DEPARTMENT OF THE INTERIOR
Roy O. West, Secretary

U. S. GEOLOGICAL SURVEY
George Otis Smith, Director

WATER-SUPPLY PAPER 593

SURFACE WATER SUPPLY OF THE UNITED STATES

1924

PART XII. NORTH PACIFIC SLOPE DRAINAGE BASINS

B. SNAKE RIVER BASIN

NATHAN C. GROVER, Chief Hydraulic Engineer
G. C. BALDWIN, G. L. PARKER, C. G. PAULSEN
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CONTENTS

ILLUSTRATION

SURFACE WATER SUPPLY OF SNAKE RIVER BASIN, 1924

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1924.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat. L., p. 394):

Provided, That this officer [the Director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation in the West. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following items:

For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources

Annual appropriations for the fiscal years ending June 30, 1895–1925

1895	$12,500.00	1903–1906	$200,000.00	1919	$148,244.10
1896	[1] 24,500.00	1907	150,000.00	1920	175,000.00
1897–1899	50,000.00	1908–1910	100,000.00	1921–1923	180,000.00
1900	[2] 70,000.00	1911–1917	150,000.00	1924–1925	170,000.00
1901–1902	100,000.00	1918	175,000.00		

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 9.

Measurements of stream flow have been made at about 4,990 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1924, 1,670 gaging stations were being maintained by the Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

[1] Includes $4,500 appropriated in act of Apr. 25, 1896.

[2] Includes $20,000 appropriated in deficiency bill of Mar. 30, 1900.

DEFINITION OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, acre-feet, and millions of cubic feet. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation," an abbreviation for the term "relation of gage height to discharge."

"Control," a term used to designate the section or sections of the stream channel below the gage which determine the stage-discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a gaging station is that point on the gage—the gage height—at which water ceases to flow over the control.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1923, and ending September 30, 1924. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored as ground water, in the form of snow or ice, or in ponds, lakes, and swamps, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for

run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct reading on a staff or chain gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

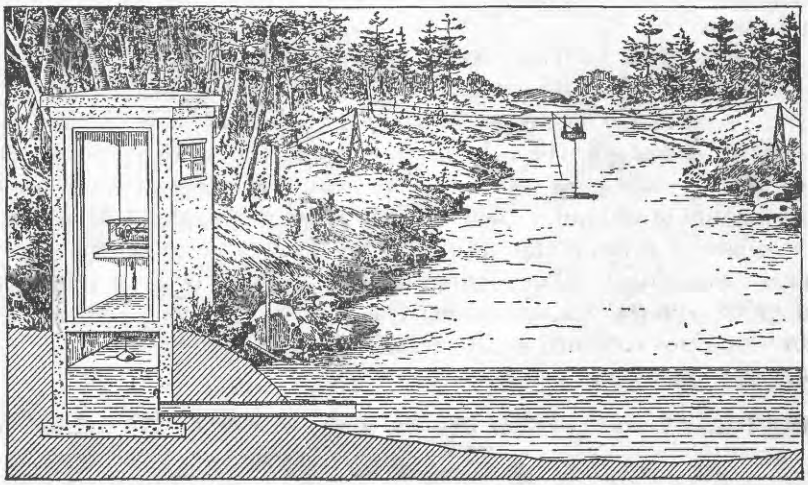

FIGURE 1.—Typical gaging station

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage heights to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is computed.

The data presented for each gaging station in the area covered by this report comprise a description of the station, a table giving records of discharge measurements, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off.

If the base data are insufficient to determine the daily discharge, tables giving daily gage height and records of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any conditions that may affect the permanence of the stage-discharge relation, covering such subjects as the occurrence of ice, the use of the

stream for log driving, shifting control, and the cause and effect of backwater. It gives also information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded stages, and the accuracy of the records.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the mean of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders the mean daily discharge may be obtained by averaging quantities of discharge for regular intervals during the day, or by means of a discharge integrator, an instrument operating on the principle of the planimeter and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gage height was highest. As the gage height is the mean for the day it does not indicate correctly the stage when the water surface was at crest height, and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column headed "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow computations recorded in the remaining columns, which are defined on page 2, are based.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanence of the stage-discharge relation and (2) on the accuracy of observation of stage, measurement of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding the (1) permanence of the stage-discharge relation, (2) precision with which the discharge rating curve is defined, (3) refinement of gage readings, (4) frequency of gage readings, and (5) methods of applying the daily gage height to the rating table to obtain the daily discharge.

For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures

showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches. All figures representing "second-feet per square mile" and "run-off in inches" previously published by the Survey should be used with caution because of possible inherent sources of error not known to the Survey.

Many gaging stations on streams in the irrigated sections of the United States are located above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the station must first be satisfied. To give an idea of the amount of prior appropriations, a paragraph on diversions is presented in each station description. The figures given can not be considered exact but represent the best information available.

The table of monthly discharge gives only a general idea of the flow at the station and should not be used for other than preliminary estimates; the tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, ground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the monographs, bulletins, professional papers, and annual reports.

The results of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

PART I. North Atlantic slope basins (St. John River to York River).
II. South Atlantic slope and eastern Gulf of Mexico basins (James River to the Mississippi).
III. Ohio River Basin.
IV. St. Lawrence River Basin.
V. Upper Mississippi River and Hudson Bay Basins.
VI. Missouri River Basin.

PART VII. Lower Mississippi River Basin.
VIII. Western Gulf of Mexico Basins.
IX. Colorado River Basin.
X. Great Basin.
XI. Pacific slope basins in California.
XII. North Pacific slope basins, in three parts:
A, Pacific slope basins in Washington and upper Columbia River Basin.
B, Snake River Basin.
C, Lower Columbia River Basin and Pacific slope basins in Oregon.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities of the United States.

3. Complete sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Boston, Mass., 2500 Customhouse.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., Statehouse.
Charlottesville, Va., care of University of Virginia.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 830 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Madison, Wis., care of Railroad Commission of Wisconsin.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Helena, Mont., 45–46 Federal Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Tacoma, Wash., 404 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Tucson, Ariz., Room 106, College of Law Building, University of Arizona.
Austin, Tex., State Capitol.
Honolulu, Hawaii, Territorial Office Building.

A list of the Geological Survey's publications may be obtained by applying to the Director, United States Geological Survey, Washington, D. C.

Stream-flow records have been obtained at about 4,990 points in the United States, and the data obtained have been published in the reports tabulated below.

Stream-flow data in reports of the United States Geological Survey

[A=Annual Report; B=Bulletin; W=Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River, and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.

The records at most of the stations discussed in these reports extend over a series of years, and miscellaneous measurements at many points other than regular gaging stations have been made each year. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1923. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for Machias River at Whitneyville, Maine, 1903 to 1921, are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, 321, 351, 381, 401, 431, 451, 471, 501, and 521, which contain records for the New England streams from 1903 to 1921. Results of miscellaneous measurements are published by drainage basins.

Numbers of water-supply papers containing results of stream measurements, 1899–1924

[For basins included see p. 5]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
												A	B	C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [j] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98,99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125, [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166, [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332–A	332–B	332–C
1913	351	352	353	354	355	356	357	358	359	360	361	362–A	362–B	362–C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, Part IV.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Tables of monthly discharge for 1900 in Twenty-second Annual Report, Part IV.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[k] Tributaries of Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California, except Truckee and Carson River Basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

During the year ending September 30, 1924, work in the Snake River Basin was carried on in cooperation with the States of Idaho, Oregon, Nevada, and Washington, effected under contracts made between the Director of the Federal Survey and the State engineers or other officials and authorized by legislative acts appropriating money.

Special acknowledgments are due to W. G. Swendsen, commissioner of reclamation of Idaho; Rhea Luper, State engineer of Oregon; Robert A. Allen, State engineer of Nevada; and Dan A. Scott, director of Department of Conservation and Development of Washington, for the efficient manner in which they represented their States in the investigations.

Acknowledgments are due also to the United States Bureau of Reclamation, the United States Forest Service, and the United States Office of Indian Affairs, which permitted the free use of data gathered exclusively for them or paid for by them.

The following cities, private companies, and individuals have aided in the collection of records by paying the expense of work or otherwise assisting: Cities of Boise and Pocatello; Idaho Power Co.; Salmon River Canal Co. (Ltd.); Utah Construction Co.; Weiser Irrigation District; Little Wood Reservoir Association; Camas Mutual Irrigation District; Murtaugh Irrigation District; Big Wood Canal Co. (Ltd.); Idaho Water District No. 36; Love & Von Brecht; Lynn Crandall, water commissioner under the Federal court for Big Lost River and tributaries; S. H. Chapman, water master for Big Wood and Little Wood Rivers; Empire Irrigation District; water master for Malheur County, Oreg.; Warmsprings Irrigation District; Malheur Land Co.; Grangeville Electric Light & Power Co.; Mountain Home Cooperative Irrigation Co.; Crane Creek Reservoir Administration Board; Southern Idaho Land & Power Co.; and Mesa Orchards Co.

Acknowledgment for records furnished by cooperating parties is made in the description of gaging stations.

DIVISION OF WORK

Data for stations in Wyoming and on Snake River above Milner, Idaho, for those tributaries entering the river above Idaho Falls and for a few stations on the lower Blackfoot River and its tributaries, were collected and prepared for publication under the direction of G. C. Baldwin, district engineer, assisted by C. A. McClelland, L. L. Bryan, F. A. Backman, W. F. Dawson, M. H. Coffin, and Mrs. B. M. Rees.

For stations in Idaho (except in the Clearwater, upper Columbia, upper Snake, lower Salmon, and Palouse Basins) and in the Salmon Falls Creek Basin in Nevada, the data were collected and prepared for publication under the direction of C. G. Paulsen, district engineer,

assisted by Berkeley Johnson, Miss E. H. Haugse, F. M. Veatch, C. L. Batchelder, and K. N. Vaksvik.

Data for stations in Nevada were collected and prepared for publication under the direction of A. B. Purton, district engineer, assisted by W. E. Dickinson, J. W. Mangan, M. T. Wilson, D. M. Corbett, and Miss Lysle Christensen.

For stations in Oregon, the data were collected and prepared for publication under the direction of F. F. Henshaw, district engineer, assisted by G. H. Canfield, Wendell Dawson, R. J. McKinney, and E. O. Hokanson.

The data for stations on Salmon River at Whitebird, Idaho; Clearwater River at Kamiah, Idaho; South Fork of Clearwater River near Grangeville, Idaho; and Tucannon River near Pomeroy, Wash., were collected and prepared for publication under the direction of G. L. Parker, district engineer, assisted by D. J. F. Calkins, R. B. Kilgore, J. S. Gatewood, A. C. Baldwin, C. O. Dueval, and J. M. Rogers.

The manuscript was reviewed and assembled by J. W. Mangan.

GAGING-STATION RECORDS

SNAKE RIVER

SNAKE RIVER AT SOUTH BOUNDARY OF YELLOWSTONE NATIONAL PARK

LOCATION.—A quarter of a mile below junction of Lewis and Snake Rivers, half a mile north of Snake River Park ranger station and south boundary of Yellowstone National Park, and 25 miles north of Moran, Wyo.

DRAINAGE AREA.—490 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 19, 1913, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed July 20, 1921; read by Peters and Newell. Overhanging chain gage on right bank 2½ miles above used only as reference gage.

DISCHARGE MEASUREMENTS.—Made from cable 225 feet below upper reference gage or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel; clean except for occasional lodgment of drift. Control probably permanent at ordinary stages. One channel at gage but divided by an island into two channels at control. Conditions at auxiliary location similar except that the stream is in one channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 20 to September 30, 6.39 feet at 10 p. m. May 20 (discharge, 4,310 second-feet); minimum stage, 2.39 feet at 5 a. m. September 4 (discharge, 205 second-feet).

1913–1924: Maximum stage recorded, 7.45 feet June 12, 1923 (discharge, 6,280 second-feet); minimum stage, 1.4 feet October 26–31, 1915 (discharge, 160 second-feet).

ICE.—Stage-discharge relation not affected by ice, formation of which is evidently prevented by hot springs above gage.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge obtained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Part of gage-height record and one measurement furnished by United States Bureau of Reclamation.

Discharge measurements of Snake River at south boundary of Yellowstone National Park, during the year ending September 30, 1924

Date	Gage height[a]	Discharge	Date	Gage height[a]	Discharge	Date	Gage height[a]	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 20	5.74	3,210	June 24	3.97	943	July 29	2.82	322
May 27	5.22	2,350	July 3	3.40	570	Aug. 20	2.52	238
June 10	4.43	1,380	July 16	3.06	423	Sept. 11	2.57	249

[a] Bridge or lower gage.

Daily discharge, in second-feet, of Snake River at south boundary of Yellowstone National Park, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		1,760	645	315	209	16		1,630	407	252	226
2		1,900	616	305	209	17		1,440	391	247	236
3		2,330	594	299	207	18		1,320	380	241	239
4		2,600	577	289	207	19		1,250	376	239	247
5		2,490	605	283	229	20	3,660	1,210	491	236	241
6		2,270	622	280	257	21	3,580	1,080	496	239	236
7		2,000	633	277	234	22	3,440	1,030	424	236	239
8		1,780	616	274	236	23	3,020	999	380	231	236
9		1,470	530	272	249	24	2,800	966	361	226	229
10		1,420	487	272	280	25	3,290	905	350	224	234
11		1,480	468	269	252	26	3,060	868	342	219	244
12		1,550	482	266	241	27	2,480	825	332	217	234
13		1,660	506	252	239	28	2,200	771	328	217	239
14		1,860	454	260	236	29	1,920	712	325	214	236
15		1,830	428	254	231	30	1,810	675	328	212	231
						31	1,760		325	209	

NOTE.—No record obtained Oct. 1 to May 19. Gage height and discharge refer to lower or bridge gage

Monthly discharge of Snake River at south boundary of Yellowstone National Park, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 20-31	3,660	1,760	2,750	65,500
June	2,600	675	1,470	87,500
July	645	325	461	28,300
August	315	209	252	15,500
September	280	207	235	14,000
The period				211,000

JACKSON LAKE AT MORAN, WYO.

LOCATION.—In sec. 18, T. 45 N., R. 114 W., a short distance above gates at outlet of lake at Moran, Teton County.

RECORDS AVAILABLE.—June 1, 1909, to September 30, 1924. Records for years 1909 and 1910 fragmentary.

GAGE.—Inclined staff on right shore just below engineer's cottage; read by Joseph Markham. Zero of gage, 6,700 feet above sea level.

COOPERATION.—Gage-height record and table showing storage capacity of lake furnished by United States Bureau of Reclamation.

Jackson Lake impounds water for the irrigation of lands in the Upper Snake River Valley and in the Minidoka and Twin Falls tracts. It has a capacity of 847,000 acre-feet between the elevations 6,730 and 6,769 feet, sea-level datum.

Daily contents, in acre-feet, of Jackson Lake at Moran, Wyo., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146,160	173,560	196,190	223,050	248,830	270,420	288,900	317,680	453,280	442,140	185,890	35,640
2	147,120	174,340	197,180	224,470	249,860	270,840	289,750	320,250	444,180	432,400	179,990	32,150
3	148,080	175,120	198,170	225,700	250,890	271,460	290,600	322,830	441,450	422,480	173,560	28,500
4	149,040	175,700	199,160	226,920	251,720	271,880	291,240	326,050	441,910	408,780	166,350	27,110
5	149,800	176,290	200,150	228,150	252,750	272,510	292,090	329,720	448,050	396,250	159,580	25,540
6	150,760	176,870	201,140	229,170	253,580	272,930	292,720	332,980	454,870	382,930	152,490	25,020
7	152,110	177,650	201,930	229,980	254,410	273,560	293,570	336,230	458,510	373,850	145,780	23,980
8	153,060	178,240	202,730	230,800	255,230	273,980	294,210	339,060	460,550	368,340	140,270	22,930
9	154,410	179,020	203,540	231,610	256,060	274,610	294,840	342,090	459,640	362,420	134,040	22,760
10	155,360	179,600	204,140	232,430	256,680	275,020	295,480	345,130	459,640	356,710	127,820	22,760
11	156,130	180,380	204,740	233,450	257,300	275,650	296,120	348,390	460,550	350,570	120,710	22,410
12	157,090	181,160	205,550	234,260	257,920	276,280	296,750	353,640	460,550	344,480	114,200	21,890
13	157,860	181,940	206,150	235,080	258,750	276,910	298,240	360,660	463,530	338,840	108,630	21,190
14	158,620	182,520	206,950	235,900	259,370	277,540	300,360	368,120	468,350	331,460	104,380	20,150
15	159,580	183,120	207,760	236,710	259,990	278,170	301,420	376,510	472,470	323,470	100,170	18,590
16	160,350	183,710	208,560	237,530	260,820	278,790	302,270	385,370	476,820	314,240	97,780	17,890
17	161,120	184,310	209,370	238,340	261,440	279,420	303,110	395,360	480,490	302,690	93,200	17,190
18	161,880	184,900	210,170	239,160	262,260	280,050	303,960	405,200	484,350	288,900	88,440	16,510
19	162,840	185,500	210,980	239,970	263,090	280,470	304,810	416,610	485,550	273,770	83,200	15,820
20	163,620	186,290	211,780	240,790	263,920	281,100	305,660	427,660	486,700	258,960	77,240	14,790
21	164,590	187,280	212,580	241,610	264,760	281,730	306,730	438,270	486,240	246,960	73,080	13,410
22	165,370	188,270	213,190	242,420	265,600	282,360	307,810	449,180	484,850	234,670	70,190	11,690
23	166,150	189,260	213,990	243,040	266,440	282,980	308,880	459,420	483,240	222,840	68,230	9,970
24	166,930	190,050	214,800	243,660	267,070	283,610	309,950	468,580	480,030	209,570	66,270	8,250
25	167,710	191,040	215,600	244,280	267,480	284,240	311,020	476,370	474,470	203,130	64,480	6,530
26	168,490	191,830	216,200	244,900	268,110	284,870	312,100	480,720	467,660	199,160	61,630	5,850
27	169,270	192,630	216,810	245,520	268,740	285,510	312,960	481,860	462,850	198,370	57,710	4,300
28	170,050	193,420	217,410	246,140	269,370	286,360	314,030	480,030	458,050	197,580	53,430	3,270
29	170,830	194,410	218,010	246,760	270,000	286,780	315,100	477,740	454,420	196,390	49,190	2,580
30	171,810	195,200	219,420	247,380	-------	287,420	316,180	471,550	448,730	194,010	43,910	2,410
31	172,780	-------	221,430	248,000	-------	288,060	-------	462,850	-------	191,040	38,980	-------

SNAKE RIVER NEAR MORAN, WYO.

LOCATION.—In sec. 17, T. 45 N., R. 114 W., 1½ miles below Moran post office, Teton County, and United States Bureau of Reclamation dam at outlet of Jackson Lake. No important tributaries between dam and station.

DRAINAGE AREA.—820 square miles.

RECORDS AVAILABLE.—September 21, 1903, to September 30, 1924.

GAGE.—Vertical staff in two sections on left bank. Datum lowered 1.0 foot July 25, 1915. Stevens water-stage recorder installed June 14, 1917, on bank to rear of staff gage. Gage read by Joseph Markham.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed of gravel and boulders. Control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.60 feet at 8 p. m. July 19 (discharge, 9,080 second-feet); minimum discharge, estimated 19 second-feet December 16–31 (stage-discharge relation affected by ice).

1903–1924: Maximum stage recorded, 10.41 feet at 8 p. m. June 12, 1918 (discharge, 15,100 second-feet); practically no flow during a few days in 1907 and 1909 as a result of closing of gates in Jackson Lake Dam.

ICE.—Stage-discharge relation affected by ice. Gates in dam at Jackson Lake are closed during winter. Flow past gage represents leakage through dam and inflow from springs.

DIVERSIONS.—None between dam and station and practically none above Jackson Lake.

REGULATION.—Flow controlled by operation of gates in Jackson Lake Dam. Storage capacity of reservoir 847,000 acre-feet.

ACCURACY.—Stage-discharge relation permanent after July 1. Rating curve well defined; parallel curves used May 25 to June 7 and June 9–23. Operation of water-stage recorder satisfactory. Daily discharge May 25 to September 30, ascertained by averaging the hourly discharge obtained by applying mean hourly gage height from the recorder graph to the rating table; shifting-control method used June 8, 9, and 24–30. Records excellent.

COOPERATION.—Gage-height record and two discharge measurements furnished by United States Bureau of Reclamation.

Discharge measurements of Snake River near Moran, Wyo., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 16	0.32	37.7	June 30	5.63	5,150	Aug. 22	3.11	1,710
May 26	4.36	3,040	July 2	6.48	6,750	Aug. 25	2.73	1,390
May 29	5.85	5,350	July 8	4.92	3,960	Sept. 1	3.62	2,230
May 30	6.40	6,380	July 15	5.77	5,430	Sept. 6	2.16	844
June 2	6.85	7,230	July 21	6.78	7,390	Sept. 10	1.70	582
June 7	2.76	1,260	July 27	2.50	1,140	Sept. 21	2.53	1,170
June 18	1.68	549	Aug. 4	5.05	4,150	Sept. 30	1.12	290
June 19	3.45	2,000	Aug. 11	4.82	3,840			
June 23	3.97	2,610	Aug. 18	4.24	3,030			

Daily discharge, in second-feet, of Snake River near Moran, Wyo., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	33	24					82	7,270	5,740	3,310	2,180
2	46	33	22				22	87	5,930	6,810	3,310	1,970
3	44	33	22					98	3,460	7,680	4,060	1,450
4	44	33	22					82	2,300	8,310	4,090	1,310
5	44	33	22				22	52	535	8,310	3,810	1,190
6	44	33	22				24	49	766	7,500	3,530	909
7	44	33	22				24	45	1,660	5,520	3,470	921
8	44	33	22				24	45	2,600	4,070	3,340	829
9	46	33	20				24	40	2,350	4,100	3,680	651
10	46	33	20				26	38	1,740	4,070	3,650	581
11	44	33	20				26	38	1,900	4,050	3,780	579
12	44	33	20				26	35	1,670	4,070	3,380	596
13	44	33	20				26	35	527	4,520	2,910	677
14	44	33	20				29	35	563	4,950	2,540	968
15	44	33	20		21		29	35	565	5,300	2,210	894
16	43	33	19	20		22	32	36	564	5,990	2,140	707
17	43	33	19				35	35	539	7,490	2,230	716
18	43	33	19				35	35	894	8,150	3,110	711
19	41	33	19				38	35	2,000	8,720	2,990	761
20	41	30	19				38	35	1,970	8,080	2,920	978
21	38	30	19				45	35	2,080	7,340	1,840	1,170
22	38	30	19				49	35	2,590	7,130	1,670	1,170
23	33	30					49	35	3,000	6,980	1,340	1,100
24	33	30					52	35	4,540	5,630	1,320	1,030
25	33	30					52	1,870	5,250	3,010	1,390	966
26	33	30	19				56	3,570	4,840	1,750	2,160	913
27	33	30					64	4,370	4,080	1,140	2,350	862
28	33	25					69	4,670	3,660	1,140	2,400	823
29	33	25					73	5,600	3,800	1,290	2,690	644
30	33	24					78	6,680	5,160	2,050	2,570	304
31	33	-------			-------		-------	7,200	-------	2,830	2,310	-------

NOTE.—Stage-discharge relation affected by ice Dec. 23 to Apr. 4; gates in dam at Jackson Lake remained closed and daily discharge was estimated.

Monthly discharge of Snake River near Moran, Wyo., for the year ending September, 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	46	33	40.4	2,480
November	33	24	31.4	1,870
December	24	19	20.1	1,240
January	----------	----------	20.0	1,230
February	----------	----------	21.0	1,210
March	----------	----------	22.0	1,350
April	78	22	37.8	2,250
May	7,200	35	1,130	69,500
June	7,270	527	2,630	156,000
July	8,720	1,140	5,280	325,000
August	4,090	1,320	2,790	172,000
September	2,180	304	952	56,600
The year	8,720	19	1,090	791,000

SNAKE RIVER NEAR HEISE, IDAHO

LOCATION.—In sec. 5, T. 3 N., R. 41 E., 600 feet above Anderson Dam, Bonneville County, 3 miles above Heise, Jefferson County, and 25 miles below site of station formerly maintained near Lyon. Several small creeks enter between old site and present station.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 25, 1910, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed September 30, 1922; inspected by Ira Moore.

DISCHARGE MEASUREMENTS.—Made from cable 150 feet above gage.

CHANNEL AND CONTROL.—Bed composed of rock ledge, coarse gravel, and cobblestones. One channel at all stages. Control formed by Anderson Dam, parts of which washed out during high-water period of 1917 and 1918 and has recently been in the process of repair.

EXTREMES OF DISCHARGE.—Maximum stage recorded during periods October to December 5 and April 3 to September 30, 5.47 feet at 8 a. m May 18 (discharge, 15,400 second-feet); minimum stage, 0.99 foot at 12.30 p. m. April 3 (discharge, 2,120 second-feet).

1910–1924: Maximum discharge, about 52,000 second-feet June 16, 1918; minimum discharge, 2,120 second-feet April 3, 1924.

ICE.—Stage-discharge relation seriously affected by ice. Observations discontinued during winter.

DIVERSIONS.—No large diversions above station. A small ditch having a capacity of about 25 second-feet diverts just above station.

REGULATION.—Flow controlled to a large extent by storage in Jackson Lake Reservoir.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Several parallel curves used. Changing conditions attributable to construction work at Anderson Dam. Water-stage recorder operated satisfactorily. Records good.

Discharge measurements of Snake River near Heise, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	1.29	3,990	May 14	4.90	13,000	Aug. 7	3.09	6,680
Nov. 14	1.40	2,980	June 12	3.65	8,700	Aug. 12	3.25	6,700
Dec. 5	1.24	2,520	June 26	4.58	12,100	Aug. 18	2.81	4,960
Apr. 3	1.00	2,130	July 9	3.95	9,870	Sept. 2	3.05	4,770
Apr. 29	2.72	5,880	July 30	2.26	4,610	Sept. 13	2,23	3,380
May 6	3.77	8,810	Aug. 4	3.22	7,000	Sept. 29	2.31	3,320

Daily discharge, in second-feet, of Snake River near Heise, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	3,810	2,660	2,840		6,830	14,300	10,800	5,740	4,910
2	3,790	2,670	2,690		7,560	14,100	11,000	6,160	4,780
3	3,660	2,840	2,590	2,190	8,610	13,700	12,000	6,360	4,580
4	3,610	2,910	2,620	2,340	9,470	12,000	12,400	6,980	4,120
5	3,700	2,930	2,520	2,390	10,400	12,400	13,100	7,280	3,850
6	3,940	2,950		2,430	9,400	11,200	13,300	6,980	3,900
7	3,790	2,880		2,670	7,960	10,900	13,000	6,740	3,550
8	3,790	2,780		3,120	7,620	11,000	11,400	6,740	3,440
9	3,680	2,880		3,530	8,030	10,700	9,740	6,680	3,480
10	3,660	2,990		3,680	8,610	9,920	9,200	6,740	3,510
11	3,660	3,100		3,830	9,400	9,000	8,940	6,680	3,460
12	3,530	3,140		3,960	10,600	8,770	8,770	6,770	3,400
13	3,420	3,070		4,240	11,800	9,540	8,700	6,540	3,380
14	3,340	2,990		4,960	13,000	9,130	8,800	5,960	3,340
15	3,260	3,010		5,760	13,500	10,100	9,130	5,600	3,440
16	3,240	2,990		5,090	13,900	10,700	9,200	5,240	3,590
17	3,220	2,950		4,620	14,600	10,400	9,470	5,010	3,400
18	3,220	2,900		4,210	15,000	9,920	10,800	4,960	3,420
19	3,120	2,780		3,880	14,800	9,680	11,300	5,620	3,440
20	3,070	2,760		3,960	14,300	9,740	12,000	5,960	3,530
21	3,030	2,880		4,430	14,000	9,070	12,000	5,990	3,530
22	3,010	2,900		5,430	13,800	8,610	11,000	4,910	3,680
23	3,050	2,900		6,920	13,600	8,970	10,600	4,520	3,790
24	3,050	2,860		7,810	12,300	9,680	10,400	4,170	3,740
25	3,010	2,900		7,280	11,600	11,200	9,680	3,920	3,680
26	2,930	2,930		6,130	13,000	11,800	7,130	3,850	3,610
27	2,900	2,860		5,510	14,900	11,800	5,900	4,190	3,570
28	2,880	2,750		5,430	14,500	11,200	5,060	4,850	3,440
29	2,880	2,710		5,760	14,100	10,400	4,720	4,910	3,340
30	2,780	2,820		6,240	14,000	10,000	4,650	5,110	3,280
31	2,690				14,200		4,910	5,140	

NOTE.—No record obtained Dec. 6 to Apr. 2.

Monthly discharge of Snake River near Heise, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,940	2,690	3,310	204,000
November	3,140	2,660	2,890	172,000
December 1–5	2,840	2,520	2,650	26,300
April 3–30	7,810	2,190	4,560	253,000
May	15,000	6,830	11,800	726,000
June	14,300	8,610	10,700	637,000
July	13,300	4,650	9,650	593,000
August	7,280	3,850	5,690	350,000
September	4,910	3,280	3,670	218,000

GREAT FEEDER CANAL NEAR RIRIE, IDAHO

LOCATION.—In sec. 36, T. 4 N., R. 40 E., 700 feet below head of canal, 4 miles east of Ririe, and 14 miles southeast of Rigby, Jefferson County. Diversion gates of canal 2 miles below Heise gaging station.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 31, 1923, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; inspected by Ira Moore.

DISCHARGE MEASUREMENTS.—Made from cable 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of cobbles and gravel drift. Banks fairly clean. One channel for all stages. Control fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during periods October 1 to December 8 and May 3 to September 30, 7.1 feet May 17–18 (discharge, 3,930 second-feet); minimum discharge probably occurred during period of no record.

1923–1924: Maximum stage recorded, 7.10 feet May 17–18, 1924 (discharge, 3,930 second-feet); minimum stage, 2.67 feet on September 25, 1923 (discharge, 591 second-feet).

ICE.—Stage-discharge relation seriously affected by ice. Observations discontinued during winter.

DIVERSIONS.—None above nor below gage of sufficient importance to affect stage-discharge relation.

REGULATION.—Flow is regulated by canal head gates.

ACCURACY.—Stage-discharge relation not entirely permanent. Standard rating curve and one parallel curve used. Shifting-control method employed for short period. Operation of water-stage recorder satisfactory except for short period. Daily discharge obtained by applying mean daily gage height to rating table except as shown in footnote to table of daily discharge. Records good.

Discharge measurements of Great Feeder Canal near Ririe, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 14	3.41	988	June 18	5.91	2,870	Aug. 9	5.22	2,280
Dec. 5	2.98	744	July 8	5.88	2,810	Sept. 4	4.71	1,860
May 3	5.52	2,570	July 31	5.15	2,140			

Daily discharge, in second-feet, of Great Feeder Canal near Ririe, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	May	June	July	Aug.	Sept.
1	1,830	1,030			2,630	2,590	2,490	2,070
2	1,800	1,030			2,930	2,430	2,620	1,970
3	1,800	1,030	720	2,530	3,230	2,850	2,530	1,930
4	1,800	1,030		2,600	3,070	3,130	2,530	1,840
5	1,830	1,030	745		3,110	3,010	2,510	1,790
6	1,870	1,020			2,900	3,010	2,350	1,790
7	1,850	1,020	750		2,850	2,980	2,300	1,720
8	1,860	1,010			2,850	2,800	2,280	1,680
9	1,850	1,010			2,810	2,810	2,250	1,670
10	1,850	1,010		3,040	2,710	2,980	2,360	1,660
11	1,840	1,010			2,700	2,930	2,540	1,640
12	1,810	999			2,750	2,890	2,730	1,620
13	1,800	993			2,850	2,890	2,640	1,590
14	1,800	987			2,680	2,890	2,440	1,620
15	1,780	993			2,630	2,940	2,360	1,690

Daily discharge, in second-feet, of Great Feeder Canal near Ririe, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	May	June	July	Aug.	Sept.
16	1,770	987			2,720	2,960	2,240	1,750
17	1,770	981		3,860	2,940	3,010	2,170	1,780
18	1,760	981		3,800	2,950	3,080	2,130	1,840
19	1,750	975		3,750	2,840	2,900	2,320	1,930
20	1,750	975		3,640	2,900	2,790	2,410	1,980
21	1,750	987		3,540	2,830	2,670	2,420	1,940
22	1,740	993		3,520	2,720	2,560	2,080	1,840
23	1,740	993		3,460	2,770	2,600	1,800	1,860
24	1,740	993		3,380	2,880	2,710	1,730	1,820
25	1,740	969		3,370	3,010	2,610	1,680	1,820
26	1,720	969		3,490	2,930	2,460	1,660	1,810
27	1,720	969		3,390	2,980	2,420	1,770	1,810
28	1,720	905		2,860	2,920	2,200	1,980	1,800
29	1,720	708		2,630	2,810	2,130	2,030	1,780
30	1,360	703		2,630	2,730	2,130	2,140	1,750
31	1,030			2,620		2,220	2,190	

NOTE.—No record obtained Dec. 9 to May 2. No gage-height record May 5–9 and 11–16; not sufficient data available to warrant interpolation of discharge. Discharge estimated Dec. 1–4 and 6–8 on account of ice. Staff reading only, May 10.

Monthly discharge of Great Feeder Canal near Ririe, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,870	1,030	1,750	108,000
November	1,030	703	976	58,100
December 1–8			734	11,600
May 17–31	3,860	2,620	3,330	99,100
June	3,230	2,630	2,850	170,000
July	3,130	2,130	2,730	168,000
August	2,730	1,660	2,250	138,000
September	2,070	1,590	1,790	107,000

SNAKE RIVER AT LORENZO, IDAHO

LOCATION.—In sec. 33, T. 5 N., R. 39 E., 500 feet above bridge of Yellowstone branch of the Oregon Short Line Railroad and one-fourth mile north of Lorenzo, Jefferson County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 17, 1924, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed April 17, 1924; inspected by Anderson and Sauer.

DISCHARGE MEASUREMENTS.—Main channel from cable 1,000 feet below gage; secondary channel from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel drift and sand. One channel at gage; two channels below bridge. Control not permanent and subject to shift during high-water period.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, April 17 to September 30, 4.40 feet at 7 a. m. June 1 (discharge, 9,570 second-feet); minimum stage, 0.04 foot from 1 to 6 p. m. September 21 (discharge, 310 second-feet).

ICE.—Stage-discharge relation seriously affected by ice. No observations made during winter.

DIVERSIONS.—Numerous canal diversions above and below station.

REGULATION.—Flow controlled to a large extent by storage in Jackson Lake Reservoir.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge obtained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records good.

Discharge measurements of Snake River at Lorenzo, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 29	2.80	4,580	June 15	3.10	5,130	July 28	1.27	1,440
May 2	2.72	4,480	June 19	2.91	4,580	Aug. 11	1.49	1,750
May 5	3.48	6,620	June 23	2.46	3,680	Sept. 1	.75	822
May 15	3.60	6,730	July 3	3.76	7,140	Sept. 10	.39	520
May 20	3.89	7,630	July 17	2.59	3,880	Sept. 16	.26	428
May 27	4.20	8,800	July 27	1.56	1,860	Sept. 20	.05	316

Daily discharge, in second-feet, of Snake River at Lorenzo, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	------	3,840	9,410	5,630	1,160	830	16	------	6,680	5,490	3,820	1,110	425
2	------	4,230	9,050	6,080	1,320	850	17	2,120	7,290	5,230	3,940	969	384
3	------	4,780	8,780	6,910	1,450	860	18	2,170	7,990	4,720	5,150	903	356
4	------	5,430	7,290	7,010	1,800	780	19	2,380	8,070	4,520	5,870	1,000	320
5	------	6,270	7,640	8,140	2,120	698	20	2,360	7,560	4,440	6,720	1,120	315
6	------	5,810	6,240	8,330	2,050	689	21	2,520	7,460	3,960	7,150	1,120	320
7	------	4,320	5,810	8,400	1,890	640	22	3,100	7,460	3,510	6,360	969	395
8	------	3,480	5,810	7,010	1,780	570	23	4,400	7,390	3,570	5,900	914	431
9	------	2,940	5,550	5,210	1,690	540	24	4,960	6,490	3,840	5,430	870	462
10	------	3,170	5,120	4,200	1,690	511	25	4,600	5,660	4,800	5,210	790	455
11	------	3,640	4,370	3,870	1,680	497	26	3,570	6,390	5,660	3,000	743	443
12	------	4,270	3,910	3,660	1,600	476	27	3,120	8,820	5,960	1,890	734	437
13	------	4,990	4,420	3,620	1,640	455	28	4,180	9,290	5,900	1,430	870	431
14	------	5,870	4,270	3,590	1,460	437	29	4,520	9,250	5,490	1,170	881	413
15	------	6,390	4,910	3,840	1,310	419	30	4,830	9,130	5,040	947	850	395
							31	------	9,170	------	936	860	------

NOTE.—No record obtained Oct. 1 to Apr. 16.

Monthly discharge of Snake River at Lorenzo, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 17-30	4,960	2,120	3,490	96,900
May	9,290	2,940	6,240	384,000
June	9,410	3,510	5,490	327,000
July	8,400	936	4,850	298,000
August	2,120	734	1,270	78,100
September	860	315	508	30,200
The period	----------	----------	----------	1,210,000

DIVERSIONS FROM SNAKE RIVER BETWEEN HEISE AND SHELLEY GAGING STATIONS, IDAHO

Between Heise and Shelley gaging stations 50 separate canals divert water from Snake River for irrigation. More than one-third of these head in the Great Feeder, an old channel of the river, which has been equipped with head gates. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate

distribution of the water. Records are available from June 1, 1919, to September 30, 1924.

Stage-discharge relation on most of the canals affected by growth of aquatic plants or by operation of check gates. Rating curves well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Snake River between Heise and Shelley gaging stations for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		5,120	4,640	5,650	5,010	16		5,640	6,720	5,730	3,960
2		5,060	4,550	5,830	4,700	17		6,010	6,970	5,590	3,940
3		4,590	4,950	5,740	4,520	18		6,100	7,150	5,580	3,920
4		5,150	4,650	6,000	4,320	19	9,260	6,300	7,060	5,870	3,910
5		5,630	5,500	6,170	4,240	20	8,840	6,690	6,980	6,120	3,760
6		6,300	6,500	5,940	4,230	21	8,750	6,270	6,800	6,170	3,610
7		6,550	6,940	5,910	4,040	22	8,420	6,000	6,340	5,310	3,760
8		6,520	7,330	5,860	4,000	23	8,100	6,100	6,290	4,760	3,690
9		6,530	7,310	5,810	4,070	24	7,880	6,340	6,410	4,600	3,570
10		6,620	7,360	6,120	4,040	25	7,750	6,820	6,430	4,400	3,460
11		5,990	6,860	6.350	4,000	26	7,360	6,710	6,430	4,280	3,460
12		5,740	6,680	6,420	3,830	27	6,830	6,110	6,060	4,470	3,380
13		6,000	6,690	6,030	3,740	28	6,310	4,800	5,340	5,170	3,440
14		5,460	6,450	5,820	3,710	29	5,880	4,510	5,000	5,170	3,510
15		5,520	6,550	5,800	3,850	30	5,330	4,840	5,220	5,330	3,500
						31	5,120		5,280	5,300	

NOTE.—No record obtained Oct. 1 to May 18; 38 diversions are above entrance of Henrys Fork and 12 are below.

Combined monthly discharge of canals diverting from Snake River between Heise and Shelley gaging stations for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	9,260	5,120	7,370	190,000
June	6,820	4,510	5,870	349,000
July	7,360	4,550	6,240	384,000
August	6,420	4,280	5,590	344,000
September	5,010	3,380	3,910	233,000
The period				1,500,000

NOTE.—Riley Canal does not divert in this section and is not included in summary.

SNAKE RIVER NEAR SHELLEY, IDAHO

LOCATION.—In sec. 17, T. 1 N., R. 37 E., a quarter of a mile above Woodville highway bridge and 3 miles north of Shelley, Bingham County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 18, 1915, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; inspected by C. A. McCurdy.

DISCHARGE MEASUREMENTS.—Made from cable 600 feet above gage or by wading.

CHANNEL AND CONTROL.—Control formed by lava-rock reef extending across channel 500 feet below gage. Banks high and clean at gage and control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, October 1–19 and April 1 to September 30, 8.40 feet at 4 p. m. June 2 (discharge, 11,000 second-feet); minimum stage, 3.61 feet at 1.30 p. m. September 19 (discharge, 666 second-feet).

1915–1924: Maximum stage recorded, 16.97 feet at 1.30 p. m. June 17, 1918 (discharge, 47,200 second-feet); minimum stage, 3.61 feet at 1.30 p. m. September 19, 1924 (discharge, 666 second-feet).

ICE.—Stage-discharge relation probably seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Practically the entire normal summer flow of the river above station is appropriated by numerous diversions in the Idaho Falls district.

REGULATION.—Normal flow during the irrigation season is augmented by release of stored flood waters in Jackson Lake for use on the Minidoka project and Twin Falls tracts.

ACCURACY.—Stage-discharge relation practically permanent. Rating curves fairly well defined. Operation of recorders satisfactory except April 13–17, April 25 to May 2, May 4–6, and 10. Daily discharge obtained by applying to rating table mean daily gage height from recorder graph, except for estimated periods, April 13–17, April 25 to May 2, and May 4–6, and interpolated discharge May 10. Records good.

Discharge measurements of Snake River near Shelley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft*		*Feet*	*Sec.-ft.*
Apr. 1	5.26	2,150	July 16	6.10	3,610	Aug. 14	5.12	1,870
Apr. 5	5.22	2,070	July 24	6.94	5,830	Aug. 27	4.70	1,540
May 8	6.60	5,030	July 29	4.95	1,820	Sept. 11	4.37	1,180
June 2	8.27	11,000	July 30	4.12	995	Sept. 18	3.78	774
June 5	7.55	8,030						

Daily discharge, in second-feet, of Snake River near Shelley, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	2,360	2,140	5,750	10,300	6,230	702	1,340
2	2,270	2,140	5,850	10,700	7,180	966	1,410
3	2,220	2,060	6,140	10,700	7,510	1,360	1,560
4	2,200	2,010		9,400	8,350	1,620	1,660
5	2,310	2,090	7,500	8,180	8,700	1,880	1,460
6	2,700	2,120		7,680	8,520	2,100	1,530
7	3,310	2,090	6,380	6,380	8,350	2,280	1,620
8	3,380	2,220	5,030	6,080	7,680	2,160	1,670
9	3,480	2,510	3,930	6,080	6,380	2,240	1,540
10	3,500	3,010	3,700	5,620	4,740	2,120	1,340
11	3,620	3,400	3,460	5,180	3,930	2,020	1,230
12	3,740	3,460	3,690	4,740	3,930	1,960	1,230
13	3,740		4,060	4,460	3,690	1,890	1,190
14	3,740		4,740	4,740	3,690	1,910	1,110
15	3,740	4,200	5,470	4,880	3,810	1,770	994
16	3,860		5,770	5,770	3,690	1,540	910
17	3,990		6,080	5,920	3,580	1,190	840
18	3,990	3,690	6,700	5,620	3,810	1,070	744
19	4,120	3,580	7,180	5,180	4,740	1,080	666
20		3,460	7,020	4,740	5,770	1,280	732
21		3,420	6,860	4,600	6,860	1,480	987
22		3,690	6,860	4,320	6,860	1,420	1,180
23		4,460	7,020	4,060	6,540	1,470	1,370
24		6,080	7,020	4,060	6,080	1,630	1,570
25			6,080	4,460	6,080	1,610	1,630
26			5,620	5,470	5,180	1,570	1,790
27		6,000	7,510	6,230	2,920	1,460	1,770
28			9,040	7,020	1,970	1,340	1,630
29			9,580	7,180	1,700	1,260	1,520
30			9,940	6,540	1,100	1,200	1,390
31			10,300		774	1,160	

Monthly discharge of Snake River near Shelley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–19	4,120	2,200	3,280	124,000
April		2,010	3,820	227,000
May	10,300	3,460	6,430	395,000
June	10,700	4,060	6,210	370,000
July	8,700	774	5,170	318,000
August	2,280	702	1,570	96,500
September	1,790	666	1,320	78,600

NOTE.—No record Oct. 20 to Mar. 31.

DIVERSIONS FROM SNAKE RIVER BETWEEN SHELLEY AND BLACKFOOT BRIDGE GAGING STATIONS, IDAHO

Between Shelley and Blackfoot Bridge gaging stations, 14 separate canals divert water from Snake River for irrigation. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from May 19 to September 30, 1924, division of record made from Shelly to Porterville Bridge station the latter being discontinued at end of 1923 irrigation season.

Stage-discharge relation on most of the canals affected by growth of aquatic plants or by operation of check gates. Rating curves well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Snake River between Shelley and Blackfoot Bridge gaging stations for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		2,380	2,390	621	1,040	16		2,820	1,940	1,330	748
2		1,600	2,640	561	1,160	17		2,810	1,940	917	682
3		1,200	2,640	977	1,170	18		2,240	2,110	669	499
4		1,180	2,210	1,310	1,290	19	3,520	1,940	2,350	708	566
5		1,170	1,890	1,460	1,220	20	3,460	1,880	2,330	894	560
6		1,970	1,890	1,770	1,190	21	3,500	1,940	2,330	1,080	691
7		2,270	2,050	1,570	1,250	22	3,410	1,850	2,320	1,220	838
8		2,280	2,790	1,470	1,300	23	3,290	1,410	2,110	1,060	1,010
9		2,690	2,970	1,480	1,250	24	3,260	1,030	2,010	1,220	1,300
10		2,910	2,750	1,410	1,120	25	3,130	1,680	2,020	1,340	1,290
11		2,920	2,420	1,380	956	26	3,080	2,280	1,820	1,360	1,380
12		2,780	2,380	1,590	910	27	3,240	2,420	1,340	1,220	1,330
13		2,650	2,070	1,660	938	28	3,250	2,360	980	1,060	1,120
14		2,730	2,050	1,460	855	29	3,270	2,280	695	977	1,030
15		2,310	2,030	1,460	810	30	3,160	2,270	697	911	970
						31	2,820		755	963	

NOTE.—No record obtained Oct. 1 to May 18.

Combined monthly discharge of canals diverting from Snake River between Shelley and Blackfoot Bridge gaging stations for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	3,520	2,820	3,260	84,100
June	2,920	1,030	2,140	127,000
July	2,970	695	2,030	125,000
August	1,770	561	1,200	73,800
September	1,380	499	1,020	60,700
The period				471,000

SNAKE RIVER (NOS. 1 AND 2 CHANNELS) BELOW BLACKFOOT BRIDGE, NEAR BLACKFOOT, IDAHO

LOCATION.—In NW. ¼ T. 3 S., R. 35 E., one-half mile below Blackfoot highway bridge and 2 miles west of Blackfoot, Bingham County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 24 to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank of No. 2 channel one-fourth mile below head of island where No. 1 channel comes out of river; inspected by D. G. Taylor.

DISCHARGE MEASUREMENTS.—Made from cables (No. 1 channel one-fourth mile above gage; No. 2 channel 50 feet below gage) or by wading.

CHANNEL AND CONTROL.—Bed composed of cobble in gravel drift. Control subject to occasional shifts. Banks low and subject to overflow at high stages. Two channels at gage, except at low stages, when No. 1 channel is dry.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.15 feet at 11 p. m. June 2 (discharge, 7,800 second-feet); minimum stage, dry on numerous days in summer.

ICE.—Stage-discharge relation probably seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Practically the entire normal summer flow of river above station is appropriated by numerous diversions in the Idaho Falls district. One small canal diverts between this station and the station at Clough ranch.

REGULATION.—Normal flow during irrigation season is augmented by the release of stored flood waters in Jackson Lake for use on Minidoka and Twin Falls tracts.

ACCURACY.—Stage-discharge relation fairly permanent. Rating curve well-defined. Operation of water-stage recorder satisfactory except July 31 to September 30, when stage was too low to record; May 2, 8, and 9, when clock stopped; and June 13, when inlet pipe did not function. Daily discharge ascertained by applying to rating table mean daily gage height determined from inspecting recorder graph or as noted in footnote to table of daily discharge. Records good, except for August and September for which they are fair.

At this point Snake River is divided into three channels, which are listed from east to west as Nos. 1, 2, and 3. One gage serves for Nos. 1 and 2 channels and one gage for No. 3 channel.

Discharge measurements of Snake River (Nos. 1 and 2 channels) below Blackfoot Bridge, near Blackfoot, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 7	4.29	5,270	June 3	5.08	7,620	July 14	1.96	1,230
May 10	1.85	1,170	June 10	2.89	2,340	July 28	1.35	683
May 14	2.13	1,470	June 14	2.23	1,500	July 31	.35	135
May 17	2.75	2,200	June 28	3.73	3.710	Do	−.36	8
May 23	3.40	3,100	July 3	3.72	3,750			
May 30	4.42	5,540	July 12	1.89	1,280			

Daily discharge, in second-feet, of Snake River (Nos. 1 and 2 channels) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1		3,630	6,600	3,090	6	3	16		2,110	2,210	1,400	6	1
2		3,800	7,220	3,450	0	4	17		2,140	2,590	1,380	6	0
3		3,970	7,580	3,800	0	3	18		2,580	2,700	1,190	7	0
4		4,640	7,060	4,780	0	5	19		3,080	2,720	1,700	15	0
5		5,260	5,840	5,430	0	6	20		3,210	2,410	2,500	15	1
6		5,840	5,230	5,520	0	6	21		2,920	2,240	3,470	7	3
7		4,920	3,630	5,320	5	5	22		2,920	2,150	3,830	3	6
8		3,680	3,320	4,610	24	6	23		3,080	2,210	3,610	2	8
9		2,440	2,950	3,240	70	5	24	4,110	3,240	2,450	3,410	6	10
10		1,200	2,410	2,050	75	4	25	4,810	2,770	2,190	3,270	2	8
11		972	2,050	1,270	70	3	26	4,980	2,200	2,340	3,160	1	8
12		1,060	1,800	1,270	55	5	27	4,400	2,760	3,030	1,740	0	11
13		1,180	1,580	1,340	20	6	28	3,570	4,720	3,670	838	0	12
14		1,450	1,630	1,260	5	5	29	3,610	5,400	4,040	622	0	12
15		1,830	2,010	1,400	6	3	30	3,630	5,750	3,510	375	0	11
							31		6,230		80	1	

NOTE.—No record Oct. 1 to Apr. 23. No gage-height record May 2, 8, and 9; discharge interpolated. Estimated June 13, on account of inaccurate gage height. Estimated July 31 to Sept. 30 on basis of observer's daily estimates checked by occasional estimates by engineers.

Monthly discharge of Snake River at (Nos. 1 and 2 channels) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 24-30	4,980	3,570	4,160	57,800
May	6,230	972	3,260	200,000
June	7,580	1,580	3,380	201,000
July	5,520	80	2,590	159,000
August	75	0	13.1	806
September	12	0	5.33	317
The period				619,000

SNAKE RIVER (NO. 3 CHANNEL) BELOW BLACKFOOT BRIDGE, NEAR BLACKFOOT, IDAHO

LOCATION.—In NW. ¼ T. 3 S., R. 35 E., 2 miles below Blackfoot highway bridge and 3½ miles southwest of Blackfoot, Bingham County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 3 to September 30, 1924.

GAGE.—Friez recorder on right bank; inspected by D. G. Taylor.

DISCHARGE MEASUREMENTS.—Made from cable 40 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel over cobbles. Banks not subject to overflow except at extremely high stages. One channel at gage, several overflow channels cross island between Nos. 2 and 3 channels at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 3.81 feet at 1 a. m. June 3 (discharge, 1,390 second-feet); minimum stage, dry on several days during August and September.

ICE.—Stage-discharge relation probably seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Practically the entire normal summer flow of river above station is appropriated by numerous diversions in the Idaho Falls district. One small canal diverts between this station and the station at Clough ranch.

REGULATION.—Normal flow during irrigation season is augmented by the release of stored flood waters in Jackson Lake for use on the Minidoka and Twin Falls tracts.

ACCURACY.—Stage-discharge relation fairly permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, by interpolation, or as noted in footnote to table of daily discharge. Records good.

At this point Snake River is divided into three channels, which are listed from east to west as Nos. 1, 2, and 3. One gage serves for Nos. 1 and 2 channels and one gage for No. 3 channel.

Discharge measurements of Snake River (No. 3 channel) below Blackfoot Bridge, near Blackfoot, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 7	2.89	604	May 30	3.23	905	July 19	2.02	108
May 10	2.00	97.7	June 3	3.74	1,310	Aug. 9	2.45	308
May 14	1.74	28.4	June 14	1.94	79.8	Sept. 14	1.82	51.2
May 23	2.39	257	June 26	2.19	177	Sept. 30	2.38	255

Daily discharge, in second-feet, of Snake River (No. 3 channel) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	1,040	280	2	6	16	80	138	77	40	6
2	-------	1,210	339	0	23	17	84	186	77	74	0
3	474	1,330	404	1	5	18	116	208	71	84	0
4	572	1,190	612	6	25	19	191	217	99	96	6
5	754	874	772	1	52	20	227	182	177	157	10
6	865	746	780	17	77	21	177	157	345	25	17
7	662	384	720	96	18	22	182	142	424	13	47
8	326	314	572	280	63	23	232	146	377	0	113
9	208	253	303	268	63	24	285	169	345	34	154
10	90	182	142	291	23	25	208	150	314	17	77
11	74	146	74	268	6	26	138	154	297	1	138
12	29	113	63	157	50	27	208	253	116	0	182
13	14	71	65	40	74	28	588	371	40	0	253
14	27	74	65	34	52	29	738	438	21	0	258
15	58	116	74	106	17	30	831	358	14	1	237
						31	950	-------	18	10	-------

NOTE.—No record Oct. 1 to May 2. No gage-height record, May 9; discharge interpolated. Channel dry all or part of Aug. 1-3, 23-24, 28-29, and Sept. 17-19; mean of hourly discharge used.

Monthly discharge of Snake River (No. 3 channel) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 3-31	950	14	324	18,600
June	1,330	71	377	22,400
July	780	14	261	16,000
August	291	0	68.4	4,210
September	258	0	68.4	4,070
The period	----------	----------	----------	65,300

Combined daily discharge, in second-feet, of Snake River (Nos. 1, 2, and 3 channels) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	7,640	3,370	8	9	16	2,190	2,350	1,480	46	7
2	-------	8,430	3,790	0	27	17	2,220	2,780	1,460	80	0
3	4,440	8,910	4,200	1	8	18	2,700	2,910	1,260	91	0
4	5,210	8,250	5,390	6	30	19	3,270	2,940	1,800	111	6
5	6,010	6,710	6,200	1	58	20	3,440	2,590	2,680	172	11
6	6,700	5,980	6,300	17	83	21	3,100	2,400	3,820	32	20
7	5,580	4,010	6,040	101	23	22	3,100	2,290	4,250	16	53
8	4,010	3,630	5,180	304	69	23	3,310	2,360	3,990	2	121
9	2,650	3,200	3,540	338	68	24	3,520	2,620	3,760	40	164
10	1,290	2,590	2,190	366	27	25	2,980	2,340	3,580	19	85
11	1,050	2,200	1,340	338	9	26	2,340	2,490	3,460	2	146
12	1,090	1,910	1,330	212	55	27	2,970	3,280	1,860	0	193
13	1,190	1,650	1,400	60	80	28	5,310	4,040	878	0	265
14	1,480	1,700	1,320	39	57	29	6,140	4,480	643	0	270
15	1,890	2,130	1,470	112	20	30	6,580	3,870	389	1	248
						31	7,180	-------	98	11	-------

Combined monthly discharge of Snake River (Nos. 1, 2, and 3 channels) below Blackfoot Bridge, near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 3-31	7,180	1,050	3,550	204,000
June	8,910	1,650	3,760	224,000
July	6,300	98	2,850	175,000
August	366	0	81.5	5,010
September	270	0	73.7	4,390
The period				612,000

DIVERSION FROM SNAKE RIVER BETWEEN BLACKFOOT BRIDGE AND CLOUGH GAGING STATION, IDAHO

Between Blackfoot Bridge and Clough gaging station, one small canal (Smith Maxwell Canal) diverts water from Snake River for irrigation. A gaging station is maintained at heading of canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from May 1 to September 30, 1924.

Stage-discharge relation affected by growth of aquatic plants. Rating curve fairly well defined. Gage read to hundredths daily May 24 to September 30. Discharge estimated May 1–23. Records fair.

Daily discharge, in second-feet, of one canal diverting from Snake River between Blackfoot Bridge and Clough gaging station for the irrigation season of 1924

Day	May	June	July	Day	May	June	July	Day	May	June	July
1		18	18	11		7	2	21		18	0
2		18	18	12		0	1	22	12	18	0
3		18	18	13		7	2	23		17	18
4		18	18	14		6	1	24	15	18	18
5		15	18	15		7	1	25	14	18	18
	12				12						
6		18	18	16		10	2	26	10	16	18
7		14	18	17		20	2	27	10	18	10
8		12	18	18		20	1	28	18	18	1
9		14	14	19		18	0	29	18	18	0
10		10	12	20		18	0	30	24	18	0
								31	18	-------	0

NOTE.—No record obtained Oct. 7 to Apr. 30. Discharge estimated May 1–23. Dry July 28 to Sept. 30.

Monthly discharge of one canal diverting from Snake River between Blackfoot Bridge and Clough gaging station for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May	24	10	13.0	799
June	20	0	14.8	881
July	18	0	8.55	526
August	0	0	0	0
September	0	0	0	0
The period				2,210

SNAKE RIVER AT CLOUGH RANCH, NEAR BLACKFOOT, IDAHO [1]

LOCATION.—In sec. 31, T. 3 S., R. 34 E., a quarter of a mile below mouth of Blackfoot River and 14 miles southwest of Blackfoot, Bingham County. Blackfoot River is the only large tributary between station and mouth of Henrys Fork, 60 miles above. Portneuf and Bannock Rivers and 2,500 second-feet of spring water enter between this station and station at Neeley.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 6, 1910, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; installed July 6, 1913; inspected by J. A. Clough.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of very coarse gravel. Two channels at low and medium stages. Control shifts slightly during high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.76 feet at 8 a. m. June 3 (discharge, 9,330 second-feet); minimum stage, 1.48 feet September 1–2 (discharge, 131 second-feet).

1910–1924: Maximum stage recorded, 14.8 feet (approximately) at 5 p. m. June 18, 1918 (discharge, about 46,200 second-feet); exact discharge uncertain because of probable shift in stage-discharge relation at about this time. Minimum stage, 1.93 feet at 6 p. m. August 25, 1919 (discharge, 118 second-feet).

ICE.—Floating ice sometimes present for short periods; stage-discharge relation apparently not affected.

DIVERSIONS.—Practically entire normal summer flow of river is diverted above station.

REGULATION.—Flow regulated by storage in Jackson Lake Reservoir and in Blackfoot-Marsh Reservoir on Blackfoot River. Practically entire summer flow is released water from these reservoirs.

ACCURACY.—Stage-discharge relation changed during winter. Standard rating curves well defined. Operation of water-stage recorder satisfactory except during periods of coldest weather, when occasional staff gage readings were used. Daily discharge ascertained by applying mean daily gage height to rating table, except as noted in footnote to daily-discharge table. Records good.

Discharge measurements of Snake River at Clough ranch, near Blackfoot, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	3.83	2,230	July 7	5.63	5,840	Aug. 4	1.59	134
Jan. 17	4.10	2,500	July 8	5.45	5,410	Aug. 8	1.94	281
Apr. 30	4.98	4,430	July 14	3.15	1,360	Aug. 16	1.62	173
May 16	3.75	2,210	July 24	4.70	3,810	Aug. 29	1.49	141
June 3	6.65	8,960	July 30	2.38	586			
June 7	4.89	4,130	Aug. 1	1.68	181			

[1] Formerly known as "Snake River near Blackfoot."

Daily discharge, in second-feet, of Snake River at Clough ranch, near Blackfoot, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,680	3,740	3,310		2,900	2,990	1,940	4,410	7,490	3,520	171	134
2	2,040	3,740	3,160	2,300	3,010	2,920	1,920	4,520	8,120	3,520	143	131
3	2,080	3,740	3,000		2,970	2,990	1,920	4,520	9,120	4,000	146	137
4	2,140	3,840	3,150		3,020	3,100	2,020	5,060	8,450	4,840	143	146
5	2,280	3,840	3,310	2,140	3,010	3,020	1,920	5,910	6,590	5,780	143	164
6	2,340	3,840	3,460	2,210	2,930	2,850	1,870	6,590	6,180	6,040	140	171
7	2,930	3,740	3,550	2,280	2,990	2,810	1,850	5,660	4,200	5,780	143	168
8	3,090	3,640	3,340	2,340	3,220	2,710	1,870	3,700	3,700	5,290	234	178
9	3,230	3,740	3,200	2,410	3,350	2,690	2,050	2,390	3,380	3,900	354	195
10	3,320	3,640	2,660	2,480	3,310	2,650	2,340	1,520	2,740	2,650	451	203
11	3,360	3,550	2,310	2,550	3,280	2,570	2,650	1,110	2,330	1,540	466	191
12	3,550	3,640	2,340	2,660	3,240	2,550	2,810	1,090	2,030	1,340	391	195
13	3,550	3,640	2,360	2,680	3,200	2,500	2,920	1,110	1,630	1,470	203	186
14	3,550	3,640	2,390	2,690	3,060	2,440	3,190	1,340	1,600	1,370	178	164
15	3,640	3,550	2,420	2,710	3,020	2,420	3,700	1,710	1,980	1,420	182	157
16	3,640	3,460	2,630	2,800	3,080	2,360	4,200	2,050	2,320	1,520	178	154
17	3,740	3,360	2,680	2,780	3,150	2,360	4,100	2,120	2,710	1,480	174	150
18	3,740	3,360	2,730	2,550	3,150	2,280	3,520	2,490	2,760	1,320	171	146
19	3,840	3,270	2,780	2,580	3,200	2,220	3,150	3,130	2,970	1,600	164	146
20	3,840	3,230	2,830	2,490	3,200	2,260	3,010	3,400	2,710	2,500	207	150
21	3,840	3,220	2,640	2,390	3,170	2,280	2,920	3,190	2,420	3,610	182	164
22	3,740	3,310	2,800	2,390	3,110	2,220	3,020	3,130	2,320	4,100	164	225
23	3,840	3,360	2,970	2,260	3,010	2,200	3,420	3,520	2,300	3,900	146	244
24	3,840	3,310	2,560	2,210	2,970	2,160	4,410	3,700	2,500	3,800	140	225
25	3,840	3,310	2,400	2,340	2,900	2,150	5,530	3,200	2,450	3,610	146	216
26	3,840	3,270	2,690	2,530	2,850	2,180	5,780	2,420	2,320	3,520	140	207
27	3,840	3,340	2,810	2,730	2,920	2,120	5,180	2,600	3,110	2,210	137	225
28	3,840	3,320	2,930	2,760	3,020	2,080	4,520	4,730	3,800	1,140	134	274
29	3,840	3,290	3,050	2,730	3,080	2,030	4,300	5,780	4,300	870	134	372
30	3,840	3,250	3,100	2,760	-------	2,020	4,300	6,310	3,900	611	134	424
31	3,740	-------	2,700	2,800	-------	1,980	-------	7,030	-------	301	134	-------

NOTE.—No gage-height record Oct. 28, 29, Dec. 2, 4–5, 17–19, 22, 27–28, 30–31, Jan. 1–4, 6–10, 13–14, Feb. 10–12; discharge interpolated except Dec. 30 to Jan. 4, for which it was estimated. Shifting-control method used Aug. 9 and 10. Discharge interpolated Dec. 12–14 on account of float tape inaccuracy.

Monthly discharge of Snake River at Clough ranch, near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,840	1,680	3,340	205,000
November	3,840	3,220	3,510	209,000
December	3,550	2,310	2,850	175,000
January	2,800	2,140	2,500	154,000
February	3,350	2,850	3,080	177,000
March	3,100	1,980	2,450	151,000
April	5,780	1,850	3,210	191,000
May	7,030	1,090	3,530	217,000
June	9,120	1,600	3,750	223,000
July	6,040	301	2,860	176,000
August	466	134	193	11,900
September	424	131	195	11,600
The year	9,120	131	2,620	1,900,000

SNAKE RIVER AT NEELEY, IDAHO

LOCATION.—In sec. 11, T. 8 S., R. 30 E., half a mile north of Neeley post office Power County, 4 miles southwest of American Falls, and 32 miles above Minidoka Dam. Portneuf and Bannock Rivers and 2,500 second-feet of spring water enter Snake River between this station and station near Blackfoot. Raft River enters 18 miles below Neeley.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 17, 1906, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank installed August 8, 1910; inspected by A. J. Ayers.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed at measuring section rough, especially near right bank. One channel at all stages. Control composed of lava rock, probably partly overlain with coarse gravel; shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.0 feet at noon June 3 (discharge, 12,100 second-feet); minimum stage 3.46 feet at 7 a. m. September 5 (discharge, 1,780 second-feet).

1906–1924: Actual maximum stage doubtful; maximum mean daily stage, 13.5 feet June 20, 1918 (discharge, 48,400 second-feet); minimum stage, 3.46 feet at 7 a. m. September 5, 1924 (discharge, 1,780 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Numerous canals near Blackfoot and Idaho Falls divert practically the entire normal summer flow of Snake River.

REGULATION.—Summer flow augmented by stored water from Jackson Lake for use on Minidoka project and Twin Falls tracts. New power plant completed at American Falls during 1924 causes considerable diurnal fluctuation at station.

ACCURACY.—Stage-discharge relation fairly permanent; affected by ice January 1–11. Rating curve well defined above 2,000 second-feet; fairly well defined below that stage. Operation of water-stage recorder satisfactory except for periods during winter when well was frozen. Daily discharge ascertained by application of mean daily gage height to rating table or as noted in footnote to table of daily discharge. Records excellent except December to February, for which they are fair.

Discharge measurements of Snake River at Neeley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	5.05	5,430	Aug. 1	3.98	2,910	Aug. 10	3.96	2,760
Jan. 25	4.83	5,010	Aug. 3	4.01	2,950	Sept. 6	4.19	3,180
May 1	5.72	7,570	Aug. 8	3.93	2,450	Sept. 23	3.51	1,940
June 8	5.67	7,240	Aug. 9	3.98	2,820	Sept. 26	4.23	3,290
July 8	5.99	8,490	Do	4.06	3,010			

Daily discharge, in second-feet, of Snake River at Neeley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,820	6,940	6,320		5,800	6,160	5,150	7,460	9,500	5,770	2,790	2,520
2	4,790	6,940	6,160		6,620	6,160	5,120	7,460	9,870	5,370	2,460	2,610
3	5,010	7,260	6,010			6,160	5,120	7,530	11,120	6,010	2,560	2,530
4	5,090	7,100	5,860			6,320	5,070	7,600	10,920	6,560	2,560	2,450
5	5,290	6,940	6,160			6,320	5,040	8,200	9,720	7,360	2,560	2,610
					5,850							
6	5,430	6,940	6,620	5,000		6,160	4,080	9,210	8,860	8,170	2,540	2,600
7	5,720	6,940	6,780			6,010	5,070	9,680	7,690	7,900	2,640	2,590
8	6,160	6,780	6,620			5,430	4,850	7,660	6,690	8,130	2,580	2,590
9	6,470	6,780	6,320		5,570	5,070	4,790	6,160	6,070	7,100	2,750	2,560
10	6,470	6,780	6,320			5,570	4,850	5,510	5,540	5,860	2,830	2,640
11	6,470	6,620				5,570	4,960	6,470	4,960	4,530	3,010	2,640
12	6,320	6,780	5,200	5,290	6,100	5,570	5,430	3,810	4,640	4,130	2,890	2,590
13	6,470	6,780				5,570	4,790	3,570	4,380	3,860	2,610	2,800
14	6,620	6,780		5,450		5,430	6,620	3,480	3,810	3,810	2,660	2,680
15	6,620	6,780	5,010			5,570	6,470	2,750	4,060	3,790	2,500	2,740

Daily discharge, in second-feet, of Snake River at Neeley, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	6,620	6,620			6,160	5,290	6,780	4,430	4,400	3,930	2,680	2,690
17	6,620	6,470		5,450	6,320	5,430	7,260	4,400	4,610	3,840	2,640	2,700
18	6,780	6,470			6,320	5,290	7,430	4,480	4,820	3,690	2,630	2,560
19	6,780	6,320	5,400	5,570	6,320	5,290	6,620	4,300	5,120	3,810	2,550	2,670
20	6,780	6,320			6,320	5,290	5,720	3,670	4,960	4,660	2,710	2,580
21	6,780	6,320		5,200	6,320	5,150	6,470	5,510	4,690	5,230	3,680	2,680
22	6,780	6,320	5,570		6,320	5,430	5,860	5,600	4,510	6,220	3,930	2,780
23	7,100	6,470			6,160	4,790	5,860	5,600	4,280	6,410	3,570	2,740
24	7,100	6,470			5,860	5,430	6,940	6,070	4,480	6,070	3,140	2,790
25	6,940	6,470		4,820	6,160	5,430	7,930	5,770	4,740	6,070	2,830	2,720
26	6,940	6,320	5,400		6,160	5,430	8,960	5,150	4,300	5,630	2,700	2,780
27	6,940	6,320			5,860	5,430	8,790	4,740	4,460	5,510	2,680	2,620
28	6,940	6,320		5,500	6,010	5,430	8,100	6,010	5,350	4,030	2,640	2,890
29	6,940	6,320	6,160		6,160	5,290	7,430	7,600	5,980	3,320	2,620	2,780
30	6,780	6,320	6,300		-------	5,230	7,430	8,540	6,350	3,120	2,680	3,010
31	6,940	-------	5,900		-------	5,210	-------	9,040	-------	2,850	2,660	-------

NOTE.—No gage-height record Dec. 11–14, 16–21, 23–28, 30, 31, Jan 1–4, 6–11, 13–18, 20–24, 26–31, Feb. 1, 3–8, 10–15; discharge estimated on basis of flow at Blackfoot gaging station. Discharge affected by ice Jan. 1–11; estimated. Mean of daily discharge used Aug. 12–21 and Sept. 1–30.

Monthly discharge of Snake River at Neeley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7,100	4,790	6,370	392,000
November	7,260	6,320	6,630	395,000
December	6,780	----------	5,730	352,000
January	----------	----------	5,240	322,000
February	----------	----------	6,070	349,000
March	6,320	4,790	5,550	341,000
April	8,960	4,080	6,170	367,000
May	9,680	2,750	6,050	372,000
June	11,120	3,810	6,030	359,000
July	8,170	2,850	5,250	323,000
August	3,930	2,460	2,780	171,000
September	3,010	2,450	2,670	159,000
The year	11,120	2,450	5,370	3,900,000

LAKE WALCOTT NEAR MINIDOKA, IDAHO

LOCATION.—In sec. 1, T. 9 S., R. 25 E., in backwater of United States Bureau of Reclamation dam, 6 miles southeast of Minidoka post office, Minidoka County.

RECORDS AVAILABLE.—April 1, 1909, to September 30, 1924; gage heights only prior to October 1, 1918.

GAGE.—Hook gage in wooden stilling well on face of dam at entrance to power house. Zero of gage, 4,200 feet above sea level.

ACCURACY.—Gage heights occasionally affected by wind.

COOPERATION.—Gage-height record and table of contents furnished by United States Bureau of Reclamation.

Lake Walcott impounds water for the irrigation of lands in the North Side Minidoka project and the South Side Minidoka project of the United States Bureau of Reclamation. It has a capacity of 107,240 acre-feet between elevations 4,236 and 4,246 feet; elevation of spillway, 4,240 feet, sea-level datum.

Daily contents, in acre-feet, of Lake Walcott near Minidoka, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58,910	90,640	90,290	88,900	89,360	89,600	87,030	92,740	55,900	88,200	73,390	9,540
2	62,710	90,760	89,360	86,920	89,940	89,360	87,270	91,690	61,500	88,200	70,950	9,060
3	68,090	90,880	89,360	86,100	89,360	88,900	87,500	90,530	67,870	86,450	66,770	8,390
4	73,390	90,990	89,360	86,450	89,360	89,250	87,850	89,010	75,870	86,330	63,920	8,770
5	77,680	90,990	88,660	86,800	89,130	89,360	87,380	85,640	84,470	86,920	60,740	8,580
6	82,410	90,760	89,360	85,400	89,130	89,600	87,270	88,550	89,940	89,130	57,620	8,010
7	84,940	90,760	89,710	85,520	89,360	89,360	86,570	89,940	95,550	95,070	53,540	7,820
8	87,030	90,530	90,290	85,640	89,250	89,360	86,220	90,530	100,130	100,970	50,520	7,060
9	88,200	90,410	89,830	87,030	89,360	88,780	86,680	88,660	102,780	106,990	46,510	6,100
10	88,550	90,530	89,830	86,800	88,430	87,960	86,570	83,310	104,100	108,740	43,550	5,150
11	88,550	90,290	89,360	85,980	90,990	88,200	85,870	80,720	103,740	107,740	39,960	4,580
12	88,550	90,640	88,200	87,500	90,290	88,430	85,400	79,820	103,500	105,070	36,850	4,000
13	88,430	90,530	88,780	87,730	90,530	88,780	86,800	75,080	102,050	102,410	34,780	3,620
14	88,660	90,530	87,030	87,960	90,180	88,550	86,680	69,410	99,520	100,370	27,970	3,150
15	88,780	90,290	87,030	88,080	89,940	88,660	86,680	65,670	97,110	96,390	25,530	2,860
16	89,600	90,410	87,620	87,730	89,830	88,200	88,080	61,170	95,550	95,180	24,010	2,670
17	89,360	90,290	88,080	87,730	89,600	88,200	88,200	59,130	94,370	94,020	22,280	1,720
18	90,410	90,060	88,200	87,960	90,060	87,380	91,230	57,090	91,920	92,160	20,660	670
19	90,060	89,830	88,900	87,850	89,600	87,380	91,810	54,830	92,860	90,760	19,440	−2,100
20	90,180	89,600	89,130	88,550	89,710	87,850	91,810	51,920	94,600	88,080	18,650	−1,430
21	90,180	90,290	89,130	86,570	89,830	87,500	92,390	50,310	95,430	88,200	18,450	−1,720
22	90,290	89,830	88,780	86,800	89,600	87,380	91,690	49,790	94,370	91,920	20,250	−2,380
23	90,530	90,060	88,550	87,380	89,830	87,030	89,940	49,570	94,840	93,090	20,660	−1,140
24	90,760	90,060	88,660	87,270	89,600	87,270	88,780	49,570	94,250	94,140	19,850	−1,140
25	90,990	90,290	88,430	87,270	88,550	87,030	90,290	49,150	95,310	94,600	18,450	−1,910
26	90,880	89,830	88,310	87,030	89,360	87,030	91,570	49,470	95,910	94,840	16,270	−2,100
27	90,990	89,830	88,200	87,270	89,360	86,920	94,140	47,360	92,740	94,020	13,600	−1,430
28	91,230	90,060	88,200	87,030	89,130	86,800	95,310	45,140	90,530	91,690	12,700	−1,720
29	90,760	90,180	89,130	88,430	89,360	86,450	94,840	45,240	89,130	87,030	11,810	−1,330
30	90,760	90,060	89,360	87,620	-------	87,150	93,670	47,460	88,660	81,400	11,020	− 950
31	90,530	-------	89,940	87,730	-------	87,150	-------	51,170	-------	76,440	10,030	-------

NOTE.—Water surface below zero of capacity table Sept. 19–30; contents estimated for that period.

SNAKE RIVER NEAR MINIDOKA, IDAHO

LOCATION.—In sec. 2, T. 9 S., R. 25 E., 100 yards below Howells Ferry, 1 mile below United States Bureau of Reclamation dam, 6 miles southeast of Minidoka post office, Minidoka County, nearest railroad point, and 6 miles above Montgomerys Ferry gaging station, which was discontinued December 31, 1910. Raft River enters between this station and station at Neeley.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 21, 1910, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; inspected by employees of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage.

CHANNEL AND CONTROL.—Bed composed of coarse gravel. One channel at all stages. Control shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.36 feet at 2 p. m. October 28 (discharge, 7,780 second-feet); minimum stage, 4.13 feet from 6 to 10 a. m. September 23 (discharge, 1,440 second-feet).

1910–1924: Maximum stage recorded, 16.02 feet at 1 a. m. June 21, 1918 (discharge, 45,900 second-feet); minimum stage, 4.05 feet from 11 a. m. to 3 p. m. October 13, 1914 (discharge, 960 second-feet).

ICE.—Some shore ice forms near gage and river closes farther down; stage-discharge relation slightly affected at times.

DIVERSIONS.—The North Side and South Side (Minidoka) Canals divert water between the Neeley and Minidoka stations. The nearest diversions below the station are Twin Falls North Side and South Side Canals at Milner.

REGULATION.—Flow partly regulated by storage in Lake Walcott above Minidoka Dam (storage capacity about 67,000 acre-feet above spillway).

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined above 2,000 second-feet; one parallel curve used. Second parallel curve used to define period January 4–27, when stage-discharge relation was slightly ice affected. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table using shifting-control method January 3 and 28–31. Records good.

COOPERATION.—Gage-height record and three discharge measurements furnished by United States Bureau of Reclamation.

Discharge measurements of Snake River near Minidoka, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	6.26	4,970	July 16	4.85	2,150	Aug. 2	4.70	2,100
Jan. 24	[a] 6.31	5,010	July 21	4.73	2,150	Aug. 17	5.17	2,830
June 2	6.31	5,170	Aug. 1	4.73	2,200	Sept. 24	4.93	2,370

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Snake River near Minidoka, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,730	6,760	6,580	5,480	6,400	6,000	4,490	5,660	5,100	3,910	2,100	2,700
2	1,740	6,830	6,400	5,170	6,630	5,900	4,380	5,440	5,030	3,700	2,070	2,520
3	1,880	7,090	6,220	4,760	6,320	5,930	4,490	5,480	4,940	3,700	2,070	2,240
4	1,970	7,220	6,200	4,660	6,120	6,050	4,460	5,660	4,870	3,740	2,090	2,320
5	1,980	7,090	5,900	4,640	6,100	6,150	4,460	5,730	4,310	3,780	2,100	2,370
6	2,730	6,960	6,250	4,350	6,150	6,020	4,160	6,020	3,620	3,520	2,340	2,370
7	3,760	6,960	6,450	4,490	6,020	6,020	3,820	6,400	3,030	2,400	2,380	2,340
8	4,690	6,830	6,960	4,710	6,080	5,930	4,120	6,300	2,940	2,240	2,340	2,480
9	5,460	6,680	6,830	4,960	6,120	5,290	4,070	6,020	3,060	2,570	2,380	2,520
10	5,700	6,760	6,630	4,890	5,660	5,270	3,990	4,970	3,050	3,640	2,540	2,570
11	5,750	6,580	6,020	4,820	7,220	5,440	4,100	3,930	2,960	3,230	2,520	2,520
12	5,730	6,810	5,630	5,080	6,830	5,440	3,840	3,840	3,010	3,030	2,550	2,540
13	5,660	6,760	5,200	5,240	6,830	5,480	3,620	3,440	2,900	2,540	2,770	2,540
14	5,830	6,650	4,940	5,510	6,500	5,290	4,250	3,360	2,870	2,430	2,780	2,420
15	5,660	6,630	4,960	5,560	6,380	5,830	4,780	3,030	2,840	2,360	2,730	2,540
16	5,900	6,630	5,130	5,510	6,280	5,150	4,710	2,960	2,900	2,280	2,820	2,550
17	6,080	6,450	5,440	5,410	6,350	5,360	4,890	3,140	2,940	2,310	2,780	2,800
18	6,350	6,350	5,780	5,560	6,530	4,920	5,010	3,320	2,920	2,320	2,750	2,670
19	6,220	6,250	6,020	5,290	6,350	4,940	4,920	3,280	2,620	2,180	2,650	2,770
20	6,320	6,200	6,150	4,710	6,380	5,150	4,530	3,250	2,600	2,180	2,550	2,650
21	6,280	6,320	6,080	4,890	6,380	5,100	4,530	3,250	2,670	2,100	2,220	2,700
22	6,150	6,280	5,830	5,130	6,450	5,100	4,600	3,280	2,700	2,510	2,270	2,100
23	6,630	6,380	5,700	5,100	6,320	4,820	4,530	3,270	2,620	3,760	2,310	1,860
24	6,960	6,300	5,950	5,030	6,120	4,660	4,780	3,300	2,380	3,660	2,340	2,540
25	6,830	6,480	5,660	4,960	5,880	4,690	4,850	3,440	2,400	3,620	2,460	2,520
26	6,830	6,420	5,660	4,800	6,180	4,620	5,170	3,340	2,890	3,640	2,510	2,400
27	6,830	6,500	5,610	4,800	6,080	4,600	5,610	3,410	4,290	4,010	2,480	2,430
28	6,960	6,500	5,680	4,960	5,900	4,550	5,700	3,950	4,160	4,120	2,510	2,420
29	6,960	6,420	6,380	5,680	6,080	4,600	5,630	5,060	4,250	4,070	2,580	2,030
30	6,830	6,380	6,300	5,200	-------	4,850	5,480	5,240	4,250	3,880	2,600	1,970
31	6,630	-------	6,100	5,510	-------	4,760	-------	5,150	-------	2,110	2,720	-------

Monthly discharge of Snake River near Minidoka, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	6,960	1,730	5,320	327,000
November	7,220	6,200	6,620	394,000
December	6,960	4,940	5,960	366,000
January	5,680	4,350	5,060	311,000
February	7,220	5,660	6,300	362,000
March	6,150	4,550	5,290	325,000
April	5,700	3,620	4,600	274,000
May	6,400	2,960	4,320	266,000
June	5,100	2,380	3,370	201,000
July	4,120	2,100	3,080	189,000
August	2,820	2,070	2,460	151,000
September	2,800	1,860	2,450	146,000
The year	7,220	1,730	4,560	3,310,000

LAKE MILNER AT MILNER, IDAHO

LOCATION.—In sec. 29, T. 10 S., R. 21 E., in backwater of Twin Falls Co.'s dam at Milner, Cassia County.

RECORDS AVAILABLE.—April 10, 1911, to September 30, 1924.

GAGE.—Hook gage supplemented by float gage in same well at dam; latter installed June 1, 1920, consists of target which moves directly with large float in well and automatically indicates stage on graduated scale above gage-house floor. A Lietz and a Friez water-stage recorder have also been used for short periods. All gages have same datum.

ACCURACY.—Gage heights occasionally seriously affected by wind.

COOPERATION.—Gage-height record furnished by North Side Canal Co. (Ltd.) and Twin Falls Canal Co.

Daily gage height, in feet, of Lake Milner at Milner, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.76	9.03	8.93	7.26	7.59	7.56	8.62	10.52	10.41	10.58	10.16	9.00
2	8.66	9.03	8.86	7.25	7.43	7.46	8.60	10.50	10.46	10.60	10.07	9.11
3	8.79	9.00	8.66	7.80	7.76	7.29	8.64	10.35	10.52	10.58	9.96	9.18
4	9.18	9.14	8.56	8.00	7.50	7.50	8.65	10.23	10.32	10.54	9.84	9.09
5	9.14	9.08	8.56	7.73	7.52	7.51	8.66	10.06	10.46	10.50	9.82	9.12
6	9.10	9.01	8.66	7.27	7.54	7.56	8.66	10.40	10.20	10.63	9.85	9.04
7	9.29	9.04	8.27	7.32	7.49	7.40	8.62	10.61	10.48	10.42	9.75	9.35
8	9.22	9.06	8.52	7.60	7.49	7.58	8.66	10.98	10.58	10.37	9.84	9.08
9	9.29	8.98	8.90	7.65	7.58	7.50	8.77	11.00	10.73	10.50	9.86	8.94
10	9.15	9.04	8.53	7.56	7.42	7.46	9.02	10.87	10.76	10.63	9.82	8.88
11	9.10	8.85	8.16	7.57	7.61	7.52	9.70	10.22	10.84	10.64	9.74	8.94
12	9.12	9.03	7.98	7.62	7.60	7.52	10.24	9.45	10.85	10.55	9.72	8.94
13	9.05	9.01	7.80	7.64	7.58	7.57	10.59	9.26	10.88	10.70	9.67	8.90
14	9.06	9.04	7.55	7.68	7.48	7.43	10.34	9.04	10.76	10.78	9.44	8.86
15	8.92	9.02	7.48	7.60	7.48	7.60	10.82	8.84	10.68	10.72	9.52	8.76
16	8.99	9.04	7.50	7.52	7.48	7.40	10.72	8.66	10.64	10.78	9.36	8.66
17	8.92	9.02	7.60	7.50	7.50	7.59	10.79	8.68	10.52	10.78	9.35	8.41
18	9.20	8.95	7.67	7.62	7.40	7.51	10.78	8.69	10.29	10.72	9.24	8.58
19	9.16	8.94	7.68	7.46	7.48	7.64	10.86	8.78	10.48	10.85	9.07	8.44
20	9.16	8.90	7.68	7.40	7.53	8.67	10.68	8.88	10.62	10.42	8.89	8.64
21	9.08	9.02	7.68	7.40	7.38	8.62	10.81	8.97	10.64	10.77	8.74	8.79
22	8.90	9.01	7.58	7.57	7.58	8.64	10.89	8.92	10.62	10.65	8.68	9.45
23	9.12	9.13	7.56	7.60	7.48	8.66	10.72	9.10	10.68	10.70	8.60	9.26
24	9.16	9.05	7.58	7.54	7.46	8.56	10.64	9.11	10.61	10.73	8.54	8.98
25	9.02	9.05	7.60	7.52	7.40	8.68	10.89	8.78	10.66	10.66	8.49	8.75
26	8.98	8.92	7.38	7.46	7.34	8.64	10.86	9.05	10.69	10.58	8.60	8.92
27	8.99	9.04	7.36	7.44	7.52	8.63	10.94	9.18	10.30	10.58	8.68	9.10
28	9.11	9.02	7.44	7.46	7.34	8.60	10.85	9.53	10.53	10.52	8.65	9.16
29	9.18	8.98	7.56	7.60	7.52	8.52	10.82	9.90	10.56	10.50	8.54	9.14
30	9.10	8.90	7.75	7.54	-------	8.56	10.71	10.23	10.62	10.40	8.72	8.94
31	9.04	-------	7.47	7.44	-------	8.68	-------	10.29	-------	10.26	8.76	-------

NOTE.—Gage height is the mean of two daily observations.

SNAKE RIVER AT MILNER, IDAHO

LOCATION.—In sec. 29, T. 10 S., R. 21 E., 500 yards below Milner Dam, at Milner, Twin Falls County. No tributaries enter Snake River between Minidoka station and Milner and no noteworthy inflow between Milner and station near Twin Falls except seepage and spring water.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 10, 1909, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank below highway bridge; installed May 28, 1919; inspected by McConnel and Gilham.

DISCHARGE MEASUREMENTS.—Made from cable 400 yards above gage, from foot planks midway between gage and cable, or by wading.

CHANNEL AND CONTROL.—Bed at gage composed of lava rock, overlain with very slight gravel deposits and occasional loose rock. Left bank high and steep; right bank confines flow in narrow gorge below gage datum of 15 feet; full river width above that point. Control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during the year, 10.85 feet at 1. p. m. October 24 (discharge, 6,480 second-feet); minimum stage, 1.50 feet August 22–26 (discharge, 8 second-feet).

1909–1924: Maximum stage recorded, 20.1 feet (original gage) June 12, 1909 (discharge, 44,400 second-feet); minimum flow occurred at gage height 1.50 feet August 22–26, 1924 (discharge, 8 second-feet).

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Twin Falls canals divert water at Milner Dam, just above station. During part of the season practically entire flow of river is taken by these canals.

REGULATION.—Flow past the station during the irrigation season is regulated at Milner Dam.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except during extremely low stages, when staff gage was read twice daily to hundredths. Daily discharge ascertained by applying mean daily gage height to rating table except Apr. 9, 15, 16, 18–20, when marked changes occurred, when mean of hourly discharge was used. Records good.

COOPERATION.—Gage-height record and 3 discharge measurements furnished by Twin Falls Canal Co.

Discharge measurements of Snake River at Milner, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 12	9.80	5,350	May 3	1.74	17.8
Jan. 23	8.88	4,280	June 26	1.60	11.8

Daily discharge, in second-feet, of Snake River at Milner, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	5,660	5,550	3,880	4,700	5,340	2,880	24	14	11	11	10
2	9	5,990	5,660	3,280	5,120	5,020	2,500	20	13	11	11	11
3	11	5,770	5,440	3,580	6,320	4,500	2,500	18	12	10	11	10
4	1,160	5,990	5,340	3,680	5,440	4,600	2,500	18	11	10	11	10
5	1,470	5,990	5,340	3,680	5,230	4,700	2,320	18	12	11	11	10
6	1,550	5,880	5,550	3,280	5,550	4,700	2,320	16	11	11	11	10
7	2,600	5,660	4,920	3,080	5,230	4,390	825	14	12	10	11	10
8	3,880	5,660	4,500	3,080	5,230	4,810	1,510	16	13	10	12	10
9	4,810	5,660	5,660	3,580	5,440	4,180	1,990	20	13	10	12	10
10	5,440	5,660	5,990	3,980	4,810	3,480	63	15	13	11	11	10
11	5,440	5,230	5,340	3,880	5,440	3,880	74	13	12	12	12	10
12	5,230	5,340	4,810	3,880	6,210	3,680	87	12	12	12	11	10
13	4,920	5,660	4,600	4,080	6,100	3,880	89	12	12	12	10	10
14	5,120	5,660	4,390	4,080	5,990	3,680	83	11	12	13	10	10
15	4,920	5,660	3,880	4,600	5,550	3,980	1,100	10	12	12	10	10
16	4,810	5,660	3,980	4,600	5,440	4,280	622	10	12	12	10	9
17	5,020	5,660	4,080	4,600	5,340	3,780	1,090	11	12	13	10	9
18	5,660	5,230	4,500	4,390	5,660	3,680	1,260	10	11	12	10	9
19	5,770	4,920	4,920	4,280	5,660	2,040	903	10	12	12	10	9
20	5,880	4,600	5,020	4,390	5,770	3,480	565	10	12	12	10	10
21	5,990	4,810	5,230	3,580	5,440	4,180	86	10	12	12	9	10
22	5,340	5,020	5,020	3,780	5,660	4,180	65	10	12	12	8	15
23	5,660	5,440	4,700	4,280	5,770	4,280	44	10	12	12	8	15
24	6,430	5,440	4,700	4,180	5,550	3,680	35	10	12	13	8	10
25	6,210	5,440	4,810	4,180	5,440	3,980	40	10	12	13	8	9
26	5,770	5,340	4,500	3,980	5,020	4,080	32	10	12	12	8	9
27	5,770	5,440	4,390	3,980	5,440	3,080	33	10	12	12	9	10
28	5,880	5,440	4,280	3,980	5,020	2,040	30	11	12	12	9	10
29	6,320	5,440	4,920	4,180	5,120	3,380	29	16	11	11	9	10
30	6,320	5,340	5,660	4,920	-------	2,980	28	17	11	11	9	9
31	5,880	-------	5,230	4,180	-------	3,280	-------	16	-------	11	9	-------

Monthly discharge of Snake River at Milner, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	6,430	9	4,490	276,000
November	5,990	4,600	5,490	327,000
December	5,990	3,880	4,930	303,000
January	4,920	3,080	3,970	244,000
February	6,320	4,700	5,470	315,000
March	5,340	2,040	3,910	240,000
April	2,880	28	857	51,000
May	24	10	13.5	830
June	14	11	12.0	714
July	13	10	11.5	707
August	12	8	9.97	613
September	15	9	10.1	601
The year	6,430	8	2,420	1,760,000

SNAKE RIVER NEAR KIMBERLY, IDAHO

LOCATION.—In SE. ¼ sec. 32, T. 9 S., R. 18 E., above upper outlet of Devil's Corral, half a mile below Twin Falls, 2½ miles above Shoshone Falls, 4 miles north of Kimberly, Twin Falls County, and 6½ miles northeast of city of Twin Falls.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 24, 1923, to September 30, 1924.

GAGE.—Au water-stage recorder on left bank installed December 15, 1923, replacing Friez recorder; inspected by L. M. Morse and Garry Chappell.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet above gage.

CHANNEL AND CONTROL.—Bed composed of lava boulders and solid rock in deep lava canyon; very rough. Control formed by low falls 70 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year and for period of record from water-stage recorder, 9.3 feet at 2 p. m. October 24 (discharge, 7,380 second-feet); minimum stage, 0.80 foot May 16–20 (discharge, 378 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—No water diverted from river between this station and station at Milner.

REGULATION.—Flow past station is regulated directly by diversions of the North and South Side Canals at Milner, where practically the entire flow of the river is diverted during large part of the irrigation season; flow at such times consists of inflow and seepage between this station and the one at Milner.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except for few short periods. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph, except as indicated in footnote to table of daily discharge. Records good.

COOPERATION.—Gage-height record and two discharge measurements furnished by Idaho Power Co.

Discharge measurements of Snake River near Kimberly, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.72	500	Mar. 31	7.72	4,420	July 23	0.97	424
Nov. 1	8.80	6,100	Apr. 17	[a] 3.46	1,060	Aug. 19	1.09	396
Dec. 15	7.94	5,190	May 16	.82	400	Sept. 12	1.12	430
Feb. 29	8.45	5,740	June 5	.88	388	Sept. 24	1.26	484

[a] Stage rose 1.03 feet during measurement.

Daily discharge, in second-feet, of Snake River near Kimberly, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	542	6,320	6,120	4,640	5,530	5,920	3,430	420	391	391	405	420
2	531	6,740	6,320	3,860	5,530	5,720	2,900	412	391	391	405	420
3	520	6,530	6,120	4,160	6,740	4,980	2,900	405	391	391	405	420
4	520	6,740	5,920	4,480	5,920	4,980	2,550	391	391	391	405	420
5	1,320	6,740	6,320	4,640	5,920	5,340	2,780	391	391	391	405	420
6	1,860	6,740	6,530	3,860	5,920	5,160	2,780	384	391	391	405	420
7	2,280	6,320	5,530	3,430	5,920	4,980	2,210	391	391	391	405	420
8	4,640	6,320	4,980	3,710	5,720	5,340	1,530	391	398	391	405	428
9	5,160	6,320	6,120	4,320	6,120	4,810	2,360	391	398	391	405	428
10	6,320	6,320	6,740	4,480	5,530	4,160	1,200	398	398	398	405	428
11	6,120	5,920	6,120	4,320	6,120	4,320		405	398	398	405	428
12	6,120	5,920	5,530	4,480	6,950	4,320		391	398	405	405	420
13	5,530	6,320	5,340	4,640	6,950	4,320	480	384	398	405	405	420
14	5,720	6,320	5,160	4,810	6,530	4,480		384	398	398	412	428
15	5,720	6,320	4,480	5,160	6,120	4,160		384	398	398	412	428
16	5,530	6,320	4,640	4,980	6,120	4,980	1,300	378	405	398	412	428
17	5,720	6,320	4,810	4,980	5,920	4,480	1,530	378	398	398	412	428
18	6,120	6,120	4,810	4,980	6,120	4,480	1,710	378	398	398	420	428
19	6,530	5,530			6,320	3,570	1,120	378	398	398	420	436
20	6,320	5,340	5,800		6,530	2,450	1,280	378	398	398	420	436
21	6,740	5,530			6,320	4,810	676	384	398	398	420	436
22	6,120	5,720	5,720	4,800	6,320	4,810	480	384	398	398	420	436
23	6,120	6,120	5,340		6,530	4,810	453	391	398	398	420	436
24	7,160	6,120	5,340		6,120	4,480	436	384	398	398	420	444
25	7,160	6,120	5,530		5,920	4,480	436	384	398	405	412	453
26	6,530	6,120	5,160	4,640	5,530	4,640	436	384	398	405	412	444
27	6,530	6,120	5,160	4,480	6,120	4,010	428	384	398	405	412	444
28	6,530	6,120	4,980	4,480	5,530	2,210	428	384	391	405	412	444
29	7,160	6,120	5,530	4,810	5,530	3,570	420	391	391	405	412	444
30	7,160	6,120	6,120	5,160	-------	3,430	420	391	391	398	412	444
31	6,740	-------	5,720	4,810	-------	4,010	-------	391	-------	398	420	-------

NOTE.—Discharge estimated on account of missing gage-height record, Dec. 19–21, Jan. 19–25, Apr. 10–16, based on flow at Milner and Perrine Bridge. Interpolated July 16–20. Braced figures show mean discharge for periods indicated.

Monthly discharge of Snake River near Kimberly, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7,160	520	5,070	312,000
November	6,740	5,340	6,190	368,000
December	6,740	4,480	5,600	344,000
January	5,160	3,430	4,580	282,000
February	6,950	5,530	6,080	350,000
March	5,920	2,210	4,460	274,000
April	3,430	420	1,290	76,800
May	420	378	389	23,900
June	405	391	396	23,600
July	405	391	398	24,500
August	420	405	411	25,300
September	453	420	431	25,600
The year	7,160	378	2,930	2,130,000

SNAKE RIVER NEAR TWIN FALLS, IDAHO

LOCATION.—In sec. 33, T. 9 S., R. 17 E., at Perrine Bridge, on Blue Lakes ranch, 4 miles north of Twin Falls, Twin Falls County, and 4 miles below Shoshone Falls. Outlet of Blue Lakes enters Snake River 200 feet below gage and Salmon Falls Creek enters 18 miles below.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 29, 1911, to June 30, 1917, and May 1, 1919, to September 30, 1924.

GAGE.—Combined inclined and vertical staff set in concrete, on left bank 100 feet above bridge; installed August 18, 1921; read by employees on Blue Lakes ranch.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

CHANNEL AND CONTROL.—Bed at measuring section very rough. Banks high; not subject to overflow. Control composed of lava boulders and solid rock; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.7 feet at 4.15 p. m. October 24, 7.10 a. m. October 25, and 7 p. m. October 29 (discharge, 7,960 second-feet); minimum stage, 2.0 feet May 25 and 27 (discharge, 475 second-feet).

1911–1917; 1919–1924: Maximum stage recorded, 13.3 feet at 6 a. m. and 7 p. m. June 10, 1914 (discharge, 32,200 second-feet); minimum discharge, 468 second-feet, several periods in June, July, and August, 1915.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—No water is diverted from the river between this station and that at Milner, except by small ranch ditches.

REGULATION.—Flow past station regulated directly by diversions of North Side and South Side Canals at Milner, where practically entire flow of river is diverted during latter part of irrigation season; flow at such times consists of inflow and seepage between this station and the one at Milner.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Snake River near Twin Falls, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 16	3.60	[a] 2,360	July 24	2.16	540
May 17	2.10	523	Sept. 11	2.21	555

[a] Unreliable because of change in stage of 0.99 foot during measurement.

Daily discharge, in second-feet, of Snake River near Twin Falls, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	750	6,940	6,450	5,290	5,520	6,210	3,820	570	545	520	545	570
2	750	7,180	6,690	4,420	5,980	6,210	3,450	570	545	520	570	598
3	750	7,180	6,690	4,640	6,210	5,520	3,270	570	545	545	570	545
4	820	7,180	6,690	4,640	6,210	5,520	2,920	545	545	545	570	570
5	1,220	7,440	6,940	5,290	6,210	5,520	3,270	570	545	545	570	570
6	2,300	7,180	7,180	4,420	6,210	5,740	2,760	570	545	545	570	570
7	2,920	6,940	5,740	3,820	6,210	5,290	2,920	520	570	545	625	570
8	5,290	7,180	5,290	4,020	6,210	5,520	3,270	520	545	545	545	570
9	5,740	6,940	6,450	4,420	6,450	5,070	3,270	545	545	545	545	570
10	6,940	6,940	7,180	5,070	5,980	4,420	1,370	545	570	545	520	545
11	6,690	6,690	6,690	4,850	6,210	4,850	750	545	570	545	545	570
12	6,690	6,450	5,740	4,850	7,440	4,640	625	545	545	545	545	570
13	6,210	7,180	5,740	5,070	7,180	4,850	625	545	545	570	570	570
14	6,450	6,940	5,520	5,070	7,180	4,640	598	545	545	570	545	570
15	6,450	6,940	5,070	5,520	6,450	4,640	655	520	545	570	570	570
16	5,980	6,940	4,850	5,290	6,210	5,520	1,640	520	545	545	570	570
17	6,210	6,690	4,850	5,290	6,210	4,640	1,320	520	570	520	545	570
18	6,940	6,690	5,520	5,290	6,450	4,850	2,150	520	570	545	545	570
19	7,180	6,210	5,980	5,290	6,690	3,820	1,470	520	545	545	598	598
20	7,440	5,980	6,210	5,290	6,690	4,020	1,420	520	570	545	598	570
21	7,440	5,740	6,210	4,640	6,450	5,290	1,090	520	545	520	570	570
22	6,690	6,210	6,210	4,850	6,450	5,290	718	520	570	570	570	570
23	6,450	6,690	5,740	5,070	6,690	5,290	625	520	570	545	545	570
24	7,700	6,450	5,740	5,070	6,450	4,850	625	545	545	545	570	545
25	7,700	6,690	5,980	5,070	6,450	4,850	625	475	545	545	545	570
26	7,180	6,690	5,740	5,070	5,740	5,070	598	498	545	570	570	570
27	7,180	6,690	5,520	4,850	6,450	4,420	598	475	545	545	570	570
28	7,180	6,690	5,290	4,850	5,740	2,600	625	520	545	570	570	570
29	7,700	6,690	5,740	4,850	5,980	4,020	625	520	545	570	570	545
30	7,700	6,450	6,690	5,070	-------	3,820	570	520	545	545	570	570
31	7,180	-------	6,690	5,290	-------	4,220	-------	545	-------	545	570	-------

Monthly discharge of Snake River near Twin Falls, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7,700	750	5,610	345,000
November	7,440	5,740	6,760	402,000
December	7,180	5,070	6,030	371,000
January	5,520	3,820	4,920	303,000
February	7,440	5,520	6,360	366,000
March	6,210	2,600	4,880	300,000
April	3,820	570	1,610	95,800
May	570	475	532	32,700
June	570	545	552	32,800
July	570	520	547	33,600
August	625	520	564	34,700
September	598	545	569	33,900
The year	7,700	475	3,240	2,350,000

SNAKE RIVER NEAR HAGERMAN, IDAHO

LOCATION.—In sec. 2, T. 8 S., R. 13 E., one-eighth mile above Owsley Bridge, just above Upper Salmon Falls, and 4 miles south of Hagerman, Gooding County. Big Wood River enters 10 miles below.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 24, 1912, to June 18, 1917, and July 25, 1919, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank installed April 20, 1921; inspected by F. M. Gregg.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet below gage.

CHANNEL AND CONTROL.—Control rocky; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.7 feet October 25 and 30 (discharge, 12,600 second-feet); minimum discharge measured, 4,690 second-feet, September 6.

1912–1917; 1919–1924: Maximum stage recorded, 7.75 feet at 6 p. m. June 10, 1914 (discharge, 35,100 second-feet); minimum stage, 3.1 feet July 15 to August 2, 1915 (discharge, 4,030 second-feet). Data insufficient in 1916 and 1917 for determination of maximum and minimum stages.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—No important diversions between this station and one at Milner. Practically entire flow of river is diverted at Milner during part of irrigation season by the Twin Falls canals, and flow at Owsley Bridge is maintained largely by springs and waste water from irrigation above.

REGULATION.—Flow regulated by diversions of the Twin Falls canals at Milner.

ACCURACY.—Stage-discharge relation changed October 8–25. Well-defined rating curve used October 1–7 and curve parallel thereto October 26 to September 30. Water-stage recorder operated satisfactorily except for short periods in April, June, and September. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspecting recorder graph, except as indicated in footnote to table of daily discharge. Records for October to January, good; February to September, excellent.

Discharge measurements of Snake River near Hagerman, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 1	4.52	11,800	May 16	3.24	4,830	Sept. 26	3.33	5,390
Feb. 27	4.37	10,800	June 7	3.26	5,090	Sept. 30	3.34	5,340
Apr. 6	3.87	7,670	Sept. 6	3.24	4,690			

Daily discharge, in second-feet, of Snake River near Hagerman, Idaho for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,750	11,600	11,200	10,600	10,300	10,600	8,750	5,540	4,920	4,920	4,920	4,720
2	5,750	11,600	11,200	9,340	11,200	10,900	8,180	5,540	4,920	4,920	4,920	4,720
3	5,750	11,900	11,200	9,040	10,900	10,300	7,910	5,540	4,920	4,920	4,920	4,920
4	5,970	11,900	11,200	9,340	11,600	9,950	7,910	5,330	4,920	4,920	4,720	4,920
5	5,970	12,200	11,200	9,640	10,900	9,950	7,910	5,540	4,920	4,920	4,720	4,920
6	6,650	12,200	11,900	9,040	11,200	9,950	7,910	5,540	4,920	4,920	4,720	4,920
7	7,380	11,900	11,600	8,750	11,200	9,640	7,910	5,330	4,920	4,920	4,720	4,920
8	9,340	11,600	10,600	8,460	11,200	9,640	6,890	5,330	4,950	5,120	4,920	4,920
9	10,300	11,600	10,600	9,340	11,200	9,950	7,380	5,330	4,980	5,120	4,920	4,920
10	11,600	11,600	11,200	9,640	10,900	9,340	7,640	5,330	5,010	5,120	4,920	4,920

Daily discharge, in second-feet, of Snake River near Hagerman, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	11,600	11,600	11,200	9,640	10,300	9,040	6,940	5,330	5,030	5,330	4,720	4,920
12	11,600	11,600	10,600	9,340	11,600	9,340	6,240	5,120	5,060	5,330	4,720	4,920
13	11,200	11,600	10,300	9,640	11.600	9,040	5,540	5,120	5,090	5,330	4,720	5,120
14	11,200	11,600	10,300	9,640	11,600	9,340	5,540	4,920	5,120	5,330	4,720	5,120
15	11,200	11,600	9,950	9,950	11,200	9,040	5,750	4,920	5,120	5,120	4,720	5,120
16	10,900	11,600	9,640	9,950	11,200	9,950	5,750	4,920	5,120	5,120	4,720	5,120
17	10,900	11,600	9,640	9,950	10,900	9,340	5,920	4,920	4,920	5,120	4,720	5,120
18	10,900	11,600	9,950	9,950	10,900	9,340	6,090	4,920	5,120	5,120	4,720	5,120
19	11,600	10,900	10,300	9,950	11,200	8,750	6,250	4,920	5,120	5,120	4,720	5,120
20	11,900	10,900	10,600	9,640	11,200	7,640	6,420	4,920	5,120	4,920	4,720	5,120
21	11,900	10,600	10,900	9,340	11,200	9,640	6,420	4,920	5,120	4,920	4,720	5,120
22	11,900	10,900	10,900	9,040	10,600	9,640	5,750	4,920	5,120	4,920	4,720	5,120
23	11,200	10,900	10,900	9,640	11,200	9,340	5,540	4,920	5,120	4,920	4,720	5,120
24	11,900	11,600	10,600	9,640	10,900	9,040	5,540	4,920	5,120	4,920	4,720	5,120
25	12,600	11,200	10,900	9,640	10,900	9,040	5,640	4,920	4,920	4,920	4,720	5,120
26	11,900	11,200	10,600	9,340	10,600	9,040	5,750	4,920	4,920	4,920	4,720	5,120
27	11,900	11,200	10,300	9,640	10,600	7,910	5,750	4,920	4,920	4,720	4,720	5,120
28	11,900	11,200	9,950	9,640	10,600	7,130	5,750	4,920	4,920	4,720	4,720	5,330
29	12,200	11,600	10,900	9,640	10,300	8,180	5,750	4,920	4,920	4,720	4,720	5,330
30	12,600	11,600	11,200	10,600	-------	8,460	5,540	4,920	4,920	4,720	4,720	5,330
31	11,900	-------	11,600	10,300	-------	8,750	-------	4,920	-------	4,920	4,720	-------

NOTE.—Discharge interpolated Apr. 11-12, 17-19, 25, June 8-13, Sept. 7-10. Shifting-control method used Oct. 8-25.

Monthly discharge of Snake River near Hagerman, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12,600	5,750	10,300	633,000
November	12,200	10,600	11,500	684,000
December	11,900	9,640	10,700	658,000
January	10,600	8,460	9,590	590,000
February	11,600	10,300	11,000	633,000
March	10,900	7,130	9,260	569,000
April	8,750	5,540	6,540	389,000
May	5,540	4,920	5,110	314,000
June	5,120	4,920	5,010	298,000
July	5,330	4,720	5,000	307,000
August	4,920	4,720	4,760	293,000
September	5,330	4,720	5,050	300,000
The year	12,600	4,720	7,810	5,670,000

SNAKE RIVER AT KING HILL, IDAHO

LOCATION.—In sec. 7, T. 5 S., R. 11 E., 300 feet east of Oregon Short Line Railroad station at King Hill, Elmore County. Big Wood River enters from north 20 miles above station.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 13, 1909, to September 30, 1924.

GAGE.—Inclined staff on right bank installed August 24, 1922; read by employees of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet below gage.

CHANNEL AND CONTROL.—Bed composed largely of gravel. Control is lava reef partly overlain with gravel; shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.77 feet February 8 (discharge, 15,800 second-feet); minimum discharge, 6,070 second-feet several days during May to September.

1909–1924: Maximum stage recorded, 16.3 feet June 22, 1918 (discharge, 47,200 second-feet); minimum stage, 4.5 feet July 7–9, and August 15 and 16, 1910 (discharge, 4,760 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—No important diversions for irrigation are made between this station and the one at Milner.

REGULATION.—Flow regulated by diversions at Milner. During certain parts of irrigation season practically the entire flow of river is appropriated, and flow at King Hill is derived largely from springs and seepage water from the Twin Falls tracts.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by United States Bureau of Reclamation.

Discharge measurements of Snake River at King Hill, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 2	8.07	13,900	Apr. 1	7.10	10,400	June 7	5.35	6,110
Dec. 16	7.43	[a] 9,970	Apr. 19	6.20	8,160	Sept. 14	5.41	6,250
Feb. 26	7.77	12,500	May 14	5.34	6,180			

[a] Result affected by incorrect placing of meter weight during measurement.

Daily discharge, in second-feet, of Snake River at King Hill, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,080	13,800	13,500	12,800	12,200	12,200	10,700	6,280	6,070	6,070	6,070	6,280
2	8,080	13,500	13,500	11,600	13,200	12,800	9,880	6,280	6,280	6,070	6,070	6,280
3	8,080	13,800	13,500	10,700	12,500	12,500	9,880	6,280	6,070	6,070	6,070	6,280
4	8,080	13,500	13,200	11,000	13,500	11,600	9,610	6,280	6,070	6,280	6,070	6,280
5	8,320	13,800	13,200	11,000	12,500	11,300	9,080	6,280	6,070	6,490	6,070	6,070
6	8,570	14,100	13,500	11,300	13,200	11,900	9,880	6,280	6,280	6,490	6,070	6,070
7	10,200	13,800	13,800	10,700	13,500	11,900	9,880	6,280	6,280	6,490	6,070	6,070
8	10,200	13,800	12,800	10,400	15,800	11,300	9,080	6,280	6,280	6,070	6,070	6,280
9	12,200	13,500	11,600	10,700	13,800	11,900	8,320	6,490	6,280	6,280	6,070	6,280
10	13,200	13,500	12,800	11,000	13,500	11,300	10,200	6,280	6,280	6,070	6,070	6,280
11	13,500	13,500	13,200	11,300	12,500	10,700	8,320	6,490	6,280	6,070	6,070	6,280
12	13,500	13,500	12,500	11,300	12,500	11,000	7,380	6,490	6,280	6,280	6,070	6,280
13	13,500	13,500	12,200	11,600	13,800	12,500	6,930	6,490	6,280	6,280	6,070	6,280
14	12,800	13,800	11,900	11,600	13,500	12,500	6,710	6,280	6,280	6,280	6,070	6,280
15	13,500	13,500	11,600	11,600	13,500	12,500	7,150	6,070	6,280	6,070	6,070	6,280
16	13,200	13,500	11,300	11,900	13,200	10,700	7,150	6,070	6,280	6,070	6,070	6,280
17	12,800	13,500	11,600	11,900	12,800	11,300	8,320	6,070	6,490	6,070	6,070	6,280
18	12,800	13,200	11,600	12,200	12,500	11,000	7,840	6,070	6,280	6,070	6,070	6,280
19	13,800	13,200	11,900	11,900	13,200	11,000	8,320	6,070	6,280	6,070	6,070	6,490
20	13,800	12,800	12,500	11,900	13,200	10,200	8,080	6,070	6,280	6,070	6,070	6,490
21	13,800	12,500	12,500	11,600	13,500	9,880	8,080	6,070	6,280	6,070	6,070	6,490
22	14,100	13,200	12,800	11,000	12,800	11,300	7,610	6,070	6,280	6,070	6,280	6,490
23	13,500	12,800	12,800	11,300	13,200	11,600	6,930	6,070	6,280	6,070	6,280	6,490
24	13,500	13,200	12,200	11,600	13,200	11,600	6,930	6,070	6,280	6,070	6,280	6,490
25	14,500	13,200	13,200	11,600	12,800	11,000	6,710	6,070	6,280	6,070	6,280	6,490
26	14,100	13,200	12,500	11,600	12,800	11,000	6,710	6,070	6,280	6,070	6,280	6,490
27	13,800	13,200	11,900	11,600	12,200	11,000	6,710	6,070	6,280	6,070	6,280	6,710
28	13,800	13,200	11,600	11,300	12,800	10,700	6,710	6,280	6,070	6,280	6,280	6,710
29	13,800	13,400	12,200	11,300	11,900	8,820	6,490	6,070	6,070	6,070	6,280	6,710
30	14,500	13,500	13,200	11,600	-------	10,200	6,490	6,070	6,280	6,070	6,070	6,710
31	14,100	-------	13,200	12,500	-------	9,880	-------	6,280	-------	6,070	6,070	-------

NOTE.—Discharge interpolated Nov. 29 and May 3.

Monthly discharge of Snake River at King Hill, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	14,500	8,080	12,300	756,000
November	14,100	12,500	13,400	797,000
December	13,800	11,300	12,600	775,000
January	12,800	10,400	11,500	707,000
February	15,800	11,900	13,100	754,000
March	12,800	9,880	11,300	695,000
April	10,700	6,490	8,070	480,000
May	6,490	6,070	6,210	382,000
June	6,490	6,070	6,240	371,000
July	6,490	6,070	6,150	378,000
August	6,280	6,070	6,120	376 000
September	6,710	6,070	6,370	379,000
The year	15,800	6,070	9,430	6,850,000

SNAKE RIVER NEAR MURPHY, IDAHO

LOCATION.—In NW. ¼ sec. 18, T. 2 S., R. 1 E., Ada County, three-quarters of a mile below Swan Falls power plant, 12 miles east of Murphy, Owyhee County, and 38 miles below mouth of Bruneau River.

DRAINAGE AREA.—41,900 square miles (measured on United States Land Office maps).

RECORDS AVAILABLE.—August 29 to October 31, 1912; August 21, 1913, to September 30, 1924.

GAGE.—Au water-stage recorder installed July 31, 1924, replaced a Friez recorder in use since September 7, 1914, on right bank a quarter of a mile below ranch house of S. N. Glass; inspected by George Bahler.

DISCHARGE MEASUREMENTS.—Made from boat at ferry cable 1¼ miles above gage.

CHANNEL AND CONTROL.—Bed composed of lava rock with deposits of sand, silt and gravel, where not scoured out by current. Banks not subject to overflow. Control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.26 feet at 9 a. m. February 9 (discharge, 18,700 second-feet); minimum mean daily discharge, 6,130 second-feet, June 29 and July 4; absolute minimum stage and discharge not definitely known because water fell below intake at times of minimum load at power plant above.

1912–1924: Maximum stage recorded, 13.95 feet at 10 p. m. June 22, 1918 (discharge, 47,300 second-feet); minimum stage, about −2.25 feet at 6 a. m. August 6, 1917 (discharge, about 5,000 second-feet). Stage probably fell equally low at times of minimum load at power plant above during low-water periods in 1919 to 1924, inclusive.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—A number of small pumping plants divert water for irrigation between this station and the one at King Hill.

REGULATION.—Large diurnal fluctuations in stage are caused by operation of gates at dam above and by variation in load at power plant, but because of small relative amount of storage obtained, the changes are of short duration.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except for few short periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records fair.

The following discharge measurement was made:

September 2, 1924: Gage height, 0.34 foot; discharge, 7,400 second-feet.

Daily discharge, in second-feet, of Snake River near Murphy, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,440	14,500	13,800	13,300	12,400	12,600	10,300	6,830	6,830	6,590		6,310
2	8,320	14,300	13,600	12,600	12,600	12,400	10,800	7,570	6,380	6,520	6,400	6,590
3	8,320	13,800	13,300	11,600	13,300	13,100	10,300	7,090	6,910	6,380		6,380
4	8,680	14,000	13,600	11,000	13,300	12,400	9,930	7,470	6,670	6,130	6,590	6,450
5	8,320	14,300	13,300	11,000	13,800	11,800	9,770	7,570	6,520	6,750	6,310	6,380
6	8,680	14,000	13,300	11,200	13,300	11,800	9,770	7,180	6,590	6,590	6,450	6,450
7	9,190	14,300	13,800	11,000	13,600	11,800	9,770	7,090	6,520	6,750	6,260	6,380
8	10,100	14,300	14,000	11,000	14,000	11,600	9,770	7,370	6,670	6,520	6,450	6,450
9	10,800	14,000	12,900	10,100	15,800	12,400	9,470	7,270	6,670	6,380	6,380	6,750
10	12,400	13,800	12,000	10,400	15,300	12,000	9,190	7,090	7,000	6,450	6,190	6,450
11	13,300	14,000	13,300	11,000	14,300	11,400	10,100	7,000	6,670	6,520	6,590	6,590
12	13,800	14,000	13,100	11,600	13,300	10,800	8,680	7,470	6,750	6,380	6,380	6,670
13	13,800	13,800	12,900	11,200	13,600	11,000	8,100	7,180	7,090	6,310	6,450	6,670
14	13,600	13,800	12,400	11,600	14,300	10,800	7,880	7,180	6,830	6,590	6,310	6,450
15	13,300	14,000	12,200	11,600	14,300	11,000	8,320	7,180	6,590	6,450	6,310	6,670
16	13,600	13,800	12,600	11,600	14,000	10,800		6,830	6,520	6,380	6,380	6,670
17	13,300	13,800	12,000	12,000	13,800	10,800		7,180	6,670	6,450	6,380	6,670
18	13,300	13,800	12,000	11,800	13,600	11,000	8,400	7,090	6,520	6,310	6,380	6,670
19	13,300	13,800	12,000	11,800	13,300	10,600		7,180	6,520	6,520	6,380	6,750
20	14,000	13,600	12,400	11,800	13,300	10,200	7,880	7,180	6,590	6,380	6,310	
21	14,000	13,100	12,600	11,800	13,300		8,440	7,000	6,590	6,250	6,590	
22	14,300	12,900	12,900	11,400	13,600	10,100	8,440	6,910	6,670	6,520	6,380	
23	14,300	12,900	12,900	11,000	13,300		8,210	6,830	6,520	6,310		
24	13,800	13,100	12,900	11,200	13,300	11,600	7,670	6,910	6,520	6,310		6,800
25	14,300	13,300	12,200	11,600	13,600		7,880	6,670	6,520	6,520		
26	14,800	13,800	12,600	11,600	13,900	11,200	7,670	6,670	6,520	6,310	6,500	
27	14,500	13,600	12,600	11,600	13,100		7,270	6,670	6,450	6,380		
28	14,300	13,300	12,200	11,600	12,600	11,000	7,880	6,670	6,520			6,830
29	14,300	13,300	12,000	11,600	12,900	10,400	6,910	6,670	6,130	6,400		7,000
30	14,300	13,800	12,400	11,600		10,600	7,770	6,750	6,520			6,830
31	14,500		13,600	12,000		10,100		6,750			6,520	

NOTE.—Owing to water-stage recorder not operating satisfactorily, discharge estimated by comparison with flow at King Hill, Weiser, and Oxbow Mar. 20–21, 23–27, Apr. 16–19, July 28–31, Aug. 1–3, 23–30, and Sept. 20–27.

Monthly discharge of Snake River near Murphy, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	14,800	8,320	12,400	762,000
November	14,500	12,900	13,800	821,000
December	14,000	12,000	12,800	787,000
January	13,300	10,100	11,500	707,000
February	15,800	12,400	13,600	782,000
March	13,100	10,100	11,300	695,000
April	10,800	6,910	8,730	519,000
May	7,570	6,670	7,050	433,000
June	7,090	6,130	6,620	394,000
July	6,750	6,130	6,440	396,000
August		6,190	6,430	395,000
September	7,000	6,310	6,650	396,000
The year	15,800	6,130	9,760	7,090,000

SNAKE RIVER AT WEISER, IDAHO

LOCATION.—In sec. 31, T. 11 N., R. 5 W., a third of a mile above wagon bridge at Weiser, Washington County. Between this station and station near Murphy, Sucker Creek and Owyhee and Malheur Rivers enter Snake River from left and Boise, Payette, and Weiser Rivers from right.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 8, 1910, to September 30, 1924. Fragmentary gage height record obtained by United States Weather Bureau since 1895.

GAGE.—Inclined concrete gage on right bank; installed by United States Weather Bureau; read by J. W. Lapish. Elevation of zero of gage is at 2,087.22 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable 200 yards below bridge.

CHANNEL AND CONTROL.—Bed composed of rocks and coarse gravel. One channel at all stages. Control fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.60 feet February 9 (discharge, 28,900 second-feet); minimum stage, 1.35 feet August 5 (discharge, 5,100 second-feet.)

1910–1924: Maximum stage recorded, 13.60 feet May 23, 1921 (discharge, 83,100 second-feet); minimum stage, 1.35 feet August 5, 1924. A stage of 15.7 feet was observed March 3, 1910, on old Weather Bureau gage (discharge, about 100,000 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Some water is diverted between Weiser and the station near Murphy by pumping.

REGULATION.—Diurnal fluctuations during periods of low water due to operations at Swan Falls power plant above.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well-defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Snake River at Weiser, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	4.61	18,000	June 3	2.12	[a]8,450	Aug. 1	1.51	5,710
Feb. 26	4.68	18,200	June 24	1.76	6,390	Sept. 22	1.79	6,520

[a] Result unreliable owing to inaccurate soundings.

Daily discharge, in second-feet, of Snake River at Weiser, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,600	17,500	17,100	15,600	16,100	17,100	11,700	9,860	8,180	6,020	5,700	6,020
2	11,200	17,100	17,100	15,600	20,500	16,600	12,500	8,910	7,660	6,020	5,700	6,020
3	10,800	17,100	17,100	15,200	22,600	16,100	13,400	8,540	7,480	6,020	5,860	6,020
4	10,800	16,600	17,100	15,200	20,000	17,100	13,400	8,910	7,310	5,860	6,170	5,860
5	11,700	17,100	17,100	15,200	19,500	16,100	12,900	10,000	7,660	5,860	5,100	5,860
6	11,700	18,000	17,100	15,200	20,500	15,600	12,900	10,800	7,660	6,020	5,860	5,860
7	11,700	18,000	17,100	14,700	21,000	15,200	12,900	13,400	7,660	6,020	5,550	5,860
8	14,300	18,000	17,100	14,300	22,600	15,200	13,400	10,000	7,830	6,170	5,700	5,860
9	15,600	18,000	17,100	13,800	28,900	15,200	13,800	11,700	7,830	6,170	5,550	5,860
10	16,100	17,500	17,100	13,400	26,500	15,200	14,700	11,700	8,000	6,170	5,700	5,860
11	17,100	17,500	16,600	13,400	28,200	15,200	15,200	12,100	7,830	6,020	5,860	6,170
12	17,100	17,500	16,100	13,400	23,700	15,200	15,200	12,500	7,660	5,860	5,400	6,170
13	18,000	17,500	16,100	13,800	21,000	13,400	15,200	14,300	8,180	5,860	5,860	6,170
14	17,500	17,100	15,600	14,300	19,500	13,400	14,700	14,300	7,480	5,700	5,860	6,170
15	17,500	17,100	15,600	14,700	20,000	14,300	14,700	14,700	7,480	5,700	5,700	6,170
16	17,500	17,100	15,200	15,200	20,000	13,800	14,700	15,200	7,140	5,860	5,700	6,330
17	17,100	17,100	15,200	15,200	21,000	13,800	14,300	16,100	6,810	5,700	5,860	6,330
18	17,100	17,100	15,200	14,700	21,000	14,300	13,400	15,200	6,810	5,550	6,020	6,170
19	17,100	17,100	15,200	14,300	20,000	14,300	13,400	14,700	6,810	5,860	6,020	6,330
20	17,100	17,100	15,200	14,300	19,000	13,800	12,900	14,700	6,810	5,860	6,170	6,170
21	17,100	16,600	15,200	14,300	19,000	13,400	11,700	13,800	6,810	5,700	6,020	6,490
22	17,500	16,600	15,200	14,300	19,000	13,400	12,900	13,800	6,810	5,700	6,170	6,490
23	17,500	16,100	15,600	14,300	18,500	13,800	12,900	12,500	6,980	5,550	6,330	6,650
24	18,000	16,600	15,200	14,300	18,000	14,700	12,500	11,700	6,490	6,020	6,170	6,650
25	18,000	16,600	15,200	14,700	18,000	14,300	12,100	11,200	6,490	5,700	5,860	6,650
26	18,000	17,100	15,200	14,700	18,500	14,700	11,700	10,800	6,490	5,700	6,020	6,650
27	18,500	18,000	15,200	14,700	17,500	14,700	11,700	10,400	6,330	5,700	6,170	7,140
28	18,000	17,500	15,600	14,300	17,500	14,300	10,800	9,860	6,330	5,700	5,860	7,140
29	18,000	17,500	15,600	14,700	17,100	13,400	10,000	8,540	6,170	5,700	6,170	7,310
30	18,000	17,100	15,600	14,300	-------	12,500	9,100	8,910	6,020	5,700	5,860	7,140
31	17,500	-------	15,200	15,200	-------	11,700	-------	8,540	-------	5,700	6,020	-------

Monthly discharge of Snake River at Weiser, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18,500	10,600	15,900	978,000
November	18,000	16,100	17,200	1,020,000
December	17,100	15,200	16,000	984,000
January	15,600	13,400	14,600	898,000
February	28,900	16,100	20,500	1,180,000
March	17,100	11,700	14,600	898,000
April	15,200	9,100	13,000	774,000
May	16,100	8,540	11,900	732,000
June	8,180	6,020	7,170	427,000
July	6,170	5,550	5,840	359,000
August	6,330	5,100	5,870	361,000
September	7,310	5,860	6,320	376,000
The year	28,900	5,100	12,400	8,990,000

SNAKE RIVER AT OXBOW, OREG.

LOCATION.—In NW. ¼ sec. 16, T. 7 S., R. 48 E. Willamette meridian, at Oxbow station on Homestead branch of Oregon Short Line Railroad, Baker County, five-eighths mile above intake of diversion tunnel for Oxbow power plant, and 1¼ miles southeast of Copperfield post office.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 22, 1923, to September 30, 1924.

GAGE.—Au water-stage recorder on left bank; installed December 20, 1923; inspected by William T. Kingsley and L. W. Goodin. Prior to December 20, 1923, an inclined staff at present site and datum was used.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Banks high; not subject to overflow. One channel at all stages. Control fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 13.42 feet at 11 a. m. February 9 (discharge, 30,800 second-feet); minimum stage, 6.30 feet from 5 to 6 a. m. August 6 (discharge, 4,890 second-feet).

1923–1924: Maximum stage recorded, 15.5 feet June 12, 1923 (discharge, 42,900 second-feet); minimum stage and discharge occurred August 6, 1924.

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—A number of small pumping plants divert water for irrigation between this station and the one at Weiser.

REGULATION.—Diurnal fluctuations during periods of low water due to operations of Swan Falls power plant above.

ACCURACY.—Stage-discharge relation assumed to have changed slightly October 16–24. Rating curve well defined. Gage read to hundredths once daily prior to December 20, and at other times during April, May, and June when water was below inlet pipe as noted in footnote to table of daily discharge; water-stage recorder satisfactorily operated during remainder of year. Daily discharge ascertained by applying daily gage height to rating table except as noted in footnote to table of daily discharge. For periods water-stage recorder was operated, mean daily gage height determined by inspection of recorder graph. Records excellent July to September; others good.

Discharge measurements of Snake River at Oxbow, Oreg., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	10.60	17,500	Feb. 28	10.60	18,400	June 30	6.92	6,180
Oct. 25	10.63	18,400	Mar. 3	10.37	17,500	Aug. 5	6.54	5,320
Dec. 20	9.90	15,700	May 14	10.13	16,400	Sept. 21	6.96	6,240
Feb. 28	10.65	18,800	June 19	7.43	7,250			

Daily discharge, in second-feet, of Snake River at Oxbow, Oreg., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,400	18,000	17,600	16,000	16,000	18,000	13,000	10,500	9,290	5,680	5,680	5,890
2	10,800	18,400	17,200	16,000	18,000	18,000	13,600	12,400	8,990	5,890	5,680	5,890
3	11,400	18,000	17,600	16,400	21,300	17,600	14,000	10,800	9,290	5,890	5,680	5,890
4	11,400	18,000	16,400	15,300	20,800	17,200	14,300	12,400	8,390	6,100	5,680	5,890
5	12,500	18,400	16,800	13,700	20,000	17,600	14,700	12,100	8,390	5,890	5,680	5,890
6	13,200	18,000	16,800	13,700	20,000	17,200	14,300	13,500	7,700	5,680	5,480	5,890
7	12,500	18,400	17,200	14,000	23,000	16,800	14,000	15,600	7,700	5,890	5,680	5,890
8	13,600	18,400	17,200	14,300	26,000	16,800	14,700	15,000	9,290	6,100	5,680	5,890
9	14,800	18,000	17,600	16,000	29,800	16,800	15,000	13,000	8,230	6,310	5,480	5,890
10	15,200	18,000	17,600	15,200	26,400	16,800	16,000	13,600	7,960	6,100	5,680	5,890
11	16,000	18,000	16,000	14,400	27,800	16,400	16,400	16,300	8,230	5,890	5,680	5,890
12	16,800	17,600	15,200	14,400	26,000	16,400	16,800	15,600	8,230	5,680	5,480	6,100
13	18,000	17,600	16,000	14,800	22,500	16,000	17,600	15,600	7,700	5,890	5,480	6,310
14	18,000	17,600	16,800	14,800	20,800	15,200	16,800	16,800	8,230	5,680	5,480	6,310
15	18,000	17,600	16,800	14,400	20,800	15,200	16,800	16,800	7,700	5,480	5,480	6,310
16	17,600	17,600	16,400	14,800	21,300	15,200	16,800	17,200	7,450	5,890	5,280	6,100
17	17,200	17,600	16,000	14,800	21,300	15,200	16,000	17,600	7,210	5,890	5,280	6,310
18	17,600	17,600	15,600	15,200	21,700	15,200	15,000	17,600	6,980	5,680	5,280	6,310
19	17,200	17,600	15,600	15,200	21,300	15,200	14,400	16,800	7,210	5,890	5,680	6,100
20	17,200	17,600	15,200	14,800	20,800	15,200	14,300	16,400	6,980	5,680	5,680	6,100
21	17,600	17,600	15,200	14,800	20,000	15,200	17,700	16,000	6,750	5,890	5,890	6,310
22	18,000	17,600	15,600	14,800	20,400	14,800	13,400	15,600	6,750	5,680	5,680	6,310
23	18,000	17,200	15,600	14,800	20,400	14,800	14,300	14,400	6,750	5,680	6,100	6,310
24	18,000	17,200	16,000	14,800	20,000	14,400	14,300	13,200	6,750	5,890	6,100	6,310
25	18,400	17,200	16,000	14,400	19,600	15,200	14,000	13,400	6,310	5,890	5,890	6,310
26	17,600	17,200	16,400	14,400	19,200	15,200	13,200	12,700	6,310	5,680	5,680	6,530
27	18,400	17,600	15,600	14,800	18,800	14,800	13,400	12,100	6,310	5,890	5,890	6,530
28	18,400	17,600	16,000	14,800	18,400	15,000	13,000	11,100	6,310	5,890	5,890	6,750
29	18,000	17,600	16,400	14,800	18,400	14,700	12,700	10,200	6,100	5,680	5,680	6,980
30	18,000	17,600	16,000	15,200	-------	14,700	11,800	9,900	6,100	5,890	5,890	7,210
31	18,000	-------	16,000	15,200	-------	14,700	-------	8,800	-------	5,890	5,890	-------

NOTE.—Water below intake of gage well Jan. 4–8, Mar. 28–31, Apr. 1–9, 18-30, May 1–12, 23–31, and June 1-22, for which discharge was determined by means of staff readings Apr. 2, 7, 19, 26, May 3, 10, 24, 31, June 6–7, 9–22; for remaining periods discharge was based on flow determined at tailrace of Oxbow power plant 1½ miles below, except May 23 for which it was interpolated. Discharge interpolated Sept. 1–4. Shifting-control method used Oct. 16–24.

Monthly discharge of Snake River at Oxbow, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18,400	10,800	16,100	990,000
November	18,400	17,200	17,700	1,050,000
December	17,600	15,200	16,300	1,000,000
January	16,400	13,700	14,900	916,000
February	29,800	16,000	21,400	1,230,000
March	18,000	14,400	15,900	978,000
April	17,700	11,800	14,700	875,000
May	17,600	8,800	14,000	861,000
June	9,290	6,100	7,520	447,000
July	6,310	5,480	5,840	359,000
August	6,100	5,280	5,670	349,000
September	7,210	5,890	6,210	370,000
The year	29,800	5,280	13,000	9,420,000

TRIBUTARY BASINS

HENRYS FORK NEAR LAKE, IDAHO

LOCATION.—In SW. ¼ sec. 26, T. 15 N., R. 43 E., one-fourth mile below Henrys Lake reservoir dam and 4 miles south of Lake post office, Fremont County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 21, 1922, to September 30, 1924. May 17, 1920, to September 20, 1922, at a site 3 miles downstream just below mouth of Dry Creek.

GAGE.—Stevens eight-day water-stage recorder on left bank; read by J. M. McGinn.

DISCHARGE MEASUREMENTS.—Made from footbridge just above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of small cobbles and gravel; fairly permanent. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.84 feet at 10 p. m. August 6 (discharge, 743 second-feet); minimum discharge, 1 second-foot, during several days in October after reservoir gates were closed for storage purposes.

1920–1924: Maximum stage recorded occurred August 6, 1924; minimum discharge, 1 second-foot July 1–8 and October 26, 1923.

ICE —Stage-discharge relation seriously affected by ice and records discontinued during winter.

DIVERSIONS.—None between Henrys Lake reservoir dam and gaging station and practically none above dam.

REGULATION.—Flow controlled by operation of gates in Henrys Lake reservoir dam.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by North Fork Reservoir Association.

Discharge measurements of Henrys Fork near Lake, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
June 11	1.22	56.5	July 15	2.52	225	Aug. 1	3.76	473
June 17	1.33	71.0	July 18	3.65	440	Aug. 2	4.64	683
June 27	2.80	271	Do	3.43	389	Aug. 4	4.11	552
July 9	2.88	289	July 19	3.95	512	Sept. 4	1.52	78.4
July 13	2.12	165	July 23	2.60	247			

Daily discharge, in second-feet, of Henrys Fork near Lake, Idaho, for the year ending September 30, 1924

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1	8	------	20	271	457	101	16	1	------	73	242	438	41
2	8	------	20	296	556	93	17	1	------	70	237	407	27
3	8	------	20	394	313	87	18	1	------	69	363	363	27
4	8	------	20	367	563	73	19	1	------	68	489	326	26
5	7	------	23	359	648	69	20	1	------	68	518	308	26
6	7	------	24	353	664	72	21	1	------	66	473	300	26
7	6	------	25	485	659	70	22	1	------	64	407	271	27
8	7	------	24	425	573	56	23	2	38	65	284	253	26
9	7	------	25	289	533	41	24	1	38	64	245	232	27
10	4	------	47	277	506	35	25	1	39	63	258	213	27
11	3	------	60	276	492	30	26	1	39	62	308	192	27
12	2	------	71	195	473	29	27	1	37	210	247	171	28
13	2	------	74	170	440	28	28	------	35	271	252	155	28
14	2	------	76	165	436	50	29	------	34	269	321	136	28
15	1	------	76	194	473	56	30	------	35	271	403	127	27
							31	------	24	------	414	115	------

NOTE.—No record obtained Oct. 28 to May 22.

Monthly discharge of Henrys Fork near Lake, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–27	8	1	3.44	184
May 23–31	39	24	35.4	632
June	271	20	78.6	4,680
July	518	165	322	19,800
August	664	115	380	23,400
September	101	26	43.6	2,590

HENRYS FORK AT WARM RIVER, IDAHO

LOCATION.—In sec. 12, T. 9 N., R. 43 E., 300 yards above mouth of Warm River and half a mile above Warm River Railroad station, Fremont County; above all main tributaries.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 3, 1910, to March 22, 1915; April 3, 1918, to September 30, 1924.

GAGE.—Au water-stage recorder on left bank used October 1–23, May 8 to September 30; for other periods vertical staff readings only; read daily by H. E. Sheppard.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of cobbles, gravel, and sand. Stage-discharge relation at times affected by growth of moss and water vegetation; otherwise conditions are fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.20 feet at 1 p. m. May 4 and 5 (discharge, 1,530 second-feet); minimum stage, 4.00 feet December 9 and January 2-3 (discharge, 706 second-feet).

1910–1915; 1918–1924: Maximum discharge, 3,390 second-feet May 16, 1920; minimum discharge, 623 second-feet January 10 and 11, 1921.

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Practically none above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except during ice-affected period in January for which they are fair.

Discharge measurements of Henrys Fork at Warm River, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	4.26	862	June 8	4.29	861	Aug. 11	4.75	1,230
Jan. 18	[a] 4.30	819	July 6	4.57	1,100	Sept. 11	4.12	779
May 6	4.66	1,130	July 31	4.51	1,060	Sept. 30	4.08	763

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Henrys Fork at Warm River, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	843	855	794	824	855	794	764	1,260	880	1,020	1,100	950
2	837	855	886	706	855	794	764	1,370	861	1,010	1,130	931
3	843	855	855	706	886	794	764	1,370	874	1,020	1,150	905
4	843	855	855		824	794	824	1,530	868	1,030	1,200	893
5	855	855	855		824	794	824	1,530	855	1,080	1,130	886
6	855	855	855		824	794	824	1,120	880	1,090	1,230	868
7	868	855	886		824	794	824	1,050	886	1,120	1,310	861
8	880	855	886		855	794	824	1,060	886	1,140	1,320	843
9	886	855	706		855	794	794	1,070	880	1,180	1,310	837
10	905	855	794		824	794	794	1,060	855	1,170	1,270	824
11	899	855	794	790	794	794	794	1,060	855	1,080	1,210	782
12	886	855	824		794	794	794	1,060	861	1,060	1,200	759
13	874	855	824		794	794	855	1,060	868	1,060	1,190	753
14	874	855	855		764	794	855	1,070	861	1,000	1,190	753
15	874	855	855		764	794	918	1,070	861	964	1,150	759
16	880	855	824		764	794	918	1,060	861	950	1,150	782
17	893	855	824		764	794	855	1,060	849	983	1,170	782
18	861	855	824	819	764	794	824	1,040	843	996	1,160	776
19	861	855	824		764	794	824	1,020	861	1,010	1,150	770
20	861	855	824		764	794	855	990	849	1,150	1,140	776
21	886	855	794		794	764	918	970	837	1,260	1,130	770
22	886	855	794		794	764	918	957	831	1,280	1,110	759
23	886	855	794		794	735	1,080	938	831	1,240	1,080	753
24	886	855	824		794	735	1,080	938	824	1,180	1,060	759
25	886	855	824	825	794	735	1,020	924	824	1,110	1,050	770
26	886	855	855		794	764	1,050	938	812	1,040	1,040	776
27	886	824	855		794	764	1,050	918	812	1,040	1,030	770
28	886	824	855		794	764	1,080	912	849	1,070	1,020	759
29	855	824	855		794	764	1,080	912	990	1,040	996	759
30	855	824	855		-------	735	1,120	905	1,000	1,030	983	759
31	855	-------	824		-------	735	-------	905	-------	1,050	970	-------

NOTE.—Discharges estimated Jan. 4–17 and 19–31; actual measurement used Jan. 18. Shifting-control method used Oct. 1–19, June 23, and Aug. 12 to Sept. 10.

Monthly discharge of Henrys Fork at Warm River, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	905	837	872	53,600
November	855	824	851	50,600
December	886	706	831	51,100
January			801	49,300
February	855	764	804	46,200
March	794	735	779	47,900
April	1,120	764	896	53,300
May	1,530	905	1,070	65,800
June	1,000	812	863	51,400
July	1,280	950	1,080	66,400
August	1,320	970	1,140	70,100
September	950	753	804	47,800
The year	1,530	706	900	654,000

HENRYS FORK NEAR ASHTON, IDAHO

LOCATION.—In T. 9 N., R. 42 E., one-fourth mile below Ora highway bridge, 3 miles below hydroelectric power plant of Utah Power & Light Co., and 5 miles southwest of Ashton, Fremont County. Station was formerly maintained at Ora highway bridge, one-fourth mile upstream; described in some previous reports as "North Fork of Snake River near Ora, Idaho." Records at old and new station are comparable.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—August 20, 1902, to June 30, 1909; April 20, 1920, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed April 25, 1921; inspected by R. H. Fuqua.

DISCHARGE MEASUREMENTS.—Made from cable a quarter of a mile above gage.

CHANNEL AND CONTROL.—Bed composed of coarse gravel. Control not well defined; subject to shifts during high stages.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during period, May 3 to September 30, 1.23 feet at 2 p. m. May 3 (discharge, 2,220 second-feet); minimum stage, 0.09 foot at noon August 15 (discharge, 575 second-feet).

1902–1909; 1920–1924: Maximum stage recorded, 4.50 feet (bridge gage) May 20, 1904 (discharge, 5,370 second-feet); minimum stage, 0.09 foot at noon August 15, 1924 (discharge, 575 second-feet).

ICE.—Stage-discharge relation not seriously affected by ice. Observations discontinued during winter.

DIVERSIONS.—None above station.

REGULATION.—None except that due to operation of gates at dam of Utah Power and Light Co.'s power plant 3 miles above station.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Operation of water-stage recorder satisfactory during period. Daily discharge obtained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Henrys Fork near Ashton, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	0.74	1,150	June 30	0.67	1,210	Sept. 9	0.54	1,050
May 3	1.22	2,210	July 29	.73	1,300	Sept. 28	.43	885
May 26	.69	1,270	Aug. 15	.11	589			

Daily discharge, in second-feet, of Henrys Fork near Ashton, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	1,120	1,180	1,240	975	16	1,450	1,100	1,320	1,450	1,000
2	-------	1,080	1,200	1,340	975	17	1,470	1,080	1,290	1,500	1,020
3	2,160	1,030	1,200	1,340	975	18	1,440	1,040	1,280	1,420	963
4	2,100	1,000	1,200	1,360	1,000	19	1,420	1,070	1,220	1,390	975
5	2,020	1,020	1,230	1,370	1,230	20	1,370	1,080	1,260	1,340	1,060
6	1,730	1,060	1,260	1,400	1,110	21	1,240	1,070	1,420	1,310	1,040
7	1,440	1,060	1,360	1,630	1,020	22	1,140	1,040	1,490	1,290	927
8	1,400	1,080	1,370	1,610	1,000	23	1,370	1,030	1,520	1,280	890
9	1,490	1,110	1,340	1,590	1,030	24	1,230	1,020	1,520	1,320	878
10	1,520	1,070	1,320	1,590	1,040	25	1,180	1,000	1,490	1,160	854
11	1,370	1,070	1,280	1,560	1,030	26	1,220	975	1,420	1,280	890
12	1,400	1,070	1,220	1,420	1,000	27	1,220	975	1,360	1,180	963
13	1,470	1,080	1,260	1,420	988	28	1,200	1,020	1,340	1,080	939
14	1,470	1,080	1,360	1,490	975	29	1,170	1,200	1,280	1,100	951
15	1,470	1,070	1,360	1,240	975	30	1,100	1,220	1,240	1,100	975
						31	1,060	-------	1,230	1,060	-------

NOTE.—No record obtained Oct. 1 to May 2.

Monthly discharge of Henrys Fork near Ashton, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 3–31	2,160	1,060	1,420	81,700
June	1,220	975	1,060	63,100
July	1,520	1,180	1,320	81,200
August	1,630	1,060	1,350	83,000
September	1,230	854	988	58,800
The period				368,000

DIVERSIONS FROM HENRYS FORK BETWEEN ASHTON AND ST. ANTHONY GAGING STATIONS, IDAHO

Between Ashton and St. Anthony gaging stations six separate canals divert water from Henrys Fork for irrigation. Gaging stations are maintained at headings of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from June 1, 1919, to September 30, 1924.

Stage-discharge relation on most of the canals is affected by growth of aquatic plants or by operation of check gates. Rating curves well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Henrys Fork between Ashton and St. Anthony gaging stations for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		1,070	883	695	410	16		965	643	557	329
2		928	778	577	417	17		907	623	572	330
3		968	765	640	403	18		862	573	573	337
4		1,000	551	670	350	19	1,390	892	560	605	332
5		1,020	481	683	301	20	1,370	931	632	589	270
6		1,100	487	667	286	21	1,360	867	619	580	250
7		1,060	500	680	284	22	1,330	855	616	587	262
8		980	472	662	270	23	1,320	777	610	569	255
9		945	589	656	263	24	1,240	707	610	525	263
10		966	806	654	297	25	1,290	800	607	466	258
11		867	819	633	319	26	1,320	735	595	478	254
12		815	822	611	329	27	1,330	786	613	460	304
13		830	839	601	331	28	1,270	750	633	449	303
14		875	815	590	330	29	1,140	765	709	430	303
15		933	773	565	328	30	1,140	765	778	437	304
						31	1,150		741	405	

NOTE.—No record obtained Oct. 1 to May 18. One diversion is above mouth of Fall River and five are below.

Combined monthly discharge of canals diverting from Henrys Fork between Ashton and St. Anthony gaging stations for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	1,390	1,140	1,280	33,000
June	1,100	707	891	53,000
July	883	472	663	40,800
August	695	405	576	35,400
September	417	250	309	18,400
The period				181,000

HENRYS FORK AT ST. ANTHONY, IDAHO

LOCATION.—In sec. 1, T. 7 N., R. 40 E., half a mile above bridge on the main street of St. Anthony, Fremont County, and 9 miles below mouth of Fall River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 26, 1919, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed May 8, 1922; inspected by Ernest Luetjen.

DISCHARGE MEASUREMENTS.—Made from cable 600 feet below gage.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and outcrops of lava. One channel at all stages. Control shifts slightly at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period April 19 to September 30, 4.26 feet at noon May 5 (discharge, 2,470 second-feet); minimum stage, 2.87 feet at 2 a. m. June 28 (discharge, 476 second-feet).

1919–1924: Maximum stage recorded, 6.35 feet June 1, 1921 (discharge, 7,140 second-feet); minimum stage, 2.87 feet June 28, 1924 (discharge, 476 second-feet).

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Numerous diversions both above and below station.

REGULATION.—Flow affected by manipulation of canal head gates above station and by operation of Warm Springs Power Co.'s plant 17 miles upstream.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to daily-discharge table. Daily discharge obtained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Henrys Fork at St. Anthony Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 19	3.15	693	July 10	3.15	715	Sept. 27	3.31	862
June 7	3.47	1,060	Aug. 23	3.50	1,090			

Daily discharge, in second-feet, of Henrys Fork at St. Anthony, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1		1,350	693	638	596	901	16		1,350	996	646	924	782
2		1,540	813	630	750	924	17		1,430	813	646	1,170	771
3		1,970	1,020	664	890	866	18		1,490	684	684	1,110	782
4		2,320	1,200	824	1,060	901	19	684	1,560	604	740	1,200	750
5		2,280	1,410	890	1,100	1,110	20	693	1,530	712	834	1,160	936
6		1,600	1,350	947	1,060	1,160	21	702	1,380	702	983	1,110	1,100
7		1,400	1,020	1,020	1,180	1,130	22	771	1,330	684	1,020	1,100	1,040
8		1,110	855	1,090	1,330	947	23	936	1,560	655	996	1,130	1,040
9		1,260	722	760	1,290	912	24	1,210	1,290	674	996	1,200	1,130
10		1,300	664	684	1,270	901	25	1,530	1,160	646	983	1,110	1,010
11		1,240	684	612	1,270	866	26	1,160	1,330	532	901	1,110	866
12		1,290	702	587	1,160	824	27	1,240	1,300	510	813	1,130	855
13		1,360	855	540	1,070	792	28		1,040	502	750	996	792
14		1,440	996	596	958	792	29	1,150	970	630	674	996	792
15		1,350	996	646	890	771	30		824	674	621	996	802
							31		731		570	983	

NOTE.—No record obtained Oct. 1 to Apr. 18. No gage-height record Apr. 28 to May 1; discharge estimated.

Monthly discharge of Henrys Fork at St. Anthony, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 19–30	1,530	684	1,030	24,500
May	2,320	731	1,390	85,500
June	1,410	502	800	47,600
July	1,090	540	774	47,600
August	1,330	596	1,070	65,800
September	1,160	750	908	54,000
The period				325,000

DIVERSIONS FROM HENRYS FORK BETWEEN ST. ANTHONY AND REXBURG GAGING STATIONS, IDAHO

Between St. Anthony and Rexburg gaging stations four separate canals divert water from Henrys Fork for irrigation. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from June 1, 1919, to September 30, 1924.

Stage-discharge relation on most of the canals affected by the growth of aquatic plants or by the operation of check gates. Rating curves well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Henrys Fork between St. Anthony and Rexburg gaging stations for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		753	667	475	478	16		922	665	526	366
2		861	687	524	492	17		823	686	530	384
3		988	701	521	430	18		656	528	506	415
4		813	672	701	420	19	1,110	560	490	555	399
5		977	770	634	414	20	1,120	738	579	569	417
6		891	690	652	377	21	1,140	740	666	556	397
7		819	671	671	353	22	1,070	681	622	573	374
8		763	637	687	385	23	1,080	693	735	583	388
9		718	591	674	412	24	956	659	716	516	388
10		668	604	665	393	25	995	683	723	449	377
11		720	649	702	380	26	1,070	587	701	482	362
12		689	643	627	380	27	1,040	535	662	471	373
13		865	602	608	365	28	934	569	657	473	374
14		870	614	624	356	29	887	632	592	464	395
15		937	661	594	365	30	661	760	579	460	395
						31	560		604	461	

NOTE.—No record obtained Oct. 1 to May 18.

Combined monthly discharge of canals diverting from Henrys Fork between St. Anthony and Rexburg gaging stations for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	1,140	560	971	25,000
June	988	535	752	44,700
July	770	490	647	39,800
August	702	449	566	34,800
September	492	353	393	23,400
The period				168,000

HENRYS FORK NEAR REXBURG, IDAHO

LOCATION.—In sec. 30, T. 6 N., R. 39 E., just below highway bridge, 1 mile below mouth of south channel of Teton River, 7 miles below mouth of main channel of Teton River, and 7 miles west of Rexburg, Madison County. Below all tributaries.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 13, 1909, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank 250 feet below bridge; installed April 5, 1913; inspected by Mrs. Irvin Siepert.

DISCHARGE MEASUREMENTS.—Made from cable a quarter of a mile below gage, from highway bridge above, or by wading.

CHANNEL AND CONTROL.—Bed composed of mud, sand, and fine gravel; shifting. Except at bridge, left bank is overflowed at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during periods October 1–19 and April 8 to September 30, 4.06 feet from 11 a. m. to 2 p. m. October 19 (discharge, 1,710 second-feet); minimum stage, about 1.87 feet June 30 and July 1 (discharge, 391 second-feet).

1909–1924: Maximum stage recorded, 10.12 feet at 8 a. m. June 2, 1921 (discharge, 8,300 second-feet); minimum discharge, 355 second-feet June 28 and 29, 1919.

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—A large percentage of normal summer flow diverted above station.

REGULATION.—None except that due to operation of head gates of irrigation canals.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined; several parallel curves used. Operation of water-stage recorder satisfactory except April 18, 30, May 1–2, and 9–15. Staff gage read to hundredths daily during periods. Daily discharge obtained by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table; shifting-control method used during many periods. Records fair.

Discharge measurements of Henrys Fork near Rexburg, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	4.06	1,720	June 29	1.91	408	Aug. 9	2.96	957
Apr. 8	2.65	789	July 11	2.06	505	Aug. 26	2.83	912
May 16	2.13	476	July 23	2.46	722	Sept. 10	2.78	915
May 31	2.21	509	Aug. 2	2.01	455	Sept. 22	2.99	1,040
June 19	2.15	499						

Daily discharge, in second-feet, of Henrys Fork near Rexburg, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	1,190	-------	772	478	394	432	852
2	1,190	-------	848	488	401	455	790
3	1,190	-------	923	497	401	557	795
4	1,150	-------	1,280	507	394	663	770
5	1,180	-------	1,410	640	470	726	852
6	1,200	-------	1,220	800	574	755	1,050
7	1,220	-------	800	810	650	726	1,100
8	1,240	805	895	682	810	895	1,030
9	1,290	962	709	632	735	956	928
10	1,330	1,070	523	578	583	945	906
11	1,400	1,060		544	507	940	901
12	1,460	962	490	515	482	895	874
13	1,490	991		490	466	874	831
14	1,520	997		478	443	826	800
15	1,560	1,090	552	494	455	760	795
16	1,600	1,050	490	574	478	654	770
17	1,640	852	523	561	466	755	765
18	1,670	804	574	519	447	874	755
19	1,710	755	618	498	536	895	721
20	-------	678	668	507	663	917	750
21	-------	618	650	507	711	912	917
22	-------	605	583	494	785	923	1,010
23	-------	632	650	478	726	906	951
24	-------	673	716	462	726	917	985
25	-------	874	618	459	721	1,020	1,010
26	-------	810	574	447	678	912	895
27	-------	755	632	420	622	1,020	790
28	-------	687	609	401	574	912	745
29	-------	622	565	401	527	857	696
30	-------	697	548	394	470	857	663
31	-------	-------	507	-------	435	863	-------

NOTE.—No record obtained Oct. 20 to Apr. 7. No gage-height record Oct. 13–18, Apr. 18, Apr. 30 to May 2, and May 9; discharge interpolated. No gage-height record May 11–14; discharge estimated.

Monthly discharge of Henrys Fork near Rexburg, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1-19	1,710	1,150	1,380	52,000
April 8-30	1,090	605	828	37,800
May	1,410	490	691	42,500
June	810	394	525	31,200
July	810	394	559	34,400
August	1,020	432	826	50,800
September	1,100	663	857	51,000

BIG SPRINGS CREEK AT BIG SPRINGS, IDAHO

LOCATION.—In sec. 32, T. 14 N., R. 44 E. at Big Springs forest ranger station and one-half mile southeast of Big Springs railroad station of Oregon Short Line Railroad, Fremont County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 18 to September 30, 1924.

GAGE.—Vertical staff on left bank one-fourth mile below wagon bridge; read by Ira Latham.

DISCHARGE MEASUREMENTS.—Made from wagon bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of fine gravel and well-packed sand. Control not well defined. Subject to slight shifts.

EXTREMES OF DISCHARGE.—Range of discharge during period from 166 to 169 second-feet. Stream spring fed, resulting in very uniform discharge.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Rating curve well defined. Staff gage read to hundredths daily, except as noted in footnote to daily-discharge table. Daily discharge obtained by applying daily gage height to rating table. Records fair.

COOPERATION.—Gage-height record furnished by United States Forest Service.

The following discharge measurements were made:
June 18, 1924: Gage height, 0.66 foot; discharge, 166 second-feet.
July 14, 1924: Gage height, 0.70 foot; discharge, 168 second-feet.
August 3, 1924; Gage height, 0.74 foot; discharge, 169 second-feet.

Daily discharge, in second-feet, of Big Springs Creek at Big Springs, Idaho, for the year ending September 30, 1924

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1		167	169	167	16		168	168	167
2		167	169	167	17		168	168	167
3		167	169	167	18	166	168	168	167
4		167	169	167	19	167	168	168	167
5		167	169	167	20	167	168	168	167
6		167	169	167	21	167	168	168	167
7		167	169	167	22	167	168	168	167
8		167	169	167	23	167	168	168	167
9		167	169	168	24	167	169	168	167
10		167	169	167	25	167	169	168	167
11		167	169	167	26	167	169	168	167
12		167	169	167	27	167	169	168	167
13		167	169	167	28	167	169	167	168
14		168	168	167	29	167	169	167	168
15		168	168	167	30	167	169	167	168
					31		169	167	

NOTE.—No record obtained Oct. 1 to June 17. No gage-height record June 19 to July 13, July 15-31, Aug. 4-23, 25-30 and Sept. 2-3, 28-30; discharge interpolated.

Monthly discharge of Big Springs Creek at Big Springs, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
June 18-30	167	166	167	4,310
July	169	167	168	10,300
August	169	167	168	10,300
September	168	167	167	9,940
The period				34,800

WARM RIVER AT WARM RIVER, IDAHO

LOCATION.—In sec. 13, T. 9 N., R. 43 E., at highway bridge, half a mile above mouth and half a mile northeast of Warm River, Fremont County. Robinson Creek enters a quarter of a mile below station.

DRAINAGE AREA.—144 square miles (measured on Forest Service maps).

RECORDS AVAILABLE.—January 24, 1912, to March 22, 1915; April 3, 1918, to September 30, 1924.

GAGE.—Vertical staff on downstream side of highway bridge; installed October 19, 1922; read by H. E. Sheppard. Prior gages at approximately same location but at different datum planes.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Bed composed of large cobbles or boulders in gravel drift. Control shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.50 feet May 1–4 (discharge, 281 second-feet); minimum stage, 1.14 feet at 1 p. m. March 31 (discharge, 155 second-feet).

1912–1915; 1918–1924: Maximum stage recorded, 2.3 feet (original gage) June 2, 1912 (discharge, 900 second-feet); minimum stage and discharge occurred March 31, 1924.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation shifted slightly June 21. Rating curve fairly well defined. Gage read to hundredths once daily except February 22. Daily discharge ascertained by applying daily gage height to rating table. Discharge interpolated February 22. Records good.

Discharge measurements of Warm River at Warm River, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.28	201	June 9	1.26	197	Sept. 11	1.19	174
Jan. 17	1.26	191	July 13	1.22	191			
May 6	1.38	230	July 31	1.22	188			

Daily discharge, in second-feet, of Warm River at Warm River, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	222	194	174	194	194	188	181	281	194	188	188	181
2	222	194	194	188	194	188	181	281	194	188	188	181
3	222	194	194	188	201	188	181	281	194	188	188	181
4	222	194	194	188	188	188	181	281	194	188	188	181
5	222	194	194	194	188	188	181	237	194	188	188	181
6	222	194	194	194	188	188	188	237	194	188	188	181
7	222	194	194	194	188	188	188	237	194	194	181	181
8	222	194	194	194	194	188	188	230	201	194	181	181
9	222	194	174	194	194	188	188	230	194	188	181	181
10	230	194	174	194	194	188	188	230	194	188	181	181
11	230	194	174	194	188	188	188	230	194	188	181	181
12	222	194	174	194	188	188	188	230	194	188	181	181
13	222	194	174	194	188	188	188	230	194	188	181	181
14	222	194	194	194	188	188	188	222	188	188	181	181
15	222	194	194	194	188	188	188	222	188	188	181	181
16	222	194	194	194	188	188	188	222	188	188	181	181
17	230	194	194	194	188	188	188	208	188	188	181	181
18	230	194	194	194	188	188	188	208	188	188	181	181
19	222	194	194	194	188	188	188	208	188	188	181	181
20	208	194	194	194	188	188	188	208	208	201	181	181
21	237	194	174	194	188	188	201	201	208	194	181	181
22	237	194	174	194	188	188	201	201	201	188	181	181
23	230	194	174	194	188	174	208	201	201	188	181	181
24	230	194	194	194	188	174	208	201	194	188	181	174
25	230	194	194	194	188	188	208	201	194	188	181	174
26	230	194	198	194	188	188	201	201	194	188	181	174
27	222	188	198	194	188	188	244	201	194	188	181	174
28	222	188	198	194	188	188	244	201	188	188	181	174
29	194	188	205	104	188	188	244	201	188	188	181	174
30	194	188	201	194	-------	174	259	201	188	188	181	174
31	194	-------	201	194	-------	155	-------	194	-------	188	181	-------

Monthly discharge of Warm River at Warm River, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	237	194	222	13,600
November	194	188	193	11,500
December	205	174	189	11,600
January	194	188	193	11,900
February	201	188	189	10,900
March	188	155	186	11,400
April	259	181	198	11,800
May	281	194	223	13,700
June	208	188	194	11,500
July	201	188	189	11,600
August	188	181	182	11,200
September	181	174	179	10,700
The year	281	155	195	141,000

ROBINSON CREEK AT WARM RIVER, IDAHO

LOCATION.—In sec. 13, T. 9 N., R. 43 E., at Oregon Short Line Railroad bridge, 300 yards above mouth of creek and one-third mile northeast of Warm River, Fremont County.

DRAINAGE AREA.—About 41 square miles (measured on Forest Service maps).

RECORDS AVAILABLE.—January 24, 1912, to March 22, 1915; April 4, 1918, to September 30, 1924.

GAGE.—Vertical staff attached to downstream side of pile bent of railroad bridge; read by H. E. Sheppard.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of cobbles in gravel drift. Control is a well-defined cobble riffle 150 feet below gage; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.60 feet at 1 p. m. May 4 (discharge, 266 second-feet); minimum stage, 0.48 foot, several days in August and September (discharge, 46 second-feet); even lower discharge may have occurred during ice-affected periods.

1912–1915; 1918–1924: Maximum stage recorded, 4.3 feet May 28, 1912 (discharge, 1,140 second-feet); minimum stage, 1.4 feet February 7 and 8, 1921 (discharge, 34 second-feet).

ICE.—Stage-discharge relation affected by ice for short periods.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during winter. Rating curves fairly well defined. Gage read to hundredths daily. Daily discharge obtained by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Robinson Creek at Warm River, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	0.71	72.9	June 9	0.88	93.6	July 31	0.52	55.7
Jan. 18	*1.10	47.8	July 13	.56	54.0	Sept. 11	.50	46.5
May 6	1.29	186						

* Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Robinson Creek at Warm River, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	74	71			56	56	162	101	58	51	46
2	71	74	69			56	56	176	98	58	51	46
3	71	74	74			56	56	212	94	56	47	46
4	71	74	74			56	56	266	88	56	47	46
5	71	74	74		65	56	56	217	82	56	47	47
6	71	74	74			56	56	186	82	56	47	53
7	71	74	74			56	56	186	88	62	47	49
8	71	74			70	56	56	207	94	60	47	53
9	71	74			70	56	73	239	98	58	47	49
10	74	74		50	65	56	76	255	98	56	47	51
11	80	74			62	56	76	255	84	56	47	47
12	77	74			58	56	76	255	94	56	47	47
13	77	74			58	56	82	255	88	54	47	47
14	77	74			58	56	82	255	70	56	47	46
15	77	74			58	56	88	250	68	56	46	46
16	80	74			58	56	88	250	68	53	46	46
17	80	74			58	56	84	212	65	53	46	46
18	80	74		48	58	56	70	186	65	51	46	49
19	77	74	55		58	56	82	172	68	51	46	49
20	77	74			56	56	101	162	70	70	46	49
21	80	74			56	56	116	158	70	62	49	49
22	80	74			56	56	127	136	65	58	47	47
23	80	74			56	56	140	136	60	51	47	47
24	80	74			56	56	140	127	60	51	46	47
25	77	74		55	58	56	127	123	60	51	46	49
26	74	74			58	56	119	119	60	51	46	51
27	74	71			56	56	119	119	60	51	46	49
28	74	71			56	56	119	119	58	51	46	47
29	74	71			56	56	127	116	58	51	46	47
30	74	71			-------	56	131	116	58	51	46	47
31	74	-------			-------	56	-------	108	-------	50	46	-------

NOTE.—No gage heights Jan. 6–17 and Feb. 22. Actual measurement used Jan. 18. Discharge interpolated Feb. 22; estimated Dec. 8 to Jan. 17 and Jan. 19 to Feb. 7.

Monthly discharge of Robinson Creek at Warm River, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	80	71	75.4	4,640
November	74	71	73.6	4,380
December	74	55	59.0	3,630
January	55	48	52.0	3,200
February	70	56	60.3	3,470
March	56	56	56.0	3,440
April	140	56	89.7	5,340
May	266	108	185	11,400
June	101	58	75.7	4,500
July	70	50	55.2	3,390
August	51	46	46.9	2,880
September	53	46	47.9	2,850
The year	266	46	73.1	53,100

DIVERSIONS FROM FALL RIVER ABOVE GAGING STATION NEAR SQUIRREL, IDAHO

Above the gaging station near Squirrel three separate canals divert water from Fall River for irrigation. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from June 1, 1919, to September 30, 1924.

Stage-discharge relation of these canals affected by growth of aquatic plants. Rating curves fairly well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Fall River above gaging station near Squirrel, Idaho, for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		206	0	0	0	16		224	64	0	30
2		180	0	0	15	17		227	4	0	38
3		188	0	0	15	18		241	8	0	38
4		192	0	0	15	19	122	0	8	0	38
5		242	0	0	15	20	153	0	8	0	21
6		238	0	114	15	21	171	0	8	0	20
7		153	0	0	14	22	196	0	8	0	20
8		211	12	0	15	23	202	0	8	0	18
9		207	91	0	20	24	220	0	8	0	20
10		195	45	0	20	25	226	0	7	50	57
11		197	26	0	21	26	242	0	7	13	57
12		80	44	0	21	27	231	0	7	13	62
13		0	100	0	33	28	232	0	7	0	72
14		0	99	0	30	29	208	0	7	0	74
15		186	99	0	30	30	199	0	7	0	74
						31	199		8	0	

NOTE.—No record obtained Oct. 1 to May 18.

Combined monthly discharge of canals diverting from Fall River above gaging station near Squirrel, Idaho, for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	242	122	200	5,160
June	242	0	106	6,310
July	100	0	22.3	1,370
August	114	0	6.13	377
September	74	0	30.6	1,820
The period				15,000

FALL RIVER NEAR SQUIRREL, IDAHO

LOCATION.—In sec. 35, T. 9 N., R. 44 E., 9 miles southeast of Marysville, 4 miles northeast of Squirrel post office, Fremont County. Marysville Canal diverts half a mile upstream. This station was formerly known as "Fall River near Fremont."

DRAINAGE AREA.—390 square miles.

RECORDS AVAILABLE.—January 1, 1904, to June 30, 1909; May 2, 1918, to September 30, 1924. Three miles above at Wilson's sawmill August 24, 1902, to December 31, 1903.

GAGE.—Vertical staff on left bank; installed January 1, 1904; read by E. and T. W. Luetjen.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders in gravel drift. Control formed by riffle below gage; fairly permanent. Banks high, clean, and not subject to overflow. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.48 feet at 8.30 a. m. May 21 (discharge, 1,920 second-feet); minimum stage, 1.46 feet at 1 p. m. January 19 (discharge, 124 second-feet).

1904–1909; 1918–1924: Maximum stage recorded, 5.6 feet June 14, 15, and 23, 1918 (discharge, 5,380 second-feet); minimum stage, 1.46 feet at 1 p. m. January 19, 1924 (discharge, 124 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Three irrigation canals divert above station.

REGULATION.—None except that due to head gate changes on canal above station.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice November 29 to February 13. Two rating curves used during year differing very little except in shape and at low stages. Gage read to hundredths once daily. Daily discharge obtained by applying daily gage height to rating table. Records good.

Discharge measurements of Fall River near Squirrel, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 19	[a]1.57	166	July 16	1.96	394	Sept. 12	1.89	339
May 8	2.76	1,090	July 25	2.01	445			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Fall River near Squirrel, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	476	457				363	339	991	1,050	540	419	371
2	476	450				360	339	1,110	1,140	532	419	339
3	469	450				358	339	1,140	1,330	525	419	345
4	469	450				358	339	1,220	1,620	509	412	345
5	489	450				358	339	1,090	1,770	517	412	371
6	482	450				351	339	1,010	1,630	540	278	405
7	489	450			420	351	339	1,040	1,170	525	405	392
8	482	450				351	339	1,090	1,010	517	405	385
9	476	444				351	339	1,110	991	426	412	378
10	496	444		350		351	339	1,180	836	392	405	412
11	502	482				351	339	1,420	799	434	405	378
12	489	469				351	339	1,460	744	449	405	358
13	482	469				351	385	1,560	1,010	405	405	345
14	482	469			525	345	412	1,530	1,280	378	419	345
15	482	463			525	345	449	1,560	1,240	392	399	339
16	496	463	400		548	345	463	1,580	1,150	392	405	339
17	502	463			501	339	441	1,710	1,090	405	405	339
18	502	463			478	339	419	1,800	799	426	371	385
19	502	463		166	463	339	419	1,820	836	434	392	371
20	496	463		138	463	332	426	1,910	818	419	385	378
21	482	457		142	471	332	456	1,920	726	525	419	392
22	482	457		189	478	339	509	1,900	744	540	399	385
23	476	457		218	501	345	580	1,820	753	463	405	378
24	476	476		289	501	345	622	1,530	656	449	392	358
25	469	482		308	478	339	639	1,560	631	434	326	339
26	469	482		314	478	339	656	1,820	597	426	283	339
27	469	482			419	339	580	1,650	580	419	339	320
28	476	476			385	345	597	1,460	572	419	399	314
29	469	460		400	365	358	639	1,150	572	405	385	295
30	457	450			-------	339	913	1,080	548	405	378	301
31	457	-------			-------	339	-------	1,110	-------	412	378	-------

NOTE.—Discharges estimated Nov. 29 to Jan. 18 and Jan. 27 to Feb. 13. Actual measurement used Jan. 19. No gage-height record Jan. 18.

Monthly discharge of Fall River near Squirrel, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	502	457	481	29,600
November	482	444	461	27,400
December	----------	----------	400	24,600
January	----------	138	325	20,000
February	548	365	450	25,900
March	363	332	347	21,300
April	913	339	456	27,100
May	1,920	991	1,430	87,900
June	1,770	548	956	56,900
July	540	378	453	27,900
August	419	278	390	24,000
September	412	295	358	21,300
The year	1,920	138	543	394,000

DIVERSIONS FROM FALL RIVER BETWEEN SQUIRREL AND CHESTER GAGING STATIONS, IDAHO

Between Squirrel and Chester gaging stations nine separate canals divert water from Fall River for irrigation. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of water. Records are available from June 1, 1919, to September 30, 1924.

Stage-discharge relation on most of the canals affected by growth of aquatic vegetation or by operation of check gates. Rating curves fairly well defined. Gages read to hundredths daily May 19 to September 30. Records good.

Combined daily discharge, in second-feet, of canals diverting from Fall River between Squirrel and Chester gaging stations for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		597	446	365	56	16		618	338	261	283
2		487	447	366	95	17		558	339	239	304
3		505	450	215	137	18		535	408	125	315
4		468	447	27	154	19	765	377	381	28	310
5		619	445	21	184	20	782	479	396	50	116
6		638	456	21	193	21	787	448	402	57	70
7		670	462	97	89	22	778	447	358	69	64
8		645	455	28	221	23	737	486	375	47	59
9		585	343	27	283	24	710	470	406	37	56
10		538	382	38	307	25	696	392	372	34	268
11		446	459	38	302	26	736	486	365	47	277
12		426	435	38	292	27	740	490	360	51	290
13		482	415	149	293	28	696	490	368	93	285
14		529	350	352	285	29	664	481	362	62	281
15		651	345	320	282	30	629	475	386	78	276
						31	651		376	63	

NOTE.—No record obtained Oct. 1 to May 18.

Combined monthly discharge of canals diverting from Fall River between Squirrel and Chester gaging stations for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19–31	787	629	721	18,600
June	670	377	517	30,800
July	462	338	398	24,500
August	366	21	111	6,820
September	315	56	214	12,700
The period				93,400

FALL RIVER NEAR CHESTER, IDAHO

LOCATION.—In sec. 13, T. 8 N., R. 41 E., half a mile above mouth and 2 miles north of Chester post office, Fremont County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 23, 1920, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed April 29, 1921; inspected by Ernest Luetjen.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet downstream or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders in gravel drift and lava outcrop. Control is well-defined rock ledge immediately below gage. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 3 to September 30, 3.53 feet at 10 a. m. May 27 (discharge, 1,550 second-feet); minimum stage, 1.16 feet at 4 a. m. July 11 (discharge, 42 second-feet).

1920–1924: Maximum stage recorded, 5.30 feet at 6 p. m. May 29, 1921 (discharge, 3,720 second-feet); minimum stage, 1.01 feet at 6 p. m. August 7, 1923 (discharge, 9 second-feet).

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Several irrigation canals divert above station.

REGULATION.—None except that due to manipulation of canal head gates above station.

ACCURACY.—Stage-discharge relation changed slightly May 26. Standard rating curve fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge obtained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Fall River near Chester, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	2.01	253	June 14	2.83	849	Aug. 23	2.14	328
May 8	2.78	740	July 24	1.50	106	Sept 25	2.08	292

Daily discharge, in second-feet, of Fall River near Chester, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	528	115	79	315	16	1,140	713	55	155	88
2	-------	613	125	83	286	17	1,240	506	63	163	69
3	924	820	128	166	207	18	1,310	332	69	320	90
4	1,130	1,160	128	342	182	19	1,370	281	79	348	85
5	1,150	1,280	128	359	194	20	1,370	397	120	342	157
6	696	1,190	136	258	276	21	1,340	332	191	354	299
7	696	802	144	286	263	22	1,380	290	152	348	304
8	766	565	160	372	160	23	1,290	258	125	337	304
9	1,050	403	67	359	136	24	1,110	201	107	342	295
10	1,040	397	55	348	133	25	1,070	182	102	310	204
11	1,030	348	58	337	102	26	1,280	155	102	315	100
12	1,020	332	55	326	79	27	1,220	133	95	295	90
13	1,010	521	58	220	100	28	924	125	93	299	73
14	1,120	688	73	83	97	29	775	120	90	299	67
15	1,070	730	63	77	97	30	543	107	120	295	65
						31	498	-------	83	295	-------

NOTE.—No record obtained Oct. 1 to May 2. No record May 10–12; discharge interpolated. Shifted May 27.

Monthly discharge of Fall River near Chester, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 3–31	1,380	498	1,050	60,400
June	1,280	107	484	28,800
July	191	55	101	6,210
August	372	77	275	16,900
September	315	65	164	9,760
The period				122,000

TETON RIVER NEAR ST. ANTHONY, IDAHO

LOCATION.—In sec. 15, T. 7 N., R. 41 E., half a mile above Oregon Short Line Railroad bridge and 4 miles southeast of St. Anthony, Fremont County. Station was formerly maintained at Hog Hollow highway bridge, three-quarters of a mile upstream; records comparable.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 23, 1903, to June 30, 1919; April 19, 1920, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed May 2, 1921, and prior to this time staff gage readings only were obtained. Gage inspected by Johnson, Black, and Dawson.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage.

CHANNEL AND CONTROL.—Bed composed of fine, compact gravel drift. Control subject to shifts during high stages or during ice periods.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 2 to September 30, 2.26 feet at 1 p. m. May 18 (discharge, 1,580 second-feet); minimum stage, 0.12 foot at 9 p. m. September 24 (discharge, 383 second-feet).

1903–1909; 1920–1924: Maximum stage recorded, 6.9 feet at 3 p. m. June 5, 1909 (discharge, 7,820 second-feet); minimum stage, 1 foot March 12, 1906 (discharge, 88 second-feet). Both gage heights from Hog Hollow highway bridge gage.

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Several irrigation canals divert in Teton River Basin 20 miles above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not entirely permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily staff readings May 19 to September 30. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Teton River near St. Anthony, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 2	0.70	614	July 29	0.42	486	Aug. 26	0.19	420
June 21	.84	731	July 30	.47	511	Sept. 23	.16	402

Daily discharge, in second-feet, of Teton River near St. Anthony, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	------	684	646	469	409	16	1,330	877	552	450	414
2	630	679	625	464	400	17	1,430	871	527	427	405
3	712	768	625	469	409	18	1,490	836	507	432	418
4	785	871	625	455	423	19	1,450	779	507	432	432
5	888	917	636	450	427	20	1,400	751	552	441	436
6	796	882	657	446	464	21	1,350	706	701	432	427
7	674	871	668	474	459	22	1,370	712	646	441	418
8	630	819	712	469	432	23	1,300	757	588	432	409
9	696	757	668	464	432	24	1,070	757	552	427	400
10	802	706	625	464	446	25	1,030	723	537	423	405
11	929	657	598	469	446	26	1,200	723	522	414	418
12	1,060	657	583	459	441	27	1,060	712	512	418	418
13	1,180	706	609	469	432	28	911	696	502	409	418
14	1,270	796	598	474	432	29	888	674	493	409	418
15	1,280	865	567	464	423	30	790	657	493	418	414
						31	718	------	488	409	------

NOTE.—No record obtained Oct. 1 to May 1.

Monthly discharge of Teton River near St. Anthony, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 2-31	1,490	630	1,040	61,900
June	917	657	762	45,300
July	712	488	585	36,000
August	474	409	444	27,300
September	464	400	424	25,200
The period				196,000

DIVERSIONS FROM TETON RIVER BETWEEN GAGING STATION NEAR ST. ANTHONY AND MOUTH OF RIVER, IDAHO

Between St. Anthony gaging station and the mouth of the stream 14 separate canals divert water from Teton River for irrigation. Gaging stations are maintained at heading of each canal by the United States Geological Survey for the Idaho State Department of Reclamation to facilitate distribution of the water. Records are available from June 1, 1919, to September 30, 1924.

The stage-discharge relation on these canals is affected by growth of aquatic plants. Rating curves are only fairly well defined. Gages read to hundredths daily May 19 to September 30. Records fair.

Combined daily discharge, in second-feet, of canals diverting from Teton River between St. Anthony gaging station and mouth of river for the irrigation season of 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		651	587	401	281	16		826	504	337	328
2		652	573	375	280	17		810	448	325	321
3		708	573	372	253	18		799	475	315	330
4		763	565	341	292	19	1,210	771	447	304	353
5		812	547	364	315	20	1,210	730	499	302	349
6		769	577	354	331	21	1,190	682	633	308	350
7		793	568	371	335	22	1,210	703	563	322	315
8		785	639	351	296	23	1,190	716	533	307	326
9		752	589	343	310	24	1,040	707	506	300	311
10		702	567	340	328	25	999	663	468	286	320
11		653	542	348	361	26	1,120	693	438	271	333
12		632	561	344	339	27	1,040	642	436	285	350
13		668	519	359	342	28	886	646	422	287	351
14		732	515	349	340	29	866	615	403	289	351
15		783	537	340	330	30	792	597	389	288	353
						31	708		391	299	

NOTE.—No record obtained Oct. 1 to May 18.

Combined monthly discharge of canals diverting from Teton River between St. Anthony gaging station and mouth of river for the irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 19-31	1,210	708	1,040	26,800
June	826	597	715	42,500
July	639	389	517	31,800
August	401	271	328	20,200
September	361	253	326	19,400
The period				141,000

CANYON CREEK NEAR NEWDALE, IDAHO

LOCATION.—In T. 6 N., R. 42 E., one-fourth mile west of Pincock Warm Springs and 14 miles southeast of Newdale, Madison County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 29, 1920, to September 30, 1924.

GAGE.—Vertical staff on left bank 300 feet below highway bridge; read by A. J. Cheney.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of compact gravel; fairly permanent. Two channels at low and medium stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 7 to August 31, 2.64 feet at 7.30 a. m. May 18 (discharge, 184 second-feet); minimum stage, 0.98 foot at 8 a. m. August 31 (discharge, 2 second-feet).

1920–1924: Maximum stage recorded, 4.22 feet at 8 a. m. May 28, 1921 (discharge, 419 second-feet); minimum stage, 0.98 foot at 8 a. m. August 31, 1924 (discharge, 2 second-feet).

ICE.—Formation of ice prevented by inflow from warm springs above station. No winter observations obtained.

DIVERSIONS.—Power canal of Pincock sawmill diverts three-eighths mile upstream; water is returned above station.

REGULATION.—None except that caused by operation of power canal.

ACCURACY.—Stage-discharge relation fairly permanent after May 31. Standard rating curve well defined. Shifting-control methods employed May 19–31. Gage read daily during period. Daily discharge obtained by applying daily gage height to rating table. Records fair.

Discharge measurements of Canyon Creek near Newdale, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 7	1.58	61.6	July 19	1.13	11.3	Sept. 13	1.08	8.03
June 11	1.41	36.6	Aug. 16	1.07	6.31			

Daily discharge, in second-feet, of Canyon Creek near Newdale, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Day	May	June	July	Aug.
1		50	20	9	16	155	34	5	6
2		48	20	8	17	182	34	5	4
3		52	19	8	18	184	30	4	4
4		54	7	7	19	169	30	11	4
5		54	6	7	20	164	26	103	4
6		38	7	6	21	139	26	100	4
7	62	40	7	6	22	134	26	81	4
8	66	42	7	6	23	116	25	66	4
9	77	40	9	5	24	118	25	59	3
10	91	38	7	5	25	99	24	38	3
11	99	38	7	5	26	92	23	34	3
12	119	36	6	5	27	84	23	26	3
13	122	36	6	4	28	74	22	18	3
14	143	34	6	5	29	69	21	13	3
15	148	38	5	4	30	58	19	11	3
					31	60		10	2

NOTE.—No record obtained Oct. 1 to May 6 and Sept. 1-30.

Monthly discharge of Canyon Creek near Newdale, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 7–31	184	58	113	5,600
June	54	19	34.2	2,040
July	103	4	23.3	1,430
August	9	2	4.74	291

WILLOW CREEK NEAR RIRIE, IDAHO

LOCATION.—In T. 3 N., R. 40 E., at Cutler ranch, 3 miles above mouth of canyon and 6 miles southeast of Ririe, Bonneville County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 23, 1916, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank installed July 1, 1921; inspected by Ira Moore.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders in gravel drift; fairly permanent. Left bank is overflowed at high stages; both are brush covered.

EXTREMES of DISCHARGE.—Maximum stage recorded during period, 8.79 feet at 5 a. m. April 24 (discharge, 1,420 second-feet); minimum discharge, 10 second-feet, August 31 to September 5.

1916–1924: Maximum stage recorded, 16.3 feet May 15, 1917 (discharge, 4,200 second-feet); minimum discharge occurred in 1924.

ICE.—Stage-discharge relation seriously affected by ice; records discontinued during winter.

DIVERSIONS.—During the spring of 1924, a low dam was constructed across Grays Lake outlet near Herman, Idaho, about 40 miles upstream from station. This dam was in use throughout the summer to divert water into the Blackfoot-Marsh Reservoir via Meadow Creek.

REGULATION.—United States Office of Indian Affairs dam as described above.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves well defined. Operation of water-stage recorder satisfactory except as noted in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table staff gage reading or mean daily gage height obtained from inspection of recorder graph. Shifting-control method used May 7–27 and June 10–13. Records fair.

Discharge measurements of Willow Creek near Ririe, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	2.91	58.7	June 26	2.96	67.1	Sept. 2	2.34	10.8
April 3	3.02	69.8	July 2	2.79	45.2	Sept. 13	2.50	18.0
May 6	5.75	653	July 30	2.56	23.4	Sept. 29	2.54	22.1
May 29	3.99	227						

Daily discharge, in second-feet, of Willow Creek near Ririe, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	56	56	-------	844	151	48	18	10
2	52	56	-------	794	143	46	17	10
3	49	56	71	769	134	43	16	10
4	49	54	93	719	124	40	16	10
5	53	51	73	694	115	38	14	10
6	59	49	86	634	102	38	14	12
7	57	49	169	572	98	39	13	13
8	57	49	250	512	88	52	13	16
9	60	48	212	478	99	49	13	15
10	60	53	177	455	95	43	14	15
11	63	52	171	432	91	38	13	16
12	63	51	182	407	86	38	13	16
13	64	50	191	396	82	40	13	17
14	61	49	199	374	78	43	12	17
15	60	48	208	352	75	39	12	17
16	59	47	216	332	71	47	12	16
17	59	46	225	317	67	47	12	16
18	61	47	233	306	64	44	12	17
19	61	48	242	289	63	40	11	18
20	61	49	258	275	67	43	11	19
21	61	49	325	264	72	47	11	20
22	60	50	514	250	80	54	11	20
23	61	51	971	246	85	45	12	20
24	64	52	1,340	232	78	39	12	20
25	63	56	1,130	218	72	38	12	21
26	63	49	794	207	67	36	11	21
27	61	-------	769	197	63	32	11	21
28	60	-------	844	190	59	28	11	21
29	57	-------	894	216	55	25	11	22
30	57	-------	894	195	52	23	11	21
31	57	-------	-------	169	-------	19	10	-------

NOTE.—No record obtained Nov. 27 to Apr. 2. No gage-height record Oct. 30 to Nov. 2, Nov. 11–16, 18–23, Apr. 13–18, June 10–13, Sept. 18, 19, and 21–28; discharge interpolated or estimated.

Monthly discharge of Willow Creek near Ririe, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	64	49	59.0	3,630
November 1–26	56	46	50.6	2,610
April 3–30	1,340	71	419	23,300
May	844	169	398	24,500
June	151	52	85.9	5,110
July	54	19	40.0	2,460
August	18	10	12.7	781
September	22	10	16.6	988

WILLOW CREEK NEAR IONA, IDAHO

LOCATION.—In sec. 19, T. 3 N., R. 39 E., at concrete bridge 3 miles northeast of Iona, Bonneville County, and 9 miles on main road northeast of Idaho Falls. Boomer Canal crosses in a flume 600 feet above station.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 22, 1916, to September 30, 1924.

GAGE.—Vertical staff attached to downstream face of right abutment of concrete arch bridge; read by C. N. Kemper.

DISCHARGE MEASUREMENTS.—Made from rating bridge 250 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of mud, sand, and gravel; shifting. Banks subject to overflow at very high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.40 feet at noon April 26 (discharge, 321 second-feet); minimum discharge, 1 second-foot December 7–10.

1916–1924: Maximum stage recorded, 7.75 feet May 16 and 17, 1917 (discharge, 603 second-feet); minimum discharge, about 1 second-foot occurred December 31, 1918, January 1, 1919, January 1–10, 1920, and December 7–10, 1923.

ICE.—Stage-discharge relation seriously affected by ice; record discontinued during winter.

DIVERSIONS.—Sand Creek and irrigation canals divert water above station; definite information not available as to number of canals and quantity of water diverted.

REGULATION.—Flow regulated at diversion works above station. Several irrigation canals waste water into creek.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined; several parallel curves used. Stage subject to sudden fluctuations. Gage read to hundredths once daily. Daily discharge ascertained by applying mean daily gage height to rating table or by shifting-control methods. Records fair.

Discharge measurements of Willow Creek near Iona, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	1.20	27.8	June 30	0.70	7.13	Aug. 29	2.20	81.0
Apr. 29	3.99	208	July 19	2.54	113	Sept. 9	1.93	64.8
May 29	2.56	113	Aug. 7	2.47	104			

Daily discharge, in second-feet, of Willow Creek near Iona, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	32	26	64	-------	182	100	6	71	89
2	68	26	64	-------	173	96	100	91	83
3	75	24	66	-------	168	91	99	101	76
4	75	26	38	4	164	81	98	98	70
5	72	28	7	8	161	88	98	114	66
6	70	46	7	10	160	91	113	114	63
7	66	55	1	14	167	95	106	107	63
8	66	55	1	70	161	110	94	103	63
9	66	55	1	76	163	112	89	100	63
10	63	56	1	73	155	114	95	100	60
11	58	56	2	62	158	98	92	98	59
12	50	56	10	59	161	96	110	98	59
13	32	55	11	45	158	102	108	97	56
14	28	55	12	44	154	105	106	96	60
15	28	53	12	42	150	105	106	96	56
16	26	53	-------	32	154	109	108	83	56
17	26	53	-------	34	154	109	108	80	56
18	26	55	-------	36	156	110	113	80	66
19	26	55	-------	37	160	112	112	83	70
20	26	55	-------	38	178	108	115	83	72
21	26	53	-------	38	164	109	115	80	56
22	26	50	-------	72	164	116	107	76	59
23	26	51	-------	174	159	124	105	83	60
24	26	56	-------	265	160	128	103	86	60
25	26	56	-------	305	152	116	100	83	59
26	24	56	-------	321	152	114	98	84	59
27	26	62	-------	273	143	102	98	84	56
28	26	62	-------	241	121	10	93	84	58
29	26	63	-------	209	113	8	58	85	56
30	26	63	-------	196	109	7	58	87	58
31	26	-------	-------	-------	102	-------	65	89	-------

NOTE.—No record obtained Dec. 16 to Apr. 3.

Monthly discharge of Willow Creek near Iona, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	75	24	40.7	2,500
November	63	24	50.5	3,000
December 1–15	66	1	19.8	589
April 4–30	321	4	103	5,520
May	182	102	154	9,470
June	128	7	95.5	5,680
July	115	6	96.0	5,900
August	114	71	90.8	5,580
September	89	56	62.9	3,740

GRAYS LAKE OUTLET NEAR HERMAN, IDAHO

LOCATION.—In sec. 15, T. 3 S., R. 42 E., 3 miles below bridge at outlet of lake and 3¼ miles west of Herman, Bonneville County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 5, 1916, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on right bank; installed April 20, 1918; inspected by Emory Poulson.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Channel composed of gravel and small cobbles; left bank subject to overflow at gage height of about 3.5 feet. Control is rock ledge 25 feet below gage; practically permanent. Point of zero flow determined September 17, 1924, as at gage height 0.45 foot ±0.05 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 5.00 feet at 3.30 p. m. April 25 (discharge, 775 second-feet); minimum discharge, 1.0 second-foot, May 26–31, August 27–31, September 1–4 and 14–17. Lower flow may have occurred during period of no record.

1916–1924: Maximum stage recorded, 5.9 feet at 9 a. m. May 15, 1917 (discharge, 1,350 second-feet); minimum stage, 0.63 foot August 30 and 31, 1920 (discharge, 0.5 second-foot).

ICE.—Ice practically stops flow from lake at times but springs probably keep channel near gage free from ice. Observations discontinued during winter.

DIVERSIONS.—No diversions between outlet of lake and station. Diversions for irrigation are made above lake, but amount of water so diverted is not known. On May 25, 1924, United States Office of Indian Affairs completed a dam at outlet of lake and after that date some water has been diverted from south end of lake through Clark cut into Meadow Creek Basin and thence into Blackfoot-Marsh Reservoir.

REGULATION.—Some regulation after May 25, 1924, due to construction of dam at outlet of lake.

ACCURACY.—Stage-discharge relation permanent during year. Rating curves well defined. Operation of water-stage recorder unsatisfactory. Staff gage read to hundredths about once a week after August 1. Daily discharge ascertained by applying mean daily gage height to rating table except as indicated in footnote to table of daily discharge. During periods water-stage recorder was operated, mean daily gage heights were determined by inspection of recorder graph. Records fair.

Discharge measurements of Grays Lake outlet near Herman, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	0.91	3.93	June 4	0.84	1.48	July 10	1.06	9.65
May 8	2.98	217	July 10	1.06	10.2	Sept. 17	.78	1.60

Daily discharge, in second-feet, of Grays Lake outlet near Herman, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	4				22	3	1
2	4			2	22	3	1
3	4				22	3	1
4	4			2	22	3	1
5	4		300	2	20	3	2
6	4	5		2	17	2	2
7	4			2	14	2	2
8			215	2	12	2	2
9			202	2	9	2	2
10		3	191	2	8	2	2
11	4		188	2	4	2	2
12			170	2	4	2	2
13			157	2	7	2	2
14		3	145	2		2	1
15			132	2		2	1
16	4		118	2		2	1
17	2	12	109	2		2	1
18			99	3		2	
19			88	11		2	
20			86	25	15	2	
21		30	85	19		2	
22			20	21		2	
23			12	21		2	
24				19		2	
25		725	2	20		2	
26		500				2	
27				22		1	
28			1	23	4	1	
29		400		23		1	
30				22		1	
31						1	

NOTE.—Discharge estimated on account of missing gage heights Oct. 8–15, Apr. 7–12, 16–19, 26–27, May 23–24, 26–28, June 25–26, July 26–31, and Aug. 1; because of unreliable gage heights, Apr. 13–15, 20–25, 28–30, May 1–7, 22, 25, 29–31, June 1–3, and July 14–25. Discharge interpolated Aug. 3–8, 10–13, 15–22, 25–29, Sept. 1–8 and 10–16. Braced figures give mean discharge for periods indicated.

Monthly discharge of Grays Lake outlet near Herman, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–17	4	2	3.9	132
April 6–30			126	6,250
May			133	8,180
June	25		9.4	559
July			12.5	769
August	3	1	2.0	123
September 1–17	2	1	1.5	51

IDAHO (GOVERNMENT) CANAL NEAR SHELLEY, IDAHO [1]

LOCATION.—In sec. 31, T. 1 N., R. 37 E., 600 feet below canal head gates, 1½ miles southwest of Shelley, Bingham County, and 10 miles above point where Sand Creek crosses canal.

RECORDS AVAILABLE.—June 20, 1912, to September 30, 1924. No water diverted during 1913 because of break in canal.

GAGE.—Friez water-stage recorder on right bank installed September 12, 1923. Datum of gage about 0.12 foot lower than original gage. Recorder inspected and daily staff readings made by M. A. Jensen and D. G. Taylor.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge at gage or by wading.

CHANNEL AND CONTROL.—Trapezoidal concrete rating section. Growth of weeds and brush causes changes in stage-discharge relation, but bottom of rating section evidently furnishes a permanent point of zero flow at gage height of about 0.0 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.79 feet at 1 a. m. May 20 (discharge, 681 second-feet); minimum discharge, practically no flow during period of no record and on days reported dry by observer.

1912–1924: Maximum stage recorded, 4.83 feet August 12, 1920; maximum discharge, 681 second-feet on May 20, 1924; minimum discharge, practically no flow during periods of no record when head gates were closed.

ICE.—Canal not operated during winter.

DIVERSIONS.—None.

REGULATION.—Flow controlled at head gates 600 feet above.

ACCURACY.—Stage-discharge relation changed during winter. Standard rating curves well defined. Daily discharge October 4–27, November 14–18, May 8 to July 6, July 8–15, ascertained by applying to rating table mean daily gage height obtained from recorder graph or from daily staff gage readings; for other periods of record it was ascertained by use of observers' notes. Records good.

Idaho (Government) Canal diverts water from left bank of Snake River in sec. 31, T. 1 N., R. 37 E. and discharges into Blackfoot River in sec. 24, T. 2 S., R. 36 E. The canal also receives water from Sand Creek about 10 miles below station.

Discharge measurements of Idaho (Government) Canal near Shelley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	2.63	226	May 19	4.66	650	July 1	4.21	578
Nov. 16	3.04	292	June 5	4.39	608	July 6	.60	21.6
May 8	2.43	253	June 17	4.18	563	July 14	3.08	373
May 15	3.87	501	June 24	3.38	420			

[1] Record for this diversion is also included in "Total diversions from Snake River between Shelley and Blackfoot Bridge gaging stations."

Daily discharge, in second-feet, of Idaho (Government) Canal near Shelley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	May	June	July	Day	Oct.	Nov.	May	June	July
1	0		-------	609	580	16	241	299	530	567	6
2	10		-------	611	637	17	251	294	582	578	6
3	10		-------	605	615	18	254	286	628	554	6
4	26		-------	594	228	19	257		660	521	1
5	40		-------	596	21	20	257		619	480	2
6	59		-------	598	22	21	262	286	651	474	2
7	99	286	-------	560	10	22	256		592	453	-------
8	99		251	571	418	23	264		637	422	-------
9	180		254	569	582	24	257		611	419	-------
10	180		262	505	473	25	270	143	550	447	-------
11	198		270	523	399	26	279	-------	532	532	-------
12	227		289	483	397	27	276	-------	613	599	-------
13	233		303	446	372	28		-------	626	618	-------
14	240	296	390	482	366	29	286	-------	626	599	-------
15	241	306	505	489	141	30		-------	607	582	-------
						31		-------	607	-------	-------

NOTE.—Discharge estimated because of missing gage heights, Oct. 2–3, 28–31, Nov. 1–13, 19–25, July 7, 16–21, on basis of head gate changes and observers' notes. Braced figures give mean discharge for periods indicated. No flow July 22 to Sept. 30.

Monthly discharge of Idaho (Government) Canal near Shelley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	----------	0	197	12,100
November 1–25	----------	----------	282	14,000
May 8–31	660	251	508	24,200
June	618	419	536	31,900
July	637	0	170	10,500
August	----------	----------	0	0
September	----------	----------	0	0

BLACKFOOT RIVER ABOVE RESERVOIR, NEAR HENRY, IDAHO

LOCATION.—About sec. 9, T. 7 S., R. 42 E., at Swanson ranch, 1½ miles above flow line of Blackfoot-Marsh Reservoir, 7 miles south of Henry, Caribou County, and 13 miles north of Soda Springs.

DRAINAGE AREA.—360 square miles (measured on Land Office map).

RECORDS AVAILABLE.—March 25, 1914, to September 30, 1924.

GAGE.—Vertical staff on right bank to rear of Swanson's house and 500 feet below highway bridge; installed June 23, 1921; read by Mrs. A. C. Swanson.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed rough; composed of loose rocks and boulders with some gravel. Control of loose rock, fairly permanent. One channel at ordinary stages; two or three channels at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.00 feet April 24 (discharge, 1,110 second-feet); minimum discharge, 40 second-feet, August 28 to September 5. Lower flow may have occurred during winter.

1914–1924: Maximum stage estimated from high-water mark above gage, 6.85 feet May 16, 1917 (discharge, 2,060 second-feet); minimum stage, 0.98 foot August 17, 1919 (discharge, 23 second-feet). Minimum discharge probably occurred during periods of no record.

ICE.—Stage-discharge relation affected by ice; records discontinued during winter.

DIVERSIONS.—A few small ranch diversions are made above gage.

REGULATION.—None. Entire flow passing gage is stored in Blackfoot-Marsh Reservoir 1½ miles below.

ACCURACY.—Stage-discharge relation changed several times after high water due to accumulation of moss and débris on control. Rating curves well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used May 10 to June 5, August 20–31, and September 21–30. Records good, except for estimated periods for which they are poor.

COOPERATION.—Several discharge measurements furnished by United States Office of Indian Affairs.

Discharge measurements of Blackfoot River above reservoir, near Henry, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 18	1.71	96.0	July 25	1.21	43.0	Aug. 19	1.26	46.7
May 9	2.69	303	Aug. 6	1.31	51.4	Sept. 1	1.28	40.0
June 6	1.83	127	Aug. 8	1.31	52.7	Sept. 3	1.28	40.5
July 13	1.62	87.1	Aug. 11	1.30	51.3	Sept. 5	1.30	39.2
Do	1.62	85.0	Aug. 13	1.29	51.2	Sept. 19	1.35	48.6
July 14	1.55	78.3						

Daily discharge, in second-feet, of Blackfoot River above reservoir, near Henry, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	75			53	904	165	54	54	40
2	92	75			58	824	163	54	50	
3	100	75			58	670	148	54	50	40
4	89	80			63	565	136	68	50	40
5	92	77	65		84	500	133	88	52	40
6	94	75			63	409	122	75	52	45
7	98	72			68	352	118	75	52	45
8	104	72			79	310	137	92	50	45
9	104	70			99	297	149	94	50	44
10	104	72			102	285	137	83	50	45
11	113	77			111	286	118	75	50	47
12	113	77			158	274	111	75	50	45
13	100	80			246	275	104	87	50	44
14	94	75			297	276	94	79	52	44
15	89	75			258	274	80	72	54	44
16	86	75			246	264	80	70	52	44
17	94	83			210	265	78	66	49	45
18	93	70			178	254	75	63	47	45
19	93	70			199	250	83	63	47	49
20	92				338	231	101	66	49	49
21	89			45	565	227	98	70	50	49
22	86	75			634	221	86	83	49	50
23	86	70			1,030	222	78	52	49	47
24	92	70			1,110	211	68	47	46	46
25	89	80			1,070	189	68	42	45	48
26	83	75			785	183	68	59	43	48
27	80	75		47	599	180	63	59	41	48
28	77	89		61	565	170	57	59	40	49
29	83	85		58	708	215	54	59		49
30	70			76	824	216	56	57	40	49
31	77			79		194		56		

NOTE.—Discharge estimated on account of ice Nov. 19–21, 29–30, Dec. 1–8, and Mar. 16–26; on account of unreliable gage heights Aug. 29 to Sept. 2. Shifting-control method used May 10 to June 5, Aug. 20–31, and Sept. 21–30. Braced figures give mean discharge for periods indicated.

Monthly discharge of Blackfoot River above reservoir, near Henry, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	113	70	92.1	5,660
November	----------	----------	75.6	4,500
December 1–8	----------	----------	65.0	1,030
March 16–31	79	----------	51.0	1,620
April	1,110	53	362	21,500
May	904	170	322	19,800
June	165	54	101	6,010
July	94	42	67.6	4,160
August	54	40	48.2	2,960
September	50	40	45.4	2,700

BLACKFOOT-MARSH RESERVOIR NEAR HENRY, IDAHO

LOCATION.—In sec. 12, T. 5 S., R. 40 E., 12 miles northwest of Henry, Caribou County, and 45 miles southeast of Blackfoot.

RECORDS AVAILABLE.—January 1, 1912, to September 30, 1924.

GAGE.—Vertical staff near spillway at right end of dam; read to hundredths by B. B. Reynolds. Gage datum was raised 51.6 feet on April 23, 1918, but subsequent readings have been reduced to original datum. To reduce published gage heights to elevation above sea level add 6,048.40 feet.

EXTREMES OF STAGE.—Maximum stage recorded, 56.05 feet June 10; minimum stage, 42.00 feet October 9, 11, 13, 14, 17, and 18.

1912–1924: Maximum stage recorded, 68.60 feet June 27–30, 1912; minimum stage, 40.76 feet September 28 and 29, 1919.

ACCURACY.—Gage moved several times during year on account of construction work on dam. As some of the gage settings were probably not checked by level, part of the record may be slightly in error with respect to datum.

COOPERATION.—Gage-height record furnished by United States Office of Indian Affairs.

Stored water from this reservoir is used for irrigation of lands near Pocatello and on Fort Hall Indian Reservation, the area covered by the project being about 50,000 acres. The reservoir is formed by a loose rock and hydraulic-fill dam with a concrete core-wall, paved on the reservoir side to prevent erosion. The dam is 120 feet long at base, 250 feet long at crest, and about 40 feet high. The reservoir is 17 miles long and 5½ miles wide at the widest point and covers about 15,000 acres of land. The spillway, excavated in rock at north end of dam, is 50 feet wide and the crest elevation is 6,118 feet. The capacity of the reservoir at elevation of crest of spillway is 303,000 acre-feet. Elevation of lowest point to which water may be drawn is 6,090 feet. The distribution system comprises 56 miles of main canal, 108 miles of laterals, and 3½ miles of drainage ditch.

Daily gage height, in feet, of Blackfoot-Marsh Reservoir near Henry, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42.40	42.61	46.10	48.01	48.55	49.91	50.70	54.50	55.90	55.18	51.60	46.59
2	42.35	42.55	46.18	48.03	48.60	49.92	50.72	54.70	55.93	55.14	51.46	46.40
3	42.20	42.45	46.30	48.01	48.67	49.95	50.75	54.87	55.95	55.10	51.30	46.20
4	42.40	42.50	46.42	48.06	48.75	49.96	50.78	54.96	55.97	55.02	51.11	45.98
5	42.30	42.70	46.54	48.07	48.85	49.97	50.80	55.05	55.99	54.94	50.93	45.75
6	42.30	42.80	46.65	48.08	48.92	49.98	50.83	55.12	55.99	54.85	50.78	45.55
7	42.20	42.70	46.74	48.09	49.00	49.99	50.86	55.20	55.90	54.78	50.66	45.28
8	42.10	42.60	46.84	48.10	49.09	50.00	50.89	55.28	55.85	54.68	50.51	45.05
9	42.00	42.50	46.96	48.12	49.18	50.01	50.93	50.34	55.95	54.67	50.38	44.75
10	42.01	42.40	47.05	48.14	49.28	50.02	51.00	55.42	56.05	54.67	50.22	44.55

Daily gage height, in feet, of Blackfoot-Marsh Reservoir near Henry, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	42.00	42.15	47.14	48.15	49.35	50.03	51.07	55.49	56.03	54.65	50.08	44.28
12	42.02	42.09	47.26	48.17	49.43	50.04	51.17	55.52	56.04	54.58	49.95	44.02
13	42.00	42.22	47.34	48.19	49.51	50.05	51.26	55.54	55.98	54.50	49.80	43.78
14	42.00	42.40	47.44	48.20	49.64	50.06	51.35	55.58	55.99	54.40	49.62	43.50
15	42.01	42.60	47.55	48.21	49.80	50.07	51.44	55.60	55.95	54.30	49.47	43.29
16	42.02	43.00	47.64	48.22	49.82	50.08	51.56	55.62	55.91	54.16	49.31	43.02
17	42.00	43.45	47.74	48.23	49.83	50.09	51.67	55.64	55.86	54.01	49.11	42.90
18	42.00	43.70	47.76	48.24	49.84	50.10	51.81	55.66	55.76	53.82	48.95	42.60
19	42.04	44.05	47.78	48.26	49.84	50.12	51.91	55.67	55.67	53.68	48.74	42.55
20	42.06	44.35	47.80	48.29	49.84	50.14	52.00	55.72	55.65	53.55	48.50	42.52
21	42.10	44.68	47.82	48.30	49.85	50.15	52.28	55.75	55.58	53.42	48.38	42.50
22	42.12	44.98	47.84	48.31	49.86	50.19	52.52	55.76	55.54	53.20	48.25	42.40
23	42.12	45.20	47.88	48.32	49.86	50.22	52.80	55.77	55.50	52.90	48.10	42.38
24	42.16	45.41	47.90	48.35	49.87	50.24	53.01	55.78	55.45	52.74	47.94	42.29
25	42.20	45.65	47.92	48.37	49.87	50.30	53.40	55.78	55.40	52.60	47.79	42.23
26	42.31	45.75	47.94	48.38	49.88	50.39	53.64	55.78	55.36	52.50	47.63	42.20
27	42.40	45.82	47.96	48.40	49.88	50.47	53.90	55.80	55.31	52.40	47.48	42.45
28	42.50	45.90	47.97	48.41	49.89	50.55	54.06	55.72	55.25	52.25	47.33	42.50
29	42.51	45.97	47.99	48.43	49.90	50.63	54.20	55.68	55.25	52.05	47.15	-------
30	42.52	46.04	48.00	48.46	-------	50.66	54.35	55.78	55.22	51.90	46.97	42.60
31	42.58	-------	48.00	48.50	-------	50.68	-------	55.90	-------	51.75	46.79	-------

BLACKFOOT RIVER NEAR HENRY, IDAHO

LOCATION.—In sec. 11, T. 5 S., R. 40 E., 200 feet below wagon bridge at Rockyford crossing, 1 mile below Blackfoot-Marsh Dam of United States Office of Indian Affairs, and 12 miles northwest of Henry, Caribou County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 15, 1908, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed September 18, 1912; inspected by B. B. Reynolds.

DISCHARGE MEASUREMENTS.—Made from cable 600 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock, boulders, and gravel; fairly permanent. One channel at all stages. Growth of moss at times affects stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.05 feet July 15–21 and 28 (discharge, 936 second-feet); minimum stage, 0.76 foot February 22 to March 3 (discharge, 4 second-feet).

1908–1924: Maximum stage recorded, 4.15 feet May 14, 1909 (discharge, 1,640 second-feet); minimum stage, 0.50 foot May 11 and 12, 1917 (discharge, about 1 second-foot).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Few small diversions for irrigation above reservoir.

REGULATION.—Flow entirely regulated by storage in reservoir which has a capacity of about 300,000 acre-feet.

ACCURACY.—Stage-discharge relation permanent. Rating curve well-defined below 800 second-feet. Operation of water-stage recorder satisfactory June 3 to August 30 and September 22-28. Staff gage read to hundredths once daily at other times except during December when readings were made about once a week. Daily discharge ascertained by applying daily or mean daily gage height to rating table. During periods water-stage recorder was operated mean daily gage height obtained by inspection of recorder graph. Discharge interpolated October 7, 8, December 3–8, 10–15, 17–22, 24–30. Records fair.

COOPERATION.—Gage-height record and several discharge measurements furnished by United States Offices of Indian Affairs.

Discharge measurements of Blackfoot River near Henry, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	1.86	246	July 30	3.02	965	Aug. 20	2.70	714
May 8	.85	9.26	July 31	3.01	934	Aug. 29	2.44	550
June 5	.86	10.8	Aug. 3	2.98	917	Sept. 2	2.30	469
July 11	2.08	357	Aug. 5	2.90	838	Sept. 4	2.24	447
Do	2.31	456	Aug. 7	2.88	831	Sept. 6	2.20	426
July 22	3.02	953	Aug. 9	2.86	817	Sept. 9	1.97	329
July 24	2.93	907	Aug. 12	2.81	785	Sept. 17	1.66	182
July 26	2.87	855	Aug. 14	2.82	796			
July 28	3.03	982	Aug. 18	2.77	764			

Daily discharge, in second-feet, of Blackfoot River near Henry, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	266	198	31	31	35	4	7	10	122	202	885	484
2	259	195	31	31	35	4	7	10	122	215	885	457
3	251	195	31	31	35	4	7	10	62	304	877	446
4	192	158	31	31	36	5	7	10	11	725	849	430
5	185	80	31	31	36	5	7	10	11	786	834	420
6	274	74	31	31	36	5	7	10	10	786	287	441
7	269	105	31	31	36	5	7	10	10	758	213	374
8	264	195	31	31	36	5	7	10	10	251	806	326
9	259	195	31	31	36	5	7	10	9	248	799	295
10	266	189	31	31	38	5	7	10	62	262	786	283
11	270	173	31	31	38	5	7	10	124	399	772	255
12	266	130	31	31	38	5	8	10	147	506	758	236
13	266	63	31	31	38	5	8	10	209	535	758	229
14	251	31	31	31	38	5	8	31	236	679	758	219
15	244	31	31	31	38	5	8	63	259	936	758	205
16	229	33	31	31	38	5	8	63	340	936	751	192
17	229	35	31	31	38	5	8	63	326	936	738	186
18	226	36	31	31	38	5	8	63	304	936	732	180
19	226	38	31	31	38	5	9	63	304	936	712	173
20	226	31	31	33	38	5	9	63	308	936	705	167
21	222	33	31	33	14	6	9	63	308	936	673	170
22	219	31	31	33	4	6	9	63	308	899	642	170
23	219	31	31	33	4	6	10	63	304	899	599	161
24	215	31	31	33	4	6	10	63	304	849	599	144
25	215	31	31	33	4	6	10	63	304	841	599	138
26	212	31	31	35	4	6	10	156	304	813	599	135
27	212	31	31	35	4	6	10	202	270	834	599	116
28	209	31	31	35	4	6	10	164	176	936	558	36
29	205	31	31	35	4	6	10	141	180	899	535	24
30	205	31	31	35	-------	6	10	122	180	899	529	28
31	202	-------	31	35	-------	6	-------	122	-------	892	518	-------

Monthly discharge of Blackfoot River near Henry, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	274	185	234	14,400
November	198	31	86.2	5,130
December	31	31	31.0	1,910
January	35	31	32.2	1,980
February	38	4	27.1	1,560
March	6	4	5.3	326
April	10	7	8.3	494
May	202	10	56.8	3,490
June	340	9	187	11,100
July	936	202	709	43,600
August	885	518	718	44,100
September	484	24	236	14,000
The year	936	4	196	142,000

BLACKFOOT RIVER NEAR SHELLEY, IDAHO

LOCATION.—In sec. 7, T. 2 S., R. 38 E., 1½ miles above mouth of canyon, 3 miles above N. A. Just ranch, 10 miles southeast of Shelley, Bingham County, and 18 miles northeast of Blackfoot. Below all important tributaries.

DRAINAGE AREAS.—Not measured.

RECORDS AVAILABLE.—June 26, 1909, to September 30, 1924. March 23, 1903, to December 31, 1909, records were obtained near Presto, 5 miles below present site. No tributaries enter between the two sites, but during the irrigation season several canals divert approximately 50 second-feet.

GAGE.—Friez water-stage recorder on right bank; inspected by Rufus E. Reid.

DISCHARGE MEASUREMENTS.—Made by wading or from cable at gage.

CHANNEL AND CONTROL.—Bed rocky and rough. One channel at all stages. Control shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.11 feet 7 a. m. to 2 p. m. July 20 (discharge, 997 second-feet); minimum stage, 3.09 feet at 2 a. m. December 21 (discharge, 31 second-feet).

1909–1924: Maximum stage recorded, 6.30 feet at 9 p. m. July 23, 1923 (discharge, 1,830 second-feet); minimum stage, 2.83 feet at midnight January 23, 1919 (discharge, approximately 15 second-feet). Ice jam above station caused temporary drop in stage.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSION.—No noteworthy diversions are made from river or tributaries above station.

REGULATION.—Flow regulated largely by storage in Blackfoot-Marsh Reservoir of United States Office of Indian Affairs about 40 miles upstream.

ACCURACY.—Stage-discharge relation not permanent, affected by ice. Standard rating curves fairly well defined. Shifting-control method used July 4. Operation of water-stage recorder fairly satisfactory, except during periods of ice effect when weekly staff readings were obtained. Daily discharge ascertained by applying mean daily gage height to rating table, except for periods of ice effect and for periods of no record as indicated in footnote to table of daily discharge. Records fair.

Discharge measurements of Blackfoot River near Shelley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	4.02	294	Aug. 13	4.81	712	Aug. 27	4.55	615
Mar. 6	3.31	75.2	Aug. 22	4.65	716	Do	4.55	613
Apr. 28	3.68	173	Aug. 25	4.56	689	Do	4.55	618
June 13	3.74	194	Aug. 26	4.55	585	Sept. 6	4.21	446
July 18	5.06	917	Do	4.55	622	Do	4.21	419
July 21	5.09	1,120	Do	4.54	655	Sept. 11	3.96	307
July 29	5.08	1,020	Do	4.54	619			

Daily discharge, in second-feet, of Blackfoot River near Shelley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	339	294	100			68	74	167	210	202	955	509
2	331	290				69	79	164	206	240	948	470
3	323	294	85			70	86	161	202	248	948	459
4	319	280				70	86	158	108	566	920	443
5	259	267	72			71	90	148	79	830	899	438
6	339	169	79			72	96	139	76	830	885	427
7	344	169	84			79	116	136	79	857	878	402
8	335	382	64		80	72	152	130	83	509	864	367
9	335	369	95			70	167	125	79	303	850	334
10	335	339				69	202	125	74	299	830	321
11	348	310				67	238	125	125	339	802	307
12	344	298	85			66	273	122	167	497	789	285
13	339	294				64	284	116	195	566	789	265
14	331	207				63	296	114	273	566	789	256
15	323	138				61	307	114	265	913	782	248
16	315	120	81	70	90	63	225	152	334	962	782	232
17	298	120	72		88	68	198	161	358	962	769	229
18	294	117	63		87	68	170	158	334	962	756	221
19	294	114	46		85	72	202	155	339	962	736	217
20	302	126	37		84	76	244	152	339	983	723	213
21	310	114	37		82	76	281	155	344	969	710	206
22	310	106	103		81	68	330	152	344	962	658	202
23	298	92	103		79	63	363	155	339	962	602	192
24	290	103	53		77	72	307	152	334	906	609	178
25	302	103	46		76	65	244	148	330	899	615	178
26	298	103	44		74	68	195	148	330	871	621	178
27	298	97	96		73	81	178	210	325	864	621	148
28	310	97	111		71	76	174	217	248	948	602	120
29	298	123	46		70	72	174	217	198	969	572	80
30	298	114	70		-------	61	170	217	198	969	549	70
31	294	-------	70		-------	65	-------	213	-------	962	531	-------

NOTE.—Stage-discharge relation affected by ice Dec. 2-4, 10-15, 30, 31, Jan. 1-31, Feb. 1-15; discharge ascertained by means of fragmentary gage-height record and comparison with flow at unaffected station below Blackfoot-Marsh Reservoir. Discharge estimated on account of lack of gage-height record Sept. 28-30, on basis of flow at station below Blackfoot-Marsh Reservoir. Discharge interpolated on account of lack of gage-height record Nov. 4, Feb. 17-22, 24-29, Mar. 2-5, 9-14, Apr. 10, 11, 13, and 14. Braced figures give mean discharge for periods indicated.

Monthly discharge of Blackfoot River near Shelley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	348	259	315	19,400
November	382	92	192	11,400
December	111	37	75.4	4,640
January	----------	----------	70.0	4,300
February	90	70	79.9	4,600
March	81	61	69.2	4,250
April	363	74	200	11,900
May	217	114	155	9,530
June	358	74	230	13,700
July	983	202	738	45,400
August	955	531	754	46,400
September	509	70	273	16,200
The year	983	37	264	192,000

BLACKFOOT RIVER NEAR BLACKFOOT, IDAHO

LOCATION.—In sec. 27, T. 3 S., R. 34 E., 2 miles above junction of Blackfoot River with Snake River and 8 miles southwest of Blackfoot, Bingham County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 27, 1913, to September 30, 1924.

GAGE.—Inclined staff on right bank half a mile south of Kofoed ranch house; read by Eva Davis.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 100 yards below gage

CHANNEL AND CONTROL.—Bed composed of gravel. Control presumably of the same material; fairly permanent. One channel at all stages. Banks covered with heavy growth of brush and willows which may affect stage-discharge relation at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.63 feet at 11 a. m. July 9 (discharge, 335 second-feet); minimum discharge, no flow, on several days.

1913–1924: Maximum stage recorded, 9.6 feet at 12.30 p. m. May 21, 1921 (discharge, 868 second-feet); minimum discharge, no flow, on several days during 1919–1921 and 1924.

ICE.—Observations discontinued during winter.

DIVERSIONS.—Principal diversions above gage are the two Fort Hall canals near Blackfoot; several smaller diversions are also made near Blackfoot.

REGULATION.—Flow regulated by storage in the Blackfoot-Marsh Reservoir of the United States Office of Indian Affairs and by manipulation of canal head gates above station.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Gage read to hundredths daily. Daily discharge obtained by applying daily gage height to rating table. Records good.

Discharge measurements of Blackfoot River near Blackfoot, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 23	6.46	303	July 9	6.63	335	Sept. 14	4.40	5.01
May 31	5.22	62.3	July 18	4.13	[a] 1.5	Sept. 24	4.95	39.0
June 18	4.12	[a] 2.0	Sept. 9	4.34	3.65	Sept. 30	5.13	56.4

[a] Estimated.

Daily discharge, in second-feet, of Blackfoot River near Blackfoot, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	61	6	0	0	16	-------	0	14	0	5
2	-------	44	6	0	0	17	-------	44	2	0	5
3	-------	26	6	0	0	18	-------	2	1	0	1
4	-------	8	4	0	0	19	-------	0	2	2	4
5	-------	6	4	0	0	20	-------	1	4	0	1
6	-------	2	3	0	1	21	-------	0	1	0	13
7	-------	2	2	0	0	22	-------	0	3	1	44
8	-------	1	148	1	4	23	303	0	0	2	52
9	-------	6	290	1	4	24	308	0	0	1	42
10	-------	2	139	0	8	25	95	0	4	0	44
11	-------	1	5	0	16	26	11	0	2	0	36
12	-------	0	0	0	16	27	13	26	1	0	44
13	-------	0	5	0	5	28	13	48	2	1	44
14	-------	0	4	0	5	29	12	11	0	3	48
15	-------	0	3	0	5	30	125	9	0	2	56
						31	72	-------	0	2	-------

NOTE.—No record obtained Oct. 1 to May 22.

Monthly discharge of Blackfoot River near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 23–31	308	11	106	1,890
June	61	0	10.0	595
July	290	0	21.3	1,310
August	3	0	.52	32
September	56	0	16.8	1,000
The period				4,830

LITTLE BLACKFOOT RIVER AT HENRY, IDAHO

LOCATION.—In sec. 10, T. 6 S., R. 42 E., at bridge on Kirk ranch at Henry, Caribou County, a short distance above flow line of Blackfoot-Marsh Reservoir and 20 miles north of Soda Springs.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 24, 1914, to September 30, 1924.

GAGE.—Vertical staff attached to upstream side of bridge on left bank; read by Mrs. W. J. Chester. Prior to August 19, 1919, gage was vertical staff fastened to log across stream just below barn 40 feet above present gage; at different datum.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of rocks overlain with sand and gravel. Control is rock crest on an 8-foot falls, 20 feet below gage. Stage-discharge relation at times seriously affected by growth of aquatic vegetation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.30 feet at 6.30 p. m. April 24 (discharge determined from extension of rating curve, 206 second-feet); minimum stage, 0.72 foot on afternoons of January 24, 25, 28–31, and February 1–5 (discharge, 8.6 second-feet).

1914–1924: Maximum stage recorded, 3.5 feet at 8 p. m. April 19, 1914 (discharge determined from extension of rating curve, about 292 second-feet); minimum discharge, 6.9 second-feet January 8, 1919.

ICE.—Stage-discharge relation not affected by ice because of warm springs.

DIVERSIONS.—One small diversion above station and one below.

REGULATION.—No artificial regulation.

ACCURACY.—Stage-discharge relation affected by growth of aquatic vegetation. Standard rating curve well defined between 10 and 70 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table or by shifting-control method. Records fair.

Discharge measurements of Little Blackfoot River at Henry, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	0.88	12.3	July 12	0.84	11.4	July 25	0.90	15.4
Mar. 4	.77	10.3	Do	.84	9.82	Aug. 4	.88	14.8
May 9	.84	15.7	July 13	.84	12.5	Aug. 11	.86	11.7
June 6	.77	13.6	July 14	.82	10.8	Sept. 18	.85	10.8

NOTE.—River channel below gage gains in flow as shown by the following measurements made during the year after the reservoir had lowered sufficiently to measure below station: September 8, 19.4 second-feet 700 feet below gage; September 11, 37.9 second-feet one-fourth of a mile below gage; September 11, 32.3 second-feet one-fourth of a mile below gage; September 19, 37.1 second-feet 2,000 feet below gage.

Daily discharge, in second-feet, of Little Blackfoot River at Henry, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	13	15	9.3	9.0	10	11	26	13	10	12	9.7
2	14	12	15	9.3	9.0	9.7	11	26	13	9.3	13	9.7
3	14	13	15	9.3	8.6	10	11	24	13	12	14	9.7
4	14	12	15	9.7	9.0	10	11	26	13	9.7	14	9.7
5	13	13	15	9.7	9.0	10	11	22	13	12	14	9.7
6	14	13	15	10	9.3	10	11	18	13	14	14	9.7
7	14	13	14	9.3	9.3	10	11	18	14	16	13	9.7
8	13	12	14	9.3	9.7	10	11	17	14	14	13	9.7
9	14	13	12	9.3	10	10	11	15	14	13	12	10
10	14	12	12	9.3	9.3	11	12	15	14	12	12	10
11	14	13	12	9.3	9.3	12	12	15	13	12	12	9.7
12	14	13	12	9.3	9.3	12	13	14	13	12	12	9.7
13	14	12	12	9.3	10	12	20	14	13	12	12	9.7
14	13	13	12	9.3	9.7	11	17	14	13	11	12	9.7
15	13	13	12	9.3	10	11	14	14	12	11	12	9.7
16	14	13	11	9.3	10	11	14	14	12	11	12	9.7
17	13	13	11	9.3	10	11	13	14	12	12	13	9.7
18	14	13	12	9.3	10	11	13	13	12	12	13	10
19	13	14	12	9.3	10	11	14	14	12	12	13	11
20	13	14	12	9.3	10	11	15	14	12	16	12	10
21	12	14	12	9.3	10	11	71	13	11	17	12	10
22	12	14	12	9.3	10	11	118	14	11	16	12	9.7
23	13	14	12	9.3	10	11	146	13	11	16	12	9.7
24	13	14	12	9.0	10	11	146	13	11	16	10	10
25	12	15	12	8.6	9.7	11	104	14	11	16	10	9.7
26	13	15	11	9.3	9.7	11	75	13	10	16	10	9.3
27	13	15	11	9.3	10	11	60	13	11	16	10	9.3
28	13	15	11	9.0	10	11	75	19	10	14	10	9.7
29	13	15	11	9.0	10	11	43	18	10	14	10	9.3
30	13	15	10	8.6	-------	10	31	14	10	13	10	9.3
31	12	-------	10	9.0	-------	10	-------	14	-------	13	9.7	-------

NOTE.—Discharge interpolated Feb. 22–23 on account of missing gage heights.

Monthly discharge of Little Blackfoot River at Henry, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15	12	13.3	818
November	15	12	13.4	797
December	15	10	12.4	762
January	10	8.6	9.26	569
February	10	8.6	9.65	555
March	12	9.7	10.7	658
April	146	11	37.5	2,230
May	26	13	16.3	1,000
June	14	10	12.1	720
July	17	9.3	13.2	812
August	14	9.7	11.9	732
September	11	9.3	9.75	580
The year	146	8.6	14.1	10,200

MEADOW CREEK NEAR HENRY, IDAHO

LOCATION.—In sec. 3, T. 6 S., R. 42 E., half a mile above flow line of Blackfoot-Marsh Reservoir, three-fourths mile below Goose Lake or Pelican slough and 1½ miles northeast of Henry, Caribou County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 20, 1914, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on left bank; installed June 27, 1914; inspected by Mrs. W. J. Chester.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock and gravel. One channel at all stages. Banks very brushy. Control somewhat shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 2.63 feet at 7.30 p. m. May 4 (discharge, 55 second-feet); minimum stage, 0.95 foot June 29 (discharge, 2.6 second-feet). According to marks on banks, a considerably higher discharge occurred sometime prior to May 4.

1914–1924: Maximum stage recorded, 4.81 feet May 17, 1917 (discharge, 424 second-feet); minimum discharge probably somewhat less than 0.5 second-foot during July, 1919.

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Several small irrigation diversions above gage.

REGULATION.—None prior to June, 1924. After that time some water diverted from Grays Lake through Clark Cut into Meadow Creek above station.

ACCURACY.—Stage-discharge relation not permanent. Two well-defined rating curves used, applicable, respectively, October 4–13 and May 4 to September 11. Operation of water-stage recorder satisfactory except for short periods in October, May, and June. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records good except for estimated periods for which they are fair.

Discharge measurements of Meadow Creek near Henry, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	1.73	14.5	July 14	1.56	12.0	Aug. 13	1.12	3.84
May 8	2.22	32.4	Do	1.55	11.7	Aug. 19	1.22	5.10
June 5	1.32	6.83	July 23	1.21	5.43	Sept. 1	1.23	5.50
July 12	1.30	6.46	Aug. 4	1.12	4.13	Sept. 3	1.23	5.44
Do	1.30	6.82	Aug. 8	1.10	3.84	Sept. 5	1.33	7.90
July 13	1.30	6.68	Aug. 11	1.12	4.02	Sept. 18	[a] 1.72	6.08

[a] Gage read 1.72 feet before cleaning control and 1.26 feet after cleaning control.

Daily discharge, in second-feet, of Meadow Creek near Henry, Idaho, for the year ending September 30, 1924

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1	11	------	9.7	3.5	4.4	5.6	16	------	22	3.4	7.9	4.3	4.8
2	11	------	8.8	6.0	4.3	5.5	17	------		3.0	6.8	4.5	5.3
3	11	------	8.0	4.2	4.4	5.8	18	------	19	3.4	6.3	4.8	5.8
4	11	54	7.7	3.8	4.2	6.0	19	------	13	4.9	6.0	6.0	6.3
5	11	50	7.1	3.9	3.6	6.8	20	------	3.0	4.9	6.0	5.8	------
6	11	46	6.8	3.8	3.9	7.5	21	------	3.0	4.8	6.0	6.0	------
7	12	39	6.6	4.2	3.9	6.6	22	------	3.4	4.5	5.3	6.0	------
8	12	32	12	5.6	3.9	6.1	23	------	4.2	4.6	5.2	6.6	------
9	12	30	18	5.6	4.2	3.4	24	------	5.5	6.1	4.8	6.3	------
10	13	29		5.8	4.2	2.9	25	------	7.1	5.8	4.6	5.8	------
11	16	25	10	6.0	4.2	2.8	26	------	8.4	5.6	4.6	5.6	------
12	17	25		6.8	4.0	3.3	27	------	8.6	4.0	4.8	5.6	------
13	17			8.2	4.0	4.8	28	------			4.9	5.5	------
14	16	22	11	4.0	5.2		29	------	9.0	2.6	5.0	5.6	------
15	14		3.8	9.2	4.3	5.0	30	------		3.2	4.9	5.6	------
							31	------		------	4.5	5.3	------

NOTE.—Discharge estimated because of missing gage heights Oct. 1–3, 14, May 13–17, 28–31, June 10–14, and 27–28. Débris on control affected stage-discharge relation Sept. 12–19, for which discharge was determined from gage height correction curve based on discharge measurement made Sept. 18. Result of actual measurement used Oct. 15. Discharge interpolated May 7. Braced figures show mean discharge for periods indicated. No record Oct. 16 to May 3 and Sept. 20–30.

Monthly discharge of Meadow Creek near Henry, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–15	17	11	13.0	387
May 4–31	54	3.0	19.7	1,090
June		2.6	6.78	403
July	11	3.5	5.65	347
August	6.6	3.6	4.86	299
September 1–19	7.5	2.8	5.24	197

IDAHO (GOVERNMENT) CANAL NEAR FIRTH, IDAHO

LOCATION.—In sec. 13, T. 2 S., R. 36 E., 200 feet above concrete drop in canal a quarter of a mile below nearest highway bridge, 1½ miles below point where Sand Creek crosses canal, and 5 miles southeast of Firth, Bingham County.

RECORDS AVAILABLE.—March 29, 1914, to July 31, 1924, when station was discontinued.

GAGE.—Friez water-stage recorder on right bank, installed May 8, 1923; inspected by M. A. Jensen.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and fine gravel. Control is lip of concrete drop and should be permanent at all stages. Point of zero flow at about 1.40 feet gage height.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 6.20 feet at 9 a. m. May 19 (discharge, 866 second-feet). Canal dry July 22 and 27–31.

1914–1924: Maximum stage recorded, 6.20 feet at 9 a. m. May 19, 1924 (discharge, 866 second-feet). Canal dry many periods.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None.

REGULATION.—Flow partly regulated by Snake River head gates, about 12 miles above, and partly by gates at Sand Creek crossing, 1½ miles above.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory during period. Staff gage read once daily to hundredths January 1 to February 9. Daily discharge ascertained by applying mean daily gage height to rating table except as indicated in footnote to table of daily discharge. Records good.

Idaho (Government) Canal diverts water from left bank of Snake River in sec. 31, T. 1 N., R. 37 E., and discharges into Blackfoot River in sec. 24, T. 2 S., R. 36 E. The canal also receives water from Sand Creek 1½ miles above this station.

Discharge measurements of Idaho (Government) Canal near Firth, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	4.29	360	Mar. 5	[a] 2.56	59.2	June 2	5.08	566
Nov. 13	4.37	377	Apr. 28	4.69	439	June 13	4.53	408
Jan. 18	[a] 2.99	91.8						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Idaho (Government) Canal near Firth, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	259	144	146	33			87	553	566	540
2	228	139	165			60	83	490	553	579
3	229	146	171				86	477	540	566
4	245	153	176				107	465	540	314
5	240	130	172			59	114	429	540	28
6	340	83	141				102	394	553	19
7	247	82	130				119	278	527	17
8	269	64	133				196	257	566	294
9	297	140	118				226	309	566	553
10	330	350	110	61			188	293	502	453
11	340	350	87				150	330	514	372
12	372	350	62				143	340	453	372
13	361	372	23				133	309	418	350
14	340	383	27				147	340	441	340
15	299	406	67		62	57	187	453	465	213
16	297	406	97				198	477	502	15
17	299	406	114				170	502	527	9
18	309	394	120	92			168	661	514	9
19	309	383	115				159	806	477	8
20	299	383	94				152	689	441	10
21	293	394	119				166	704	429	20
22	293	406	107				201	718	418	0
23	309	383	96				299	821	394	21
24	309	372	94			55	441	762	383	41
25	309	383	85	73		65	490	620	406	37
26	330	406	69			79	514	566	477	1
27	319	418	55			97	465	553	540	0
28	309	394	51			107	453	579	553	0
29	295	394	50			106	477	647	540	0
30	299	350	52		-------	96	502	633	540	0
31	240	-------	35		-------	97	-------	566	-------	0

NOTE.—Discharge estimated on account of ice Jan. 2 to Mar. 23 on basis of discharge measurements, observer's notes, staff readings, and weather reports.

Monthly discharge of Idaho (Government) Canal near Firth, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	372	228	297	18,300
November	418	64	305	18,100
December	176	23	99.4	6,110
January	-------	-------	66.1	4,060
February	-------	-------	62.0	3,570
March	-------	-------	65.4	4,020
April	514	83	231	13,700
May	821	257	517	31,800
June	566	383	496	29,500
July	579	0	167	10,300
The period	-------	-------	-------	139,000

SAND CREEK NEAR FIRTH, IDAHO

LOCATION.—In sec. 7, T. 2 S., R. 37 E., 400 feet downstream from point where Idaho (Government) Canal crosses creek and 4 miles east of Firth, Bingham County.

RECORDS AVAILABLE.—December 21, 1916, to June 30, 1924, when station was discontinued.

GAGE.—Vertical staff on left bank, just above highway bridge; read by P. W. Wernette.

DISCHARGE MEASUREMENTS.—Made by wading, from highway bridge, or from small flume crossing creek 50 feet downstream.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and fine gravel; probably not permanent. Banks clean but subject to overflow at high stages. Point of zero flow, about −0.2 foot gage height; measured October 11, 1921.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during period, 31 second-feet at 7 a. m. May 25; creek dry April 13–24.

1916–1924: Maximum discharge recorded at gage-height 4.34 feet at 7 a. m. April 3, 1919 (discharge, 348 second-feet). Flow zero on days when regulation head gate was closed.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None between canal crossing and station.

REGULATION.—The Idaho (Government) Canal has been constructed directly across the channel of the creek above station. The canal receives the entire flow of the creek as tributary and regulates the flow returned to the creek channel below by means of head gates. Above this point numerous canal systems utilize the creek channel as a waste ditch.

ACCURACY.—Stage-discharge relation not permanent; affected by ice December 9 to March 31. Standard rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used April 29 to June 1. Records good for open-channel season; fair for ice-affected period.

Discharge measurements of Sand Creek near Firth, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	0.40	[a] 8.0	Mar. 5	[b] 1.54	22.9	June 2	0.60	20.7
Nov. 13	.70	21.8	Apr. 28	.50	9.19	June 13	.25	[a] 8.0
Jan. 18	[b] 1.90	20.3						

[a] Estimated. [b] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Sand Creek near Firth, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15	20	21				4	18	21
2	14	19	21				4	18	21
3	12	21	26			26	4	14	17
4	12	20	26				4	10	16
5	13	19	21			23	4	11	16
6	12	18	24				3	3	5
7	12	15	24				3	2	4
8	10	16	24				3	2	4
9	10	15		17			2	2	7
10	10	14					1	2	7
11	8	16					1	2	8
12	9	21					1	2	9
13	9	22						3	9
14	12	21						6	9
15	12	21			22			6	9
16	10	22						6	9
17	9	21						4	9
18	10	22		20			17	2	9
19	8	21						4	8
20	9	21	21					11	8
21	11	21						22	9
22	12	21						22	9
23	12	21						28	9
24	16	21						28	9
25	17	21		23			9	31	9
26	21	21					9	29	8
27	22	21					9	26	9
28	21	21					9	24	30
29	20	21					13	19	30
30	20	21					13	19	30
31	22							20	

NOTE—No flow Apr. 13-24.

Monthly discharge of Sand Creek near Firth, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	22	8	13.2	812
November	22	14	19.8	1,180
December	26	----	21.6	1,330
January	----	----	19.6	1,210
February	----	----	22.0	1,270
March	----	----	18.4	1,130
April	13	0	3.20	190
May	31	2	12.8	787
June	30	4	11.9	708
The period	----	----	----	8,620

FORT HALL UPPER CANAL NEAR BLACKFOOT, IDAHO

LOCATION.—In sec. 13, T. 3 S., R. 35 E., 500 feet below head gates, and 3½ miles southeast of Blackfoot, Bingham County.

RECORDS AVAILABLE.—May 8, 1912, to June 30, 1924, when station was discontinued.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed July 20, 1921; read by ditch rider and gate tender.

DISCHARGE MEASUREMENTS.—Made by wading or from suspension footbridge at gage.

CHANNEL AND CONTROL.—Concrete trapezoidal rating section.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period of record, 4.10 feet June 18 (discharge, 413 second-feet); canal dry during various periods in winter.

1912–1924; Maximum discharge recorded, 533 second-feet July 21, 1922. Canal dry during various periods in most winters.

ICE.—Observations discontinued during winter.

DIVERSIONS.—None above station or for several miles below.

REGULATION.—Flow regulated at head gates 500 feet above.

ACCURACY.—Stage-discharge relation not permanent, changes from year to year. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height from recorder graph to rating table. Records good.

Fort Hall Upper Canal diverts water from left bank of Blackfoot River in sec. 12, T. 3 S., R. 35 E., for irrigation on Fort Hall Indian Reservation.

The following discharge measurements were made:

April 30, 1924: Gage height, 1.49 feet; discharge, 77.0 second-feet.

June 10, 1924: Gage height, 3.73 feet; discharge, 364 second-feet.

June 24, 1924: Gage height, 3.65 feet; discharge, 347 second-feet.

Daily discharge, in second-feet, of Fort Hall Upper Canal near Blackfoot, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	Day	Oct.	Apr.	May	June
1	228		121	371	16		64	228	364
2	177		121	371	17		59	239	388
3	145		133	370	18		59	270	413
4	99		133	372	19		59	339	412
5	78		145	361	20		59	365	407
6			159	367	21		59	365	393
7			169	360	22		60	179	372
8		34	158	365	23		64	34	368
9		44	188	367	24		64	88	349
10		58	176	363	25		65	229	344
11		56	174	351	26		65	318	346
12		59	202	336	27		62	336	361
13		64	205	329	28		61	368	361
14		64	205	336	29		59	381	347
15		64	208	351	30		78	378	339
					31			371	

NOTE.—No record obtained from Oct. 6 to Apr. 7.

Monthly discharge of Fort Hall Upper Canal near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–5	228	78	145	1,440
April 8–30	78	34	60	2,740
May	381	34	225	13,800
June	413	329	364	21,700

FORT HALL LOWER CANAL NEAR BLACKFOOT, IDAHO

LOCATION.—In sec. 15, T. 3 S., R. 35 E., 200 feet below ford where road to head gates half a mile above crosses canal and 2½ miles southeast of Blackfoot, Bingham County.

RECORDS AVAILABLE.—May 15, 1912, to June 30, 1924, when station was discontinued.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed July 14, 1921; read by ditch rider for United States Office of Indian Affairs.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge at gage.

CHANNEL AND CONTROL.—Channel at gage is trapezoidal concrete rating section, at sides of which sand and silt have been deposited. Principal control is wooden check across canal about one-third mile below gage. Variations in amount of water carried in a large lateral that diverts between gage and check and growth of moss and weeds in canal caused several changes in stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.50 feet May 24 (discharge, 321 second-feet); canal dry during various periods in winter.

1912–1924: Maximum stage recorded, 4.51 feet at 6 a. m. July 9, 1922 (discharge, 544 second-feet). Canal reported dry on numerous dates.

ICE.—No record obtained during winter. Small quantities of water are run at times for use of stock, but during greater part of winter the head gates are closed.

DIVERSIONS.—None above gage; one large and one small lateral divert between gage and check that forms main control.

REGULATION.—Flow regulated at head gates half a mile above gage.

ACCURACY.—Stage-discharge relation not permanent; affected by variation in quantity of water diverted just below gage, by variable conditions at control, and by growth of aquatic vegetation. Standard rating curves fairly well defined. Shifting-control method used June 12. Partly estimated October 5. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height obtained from inspection of recorder graph to rating table except days when shifting-control method was used or estimate made. Records fair.

Fort Hall Lower Canal diverts water from left bank of Blackfoot River in sec. 11, T. 3 S., R. 35 E. Water is used for irrigation on Fort Hall Indian Reservation.

The following discharge measurements were made:

April 30, 1924: Gage height, 1.70 feet; discharge, 87.9 second-feet.

June 10, 1924: Gage height, 2.46 feet; discharge, 171 second-feet.

June 24, 1924: Gage height, 2.14 feet; discharge, 182 second-feet.

Daily discharge, in second-feet, of Fort Hall Lower Canal near Blackfoot, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	Day	Oct.	Apr.	May	June
1	140		84	236	16		30	136	171
2	120		101	244	17		25	163	240
3	62		118	222	18		8	220	245
4	60		127	215	19		0	244	225
5	21		126	179	20		27	237	210
6			124	190	21		27	210	182
7			137	171	22		28	241	188
8			84	189	23		28	305	186
9			134	197	24		28	321	183
10			93	179	25		26	299	204
11			95	177	26		27	231	229
12		24	94	153	27		27	205	229
13		24	92	114	28		44	254	221
14		29	96	135	29		63	270	194
15		29	121	159	30		79	246	207
					31			236	

NOTE.—No record obtained Oct. 6 to Apr. 11.

Monthly discharge of Fort Hall Lower Canal near Blackfoot, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–5	140	21	80.6	799
April 12–30	79	0	30.2	1,140
May	321	84	176	10,800
June	245	114	196	11,700

MUD LAKE NEAR TERRETON, IDAHO

LOCATION.—In NW. ¼ sec. 3, T. 6 N., R. 35 E., at C. O. Magill ranch, in backwater of Camas Creek, 6 miles northeast of Terreton, Jefferson County, 7 miles southwest of Hamer, and 15 miles northwest of Roberts.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 4, 1921, to September 30, 1924.

GAGE.—Vertical staff installed April 14, 1923, on bridge pier near left bank of Camas Creek; read by C. O. Magill. Elevation of zero of gage is 4,775.33 feet above mean sea level.

EXTREMES OF CONTENTS.—Maximum stage recorded during year, 9.07 feet May 4 (contents, 60,000 acre-feet); minimum stage, 3.55 feet September 3 (contents 14,300 acre-feet).

1921–1924: Maximum stage recorded, 9.20 feet May 5, 1923 (contents, 61,600 acre-feet); minimum stage and contents September 3, 1924.

ICE.—Complete ice cover during winter.

DIVERSIONS.—Considerable water diverted from tributaries to Mud Lake. During the year approximately 38,500 acre-feet were diverted from the lake (includes Rays Lake, Sandhole Lake, and all other ponds and sloughs which are affected by backwater when Mud Lake is at high stage) to irrigate about 12,500 acres.

REGULATION.—None except as the supply in the lake is affected by pumping operations.

Daily contents, in acre-feet, of Mud Lake near Terreton, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23,100	28,300	34,700	39,300	44,200	49,400	55,400	59,300	44,900	30,100	20,900	14,400
2	23,100	28,700	34,700	39,500	44,300	49,800	55,600	59,300	44,300	29,300	20,600	14,400
3	23,100	29,100	34,700	39,600	44,500	49,800	55,700	59,600	43,800	28,900	20,300	14,300
4	23,100	29,100	34,700	39,700	44,800	50,200	56,100	60,000	43,200	28,600	20,100	14,400
5	23,100	29,800	34,700	39,900	45,000	50,400	56,200	59,300	42,700	28,200	19,500	14,400
6	23,100	29,800	35,200	40,000	45,100	50,400	56,700	58,700	42,100	27,800	19,000	14,600
7	23,700	29,800	35,600	40,100	45,300	50,400	56,900	58,300	41,600	27,200	18,700	14,600
8	23,700	29,800	35,600	40,300	45,500	50,400	57,300	58,300	41,100	27,100	18,400	14,700
9	23,700	29,800	35,600	40,400	45,700	51,000	57,300	57,400	40,600	26,800	17,900	15,100
10	24,000	30,600	35,600	40,600	45,800	51,100	57,400	57,400	40,600	26,400	17,800	14,600
11	24,000	30,600	35,600	40,800	46,000	51,300	57,600	56,900	40,100	26,100	17,400	15,000
12	24,300	30,600	35,600	40,900	46,100	51,300	57,900	56,300	39,600	25,400	17,300	14,500
13	24,600	30,600	35,600	41,100	46,400	51,400	57,900	55,700	39,100	25,400	17,400	14,400
14	24,900	31,400	35,600	41,300	46,600	51,600	58,200	55,200	38,600	25,100	16,900	14,400
15	24,900	31,400	36,000	41,400	46,800	51,600	58,300	55,100	38,100	24,800	16,600	14,400
16	25,200	31,400	36,000	41,600	47,000	51,700	58,600	54,400	37,700	24,500	16,600	14,400
17	25,600	31,400	36,500	41,800	47,100	51,900	58,600	53,800	37,200	24,200	16,600	14,700
18	25,600	32,200	36,500	41,900	47,300	52,200	58,800	53,200	36,800	23,900	16,600	14,800
19	25,900	32,200	36,900	42,100	47,400	52,400	59,000	52,600	36,300	23,300	16,400	14,600
20	25,900	32,200	36,900	42,400	47,700	52,600	59,200	52,000	35,900	23,300	16,100	14,900
21	26,200	32,200	37,400	42,500	47,800	52,800	59,300	50,800	35,400	23,600	16,000	15,100
22	26,200	32,200	37,400	42,700	48,000	53,100	59,300	50,500	35,000	23,300	15,900	15,100
23	26,600	32,200	37,400	42,800	48,100	53,500	59,100	49,600	34,100	23,000	15,900	15,100
24	26,600	32,200	37,900	42,900	48,400	53,600	59,100	49,000	33,700	23,000	15,900	15,100
25	26,600	33,000	38,300	43,100	48,600	54,100	59,000	49,000	33,300	22,600	15,600	15,100
26	26,900	33,000	38,300	43,200	48,900	54,100	59,100	47,800	32,400	22,400	15,400	14,900
27	27,300	33,900	38,800	43,400	48,900	54,300	59,300	47,200	32,000	22,100	15,400	14,900
28	27,300	33,900	38,800	43,500	49,200	54,400	59,100	46,600	31,600	22,000	15,100	14,900
29	27,600	33,900	38,900	43,800	49,200	54,400	59,100	46,000	30,800	21,500	14,900	14,900
30	27,600	34,300	39,000	43,900	-------	54,700	59,300	45,500	30,400	21,200	14,600	14,900
31	28,300	-------	39,100	44,100	-------	55,100	-------	44,900	-------	21,100	14,400	-------

NOTE.—Action of ice caused error in readings from Magill gage Dec. 1 to Feb. 24, and action of wind caused error Apr. 26; contents determined from gage-height graph based on readings from gage at First Owsley intake.

CAMAS CREEK NEAR DUBOIS, IDAHO

LOCATION.—In NE. ¼ SE. ¼ sec. 13, T. 11 N., R. 38 E., 2 miles north of Lone Tree Reservoir, 2 miles downstream from 18-mile shearing corral, 5½ miles south of Idmon and 19 miles northeast of Dubois, Clark County. Station is 26 miles north (upstream) of gage on Camas Creek near Camas.

DRAINAGE AREA.—216 square miles (measured on United States Geological Survey map of Mud Lake Basin).

RECORDS AVAILABLE.—April 11, 1921, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on right bank; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made at high stages from wagon bridge 2 miles above gage at which point during extremely high stages water flows in a flood channel to the left of main channel and unites above the gage. Measured by wading at low and medium stages 300 feet above gage.

CHANNEL AND CONTROL.—Bed composed of lava boulders and gravel; practically permanent. Banks fairly high and brushy; right bank subject to overflow. Control well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period from water-stage recorder, 2.02 feet April 16 (discharge, 138 second-feet); minimum stage, 0.65 foot from 4 p. m. June 5 to 9 a. m. June 6 (discharge, 8.5 second-feet). Maximum discharge probably occurred about April 25 during period of no record.

1921–1924: Maximum stage recorded, 5.75 feet probably on May 21, 1922 (discharge, 1,550 second-feet); minimum stage and discharge occurred in 1924.

ICE.—Stage-discharge relation seriously affected by ice. Records discontinued during winter.

DIVERSIONS.—Two stock-watering ditches of Wood Live Stock Co. are the principal diversions above station. In addition a number of small irrigation ditches divert water from tributaries above.

REGULATION.—Some water stored in Frazier Reservoir, which has a capacity of 2,000 to 3,000 acre-feet, on West Camas Creek, and released during low-water period for use above gaging station.

ACCURACY.—Stage-discharge relation changed during winter. Rating curve applicable after April 14, well-defined between 10 and 200 second-feet. Operation of water-stage recorder not wholly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records good except for interpolated and estimated periods for which they are fair.

Discharge measurements of Camas Creek near Dubois, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	1.40	46.6	May 30	0.78	13.6	July 4	0.77	13.0
May 5	1.68	89.0	June 19	.82	14.7	Sept. 7	.86	18.1
May 13	1.07	30.6						

Daily discharge, in second-feet, of Camas Creek near Dubois, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	------	------	11	10	13		16	138	25	18	20		11
2	------	------	11	9.9	13		17	------	31	14	20		11
3	------	------	11	9.9	15	16	18	------	28	13	18		12
4	------	------	9.9	13	14		19	------	27	14	21		13
5	------	79	8.8	15	12		20	------	26	16	26		27
6	------	72	8.8	16	12		21	------	23	15	28		24
7	------	68	9.9	17	14	17	22	------	22	13	25		20
8	------	66	9.5	21	13	15	23	------	22	12	23	17	18
9	------	59	9.5	23	13	13	24	------	22	12	22		17
10	------	52	12	21	14	12	25	------	23	12	21		19
11	------	44	11	18	14	17	26	------	20	11	19		21
12	------	37	10	18	16	16	27	------	18	12	20		20
13	------	30	11	20	16	15	28	------	18	11	18		20
14	------	29	11	22	17	13	29	------	14	11	16		21
15	133	25	18	21	17	11	30	------	13	11	15		17
							31	------	12	------	14		------

NOTE.—Discharge estimated because of missing gage heights Aug. 16 to Sept 6; interpolated May 9–12. Braced figures give mean discharge for periods indicated.

Monthly discharge of Camas Creek near Dubois, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 5–31	79	12	33.5	1,790
June	18	8.8	11.9	708
July	28	9.9	18.7	1,150
August	----------	12	15.6	959
September	27	11	16.5	982
The period	----------	----------	----------	5,590

CAMAS CREEK NEAR CAMAS, IDAHO

LOCATION.—In NE. ¼ sec. 34, T. 9 N., R. 36 E., Clark County, one-fourth mile south of C. J. Thompson ranch, 1 mile east of Oregon Short Line Railroad, and 5 miles northeast of Camas, Jefferson County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 1, 1921, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed November 30, 1921; inspected by William McCall.

DISCHARGE MEASUREMENTS.—Made from wagon bridge 500 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava covered in places by gravel. Control formed by lava boulders; well defined. Banks high; one channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, from water-stage recorder, 1.77 feet April 26 (discharge, 98 second-feet); minimum stage, −0.06 foot from 10 p. m. July 5 to 2 a. m. July 6 (discharge, 2.6 second-feet).

1921–1924: Maximum stage recorded, 4.82 feet at 9.30 a. m. May 22, 1922 (discharge, 645 second-feet); minimum stage and discharge occurred in 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—A number of irrigation and stock-water diversions above station

REGULATION.—Flow past station affected to some extent by losses through lava crevices in Lone Tree Reservoir, 24 miles upstream. Gates in dam not regulated during year.

ACCURACY.—Stage-discharge relation changed slightly at low stages during ice-affected period. Two well-defined rating curves used; one applicable October 1 to December 5, the other applicable after April 11. Operation of water-stage recorder satisfactory during open-channel period except for short periods on account of clock trouble. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspecting recorder graph except as noted in footnote to table of daily discharge. Records good except for estimated periods for which they are poor.

COOPERATION.—Gage-height record furnished by Camas Mutual Irrigation District.

Discharge measurements of Camas Creek near Camas, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	1.18	43.7	May 5	1.25	49.2	June 20	0.11	4.01
Oct. 27	1.02	29.8	May 12	.61	14.3	July 5	−.05	2.89
Apr. 14	1.49	65.2	May 30	.29	6.09	Sept. 8	.22	5.38

Daily discharge, in second-feet, of Camas Creek near Camas, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	35	22					69	5.8	4.9	7.8	4.6
2	26	35	20					57	5.6	4.6	6.6	3.8
3	22	36	25					53	4.6	4.4	7.2	3.3
4	22	26	29					50	3.1	3.8	7.2	4.2
5	23	29	34					47	3.1	2.7	8.0	4.8
6	23	34		14				44	3.0	2.9	8.7	5.7
7	24	35					25	42	2.9	8.9	7.4	5.4
8	24	36						37	2.9	9.4	7.0	5.3
9	24	37						34	3.0	9.9	8.0	5.1
10	26	37						22	3.2	10	8.2	5.6
11	26	35						19	3.2	11	6.8	5.4
12	26	36					39	14	3.1	11	6.6	5.5
13	26	36					65	13	3.6	12	6.5	5.6
14	27	34					69	9.2	4.4	12	6.5	5.7
15	38	31			15		70	6.8	3.6	13	6.4	5.3
16	49	29				12	68	6.4	3.4	13	6.0	6.4
17	41	26					70	6.1	4.2	12	5.7	4.7
18	37	24					70	5.8	4.8	11	5.6	4.6
19	36	24	20				69	5.7	4.4	10	6.3	4.4
20	35	32					68	5.7	4.0	12	8.0	4.7
21	36	30		16			70	6.4	3.8	13	7.0	4.9
22	37	35					76	6.6	3.4	13	6.6	8.0
23	38	29					83	6.6	3.1	12	8.9	9.4
24	41	36					91	6.6	3.2	12	9.7	7.2
25	38	32					97	6.6	4.1	13	8.2	6.8
26	35	33					98	6.4	4.9	12	8.2	6.8
27	32	27					96	6.6	4.6	11	7.2	6.3
28	32	28					91	6.6	5.0	10	6.8	7.4
29	33	27					88	6.4	5.6	10	6.3	7.0
30	33	35			-------		83	6.4	5.7	9.7	5.6	
31	34	-------			-------		-------	6.1	-------	8.2	4.9	-------

NOTE.—Discharge estimated on account of ice and missing gage heights Dec. 6 to Apr. 11 and Sept. 29–30. Discharge interpolated Oct. 5–6, 13, 19, 25–26, 29–31, Nov. 1–2, 7–9, 15–16, Dec. 3–4, June 22, July 8–12, 22–23, Aug. 13–14, and Sept. 12.

Monthly discharge of Camas Creek near Camas, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	49	22	31.3	1,920
November	37	24	32.0	1,900
December			21.0	1,290
January			15.4	947
February			15.0	863
March			12.0	738
April	98		57.9	3,450
May	69	5.7	19.9	1,220
June	5.8	2.9	3.98	237
July	13	2.7	9.75	600
August	9.7	4.9	7.09	436
September	9.4	3.3	5.70	339
The year	98	2.7	19.2	13,900

BEAVER CREEK AT DUBOIS, IDAHO

LOCATION.—In NW. ¼ sec. 21, T. 10 N., R. 36 E., at Ed F. Palmer ranch, one-half mile north of Dubois, Clark County. Locally this stream is often called Dry Creek.

DRAINAGE AREA.—220 square miles (measured on United States Geological Survey map of Mud Lake Basin).

RECORDS AVAILABLE.—April 15, 1921, to September 30, 1924.

GAGE.—Vertical staff attached to cottonwood tree on left bank, 25 feet below wagon bridge; read by John W. and W. L. Miller.

DISCHARGE MEASUREMENTS.—Made from wagon bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock and gravel. Control fairly well defined but occasionally fouled by drift. Banks steep and brushy. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 260 second-feet April 13. Channel reported dry August 3 to September 30.

1921–1924: Maximum stage recorded, 4.9 feet May 20, 1922 (discharge, 637 second-feet); stream reported dry August 3 to September 30, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—A few small diversions several miles upstream. After high water practically entire flow is diverted below gage for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves fairly well defined. Gage read to hundredths once daily except during winter. Daily discharge ascertained by applying daily gage height to rating table except as indicated in footnote to table of daily discharge. Records good after April 12; fair for October and November; others poor.

Discharge measurements of Beaver Creek at Dubois, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	1.24	25.6	Apr. 16	1.15	30.8	May 31	0.73	11.6
Oct. 26	[a] 1.17	25.8	May 5	1.36	42.4	June 20	.65	7.09
Mar. 8	[b] 1.38	12.6	May 13	1.00	22.6	July 3	.19	.58

[a] Gage read 1.22 feet before control was cleaned.
[b] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Beaver Creek at Dubois, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	15	23						56	9.7	1.0	0.2
2	16	25						56	9.0	.5	.1
3	15	25					40	52	8.3	.6	
4	18	25						51	7.7	.5	
5	20	25				15		43	5.8	.6	
6		23					100	44	4.9	6.3	
7		22						46	5.8	.7	
8		21				13		39	7.7	5.3	
9		20						32	9.0	2.6	
10		20					210	29	8.3	1.2	
11		18						26	7.7	.6	
12		18						24	6.3	.5	
13		19					260	23	5.8	.6	
14		19					227	18	4.4	1.3	
15	20	19			20	17	67	16	3.9	.7	
16		20	16	14			34	14	3.9	.5	
17		21					56	15	2.3	.3	
18		17					37	15	2.6	.1	
19		17					44	14	3.3	.1	
20		20					52	12	8.0	.6	
21		21					62	11	5.8	1.2	
22		20					103	12	3.9	1.3	
23		17					93	12	2.9	.6	
24	26	22					67	11	2.6	1.2	
25	20	17				25	33	11	2.3	1.2	
26	26	12					67	9.7	2.1	1.0	
27	17	12					46	9.7	1.7	.7	
28	19	17					46	9.7	1.5	.5	
29	19	12					46	11	1.3	.9	
30	22	12					51	11	1.2	.5	
31	22							11		.3	

NOTE.—Discharge estimated on account of doubtful gage-height record, Oct 6–23, 25; on account of ice and missing gage heights Nov. 30 to Mar. 7, 9–31, Apr. 1–12. Results of actual discharge measurements used Oct. 24 and Mar. 8. Creek dry Aug. 3 to Sept. 30. Braced figures give mean discharge for periods indicated.

Monthly discharge of Beaver Creek at Dubois, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October		15	19.8	1,220
November	25	12	19.3	1,150
December			16.0	984
January			14.0	861
February			20.0	1,150
March			19.3	1,190
April	260	33	96.7	5,750
May	56	9.7	24.0	1,480
June	9.7	1.2	4.99	297
July	6.3	.1	1.10	67.6
August	.2	0	.15	.6
September				0
The year				14,200

BEAVER CREEK AT CAMAS, IDAHO

LOCATION.—In NE. ¼ sec. 21, T. 8 N., R. 36 E., three-eighths mile above confluence with Camas Creek and one-fourth mile northwest of Oregon Short Line Railroad depot at Camas, Jefferson County. Locally this stream is generally known as Dry Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 25, 1921, to September 30, 1924.

GAGE.—Vertical staff attached to highway bridge on right bank; read by William McCall.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Bed composed of gravel. Control is a fairly well defined gravel riffle 250 feet below gage; fairly permanent. Banks subject to overflow at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.42 feet 7 and 8.10 a. m. April 14 (discharge. 107 second-feet). Stream reported dry except during parts of April and May.

1921–1924: Maximum stage recorded, 2.94 feet June 1, 1921 (discharge, 153 second-feet). No flow past station except during April, May, and sometimes June of each year.

ICE.—Channel is dry during winter.

DIVERSIONS.—After high water, entire flow is diverted for irrigation about 14 miles above, near Dubois.

REGULATION.—None, except as flow is affected by irrigation diversions above.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve fairly well defined below 100 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by Camas Mutual Irrigation District.

The following discharge measurements were made:

April 14, 1924: Gage height, 2.27 feet; discharge, 95.0 second-feet.

April 16, 1924: Gage height, 1.44 feet; discharge, 27.9 second-feet.

Daily discharge, in second-feet, of Beaver Creek at Camas, Idaho, for the year ending September 30, 1924

Day	Apr.	May	Day	Apr.	May	Day	Apr.	May
1		3	11	48		21	25	
2		1	12	60		22	33	
3			13	84		23	41	
4			14	102		24	36	
5	0		15	88		25	25	
					0			0
6		0	16	25		26	13	
7			17	27		27	11	
8			18	27		28	12	
9	10		19	27		29	5.0	
10	38		20	21		30	3.8	
						31		

NOTE.—Discharge estimated Apr. 9 and May 2.

Monthly discharge of Beaver Creek at Camas, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	102	0	25.4	1,510
May	3.0	0	.13	8.0
The period				1,520

LITTLE LOST RIVER AT RAYMOND RANCH, NEAR HOWE, IDAHO

LOCATION.—In sec. 29, T. 10 N., R. 27 E., at Raymond ranch, 1½ miles above Wet Creek and 32 miles northwest of Howe, Butte County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 13, 1921, to September 26, 1924, when station was discontinued. From August 28, 1910, to October 3, 1913, records were collected at station on Little Lost River near Clyde, Idaho, 2½ miles upstream.

GAGE.—Prior to April, 1924, vertical staff on left bank 100 feet above wagon bridge; thereafter, vertical staff on left bank just below bridge and 145 feet below original location; at different datum. Gages read by Mrs. Nelle Raymond.

DISCHARGE MEASUREMENTS.—Made from wagon bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and sand; subject to change at high stages. Control fairly well defined at low stages but affected by choking of channel below at high stages. Banks overflowed during extremely high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.00 feet at 7.30 a. m. May 19 (discharge, 103 second-feet); minimum stage, 0.92 foot at 8 p. m. July 22 (discharge, 20 second-feet). A lower discharge probably occurred during winter when no record was obtained.

1921–1924: Maximum stage, 4.33 feet, obtained from high-water marks on gage post, occurred sometime between June 7 and 29, 1921; discharge not determined. Minimum discharge estimated, 14 second-feet, January 16–20, 1922 (stage-discharge relation affected by ice).

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Several small ranch diversions above and numerous diversions for irrigation below. Water that is stored in the Blaine County Investment Co.'s reservoir on Dry Creek, a tributary that enters Little Lost River some distance above gage, is diverted during irrigation season through a pipe line and open ditch over small divide into Corral Creek, thence into Wet Creek through which water flows into Little Lost River below station and is used for irrigation on the company's project about 30 miles downstream.

REGULATION.—None except as affected by diversions above.

ACCURACY.—Stage-discharge relation not permanent. October 1 to December 15 curve parallel to rating curve which is well defined between 30 and 140 second-feet was used; April 18 to September 26 rating curve which is well defined between 15 and 80 second-feet was used. Gage read to hundredths usually twice daily. Daily discharge determined by applying daily gage height to rating table except December 10 and 11 and May 12–27 during which latter period stage-discharge relation was affected by choking channel conditions below and a backwater curve based upon measurement was used. Records good except for May, for which they are fair.

Discharge measurements of Little Lost River at Raymond ranch, near Howe, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 18	1.14	38.0	May 28	1.60	79.0	July 2	0.94	21.2
May 16	1.93	98.1	June 22	1.18	44.1	Sept. 12	1.00	25.5

Daily discharge, in second-feet, of Little Lost River at Raymond ranch, near Howe, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	44	35	29		43	69	26	24	24
2	44	38	26		52	65	22	27	24
3	43	36	24		63	64	25	25	23
4	44	43	26		65	66	24	25	23
5	49	35	27		66	63	26	27	24
6	47	35	25		63	64	28	28	26
7	57	33	25		57	65	30	28	25
8	53	33	26		57	74	29	28	24
9	53	41	27		65	74	29	27	24
10	57	38	26		68	61	28	27	24
11	53	44			79	59	28	27	24
12	53	39	26		84	56	29	26	25
13	49	35	22		89	52	31	26	24
14	53	33	22		89	45	28	26	24
15	53	38	22		94	43	26	28	24
16	53	30			94	42	26	28	24
17	46	30			99	41	26	25	25
18	35	27		39	99	41	27	26	27
19	36	35		38	99	43	30	27	28
20	38	32		39	94	47	32	27	28
21	43	27		43	94	43	28	26	28
22	43	29		47	94	39	21	25	28
23	44	30		45	94	34	22	24	28
24	43	29		34	84	33	23	24	27
25	43	33		29	84	35	24	22	28
26	44	32		31	84	38	24	23	31
27	41	30		38	79	38	24	23	
28	49	29		41	79	35	24	23	
29	30	29		41	79	33	24	23	
30	30	29		41	74	29	24	23	
31	32				74		24	23	

NOTE.—Discharge estimated Dec. 10–11 on account of uncertain gage heights.

Monthly discharge of Little Lost River at Raymond ranch, near Howe, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	57	30	45.2	2,780
November	44	27	33.6	2,000
December 1–15		22	25.3	753
April 18–30	47	29	38.9	1,000
May	99	43	78.6	4,830
June	74	29	49.7	2,960
July	32	21	26.2	1,610
August	28	22	25.5	1,570
September 1–26	31	23	25.5	1,320

LITTLE LOST RIVER NEAR HOWE, IDAHO

LOCATION.—In SE. ¼ sec. 11, T. 6 N., R. 28 E., a quarter of a mile above diversion dam of Blaine County Investment Co., 7 miles from Berenice, and 8 miles northwest of Howe, Butte County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 27, 1921, to September 30, 1924.

GAGE.—Vertical staff on left bank; read by Nephi W. Hansen.

DISCHARGE MEASUREMENTS.—Made by wading below gage.

CHANNEL AND CONTROL.—Bed composed of cobbles and gravel; subject to cutting by swift velocity. No well-defined control. One channel at all stages. Banks fairly high.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 1.43 feet May 29 (discharge, 141 second-feet); minimum stage, 0.65 foot August 27, 28, 30, and September 4 (discharge, 45 second-feet). Probably not actual extremes.

1921–1924: Maximum stage recorded, 1.64 feet June 14, 1923 (discharge, 176 second-feet); minimum stage, 0.23 foot April 15 and 20, 1923 (discharge, 13 second-feet).

ICE.—Observations discontinued during winter.

DIVERSIONS.—Numerous irrigation diversions above and below station.

REGULATION.—Water is stored in small reservoir of Blaine County Investment Co. on Dry Creek, about 40 miles upstream, and during irrigation season is released and carried through Corral and Wet Creeks to Little Lost River and diverted into the company's main canal one-quarter mile below gage.

ACCURACY.—Stage-discharge relation changed during winter. Two well-defined curves used, the first applicable October 1–15 and the second applicable April 16 to September 30. Gage read to hundredths nearly every day. Daily discharge determined by applying daily gage height to rating table except as indicated in footnote to table of daily discharge. Records good.

COOPERATION.—Gage-height record furnished by water master for Little Lost River.

Discharge measurements of Little Lost River near Howe, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 12	[a] 0.98	77.8	May 16	1.10	95.7	July 2	0.78	58.3
Mar. 24	[a] .93	68.6	May 29	1.43	139	Sept. 12	.70	50.2
Apr. 18	.99	79.8	June 22	.89	70.5			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Little Lost River near Howe, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	126		69	128	64	58	46
2	113		64	114	59	57	47
3	106		74	121	59	57	46
4	100		83	114	70	57	45
5	94		78	114	68	58	47
6	86		83	121	63	58	49
7	90		73	124	66	58	49
8	94		73	128	70	59	49
9			71	128	67	57	49
10			75	121	64	57	49
11	100		78	121	64	57	50
12			83	114	68	57	50
13			88	108	70	53	51
14			90	79	66	50	52
15	106		92	78	61	49	53
16		89	95	78	63	50	54
17		86	102	79	62	49	52
18		82	102	78	61	50	57
19		82	102	78	64	48	58
20		82	102	77	68	51	59
21		77	102	71	70	52	59
22		95	95	70	58	50	60
23		95	102	66	60	50	61
24		77	108	64	59	48	58
25		73	114	64	57	46	55
26		73	121	61	56	46	53
27		73	128	58	57	45	52
28		72	134	55	58	45	52
29		72	141	54	57	45	52
30		69	134	67	58	45	52
31			134		58	46	

NOTE.—Discharge estimated on account of missing gage heights Oct. 9–14; interpolated Oct. 3–4, 7, Apr. 17, 19, May 3, 14–15, 18–19, 24, 28, June 7, 16, 18, 26–27, July 7, 14, 19, Aug. 1, 3, 7, 24, 29, 31, Sept. 5, 7–9, 11, 13–14, 19–22, and 28. Braced figure gives mean discharge for period indicated.

Monthly discharge of Little Lost River near Howe, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–15	126	86	101	3,000
April 16–30	95	69	79.8	2,370
May	141	64	96.5	5,930
June	128	54	91.1	5,420
July	70	56	62.7	3,860
August	59	45	51.9	3,190
September	61	45	52.2	3,110

BLAINE COUNTY INVESTMENT CO.'S CANAL NEAR HOWE, IDAHO

LOCATION.—In sec. 11, T. 6 N., R. 28 E., 65 feet below head gates, 6 miles northwest of Berenice, and 8 miles northwest of Howe, Butte County.

RECORDS AVAILABLE.—April 11 to September 30, 1924.

GAGE.—Vertical staff on left bank; read by N. W. Hansen.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of gravel, silt, and fine sand; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 1.48 feet May 29 (discharge, 79 second-feet); minimum stage, 0.52 foot May 2 and 3 (discharge, 2.1 second-feet).

DIVERSIONS.—None above gage.

REGULATION.—Flow regulated by gates in diversion dam above.

ACCURACY.—Stage-discharge relation permanent during period. Rating curve well defined below 40 second-feet and fairly well defined above. Gage read to hundredths once daily. Daily discharge determined by applying daily gage height to rating table except as noted in footnote to table of daily discharge. Records good.

COOPERATION.—Gage-height record furnished by water master for Little Lost River.

Blaine County Investment Co.'s canal diverts water from right bank of Little Lost River in sec. 11, T. 6 N., R. 28 E., and is used for irrigation on lands in project of Blaine County Investment Co.

Discharge measurements of Blaine County Investment Co.'s canal near Howe, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 18	0.55	2.52	May 28	1.45	78.0	Sept. 12	0.76	8.12
May 16	1.07	27.7	June 22	.60	3.05	Do	.64	4.12
May 28	1.46	71.7	July 2	.62	3.69			

Daily discharge, in second-feet, of Blaine County Investment Co.'s canal near Howe, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	------	5.3	67	3.9	11	4.2	16	2.5	28	14	10	4.2	4.2
2	------	2.1	51	3.6	11	4.2	17	2.4	30	13	10	4.2	4.2
3	------	2.1	53	4.2	11	4.2	18	2.4	30	13	10	4.2	4.2
4	------	17	57	8.1	10	4.2	19	2.8	30	9.7	10	4.2	4.2
5	------	8.9	53	15	9.3	4.2	20	6.6	33	6.6	10	4.2	4.2
6	------	14	53	15	9.3	4.2	21	12	29	3.1	14	4.2	4.2
7	------	8.9	73	15	9.3	4.2	22	23	29	3.9	13	4.2	4.2
8	------	6.6	73	13	8.4	4.2	23	29	32	3.9	10	4.2	4.2
9	------	6.6	74	12	7.0	4.2	24	23	51	3.9	10	4.2	4.4
10	------	8.9	59	12	7.0	4.2	25	17	54	5.0	10	4.2	5.3
11	2.8	8.9	60	10	7.0	4.2	26	17	56	3.9	10	4.2	5.3
12	2.8	14	53	11	7.0	5.8	27	17	73	3.9	10	4.2	5.3
13	2.7	17	38	13	7.0	4.2	28	17	74	3.9	10	4.2	5.3
14	2.6	17	8.1	13	7.0	4.2	29	5.8	79	3.9	10	4.2	5.3
15	2.6	28	7.4	11	6.1	4.2	30	5.3	73	3.9	11	4.2	4.2
							31	------	67	------	11	4.2	------

NOTE.—Discharge estimated Apr. 28, May 14, 18–19, June 6, 8, July 7–8, 14–15, 22–23, Aug. 3–4, 7–8, 15, and Sept. 11–14; based on changes in diversion gates, as furnished by water master. Discharge interpolated Apr. 12–17, July 29, Aug. 1, 24, 31, Sept. 5, 7–8, 19–22.

Monthly discharge of Blaine County Investment Co.'s canal near Howe, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 11–30	29	2.4	9.82	390
May	79	2.1	30.1	1,850
June	74	3.1	29.2	1,740
July	15	3.6	10.6	652
August	11	4.2	6.28	386
September	5.8	4.2	4.44	264
The period				5,280

BIG LOST RIVER AT HOWELL RANCH, NEAR CHILLY, IDAHO

LOCATION.—In sec. 30, T. 8 N., R. 21 E., at Howell ranch, 12 miles southwest of Chilly, Custer County, and 30 miles northwest of Mackay, the nearest railroad point.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 25, 1904, to August 31, 1906; July 1, 1907, to November 14, 1914; May 11, 1920, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank installed June 17, 1920; inspected by Mrs. John Howell.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and cobbles. Channel straight. Banks covered with brush and subject to overflow at high stages. Control composed of gravel and cobbles; may shift at high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.13 feet at 2 a. m. May 17 (discharge, 932 second-feet); minimum stage, 1.25 feet 4 to 7 a. m. September 1 (discharge, 53 second-feet).

1904–1914; 1920–1924: Maximum stage recorded, 5.94 feet from 4 to 8 a. m. June 12, 1921 (discharge, 3,500 second-feet); minimum discharge, 35 second-feet April 2, 1909.

ICE.—Stage-discharge relation seriously affected by ice. Records discontinued during winter.

DIVERSIONS.—Several small diversions above. Hammerly ditch, capacity about 20 second-feet, diverts one-fourth mile below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed October 1–15 and during winter. Two well-defined rating curves were used, the first October 16–21 and the second after April 7. Operation of water-stage recorder satisfactory except for short periods at which times staff gage was read to hundredths once daily. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method October 1–15. During periods water-stage recorder was operated, mean daily gage height determined by inspection of recorder graph. Records good except for April for which they are fair.

COOPERATION.—Water commissioner for Big Lost River furnished results of discharge measurements made by him.

Discharge measurements of Big Lost River at Howell ranch, near Chilly, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.75	140	Apr. 14	1.95	230	May 29	2.31	363
Dec. 6	[a] 2.80	75.7	Apr. 21	1.66	143	June 8	2.16	305
Jan. 28	[b]	87.2	May 15	2.91	753	June 25	2.00	262
Mar. 6	[b]	80.9	May 18	2.91	746	July 17	1.56	117
Mar. 14	[b]	70.3	May 25	2.74	626	Sept. 14	1.34	68.9

[a] Stage-discharge relation affected by ice. [b] Gage frozen in.

Daily discharge, in second-feet, of Big Lost River at Howell ranch, near Chilly, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	142		211	348	211	84	55
2	142		272	402	215	78	56
3	142		352	463	218	74	56
4	148	115	379	447	215	74	58
5	168		303	421	242	72	63
6	168		264	393	236	72	76
7	184		261	340	218	72	70
8	174	127	272	311	192	74	80
9	165	141	335	283	173	76	95
10	162	155	416	268	164	72	84
11	162	135	502	257	164	72	76
12	156	173	602	250	164	72	74
13	150	291	680	257	158	72	72
14	150	239	748	307	138	74	69
15	148	144	748	295	124	72	69
16	148	114	788	268	117	74	67
17	142	117	820	250	114	70	67
18	139	114	764	268	110	69	69
19	142	124	756	246	107	69	70
20	139	133	764	225	120	72	78
21	139	149	688	211	122	70	78
22		225	644	218	110	69	74
23		228	563	225	102	67	72
24		167	519	239	100	63	70
25		144	602	239	100	63	74
26	135	141	569	242	100	61	78
27		149	463	246	98	59	76
28		161	416	228	98	59	74
29		164	379	215	95	59	72
30		182	348	211	91	61	72
31			344		87	55	

NOTE.—Discharge estimated on account of ice Oct. 22–31; on account of missing gage heights Apr. 1–7. Braced figures give mean discharge for periods indicated.

Monthly discharge of Big Lost River at Howell ranch, near Chilly, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	184	----------	147	9,040
April	291	----------	151	8,980
May	820	211	509	31,300
June	463	211	286	17,000
July	242	87	145	8,920
August	84	55	69.4	4,270
September	95	55	71.5	4,250

BIG LOST RIVER (EAST CHANNEL) ABOVE MACKAY RESERVOIR, NEAR MACKAY, IDAHO

LOCATION.—In sec. 32, T. 8 N., R. 23 E., 3 miles above Mackay Dam, above flow line of reservoir, and 7½ miles above Mackay, Custer County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 9, 1919, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; inspected by employees of Utah Construction Co.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge 20 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; shifts occasionally. One channel at low and medium stages; right bank overflowed at high stages. Control fairly well defined.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year, 1.24 feet May 20 (discharge, 179 second-feet); channel reported dry at times during year.

1919–1924: Maximum mean daily stage recorded, 3.37 feet June 16, 1922 (discharge, 999 second-feet); no flow April 27 to May 16, 1920, in winter of 1923, and for long periods in 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None between gage and reservoir. Several canals divert water in vicinity of Chilly above "dry beds" which extend from a few miles above gage to a point about 15 miles above.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Two well-defined rating curves and one parallel curve were used, applicable, respectively, October 1 to December 7, May 16–26 and June 15 to September 30, and May 31 to June 8. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except as indicated in footnote to table of daily discharge; shifting-control method used May 27–30 and June 9–14. Records fair.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

The record at this station represents a part of the natural flow of Big Lost River, and, taken in conjunction with the record for west channel of Big Lost River and with the record for east and west channels of Warm Spring Creek, will show the entire flow of Big Lost River at this point. The combined flow of Big Lost River and Warm Spring Creek represents practically the entire surface flow at this point into Mackay Reservoir located a short distance below. For record at station on west channel of river and on east and west channels of Warm Spring Creek see pages 105, 113, and 115, respectively. For combined flow of both channels of Big Lost River and both channels of Warm Spring Creek, see page 107.

Discharge measurements of Big Lost River (east channel) above Mackay Reservoir, near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	0.18	24.7	Apr. 21		0	June 23	−0.20	4.59
Dec. 7	−.07	7.45	May 17	1.12	155	July 1	−.18	4.30
Jan. 10	[a] 1.24	[b] 2.0	May 24	.97	132	July 23	−.23	3.61
Mar. 13		0	June 4	.68	103	Sept. 13		[b] .10
Mar. 23		0	June 18	−.06	9.81	Sept. 14	−.33	[b] 1.0

[a] Stage-discharge relation affected by ice.
[b] Estimated.

Daily discharge, in second-feet, of Big Lost River (east channel) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	20			1.0				83	5.2	1.5	
2	22	20							84	4.8	2.7	
3	22	19				0.5			104	4.2	5.2	
4	24	19	9.0						104	4.5	2.7	
5	24	18		2.0					102	4.8	1.5	
6	24	18				.5			100	5.2	1.5	
7	27	17	7.6					0	90	5.2	2.1	0
8	32	17				.5			83	4.8	2.7	
9	32	17							69	4.8	2.7	
10	31	17		2.0					44	4.8	2.1	
11	30	17			1.0				32	5.2	2.1	
12	29	17							29	5.2	1.5	
13	27	16							23	5.6	1.5	.1
14	27	16							18	4.5	1.8	1.0
15	27	15		2.0			0	21	13	4.2		
16	27	15						102	11	3.9		
17	26	15						148	9.6	4.2		
18	26	15						169	9.6	4.4		
19	25	14						175	8.0	4.5	1.0	2.0
20	24	13	5.0					179	7.0	4.6		
21	24	12				0		175	5.9	4.8		
22	24	12						166	5.6	4.2		
23	24	12						149	5.6	4.5		
24	24							130	5.9	3.9		
25	24	12			.5			130	5.6	3.6		3.0
26	24			1.0				135	5.9	3.3		2.7
27	24	11						125	5.6	3.0	0	2.7
28	24							116	5.2	2.4		2.7
29	23	11						110	5.2	2.1		2.7
30	22	11						100	5.2	1.5		2.4
31	21							88		1.5		

NOTE.—Discharge estimated largely by comparison with flow of west channel of Big Lost River Nov. 24–28, 30 Dec. 1–6, 8–31, Jan. 1–9, 11–31, Feb. 2 to May 14, Aug. 15 to Sept. 12, 15–24; part-day estimate made May 15. Estimated discharge measurements used Jan. 10, Feb. 1, Sept. 13, 14. Discharge interpolated July 18–20. Channel practically dry Mar. 11 to May 14 and Aug. 25 to Sept. 12. Braced figures give mean discharge for periods indicated.

Monthly discharge of Big Lost River (east channel) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	32	21	25.4	1,560
November	20		15.0	893
December			5.86	360
January			1.65	101
February			.84	48
March			.16	9.8
April	0	0	0	0
May	179	0	71.5	4,400
June	104	5.2	36.0	2,140
July	5.6	1.5	4.17	256
August	5.2	0	1.34	82.4
September		0	1.24	73.8
The year	179	0	13.7	9,920

BIG LOST RIVER (WEST CHANNEL) ABOVE MACKAY RESERVOIR, NEAR MACKAY, IDAHO

LOCATION.—In sec. 5, T. 7 N., R. 23 E., 3 miles above Mackay Dam, above flow line of reservoir, and 7½ miles above Mackay, Custer County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 9, 1919, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on left bank; installed May 4, 1920; inspected by employees of Utah Construction Co.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge just above gage or by wading.

CHANNEL AND CONTROL.—Bed composed chiefly of gravel. Channel winding. Banks subject to overflow at extremely high stages. Control of gravel, fairly well defined, but subject to change.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year, 1.65 feet May 20 and 21 (discharge, 141 second-feet); minimum stage, 0.97 foot April 1–20 (discharge, 22 second-feet).

1919–1924: Maximum discharge estimated, 1,200 second-feet from high-water mark on gage (4.45 feet) during period June 5–16, 1921, when water-stage recorder was not operating. Minimum discharge from actual discharge measurement, 18.3 second-feet May 1, 1920.

ICE.—Ice formation negligible on account of spring inflow above.

DIVERSIONS.—None between station and reservoir. Several canals divert water above the "dry beds" which extend from a point a few miles above station to a point about 15 miles above near Chilly. No surface flow passes the "dry beds" except during fairly high stages.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly May 16 and 17 and June 10–15. Well-defined rating curve and a curve parallel thereto were used. Operation of water-stage recorder satisfactory except for several short periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except as noted in footnote to daily-discharge table; shifting-control method used May 16, 17, and June 10–15. Records good.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

The record at this station represents a part of the natural flow of Big Lost River and taken in conjunction with record for east channel of Big Lost River

and with the record for east and west channels of Warm Spring Creek will show the entire surface flow of Big Lost River at this point. The combined flow of Big Lost River and Warm Spring Creek represents practically the entire flow at this point into Mackay Reservoir located a short distance below. For record at station on east channel of river and on east and west channels of Warm Spring Creek see pages 103, 113, and 115, respectively. For combined flow of both channels of Big Lost River and Warm Spring Creek see page 107.

Discharge measurements of Big Lost River (west channel) above Mackay Reservoir, near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	1.24	52.0	Mar. 23	1.00	24.5	June 18	1.02	26.7
Dec. 7	1.10	37.8	Apr. 21	.98	23.3	June 23	1.00	25.8
Jan. 10	1.05	31.3	May 9	.99	22.8	July 1	1.01	27.7
Feb. 1	1.03	29.6	May 18	1.62	132	July 23	1.03	29.6
Mar. 6	1.00	23.9	May 24	1.56	124	Sept. 13	1.02	26.4
Mar. 13	1.00	26.1	June 4	1.36	81.2			

Daily discharge, in second-feet, of Big Lost River (west channel) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	51	38	32	29	25	22	23	74	26	26	25
2	56	51	38	32	29	25	22	23	72	26	27	25
3	56	50	38	32	29	25	22	23	62	26	29	25
4	59	50	37	32	29	25	22	23	83	26	29	26
5	62	50	37	32	29	25	22	23	83	26	30	26
6	61	48	37	32	29	25	22	23	91	26	30	26
7	71	48	37	31	29	25	22	23	94	26	31	27
8	69	47	37	31	29	25	22	23	91	26	30	27
9	67	47	36	31	29	25	22	24	80	26	29	28
10	64	47	35	31	29	25	22	24	54	26	29	28
11	62	47	35	31	29	25	22	24	47	27	29	29
12	61	47	35	31	29	25	22	24	45	31	29	28
13	61	45	35	31	29	25	22	24	41	32	29	27
14	59	45	35	31	29	25	22	24	37	30	29	27
15	59	45	35	31	29	25	22	32	33	29	27	27
16	59	45	36	31	29	25	22	65	31	30	29	27
17	57	44	36	31	28	25	22	106	29	30	29	30
18	57	44	36	31	28	25	22	130	27	31	31	32
19	57	44	36	31	27	25	22	137	27	30	31	33
20	57	43	36	30	27	25	22	141	27	31	32	36
21	57	43	36	30	27	25	23	141	26	31	33	36
22	57	43	35	29	27	25	23	137	26	30	35	35
23	57	43	34	29	27	25	23	130	25	29	33	35
24	57	43	34	29	26	25	23	122	25	29	33	36
25	56	43	33	29	26	24	23	118	25	29	32	37
26	56	43	32	29	25	23	23	118	26	27	31	37
27	56	41	32	29	25	23	23	112	26	27	31	36
28	56	41	32	29	25	23	23	104	26	26	27	36
29	54	40	32	29	25	23	23	94	26	26	26	36
30	53	40	32	29	-------	23	23	85	26	27	23	36
31	53	-------	32	29	-------	23	-------	78	-------	27	24	-------

NOTE.—Discharge interpolated Dec. 21–26, 28–31, Jan. 1–2, 4–9, 11–16, 18–23, 25–30, Feb. 2–6, 8–13, 15–20, 22–27, 29, Mar. 1–5, 7–12, 14–19, 21–22, 24–26, June 27–30, Sept. 6–10, and 12.

Monthly discharge of Big Lost River (west channel) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	71	53	58.8	3,620
November	51	40	45.3	2,700
December	38	32	35.1	2,160
January	32	29	30.5	1,880
February	29	25	27.8	1,600
March	25	23	24.6	1,510
April	23	22	22.3	1,330
May	141	23	70.3	4,320
June	94	25	46.2	2,750
July	32	26	28.0	1,720
August	35	23	29.5	1,810
September	37	25	30.6	1,820
The year	141	22	37.5	27,200

Combined daily discharge, in second-feet, of Big Lost River (east and west channels) and Warm Spring Creek (east and west channels) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	203	211	178	167	158	150	138	106	296	122	122	116
2	204	213	177	167	158	150	138	104	289	122	125	117
3	204	209	176	167	158	148	138	104	304	122	129	117
4	212	209	173	166	158	148	139	103	326	122	127	118
5	215	208	173	167	157	148	139	101	325	124	126	118
6	216	205	175	167	157	148	140	101	350	126	126	118
7	232	203	174	166	157	148	138	101	344	126	128	119
8	237	200	169	166	159	146	134	100	333	124	128	119
9	238	200	168	166	159	146	132	101	298	124	127	121
10	237	200	166	166	159	146	131	101	218	124	126	120
11	235	199	167	166	159	145	131	104	187	125	126	122
12	231	198	168	166	159	145	130	106	176	130	126	119
13	228	194	170	165	159	145	131	109	163	134	126	118
14	225	195	171	164	159	145	130	111	151	130	126	119
15	225	194	170	163	159	145	128	149	141	127	123	119
16	230	194	171	163	159	145	124	293	137	127	125	119
17	225	192	172	164	158	145	124	417	133	127	125	122
18	223	192	172	163	157	145	124	477	128	128	126	124
19	222	190	172	163	156	145	122	503	127	128	126	125
20	222	188	172	162	156	145	120	513	125	131	127	129
21	225	187	171	162	156	147	119	508	123	132	129	129
22	226	188	170	161	156	146	117	493	123	129	132	127
23	226	188	167	161	156	144	116	463	122	128	129	129
24	227	189	170	161	154	144	112	430	122	127	128	130
25	228	189	169	159	152	144	111	422	122	128	125	134
26	228	188	168	159	150	142	109	429	123	125	123	134
27	228	183	170	159	150	142	109	406	123	125	123	134
28	225	182	171	158	150	142	108	383	123	122	119	134
29	221	183	171	158	150	142	108	360	123	122	118	136
30	218	183	170	158	-------	140	106	334	123	124	113	135
31	216	-------	170	158	-------	140	-------	310	-------	124	114	-------

Combined monthly discharge of Big Lost River (east and west channels) and Warm Spring Creek (east and west channels) above Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	238	203	224	13,800
November	213	182	195	11,600
December	178	166	171	10,500
January	167	158	163	10,000
February	159	150	156	8,970
March	150	140	145	8,920
April	140	106	125	7,440
May	513	100	269	16,500
June	350	122	193	11,500
July	134	122	126	7,750
August	132	113	125	7,690
September	136	116	124	7,380
The year	513	100	168	122,000

MACKAY RESERVOIR NEAR MACKAY, IDAHO

LOCATION.—In sec. 12, T. 7 N., R. 23 E., 4 miles northwest of Mackay, Custer County.

RECORDS AVAILABLE.—January 1, 1919, to September 30, 1924.

GAGE.—Vertical staff on head-gate tower near right end of dam; read to hundredths once daily by employees of Utah Construction Co. Datum of gage 6,000 feet above sea level.

EXTREMES OF CONTENTS.—Maximum stage recorded during year, 54.85 feet April 24–27 (contents, 29,850 acre-feet); minimum stage, 6.95 feet August 5 (water surface below bottom of outlet tunnel).

1919–1924: Maximum stage recorded, 63.62 feet June 26, 1922 (contents, 40,500 acre-feet); minimum contents, water surface below bottom of outlet tunnel August 1 to October 19, 1919, August 5, 17–27, 31, September 1–5, 12–14, and 18, 1920, and August 5, 1924 (minimum stage during these periods, 6.6 feet August 24 to September 2, 1919.

COOPERATION.—Gage-height record furnished by Utah Construction Co. through water commissioner for Big Lost River.

Stored water from this reservoir is used for irrigation of land near Arco, under the Utah Construction Co.'s Carey Act project. About 5,200 acres are under cultivation at present, but this area is subject to change from year to year. The reservoir is formed by a gravity earth dam 750 feet in length at crest. The crest is 75 feet above bottom of concrete core wall below which there is 15 feet of sheet piling to prevent excessive seepage. Crest of spillway is 10 feet below crest of dam and 55 feet above bottom of outlet tunnel. Elevation of bottom of outlet tunnel corresponds to 7.0 feet on gage, at which stage the usable storage is zero, although there is about 125 acre-feet of water in the reservoir, which is not available for use. Elevation of crest of spillway corresponds to 62.0 feet on gage, at which stage the capacity of the reservoir is 38,400 acre-feet, about 2,400 acres of land being submerged. As the foundation of the dam is on very porous material and the core wall does not penetrate to bedrock, heavy seepage loss occurs, and at times during low water the inflow is not sufficient to counteract this loss plus the loss sustained by evaporation. Thus the stage of water in the reservoir occasionally falls below the bottom of the outlet tunnel. A study of the stream-flow records at this point indicates that most of the seepage from the reservoir reappears in the river channel above the gaging station at the "Narrows"

1½ miles downstream, where favorable rock structure forces underground water to the surface. Additional water also reappears, part of which is probably side drainage while part evidently flows underground at the places where the surface flow into the reservoir is measured and thence through the reservoir. Seepage loss will probably diminish as silting takes place, although the amount of water thus lost has not varied appreciably in the last few years.

Daily contents, in acre-feet, of Mackay Reservoir near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16,870	3,909	10,560	17,560	22,450	25,880	28,880	29,800	20,390	11,360	180	42
2	16,870	3,417	10,820	17,730	22,590	25,990	28,980	29,800	19,990	11,310	108	25
3	16,930	3,030	11,140	17,840	22,680	26,160	29,090	29,800	19,650	11,250	78	17
4	16,960	2,675	11,390	17,950	22,780	26,300	29,200	29,800	19,270	11,210	17	17
5	16,960	2,378	11,650	18,130	22,880	26,400	29,320	29,740	18,870	11,080	0	17
6	17,010	2,584	11,880	18,310	22,970	26,510	29,430	29,690	18,520	10,540	47	20
7	17,200	2,981	12,090	18,480	23,130	26,570	29,490	29,660	18,140	9,791	103	30
8	17,450	3,365	12,310	18,650	23,260	26,620	29,550	29,640	17,770	9,084	100	33
9	17,640	3,771	12,570	18,830	23,360	26,720	29,600	29,620	17,330	8,278	92	42
10	17,810	4,134	12,810	19,000	23,520	26,820	29,660	29,600	16,820	7,503	97	58
11	17,700	4,480	13,030	19,170	23,660	26,930	29,680	29,590	16,310	6,811	58	67
12	17,450	4,900	13,250	19,350	23,820	27,040	29,680	29,580	15,830	6,190	36	67
13	16,930	5,233	13,470	19,520	23,950	27,140	29,680	29,330	15,400	5,679	25	67
14	16,130	5,546	13,690	19,700	24,050	27,250	29,720	28,690	14,910	5,164	8	67
15	15,210	5,881	13,920	19,870	24,210	27,360	29,740	28,270	14,370	4,643	0	67
16	14,440	6,190	14,140	20,050	24,350	27,420	29,740	27,940	13,690	4,078	0	67
17	13,770	6,527	14,370	20,180	24,450	27,470	29,740	27,640	13,020	3,693	0	67
18	13,250	6,853	14,600	20,300	24,550	27,570	29,740	27,230	12,420	3,280	0	67
19	12,620	7,136	14,820	20,430	24,650	27,640	29,770	26,670	11,900	2,851	8	67
20	12,000	7,448	15,060	20,570	24,750	27,690	29,800	26,140	11,600	2,524	25	67
21	11,480	7,745	15,260	20,770	24,920	27,780	29,800	25,550	11,600	2,172	50	67
22	10,870	8,031	15,460	20,960	25,060	27,890	29,800	24,970	11,540	1,692	67	75
23	10,160	8,325	15,680	21,110	25,220	28,000	29,830	24,420	11,480	1,238	67	83
24	9,326	8,624	15,910	21,220	25,370	28,110	29,850	23,850	11,460	782	67	86
25	8,468	8,929	16,090	21,350	25,430	28,220	29,850	23,270	11,460	536	67	92
26	7,688	9,201	16,280	21,460	25,480	28,330	29,850	22,760	11,450	405	67	97
27	6,943	9,490	16,480	21,600	25,570	28,440	29,850	22,280	11,450	302	64	100
28	6,225	9,810	16,690	21,790	25,680	28,550	29,820	21,760	11,430	252	58	100
29	5,607	10,090	16,890	21,980	25,780	28,650	29,800	21,390	11,420	223	53	100
30	4,990	10,310	17,120	22,170	-------	28,760	29,800	21,080	11,410	204	50	100
31	4,423	-------	17,360	22,300	-------	28,830	-------	20,770	-------	198	50	-------

BIG LOST RIVER BELOW MACKAY RESERVOIR, NEAR MACKAY, IDAHO

LOCATION.—In sec. 18, T. 7 N., R. 24 E., 450 feet below Oleson suspension bridge, half a mile above heading of Streeter ditch, 1½ miles below Mackay Dam, and 2½ miles above Mackay, Custer County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 1, 1903, to August 31, 1906; May 12, 1912, to March 15, 1915; January 1, 1919, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed May 4, 1920; inspected by employees of Utah Construction Co. From April 29, 1913, to March 15, 1915, records were obtained 1 mile below present site. Streeter ditch diverts water between these two points.

DISCHARGE MEASUREMENTS.—Made from cable just below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; shifts occasionally. Moss growth at times affects stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year, 3.02 feet October 14 (discharge, 812 second-feet); minimum stage, 1.25 feet noon to midnight November 6 (discharge, 46 second-feet).

1903–1906; 1912–1915; 1919–1924: Maximum stage recorded, 5.79 feet June 10, 1921 (discharge, 2,990 second-feet); minimum stage, 0.36 foot March 26–28, 1914 (discharge, 41 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Numerous diversions above Mackay Reservoir but Sharp ditch is only diversion between gage and reservoir.

REGULATION.—Flow past gage regulated by operation of gates in Mackay Dam. Prior to 1917 regulation from storage above was practically negligible.

ACCURACY.—Stage-discharge relation changed slightly October 15–28 and September 1–9, for which shifting-control methods were used. For remainder of year three well-defined rating curves were used. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspecting recorder graph, except for periods for which shifting-control methods were used. Records good.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

Discharge measurements of Big Lost River below Mackay Reservoir, near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.73	594	Apr. 19	1.52	112	June 30	1.63	148
Nov. 20	1.32	68.2	May 9	1.54	116	July 9	2.55	511
Dec. 8	1.39	77.0	May 17	2.56	542	July 23	2.28	379
Jan. 10	1.46	102	May 23	2.92	721	Aug. 28	1.57	130
Feb. 1	1.50	107	June 4	2.52	514	Sept. 13	1.58	143
Mar. 14	1.54	122	June 18	2.36	429			
Mar. 22	1.54	121	June 24	1.65	160			

Daily discharge, in second-feet, of Big Lost River below Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	529	71	95	109	118	127	115	459	149	171	133
2	211	498	71	95	109	118	127	115	464	149	181	133
3	215	473	71	95	109	118	127	115	473	149	178	136
4	219	444	74	95	109	118	127	121	498	149	161	136
5	219	420	74	95	109	118	130	127	509	152	139	136
6	219	205	76	95	109	118	130	133	503	435	133	136
7	219	48	78	95	109	118	130	121	514	493	155	136
8	219	48	78	98	109	118	130	121	519	519	158	136
9	215	50	78	98	109	118	127	121	509	519	149	136
10	211	50	78	98	109	118	124	118	478	514	149	139
11	292	50	78	98	109	118	115	118	439	509	165	139
12	396	52	81	98	109	121	115	121	406	493	161	139
13	510	54	81	98	109	121	115	238	388	454	155	139
14	812	54	81	98	109	121	115	420	406	435	152	142
15	763	54	81	101	109	121	115	354	430	416	152	142
16	703	56	81	101	109	121	115	430	503	384	149	142
17	644	56	81	101	112	121	115	529	488	354	145	142
18	570	56	84	101	112	121	115	652	425	346	145	145
19	598	58	84	103	112	121	115	780	411	350	142	149
20	632	61	84	103	112	121	115	780	284	350	133	149
21	558	64	84	103	112	121	115	780	158	371	136	149
22	570	66	84	103	112	121	115	780	155	376	139	149
23	632	66	87	103	112	124	115	761	155	388	139	152
24	715	68	87	103	112	124	121	730	155	367	139	155
25	721	68	89	103	115	124	121	712	152	291	139	158
26	715	68	89	103	115	124	118	694	149	236	136	158
27	685	68	89	106	115	124	118	670	149	204	133	161
28	650	71	92	106	115	124	118	612	149	178	130	161
29	623	71	92	106	118	127	118	535	149	161	130	161
30	594	71	92	106	-------	127	118	468	149	152	130	161
31	562	-------	92	106	-------	127	-------	454	-------	155	130	-------

Monthly discharge of Big Lost River below Mackay Reservoir, near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	812	211	487	29,900
November	529	48	133	7,910
December	92	71	82.0	5,040
January	106	95	100	6,150
February	118	109	111	6,380
March	127	118	121	7,440
April	130	115	120	7,140
May	780	115	414	25,500
June	519	149	354	21,100
July	519	149	329	20,200
August	181	130	147	9,040
September	161	133	145	8,630
The year	812	48	213	154,000

BIG LOST RIVER NEAR MOORE, IDAHO

LOCATION.—In sec. 4, T. 5 N., R. 26 E., at Grant Walburn ranch, 1 mile above Moore Canal diversion, 4 miles north of Moore, Butte County, and 11 miles north of Arco.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—November 18, 1919, to September 30, 1924.

GAGE.—Vertical staff on right bank; read by L. G. Walburn.

DISCHARGE MEASUREMENTS.—Made from cable 20 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of clean gravel. Banks low and likely to be overflowed at high stages. Channel winding. Control formed by well-defined gravel bar; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.48 feet October 25 (discharge, 576 second-feet); minimum stage, 0.47 foot September 4 (discharge, 41 second-feet).

1920–1924: Maximum discharge, estimated about 2,330 second-feet June 14, 1921, based on high-water marks on gage; minimum stage, 0.39 foot December 17, 1920 (discharge, 19 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Numerous canal diversions above station. Moore Canal diverts 1 mile below.

REGULATION.—Flow regulated by operation of head gates at Mackay Dam and by canal diversions above station.

ACCURACY.—Stage-discharge relation changed several times during year. Standard rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying to rating table daily gage height using shifting-control method. Records good.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

Discharge measurements of Big Lost River near Moore, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	1.76	355	Mar. 23	0.66	64.5	May 26	0.97	139
Dec. 4	.84	106	Apr. 19	.74	84.6	June 23	.72	84.4
Jan. 12	.71	85.2	May 10	.54	44.4	July 1	.66	72.0
Feb. 16	.76	90.8	May 17	.71	78.4	Sept. 14	.48	41.6
Mar. 13	.70	72.7						

Daily discharge, in second-feet, of Big Lost River near Moore, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	331	94	79	95	90	67	43	111	72	63	43
2	118	302	97	74	92	88	67	42	116	72	67	43
3	131	302	116	82	97	88	67	41	114	69	69	42
4	124	260	99	79	88	84	67	42	107	70	63	41
5	126	246	97	74	92	82	67	43	111	70	61	46
6	146	181	105	69	92	82	70	45	107	72	56	44
7	169	158	101	72	90	81	77	43	111	82	52	43
8	158	158	92	74	92	82	92	43	122	79	59	43
9	169	158	101	77	92	79	101	44	118	74	57	44
10	181	146	92	82	92	77	94	44	111	66	59	43
11	169	146	88	86	94	76	94	42	97	63	59	45
12	246	146	92	86	94	76	92	42	82	61	61	43
13	274	146	86	84	92	72	105	43	79	61	60	42
14	451	139	90	79	94	77	124	54	69	61	59	42
15	513	135	92	84	92	79	101	46	64	69	57	42
16	512	135	99	90	92	79	90	50	76	70	56	42
17	482	131	101	88	94	76	84	76	81	67	53	43
18	482	124	99	84	94	77	81	116	92	64	52	44
19	451	122	103	84	94	76	84	144	84	53	51	46
20	513	120	99	81	95	66	77	169	70	53	52	50
21	482	118	107	84	94	66	79	158	99	50	52	48
22	482	116	81	84	94	64	81	139	84	53	53	48
23	513	116	84	82	94	64	70	169	82	56	54	45
24	544	118	99	84	94	64	67	146	81	59	54	45
25	576	120	101	86	94	63	63	142	82	64	49	45
26	420	120	101	88	92	61	61	137	82	63	49	48
27	405	120	101	90	92	59	59	146	81	74	48	48
28	390	111	88	94	92	64	54	169	79	69	45	48
29	375	114	97	94	90	66	51	158	77	66	45	46
30	360	97	88	95	-------	84	44	139	77	64	45	48
31	331	-------	82	97	-------	69	-------	120	-------	67	44	-------

NOTE.—Discharge interpolated Oct. 29, Nov. 26, June 25, and July 22.

Monthly discharge of Big Lost River near Moore, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	576	118	336	20,700
November	331	97	158	9,400
December	116	81	95.9	5,900
January	97	69	83.4	5,130
February	97	88	92.9	5,340
March	90	59	74.5	4,580
April	124	44	77.7	4,620
May	169	41	91.5	5,630
June	122	64	91.5	5,440
July	82	50	65.6	4,030
August	69	44	55.0	3,380
September	50	41	44.7	2,660
The year	576	41	106	76,800

WARM SPRING CREEK (EAST CHANNEL) NEAR MACKAY, IDAHO

LOCATION.—In NE. ¼ sec. 5, T. 7 N., R. 23 E., 500 feet above junction with west channel of Warm Spring Creek, 3½ miles above Mackay Dam, and 7½ miles northwest of Mackay, Custer County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1919, to September 30, 1924.

GAGE.—Vertical staff on right bank; read by employees of Utah Construction Co.

DISCHARGE MEASUREMENTS.—Made from suspension bridge 125 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. One channel at all stages. Banks steep and covered with brush. Channel congested by growth of moss during summer.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 52 second-feet May 19 and 20; minimum discharge, 13 second-feet May 5–10. Actual maximum and minimum flow may have occurred on days of no record. 1919–1924: Maximum discharge recorded, 225 second-feet June 15, 1922; minimum discharge, 9 second-feet May 8, 9, 13, 14, 1919, and May 18–21, 1920.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Natural flow practically all diverted during irrigation season. Flow during summer represents return flow from irrigation above. Entire flow stored in Mackay Reservoir 3½ miles below.

REGULATION.—None.

ACCURACY.—Stage-discharge relation affected by growth of moss and by brush along banks. Well-defined rating curve used February 28 to March 27; shifting-control method used during remainder of year. Gage read to hundredths once or twice a week. Daily discharge ascertained by applying gage height to rating table and by interpolation for days when gage was not read. Records fair chiefly because of infrequent gage readings and because of changing channel conditions.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

The record at this station represents a portion of the natural flow of Big Lost River and taken in conjunction with the record for west channel of Warm Spring Creek and east and west channels of Big Lost River will show the entire surface flow of Big Lost River which enters Mackay Reservoir a short distance below. For record from station on west channel of Warm Spring Creek and east and west channels of Big Lost River see pages 115, 103, and 105, respectively. For record of combined flow of both channels of Big Lost River and Warm Spring Creek see page 107.

Discharge measurements of Warm Spring Creek (east channel) near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	1.64	29.8	Mar. 23	1.45	22.1	June 18	1.39	16.6
Dec. 7	1.54	24.3	Apr. 21	1.38	15.5	June 23	1.38	16.5
Jan. 10	1.52	27.1	May 9	1.35	13.0	July 1	1.39	16.4
Feb. 1	1.50	25.3	May 18	1.74	47.3	July 23	1.43	17.5
Mar. 6	1.47	21.2	May 24	1.74	46.9	Sept. 13	1.45	16.0
Mar. 13	1.46	21.1	June 4	1.62	32.8			

Daily discharge, in second-feet, of Warm Spring Creek (east channel) near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	28	25	27	25	22	20	14	33	16	18	16
2	25	28	25	27	25	22	20	14	31	16.	18	16
3	25	28	24	27	25	22	20	14	32	16	18	16
4	25	28	24	27	25	22	21	14	33	16	18	16
5	25	28	24	27	24	22	21	13	31	17	18	16
6	26	28	24	27	24	22	22	13	32	18	18	16
7	27	28	24	27	24	22	21	13	33	18	18	17
8	27	28	24	27	24	22	20	13	34	17	18	17
9	28	28	24	27	24	22	19	13	35	17	18	18
10	29	28	24	27	24	22	18	13	30	16	18	18
11	29	27	25	27	24	22	19	14	25	16	18	18
12	29	27	25	27	24	22	19	14	20	17	18	17
13	29	26	25	26	24	22	20	15	20	18	18	16
14	29	26	25	26	24	22	19	16	19	18	18	16
15	28	26	25	25	24	22	18	16	18	18	18	16
16	28	26	25	25	24	22	17	26	18	17	18	16
17	28	26	25	25	24	22	16	37	17	17	18	16
18	28	26	25	25	23	22	16	47	16	17	18	16
19	28	26	25	25	23	22	16	52	16	18	18	16
20	29	26	25	25	23	22	16	52	16	18	18	16
21	30	26	25	26	23	22	16	51	16	18	18	17
22	30	26	25	26	23	21	15	51	16	18	18	17
23	30	26	25	26	23	21	15	49	16	18	18	18
24	30	26	26	26	23	21	14	47	16	18	17	18
25	30	26	26	26	22	22	14	47	16	18	17	18
26	30	25	26	26	22	22	14	47	16	18	16	18
27	30	25	26	26	22	22	14	44	16	18	16	18
28	29	25	26	25	22	22	14	42	17	18	16	18
29	29	25	26	25	22	22	14	40	17	18	16	19
30	28	25	26	25	------	21	14	37	17	18	16	19
31	28	------	27	25	------	21	------	35	------	18	16	------

Monthly discharge of Warm Spring Creek (east channel) near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	30	25	28.1	1,730
November	28	25	26.6	1,580
December	27	24	25.0	1,540
January	27	25	26.1	1,600
February	25	22	23.6	1,360
March	22	21	21.8	1,340
April	22	14	17.4	1,040
May	52	13	29.5	1,810
June	35	16	22.4	1,330
July	18	16	17.4	1,070
August	18	16	17.5	1,08
September	19	16	17.0	1,01
The year	52	13	22.7	16,500

WARM SPRING CREEK (WEST CHANNEL) NEAR MACKAY, IDAHO

LOCATION.—In NE. ¼ sec. 5, T. 7 N., R. 23 E., 500 feet above junction with east channel of Warm Spring Creek, 3½ miles above Mackay Dam, above flow line of reservoir, and 7½ miles above Mackay, Custer County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 8, 1919, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; inspected by employees of Utah Construction Co.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge just below gage or by wading.

CHANNEL AND CONTROL.—Bed composed chiefly of gravel. One channel at all stages. Control formed by well-defined gravel riffle; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year, 1.21 feet, May 20 and 21 (discharge, 141 second-feet); minimum discharge, 64 second-feet, May 8–10.

1919–1924: Maximum mean daily stage recorded, 3.38 feet, June 12, 1921 (discharge, 411 second-feet); minimum discharge, May 8–10, 1924.

ICE.—Stage-discharge relation practically unaffected by ice.

DIVERSIONS.—Practically entire flow diverted during irrigation season. Flow during summer represents return flow from irrigation above. Entire flow impounded in Mackay Reservoir below.

REGULATION.—None.

ACCURACY.—Stage-discharge relation affected by growth of moss. Rating curve applicable October 22 to April 21 well defined and curve applicable May 18 to September 25 well defined above 75 second-feet; rating curve parallel to latter used September 27–30. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph; shifting-control method used October 1–22 and April 22 to May 17. Records good.

COOPÉRATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

The record at this station represents a portion of the natural flow of Big Lost River and taken in conjunction with the record for east channel of Warm Spring Creek and the record for east and west channels of Big Lost River will show practically the entire surface flow of Big Lost River which enters Mackay Reservoir a short distance below. For record from station on east channel of Warm Spring Creek and on east and west channels of Big Lost River see pages 113, 103, and 105, respectively. For record of combined flow of both channels of Big Lost River and Warm Spring Creek see page 107.

Discharge measurements of Warm Spring Creek (west channel) near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	1.10	115	Mar. 23	0.97	98.4	June 18	0.78	73.8
Dec. 7	1.02	108	Apr. 21	.82	80.4	June 23	.78	77.2
Jan. 10	1.03	104	May 9	.74	64.1	July 1	.78	75.0
Feb. 1	1.01	102	May 18	1.14	127	July 23	.80	73.4
Mar. 6	.98	99.8	May 24	1.16	131	Sept. 13	.78	76.9
Mar. 13	.97	99.4	June 4	1.02	105			

Daily discharge, in second-feet, of Warm Spring Creek (west channel) near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	112	106	106	103	102	96	69	106	75	77	75
2	101	114	105	106	103	102	96	67	102	75	77	76
3	101	112	105	106	103	101	96	67	106	76	77	76
4	104	112	103	105	103	101	96	66	106	76	77	76
5	104	112	103	106	103	101	96	65	109	76	77	76
6	105	111	105	106	103	100	96	65	127	77	77	76
7	107	110	105	106	103	100	95	65	127	77	77	75
8	109	108	103	106	105	98	92	64	125	76	77	75
9	111	108	103	106	105	98	91	64	114	76	77	75
10	113	108	102	106	105	98	91	64	90	77	77	74
11	114	108	102	106	105	98	90	66	83	77	77	75
12	112	107	103	106	105	98	89	68	82	77	77	74
13	111	107	105	106	105	98	89	70	79	78	77	75
14	110	108	106	105	105	98	89	71	77	77	77	75
15	111	108	105	105	105	98	88	80	77	76	77	74
16	116	108	105	105	105	98	85	100	77	76	77	74
17	114	107	106	106	105	98	86	126	77	76	77	74
18	112	107	106	105	105	98	86	131	75	76	76	74
19	112	106	106	105	105	98	84	139	76	76	76	74
20	112	106	106	105	105	98	82	141	75	77	76	75
21	114	106	105	105	105	100	80	141	75	78	77	74
22	115	107	105	105	105	100	79	139	75	77	78	73
23	115	107	103	105	105	98	78	135	75	77	77	74
24	116	108	105	105	105	98	75	131	75	76	77	74
25	118	108	105	103	103	98	74	127	75	77	76	76
26	118	108	105	103	103	97	72	129	75	77	76	76
27	118	106	107	103	103	97	72	125	75	77	76	77
28	116	105	108	103	102	97	71	121	75	76	76	77
29	115	107	108	103	102	97	71	116	75	76	76	78
30	115	107	107	103	-------	96	69	112	75	77	74	78
31	114	-------	106	103	-------	96	-------	109	-------	77	74	-------

NOTE.—Discharge interpolated on account of missing gage heights Oct. 6–9, May 30–31, June 1, 15–16, Aug. 27, and Sept. 26.

Monthly discharge of Warm Spring Creek (west channel) near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	118	100	111	6,820
November	114	105	108	6,430
December	108	102	105	6,460
January	106	103	105	6,460
February	105	102	104	5,980
March	102	96	98.5	6,060
April	96	69	85.1	5,060
May	141	64	97.8	6,010
June	127	75	88.0	5,240
July	78	75	76.5	4,700
August	78	74	76.6	4,710
September	78	73	75.2	4,470
The year	141	64	94.3	68,400

SHARP DITCH NEAR MACKAY, IDAHO

LOCATION.—In sec. 12, T. 7 N., R. 23 E., 250 feet below head of ditch, half a mile below Mackay Reservoir, and 3½ miles northwest of Mackay, Custer County.

RECORDS AVAILABLE.—June 6, 1912, to October 24, 1914; March 24, 1919, to September 30, 1924.

GAGE.—Vertical staff on right bank; installed April 20, 1920; read by water master or employees of Utah Construction Co.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Control composed of gravel and sand; poorly defined. Channel congested at times by moss and weeds.

EXTREMES OF DISCHARGE.—Maximum measured discharge during year, 24.6 second-feet on afternoon of May 25; ditch probably dry except for leakage through head gates during period of no record.

1912–1914; 1919–1924: Maximum stage recorded, 2.50 feet June 23, 1921 (discharge, 42 second-feet); ditch reported dry during winter and on other days when water is shut off.

ICE.—No record obtained during winter. Probably only flow is leakage through head gates.

DIVERSIONS.—Station above all diversions.

REGULATION.—Flow controlled by head gate and by a small wasteway above gage.

ACCURACY.—Stage-discharge relation affected by growth of moss and silt deposits. Standard well-defined rating curve used April 19 to May 31; parallel curve used May 17–28; shifting-control method applied May 14–16 and May 29 to September 30. Gage read to hundredths once daily; record fragmentary prior to May 2 (see footnote to table of daily discharge). Daily discharge ascertained by applying gage height to rating table except for periods for which shifting-control method was used and except as indicated in footnote to table of daily discharge. Records fair.

COOPERATION.—Gage-height record and several discharge measurements furnished by water commissioner for Big Lost River.

Sharp ditch diverts from east side of Big Lost River in sec. 12, T. 7 N., R. 23 E., a mile above heading of Streeter ditch and half a mile below Mackay Reservoir. The water is used for irrigation on land northwest of Mackay and above Streeter ditch.

Discharge measurements of Sharp ditch near Mackay, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 13	------	0	June 4	1.12	23.3	July 23	1.12	19.4
Apr. 19	0.74	15.6	June 18	1.10	21.6	Aug. 14	1.16	21.2
May 9	1.04	22.8	June 24	1.18	22.5	Aug. 28	1.16	21.9
May 17	1.08	22.4	July 9	1.22	22.1	Sept. 13	.97	19.1
May 25	1.14	24.6						

Daily discharge, in second-feet, of Sharp ditch near Mackay, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	14	3		24	22	22	22	22
2				24	23	22	22	20
3	13			22	23	22	22	20
4				22	23	22	22	20
5			0	22	23	22	22	20
6	10			22	24	22	22	20
7				23	24	22	22	19
8	7			23	24	22	21	19
9			2	22	24	22	21	19
10			8	21	24	22	21	19
11				21	24	21	21	20
12				21	24	20	21	20
13			12	21	24	20	21	19
14				21	24	20	21	19
15				21	24	20	21	19
16	4			21	23	21	22	19
17			15	22	23	21	22	22
18				23	22	21	23	22
19			16	24	23	19	23	20
20				23	22	19	22	16
21			16	23	22	19	22	16
22			17	23	23	19	22	16
23				23	23	19	22	16
24				23	23	19	22	16
25				23	22	21	22	13
26			20	24	22	16	22	13
27				24	22	16	22	13
28				23	22	21	22	13
29	3			23	22	19	22	13
30				23	21	22	22	13
31				22		22	22	

NOTE.—Discharge estimated owing largely to lack of gage heights, Oct. 1 to Nov. 5, Apr. 1–18, 20–21, 23–30, and May 1, based on information furnished by water master for Big Lost River; interpolated June 6 and 27. No flow Nov. 5 to Apr. 8, except possibly for small leakage through head gates. Braced figures give mean discharge for periods indicated.

Monthly discharge of Sharp ditch near Mackay, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October			5.6	344
November 1–5			3.0	29.8
April		0	11.3	672
May		21	22.5	1,380
June	24	21	23.0	1,370
July	22	16	20.5	1,260
August	23	21	21.8	1,340
September	22	13	17.9	1,070

PORTNEUF RIVER AT TOPAZ, IDAHO

LOCATION.—In sec. 23, T. 9 S., R. 37 E., at Oregon Short Line Railroad Bridge, one-fourth mile west of Topaz flag station, Bannock County, 1¼ miles above diversion dam of Portneuf-Marsh Valley Canal Co., and 6 miles southeast of McCammon.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 12, 1913, to September 30, 1915; July 20, 1919, to September 30, 1924.

GAGE.—Enamel-faced vertical staff fastened to abandoned bridge pile on left bank at upstream side of railroad bridge; installed September 30, 1915; read by Mrs. Selma Hendricks.

DISCHARGE MEASUREMENTS.—Made from railroad bridge immediately below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Hardpan and conglomerate formation 700 feet below gage forms control; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.40 feet July 8 (discharge, 680 second-feet); minimum discharge, 121 second-feet, September 13–18 and 21–30.

1913–1915; 1919–1924: Maximum stage recorded (on old gage) 6.1 feet April 3, 1913 (discharge, 902 second-feet); minimum stage, 0.92 foot August 17 and 30, 1919 (discharge, 116 second-feet).

ICE.—Stage-discharge relation not affected by ice on account of warm springs entering stream above.

DIVERSIONS.—Numerous ranch diversions above. Stored water from Portneuf-Marsh Valley Canal Co.'s reservoir is diverted for irrigation 1¼ miles below.

REGULATION.—Water is stored during winter and spring in Portneuf-Marsh Valley Canal Co.'s reservoir near Chesterfield and released during irrigation season.

ACCURACY.—Stage-discharge relation changed probably during winter. Rating curves well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Shifting-control method used October 21 to March 1. Discharge interpolated March 18–22. Records good.

Discharge measurements of Portneuf River at Topaz, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.32	206	May 7	1.68	270	July 18	1.39	212
Mar. 2	1.45	225	June 8	1.49	241	Sept. 21	.97	124

Daily discharge, in second-feet, of Portneuf River at Topaz, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	207	197	200	186	213	213	234	234	192	202	141
2	228	207	204	200	196	224	224	244	224	192	192	131
3	200	207	203	199	196	234	244	266	213	213	192	131
4	218	207	203	190	194	234	255	276	213	213	192	131
5	218	207	197	179	185	224	255	297	234	213	192	141
6	218	207	194	179	193	224	266	276	234	224	192	131
7	218	207	194	179	195	213	276	276	234	234	202	131
8	218	207	193	179	205	202	276	276	234	605	192	131
9	228	206	193	179	214	202	255	266	234	319	182	141
10	247	206	193	178	215	202	244	266	234	255	192	131
11	228	208	193	178	215	202	234	234	224	213	182	131
12	228	206	193	178	215	202	234	213	213	234	182	131
13	218	206	193	178	225	202	255	202	234	224	192	121
14	218	206	193	178	236	202	297	192	224	213	171	121
15	218	206	192	185	236	202	266	202	213	202	161	121
16	218	206	192	185	244	202	255	213	213	213	171	121
17	218	205	192	185	244	202	244	224	224	213	171	121
18	209	205	192	185	256	202	234	224	213	213	171	121
19	209	205	192	185	256	202	224	234	213	192	171	131
20	209	205	192	185	266	202	224	234	213	202	151	131

Daily discharge, in second-feet, of Portneuf River at Topaz, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	209	205	192	184	244	202	224	276	213	192	151	121
22	218	205	192	184	235	202	234	286	213	192	151	121
23	228	205	191	184	214	202	255	276	213	202	161	121
24	218	205	191	184	202	234	255	266	213	202	151	121
25	209	204	191	184	203	234	244	244	202	202	151	121
26	209	204	191	184	203	224	234	234	213	192	151	121
27	209	198	191	184	213	224	234	234	213	202	151	121
28	208	204	196	176	213	224	234	213	202	202	151	121
29	208	204	200	176	213	213	234	213	202	192	151	121
30	208	204	200	184	-------	224	234	234	202	202	151	121
31	208	-------	200	184	-------	213	-------	234	-------	192	151	-------

Monthly discharge of Portneuf River at Topaz, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	247	200	217	13,300
November	208	198	205	12,200
December	204	191	195	12,000
January	200	176	184	11,300
February	266	185	218	12,500
March	234	202	213	13,100
April	297	213	245	14,600
May	297	192	244	15,000
June	234	202	219	13,000
July	605	192	224	13,800
August	202	151	172	10,600
September	141	121	127	7,560
The year	605	121	205	149,000

PORTNEUF RIVER AT POCATELLO, IDAHO

LOCATION.—In sec. 27, T. 6 S., R. 34 E., at highway bridge at foot of Carson Street, in west end of Pocatello, Bannock County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 31, 1911, to September 30, 1924. At site 1 mile upstream, May 18, 1897, to October 14, 1899.

GAGE.—Vertical staff attached to pile of highway bridge near left bank; installed September 8, 1919; read by W. S. Hutson.

DISCHARGE MEASUREMENTS.—Made from highway bridge at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rocks and boulders; very rough. One channel except at extremely high stages, when left bank is overflowed. Control shifts within well-defined limits.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.10 feet January 8 during ice-affected period; maximum discharge, 471 second-feet February 18–23, April 8, and May 6. Minimum stage, 2.15 feet June 11 (discharge, 53 second-feet).

1911–1924: Maximum stage recorded, 7.8 feet May 30, 1917 (discharge in excess of 2,000 second-feet during period May 13 to June 14, when left bank was overflowed); minimum stage, 1.92 feet June 24 and 28, 1919 (discharge, 44 second-feet).

1897–1899: Maximum stage recorded, 12.80 feet May 18, 1897 (discharge, 1,880 second-feet); minimum stage, 6.10 feet July 4–11, 13, 17, and 18, 1898 (discharge, 14 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Numerous ranch diversions above gage. The largest single diversion is canal of Portneuf-Marsh Valley Canal Co., which irrigates land near Downey.

REGULATION.—None below head of Portneuf-Marsh Valley Canal Co.'s canal. Storage reservoir of company near Chesterfield has capacity of about 28,000 acre-feet.

ACCURACY.—Stage-discharge relation changed during winter and from July 23 to September 19. Two well-defined rating curves used; one applicable October 1 to December 30, the other February 6 to July 22; September 20–30 curve parallel to latter curve used. Gage read to half-tenths several times a week. Daily discharge ascertained by applying daily gage height to rating table for days when gage was read and by interpolation for intervening days; shifting-control method used July 23 to September 19. Open-water records good; winter records fair.

Discharge measurements of Portneuf River at Pocatello, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	3.84	339	June 4	2.29	72.4	July 19	2.38	80.0
Mar. 1	3.98	390	June 9	2.29	71.0	Sept. 22	2.70	91.8
Apr. 12	4.28	420	June 30	2.22	59.0			
May 7	4.34	445	July 16	2.54	112			

Daily discharge, in second-feet, of Portneuf River at Pocatello, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	327	332	310			373	356	420	84	60	75	89
2	327	330	313			373	362	430	80	59	74	88
3	327	327	316		290	373	368	440	74	62	73	88
4	334	327	312			373	373	450	70	66	71	88
5	342	327	308			373	398	460	68	69	70	87
6	350	324	304		308	373	422	471	66	69	70	87
7	362	322	304		315	362	446	445	65	69	70	90
8	374	319	304	270	322	351	471	400	65	257	70	92
9	374	316	304		329	373	462	354	70	308	69	91
10	374	320			351	366	454	308	62	209	74	90
11	374	324	280		373	358	445	287	53	140	80	90
12	370	327			380	351	445	244	56	128	79	89
13	366	327			388	344	445	200	58	116	85	88
14	362	327			396	336	445	166	61	104	86	88
15	358	326			420	329	445	132	60	104	87	88
16	354	324	250		445	329	438	118	59	104	87	88
17	350	322			458	329	432	104	64	87	85	88
18	350	320			471	329	426	98	64	85	87	90
19	350	318	237		471	329	420	93	65	83	88	91
20	350	316	237		471	329	420	93	66	86	88	92
21	338	313	237		471	329	420	93	67	89	88	92
22	338	310	237		471	329	420	112	69	89	88	92
23	344	307	237		471	329	420	130	66	84	87	93
24	350	304	237	280	434	329	420	148	64	80	87	94
25	354	304	237		396	329	420	148	62	80	86	96
26	358	304	260		396	329	420	130	61	79	85	97
27	362	304	282		396	329	432	112	60	80	85	97
28	354	304	304		396	329	445	93	59	80	87	97
29	346	304	327		384	329	436	87	60	78	88	97
30	338	307	292		-------	340	428	87	60	76	90	97
31	335	-------	260		-------	351	----	87	-------	76	90	-------

NOTE.—Discharge estimated on account of ice Dec. 10–18, 31, Jan. 1 to Feb. 5 based upon weather records, observer's notes, and comparison with flow past Topaz station. Braced figures give mean discharge for periods indicated.

Monthly discharge of Portneuf River at Pocatello, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	374	327	351	21,600
November	332	304	318	18,900
December	327	----------	276	17,000
January	----------	----------	275	16,900
February	471	----------	385	22,100
March	373	329	345	21,200
April	471	356	424	25,200
May	471	87	224	13,800
June	84	53	64.6	3,840
July	308	59	102	6,270
August	90	69	81.6	5,020
September	97	87	91.1	5,420
The year	471	53	244	177,000

NORTH SIDE MINIDOKA CANAL NEAR MINIDOKA, IDAHO

LOCATION.—In sec. 1, T. 9 S., R. 25 E., 650 feet below Minidoka Dam and 6 miles south of Minidoka, Minidoka County.

RECORDS AVAILABLE.—May 1, 1909, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed October 31, 1914; inspected by employees of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge at gage.

CHANNEL AND CONTROL.—Rock cut; practically permanent but rough.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.50 feet at 7 p. m. May 22 (discharge, 1,510 second-feet); no flow at various times when head gates were closed.

1909–1924: Maximum stage recorded, 9.44 feet May 20, 1914 (discharge, 1,520 second-feet); no flow at various times when head gates were closed.

ICE.—Observations discontinued during winter.

DIVERSIONS.—None above station and none below near enough to affect stage-discharge relation.

REGULATION.—Flow controlled by head gates at Minidoka Dam.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good.

COOPERATION.—Gage-height record and one discharge measurement furnished by United States Bureau of Reclamation and Minidoka Irrigation District.

North Side Minidoka Canal diverts water from right bank of Snake River in sec. 1, T. 9 S., R. 25 E., for irrigation of land in North Side Minidoka project of United States Bureau of Reclamation. Project comprises about 20 miles of main canal and about 260 miles of laterals.

Discharge measurements of North Side Minidoka Canal near Minidoka, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	5.58	616	Aug. 3	8.68	1,310	Sept. 25	3.93	340
Apr. 14	7.86	1,110	Sept. 24	4.02	343			

Daily discharge, in second-feet, of North Side Minidoka Canal near Minidoka, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	639		1,490	923	1,380	1,330	0
2	637		1,490	918	1,380	1,330	0
3	635		1,490	1,010	1,420	1,320	0
4	637		1,480	1,080	1,440	1,300	85
5	637		1,480	1,110	1,440	1,250	145
6	629		1,490	1,230	1,440	1,240	206
7	629	679	1,490	1,310	1,440	1,240	248
8	633	680	1,490	1,300	1,440	1,260	245
9	637	745	1,480	1,290	1,450	1,270	245
10	637	795	1,480	1,290	1,480	1,300	246
11	633	813	1,490	1,290	1,480	1,330	245
12	633	904	1,480	1,280	1,480	1,310	246
13	633	993	1,480	1,310	1,480	1,270	246
14	635	1,070	1,480	1,340	1,470	1,020	248
15	633	1,110	1,480	1,300	1,430	26	246
16	635	1,110	1,480	1,300	1,400	0	246
17	635	1,110	1,480	1,300	1,380	0	241
18	637	1,120	1,480	1,310	1,380	0	239
19	637	1,090	1,480	1,310	1,350	0	236
20	635	1,100	1,480	1,300	1,330	0	243
21	635	1,200	1,480	1,260	1,330	151	245
22	633	1,300	1,490	1,210	1,300	796	246
23	596	1,330	1,490	1,200	1,290	1,020	310
24	251	1,340	1,490	1,190	1,290	1,000	352
25		1,390	1,470	1,190	1,310	967	344
26		1,470	1,490	1,240	1,340	925	346
27		1,490	1,480	1,300	1,330	608	346
28		1,490	1,470	1,330	1,330	0	346
29		1,480	1,180	1,370	1,330	0	350
30		1,490	709	1,380	1,320	0	354
31			826		1,330	0	

Monthly discharge of North Side Minidoka Canal near Minidoka, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–24	639	251	617	29,400
April 7–30	1,490	679	1,140	54,300
May	1,490	709	1,430	87,900
June	1,380	918	1,240	73,800
July	1,480	1,290	1,390	85,500
August	1,330	0	750	46,100
September	354	0	236	14,000

SOUTH SIDE MINIDOKA CANAL NEAR MINIDOKA, IDAHO

LOCATION.—In sec. 12, T. 9 S., R. 25 E., Cassia County, 300 yards below head gates at Minidoka Dam and 6 miles south of Minidoka, Minidoka County.

RECORDS AVAILABLE.—April 21, 1909, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; inspected by employees of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge at gage.

CHANNEL AND CONTROL.—Canal section in earth; may shift. Stage-discharge relation affected by growth of aquatic plants.

EXTREMES OF DISCHARGE.—Maximum discharge occurred at gage height 5.33 feet at 4 p. m. May 29 (discharge, 973 second-feet); probably no flow during period of no record.

1909–1924: Maximum discharge occurred at gage height 5.71 feet July 16 and 18, 1921 (discharge, 1,100 second-feet); probably no flow during various periods of no record each year.

ICE.—No records obtained during winter.
DIVERSIONS.—None above gage.
REGULATION.—Flow controlled by head gates at Minidoka Dam.
ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Shifting-control method used as noted in footnote to daily-discharge table. Records good.
COOPERATION.—Gage-height record and 14 discharge measurements furnished by United States Bureau of Reclamation.

South Side Minidoka Canal diverts water from the left bank of Snake River in sec. 1, T. 9 S., R. 25 E., for irrigation of land in South Side Minidoka project of United States Bureau of Reclamation. Project comprises about 13 miles of main canal and about 297 miles of laterals.

Discharge measurements of South Side Minidoka Canal near Minidoka, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.46	278	July 3	4.84	824	Aug. 5	5.01	818
Apr. 15	3.13	430	July 8	4.94	816	Aug. 13	4.80	776
May 20	5.21	926	July 16	5.06	866	Aug. 21	3.66	509
June 2	4.87	706	July 21	5.09	860	Aug. 29	2.95	356
June 17	4.37	721	July 31	4.95	810	Sept. 24	1.79	a 204
June 25	4.60	721	Aug. 2	5.02	858	Sept. 25	1.50	151

a Discharge measurement evidently inaccurate.

Daily discharge, in second-feet, of South Side Minidoka Canal near Minidoka, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	349		799	724	777	845	331
2	321		837	711	802	842	322
3	312		862	722	815	842	321
4	322		873	711	829	840	322
5	319		890	638	840	834	317
6	288		901	758	842	818	316
7	270		910	812	842	780	311
8	275		912	820	837	748	295
9	245	174	901	812	873	743	278
10	230	197	896	812	932	761	266
11	234	236	912	837	950	753	259
12	234	270	915	799	944	743	250
13	234	290	918	802	898	748	245
14	165	336	918	802	845	688	242
15		405	915	706	859	652	236
16		429	912	709	868	643	232
17		498	910	714	879	582	207
18		572	901	711	879	549	193
19		599	907	714	873	516	177
20		632	924	714	870	498	177
21		648	935	704	870	507	172
22		668	941	704	901	552	168
23		688	950	748	941	552	184
24		704	953	743	935	529	177
25		714	938	717	932	494	154
26		722	944	722	932	453	158
27		782	921	724	935	411	150
28		737	924	732	932	394	146
29		735	930	764	930	373	151
30		750	701	775	890	365	152
31			748		831	344	

NOTE.—No record obtained Oct. 15 to Apr. 8. Shifting-control methods used Oct. 1–6, June 18–24, July 17–20, Aug. 3, 4, 14–19, 30, 31, and Sept. 1–23.

Monthly discharge of South Side Minidoka Canal near Minidoka, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–14	349	165	271	7,530
April 9–30	750	174	533	23,300
May	953	748	900	55,300
June	837	638	745	44,300
July	950	777	880	54,100
August	845	344	625	38,400
September	331	146	230	13,700

GOOSE CREEK ABOVE TRAPPER CREEK, NEAR OAKLEY, IDAHO

LOCATION.—In sec. 13, T. 15 S., R. 21 E., 5 miles above Trapper Creek and 10 miles south of Oakley, Cassia County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 29, 1911, to September 30, 1916; March 27, 1919, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; inspected by employees of Oakley Canal Co.

DISCHARGE MEASUREMENTS.—Made from cable 250 feet above gage or by wading. Since summer of 1921 flow has been slightly augmented by flow of artesian water from well of West Pearl Oil & Gas Co., 2 miles above station.

CHANNEL AND CONTROL.—Bed composed of rock overlain with gravel and silt. Control fairly well defined; shifts occasionally. Banks high and not likely to be overflowed.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.00 feet from 10 a. m. to 5 p. m. April 14 (discharge, 149 second-feet); minimum stage, 1.52 feet from 2 to 10 p. m. August 30 (discharge, 6.6 second-feet).

1911–1916; 1919–1924: Maximum stage recorded from water-stage recorder, 5.23 feet at 9 a. m. May 18, 1921 (discharge, 670 second-feet); minimum stage, 1.19 feet at 9 a. m. August 13, 1915 (discharge, 1.1 second-feet).

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—Several small canals and ditches divert above station for irrigation chiefly of lands belonging to Utah Construction Co.

REGULATION.—None except that due to diversions.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves well defined. Operation of water-stage recorder satisfactory except April 14 to May 26 when inlet pipe gave trouble. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good.

COOPERATION.—Gage-height record furnished by Oakley Canal Co.

Discharge measurements of Goose Creek above Trapper Creek, near Oakley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	2.10	36.7	May 11	2.66	101	July 21	1.64	10.9
Apr. 11	2.82	124	June 5	2.12	40.4	Sept. 23	1.72	14.1

Daily discharge, in second-feet, of Goose Creek above Trapper Creek, near Oakley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	36	35		52	127	58	12	8.9	7.3
2	27	36			58	134	54	11	8.6	7.3
3	27	36			68	138	51	11	8.6	7.9
4	28	36			62	142	45	11	8.6	7.9
5	46	36			57	143	42	12	8.6	8.9
6	41	35			59	140	38	12	8.2	12
7	53	35			70	134	37	12	8.2	12
8	51	35			89	127	38	12	7.9	11
9	47	36			102	119	39	10	7.9	10
10	50	37			110	110	39	11	7.9	10
11	52	38			121	102	36	12	8.2	10
12	48	38			131	101	33	12	8.6	11
13	44	39			137	97	30	12	8.9	11
14	42	40			148	93	29	12	9.2	11
15	40	39			142	89	27	12	8.9	11
16	40	38			134	85	27	11	8.6	12
17	38	36			126	80	24	11	7.9	12
18	37	35			119	76	22	10	7.6	12
19	37	36			113	73	21	10	7.9	13
20	37	39			112	70	20	10	8.9	14
21	36	39			112	69	19	11	10	15
22	37	39			117	66	16	12	10	15
23	40	39			131	65	15	13	9.6	15
24	41	38			144	61	15	13	8.9	14
25	40	37		79	146	61	15	12	8.6	15
26	40	37		91	140	59	14	12	8.2	16
27	38	39		93	134	57	14	12	7.9	16
28	38	37			130	52	13	11	7.6	17
29	37	35		70	128	52	13	10	7.0	17
30	36				127	59	12	10	7.0	16
31	36			48		59		9.2	7.0	

NOTE.—Discharge estimated Nov. 29 to Dec. 3 on account of ice; Mar. 28–30 on account of missing gage heights. Discharge interpolated Oct. 28, Nov. 2–4, 9–13, 23–25, and Sept. 16.

Monthly discharge of Goose Creek above Trapper Creek, near Oakley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	53	27	39.7	2,440
November			37.0	2,200
December 1–3			35.0	208
March 25–31			74.4	1,030
April	148	52	111	6,600
May	143	52	91.6	5,630
June	58	12	28.5	1,700
July	13	9.2	11.3	695
August	10	7.0	8.38	515
September	17	7.3	12.2	726

TRAPPER CREEK NEAR OAKLEY, IDAHO

LOCATION.—In sec. 33, T. 14 S., R. 21 E., 1½ miles above Nelson ranch, 1 mile from east boundary of Minidoka National Forest, 5 miles above Oakley Dam, and 9 miles southwest of Oakley, Cassia County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1911, to September 30, 1916; March 28, 1919, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed April 8, 1913; inspected by employees of Oakley Canal Co.

DISCHARGE MEASUREMENTS.—Made by wading. Since summer of 1921, flow past station has been augmented by flow from two artesian wells 1 mile above gage.

CHANNEL AND CONTROL.—Bed composed of small boulders and coarse gravel. Control shifting. Banks brushy; not likely to be overflowed.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.42 feet at 6 a. m. May 4 (discharge, 25 second-feet); minimum stage, 2.03 feet at 10 p. m. August 18 (discharge, 10 second-feet).

1911–1916; 1919–1924: Maximum stage recorded, 3.44 feet May 28 and June 8, 1921 (discharge, 98 second-feet); minimum discharge probably occurs during winter.

ICE.—Stage-discharge relation seriously affected by ice. Observations discontinued during winter.

DIVERSIONS.—No diversions of consequence above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph; shifting-control method used October 1–20 and April 19 to May 2. Records good.

COOPERATION.—Gage-height record furnished by Oakley Canal Co.

Discharge measurements of Trapper Creek near Oakley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	2.19	12.5	June 5	2.21	15.3	Sept. 23	2.06	11.7
Apr. 11	2.28	19.6	July 21	2.06	11.1	Do	2.07	11.3
May 11	2.38	22.9						

Daily discharge, in second-feet, of Trapper Creek near Oakley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	13	12	------	15	22	17	11	11	11
2	12	12	12	------	15	23	16	12	11	11
3	12	12	12	------	16	24	16	12	11	11
4	15	12	12	------	15	24	15	12	11	11
5	14	12	12	------	15	23	15	12	11	11
6	13	12	12	------	16	23	15	12	11	11
7	13	12	12	------	18	22	15	12	11	11
8	13	12	12	------	20	22	16	12	11	11
9	14	12	12	------	20	22	15	11	11	11
10	13	12	12	------	19	22	15	12	11	11
11	13	13	------	------	20	22	15	12	11	11
12	13	13	------	------	20	22	14	12	11	11
13	13	12	------	------	21	22	14	12	11	11
14	13	12	------	------	22	22	14	11	11	11
15	13	12	------	------	21	21	13	11	11	11
16	13	12	------	------	20	21	13	11	11	11
17	13	12	------	------	20	21	13	11	11	11
18	13	12	------	------	19	20	13	11	11	11
19	13	12	------	------	20	20	13	11	11	11
20	13	12	------	------	20	20	13	11	11	11
21	12	12	------	------	21	20	13	11	11	11
22	13	12	------	------	22	19	13	11	11	11
23	13	12	------	------	23	19	12	11	11	11
24	13	12	------	------	23	19	12	11	11	12
25	13	12	------	------	22	18	12	11	11	12
26	13	12	------	------	21	18	12	11	11	12
27	13	12	------	------	21	18	12	11	11	12
28	13	12	------	15	21	18	12	11	11	12
29	13	13	------	15	21	19	12	11	11	12
30	13	13	------	15	22	19	11	11	11	11
31	13	------	------	14	------	18	------	11	11	------

NOTE.—Discharge interpolated on account of lack of gage-height record Nov. 24–26, July 30, and Sept. 17.

Monthly discharge of Trapper Creek near Oakley, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15	12	13.0	799
November	13	12	12.2	726
December 1–10	12	12	12.0	238
March 28–31	15	14	14.8	117
April	23	15	19.6	1,170
May	24	18	20.7	1,270
June	17	11	13.7	815
July	12	11	11.4	701
August	11	11	11.0	676
September	12	11	11.2	666

P. A. LATERAL NEAR MILNER, IDAHO

LOCATION.—In sec. 22, T. 10 S., R. 21 E., Jerome County, 200 yards below pumping station and 2½ miles northeast of Milner, Twin Falls County.

RECORDS AVAILABLE.—April 29, 1919, to September 30, 1924.

GAGE.—Vertical staff near left bank; read by employees of North Side Canal Co. (Ltd.).

DISCHARGE MEASUREMENTS.—Made from foot plank at rating flume just below gage.

CHANNEL AND CONTROL.—Canal section in earth; often obstructed by growth of moss. Concrete rating flume below gage contracts section forming permanent control.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 1.98 feet May 7–10 and July 9–11 (discharge, 55 second-feet); canal reported dry on numerous occasions.

1919–1924: Maximum discharge, 64 second-feet, May 11–13, 1920; canal dry on numerous occasions.

ICE.—No records obtained during winter.

DIVERSIONS.—One small diversion between pumping station and gage furnishes water for pumpman's garden.

REGULATION.—Flow regulated by pumps at head of canal.

ACCURACY.—Stage-discharge relation fairly permanent March 24 to September 30. Rating curves well defined. Gage read to hundredths twice daily; account taken of all periods when pumps were not operated. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage-height record and three discharge measurements furnished by North Side Canal Co. (Ltd.).

P. A. lateral diverts water pumped from right bank of Snake River above Milner Dam, in sec. 22, T. 10 S., R. 21 E. Water is used for irrigating part of the North Side Twin Falls project.

Discharge measurements of P. A. lateral near Milner, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 18	1.18	13.4	Apr. 29	1.97	54.9	June 17	1.60	32.2
Apr. 22	1.50	27.7	May 1	1.96	55.4	July 16	1.72	40.0
Apr. 26	1.72	39.4	May 18	1.69	38.7	Aug. 15	1.50	28.9

Daily discharge, in second-feet, of P. A. lateral near Milner, Idaho, for the year ending September 30, 1924.

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10			54	40	25	40	34
2				54	40	0	40	34
3				54	40	0	40	34
4				54	42	0	40	8
5				54	42	0	37	0
6				54	42	10	34	0
7				55	35	40	34	21
8				55	42	40	34	28
9				55	42	48	34	28
10				55	42	55	17	27
11				40	42	48	0	32
12				39	42	40	0	34
13				38	42	40	0	34
14				38	42	40	0	34
15				38	42	40	28	34
16				39	36	40	28	34
17			9	38	34	40	28	23
18			13	39	32	40	28	0
19			13	38	34	40	28	0
20			13	38	34	40	28	0
21			21	39	34	40	28	0
22			28	39	34	30	27	0
23			36	38	34	0	28	0
24		4	40	38	34	0	29	0
25		9	40	40	34	0	34	0
26		9	40	40	34	0	34	0
27		9	40	41	34	10	34	0
28		9	40	40	34	40	34	0
29		9	41	40	34	40	34	0
30			50	40	34	40	34	0
31				40		40	34	

NOTE.—No record obtained Oct. 2 to Mar. 23, Mar. 30 to Apr. 16. Canal presumably dry during periods of no record. Canal reported dry July 2–5, 23–26, Aug. 11–14, Sept. 5, 6, and 18–30.

Monthly discharge of P. A. lateral near Milner, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 24–29	9	4	8.17	97
April 17–30	50	9	30.3	841
May	55	38	44.0	2,710
June	42	32	37.6	2,240
July	55	0	27.9	1,720
August	40	0	28.0	1,720
September	34	0	14.6	869

MILNER LOW LIFT CANAL NEAR MILNER, IDAHO

LOCATION.—In sec. 32, T. 10 S., R. 21 E., one-eighth mile below pumping station at head of canal and 1½ miles southeast of Milner post office, Cassia County.

RECORDS AVAILABLE.—June 1, 1921, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; installed July 21, 1924; inspected by McConnel and Wilcox. Staff gage at same location and same datum used prior to that time.

DISCHARGE MEASUREMENTS.—Made from foot plank at gage.

CHANNEL AND CONTROL.—Canal section in earth. Banks clean. Control poorly defined and shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 2.94 feet about 4 a. m. May 27 (discharge, 104 second-feet); canal dry on numerous occasions.

1921–1924: Maximum discharge, that of 1924 season; canal dry on numerous occasions.

ICE.—No records obtained during winter; pumps not operated.
DIVERSIONS.—None above station.
REGULATION.—Flow regulated by pumps at head of canal.
ACCURACY.—Stage-discharge relation not permanent. Standard rating curves fairly well defined. Gage read to hundredths twice daily until July 20; after that time mean daily gage height obtained from recorder graph. Daily discharge ascertained by applying mean daily gage height to rating table or by shifting-control method. Records good.
COOPERATION.—Gage-height record furnished by Milner Low Lift Irrigation District.

Milner Low Lift Canal diverts water by pumping from the south side of Snake River in the backwater above Milner Dam and furnishes water for irrigation of lands within area controlled by Milner Low Lift Irrigation District.

Discharge measurements of Milner Low Lift Canal near Milner, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 19	1.90	52.6	June 23	2.32	72.6	July 29	1.99	52.5
May 1	1.90	53.0	July 2	2.30	70.4	Aug. 5	2.05	52.1
June 5	2.74	94.5	Do	2.32	68.9	Aug. 16	2.03	50.1
June 6	2.81	96.0	July 16	2.26	68.3	Aug. 24	2.09	50.9
June 13	2.68	90.4	July 19	1.69	41.3	Sept. 16	1.60	36.4
June 14	2.38	76.3	July 25	1.97	51.7			

Daily discharge, in second-feet, of Milner Low Lift Canal near Milner, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	17			53	97	72	53	53
2	24			53	95	72	52	40
3				20	94	71	51	0
4				5	95	71	51	0
5				32	94	70	52	0
6				65	100	70	52	0
7				80	97	63	52	0
8				88	90	72	52	0
9				91	93	72	51	0
10				93	94	71	51	0
11				93	92	71	52	0
12				98	94	72	53	0
13				100	88	72	51	0
14				100	78	71	53	0
15				50	73	70	51	0
16				94	74	70	51	22
17			41	92	74	72	52	40
18			53	89	74	51	53	16
19			53	89	72	42	51	0
20			53	90	73	45	49	0
21			53	81	73	43	50	0
22		8	53	95	73	43	48	0
23		14	53	102	73	52	51	0
24		14	54	101	73	53	50	0
25		17	14	100	74	52	50	0
26		17	4	102	74	52	49	0
27		17	36	52	73	53	51	0
28		6	53	0	72	52	51	0
29			53	0	72	53	52	0
30			53	76	72	52	51	0
31				96		52	51	

NOTE.—No record obtained Oct. 3 to Nov. 21 and Nov. 29 to Apr. 16; pumps closed down.

Monthly discharge of Milner Low Lift Canal near Milner, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–2	24	17	20.5	81
November 22–28	17	6	13.3	185
April 17–30	54	4	44.7	1,240
May	102	0	73.5	4,520
June	100	72	82.3	4,900
July	72	42	61.2	3,760
August	53	48	51.2	3,150
September	53	0	5.70	339

NORTH SIDE TWIN FALLS CANAL AT MILNER, IDAHO

LOCATION.—In sec. 20, T. 10 S., R. 21 E., Jerome County, half a mile north of Milner post office, Twin Falls County, and three-fourths of a mile below head gates at Milner Dam.

RECORDS AVAILABLE.—May 10, 1909, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on right bank; installed April 1, 1918; inspected by McConnel and Gilham.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Channel is a permanent concrete-lined section. Growth of moss heavy during summer and stage-discharge relation is seriously affected. Control apparently indeterminate.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 8.75 feet at 9 a. m. May 9 (discharge, 3,020 second-feet); canal dry October 4–11.

1909–1924: Maximum discharge occurred at gage height 8.68 feet July 5–7 and 29–31, 1921 (discharge, 3,200 second-feet); canal dry many times when head gates were closed.

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—None between gage and head gates and none for some distance below. Surplus water may be discharged into river through waste gates about 200 feet below head of canal.

REGULATION.—Flow regulated by head and waste gates.

ACCURACY.—Stage-discharge relation not permanent; changes due largely to growth of aquatic plants. Standard rating curve well defined; many parallel curves used. Operation of water-stage recorder satisfactory. Staff gage read to hundredths once daily November 1 to March 31 and twice daily for remainder of year. Daily discharge ascertained by applying to rating table mean daily gage height obtained from staff reading or by inspecting recorder graph; also by shifting-control method. Records good November to March; excellent for October and from April to September.

COOPERATION.—Gage-height record and 46 discharge measurements furnished by North Side Canal Co. (Ltd.).

The North Side Twin Falls Canal diverts water from the north side of Snake River at the Milner Dam and furnishes water for stock and irrigation on about 240,000 acres of land in Jerome, Lincoln, and Gooding Counties. The distribution system comprises about 100 miles of main canal and 625 miles of laterals.

Discharge measurements of North Side Twin Falls Canal at Milner, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 9	3.09	599	June 10	2.36	364	July 23	6.81	1,950
Jan. 23	2.63	460	June 14	2.33	367	July 29	7.67	2,330
Feb. 15	2.70	471	June 17	2.02	285	Aug. 1	2.39	357
Mar. 18	3.24	629	June 23	2.00	287	Aug. 2	2.77	450
Apr. 6	5.40	1,410	June 26	2.60	467	Aug. 5	1.83	215
Apr. 18	6.25	1,840	June 27	7.01	2,140	Aug. 15	2.09	252
Apr. 22	6.62	1,980	June 28	7.20	2,280	Aug. 22	2.19	249
Apr. 26	6.92	2,110	June 29	7.21	2,290	Aug. 23	2.31	280
Apr. 29	8.50	2,910	Do	7.25	2,270	Aug. 27	2.48	316
May 1	8.21	2,750	July 1	7.23	2,290	Sept. 4	6.88	1,820
May 18	2.19	316	July 3	6.41	1,900	Do	6.34	1,600
Do	2.19	312	July 4	6.39	1,890	Sept. 8	2.26	311
May 22	2.46	341	July 8	2.34	370	Sept. 15	2.14	270
May 29	7.58	2,140	July 10	2.87	521	Sept. 16	2.12	285
Do	7.57	2,130	July 14	2.32	355	Sept. 24	2.28	315
June 8	2.51	384	July 16	2.36	360			

Daily discharge, in second-feet, of North Side Twin Falls Canal at Milner, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	774	441	664	476	469	526	1,060	2,740	2,450	2,170	369	295
2	557	439	661	475	466	709	1,100	2,720	2,300	1,900	450	292
3	282	439	661	474	480	804	1,150	2,650	2,240	1,890	452	288
4	0	444	671	474	469	894	1,190	2,570	2,090	1,890	393	1,320
5	0	509	671	473	469	1,080	1,200	2,540	2,070	1,900	242	1,800
6	0	549	674	473	472	1,080	1,330	2,700	697	1,880	214	1,500
7	0	585	655	472	472	1,060	1,400	2,780	310	1,300	212	393
8	0	597	671	478	472	1,060	1,010	2,960	382	364	216	307
9	0	597	686	480	478	1,080	394	2,980	359	895	222	281
10	0	597	674	472	475	1,070	1,630	2,910	359	517	240	276
11	0	594	646	472	472	1,080	1,770	2,630	359	439	244	272
12	217	618	649	472	472	1,080	1,780	1,850	364	346	237	274
13	387	630	606	475	472	1,090	1,840	828	367	354	233	281
14	395	630	552	478	469	980	1,800	801	364	354	233	285
15	393	652	544	475	472	880	1,790	503	349	1854	242	283
16	393	664	549	480	472	827	1,800	314	295	359	265	281
17	390	664	541	466	475	630	1,810	314	288	359	260	290
18	395	658	517	480	475	664	1,840	324	278	359	260	314
19	393	633	520	489	478	716	1,850	339	281	364	256	312
20	393	696	509	489	478	794	1,900	342	283	354	265	316
21	390	702	483	455	472	791	1,970	342	283	362	262	322
22	387	702	483	461	478	794	1,990	344	281	369	265	326
23	390	706	480	461	478	794	1,960	367	283	1,760	276	316
24	390	677	480	458	475	787	2,010	377	283	1,950	278	316
25	387	668	480	466	472	794	2,080	385	356	1,970	276	314
26	385	664	475	464	469	791	2,140	401	557	1,980	285	314
27	385	668	475	458	506	791	2,670	404	2,200	2,050	319	322
28	425	664	478	461	517	791	2,860	598	2,260	2,360	316	324
29	444	661	477	466	523	845	2,870	2,180	2,270	2,360	312	326
30	441	655	477	466		991	2,820	2,480	2,280	2,330	312	322
31	441		476	464		1,060		2,500		1,140	302	

NOTE.—Canal reported dry Oct. 1–11. Discharge interpolated Dec. 29 to Jan. 6 and Jan. 19.

Monthly discharge of North Side Twin Falls Canal at Milner, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	774	0	303	18,600
November	706	439	615	36,600
December	686	475	567	34,900
January	489	455	471	29,000
February	523	466	477	27,400
March	1,090	526	876	53,900
April	2,870	394	1,770	105,000
May	2,980	314	1,490	91,600
June	2,450	278	918	54,600
July	2,360	346	1,180	72,600
August	452	212	281	17,300
September	1,800	272	429	25,500
The year	2,980	0	781	567,000

SOUTH SIDE TWIN FALLS CANAL AT MILNER, IDAHO

LOCATION.—In sec. 29, T. 10 S., R. 21 E., at wagon bridge one-eighth mile below head gates at Milner, Twin Falls County.

RECORDS AVAILABLE.—May 10, 1909, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank, at site and datum of vertical staff gage installed early in summer of 1912; the latter has been used since that time for stages above 5.3 feet. Inspected by McConnel and Gilham.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel at gage blasted out of rock; practically permanent. Occasional slight changes in control are due to deposition of silt.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.34 feet at 11 a. m. May 9 (discharge, 3,470 second-feet); minimum stage, 1.40 feet March 25 and 26 (discharge, 49 second-feet).

1909–1924: Maximum discharge recorded, 4,600 second-feet August 12, 1918; canal dry September 20, 1920.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None above gage and none of consequence for several miles below.

REGULATION.—Flow regulated by head gates.

ACCURACY.—Stage-discharge relation not permanent; affected by ice December 29 to January 21 and January 23 to February 5. Standard rating curve well defined. Operation of water-stage recorder satisfactory except December 10–21 and March 24–27 when staff gage was read to hundredths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph or from staff gage readings. Shifting-control method used March 21, 27, June 24, 25, September 5 and 7. Records excellent except December to March, for which they are good.

COOPERATION.—Gage-height record and 23 discharge measurements furnished by Twin Falls Canal Co.

South Side Twin Falls Canal diverts water from south side of Snake River at Milner Dam and furnishes water for stock and irrigation on about 200,000 acres of land near Twin Falls. The distribution system comprises about 110 miles of main canal and 590 miles of laterals.

Discharge measurements of South Side Twin Falls Canal at Milner, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 22	[a] 5.04	649	May 19	9.34	2,830	Aug. 24	8.22	2,240
Feb. 14	3.90	560	June 9	9.10	2,720	Aug. 27	8.21	2,190
Mar. 18	4.97	868	July 8	7.67	1,960	Sept. 4	4.56	657
Mar. 24	1.42	52.3	July 23	7.79	1,980	Sept. 6	4.98	815
Apr. 6	5.23	995	July 24	7.79	1,970	Sept. 8	8.57	2,420
Apr. 19	8.36	2,390	July 30	7.60	1,910	Sept. 13	8.52	2,410
Apr 26	9.16	2,750	Aug. 6	8.39	2,260	Sept. 17	8.56	2,400
May 2	9.46	2,930	Aug. 15	9.26	2,800	Sept. 24	8.32	2,280

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of South Side Twin Falls Canal at Milner, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,980	645	682		648	542	756	2,970	2,770	2,020	1,930	2,240
2	1,940	840	686	695	615	540	759	2,960	2,770	1,930	1,950	2,240
3	1,890	980	692		594	554	759	2,960	2,770	1,940	1,960	2,240
4	1,710	984	481		571	557	920	2,960	2,800	1,930	1,960	1,160
5	1,570	980	183		562	557	1,010	2,970	2,630	1,940	1,950	717
6	1,540	973	206	710	571	554	995	2,970	2,800	1,920	2,190	792
7	1,560	876	909		568	554	1,040	2,980	2,800	1,940	2,310	1,980
8	1,540	910	1,140		571	551	1,220	3,170	2,800	1,940	2,310	2,410
9	1,460	848	724		571	548	1,380	3,380	2,780	1,930	2,320	2,400
10	1,330	886	762		571	554	1,420	3,010	2,750	2,500	2,470	2,390
11	1,230	984	802		571	551	1,450	2,960	2,740	2,970	2,520	2,390
12	1,190	980	756		574	557	1,420	2,960	2,740	2,820	2,520	2,390
13	1,140	928	730		562	560	1,550	2,970	2,740	2,420	2,710	2,390
14	1,110	676	686		545	624	1,690	2,960	2,750	1,990	2,790	2,390
15	1,120	636	679	645	531	664	1,740	2,920	2,750	1,990	2,780	2,390
16	1,070	636	689		520	759	1,720	2,840	2,740	2,000	2,790	2,380
17	1,050	633	692		526	821	1,800	2,820	2,740	2,010	2,780	2,370
18	1,000	792	698		526	852	2,020	2,830	2,730	1,990	2,790	2,380
19	920	970	698		526	917	2,250	2,890	2,510	1,990	2,790	2,380
20	886	977	698		514	522	2,270	2,950	2,490	2,000	2,780	2,410
21	876	876	698		517	144	2,280	2,970	2,500	2,000	2,450	2,350
22	914	727	689	649	523	120	2,480	2,960	2,500	2,000	2,240	1,250
23	973	484	689		517	120	2,610	2,970	2,500	1,990	2,240	2,280
24	962	468	689		517	97	2,660	2,970	2,270	2,000	2,240	2,270
25	956	439	692	660	526	73	2,750	2,870	2,120	1,920	2,240	2,260
26	956	554	692		545	49	2,790	3,000	2,030	1,900	2,230	2,260
27	959	661	676		545	864	2,780	2,950	2,010	1,900	2,240	2,240
28	752	686	686	704	551	1,480	2,840	2,790	2,040	1,900	2,240	2,230
29	648	689	685	749	542	612	2,930	2,770	2,040	1,900	2,240	2,160
30	636	603	685	765	-------	583	2,960	2,770	2,030	1,900	2,240	2,070
31	639	-------	685	740	-------	667	-------	2,770	-------	1,900	2,240	-------

NOTE.—Stage-discharge relation affected by ice Dec. 29 to Jan. 21 and Jan. 23 to Feb. 5; mean discharge estimated for periods as shown above on basis of one measurement, study of weather records, and observer's notes on head gate changes and ice conditions. Braced figures show mean discharge for periods indicated.

Monthly discharge of South Side Twin Falls Canal at Milner, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,980	636	1,180	72,600
November	984	439	777	46,200
December	1,140	183	683	42,000
January			675	41,500
February	648	514	552	31,800
March	1,480	49	553	34,000
April	2,960	756	1,840	109,000
May	3,380	2,770	2,940	181,000
June	2,800	2,010	2,550	152,000
July	2,970	1,900	2,050	126,000
August	2,790	1,930	2,370	146,000
September	2,410	717	2,130	127,000
The year	3,380	49	1,530	1,110,000

ROCK CREEK NEAR TWIN FALLS, IDAHO

LOCATION.—On south line of sec. 36, T. 9 S., R. 16 E., at highway bridge, 3 miles above confluence with Snake River and 3½ miles northwest of Twin Falls, Twin Falls County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 27, 1922, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; installed July 31, 1922; inspected by H. T. Henderson and T. T. Rutledge.

DISCHARGE MEASUREMENTS.—Made from highway bridge at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock covered with boulders, gravel, and silt. One channel at all stages. Banks high; covered with brush. Control formed by lava reef covered in part by boulders and brush growth; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.35 feet at 5 a. m. November 12 (discharge, 563 second-feet); minimum stage, 1.01 feet from 3 p. m. to midnight August 3 (discharge, 94 second-feet).

1922–1924: Maximum stage recorded, 3.43 feet at 7 p. m. July 23, 1923 (discharge, about 589 second-feet); minimum discharge occurred August 3, 1924.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—After spring floods the normal flow is entirely diverted for irrigation several miles upstream. Flow past gage derived largely from waste and seepage water from the South Side Twin Falls tract.

REGULATION.—At times waste water from South Side Twin Falls Canal which crosses Rock Creek 10 miles above causes appreciable changes in stage.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined below 400 second-feet and extended above. Operation of water-stage recorder satisfactory except for short periods. Daily discharge ascertained by applying to rating table mean daily gage height determined from inspection of recorder graph except as indicated in footnote to table of daily discharge. Records good.

COOPERATION.—Gage-height record furnished by Murtaugh Irrigation District.

Discharge measurements of Rock Creek near Twin Falls, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	1.93	232	Apr. 15	2.60	383	July 14	1.14	107
Dec. 15	1.80	210	May 18	1.29	129	July 22	1.07	102
Feb. 27	1.52	163	June 6	1.28	131	Sept. 10	1.28	134
Mar. 3	1.49	153	June 7	1.40	144	Sept. 24	1.44	157
Mar. 31	1.85	218						

Daily discharge, in second-feet, of Rock Creek near Twin Falls, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	239	200	344	378	156	223	148	138	115	99	121
2	332	238	188		355	161	224	150	133	114	97	122
3	390	366	185		321	158	267	155	132	112	97	122
4	414	241	207	310	332	154	208	156	129	110	97	121
5	366	193	187		310	155	224	158	131	108	97	118
6	299	205	191		299	169	366	149	132	106	98	113
7	332	332	198		278	169	344	146	145	104	100	113
8	332	195	161	288	288	161	299	149	148	102	101	121
9	332	257	155	310	278	158	310	148	145	100	100	129
10	310	288	166	332	267	160	299	152	143	105	99	131
11	278	355	154	344	267	163	185	142	142	110	103	133
12	267	538	208	344	284	154	158	142	142	119	103	133
13	212	504	226	355	261	155	150	136	140	115	105	133
14	207	469	238	355	257	171	234	139	143	112	106	136
15	210	435	215	366	253	177	366	135	143	103	108	138
16	210	400	221	355	249	177	332	140	146	104	110	136
17	195	366	207	390	245	175	332	126	146	104	112	139
18	188	338	221	378	241	175	203	129	149	106	113	142
19	226	310	239	378	237	174	402	125	150	108	114	145
20	188	272	224	390	234	175	414	119	143	105	126	145
21	188	234	223	402	232	174	414	121	140	104	126	143
22	191	196	228	402	195	171	288	125	140	104	122	146
23	188	158	247	402	164	172	185	121	142	100	118	143
24	188	158	278	390	160	172	160	121	135	100	118	150
25	187	174	288	378	158	169	158	421	128	103	117	154
26	203	278	278	378	166	138	163	122	125	104	117	149
27	239	332	288	366	164	200	166	125	117	103	119	146
28	267	310	344	366	161	121	161	126	114	101	118	149
29	210	257	426	355	155	128	161	125	115	98	117	149
30	189	378	332	378		133	150	131	117	98	117	146
31	224		310	378		205		132		99	121	

NOTE.—Discharge estimated on account of float frozen in well Jan. 2-7; interpolated on account of missing gage height record Nov. 13-16, 18, 20-22, Feb. 12-19, and Sept. 12; on account of water being below intake pipe July 3-8, 10, and 16. Braced figures gives mean discharge for period indicated.

Monthly discharge of Rock Creek near Twin Falls, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	414	189	254	15,600
November	538	158	301	17,900
December	426	154	233	14,300
January	402	155	354	21,800
February	378	155	247	14,200
March	205	121	164	10,100
April	414	150	252	15,000
May	158	119	136	8,360
June	150	114	137	8,150
July	119	98	106	6,520
August	126	97	110	6,760
September	154	113	136	8,090
The year	538	97	202	147,000

SALMON FALLS CREEK NEAR SAN JACINTO, NEV.

LOCATION.—In sec. 23, T. 47 N., R. 64 E., in canyon 200 yards below county highway bridge, 250 yards below mouth of Shoshone Creek, and 5 miles north of San Jacinto, Elko County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 17, 1909, to September 30, 1916; October 1, 1918, to September 30, 1924.

GAGE.—An water-stage recorder on right bank; installed September 25, 1924; inspected by employees of Salmon River Canal Co. (Ltd.) Barrett & Lawrence water-stage recorder at same site used November 20, 1911, to September 24, 1924.

DISCHARGE MEASUREMENTS.—Made from cable 20 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control shifts slightly. Left bank subject to overflow at high stages. Stage of zero flow determined September 25, 1924, gage height 1.65 feet ±0.05 foot.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.19 feet at 8 a. m. April 12 (discharge, 646 second-feet); minimum stage, 2.32 feet 3 to 11 p. m. August 28 (discharge, 15 second-feet).

1909–1916; 1919–1924: Maximum stage recorded, 7.5 feet May 22, 1912 (discharge, 1,280 second-feet); minimum stage, 2.28 feet July 25, 1919 (discharge, 10 second-feet).

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—A large number of diversions on ranches of Utah Construction Co. above station appropriate a large part of low-water flow of Salmon Falls and Shoshone Creeks.

REGULATION.—None except that due to diversions. Salmon Dam of Salmon River Canal Co., 15 miles below station, forms a reservoir having a capacity of about 180,000 acre-feet.

ACCURACY.—Stage-discharge relation fairly permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except November 28 to December 2, December 4 to February 15, March 13–28, and short periods in April, May, June, and August. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except as indicated in footnote to table of daily discharge. Records good except for estimated periods for which they are fair.

COOPERATION.—Gage-height record furnished by Salmon River Canal Co. (Ltd.).

Discharge measurements of Salmon Falls Creek near San Jacinto, Nev., during the year ending September 30, 1924.

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	3.00	78.6	Apr. 18	4.27	365	July 23	2.45	24.0
Feb. 28	3.14	109	May 19	4.11	326	Sept. 25	2.52	26.6
Mar. 29	3.14	104	June 6	3.18	112			

Daily discharge, in second-feet, of Salmon Falls Creek near San Jacinto, Nev., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	84	72			105	100	367	163	28	26	16
2	44	84	71		70	103	103	361	145	28	26	16
3	45	84	70			107	129	381	139	28	26	17
4	50	84	57		73	107	135	392	126	28	26	18
5	59	84				103	184	419	116	29	25	18
6	63	82				100	234	436	111	30	24	19
7	66	82				103	283	433	107	30	24	18
8	68	82				102	280	395	107	30	23	18
9	73	79				100	413	372	107	35	23	18
10	80	79			110	102	524	367	100	39	22	18
11	84	84				103	584	363	90	38	22	18
12	85	85				98	584	358	84	39	22	17
13	84	87					509	353	74	38	21	18
14	82	87					569	348	68	36	21	18
15	82	87					600	344	62	33	20	18
16	78	85		55	143		494	339	59	31	20	18
17	74	80	65		143		427	331	56	30	19	18
18	74	79			135		372	328	54	28	18	18
19	74	76			124		356	326	51	26	18	18
20	79	76			131		375	323	48	25	17	18
21	80	74			129	95	375	323	46	25	17	20
22	82	76			118		407	315	45	25	16	20
23	84	76			109		450	310	44	25	16	23
24	84	76			107		465	309	43	25	16	25
25	84	76			103		465	304	43	27	16	25
26	84	76			103		450		40	29	16	26
27	84	76			103		422		37	28	16	28
28	84	75			103		390	240	34	27	16	30
29	84	74			102	98	372		31	27	16	31
30	84	73			-------	100	370		28	26	16	33
31	82	-------	59		-------	98	-------		-------	26	16	-------

NOTE.—Discharge estimated on account of missing gage height record Dec. 5–30, Jan. 1–31, Feb. 1–3, 5–15, Mar. 13–28, May 26–31. Discharge interpolated Nov. 28–30, Dec. 1–2, Apr. 5–6, May 10–15, June 16–18, 26–29, and Aug. 13–21. Braced figures give mean discharge for periods indicated. Discharge Dec. 31 and Feb. 4 based upon one staff gage reading daily.

Monthly discharge of Salmon Falls Creek near San Jacinto, Nev., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	85	43	74.3	4,570
November	87	73	80.1	4,770
December	----------	----------	65.1	4,000
January	----------	----------	55.0	3,380
February	----------	----------	108	6,210
March	107	----------	98.4	6,050
April	600	100	381	22,700
May	436	----------	333	20,500
June	163	28	75.3	4,480
July	39	25	29.6	1,820
August	26	16	20.0	1,230
September	33	16	20.5	1,220
The year	600	16	111	80,900

BIG WOOD RIVER AT HAILEY, IDAHO

LOCATION.—In sec. 9, T. 2 N., R. 18 E., at steel highway bridge a quarter of a mile southwest of Hailey, Blaine County.

DRAINAGE AREA.—640 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 11, 1915, to September 30, 1924.

GAGE.—Vertical staff on right bank; installed April 6, 1920; read by R. F. Bowman.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and sand; clean. Banks low; covered with light brush. Log cribbing along left bank constructed in April, 1922, prevents overflow and confines flood discharge in one channel. Control subject to changes at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.80 feet May 17 (discharge, 587 second-feet); minimum discharge, 0.1 second-foot September 10–20.

1915–1924: Maximum stage recorded, 5.70 feet June 12, 1921 (discharge, 3,560 second-feet); minimum discharge, September 10–20, 1924.

ICE.—Stage-discharge relation slightly affected by ice.

DIVERSIONS.—A number of small diversions for irrigation, principally from tributaries, are made above station. Hailey power plant, half a mile upstream, utilizes as a tailrace a natural channel on east side of river known as Big Wood Slough. A large amount of water is diverted from main stream in this manner and is returned to river below station. A record of the flow of Big Wood Slough is being obtained (see page 151), and the total flow of Big Wood River is represented by amount of water passing both stations.

REGULATION.—Variation in the amount of water used at Hailey power plant causes some diurnal fluctuation at gage, but as observations on the river and on Big Wood Slough are practically simultaneous each day, the effect of such regulation is probably eliminated.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good except for estimated periods for which they are fair.

COOPERATION.—Two discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Tables of combined discharge of Big Wood River and Big Wood Slough are published herein.

Discharge measurements of Big Wood River at Hailey, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	1.90	212	May 8	2.10	278	June 26	0.49	7.73
Feb. 29	.41	*6.0	May 26	2.64	464	July 30	.34	2.92
Apr. 13	2.07	248	June 12	1.61	128	Sept. 28	.26	1.11

* Estimated.

Daily discharge, in second-feet, of Big Wood River at Hailey, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.
1	238	238	10			5.3	4.0	294	216	8.0	2.9	0.1
2	219	244	6.6		4	5.3	4.6	329	246	7.7	2.1	.3
3	231	238	6.6			5.3	4.0	426	246	8.0	2.1	.4
4	250	228	6.6			5.3	4.6	405	216	13	2.4	1.1
5	282	219				5.3	5.3	366	198	14	2.1	1.5
6	266	213			3	5.3	6.0	294	196	8.8	2.4	1.5
7	274	207				5.3	7.3	261	174	8.0	2.1	.6
8	282	202				5.3	53	261	164	8.0	1.6	.6
9	282	202				5.3	107	230	152	7.7	1.8	.8
10	266	207	4			5.3	174	261	140	7.7	2.4	.1
11	266	202				5.3	174	312	127	8.4	2.9	.1
12	266	196				5.3	201	405	123	8.0	2.4	.1
13	250	202			0.3	5.3	246	490	107	8.0	2.4	.1
14	250	207				5.3	246	490	115	7.3	1.1	.1
15	250	207				5.3	196	514	111	7.3	1.1	.1
16	266	202				5.3	123	537	111	6.0	1	.1
17	250	185				5.3	278	587	113	5.6	.4	.1
18	244	120				4.0	123	562	100	6.6	.6	.1
19	244	55			4	4.0	123	446	93	6.6	.8	.1
20	250	55				4.6	123	537	85	6.6	1.0	.1
21	274	58				5.3	136	562	80	6.6	1.5	.4
22	298	60				5.3	213	514	68	6.6	1.1	.4
23	282	60				4.0	224	490	71	6.6	1.1	.8
24	282	65			5	4.6	213	446	70	6.0	.8	1.1
25	266	60				4.0	185	468	67	6.0	.4	1.1
26	266	63				4.0	185	446	27	6.6	.6	1.1
27	250	51				4.0	185	366	8.8	7.0	.4	1.1
28	250	52			4	4.6	201	294	8.4	6.0	.4	1.1
29	244	35			4.6	4.0	207	261	8.4	2.6	.1	.8
30	238	19				4.0	230	246	8.0	2.9	.0	.8
31	225					3.5		185		2.9	.4	

NOTE.—Discharge estimated Dec. 5 to Feb. 28, based on observer's notes, weather records, and engineer's discharge estimate on Feb. 29. Discharge interpolated Oct. 7, 21, Nov. 4, 18, June 1, and Aug. 19. Braced figures give mean discharge for periods indicated.

Monthly discharge of Big Wood River at Hailey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	298	219	258	15,900
November	244	19	145	8,630
December			4.96	305
January			3.2	197
February			3.78	217
March	5.3	3.5	4.84	298
April	278	4.0	139	8,270
May	587	185	396	24,300
June	246	8.0	115	6,840
July	14	2.6	7.13	438
August	2.9	.1	1.36	83.6
September	1.5	.1	.56	33.3
The year	587	.1	90.3	65,500

Combined daily discharge, in second-feet, of Big Wood River and Big Wood Slough at Hailey, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.
1	273	268	169	125	163	173	141	416	402	167	113	103
2	250	274	166	125	163	164	142	458	458	163	102	100
3	264	268	166	125	162	181	197	585	453	167	108	97
4	290	257	159	125	162	173	157	557	405	244	105	98
5	325	247	156	125	162	198	142	521	366	260	112	98
6	306	240	156	147	162	181	182	410	359	194	105	108
7	313	234	156	147	162	164	219	374	342	180	108	104
8	320	229	141	147	188	157	294	371	332	163	115	102
9	320	229	126	147	179	157	300	389	304	167	115	92
10	304	234	126	155	180	173	303	454	292	167	105	91

Combined daily discharge, in second-feet, of Big Wood River and Big Wood Slough at Hailey, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	301	229	133	155	133	164	303	524	271	167	119	97
12	301	223	163	155	180	164	345	585	316	141	105	97
13	288	229	189	155	180	157	426	666	283	141	99	91
14	283	234	189	155	189	157	414	670	308	129	92	91
15	281	234	189	147	172	157	340	694	287	151	92	97
16	301	229	173	147	172	157	275	726	291	135	91	91
17	283	209	173	140	180	157	295	809	289	112	97	97
18	275	228	173	140	180	156	291	706	252	162	98	110
19	275	248	198	140	180	156	291	579	261	159	98	116
20	283	248	198	140	180	157	291	677	225	159	98	119
21	312	243	198	162	180	173	312	706	217	159	104	116
22	341	236	127	171	180	181	357	651	190	117	111	129
23	320	236	127	179	180	180	383	619	197	104	111	123
24	320	250	127	179	163	181	381	568	192	92	104	117
25	301	228	164	171	163	156	322	590	186	92	106	117
26	301	209	164	163	163	156	322	568	190	93	104	117
27	285	195	164	163	163	197	322	495	202	107	97	123
28	285	196	164	163	163	190	345	420	193	125	97	120
29	277	247	181	163	138	156	359	383	184	113	91	117
30	268	221	142	163	------	156	380	359	193	113	95	117
31	255	------	142	163	------	140	------	344	------	113	97	------

Combined monthly discharge of Big Wood River and Big Wood Slough at Hailey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	341	250	293	18,000
November	274	195	236	14,000
December	198	126	161	9,900
January	179	125	151	9,280
February	189	133	170	9,780
March	198	140	167	10,300
April	426	141	295	17,600
May	809	344	544	33,400
June	458	184	281	16,700
July	260	92	147	9,040
August	119	91	103	6,380
September	129	91	106	6,310
The year	809	91	221	161,000

BIG WOOD RIVER NEAR BELLEVUE, IDAHO

LOCATION.—In sec. 20, T. 1 S., R. 18 E., three-eighths mile below Blair ranch, 1¾ miles above flow line of Magic Reservoir, and 10 miles southwest of Bellevue, Blaine County. Camas Creek enters reservoir 3 miles below station.

DRAINAGE AREA.—823 square miles (measured on topographic and Land Office maps).

RECORDS AVAILABLE.—July 6, 1911, to September 30, 1924.

GAGE.—Gurley water-stage recorder on right bank; reinstalled September 24, 1923; inspected by assistants of Wood River water master.

DISCHARGE MEASUREMENTS.—Made from cable 150 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel. Control of same material, shifts occasionally. Banks clean; may be overflowed at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.00 feet at 6 p. m. May 4 (discharge, 320 second-feet); minimum stage, 1.09 feet August 31 to September 4 (discharge, 32 second-feet).

1911–1924: Maximum stage recorded, 6.07 feet at 7 p. m. June 16, 1921 (discharge, 3,660 second-feet); minimum discharge, 25 second-feet April 22–24, 1920; lower flow may have occurred on a day of no record.

ICE.—Stage-discharge relation seldom affected by ice. Records discontinued during winter.

DIVERSIONS.—Numerous diversions for irrigation above station. Flood waters stored in Magic Reservoir.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during winter. Rating curves well defined. Operation of water-stage recorder not entirely satisfactory because of occasional trouble with inlet. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good for July and August; others fair.

COOPERATION.—Gage-height record and two discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Big Wood River near Bellevue, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.62	167	Apr. 23	1.76	219	July 29	1.12	35.8
Apr. 2	1.18	48.5	May 22	1.66	190	Sept. 27	1.11	35.6
Apr. 9	1.31	81.8	June 26	1.24	60.7			

Daily discharge, in second-feet, of Big Wood River near Bellevue, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	231	173	90		48	198	64	50	39	32
2	152	231	144	90		48	216	62	48	41	32
3	152	231	144			47	270	59	48	41	32
4	181	213	134				307		48	39	32
5	235	213	131			46	286		48	39	33
6	227	205	134				254	65	50	37	35
7	249	201	141			65	212		52	35	33
8	253	201	131				159		52	37	35
9	253	197	115			81	109		52	37	
10	253	201	112			100	100	69	57	35	
11	244	197	109			115	90		62	35	36
12	231	193	103			124	81		62	35	
13	222	185	103				143		59	35	
14	220	189	103			160	173	60	54	35	
15	218	185	109				180		52	35	37
16	231		112			190	176		48	37	35
17	249	180	115			187	194	57	44	37	33
18	244		118			180	212		46	37	33
19	244	173	134			173	190		48	39	33
20	244		134			170	201		50	41	35
21	249		131			173	205	60	52	39	37
22	249	175	125			196	187		52	39	37
23			122			220	166		44	39	
24			122			212	150	62	42	37	
25			118			201	134	62	42	35	36
26	240	181	128			194	118	64	42	33	
27		177	128			184	124	64	41	33	35
28		162	81			184	109	52	39	33	
29	231	166	84		52	180	95	52	39	33	35
30	227	177	95		50	194	76	52	35	33	
31	222		90		48		69		39	32	

NOTE.—Discharge estimated on account of missing gage heights Oct. 23–28, Nov. 16–18, 20–25, Apr. 3–4, 6–8, 13–15, June 4–9, 11–16, 18–23, Sept. 9–14, 23–26, and 28–30. Discharge interpolated Oct. 14, Dec. 10, 13 Apr. 22, May 10–11, 25, and June 2. Braced figures give mean discharge for periods indicated.

Monthly discharge of Big Wood River near Bellevue, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	253	152	229	14,100
November	231	162	190	11,300
December	173	81	120	7,380
January 1-2	90	90	90.0	357
March 29-31	52	48	50.0	298
April	220	----------	139	8,270
May	307	69	167	10,300
June	----------	----------	61.0	3,630
July	62	35	48.3	2,970
August	41	32	36.5	2,240
September	----------	----------	34.8	2,070

MAGIC RESERVOIR NEAR RICHFIELD, IDAHO

LOCATION.—In NE. ¼ SE. ¼ sec. 18, T. 2 S., R. 18 E., Blaine County, 18 miles northwest of Richfield, Lincoln County.

DRAINAGE AREA.—1,500 square miles (furnished by Idaho Irrigation Co.).

RECORDS AVAILABLE.—February 3, 1909, to September 30, 1924. Prior to April 4, 1909, gage-height record only is available. Practically no storage prior to July 14, 1909, when first stop logs were placed in tunnel entrance.

GAGE.—All readings made by measuring with a weighted steel tape from tower on east side of dam. Below elevation 4,855 feet readings obtained by measuring from a well-defined offset in walls of tower; when stages are above that elevation measurements are made in a 5⅝ inch well casing which serves as a stilling well, bolted to face of tower. Reading made by attendants at the dam. Observations are referred to an assumed datum which is about 137 feet lower than sea level.

COOPERATION.—Gage-height record furnished by water master for Big Wood and Little Wood Rivers.

Stored water from this reservoir is used for irrigation on about 69,000 acres of land, under Carey Act project of the Big Wood Canal Co. (Ltd.), operated prior to 1921 by Idaho Irrigation Co. The reservoir is formed by a gravity earth and rock filled dam several hundred feet long at crest and 127 feet above bottom of outlet gates. Concrete lip spillway 400 feet long is provided, crest of which is 15 feet below top of dam. Elevation of bottom of outlet gates corresponds to 4,818.5 feet on gage, which is about 3 feet lower than the actual stage of zero storage. At times, however, the stage may fall below 4,821.5 feet, depending upon the amount of normal flow passing through reservoir. Elevation of concrete lip spillway crest corresponds to 4,930 feet on gage. Use of a system of flashboards extends the actual elevation of spillway crest to 4,935 feet with respect to gage datum, at which stage the capacity of the reservoir is about 191,000 acre-feet, as determined by latest capacity table, based upon inflow and outflow records; about 4,000 acres being submerged at this stage.

Daily contents, in acre-feet, of Magic Reservoir near Richfield, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	6,146	21,252	29,798	-------	42,722	55,462	68,443	84,695	31,307	8,034
2	6,516	21,551	29,942	-------	42,982	55,880	68,723	84,673	29,215	7,878
3	6,908	22,036	30,058	-------	43,224	56,262	69,044	84,673	27,362	7,952
4	7,216	22,429	-------	38,188	43,397	56,816	69,426	84,235	25,521	8,034
5	7,666	22,958	30,131	38,319	43,623	57,257	69,828	83,534	23,738	7,549
6	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
7	8,068	23,396	30,276	38,467	44,145	57,641	70,290	82,905	22,220	7,079
8	8,333	23,815	30,595	38,598	44,339	58,161	70,733	82,278	20,716	6,516
9	9,268	24,259	30,827	38,828	44,849	58,644	71,096	81,630	19,388	6,004
10	9,871	24,686	31,088	39,008	45,730	59,087	71,644	80,454	18,271	5,468
11	10,342	25,154	31,381	39,141	46,229	59,532	72,151	79,054	17,534	4,949
12	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
13	10,901	25,521	-------	39,307	46,587	60,114	72,780	77,733	16,824	4,441
14	11,315	25,920	-------	39,473	47,160	60,699	73,639	76,008	16,198	4,393
15	11,736	26,322	-------	39,607	47,375	61,244	74,500	74,480	15,542	4,530
16	12,254	26,751	-------	39,724	47,661	61,792	75,304	73,066	15,141	4,686
17	12,608	27,129	-------	-------	48,095	62,400	76,214	71,502	14,672	4,829
18	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
19	12,995	27,513	33,024	-------	48,405	62,870	77,294	67,983	14,459	4,921
20	13,468	27,927	33,252	-------	49,151	63,146	77,984	66,409	13,983	5,032
21	14,077	28,328	33,632	-------	49,699	63,658	78,613	64,763	12,968	5,186
22	14,459	28,736	33,938	40,492	50,141	64,092	79,245	62,733	11,481	4,553
23	15,023	-------	34,275	40,626	50,766	64,447	79,839	62,243	10,144	3,030
24	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
25	15,542	-------	34,556	40,743	51,392	64,783	80,369	59,319	9,343	2,479
26	15,996	-------	34,774	40,913	52,043	65,397	80,987	56,816	9,418	2,377
27	16,561	-------	35,071	41,049	52,471	65,496	81,587	54,440	9,530	2,384
28	17,044	-------	35,398	41,168	52,843	65,793	82,127	51,263	9,606	2,075
29	17,620	-------	35,648	41,338	53,255	66,210	82,667	48,514	9,666	1,742
30	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
31	18,140	31,529	35,996	41,474	53,631	66,469	83,293	45,553	9,742	1,302
32	18,660	-------	36,172	41,627	54,044	66,807	83,862	42,844	9,530	663
33	19,186	29,613	36,444	41,797	54,647	67,145	84,213	40,626	9,085	51
34	19,615	29,343	36,700	42,052	55,139	67,464	84,738	38,385	8,761	0
35	-------	29,641	37,084	42,308	-------	67,823	84,695	36,044	8,374	0
36	-------	-------	37,372	42,532	-------	68,183	-------	33,632	-------	0

NOTE.—Reservoir was empty July 29 to Sept. 30.

BIG WOOD RIVER BELOW MAGIC DAM, NEAR RICHFIELD, IDAHO

LOCATION.—In sec. 18, T. 2 S., R. 18 E., Blaine County, half a mile below Magic Dam and 18 miles northwest of Richfield, Lincoln County. No tributaries between dam and station.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 19, 1911, to September 30, 1924.

GAGE.—Gurley water-stage recorder on right bank; installed April 20, 1916; inspected by Ed Dayton.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed and control composed of clean, coarse gravel and small boulders; somewhat shifting. Banks high and brushy.

EXTREMES OF DISCHARGE.—Maximum measured discharge, 1,600 second-feet May 22; minimum discharge, about 5 second-feet December 6–11, 18, 20–31, and January 1–4.

1911–1924: Maximum stage recorded, 9.2 feet May 18, 1911 (discharge, 5,070 second-feet); no flow reported February 3, 1915.

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—No diversions are made by Big Wood Canal Co. above this station, but numerous ranch diversions are made in the upper basin, the largest quantity of water probably being used in the district below Hailey. Flood waters are stored in Magic Reservoir just above station and the first diversion by the company is Richfield Canal, about 2 miles below.

REGULATION.—Flow past station completely regulated by gates in outlet tunnel at Magic Dam.

ACCURACY.—Stage-discharge relation changed during high water May 25 to June 7. Rating curves well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph or by averaging discharges for intervals of a day. Records excellent except for estimated periods and for June and July for which they are fair.

COOPERATION.—Gage-height record and several discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Big Wood River below Magic Dam, near Richfield, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 14	1.69	13.2	May 22	5.15	1,600	July 29	2.20	77.0
May 2	3.03	307	May 23	5.21	1,550	Sept. 27	2.24	82.4
May 16	4.43	1,090						

Daily discharge, in second-feet, of Big Wood River below Magic Dam, near Richfield, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	9	148		9	13	14	298	1,190	235	64	51
2	15	9	140	5		13	14	303	1,030	31	63	50
3	15	9	135			13	14	491	1,030	33	64	50
4	15	9	135			13	14	719	998	214	64	50
5	15	9	54		10	13	14	743	930	338	63	52
6	15	9	5			13	14	658	862	352	63	54
7	15	8	5			14	14	646	862	356	60	53
8	15	8	5	6		14	14	756	787	356	58	54
9	15	8	5			14	14	896	504	356	58	54
10	15	8	5			14	14	896	499	356	58	53
11	15	8	5		11	14	14	930	488	242	57	54
12	15	8	6			14	13	930	457	10	57	54
13	16	8	6			14	13	896	352	9	55	54
14	16	8	6			14	13	930	261	9	55	57
15	16	8	6	7		14	13	1,060	282	9	55	43
16	16	8	6			14	13	1,100	334	9	55	57
17	17	8	6			14	13	1,100	465	9	57	53
18	17	8	5			14	13	1,190	859	16	57	53
19	17	8	6			14	13	1,430	793	967	57	53
20	12	8	5		12	14	14	1,520	683	535	58	54
21	8	8	5	8		14	14	1,570	122	144	58	55
22	8	8	5			14	14	1,570	46	19	58	55
23	8	7	5			14	14	1,570	46	242	58	54
24	8	7	5			14	14	1,570	46	235	55	54
25	8	7	5			14	14	1,520	46	258	54	54
26	8	287	5		13	14	15	1,370	74	277	53	54
27	9	802	5			14	15	1,340	294	294	53	44
28	9	434	5	6		14	15	1,310	273	99	54	6
29	9	138	5			14	184	1,310	265	75	53	6
30	9	72	5			14	307	1,310	261	71	53	6
31	9					14		1,310		67	53	

NOTE.—Discharge estimated on account of lack of gage-height record Dec. 30 to Feb. 29, based on information furnished by water master for Big Wood and Little Wood Rivers; flow leakage through gates at Magic Dam. Discharge estimated June 8 and Sept. 27 based upon recorder record for part of day and marks of pencil thereon while clock was stopped. Discharge interpolated Oct. 5, 6, Dec. 23, 24, and Sept. 5. Braced figures give mean discharge for periods indicated.

Monthly discharge of Big Wood River below Magic Dam, near Richfield, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	17	8	12.9	793
November	802	7	64.5	3,840
December	148	----------	24.2	1,490
January	----------	----------	7.1	437
February	----------	----------	11.4	656
March	14	13	13.8	848
April	307	13	29.3	1,740
May	1,570	298	1,070	65,800
June	1,190	46	505	30,000
July	967	9	201	12,400
August	64	53	57.4	3,530
September	57	6	48.0	2,860
The year	1,570	----------	171	124,000

BIG WOOD RIVER ABOVE NORTH GOODING CANAL, NEAR SHOSHONE, IDAHO

LOCATION.—In sec. 10, T. 4 S., R. 18 E., 1 mile above heading of North Gooding Canal, 13 miles below Magic Dam, and 14 miles northeast of Shoshone, Lincoln County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 21, 1921, to September 30, 1924.

GAGE.—Vertical staff on right bank; read by J. H. Gilmore. Datum raised 5.0 feet April 16, 1923.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock partly covered with gravel. Control formed by lava-rock riffle 100 feet below gage; fairly permanent. One channel at all stages. Point of zero flow occurs at a gage height of approximately —0.5 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.16 feet at 5 p. m. July 19 (discharge, 792 second-feet); channel reported dry most of nonirrigation season.

1921–1924: Maximum stage recorded, 12.79 feet (old datum) June 13, 1921 (discharge, 3,330 second-feet); channel practically dry except during irrigation seasons each year.

ICE.—Channel practically dry during winter.

DIVERSIONS.—Numerous diversions for irrigation made above and below station. Richfield Canal of Big Wood Canal Co. (operating Idaho Irrigation Co. project) is main diversion between station and Magic Dam.

REGULATION.—Flow regulated by operation of head gates at Magic Dam 13 miles above, except when water is wasted over spillway.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined above 100 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except as indicated in footnote to table of daily discharge. Records fair except May 1 to June 9 for which they are good.

COOPERATION.—Gage-height record and two discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Big Wood River above North Gooding Canal, near Shoshone, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 2	0.64	94.6	May 21	2.74	634
May 17	2.68	601	May 30	1.95	377

Daily discharge, in second-feet, of Big Wood River above North Gooding Canal, near Shoshone, Idaho, for the year ending September 30, 1924

Day	Nov.	May	June	July	Day	Nov.	May	June	July
1		64	378		16		604	0	
2		90	378		17		604		0
3		94	364		18		604	180	
4		451	364		19		604	270	340
5		510	350		20		571	246	422
6		422	234		21	0	604	50	144
7		422	258		22		604		
8	0	393	258	0	23		604		
9		393	50		24		604		
10		422			25		571		
11		451			26		422	0	0
12		451	0		27	571	393		
13		422			28	571	364		
14		422			29	234	364		
15		540			30	0	378		
					31		378		

NOTE.—Discharge estimated for May 1, June 9, 18, 21, and July 19, based on gage heights, observer's notes, and by comparison with flow at stations above and below.

Monthly discharge of Big Wood River above North Gooding Canal, near Shoshone, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November	571	0	45.9	2,730
May	604		446	27,400
June	378	0	113	6,720
July	422	0	29.2	1,800

BIG WOOD RIVER BELOW NORTH GOODING CANAL, NEAR SHOSHONE, IDAHO

LOCATION.—In sec. 15, T. 4 S., R. 18 E., 300 yards below heading of North Gooding Canal, 13 miles northeast of Shoshone, Lincoln County, and 14 miles below Magic Dam.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 1, 1911, to September 30, 1924.

GAGE.—Gurley seven-day water-stage recorder on right bank installed July 5, 1920; inspected by assistants of water master for Big Wood and Little Wood Rivers. Prior to July 8, 1918, datum was about 6 feet lower than present datum.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock; practically permanent; rough. At extremely high stages water overflowed above North Gooding diversion dam into secondary channel to left of gage. Control fairly well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 5.28 feet 6 to 8 p. m. July 19 (discharge, 675 second-feet); channel reported dry except during period of recorded flow.

1911–1924: Maximum stage recorded, 15.0 feet (old datum) May 18, 1911 (discharge, 3,180 second-feet); no flow occurred during many periods since establishment of station.

ICE.—Channel reported dry during winter.

DIVERSIONS.—Station is below all diversions of Big Wood Canal Co. North Gooding and Richfield Canals divert between station and Magic Dam.

REGULATION.—Flow past station is regulated by gates at Magic Dam and head gates of North Gooding and Richfield Canals.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined above 45 second-feet, used. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph or by averaging the discharge for intervals of the day. Records good.

COOPERATION.—Gage-height record and one discharge measurement furnished by water master for Big Wood and Little Wood Rivers.

The following discharge measurements were made:

May 2, 1924: Gage height, 1.78 feet; discharge, 58.5 second-feet.[5]

May 21, 1924: Gage height, 3.51 feet; discharge, 243 second-feet.

Daily discharge, in second-feet, of Big Wood River below North Gooding Canal, near Shoshone, Idaho, for the year ending September 30, 1924

Day	Nov.	May	June	July	Day	Nov.	May	June	July
1		15	170		16		264		
2		44	171		17		236		
3		64	174		18		236		
4		231	168		19		241		241
5		368	152		20		234		108
6		281	53		21		247		
7		264	44		22		245		
8		231	45		23		244		
9		209	18		24		247		
10		233			25		247		
11		247			26		220		
12		264			27	262	215		
13		228			28	219	197		
14		221			29		182		
15		215			30		175		
					31		177		

NOTE.—Channel reported dry during periods for which no discharge is given.

Monthly discharge of Big Wood River below North Gooding Canal, near Shoshone, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November	262	0	16.0	952
May	368	15	217	13,300
June	174	0	33.2	1,980
July	241	0	11.3	695
The year	368	0	23.4	16,900

NOTE.—River dry for other months of year.

[5] Unreliable, owing to poor condition of meter.

BIG WOOD RIVER AT GOODING, IDAHO

LOCATION.—In sec. 29, T. 5 S., R. 15 E., Gooding County, 30 feet below highway bridge and half a mile north of Gooding station on Oregon Short Line Railroad.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 1, 1921, to September 30, 1924. From June 2, 1896, to October 31, 1899, at approximately same site but known as "Malade River at Toponis."

GAGE.—Gurley water-stage recorder on left bank; inspected by James Devanney.

DISCHARGE MEASUREMENTS.—Made from cable 600 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock overlain with gravel. Control formed by lava-rock riffle 300 feet below gage; permanent. One channel at all stages. Zero flow would occur at gage height of 0.80 foot ±0.10 foot, as determined April 27, 1923.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 2.17 feet at noon May 6 (discharge, 147 second-feet); channel reported practically dry prior to May 6 and soon after June 4.

1921–1924: Maximum stage recorded, 5.80 feet May 7, 1922 (discharge, 2,340 second-feet); channel dry for long periods each year.

ICE.—Channel generally dry during winter.

DIVERSIONS.—Numerous diversions for irrigation above and below station.

REGULATION.—Flow regulated by operation of head gates at Magic Dam and by diversions above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records poor.

COOPERATION.—Gage-height record and one discharge measurement furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Big Wood River at Gooding, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 28		a 0.2	May 27	1.69	43.4
May 20	1.70	49.1	Sept. 26		0

a Estimated.

Daily discharge, in second-feet, of Big Wood River at Gooding, Idaho, for the year ending September 30, 1924

Day	May	June	Day	May	June	Day	May	June
1			11	29		21	41	
2			12	42		22	40	
3			13	53		23	37	
4		12	14	40		24	38	
5			15	29		25	35	
6	50		16	32		26	41	
7			17	51		27	42	
8			18	37		28	41	
9	31		19	44		29		
10	16		20	44		30		
						31		

NOTE.—Discharge estimated for May 6, based on part day gage-height record and from information furnished by observer indicating that the first water of the year reached gage at 11.30 a. m. on that day. Staff gage reading used June 12 because water-stage recorder was not operating.

BIG WOOD RIVER NEAR GOODING, IDAHO

LOCATION.—In sec. 21, T. 6 S., R. 14 E., at Cleek ranch, 3½ miles above bridge on upper road between Bliss and Hagerman, 5 miles above diversion dam for King Hill project, and 6 miles southwest of Gooding, Gooding County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 26, 1916, to September 30, 1924.

GAGE.—Gurley seven-day water-stage recorder on right bank; replaced Stevens eight-day recorder on April 10, 1924, which was installed April 13, 1921, at same site and datum; inspected by K. R. Sayre.

DISCHARGE MEASUREMENTS.—Made from cable a short distance above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock, boulders, and coarse gravel. Control practically permanent. Banks overflowed at high stages; one channel at gage; several channels above gage during high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period from water-stage recorder, 1.40 feet 10 a. m. to 2 p. m. April 2 (discharge, 44 second-feet); channel reported practically dry after June 3.

1916–1924: Maximum stage recorded, 9.00 feet March 17, 1922 (discharge, 3,680 second-feet); channel reported dry several times each year.

ICE.—Stage-discharge relation affected by ice at times. Record discontinued during winter.

DIVERSIONS.—Below all diversions of North Side Canal Co. (Ltd.) and above Big Malad Springs. Justice and Croco ditches (combined capacity, about 15 second-feet) divert about 3 miles below gage; a few second-feet are occasionally wasted into river about 2 miles below gage.

REGULATION.—Flow regulated by dams and diversions above station.

ACCURACY.—Stage-discharge relation permanent. Rating curve well-defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records good.

COOPERATION.—Gage-height record and one discharge measurement furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Big Wood River near Gooding, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 6	0.98	15.0	May 20	• 1.02	17.3
Apr. 21	.94	12.4	Sept. 26		0

• Gage height from water-stage recorder graph.

Daily discharge, in second-feet, of Big Wood River near Gooding, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1	37	8	7	11	4	3	------	21	13	19	------
2	39	4	4	12	6	17	------	22	11	17	------
3	28	3	2	13	2	14	------	23	7	12	------
4	19	} 2	------	14	2	22	------	24	14	11	------
5	15		------	15	2	15	------	25	24	11	------
6	15	}	------	16	3	12	------	26	20	10	------
7	9	12	------	17	11	14	------	27	10	15	------
8	8	7	------	18	12	20	------	28	8	15	------
9	6	7	------	19	11	16	------	29	11	20	------
10	3	4	------	20	11	18	------	30	10	16	------
								31	------	7	------

NOTE.—Discharge estimated May 4–6, on account of water being below intake pipe. Daily staff readings obtained Apr. 6, 8, and 9, when recorder was not operating. Braced figure given mean discharge for period indicated.

Monthly discharge of Big Wood River near Gooding, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	39	2	12.4	738
May	22		11.5	707
June 1-3	7	2	4.3	25.6
The period				1,470

BIG WOOD SLOUGH AT HAILEY, IDAHO

LOCATION.—In sec. 9, T. 2 N., R. 18 E., at highway bridge one-eighth mile northeast of steel highway bridge across Big Wood River and one-eighth mile southwest of Hailey, Blaine County.

RECORDS AVAILABLE.—June 11, 1915, to September 30, 1924.

GAGE.—Vertical staff on left bank 3 feet below highway bridge; installed August 3, 1923; read by R. F. Bowman.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Banks covered with brush and subject to overflow. One channel at all stages. Control formed by a wood-stave water pipe, laid in bed 15 feet below gage; changes slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.90 feet at 2.40 p. m. July 5 (discharge, 251 second-feet); minimum stage, 1.00 foot April 17 (discharge, 18 second-feet).

1915–1924: Maximum stage recorded, 3.00 feet June 6, 1921 (discharge, 419 second-feet); minimum discharge, 0.9 second-foot, March 21–24, 1919.

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—None.

REGULATION.—The amount of water passing gage is affected by load at power plant half a mile upstream, and there is considerable fluctuation. The main river station is affected inversely by any such regulation, so that the accuracy of the summation of the two records is presumably affected but slightly by this factor.

ACCURACY.—Stage-discharge relation practically permanent during year. Rating curve fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

COOPERATION.—Four discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Big Wood Slough is a natural channel of Big Wood River that is utilized also as a tailrace for the Hailey power plant. The record from this station represents part of the natural flow of Big Wood River and taken in conjunction with the record at the near-by station on the main river, will show the entire flow of the river at this point. For record from station on the main river see page 139. For record of combined flow of Big Wood River and Big Wood Slough see page 140.

Discharge measurements of Big Wood Slough at Hailey, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	1.18	31.2	Apr. 24	1.69	152	July 30	1.56	116
Feb. 29	1.64	133	May 26	1.60	134	Aug. 28	1.52	92.1
Apr. 2	1.64	133	June 11	1.66	141	Sept. 27	1.60	113
Apr. 13	1.75	175	June 26	1.77	199			

Daily discharge, in second-feet, of Big Wood Slough at Hailey, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	30	159	122	159	168	137	122	186	159	110	103
2	31	30	159	122	159	159	137	129	212	155	100	100
3	33	30	159	122	159	176	193	159	207	159	106	97
4	40	29	152	122	159	168	152	152	189	231	103	97
5	43	28	152	122	159	193	137	155	168	246	110	97
6	40	27	152	144	159	176	176	116	163	185	103	106
7	39	27	152	144	159	159	212	113	168	172	106	103
8	38	27	137	144	185	152	241	110	168	155	113	91
9	38	27	122	144	176	152	193	159	152	159	113	91
10	38	27	122	152	176	168	129	193	152	159	103	91
11	35	27	129	152	129	159	129	212	144	159	116	97
12	35	27	159	152	176	159	144	180	193	133	103	97
13	33	27	185	152	176	152	180	176	176	133	97	91
14	33	27	185	152	185	152	168	180	193	122	91	91
15	31	27	185	144	168	152	144	180	176	144	91	97
16	35	27	168	144	168	152	152	189	180	129	91	91
17	33	24	168	137	176	152	18	222	176	106	97	97
18	31	108	168	137	176	152	168	144	152	155	97	110
19	31	193	193	137	176	152	168	133	168	152	97	116
20	33	193	193	137	176	152	168	140	140	152	97	119
21	38	185	193	159	176	168	176	144	137	152	103	116
22	43	176	122	168	176	176	144	137	122	110	110	129
23	38	176	122	176	176	176	159	129	126	97	110	122
24	38	185	122	176	159	176	168	122	122	86	103	116
25	35	168	159	168	159	152	137	122	119	86	106	116
26	35	176	159	159	159	152	137	122	163	86	103	116
27	35	144	159	159	159	193	137	129	193	100	97	122
28	35	144	159	159	159	185	144	126	185	119	97	119
29	33	212	176	159	133	152	152	122	176	110	91	116
30	30	202	137	159	.....	152	159	113	185	110	94	116
31	30	.....	137	159	.....	137	.....	159	.....	110	97	.....

NOTE.—Discharge interpolated Oct. 7, 21, Nov. 4, 18, June 1, and Aug. 19.

Monthly discharge of Big Wood Slough at Hailey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	43	30	35.3	2,170
November	212	24	91.0	5,410
December	193	122	156	9,590
January	176	122	148	9,100
February	185	129	166	9,550
March	193	137	162	9,960
April	241	18	155	9,220
May	222	110	148	9,100
June	212	119	166	9,880
July	246	86	140	8,610
August	116	91	102	6,270
September	129	91	106	6,310
The year	246	18	131	95,200

CAMAS CREEK NEAR BLAINE, IDAHO

LOCATION.—In sec. 15, T. 1 S., R. 16 E., 500 feet below sheep bridge, a quarter of a mile north of Macon siding on Hill City branch of Oregon Short Line Railroad, 1½ miles below railroad bridge, 2¼ miles above backwater of Magic Reservoir, and 4 miles southeast of Blaine, Camas County. No tributaries or diversions between station and Magic Reservoir.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 9, 1912, to September 30, 1924. Results of discharge measurements made in 1911 by Idaho Irrigation Co. are also available. Discharge measurements only are available for 1922.

GAGE.—Gurley water-stage recorder on left bank; reinstalled September, 1922; inspected by deputy water masters.

DISCHARGE MEASUREMENTS.—Made from sheep bridge or by wading.

CHANNEL AND CONTROL.—Bed rocky. Control somewhat shifting. One channel at all stages. Point of zero flow determined July 30, 1924, as at gage height 0.55 foot ±0.05 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, from water-stage recorder, 3.10 feet 2 to 8 a. m. April 14 (discharge, 280 second-feet); minimum stage, 0.95 foot 6 to 8 p. m. July 31 (discharge, 2.3 second-feet); probably not actual extremes for the year.

1911–1924: Maximum stage recorded, 10.76 feet April 12, 1916 (measured discharge, 5,240 second-feet); minimum discharge, 2.3 second-feet, 4 to 6 p. m. August 17, 1920, and 6 to 8 p. m. July 31, 1924; probably not actual extremes.

ICE.—Observations discontinued during winter.

DIVERSIONS.—Many small diversions are made above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined. Operation of water-stage recorder satisfactory until July 1; thereafter record is fragmentary due to irregular visits on part of observer. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except for June 3 for which it was interpolated. Records fair.

COOPERATION.—Gage-height record and one discharge measurement furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Camas Creek near Blaine, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 9	2.84	216	May 27	1.24	7.60	Sept. 27	1.02	3.45
Apr. 23	2.34	107	July 30	.96	2.14			

Daily discharge, in second-feet, of Camas Creek near Blaine, Idaho, for the year ending September 30, 1924

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		96	71	8.2	3.4	2.4	
2		106	71	8.6		2.4	
3		122	70	7.2		2.4	
4		148	69	5.9			
5		160	65	5.7			
6		160	61	5.3			
7		175	57	5.1			
8		195	51	5.1			
9		208	50	5.1	2.9		
10		205	44	6.5	2.9		
11		212	38	6.5	2.9		
12		249	34	6.3	2.9		
13		269	32	6.1	2.9		
14		272	30	5.7	2.9		
15		228	26	5.7	2.8		

Daily discharge, in second-feet, of Camas Creek near Blaine, Idaho, for the year ending September 30, 1924—Continued

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
16		200	23	5.5	2.8		
17		166	21	5.3			2.8
18		154	21	5.3			
19		136	15	5.1			
20		125	14	4.9			
21		118	14	4.7			
22		113	13	4.5			
23		108	11	4.3			
24		101	10	4.2			
25		99	9.5	4.0			
26		95	8.6	3.5			
27		88	8.3	3.5			3.2
28		84	8.3	3.4			
29	129	77	8.6	3.4			
30	106	71	9.5	3.4	2.4		
31	96		10		2.4		

Monthly discharge of Camas Creek near Blaine, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 29–31	129	96	110	655
April	272	71	151	8,980
May	71	8.3	31.4	1,930
June	9.2	3.4	5.30	315
The period				11,900

LITTLE WOOD RIVER NEAR CAREY, IDAHO

LOCATION.—In SW. ¼ NW. ¼ sec. 35, T. 2 N., R. 20 E., at Campbell ranch, three-fourths mile below dam site of proposed Little Wood Reservoir, on Carey-Muldoon road, 1½ miles below mouth of High Five Creek, 2½ miles below mouth of Muldoon Creek, 11 miles due east of Bellevue, and 12 miles northwest of Carey, Blaine County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 22, 1920, to September 30, 1924. Records available for station 8 miles downstream, April 28, 1904, to May 31, 1905.

GAGE.—Friez water-stage recorder on left bank, installed February 22, 1920; inspected by J. H. Nelson.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. One channel at all stages. Control formed by well-defined gravel and boulder riffle 25 feet below gage; subject to change.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 2.47 feet at 9 p. m. April 8 (discharge, 368 second-feet); minimum stage, 0.48 foot from 11 p. m. August 29 to 2 a. m. August 30 (discharge, 14 second-feet).

1920–1924: Maximum discharge recorded, 1,030 second-feet June 12, 1921, and May 26, 1922; minimum stage and discharge, that of August 29 and 30, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Practically no diversions above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curves well defined. Staff gage read to hundredths about once a week during winter. Operation of water-stage recorder fairly satisfactory during remainder of year except for short period when clock was not operating properly. Daily discharge ascertained by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. During periods water-stage recorder was operated mean daily gage height determined by inspection of recorder graph. Records good except for estimated periods for which they are fair.

COOPERATION.—Gage-height record furnished by Little Wood Reservoir Association.

Discharge measurements of Little Wood River near Carey, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	1.30	95.4	Apr. 8	1.75	177	July 26	0.58	18.8
Do	1.30	96.9	May 23	1.52	140	July 27	.59	20.7
Mar. 1	1.02	59.1	June 27	.86	42.5	Sept. 28	.70	24.2

Daily discharge, in second-feet, of Little Wood River near Carey, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59		74		65	65		145	86	33		16
2	59	80			69	67		165	91	33	18	16
3	60		65			69	100	182	94	34	17	16
4	72	77				69		192	91	33	17	16
5	96	77	59	50	69	69		167	88	33	17	18
6	80	77				68	173	148	83	32	18	20
7	100	76	58			67	185	141	79	32	18	19
8	96	76				65	250	135	77	31	18	20
9	93	76	56		69	77	278	148	73	29	18	21
10	94	74					275	169	69	26	17	20
11	93		60				247	180	65	26		20
12	90				66	70	262	198	64	26		20
13	88						278	194	65	31		20
14							244	203	65	26		
15			64	55			180	203	65	24		
16	84				64	63	137	208	63	24	16	22
17						80	129	203	61	22		
18		70					125	198	57	22		
19			60				133	187	56	22		
20	80				70	70	135	182	54	26		29
21	80						145	162	48	25		26
22	86		54			67	178	156	46	24		24
23	101				75		185	143	44	21	16	24
24	96					70	162	137	44	21	16	22
25	94						141	135	41	20	16	24
26	91	73		60	70	75	139	135	40	20	16	25
27	91	64	50			76		117	40	21	16	26
28	90	70				70	140	110	38	21	15	26
29		76				67		99	35	21	15	25
30	86	76				65	137	94	34	21	16	25
31								89		20	16	

NOTE.—Discharge estimated Oct. 14–19, 29–31, Nov. 1–3, 11–25, Dec. 2–4, 6–8, 10–14, 16–21, 23–31, Jan. 1–31, Feb. 1, 3–8, 10–15, 17–22, 24–29, Mar. 10–15, 18–21, 23–25, 28, 30–31, Apr. 1–5, 27–29, Aug. 1–2, 11–22, and Sept. 14–19. Discharge interpolated Mar. 6. Shifting-control method used Apr. 10–14. Braced figures give mean discharge for periods indicated.

Monthly discharge of Little Wood River near Carey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	101	59	85.5	5,260
November	----------	----------	72.7	4,330
December	----------	----------	57.6	3,540
January	----------	----------	55.2	3,390
February	----------	----------	68.7	3,950
March	----------	----------	69.5	4,270
April	278	----------	168	10,000
May	208	89	159	9,780
June	94	34	61.9	3,680
July	34	20	25.8	1,590
August	----------	----------	16.5	1,010
September	----------	16	21.7	1,290
The year	278	----------	71.7	52,100

LITTLE WOOD RIVER NEAR RICHFIELD, IDAHO

LOCATION.—In sec. 30, T. 4 S., R. 20 E., half a mile above heading of Dietrich Canal and 1 mile east of railroad station at Richfield, Lincoln County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 1, 1911, to September 30, 1924.

GAGE.—Gurley water-stage recorder on right bank installed April 14, 1920; inspected by employees of water master. Records prior to September 30, 1918, referred to datum 1.0 foot lower than present gage.

DISCHARGE MEASUREMENTS.—Made from suspension footbridge just below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small rocks; rough. Control may change slightly. Stage-discharge relation may be affected during summer by light growth of aquatic plants.

EXTREMES OF DISCHARGE.—Maximum stage recorded from water-stage recorder, 2.24 feet from noon to 2 p. m. April 14 (discharge, 237 second-feet); minimum stage, 1.23 feet at 8 p. m. June 20 (discharge, 57 second-feet).

1911–1924: Maximum stage recorded, 4.5 feet May 17 and 18, 1911 (discharge, 722 second-feet); minimum stage, 0.52 foot June 24 and 25, 1920 (discharge, 7.6 second-feet).

ICE.—Stage-discharge relation affected by ice; observations discontinued during winter.

DIVERSIONS.—Small ranch diversions are made above station. Dietrich Canal diverts a short distance below.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph except July 5–7, for which it was determined by shifting-control method. Records good.

COOPERATION.—Gage-height record and three discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Little Wood River near Richfield, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 9	2.03	189	May 24	1.27	60.1	July 25	1.30	61.2
Apr. 7	1.79	137	July 12	1.38	70.4	July 29	1.31	62.9
May 9	1.36	76.0	July 24	1.35	66.5	Sept. 29	1.41	75.1

Daily discharge, in second-feet, of Little Wood River near Richfield, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	165	139	92	73	66	63	65
2	163	139	91	74	66	61	66
3	163	145	82	72	66	61	64
4	167	145	81	73	66	64	61
5	165	145	78	66	66	63	64
6	167	141	82	66	69	63	66
7	180	139	82	68	73	61	70
8	180	134	78	68	73	61	72
9	191	161	69	70	73	63	72
10	------	200	61	69	70	68	73
11	------	209	65	72	68	65	70
12	------	213	66	69	72	65	73
13	------	225	59	69	74	59	70
14	------	234	58	69	74	61	73
15	------	232	60	69	74	64	75
16	------	220	61	68	74	73	77
17	------	200	60	69	74	72	77
18	------	186	60	63	72	66	81
19	------	172	58	59	70	64	82
20	------	167	59	58	72	61	79
21	------	165	63	63	73	65	79
22	------	161	60	60	72	69	79
23	------	161	60	59	69	69	82
24	------	165	61	61	68	65	78
25	------	157	60	64	66	66	79
26	------	147	60	65	66	65	79
27	------	137	60	65	65	66	77
28	------	123	64	66	65	66	77
29	------	110	66	65	63	66	77
30	------	96	73	66	63	65	73
31	------	------	73	------	64	66	------

NOTE.—Discharge interpolated June 14, because of missing gage height.

Monthly discharge of Little Wood River near Richfield, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–9	191	163	171	3,050
April	234	96	166	9,880
May	92	58	67.8	4,170
June	74	58	66.6	3,960
July	74	63	69.2	4,250
August	73	59	64.7	3,980
September	82	61	73.7	4,390

LITTLE WOOD RIVER AT SHOSHONE, IDAHO

LOCATION.—In sec. 35, T. 5 S., R. 17 E., just above diversion dam for town water supply, 200 feet north of water tower, and 400 feet above highway bridge on Shoshone-Richfield road in Shoshone, Lincoln County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 1, 1922, to September 30, 1924.

GAGE.—Gurley water-stage recorder on left bank; inspected by assistants to water master for Big Wood and Little Wood Rivers.

DISCHARGE MEASUREMENTS.—Made from cable a quarter of a mile above gage.

CHANNEL AND CONTROL.—Bed composed of lava rock partly overlain with sand and gravel. Banks steep. One channel at all stages. Control for low and medium stages formed by crest of concrete diversion dam. No well-defined control for high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 1.67 feet from 3 to 5 a. m. May 21 (discharge, 357 second-feet); minimum stage, 0.34 foot at 10 a. m. September 3 (discharge, 0.4 second-foot).

1922–1924: Maximum stage recorded, 2.26 feet June 18, 1922 (discharge, 664 second-feet); minimum stage, September 3, 1924.

ICE.—No record.

DIVERSIONS.—Numerous irrigation diversions above and below. A small ditch for the Shoshone water supply diverts from left bank directly below gage.

REGULATION.—None except that due to diversions.

ACCURACY.—Stage-discharge relation changed sometime between October and April and again on April 18 by change made in planks on dam which forms control. Rating curves well defined. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good.

COOPERATION.—Gage-height record furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Little Wood River at Shoshone, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 14	1.30	177	June 26	0.73	32.0	Sept. 30	0.85	55.2
May 21	1.61	329	July 25	.81	45.9			

Daily discharge, in second-feet, of Little Wood River at Shoshone, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	154	111	69	306	39	34	32
2	154	108	62	204	39	34	19
3	154	108	53	82	48	34	1.8
4	157	108	44	82	37	34	4.6
5	161	111	39	74	37	34	4.6
6	157	108	39	64	39	36	10
7	168	101	46	71	41	36	32
8	172	98	46	79	36	34	34
9	184	92	102	76	46	34	32
10	184	134	270	71	44	36	32
11	------	158	279	69	41	41	36
12	------	158	284	66	42	37	39
13	------	173	279	59	44	37	39
14	------	177	275	36	41	32	42
15	------	166	288	42	42	32	42

Daily discharge, in second-feet, of Little Wood River at Shoshone, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
16		169	275	150	42	36	44
17		154	275	297	42	42	46
18		134	288	302	41	39	48
19		134	306	315	39	37	48
20		130	310	306	37	36	53
21		120	343	306	39	34	53
22		104	324	144	41	36	55
23		114	315	41	39	37	26
24		126	315	32	42	37	9.5
25		137	320	32	46	36	30
26		126	324	32	48	36	57
27		117	329	32	190	34	55
28		104	302	37	104	34	51
29		95	297	46	44	32	53
30		87	315	41	39	32	55
31			315		34	32	

NOTE.—Discharge interpolated Sept. 29.

Monthly discharge of Little Wood River at Shoshone, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1-10	184	154	164	3,250
April	177	87	125	7,440
May	343	39	230	14,100
June	315	32	116	6,900
July	190	34	47.8	2,940
August	42	32	35.3	2,170
September	57	1.8	36.1	2,150

FISH CREEK ABOVE DAM, NEAR CAREY, IDAHO

LOCATION.—In sec. 2, T. 1 N., R. 22 E., 1¾ miles above entrance of West Fork of Fish Creek, 2 miles above dam of Carey Valley Reservoir Co., and 14 miles northeast of Carey, Blaine County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 3, 1920, to September 30, 1924.

GAGE.—Vertical staff on right bank; read by Wren Chidester.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of coarse sand and gravel. Left bank may be overflowed at high stages. Control formed by 18-foot Cippoletti weir set in concrete, 8 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 0.67 foot April 11 (measured discharge, 35.6 second-feet); minimum stage, 0.06 foot July 15 (discharge, 1.3 second-feet). Probably not actual extremes.

1920–1924: Maximum stage recorded, 1.78 feet 9 a. m. to 1 p. m. May 6, 1922 (discharge, 158 second-feet); minimum stage and discharge, July 15, 1924. Probably not actual extremes.

ICE.—Stage-discharge relation affected by ice; records discontinued during winter.

DIVERSIONS.—Several small diversions above gage.

REGULATION.—None except as affected by diversions above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths once daily except for short periods in April and July, when readings were not made regularly. Daily discharge determined by applying daily gage height to rating table. Records good except those for April, which are fair.

COOPERATION.—Gage-height record furnished by water master for Fish Creek.

Discharge measurements of Fish Creek above dam, near Carey, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	0.31	10.5	May 23	0.36	13.4	July 26	0.08	1.78
Apr. 11	.67	35.6	June 27	.14	3.46	Sept. 29	.14	3.86

Daily discharge, in second-feet, of Fish Creek above dam, near Carey, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Day	Apr.	May	June	July
1		20	12	1.8	16		20	2.9	2.3
2		20	10	1.8	17		18	2.9	2.4
3		20	9.1	1.8	18	25	16	3.5	2.6
4		18	2.3	1.8	19		16	3.5	2.6
5		18	2.3	2.3	20	25	16	2.9	2.6
6		17	1.8	2.3	21	24	16	3.5	4.5
7		17	1.8	2.3	22	22	16	3.5	2.3
8		17	1.8	2.3	23	24	14	3.5	3.2
9		16	1.8	2.3	24	25	14	4.2	3.2
10		16	1.8	2.3	25	24	13	3.5	3.2
11	35	22	2.3	2.3	26	22	13	2.3	1.8
12		22	2.3	2.3	27	21	16	2.6	1.7
13	34	22	2.3	1.8	28	20	16	1.8	1.6
14		21	2.3	1.8	29	21	16	1.8	
15	25	20	2.9	1.3	30	20	14	1.8	
					31		13		

NOTE.—Discharge estimated on account of missing gage heights Apr. 12–19, based on comparison with flow of Little Wood River above Carey; interpolated Apr. 21, 23, 25, July 17, 19, 24, and 27. Braced figure gives mean discharge for period indicated.

Monthly discharge of Fish Creek above dam, near Carey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 11–30		20	25.5	1,010
May	22	13	17.2	1,060
June	12	1.8	3.37	201
July 1–28	4.5	1.3	2.30	128
The period				2,400

FISH CREEK NEAR CAREY, IDAHO

LOCATION.—In sec. 22, T. 1 N., R. 22 E., 1½ miles below dam of Carey Valley Reservoir Co. and 11 miles northeast of Carey, Blaine County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 10, 1919, to September 30, 1920; May 12, 1923, to September 30, 1924.

GAGE.—Vertical staff on left bank; read by Wren Chidester.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock covered by gravel, sand, and silt. One channel at all stages. Control formed by Cippoletti weir set in concrete, located immediately below gage; weir crest is 17.64 feet in length. Zero of gage set to agree with average elevation of weir crest.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.30 feet June 8 (discharge, 90 second-feet); minimum stage, 0.14 foot, September 29 (measured discharge, 3.1 second-feet). Lower flow occurred during period of no record.

1919–1920; 1923–1924: Maximum stage recorded, 1.46 feet August 3 and 5, 1923 (discharge, 108 second-feet); minimum stage, 0.08 foot February 15, 16, and 21, 1920 (discharge, 1.5 second-feet). Probably not actual extremes.

ICE.—Stage-discharge relation probably affected by ice; records discontinued during winter.

DIVERSIONS.—None between station and dam.

REGULATION.—Flow completely regulated by operation of gates in dam above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 80 second-feet above which it is extended nearly parallel to curve based on standard weir formula. Gage read to hundredths once daily except for short period in April. Daily discharge determined by applying daily gage height to rating table except for days of missing gage height for which it was interpolated. Records good.

COOPERATION.—Gage-height record furnished by water master for Fish Creek.

Discharge measurements of Fish Creek near Carey, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	0.16	3.62	May 23	0.68	34.1	Sept. 29	0.14	3.13
Apr. 11	.22	5.17	July 26	.74	38.2			

Daily discharge, in second-feet, of Fish Creek near Carey, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Day	Apr.	May	June	July
1		12.9	57	39	16	6.4	31	84	55
2		12.9	52	48	17	6.4	31	84	35
3		12.9	64	48	18	6.4	37	86	15.6
4		31	74	48	19	6.4	34	86	33
5		31	76	48	20	6.4	31	88	33
6		31	86	64	21	6.4	28	88	34
7		31	86	64	22	7.3	34	74	41
8		31	90	64	23	7.3	34	71	40
9		31	26	64	24	7.3	28	62	39
10		31	28	64	25	7.3	31	59	7
11	6.4	31	76	60	26	6.4	31	43	33
12	6.4	31	22	60	27	6.4	33	40	28
13	6.4	31	70	60	28	9.2	42	35	27
14	6.4	31	76	59	29	9.2	51	39	
15	6.4	31	82	57	30	12.9	52	39	
					31		57		

NOTE.—Discharge interpolated because of missing gage heights, Apr. 12, 14–19, and July 17.

Monthly discharge of Fish Creek near Carey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 11–30	12.9	6.4	7.18	285
May	57	12.9	32.1	1,970
June	90	22	64.8	3,860
July 1–28	64	15.6	46.3	2,570
The period				8,680

WEST FORK OF FISH CREEK NEAR CAREY, IDAHO

LOCATION.—In sec. 3, T. 1 N., R. 22 E., 1¾ miles above confluence with Fish Creek, 2 miles above dam of Carey Valley Reservoir Co., and 14 miles northeast of Carey, Blaine County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 11, 1920, to September 30, 1924. Discharge measurements only are available in 1923.

GAGE.—Vertical staff on left bank; read by Wren Chidester.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of coarse sand and gravel. One channel at all stages. Control formed by Cippoletti weir with 12-foot crest. Zero of gage corresponds to average elevation of weir crest.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 0.22 foot April 20 (discharge, 4.2 second-feet); minimum discharge, 0.1 second-foot, several times after June 26. Probably not actual extremes.

1920–1922; 1924: Maximum stage recorded, 0.93 foot at 9 p. m. April 22, 1922 (discharge, 42.8 second-feet); minimum discharge, 0.1 second-foot at 8.30 p. m. August 8, 1920, and several days in 1924. Probably not actual extremes.

ICE.—Stage-discharge relation affected by ice.

DIVERSION.—One small diversion above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve used based on standard weir formula for 12-foot Cippoletti weir which has been fairly well substantiated by several discharge measurements made in 1923 and 1924. Gage read to hundredths nearly every day in May and June; readings made infrequently at other times. Daily discharge determined by applying daily gage height to rating table except for days of missing records for which it was interpolated as noted in footnote to table of daily discharge. Records fair.

COOPERATION.—Gage-height record furnished by water master for Fish Creek.

Discharge measurements of West Fork of Fish Creek near Carey, Idaho, during the years ending September 30, 1923 and 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1923	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
May 12	0.38	9.58	Apr. 11	0.21	3.86	Sept. 29	0.02	[a] 0.15
June 19	.22	3.68	May 23	.08	.74			
July 18	.11	1.04	June 27	.02	[a] .15			
Oct. 6	.07	[a] .70	July 26	.025	[a] .20			

[a] Estimated.

Daily discharge, in second-feet, of West Fork of Fish Creek near Carey, Idaho, for the year ending September 30, 1924

Day	May	June	July	Day	May	June	July	Day	May	June	July
1		0.6	0.1	11	1.7	0.3	0.1	21	1.3	0.3	0.1
2		.6	.1	12	1.7	.3	.1	22	.9	.3	.1
3		.6	.1	13	1.7	.3	.1	23	.9	.3	.2
4		.6	.1	14	1.7	.3	.1	24	.9	.3	.2
5		.6	.1	15	1.7	.3	.1	25	.6	.3	.2
6		.3	.1	16	1.7	.3	.1	26	.6	.3	.2
7		.3	.1	17	1.7	.3	.1	27	.6	.1	
8		.3	.1	18	1.5	.3	.1	28	.6	.3	
9		.3	.1	19	1.5	.3	.1	29	.9	.1	
10		.3	.1	20	1.5	.3	.1	30	.9	.1	
								31	.6		

NOTE.—Discharge interpolated because of missing gage height June 1, 10, 12, 14, 16, 18, 21, 23, 25, 30, July 2, 4, 8, 10, 14, 16–17, and 19–25.

Monthly discharge of West Fork of Fish Creek near Carey, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 11–31	1.7	0.6	1.20	50.0
June	.6	.1	.33	19.6
July 1–26	.2	.1	.12	5.95

SILVER CREEK NEAR PICABO, IDAHO

LOCATION.—In sec. 1, T. 2 S., R. 20 E., at Brett ranch, 1½ miles below mouth of drain ditch of Blaine County Drainage District No. 1 and 3 miles south of Picabo, Blaine County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 25, 1920, to September 30, 1924.

GAGE.—Gurley water-stage recorder on left bank 450 feet below Brett ranch house; installed July 29, 1922; inspected by E. F. McDowell.

DISCHARGE MEASUREMENTS.—Made from footbridge 150 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock overlain with fine gravel; subject to slight changes due to aquatic growth.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period from water-stage recorder, 2.48 feet October 5 (measured discharge, 213 second-feet); minimum stage, 1.05 feet at 10.30 a. m. May 8 (discharge, 77 second-feet). Probably not actual extremes.

1920–1924: Maximum discharge recorded, 312 second-feet at 4 p. m. April 3, 1923; minimum stage, 0.48 foot at 7 p. m. June 2, 1920 (discharge, 26 second-feet).

ICE,—Stage-discharge relation slightly affected by ice at times. Observations discontinued during winter.

DIVERSIONS.—Numerous irrigation diversions above gage. During part of year some water diverted around gage on right bank through a small slough which heads about 300 feet above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed May 7–10 and June 14–25 owing to light aquatic growth below gage. Standard rating curve well defined; curves parallel thereto used April 1 to May 6, May 11 to June 13, and June 26 to September 29; indirect method for shifting control used for intervening periods. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good.

COOPERATION.—Gage-height record and several discharge measurements furnished by water master for Big Wood and Little Wood Rivers.

Discharge measurements of Silver Creek near Picabo, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	2.48	[a] 213	June 5	1.24	91.7	July 26	1.20	87.8
Apr. 7	1.83	156	June 13	1.30	92.5	July 28	1.18	87.3
May 6	1.44	116	June 27	1.23	91.8	Aug. 13	1.24	87.6
May 11	1.22	87.0	July 6	1.26	89.8	Aug. 27	1.17	80.6
May 23	1.22	81.7	July 19	1.22	83.4	Sept 29	1.29	96.9
May 24	1.26	91.3						

[a] 4.0 second-feet additional measured flow around gage.

Daily discharge, in second-feet, of Silver Creek near Picabo, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	150	122	97	94	83	88	16	144	84	90	95	91	98
2	153	119	94	91	85	88	17	143	86	89	91	86	109
3	155	120	91	91	86	85	18	142	84	84	91	85	108
4	158	114	90	92	87	85	19	139	85	87	91	83	105
5	155	115	89	93	87	88	20	140	87	92	92	84	104
6	153	116	93	94	86	95	21	138	87	91	94	86	106
7	154	114	91	98	84	99	22	138	87	90	93	86	110
8	151	102	94	99	87	96	23	135	88	88	91	83	106
9	151	85	95	98	87	96	24	135	89	91	90	84	105
10	149	89	98	95	83	95	25	134	88	91	90	84	105
11	148	88	96	94	84	93	26	133	84	94	88	83	97
12	146	88	95	96	86	93	27	133	88	94	88	86	95
13	145	88	96	97	84	100	28	128	91	92	87	86	106
14	145	88	96	97	87	101	29	124	97	93	85	87	97
15	144	88	94	96	90	99	30	123	97	95	85	87	90
							31	------	96	------	83	86	------

NOTE.—Discharge estimated for Sept. 30, based on comparison with flow of Little Wood River near Richfield. No water reported flowing around gage through slough on right bank after Mar. 31.

Monthly discharge of Silver Creek near Picabo, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	158	123	143	8,510
May	122	84	95.3	5,860
June	98	84	92.3	5,490
July	99	83	92.2	5,670
August	91	83	85.6	5,260
September	110	85	98.1	5,840
The period				36,600

LONG TOM RESERVOIR NEAR BENNETT, IDAHO

LOCATION.—In sec. 35, T. 1 S., R. 7 E., 8 miles southwest of Bennett, Elmore County, and 17 miles northeast of Mountain Home.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 3 to June 25, 1924.

GAGE.—Readings obtained by measuring with steel tape from top of upstream corner of masonry gate tower on southeast end of dam; read by C. J. McGrath. Elevations referred to datum of Mountain Home Cooperative Irrigation Co.

EXTREMES OF STAGE.—Maximum stage recorded during period of record, 4,446.22 feet May 1; minimum stage, 4,406.73 feet June 25.

COOPERATION.—Occasional readings furnished by Mountain Home Cooperative Irrigation Co.

This reservoir is used partly as a storage unit and partly as an equalizing basin for natural flow of Long Tom Creek and for storage water released from Little Camas Reservoir which is carried several miles through an open canal and series of tunnels into Long Tom Basin. From Long Tom Reservoir water is released and flows through Long Tom and Canyon Creeks to the head of the Mountain Home feeder canal and used for irrigation on about 5,000 acres of land near Mountain Home.

The reservoir is formed by a gravity earth dam 400 feet in length at crest. The crest is 56 feet above bottom of outlet tunnel and 6 feet above crest of spillway. Elevation of bottom of outlet tunnel corresponds to 4,404.15 feet referred to recorded reservoir stages, at which stage the available storage is practically zero. Elevation of crest of spillway corresponds to 4,453.87 feet, at which stage the capacity of reservoir is about 4,040 acre-feet, about 153 acres of land being submerged.

Daily gage height, in feet, of Long Tom Reservoir near Bennett, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June
1		4,446.22		16		4,439.96	
2				17	4,435.32		
3	4,422.89			18			
4				19			
5		4,445.91		20			
6			4,421.26	21		4,437.46	
7		4,445.42		22			
8				23			
9		4,444.70	4,413.26	24			
10				25			4,406.73
11				26			
12				27			
13				28		4,432.46	
14				29			
15	4,433.39			30			
				31		4,422.26	

LONG TOM CREEK BELOW LONG TOM RESERVOIR, NEAR BENNETT, IDAHO

LOCATION.—In sec. 35, T. 1 S., R. 7 E.,[6] 500 feet below Long Tom Reservoir of Mountain Home Cooperative Irrigation Co., 8 miles southwest of Bennett, Elmore County, and 17 miles northeast of Mountain Home.

DRAINAGE AREA.—Not measured.

[6] Formerly shown as sec. 2, T. 2 S., R. 7 E.

RECORDS AVAILABLE.—May 31 to December 6, 1917; April 12 to June 30, 1924.

GAGE.—Au water-stage recorder installed May 10, 1924, on left bank at same site and datum of staff gage installed April 15, 1924; read by C. J. McGrath. During 1917 a McConnel water-stage recorder near present site but at different datum, was used.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of sand and small gravel. Left bank brushy below gage and may overflow at high stages. Control formed by well-defined riffle 40 feet below gage; probably subject to change.

EXTREMES OF DISCHARGE.—Maximum discharge from actual measurement, 107 second-feet on May 10; channel practically dry during period of no record. 1917; 1924: Maximum discharge on May 10, 1924; practically no flow except during irrigation seasons.

DIVERSIONS.—None between reservoir and gage. A small amount of leakage from dam above flows to left of gage and enters the creek channel some distance below.

REGULATION.—Flow regulated by gates at Long Tom Reservoir.

ACCURACY.—Stage-discharge relation permanent during period of record. Rating curve well defined. Operation of water-stage recorder satisfactory. Prior to May 10 staff gage read only when changes in gate openings at dam above were made. Daily discharge ascertained by applying to rating table daily staff gage height or mean daily gage height determined by inspection of recorder graph. Records good after May 8; others fair.

COOPERATION.—Services of observer furnished by Mountain Home Cooperative Irrigation Co.

Discharge measurements of Long Tom Creek below Long Tom Reservoir, near Bennett, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 15	1.18	13.7	May 8	2.42	97.3	June 6	1.81	49.5
May 1	1.70	40.6	May 10	2.48	107	June 9	1.60	34.6
May 8	2.42	94.2	May 28	2.29	83.3	June 25	.74	*.50

*Estimated.

Daily discharge, in second-feet, of Long Tom Creek below Long Tom Reservoir, near Bennett, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1		41	55	11		99	1.8	21		90	0.7
2			56	12		99	1.4	22		87	.7
3		70	57	13	2	98	1.0	23		86	.6
4			54	14		98	.9	24		85	.6
5		75	52	15	14	98	.8	25		86	.6
6		76	49	16	14	97	.8	26	19	88	
7		86	45	17	15	95	.8	27		86	
8		96	40	18		94	.8	28		85	.5
9		96	34	19	19	93	.8	29		79	
10		101	9.3	20		92	.8	30		70	
								31		57	

NOTE.—Discharge estimated on account of missing gage heights Apr. 12–14, 18–30, May 2–4, and June 26–30, based on gate openings in dam above and by comparison with flow at head of Mountain Home feeder canal; interpolated Apr. 16 and May 7.

Monthly discharge of Long Tom Creek below Long Tom Reservoir, near Bennett, Idaho, for the year ending September, 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 12-30			15.6	588
May	101	41	85.3	5,240
June	57		15.6	928
The period				6,760

NOTE.—Leakage below dam, not included in flow past gage, has been estimated upon basis of occasiona measurements, as follows: Apr. 12-30, 19 acre-feet; May, 45 acre-feet; June, 1.2 acre-feet.

MOUNTAIN HOME FEEDER CANAL NEAR MOUNTAIN HOME, IDAHO

LOCATION.—In sec. 36, T. 2 S., R. 6 E., 75 feet below point of diversion in Canyon Creek and 5 miles north of Mountain Home, Elmore County.

RECORDS AVAILABLE.—April 15 to June 30, 1924.

GAGE.—Au water-stage recorder installed May 4, 1924, on right bank. Prior to this date vertical staff at present site and datum was used; read by W. S. Langfitt.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and fine gravel; shifts somewhat. Control not well defined.

EXTREMES OF DISCHARGE.—Maximum discharge recorded, 102 second-feet, May 11 and 12; canal reported practically dry after June 30.

DIVERSIONS.—None from canal above gage; between gage and head gates of Mountain Home Cooperative Canal half a mile below, three small laterals divert water for irrigation use on the Ake farms.

REGULATION.—Flow regulated by head gate in Canyon Creek and by storage in Long Tom Reservoir.

ACCURACY.—Stage-discharge relation changed during period May 8–20. Standard rating curve well defined. Staff gage read to hundredths almost daily prior to May 4, after which time water-stage recorder was used satisfactorily. Daily discharge ascertained by applying to rating table daily staff gage height or mean daily gage height from recorder graph determined by inspection; shifting-control method used May 8–20. Records good.

COOPERATION.—Gage-height record furnished by Mountain Home Cooperative Irrigation Co.

Water is diverted from Canyon Creek in sec. 36, T. 2 S., R. 6 E., and used for irrigation on about 5,000 acres included in project of Mountain Home Irrigation Co., for which water is delivered by Mountain Home Cooperative Canal, which heads in the feeder canal half a mile below gage. At times when there is a surplus of water for irrigation, the canal feeds water directly into Mountain Home Reservoir beyond head gate of Mountain Home Cooperative Canal.

Discharge measurements of Mountain Home feeder canal near Mountain Home, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 17	1.25	17.8	May 29	1.75	85.2	June 9	1.40	38.5
May 5	1.81	80.4	June 5	1.54	53.8	June 25	.66	a.50
May 13	1.90	100						

a Estimated.

Daily discharge, in second-feet, of Mountain Home feeder canal near Mountain Home, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1		39	57	11		102	7.3	21	20	91	1.7
2		61	54	12		102	5.1	22	20	88	1.2
3		76	57	13		100	4.0	23	20	85	.9
4		79	56	14		98	2.5	24	20	87	.8
5		80	54	15	18	96	2.0	25	20	87	.8
6		83	53	16	18	93	2.2	26	21	90	.4
7		83	49	17	18	93	1.8	27	22	88	.4
8		91	45	18	20	91	1.8	28	22	88	.6
9		93	38	19	20	93	1.8	29	22	83	.3
10		100	23	20	20	91	1.7	30	22	77	.2
								31		59	

NOTE.—Discharge interpolated on account of missing gage heights Apr. 16, 22, 24, and 26. During present year, the entire flow of Canyon Creek was diverted and due to shortage no water was diverted past gates of the Mountain Home Cooperative Canal for storage in Mountain Home Reservoir.

Monthly discharge of Mountain Home feeder canal near Mountain Home, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 15-30	22	18	20.2	641
May	102	39	86.0	5,290
June	57	.2	17.4	1,040
The period				6,970

MOUNTAIN HOME COOPERATIVE CANAL NEAR MOUNTAIN HOME, IDAHO

LOCATION.—In sec. 36, T. 2 S., R. 6 E., at Lamberton weir, 250 feet below point of diversion in Mountain Home feeder canal and 4½ miles north of Mountain Home, Elmore County.

RECORDS AVAILABLE.—April 17 to August 15, 1924.

GAGE.—Gurley water-stage recorder installed May 4, 1924, on right bank; inspected by W. S. Langfitt. Prior to May 4, vertical staff at present site and datum was used.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and fine gravel. Control formed by 12-foot wooden sharp crested weir 5 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period from water-stage recorder, 1.59 feet from 2 to 6 a. m. May 13 (discharge, 97 second-feet); canal dry after June 14.

DIVERSIONS.—None between gage and head of canal.

REGULATION.—Flow regulated by head gate in Mountain Home feeder canal and by operation of gates in Long Tom Reservoir.

ACCURACY.—Stage-discharge relation permanent except for short periods in May when a small amount of leakage under Cippoletti weir occurred. Rating curve well defined. Staff gage read to hundredths once daily until May 3; thereafter water-stage recorder was used. Daily discharge ascertained by applying to rating table daily gage height or mean daily gage height determined by inspection of recorder graph, except as indicated in footnote to table of daily discharge. Records good.

COOPERATION.—Gage-height record furnished by Mountain Home Cooperative Irrigation Co.

Water is diverted from Canyon Creek in sec. 36, T. 2 S., R. 6 E., through the Mountain Home feeder canal for about one-half mile and rediverted through the Mountain Home Cooperative Canal for irrigation of about 5,000 acres of the Mountain Home Cooperative Irrigation Co.

Discharge measurements of Mountain Home Cooperative Canal near Mountain Home, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 5	1.28	74.7	May 29	1.39	77.4	June 9	0.94	36.2
May 13	1.56	95.4	June 5	1.05	51.0	June 25		0

Daily discharge, in second-feet, of Mountain Home Cooperative Canal near Mountain Home, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1		29	54	11		96	5.9	21	14	85	
2		50	50	12		96	3.3	22	14	82	
3		67	53	13		96	2.2	23	14	81	
4		74	52	14		94	1.1	24	14	82	
5		75	49	15		92		25	14	83	
6		77	47	16		89		26	14	85	
7		78	46	17	11	88		27	15	83	
8		84	42	18	14	88		28	15	82	
9		88	35	19	14	87		29	15	77	
10		94	22	20	14	87		30	15	72	
								31		56	

NOTE.—Owing to probable leakage under weir discharge estimated May 4-7, 9, 24-28, based on one discharge measurement and by comparison with flow at head of Mountain Home feeder canal, where flow is about the same except for intervening canal losses and diversions of three laterals. Discharge interpolated on account of missing gage-height record Apr. 22, 24, and 26.

Monthly discharge of Mountain Home Cooperative Canal near Mountain Home, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 17-30	15	11	14.1	392
May	96	29	80.5	4,950
June 1-15	54	0	30.8	916
The period				6,260

OWYHEE RIVER NEAR GOLD CREEK, NEV.

LOCATION.—In W. ½ sec. 24, T. 44 N., R. 54 E., an eighth of a mile below Wild Horse dam site, 9 miles west of Gold Creek, Elko County, and 65 miles north of Elko.

DRAINAGE AREA.—209 square miles (measured on map compiled by irrigation service of United States Office of Indian Affairs).

RECORDS AVAILABLE.—March 26, 1916, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by Emery Johnson.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rocks and loose sand. Control is gravel riffle in each of two channels where stream is divided by small island 500 feet below gage; subject to change by work of beavers. Left bank high and rocky; right bank is overflowed at extremely high stages. One channel at all stages. Dense growth of willows along banks.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water stage recorder, 5.82 feet at 10 a. m. April 10 (discharge, 670 second-feet); minimum discharge, 1.9 second-feet September 17 (stage-discharge relation affected by backwater from moss growth).

1916–1924: Maximum stage recorded, 10.11 feet at 2 a. m. May 5, 1922 (discharge, by extending rating curve, 1,810 second-feet). Minimum discharge probably less than 1 second-foot in August, 1918.

ICE.—River freezes over during winter.

DIVERSIONS.—Wild-hay meadows above station practically only land irrigated.

ACCURACY.—Stage-discharge relation affected July 16 to September 30, because of backwater caused by moss on control. Stage-discharge relation permanent for remainder of year. Rating curve fairly well defined. Operation of water-stage recorder satisfactory October 1 to November 15 and April 6 to September 30. Discharge during winter and during periods when no gage heights were taken was interpolated or estimated from observer's notes and by comparison with records for station on Owyhee River near Owyhee. Records fair.

Discharge measurements of Owyhee River near Gold Creek, Nev., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 2	1.97	22.6	June 12	1.57	4.9
Apr. 27	2.82	103	Sept. 17	[a] 1.65	1.9

[a] Stage-discharge relation affected by backwater from moss.

Daily discharge, in second-feet, of Owyhee River near Gold Creek, Nev., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	9					20	89	11	2	2	2
2	7	9					23	86	9	2	2	2
3	7	9						78	7	2	2	2
4	8	9					50	74	6	3	2	2
5	12	9						68	4	3	2	2
6	9	9					93	62	4	3	2	2
7	9	9					194	52	6	3	2	2
8	9	8					324	47	7	3	2	3
9	9	8					380	45	6	3	2	2
10	9	8					580	40	5	3	2	3
11	10	11					450	35	5	3	2	3
12	9	9					390	33	5	4	2	2
13	9	8					490	31	5	4	2	3
14	8	9					540	30	5	4	2	3
15	9	8			6		212	26	5	4	2	2
16	9		6	6		10	155	24	4	3	2	2
17	9						152	23	4	3	2	2
18	8						167	21	4	3	2	3
19	9						250	20	4	3	2	3
20	9						260	20	4	3	2	3
21	9						246	20	3	3	2	3
22	10						246	20	2	3	2	3
23	11	8					228	20	2	3	2	3
24	10						140	19	2	3	2	3
25	9						115	18	3	3	2	3
26	9						106	16	3	3	2	3
27	9						102	16	3	4	2	3
28	9						100	15	3	3	2	3
29	9						97	14	3	3	2	3
30	9						94	14	3	3	2	3
31	9							13		3	2	

Monthly discharge of Owyhee River near Gold Creek, Nev., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12	7	9.0	553
November	11		8.4	500
December			[a] 6	369
January			[a] 6	369
February			[a] 6	345
March			[a] 10	615
April	580	20	210	12,500
May	89	13	35.1	2,160
June	11	2	4.6	274
July	4	2	3.1	191
August	2	2	2.0	123
September	3	2	2.6	155
The year	580	2	25.0	18,200

[a] Estimated.

OWYHEE RIVER NEAR OWYHEE, NEV.

LOCATION.—In sec. 21, T. 46 N., R. 53 E., 40 feet above mouth of Jones Brook, half a mile above J. P. Jones ranch, 4 miles below Mountain City, and 8 miles southeast of Owyhee, Elko County.

DRAINAGE AREA.—380 square miles (measured on United States Forest Service map).

RECORDS AVAILABLE.—November 29, 1913, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on right bank; inspected by P. W. Davidson.

DISCHARGE MEASUREMENTS.—Made from cable 125 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed consists of ledge rock and boulders filled in with sand and gravel. Permanent except for slight changes at very low stages. One channel at all stages. Banks covered with willows and brush; subject to overflow. At low stages a riffle just below gage forms control. At high stages a secondary control becomes effective.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.57 feet at 8 p. m. April 22 (discharge, 741 second-feet); minimum stage, 1.26 feet August 5 and 16 (discharge, less than 1 second-foot).

1914–1924: Maximum discharge, 2,600 second-feet May 5, 1922; minimum discharge, less than 1 second-foot August 5 and 16, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—A number of ranches above station divert water from main stream and tributaries for irrigation—mainly of hay meadows.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; affected by ice November 28 to March 4. Rating curve well defined below 300 second-feet and extended above. Operation of water-stage recorder satisfactory except November 28 to March 4, June 10, and 11. Daily discharge ascertained by applying mean daily gage height to rating table. Estimates of discharge were made for periods when no gage heights were taken and during ice-affected period by comparison with record for Gold Creek and observer's notes at Mountain City. Records good.

Discharge measurements of Owyhee River near Owyhee, Nev., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.78	16.7	June 13	1.87	21.0
Mar. 27	2.34	49.6	Sept. 18	1.36	1.7

Daily discharge, in second-feet, of Owyhee River near Owyhee, Nev., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	24					62	299	41	5	1	.2
2	17	24				30	73	292	38	5	1	2
3	17	23					97	280	32	5	1	3
4	20	23					100	264	30	5	1	2
5	22	23				44	93	240	27	5	1	2
6	23	24				47	149	215	25	4	1	2
7	22	24				54	311	193	26	4	1	2
8	21	23				45	610	174	32	4	2	2
9	21	24				48	690	162	33	4	2	2
10	22	24				54	469	143	30	4	2	1
11	23	27				53	386	130	27	4	2	2
12	24	29				47	433	126	24	4	2	2
13	23	27				48	294	123	20	4	3	2
14	22	27				46	197	119	18	3	2	2
15	23	27			20	44	433	105	16	2	1	2
16	23	26	20	20		38	364	91	16	2	1	3
17	23	22				41	361	81	15	2	1	2
18	24	20				41	344	86	15	2	1	2
19	25	22				44	478	80	15	2	1	2
20	25	26				45	590	76	15	1	2	3
21	25	25				42	604	70	15	2	3	4
22	27	24				41	648	68	14	1	4	4
23	29	23				43	645	63	13	1	4	4
24	29	26				38	446	60	11	1	4	4
25	28	26				41	331	54	10	1	4	4
26	27	23				41	287	50	8	1	4	5
27	26	20				51	278	48	7	1	3	5
28	25	20				56	285	47	6	1	2	5
29	26	20				52	287	47	6	1	2	5
30	26	20			-------	39	297	47	6	1	2	5
31	24	-------			-------	49	-------	44	-------	1	2	-------

Monthly discharge of Owyhee River near Owyhee, Nev., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	29	17	23.5	1,440
November	29	20	23.9	1,420
December	----------	----------	[a] 20	1,230
January	----------	----------	[a] 20	1,230
February	----------	----------	[a] 20	1,150
March	56	----------	43.6	2,680
April	690	62	355	21,100
May	299	44	125	7,690
June	41	6	19.7	1,170
July	5	1	2.7	166
August	4	1	2.0	123
September	5	1	2.9	173
The year	690	1	54.5	39,600

[a] Estimated.

OWYHEE RIVER NEAR OWYHEE, OREG.

LOCATION.—In sec. 2, T. 21 S., R. 46 E., at county bridge, 1½ miles southwest of Owyhee, Malheur County, 3 miles above mouth of river, and 10 miles southwest of Nyssa.

DRAINAGE AREA.—About 11,100 square miles. Watershed not well defined on available maps.

RECORDS AVAILABLE.—March 26, 1890, to December 31, 1893; January 1, 1895, to October 3, 1896; Auugst 28, 1903, to September 30, 1916; May 17 to October 9, 1920; March 8, 1921, to September 30, 1924.

GAGE.—Chain gage on upstream side of highway bridge; read by Alvon McGinnis or Mrs. S. J. Watson.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed consists of gravel; may shift during high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.8 feet February 10 (discharge, 7,880 second-feet); minimum stage recorded, 1.30 feet July 7, 19, and August 14–16, no flow.

1890–1893; 1895–1896; 1903–1916; 1920–1924: Maximum stage recorded, 12.9 feet March 2, 1910 (discharge, 23,200 second-feet); minimum discharge that of July and August, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Owyhee Canal, the principal diversion immediately above station, heads about 6 miles above gage. This canal diverts practically entire natural low-water flow of river.

REGULATION.—Variation in flow may be caused by manipulation of gates at head of Owyhee Canal.

ACCURACY.—Stage-discharge relation permanent; affected by ice December 9 to February 6. Rating curve well defined. Gage read to half-tenths once a day. Daily discharge ascertained by applying daily gage height to rating table. Records good except for period stage-discharge relation was affected by ice and low water of July to September for which they are fair.

The following discharge measurements were made:

April 10, 1924: Gage height, 4.30 feet; discharge, 1,360 second-feet.

July 31, 1924: Gage height, 1.45 feet; discharge, 0.5 second-foot.

Daily discharge, in second-feet, of Owyhee River near Owyhee, Oreg., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	111	125	240			600	240	565	14	8	8	4
2	111	125	240			530	320	600	14	6	6	4
3	125	125	240			530	290	470	14	4	6	4
4	125	125	240		251	530	265	455	8	4	6	4
5	125	125	240			565	290	440	8	4	11	6
6	141	125	218			600	740	600	8	4	8	6
7	141	141	218		900	600	670	670	14	0	8	8
8	157	141	195		900	600	705	670	14	.6	8	8
9	157	141			2,150	600	780	565	14	1	8	8
10	157	157			7,880	635	1,240	500	14	.2	8	8
11	157	157			2,940	670	1,330	440	11	.2	8	11
12	176	157			2,150	670	1,330	410	8	.1	8	14
13	195	157			1,720	600	1,240	265	8	.2	4	14
14	195	157			1,330	600	1,330	218	8	.2	0	14
15	195	157			1,330	530	1,330	176	8	.2	0	14
16	157	157		141	1,330	530	1,330	157	8	.2	0	14
17	157	157			2,150	530	1,520	141	6	.2	4	14
18	176	157			1,930	530	1,420	125	4	.2	6	18
19	125	157			1,820	470	1,330	97	8	.0	6	22
20	125	157	157		1,420	470	1,150	84	6	8	6	34
21	125	157			1,150	410	1,020	61	4	14	6	34
22	125	157			1,060	410	860	50	8	8	6	34
23	111	157			980	410	940	50	8	.2	6	34
24	111	157			980	350	860	50	8	.2	6	34
25	97	157			980	350	900	34	8	.2	8	34
26	97	157			900	350	860	34	6	14	11	34
27	97	176			820	290	820	34	4	8	11	50
28	97	195			740	290	780	34	14	8	8	50
29	97	218			670	290	740	28	6	8	4	50
30	111	240			-------	290	635	28	8	4	4	50
31	111	-------			-------	265	-------	22	-------	8	4	-------

Monthly discharge of Owyhee River near Owyhee, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	195	97	135	8,300
November	240	125	156	9,280
December	240		176	10,800
January			141	8,670
February	7,880		1,370	78,800
March	670	265	487	29,900
April	1,520	240	909	54,100
May	670	22	260	16,000
June	14	4	9.03	536
July	14	0	3.67	226
August	11	0	6.35	390
September	50	4	21.1	1,300
The year	7,880	0	302	218,000

SOUTH FORK OF OWYHEE RIVER NEAR DEEP CREEK, NEV.

LOCATION.—In NW. ¼ sec. 29, T. 42 N., R. 50 E., at lower end of canyon connecting Spanish Valley and I. L. Valley, 3½ miles above I. L. ranch buildings and 15 miles southwest of Deep Creek, Elko County.

DRAINAGE AREA.—Not determined.

RECORDS AVAILABLE.—May 10, 1921, to November 30, 1923, and April 25 to September 30, 1924, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder on right bank; installed November 16, 1921; read by Juan Acordagoitia.

DISCHARGE MEASUREMENTS.—Made by wading or from cable.

CHANNEL AND CONTROL.—Bed of gravel and sand; shifting. Channel crooked. Right bank high and clean at gage; banks covered with willows a short distance below.

EXTREMES OF DISCHARGE.—Extreme stages not recorded for 1924.

1921–1924: Maximum discharge determined from high-water marks, 1,150 second-feet May 19, 1921.

ICE.—River freezes during winter.

DIVERSIONS.—A considerable area of wild-hay meadows is irrigated in Spanish Valley about 20 miles upstream.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined. Operation of water-stage recorder satisfactory for periods when daily discharge is shown. Daily discharge ascertained by applying to rating table mean daily gage-height determined from recorder graph. Discharge for days of missing gage-height estimated from comparison with flow of Jack Creek. Records where daily discharge is shown are good. Estimated periods are fair.

Discharge measurements of South Fork of Owyhee River near Deep Creek, Nev. during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	4.37	22.6	Apr. 25	5.24	92.9	Sept. 18	4.03	9.4
Mar. 29	4.90	60.8	June 14	4.16	12.8			

Daily discharge, in second-feet, of South Fork of Owyhee River near Deep Creek, Nev., for the year ending September 30, 1924

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	26	22	-------	83	32	8	13	9
2	24	21	-------	77		8	13	9
3	24	21	-------	77		9	13	9
4	32	20	-------	66		13	14	9
5	39	20	-------	59		15	13	
6	30	19	-------	58		21	12	
7	32	19	-------	53		20	12	9
8	29	19	-------	50	25	18	12	
9	26	20	-------	47		16	12	
10	26		-------	44		18	12	9
11	27		-------	42		18	12	9
12	26	25	-------	42		18	11	9
13	25		-------	41		18	11	9
14	25		-------	42	14	17	11	9
15	27	28	-------	41	13	15	11	9
16	27	28	-------	42	13	14	10	9
17	26	27	-------	47	13		10	9
18	26	29	-------	52	14		10	10
19	26		-------	50	34		11	
20	26		-------	49	33		12	
21	26		-------	47	23		12	
22	29		-------	48	17		12	
23	29		-------	44	14	14	11	
24	27	25	-------	40	12		11	10
25	27		100	38	11		10	
26	26		107	37	11		10	
27	25		100	36	10		10	
28	24		97	36	10		9	
29	24		89	35	9		9	
30	23		85	34	8	13	9	
31	23	-------	-------	34	-------	14	9	-------

Monthly discharge of South Fork of Owyhee River near Deep Creek, Nev., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	39	23	26.8	1,650
November	-------	-------	23.9	1,420
April 25-30	107	85	96.3	1,150
May	83	34	48.1	2,960
June	34	8	19.7	1,170
July	21	8	14.7	904
August	14	9	11.2	689
September	-------	-------	9.4	559

JACK CREEK NEAR TUSCARORA, NEV.

LOCATION.—In sec. 35, T. 42 N., R. 52 E., at R. M. Woodward ranch on Elko-Mountain City stage road, 8 miles above confluence with South Fork of Owyhee River and 12 miles northeast of Tuscarora, Elko County.

DRAINAGE AREA.—31 square miles (measured on United States Forest Service map).

RECORDS AVAILABLE.—May 15, 1913, to September 30, 1924.

GAGE.—Vertical staff on right bank 500 feet below Woodward's house; read by R. M. Woodward.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders; shifting. Banks low and fringed with willows; subject to overflow at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 121 second-feet April 13; minimum discharge, 1 second-foot on several days during July, August, and September.

1913–1924: Maximum stage recorded, 3.6 feet at 6 p. m. May 14, 1917 (discharge, 465 second-feet); minimum stage, 0.18 foot September 2 and 3, 1918 (discharge, 0.6 second-foot).

ICE.—Stage-discharge relation affected during winter.

DIVERSIONS.—Small ditches on Woodward ranch practically only diversions above station. Have little effect on flow except during August and September.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Staff gage read three or four times a week. Daily discharge determined by applying to rating table daily gage height except during ice-affected periods when mean discharge was estimated from observer's notes and study of climatic records. Discharge for days when gage was not read obtained by interpolation. Records fair.

COOPERATION.—Gage-height record furnished by R. M. Woodward.

Discharge measurements of Jack Creek near Tuscarora, Nev., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	0.37	4.6	Apr. 24	1.30	66.9	Sept. 19	0.20	1.4
Mar. 26	[a].65	9.5	June 14	.64	14.4			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Jack Creek near Tuscarora, Nev., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	8					14	87	26	5	1	1
2	5	8					14	103	25	5	1	1
3	5	8					14	98	24	5	2	1
4	5	7					17	92	24	4	1	1
5	5	7					22	86	22	4	2	1
6	6	7					37	79	22	4	1	1
7	6	7					52	76	22	4	2	1
8	6	7					67	72	22	3	1	1
9	7	7					73	79	22	3	2	1
10	7	7					46	79	20	3	1	1
11	7	7					92	78	18	3	2	1
12	8	7					56	77	16	3	1	1
13	8	7				10	121	79	14	3	2	1
14	8	7					114	80	14	3	1	1
15	8	7			8		92	82	14	3	2	1
16	8	7	5	5			74	80	14	3	1	1
17	8	7					56	78	13	3	1	1
18	8	7					62	77	13	2	1	1
19	8	7					67	73	13	2	1	1
20	8	7					72	69	10	2	1	1
21	8	7					89	64	8	2	1	1
22	8	7					106	60	8	2	1	2
23	8	7					88	57	8	2	1	1
24	8	7					69	54	7	2	1	2
25	8	7					66	48	7	2	1	1
26	8	7				10	63	44	7	2	1	2
27	8	7				14	66	41	6	2	1	1
28	8	7				14	69	36	5	2	1	2
29	8	7				14	73	32	5	2	1	1
30	8	7				14	77	30	5	1	1	2
31	8	-------			-------	14	-------	28	-------	2	1	-------

Monthly discharge of Jack Creek near Tuscarora, Nev., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8	5	7.2	443
November	8	7	7.1	422
December	----------	----------	[a] 5	307
January	----------	----------	[a] 5	307
February	----------	----------	[a] 8	460
March	----------	----------	10.6	652
April	121	14	64.3	3,830
May	103	28	68.3	4,200
June	26	5	14.5	863
July	5	1	2.8	172
August	2	1	1.2	74
September	2	1	1.2	71
The year	121	1	16.3	11,800

[a] Estimated.

OWYHEE CANAL NEAR OWYHEE, OREG.

LOCATION.—In NE. ¼ sec. 12, T. 21 S., R. 45 E., 1 mile below head of canal, 6 miles southwest of Owyhee, Malheur County, and 15 miles southwest of Nyssa.

RECORDS AVAILABLE.—October 5, 1911, to September 30, 1916; and irrigation seasons 1904, 1905, and 1920 to 1924.

GAGE.—Vertical staff at right end of footbridge; read by ditch rider for Owyhee Canal Co.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed clean and smooth. Control not well defined but fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.5 feet April 6 (discharge, 244 second-feet); canal dry at times during each winter.

1904–1905; 1911–1916; 1920–1924: Maximum stage recorded, 4.3 feet May 17, 1921, and May 10–11, 1922 (discharge, 333 second-feet); canal dry at various times each year.

ICE.—No record during winter.

DIVERSIONS.—Station above all diversions from canal; surplus water is returned to Owyhee River throught two wasteways between this station and station on Owyhee River near Owyhee.

REGULATION.—Abrupt changes of stage due to manipulation of head gates not to be expected, as water is kept at nearly constant stage.

ACCURACY.—Stage-discharge relation not permanent; affected by varying number of flashboards placed on check 1 mile below gage June 12 to October 31. Rating curve well defined. Correction applied for backwater affect somewhat uncertain. Gage read to tenths once a day except September 1–15 and October 13–31; gage readings unsatisfactory and not used June 12 to August 31. Daily discharge ascertained by applying daily gage height to rating table directly or indirectly; discharge estimated June 12–26, 28–30, July 1–31, August 1–19, 28–31, September 1–15, and October 13–31. Records good March 30 to June 11, fair June 12–30 and for July, and poor for remainder of period.

COOPERATION.—Record furnished by I. E. Oakes, manager of Owyhee Canal Co.

Owyhee Canal diverts water from Owyhee River in sec. 18, T. 21 S., R. 46 E. In 1920 it supplied water for irrigating 13,397 acres of land near Owyhee, Nyssa, and Ontario.

The following discharge measurements were made:

April 10, 1924: Gage height, 3.32 feet; discharge, 224 second-feet.

June 27, 1924: Gage height, 2.42 feet; discharge, 124 second-feet.

July 31, 1924: Gage height, 2.12 feet; discharge, 89 second-feet.

Daily discharge, in second-feet, of Owyhee Canal near Owyhee, Oreg., for the period March 30 to October 31, 1924

Day	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1		233	222	192				104
2		233	233	192				102
3		233	233	192				99
4		222	222	182				99
5		222	233	182				99
6		244	126	192				100
7		233	0	192				101
8		222	62	192			80	104
9		233	62	192				101
10		222	62	192		85		100
11		222	62	182				99
12		233	117					93
13		233	117					
14		222	117					
15		222	153					
16		222	153				77	
17		233	153				77	
18		233	162				77	
19		222	162				75	
20		222	162	150		85	76	
21		233	192			85	77	93
22		233	192			87	81	
23		222	192			89	85	
24		222	192			91	85	
25		222	192			87	85	
26		222	192			83	88	
27		233	192	124		83	91	
28		233	202	121			91	
29		222	202	118		80	91	
30	233	222	212	115			98	
31	233		212		89			

Monthly discharge of Owyhee Canal near Owyhee, Oreg., for the period March 30 to October 31, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 30–31	233	233	233	924
April	244	222	228	13,600
May	233	0	161	9,900
June	192	115	160	9,520
July			[a] 100	6,150
August			84.7	5,210
September			81.8	4,870
October	104		95.7	5,880
The period				56,100

[a] Estimated.

BOISE RIVER NEAR TWIN SPRINGS, IDAHO

LOCATION.—About sec. 23, T. 4 N., R. 6 E. (unsurveyed), a quarter of a mile above Birch Creek, 1½ miles above flow line of Arrowrock Reservoir, 4 miles below Twin Springs, Boise County, and 18 miles above Arrowrock.

DRAINAGE AREA.—830 square miles (measured on topographic maps).

RECORDS AVAILABLE.—March 21, 1911, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank installed April 4, 1915; inspected by John Pfoser.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Control practically permanent, except under unusually severe ice or flood conditions. Banks not overflowed.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.51 feet at 4 a. m. May 17 (discharge, 3,000 second-feet); minimum stage, 1.73 feet at 8 p. m. September 7 (discharge, 212 second-feet).

1911–1924: Maximum stage recorded, 7.82 feet at 3 a. m. May 15, 1917 (discharge, 9,430 second-feet); minimum stage, 1.73 feet at 10.30 p. m. November 13, 1916 (discharge, about 142 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—No important diversions above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during winter; affected by ice December 12 to February 2. Rating curves well defined. Operation of water-stage recorder satisfactory except for short periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except as indicated in footnote to daily-discharge table and except for periods of ice effect for which it was ascertained upon basis of observer's notes, weather records, changes in Arrowrock Reservoir, and by comparison with flow of South Fork of Boise River. Records good except those estimated which are fair.

Discharge measurements of Boise River near Twin Springs, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 14	2.25	442	June 10	2.66	767	July 24	[a] 1.92	288
Apr. 28	3.28	1,460	Do	2.66	772	Aug. 19	1.79	227
May 8	3.43	1,580	July 10	2.05	352	Do	1.79	238
Do	3.41	1,570	Do	2.05	352	Sept. 29	1.87	258
June 10	2.66	738	July 22	[a] 1.95	292	Do	1.87	263

[a] Referred to outside gage.

Daily discharge, in second-feet, of Boise River near Twin Springs, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	337	355	355	300	440	438	394	1,850	1,120	404	248	222
2	332	355	278			444	378	2,100	1,180	394	248	226
3	337	360	365		394	444	409	2,360	1,230	394	252	226
4	355	355	314		383	432	409	2,420	1,200	415	248	222
5	380	355	328		388	409	404	2,040	1,120	388	244	226
6	365	355	400		394	420	450	1,730	1,040	378	244	226
7	472	350	441		409	432	637	1,590	984	372	240	215
8	447	350	390		705	404	963	1,570	932	357	236	222
9	405	350	328		734	399	1,090	1,730	840	353	240	226
10	395	346	270		532	450	1,130	1,970	762	348	236	218

Daily discharge, in second-feet, of Boise River near Twin Springs, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	390	337	270		468	409	1,070	2,290	724	338	232	215
12	380	342			456	394	1,160	2,560	705	333	229	218
13	375	337			450	420	1,410	2,700	680	329	226	218
14	370	337			456	409	1,530	2,630	671	319	229	
15	370	337			480	394	1,310	2,700	654	306	226	220
16	390	332			500	367	1,060	2,700	637	301	226	
17	417	319			486	388	963	2,850	612	301	226	222
18	385			340	468	372	860	2,630	605	297	229	229
19	380				444	399	860	2,420	637	301	232	244
20	380	350			444	388	870	2,360	582	315	279	267
21	385		350		468	388		2,290	545	324	267	
22	447				438	378		2,160	519	297	256	
23	459				444	353	1,200	2,100	500	293	244	
24	411	479			404	378		1,910	493	288	236	
25	400	521			432	348		1,970	480	256	229	270
26	390	405			432	348	1,230	1,850	468	263	226	
27	385	350			409	388	1,280	1,640	462	267	226	
28	380	314		350	432	367	1,370	1,470	444	259	218	
29	375	400			394	378	1,490	1,340	438	252	218	263
30	360	400			-------	319	1,640	1,210	420	252	218	259
31	360	------			-------	343	-------	1,120	-------	248	222	-------

NOTE.—Discharge estimated because of missing gage height or ice effect Nov. 18–23, Dec. 12 to Feb. 2, Apr. 21–25, Sept. 14–16, and 21–28. Braced figures give mean discharge for periods indicated.

Monthly discharge of Boise River near Twin Springs, Idaho, for the year ending September 30, 1924

[Drainage area, 830 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	472	332	388	0.467	0.54	23,900
November	521	-------	361	.435	.49	21,500
December	-------	-------	346	.417	.48	21,300
January	-------	-------	329	.396	.46	20,200
February	734	383	459	.553	.60	26,400
March	450	319	394	.475	.55	24,200
April	1,640	378	1,010	1.22	1.36	60,100
May	2,850	1,120	2,070	2.49	2.87	127,000
June	1,230	420	723	.871	.97	43,000
July	415	248	321	.387	.45	19,700
August	279	218	236	.284	.33	14,500
September	-------	215	239	.288	.32	14,200
The year	2,850	215	574	.692	9.42	416,000

ARROWROCK RESERVOIR AT ARROWROCK, IDAHO

LOCATION.—In E. ½ sec. 13, T. 3 N., R. 4 E., at Arrowrock, Boise County, 22 miles by road east from Boise.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 1, 1917, to September 30, 1924.

GAGE.—Graduations painted on center of upstream vertical face of concrete dam, in September, 1917; read usually to tenths once daily by E. L. Ballard, superintendent of Arrowrock Dam. Gage set to read sea-level datum.

EXTREMES OF CONTENTS.—Maximum stage recorded, 3,140.5 feet May 24 (contents, 113,400 acre-feet); natural flow passing through reservoir August 19 to September 30.

1918–1924: Maximum stage recorded, 3,214.1 feet June 14, 1918 (contents, 285,800 acre-feet); natural flow passing through reservoir, September 13–17, September 20 to October 1, 1919; September 13 to October 10, 1920; September 19 to October 22, 1922; August 19 to September 30, 1924.

COOPERATION.—Gage-height record and table of storage capacity furnished by United States Bureau of Reclamation.

Stored water from this reservoir is used for irrigation of land in Boise Valley. The reservoir is formed by a concrete dam, gravity section, 348.5 feet high and 1,100 feet long at crest. Base of dam is 223 feet thick and thinnest point near the top is 15.5 feet thick. A 16-foot roadway is carried across on top of dam. A lip spillway at north end of dam has a carrying capacity of 40,000 second-feet. Elevation of spillway crest referred to gage datum is 3,205 feet, the capacity of the reservoir at that stage being 259,000 acre-feet. A movable crest is provided for the spillway, the top of which is at elevation 3,211 feet. The capacity of the reservoir at that stage is 276,500 acre-feet, and about 2,900 acres of land is submerged. Elevation of center line of sluice gates is 2,967 feet, the capacity of the reservoir at that stage being 131 acre-feet.

Daily contents, in acre-feet, of Arrowrock Reservoir at Arrowrock, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	13,500	15,140	24,070	28,840	53,340	44,700	40,440	81,200	102,300	30,960	2,089
2	12,260	15,420	22,600	29,820	52,900	43,800	42,060	81,200	99,580	27,890	2,156
3	11,130	15,740	21,200	30,680	52,790	43,410	43,700	82,550	98,730	24,950	2,130
4	10,140	16,030	19,670	31,840	52,680	43,140	45,600	84,350	97,200	22,220	2,109
5	10,110	16,450	18,050	32,650	52,680	42,690	47,300	86,300	94,860	20,370	2,082
6	10,520	16,840	16,660	33,410	52,570	41,970	49,050	86,900	91,980	18,510	2,082
7	10,780	17,140	15,700	34,180	52,460	41,250	50,700	86,300	89,900	16,880	2,086
8	11,590	17,410	15,060	35,370	54,000	40,620	53,450	85,250	86,750	15,620	2,048
9	11,950	17,860	13,990	36,810	57,000	39,900	57,240	84,350	84,200	14,360	2,123
10	11,920	18,320	12,720	38,030	58,440	39,000	61,430	83,900	81,800	13,000	2,102
11	11,390	18,800	11,130	39,450	58,440	38,350	65,720	84,800	79,160	11,660	2,093
12	10,590	19,130	9,887	40,800	57,840	37,870	69,750	86,300	76,780	11,590	2,123
13	9,794	19,520	10,400	41,700	57,120	37,140	73,560	89,100	74,260	11,590	2,128
14	8,840	19,870	11,100	42,600	56,280	36,490	78,320	92,300	72,220	11,560	2,092
15	8,170	20,220	12,260	43,500	55,320	35,770	82,700	95,500	70,140	11,490	2,105
16	8,030	20,990	13,430	44,800	54,600	34,970	85,400	98,900	68,190	11,390	2,112
17	7,890	21,730	14,520	46,100	54,000	34,180	87,050	102,300	66,370	11,330	1,868
18	7,890	22,490	15,500	47,300	53,450	33,410	88,460	105,700	64,420	11,310	915
19	7,890	22,990	16,540	47,900	52,790	32,650	89,100	108,100	62,210	11,330	----
20	7,806	23,610	17,680	48,400	51,910	31,910	89,420	110,100	60,000	11,000	----
21	7,806	24,180	18,840	48,830	51,030	31,330	88,780	111,300	57,600	10,080	----
22	7,806	25,010	19,670	49,270	50,150	30,680	88,460	112,300	55,200	9,298	----
23	9,360	25,880	20,170	49,710	49,600	30,030	88,460	113,000	52,680	8,547	----
24	10,460	26,640	20,580	50,370	48,500	29,470	88,620	113,400	50,150	7,583	----
25	11,420	27,560	21,520	50,920	47,900	29,400	87,660	113,000	47,500	6,200	----
26	12,260	27,820	22,600	51,690	47,400	31,040	86,600	112,900	45,000	4,876	----
27	12,960	27,560	23,490	52,350	47,000	32,580	85,100	112,200	42,150	3,827	----
28	13,500	26,770	24,300	53,230	46,200	34,340	83,750	111,100	39,270	3,752	----
29	14,060	25,750	25,130	53,560	45,500	35,930	82,550	109,400	36,490	3,162	----
30	14,440	24,890	26,640	53,670	----	37,540	81,800	107,400	33,800	2,625	----
31	14,830	----	27,760	53,780	----	38,840	----	105,000	----	2,076	----

NOTE.—Natural flow passed through reservoir Aug. 19 to Sept. 30.

BOISE RIVER AT DOWLING RANCH, NEAR ARROWROCK, IDAHO

LOCATION.—In sec. 15, T. 3 N., R. 4 E., at Dowling ranch, Elmore County, three-fourths mile above Moore Creek, 2 miles below Highland power dam, and 4 miles below Arrowrock.

DRAINAGE AREA.—2,230 square miles (measured on topographic maps).

RECORDS AVAILABLE.—March 12, 1911, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank; installed March 19, 1915; inspected by J. N. Davis.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. One channel at all stages. Control shifts slightly. Stage of zero flow as determined March 28, 1924, is at gage height 0.30 foot ±0.2 foot.

EXTREMES OF DISCHARGE.—Maximum measured discharge, 3,440 second-feet, May 24; minimum estimated discharge, 10 second-feet, March 26 to April 5.

1911–1924: Maximum stage recorded, 9.27 feet noon to 4 p. m. June 12, 1921 (discharge, 16,500 second-feet); minimum estimated discharge, 10 second-feet, March 26 to April 5, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—No important diversions above station. New York Canal of Boise project, United States Bureau of Reclamation, diverts 10 miles below and has a maximum capacity of 2,500 second-feet. Several smaller canals, total capacity of about 2,900 second-feet, divert below New York Canal.

REGULATION.—Since February 21, 1915, flow has been regulated at Arrowrock Dam, 4 miles upstream, which has storage capacity of about 280,000 acre-feet. Water is stored during winter and spring and released during irrigation season.

ACCURACY.—Stage-discharge relation changed slightly February 14 to March 10. Rating curves well defined. Operation of water-stage recorder satisfactory except for short period water was below intake pipe. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records excellent except for estimated periods for which they are good.

COOPERATION.—Several discharge measurements furnished by United States Bureau of Reclamation and water master for Boise River.

Discharge measurements of Boise River at Dowling ranch, near Arrowrock, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 23	2.66	575	May 16	4.82	3,120	July 17	2.60	563
Feb. 2	3.31	980	May 24	4.94	3,440	Do	2.60	545
Feb. 13	3.64	1,440	May 27	4.89	3,260	July 21	3.06	917
Mar. 11	3.49	1,340	June 5	4.78	3,020	July 23	2.93	778
Mar. 28	.76	[a] 10	June 9	4.52	2,830	July 25	3.18	1,050
Apr. 8	1.95	240	June 11	4.46	2,550	July 28	2.77	649
Do	1.95	284	June 16	4.05	2,040	Aug. 4	2.36	410
Apr. 10	1.98	289	June 19	4.15	2,150	Aug. 18	2.73	659
Apr. 20	4.14	2,190	June 21	4.18	2,190	Aug. 19	2.34	440
Apr. 23	4.43	2,590	July 9	3.46	1,280	Sept. 8	2.24	362
Apr. 28	4.77	3,100	July 15	2.65	573	Sept. 30	2.47	480
May 8	4.91	3,330						

[a] Estimated.

Daily discharge, in second-feet, of Boise River at Dowling ranch, near Arrowrock, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,280	640	1,330		1,100	1,320		3,400	3,230	2,230	417	367
2	1,280	659	1,320		1,080	1,270		3,400	2,980	2,160	417	367
3	1,210	626	1,330		894	1,270	10	3,400	2,230	2,090	436	367
4	1,010	588	1,380		862	1,270		3,320	3,140	1,820	431	372
5	838	600	1,410		894	1,300		3,400	3,060	1,640	426	362
				145								
6	778	607	1,370		952	1,350	73	3,400	3,060	1,580	422	372
7	822	620	1,310		1,030	1,350	247	3,320	2,980	1,410	422	372
8	878	568	1,270		727	1,350	254	3,320	2,820	1,320	398	376
9	961	537	1,210		778	1,350	261	3,400	2,740	1,320	403	385
10	1,100	549	1,180		1,030	1,340	265	3,320	2,660	1,290	403	390
11	1,230	555	1,080		1,200	1,340	268	3,320	2,590	869	398	380
12	1,250	562	555		1,370	1,330	358	3,320	2,520	588	394	385
13	1,230	568	350		1,450	1,320	465	3,320	2,370	594	398	380
14	1,100	562	386		1,450	1,310	775	3,230	2,300	594	394	380
15	970	440	368	155	1,460	1,300	969	3,140	2,230	588	390	376
16	902	350	301		1,460	1,290	1,120	3,140	2,090	568	394	380
17	902	354	305		1,420	1,290	1,220	3,230	2,090	544	600	380
18	918	358	273		1,400	1,280	1,410	3,320	2,160	522	594	385
19	894	363	285		1,410	1,260	1,640	3,320	2,160	528	417	408
20	870	368	285		1,410	1,250	2,020	3,320	2,230	923	441	441
21	870	376	333		1,420	1,240	2,230	3,320	2,230	914	455	450
22	620	381	395		1,430	1,230	2,440	3,400	2,230	834	436	455
23	600	386	415		1,420	1,220	2,660	3,400	2,230	843	422	445
24	537	440	321	460	1,300	905	2,900	3,400	2,230	960	412	445
25	507	741	321		1,230	300	2,980	3,320	2,230	1,040	398	465
26	543	927	333		1,290		2,980	3,320	2,300	978	394	506
27	568	1,030	405		1,390		3,060	3,320	2,300	588	380	500
28	588	1,120	354		1,380		3,060	3,320	2,230	574	372	490
29	607	1,220	265		1,380	10	3,140	3,320	2,230	628	367	485
30	620	1,280	186	727	-------		3,320	3,230	2,160	607	367	475
31	633	-------	180	886	-------		-------	3,230	-------	511	372	-------

NOTE.—Discharge estimated Dec. 31 to Jan. 29 on account of ice, based on observer's notes, weather records, and gate openings at Arrowrock Dam. Discharge estimated Mar. 25 to Apr. 6 on account of water being below intake pipe when gates in Arrowrock Dam were closed. Braced figures give mean discharge or periods indicated.

Monthly discharge of Boise River at Dowling ranch, near Arrowrock, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,280	507	875	53,800
November	1,280	350	612	36,400
December	1,410	----------	671	41,300
January	886	----------	312	19,200
February	1,460	727	1,230	70,800
March	1,350	----------	1,000	61,500
April	3,320	----------	1,340	79,700
May	3,400	3,140	3,320	204,000
June	3,230	2,090	2,470	147,000
July	2,230	511	1,020	62,700
August	600	367	418	25,700
September	506	362	411	24,500
The year	3,400	----------	1,140	827,000

BOISE RIVER AT NOTUS, IDAHO

LOCATION.—In sec. 34, T. 5 N., R. 4 W., at steel highway bridge a quarter of a mile south of Notus, Canyon County, and 7 miles northwest of Caldwell.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 1, 1920, to September 30, 1924.

GAGE.—Vertical staff of Steward type bolted to center tubular steel pier on upstream side of highway bridge; read by Mrs. Ida B. Mansell.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean gravel and cobbles. One channel at gage during all but extremely high stages. Control formed by well-defined gravel bar; subject to change during extremely high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 2.80 feet October 28 (discharge, 1,110 second-feet); minimum stage, 0.30 foot August 4 (discharge, 13 second-feet).

1920–1924: Maximum stage recorded, 7.0 feet May 19 and 20, 1921 (discharge, 14,500 second-feet); minimum discharge, 10 second-feet, August 18, 1920.

ICE.—Records discontinued during fall and winter.

DIVERSIONS.—Below practically all diversions for irrigation in Boise Valley. Records during irrigation season show amount of water wasted into Snake River.

REGULATION.—Flow regulated by head gates at Arrowrock Reservoir and by numerous diversions between station and reservoir.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Boise River at Notus, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 1	2.25	589	June 4	0.58	37.0	Aug. 3	0.36	15.6
Apr. 1	1.70	304	June 24	.39	17.3	Sept. 24	.36	16.6

Daily discharge, in second-feet, of Boise River at Notus, Idaho, for the year ending September 30, 1924

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		584	298	97	84	15	17	15
2		520	261	86	62	17	16	15
3		490	298	84	32	16	16	16
4		490	340	68	35	14	13	16
5		490	363	73	22	14	15	16
6		490	261	95	22	14	15	16
7		462	197	122	33	16	16	15
8		435	200	144	102	16	16	15
9		462	221	102	122	14	16	14
10		462	197	97	102	14	16	14
11		435	191	97	65	14	15	15
12		435	122	97	46	14	16	14
13		435	102	71	33	14	16	15
14		435	70	62	27	15	17	14
15		435	73	52	27	16	17	15
16		435	84	40	22	16	17	16
17		435	110	34	17	16	18	15
18		435	102	46	17	16	18	16
19		410	76	49	17	17	17	16
20		410	73	45	20	18	16	16
21		410	70	46	17	18	17	16
22		410	68	39	17	18	18	16
23		435	73	34	18	18	18	16
24		435	70	46	18	18	16	16
25		410	106	60	18	18	16	18
26		410	110	68	18	19	16	18
27		435	102	68	17	20	16	18
28	1,110	410	84	62	17	19	17	18
29		319	70	62	16	18	17	18
30		319	95	62	15	18	16	18
31		298		137		18	15	

Monthly discharge of Boise River at Notus, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March	584	298	435	26,700
April	363	68	150	8,930
May	144	34	72.4	4,450
June	122	14	35.9	2,140
July	20	14	16.4	1,010
August	18	13	16.3	1,000
September	18	14	15.9	946
The period				45,200

DIVERSIONS FROM BOISE RIVER, IDAHO

Below mouth of Moore Creek and between gaging stations at Dowling ranch and Notus, 27 principal canals and a number of small farm laterals divert water from Boise River for use in irrigation.

Daily gage-height records were obtained, frequent discharge measurements made, and records summarized under direction of A. V. Tallman, water master for Boise River.

Records are available from 1919 to 1924. Record of daily diversions subsequent to 1915 is on file in office of Idaho commissioner of reclamation.

Total amount of water, in acre-feet, diverted from Boise River by canals during irrigation season of 1924

Main canal of United States Bureau of Reclamation	235,000	Phyllis	60,800
Penitentiary	766	Eureka No. 1	6,540
Ridenbaugh	86,900	Pioneer	6,360
Bubb	2,800	Canyon County	18,800
Cruzen	12,500	Caldwell High Line	16,200
Boise City, No. 1	8,430	Farmers Cooperative	39,200
Settlers	31,100	Canyon	3,530
Thurman mill	7,180	Seibenberg	2,090
Farmers Union (includes Boise Valley diversion)	41,500	Riverside No. 2	30,500
Little Union	3,560	Pioneer Dixie	7,930
Dry Creek	12,100	Eureka No. 2	12,500
Ballantine	3,000	Upper Center Point	3,170
7 Eagle Island canals	11,800	Lower Center Point	3,020
Middleton Water Co	25,900	Miscellaneous	7,020
Middleton Mill ditch	13,800		714,000

Combined monthly discharge of canals diverting from Boise River, Idaho, during irrigation season of 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	4,010	300	1,820	108,000
May	4,320	3,870	4,120	253,000
June	3,960	2,510	3,020	180,000
July	2,560	836	1,380	84,800
August	919	631	732	45,000
September	910	484	717	42,700
The period				714,000

SOUTH FORK OF BOISE RIVER NEAR LENOX, IDAHO

LOCATION.—In sec. 24, T. 2 N., R. 6 E., in canyon at R. S. Sandlin ranch, 1 mile above mouth of Smith Creek, 4 miles above flow line of Arrowrock Reservoir, 4 miles southwest of Lenox post office, Elmore County, 14 miles above mouth, and 18 miles above Arrowrock Dam.

DRAINAGE AREA.—1,090 square miles (measured on topographic maps).

RECORDS AVAILABLE.—March 24, 1911, to September 30, 1924,

GAGE.—Friez water-stage recorder on right bank; installed April 11, 1915; inspected by R. S. Sandlin.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and gravel. Control of coarse gravel and rock; practically permanent. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.19 feet at 12.30 p. m. May 13 (discharge, 2,150 second-feet); minimum stage, 1.87 feet 5 p. m. September 1 to 10 p. m. September 2 (discharge, 144 second-feet); lower flow may have occurred during periods of ice effect.

1911–1924: Maximum stage recorded, 9.53 feet at 11 a. m. May 15, 1917 (discharge, 9,200 second-feet); minimum stage and discharge occurred in 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—No important diversions above or below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during ice period and again following high water. Rating curves well defined. Operation of water-stage recorder satisfactory except for few short periods. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph; shifting-control method used May 18 to June 11. Records good except for estimated periods, for which they are fair.

Discharge measurements of South Fork of Boise River near Lenox, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 15	2.68	417	July 11	[a] 2.25	245	Aug. 15	1.93	158
May 9	4.34	1,380	Do	[a] 2.25	248	Aug. 16	1.95	[b] 138
June 12	3.01	547	July 21	[a] 2.17	228			

[a] Referred to well gage.

[b] Unreliable, owing to meter trouble.

Daily discharge, in second-feet, of South Fork of Boise River near Lenox, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	339	384	380		412	379	400	1,430	810	306	168	146
2	332	384	250		442	442	408	1,640	810	292	166	144
3	332	384	289		412	438	421	1,810	799	278	164	146
4	384	372	332		375	442	434	1,900	771	274	164	148
5	464	365	318		371	421	416	1,680	743	281	164	148
				300								
6	438	365	368		387	416	451	1,470	689	274	164	152
7	491	365	429		442	434	632	1,320	668	274	162	
8	514	365	400		810	438	955	1,280	668	264	159	
9	468	361	372		674	412	1,050	1,320	652	254	159	
10	451	368			538	425	1,080	1,470	611	254	159	150
11	429	368			451	451	1,080	1,680	586	250	159	
12	416	368			412	416	1,140	1,860	552	244	159	
13	412	368			408	416	1,280	2,000	533	250	157	157
14	412	365			421	434	1,320	2,000	509	247	157	157
15	412	357			425	416	1,110	2,000	486	241	157	157
16	412	357			425	400	955	2,000	464	234	162	159
17	438	357			446	383	896	1,950	451	231	162	162
18	425	354		325	442	396	867	1,900	442	228	162	164
19	404	325			421	375	867	1,810	446	225		168
20	404	308			416	396	867	1,720	446	222	175	168
21	404	332			425	387	925	1,640	425	222		181
22	434	380			438	379	1,110	1,550	408	216		189
23	514	346			392	367	1,240	1,510	396	211	171	189
24	473	335			392	367	1,210	1,390	379	202	166	191
25	438	357			375	367	1,110	1,320	367	194	162	199
26	421	384			392	359	1,080	1,240	359	189	157	214
27	412	361			400	375	1,050	1,140	348	183	152	214
28	412	304			375	387	1,110	1,050	336	176	146	214
29	408	365		330	375	375	1,180	985	325	176	146	208
30	400	416			-------	352	1,280	925	317	173	146	208
31	384	-------			-------	355	-------	867	-------	171	146	-------
			340									

NOTE.—Discharge estimated on account of ice and missing gage heights, Dec. 9 to Jan. 31, Aug. 19–22, and Sept. 7–12, based on reservoir action, observer's notes, weather records, and comparison with flow at Twin Springs. Interpolated Nov. 11, Feb. 9, and May 17. Braced figures give mean discharge for periods indicated.

Monthly discharge of South Fork of Boise River near Lenox, Idaho, for the year ending September 30, 1924

[Drainage area, 1,090 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	514	332	422	0.387	0.45	25,900
November	416	304	361	.331	.37	21,500
December	-------	-------	343	.315	.36	21,100
January	-------	-------	318	.292	.34	19,600
February	810	371	438	.402	.43	25,200
March	451	352	400	.367	.42	24,600
April	1,320	400	931	.854	.95	55,400
May	2,000	867	1,540	1.41	1.63	94,700
June	810	317	527	.483	.54	31,400
July	306	171	233	.214	.25	14,300
August	-------	146	161	.148	.17	9,900
September	214	144	169	.155	.17	10,100
The year	2,000	144	487	.447	6.08	354,000

LITTLE CAMAS RESERVOIR NEAR BENNETT, IDAHO

LOCATION.—In sec. 9, T. 1 S., R. 9 E., 4 miles northeast of Bennett, Elmore County, and 30 miles northeast of Mountain Home.

DRAINAGE AREA.—31.8 square miles (measured on map of Mountain Home Cooperative Irrigation Co.).

RECORDS AVAILABLE.—March 20 to June 25, 1924, when station was temporarily discontinued.

GAGE.—Readings obtained by measuring with steel tape from reference point located on top of northeast corner of concrete outlet sturcture; read by Chas. J. McGrath. Elevations referred to datum of Mountain Home Cooperative Irrigation Co.

EXTREMES OF STAGE.—Maximum stage recorded during period of record, 4,951.27 feet March 20; minimum stage, 4,928.85 feet May 29 (reservoir practically empty).

Water is stored in Little Camas Reservoir for irrigation use on about 5,000 acres of land near Mountain Home. (See description of Long Tom Reservoir.) The reservoir is formed by a gravity earth dam about 1,500 feet in length. The crest is 46 feet above bottom of outlet tunnel which is 8 feet above spillway crest. The bottom of tunnel outlet corresponds to an elevation of 4,926.50 feet referred to reservoir stages, which is about 4.5 feet below stage to which the present usable storage can be drawn.

Elevation of crest of spillway corresponds to 4,965.00 feet at which stage the reservoir capacity is about 22,300 acre-feet, about 1,250 acres of land being submerged.

Daily gage height, in feet, of Little Camas Reservoir near Bennett, Idaho, for the year ending September 30, 1924

Day	Mar.	Apr.	May	June	Day	Mar.	Apr.	May	June
1			4,947.08		16		4,950.58		
2			4,946.78		17			4,940.22	
3			4,946.51		18				
4			4,946.28		19		4,950.09	4,939.41	
5			4,945.86		20	4,951.27			
6					21		4,949.71	4,938.08	
7			4,945.28		22				
8					23		4,949.26	4,937.68	
9			4,944.36		24				
10					25		4,948.74	4,936.85	4,931.19
11			4,943.56		26				
12					27		4,948.17	4,933.08	
13			4,942.58		28			4,930.15	
14					29		4,947.67	4,928.85	
15			4,941.31		30				
					31				

NOTE.—Gates in dam reported opened on Apr. 1 for release of water through Little Camas Canal. Reservoir empty on May 31 when gates were closed. Readings on May 28-29 do not represent actual reservoir stages owing to fall in low stage outlet channel from main body of water to point under reference point where readings were made. Under present condition of outlet channel, the lowest stage to which main body of water in reservoir can actually be drawn is at an elevation of about 4,931.00 feet.

LITTLE CAMAS CANAL AT HEADING, NEAR BENNETT, IDAHO

LOCATION.—In sec. 9, T. 1 S., R. 9 E., 400 feet below Little Camas Reservoir, 4 miles northeast of Bennett, Elmore County, and 30 miles northeast of Mountain Home.

RECORDS AVAILABLE.—June 1 to November 28, 1917; April 16 to May 31, 1924.

GAGE.—Au water-stage recorder installed May 12, 1924, on right bank. From April 16 to May 11, 1924, gage heights obtained from vertical staff at same site; read by Chas. J. McGrath.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Bed composed of cemented sand and fine gravel. Control formed by head of McGinnis flume 1,200 feet below gage; growth of moss in earth canal section above flume may affect stage-discharge relation at times.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during period, 77 second-feet April 27–30, May 1, 3, and 9; canal reported dry prior to April 1 and after May 31.

1917–1924: Maximum discharge as shown above; no flow August 7, November 1, 1917, and greater part of 1924.

DIVERSIONS.—None.

REGULATION.—Flow regulated by head gates at Little Camas Reservoir.

ACCURACY.—Stage-discharge relation permanent during period. Rating curve well defined. Operation of water-stage recorder satisfactory. Staff readings obtained irregularly prior to May 12. Daily discharge ascertained by applying to rating table daily gage height or mean daily gage height determined by inspection of recorder graph. Records excellent after May 11; others good.

COOPERATION.—Gage-height record furnished by Mountain Home Cooperative Irrigation Co.

Water released from Little Camas Reservoir in sec. 9, T. 1 S., R. 9 E., is carried 13 miles through Little Camas Canal into Long Tom Basin and collected in Long Tom Reservoir for release for irrigation use on about 5,000 acres of land in the vicinity of Mountain Home.

Discharge measurements of Little Camas Canal at heading, near Bennett, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 16	2.40	67.6	May 10	2.56	74.8	May 13	2.55	72.9
May 2	2.57	76.2	May 11	2.52	73.4	May 28	1.46	29.0

Daily discharge, in second-feet, of Little Camas Canal at heading, near Bennett, Idaho, for the year ending September 30, 1924

Day	Apr.	May	Day	Apr.	May	Day	Apr.	May
1		77	11		74	21	73	56
2		76	12		74	22	74	53
3		77	13		74	23	76	50
4		76	14		74	24	76	40
5		76	15		72	25	76	46
6		76	16	68	68	26	76	50
7		76	17	70	66	27	77	47
8		76	18	72	64	28	77	27
9		77	19	72	61	29	77	8.5
10		75	20	72	58	30	77	3.9
						31		1.2

NOTE.—Discharge interpolated on account of lack of gage heights, Apr. 17, 20, 22, 24, 26, 28, 30, May 6 and 8. Gates in Little Camas Reservoir reported opened for diversion of water through canal on Apr. 1

Monthly discharge of Little Camas Canal at heading, near Bennett, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 16–30	77	68	74.2	2,210
May	77	1.2	59.0	3,630
The period				5,840

LITTLE CAMAS CANAL BELOW TUNNEL NO. 9, NEAR BENNETT, IDAHO

LOCATION.—In sec. 22, T. 1 S., R. 8 E., 300 feet below outlet of tunnel No. 9, 3 miles west of Bennett, Elmore County, and 22 miles northeast of Mountain Home.

RECORDS AVAILABLE.—April 2 to June 2, 1924. From June 1 to November 29, 1917, records obtained from station above tunnel No. 9, one-half mile above present gage.

GAGE.—Au water-stage recorder on left bank installed May 12, 1924, referred to vertical staff set to read actual head over Cippoletti weir located 3 feet below. Prior to May 12, 1924, actual head over weir obtained by measuring from a reference point; read by Irving Brooks.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and fine gravel. Banks high and clean. Control formed by 10-foot Cippoletti weir set in concrete.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during period, 66 second-feet May 8–11, 13–14; canal dry prior to April 1 and after June 2.

DIVERSIONS.—None.

REGULATION.—Flow regulated by gates at Little Camas Reservoir. During early spring canal picks up a small flow from side drainage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Prior to May 12, daily readings over weir crest obtained by measuring from a reference point. Daily discharge ascertained by applying to rating table daily head over weir crest or mean daily gage height determined by inspection of recorder graph. Records excellent after May 11; others fair.

COOPERATION.—Gage-height record prior to May 12 furnished by Mountain Home Cooperative Irrigation Co.

Canal heads in Little Camas Reservoir in sec. 9, T. 1 S., R. 9 E., 13 miles above (distance by canal route), where water is released for irrigation use on about 5,000 acres of land near Mountain Home.

The following discharge measurements were made:

May 9, 1924: Gage height, 1.26 feet; discharge, 72.4 second-feet.[7]

May 13, 1924: Gage height, 1.51 feet; discharge, 66.0 second-feet.

May 28, 1924: Gage height, 1.00 foot; discharge, 34.7 second-feet.

Daily discharge, in second-feet, of Little Camas Canal below tunnel No. 9, near Bennett, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1	------	63	0.7	11	50	66	------	21	60	54	------
2	8.8	63	.1	12	57	65	------	22	62	52	------
3	12	64	------	13	58	66	------	23	63	51	------
4	26	64	------	14	54	66	------	24	63	42	------
5	29	64	------	15	57	65	------	25	63	38	------
6	31	64	------	16	57	62	------	26	64	48	------
7	34	64	------	17	58	60	------	27	64	44	------
8	38	66	------	18	58	59	------	28	64	33	------
9	39	66	------	19	61	57	------	29	64	13	------
10	44	66	------	20	60	56	------	30	64	5.2	------
								31	------	2.8	------

[7] Unreliable because of stop watch trouble during measurement.

Monthly discharge of Little Camas Canal below tunnel No. 9, near Bennett, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 2-30	64	8.8	50.4	2,900
May	66	2.8	53.2	3,270
June 1-2	.7	.1	.40	1.6
The period				6,170

MOORE CREEK NEAR ARROWROCK, IDAHO

LOCATION.—In sec. 21, T. 3 N., R. 4 E., at highway bridge on Boise-Arrowrock road, a quarter of a mile above mouth and 5 miles southwest of Arrowrock, Boise County.

DRAINAGE AREA.—426 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1924 (discharge measurements only prior to December 1, 1915).

GAGE.—Vertical staff on right bank, 15 feet above highway bridge; read by Oliver Call.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders, cobbles, and sand. Control shifts frequently owing to deposition of sand at low stages and scouring out at high stages. Stream usually carries much sand and silt as a result of placer operations in Boise basin. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 358 second-feet April 13, 14, and 16; minimum stage, 0.09 foot August 13–15, 17, and 18 (discharge, 7.9 second-feet).

1915–1924: Maximum stage recorded, 6.3 feet April 11, 1916 (discharge, 3,140 second-feet); minimum stage and discharge occurred in 1924.

ICE.—Stage-discharge relation ordinarily not seriously affected by ice.

DIVERSIONS.—No important diversions above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed several times during year. Standard rating curve well defined. Gage read to hundredths once daily; rough water at high stages makes it difficult to read gage with refinement. Daily discharge determined by applying gage height to rating table except for periods for which the shifting-control method was used and except as noted in footnote to table of daily discharge. Records of daily discharge subject to error; records of monthly discharge good.

COOPERATION.—Several discharge measurements made by employees of United States Bureau of Reclamation and water master for Boise River.

Discharge measurements of Moore Creek near Arrowrock, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 23	0.80	84.0	Apr. 28	1.54	238	July 9	0.28	21.1
Feb. 2	.95	127	May 8	1.50	254	July 15	.22	13.2
Feb. 13	1.34	178	May 16	1.47	233	July 17	.20	14.9
Mar. 11	1.06	127	May 27	.95	99.4	Do	.20	13.5
Mar. 28	1.02	121	June 5	.68	63.2	July 28	.16	10.6
Apr. 8	1.69	291	June 9	.73	73.5	Aug 18	.10	8.82
Do	1.69	311	June 11	.68	63.6	Sept. 8	.14	10.4
Apr. 20	1.48	230	June 16	.56	44.2	Sept. 30	.34	25.8
Apr. 23	1.63	295	June 19	.58	49.9			

Daily discharge, in second-feet, of Moore Creek near Arrowrock, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	71	98		91	179	134	296	83	25	8.4	8.4
2	45	74	76		125	167	136	296	78	24	10	8.4
3	45	74	83		108	174	159	296	71	22	9.6	8.4
4	49	76	83		108	182	185	326	69	22	9.6	8.4
5	77	76	87		123	167	172	296	63	21	9.6	8.4
				50								
6	59	74	92		125	167	195	251	58	21	9.0	8.4
7	91	76	159		147	182	239	234	59	22	9.6	8.4
8	115	80	123		311	174	296	234	62	21	8.4	9.6
9	111	80	91		311	159	326	231	69	20	8.4	11
10	87	81	76		266	179	326	239	66	21	8.4	11
11	79	81	76		179	141	326	251	63	20	8.4	11
12	76	81	73		187	159	342	251	63	20	8.4	11
13	70	76	58		182	159	358	239	63	18	7.9	12
14	70	80	73		172	155	358	239	58	16	7.9	13
15	68	76	91		187	138	311	222	52	16	7.9	14
16	73	80	83		172	136	358	222	47	14	8.4	13
17	97	80	81		200	136	281	206	46	14	7.9	13
18	78	73	74		200	123	245	206	45	14	8.4	13
19	78	73	98	45	187	136	239	185	50	14	8.4	14
20	74	87	92		185	136	234	174	48	16	9.6	18
21	72	81	63		211	132	231	159	46	18	14	19
22	83	83	59		192	119	251	155	40	15	14	21
23	83	83	52		198	110	281	136	40	16	14	21
24	81	102	66		172	119	266	157	40	14	13	22
25	81	123	83		182	115	266	119	39	14	12	25
26	78	112	91		182	132	266	115	34	14	9.6	29
27	76	100	74	73	177	132	251	104	32	14	9.0	27
28	80	91	83	76	174	117	251	98	30	12	8.4	28
29	76	102	123	76	179	123	266	108	29	11	8.4	26
30	76	123	91	76	-------	104	281	96	25	11	8.4	25
31	74	-------	83	83	-------	115	-------	91	-------	11	8.4	-------

NOTE.—Stage-discharge relation affected by ice Jan. 1–26; discharge ascertained by means of gage heights observer's notes, and weather records. Braced figures give mean discharge for periods indicated.

Monthly discharge of Moore Creek near Arrowrock, Idaho, for the year ending September 30, 1924

[Drainage area, 426 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	115	45	75.7	0.178	0.21	4,650
November	123	71	85.0	.200	.22	5,060
December	159	52	85.0	.200	.23	5,230
January	-------	-------	51.7	.121	.14	3,180
February	311	91	180	.423	.46	10,400
March	182	104	144	.338	.39	8,850
April	358	134	261	.613	.68	15,500
May	326	91	201	.472	.54	12,400
June	83	25	52.3	.123	.14	3,110
July	25	11	17.1	.040	.05	1,050
August	14	7.9	9.46	.022	.03	582
September	29	8.4	15.5	.036	.04	922
The year	358	7.9	97.7	.229	3.13	70,900

WARMSPRINGS RESERVOIR NEAR RIVERSIDE, OREG.

LOCATION.—In SE. ¼ sec. 8, T. 23 S., R. 37 E., on Malheur River, 4 miles above junction with South Fork, and 4 miles above Riverside, Malheur County.

RECORDS AVAILABLE.—January 24, 1920, to September 30, 1924.

GAGE.—Tape gage with float set to read depth of water above bottom of tunnel direct; read by U. S. Yost. Elevation of bottom of tunnel 3,327.00 feet above mean sea level.

EXTREMES OF STAGE.—Maximum stage recorded during year, 62.70 feet April 21 (quantity stored, 123,800 acre-feet); minimum stage, 22.90 feet September 29 (quantity stored, 16,900 acre-feet).

COOPERATION.—Daily gage readings and storage table furnished by Warmsprings Irrigation District, C. L. Batchelder, manager.

Warmsprings Reservoir stores water for Warmsprings district, which embraces 31,618 acres of irrigable land on either side of Malheur River, extending from mouth of canyon to Ontario. Capacity of reservoir at spillway level, 74.0 feet, is 170,000 acre-feet. Dam completed November 25, 1919.

Monthly stage and contents of Warmsprings Reservoir near Riverside, Oreg., for the year ending September 30, 1924

Date	Gage height	Contents	Loss or gain during month	Date	Gage height	Contents	Loss or gain during month
	Feet	*Acre-feet*	*Acre-feet*		*Feet*	*Acre-feet*	*Acre-feet*
Sept. 30	50.42	82,300		May 31	54.46	94,400	−23,900
Oct. 31	51.09	84,300	+2,000	June 30	46.83	71,500	−22,900
Nov. 30	52.08	87,200	+2,900	July 31	36.96	44,400	−27,100
Dec. 31	53.10	90,300	+3,100	Aug. 31	28.96	26,900	−17,500
Jan. 31	54.12	93,400	+3,100	Sept. 30	22.91	16,900	−10,000
Feb. 29	59.70	111,800	+18,400				
Mar. 31	61.16	117,600	+5,800	The year			−65,400
Apr. 30	61.33	118,300	+700				

MALHEUR RIVER BELOW WARMSPRINGS RESERVOIR, NEAR RIVERSIDE, OREG.

LOCATION.—In SW. ¼ sec. 17, T. 23 S., R. 37 E., 1 mile below Warmsprings Dam, 3 miles above mouth of South Fork, and 4 miles northwest of Riverside, Malheur County.

DRAINAGE AREA.—About 1,100 square miles.

RECORDS AVAILABLE.—December 9, 1914, to July 4, 1917; March 18, 1919, to September 30, 1924. From January 3, 1906, to March 31, 1907, and December 15, 1908, to May 25, 1910, records were obtained at a site 4 miles below, at Riverside.

GAGE.—Vertical staff on left bank installed April 28, 1920; read by U. S. Yost.

DISCHARGE MEASUREMENTS.—Made from a highway bridge a quarter of a mile below dam or by wading.

CHANNEL AND CONTROL.—Concrete control 200 feet below gage. Concrete is of poor quality and disintegrates during winter. Above a medium stage the concrete control is submerged and contraction and riffle 200 feet farther downstream acts as control for gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.60 feet July 1–13 (discharge, 435 second-feet); seepage was estimated at 1 second-foot when gates to reservoir were closed October 30, 1923, to April 19 and September 29 and 30, 1924.

1906–1924: Maximum discharge recorded, 5,490 second-feet March 2, 1910 (gage height on Riverside gage, 10.0 feet); minimum discharge recorded prior to construction of dam, practically no flow during August, 1910; determined by subtracting discharge of South Fork from discharge of main river below South Fork. Minimum discharge since construction of dam; somewhat less than 1 second-foot when gates are closed; stream was dry August 1 to September 16, 1919, while dam was being constructed.

ICE.—No water released from dam during winter.

DIVERSIONS.—A large area of bottom land is irrigated with flood water above station.

REGULATION.—Flow past station entirely controlled by operation of gates in Warmsprings Dam beginning November, 1919.

ACCURACY.—Stage-discharge relation above 4.2 feet changed probably due to scouring of river bed below crest of artificial control by ice during winter. Rating curves well defined. Staff gage read to hundredths once a day and time noted when change was made in gate openings at dam. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

COOPERATION.—Record furnished by Warmsprings Irrigation District and water master for Malheur County.

Discharge measurements of Malheur River below Warmsprings Reservoir, near Riverside, Oreg., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 3	4.55	408	July 24	4.35	302	July 24	4.44	355
June 5	4.50	412	Do	4.24	251			

Daily discharge, in second-feet, of Malheur River below Warmsprings Reservoir, near Riverside, Oreg., for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	118	1	370	280	435	305	174
2	118	1	408	290	435	305	183
3	118	1	408	350	435	305	205
4	79	1	408	402	435	305	205
5	2	1	408	380	435	305	205
6	2	1	408	380	435	305	205
7	2	1	408	380	435	305	205
8	2	1	408	380	435	305	205
9	2	1	408	386	435	305	205
10	2	1	402	408	435	305	205
11	2	1	380	408	435	305	205
12	2	1	380	370	435	305	205
13	2	1	380	330	435	305	205
14	2	1	380	330	424	305	205
15	2	1	380	330	408	305	199
16	2	1	380	330	408	305	174
17	2	1	380	330	408	295	174
18	2	1	380	330	408	280	174
19	2	1	380	330	408	260	162
20	2	32	380	320	408	222	145
21	2	134	380	305	408	222	145
22	2	174	380	305	396	222	145
23	2	239	380	305	380	208	137
24	2	280	380	305	375	174	118
25	2	280	380	305	355	174	118
26	2	310	380	305	355	174	118
27	2	355	380	335	355	174	118
28	2	355	380	370	330	174	118
29	2	355	380	380	305	174	40
30	1	355	355	396	305	174	1
31	1	-------	280	-------	305	174	-------

NOTE.—Gates from reservoir closed Oct. 30 to Apr. 19 and Sept. 29 and 30; discharge estimated, 1 second-foot.

Monthly discharge of Malheur River below Warmsprings Reservoir, near Riverside, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	118	1	15.6	959
November	1	1	1	60
December	1	1	1	62
January	1	1	1	62
February	1	1	1	58
March	1	1	1	62
April	355	1	96.3	5,730
May	408	280	384	23,600
June	408	280	345	20,500
July	435	305	400	24,600
August	305	174	257	15,800
September	205	1	163	9,700
The year	435	1	139	101,000

MALHEUR RIVER NEAR HOPE, OREG.

LOCATION.—In SW. ¼ sec. 5, T. 19 S., R. 43 E., half a mile above intake of Vines Canal, half a mile above railroad bridge, 6½ miles west of Hope, Malheur County, and 15 miles west of Vale.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 30 to October 26, 1919; May 5 to September 30, 1920; fragmentary record during 1921 and 1922; October 1, 1922, to September 30, 1924. Station maintained half a mile below Vines Canal, March 22 to September 30, 1914.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by C. L. Bachelor and H. G. Kennard.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and boulders; subject to shift at high stages. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage for year occurred when recorder was not operating in February when there was an ice jam and high water lasting for a few days; minimum stage during year from water-stage recorder, 0.83 foot at 5 a. m. April 9 (discharge, 51 second-feet).

1919–1924: Maximum discharge recorded, 3,950 second-feet February 11, 1921; minimum stage, 0.02 foot from 5–9 p. m. September 2, 1919 (discharge, 3.5 second-feet).

ICE.—Water-stage recorder not operating during winter.

DIVERSIONS.—Several small canals divert water above this point.

REGULATION.—Flow controlled to a large extent by Warmsprings Dam 60 miles above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined Water-stage recorder operated satisfactorily March 7 to September 30, except May 5–18 and June 30 to July 19. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspecting recorder graph. Records good, except for periods recorder was not operating, for which they were fair.

The record at this station shows the discharge above intake of canals of Warmsprings irrigation district.

The following discharge measurements were made:

March 7, 1924: Gage height, 1.28 feet; discharge, 109 second-feet.

April 15, 1924: Gage height, 1.34 feet; discharge, 125 second-feet.

July 30, 1924: Gage height, 1.95 feet; discharge, 302 second-feet.

Daily discharge, in second-feet, of Malheur River near Hope, Oreg., for the year ending September 30, 1924

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		101	380	332		277	172
2		100	410	314		273	178
3		98	440	314		277	178
4	115	84	440	336		281	193
5		74		370		289	204
6		70		355		285	208
7	113	64		355		289	204
8	119	53		360		285	200
9	113	68		355	375	285	204
10	105	83		360		285	193
11	106	95	450	385		289	190
12	102	96		380		289	184
13	96	105		380		285	187
14	90	115		341		285	184
15	98	123		336		281	184
16	96	121		341		277	184
17	98	106		346		277	181
18	95	90		350	370	285	166
19	98	82	445	360	380	285	169
20	96	76	440	355	390	289	175
21	100	73	415	350	390	261	169
22	100	73	435	332	385	261	169
23	98	200	435	332	370	253	169
24	101	265	435	332	360	249	169
25	110	318	420	328	350	225	163
26	106	323	425	323	323	200	163
27	113	341	415	318	328	187	160
28	110	365	410	341	332	187	160
29	113	375	405	350	332	184	155
30	108	390	400	350	323	181	155
31	105	-------	385	-------	297	172	-------

Monthly discharge of Malheur River near Hope, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	-------	-------	90	5,530
November	-------	-------	80	4,760
December	-------	-------	75	4,610
January	-------	-------	75	4,610
February	-------	-------	450	25,900
March	119	90	106	6,520
April	390	53	151	8,980
May	-------	380	433	26,600
June	385	314	346	20,600
July	390	297	364	22,400
August	289	172	259	15,900
September	208	155	179	10,700
The year	-------	-------	-------	157,000

NOTE.—Mean monthly discharge estimated, October to December, from records at gaging station on Malheur River near Namorf; January and February, from records of inflow into Warmsprings Reservoir and ratios between the inflow and flow at the Namorf and Hope gaging stations same as given in earlier reports.

WILLOW CREEK NEAR MALHEUR, OREG.

LOCATION.—In sec. 6, T. 14 S., R. 41 E., at Stanfield ranch, half a mile above flow line of reservoir No. 3 of Willow River Land & Irrigation Co., and 2½ miles south of Malheur, Malheur County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—November 20, 1904, to August 14, 1906; March 19, 1910, to August 2, 1911; March 27, 1912, to September 30, 1915; March 1, 1921, to September 30, 1924.

GAGE.—Stevens eight-day water-stage recorder on left bank; inspected by James Minougham.

DISCHARGE MEASUREMENTS.—Made from bridge 200 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed of sand and loose gravel. Just below gage is an artificial control of concrete. The crest is 2 feet above stream bed, 8 inches wide, inclined toward right where there is a low-water section 3 feet long and 6 inches wide. The cut-off walls at ends conform to slope of the banks. The control was reconstructed in November, 1922, extending cut-off wall deeper into bed and banks of stream and adding a concrete apron 6 feet long.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.25 feet at 5 p. m. February 8 (discharge, 116 second-feet). No flow October 1–30 and July 6 to September 30.

1904–1906; 1910–1915; 1921–1924: Maximum discharge (computed from cross section and estimated velocities) 1,400 second-feet March 20, 1910. No flow at times.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Several small diversions above station irrigating a large area of meadow land; reservoir No. 3 just below. The Eldorado ditch diverted no water into Willow Creek, 25 miles above gaging station, in 1924.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory November 6 to December 9, February 7 to March 5, and April 1 to May 22; staff gage read once every other day for remainder of year except July 10 to September 30 when there was practically no flow. Daily discharge ascertained by applying to rating table daily gage height or mean daily gage height determined from recorder graph by inspection. Records good.

No discharge measurements made during year; rating checked by measurements during 1925.

Daily discharge, in second-feet, of Willow Creek near Malheur, Oreg., for the year ending September 30, 1924

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1		1.7		4.3	12	1.5	0.8		
2		1.8		20	11	1.4	.8	0.3	0.2
3	0.2	1.8		10	12	1.5	.8		
4		1.8	3.0	6.7	11	1.5	.8	.3	
5		2.0		15	10	1.3	.9		.1
6	.4	2.4		30	10	1.2	1.6	.3	
7	.4	3.1	2.5	60	10	1.2	1.7		
8	.6	2.3		72	9.2	1.1	1.1		
9	.7	2.2		50	9.2	1.0	1.0	.3	
10	.8	1.9		30	9.2	.8	.9		
11	.9	1.6	3.2	21	7.0	.8	1.0	.3	
12	1.0	1.6		18	4.9	.8	.9		
13	1.0	1.7		20	5.2	.8	1.5	.3	
14	1.0	1.8		24	5.3	1.0	1.0		
15	.9	1.9		31	4.6	1.1	.9		
16	.8	2.0	3.5	35	4.0	1.2	.8	.2	
17	1.0	2.2		32	3.6	1.4	.6		
18	1.1	2.4		26	3.3	1.3	.6	.2	
19	1.1	2.2		21	2.9	1.4	.5		
20	1.5	2.0		18	2.5	1.6	.4	.3	
21	1.6	1.7	3.0	20	2.1	1.5	.4		
22	1.7	1.9		18	1.7	1.4	.4		
23	1.9	2.0		17	1.7	1.2	.4	.2	
24	1.8	2.2	2.8	16	1.7	1.1	.4		
25	1.7	2.4		15	1.7	1.2	.4	.2	
26	1.8	2.2		13	1.7	.9	.3		
27	1.9	2.4		13	1.7	.9	.3	.2	
28	2.2	2.6		13	1.6	1.0	.3		
29	2.3	2.8	3.5	12	1.4	1.0	.3		
30	2.4	2.8			1.4	1.0	.3	.2	
31		2.8			1.5		.3		

NOTE.—No flow July 6–31.

Monthly discharge of Willow Creek near Malheur, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November	2.4		1.12	67
December	3.1	1.6	2.14	132
January			3.07	189
February	72	6.7	23.5	1,350
March	12	1.4	5.33	328
April	1.5	.8	1.17	70
May	1.5	.3	.72	44
June			.26	15
July		0	.03	2
The year	72	0	3.03	2,200

NOTE.—No flow in months for which no record is given.

PAYETTE RIVER AT BANKS, IDAHO

LOCATION.—In SE. ¼ sec. 29, T. 9 N., R. 3 E., three-eighths of a mile below confluence of North and South Forks of Payette River and one-fifth mile above railroad depot at Banks, Boise County.

DRAINAGE AREA.—2,120 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 31, 1922, to September 30, 1924.

GAGE.—Vertical staff in two sections on right bank; low-water section 60 feet above high-water section; read by Luther A. Vance and H. B. Redington.

DISCHARGE MEASUREMENTS.—Made from cable 125 feet below high-water gage.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and boulders. One channel at all stages. Control composed of large boulders; well-defined and practically permanent prior to December 22, 1923. Beginning that date and continuing throughout period of blasting and excavating side hill cut for new highway along river, considerable material was spilled down left bank and on control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.32 feet May 17 (discharge, 8,820 second-feet); minimum discharge, 548 second-feet September 17.

1922–1924: Maximum stage recorded, 12.54 feet June 7 and 8, 1922 (discharge, 18,900 second-feet); minimum discharge, September 17, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Several diversions for irrigation from tributaries above.

REGULATION.—During spring and summer flow past station slightly affected by regulation at outlet of Payette Lake, 58 miles above.

ACCURACY.—Stage-discharge relation changed on December 22, in January, May 22 to June 14, and June 22–29, by deposits of material wasted down left bank and onto control from blasting and excavating side hill cut for new highway. Standard rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used May 22 to June 14 and June 22–29. Records good except during estimated periods for which they are fair.

Discharge measurements of Payette River at Banks, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	1.35	1,110	Apr. 22	5.75	3,410	June 18	4.04	1,600
Dec. 18	1.02	932	Apr. 26	5.59	3,140	July 3	3.28	1,160
Feb. 13	3.10	1,340	May 21	8.58	7,640	Aug. 13	2.20	662
Feb. 19	3.24	1,400	May 31	5.34	2,710	Sept. 12	2.07	633
Mar. 18	2.65	1,080	June 15	4.24	1,760			

Daily discharge, in second-feet, of Payette River at Banks, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	928	972	882			1,270	1,140	4,670	2,600	1,060	685	685
2	928	995	705		1,150	1,240	1,160	5,060	2,520	1,160	685	685
3	950	972	928			1,300	1,320	5,760	2,520	1,160	705	665
4	950	950	905		1,220	1,220	1,300	5,540	2,520	1,160	705	645
5	1,040	928	928		1,160	1,160	1,270	5,330	2,520	1,160	705	645
6	1,170	882	995	720	1,160	1,220	1,460	4,800	2,440	1,120	705	645
7	1,300	950	1,300		1,240	1,240	1,850	4,670	2,440	1,060	685	625
8	1,240	950	1,060		1,850	1,190	2,440	4,670	2,360	1,020	685	625
9	1,220	972	928		2,210	1,160	2,600	4,930	2,280	995	665	625
10	1,240	882	792		1,720	1,270	2,600	5,470	2,140	995	665	625
11	1,190	905	770		1,520	1,190	2,520	6,060	2,060	972	685	605
12	1,140	928	905		1,400	1,140	2,780	7,080	1,990	950	665	625
13	1,020	950	792		1,350	1,190	3,600	7,830	1,920	1,040	665	605
14	1,040	950	995		1,400	1,220	4,060	7,830	1,780	1,120	625	605
15	1,040	950	1,060		1,460	1,090	3,490	8,420	1,720	1,120	645	585
16	1,020	928	995	850	1,440	1,060	2,970	8,620	1,720	1,060	645	585
17	1,220	882	928		1,460	1,090	2,690	8,820	1,650	1,020	645	548
18	1,140	792	972		1,520	1,090	2,600	8,620	1,580	1,020	625	585
19	1,090	770	995		1,440	1,140	2,780	8,020	1,650	995	705	605
20	1,060	995	905		1,380	1,120	2,780	7,640	1,580	1,060	838	645
21	1,060	950	792		1,400	1,090	2,970	7,260	1,460	1,020	748	625
22	1,060	905	650		1,320	1,120	3,380	6,720	1,300	950	685	625
23	1,220	950			1,320	995	3,490	6,220	1,380	905	625	605
24	1,090	1,270		820	1,220	1,060	3,490	5,760	1,320	838	605	605
25	1,040	1,650			1,300	995	3,270	5,470	1,300	792	585	645
26	1,040	1,350	780		1,270	1,060	3,170	5,060	1,240	770	625	685
27	1,020	1,040			1,270	1,140	3,270	4,060	1,190	748	625	645
28	995	1,080			1,350	1,120	3,490	3,490	1,160	705	645	645
29	995	1,120		980	1,220	1,140	3,710	3,170	1,120	725	685	625
30	972	1,140			------	928	4,060	2,780	995	705	705	605
31	972	-------			-------	1,040	-------	2,690	-------	705	705	-------

NOTE.—Discharge estimated on account of ice, Dec. 22 to Feb. 3; interpolated Oct. 6, Nov. 28, May 4, July 4, Aug. 24 on account of missing gage heights. Braced figures give mean discharge for periods indicated.

Monthly discharge of Payette River at Banks, Idaho, for the year ending September 30, 1924

[Drainage area, 2,120 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,300	928	1,080	0.509	0.59	66,400
November	1,650	770	999	.471	.53	59,400
December	1,300	650	877	.414	.48	53,900
January	----------	----------	823	.388	.45	50,600
February	2,210	----------	1,380	.651	.70	79,400
March	1,300	928	1,140	.538	.62	70,100
April	4,060	1,140	2,720	1.28	1.43	162,000
May	8,820	2,690	5,890	2.78	3.20	362,000
June	2,600	995	1,820	.858	.96	108,000
July	1,160	705	971	.458	.53	59,700
August	838	585	673	.317	.37	41,400
September	685	548	626	.295	.33	37,200
The year	8,820	548	1,580	.745	10.19	1,150,000

PAYETTE RIVER NEAR HORSESHOE BEND, IDAHO

LOCATION.—In sec. 14, T. 7 N., R. 2 E., 100 feet east of tracks of Idaho Northern branch of Oregon Short Line Railroad and 1½ miles northeast of Horseshoe Bend, Boise County.

DRAINAGE AREA.—2,230 square miles (revised; measured on topographic and Land Office maps).

RECORDS AVAILABLE.—November 23, 1912, to September 30, 1916; July 27, 1919, to September 30, 1924. February 13, 1906, to November 22, 1912, at site in section 2, two miles upstream. Two small creeks enter between the two stations.

GAGE.—Barrett & Lawrence water-stage recorder on right bank 200 feet above railroad crossing, installed May 3, 1912; reinstalled in new shelter house at same site September 10, 1924; Bristol water-stage recorder used temporarily September 22 to December 10, 1923; inspected by J. W. Anthony.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet below gage.

CHANNEL AND CONTROL.—Bed composed of cobbles and coarse gravel with a few large rocks. Control practically permanent. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.46 feet from 2 to 7 p. m. May 17 (discharge, 8,740 second-feet); minimum stage, 0.77 foot August 25 and September 19 (discharge, 580 second-feet).

1906–1916; 1919–1924: Maximum stage recorded, 9.57 feet at 1 p. m. June 9, 1921 (discharge, 22,100 second-feet); minimum stage, 0.75 foot December 1, 1922 (discharge, 530 second-feet).

ICE.—Stage-discharge relation somewhat affected by ice.

DIVERSIONS.—Several diversions for irrigation from tributaries above; none between this station and the one at Banks.

REGULATION.—During irrigation season, flow past station slightly affected by regulation at outlet of Payette Lake 70 miles above.

ACCURACY.—Stage-discharge relation changed slightly for low stages during winter. Rating curves well defined. Operation of water-stage recorder satisfactory except during winter and for short periods at other times during year. Staff gage read to hundredths several times each day August 23 to September 9, during period of construction of new shelter house; read occasionally during winter. Daily discharge ascertained by applying to rating table mean daily gage height. During periods water-stage recorder was operated, mean daily gage height determined by inspection of recorder graph. Records good except for estimated periods which are fair.

COOPERATION.—Gage-height record furnished by Idaho Power Co.

Discharge measurements of Payette River near Horseshoe Bend, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	1.39	1,070	Apr. 26	2.86	2,970	July 30	0.96	705
Dec. 18	* 1.26	850	May 21	4.88	7,000	Aug. 13	.88	636
Feb. 12	1.67	1,340	May 31	2.65	2,610	Aug. 27	.84	615
Mar. 18	1.35	1,020	June 14	1.96	1,680	Sept. 11	.82	611
Apr. 22	2.86	3,030	July 3	1.40	1,070			

* Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Payette River near Horseshoe Bend, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	935	908	908		1,100	1,230	1,040	4,120	2,500	999	669	662
2	935	935	744		1,140	1,260		4,520	2,500	1,020	669	652
3	935	926	728			1,280	1,240	5,150	2,420	1,070	669	642
4	971	908	890			1,290		5,800	2,420	1,080	669	631
5	999	848	1,050			1,240	1,140	5,580	2,420	1,100	662	625
6	1,080	856	1,190	700	1,270	1,220	1,240	4,840	2,350	1,080	655	619
7	1,290	856	1,050			1,230	1,530	4,520	2,350	1,050	655	607
8	1,320	839	873			1,210	2,070	4,320	2,350	990	649	613
9		839	762		2,140	1,140	2,420	4,420	2,210	962	649	625
10		830	762		1,810	1,140	2,650	4,730	2,070	935	637	619
11	1,100	822			1,540	1,160	2,730	5,150	2,000	917	631	607
12		856	800		1,390	1,100	2,880	6,020	1,940	890	631	595
13		864			1,300	1,100	3,210	6,710	1,880	873	637	595
14		864				1,220	3,740	7,190	1,720	917	607	595
15		864				1,100	3,740	7,950	1,690	944	607	595
16	1,060	848	950	830		1,060	3,210	8,210	1,620	962	619	595
17	1,180	848				1,050	2,880	8,470	1,580	944	613	590
18	1,060	780	850			1,050	2,650	8,470	1,530	935	607	585
19	1,040	737			1,400	1,060	2,650	7,950	1,530	926	631	580
20	1,020	822				1,080	2,580	7,690	1,520	935	718	595
21	999	908				1,060	2,650	7,190	1,460	935	704	607
22	1,010	873				1,030	2,880	6,710	1,380	917	687	607
23	1,100	873						6,480	1,320	890	625	595
24	1,080	1,060		800	1,140		3,400	5,910	1,310	848	601	607
25	1,030	1,420	750		1,210			5,580	1,270	781	585	607
26	1,000	1,250			1,250	1,050	2,960	5,260	1,210	725	607	619
27	972	1,080			1,260		3,040	4,420	1,160	718	625	619
28	944	908			1,280		3,130	3,560	1,120	711	625	619
29	935	1,020		960	1,250		3,300	3,210	1,080	697	649	613
30	917	1,070			-------		3,650	2,880	1,050	683	669	595
31	908	-------			-------		-------	2,650	-------	669	669	-------

NOTE.—Discharge estimated Oct. 9–15, 17, Dec. 11–17, 19–31, Jan. 1–31, Feb. 1, 3–8, 14–23, Mar. 23–31, Apr. 2–4, 23–25, based largely on flow at Banks; affected somewhat by ice Dec. 11 to Feb. 1. Discharge interpolated Oct. 19, 26–27, Sept. 2–3. Result of discharge measurement used Dec. 18. Braced figures give mean discharge for periods indicated.

Monthly discharge of Payette River near Horseshoe Bend, Idaho, for the year ending September 30, 1924

[Drainage area, 2,230 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,320	908	1,050	0.471	0.54	64,600
November	1,420	737	917	.411	.46	54,600
December	1,190	----------	831	.373	.43	51,100
January	----------	----------	803	.360	.42	49,400
February	2,140	----------	1,360	.610	.66	78,200
March	1,290	----------	1,120	.502	.58	68,900
April	3,740	----------	2,600	1.17	1.30	155,000
May	8,470	2,650	5,670	2.54	2.93	349,000
June	2,500	1,050	1,770	.794	.89	105,000
July	1,100	669	907	.407	.47	55,800
August	718	585	643	.288	.33	39,500
September	662	580	610	.274	.31	36,300
The year	8,470	580	1,520	.682	9.32	1,110,000

PAYETTE LAKE AT LARDO, IDAHO

LOCATION.—In sec. 8, T. 18 N., R. 3 E., at outlet of lake at Lardo, Valley County.

DRAINAGE AREA.—131 square miles (measured on topographic and Land Office maps).

RECORDS AVAILABLE.—Fragmentary records August 1, 1921, to September 30, 1924.

GAGE.—Vertical staff on tubular pier of highway bridge, near right bank; read by J. J. Christeson and F. L. Williams. Gage datum is 4,984.17 feet above mean sea level.

DIVERSIONS.—None.

REGULATION.—Some storage is used for irrigation in the lower Payette valley. From 1919 to 1923, a small amount of regulation affected during July, August, and September, by installation and later gradual removal of temporary dam above highway bridge. In the fall of 1923, a more permanent dam was installed 250 feet below highway bridge; thereafter regulation effected by operation of flashboards in dam. No storage prior to 1919.

COOPERATION.—Gage-height record furnished in part by United States Forest Service.

Daily gage height, in feet, of Payette Lake at Lardo, Idaho, for the year ending September 30, 1924

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					5.36	5.40	2.88	
2		1.47			5.50	5.35	2.81	0.76
3				3.35	5.55	5.30	2.74	
4					5.55		2.62	
5			1.57		5.55	5.18	2.60	
6					5.50	5.10	2.50	
7					5.59	5.00	2.46	
8		1.48			5.55	4.95	2.41	
9					5.50	4.88	2.30	
10					5.50	4.80	2.22	
11				5.60	5.50	4.65	2.16	
12			1.71		5.55	4.50	2.10	
13					5.58	4.40	2.05	
14					5.60	4.15	1.96	
15					5.60	4.00	1.90	
16					5.60	3.90	1.84	
17	1.60	1.52			5.60	3.80	1.78	—.27
18				5.35	5.60	3.70	1.70	
19			1.92	5.00	5.60	3.60	1.78	
20				4.85	5.60	3.52	1.76	
21				4.65	5.60	3.45	1.74	
22		1.51		4.55	5.58	3.40	1.70	
23	1.54			4.40	5.60	3.35	1.65	
24			2.10	4.25	5.60	3.35	1.60	
25				4.28	5.55		1.54	
26			2.16	4.55	5.55	3.26	1.42	
27				4.75	5.55	3.18	1.32	
28		1.56		4.90	5.55		1.22	
29				5.05	5.55	3.05	1.12	
30				5.20	5.45		1.02	
31				5.28		2.96		

NOTE.—First flashboards placed in new dam below gage on May 3. Center flashboards in dam washed out at 3 p. m. May 12 and replaced on May 23; thereafter regulation effected by operation of flashboards.

NORTH FORK OF PAYETTE RIVER AT LARDO, IDAHO

LOCATION.—In sec. 8, T. 18 N., R. 3 E., a quarter of a mile below Lardo, Valley County, and outlet of Payette Lake. No tributaries enter between lake and gage.

DRAINAGE AREA.—131 square miles (measured on topographic and Land Office maps).

RECORDS AVAILABLE.—September 1, 1908, to June 30, 1917; May 24, 1919, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank, installed December 19, 1923; staff gage read prior to that date. Gage read by F. L. Williams.

DISCHARGE MEASUREMENTS.—Made from cable half a mile below gage or by wading.

CHANNEL AND CONTROL.—Bed and control composed of cobbles and gravel; slightly shifting. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 5.90 feet from 5 to 6 a. m. May 13 (discharge, 2,490 second-feet); minimum stage, 1.23 feet December 20–23 (discharge, 7 second-feet).

1908–1917; 1919–1924: Maximum stage recorded, 7.5 feet June 5, 1909 (discharge, 4,250 second-feet); minimum discharge, 3 second-feet October 21 and 22, 1911, and November 10–26, 1919.

ICE.—Stage-discharge relation not affected by ice, presumably because of proximity of station to Payette Lake.

DIVERSIONS.—None above station.

REGULATION.—Flow during irrigation season partly regulated by changing flashboards in dam installed in October and November, 1923, at outlet of Payette Lake. From 1919 to 1923, some regulation effected during July, August, and September, by installation and later gradual removal of temporary dam about 500 feet above present dam.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined. Gage read to hundredths once daily October 1 to December 15, except for intervening periods of missing readings as noted in footnote to table of daily discharge. Water-stage recorder operated satisfactorily during remainder of year. Daily discharge ascertained by applying daily gage height to rating table, or for days having large range in stage, by averaging discharge for intervals of the day. During period water-stage recorder was operated mean daily gage height determined by inspection of recorder graph Records excellent except for estimated periods for which they are fair.

COOPERATION.—Gage-height record furnished by United States Forest Service.

Discharge measurements of North Fork of Payette River at Lardo, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 19	1.24	7.22	June 1	2.33	107	Sept. 2	2.56	169
Feb. 17	2.31	100	June 17	2.60	173	Sept. 17	2.25	92.3
Apr. 25	2.92	282	July 1	2.76	222			
May 18	5.63	2,200	Aug. 11	2.50	153			

Daily discharge, in second-feet, of North Fork of Payette River at Lardo, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67		20	33	52	70	52	639	121	232	158	177
2	64			33	58	67	52	776	213	219	166	166
3	64			34	58	66	53	435	278	197	160	155
4	62			35	60	64	55	222	367	177	166	145
5	62		21	35	64	45	55	398	371	177	160	140
6	62			35	67	35	55	525	345	174	166	137
7				35	72	36	57	568	281	183	152	133
8			22	35	89	36	63	639	337	200	160	133
9				35	89	36	70	783	358	183	177	128
10				35	87	37	80	1,160	341	225	158	119
11			21	35	87	38	94	1,540	316	333	140	108
12				35	87	38	108	1,900	155	470	137	98
13				35	98	39	128	2,440	169	416	147	115
14				35	112	42	166	2,440	177	367	142	102
15			20	36	112	42	183	2,440	177	341	135	106
16		30		40	108	42	186	2,390	177	312	130	100
17			12	43	104	42	191	2,390	174	274	123	92
18				44	98	42	191	2,240	191	260	112	85
19	45		7.3	44	92	42	191	1,810	197	246	85	80
20			7.0	44	89	42	188	1,680	186	235	39	73
21			7.0	44	87	45	191	1,540	180	163	38	67
22			7.0	43	87	45	206	1,410	147	121	47	64
23			7.0	43	85	44	238	1,280	117	110	125	59
24			8.2	42	83	47	263	1,360	102	98	155	55
25			15	42	78	47	278	850	98	102	158	54
26			29	42	77	46	289	125	96	106	194	52
27			29	42	73	47	308	169	92	152	242	50
28			29	42	73	50	367	102	83	142	232	44
29			33	42	72	53	435	137	116	133	216	40
30			33	45	------	53	525	160	308	128	200	
31		------	33	48	------	53	------	155	------	121	188	------

NOTE.—Discharge estimated on account of missing gage heights, Oct. 7 to Nov. 30, Dec. 2–7, 9–14, 16–18, and Sept. 29–30; estimated June 29 on basis of part day gage-height record. Discharge interpolated Jan. 10–11, Mar. 16, May 10, and June 15. Braced figures give mean discharge for periods indicated.

Monthly discharge of North Fork of Payette River at Lardo, Idaho, for the year ending September 30, 1924

[Drainage area, 131 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	67	------	48.6	0.371	0.43	2,990
November	------	------	30.0	.229	.26	1,790
December	33	7.0	19.2	.147	.17	1,180
January	48	33	39.1	.298	.34	2,400
February	112	52	82.7	.631	.68	4,760
March	70	35	46.2	.353	.41	2,840
April	525	52	177	1.35	1.51	10,500
May	2,440	102	1,120	8.55	9.86	68,900
June	371	83	209	1.60	1.78	12,400
July	470	98	213	1.63	1.88	13,100
August	242	38	149	1.14	1.31	9,160
September	177	------	97.2	.742	.83	5,780
The year	2,440	7.0	187	1.43	19.46	136,000

NORTH FORK OF PAYETTE RIVER AT VAN WYCK, IDAHO

LOCATION.—In sec. 26, T. 14 N., R. 3 E., at highway bridge half a mile north of Van Wyck, Valley County, and 2 miles northwest of Cascade. Willow Creek, a small stream, enters from south, half a mile below.

DRAINAGE AREA.—586 square miles (measured on topographic and Land Office maps).

RECORDS AVAILABLE.—January 1, 1912, to June 30, 1916; June 9, 1920, to November 23, 1924, when station was discontinued. Gage heights January 1 to August 7, 1912, were derived from private records from comparative gage readings; daily discharge not determined prior to June 20, 1912. Several discharge measurements made during 1919 and spring of 1920.

GAGE.—Vertical staff spiked to downstream side of second bridge pier from right end of bridge; read by W. L. Hanan.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of rock overlain by sand and gravel; control somewhat shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during 1924, 6.30 feet May 16 (discharge, 4,180 second-feet); minimum stage, 1.56 feet October 25, 1924 (discharge, 92 second-feet).

1912–1916; 1920–1924: Maximum stage recorded, 8.6 feet May 20, 1921 (discharge, 8,700 second-feet); minimum discharge, that of October 25, 1924.

ICE.—Stage-discharge relation affected by ice; observations discontinued during winter.

DIVERSIONS.—Above station practically no diversions are made from main stream, but numerous diversions for irrigation are made from tributaries.

REGULATION.—During spring and summer flow partly regulated by dam at outlet of Payette Lake, 30 miles above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of North Fork of Payette River at Van Wyck, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 25	3.19	1,000	June 17	2.35	366	Sept. 2	1.96	222
May 19	6.08	3,850	July 1	2.24	315	Sept. 17	1.76	147
June 1	2.85	654	Aug. 12	1.92	200			

Daily discharge, in second-feet, of North Fork of Payette River at Van Wyck, Idaho, for the period April 24 to November 23, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1		1,190	624	326	192	210	124	210
2		1,410	560	305	192	213	127	246
3		1,650	624	305	192	199	130	227
4		1,840	624	285	192	192	133	246
5		1,490	758	265	192	189	136	265
6		1,410	758	227	196	179	124	220
7		1,410	724	227	192	173	113	192
8		1,340	690	227	196	176	127	213
9		1,410	624	246	192	179	116	227
10		1,570	624	246	192	173	102	285

Daily discharge, in second-feet, of North Fork of Payette River at Van Wyck, Idaho, for the period April 24 to November 23, 1924—Continued

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
11		2,040	624	227	192	170	102	
12		2,490	592	305	196	170	102	
13		2,970	499	394	192	160	102	
14		3,620	444	444	196	148	108	
15		4,040	444	394	192	151	105	220
16		4,040	444	371	192	151	102	
17		4,040	394	371	186	148	102	
18		4,040	394	305	176	142	102	
19		3,900	394	305	199	142	99	
20		3,620	394	305	192	148	97	444
21		3,360	348	305	176	142	99	444
22		3,230	348	265	130	136	97	499
23		2,970	348	227	154	130	99	394
24	898	2,730	305	192		130	97	
25	898	2,370	285	160		133	92	
26	898	1,340	227		240	130	102	
27	898	1,190	210	192		130	108	
28	898	1,040	202	192		130	154	
29	1,010	898	192			130	166	
30	1,110	690	210	175		124	186	
31		690			213		192	

NOTE.—Gage-height record July 25, 26, 29–31 discredited; no gage heights Aug. 24–30; discharge estimated. Stage-discharge relation affected by ice and discharge estimated Nov. 11–19.

Monthly discharge of North Fork of Payette River at Van Wyck, Idaho, for the period April 24 to November 23, 1924

[Drainage area, 586 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
April 24–30	1,110	898	944	1.61	0.42	13,100
May	4,040	690	2,260	3.86	4.45	139,000
June	758	192	464	.792	.88	27,600
July	444		268	.457	.53	16,500
August		130	200	.341	.39	12,300
September	213	124	158	.270	.30	9,400
October	192	92	118	.201	.23	7,260
November 1–23	499		265	.452	.39	12,100
The period						237,000

SOUTH FORK OF PAYETTE RIVER NEAR GARDEN VALLEY, IDAHO

LOCATION.—In sec. 1, T. 8 N., R. 4 E., at Garden Valley ranger station, 300 feet above mouth of Station Creek, half a mile above mouth of Wash Creek, 1¼ miles above mouth of Alder Creek, 4¾ miles above mouth of Middle Fork of Payette River, and 5 miles southeast of Garden Valley, Boise County.

DRAINAGE AREA.—779 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 15, 1921, to September 30, 1924.

GAGE.—Vertical staff on right bank directly to rear of ranger station; read by W. E. Lively, C. L. Davenport, and Dewitt Russell.

DISCHARGE MEASUREMENTS.—Made from cable 30 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock overlain with cobbles and gravel. Control formed by well-defined riffle. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 3,180 second-feet May 17 and 18; minimum measured discharge, 322 second-feet September 3.

1921–1924: Maximum stage recorded, 6.87 feet June 9, 1921 (discharge, 9,330 second-feet); minimum discharge occurred September 3, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Practically none above.

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably changed slightly during winter and between March 25 and middle of April. Standard rating curves well defined. Gage read to hundredths once daily; record fragmentary during February, March, and early April. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used March 25 to April 8. Records good except February, March, and April, for which they are fair.

COOPERATION.—Gage-height record furnished by United States Forest Service.

Discharge measurements of South Fork of Payette River near Garden Valley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 19	0.70	490	June 2	1.94	1,450	Aug. 13	0.50	350
Apr. 23	1.70	1,220	June 15	1.41	952	Sept. 3	.45	322
May 20	3.08	2,780	July 2	.97	638			

Daily discharge, in second-feet, of South Fork of Payette River near Garden Valley, Idaho, for the year ending September 30, 1924

Day	Oct.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	548		520	465	1,730	1,430	655	385	335
2	548		525	495	1,950	1,430	622	385	330
3	548	490		525	2,200	1,430	622	385	325
4	548				2,460	1,430	725	385	325
5	515		510	550	2,070	1,340	690	360	330
6	515	465			1,730	1,340	655	360	325
7	548	495		750	1,730	1,240	622	360	325
8	548	725	495	918	1,630	1,050	622	360	325
9	548	655			1,840	1,140	590	360	325
10	580		500		2,070	1,100	590	360	325
11	580	550		1,200	2,330	1,000	525	355	330
12	564				2,740	960	525	360	330
13	548		495		2,800	960	495	355	330
14	515	525			2,880	960	465	355	325
15	548		465		3,030	960	465	355	325
16	532				3,030	960	465	350	325
17	515	535			3,180	918	465	345	330
18	515		410		3,180	918	465	340	330
19	548		495	1,050	2,880	918	465	345	340
20	548		465		2,740	835	465	438	340
21	580	525	465		2,600	835	465	385	340
22	650		465		2,460	760	465	385	350
23	685		465	1,240	2,200	760	438	385	360
24	615		438	1,240	2,200	760	438	350	360
25	615		410	1,100	2,200	760	438	350	385
26	615	520	438	1,100	2,200	725	410	340	385
27	615		438	1,140	1,950	725	410	340	385
28			438	1,240	1,730	695	385	335	385
29				1,340	1,630	655	385	330	360
30			410	1,530	1,530	655	385	330	360
31					1,430		385	335	

NOTE.—Discharge estimated because of ice Feb. 1–5, because of missing gage heights Feb. 10–13, 15–20, 22–29, Mar. 1, 3–7, 9–12, 14–17, 29–31, Apr. 4–7, and 9–22, and on account of discredited gage height May 13, based upon comparison with computed flow at station near Banks. Discharge interpolated Oct. 12, 16, Mar. 24, 27, and Apr. 2. Braced figures give mean discharge for periods indicated.

Monthly discharge of South Fork of Payette River near Garden Valley, Idaho, for the year ending September 30, 1924

[Drainage area, 779 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October 1–27	685	515	564	0.724	0.73	30,200
February	725		531	.682	.74	30,500
March			471	.605	.70	29,000
April	1,530	465	1,020	1.31	1.46	60,700
May	3,180	1,430	2,270	2.91	3.36	140,000
June	1,430	655	988	1.27	1.42	58,800
July	725	385	510	.655	.76	31,400
August	438	330	360	.462	.53	22,100
September	385	325	342	.439	.49	20,400

SOUTH FORK OF PAYETTE RIVER NEAR BANKS, IDAHO

LOCATION.—In sec. 28, T. 9 N., R. 3 E., 1 mile above junction with North Fork of Payette River and 1½ miles northeast of Banks, Boise County.

DRAINAGE AREA.—1,200 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 19, 1921, to September 30, 1924.

GAGE.—Au continuous water-stage recorder on right bank, installed September 12, 1922; inspected by J. A. McCubbin, E. F. Glennon, H. Holcomb, and H. B. Redington.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of rock, boulders, and sand. Banks steep, one channel at all stages. Control formed by well-defined rock and boulder riffle, 250 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.40 feet May 17 (discharge, 4,100 second-feet); minimum stage, 0.23 foot at 6 p. m. September 6 and 7 p. m. September 17 (discharge, 362 second-feet).

1921–1924: Maximum stage recorded, 8.70 feet June 7, 1922 (discharge, 9,900 second-feet); minimum stage, 0.19 foot at 8.30 p. m. December 12, 1922 (discharge, about 330 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None, except a few small ranch diversions from tributaries in drainage above.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except for short periods in November, May, and August, and January 8 to February 12. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspecting recorder graph except as indicated in footnote to table of daily discharge. Records excellent except during estimated periods for which they are fair.

Discharge measurements of South Fork of Payette River near Banks, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	0.88	690	Apr. 22	2.19	1,700	July 2	0.93	745
Dec. 20	.76	578	May 20	3.88	3,440	Sept. 3	.30	403
Feb. 18	.99	768	June 2	2.16	1,610	Sept. 16	.28	379
Mar. 18	.67	577	June 15	1.47	1,090			

Daily discharge, in second-feet, of South Fork of Payette River near Banks, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	629	629	558			682	618	2,410	1,730	742	440	386
2	624	634	422			694	629	2,740	1,680	724	440	386
3	629	646	515			700	682	3,140	1,680	718	444	386
4	646	624	541			694	694	3,380	1,680	792	440	382
5	694	612	552		670	664	658	2,920	1,600	766	435	382
				480								
6	682	624	676			658	718	2,460	1,560	736	440	378
7	825	607	839			682	930	2,260	1,470	712	435	378
8	853	596	706		1,100	658	1,270	2,200	1,470	682	426	382
9	773	596	558			640	1,390	2,360	1,390	658	426	404
10	760	590	458			682	1,470	2,680	1,270	629	419	394
					680							
11	748	596	490			664	1,390	3,030	1,230	612	411	390
12	724	596	682			634	1,470	3,380	1,230	607	404	390
13	700	602	694		688	658	1,730	3,740	1,190	602	408	390
14	688	596	724		700	658	2,060	3,800	1,150	585	399	386
15	688	602	748		724	629	1,780	3,900	1,120	563	399	386
				550								
16	736	596	688		742	602	1,470	4,000	1,120	552	408	382
17	812	558	629		760	602	1,350	4,100	1,080	552	404	378
18	730	520	640		748	590	1,270	4,000	1,040	546	399	386
19	712	510	658		712	624	1,230	3,700	1,120	552	417	399
20	712	658	618		694	618	1,190	3,380	1,040	596	505	422
21	712	624	530		712	602	1,310	3,260	965	596	476	417
22	766	590	480		706	602	1,640	3,140	881	552	444	408
23	812				688	563	1,730	2,970	881	530	430	399
24	736			530	664	602	1,780	2,740	867	510	417	404
25	706	750			676	568	1,680	2,680	860	495	408	426
26	688		540		694	574	1,640	2,630	839	485	399	444
27	676				694	607	1,680	2,360	825	480	394	435
28	670	568			712	602	1,820	2,160	806	466	390	426
29	652	670		600	694	612	1,910	2,010	786	462	386	417
30	646	682			-------	536	2,100	1,820	748	453	386	412
31	629	-------			-------	558	-------	1,770	-------	440	386	-------

NOTE.—Discharge estimated Nov. 23–27, Dec. 23 to Feb. 12, May 14–19, because of missing gage-height record or effect of ice, by comparison with flow past other stations in same basin and weather records. Discharge interpolated on account of missing gage-height record May 31, June 1, Aug. 10 and 11. Braced figures show mean discharge for periods indicated.

Monthly discharge of South Fork of Payette River near Banks, Idaho, for the year ending September 30, 1924

[Drainage area, 1,200 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	853	624	712	0.593	0.68	43,800
November	----------	510	629	.524	.58	37,400
December	839	422	589	.491	.57	36,200
January	----------	----------	532	.443	.51	32,700
February	----------	----------	722	.602	.65	41,500
March	700	536	628	.523	.60	38,600
April	2,100	618	1,380	1.15	1.28	82,100
May	4,100	1,770	2,940	2.45	2.82	181,000
June	1,730	748	1,180	.983	1.10	70,200
July	792	440	593	.494	.57	36,500
August	505	386	420	.350	.40	25,800
September	444	378	398	.332	.37	23,700
The year	4,100	378	894	.745	10.13	650,000

DEADWOOD RIVER NEAR LOWMAN, IDAHO

LOCATION.—In sec. 29, T. 9 N., R. 7 E., 600 feet above bridge on Garden Valley-Lowman highway, 700 feet above confluence with South Fork of Payette River, and 2½ miles west of Lowman, Boise County.

DRAINAGE AREA.—217 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 11, 1921, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by W. C. Taylor.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; rough banks fairly low but not subject to overflow; gradient steep. Control fairly well defined, wide and not sensitive; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.11 feet from 2 to 4 a. m. May 14 (discharge, 1,070 second-feet); minimum stage, 1.12 feet August 29 (discharge, 75 second-feet). Actual maximum stage and discharge probably occurred May 16 or 17 when water-stage recorder was not operating.

1921–1924: Maximum stage recorded, 4.53 feet at 3 a. m. May 26, 1922 (discharge, 3,080 second-feet); minimum stage and discharge recorded, August 29, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during ice-affected period December 2 to March 29. Rating curves fairly well defined. Operation of water-stage recorder satisfactory except during winter and for few other short periods. Staff gage read to hundredths about once a week during winter. Daily discharge ascertained by applying to rating table mean daily gage height determined from inspection of recorder graph except December 2, March 30, April 6, and 13, when daily staff gage readings were used. Records good July to September; others fair.

Discharge measurements of Deadwood River near Lowman, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	1.43	144	June 15	1.76	208	Aug. 14	1.16	82.4
Feb. 14	[a] 1.38	106	June 17	1.70	199	Sept. 4	1.15	80.3
Mar. 19	[a] 1.40	119	July 2	1.43	146	Sept. 13	1.15	80.0
Apr. 23	2.25	461	Aug. 10	1.17	81.8			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Deadwood River near Lowman, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		138	120					738	386	137	90	78
2		131	98					830	368	133	90	78
3	134	134					140	920	344	130	88	80
4		140						939	322	128	88	80
5		133						770	305	126	88	82
	150			100								
6		133					186	662	293	124	88	80
7	177	133			105			626	301	122	88	80
8	163	133						655	310	118	86	83
9	152	131						731	290	114	85	86
10	150	133				115	200	802	267	110	83	85
11	142	133	130					873	263	106	83	85
12	138	131						949	271	102	82	82
13	138	131					205	989	253	101	80	82
14	138	128			106			1,030	232	97	80	80
15	140	134						1,050	217	93	80	80
16	129	138					240		208	93	80	78
17	124	144							202	92	80	77
18	140	152						1,050	208	90	80	78
19	140	144				119			229	101	86	82
20	140	144					274		208	116	106	83
21	138			105			327	787	194	112	101	82
22	113	160			110		427	762	177	102	92	80
23	113						437	707	172	101	86	78
24	128						437	677	167	97	83	83
25	133	187				110	406	662	165	97	80	88
26	136	187	120				401	606	158	95	78	93
27	138						437	547	153	95	78	88
28	136	150					498	504	148	93	77	86
29	146						535	476	146	92	75	85
30	146				-------	92	626	437	141	90	77	83
31	144	-------			-------	100	-------	411	-------	90	78	-------

NOTE.—Discharge estimated Oct. 1–6, Nov. 21–24, 27–30, Dec. 1, 3–31, Feb. 1–13, 15–29, Mar. 1–18, 20–29, 31, Apr. 1–5, 7–12, 14–19, May 10, and 16–20. Results of discharge measurements used Feb. 14 and Mar. 19. Braced figures give mean discharge for periods indicated.

Monthly discharge of Deadwood River near Lowman, Idaho, for the year ending September 30, 1924

[Drainage area, 217 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	177	113	139	0.641	0.74	8,550
November	----------	----------	144	.664	.74	8,570
December	----------	----------	125	.576	.66	7,690
January	----------	----------	103	.475	.55	6,330
February	----------	----------	108	.498	.54	6,210
March	----------	----------	112	.516	.59	6,890
April	626	----------	285	1.31	1.46	17,000
May	----------	411	787	3.63	4.18	48,400
June	386	141	237	1.09	1.22	14,100
July	137	90	106	.488	.56	6,520
August	106	75	84.4	.389	.45	5,190
September	93	77	82.2	.379	.42	4,890
The year	----------	75	193	.889	12.11	140,000

WEISER RIVER ABOVE CRANE CREEK, NEAR WEISER, IDAHO

LOCATION.—In sec. 10, T. 11 N., R. 4 W., at Purcell ranch, 1 mile above mouth of Crane Creek and 12 miles northeast of Weiser, Washington County.

DRAINAGE AREA.—1,160 square miles (measured on Forest Service, topographic, and United States Geological Survey State maps).

RECORDS AVAILABLE.—July 15, 1920, to September 30, 1924.

GAGE.—Friez water-stage recorder on left bank a quarter of a mile from Purcell ranch house; inspected by O. A. Purcell.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control formed by well-defined gravel and boulder riffle 200 feet below gage; changes at times. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum estimated discharge, 2,300 second-feet February 7–9 (stage-discharge relation affected by ice); minimum discharge, 10 second-feet, July 31, August 1, and 6–18.

1920–1924: Maximum stage from well-defined high-water mark, 9.98 feet March 24, 1922 (discharge, about 11,600 second-feet); minimum discharge recorded, July 31, August 1, and 6–18, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Numerous diversions for irrigation above.

REGULATION.—None except that due to diversions.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves well defined. Operation of water-stage recorder satisfactory except for ice-affected period and July 4–30, August 8–18, and September 3–22 when water surface dropped below crest of gravel bar between main channel and gage and prevented registration of correct gage height on recorder chart. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except as indicated in footnote to table of daily discharge. Records for ice-affected periods poor; for other estimated periods fair; others excellent.

Discharge measurements of Weiser River above Crane Creek, near Weiser, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	1.54	143	May 12	3.20	1,200	June 25	1.28	72.6
Feb. 22	3.68	1,670	May 15	3.11	1,070	July 31	.81	10.2
Apr. 8	2.27	486	June 1	1.66	186	Sept. 23	.90	13.9
Apr. 22	2.51	661	June 14	1.42	111			

Daily discharge, in second-feet, of Weiser River above Crane Creek, near Weiser, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	145	187		300	730	267	953	193	25	10	14
2	74	145	151			694	267	1,020	162	22	11	14
3	74	145				659	267	1,100	146	20	12	13
4	82	145				617	305	1,190	121		11	13
5	89	145	160		800	575	310	1,020	99		11	14
6	91	142		150		536	305	881	86		10	14
7	103	145	174			523	352	820	83		10	13
8	151	145	190		2,300	498	498	782	104		10	13
9	193	142				474	652	835	118		10	13
10	187	142			1,580	462	738	937	118		10	13
11	178	140			1,100	450	798	1,020	118		10	13
12	171	140			889	420	790	1,150	121		10	12
13	159	137			842	408	889	1,150	116		10	12
14	156	140			985	396	1,100	1,190	110		10	12
15	154	140			1,060	390	1,150	1,100	94		10	12
16	154	140			1,190	374	961	1,060	62	15	10	12
17	181	140			1,420	346	828	985	51		10	13
18	184	140			1,420	330	738	865	49		10	13
19	168	137		170	1,190	320	673	782	60		11	14
20	162	134	175		1,060	330	631	722	78		11	14
21	159	140			1,240	325	603	715	86		12	14
22	156	145			1,580	305	659	556	78		13	14
23	154	145			1,150	300	760	486	78		14	14
24	159	151			903	300	805	432	71		14	14
25	156	190			889	310	730	390	71		14	14
26	154	190			842	290	701	357	62		14	14
27	151	174			790	280	701	315	51		15	14
28	148	159			790	290	745	280	44		16	14
29	145	156			828	295	805	262	35		15	14
30	145	181		200		290	897	240	29		14	15
31	145					262		216		10	14	

NOTE.—Discharge estimated because of ice, Dec. 3-6, 9-31, and Jan. 1 to Feb. 9, based upon observer's notes, weather records, and flow at other stations in same basin; estimated July 4-30, Aug. 8-18, and Sept. 3-22 because of inaccurate gage-height record. Braced figures give mean estimated discharge for periods indicated.

Monthly discharge of Weiser River above Crane Creek, near Weiser, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	193	74	144	8,850
November	190	134	149	8,870
December			173	10,600
January			167	10,300
February			1,140	65,600
March	730	262	412	25,300
April	1,150	267	664	39,500
May	1,190	216	768	47,200
June	193	29	89.8	5,340
July	25		15.5	953
August	16	10	11.7	719
September	15	12	13.4	797
The year		10	309	224,000

WEST FORK OF WEISER RIVER NEAR FRUITVALE, IDAHO

LOCATION.—In NW. ¼ sec. 9, T. 17 N., R. 1 W., at Caseman ranch, 1¼ miles northwest of Fruitvale post office, Adams County, and 1½ miles above junction with Weiser River.

DRAINAGE AREA.—65 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—October 5, 1910, to January 31, 1913; October 1, 1919, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on left bank; installed June 17, 1924. Vertical staff at same site used prior to that date; read and inspected by Willard and J. A. Finn.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge one-half mile below gage.

CHANNEL AND CONTROL.—Bed composed of sand and coarse gravel. Banks covered with brush; left bank not likely to be overflowed; right bank subject to overflow at extremely high stages. Control formed by poorly defined gravel riffle and by log embedded in stream bed below gage; affected at times by débris.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.28 feet May 19 (discharge, 212 second-feet); minimum stage, 0.44 foot June 5 (discharge, 2.6 second-feet).

1910–1913; 1919–1924: Maximum discharge recorded, 687 second-feet April 13 and May 18–23, 1921; minimum discharge, 0.5 second-foot, July 23–27, 1911.

ICE.—Stage-discharge relation affected by ice; observations discontinued during winter.

DIVERSIONS.—Several small ditches divert above and below station.

REGULATION.—Flow regulated by head gates at Lost Creek Reservoir 12 miles above. Gates in dam changed only at infrequent intervals.

ACCURACY.—Stage-discharge relation changed slightly several times due to débris on control. Standard rating curve well defined. Gage read to hundredths once daily prior to June 17; thereafter water-stage recorder was satisfactorily operated. For period water-stage recorder was operated, mean daily gage height determined by inspection of recorder graph. Daily discharge ascertained by applying daily gage height to rating table. Records good except those for April and May, which are fair.

Discharge measurements of West Fork of Weiser River near Fruitvale, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	0.72	12.6	May 28	0.59	7.37	June 28	1.06	48.3
Feb. 24	1.12	53.7	Do	.56	6.85	Aug. 6	.92	34.7
Apr. 11	1.28	70.6	June 17	1.20	53.0	Sept. 18	.70	17.0
Apr. 24	1.34	75.2						

Daily discharge, in second-feet, of West Fork of Weiser River near Fruitvale, Idaho, for the year ending September 30, 1924

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1			75	5.8	36	34	20
2			80	5.8	36	33	19
3			78	5.0	35	33	19
4			77	4.4	35	33	19
5			80	2.6	35	34	18
6			75	5.0	37	35	18
7	9.0		73	5.8	33	34	18
8	9.0		71	5.8	33	12	18
9	9.5		73	6.6	33	7.4	19
10	9.5		84	33	33	7.4	18

Daily discharge, in second-feet, of West Fork of Weiser River near Fruitvale, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
11	10	71	104	10	33	7.4	18
12	10	89	106	9.0	33	7.0	17
13	10	106	106	7.4	32	6.6	18
14	10	131	99	5.8	18	6.6	17
15	10	129	91	5.0	18	8.6	16
16	10	127	84	5.8	18	43	17
17	10	61	80	53	18	43	17
18	10	54	80	54	18	44	17
19	10	50	212	53	34	50	18
20	10	50	198	52	35	45	18
21	10	56	20	51	35	43	18
22	10	62		50	36	43	17
23	10	68		50	35	43	17
24	10	75		51	34	39	18
25	10	75	14	50	34	20	10
26	10	71		49	33	20	7.4
27	10	71		48	31	20	7.0
28	10	69	7.4	48	29	19	5.4
29	10	69	7.4	46	32	18	5.0
30	11	71	7.4	35	32	20	5.8
31	12	------	5.8	------	32	20	------

NOTE.—Discharge estimated on account of missing gage height May 22–27 and July 29–30, based largely on flow of Lost Creek; interpolated Apr. 22–23, May 3, and June 13. Control cleaned of débris on June 28. Braced figures give mean discharge for periods indicated.

Monthly discharge of West Fork of Weiser River near Fruitvale, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 7–31	12	9.0	10.0	496
April 11–30	131	50	77.8	3,090
May	212	5.8	66.4	4,080
June	54	2.6	27.1	1,610
July	37	18	31.2	1,920
August	50	6.6	26.7	1,640
September	20	5.0	15.7	934

LOST VALLEY RESERVOIR NEAR TAMARACK, IDAHO

LOCATION.—In sec. 28, T. 19 N., R. 1 W., 6 miles southwest of Tamarack, Adams County, and 20 miles north of Council.

DRAINAGE AREA.—30 square miles (furnished by Weiser Valley Land & Water Co.).

RECORDS AVAILABLE.—May 22 to September 24, 1924, when station was discontinued.

GAGE.—Vertical staff a short distance above outlet gates near left end of dam; read by Verne Brewer and others.

EXTREMES OF STAGE.—Maximum stage recorded during period of record, 18.04 feet June 17; minimum stage, 7.56 feet September 24.

COOPERATION.—Gage-height record furnished in part by Mesa Orchards Co.

Stored water from this reservoir is used for irrigation in Weiser Valley. The reservoir is formed by a gravity earth dam, 30 feet high and 250 feet long at crest. Elevation of permanent spillway crest referred to gage datum is 16.40 feet; insertion of temporary flashboards increases elevation of spillway crest to about 20 feet on gage. Capacity of reservoir is about 6,000 acre-feet.

Daily gage height, in feet, of Lost Valley Reservoir near Tamarack, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1			16.10			16			14.51		8.16
2						17		18.04			8.13
3						18			14.44	10.96	7.96
4				12.25	9.08	19					7.89
5				12.04	9.00	20		17.59			
6						21				10.56	7.69
7					8.85	22	17.69		13.93		
8					8.75	23					
9						24		17.19		10.00	7.56
10			15.10			25			13.40		
11				11.64		26				9.83	
12				11.64	8.40	27		16.60		9.68	
13			14.76		8.36	28		16.35	13.15		
14					8.26	29		16.30			
15				11.59	8.21	30				9.48	
						31			12.27		

LOST CREEK NEAR TAMARACK, IDAHO

LOCATION.—In sec. 28, T. 19 N., R. 1 W., a quarter of a mile below dam of Lost Valley Reservoir, 6 miles southwest of Tamarack, Adams County, and 20 miles north of Council.

DRAINAGE AREA.—30 square miles (furnished by Weiser Valley Land & Water Co.).

RECORDS AVAILABLE.—January 1, 1910, to August 21, 1914; May 21, 1920, to September 30, 1921; May 22 to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on right bank; installed May 21, 1920; inspected by Verne Brewer and W. E. Talboy.

DISCHARGE MEASUREMENTS.—Made from footbridge near gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel, cobbles, and boulders; very rough. One channel at all stages. Control formed by well-defined rock riffle 20 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 1.85 feet from noon June 16 to midnight June 18 (discharge, 53 second-feet); gates in dam above reported closed sometime in February after which channel was practically dry until May 22.

1910–1914; 1920–1921; 1924: Maximum stage recorded, 4.29 feet from 9 p. m. May 17 to 8 a. m. May 18, 1921 (discharge, 688 second-feet); practically no flow at various times gates in dam were closed.

ICE.—Records discontinued during winter.

DIVERSIONS.—None between gage and reservoir; practically entire flow diverted below during irrigation season.

REGULATION.—Flow entirely regulated by head gates at dam above.

ACCURACY.—Stage-discharge relation changed slightly on July 27 due to débris lodging on control, and again on August 4 when débris was removed. Standard rating curve well defined above 10 second-feet. Operation of water-stage recorder fairly satisfactory June 17 to August 29. Staff gage read to hundredths once daily September 12–19, and somewhat irregularly during remainder of year. During period water-stage recorder was operated mean daily gage height determined by inspection of recorder graph. Daily discharge ascertained by applying daily gage height to rating table. Records good, except for estimated periods for which they are fair.

COOPERATION.—Gage-height record furnished in part by Mesa Orchards Co.

Discharge measurements of Lost Creek near Tamarack, Idaho, during the years ending September 30, 1922 and 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1922	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
June 16	1.98	72.1	June 17	1.85	54.5	June 29	1.70	36.1
Aug. 11	1.81	59.4	June 29	1.80	47.7	Aug. 4	1.66	33.3
Sept. 24	1.77	46.4	Do	1.36	13.0	Sept. 18	1.44	17.6

Daily discharge, in second-feet, of Lost Creek near Tamarack, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1			36	34	20	16		28	18	45	18
2			36	34	20	17		53	18	45	18
3			36	34	19	18		53	26	45	18
4			36	35	19	19		51	36	44	18
5		6	36	37	19	20		51	36	43	18
6			35	37	19	21		51	36	43	18
7			34	18	19	22	6.2	50	36	43	18
8			34	5.9	19	23		49	36	43	
9		22	33	5.9	19	24		49	36	30	9
10		16	33	5.9	19	25		48	36	21	
11			33	5.7	19	26		48	36	21	
12			33	6.2	19	27	6	48	36	21	4
13		4	25	6.2	19	28		47	35	21	
14			18	5.9	18	29		34	35	21	
15			18	14	18	30		36	34	21	
						31			34	21	

NOTE.—Discharge estimated on account of missing gage heights, May 23–31, June 1–8, 11–15, Aug. 25, Sept. 22–23, and 25–30; because of changes in gates in dam above, June 9–10, 16, and Sept. 24; based largely on information furnished by water master and by comparison with flow of West Fork of Weiser River. Discharge interpolated June 25–26, Aug. 31, Sept. 1–3, 6, 9–11, and 20. Braced figures give mean discharge for periods indicated.

Monthly discharge of Lost Creek near Tamarack, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 22–31			6.02	119
June	53		26.7	1,590
July	36	18	32.3	1,990
August	45	5.7	26.2	1,610
September	20		15.4	916
The period				6,220

MESA ORCHARDS CANAL NEAR MESA, IDAHO

LOCATION.—In sec. 14, T. 15 N., R. 1 W., 900 feet above end of flume, 1¼ miles northeast of Mesa, Adams County, and 3 miles below point of diversion from Middle Fork of Weiser River.

RECORDS AVAILABLE.—May 10 to September 22, 1924, when records were temporarily discontinued.

GAGE.—Vertical staff on left bank. Prior to May 17, gage was attached to left side of flume at same site. Read by employees of Mesa Orchards Co.

DISCHARGE MEASUREMENTS.—Made from footbridge.

CHANNEL AND CONTROL.—Formed by wooden flume. Stage-discharge relation affected at times by accumulation of débris on trash racks and by two large pipe lines which divert entire flow at end of flume, 900 feet below gage.

EXTREMES OF DISCHARGE.—Maximum discharge during period, 35 second-feet, May 24, 25, 27, and 28; flume dry from 10 a. m. September 5 to 7 a. m. September 6.

REGULATION.—Regulated by operation of gates in diversion dam and by waste gates in flume above gage.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Shifting-control method used June 20–26 and August 11 to September 11. Gage read to hundredths once and sometimes twice daily. Daily discharge determined by applying daily or mean daily gage height to rating table except during periods of shifting control and except as noted in footnote to table of daily discharge. Records fair.

COOPERATION.—Gage-height record furnished by Mesa Orchards Co.

Canal diverts water from left bank of Middle Fork of Weiser River in sec. 9, T. 15 N., R. 1 W., 3 miles above gage. Water is used for irrigation on Mesa orchards and for domestic purposes at Mesa.

Discharge measurements of Mesa Orchards Canal near Mesa, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 17	0.92	19.6	June 16	1.09	27.6	Aug. 3	0.53	9.47
May 29	1.12	29.3	June 28	.94	23.0	Sept. 19	.42	6.21

Daily discharge, in second-feet, of Mesa Orchards Canal near Mesa, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	24	20	10.1	8.6	16	27	26	12.1	10.4	8.4
2	-------	23	18.1	9.9	9.0	17	18.4	26	10.6	9.9	8.4
3	-------	23	17.7	9.2	8.6	18	19	26	11.6	9.7	9.0
4	-------	23	17.4	8.8	8.4	19	18.8	24	11.8	11.1	6.2
5	-------	24	15.6	11.6	3.1	20	26	24	12.9	14.3	6.2
6	-------	22	15.6	11.8	5.6	21	30	22	11.3	11.6	6.2
7	-------	21	14.3	11.3	6.0	22	32	22	10.9	11.6	6.2
8	-------	21	15.6	10.9	8.4	23	32	23	10.4	10.6	-------
9	-------	25	14.3	10.1	8.8	24	35	27	9.9	10.1	-------
10	6.8	24	13.8	9.9	9.2	25	35	24	10.6	9.5	-------
11	7.9	24	12.9	9.9	9.2	26	34	25	11.1	9.9	-------
12	}	26	12.1	9.9	7.7	27	35	25	10.6	9.7	-------
13	8	26	11.8	9.7	7.7	28	35	24	9.5	9.5	-------
14	}	26	11.6	9.5	8.6	29	32	23	10.4	8.4	-------
15	13.8	26	11.1	9.9	7.7	30	32	21	9.7	8.5	-------
						31	27	-------	9.9	8.6	-------

NOTE.—Discharge estimated on account of missing gage heights May 12–14; on account of backwater effect from trash racks below, based on information furnished by observer, May 18, 20–24, June 11–14, and 17–19; on account of water being turned out part of day Sept. 5–7. Discharge interpolated July 13, Aug. 27, 30, Sept. 9, and 21. Braced figure gives mean discharge for period indicated.

Monthly discharge of Mesa Orchards Canal near Mesa, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 10–31	35	6.8	23.7	1,030
June	27	21	24.0	1,430
July	20	9.5	12.7	781
August	14.3	8.4	10.2	627
September 1–22	9.2		7.60	332
The period				4,200

LITTLE WEISER RIVER NEAR INDIAN VALLEY, IDAHO

LOCATION.—In sec. 36, T. 14 N., R. 1 W., half a mile below the Richardson ranch house and 5 miles southeast of Indian Valley, Adams County.

DRAINAGE AREA.—81 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 26, 1920, to February 28, 1921; March 24 to June 29, 1923; February 25 to September 30, 1924.

GAGE.—Au water-stage recorder on right bank installed April 23, 1924; inspected by Geological Survey engineers. Records February 25 to April 22, 1924, obtained from vertical staff at Burger ranch 1 mile below. Prior to June 30, 1923, gage was vertical staff half a mile upstream.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock overlain with gravel. One channel at all stages. Banks fairly high. Control well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 2.01 feet at 1 a. m. May 14 (discharge, 271 second-feet); minimum stage, 0.60 foot August 28–30 and July 4 and 5 (discharge, 3.6 second-feet).

1920, 1921, 1923, 1924: Maximum discharge estimated, 1,400 second-feet December 30, 1920; minimum stage and discharge occurred August 28–30 and July 4 and 5, 1924.

ICE.—No record.

DIVERSIONS.—Few small ranch diversions upstream. One or two small diversions between Burger ranch and station. After the high-water period the entire flow is diverted for irrigation below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent after April 22. Rating curves well defined. Gage read to hundredths twice daily at site 1 mile below February 25 to April 22. After this date operation of water-stage recorder satisfactory except for period of three weeks after July 14 when lack of tension in recording pencil failed to produce a trace. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph or staff gage readings. Records fair.

Discharge measurements of Little Weiser River near Indian Valley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 25	[a] 1.92	53.8	May 16	1.78	197	June 27	0.88	18.5
Apr. 10	[a] 2.24	88.8	May 29	1.28	64.7	Aug. 3	.67	6.45
Apr. 23	[b] 1.46	105	June 16	.97	24.8	Sept. 19	.66	6.00

[a] Referred to and measured at Burger ranch 1 mile downstream.
[b] Burger ranch gage read 2.24 feet.

Daily discharge, in second-feet, of Little Weiser River near Indian Valley, Idaho, for the year ending September 30, 1924

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		52	35	166	48	16	7.0	4.0
2		52	39	184	47	15	7.0	4.0
3		48	48	206	44	14	6.4	4.0
4		48	48	203	42	14	6.4	3.6
5		43	48	166	39	13	6.4	3.6
6		48	52	148	37	12	6.0	4.0
7		43	68	142	40	12	5.6	4.0
8		43	90	154	42	12	5.6	5.2
9		43	90	178	40	12	5.2	6.4
10		43	90	200	36	11	4.8	5.6
11		43	90	209	33	11	4.4	5.6
12		43	95	216	32	11	4.4	5.6
13		43	106	225	31	11	4.4	5.2
14		43	106	225	29		4.4	4.8
15		39	95	213	26		4.8	4.8
16		39	90	206	26		4.8	4.8
17		39	84	191	25		4.8	4.8
18		39	84	175	26		4.8	5.6
19		43	84	160	27		12	6.0
20		39	90	145	26		12	6.8
21		39	95	131	23		8.1	6.8
22		39	106	117	23	9	6.8	6.4
23		39	104	106	22		6.0	5.6
24		39	104	96	20		5.6	6.0
25	52	39	104	89	20		5.2	6.8
26	57	35	102	78	19		4.8	7.6
27	52	39	109	72	18		4.0	6.8
28	57	39	120	68	17		3.6	6.4
29	52	39	125	66	17		3.6	5.6
30		32	145	60	16		3.6	5.2
31		35		54			4.0	

NOTE.—Record Feb. 25 to Apr. 22 obtained at Burger ranch 1 mile downstream. No gage-height record and discharge estimated Apr. 24, 25, July 14 to Aug. 2. Braced figure shows mean discharge for period indicated.

Monthly discharge of Little Weiser River near Indian Valley, Idaho, for the year ending September 30, 1924

[Drainage area, 81 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
February 25–29	57	52	54.0	0.667	0.12	536
March	52	32	41.5	.512	.59	2,550
April	145	35	88.2	1.09	1.22	5,250
May	225	54	150	1.85	2.13	9,220
June	48	16	29.7	.367	.41	1,770
July	16		10.5	.130	.15	646
August	12	3.6	5.69	.070	.08	350
September	7.6	3.6	5.39	.067	.07	321
The period						20,600

NOTE.—See footnote to daily-discharge table.

LITTLE WEISER RIVER NEAR CAMBRIDGE, IDAHO

LOCATION.—Near line between secs. 8 and 9, T. 14 N., R. 2 W., on Gladhart Lane, half a mile south of State highway, 4½ miles east of Cambridge, Washington County, 5 miles above mouth, and 7 miles below entrance of Grays Creek.

DRAINAGE AREA.—187 square miles (measured on topographic maps and United States Geological Survey base map of Idaho).

RECORDS AVAILABLE.—May 22, 1920, to September 30, 1924.

GAGE.—Vertical staff fastened to streamward side of right abutment of highway bridge; read by Mrs. W. J. Martin. From September 1 to November 1, 1923, during construction of new highway bridge, a temporary staff 500 feet upstream was used. All readings practically correspond to original datum.

DISCHARGE MEASUREMENTS.—Made from highway bridge at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Channel winding above and below gage. Banks subject to overflow at high stages. Control formed by well-defined gravel riffle 75 feet below gage; subject to change during high water. Stage of zero flow at gage height 0.55 foot determined June 16, 1924.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, about 7.5 feet as determined by well-defined high-water mark on gage, February 8 (discharge, about 2,400 second-feet); minimum stage, no flow after July 19.

1920–1924: Maximum discharge estimated, based on well-defined high-water mark on gage, 2,400 second-feet, February 8, 1924; no flow August 2 to September 14, September 17–25, 1920, and July 20 to September 30, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Numerous ditch and canal diversions above, chiefly for irrigation of land in Indian Valley.

REGULATION.—None except that due to diversions.

ACCURACY.—Stage-discharge relation changed following high water on February 8. Rating curves well defined below 250 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method February 9–12. Records good except for discharges above 250 second-feet and during estimated periods for which they are fair.

Discharge measurements of Little Weiser River near Cambridge, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 2	1.74	13.7	May 16	2.53	154	June 27	1.04	1.25
Feb. 23	2.70	196	May 30	1.80	42.1	Aug. 3		0
Apr. 10	2.35	121	June 16	1.26	6.05	Sept. 19		0
Apr. 23	2.37	120						

Daily discharge, in second-feet, of Little Weiser River near Cambridge, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1		14	24	24	14	112	37	159	17	1.5
2		13	12		599	104	36	159	12	.9
3		14	16		514	97	44	213	12	.9
4		16	21		329	91	53	213	12	.8
5	5.5	17	20		514	79	46	171		.8
6		15	25		493	73	49	139		.4
7		18	33		859	73	68	120		.4
8		19	55	16	2,400	65	108	127		.4
9		22	22		624	63	110	147		.4
10		23	22		329	65	120	184	9	.4
11	20	21	18		243	58	104	184		.4
12		18	16		194	53	118	184		.4
13		18	21		198	52	159	184		.3
14		18	21		228	53	171	198		.3
15		16	26		244	55	125	184		.2

Daily discharge, in second-feet, of Little Weiser River near Cambridge, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
16		17	23		294	44	107	171	6.0	0.2
17		17	17		347	44	96	171	5.6	.2
18		16	22	16	260	42	85	135	5.6	.2
19		16	21		213	44	80	113	7.1	.2
20		16	15		184	40	78	104	7.5	
21		18	14		588	38	91	99	7.5	
22		18	19		260	38	113	82	6.0	
23	20	18	21		213	35	122	71	5.6	
24		22	24		159	42	115	63	4.5	
25		32	26		147	39	107	59	3.8	0
26		24	26	4	135	38	110	53	4.2	
27		21	22		117	40	117	48	1.5	
28		18	26		147	42	124	43	2.6	
29		24	27		113	42	125	44	1.7	
30		33	38		-------	35	139	37	1.7	
31		-------	31		-------	37	-------	31	-------	

NOTE.—Discharge estimated Oct. 1 to Nov. 1, based on readings from temporary staff 500 feet upstream during reconstruction of highway bridge at permanent gage location; estimated on account of ice Jan. 2–31 and on account of lack of gage-height record June 5–15. Discharge estimated Mar. 8, based on well-defined water mark on gage observed directly after flood subsided. Braced figures show mean discharge for periods indicated. River reported dry July 20 to Sept. 30.

Monthly discharge of Little Weiser River near Cambridge, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	-------	-------	16.7	1,030
November	33	13	19.1	1,140
December	55	12	23.4	1,440
January	-------	-------	12.0	738
February	2,400	14	378	21,700
March	112	35	55.9	3,440
April	171	36	98.6	5,870
May	213	31	125	7,690
June	17	1.7	7.43	442
July	1.5	0	.30	18
August	0	0	0	0
September	0	0	0	0
The year	2,400	0	60.0	43,500

CRANE CREEK RESERVOIR NEAR MIDVALE, IDAHO

LOCATION.—In SE. ¼ sec. 19, T. 12 N., R. 2 W., 12 miles southeast of Midvale, Washington County.

DRAINAGE AREA.—269 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 25, 1923, to September 30, 1924.

GAGE.—Sloping staff consisting of painted chisel marks on gate-control pipe at southeast end of dam above tunnel outlet; read by Jesse Bain.

EXTREMES OF STAGE.—Maximum stage recorded during period, 40.1 feet March 13 to morning of March 20; minimum stage, 9.4 feet November 25.

COOPERATION.—Gage-height record furnished by Crane Creek Reservoir Administration Board.

Stored water from this reservoir is used for irrigation in lower Weiser Valley. The reservoir is formed by a gravity earth dam, 65 feet high and 350 feet long at the crest. Elevation of spillway crest referred to gage datum is 55 feet, at which stage the capacity of reservoir is reported to be about 60,000 acre-feet, about 3,300 acres being submerged. Elevation at bottom of outlet gates corresponds to approximately 8.0 feet on gage, at which stage the usable storage is zero.

Daily gage height, in feet, of Crane Creek Reservoir near Midvale, Idaho, for the year ending September 30, 1924

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		11.6	13.0	18.0	39.9	40.0		37.3	33.25	26.25	19.65
2		11.9	13.0	22.0	39.92	40.0	39.55	37.2	32.95	26.05	19.45
3		12.0	13.0	25.3	40.0	40.0	39.5	37.15	32.7	25.72	19.25
4		12.1	13.0	25.3	40.0	40.0	39.5	37.05	32.35	25.32	19.05
5		12.2	13.0	26.1	40.0	40.0	39.4	36.95	32.15	25.05	18.85
6		12.4	13.0	27.2	40.0	40.0	39.4	36.9	31.95	24.85	18.65
7		12.6	13.0	29.35	40.0	40.0	39.3	36.8	31.75	24.65	18.6
8		12.8	13.0	35.25	40.0	40.0	39.3	36.75	31.55	24.45	18.5
9		12.9	13.0	36.45	40.0	40.0	39.2	36.65	31.35	24.25	18.3
10		13.0	13.0	37.05	40.0	40.0	39.2	36.55	31.15	24.1	18.2
11		13.0	13.0	37.35	40.0	40.0	39.1	36.5	30.75	24.0	18.1
12		13.0	13.0	37.5	40.05	40.0	39.1	36.4		23.85	18.0
13		13.0	13.0	37.65	40.1	40.0	38.9	36.35	30.65	23.65	17.9
14		13.0	13.0	37.85	40.1	40.0	38.85	36.3	30.45	23.45	17.8
15		13.0	13.0	38.05	40.1	40.0	38.78	36.2	30.25	23.15	17.7
16		13.0	13.0	38.25	40.1	40.0	38.72	36.15	29.92	22.95	17.6
17		13.0	13.0	38.45	40.1	40.0	38.65	36.05	29.6	22.7	17.5
18		13.0	13.0	38.6	40.1	40.0	38.6	35.9	29.35	22.45	17.4
19		13.0	13.0	38.7	40.1	39.9	38.55	35.75	29.15	22.15	17.3
20		13.0	13.0	38.8	40.05	39.9	38.45	35.6	28.95	22.1	17.2
21		13.0	13.0	39.05	40.0	39.9	38.35	35.5	28.68	21.95	17.1
22		13.0	13.0	39.15	40.0	39.8	38.25	35.35	28.42	21.75	16.9
23		13.0	13.0	39.3	40.0	39.8	38.15	35.15	28.15	21.4	16.8
24		13.0	13.0	39.45	40.0	39.7	38.05	34.95	27.85	21.2	16.7
25	9.4	13.0	13.0	39.55	40.0	39.7	37.95	34.75	27.65	21.1	16.5
26	9.7	13.0	13.0	39.65	40.0	39.65	37.85	34.55	27.45	20.95	16.3
27	9.8	13.0	13.0	39.7	40.0	39.6	37.75	34.25	27.25	20.75	16.1
28	10.4	13.0	13.0	39.78	40.0	39.6	37.6	34.0	27.05	20.55	16.0
29	10.8	13.0	13.0	39.82	40.0	39.6	37.5	33.75	26.85	20.35	15.9
30	11.3	13.0	13.0		40.0		37.4	33.5	26.65	20.15	15.9
31		13.0	15.0		40.0		37.3		26.45	19.85	

CRANE CREEK NEAR MIDVALE, IDAHO

LOCATION.—In SE. ¼ sec. 19, T. 12 N., R. 2 W., 400 feet below Crane Creek Dam, and 12 miles southeast of Midvale, Washington County. No tributaries between dam and station; Last Chance Creek enters three-quarters of a mile below.

DRAINAGE AREA.—269 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 30, 1910, to April 8, 1916; May 1 to September 30, 1924.

GAGE.—Au water-stage recorder on right bank; installed May 2, 1924; inspected by Jesse Bain. Prior to May 1, 1924, used staff gage at different datum, 100 feet upstream.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rocks and coarse gravel; very rough. One channel at all stages. Control formed by Cippoletti weir, crest of which is 20 feet long, installed in concrete, 25 feet below gage. Average elevation of weir crest corresponds to 0.02 foot on gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 1.84 feet at noon June 22 (discharge, 184 second-feet); channel reported dry May 1, after 10 a. m. September 30, and at other times prior to May 1.

1910–1916; 1924: Maximum stage recorded, 8.9 feet December 3, 1910 (discharge, 4,240 second-feet); no flow reported at various times when gates in dam are closed.

DIVERSIONS.—No large diversions above gage. Flood waters are impounded in Crane Creek Reservoir and flow past gage therefore shows only the amount

of water released through the dam and does not necessarily represent the actual flow of Crane Creek.

REGULATION.—Flow completely regulated by gates at dam.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory June 15–27 and July 9 to September 30. Staff gage read to hundredths twice daily during remaining periods. Daily discharge ascertained by applying mean daily gage height to rating table, except for estimated periods as indicated in footnote to table of daily discharge. Mean daily gage height for period when water-stage recorder was operated, determined by inspection of recorder graph.

COOPERATION.—Gage-height record furnished in part by Crane Creek Reservoir Administration Board.

Discharge measurements of Crane Creek near Midvale, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 30	0.90	58.5	June 27	1.66	155	Aug. 2	1.17	93.1
Do	.90	60.5	Aug. 2	.54	25.0	Sept. 19	.38	15.0
June 15	.85	47.1	Do	.86	54.1	Sept. 24	.37	12.8
June 27	1.66	160						

Daily discharge, in second-feet, of Crane Creek near Midvale, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	0	57	159	82	41	16	56	55	127	76	16
2	11	57	159	70	39	17	57	55	125	77	16
3	23	57	160	90	39	18	57	55	127	76	16
4	23	57	160	91	39	19	57	54	125	44	15
5	36	57	161	91	39	20	57	69	122	27	15
6	46	57	161	91	16	21	57	76	122	37	15
7	46	55	162	90	5.2	22	57	128	121	44	14
8	46	53	162	64	12	23	57	182	95	47	14
9	56	53	138	45	17	24	57	170	87	47	14
10	56	53	77	43	18	25	57	159	86	47	13
11	56	53	77	43	18	26	57	159	86	46	13
12	56	53	77	44	18	27	57	157	86	44	12
13	56	53	57	43	18	28	57	157	85	43	12
14	56	53	56	67	17	29	57	158	85	43	12
15	56	54	108	75	17	30	59	158	84	41	5
						31	57	-------	83	41	-------

NOTE.—Discharge estimated on account of unreliable gage heights June 28–30 and July 1–8 and on account of missing gage height July 23; interpolated July 30–31. Gates in dam reported closed on May 1 and after 10 a. m. on Sept. 30. From Oct. 1 to Apr. 30 gates were also reported closed except on Nov. 24, when reservoir was drained, and Mar. 13 to Apr. 28, during which a small amount of water was released.

Monthly discharge of Crane Creek near Midvale, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May	59	0	49.5	3,040
June	182	53	87.1	5,180
July	----------	56	114	7,010
August	91	27	58.4	3,590
September	41	5	18.5	1,100
The period	----------	----------	----------	19,900

CRANE CREEK AT MOUTH, NEAR WEISER, IDAHO

LOCATION.—In sec. 14, T. 11 N., R. 4 W., just below steel highway bridge at Harris ranch, quarter of a mile above mouth, and 12 miles northeast of Weiser, Washington County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 14, 1920, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank; installed July 21, 1920; inspected by O. A. Purcell.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of cobbles and boulders; very rough. Concrete control installed August 21, 1920, 100 feet below gage. Above stage of about 4.0 feet stream flows in two channels. Stage of zero flow at gage height 1.25 feet ± 0.05 foot as determined May 20, 1922.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.27 feet at 5.30 p. m. February 7 (discharge, 1,140 second-feet); minimum stage, 1.44 feet May 24–27 (discharge, 0.6 second-foot).

1920–1924: Maximum stage recorded, determined from well-defined high-water mark, 5.95 feet March 24, 1922 (discharge, about 1,860 second-feet); minimum stage, 1.30 feet January 21, 1922 (discharge, 0.4 second-foot).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Canal of Washington County irrigation district, which diverts about 4 miles above gage, is principal diversion. Several small ranch diversions a short distance above gage.

REGULATION.—Flow is regulated by head gates at Crane Creek Reservoir and by diversions above.

ACCURACY.—Stage-discharge relation above low water changed on June 6 on account of repair work performed on artificial control. Rating curves well defined. Operation of water-stage recorder satisfactory except for short periods in October, January, and June. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent except for estimated periods for which they are good.

Discharge measurements of Crane Creek at mouth, near Weiser, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	1.68	3.54	May 31	1.60	1.90	June 26	2.98	92.9
Do	1.68	3.34	June 14	1.67	3.67	July 31	2.27	31.9
Feb. 22	1.97	14.6	June 25	3.00	94.0	Sept. 23	1.66	3.64

Daily discharge, in second-feet, of Crane Creek at mouth, near Weiser, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	4.2	6.0	4.5	16	5.8	3.2	1.4	1.8	93	28	3.2
2	10	4.5	5.5		115	6.0	3.2	1.3	1.6	93	23	3.1
3	9.8	4.7	5.0	7	36	5.8	3.4	1.3	1.8	92	30	2.7
4	11	4.7	5.0		21	5.0	3.8	1.9	1.8	92	34	2.5
5	9.4	152	5.0		32	4.5	3.6	1.3	2.2	93	34	2.3
6	9.8	393	5.0	10	73	4.5	3.4	.9	2.2	93	33	2.3
7	22	473	5.2		393	2.9	3.4	.9	30	93	33	1.6
8	33	167	5.2	7	310	2.5	3.4	.9	28	92	28	1.4
9	28	14	4.7		48	2.3	3.8	.9	11	91	5.0	3.2
10	28	9.4	4.0		23	2.3	3.2	3.2	4.7	60	4.2	4.7

Daily discharge, in second-feet, of Crane Creek at mouth, near Weiser, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	28	8.1	4.0	7	18	2.3	4.2	2.9	3.2	28	3.1	4.7
12	27	6.8	4.0		15	2.2	10	1.8	2.9	25	2.7	2.7
13	26	6.5	4.0	4.7	18	2.3	3.6	1.3	2.0	20	2.5	2.5
14		6.3	4.2		25	3.4	12	1.1	3.4	10	5.5	2.5
15		6.0	4.2		23	11	10	.9	.9	21	24	2.7
16	25	5.8	4.2	3	18	11	10	.9	.8	70	31	2.9
17		5.5	4.2		18	11	9.1	.8	.8	70	30	3.2
18		5.2	4.2		14	11	7.8	1.3	.9	71	30	3.1
19		5.2	4.2		10	11	7.8	.9	1.0	70	31	3.2
20		5.2	4.0	1.9	8.8	11	7.8	.7	4.0	68	6.8	3.4
21	24	5.2	4.0		9.1	11	6.5	.8	20	68	7.8	3.4
22	9.4	5.2	4.2		14	5.2	6.3	1.0	38	67	5.8	3.4
23	5.2	5.2	4.2		8.4	3.4	5.8	.8	117	59	7.8	3.4
24	4.7	92	4.5	3	7.8	4.2	3.8	.6	114	38	6.3	3.4
25	4.7	50	4.7		6.8	3.8	5.2	.6	96	37	5.8	3.4
26	4.7	10	4.7		6.5	3.4	4.2	.6	95	37	5.2	3.4
27	4.2	6.5	4.7	4.2	6.0	4.5	3.8	.6	94	35	4.7	3.4
28	4.0	6.0	5.0	4.5	5.5	4.2	3.6	.7	94	33	4.5	3.4
29	3.8	6.5	5.2	4.7	5.8	3.4	3.6	.9	94	33	2.7	4.0
30	3.8	6.5	6.0	5.0	-------	3.4	3.1	1.9	94	31	2.5	9.1
31	4.0	-------	5.5	6.0	-------	3.2	-------	2.0	-------	30	3.4	-------

NOTE.—Discharge estimated on account of missing gage heights, Oct. 14–20, Jan. 2–5, 7–12, 14–19, 21–26, June 6–8, and 9, based on flow from Crane Creek Reservoir and intervening diversions. Discharge based on staff readings when water-stage recorder was not operating, Jan. 6, 13, and 20. Braced figures give mean discharge for periods indicated.

Monthly discharge of Crane Creek at mouth, near Weiser, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	33	3.8	16.1	990
November	473	4.2	49.3	2,930
December	6.0	4.0	4.66	287
January			4.89	301
February	393	5.5	45.0	2,590
March	11	2.2	5.40	332
April	12	3.1	5.42	323
May	3.2	.6	1.20	73.8
June	117	.8	32.0	1,900
July	93	10	58.5	3,600
August	34	2.5	15.3	941
September	9.1	1.4	3.27	195
The year	473	.6	19.9	14,500

CRANE CREEK IRRIGATION DISTRICT CANAL NEAR WEISER, IDAHO

LOCATION.—In sec. 7, T. 11 N., R. 3 W., 3½ miles below diversion dam of Washington County Irrigation District,[8] and 12 miles northeast of Weiser, Washington County.

RECORDS AVAILABLE.—June 23, 1920, to September 30, 1924.

GAGE.—Friez water-stage recorder on right bank installed May 5, 1923; inspected by Lee Cobb, C. C. Herner, and Sylvester Holmes.

DISCHARGE MEASUREMENTS.—Made from plank across flume.

CHANNEL AND CONTROL.—Section of wooden flume and earth canal section forms control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.07 feet at 1 p. m. May 26 (discharge, 52 second-feet); canal probably dry prior to March 7 and portions of April 11 and 12.

[8] Formed by reorganization of Crane Creek and Sunnyside Irrigation Districts.

1920–1924: Maximum stage recorded, 2.83 feet (upper location) 4 to 8 a. m. July 15, 1920 (discharge, 79 second-feet); canal usually dry during nonirrigation periods.

DIVERSIONS.—None between gage and point of diversion.

REGULATION.—Flow controlled by head gates at diversion dam.

ACCURACY.—Stage-discharge relation changed somewhat gradually after June 8 owing to silt deposits below gage. Well-defined rating curve used March 8 to June 8; parallel curves based on frequent discharge measurements used after June 8. Operation of water stage-recorder satisfactory April 12 to August 9 and August 23 to September 6. Staff gage read to hundredths once daily at other times except prior to March 26 and after September 6 when readings were obtained rather irregularly. Daily discharge ascertained by applying mean daily gage height to rating table, or for days having large range in stage by averaging discharge for intervals of the day. Mean daily gage height obtained by inspection of recorder graph when water-stage recorder was operated. Records good April to August; others fair.

COOPERATION.—Washington County Irrigation District furnished gage-height record.

Crane Creek Irrigation District Canal diverts water from south side of Crane Creek in sec. 3, T. 11 N., R. 3 W., 5½ miles below Crane Creek Reservoir where water is released and transported through canal for irrigation of lands of the Washington County Irrigation District, aggregating 10,000 acres, of which less than 1,500 acres were irrigated in 1924. The district operates about 100 miles of canal and irrigation structures under one management.

Discharge measurements of Crane Creek Irrigation District Canal near Weiser, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 22	1.26	23.2	June 2	1.98	47.1	June 25	1.95	46.0
May 12	1.96	47.4	June 14	1.96	46.2	July 31	1.98	47.4
May 15	2.00	48.9	Do	1.96	47.5	Do	1.97	46.9
June 2	1.98	49.4	June 25	1.95	46.3	Sept. 23	.85	9.70

Daily discharge, in second-feet, of Crane Creek Irrigation District Canal near Weiser, Idaho, for the year ending September 30, 1924

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		11	3.0	49	46	47	34
2		11	2.6	50	46	45	33
3		11	10	50	46	47	33
4	0	12	19	49	45	48	33
5		11	25	50	45	48	33
6		10	33	50	45	48	32
7		9.5	38	21	46	48	10
8	4.0	9.1	40	19	47	43	4.0
9		9.5	41	36	47	37	3.8
10		9.5	43	44	47	36	3.7
11		3.2	46	47	46	36	7.0
12	3.6	3.7	48	47	47	36	9.9
13		10	49	47	46	36	
14	15	15	49	47	47	36	
15		17	49	47	47	36	
16		18	49	48	47	37	9.8
17	8.0	19	50	48	47	38	
18		20	50	48	47	39	
19		21	51	47	47	39	
20		22	51	47	47	17	

Daily discharge, in second-feet, of Crane Creek Irrigation District Canal near Weiser, Idaho, for the year ending September 30, 1924—Continued

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
21	8.0	23	50	47	47	30	9.8
22	11	23	50	46	47	33	9.7
23	11	25	51	46	47	38	9.7
24	11	27	51	46	47	38	9.7
25	11	31	51	46	47	38	9.7
26	11	32	51	46	47	37	8.0
27	11	33	51	47	47	37	8.0
28	12	33	51	46	47	36	8.0
29	11	26	51	46	47	34	8.0
30	11	5.0	50	46	47	34	8.0
31	11	-------	49	-------	47	34	-------

NOTE.—Discharge estimated for following periods: Mar. 7–13, 15–25, based on occasional staff readings and information furnished by observer; Apr. 11–12, based on recorded flow for part time; Sept. 7, 9, 11, 13–22, 24–30, based on one discharge measurement and flow from Crane Creek Reservoir. Braced figures give mean discharge for periods indicated.

Monthly discharge of Crane Creek Irrigation District Canal near Weiser, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March	----------	0	6.74	414
April	33	3.2	17.0	1,010
May	51	2.6	42.0	2,580
June	50	19	45.1	2,680
July	47	45	46.6	2,870
August	48	17	38.3	2,360
September	34	----------	13.3	791
The period	----------	----------	----------	12,700

WEISER IRRIGATION DISTRICT CANAL NEAR WEISER, IDAHO

LOCATION.—In sec. 32, T. 11 N., R. 4 W., at Durbin ranch, 1½ miles below headworks of canal and 7 miles above Weiser, Washington County.

RECORDS AVAILABLE.—April 29, 1920, to September 30, 1924.

GAGE.—Friez water-stage recorder adjacent to left side of concrete rating flume; inspected by Fred Hemenway, jr., ditch walker. Zero of gage is at bottom of rating flume.

DISCHARGE MEASUREMENTS.—Made from footwalk across concrete rating flume.

CHANNEL AND CONTROL.—Canal above and below gage is about 20 feet wide. Bed composed of hard clay and gravel; fairly permanent. Banks are clean and not subject to appreciable growth of moss or weeds.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.27 feet at midnight May 9 (discharge, 189 second-feet). Canal reported dry prior to April 8 and during nonirrigation season.

1920–1924: Maximum stage recorded, 4.13 feet at 2 p. m. May 23, 1920 (discharge, 206 second-feet); canal dry except during irrigation season.

ICE.—No record during winter.

DIVERSIONS.—One farm lateral about a quarter of a mile above gage.

REGULATION.—Flow regulated at Luck waste gate, one-half mile above, which in practice forms head of canal, although actual diversion from Weiser River is 1½ miles above gage. Water from waste gate returns to Weiser River through a slough which formerly was main channel of river.

ACCURACY.—Stage-discharge relation not permanent. Well-defined rating curve used April 10 to May 15 and curve parallel thereto June 14 to September 30. Operation of water-stage recorder satisfactory beginning April 15; staff gage

read to hundredths once daily prior to that date. Daily discharge ascertained by applying to rating table daily staff gage reading or mean daily gage height obtained by inspection of recorder graph; shifting-control method used May 16 to June 13. Records excellent except during period of changing stage-discharge relation, May 16 to June 13 for which they are good.

COOPERATION.—Gage-height record furnished by Weiser Irrigation District.

Weiser Irrigation District Canal diverts water from north side of Weiser River in sec. 3, T. 10 N., R. 4 W., 1½ miles above gage and furnishes water for irrigation of about 9,600 acres, included in projects of the Weiser Irrigation District and Weiser Bench Irrigation Co. near Weiser. The district maintains about 20 miles of main canal.

Discharge measurements of Weiser Irrigation District Canal near Weiser, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	1.07	47.1	May 12	3.15	179	June 26	2.93	156
Apr. 10	1.36	68.7	June 2	2.74	149	Aug. 1	.96	38.2
Apr. 12	1.88	101	June 14	2.26	111	Sept. 23	.58	18.2
Apr. 22	.74	32.8	June 25	2.99	160			

Daily discharge, in second-feet, of Weiser Irrigation District Canal near Weiser, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1		178	176	132	38	16	16	134	184	67	84	32	14
2		180	155	131	38	17	17	137	184	51	87	34	14
3		180	136	122	35	16	18	138	183	47	87	34	13
4		184	125	122	46	15	19	142	183	48	86	26	13
5	0	185	108	117	46	15	20	149	182	84	82	8.8	14
6		185	99	115	45	15	21	152	183	111	82	24	15
7		184	102	113	45	14	22	86	166	101	82	23	16
8	40	184	138	110	44	13	23	32	171	172	81	22	18
9	65	187	145	115	21	14	24	95	185	175	52	22	18
10	68	188	122	110	16	16	25	145	185	161	49	21	18
11	77	185	117	49	15	15	26	154	185	158	45	22	17
12	95	181	116	42	14	15	27	158	185	153	43	21	16
13	103	179	111	36	13	14	28	159	183	147	43	22	18
14	114	180	108	26	12	14	29	165	182	138	42	21	18
15	129	183	90	24	22	14	30	173	182	136	40	18	20
							31	------	180	------	39	18	------

NOTE.—Water turned into canal morning of Apr. 8 and discharge for that date computed upon basis of flow for part day; estimated Apr. 9 on account of missing gage height.

Monthly discharge of Weiser Irrigation District Canal near Weiser, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	173	0	90.3	5,370
May	188	166	182	11,200
June	176	47	120	7,140
July	132	24	77.0	4,730
August	46	8.8	26.4	1,620
September	20	13	15.5	922
The period				31,000

POWDER RIVER NEAR NORTH POWDER, OREG.

LOCATION.—In NE. ¼ sec. 12, T. 6 S., R. 39 E., at entrance to short canyon below North Powder Valley, 3 miles northeast of North Powder, Union County; below all tributaries and return water from irrigation in North Powder Valley and near backwater of proposed Thief Valley Reservoir.

DRAINAGE AREA.—775 square miles; at lower end of Thief Valley, 826 square miles.

RECORDS AVAILABLE.—May 20, 1913, to September 30, 1915; March 10 to July 31, 1916; February 1 to July 31, 1920; November 21, 1920, to July 26, 1924. Records at this station are almost directly comparable with those at station below Thief Valley, March 9, 1909, to June 30, 1912, as the inflow between two points constitutes only a negligible percentage of the total.

GAGE.—Inclined staff on left bank; read by Mrs. H. C. Bidwell.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rocks with some sand; occasional slight shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 2.81 feet February 15 (discharge, 392 second-feet); minimum stage, 0.3 foot July 11–13, 16–19, and 26 (discharge, 1 second-foot.)

1909–1916; 1920–1924: Maximum stage recorded, 8.1 feet May 20, 21, 24, and 25, 1921 (discharge, 3,010 second-feet); stream dry in August and September, 1910.

ICE.—Stage-discharge relation affected by ice December 12 to February 10.

DIVERSIONS.—Water is diverted from Powder River and its tributaries for irrigating 72,000 acres of land above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed when ice was going out February 5–10. Rating curve used before change well defined; rating curve used after change fairly well defined. Gage read to hundredths once a day. Daily discharge ascertained by applying daily gage height to rating table. Records good except for estimated period when stage-discharge relation was affected by ice for which they are fair.

The following discharge measurement was made:

April 9, 1924: Gage height, 1.74 feet; discharge, 131 second-feet.

Daily discharge, in second-feet, of Powder River near North Powder, Oreg., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	52	100	159			277	133	68	14	4.5
2	58	100	159			264	122	68	11	4.5
3	63	104	151			264	110	68	11	4.5
4	69	107	143			238	117	73	14	3.0
5	63	114	128			238	110	73	17	3.0
6	75	114	121		270	225	110	79	20	3.0
7	81	111	128			238	110	73	24	3.0
8	87	111	107			238	117	73	20	3.0
9	87	111	107			238	122	79	14	2.0
10	100	114	114			215	98	111	14	2.0
11	107	114	114	110	348	191	104	180	17	1.0
12	114	114			291	180	111	250	17	1.0
13	114	111			291	180	118	348	16	1.0
14	107	107			291	170	125	305	17	2.0
15	100	111			392	180	141	333	17	2.0
16	87	107	140		291	170	133	333	17	1.0
17	87	111			291	150	111	305	20	1.0
18	81	114			277	141	98	305	20	1.0
19	75	111			277	141	85	225	17	1.0
20	75	114			305	133	85	202	11	1.5

Daily discharge, in second-feet, of Powder River near North Powder, Oreg., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
21	75	114			348	122	73	180	6.0	1.5
22	75	114			333	122	62	180	6.0	2.0
23	77	128			309	141	60	160	4.5	2.0
24	75	135			309	141	41	125	4.5	2.0
25	81	143			305	141	41	118	3.0	1.5
26	85	159	140	110	277	141	46	73	3.0	1.0
27	87	176			264	141	51	41	3.0	-------
28	87	176			238	141	51	17	3.0	-------
29	94	167			264	133	56	11	4.5	-------
30	94	159			-------	141	62	11	4.5	-------
31	100	-------			-------	141	-------	14	-------	-------

Monthly discharge of Powder River near North Powder, Oreg., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	114	52	84.3	5,180
November	176	100	122	7,260
December	159	107	136	8,360
January	-------	-------	110	6,760
February	392	238	290	16,700
March	277	122	180	11,100
April	141	41	93.4	5,560
May	348	11	145	8,920
June	24	3	12.3	732
July 1–26	4.5	1	2.12	109
The period	-------	-------	-------	70,600

SALMON RIVER AT STANLEY, IDAHO

LOCATION.—In sec. 3, T. 10 N., R. 13 E., a quarter of a mile above mouth of Valley Creek, half a mile northeast of new Stanley post office, and three-fourths mile southwest of old Stanley, Custer County.

DRAINAGE AREA.—355 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 2, 1921, to September 30, 1924.

GAGE.—Vertical staff on left bank; read by E. P. Huffman.

DISCHARGE MEASUREMENTS.—Made by wading or from wagon bridge at old Stanley, 1 mile below and deducting Valley Creek discharge to determine flow past gage.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; practically permanent. Control well defined but not sensitive owing to width of channel and swift current. Banks fairly low. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.24 feet May 19 (discharge, 1,300 second-feet); minimum stage, 0.70 foot August 30, 31, September 2 and 3 (discharge, 125 second-feet).

1921–1924: Maximum stage recorded, 3.8 feet June 12, 1921 (discharge, 4,390 second-feet); minimum discharge, August 30, 31, September 2 and 3, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; affected by ice December 23 to February 11. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table except for period of ice effect for which it was estimated based upon observer's notes, weather records, and flow at other stations in basin. Records, December to June, fair; others good.

Discharge measurements of Salmon River at Stanley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	1.00	262	Apr. 26	1.12	325	June 26	1.14	354
Mar. 19	.86	200	May 20	2.14	[a]1,180	Aug. 16	.75	142

[a] Measured at old Stanley 1 mile below gage.

Daily discharge, in second-feet, of Salmon River at Stanley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	241	288	266			236	207	494	697	288	151	134
2	241	288	256			236	207	507	697	277	151	125
3	241	288	256			236	211	521	697	266	151	125
4	236	277	256			226	202	697	697	256	192	151
5	256	277	246			216	207	656	697	256	147	143
6	256	266	277		200	216	197	618	697	256	147	134
7	277	256	293			226	216	579	697	256	151	134
8	288	246	277	180		226	241	529	641	246	151	134
9	288	246	277			216	256	594	550	256	151	143
10	277	236	277			207	266	656	521	256	151	138
11	277	236	266			202	378	738	507	251	147	138
12	266	236	266		216	197	440	873	487	246	147	134
13	256	236	266		216	192	453	920	467	246	143	134
14	266	241	256		221	188	467	1,020	453	236	143	134
15	277	236	256		216	188	474	1,120	440	226	147	138
16	288	236	256		216	188	428	1,240	428	216	147	138
17	293	236	246		216	192	349	1,240	428	216	160	143
18	298	236	231		226	192	320	1,240	428	216	169	143
19	298	236	216		236	197	378	1,300	440	207	151	143
20	288	236	211		236	197	440	1,180	440	207	143	143
21	282	241	207		231	207	467	1,180	428	197	143	134
22	288	241	207		226	211	440	1,240	421	197	143	134
23	293	246		190	226	207	428	1,180	403	192	143	143
24	288	320			216	202	378	1,180	378	188	143	143
25	293	309			216	192	355	1,120	355	188	143	147
26	293	293	200		221	188	343	1,070	343	178	143	151
27	293	266			231	197	378	1,020	332	178	138	151
28	293	277			231	197	403	920	332	169	134	151
29	298	277			236	192	440	873	320	160	129	147
30	293	266			------	197	474	738	304	156	125	147
31	288	------			------	207	------	738	------	151	125	------

NOTE.—Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of Salmon River at Stanley, Idaho, for the year ending September 30, 1924

[Drainage area, 355 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	298	236	278	0.783	0.90	17,100
November	320	236	259	.730	.81	15,400
December	293	------	238	.670	.77	14,600
January	------	------	185	.521	.60	11,400
February	236	------	215	.606	.65	12,400
March	236	188	206	.580	.67	12,700
April	474	197	348	.980	1.09	20,700
May	1,300	494	903	2.54	2.93	55,500
June	697	304	491	1.38	1.54	29,200
July	288	151	220	.620	.71	13,500
August	192	125	147	.414	.48	9,040
September	151	125	140	.394	.44	8,330
The year	1,300	125	303	.854	11.59	220,000

SALMON RIVER BELOW YANKEE FORK, NEAR CLAYTON, IDAHO

LOCATION.—In sec. 20, T. 11 N., R. 15 E., a quarter of a mile below Sunbeam Dam and mouth of Yankee Fork, 3 miles above Robinson Bar, 7 miles south of Bonanza, 12 miles below Stanley and mouth of Valley Creek, and 17 miles above Clayton, Custer County.

DRAINAGE AREA.—841 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 28, 1921, to September 30, 1924.

GAGE.—Vertical staff on left bank; read by Peter Ryan and Andrew Brown.

DISCHARGE MEASUREMENTS.—Made from cable three-tenths mile below gage.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel. Control formed by well-defined boulder and rock riffle; practically permanent. Banks high. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.0 feet May 17 and 18 (discharge, 2,820 second-feet); minimum discharge, 281 second-feet August 22–27 and September 2. (Actual minimum stage of 0.00 foot occurred August 24.)

1922–1924: Maximum stage recorded, 7.6 feet June 7, 15, and 17, 1922 (discharge, 6,760 second-feet); minimum discharge, August 22–27 and September 2, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None of importance above station.

REGULATION.—None. Future operation of power plant at Sunbeam Dam may affect flow somewhat during low stages due to probable changes in gate opening. Power plant not in operation at present.

ACCURACY.—Stage-discharge relation unchanged after October 12; affected by ice December 16 to January 31. Rating curve well defined between 250 and 6,000 second-feet. Gage read to hundredths twice daily prior to July 5; thereafter once daily. Daily discharge ascertained by applying daily gage height or mean daily gage height to rating table, except as indicated in footnote to table of daily discharge. Records fair.

COOPERATION.—Gage-height record furnished by Love & Von Brecht.

Discharge measurements of Salmon River below Yankee Fork, near Clayton, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 13	0.63	501	Apr. 25	1.33	827	June 26	1.09	704
Mar. 20	.14	320	May 20	3.84	2,690	Aug. 16	.04	295

Daily discharge, in second-feet, of Salmon River below Yankee Fork, near Clayton, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		391	482		374	408	326	1,320	1,390	611	311	296
2		374	482		358	391	342	1,540	1,460	588	311	281
3		374	482		374	391	342	1,680	1,460	611	296	296
4		408	502		374	391	326	1,760	1,460	634	311	
5		408	502		374	391	326	1,460	1,460	611	311	
6		408	482		374	391	358	1,320	1,460	611	311	
7	480	408	482		374	391	426	1,260	1,320	588	311	
8		408	482	350	391	391	502	1,260	1,320	523	311	
9		408	482		408	374	566	1,460	1,200	523	296	
10		408	482		408	391	588	1,680		523	296	290
11		408	444		408	408	634	1,920		502	296	
12		408	426		408	408	757	2,010	1,000	482	296	
13	502	408	444		408	408	1,080	1,920		463	296	
14	502	408	444		408	374	1,200	1,610		444	296	
15	502	408	444		408	358	808	1,920		408	296	

Daily discharge, in second-feet, of Salmon River below Yankee Fork, near Clayton, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	523	408			408	352	611	2,270		391	296	
17	482	408			408	345	588	2,820		391	296	
18	444	391			408	339	566	2,820	900	408	296	
19	444	408			408	332	523	2,730		391	296	
20	444	408	410		408	326	707	2,640		391	296	
												310
21	463	408			426	326	915	2,640		391	296	
22	482	426			426	326	1,080	2,540		374	281	
23	502	502		365	426	326	1,080	2,450	800	358	281	
24	482	658			408	342	970	2,360		342	281	
25	482	658			391	374	860	2,360		342	281	
26	463	611			408	342	860	2,270	707	326	281	
27	463	566	380		408	358	915	2,100	707	326	281	
28	444	523			408	342	1,020	2,100	658	326	296	330
29	408	502			408	326	1,080	1,840	634	311	296	
30	408	482			-------	326	1,200	1,610	634	311	296	
31	408	-------			-------	358	-------	1,460	-------	311	296	-------

NOTE.—Silt deposit on control caused by opening gates in Sunbeam Dam Sept. 19, 1923, affected stage-discharge relation Oct. 1–12; discharge estimated. Discharge estimated on account of ice Dec. 16 to Jan 31; because of missing gage heights June 10–25 and Sept. 4–30. Estimated flow based on comparison with that passing other stations in Salmon River Basin. Discharge interpolated Mar. 16–19. Braced figures give mean discharge for periods indicated.

Monthly discharge of Salmon River below Yankee Fork, near Clayton, Idaho, for the year ending September 30, 1924

[Drainage area, 841 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	523	408	471	0.560	0.65	29,000
November	658	374	446	.530	.59	26,500
December	502	----------	431	.512	.59	26,500
January	----------	----------	358	.426	.49	22,000
February	426	358	400	.476	.51	23,000
March	408	326	365	.434	.50	22,400
April	1,200	326	719	.855	.95	42,800
May	2,820	1,260	1,970	2.34	2.70	121,000
June	1,460	634	1,010	1.20	1.34	60,100
July	634	311	446	.530	.61	27,400
August	311	281	296	.352	.41	18,200
September	----------	----------	303	.360	.40	18,000
The year	2,820	----------	602	.716	9.74	437,000

SALMON RIVER AT SALMON, IDAHO

LOCATION.—In sec. 6, T. 21 N., R. 22 E., at rear of Rose ranch buildings, 300 feet below island, just above Lemhi River, and a quarter of a mile below highway bridge at Salmon, Lemhi County.

DRAINAGE AREA.—3,600 square miles (Forest Service records).

RECORDS AVAILABLE.—April 25, 1912, to September 30, 1916; July 6, 1919, to September 30, 1924.

GAGE.—Vertical and inclined staff on left bank; read by Wendell Wilson and Parker Wickham.

DISCHARGE MEASUREMENTS.—Made from cable 700 feet below gage.

CHANNEL AND CONTROL.—One channel at all stages. Bed composed of rock overlain with sand and gravel. Control subject to change.

EXTREMES OF DISCHARGE.—Maximum discharge, 4,370 second-feet, May 17–21. Minimum discharge, 595 second-feet August 17–19, 25–31, and September 1–5.

1912–1916; 1919–1924: Maximum stage recorded, 9.35 feet June 12, 1921 (discharge, 16,400 second-feet); minimum discharge, August 17–19, 25–31, and September 1–5, 1924.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—A small ditch diverts from left bank between bridge and gage, but its total capacity is less than 1 per cent of low-water flow. Numerous diversions principally on tributaries above.

REGULATION.—None.

ACCURACY.—Stage-discharge relation at low stages changed slightly during winter. Rating curves well defined. Gage read to tenths once daily October 1 to January 27 and to hundredths once daily beginning April 3. Daily discharge ascertained by applying daily gage height to rating table. Open-water records good; for periods of estimate, fair.

COOPERATION.—Gage-height record October to December furnished by United States Forest Service.

Discharge measurements of Salmon River at Salmon, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 17	2.33	892	May 19	4.99	4,370	June 30	2.64	1,220
Do	2.33	903	Do	4.98	4,340	Aug. 18	1.82	610
Apr. 22	2.96	1,460	June 30	2.64	1,210	Do	1.81	601
Apr. 23	3.16	1,680						

Daily discharge, in second-feet, of Salmon River at Salmon, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,170	1,340	1,260				1,000	1,860	2,360	1,150	680	595
2	1,170	1,340	1,260					2,100	2,360	1,150	680	595
3	1,210	1,340	1,170				1,020	2,500	2,500	1,150	680	595
4	1,210	1,340	1,170				1,020	2,640	2,500	1,150	650	595
5	1,210	1,340	1,170				985	2,780	2,360	1,200	650	595
6	1,260	1,340	1,260				948	2,230	2,360	1,240	650	622
7	1,260	1,340	1,260				1,060	2,100	2,230	1,240	650	622
8	1,260	1,340	1,260	750			1,150	1,980	2,230	1,150	650	650
9	1,340	1,340	1,260			1,020	1,240	1,980	2,230	1,150	622	622
10	1,340	1,340	1,260				1,340	2,230	1,980	1,060	622	622
11	1,340	1,340	1,260				1,380	2,500	1,980	1,020	622	622
12	1,340	1,340	1,170				1,340	3,080	1,860	985	622	650
13	1,340	1,340	1,170				1,480	3,390	1,750	1,020	622	650
14	1,340	1,340	1,170				1,750	3,550	1,640	985	622	650
15	1,340	1,340	1,080		1,050		1,860	3,710	1,640	910	622	650
16	1,340	1,340	1,080				1,480	4,030	1,640	910	622	650
17	1,440	1,260	1,080			948	1,290	4,370	1,640	875	595	650
18	1,440	1,260	1,080				1,290	4,370	1,540	875	595	680
19	1,440	1,170	1,000				1,240	4,370	1,640	840	595	680
20	1,540	1,170	1,080				1,290	4,370	1,640	875	622	680
21	1,540	1,170	1,000				1,240	4,370	1,540	910	650	710
22	1,540	1,170	1,000				1,480	4,200	1,380	875	622	710
23	1,540	1,170	925				1,750	4,030	1,380	840	622	680
24	1,540	1,260	925	850			1,750	3,870	1,340	840	622	680
25	1,540	1,300	925			980	1,640	3,790	1,340	808	595	710
26	1,440	1,300	780				1,480	3,710	1,290	808	595	742
27	1,440	1,300	780				1,480	3,550	1,290	775	595	742
28	1,440	1,260	780				1,540	3,230	1,240	775	595	742
29	1,340	1,260	780				1,640	3,080	1,200	775	595	742
30	1,340	1,260	780				1,750	2,780	1,200	710	595	742
31	1,340	-------	780		-------		-------	2,500	-------	710	595	-------

NOTE.—Discharge estimated Jan. 1 to Mar. 16 and Mar. 18 to Apr. 2 account of ice, and Apr. 4 because of unreliable gage height; based on weather records, two discharge measurements of Mar. 17, and by comparison with flow at other stations in Salmon River Basin. Discharge interpolated May 25. Braced figures give mean discharge for periods indicated.

Monthly discharge of Salmon River at Salmon, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,540	1,170	1,370	84,200
November	1,340	1,170	1,290	76,800
December	1,260	780	1,060	65,200
January			802	49,300
February			1,050	60,400
March			1,000	61,500
April	1,860	948	1,360	80,900
May	4,370	1,860	3,200	197,000
June	2,500	1,200	1,780	106,000
July	1,240	710	960	59,000
August	680	595	624	38,400
September	742	595	662	39,400
The year	4,370	595	1,260	918,000

SALMON RIVER AT WHITEBIRD, IDAHO

LOCATION.—In sec. 22, T. 28 N., R. 1 E., at highway bridge near Whitebird, Idaho County, just above Whitebird Creek, and below all important tributaries.

DRAINAGE AREA.—13,600 square miles (measured on General Land Office map, edition of 1909).

RECORDS AVAILABLE.—August 18, 1910, to September 30, 1917; October 1, 1919, to September 30, 1924.

GAGE.—Chain gage on handrail of highway bridge; installed September 14, 1920; read by R. E. and L. E. Shuck.

DISCHARGE MEASUREMENTS.—Made from gaging car suspended from ferry cable or from highway bridge.

CHANNEL AND CONTROL.—Channel straight for several hundred feet above and below gage; one channel at all stages. Banks not subject to overflow. Control composed of section of river channel and large boulder riffle three-eighths mile below; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.8 feet May 16 and 17 (discharge, 40,100 second-feet); minimum stage, 1.26 feet at 6 p. m. September 5 (discharge, 2,520 second-feet).

1910–1917; 1919–1924: Maximum stage recorded, 21.2 feet June 9, 1921 (discharge, 88,800 second-feet); minimum stage on November 15, 1916, when water was below gage (estimated discharge, 2,500 second-feet).

Maximum stage determined from high-water marks, 27.5 feet June, 1894 (discharge, 120,000 second-feet), estimated by extending rating curve.

ICE.—Stage-discharge relation affected by ice during severe winters.

DIVERSIONS.—Very little water diverted for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

October 28, 1923: Gage height, 2.80 feet; discharge, 4,700 second-feet.

September 11, 1924: Gage height, 1.39 feet; discharge, 2,640 second-feet.

Daily discharge, in second-feet, of Salmon River at Whitebird, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,160	4,320	4,320	3,420	3,840	4,160	3,560	17,000	17,400	6,470	3,140	2,560
2	4,160	4,160	4,000	3,020	3,840	4,160	4,000	21,200	17,400	6,430	3,280	2,560
3	4,160	4,320	3,840	2,900	4,160	4,160	4,160	24,000	17,400	6,400	3,280	2,560
4	4,000	4,320	3,560	2,900	4,480	4,160	4,160	27,900	17,400	6,370	3,280	2,560
5	4,000	4,160	3,560	2,900	4,320	4,160	4,160	24,900	16,600	6,330	3,140	2,560
6	4,160	4,160	3,560	3,280	4,320	4,000	4,480	18,800	15,600	6,300	3,140	2,560
7	4,320	4,160	3,840	4,000	4,320	4,000	4,640	18,100	16,300	6,300	3,020	2,560
8	4,640	4,160	4,480	4,160	4,800	4,000	5,900	17,400	15,300	6,100	3,020	2,560
9	4,640	4,160	4,000	4,640	4,980	4,000	6,920	19,600	13,900	5,900	3,020	2,660
10	4,980	4,160	3,700	4,800	4,980	3,840	8,060	23,600	13,000	5,900	3,020	2,660
11	4,980	4,160	3,280	5,160	4,480	3,840	8,060	27,000	12,100	4,980	2,900	2,660
12	4,800	4,160	2,780	5,160	4,480	3,840	7,820	32,900	11,800	4,800	2,900	2,660
13	4,800	4,160	2,660	4,640	4,480	4,000	9,300	37,200	11,800	4,640	2,780	2,660
14	4,640	4,320	3,140	4,160	4,480	4,000	9,820	39,100	11,200	4,640	2,780	2,560
15	4,640	4,320	3,140	4,160	4,480	4,000	10,600	39,600	10,600	4,480	2,660	2,560
16	4,640	4,160	3,140	4,160	4,640	3,840	9,300	40,100	10,400	4,320	2,660	2,560
17	4,800	4,160	3,140	4,160	4,640	3,700	8,060	40,100	10,100	4,160	2,780	2,560
18	4,800	3,840	3,280	3,840	4,640	3,560	7,140	39,600	9,820	4,160	2,660	2,560
19	4,640	3,700	4,320	3,700	4,640	3,700	6,920	39,100	10,100	4,160	2,660	2,660
20	4,640	3,560	3,840	3,700	4,640	3,840	6,700	38,700	9,560	4,480	3,020	2,780
21	4,640	4,000	3,700	3,840	4,480	3,840	6,700	36,700	9,040	4,800	3,020	2,780
22	4,640	4,160	4,000	3,840	4,480	3,700	7,360	31,600	8,540	4,640	3,020	2,780
23	4,980	4,000	4,160	3,700	4,480	3,700	9,560	31,600	8,060	4,480	3,020	2,900
24	5,160	4,160	4,320	3,700	4,320	3,700	10,900	32,900	6,920	4,160	2,900	2,780
25	4,980	4,320	4,320	3,560	4,160	3,560	10,600	31,600	6,920	4,000	2,780	2,900
26	4,980	4,320	3,700	3,700	4,160	3,560	10,600	30,200	6,920	4,000	2,660	3,020
27	4,640	4,640	3,840	3,700	4,320	3,560	10,400	22,800	7,140	3,840	2,660	3,020
28	4,640	4,640	4,000	3,560	4,320	3,700	10,900	23,200	7,140	3,840	2,560	3,020
29	4,480	4,480	3,840	3,700	4,160	3,840	12,100	22,400	6,500	3,560	2,560	3,020
30	4,320	4,480	3,840	3,700	-------	3,700	13,900	20,000	6,500	3,420	2,560	3,140
31	4,320	-------	3,700	3,700	-------	3,560	--------	18,100	--------	3,280	2,560	-------

NOTE.—Gage heights recorded for June 25 and Aug. 30 discredited, and gage not read July 1–5 and Aug. 29; discharge interpolated.

Monthly discharge of Salmon River at Whitebird, Idaho, for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5,160	4,000	4,590	282,000
November	4,640	3,560	4,190	249,000
December	4,480	2,660	3,710	228,000
January	5,160	2,900	3,860	237,000
February	4,980	3,840	4,430	255,000
March	4,160	3,560	3,850	237,000
April	13,900	3,560	7,890	469,000
May	40,100	17,000	28,600	1,760,000
June	17,400	6,500	11,400	678,000
July	6,470	3,280	4,880	300,000
August	3,280	2,560	2,890	178,000
September	3,140	2,560	2,710	161,000
The year	40,100	2,560	6,930	5,030,000

VALLEY CREEK AT STANLEY, IDAHO

LOCATION.—In sec. 3, T. 10 N., R. 13 E., one-eighth mile above Valley Creek ranger station, one-fourth mile above confluence with Salmon River, three-eighths mile below new Stanley post office, and three-fourths mile above old Stanley post office, Custer County.

DRAINAGE AREA.—176 square miles (measured on topographic maps).

RECORDS AVAILABLE.—December 21, 1910, to October 31, 1913; May 2, 1921 to September 30, 1924.

GAGE.—Vertical staff on left bank installed May 2, 1921; read by E. P. Huffman

DISCHARGE MEASUREMENTS.—Made from log bridge 300 feet upstream or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control well defined; practically permanent. Banks fairly low; left bank may be overflowed at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 485 second-feet, May 17–19; minimum stage, 0.84 foot September 7 (discharge, 41 second-feet).

1910–1913; 1921–1924: Maximum stage recorded, 4.4 feet May 29, 1921 (discharge, 1,850 second-feet); minimum stage and discharge, September 7, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—A few ranch diversions for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during ice-affected period, December 23 to January 31. Rating curves well defined. Gage read to hundredths once daily. Daily discharge determined by applying daily gage height to rating table. Records good except during estimated periods and for April and May for which they are fair.

Discharge measurements of Valley Creek at Stanley, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 11	1.22	95.9	Apr. 26	1.48	161	June 28	1.35	132
Mar. 19	1.18	95.6	May 20	2.10	434	Aug. 16	.94	53.3

Daily discharge, in second-feet, of Valley Creek at Stanley, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	91	73		74	94	70	288	216	120	56	46
2	84	86	64		76	90	69	297	202	125	56	45
3	82	87	61		79	87	72	307	224	122	55	44
4	80	87	61		83	88	76	316	238	120	55	48
5	84	86	58		87	90	76	271	254	120	54	46
6	82	84	64		83	87	79	238	246	118	55	44
7	91	80	198		83	90	109	231	216	116	56	41
8	112	82	122	60	79	94	132	220	202	113	55	44
9	104	84	112		79	90	139	250	186	89	55	46
10	99	80	97		77	87	149	279	171	79	55	48
11	95	82	84		76	83	216	316	177	76	54	46
12	93	84	70		76	83	325	356	183	72	52	46
13	91	84	67		77	79	350	403	171	72	51	44
14	95	82	64		77	76	366	430	166	70	51	44
15	97	80	64		76	70	376	430	160	70	51	44
16	99	78	64		76	72	302	458	160	70	54	44
17	99	77	64		87	83	220	485	158	72	56	44
18	99	77	127		83	87	166	485	160	76	59	45
19	102	73	91		81	94	238	485	171	79	62	45
20	97	77	102		79	92	345	430	149	94	62	46
21	91	80	91		83	92	366	430	139	76	62	46
22	99	82	73		83	94	366	458	144	72	61	45
23	102	82			81	88	356	430	134	70	59	44
24	99	295		65	83	83	254	403	130	69	59	58
25	95	282			85	72	238	376	127	69	59	72
26	95	152	70		87	65	202	366	130	65	56	69
27	95	112			87	69	297	325	125	65	51	62
28	91	102			90	69	307	302	130	62	48	62
29	91	91			92	65	320	279	120	59	46	62
30	87	84			-------	65	275	238	120	56	46	59
31	87	-------			-------	69	-------	227	-------	56	46	-------

NOTE.—Discharge estimated because of ice Dec. 23 to Jan. 31; interpolated Oct. 12 and Sept. 24. Braced figures show mean discharge for periods indicated.

Monthly discharge of Valley Creek at Stanley, Idaho, for the year ending September 30, 1924

[Drainage area, 176 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	112	80	93.6	0.532	0.61	5,760
November	295	73	100	.568	.63	5,950
December	198	58	80.7	.459	.53	4,960
January			62.6	.356	.41	3,850
February	92	74	81.3	.462	.50	4,680
March	94	65	82.2	.467	.54	5,050
April	376	69	229	1.30	1.45	13,600
May	485	220	349	1.98	2.28	21,500
June	254	120	170	.966	1.08	10,100
July	125	56	83.6	.475	.55	5,140
August	62	46	54.7	.311	.36	3,360
September	72	41	49.3	.280	.31	2,930
The year	485	41	120	.682	9.25	86,900

YANKEE FORK OF SALMON RIVER NEAR CLAYTON, IDAHO

LOCATION.—In sec. 20, T. 11 N., R. 15 E., at Sunbeam Dam, 350 feet above confluence with Salmon River, 3 miles west of Robinson Bar, 7 miles south of Bonanza, and 17 miles west of Clayton, Custer County.

DRAINAGE AREA.—195 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 3, 1921, to September 30, 1924.

GAGE.—Vertical staff on right bank; read by Peter Ryan, Andrew Brown, and F. H. Clark. Datum of gage lowered 0.40 foot June 26, 1924; lowered 0.65 foot September 17, 1922. All gage heights prior to October 1, 1922, referred to original datum; all gage readings for 1924 reduced to datum in use after September 17, 1922.

DISCHARGE MEASUREMENTS.—Made from highway bridge 250 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock, boulders, and gravel. Control formed by rock and gravel riffle 50 feet below gage; well defined at low and medium stages. Although gradient is steep control is not well defined at high stages due possibly to a slight backwater effect from Salmon River when it is in flood. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.10 feet May 20–22 (discharge, 729 second-feet); minimum stage, 0.10 foot at 8 a. m. April 5 (discharge, 22 second-feet). Actual minimum may have occurred during winter when discharge was not accurately determined.

1921–1924: Maximum stage recorded, 5.24 feet at 8 p. m. June 12, 1921 (discharge, 3,360 second-feet); minimum stage and discharge recorded April 5, 1924. Lower flow may have occurred during ice-affected periods.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during ice-affected period December 1 to April 4. Rating curves well defined. Gage read to hundredths twice daily October 1 to July 18; thereafter gage was read once daily. Daily discharge ascertained by applying daily or mean daily gage height to rating table. Records good except for estimated periods for which they are fair.

COOPERATION.—Gage-height record furnished by Love & Von Brecht.

Discharge measurements of Yankee Fork of Salmon River near Clayton, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	0.65	71.6	Apr. 25	1.43	189	June 25	1.13	135
Mar. 20	.17	25.9	May 20	3.10	703	Aug. 16	.44	50.8

Daily discharge, in second-feet, of Yankee Fork of Salmon River near Clayton, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	37						360	334	113	57	28
2	67	37					35	421	360	104	57	28
3	66	36						535	360	119	56	28
4	66	64						494	360	122	55	
5	66	66					25	389	334	114	55	
6	66	66					46	310	310		49	
7	77	66					74	287	310		55	
8	76	66	55	25			119	298	276		53	
9	77	66					145	389	265		50	
10	76	64				35	153	494			50	
11	76	62					160	579		83	48	
12	73	57						676		88	47	
13	71	55					170	579		86	50	
14	68	50					187	579		79	46	30
15	70	55			30		137	579		85	46	
16	70	54					104	579	200	88	48	
17	68	51					100	579		84	50	
18	57	45					93	676		75	50	
19	68	45					83	676		79	50	
20	68	45				26	104	729		76	53	
21	74	45					137	729		74	50	
22	84	50					196	729		69	46	
23	86	76	40	30			205	676	145	68	44	
24	73	116					205	579	145	66	36	
25	72	106					196	626	145	64	29	
26	62	97				30	170	579	145	62	29	
27	59	73					205	494	137	59	29	35
28	53	66					224	456	122	59	29	
29	45	66					234	421	120	58	28	
30	43	67			-------		287	360	119	57	28	
31	40	-------			-------		-------	334	-------	57	29	-------

NOTE.—Discharge estimated because of ice and doubtful gage heights, Dec. 1 to Mar. 19 and Mar. 21 to Apr. 4 based on observer's notes, weather records, one discharge measurement, and by comparison with flow at near-by stations; estimated on account of erroneous and missing gage heights Apr. 11–12, June 10–22, and Sept. 4–30, based on comparative flow of Salmon River and Valley Creek. Discharge interpolated June 24. Discharge Mar. 20 from current-meter measurement. Braced figures give mean discharge for periods indicated.

Monthly discharge of Yankee Fork of Salmon River near Clayton, Idaho, for the year ending September 30, 1924

[Drainage area, 195 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	86	40	67.2	0.345	0.40	4,130
November	116	36	61.6	.316	.35	3,670
December	----------	----------	47.3	.243	.28	2,910
January	----------	----------	27.6	.142	.16	1,700
February	----------	----------	30.0	.154	.17	1,730
March	----------	----------	32.9	.169	.19	2,020
April	287	----------	135	.692	.77	8,030
May	729	287	522	2.68	3.09	32,100
June	360	119	220	1.13	1.26	13,100
July	122	57	82.5	.423	.49	5,070
August	57	28	45.2	.232	.27	2,780
September	----------	----------	30.8	.158	.18	1,830
The year	729	----------	109	.559	7.61	79,100

MARSH CREEK NEAR CAPE HORN, IDAHO

LOCATION.—About sec. 9 (unsurveyed), T. 12 N., R. 11 E., at highway bridge on Cape Horn-Bear Valley road, 300 feet below mouth of Cape Horn Creek, 1¼ miles southwest of Cape Horn, Custer County, and 21 miles northwest of Stanley.

DRAINAGE AREA.—73 square miles; revised (measured on Forest Service maps).

RECORDS AVAILABLE.—June 18 to September 30, 1922; April 29 to August 15, 1924, when station was discontinued.

GAGE.—Vertical staff on left bank; read by Robert McAllister.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Control fairly well defined. Banks high. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 1.43 feet May 17 and 18 (discharge, 314 second-feet); minimum stage, 0.13 foot August 15 (measured discharge, 35.7 second-feet).

1922; 1924: Maximum stage recorded, 2.52 feet June 19, 1922 (discharge, 702 second-feet); minimum recorded stage and discharge occurred August 15, 1924.

ICE.—None during period of record.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths once daily. Daily discharge determined by applying daily gage height to rating table. Records good.

Discharge measurements of Marsh Creek near Cape Horn, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 29	0.75	136	June 16	0.47	73.6	Aug. 15	0.13	35.7
May 21	1.32	272	June 28	.35	65.1			

Daily discharge, in second-feet, of Marsh Creek near Cape Horn, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Day	Apr.	May	June	July	Aug.
1		162	140	54	38	16		298	82	43	
2		186	140	54		17		314	80	43	
3		192	130	56		18		314	76	43	
4		198	130	56		19		298	86	48	
5		162	130	54		20		298	80	50	
6		130	120	54		21		282	76	44	
7		140	120	51		22		282	72	43	
8		151	120	48	37	23		252	69	42	
9		162	114	48		24		238	68	41	
10		174	103	48		25		238	65	40	
11		198	103	47		26		211	62	40	
12		238	103	48		27		198	58	38	
13		252	98	47		28		186	61	38	
14		267	91	43		29	130	174	56	39	
15		298	86	42	36	30	151	151	56	38	
						31		140		38	

NOTE.—Discharge interpolated May 3; estimated Aug. 2–14 owing to lack of gage-height record. Braced figures give mean discharge for period indicated.

Monthly discharge of Marsh Creek near Cape Horn, Idaho, for the year ending September 30, 1924

[Drainage area, 73 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
April 29–30	151	130	140	1.92	0.14	555
May	314	130	219	3.00	3.46	13,500
June	140	56	92.5	1.27	1.42	5,500
July	56	38	45.7	.626	.72	2,810
August 1–15			37.0	.507	.28	1,100
The period						23,500

BEAVER CREEK AT CAPE HORN, IDAHO

LOCATION.—About sec. 35 (unsurveyed), T. 13 N., R. 11 E., at bridge on Cape Horn-Rapid River highway, 1 mile north of Cape Horn, Custer County, 1½ miles above point where creek unites with Marsh Creek to form Middle Fork of Salmon River, and 21 miles northwest of Stanley.

DRAINAGE AREA.—54 square miles; revised (measured on Forest Service maps).

RECORDS AVAILABLE.—June 18 to September 30, 1922, and April 28 to August 15, 1924, when station was discontinued.

GAGE.—Vertical staff on left bank; read by Robert McAllister.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; rough. Control fairly well defined. Banks low but not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 1.49 feet May 17 (discharge, 392 second-feet); minimum stage, 0.23 foot August 15 (measured discharge, 16 second-feet).

1922; 1924: Maximum stage recorded, 2.24 feet June 19, 1922 (discharge, 614 second-feet); minimum recorded stage and discharge occurred August 15, 1924.

ICE.—No record.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly following high water on May 17. Shifting-control methods used May 18–20, after which rating curve fairly well defined above 15 second-feet was used. Prior to May 18 a parallel curve was used. Gage read to hundredths once daily except for short periods in May and June when readings twice daily were obtained. Daily discharge determined by applying daily or mean daily gage height to rating table. Records fair.

Discharge measurements of Beaver Creek at Cape Horn, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 28	0.46	57.8	June 16	0.51	60.5	Aug. 15	0.23	16.0
May 21	1.29	293	June 28	.40	40.3			

Daily discharge, in second-feet, of Beaver Creek at Cape Horn, Idaho, for the year ending September 30, 1924

Day	Apr.	May	June	July	Aug.	Day	Apr.	May	June	July	Aug.
1		111	122	37	19	16		372	60	25	
2		130	122	37		17		392	56	25	
3		149	125	38		18		372	56	26	
4		169	122	37		19		352	73	31	
5		130	119	37		20		333	60	36	
6		96	116	37		21		314	53	30	
7		133	111	34		22		296	51	26	
8		156	101	32	18	23		278	51	25	
9		172	96	31		24		242	51	25	
10		198	89	31		25		242	45	24	
11		242	81	30		26		242	42	24	
12		278	77	30		27		242	37	21	
13		278	77	28		28	58	198	38	20	
14		314	73	28		29	66	169	37	19	
15		352	64	26	17	30	88	144	38	20	
						31		136		20	

NOTE.—Discharge estimated Aug. 2–14; interpolated Apr. 30, May 2–3. Braced figure gives mean discharge for period indicated.

Monthly discharge of Beaver Creek at Cape Horn, Idaho, for the year ending September 30, 1924

[Drainage area, 54 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
April 28–30	88	58	70.7	1.31	0.15	421
May	392	96	233	4.31	4.97	14,300
June	125	37	74.8	1.39	1.55	4,450
July	38	19	28.7	.531	.61	1,760
August 1–15			18.0	.333	.19	536
The period						21,500

BEAR VALLEY CREEK NEAR CAPE HORN, IDAHO

LOCATION.—About sec. 31, T. 13 N., R. 10 E. (unsurveyed), Valley County, 250 feet below mouth of Fir Creek, 5 miles above confluence with Middle Fork of Salmon River, 7 miles northwest of Cape Horn, Custer County.

DRAINAGE AREA.—180 square miles (measured on Forest Service maps).

RECORDS AVAILABLE.—September 6, 1921, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder on right bank; inspected by A. L. Bunch.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Banks high. One channel at all stages. Control not well defined; subject to slight moss growth.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.28 feet about May 17 (discharge, 1,140 second-feet); minimum stage, 1.13 feet August 28–31 and September 1 (discharge, 60 second-feet). Higher and lower discharges may have occurred during period of no record.

1921–1924: Maximum stage recorded, 5.5 feet at 8 a. m. May 26, 1923 (discharge, 2,300 second-feet); minimum stage, 1.08 feet at 1 p. m. November 13, 1922 (discharge, about 55 second-feet). Higher and probably lower discharges occurred during periods of no record.

ICE.—Stage-discharge relation affected by ice. Records discontinued during winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory after June 15. Prior to this date only a few staff readings were made. Daily discharge ascertained by applying to rating table mean daily gage height determined from inspection of recorder graph. Records good, except for estimated periods for which they are poor.

Discharge measurements of Bear Valley Creek near Cape Horn, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 14	1.45	116	May 22	2.51	579	June 27	1.44	126
Apr. 30	2.28	468	June 16	1.60	168	Aug. 14	1.14	61.2

Daily discharge, in second-feet, of Bear Valley Creek near Cape Horn, Idaho, for the year ending September 30, 1924

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	622		115	67	60	16		167	88	64	64
2	744		110	69	62	17	1,020	161	88	64	64
3			110	69	62	18		164	88	64	64
4	760		123	67	62	19		173	94	69	67
5			118	65	62	20		167	110	82	72
		260					710				
6			115	65	62	21		156	104	78	72
7			110	65	62	22	591	147	92	72	70
8	590		106	65	65	23		141	90	69	69
9			104	65	67	24	510	141	86	65	69
10			99	65	65	25		133	84	64	72
11			97	65	65	26	449	128	82	64	78
12			97	64	65	27		125	80	64	74
13	860	200	97	62	64	28		125	76	60	72
14			94	62	64	29	370	123	72	60	69
15			88	64	64	30		118	72	60	70
						31			70	60	

NOTE.—Discharge Apr. 30 was 527 second-feet. Discharge estimated on account of missing gage heights May 3–21, 23–25, 27–31, June 1–15, and Sept. 30, based on comparison with flow of Deadwood River. Daily discharge for Oct. 8, 14, May 22 and 26, when water-stage recorder was not operating, was determined by applying daily gage height to rating table. Braced figures give mean discharge for periods indicated.

Monthly discharge of Bear Valley Creek near Cape Horn, Idaho, for the year ending September 30, 1924

[Drainage area, 180 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
April 30	527	527	527	2.93	0.11	1,050
May			661	3.67	4.23	40,600
June		118	192	1.07	1.19	11,400
July	123	70	95.5	.531	.61	5,870
August	82	60	65.7	.365	.42	4,040
September	78	60	66.6	.370	.41	3,960
The period						66,900

CLEARWATER RIVER AT KAMIAH, IDAHO

LOCATION.—In sec. 1, T. 33 N., R. 3 E., at former toll bridge at Kamiah, Lewis County, 6 miles below mouth of South Fork of Clearwater River.

DRAINAGE AREA.—4,850 square miles (measured on General Land Office map, edition of 1909).

RECORDS AVAILABLE.—August 20, 1910, to September 30, 1924.

GAGE.—Chain gage attached to downstream handrail of bridge; installed May 30, 1911; read by Mrs. Elsie McCarty.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Bed at gage and control consists of heavy boulders and gravel; control practically permanent. One channel at low water; two channels between gage heights about 5 and 8 feet, and one channel above gage height 8 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.0 feet May 13 (discharge, 58,900 second-feet); minimum stage, 2.0 feet January 1–3 and September 17 and 18 (discharge, 950 second-feet).

1910–1924: Maximum stage recorded, 16.1 feet May 26, 1913 (discharge, 76,600 second-feet); minimum stage occurred in December, 1919, when stage-discharge relation was affected by ice, discharge certainly less than 500 second-feet.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Several small ditches divert water for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve fairly well defined below 50,000 second-feet. Gage read once daily to tenths. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Clearwater River at Kamiah, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 25	2.76	1,740	July 22	3.32	2,590	Aug. 20	2.96	1,980
May 23	10.55	31,000	Aug. 20	2.98	2,080			

Daily discharge, in second-feet, of Clearwater River at Kamiah, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,220	1,430	2,470	950	4,300	3,240	2,470	31,000	16,200	4,100	1,540	1,040
2	1,220	1,320	1,780	950	5,200	3,080	2,620	35,900	16,200	3,910	1,540	1,040
3	1,220	1,430	1,540	950	4,510	3,240	3,240	41,800	16,600	3,560	1,540	1,040
4	1,220	1,540	1,780	1,130	3,560	3,080	3,400	45,600	16,200	3,560	1,430	1,040
5	1,220	1,430	1,660	1,130	3,730	3,240	3,560	35,200	14,800	3,560	1,430	1,040
6	1,540	1,430	1,780	1,130	4,300	3,240	4,100	26,300	13,100	3,400	1,320	1,040
7	1,320	1,320	2,330	1,320	4,100	3,080	4,730	23,800	13,100	3,400	1,320	1,040
8	1,910	1,320	2,470	2,190	5,200	3,080	7,810	28,200	11,900	3,080	1,320	1,040
9	2,190	1,320	2,050	1,910	4,730	2,920	9,910	29,600	11,500	2,920	1,320	1,130
10	2,620	1,220	1,780	1,910	4,300	3,080	10,300	36,600	9,910	2,920	1,320	1,130
11	1,660	1,220	1,540	1,780	3,560	3,080	11,900	44,000	9,540	2,770	1,320	1,130
12	1,660	1,130	1,320	1,780	3,400	2,920	11,500	51,200	9,540	2,620	1,320	1,130
13	1,660	1,130	1,540	1,540	3,560	3,080	11,500	58,900	9,180	2,620	1,220	1,130
14	1,540	1,320	1,540	1,490	3,400	3,080	12,300	58,000	8,830	2,470	1,130	1,130
15	1,540	1,130	1,660	1,430	3,910	3,400	11,500	54,600	8,830	2,470	1,320	1,040

Daily discharge, in second-feet, of Clearwater River at Kamiah, Idaho, for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	1,540	1,130	1,780	1,380	3,730	3,240	9,910	55,500	8,830	2,190	1,320	1,040
17	1,780	1,220	1,780	1,330	3,910	2,920	8,140	56,400	8,480	2,190	1,320	950
18	2,190	1,130	1,660	1,270	3,910	2,920	8,140	50,400	7,810	2,190	1,320	950
19	1,660	1,040	1,660	1,220	3,910	2,770	7,810	48,000	8,480	2,190	1,430	1,130
20	1,660	1,220	1,660	1,220	3,730	2,920	7,480	46,400	7,810	2,620	1,910	1,320
21	1,660	1,430	1,540	1,130	3,400	2,920	7,810	34,500	6,550	3,080	1,660	1,320
22	1,780	1,660	1,660	1,320	3,730	2,770	9,910	38,000	6,260	2,620	1,540	1,220
23	2,190	1,540	1,540	1,540	3,400	2,620	13,100	35,200	5,980	2,620	1,430	1,220
24	2,050	1,780	1,660	1,430	3,560	2,470	15,300	31,700	5,710	2,190	1,320	1,130
25	1,780	3,910	1,910	1,430	3,240	2,620	14,800	34,500	5,450	2,050	1,220	1,130
26	1,660	3,080	1,780	1,320	3,080	2,470	15,700	31,700	5,200	2,050	1,220	1,320
27	1,540	2,620	1,660	1,430	3,240	2,620	17,600	24,400	4,960	1,910	1,130	1,430
28	1,540	2,050	1,660	1,430	3,080	2,620	20,000	21,100	5,710	1,780	1,130	1,320
29	1,540	2,470	1,660	1,430	3,240	2,770	20,000	18,500	4,730	1,780	1,130	1,320
30	1,540	2,470	1,660	1,430	-------	2,620	23,800	16,200	4,510	1,660	1,130	1,220
31	1,430	-------	1,130	2,770	-------	2,620	--------	15,700	--------	1,660	1,130	-------

NOTE.—Gage not read Jan. 14–18; discharge interpolated.

Monthly discharge of Clearwater River at Kamiah, Idaho, for the year ending September 30, 1924

[Drainage area, 4,850 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,620	1,220	1,650	0.340	0.39	101,000
November	3,910	1,040	1,610	.332	.37	95,800
December	2,470	1,130	1,730	.357	.41	106,000
January	2,770	950	1,440	.297	.34	88,500
February	5,200	3,080	3,820	.788	.85	220,000
March	3,400	2,470	2,930	.604	.70	180,000
April	23,800	2,470	10,300	2.12	2.36	613,000
May	58,900	15,700	37,400	7.71	8.89	2,300,000
June	16,600	4,510	9,400	1.94	2.16	559,000
July	4,100	1,660	2,650	.546	.63	163,000
August	1,910	1,130	1,350	.278	.32	83,000
September	1,430	950	1,140	.235	.26	67,800
The year	58,900	950	6,310	1.30	17.68	4,580,000

SOUTH FORK OF CLEARWATER RIVER NEAR GRANGEVILLE, IDAHO

LOCATION.—In SE. ¼ NW. ¼ sec. 30, T. 30 N., R. 4 E. Boise meridian, below power house of Grangeville Electric Light & Power Co., 3 miles east of Mount Idaho, 6 miles southeast of Grangeville, Idaho County, and 19 miles above mouth.

DRAINAGE AREA.—940 square miles.

RECORDS AVAILABLE.—November 14, 1910, to July 31, 1911; October 9 to November 18, 1911; January 4, 1912, to September 30, 1916; April 1, 1923, to September 30, 1924.

GAGE.—Vertical and inclined staff on right bank 150 feet below power house; installed January 8, 1924; read by power-plant operators; chain gage at same site used prior to that date.

DISCHARGE MEASUREMENTS.—Made from cable one-fourth mile below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of large boulders; shifts only at high stages. Gradient steep. Channel curved at gage. Left bank subject to overflow during extremely high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.75 feet at 7 a. m. May 14 (discharge, 4,600 second-feet); minimum stage, 2.50 feet at 7 a. m. September 24 (discharge, 40 second-feet).

1910–1916; 1923–1924: Maximum stage recorded, 9.7 feet (old datum) May 30, 1912 (discharge, 9,830 second-feet); minimum stage occurred September 24, 1924.

ICE.—Stage-discharge relation seriously affected by ice during severe winters.

DIVERSIONS.—Low-water flow diverted through power plant. All water diverted for power purposes returned to river above gage.

REGULATION.—Operation of power plant causes fluctuation in stage.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined above 130 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good October to July; fair thereafter.

COOPERATION.—Gage-height record furnished by Grangeville Electric Light & Power Co.

Discharge measurements of South Fork of Clearwater River near Grangeville, Idaho, during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 8	3.17	222	Apr. 15	5.47	1,660	May 22	6.28	2,520
Jan. 9	3.09	209	May 2	7.13	3,650	July 21	3.61	420
Apr. 15	5.55	1,730	Do	7.08	3,520	Sept. 10	2.92	137

Daily discharge, in second-feet, of South Fork of Clearwater River near Grangeville, Idaho, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	157	204	231	106	370	348	325	3,310	1,260	370	117	84
2	157	243	151	60	470	325	420	3,590	1,260	370	117	58
3	151	243	216	157	420	370	470	4,010	1,260	370	117	68
4	151	231	223	120	370	370	470	4,010	1,180	370	103	91
5	134	216	120	60	420	370	445	3,450	1,040	348	109	79
6	151	193	325	144	445	348	570	2,910	1,040	370	91	84
7	284	186	316	178	420	420	1,040	2,650	1,110	325	84	58
8	445	193	272	216	495	325	1,600	2,650	1,110	316	84	98
9	395	178	223	196	420	289	1,600	2,910	1,040	272	91	98
10	348	157	151	220	395	348	1,790	3,310	970	247	91	120
11	316	144	114	208	370	325	1,990	4,010	850	239	98	109
12	298	151	193	171	370	325	1,890	4,150	910	223	79	103
13	264	186	151	138	395	348	2,090	4,300	850	231	79	103
14	264	204	272	200	420	348	2,190	4,300	790	239	75	68
15	223	223	264	164	470	370	1,690	4,150	730	208	109	98
16	325	223	223	182	470	302	1,420	3,870	702	196	91	75
17	325	193	120	164	445	260	1,260	3,730	675	186	117	75
18	325	120	223	164	420	302	1,260	3,450	850	193	117	75
19	298	66	223	131	420	395	1,260	3,310	850	307	161	103
20	284	178	186	117	370	370	1,340	2,910	730	495	260	117
21	272	243	120	157	395	325	1,420	2,530	620	445	193	109
22	445	223	71	182	370	316	2,090	2,410	570	302	157	103
23	445	216	204	171	370	302	2,410	2,190	570	239	131	98
24	325	264	264	164	325	325	2,300	2,090	520	235	98	62
25	298	420	223	157	325	280	2,090	2,410	520	216	109	125
26	272	325	204	171	325	280	2,090	1,990	470	193	109	148
27	255	231	204	164	325	370	2,300	1,790	495	164	109	148
28	243	264	186	171	370	370	2,410	1,690	470	148	91	131
29	223	284	223	171	325	370	2,530	1,600	420	148	103	125
30	216	325	168	193	-------	325	2,910	1,420	420	131	79	125
31	223	-------	134	231	-------	302	-------	1,340	-------	131	58	-------

Monthly discharge of South Fork of Clearwater River near Grangeville, Idaho, for the year ending September 30, 1924

[Drainage area, 940 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	445	134	275	0.293	0.34	16,900
November	420	66	218	.232	.26	13,000
December	325	71	200	.213	.25	12,300
January	231	60	162	.172	.20	9,960
February	495	325	397	.422	.46	22,800
March	420	260	336	.357	.41	20,700
April	2,910	325	1,590	1.69	1.89	94,600
May	4,300	1,340	2,980	3.17	3.66	183,000
June	1,260	420	809	.861	.96	48,100
July	495	131	265	.282	.33	16,300
August	260	58	111	.118	.14	6,820
September	148	58	97.9	.104	.12	5,830
The year	4,300	58	621	.661	9.02	450,000

TUCANNON RIVER NEAR POMEROY, WASH.

LOCATION.—In sec. 13, T. 11 N., R. 40 E., at highway bridge at abandoned post office of Marengo, 9 miles southwest of Pomeroy, Columbia County, 17½ miles north of Dayton, and 14 miles above Petaha Creek.

DRAINAGE AREA.—109 square miles (measured on Umatilla National Forest map, edition of 1922).

RECORDS AVAILABLE.—August 31, 1913, to June 30, 1915, March 1 to September 30, 1924.

GAGE.—Vertical staff in two sections on downstream corner of left bridge abutment; read by I. O. Hovrud. Previous gage was at same site but different datum.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Bed composed of gravel. Control formed by riffle 75 feet below gage; shifting at high water. Banks not subject to overflow. Stage of zero flow determined September 8, 1924, gage height 2.97 feet ± 0.1 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.0 feet May 3, 13, and 14 (discharge, 359 second-feet); minimum stage, 3.97 feet August 13 and 14 (discharge, 44 second-feet).

1913–1915; 1924: Maximum stage recorded, 2.55 feet at 4.40 p. m. April 15, 1914 (discharge, 370 second-feet); minimum stage, 1.20 feet at 7.30 a. m. December 24, 1914 (discharge, 25 second-feet).

ICE.—Stage-discharge relation seriously affected by ice for short periods during severe winters.

DIVERSIONS.—Several small diversions for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read once daily; to half tenths March 1 to April 27, and to hundredths, thereafter. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Tucannon River near Pomeroy, Wash., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	4.27	78.6	Apr. 27	4.61	194	July 19	4.09	65.1
Apr. 13	4.72	238	May 20	4.67	207	July 26	4.03	55.7
Apr. 17	4.55	174	May 25	4.52	170	Sept. 8	4.02	50.8

Daily discharge, in second-feet, of Tucannon River near Pomeroy, Wash., for the year ending September 30, 1924

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	122	306	118	60	49	51
2	162	122	315	112	58	49	53
3	162	122	359	110	58	49	53
4	162	122	332	105	58	49	51
5	148	122	292	105	60	51	51
6	148	135	260	105	63	49	53
7	148	135	240	112	63	49	51
8	135	162	240	112	63	48	53
9	135	192	260	110	58	48	58
10	135	192	292	105	56	48	56
11	135	210	315	108	56	46	53
12	135	228	342	105	58	46	53
13	135	232	359	98	58	44	51
14	135	228	359	92	56	44	51
15	122	228	342	89	54	46	51
16	135	210	315	87	56	48	49
17	135	186	292	85	58	53	49
18	135	177	268	87	60	49	53
19	122	162	260	81	63	53	56
20	122	162	260	77	77	58	58
21	122	162	221	71	67	58	60
22	122	192	210	69	65	58	58
23	110	192	192	67	63	58	58
24	110	199	177	67	62	58	58
25	110	192	168	67	58	56	60
26	110	192	162	67	58	54	60
27	110	203	151	67	54	51	62
28	122	221	140	67	53	49	60
29	122	248	138	63	53	49	58
30	110	268	130	63	51	51	58
31	110	------	122	------	51	51	------

Monthly discharge of Tucannon River near Pomeroy, Wash., for the year ending September 30, 1924

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March	162	110	131	8,060
April	268	122	184	10,900
May	359	122	252	15,500
June	118	63	89.0	5,300
July	77	51	59.0	3,630
August	58	44	50.6	3,110
September	62	49	54.9	3,270
The period				49,800

MISCELLANEOUS DISCHARGE MEASUREMENTS

Discharge measurements of streams in the Snake River Basin at points other than regular gaging stations, made during the year ending September 30, 1924, are listed in the following table:

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Aug. 2	Snake River	Columbia River	Sec. 24, T. 1 S., R. 36 E., three-fourths mile north of Firth, at former gaging station "Snake River at Firth, Idaho."	1.40	701
3	do	do	do	2.01	1,150
4	do	do	do	2.28	1,530
July 22	do	do	NE. ¼ sec. 5, T. 11 S., R. 20 E., above Dry Creek Falls, 1½ miles east of Murtaugh, Idaho.	.23	*a* 42.8
Aug. 20	do	do	do	.23	*a* 44.1
Sept. 11	do	do	do	.22	43.1
Aug. 13	Rainey Creek	Snake River	Above all diversions, near Irwin, Idaho.		15.0
11	do	do	Above Flemming head gate, near Irwin, Idaho.		1.5
13	Total diversions	Rainey Creek	Near Irwin, Idaho		8.5
Sept. 16	Great Feeder Canal	Snake River	Below White Canal heading, near Rigby, Idaho.		13.8
June 19	Lowder Slough Creek.	do	300 yards below head, near Ririe, Idaho.		27.2
July 1	do	do	do		50.6
21	do	do	do		50.8
26	do	do	do		*b* .3
May 27	Bannock Jim Slough Creek.	do	100 yards below head, near Thornton, Idaho.		81.2
July 13	Henrys Fork	do	2 miles below Yellowstone highway bridge, near Lake, Idaho.		215
Aug. 3	do	do	At Long Bridge, near Big Springs, Idaho.	4.40	599
July 11	Duck Creek	Henrys Fork	Near mouth, near Lake, Idaho		1.7
11	Rock Creek	do	do		*b* 6.0
11	Spring Creek	do	do		1.7
Aug. 4	West Twin Creek	do	do	.20	3.3
4	East Twin Creek	do	do	.20	4.0
July 11	Hope Creek	do	do		*b* 3.0
11	East Hope Creek	do	do		*b* 1.0
June 28	Targhee Creek	do	do		29.7
July 9	do	do	do		18.0
10	Howard Creek	do	do		5.1
13	Second Creek	do	do		2.9
10	Kooch ditch	do	At head, near Lake, Idaho		10.6
Aug. 4	Meadow Creek	do	One-half mile north of Sach ranch, near Lake, Idaho.	.20	.7
4	Jimmie Creek	do	Three-eighths mile west of Sach ranch, near Lake, Idaho.	.20	.6
2	Stevens Creek	do	Above Kooch ranch outlet near Lake, Idaho.	.60	8.5
June 18	Moose Creek	do	At bridge, three-fourths mile above mouth near Big Springs, Idaho.	1.78	22.0
July 14	do	do	do	1.72	21.0
Aug. 3	do	do	do	1.72	16.6
July 12	Island Park Land & Livestock Co.'s canal.	do	At head, near Island Park, Idaho.		24.1
26	Boom Creek Canal	Boom Creek	At head, near Squirrel, Idaho		1.8
25	Squirrel Creek Canal	Squirrel Creek	do		5.2
25	Conant Creek Canal	Conant Creek	do		16.4
May 7	Warm Springs Creek.	Canyon Creek	At mouth, near Pincock Hot Springs, Idaho.		5.0
June 11	do	do	do		5.9
July 19	do	do	do		4.5
Aug. 16	do	do	do		4.3

a Furnished by Idaho Power Co. *b* Estimated.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Sept. 13	Warm Springs Creek.	Canyon Creek	At mouth, near Pincock Hot Springs, Idaho.		4.3
12-14	Aggregate surface inflow.	Snake River	Between Shelley and Blackfoot Bridge gaging stations, Idaho.		34.6
12-14	Aggregate surface inflow excepting Blackfoot River.	do	Between Blackfoot Bridge and Clough ranch gaging stations, Idaho.		9.8
July 25	Spring Creek	Blackfoot River	Sec. 17, T. 6 S., R. 42 E., 1½ miles southwest of Henry, Idaho.		[b] 6.3
Aug. 4	do	do	do		[b] 7.2
Aug. 11	do	do	do		[c] 5.1
Sept. 11	do	do	do		[c] 8.6
11	do	do	do		[c] 8.3
8	Little Blackfoot River.	do	NE. ¼ sec. 9, T. 6 S., R. 42 E., 400 yards below post office of Henry, Idaho.		[c] 19.4
11	do	do	NE. ¼ sec. 9, T. 6 S., R. 42 E., 600 yards below post office of Henry, Idaho.		[c] 37.9
11	do	do	do		[c] 32.3
19	do	do	NE. ¼ sec. 9, T. 6 S., R. 42 E., 800 yards below post office of Henry, Idaho.		37.1
July 15	Corral Creek	Blackfoot River	Sec. 16, T. 5 S., R. 40 E., 14 miles northwest of Henry, Idaho.		[c] 7.5
29	do	do	do		[c] 5.9
21	Brush Creek	do	SW. ¼ sec. 33, T. 3S., R. 39 E., at junction with Rawlings Creek, 19 miles southeast of Shelley, Idaho.		[c] 11.4
29	do	do	do		[c] 10.9
Aug. 25	do	do	do		[c] 11.3
Sept. 12	do	do	do		[c] 11.3
Aug. 1	Wood Creek	do	Sec. 10, T. 3 S., R. 38 E., 16 miles southeast of Shelley, Idaho.		[c] 1.9
May 30	Camas Creek	Mud Lake	Sec. 19, T. 10 N., R. 38 E., at Jacoby ranch, 11 miles east of Dubois, Idaho.		7.3
July 4	do	do	do		5.7
Sept. 7	do	do	do		8.6
Oct. 28	do	do	Sec. 10, T. 8 N., R. 36 E., at Cottonwood ranch, 2 miles northeast of Camas, Idaho.	0.92	31.5
Mar. 8	do	do	do	2.56	7.1
Apr. 14	do	do	do	.90	65.1
Oct. 22	do	do	NW. ¼ sec. 36, T. 7 N., R. 35 E., at highway bridge, 5 miles southwest of Hamer, Idaho.		109
Mar. 9	do	do	do		90.9
Apr. 16	do	do	do		205
May 6	do	do	do		135
12	do	do	do		107
June 1	do	do	do		50.7
July 6	do	do	do		30.8
Sept. 8	do	do	do		42.8
May 13	Woods Hump ditch	Camas Creek	Sec. 21, T. 12 N., R. 38 E., 4 miles below head, 10 miles east of Spencer, Idaho.		8.8
30	do	do	do		7.4
July 4	do	do	do		Dry.
Sept. 7	do	do	do		Dry.
May 13	Woods Lucky Strike ditch.	do	Sec. 36, T. 12 N., R. 38 E., 3 miles below head, 5 miles south of Kilgore, Idaho.		11.9
30	do	do	do		18.8
July 4	do	do	do		Dry.
Sept. 7	do	do	do		Dry.
May 30	Woods No. 1 ditch	do	Sec. 19, T. 11 N., R. 39 E., 1 mile below head, 10 miles south of Kilgore, Idaho.		[b] .4
July 4	do	do	do		Dry.
Sept. 7	do	do	do		Dry.

[b] Estimated. [c] Furnished by United States Office of Indian Affairs.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
May 30	Woods Woodie ditch	Camas Creek	Sec. 26, T. 11 N., R. 38 E., 1 mile below head, 10 miles south of Kilgore, Idaho.		1.6
July 4	do	do	do		Dry.
Sept. 7	do	do	do		Dry.
May 30	Jacoby ditch	do	Sec. 17, T. 10 N., R. 38 E., one-fourth mile below head, 11 miles east of Dubois, Idaho.		1.0
July 4	do	do	do		1.9
Sept. 7	do	do	do		3.3
May 13	Beaver Creek	do	NE. ¼ sec. 23. T. 12 N., R. 36 E., one-fourth mile southeast of Spencer, Idaho.		27.9
31	do	do	do		13.8
July 3	do	do	do		2.5
May 13	Rattlesnake Creek	Beaver Creek	NW. ¼ sec. 31, T. 12 N., R. 37 E., 3 miles southeast of Spencer, Idaho.		4.3
July 3	do	do	do		Dry.
Oct. 22	Rays Lake Irrigating Co.'s canal.	Rays Lake	SE. ¼ sec. 30, T. 7 N., R. 36 E., 4 miles southwest of Hamer, Idaho.		Dry.
Mar. 9	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
12	do	do	do		6.0
31	do	do	do		8.5
July 5	do	do	do		5.8
Sept. 8	do	do	do		Dry.
Oct. 22	Holy Water Users Canal.	Camas Creek	NW. ¼ sec. 36, T. 7 N., R. 35 E., three-fourths mile below Rays Lake, 5 miles southwest of Hamer, Idaho.		Dry.
27	do	do	do		17.9
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
12	do	do	do		Dry.
31	do	do	do		19.0
June 1	do	do	do		Dry.
July 6	do	do	do		16.6
Sept. 9	do	do	do		15.0
Oct. 22	Binnard Ranch Co.'s pump canal.	Mud Lake	NE. ¼ sec. 9, T. 6 N., R. 35 E., 8 miles southwest of Hamer, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		5.2
June 1	do	do	do		5.8
July 6	do	do	do		2.7
Sept. 9	do	do	do		Dry.
Oct. 22	Binnard Ranch Co.'s gravity ditch.	do	Sec. 8, T. 6 N., R. 35 E., 9 miles southwest of Hamer, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		2.9
June 1	do	do	do		Dry.
July 6	do	do	do		Dry.
Sept. 9	do	do	do		Dry.
Oct. 22	Melton gravity ditch.	do	NE. ¼ sec. 13, T. 6 N., R. 34 E., 2 miles northeast of Terreton, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		[b]1.0
June 1	do	do	do		Dry.
July 6	do	do	do		Dry.
Sept. 9	do	do	do		Dry.

[b] Estimated.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Mar. 10	First Owsley segregation pump canal.	Mud Lake	On line between secs. 23 and 24, T. 6 N., R. 34 E., 1 mile east of Terreton, Idaho.		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		114
June 2	do	do	do		115
29	do	do	do		73.9
July 7	do	do	do		43.7
Sept. 10	do	do	do		19.6
11	do	do	do		18.6
July 7	First Owsley segregation pump canal (east branch).	First Owsley segregation pump canal.	On line between secs. 24 and 25, T. 6 N., R. 34 E., 1.7 miles southeast of Terreton, Idaho.		16.0
Sept. 11	do	do	do		Dry.
July 7	First Owsley segregation pump canal (west branch).	do	On line between secs. 23 and 26, T. 6 N., R. 34 E., 1.7 miles southeast of Terreton, Idaho.		13.0
Sept. 11	do	do	do		19.0
11	do	do	On line between secs. 20 and 21, T. 6 N., R. 34 E., 2 miles west of Terreton, Idaho.		14.3
July 7	Inflow into First Owsley segregation pump canal (west branch).	Second Owsley and Mud Lake pump canal.	SE. ¼ sec. 22, T. 6 N., R. 34 E., 1 mile south of Terreton, Idaho.		10.3
7	Rickman ditch	First Owsley segregation pump canal (west branch).	About sec. 27, T. 6 N., R. 34 E., 1½ miles southwest of Terreton, Idaho.		8.0
7	Bartlett ditch	do	About NE. ¼ sec. 29, T. 6 N., R. 34 E., 2½ miles southwest of Terreton, Idaho.		2.8
Oct. 22	Second Owsley and Mud Lake pump canal.	Mud Lake	SE. ¼ sec. 15, T. 6 N., R. 34 E., at Terreton, Idaho		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		65.5
June 2	do	do	do		74.4
Oct. 22	Miller pump ditch [d]	Second Owsley and Mud Lake pump canal.	SE. ¼ sec. 15, T. 6 N., R. 34 E., one-half mile north of Terreton, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
15	do	do	do		Dry.
June 2	do	do	do		[b] 4.0
July 6	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
Oct. 22	Jensen pump ditch	do	SW. ¼ sec. 14, T. 6 N., R. 34 E., one-half mile north of Terreton, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		2.5
June 2	do	do	do		2.1
July 6	do	do	do		2.2
7	do	do	do		2.3
Sept. 10	do	do	do		Dry.
Oct. 22	Jemmett pump ditch	do	SE. ¼ sec. 15, T. 6 N., R. 34 E., at Terreton, Idaho.		Dry.
Mar. 10	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
14	do	do	do		2.8
June 2	do	do	do		2.6
July 6	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
Mar. 26	Sykes gravity ditches.	Mud Lake	NE. ¼ sec. 15, T. 6 N., R. 34 E., three-fourths mile north of Terreton, Idaho.		Dry.
May 4	do	do	do		Dry.
14	do	do	do		3.9
e 2	do	do	do		Dry.
y 6	do	do	do		Dry.
pt. 10	do	do	do		Dry.

[b] Estimated.

[d] Formerly known as Miller-Cutler pump ditch.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft*
May 15	Miller gravity ditch	Mud Lake	NW. ¼ sec. 15, T. 6 N., R. 34 E., 1.7 miles northwest of Terreton, Idaho.		[b] 0.8
June 2	do	do	do		Dry.
July 7	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
Mar. 11	Comstock ditch	do	On line between secs. 9 and 16, T. 6 N., R. 34 E., 1.7 miles northwest of Terreton, Idaho.		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
15	do	do	do		[b] 6.0
June 2	do	do	do		Dry.
July 7	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
Oct. 23	Welchman gravity ditch.	do	SE. ¼ sec. 32, T. 7 N., R. 34 E., 4 miles northwest of Terreton, Idaho.		Dry.
Mar. 11	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
15	do	do	do		[b] 1.5
June 2	do	do	do		[b] 1.0
July 7	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
Oct. 23	Owsley cooperative canal.	do	do		Dry.
Mar. 26	do	do	do		[b] 7.0
May 4	do	do	do		[b] 4.5
June 2	do	do	do		[b] 7.5
Sept. 9	do	do	do		Dry.
July 8	Underwood ditch	Owsley cooperative canal.	do		1.5
Oct. 23	Ferrusi gravity ditch.	Mud Lake	NE. ¼ sec. 32, T. 7 N., R. 34 E., 4½ miles northwest of Terreton, Idaho.		Dry.
Mar. 11	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
15	do	do	do		3.9
June 2	do	do	do		Dry.
July 7	do	do	do		Dry.
Sept. 9	do	do	do		Dry.
Mar. 11	Nordstrum-Harwood gravity ditch.	do	Sec. 29, T. 7 N., R. 34 E., 5 miles northwest of Terreton, Idaho.		Dry.
26	do	do	do		Dry.
May 4	do	do	do		Dry.
15	do	do	do		[b] 1.5
June 2	do	do	do		Dry.
Sept. 10	do	do	do		Dry.
May 15	Nordstrum-Abbott gravity ditch.	do	Sec. 21, T. 7 N., R. 34 E., 5 miles northwest of Terreton, Idaho.		[b] 1.0
June 2	do	do	do		Dry.
July 7	do	do	do		[b] .2
Sept. 9	do	do	do		Dry.
Mar. 26	Jefferson Reservoir Canal.	Jefferson Lake	SW. ¼ sec. 16, T. 7 N., R. 34 E., 6½ miles northwest of Terreton, Idaho.		Dry.
May 4	do	do	do		[b] 9.0
15	do	do	do		31.3
June 2	do	do	do		[b] 3.5
July 7	do	do	do		12.4
Sept. 9	do	do	do		4.3
Oct. 22	Hamer Canal Co.'s pump canal.	Hamer Lake	SW. ¼ sec. 14, T. 7 N., R. 36 E., one-half mile northeast of Hamer, Idaho.		Dry.
Mar. 9	do	do	do		Dry.
26	do	do	do		Dry.
May 4	do	do	do		16.8
12	do	do	do		13.4
31	do	do	do		12.0
July 5	do	do	do		15.4
Sept. 8	do	do	do		11.3
July 5	Hamer Canal Co.'s artesian well.	do	E. ½ sec. 14, T. 7 N., R. 36 E., 1 mile northeast of Hamer, Idaho.		2.2

[b] Estimated

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
June 3	Birch Creek	Snake River	Sec. 13, T. 10 N., R. 29 E., 45 miles west of Dubois, Idaho.	1.95	84.2
May 29	Little Lost River	do	Sec. 11, T. 6 N., R. 28 E., 8 miles northwest of Howe, Idaho.		64.4
June 22	do	do	do		69.8
May 27	Big Lost River	do	Sec. 22, T. 4 N., R. 26 E., 3½ miles west of Arco, Idaho.		52.9
27	Era Canal	Big Lost River	Sec. 30, T. 4 N., R. 26 E., 7 miles west of Arco, Idaho.	3.12	167
27	Lower Blaine Canal	Era Canal	On line between secs. 29 and 30, T. 4 N., R. 26 E., 6 miles west of Arco, Idaho.	.94	65.4
Oct. 20	Portneuf River	Snake River	SW. ¼ SW. ¼ sec. 3, T. 8 S., R. 38 E., 0.7 mile north of Pebble, Idaho.	1.42	117
Mar. 2	do	do	do	.91	143
May 7	do	do	do	1.70	148
June 8	do	do	do	2.99	161
July 18	do	do	do	1.32	164
Sept. 21	do	do	do	1.26	89.6
July 22	Devils Washbowl	do	Sec. 4, T. 10 S., R. 18 E., 4 miles north of Kimberly, Idaho.		[a] 16.7
Aug. 19	do	do	do		[a] 15.2
July 21	Devils Corral	do	At upper outlet in sec. 32, T. 9 S., R. 18 E., 4½ miles north of Kimberly, Idaho.		[a] 41.5
Sept. 12	do	do	do		43.6
Nov. 1	Blue Lakes outlet	do	SW. ¼ SW. ¼ sec. 28, T. 9 S., R. 17 E., 200 feet below highway bridge at Blue Lakes ranch, 4 miles north of Twin Falls, Idaho.	.94	220
Apr. 16	do	do	do	.86	186
May 18	do	do	do	.90	187
June 6	do	do	do	.93	193
July 21	do	do	do	.90	[a] [e] 208
24	do	do	do	.90	192
Aug. 19	do	do	do	.91	[a] 198
Sept. 11	do	do	do	.91	194
July 20	Crystal Springs	do	Sec. 7, T. 9 S., R. 16 E., and sec. 12, T. 9 S., R. 15 E., 6 miles northwest of Filer, Idaho.		[a] 407
Aug. 18	do	do	do		[a] 478
Sept. 9	do	do	do		486
July 19	Niagara Springs	do	Sec. 4, T. 9 S., R. 15 E., 6 miles northeast of Buhl, Idaho.		[a] 218
Aug. 17	do	do	do		[a] 226
Sept. 9	do	do	do		215
Aug. 17	Niagara Springs diversions	Niagara Springs	do		[a] 33.2
Sept. 9	do	do	do		27.2
July 19	Clear Lakes outlet	Snake River	Sec. 1, T. 9 S., R. 14 E., 5 miles north of Buhl, Idaho.		[a] 501
Aug. 17	do	do	do		[a] 495
July 16	Briggs Springs	do	Sec. 3, T. 9 S., R. 14 E., at ford above ranch house, 5½ miles northwest of Buhl, Idaho.		[a] 110
Aug. 17	do	do	do		[a] 111
Sept. 10	do	do	do		113
July 15	Banbury Springs	do	Sec. 33, T. 8 S., R. 14 E., at mouth, 7 miles northwest of Buhl, Idaho.		[a] 95.4
Aug. 16	do	do	do		[a] 93.8
Sept. 8	do	do	do		101
Aug. 16	Box Canyon	do	Sec. 28, T. 8 S., R. 14 E., below falls three-fourths mile from Snake River, 8½ miles northwest of Buhl, Idaho.		[a] 303
Sept. 8	do	do	do		264
July 15	Sand Springs	do	Sec. 17, T. 8 S., R. 14 E., 6 miles southeast of Hagerman, Idaho.		[f] 82.6
Aug. 15	do	do	do		[a] [g] 73.7
Sept. 7	do	do	do		[h] 79.6

[a] Furnished by Idaho Power Co.
[e] Includes 11.3 second-feet diverted.
[f] Includes 17.6 second-feet diverted.
[g] Includes 20.0 second-feet diverted.
[h] Includes 18.5 second-feet diverted.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Aug. 16	Tailrace from Thousand Springs power plant.	Thousand Springs (east and west channels).	Sec. 8, T. 8 S., R. 14 E., 5 miles southeast of Hagerman, Idaho.		[a] 509
Sept. 8	do	do	do		509
July 14	Thousand Springs (east channel).	Snake River	On line between secs. 8 and 17, T. 8 S., R. 14 E., 5 miles southeast of Hagerman, Idaho.		[a] 634
Aug. 16	do	do	do		[a] 526
Sept. 8	do	do	do		544
July 14	Thousand Springs (west channel).	do	Sec. 8, T. 8 S., R. 14 E., 5 miles southeast of Hagerman, Idaho.		[a] 252
Aug. 16	do	do	do		[a] 243
Sept. 8	do	do	do		238
July 14	Inflow into Thousand Springs (west channel).	Thousand Springs (west channel).	do		[a] 48.9
Aug. 15	do	do	do		[a] 50.2
Sept. 7	do	do	do		[i] 48.3
July 12	Springs	Snake River	Sec. 7, T. 8 S., R. 14 E., 4 miles southeast of Hagerman, Idaho.		[a] 107
Aug. 14	do	do	do		[a] 104
Sept. 6	do	do	do		120
July 14	do	do	Sec. 6, T. 8 S., R. 14 E., 4 miles southeast of Hagerman, Idaho.		[a] 48.2
Aug. 14–15.	do	do	do		[a] 45.0
Sept. 7	do	do	do		42.4
July 14	do	do	Sec. 6, T. 8 S., R. 14 E., 4 miles southeast of Hagerman, Idaho.		[a] .8
Aug. 14	do	do	do		[a] .7
Sept. 7	do	do	do		[b] 2.0
July 14	do	do	Sec. 6, T. 8 S., R. 14 E., 4 miles southeast of Hagerman, Idaho.		[a] 23.3
Aug. 14	do	do	do		[a] 17.9
Sept. 7	do	do	do		16.5
Aug. 15	Riley Creek	do	Sec. 6, T. 8 S., R. 14 E., 3½ miles southeast of Hagerman, Idaho.		[a] 57.0
Sept. 6	do	do	do		67.7
July 12	do	do	Sec. 1, T. 8 S., R. 13 E., below diversions, 3 miles southeast of Hagerman, Idaho.		[a] 117
Aug. 14	do	do	do		[a] 113
Sept. 6	do	do	do		128
July 12	Tucker Springs	Riley Creek	Sec. 6, T. 8 S., R. 14 E., 3½ miles southeast of Hagerman, Idaho.		[a] 78.4
12	Buckeye ditch and other diversions.	Riley Creek and Tucker Springs.	Sec. 31, T. 7 S., R. 14 E., and sec. 36, T. 7 S., R. 13 E., 3 miles southeast of Hagerman, Idaho.		[a] 35.6
Aug. 14	do	do	do		[a] 51.2
Sept. 6	do	do	do		32.5
July 10	Billingsley Creek	Snake River	Sec. 12, T. 7 S., R. 13 E., below diversions at State highway bridge, 2 miles northeast of Hagerman, Idaho.		[a] 45.1
Aug. 13	do	do	do		[a] 42.1
Sept. 5	do	do	do		63.1
July 10	Diversions	Billingsley Creek	Sec. 12, T. 7 S., R. 13 E., 2 miles northeast of Hagerman, Idaho.		[ai] 42.2
Aug. 13	do	do	do		[a] 57.5
Sept. 5	do	do	do		41.9
July 9	Big Wood River	Snake River	Sec. 36, T. 6 S., R. 13 E., above upper dam, 4½ miles north of Hagerman, Idaho.	2.79	[a] 601
Aug. 12	do	do	do	2.78	[a] 620
Sept. 5	do	do	do	2.78	623

[a] Furnished by Idaho Power Co.
[b] Estimated.
[i] Water from wasteway not measured.
[i] Some ditches omitted.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
July 8	Big Wood River	Snake River	Sec. 34, T. 6 S., R. 13 E., 4 miles north of Hagerman, Idaho.	1.4	[a] 197
17	do	do	do	1.3	[a] 178
Aug. 12	do	do	do	1.34	[a] 196
Sept. 5	do	do	do	1.39	215
July 8	Malad flume	Big Wood River	NW. ¼ NE. ¼ sec. 34, T. 6 S., R. 13 E., above King Hill ditch, 4 miles north of Hagerman, Idaho.		[a] 953
17	do	do	do		[a] 1,020
Aug. 12	do	do	do		[a] 995
Sept. 5	do	do	do		975
July 9	King Hill ditch	Malad flume	Sec. 28, T. 6 S., R. 13 E., 4½ miles north of Hagerman, Idaho.		[a] 293
Aug. 13	do	do	do		[a] 301
Sept. 4	do	do	do		274
4	Frazier Spring	Rattlesnake Creek	About 2 miles north of Mountain Home, Idaho.		[k] 1
Aug. 15	Rattlesnake Creek	South Fork of Boise River.	Sec. 27, T. 3 N., R. 6 E., 7 miles northwest of Lenox, Idaho.	1.18	4.8
15	Willow Creek	do	Sec. 1, T. 2 N., R. 5 E., 10 miles northwest of Lenox, Idaho.		[k] 2
Apr. 13	Malheur River	Snake River	SE. ¼ sec. 3, T. 22 S., R. 36 E., at former gaging station near Drewsey, Oreg.	1.69	230
June 4	do	do	do	.08	18.7
Apr. 12	North Fork of Malheur River.	Malheur River	SW. ¼ sec. 22, T. 20 S., R. 37 E., at former gaging station near Juntura, Oreg.	1.86	182
11	Bully Creek	do	At former gaging station at Westfall, Oreg.	1.22	[b] 1.0
Sept. 16	North Fork of Payette River.	Payette River	Sec. 29, T. 10 N., R. 3 E., 6½ miles north of Banks, Idaho.	1.35	170
Dec. 20	do	do	Sec. 28, T. 9 N., R. 3 E., three-fifths mile above Banks, Idaho.		233
Oct. 30	Weiser Irrigation District Canal.	Weiser River	SW. ¼ sec. 29, T. 11 N., R. 5 W., at pumping station at Weiser, Idaho.	1.27	8.1
Apr. 25	do	do	do	2.56	104
May 15	do	do	do	3.07	137
June 3	do	do	do	2.58	101
15	do	do	do	2.74	56.8
24	do	do	do	3.62	136
Aug. 1	do	do	do	2.54	35.4
Sept. 22	do	do	do	2.51	16.1
Oct. 13	Warm Springs Creek	Salmon River	Sec. 27, T. 11 N., R. 15 E., 14 miles west of Clayton, Idaho.	1.44	64.2
Aug. 7	Elk Creek	South Fork of Salmon River.	Sec. 15, T. 21 N., R. 7 E., 13 miles southeast of Warren, Idaho.		21.5
July 16	Selway River (head of Clearwater River).	Snake River	2 miles above Goat Creek, Idaho.		313
Aug. 19	Clearwater River	do	At 18th Street Bridge, Lewiston, Idaho.		2,830
21	do	do	do		4,040
Sept. 13	do	do	At Spalding Bridge, near Lewiston, Idaho.		2,180
July 16	Running Creek	Selway River	At mouth, Idaho		52.0
16	Goat Creek	do	do		20.4
11	Bear Creek	do	do		134
11	Indian Creek	do	do		35.8
8	Moose Creek	do	Above North Fork of Moose Creek, Idaho.		165
8	North Fork of Moose Creek.	Moose Creek	At mouth, Idaho		137
5	Meeker Creek	Selway River	do		6.6
5	Three Link Creek	do	do		71.7
June 26	Meadow Creek	do	do		378
26	Gedney Creek	do	do		122
20	Nineteenmile Creek	do	do		4.9
20	Rock Cliff Creek	do	do		14.5
19	O'Hara Creek	do	do		81.1

[a] Furnished by Idaho Power Co. [b] Estimated [k] Measured by improvised Cippoletti weir.

Miscellaneous discharge measurements in Snake River drainage basin during the year ending September 30, 1924—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
July 27	Lochsa River	Clearwater River	1 mile below Papoose Creek, Idaho.		320
Aug. 9	do	do	One-fourth mile above Sherman Creek, Idaho.		352
July 29	Squaw Creek	Lochsa River	At mouth, Idaho		16.0
29	Warm Springs Creek	do	do		44.7
Aug. 11	Fish Creek	do	do		41.5
June 9	Clear Creek	Clearwater River	do		56.3
Sept. 5	Little North Fork of Clearwater River.	North Fork of Clearwater River.	do		166

INDEX