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UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary
GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 629

# SURFACE WATER SUPPLY *of the* UNITED STATES 1926

## PART IX
## COLORADO RIVER BASIN

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Prepared in cooperation with
THE STATES OF COLORADO, WYOMING
UTAH, CALIFORNIA, and ARIZONA


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# SURFACE WATER SUPPLY OF THE COLORADO RIVER BASIN, 1926

## AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting records of measurements of flow made on streams in the United States during the year ending September 30, 1926.

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. 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, 1895–1926*

| | | | |
|---|---|---|---|
| 1895 | $12,500.00 | 1911–1917 | $150,000.00 |
| 1896 | 24,500.00 | 1918 | 175,000.00 |
| 1897–1899 | 50,000.00 | 1919 | 148,244.10 |
| 1900 | 70,000.00 | 1920 | 175,000.00 |
| 1901–2 | 100,000.00 | 1921–1923 | 180,000.00 |
| 1903–1906 | 200,000.00 | 1924–25 | 170,000.00 |
| 1907 | 150,000.00 | 1926 | 165,000.00 |
| 1908–1910 | 100,000.00 | 1927 | 151,000.00 |

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 8.

Measurements of stream flow have been made at about 5,250 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1926, 1,730 gaging stations were being maintained by the Geological 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.

## 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, and acre-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 below the gage which determines 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, 1925, and ending September 30, 1926. At the beginning of Janu-

ary in most parts of the United States much of the precipitation in the preceding three months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as ground water, 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

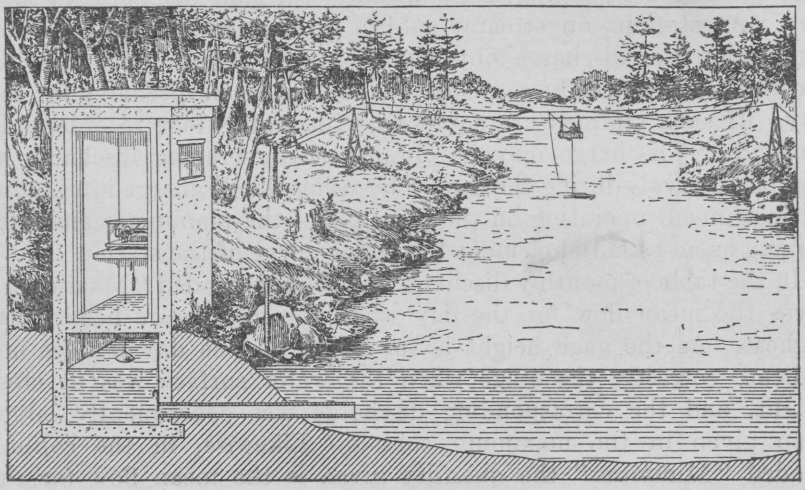

FIGURE 1.—Typical gaging station

direct readings 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. The general methods are 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.

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 results 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 heights and results of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any condition 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 of 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 discharge at regular intervals during the day or by using the 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 for each 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, measurements 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 daily gage heights 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 main 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" published in earlier reports by the Geological Survey should be used with caution because of possible inherent but unknown sources of error.

Many gaging stations on streams in the irrigated areas of the United States are situated 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 stations 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, underground 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 bulletins, professional papers, annual reports, and monographs.

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.
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*, Pacific slope basins in Oregon and lower Columbia River Basin.

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 in the United States.

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

Augusta, Me., State House.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 64 State Capitol.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., 423 Statehouse Annex.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 630 Power Building.
Tuscaloosa, Ala., Post Office Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Madison, Wis., 337N State Capitol.
Thief River Falls, Minn., 618 Knight Avenue north.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.
Tucson, Ariz., 104 Agricultural Building, University of Arizona.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.

Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 45–46 Federal Building.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Honolulu, Hawaii, Territorial Office Building.

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

Stream-flow records have been obtained at about 5,250 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. |
| W 601 to 614 | do | 1925. |
| W 621 to 634 | do | 1926. |

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 1922. The data for any particular station will, as a rule, be found in the reports covering the years during which the station was maintained. For example, data for Machias River at Whitneyville, Me., 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, 1899–1926*

[For basins included see p. 6]

| Year | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII–A | XII–B | XII–C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 [a] | 35 | [b] 35, 36 | 36 | 36 | 36 | [c] 36, 37 | 37 | 37 | [d] 37, 38 | 38, [e] 39 | 38, [f] 39 | 33 | 38 | 38 |
| 1900 [g] | 47, [h] 48 | 48 | 48, [i] 49 | 49 | 49 | 49, [i] 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] 179, 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 |
| 1925 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 |
| 1926 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 |

[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 Kerns 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

The work in Arizona, Utah, and Wyoming was carried on under cooperative agreement between the United States Geological Survey and the States. Special acknowledgments are due to the cooperating State officials, F. P. Trott, State water commissioner of Arizona; G. M. Bacon, State engineer of Utah; and F. C. Emerson, State engineer of Wyoming.

The State engineer of Colorado, M. C. Hinderlider, furnished field data for some stations in Colorado and complete records for other stations.

The United States Bureau of Reclamation paid the gage observer on Taylor River at Almont, Colo.

The United States Weather Bureau paid the gage observer for the station on Green River at Green River, Wyo.

The United States Indian Service assisted in the maintenance of stations on Gila River near San Carlos and Kelvin, Ariz. Financial assistance for work on Colorado River in Arizona was furnished by the United States Bureau of Reclamation, the Federal Power Commission, the United States Weather Bureau, the State of California, the city of Los Angeles, the Palo Verde Irrigation District, and Southern California Edison Co.

Assistance in the collection of data was rendered by Utah Power & Light Co., Best Flume & Power Co., Vernal Milling & Light Co., Redlands Irrigation Co., John L. Fish, and Gila Water Co.

## DIVISION OF WORK

Data for stations in Arizona were collected and prepared for publication under the direction of W. E. Dickinson, district engineer, who was assisted by D. A. Dudley, J. H. Gardiner, D. H. Barber, B. S. Barnes, J. A. Baumgartner, W. E. Code, K. C. McCarter, G. S. Hayes, and J. E. Klohr.

Data for stations in Colorado and Wyoming were collected and prepared for publication under the direction of Robert Follansbee, district engineer who was assisted by P. V. Hodges and Miss Nellie L. Esterly.

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

The records were reviewed and the manuscript assembled by B. J. Peterson.

# GAGING-STATION RECORDS

## COLORADO RIVER BASIN

### COLORADO RIVER AND TRIBUTARIES ABOVE GREEN RIVER

#### COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.

LOCATION.—In sec. 2, T. 1 N., R. 78 W., at highway bridge near Denver & Salt Lake Railroad station in Hot Sulphur Springs, Grand County. Nearest tributary, Ute Bill Creek, enters some distance upstream.

DRAINAGE AREA.—785 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—July 22, 1904, to September 30, 1909; September 23, 1910, to September 30, 1924; October 1, 1925, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by C. S. Jenne.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of well-compacted gravel; control 150 feet downstream; somewhat shifting. Banks subject to overflow at extreme high stage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.4 feet at 7.30 p. m. June 7 (discharge, 5,950 second-feet); minimum discharge occurred during winter.

1904–1909; 1910–1924; 1926: Maximum stage recorded, 8.7 feet at 5 a. m. June 15, 1921 (discharge, 10,300 second-feet); minimum discharge, 63 second-feet February 25 and 26, 1908.

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

DIVERSIONS.—Water diverted from Colorado River and tributaries above station for irrigation of 18,000 acres. In addition, 14,400 acre-feet was diverted into Cache la Poudre drainage basin during 1926.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. Rating curve well defined. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method October 7 to November 13. Records good except for periods of missing gage heights and for periods affected by ice, for which they are fair.

*Discharge measurements of Colorado River at Hot Sulphur Springs, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft* |
| Oct. 27 | 1.88 | 353 | Apr. 6 | [a] 3.00 | 209 | Aug. 12 | 2.57 | 640 |
| Dec. 8 | | 133 | May 13 | 3.50 | 1,180 | Sept. 22 | 1.56 | 164 |
| Jan. 26 | | 135 | June 11 | 6.88 | 4,900 | | | |
| Feb. 24 | | 108 | July 13 | 4.70 | 1,900 | | | |

[a] Stage-discharge relation affected by ice.

NOTE.—Measurements made by employees of the State engineer.

*Daily discharge, in second-feet, of Colorado River at Hot Sulphur Springs, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|
| 1 | 300 | 292 | 1,770 | 4,280 | 2,600 | 700 | 284 |
| 2 | 275 | 288 | 1,830 | 4,540 | 2,620 | 558 | 271 |
| 3 | 280 | 292 | 1,980 | 4,630 | 2,640 | 644 | 263 |
| 4 | 350 | 288 | 2,480 | 4,840 | 2,530 | 711 | 292 |
| 5 | 410 | 204 | 2,800 | 4,600 | 2,600 | 700 | 305 |
| 6 | 440 | 288 | 3,000 | 4,900 | 2,260 | 722 | 310 |
| 7 | 471 | 276 | 2,640 | 5,910 | 2,340 | 814 | 280 |
| 8 | 431 | 250 | 1,980 | 5,710 | 2,930 | 856 | 292 |
| 9 | 388 | 225 | 1,710 | 5,320 | 2,370 | 797 | 280 |
| 10 | 369 | 212 | 1,720 | 4,900 | 2,840 | 780 | 251 |
| 11 | 417 | 200 | 1,430 | 4,840 | 2,280 | 700 | 239 |
| 12 | 466 | 196 | 1,250 | 4,660 | 1,950 | 628 | 239 |
| 13 | 441 | 204 | 1,180 | 5,510 | 1,860 | 589 | 235 |
| 14 | 417 | | 1,090 | 4,980 | 1,770 | 522 | 227 |
| 15 | 431 | | 1,170 | 4,370 | 1,730 | 486 | 215 |
| 16 | 412 | 157 | 1,360 | 4,460 | 1,590 | 486 | 204 |
| 17 | 402 | | 1,570 | 3,950 | 1,530 | 486 | 200 |
| 18 | 388 | | 1,750 | 3,620 | 1,510 | 456 | 215 |
| 19 | 359 | | 1,720 | 3,270 | 1,490 | 456 | 185 |
| 20 | 355 | | 1,980 | 3,000 | 1,370 | 407 | 178 |
| 21 | 332 | | 2,620 | 2,450 | 1,370 | 388 | 163 |
| 22 | 323 | | 3,180 | 2,340 | 1,290 | 388 | 163 |
| 23 | 341 | 135 | 3,700 | 2,120 | 1,170 | 359 | 160 |
| 24 | 336 | | 4,200 | 2,080 | 1,030 | 341 | 153 |
| 25 | 341 | | 4,420 | 2,230 | 885 | 341 | 149 |
| 26 | 323 | | 4,540 | 2,340 | 944 | 314 | 149 |
| 27 | 350 | | 5,080 | 2,560 | 914 | 314 | 163 |
| 28 | 328 | 145 | 4,460 | 2,640 | 897 | 314 | 171 |
| 29 | 355 | | 4,320 | 2,530 | 914 | 305 | 163 |
| 30 | 332 | | 3,700 | 2,600 | 838 | 271 | 160 |
| 31 | 341 | ------- | 4,030 | ------- | 856 | 263 | ------- |

NOTE.—No gage-height record Oct. 1–6; stage-discharge relation affected by ice Nov. 8–9 and 14–30; discharge based on comparison with flow of Colorado River at Glenwood Springs. Braced figures give mean discharge for period indicated.

*Monthly discharge of Colorado River at Hot Sulphur Springs, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 471 | 275 | 371 | 22,800 |
| November | 292 | ---------- | 190 | 11,300 |
| May | 5,080 | 1,090 | 2,600 | 160,000 |
| June | 5,910 | 2,080 | 3,870 | 230,000 |
| July | 2,930 | 838 | 1,740 | 107,000 |
| August | 856 | 263 | 519 | 31,900 |
| September | 310 | 149 | 219 | 13,000 |

### COLORADO RIVER AT GLENWOOD SPRINGS, COLO.

LOCATION.—In sec. 9, T. 6 S., R. 89 W., at Glenwood Springs, Garfield County No Name Creek enters Colorado River 2 miles above station and Roaring Fork enters half a mile below.

DRAINAGE AREA.—4,560 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—January 1, 1900, to September 30, 1926, also May 12 to July 17, 1899, at point just above Roaring Fork.

GAGE.—Friez water-stage recorder on right bank in front of power house; inspected by C. H. Oberly and Andrew Dickson.

DISCHARGE MEASUREMENTS.—Made from cable beneath State Street bridge, a third of a mile below gage.

CHANNEL AND CONTROL.—Bed composed of well-compacted gravel, on which silt is deposited. Control at riffle 300 feet downstream; slightly shifting at intervals. Banks not subject to overflow except at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum discharge occurred when water-stage recorder was not operating. By comparison with record of Roaring Fork at Glenwood Springs the mean daily discharge was estimated at 22,700 second-feet on June 7; minimum stage, 2.1 feet from 7 to 11 a. m. December 30 and 31 (discharge, 200 second-feet).

1900–1926: Maximum stage recorded, 12.55 feet at noon June 14 and 15, 1918 (discharge, 30,100 second-feet); minimum stage, 1.6 feet at 5 p. m. February 6, 1921 (discharge, 80 second-feet).

ICE.—Stage-discharge relation not affected by ice. Hot water from springs keeps river open.

DIVERSIONS.—Between this station and Hot Sulphur Springs, water is diverted for irrigation of a few hundred acres.

REGULATION.—Shoshone power plant of Public Service Co., 7 miles upstream, controls flow during day at low water but has insufficient pondage to control it for more than a few hours.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory except as explained in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except from November 20 to April 5 when daily discharge was computed from bihourly discharge on account of diurnal fluctuations. Records excellent except for period of missing gage height, for which they are fair.

*Discharge measurements of Colorado River at Glenwood Springs, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 7 | 3.81 | 1,150 | May 11 | 6.50 | 5,930 | Aug. 24 | 4.09 | 1,490 |
| Nov. 18 | 3.68 | 1,080 | June 8 | 10.55 | 21,800 | | | |
| Mar. 30 | 3.73 | 1,150 | July 28 | 5.27 | 3,030 | | | |

NOTE.—All measurements, except the one on Nov. 18, were furnished by State engineer.

*Daily discharge, in second-feet, of Colorado River at Glenwood Springs, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,310 | 1,410 | 1,010 | 626 | 751 | 696 | 844 | 7,300 | 15,700 | 9,230 | 2,910 | 1,400 |
| 2 | 1,280 | 1,420 | 1,030 | 834 | 710 | 721 | 906 | 7,300 | 16,500 | 9,230 | 2,830 | 1,390 |
| 3 | 1,260 | 1,420 | 1,040 | 791 | 768 | 746 | 769 | 7,930 | 17,800 | 8,570 | 2,750 | 1,270 |
| 4 | 1,220 | 1,400 | 1,010 | 922 | 758 | 743 | 803 | 8,900 | 18,700 | 8,250 | 2,830 | 1,360 |
| 5 | 1,250 | 1,310 | 852 | 832 | 674 | 824 | 956 | 9,910 | 19,100 | 8,570 | 2,910 | 1,360 |
| 6 | 1,500 | 1,240 | 924 | 857 | 682 | 818 | 1,340 | 11,000 | 19,800 | 8,570 | 3,190 | 1,130 |
| 7 | 1,580 | 1,210 | 900 | 830 | 624 | 590 | 1,860 | 10,600 | 22,700 | 9,230 | 3,090 | 918 |
| 8 | 1,720 | 1,200 | 968 | 847 | 774 | 711 | 2,280 | 8,900 | 21,700 | 11,000 | 3,090 | 966 |
| 9 | 1,680 | 1,040 | 835 | 819 | 732 | 743 | 2,410 | 7,610 | 20,800 | 10,600 | 3,290 | 1,040 |
| 10 | 1,620 | 1,060 | 711 | 744 | 736 | 734 | 2,340 | 6,390 | 19,100 | 9,230 | 3,290 | 1,020 |
| 11 | 1,670 | 1,000 | 596 | 823 | 703 | 837 | 2,610 | 5,670 | 17,800 | 8,570 | 3,090 | 956 |
| 12 | 1,710 | 1,000 | 638 | 706 | 704 | 827 | 2,750 | 5,250 | 17,400 | 7,300 | 2,830 | 928 |
| 13 | 1,710 | 1,060 | 798 | 643 | 730 | 848 | 2,680 | 4,700 | 17,800 | 6,990 | 2,610 | 862 |
| 14 | 1,670 | 1,110 | 810 | 638 | 626 | 738 | 2,680 | 4,190 | 17,800 | 6,390 | 2,480 | 871 |
| 15 | 1,590 | 1,110 | 621 | 649 | 768 | 854 | 2,540 | 4,070 | 17,400 | 5,960 | 2,340 | 880 |

*Daily discharge, in second-feet, of Colorado River at Glenwood Springs, Colo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 1,540 | 1,020 | 708 | 704 | 697 | 810 | 2,680 | 4,700 | 16,100 | 5,670 | 2,220 | 937 |
| 17 | 1,500 | 946 | 740 | 703 | 745 | 833 | 3,500 | 5,670 | 14,000 | 5,530 | 2,100 | 966 |
| 18 | 1,470 | 1,020 | 631 | 728 | 687 | 825 | 4,320 | 6,690 | 12,000 | 5,250 | 1,980 | 985 |
| 19 | 1,460 | 1,040 | 732 | 723 | 650 | 931 | 4,320 | 6,990 | 10,600 | 4,970 | 1,860 | 975 |
| 20 | 1,410 | 969 | 733 | 760 | 712 | 984 | 4,700 | 7,300 | 10,600 | 4,700 | 1,740 | 946 |
| 21 | 1,420 | 893 | 754 | 763 | 612 | 966 | 4,570 | 8,900 | 10,200 | 4,570 | 1,680 | 918 |
| 22 | 1,400 | 858 | 796 | 696 | 752 | 919 | 4,970 | 11,300 | 9,230 | 4,320 | 1,620 | 862 |
| 23 | 1,400 | 878 | 843 | 724 | 681 | 1,110 | 5,250 | 13,200 | 8,800 | 4,070 | 1,570 | 844 |
| 24 | 1,430 | 959 | 842 | 614 | 645 | 1,200 | 5,250 | 15,200 | 8,250 | 3,840 | 1,510 | 790 |
| 25 | 1,470 | 932 | 842 | 725 | 678 | 1,410 | 4,440 | 16,500 | 8,250 | 3,610 | 1,460 | 799 |
| 26 | 1,430 | 1,010 | 785 | 737 | 704 | 1,310 | 4,570 | 17,000 | 8,570 | 3,400 | 1,460 | 742 |
| 27 | 1,390 | 1,010 | 785 | 743 | 707 | 1,100 | 5,110 | 16,500 | 8,570 | 3,090 | 1,360 | 844 |
| 28 | 1,370 | 1,050 | 733 | 570 | 653 | 1,070 | 5,670 | 15,700 | 8,900 | 3,090 | 1,390 | 758 |
| 29 | 1,400 | 1,060 | 662 | 648 | ------- | 897 | 5,810 | 15,700 | 8,900 | 3,400 | 1,390 | 880 |
| 30 | 1,470 | 969 | 626 | 853 | ------- | 940 | 6,390 | 14,000 | 8,900 | 3,610 | 1,360 | 899 |
| 31 | 1,480 | ------- | 527 | 638 | ------- | 869 | ------- | 14,000 | -------- | 3,190 | 1,360 | ------ |

NOTE.—No gage-height record June 6–7, 23; discharge based on comparison with flow of Roaring Fork at Glenwood Springs.

*Monthly discharge of Colorado River at Glenwood Springs, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 1,720 | 1,220 | 1,480 | 91,000 |
| November | 1,420 | 858 | 1,090 | 64,900 |
| December | 1,040 | 527 | 790 | 48,600 |
| January | 922 | 570 | 738 | 45,400 |
| February | 774 | 612 | 702 | 39,000 |
| March | 1,410 | 590 | 890 | 54,700 |
| April | 6,390 | 769 | 3,310 | 197,000 |
| May | 17,000 | 4,070 | 9,650 | 593,000 |
| June | 22,700 | 8,250 | 14,400 | 857,000 |
| July | 11,000 | 3,090 | 6,260 | 385,000 |
| August | 3,290 | 1,360 | 2,240 | 138,000 |
| September | 1,400 | 742 | 983 | 58,500 |
| The year | 22,700 | 527 | 3,550 | 2,570,000 |

### COLORADO RIVER NEAR PALISADE, COLO.

LOCATION.—In sec. 2, T. 11 S., R. 98 W., at highway bridge 2 miles above Palisade, Mesa County. Nearest large tributary, Plateau Creek, enters 6 miles above.

DRAINAGE AREA.—8,790 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 9, 1902, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge near midspan; read by A. Barnhisel.

DISCHARGE MEASUREMENTS.—Made from bridge 2 miles below gage.

CHANNEL AND CONTROL.—Bed composed of gravel, silt, and scattered boulders; control is at rapids 300 feet downstream; practically permanent. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 21.8 feet at 6 p. m. June 7 (discharge, 34,300 second-feet); minimum stage, 11.8 feet at 6 p. m. September 26 (discharge, 900 second-feet).

1902–1926: Maximum stage recorded, 24.4 feet at 7 a. m. June 16, 1921 (discharge, 52,400 second-feet); minimum stage, 11.4 feet on September 2, 1924 (discharge, 630 second-feet).

ICE.—Stage-discharge relation affected by ice during some winters.

DIVERSIONS.—Principal diversion between Glenwood Springs and Palisade gaging station is the Government high-line canal, which has a capacity of 1,425 second-feet. Enough of the water diverted for power is returned to the river to supply a priority of 521 second-feet for the Grand Valley Canal.

REGULATION.—None.

COOPERATION.—Complete records furnished by Bureau of Reclamation.

*Daily discharge, in second-feet, of Colorado River near Palisade, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,920 | 2,220 | 1,760 | 1,490 | 1,390 | 1,390 | 1,540 | 12,200 | 24,300 | 13,900 | 3,230 | 1,110 |
| 2 | 1,860 | 2,570 | 1,810 | 1,540 | 1,340 | 1,490 | 1,540 | 11,900 | 27,400 | 13,800 | 3,160 | 1,070 |
| 3 | 1,860 | 3,000 | 1,700 | 1,540 | 1,490 | 1,540 | 1,590 | 12,700 | 29,000 | 13,200 | 2,930 | 1,030 |
| 4 | 1,810 | 2,570 | 1,700 | 1,490 | 1,490 | 1,640 | 1,590 | 14,500 | 29,600 | 12,600 | 2,780 | 990 |
| 5 | 1,860 | 2,430 | 1,640 | 1,590 | 1,490 | 1,700 | 1,540 | 16,000 | 30,700 | 12,200 | 2,860 | 990 |
| 6 | 3,880 | 2,290 | 1,700 | 1,590 | 1,390 | 1,760 | 1,860 | 18,000 | 31,000 | 13,400 | 4,920 | 1,150 |
| 7 | 3,210 | 2,220 | 1,810 | 1,490 | 1,390 | 1,640 | 2,500 | 17,600 | 32,500 | 13,800 | 3,880 | 1,230 |
| 8 | 2,940 | 2,220 | 1,540 | 1,440 | 1,440 | 1,490 | 3,310 | 15,400 | 33,400 | 15,800 | 3,880 | 1,320 |
| 9 | 3,120 | 2,220 | 1,760 | 1,490 | 1,540 | 1,700 | 3,680 | 12,900 | 32,800 | 16,600 | 3,780 | 1,420 |
| 10 | 2,540 | 2,160 | 1,440 | 1,440 | 1,390 | 1,760 | 3,160 | 10,700 | 30,400 | 15,000 | 3,780 | 1,370 |
| 11 | 3,980 | 2,160 | 1,290 | 1,390 | 1,490 | 1,700 | 3,230 | 9,580 | 28,200 | 12,600 | 3,780 | 1,280 |
| 12 | 3,230 | 2,100 | 1,240 | 1,340 | 1,440 | 1,700 | 3,480 | 8,030 | 27,400 | 11,500 | 3,300 | 1,280 |
| 13 | 3,230 | 2,160 | 1,440 | 1,340 | 1,440 | 1,700 | 3,390 | 7,300 | 27,400 | 10,700 | 3,120 | 1,230 |
| 14 | 2,780 | 2,220 | 1,760 | 1,200 | 1,440 | 1,640 | 3,480 | 6,740 | 27,100 | 10,200 | 2,780 | 1,190 |
| 15 | 2,860 | 2,160 | 1,860 | 1,290 | 1,390 | 1,340 | 3,310 | 6,470 | 26,000 | 9,100 | 2,390 | 1,190 |
| 16 | 2,570 | 2,160 | 1,440 | 1,290 | 1,390 | 1,700 | 3,390 | 6,880 | 24,800 | 8,640 | 2,320 | 1,230 |
| 17 | 3,000 | 2,100 | 1,440 | 1,390 | 1,390 | 1,920 | 3,580 | 8,480 | 22,600 | 7,880 | 2,180 | 1,230 |
| 18 | 2,780 | 2,100 | 1,440 | 1,540 | 1,390 | 1,920 | 5,600 | 9,900 | 19,000 | 7,300 | 2,000 | 1,230 |
| 19 | 2,500 | 1,810 | 1,540 | 1,490 | 1,440 | 1,860 | 5,960 | 10,900 | 16,800 | 7,160 | 2,000 | 1,230 |
| 20 | 2,430 | 1,760 | 1,810 | 1,490 | 1,340 | 2,100 | 6,470 | 11,500 | 16,600 | 6,470 | 1,940 | 1,230 |
| 21 | 2,430 | 1,440 | 1,590 | 1,390 | 1,340 | 1,760 | 6,880 | 14,100 | 15,800 | 6,080 | 1,880 | 1,230 |
| 22 | 2,430 | 1,590 | 1,440 | 1,340 | 1,340 | 1,760 | 7,160 | 17,000 | 14,800 | 5,720 | 1,820 | 1,110 |
| 23 | 2,430 | 1,760 | 1,390 | 1,200 | 1,340 | 1,860 | 8,480 | 20,500 | 13,100 | 5,250 | 1,640 | 1,070 |
| 24 | 2,430 | 1,810 | 1,490 | 1,060 | 1,340 | 1,980 | 8,790 | 24,300 | 12,900 | 4,810 | 1,420 | 1,030 |
| 25 | 2,360 | 1,980 | 1,540 | 1,240 | 1,440 | 1,980 | 8,330 | 27,100 | 13,600 | 4,280 | 1,110 | 1,030 |
| 26 | 2,290 | 1,920 | 1,700 | 1,290 | 1,390 | 2,040 | 8,030 | 26,800 | 13,600 | 4,080 | 1,320 | 950 |
| 27 | 2,290 | 1,980 | 1,540 | 1,390 | 1,390 | 1,860 | 8,940 | 26,300 | 13,800 | 3,780 | 1,230 | 1,230 |
| 28 | 2,220 | 1,920 | 1,590 | 1,340 | 1,390 | 1,540 | 9,900 | 25,000 | 13,900 | 3,780 | 1,230 | 1,230 |
| 29 | 2,220 | 2,040 | 1,540 | 1,390 | ------ | 1,490 | 10,200 | 24,000 | 13,900 | 3,880 | 1,190 | 1,190 |
| 30 | 2,220 | 1,920 | 1,490 | 1,700 | ------ | 1,490 | 11,200 | 23,500 | 13,800 | 4,080 | 1,110 | 1,640 |
| 31 | 2,220 | ------ | 1,440 | 1,760 | ------ | 1,640 | -------- | 22,600 | -------- | 3,780 | 1,070 | ------ |

NOTE.—Quantities have been changed slightly to comply with rules of computation used by U. S. Geol. Survey.

*Monthly discharge of Colorado River near Palisade, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 3,980 | 1,810 | 2,580 | 159,000 |
| November | 3,000 | 1,440 | 2,100 | 125,000 |
| December | 1,860 | 1,240 | 1,580 | 97,200 |
| January | 1,760 | 1,060 | 1,420 | 87,300 |
| February | 1,540 | 1,340 | 1,410 | 78,300 |
| March | 2,100 | 1,340 | 1,710 | 105,000 |
| April | 11,200 | 1,540 | 5,070 | 302,000 |
| May | 27,100 | 6,470 | 15,400 | 947,000 |
| June | 33,400 | 12,900 | 22,500 | 1,340,000 |
| July | 16,600 | 3,780 | 9,080 | 558,000 |
| August | 4,920 | 1,070 | 2,450 | 151,000 |
| September | 1,640 | 950 | 1,190 | 70,800 |
| The year | 33,400 | 950 | 5,560 | 4,020,000 |

NOTE.—Monthly discharge computed by U. S. Geol. Survey from daily-discharge record furnished by the U. S. Bureau of Reclamation.

### COLORADO RIVER NEAR CISCO, UTAH

LOCATION.—In NW. ¼ sec. 17, T. 23 S., R. 24 E., 1 mile below mouth of Dolores River and 15 miles by road south of Cisco, Grand County.

DRAINAGE AREA.—24,100 square miles (measured on General Land Office map).

RECORDS AVAILABLE.—November 10, 1914, to September 30, 1917, and October 1, 1922, to September 30, 1926; 25 miles downstream at Moab October 1, 1913, to November 10, 1914; flow about the same at both places.

GAGE.—Au continuous water-stage recorder on left bank half a mile above suspension highway bridge; inspected by G. C. Brown and Frank Hittle.

DISCHARGE MEASUREMENTS.—Made from cable 400 feet below gage.

CHANNEL AND CONTROL.—Channel straight for several hundred feet above and below station. Left bank high and not subject to overflow; right bank in extreme floods is overflowed between station and bridge. Bed composed of sand and gravel. Low-water control is a riffle a quarter of a mile below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, 15.20 feet at 4 p. m. May 27 (discharge, 52,400 second-feet); minimum stage, 1.16 feet at 5 a. m. September 27 (discharge, 1,430 second-feet).

1915–1917; 1923–1926: Maximum stage, 19.7 feet at 9 p. m. June 19, 1917 (discharge, 76,800 second-feet); minimum stage, 1.14 feet at 8 p. m. September 3, 1924 (discharge, 844 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Below practically all diversions. A large amount of water is diverted in Colorado for irrigation.

REGULATION.—Station is too far downstream to be affected, except in a general way, by regulation in Colorado.

ACCURACY.—Stage-discharge relation practically permanent except for slight shifting caused by temporary deposits of sediment on control; affected by ice January 1 to February 11. Standard rating curve well defined. Operation of water-stage recorder satisfactory except as stated in footnote to daily-discharge table. Daily discharge determined by applying to rating table mean daily gage height or by shifting-control method. Discharge during ice-affected periods and periods of missing gage height estimated by hydrographic comparison with flow at stations in Colorado and at Lees Ferry in Arizona. Records good except for estimated periods for which they are fair.

*Discharge measurements of Colorado River near Cisco, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 11 | 2.43 | 2,790 | Apr. 29 | 8.60 | 24,400 | Aug. 27 | 2.02 | 2,020 |
| Mar. 24 | 2.85 | 3,760 | June 23 | 7.62 | 19,700 | | | |

*Daily discharge, in second-feet, of Colorado River near Cisco, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,810 | 4,320 | 3,310 | | | 2,340 | 3,290 | 26,300 | 34,600 | 17,400 | 4,500 | 1,620 |
| 2 | 3,690 | 4,430 | 3,220 | | | 2,420 | 3,430 | 25,500 | 37,900 | 17,900 | 4,200 | 1,560 |
| 3 | 3,390 | 4,790 | 3,260 | | | 2,470 | 3,390 | 24,500 | 41,300 | 17,800 | 4,000 | 1,540 |
| 4 | 3,270 | 4,890 | 3,350 | | | 2,610 | 3,450 | 26,600 | 43,200 | 16,700 | 3,900 | 1,510 |
| 5 | 5,200 | 4,630 | 3,240 | | | 2,880 | 3,290 | 28,800 | 44,600 | 16,000 | 3,800 | 1,470 |
| | | | | | 2,700 | | | | | | | |
| 6 | 13,000 | 4,350 | 2,990 | | | 3,140 | 3,510 | 32,300 | 44,800 | 17,400 | 5,500 | 1,460 |
| 7 | 5,880 | 3,940 | 3,100 | | | 3,270 | 4,390 | 35,800 | 45,200 | 18,100 | 5,500 | 1,470 |
| 8 | 5,470 | 3,830 | 3,160 | 2,400 | | 2,950 | 6,950 | 31,700 | 46,800 | 20,400 | 5,000 | 1,650 |
| 9 | 5,220 | 3,920 | 3,080 | | | 2,540 | 9,070 | 27,900 | 45,200 | 22,700 | 5,000 | 1,670 |
| 10 | 5,030 | 3,830 | 3,030 | | | | 8,600 | 22,500 | 43,700 | 20,800 | 5,500 | 1,820 |
| 11 | 5,670 | 3,730 | 2,770 | | 2,700 | | 7,650 | 18,700 | 41,300 | 18,800 | 5,500 | 1,810 |
| 12 | 6,610 | 3,790 | 2,650 | | 2,680 | 2,800 | 8,040 | 16,200 | 39,300 | 16,000 | 5,200 | 1,810 |
| 13 | 5,800 | 3,730 | 2,650 | | 2,660 | | 8,720 | 15,000 | 38,300 | 14,000 | 4,600 | 1,790 |
| 14 | 6,090 | 3,860 | 2,650 | | 2,880 | | 8,630 | 13,800 | 37,900 | 13,000 | 4,000 | 1,810 |
| 15 | 6,170 | 3,770 | 2,650 | | 2,750 | | 8,880 | 13,500 | 35,800 | 12,000 | 3,400 | 1,880 |
| 16 | 5,780 | 3,710 | 2,680 | | 2,660 | 3,060 | 9,520 | 13,400 | 34,600 | 11,000 | 3,300 | 1,840 |
| 17 | 5,320 | 3,430 | 2,580 | | 2,720 | 3,590 | 13,100 | 15,000 | 32,600 | 10,000 | 3,000 | 1,880 |
| 18 | 5,130 | 3,490 | 2,540 | 2,200 | 2,580 | 3,810 | 12,400 | 17,300 | 29,400 | 9,500 | 2,800 | 1,790 |
| 19 | 5,010 | 3,550 | 2,560 | | 2,520 | 4,060 | 14,000 | 19,200 | 25,400 | 9,000 | 2,800 | 1,760 |
| 20 | 4,890 | 3,530 | 2,560 | | 2,420 | 4,240 | 16,700 | 20,900 | 22,700 | 8,000 | 2,600 | 1,750 |
| 21 | 4,770 | 3,350 | 2,600 | | 2,380 | 4,320 | 18,200 | 24,200 | 21,600 | 7,600 | 2,400 | 1,750 |
| 22 | 4,570 | 3,180 | 2,500 | | 2,440 | 4,410 | 20,100 | 29,800 | 21,000 | 7,300 | 2,300 | 1,940 |
| 23 | 4,540 | 3,140 | 2,450 | 2,100 | 2,360 | 4,210 | 22,400 | 33,400 | 19,500 | 6,800 | 2,200 | 1,720 |
| 24 | 4,630 | 3,160 | 2,400 | | 2,410 | 3,940 | 22,600 | 37,200 | 18,200 | 6,200 | 2,100 | 1,580 |
| 25 | 4,660 | 3,240 | 2,500 | | 2,330 | 4,460 | 23,900 | 40,800 | 18,200 | 5,600 | 1,900 | 1,480 |
| 26 | 4,660 | 3,410 | 2,650 | | 2,230 | 5,060 | 23,800 | 41,900 | 18,200 | 5,300 | 2,100 | 1,510 |
| 27 | 4,570 | 3,510 | 2,800 | | 2,360 | 4,820 | 24,400 | 47,500 | 18,000 | 5,000 | 2,020 | 1,600 |
| 28 | 4,460 | 3,470 | 2,830 | 2,300 | 2,360 | 4,460 | 25,100 | 42,100 | 18,000 | 5,000 | 1,900 | 1,760 |
| 29 | 4,390 | 3,370 | 2,750 | | ------- | 4,000 | 24,000 | 38,300 | 18,400 | 5,200 | 1,750 | 1,680 |
| 30 | 4,320 | 3,330 | 2,560 | | ------- | 3,710 | 24,600 | 35,200 | 17,800 | 5,500 | 1,680 | 1,880 |
| 31 | 4,320 | ------- | 2,560 | 2,700 | ------- | 3,450 | -------- | 34,200 | -------- | 5,500 | 1,670 | ------ |

NOTE.—No gage-height record and discharge estimated by hydrographic comparison Oct. 19, 20, Dec. 21–27, Jan. 1–30, Feb. 1–10, Mar. 11–15, and July 12 to Aug. 26. Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Colorado River near Cisco, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 13,000 | 3,270 | 5,170 | 318,000 |
| November | 4,890 | 3,140 | 3,760 | 224,000 |
| December | 3,350 | 2,400 | 2,790 | 172,000 |
| January | 2,700 | ---------- | 2,310 | 142,000 |
| February | 2,880 | 2,230 | 2,590 | 144,000 |
| March | 5,060 | 2,340 | 3,450 | 212,000 |
| April | 25,100 | 3,290 | 12,900 | 768,000 |
| May | 47,500 | 13,400 | 27,400 | 1,680,000 |
| June | 46,800 | 17,800 | 31,800 | 1,890,000 |
| July | 22,700 | 5,000 | 12,000 | 738,000 |
| August | 5,500 | 1,670 | 3,420 | 210,000 |
| September | 1,940 | 1,460 | 1,690 | 101,000 |
| The year | 47,500 | 1,460 | 9,120 | 6,600,000 |

### COLORADO RIVER AT LEES FERRY, ARIZ.

LOCATION.—At Lees Ferry just above mouth of Paria River, at head of Marble Gorge, and at lower end of Glen Canyon, Coconino County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 13, 1921, to September 30, 1926.

GAGE.—Continuous water-stage recorder installed January 19, 1923, on left bank at head of Paria riffle. Zero of gage is 3,106.35 feet above sea level. Recorder inspected by D. A. Dudley and Jerry Johnson or Elmer Johnson.

DISCHARGE MEASUREMENTS.—Made from cable about 1 mile upstream.

CHANNEL AND CONTROL.—Channel at measuring section straight and fairly uniform. Banks high and not subject to overflow. Bed is composed of sand and silt and is scoured several feet during each flood season. Channel at gage confined between banks that are not subject to overflow. Control is Paria riffle; composed of gravel and boulders.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 16.7 feet at 8 a. m. May 29 (discharge, 86,500 second-feet); minimum stage from water-stage recorder, 6.16 feet at 9 p. m. September 10 (discharge, 3,100 second-feet).

1921–1926: Maximum stage recorded, 26.5 at 2 p. m. June 18, 1921 discharge, about 190,000 second-feet); minimum stage, 4.2 feet at 5 p. m. December 27, 1924 (discharge, 750 second-feet); river frozen over.

The high-water mark of the flood of 1884 at the ranch near the mouth of Paria River, as identified by Jerry Johnson, is at altitude of 3,137.1 feet above sea level.

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

DIVERSIONS.—Water is diverted from main river and tributaries above station for irrigation of about 1,500,000 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent during year, except for slight changes at the beginning of the spring floods and more changeable conditions during the short periods of maximum discharge. Rating curves well defined below 72,000 second-feet, but not satisfactory above. During the year 39 discharge measurements were made, of which 27 were made during the period of the spring floods, April 16 to July 12. Operation of water-stage recorder satisfactory, except August 18–19. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph, except for periods indicated in footnote to table of daily discharge and for a few days when hourly discharge was used because of rapidly changing stage. Records good.

*Daily discharge, in second-feet, of Colorado River at Lees Ferry, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13,000 | 11,600 | 8,610 | 6,590 | 5,090 | 6,170 | 15,600 | 47,600 | 67,000 | 28,000 | 10,000 | 4,780 |
| 2 | 12,200 | 11,500 | 8,300 | 6,620 | 5,060 | 6,140 | 14,100 | 48,800 | 66,300 | 27,000 | 9,470 | 4,410 |
| 3 | 11,200 | 11,600 | 8,300 | 6,690 | 5,330 | 6,110 | 14,000 | 50,900 | 69,700 | 25,700 | 9,350 | 4,150 |
| 4 | 10,500 | 11,800 | 8,360 | 6,810 | 5,550 | 6,020 | 13,000 | 50,900 | 73,600 | 25,300 | 9,390 | 3,920 |
| 5 | 16,500 | 11,700 | 8,540 | 6,870 | 5,870 | 6,110 | 11,800 | 52,600 | 75,000 | 25,600 | 8,850 | 3,700 |
| 6 | 29,700 | 12,100 | 8,470 | 6,780 | 6,200 | 6,320 | 11,300 | 55,300 | 76,000 | 25,400 | 8,470 | 3,520 |
| 7 | 25,500 | 12,200 | 8,650 | 6,750 | 6,290 | 6,720 | 11,300 | 59,600 | 77,500 | 25,700 | 8,890 | 3,390 |
| 8 | 30,600 | 11,900 | 8,720 | 6,780 | 6,320 | 7,350 | 12,300 | 67,300 | 78,000 | 25,800 | 8,060 | 3,330 |
| 9 | 22,500 | 11,800 | 8,400 | 6,470 | 6,410 | 8,050 | 14,600 | 70,000 | 78,500 | 26,700 | 7,800 | 3,210 |
| 10 | 16,700 | 11,400 | 8,120 | 6,350 | 6,440 | 8,650 | 15,300 | 64,100 | 78,000 | 27,600 | 8,890 | 3,150 |
| 11 | 15,900 | 10,900 | 8,190 | 6,170 | 6,290 | 9,130 | 17,600 | 59,000 | 75,500 | 29,100 | 10,500 | 4,880 |
| 12 | 15,700 | 10,700 | 7,850 | 6,170 | 6,350 | 9,240 | 20,000 | 53,600 | 73,400 | 28,600 | 11,000 | 7,940 |
| 13 | 17,100 | 10,400 | 7,620 | 6,020 | 6,380 | 8,790 | 19,700 | 47,500 | 70,600 | 29,900 | 11,100 | 7,200 |
| 14 | 19,700 | 10,400 | 7,580 | 6,020 | 6,500 | 8,940 | 22,500 | 42,200 | 68,100 | 35,800 | 11,600 | 7,200 |
| 15 | 19,200 | 10,200 | 7,350 | 5,840 | 6,780 | 9,470 | 23,200 | 38,600 | 65,800 | 33,800 | 12,200 | 5,170 |
| 16 | 19,300 | 9,890 | 7,190 | 5,640 | 6,780 | 9,660 | 22,800 | 35,300 | 62,900 | 29,800 | 12,200 | 4,550 |
| 17 | 19,700 | 9,700 | 7,190 | 5,550 | 6,780 | 9,350 | 22,800 | 33,300 | 61,400 | 26,700 | 12,200 | 6,120 |
| 18 | 17,100 | 9,740 | 7,000 | 5,550 | 6,910 | 9,740 | 23,900 | 32,000 | 59,900 | 24,000 | 11,000 | 4,930 |
| 19 | 15,600 | 9,660 | 6,810 | 5,390 | 6,870 | 10,100 | 26,900 | 33,300 | 55,800 | 21,900 | 9,800 | 4,330 |
| 20 | 15,000 | 9,540 | 6,590 | 5,280 | 6,750 | 11,000 | 31,600 | 35,800 | 49,500 | 20,400 | 8,770 | 4,670 |

*Daily discharge, in second-feet, of Colorado River at Lees Ferry, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 14,400 | 9,470 | 6,290 | 5,400 | 6,840 | 12,800 | 33,200 | 38,300 | 44,400 | 18,700 | 8,580 | 4,900 |
| 22 | 13,800 | 9,350 | 5,730 | 5,350 | 6,660 | 14,600 | 37,200 | 41,800 | 40,700 | 17,500 | 8,060 | 4,300 |
| 23 | 13,300 | 9,160 | 5,530 | 5,300 | 6,470 | 14,700 | 39,500 | 48,800 | 38,600 | 16,000 | 7,440 | 4,040 |
| 24 | 13,200 | 8,980 | 5,440 | 5,100 | 6,440 | 15,200 | 40,200 | 58,600 | 37,200 | 14,700 | 6,890 | 3,870 |
| 25 | 12,800 | 8,540 | 5,640 | 5,050 | 6,320 | 15,800 | 42,600 | 64,900 | 34,700 | 13,600 | 6,510 | 3,820 |
| 26 | 12,800 | 8,260 | 5,670 | 5,000 | 6,380 | 15,100 | 45,100 | 71,700 | 32,400 | 12,900 | 6,050 | 4,310 |
| 27 | 12,500 | 8,220 | 5,810 | 4,950 | 6,260 | 14,100 | 47,800 | 76,000 | 31,400 | 12,100 | 5,700 | 6,250 |
| 28 | 12,500 | 8,190 | 6,110 | 5,050 | 6,260 | 14,400 | 48,200 | 81,000 | 30,700 | 12,000 | 5,510 | 8,620 |
| 29 | 12,300 | 8,400 | 6,620 | 4,980 | ------- | 14,700 | 48,300 | 84,000 | 29,200 | 13,400 | 5,320 | 7,800 |
| 30 | 12,000 | 8,650 | 6,720 | 4,980 | ------- | 14,200 | 49,000 | 77,500 | 28,500 | 11,800 | 5,140 | 6,090 |
| 31 | 11,800 | -------- | 6,690 | 4,980 | ------- | 13,700 | -------- | 71,700 | -------- | 11,300 | 4,930 | ------ |

NOTE.—Discharge Jan. 18 and 21–28 estimated, because of ice, by hydrographic comparison with Colorado River near Grand Canyon. Discharge May 27–30 and June 5–11 estimated by hydrographic comparison with Colorado River near Grand Canyon because of unsatisfactory rating for Lees Ferry. Discharge Aug. 18–19 interpolated because of unsatisfactory record of gage height.

*Monthly discharge of Colorado River at Lees Ferry, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 30,600 | 10,500 | 16,300 | 1,000,000 |
| November | 12,200 | 8,190 | 10,200 | 607,000 |
| December | 8,720 | 5,440 | 7,230 | 445,000 |
| January | 6,870 | 4,950 | 5,820 | 358,000 |
| February | 6,910 | 5,060 | 6,310 | 350,000 |
| March | 15,800 | 6,020 | 10,400 | 640,000 |
| April | 49,000 | 11,300 | 26,500 | 1,580,000 |
| May | 84,000 | 32,000 | 54,600 | 3,360,000 |
| June | 78,500 | 28,500 | 57,700 | 3,430,000 |
| July | 35,800 | 11,300 | 22,500 | 1,380,000 |
| August | 12,200 | 4,930 | 8,700 | 535,000 |
| September | 8,620 | 3,150 | 4,950 | 295,000 |
| The year | 84,000 | 3,150 | 19,300 | 14,000,000 |

### COLORADO RIVER AT BRIGHT ANGEL CREEK, NEAR GRAND CANYON, ARIZ.

LOCATION.—300 feet above Kaibab Bridge, Grand Canyon National Park, a quarter of a mile above Bright Angel Creek, and 11 miles by trail northeast of Grand Canyon, Coconino County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 1, 1922, to September 30, 1926.

GAGE.—Water-stage recorder in concrete shelter and stilling well on right bank. Inspected by B. S. Barnes, D. H. Barber, W. E. Code, and K. C. McCarter, resident hydrographers. Zero of gage is 2,420.3 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable 20 feet upstream from gage.

CHANNEL AND CONTROL.—Channel at gage and measuring section ranges from a width of 250 feet at low water to 325 feet at high water. Banks are solid rock and very high. Bed is silt and sand which scours and fills each season. Control is Bright Angel Creek rapids.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 24.27 feet at 2.30 p. m. May 29 (discharge, 85,600 second-feet); minimum stage, from water-stage recorder, 2.14 feet at 1 a. m. September 12 (discharge, 3,810 second-feet).

1923–1926: Maximum stage recorded, 28.5 feet at 6 p. m. September 19, 1923 (discharge, 112,000 second-feet); minimum stage, −0.70 foot at 8 p. m. December 28, 1924 (discharge, 700 second-feet).

ICE.—No ice has occurred at this station during the period of record.

DIVERSIONS.—Water is diverted from main river and tributaries above station for irrigation of about 1,500,000 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed to some extent during period of high water in May. Rating curves very well defined by 74 discharge measurements made during the year and well distributed with respect to both time and river stage. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph. Records excellent.

*Daily discharge, in second-feet, of Colorado River at Bright Angel Creek, near Grand Canyon, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14,000 | 11,900 | 8,770 | 6,840 | 5,280 | 6,500 | 14,400 | 50,200 | 68,500 | 28,200 | 11,500 | 5,260 |
| 2 | 13,300 | 11,700 | 8,660 | 6,800 | 5,250 | 6,380 | 16,800 | 50,000 | 67,100 | 27,600 | 10,400 | 5,000 |
| 3 | 12,300 | 11,700 | 8,550 | 6,790 | 5,280 | 6,320 | 14,700 | 51,800 | 68,700 | 26,400 | 10,200 | 4,790 |
| 4 | 11,300 | 11,800 | 8,530 | 6,740 | 5,550 | 6,350 | 14,000 | 52,700 | 72,400 | 25,500 | 10,000 | 4,590 |
| 5 | 11,600 | 12,000 | 8,560 | 6,960 | 5,800 | 6,450 | 13,000 | 52,400 | 74,700 | 26,100 | 9,780 | 4,460 |
| 6 | 28,400 | 11,900 | 8,600 | 7,030 | 6,170 | 6,430 | 12,100 | 55,800 | 75,600 | 25,800 | 9,440 | 4,320 |
| 7 | 28,900 | 12,400 | 8,550 | 6,970 | 6,500 | 6,720 | 13,000 | 57,800 | 77,200 | 26,300 | 9,060 | 4,220 |
| 8 | 29,000 | 12,500 | 8,650 | 6,920 | 6,540 | 7,120 | 14,900 | 64,700 | 78,000 | 25,900 | 9,200 | 4,110 |
| 9 | 27,200 | 12,100 | 8,730 | 6,900 | 6,600 | 7,830 | 20,000 | 72,400 | 77,900 | 26,900 | 8,650 | 4,050 |
| 10 | 20,200 | 11,700 | 8,500 | 6,640 | 6,680 | 8,480 | 20,400 | 67,700 | 78,500 | 27,300 | 8,570 | 3,940 |
| 11 | 16,800 | 11,400 | 8,270 | 6,520 | 6,660 | 9,020 | 19,100 | 61,900 | 76,400 | 28,900 | 10,700 | 3,870 |
| 12 | 16,200 | 11,100 | 8,320 | 6,400 | 6,500 | 9,570 | 21,500 | 57,100 | 74,100 | 29,600 | 11,800 | 5,620 |
| 13 | 16,700 | 10,800 | 8,260 | 6,320 | 6,610 | 9,300 | 22,300 | 51,000 | 72,200 | 28,700 | 11,600 | 9,900 |
| 14 | 18,200 | 10,500 | 8,050 | 6,110 | 6,630 | 8,890 | 22,700 | 45,400 | 70,000 | 35,400 | 11,400 | 9,350 |
| 15 | 20,700 | 10,500 | 7,830 | 6,080 | 6,910 | 9,260 | 24,500 | 41,000 | 68,300 | 36,900 | 12,200 | 7,620 |
| 16 | 19,300 | 10,200 | 7,530 | 5,920 | 7,200 | 9,910 | 24,300 | 38,000 | 65,300 | 32,400 | 12,500 | 5,970 |
| 17 | 20,900 | 10,000 | 7,400 | 5,770 | 7,060 | 9,870 | 23,900 | 34,800 | 62,300 | 28,900 | 12,800 | 5,380 |
| 18 | 20,100 | 9,980 | 7,260 | 5,750 | 7,060 | 9,780 | 24,200 | 32,700 | 60,400 | 25,800 | 12,700 | 6,640 |
| 19 | 17,700 | 9,960 | 7,220 | 5,640 | 7,320 | 10,400 | 26,000 | 32,600 | 57,500 | 23,200 | 11,300 | 5,620 |
| 20 | 16,100 | 9,780 | 6,920 | 5,620 | 7,160 | 11,000 | 29,500 | 35,100 | 52,200 | 21,600 | 9,920 | 5,060 |
| 21 | 15,600 | 9,570 | 6,670 | 5,470 | 7,040 | 12,200 | 34,300 | 38,100 | 47,000 | 19,900 | 9,180 | 5,380 |
| 22 | 15,000 | 9,440 | 6,350 | 5,550 | 7,040 | 14,100 | 36,600 | 41,300 | 42,600 | 18,300 | 8,890 | 5,600 |
| 23 | 14,400 | 9,440 | 5,840 | 5,560 | 6,900 | 15,500 | 40,600 | 45,900 | 39,700 | 17,100 | 8,460 | 4,970 |
| 24 | 13,900 | 9,330 | 5,720 | 5,520 | 6,700 | 15,700 | 40,600 | 54,900 | 38,200 | 15,900 | 7,880 | 4,700 |
| 25 | 13,700 | 9,020 | 5,800 | 5,320 | 6,610 | 16,100 | 44,000 | 62,800 | 35,800 | 14,800 | 7,380 | 4,500 |
| 26 | 13,300 | 8,660 | 5,970 | 5,240 | 6,560 | 16,100 | 45,700 | 68,300 | 32,800 | 13,800 | 6,980 | 4,710 |
| 27 | 12,900 | 8,360 | 5,980 | 5,160 | 6,570 | 15,200 | 48,500 | 73,800 | 31,500 | 13,000 | 6,610 | 11,500 |
| 28 | 12,800 | 8,310 | 6,180 | 5,120 | 6,540 | 14,800 | 49,700 | 77,700 | 30,900 | 12,200 | 6,280 | 21,600 |
| 29 | 12,600 | 8,320 | 6,560 | 5,250 | ------- | 14,900 | 50,100 | 84,000 | 29,800 | 12,400 | 5,970 | 13,400 |
| 30 | 12,400 | 8,630 | 6,940 | 5,150 | ------- | 15,100 | 50,800 | 78,800 | 28,600 | 13,600 | 5,670 | 9,150 |
| 31 | 12,100 | ------- | 6,940 | 5,240 | ------- | 14,700 | ------- | 72,700 | ------- | 11,800 | 5,450 | ------- |

*Monthly discharge of Colorado River at Bright Angel Creek, near Grand Canyon, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 29,000 | 11,300 | 17,000 | 1,050,000 |
| November | 12,500 | 8,310 | 10,400 | 619,000 |
| December | 8,770 | 5,720 | 7,490 | 461,000 |
| January | 7,030 | 5,120 | 6,040 | 371,000 |
| February | 7,320 | 5,250 | 6,530 | 363,000 |
| March | 16,100 | 6,320 | 10,600 | 652,000 |
| April | 50,800 | 12,100 | 27,700 | 1,650,000 |
| May | 84,000 | 32,600 | 54,900 | 3,380,000 |
| June | 78,500 | 28,600 | 58,500 | 3,480,000 |
| July | 36,900 | 11,800 | 23,200 | 1,430,000 |
| August | 12,800 | 5,450 | 9,430 | 580,000 |
| September | 21,600 | 3,870 | 6,510 | 387,000 |
| The year | 84,000 | 3,870 | 19,900 | 14,400,000 |

### COLORADO RIVER NEAR TOPOCK, ARIZ.

LOCATION.—At lower end of a narrow section of Mohave Canyon, 3 miles below Topock, Mohave County.

DRAINAGE AREA.—171,000 square miles.

RECORDS AVAILABLE.—February 1, 1917, to September 30, 1926.

GAGE.—Continuous water-stage recorder on left bank; inspected by J. A. Baumgartner, K. C. McCarter, and J. E. Klohr, resident hydrographers. Zero of gage is 423.2 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable 20 feet upstream from gage.

CHANNEL AND CONTROL.—Channel is straight above and below gage. Banks are rock and have steep slopes. Bed is composed of sand and silt and shifts continually. The control is indefinite.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 19.80 feet at 2.30 a. m. June 1 (discharge, 84,800 second-feet); minimum stage recorded, 4.66 feet at 11 p. m. September 13 (discharge, 3,390 second-feet).

1917–1926: Maximum stage recorded, 28.2 feet at 6 a. m. June 22, 1921 (discharge, 174,000 second-feet); minimum discharge, 1,800 second-feet at 8 a. m. January 4, 1925.

DIVERSIONS.—Water is diverted from main river and tributaries above station for irrigation of about 1,500,000 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation continually changing. Discharge measurements made on alternate days throughout year. Measurements also made on intervening days when there was rapid change in stage. Measurements were made each day August 25 to September 30. Operation of water-stage recorder satisfactory. Daily discharge ascertained by shifting-control method by applying to standard rating table mean daily gage height determined from recorder graph. Records good.

*Daily discharge, in second-feet, of Colorado River near Topock, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13,700 | 11,700 | 8,080 | 6,260 | 5,210 | 6,520 | 14,800 | 50,000 | 83,800 | 30,200 | 11,800 | 5,500 |
| 2 | 13,000 | 11,300 | 8,010 | 6,520 | 5,310 | 6,490 | 14,300 | 50,700 | 78,700 | 28,800 | 12,900 | 5,220 |
| 3 | 13,300 | 11,500 | 8,220 | 6,960 | 5,340 | 6,490 | 14,400 | 51,600 | 71,200 | 27,700 | 11,600 | 4,870 |
| 4 | 13,400 | 11,500 | 8,390 | 6,960 | 5,180 | 6,520 | 15,500 | 50,800 | 68,400 | 27,400 | 11,200 | 4,970 |
| 5 | 14,900 | 12,100 | 8,530 | 6,850 | 5,400 | 6,360 | 16,800 | 50,800 | 68,600 | 26,700 | 10,500 | 5,000 |
| 6 | 13,700 | 11,400 | 8,740 | 6,820 | 5,470 | 6,260 | 14,800 | 52,200 | 70,500 | 25,600 | 10,600 | 4,760 |
| 7 | 19,800 | 11,500 | 8,280 | 6,890 | 5,120 | 6,190 | 14,300 | 52,100 | 72,200 | 25,200 | 9,920 | 5,390 |
| 8 | 22,400 | 11,900 | 8,180 | 6,590 | 5,470 | 6,320 | 15,700 | 54,200 | 72,600 | 25,400 | 10,000 | 4,360 |
| 9 | 29,500 | 11,800 | 8,390 | 6,750 | 5,930 | 6,520 | 15,800 | 56,600 | 73,900 | 25,800 | 9,240 | 4,260 |
| 10 | 26,700 | 12,200 | 8,360 | 6,820 | 6,360 | 6,590 | 15,100 | 60,100 | 76,200 | 25,900 | 8,680 | 4,300 |
| 11 | 27,400 | 12,400 | 8,280 | 6,960 | 6,420 | 6,720 | 18,100 | 65,400 | 77,000 | 25,200 | 8,600 | 5,420 |
| 12 | 21,700 | 11,900 | 8,390 | 7,020 | 6,230 | 7,020 | 21,900 | 67,500 | 78,600 | 26,300 | 8,090 | 3,970 |
| 13 | 17,900 | 11,700 | 8,460 | 6,920 | 6,390 | 7,740 | 20,900 | 65,000 | 79,300 | 27,300 | 7,670 | 3,510 |
| 14 | 16,800 | 11,500 | 8,220 | 6,590 | 6,560 | 8,250 | 20,600 | 60,200 | 76,900 | 28,800 | 9,400 | 3,540 |
| 15 | 16,400 | 11,000 | 7,770 | 6,360 | 6,420 | 8,950 | 22,400 | 52,400 | 73,000 | 28,000 | 11,400 | 3,760 |
| 16 | 16,900 | 10,500 | 7,910 | 6,230 | 6,460 | 9,090 | 21,900 | 45,300 | 71,300 | 30,200 | 11,300 | 7,140 |
| 17 | 18,000 | 10,400 | 8,080 | 6,290 | 6,820 | 8,460 | 23,900 | 41,900 | 69,800 | 35,800 | 10,700 | 8,800 |
| 18 | 18,800 | 10,300 | 8,010 | 6,130 | 6,690 | 8,530 | 25,000 | 38,700 | 65,000 | 34,500 | 11,200 | 7,360 |
| 19 | 18,700 | 10,200 | 7,470 | 6,090 | 6,890 | 9,440 | 24,200 | 35,200 | 61,700 | 30,800 | 11,400 | 5,740 |
| 20 | 20,200 | 9,760 | 7,260 | 5,860 | 7,060 | 10,000 | 24,900 | 33,600 | 59,000 | 27,000 | 11,000 | 4,760 |
| 21 | 18,600 | 9,540 | 7,130 | 5,630 | 6,850 | 9,650 | 27,100 | 32,200 | 57,700 | 24,400 | 11,100 | 5,080 |
| 22 | 16,600 | 9,480 | 6,960 | 5,800 | 6,660 | 10,000 | 29,400 | 32,700 | 52,800 | 22,400 | 10,300 | 6,390 |
| 23 | 15,600 | 9,480 | 7,090 | 5,630 | 7,130 | 10,900 | 33,000 | 35,000 | 48,400 | 20,600 | 9,320 | 5,000 |
| 24 | 15,400 | 9,340 | 6,750 | 5,470 | 6,790 | 12,000 | 35,000 | 39,400 | 43,200 | 18,600 | 8,680 | 4,530 |
| 25 | 14,700 | 9,060 | 6,460 | 5,440 | 6,960 | 14,000 | 39,300 | 43,100 | 39,400 | 17,000 | 8,050 | 4,900 |
| 26 | 14,100 | 9,120 | 6,060 | 5,340 | 6,960 | 15,200 | 40,600 | 51,100 | 37,800 | 15,900 | 7,630 | 4,900 |
| 27 | 13,400 | 9,060 | 5,700 | 5,570 | 6,660 | 15,200 | 42,600 | 58,600 | 36,000 | 15,600 | 7,210 | 4,560 |
| 28 | 13,000 | 8,950 | 5,700 | 5,700 | 6,620 | 15,200 | 44,600 | 64,600 | 34,000 | 15,100 | 6,540 | 4,230 |
| 29 | 12,600 | 8,670 | 5,860 | 5,660 | ------- | 15,000 | 47,700 | 69,100 | 32,800 | 13,700 | 6,470 | 4,040 |
| 30 | 12,500 | 8,390 | 6,090 | 5,340 | ------- | 13,700 | 49,800 | 73,200 | 32,000 | 12,900 | 5,960 | 12,500 |
| 31 | 11,900 | -------- | 6,000 | 5,080 | ------- | 13,600 | -------- | 80,700 | -------- | 11,900 | 5,960 | ------- |

*Monthly discharge of Colorado River near Topock, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 29,500 | 11,900 | 17,100 | 1,050,000 |
| November | 12,400 | 8,390 | 10,600 | 631,000 |
| December | 8,740 | 5,700 | 7,510 | 462,000 |
| January | 7,020 | 5,080 | 6,210 | 382,000 |
| February | 7,130 | 5,120 | 6,260 | 348,000 |
| March | 15,200 | 6,190 | 9,450 | 581,000 |
| April | 49,800 | 14,300 | 25,500 | 1,520,000 |
| May | 80,700 | 32,200 | 52,100 | 3,200,000 |
| June | 83,800 | 32,000 | 62,100 | 3,700,000 |
| July | 35,800 | 11,900 | 24,200 | 1,490,000 |
| August | 12,900 | 5,960 | 9,500 | 584,000 |
| September | 12,500 | 3,510 | 5,290 | 315,000 |
| The year | 83,800 | 3,510 | 19,700 | 14,300,000 |

### COLORADO RIVER AT YUMA, ARIZ.

LOCATION.—In NE. ¼ NE. ¼ sec. 35, T. 16 S., R. 22 E., San Bernardino base and meridian, 100 feet upstream from original Southern Pacific Railroad bridge and half a mile downstream from highway bridge at Yuma, Yuma County. Since the change in channel on June 7, 1920, Gila River enters from east 5 miles upstream from this station.

DRAINAGE AREA.—242,000 square miles (measured on map compiled from best available maps of the Colorado River Basin).

RECORDS AVAILABLE.—April 1, 1878, to September 30, 1926. Gage heights only, prior to January 1, 1902.

GAGE.—Long-distance water-stage recorder installed May 1, 1922. Sender in stilling well on left bank 100 feet upstream from original Southern Pacific Railroad bridge at same point as vertical staff gage formerly used. Continuous recorder in office of Bureau of Reclamation. Sender and recorder inspected daily by Dan Martinez. Prior to installation of recorder vertical staff at same location and datum. Zero of gage is 102.79 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from cable 1,100 feet downstream from gage.

CHANNEL AND CONTROL.—Bed composed of shifting sand and silt; subject to much scour during high water. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 73,100 second-feet on June 16 (stage, 25.18 feet); maximum stage, 26.65 feet at 1 p. m. June 6. Minimum stage, 15.90 feet at 7 p. m. September 16 (discharge, 2,130 second-feet).

1902–1926: Maximum daily mean discharge, 240,000 second-feet January 22, 1916; minimum discharge, 1,150 second-feet on January 8, 1925.

DIVERSIONS.—Water is diverted for irrigation and power from main river and tributaries. Some water is diverted out of the drainage basin above this station. Water for the Yuma project of the United States Bureau of Reclamation is diverted from right side of river at Laguna Dam 15 miles upstream. Canal siphons under river at Yuma. Wasteway from canal returns water to river in right side half a mile below gaging station. Imperial Irrigation District diverts water from river on right side 7 miles downstream from this station.

REGULATION.—Flow temporarily affected at times by sluicing at Laguna Dam Storage on tributaries has very little effect on flow at this station.

ACCURACY.—Stage-discharge relation continually changing. Discharge measurements made on alternate days except Sundays throughout year. Beginning January, 1926, discharge measurements made with equipment and methods similar to those used at other gaging stations on Colorado River. Operation of water-stage recorder satisfactory, except November 7–13 and December 15 to January 31, when staff readings were used. Staff gage read twice each day throughout year. Daily discharge ascertained by shifting-control method by applying to standard rating table mean daily gage height determined from recorder graph.

COOPERATION.—Station operated by United States Bureau of Reclamation. Records furnished by Bureau of Reclamation and reviewed and checked by Geological Survey. Monthly discharge computed by Geological Survey.

*Daily discharge, in second-feet, of Colorado River at Yuma, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17,000 | 14,000 | 8,860 | 6,300 | 4,400 | 5,290 | 11,500 | 41,600 | 57,400 | 28,600 | 11,500 | 4,610 |
| 2 | 15,300 | 12,900 | 8,340 | 5,960 | 4,500 | 4,910 | 11,600 | 41,400 | 61,600 | 28,300 | 10,500 | 4,310 |
| 3 | 14,600 | 11,700 | 8,290 | 6,230 | 4,540 | 5,140 | 13,300 | 43,000 | 63,400 | 27,200 | 13,900 | 4,070 |
| 4 | 14,000 | 11,900 | 7,760 | 6,520 | 4,520 | 5,170 | 12,700 | 44,100 | 65,200 | 27,800 | 12,000 | 3,740 |
| 5 | 15,900 | 11,700 | 8,460 | 6,830 | 4,480 | 5,100 | 12,800 | 45,200 | 67,300 | 26,300 | 10,600 | 3,540 |
| 6 | 17,600 | 12,200 | 9,660 | 6,620 | 4,330 | 5,520 | 14,000 | 45,400 | 68,300 | 24,300 | 10,400 | 3,760 |
| 7 | 21,400 | 12,600 | 9,180 | 6,520 | 4,400 | 4,870 | 14,000 | 46,600 | 66,500 | 23,800 | 9,800 | 5,190 |
| 8 | 17,600 | 12,500 | 9,040 | 7,110 | 4,310 | 4,590 | 13,400 | 48,500 | 66,600 | 24,100 | 9,370 | 8,250 |
| 9 | 21,800 | 12,100 | 8,550 | 6,760 | 4,440 | 4,650 | 15,500 | 48,600 | 67,700 | 23,400 | 8,510 | 5,120 |
| 10 | 24,400 | 11,800 | 8,250 | 6,110 | 4,370 | 4,440 | 27,200 | 49,300 | 68,000 | 23,200 | 9,230 | 4,940 |
| 11 | 28,000 | 11,100 | 8,550 | 6,590 | 4,610 | 4,540 | 35,800 | 49,300 | 68,300 | 24,500 | 8,820 | 4,540 |
| 12 | 27,900 | 11,400 | 8,770 | 6,830 | 4,820 | 4,540 | 26,800 | 50,500 | 68,600 | 24,100 | 8,290 | 4,090 |
| 13 | 28,400 | 12,400 | 8,600 | 6,520 | 5,730 | 4,610 | 27,200 | 51,600 | 69,700 | 24,800 | 8,550 | 4,230 |
| 14 | 23,400 | 13,100 | 8,250 | 6,720 | 5,790 | 5,000 | 24,900 | 53,900 | 71,200 | 23,900 | 9,270 | 5,170 |
| 15 | 19,900 | 13,200 | 8,130 | 6,460 | 4,980 | 5,490 | 22,100 | 57,400 | 71,800 | 25,600 | 7,180 | 4,650 |
| 16 | 18,600 | 11,900 | 8,130 | 6,420 | 5,290 | 6,330 | 22,500 | 57,800 | 73,100 | 26,000 | 7,110 | 3,330 |
| 17 | 17,600 | 10,700 | 8,000 | 5,700 | 5,360 | 6,970 | 23,700 | 56,200 | 72,700 | 26,100 | 9,370 | 2,440 |
| 18 | 17,600 | 10,100 | 7,840 | 5,930 | 5,260 | 7,150 | 23,500 | 47,600 | 70,600 | 29,800 | 9,320 | 3,190 |
| 19 | 19,900 | 10,200 | 8,290 | 5,570 | 5,440 | 7,110 | 23,200 | 41,600 | 68,200 | 31,800 | 9,000 | 7,560 |
| 20 | 19,700 | 10,200 | 7,450 | 5,240 | 6,230 | 7,370 | 23,900 | 37,500 | 64,500 | 29,500 | 9,140 | 6,260 |
| 21 | 19,500 | 10,500 | 6,720 | 4,890 | 6,360 | 8,130 | 23,400 | 34,900 | 60,000 | 26,900 | 9,610 | 5,190 |
| 22 | 20,300 | 10,900 | 6,720 | 5,010 | 6,590 | 7,920 | 23,300 | 32,200 | 57,500 | 23,700 | 9,370 | 4,200 |
| 23 | 18,300 | 10,200 | 6,790 | 5,680 | 5,930 | 7,720 | 24,700 | 31,800 | 55,400 | 21,100 | 9,420 | 3,460 |
| 24 | 16,800 | 11,000 | 6,760 | 4,670 | 5,490 | 7,370 | 26,400 | 33,300 | 49,900 | 19,200 | 8,290 | 3,680 |
| 25 | 16,400 | 10,800 | 6,900 | 5,030 | 5,760 | 8,950 | 29,700 | 34,900 | 44,700 | 18,600 | 7,220 | 4,800 |
| 26 | 15,600 | 10,500 | 6,520 | 4,630 | 5,820 | 10,600 | 31,300 | 37,300 | 40,600 | 16,800 | 6,690 | 3,540 |
| 27 | 14,600 | 10,200 | 6,720 | 4,440 | 5,650 | 12,200 | 34,400 | 40,600 | 36,900 | 15,900 | 6,330 | 3,400 |
| 28 | 14,900 | 9,850 | 6,520 | 4,460 | 5,790 | 13,200 | 36,900 | 44,000 | 35,100 | 13,700 | 6,300 | 3,300 |
| 29 | 14,300 | 10,100 | 5,840 | 4,670 | ------- | 13,600 | 39,000 | 48,000 | 33,900 | 11,900 | 5,700 | 3,360 |
| 30 | 13,300 | 9,460 | 5,490 | 4,800 | ------- | 13,700 | 40,400 | 51,100 | 30,400 | 12,000 | 5,120 | 3,190 |
| 31 | 13,200 | -------- | 5,590 | 4,420 | ------- | 12,900 | -------- | 54,400 | -------- | 11,700 | 4,650 | ------ |

*Monthly discharge of Colorado River at Yuma, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 28,400 | 13,200 | 18,600 | 1,140,000 |
| November | 14,000 | 9,460 | 11,400 | 678,000 |
| December | 9,660 | 5,490 | 7,710 | 474,000 |
| January | 7,110 | 4,420 | 5,790 | 356,000 |
| February | 6,590 | 4,310 | 5,190 | 288,000 |
| March | 13,700 | 4,440 | 7,260 | 446,000 |
| April | 40,400 | 11,500 | 23,600 | 1,400,000 |
| May | 57,800 | 31,800 | 45,100 | 2,770,000 |
| June | 73,100 | 30,400 | 59,800 | 3,560,000 |
| July | 31,800 | 11,700 | 23,100 | 1,420,000 |
| August | 13,900 | 4,650 | 8,730 | 537,000 |
| September | 8,250 | 2,440 | 4,370 | 260,000 |
| The year | 73,100 | 2,440 | 18,400 | 13,300,000 |

### FRASER RIVER NEAR WEST PORTAL, COLO.

LOCATION.—In NE. ¼ sec. 4, T. 2 S., R. 75 W., a quarter of a mile from Vasquez siding on Denver & Salt Lake Railroad and 1½ miles northwest of West Portal, Grand County. Nearest important tributary, Buck Creek, enters 7 miles upstream.

DRAINAGE AREA.—28 square miles (measured on topographic map).

RECORDS AVAILABLE.—September 23, 1910, to September 30, 1926.

GAGE.—Gurley water-stage recorder on left bank 300 feet upstream from old logging road crossing at Vasquez; inspected by forest ranger. During winter readings taken from staff gage 1 mile upstream at railroad bridge.

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

CHANNEL AND CONTROL.—Bed composed of boulders and coarse gravel; fairly permanent. No well-defined control. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.36 feet at 8 p. m. June 6 (discharge, 383 second-feet); minimum discharge, 5 second-feet January 8–10 and 20–25.

1911–1926: Maximum discharge recorded, 820 second-feet at 9 p. m. June 13, 1918 (gage height, 2.9 feet); minimum discharge, 2 second-feet on March 30, 1912 (gage height, 0.60 foot).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Court decree for diversions of 53 second-feet across divide from headwaters of Fraser River into headwaters of Clear Creek. Water is diverted below station for irrigation of 9,300 acres.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow. No artificial regulation.

COOPERATION.—Complete records furnished by State engineer of Colorado.

*Daily discharge, in second-feet, of Fraser River near West Portal, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 25 | 15 | 8 | 8 | 9 | 10 | 54 | 201 | 227 | 59 | 26 |
| 2 | 28 | 25 | 14 | 8 | 9 | 8 | 9 | 60 | 229 | 210 | 58 | 25 |
| 3 | 26 | 25 | 14 | 7 | 8 | 8 | 9 | 69 | 241 | 201 | 59 | 26 |
| 4 | 26 | 24 | 13 | 7 | 8 | 8 | 9 | 71 | 256 | 192 | 53 | 26 |
| 5 | 27 | 24 | 14 | 7 | 8 | 9 | 9 | 54 | 263 | 195 | 52 | 26 |
| 6 | 31 | 24 | 13 | 6 | 8 | 10 | 9 | 49 | 310 | 192 | 65 | 24 |
| 7 | 27 | 24 | 13 | 6 | 8 | 10 | 9 | 49 | 349 | 197 | 63 | 22 |
| 8 | 26 | 24 | 13 | 5 | 8 | 10 | 10 | 51 | 338 | 192 | 60 | 21 |
| 9 | 27 | 24 | 13 | 5 | 8 | 9 | 11 | 54 | 324 | 190 | 62 | 20 |
| 10 | 26 | 24 | 13 | 5 | 8 | 9 | 12 | 54 | 307 | 184 | 59 | 21 |
| 11 | 26 | 24 | 13 | 6 | 8 | 8 | 14 | 56 | 302 | 170 | 56 | 21 |
| 12 | 26 | 24 | 13 | 6 | 8 | 8 | 14 | 58 | 296 | 148 | 52 | 21 |
| 13 | 26 | 24 | 12 | 6 | 8 | 8 | 11 | 62 | 290 | 139 | 50 | 21 |
| 14 | 26 | 13 | 12 | 6 | 8 | 8 | 12 | 64 | 282 | 126 | 48 | 20 |
| 15 | 26 | 15 | 12 | 7 | 8 | 9 | 14 | 64 | 282 | 123 | 46 | 20 |
| 16 | 26 | 15 | 12 | 7 | 7 | 9 | 18 | 66 | 270 | 117 | 45 | 20 |
| 17 | 25 | 15 | 12 | 6 | 7 | 10 | 20 | 69 | 236 | 107 | 44 | 20 |
| 18 | 24 | 14 | 11 | 6 | 7 | 10 | 21 | 71 | 215 | 102 | 42 | 20 |
| 19 | 25 | 14 | 11 | 6 | 7 | 9 | 21 | 76 | 222 | 99 | 41 | 20 |
| 20 | 25 | 14 | 10 | 5 | 7 | 8 | 26 | 76 | 212 | 94 | 39 | 20 |
| 21 | 25 | 14 | 10 | 5 | 7 | 8 | 24 | 92 | 195 | 93 | 38 | 20 |
| 22 | 25 | 14 | 10 | 5 | 7 | 9 | 22 | 156 | 186 | 88 | 37 | 20 |
| 23 | 25 | 14 | 9 | 5 | 7 | 9 | 21 | 186 | 190 | 80 | 37 | 19 |
| 24 | 25 | 14 | 9 | 5 | 7 | 9 | 24 | 208 | 203 | 79 | 33 | 19 |
| 25 | 25 | 14 | 8 | 5 | 7 | 9 | 31 | 220 | 206 | 79 | 32 | 19 |
| 26 | 25 | 14 | 7 | 8 | 8 | 10 | 36 | 220 | 222 | 74 | 32 | 20 |
| 27 | 25 | 15 | 7 | 8 | 11 | 10 | 37 | 208 | 215 | 74 | 29 | 20 |
| 28 | 25 | 15 | 7 | 7 | 8 | 10 | 44 | 192 | 210 | 77 | 27 | 21 |
| 29 | 25 | 15 | 7 | 8 | ------- | 10 | 46 | 173 | 208 | 70 | 27 | 20 |
| 30 | 25 | 15 | 7 | 8 | ------- | 10 | 52 | 173 | 201 | 63 | 27 | 21 |
| 31 | 25 | ------- | 7 | 8 | ------- | 10 | ------- | 181 | ------- | 59 | 26 | ------ |

NOTE.—Stage-discharge relation affected by ice Oct. 22–31 and no gage-height record Sept. 19–24; discharge interpolated. Shifting-control method used Nov. 4 to Mar. 13.

*Monthly discharge of Fraser River near West Portal, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 31 | 24 | 25.9 | 1,590 |
| November | 25 | 13 | 18.6 | 1,110 |
| December | 15 | 7 | 11.0 | 676 |
| January | 8 | 5 | 6.35 | 390 |
| February | 11 | 7 | 7.79 | 433 |
| March | 10 | 8 | 9.06 | 557 |
| April | 52 | 9 | 20.2 | 1,200 |
| May | 220 | 49 | 104 | 6,400 |
| June | 349 | 186 | 249 | 14,800 |
| July | 227 | 59 | 130 | 7,990 |
| August | 65 | 26 | 45.1 | 2,770 |
| September | 26 | 19 | 21.3 | 1,270 |
| The year | 349 | 5 | 54.2 | 39,200 |

### BLUE RIVER AT DILLON, COLO.

LOCATION.—In sec. 18, T. 5 S., R. 77 W., at highway bridge on edge of Dillon, Summit County. Nearest tributaries, Snake River and Tenmile Creek, enter a short distance below.

DRAINAGE AREA.—129 squre miles (measured on Forest Service maps).

RECORDS AVAILABLE.—October 15, 1910, to September 30, 1926.

GAGE.—Gurley water-stage recorder installed April 21, 1920, and referred to vertical staff on right abutment of bridge, which was used previously; inspected by I. W. Blundell.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of compact gravel upon which lodges detritus from hydraulic dredges near Breckenridge. Control is riffle 50 feet downstream which shifts at long intervals. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.44 feet at 11.30 a. m. June 7 (discharge, 1,080 second-feet); minimum discharge occurred during winter.

1911–1926: Maximum stage recorded, 3.6 feet on June 14, 1924 (discharge, 1,180 second-feet); minimum discharge, 14 second-feet on January 30 and February 9, 1915 (gage height, 1.10 feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Except for a small diversion across Boreas Pass practically no diversions above station which do not return water to river.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow. No artificial regulation.

COOPERATION.—Complete records furnished by State engineer of Colorado.

*Daily discharge, in second-feet, of Blue River at Dillon, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 80 | 62 | | | | 36 | 202 | 625 | 536 | 170 | 90 |
| 2 | 77 | 62 | | | | 30 | 231 | 699 | 506 | 165 | 88 |
| 3 | 74 | 63 | | | | 30 | 276 | 745 | 478 | 163 | 85 |
| 4 | 74 | 62 | | | | 30 | 348 | 817 | 489 | 168 | 84 |
| 5 | 73 | 59 | | | | 30 | 379 | 908 | 461 | 175 | 84 |
| 6 | 71 | 56 | | | | 30 | 421 | 916 | 467 | 177 | 85 |
| 7 | 74 | 56 | | | | 30 | 365 | 1050 | 500 | 196 | 84 |
| 8 | 78 | 56 | | | | 34 | 314 | 995 | 495 | 196 | 81 |
| 9 | 77 | 56 | | | | 38 | 280 | 977 | 495 | 213 | 78 |
| 10 | 76 | 54 | | | | 40 | 251 | 900 | 450 | 234 | 77 |
| 11 | 74 | 54 | | | | 45 | 231 | 874 | 431 | 219 | 76 |
| 12 | 73 | 54 | | | | 45 | 213 | 858 | 445 | 196 | 73 |
| 13 | 73 | 54 | | | | 38 | 196 | 874 | 426 | 172 | 73 |
| 14 | 73 | 54 | | | | 42 | 190 | 858 | 388 | 154 | 71 |
| 15 | 73 | 52 | | | | 50 | 202 | 817 | 374 | 143 | 71 |

*Daily discharge, in second-feet, of Blue River at Dillon, Colo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 74 | 50 | | | | 78 | 237 | 784 | 361 | 138 | 69 |
| 17 | 73 | 48 | 37 | | | 84 | 280 | 684 | 343 | 132 | 68 |
| 18 | 73 | 45 | | | | 90 | 295 | 599 | 335 | 128 | 68 |
| 19 | 71 | 42 | | | | 90 | 291 | 566 | 331 | 122 | 65 |
| 20 | 70 | 42 | | 28 | | 108 | 318 | 548 | 318 | 122 | 65 |
| 21 | 70 | 42 | | | | 102 | 393 | 530 | 306 | 116 | 65 |
| 22 | 69 | 42 | | | | 100 | 472 | 495 | 287 | 116 | 65 |
| 23 | 69 | 42 | | | | 98 | 548 | 467 | 262 | 116 | 65 |
| 24 | 65 | 42 | | | | 102 | 606 | 467 | 254 | 114 | 63 |
| 25 | 63 | 42 | | | 31 | 107 | 722 | 484 | 262 | 107 | 60 |
| 26 | 58 | 45 | | | | 118 | 737 | 478 | 247 | 102 | 59 |
| 27 | 63 | 45 | | | | 128 | 669 | 484 | 231 | 97 | 60 |
| 28 | 63 | 45 | | | | 149 | 592 | 489 | 222 | 95 | 60 |
| 29 | 68 | 45 | | | | 156 | 506 | 506 | 199 | 94 | 60 |
| 30 | 66 | 45 | | | | 175 | 512 | 548 | 190 | 94 | 59 |
| 31 | 63 | | | | | | 554 | | 180 | 92 | |

NOTE.—No gage-height record Nov. 15–30 and Apr. 1–21; discharge based on temperature record and current-meter measurements. Shifting-control method used Apr. 22 to June 15.

*Monthly discharge of Blue River at Dillon, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 80 | 58 | 70.9 | 4,360 |
| November | 63 | | 50.5 | 3,000 |
| December | | | 39 | 2,400 |
| January | | | 28 | 1,720 |
| February | | | 29 | 1,610 |
| March | | | 30 | 1,840 |
| April | 175 | | 74.4 | 4,430 |
| May | 737 | 190 | 382 | 23,500 |
| June | 1,050 | 467 | 701 | 41,700 |
| July | 536 | 180 | 364 | 22,400 |
| August | 234 | 92 | 146 | 8,980 |
| September | 90 | 59 | 71.7 | 4,270 |
| The year | 1,050 | | 166 | 120,000 |

NOTE.—Mean discharge for December, January, February, and March based on temperature record and three current-meter measurements.

### ROARING FORK AT GLENWOOD SPRINGS, COLO.

LOCATION.—In sec. 9, T. 6 S., R. 89 W., 1,500 feet above mouth of river at Glenwood Springs, Garfield County.

DRAINAGE AREA.—1,460 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 6, 1906, to September 30, 1909; September 21, 1910, to September 30, 1926.

GAGE.—Gurley water-stage recorder installed October 27, 1917, and referred to inclined staff on left bank 800 feet above highway bridge; inspected by C. H. Oberly and Andrew Dickson.

DISCHARGE MEASUREMENTS.—Made from single-span highway bridge.

CHANNEL AND CONTROL.—Bed composed of boulders and coarse gravel; shifting at long intervals. No well-defined control. At rare intervals affected by backwater from Colorado River. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 6.36 feet at 7 a. m. June 7 with an estimated backwater effect of 0.3 foot (discharge, 9,640 second-feet); minimum stage, 0.80 foot from 1 p. m. to 8 p. m. February 24 (discharge, 300 second-feet).

1906–1909; 1910–1926: Maximum discharge recorded, 17,600 second-feet June 14, 1918, and June 14, 1921; minimum discharge, 225 second-feet on December 16, 1906 (gage height, 1.15 feet).

ICE.—Stage-discharge relation not seriously affected by ice except for short periods.

DIVERSIONS.—Water diverted from Roaring Fork for irrigation of 8,700 acres, and water diverted from tributaries for irrigation of 25,000 acres.

REGULATION.—Diurnal fluctuation during spring cuased by alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation shifts at intervals; slightly affected by ice. Rating curves used October 1 to December 9 and December 16 to September 25 are both well defined. Operation of water-stage recorder satisfactory except as explained in footnote to table of daily discharge. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph; shifting-control method used July 17 to August 11. Records good except for periods of missing gage heights and when affected by ice and by backwater, for which they are fair.

*Discharge measurements of Roaring Fork at Glenwood Springs, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 7 | 1.45 | 749 | May 11 | 2.37 | 1,470 | July 28 | 2.25 | 1,450 |
| Nov. 16 | 1.31 | 560 | May 12 | 2.25 | 1,360 | Aug. 24 | 1.53 | 652 |
| Mar. 30 | .98 | 367 | June 8 | 5.35 | 6,890 | | | |

NOTE.—All measurements, except the one on Nov. 16, furnished by State engineer.

*Daily discharge, in second-feet, of Roaring Fork at Glenwood Springs, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 990 | 805 | 586 | 432 | 390 | 346 | 370 | 2,100 | 3,390 | 3,800 | 1,150 | 523 |
| 2 | 960 | 796 | 586 | 402 | 374 | 352 | 395 | 2,100 | 3,240 | 3,450 | 1,100 | 511 |
| 3 | 920 | 852 | 593 | 394 | 360 | 360 | 386 | 2,520 | 3,110 | 2,970 | 1,080 | 511 |
| 4 | 890 | 834 | 532 | 386 | 363 | 370 | 394 | 2,950 | 3,800 | 3,060 | 1,110 | 529 |
| 5 | 940 | 754 | 580 | 363 | 363 | 382 | 402 | 3,430 | 6,620 | 3,430 | 1,300 | 565 |
| 6 | 1,250 | 746 | 580 | 378 | 356 | 366 | 419 | 3,430 | 7,540 | 3,450 | 1,250 | 578 |
| 7 | 1,200 | 805 | 568 | 370 | 370 | 338 | 517 | 2,610 | 8,440 | 4,240 | 1,270 | 578 |
| 8 | 1,090 | 805 | 520 | 374 | 370 | 352 | 572 | 2,230 | 7,510 | 5,120 | 1,290 | 578 |
| 9 | 1,050 | 788 | 509 | 386 | 370 | 374 | 529 | 1,900 | 7,590 | 4,750 | 1,300 | 600 |
| 10 | 1,040 | 780 | 480 | 363 | 363 | 382 | 517 | 1,670 | 6,890 | 3,840 | 1,260 | 580 |
| 11 | 1,200 | 771 | 455 | 378 | 370 | 386 | 535 | 1,450 | 6,860 | 3,530 | 1,240 | 541 |
| 12 | 1,140 | 762 | 440 | 356 | 360 | 398 | 529 | 1,310 | 7,110 | 3,340 | 1,100 | 530 |
| 13 | 1,070 | 754 | 430 | 352 | 363 | 394 | 565 | 1,190 | 6,970 | 3,110 | 950 | 525 |
| 14 | 1,020 | 754 | 420 | 370 | 363 | 382 | 584 | 1,130 | 6,280 | 2,880 | 825 | 500 |
| 15 | 980 | 698 | 400 | 370 | 349 | 402 | 591 | 1,300 | 6,060 | 2,640 | 807 | 520 |
| 16 | 970 | 690 | 352 | 398 | 378 | 419 | 679 | 1,410 | 6,090 | 2,440 | 780 | 540 |
| 17 | 1,000 | 660 | 390 | 398 | 360 | 446 | 880 | 1,630 | 4,870 | 2,330 | 764 | 565 |
| 18 | 970 | 619 | 394 | 395 | 356 | 475 | 1,110 | 1,750 | 4,170 | 2,260 | 748 | 591 |
| 19 | 930 | 606 | 437 | 398 | 338 | 475 | 1,220 | 1,800 | 4,190 | 2,160 | 732 | 595 |
| 20 | 900 | 606 | 442 | 400 | 370 | 475 | 1,270 | 2,210 | 4,370 | 2,080 | 715 | 590 |
| 21 | 881 | 580 | 419 | 390 | 374 | 465 | 1,260 | 2,950 | 4,260 | 2,030 | 700 | 585 |
| 22 | 872 | 580 | 424 | 370 | 342 | 446 | 1,370 | 3,760 | 3,780 | 1,860 | 693 | 575 |
| 23 | 881 | 600 | 432 | 338 | 363 | 455 | 1,590 | 4,100 | 3,760 | 1,750 | 686 | 550 |
| 24 | 900 | 600 | 432 | 342 | 335 | 500 | 1,610 | 5,000 | 4,130 | 1,710 | 651 | 535 |
| 25 | 843 | 606 | 424 | 428 | 366 | 495 | 1,450 | 5,500 | 4,330 | 1,680 | 617 | 517 |
| 26 | 852 | 586 | 394 | 398 | 346 | 446 | 1,670 | 6,000 | 3,950 | 1,580 | 604 | 505 |
| 27 | 843 | 580 | 390 | 398 | 335 | 442 | 1,800 | 5,100 | 4,020 | 1,500 | 591 | 540 |
| 28 | 843 | 580 | 390 | 330 | 346 | 414 | 1,800 | 4,250 | 4,060 | 1,450 | 578 | 500 |
| 29 | 852 | 580 | 402 | 370 | ------ | 424 | 1,940 | 3,840 | 4,020 | 1,360 | 565 | 510 |
| 30 | 852 | 580 | 363 | 394 | ------ | 410 | 2,170 | 3,740 | 3,740 | 1,280 | 553 | 520 |
| 31 | 824 | ------ | 360 | 374 | ------ | 385 | ------ | 3,610 | ------ | 1,200 | 535 | ------ |

NOTE.—No gage-height record Jan. 17–22, 28–29, May 23–28, July 15–16, 25–27, Aug. 12–13, 20, Sept. 9–10, 12–17, 19–24, 26–30; stage-discharge relation affected by ice Dec. 10–15 and by backwater from Colorado River June 5–13; discharge based on comparison with flow of Colorado River at Glenwood Springs.

*Monthly discharge of Roaring Fork at Glenwood Springs, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 1,250 | 824 | 966 | 59,400 |
| November | 852 | 580 | 692 | 41,200 |
| December | 593 | 352 | 456 | 28,000 |
| January | 432 | 330 | 380 | 23,400 |
| February | 390 | 335 | 360 | 20,000 |
| March | 500 | 338 | 411 | 25,300 |
| April | 2,170 | 370 | 971 | 57,800 |
| May | 6,000 | 1,130 | 2,840 | 175,000 |
| June | 8,440 | 3,110 | 5,170 | 308,000 |
| July | 5,120 | 1,200 | 2,650 | 163,000 |
| August | 1,300 | 535 | 889 | 54,700 |
| September | 600 | 500 | 546 | 32,500 |
| The year | 8,440 | 330 | 1,360 | 988,000 |

### PARACHUTE CREEK AT GRAND VALLEY, COLO.

LOCATION.—In NW. ¼ sec. 12, T. 7 S., R. 96 W., at Aplin ranch, half a mile northwest of Grand Valley, Garfield County. No tributary between station and mouth, 1 mile below.

DRAINAGE AREA.—196 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 7, 1921, to September 30, 1926.

GAGE.—Vertical staff attached to side of left abutment of private bridge; read by W. T. Aplin.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of compact silt on shale rock. Control at rapids 200 feet downstream; slightly shifting during high water. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.2 feet at 8 a. m. and 6 p. m. April 27 (discharge, 226 second-feet); minimum stage, creek dry during greater part of August and September.

1921–1926: Maximum stage recorded, 3.0 feet at 5 p. m. May 9, 1922 (discharge, 790 second-feet); minimum discharge occurred in 1926.

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

DIVERSIONS.—Water diverted above station for irrigation of 2,000 acres.

REGULATION.—Diurnal fluctuation during spring due to alternate melting and freezing of mountain snow. No artificial regulation.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of Parachute Creek at Grand Valley, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 44 | 17 | 24 | 140 | 24 | 1 | 4 | 0 |
| 2 | 12 | 44 | 17 | 26 | 103 | 24 | 1 | 2 | 0 |
| 3 | 12 | 51 | 17 | 58 | 88 | 24 | 1 | 2 | 0 |
| 4 | 12 | 58 | 17 | 71 | 88 | 24 | 1 | 2 | 0 |
| 5 | 12 | 58 | 17 | 33 | 83 | 24 | 2 | 4 | 0 |
| 6 | 12 | 58 | 17 | 58 | 74 | 17 | 1 | 24 | 0 |
| 7 | 12 | 58 | 17 | 74 | 74 | 17 | 1 | 7 | 0 |
| 8 | 12 | 58 | 17 | 74 | 92 | 17 | 1 | 4 | 0 |
| 9 | 12 | 58 | 20 | 66 | 103 | 18 | 1 | 4 | 0 |
| 10 | 12 | 58 | 20 | 58 | 88 | 17 | 1 | 4 | 0 |
| 11 | 24 | 58 | 20 | 58 | 74 | 17 | 1 | 4 | 0 |
| 12 | 24 | 58 | 24 | 71 | 74 | 17 | 2 | 2 | 0 |
| 13 | 17 | 58 | 33 | 71 | 66 | 24 | 20 | 2 | 0 |
| 14 | 12 | 58 | 33 | 78 | 66 | 28 | 4 | 2 | 1 |
| 15 | 12 | 58 | 33 | 88 | 58 | 20 | 4 | 0 | 2 |

*Daily discharge, in second-feet, of Parachute Creek at Grand Valley, Colo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 16 | 58 | 24 | 88 | 58 | 12 | 2 | 0 | 0 |
| 17 | 16 | 58 | 26 | 96 | 58 | 7 | 1 | 0 | 0 |
| 18 | 12 | 58 | 24 | 96 | 44 | 7 | 1 | 0 | 0 |
| 19 | 12 | 58 | 24 | 119 | 44 | 7 | 1 | 0 | 0 |
| 20 | 12 | 58 | 28 | 140 | 44 | 4 | 1 | 0 | 0 |
| 21 | 12 | 58 | 26 | 154 | 44 | 4 | 1 | 0 | 0 |
| 22 | 12 | 58 | 24 | 190 | 42 | 2 | 1 | 0 | 0 |
| 23 | 17 | 58 | 28 | 211 | 33 | 2 | 1 | 0 | 0 |
| 24 | 17 | 58 | 38 | 211 | 33 | 2 | 1 | 1 | 2 |
| 25 | 17 | 58 | 24 | 211 | 33 | 2 | 1 | 0 | 2 |
| 26 | 24 | 58 | 24 | 196 | 31 | 1 | 1 | 0 | 3 |
| 27 | 24 | 58 | 24 | 226 | 28 | 1 | 1 | 0 | 4 |
| 28 | 28 | 58 | 24 | 196 | 26 | 1 | 1 | 0 | 7 |
| 29 | 33 | 58 | 17 | 211 | 24 | 1 | 1 | 0 | 7 |
| 30 | 33 | 58 | 20 | 127 | 20 | 1 | 1 | 0 | 33 |
| 31 | 33 | ---- | 18 | ---- | 18 | ---- | 1 | 0 | ---- |

*Monthly discharge of Parachute Creek at Grand Valley, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 33 | 12 | 17.0 | 1,050 |
| November | 58 | 44 | 56.8 | 3,380 |
| March | 38 | 17 | 23.0 | 1,410 |
| April | 226 | 24 | 113 | 6,720 |
| May | 140 | 18 | 59.7 | 3,670 |
| June | 28 | 1 | 12.2 | 726 |
| July | 20 | 1 | 1.90 | 117 |
| August | 24 | 0 | 2.19 | 135 |
| September | 33 | 0 | 2.03 | 121 |

### ROAN CREEK NEAR DE BEQUE, COLO.

LOCATION.—On line between secs. 10 and 15, T. 7 S., R. 98 W., at highway bridge 11 miles north of De Beque, Mesa County. Nearest tributary, Kimball Creek, enters half a mile above.

DRAINAGE AREA.—210 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 8, 1921, to September 30, 1926.

GAGE.—Chain gage attached to downstream side of bridge; read by J. D. Nethery.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of compact mud and gravel; shifting. No well-defined control. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.4 feet at 8 a. m. and 6 p. m. May 1 (discharge, 193 second-feet); minimum discharge probably occurred during winter.

1921–1926: Maximum stage recorded, 4.45 feet at 7.30 p. m. May 21, 1922 (discharge, 1,110 second-feet); minimum discharge, 8 second-feet at 7.30 p. m. August 4, 1922.

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

DIVERSIONS.—Water diverted for irrigation of 2,200 acres from Roan Creek, chiefly below station; also 3,400 acres from tributaries.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of Roan Creek near De Beque, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 19 | | 16 | 16 | 193 | 36 | 21 | 19 | 16 |
| 2 | 16 | 20 | | 16 | 17 | 179 | 36 | 21 | 17 | 16 |
| 3 | 15 | 20 | | 16 | 17 | 175 | 36 | 21 | 17 | 16 |
| 4 | 16 | 21 | | 17 | 17 | 166 | 32 | 29 | 14 | 16 |
| 5 | 27 | 19 | | 26 | 36 | 157 | 32 | 32 | 14 | 14 |
| 6 | 33 | 19 | | 20 | 36 | 157 | 32 | 26 | 16 | 14 |
| 7 | 23 | 19 | | 15 | 56 | 148 | 36 | 62 | 16 | 14 |
| 8 | 21 | 18 | | 21 | 75 | 148 | 34 | 32 | 14 | 14 |
| 9 | 20 | 18 | | 21 | 50 | 140 | 32 | 24 | 14 | 14 |
| 10 | 23 | 18 | 15 | 24 | 40 | 114 | 32 | 24 | 16 | 14 |
| 11 | 32 | 19 | | 29 | 68 | 114 | 32 | 62 | 17 | 14 |
| 12 | 30 | 19 | | 29 | 68 | 98 | 31 | 36 | 19 | 14 |
| 13 | 28 | 19 | | 29 | 75 | 90 | 31 | 36 | 19 | 14 |
| 14 | 26 | 18 | | 32 | 75 | 82 | 31 | 32 | 19 | 14 |
| 15 | 24 | 17 | | 36 | 82 | 82 | 31 | 32 | 19 | 16 |
| 16 | 22 | 18 | | 50 | 90 | 75 | 31 | 32 | 19 | 14 |
| 17 | 21 | 18 | | 50 | 98 | 75 | 31 | 32 | 17 | 14 |
| 18 | 21 | 17 | | 50 | 98 | 62 | 31 | 26 | 17 | 14 |
| 19 | 20 | 17 | 16 | 50 | 98 | 50 | 31 | 21 | 17 | 14 |
| 20 | 20 | 17 | 16 | 40 | 106 | 40 | 31 | 21 | 16 | 13 |
| 21 | 20 | 17 | 16 | 45 | 106 | 40 | 31 | 21 | 16 | 12 |
| 22 | 19 | 18 | 15 | 50 | 123 | 40 | 30 | 21 | 16 | 12 |
| 23 | 19 | 18 | 16 | 56 | 148 | 32 | 29 | 17 | 16 | 12 |
| 24 | 19 | 18 | 15 | 21 | 157 | 32 | 29 | 16 | 14 | 13 |
| 25 | 19 | 18 | 15 | 19 | 166 | 32 | 29 | 16 | 14 | 13 |
| 26 | 18 | 18 | 15 | 17 | 166 | 40 | 26 | 14 | 14 | 13 |
| 27 | 18 | 18 | 15 | 17 | 161 | 40 | 26 | 14 | 14 | 14 |
| 28 | 18 | 19 | 16 | 16 | 157 | 32 | 26 | 148 | 14 | 14 |
| 29 | 17 | 19 | ------ | 16 | 175 | 36 | 26 | 24 | 14 | 14 |
| 30 | 18 | 19 | ------ | 16 | 179 | 50 | 21 | 21 | 14 | 14 |
| 31 | 18 | ------ | ------ | 16 | ------ | 62 | ------ | 19 | 14 | ------ |

*Monthly discharge of Roan Creek near De Beque, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 33 | 15 | 21.3 | 1,310 |
| November | 21 | 17 | 18.4 | 1,090 |
| February | ------ | ------ | 15 | 833 |
| March | 56 | 15 | 28.3 | 1,740 |
| April | 179 | 16 | 91.9 | 5,470 |
| May | 193 | 32 | 89.7 | 5,520 |
| June | 36 | 21 | 30.7 | 1,830 |
| July | 148 | 14 | 30.7 | 1,890 |
| August | 19 | 14 | 16.0 | 984 |
| September | 16 | 12 | 14.0 | 833 |

NOTE.—Mean discharge for February based on temperature and gage-height record.

### TAYLOR RIVER AT ALMONT, COLO.

LOCATION.—In sec. 22, T. 51 N., R. 1 E., at highway bridge in Almont, Gunnison County, 300 feet above junction of Taylor and East Rivers.

DRAINAGE AREA.—440 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—July 27, 1910, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder installed April 16, 1922, on downstream end of center pier and referred to staff gage used previously; inspected by J. W. Brittain.

DISCHARGE MEASUREMENTS.—Made from 2-span bridge.

CHANNEL AND CONTROL.—Bed composed of small boulders and coarse gravel; slightly shifting. No well-defined control. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.1 feet at 6 a. m. June 7 (discharge, 2,320 second-feet); minimum discharge occurred during winter.

1910–1926: Maximum discharge recorded, 3,760 second-feet on June 9, 1920 (gage-height, 5.0 feet); minimum stage, 1.2 feet, several days during August, 1913 (discharge, 50 second-feet).

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

DIVERSIONS.—Water diverted by Taylor River for irrigation of 1,800 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. 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; shifting-control method used August 12 to September 30. Records good except for periods of missing gage heights and when affected by ice, for which they are fair.

*Discharge measurements of Taylor River at Almont, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Mar. 24 | 1.78 | 131 | May 28 | 3.16 | 1,050 | Aug. 9 | 2.35 | 395 |
| Apr. 19 | 2.10 | 274 | June 16 | 3.36 | 1,190 | Sept. 11 | 1.82 | 176 |

NOTE.—Discharge measurements made by employees of State engineer.

*Daily discharge, in second-feet, of Taylor River at Almont, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 180 | 220 | 78 | 100 | 430 | 1,450 | 676 | 289 | 175 |
| 2 | 184 | 215 | 78 | 103 | 486 | 1,680 | 620 | 280 | 175 |
| 3 | 180 | 211 | 105 | 105 | 545 | 1,610 | 605 | 284 | 175 |
| 4 | 188 | 184 | 105 | 105 | 590 | 1,730 | 692 | 303 | 216 |
| 5 | 252 | 184 | 98 | 112 | 605 | 1,710 | 834 | 372 | 294 |
| 6 | 284 | 180 | 76 | 119 | 628 | 1,750 | 927 | 435 | 280 |
| 7 | 229 | 184 | 57 | 140 | 446 | 1,910 | 927 | 435 | 243 |
| 8 | 224 | 166 | 69 | 144 | 419 | 1,480 | 898 | 408 | 229 |
| 9 | 275 | 171 | 78 | 130 | 367 | 1,520 | 708 | 382 | 188 |
| 10 | 280 | 171 | 87 | 126 | 327 | 1,410 | 590 | 362 | 180 |
| 11 | 275 | 175 | 96 | 122 | 308 | 1,360 | 575 | 322 | 184 |
| 12 | 275 | 166 | 100 | 130 | 298 | 1,410 | 700 | 322 | 224 |
| 13 | 234 | 158 | 100 | 153 | 289 | 1,510 | 636 | 280 | 216 |
| 14 | 238 | 158 | 105 | 193 | 298 | 1,260 | 575 | 270 | 202 |
| 15 | 229 | 103 | 105 | 229 | 398 | 1,200 | 560 | 270 | 180 |
| 16 | 224 | 103 | 105 | 303 | 486 | 1,120 | 532 | 270 | 180 |
| 17 | 238 | 120 | 105 | 357 | 480 | 946 | 469 | 275 | 175 |
| 18 | 224 | 136 | 119 | 313 | 506 | 861 | 452 | 280 | 171 |
| 19 | 234 | 136 | 105 | 298 | 532 | 834 | 424 | 266 | 175 |
| 20 | 211 | 136 | 105 | 275 | 708 | 798 | 414 | 257 | 175 |
| 21 | 211 | 136 | 108 | 234 | 908 | 756 | 424 | 266 | 188 |
| 22 | 224 | 136 | 110 | 313 | 1,070 | 716 | 398 | 270 | 216 |
| 23 | 229 | 136 | 130 | 480 | 1,200 | 724 | 372 | 252 | 211 |
| 24 | 224 | 136 | 136 | 398 | 1,320 | 748 | 367 | 234 | 193 |
| 25 | 188 | 136 | 136 | 372 | 1,260 | 708 | 357 | 229 | 188 |
| 26 | 252 | 136 | 119 | 458 | 1,220 | 708 | 342 | 229 | 193 |
| 27 | 252 | 136 | 112 | 486 | 1,120 | 692 | 317 | 220 | 211 |
| 28 | 255 | 136 | 108 | 377 | 994 | 644 | 367 | 211 | 202 |
| 29 | 240 | 136 | 112 | 458 | 994 | 652 | 367 | 211 | 193 |
| 30 | 230 | 136 | 116 | 480 | 1,120 | 732 | 332 | 206 | 216 |
| 31 | 225 | ------- | 100 | ------- | 1,270 | ------- | 303 | 188 | ------- |

NOTE.—No gage-height record Oct. 27 to Nov. 2, Mar. 21–23; stage-discharge relation affected by ice Nov. 17, 22–26, 30; discharge based on comparison with flow of Gunnison River near Gunnison. Braced figures show mean discharge for period indicated.

*Monthly discharge of Taylor River at Almont, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 284 | 180 | 232 | 14,300 |
| November | 220 | 103 | 155 | 9,220 |
| December | ---------- | ---------- | 106 | 6,520 |
| January | ---------- | ---------- | 84 | 5,160 |
| February | ---------- | ---------- | 95 | 5,280 |
| March | 136 | 57 | 102 | 6,270 |
| April | 486 | 100 | 254 | 15,100 |
| May | 1,320 | 289 | 697 | 42,900 |
| June | 1,910 | 644 | 1,150 | 68,400 |
| July | 927 | 303 | 541 | 33,300 |
| August | 435 | 188 | 286 | 17,600 |
| September | 294 | 171 | 202 | 12,000 |
| The year | 1,910 | ---------- | 326 | 236,000 |

NOTE.—Mean discharge for December, January, and February based on temperature and gage-height records and comparison with flow of Gunnison River near Gunnison.

### GUNNISON RIVER NEAR GUNNISON, COLO.

LOCATION.—In sec. 3, T. 49 N., R. 1 W., at highway bridge 2 miles southwest of Gunnison, Gunnison County. Nearest tributary, Tomichi Creek, enters 1 mile below.

DRAINAGE AREA.—1,010 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—November 27, 1910, to November 30, 1914; April 27, 1916, to September 30, 1926.

GAGE.—Chain on downstream side of bridge; datum lowered 1.00 foot October 15, 1918; read by C. W. Chinery.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control at well-defined rapids below bridge; somewhat shifting. Banks not subject to overflow except during extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.9 feet at 7 a. m. June 7 (discharge, 4,140 second-feet); minimum discharge probably occurred during winter.

1910–1914; 1916–1926: Maximum discharge, 11,400 second-feet June 13, 1918; minimum discharge recorded, 126 second-feet January 8, 1919, from current-meter measurement.

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

DIVERSIONS.—Water diverted by Gunnison River, between this station and forks at Almont, for irrigation of 8,800 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation shifts at intervals; affected by ice. Rating curve used October 1 to December 24 and curve used December 25 to September 30 are both well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for ice-affected periods, for which they are fair.

*Discharge measurements of Gunnison River near Gunnison, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 2 | 1.08 | 292 | Mar. 23 | 1.04 | 231 | June 16 | 3.00 | 2,240 |
| Jan. 21 | [a].82 | 110 | Apr. 19 | 1.90 | 775 | Aug. 9 | 1.82 | 782 |
| Feb. 23 | .90 | 171 | May 27 | 3.10 | 2,600 | Sept. 10 | 1.12 | 277 |

[a] Stage-discharge relation affected by ice.

NOTE.—Discharge measurements made by employees of State engineer.

*Daily discharge, in second-feet, of Gunnison River near Gunnison, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 277 | 378 | | | | 169 | 206 | 1,420 | 2,980 | 1,170 | 436 | 330 |
| 2 | 286 | 366 | | | | 169 | 218 | 1,640 | 3,380 | 1,150 | 436 | 313 |
| 3 | 290 | 361 | 248 | | | 162 | 225 | 1,800 | 3,320 | 1,070 | 429 | 318 |
| 4 | 286 | 341 | | | | 169 | 248 | 2,010 | 3,410 | 1,030 | 442 | 336 |
| 5 | 294 | 294 | | 180 | 215 | 172 | 239 | 2,100 | 3,450 | 1,430 | 462 | 455 |
| 6 | 405 | 326 | | | | 159 | 253 | 2,220 | 3,490 | 1,430 | 632 | 448 |
| 7 | 400 | 350 | | | | 153 | 360 | 1,650 | 3,530 | 1,420 | 695 | 429 |
| 8 | 366 | 294 | 210 | | | 156 | 360 | 1,440 | 2,960 | 1,420 | 695 | 384 |
| 9 | 336 | 317 | | | | 156 | 342 | 1,330 | 2,960 | 1,270 | 709 | 336 |
| 10 | 361 | 322 | | | | 172 | 313 | 1,150 | 2,880 | 1,020 | 646 | 301 |
| 11 | 394 | 322 | | | | 172 | 313 | 960 | 2,680 | 930 | 611 | 330 |
| 12 | 411 | 308 | 200 | | | 188 | 354 | 970 | 2,920 | 1,150 | 555 | 342 |
| 13 | 417 | 308 | | | 220 | 206 | 390 | 855 | 2,980 | 1,040 | 527 | 307 |
| 14 | 423 | 299 | | | | 214 | 500 | 770 | 2,510 | 940 | 474 | 318 |
| 15 | 423 | | 201 | 150 | | 218 | 541 | 1,150 | 2,380 | 900 | 455 | 267 |
| 16 | 417 | | 198 | | | 225 | 660 | 1,150 | 2,130 | 873 | 448 | 258 |
| 17 | 423 | 262 | 201 | | | 230 | 855 | 1,270 | 1,720 | 794 | 442 | 267 |
| 18 | 435 | | 203 | | 180 | 239 | 891 | 1,270 | 1,490 | 730 | 429 | 258 |
| 19 | 435 | | 203 | | | 244 | 855 | 980 | 1,440 | 674 | 403 | 244 |
| 20 | 417 | | 201 | | | 244 | 786 | 1,130 | 1,390 | 674 | 384 | 253 |
| 21 | 411 | | 201 | | | 244 | 674 | 1,980 | 1,350 | 597 | 366 | 248 |
| 22 | 417 | | 198 | | | 239 | 770 | 2,290 | 1,300 | 611 | 384 | 248 |
| 23 | 429 | 252 | 198 | 133 | 162 | 244 | 1,190 | 2,440 | 1,120 | 562 | 354 | 263 |
| 24 | 429 | | 201 | | | 295 | 1,180 | 2,980 | 1,210 | 527 | 348 | 267 |
| 25 | 423 | | 192 | | | 295 | 1,070 | 2,880 | 1,180 | 481 | 330 | 267 |
| 26 | 411 | | 182 | | 153 | 278 | 1,220 | 2,760 | 1,100 | 468 | 318 | 267 |
| 27 | 372 | | | | 159 | 248 | 1,370 | 2,490 | 1,190 | 455 | 307 | 267 |
| 28 | 388 | 250 | | 195 | 166 | 221 | 1,220 | 2,260 | 1,220 | 500 | 278 | 272 |
| 29 | 411 | | 190 | | ------- | 214 | 1,390 | 2,060 | 1,190 | 562 | 263 | 278 |
| 30 | 361 | | | | ------- | 182 | 1,560 | 2,260 | 1,160 | 500 | 301 | 313 |
| 31 | 383 | ------- | | | ------- | 188 | ------- | 2,580 | ------- | 442 | 342 | ------- |

NOTE.—Stage-discharge relation affected by ice Nov. 15 to Dec. 14, Dec. 23–24, 27–31, Jan. 1 to Feb. 25; discharge based on temperature and gage-height record and two current-meter measurements. Braced figures give mean discharge for period indicated.

*Monthly discharge of Gunnison River near Gunnison, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 435 | 277 | 385 | 23,700 |
| November | 378 | ---------- | 289 | 17,200 |
| December | ---------- | ---------- | 207 | 12,700 |
| January | ---------- | ---------- | 166 | 10,200 |
| February | ---------- | ---------- | 194 | 10,800 |
| March | 295 | 153 | 209 | 12,900 |
| April | 1,560 | 206 | 685 | 40,800 |
| May | 2,980 | 770 | 1,750 | 108,000 |
| June | 3,530 | 1,100 | 2,200 | 131,000 |
| July | 1,430 | 442 | 865 | 53,200 |
| August | 709 | 263 | 448 | 27,500 |
| September | 455 | 244 | 306 | 18,200 |
| The year | 3,530 | ---------- | 643 | 466,000 |

### GUNNISON RIVER NEAR GRAND JUNCTION, COLO.

LOCATION.—In NW. ¼ sec. 35, T. 1 S., R. 1 W., half a mile below Redlands Co.'s canal and 2 miles above mouth of Gunnison River, in Grand Junction, Mesa County; below all tributaries.

DRAINAGE AREA.—8,020 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 1, 1917, to September 30, 1926. From October 19, 1894, to December 21, 1895, and May 2, 1897, to September 30, 1899, station maintained nearer mouth.

GAGE.—Slope gage at left bank a quarter of a mile below canal intake; read by employee of Redlands Co.

DISCHARGE MEASUREMENTS.—Made from car and cable at gage section.

CHANNEL AND CONTROL.—Bed composed of well-compacted gravel; not permanent. Control at rapids 500 feet downstream; somewhat shifting. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Combined flow: Maximum stage recorded during year, 8.95 feet 6 p. m. June 7 (discharge, 14,200 second-feet); minimum discharge, 327 second-feet September 3.

1917–1926: Maximum stage recorded, 14.95 feet at 8 a. m. and noon May 23, 1920 (discharge, 35,700 second-feet); minimum discharge, 155 second-feet September 6, 1924.

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

DIVERSIONS.—Below all diversions from Gunnison River and tributaries. Most of water diverted through Redlands power canal is for pumping and is returned to Colorado River below mouth of the Gunnison.

COMBINED FLOW.—Combined flow of Gunnison River and Redlands power canal represents flow of Gunnison River which enters Colorado River, less about 25 second-feet, which is used during irrigation season.

ACCURACY.—River and canal: Stage-discharge relation not permanent. Rating curves fairly well defined. Gages read to half-tenths twice daily. Daily discharge for river and canal ascertained by applying mean gage height to rating tables except period April 6 to August 20, when shifting control method was used for river. Combined daily discharge ascertained by adding the daily discharge of river and canal. Records fair.

*Discharge measurements of Gunnison River and Redlands power canal near Grand Junction, Colo., during the year ending September 30, 1926*

**Gunnison River**

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 16 | 3.42 | 1,810 | Apr. 24 | 6.92 | 8,300 | Sept. 6 | 0.60 | 22.8 |
| Feb. 5 | 2.60 | 945 | June 4 | 8.70 | 12,700 | | | |
| Mar. 27 | 2.60 | 983 | Aug. 1 | 1.80 | 528 | | | |

**Redlands power canal**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mar. 27 | 4.98 | 478 | June 4 | 5.52 | 535 | Sept. 7 | 4.04 | 337 |

NOTE.—All measurements made by employees of the State.

*Combined daily discharge, in second-feet, of Gunnison River and Redlands power canal near Grand Junction, Colo., for the year ending September 30, 1926*

| Day | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 1 | 950 | 1,060 | 1,140 | 9,470 | 11,500 | 3,530 | 1,110 | 330 |
| 2 | | 1,070 | 1,190 | 8,150 | 12,500 | 3,790 | 1,060 | 330 |
| 3 | | 1,050 | 1,190 | 8,740 | 13,800 | 3,570 | 948 | 327 |
| 4 | | 946 | 1,130 | 9,190 | 13,600 | 3,490 | 874 | 341 |
| 5 | 960 | 888 | 1,100 | 9,940 | 13,900 | 3,820 | 869 | 356 |
| 6 | 960 | 872 | 1,390 | 12,700 | 13,600 | 3,980 | 814 | 363 |
| 7 | 1,000 | 789 | 1,800 | 11,500 | 13,800 | 4,430 | 873 | 367 |
| 8 | 960 | 803 | 2,230 | 8,910 | 13,700 | 4,960 | 1,150 | 377 |
| 9 | 1,050 | 746 | 2,590 | 7,850 | 11,700 | 5,070 | 1,350 | 357 |
| 10 | 960 | 810 | 2,270 | 6,580 | 11,400 | 4,010 | 1,770 | 361 |
| 11 | 960 | 868 | 2,050 | 5,630 | 10,900 | 3,500 | 1,580 | 365 |
| 12 | 1,000 | 948 | 1,950 | 4,920 | 10,300 | 3,080 | 1,870 | 387 |
| 13 | 1,050 | 951 | 2,150 | 4,650 | 10,900 | 3,250 | 1,700 | 465 |
| 14 | 1,050 | 964 | 2,180 | 4,220 | 10,200 | 3,130 | 845 | 474 |
| 15 | 1,000 | 1,000 | 2,440 | 3,920 | 9,070 | 2,840 | 853 | 453 |
| 16 | 960 | 997 | 2,610 | 4,680 | 8,710 | 2,490 | 813 | 415 |
| 17 | 870 | 1,000 | 4,060 | 5,420 | 7,560 | 1,930 | 586 | 419 |
| 18 | 960 | 900 | 4,870 | 6,070 | 7,310 | 1,770 | 562 | 419 |
| 19 | 1,050 | 939 | 5,410 | 6,450 | 5,690 | 1,590 | 544 | 425 |
| 20 | 1,100 | 1,160 | 5,200 | 7,680 | 5,330 | 1,360 | 511 | 599 |
| 21 | 1,140 | 1,520 | 5,500 | 9,460 | 5,070 | 1,370 | 447 | 422 |
| 22 | 1,050 | 1,610 | 6,680 | 11,200 | 5,010 | 1,340 | 422 | 366 |
| 23 | 960 | 1,550 | 7,810 | 12,300 | 4,440 | 1,270 | 421 | 356 |
| 24 | 1,000 | 1,570 | 8,870 | 13,200 | 4,300 | 1,180 | 418 | 356 |
| 25 | 1,120 | 1,470 | 8,870 | 13,600 | 4,490 | 1,180 | 421 | 350 |
| 26 | 1,180 | 1,430 | 8,710 | 12,300 | 4,040 | 1,040 | 395 | 363 |
| 27 | 1,170 | 1,430 | 9,490 | 12,100 | 3,900 | 1,040 | 415 | 408 |
| 28 | 1,050 | 2,020 | 9,240 | 12,100 | 4,120 | 1,080 | 394 | 443 |
| 29 | ------- | 1,550 | 8,690 | 10,800 | 3,910 | 1,100 | 387 | 494 |
| 30 | ------- | 1,180 | 9,350 | 9,690 | 3,520 | 1,340 | 366 | 564 |
| 31 | ------- | 1,070 | ------- | 10,700 | ------- | 1,360 | 347 | ------- |

NOTE.—No gage-height record Feb. 1–4; discharge estimated. Braced figures give mean discharge for period indicated.

*Combined monthly discharge of Gunnison River and Redlands power canal near Grand Junction, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| February | 1,180 | 870 | 1,010 | 56,100 |
| March | 2,020 | 746 | 1,130 | 69,500 |
| April | 9,490 | 1,100 | 4,410 | 262,000 |
| May | 13,600 | 3,920 | 8,840 | 544,000 |
| June | 13,900 | 3,520 | 8,610 | 512,000 |
| July | 5,070 | 1,040 | 2,540 | 156,000 |
| August | 1,870 | 347 | 810 | 49,800 |
| September | 599 | 327 | 402 | 23,900 |
| The period | | | | 1,670,000 |

### LEROUX CREEK NEAR LAZEAR, COLO.

LOCATION.—In sec. 33, T. 13 S., R. 93 W., at highway bridge 8 miles north of Lazear, Delta County. No large tributary within several miles.

DRAINAGE AREA.—52 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—May 15, 1917, to September 30, 1926.

GAGE.—Stevens water-stage recorder installed during 1923 to replace Lallie water-stage recorder installed April 23, 1918, and referred to vertical staff fastened to face on left bridge abutment; inspected by G. H. Henderson.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; very rough. Control 50 feet downstream; shifts during high water.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.78 feet at 8.30 p. m. May 21 (discharge, 401 second-feet); minimum discharge, 2 second-feet on September 22-24.

1917–1926: Maximum stage during period, 4.0 feet at 5 p. m. May 29, 1921 (discharge, 1,420 second-feet); minimum stage, creek practically dry during winter.

ICE.—No data. Flow very small as most of it is stored in reservoirs.

DIVERSIONS.—Water diverted for irrigation of 8,000 acres above station.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow. Flow in nonirrigating season stored in reservoirs on headwaters. Decrees for such storage amount to 606 acre-feet.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of Leroux Creek near Lazear, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 18 | 10 | ------- | 14 | 11 | 201 | 277 | 28 | 4 | 12 |
| 2 | 18 | 18 | 10 | ------- | 14 | 12 | 208 | 261 | 27 | 5 | 16 |
| 3 | 17 | 25 | 11 | ------- | 13 | 8 | 233 | 301 | 25 | 10 | 17 |
| 4 | 18 | 30 | 12 | ------- | 13 | 7 | 252 | 245 | 25 | 18 | 13 |
| 5 | 21 | 33 | 14 | ------- | 13 | 7 | 298 | 245 | 25 | 19 | 7 |
| 6 | 101 | 37 | 14 | ------- | 12 | 8 | 272 | 247 | 23 | 17 | 4 |
| 7 | 46 | 33 | 15 | ------- | 12 | 13 | 173 | 229 | 32 | 13 | 7 |
| 8 | 26 | 30 | 16 | ------- | 12 | 16 | 130 | 217 | 30 | 15 | 10 |
| 9 | 22 | 28 | 15 | ------- | 10 | 10 | 98 | 197 | 26 | 19 | 5 |
| 10 | 42 | 28 | 16 | ------- | 9 | 14 | 65 | 145 | 23 | 14 | 4 |
| 11 | 115 | 23 | 16 | 16 | 9 | 14 | 43 | 137 | 24 | 11 | 5 |
| 12 | 76 | 22 | 16 | ------- | 8 | 22 | 39 | 134 | 23 | 9 | 5 |
| 13 | 84 | 22 | 16 | ------- | 8 | 32 | 29 | 101 | 23 | 9 | 4 |
| 14 | 173 | 18 | 16 | ------- | 7 | 29 | 52 | 94 | 22 | 12 | 5 |
| 15 | 140 | 14 | 16 | ------- | 8 | 38 | 114 | 82 | 18 | 14 | 3 |
| 16 | 114 | 15 | 11 | ------- | 9 | 71 | 144 | 75 | 14 | 12 | 3 |
| 17 | 80 | 12 | 12 | ------- | 9 | 98 | 136 | 73 | 14 | 13 | 4 |
| 18 | 51 | 11 | 14 | ------- | 10 | 95 | 138 | 67 | 12 | 16 | 3 |
| 19 | 36 | 11 | 14 | ------- | 12 | 116 | 188 | 54 | 12 | 17 | 3 |
| 20 | 32 | 11 | 14 | ------- | 9 | 114 | 266 | 52 | 10 | 16 | 3 |
| 21 | 33 | 14 | 15 | ------- | 8 | 138 | 292 | 50 | 10 | 14 | 3 |
| 22 | 34 | 16 | 15 | ------- | 6 | 175 | 288 | 47 | 10 | 13 | 2 |
| 23 | 26 | 16 | 15 | ------- | 7 | 199 | 316 | 45 | 10 | 13 | 2 |
| 24 | 24 | 16 | 16 | ------- | 11 | 215 | 306 | 43 | 12 | 13 | 2 |
| 25 | 20 | 13 | 16 | ------- | 17 | 239 | 300 | 41 | 12 | 14 | 3 |
| 26 | 21 | 12 | 16 | ------- | 17 | 237 | 257 | 38 | 14 | 12 | 3 |
| 27 | 22 | 13 | 16 | ------- | 14 | 237 | 297 | 36 | 8 | 12 | 3 |
| 28 | 22 | 12 | 16 | ------- | 10 | 224 | 297 | 34 | 13 | 11 | 3 |
| 29 | 23 | 11 | 16 | ------- | 11 | 242 | 293 | 32 | 19 | 7 | 3 |
| 30 | 20 | 13 | 16 | ------- | 13 | 242 | 277 | 30 | 16 | 6 | 7 |
| 31 | 20 | ------- | 16 | ------- | 13 | ------- | 273 | ------- | 8 | 10 | ------ |

*Monthly discharge of Leroux Creek near Lazear, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 173 | 17 | 48.2 | 2,960 |
| November | 37 | 11 | 19.2 | 1,140 |
| December | ---------- | ---------- | 14.5 | 892 |
| January | ---------- | ---------- | 14 | 861 |
| February | ---------- | ---------- | 16 | 889 |
| March | 17 | ---------- | 10.9 | 670 |
| April | 242 | 7 | 96.1 | 5,720 |
| May | 316 | 29 | 202 | 12,400 |
| June | 301 | 30 | 121 | 7,200 |
| July | 32 | 8 | 18.3 | 1,130 |
| August | 19 | 4 | 12.5 | 769 |
| September | 17 | 2 | 5.47 | 325 |
| The year | 316 | 2 | 48.4 | 35,000 |

NOTE.—Mean discharge for January and February based on temperature record and one current-meter measurement.

### SURFACE CREEK AT CEDAREDGE, COLO.

LOCATION.—About sec. 29, T. 13 S., R. 94 W., at Cedaredge, Delta County. Nearest tributary, Mill Creek, enters 4 miles above.

DRAINAGE AREA.—43 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—May 16, 1917, to September 30, 1926.

GAGE.—Stevens water-stage recorder referred to vertical staff fastened to concrete abutment of footbridge 400 feet upstream from highway bridge in Cedaredge; inspected by J. A. Bacon.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage section.

CHANNEL AND CONTROL.—Bed of small boulders filled in behind control, which is concrete weir filled up flush with boulders and gravel; situated 12 feet downstream. At high stages water flows through overflow channel.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 1.60 feet at 9.30 p. m. May 21 (discharge, 282 second-feet); minimum discharge during winter.

1917–1926: Maximum discharge, 715 second-feet at 7 a. m. May 24, 1920; minimum discharge during winter is practically zero.

ICE.—No data. Flow very small, as most of it is stored during winter.

DIVERSIONS.—Water diverted for irrigation of 18,000 acres above station.

REGULATION.—Alternate melting and freezing of snow in mountains caused diurnal fluctuation during spring of year. Adjudicated decrees for storage of 8,140 acre-feet on headwaters of Surface Creek. The release of this flow during irrigation season changes the natural flow.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of Surface Creek at Cedaredge, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 15 | 2 | 3 | 132 | 204 | 77 | 9 | 41 |
| 2 | 9 | 14 | 2 | 2 | 153 | 207 | 63 | 22 | 37 |
| 3 | 9 | 15 | 2 | 2 | 180 | 198 | 49 | 11 | 30 |
| 4 | 9 | 15 | 2 | 2 | 183 | 198 | 44 | 22 | 28 |
| 5 | 25 | 17 | 2 | 2 | 195 | 180 | 49 | 20 | 39 |
| 6 | 88 | 20 | 2 | 2 | 175 | 153 | 52 | 14 | 33 |
| 7 | 52 | 22 | 2 | 2 | 113 | 122 | 62 | 18 | 34 |
| 8 | 44 | 24 | 2 | 2 | 88 | 113 | 54 | 9 | 33 |
| 9 | 38 | 26 | 2 | 2 | 72 | 101 | 46 | 9 | 12 |
| 10 | 34 | 28 | 2 | 2 | 66 | 79 | 39 | 9 | 9 |
| 11 | 49 | 24 | 2 | 4 | 52 | 51 | 46 | 14 | 9 |
| 12 | 39 | 21 | 3 | 6 | 45 | 62 | 45 | 16 | 9 |
| 13 | 36 | 24 | 3 | 6 | 41 | 65 | 41 | 20 | 20 |
| 14 | 24 | 27 | 3 | 8 | 52 | 54 | 46 | 24 | 23 |
| 15 | 21 | 31 | 4 | 24 | 88 | 51 | 36 | 16 | 22 |
| 16 | 18 | 26 | 4 | 49 | 95 | 51 | 46 | 27 | 22 |
| 17 | 18 | 20 | 7 | 58 | 93 | 62 | 42 | 30 | 16 |
| 18 | 16 | 22 | 7 | 63 | 97 | 65 | 37 | 44 | 17 |
| 19 | 15 | 25 | 6 | 82 | 115 | 65 | 34 | 41 | 19 |
| 20 | 13 | 27 | 5 | 82 | 161 | 63 | 34 | 41 | 17 |
| 21 | 13 | 26 | 4 | 140 | 189 | 60 | 42 | 39 | 15 |
| 22 | 13 | 25 | 3 | 161 | 186 | 58 | 37 | 73 | 16 |
| 23 | 14 | 24 | 4 | 164 | 169 | 60 | 39 | 92 | 14 |
| 24 | 13 | 24 | 7 | 161 | 172 | 65 | 30 | 86 | 16 |
| 25 | 13 | 24 | 7 | 158 | 172 | 62 | 20 | 79 | 11 |
| 26 | 12 | 24 | 11 | 166 | 169 | 63 | 20 | 65 | 8 |
| 27 | 11 | 22 | 7 | 155 | 166 | 58 | 20 | 70 | 9 |
| 28 | 10 | 22 | 7 | 158 | 164 | 58 | 23 | 59 | 9 |
| 29 | 8 | 22 | 8 | 183 | 153 | 52 | 18 | 47 | 6 |
| 30 | 7 | 22 | 11 | 175 | 186 | 82 | 11 | 48 | 10 |
| 31 | 11 | ------- | 3 | ------- | 207 | ------- | 10 | 48 | ------- |

NOTE.—No gage-height record Oct. 7–9, 20, 24, 26–28, 31, Nov. 5–9, 11, 13–14, 16, 18–19, 21–30, Mar. 1–9, Aug. 22 to Sept. 30; discharge obtained from water commissioner's daily report.

*Monthly discharge of Surface Creek at Cedaredge, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 88 | 7 | 22.3 | 1,370 |
| November | 31 | 14 | 22.6 | 1,340 |
| March | 11 | 2 | 4.39 | 270 |
| April | 183 | 2 | 67.5 | 4,020 |
| May | 207 | 41 | 133 | 8,180 |
| June | 207 | 51 | 92.1 | 5,480 |
| July | 77 | 10 | 39.1 | 2,400 |
| August | 92 | 9 | 36.2 | 2,230 |
| September | 41 | 6 | 19.5 | 1,160 |

### UNCOMPAHGRE RIVER BELOW OURAY, COLO.

LOCATION.—In sec. 30, T. 44 N., R. 7 W. New Mexico principal meridian, near lowest bridge in Ouray, Ouray County, a third of a mile below railroad station; below all tributaries in Ouray.

DRAINAGE AREA.—76 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 12, 1913, to September 30, 1926.

GAGE.—Gurley water-stage recorder installed March 28, 1917, referred to vertical staff, attached to rock cliff 500 feet above bridge; inspected by F. A. Rice.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control is broken rock ledge 50 feet downstream on which mill tailings are alternately deposited and scoured out. Banks not subject to overflow except at extreme high-water stage of 6.5 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 5.1 feet at 10 p. m. June 6 (discharge, 1,320 second-feet); minimum stage, 0.92 foot at 8 a. m. April 2 (discharge, 20 second-feet).

1913–1926: Maximum discharge recorded, 2,530 second-feet at 1 a. m. June 14, 1918 (gage height, 5.5 feet); minimum discharge, 10 second-feet February 5 and 6, 1915, March 18, 1922, and January 21, 1923.

ICE.—Stage-discharge relation not affected by ice; warm springs keep river open.

DIVERSIONS.—Practically all diversions returned to river above station.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow. Intermittent operation of power pipe line above station causes sudden decrease in discharge for short periods.

ACCURACY.—Stage-discharge relation not permanent; not affected by ice. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except for periods as explained in footnote to daily-discharge table. Daily discharge ascertained by shifting-control method except October 1–4 and February 11 to March 5, when mean gage-height obtained by inspection of recorder graph was applied to rating table. Records fair.

*Discharge measurements of Uncompahgre River below Ouray, Colo., during the the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 10 | 1.18 | 42.9 | Apr. 30 | 2.58 | 244 | Aug. 28 | 1.45 | 64 |
| Mar. 18 | 1.40 | 47.6 | June 12 | 4.02 | 700 | Sept. 10 | 1.32 | 49.5 |
| Apr. 12 | 1.40 | 42.4 | Aug. 6 | 1.94 | 109 | | | |

NOTE.—Discharge measurements made by employees of the State.

*Daily discharge, in second-feet, of Uncompahgre River below Ouray, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 93 | 74 | | 40 | 32 | 44 | 36 | 258 | 650 | 464 | 129 | 56 |
| 2 | 90 | 78 | | 41 | 32 | 41 | 35 | 269 | 675 | 428 | 120 | 56 |
| 3 | 88 | 73 | | 40 | 32 | 41 | 36 | 290 | 725 | 394 | 127 | 58 |
| 4 | 95 | 66 | | 40 | 34 | 40 | 36 | 343 | 775 | 397 | 122 | 61 |
| 5 | [a] 173 | 60 | 43 | 38 | 34 | 36 | 37 | 354 | 800 | 391 | 124 | 63 |
| 6 | 173 | 68 | | 40 | 34 | 37 | 37 | 285 | 902 | 374 | 108 | 53 |
| 7 | 154 | 66 | | 39 | 37 | 35 | 38 | 225 | 872 | 415 | 108 | 53 |
| 8 | 144 | 68 | | 41 | 40 | 38 | 41 | 210 | 715 | 460 | 129 | 56 |
| 9 | 135 | 64 | | 41 | 41 | 37 | 39 | 179 | 842 | 400 | 112 | 49 |
| 10 | 135 | 64 | 43 | 40 | 42 | 37 | 37 | 156 | 902 | 310 | 103 | 48 |
| 11 | 133 | 63 | 46 | 38 | 40 | 37 | 41 | 147 | 842 | 295 | 115 | 5[illegible] |
| 12 | 131 | 63 | 48 | 38 | 37 | 37 | 48 | 149 | 740 | 290 | 100 | 6[illegible] |
| 13 | 144 | 63 | 45 | 38 | 36 | 35 | 59 | 140 | 544 | 280 | 95 | 57 |
| 14 | 144 | 63 | 45 | 38 | 35 | 37 | 70 | 158 | 640 | 275 | 93 | 5[illegible] |
| 15 | 136 | 60 | 46 | 38 | 34 | 44 | 96 | 169 | 640 | 270 | 90 | 5[illegible] |
| 16 | 133 | 55 | 45 | 39 | 33 | 51 | 136 | 189 | 548 | 265 | 85 | 5[illegible] |
| 17 | 129 | 53 | 47 | 38 | 32 | 57 | 140 | 222 | 496 | 258 | 88 | 4[illegible] |
| 18 | 104 | 50 | 47 | 38 | 32 | 54 | 153 | 244 | 468 | 251 | 80 | 4[illegible] |
| 19 | 90 | 48 | 44 | 37 | 33 | 48 | 154 | 315 | 472 | 244 | 76 | 4[illegible] |
| 20 | 86 | 46 | 41 | 37 | 34 | 48 | 120 | 450 | 500 | 229 | 73 | 44 |
| 21 | 84 | 44 | 44 | 34 | 32 | 45 | 149 | 564 | 484 | 214 | 76 | 52 |
| 22 | 86 | | 43 | 36 | 32 | 50 | 156 | 595 | 476 | 197 | 73 | 58 |
| 23 | 103 | | 41 | 34 | 32 | 60 | 177 | 620 | 508 | 179 | 72 | 51 |
| 24 | 103 | | 44 | 34 | 30 | 65 | 181 | 620 | 504 | 166 | 68 | 47 |
| 25 | 105 | | 41 | 34 | 29 | 59 | 208 | 556 | 476 | 158 | 68 | 47 |
| 26 | 100 | 44 | 44 | 34 | 33 | 46 | 231 | 540 | 504 | 149 | 65 | 129 |
| 27 | 98 | | 47 | 34 | 36 | 40 | 227 | 453 | 520 | 145 | 65 | 98 |
| 28 | 96 | | 44 | 34 | 40 | 38 | 227 | 348 | 456 | 233 | 64 | 68 |
| 29 | 96 | | 42 | 34 | ------- | 36 | 262 | 382 | 413 | 179 | 61 | 59 |
| 30 | 86 | | 41 | 33 | ------- | 36 | 267 | 453 | 419 | 154 | 60 | 73 |
| 31 | 79 | ------- | 44 | 33 | ------- | 33 | ------- | 512 | ------- | 144 | 58 | ------ |

[a] Cloudburst flood; maximum discharge, 504 second-feet.

NOTE.—No gage-height record Nov. 8–13, 15–20, 22–30, Dec. 1–9, 11, July 7–16, and Sept. 14–17; discharge based on comparison with records of flow of Uncompahgre River near Colona. Braced figures give mean discharge for period indicated.

*Monthly discharge of Uncompahgre River below Ouray, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 173 | 79 | 114 | 7,010 |
| November | 78 | ---------- | 56.2 | 3,340 |
| December | 48 | ---------- | 43.8 | 2,690 |
| January | 41 | 33 | 37.2 | 2,290 |
| February | 42 | 29 | 34.6 | 1,920 |
| March | 65 | 33 | 43.3 | 2,660 |
| April | 267 | 35 | 116 | 6,900 |
| May | 620 | 140 | 335 | 20,600 |
| June | 902 | 413 | 617 | 36,700 |
| July | 464 | 144 | 278 | 17,100 |
| August | 129 | 58 | 90.5 | 5,560 |
| September | 129 | 44 | 58.3 | 3,470 |
| The year | 902 | ---------- | 152 | 110,000 |

### UNCOMPAHGRE RIVER NEAR COLONA, COLO.

LOCATION.—In NE. ¼ sec. 32, T. 47 N., R. 8 W., 3 miles south of Colona, Ouray County. Nearest tributary, Billy Creek, enters a short distance upstream.

DRAINAGE AREA.—419 square miles (measured on topographic map).

RECORDS AVAILABLE.—April 6, 1917, to September 30, 1926.

GAGE.—Friez water-stage recorder installed at present site April 14, 1926. Prior to that time gage was 2 miles upstream near highway bridge. Billy Creek only stream entering between old and new sites.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Shifting during high water.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 4.63 feet at 12 p. m. June 6 (discharge, 2,000 second-feet); minimum discharge probably occurred during winter.

1917–1926: Maximum discharge recorded, 4,080 second-feet June 13 and 14, 1921; minimum discharge, 16 second-feet on September 3, 1918.

ICE.—Station discontinued during winter.

DIVERSIONS.—Only a few small diversions above station.

COOPERATION.—Records of daily discharge furnished by United States Bureau of Reclamation.

*Daily discharge, in second-feet, of Uncompahgre River near Colona, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 1 | 175 | 138 | 114 | 690 | 1,160 | 1,080 | 225 | 86 |
| 2 | 148 | 148 | 129 | 710 | 1,280 | 1,040 | 215 | 83 |
| 3 | 148 | 144 | 136 | 725 | 1,420 | 950 | 215 | 83 |
| 4 | 160 | 130 | 129 | 765 | 1,580 | 970 | 226 | 85 |
| 5 | 188 | 116 | 143 | 900 | 1,640 | 950 | 230 | 93 |
| 6 | 265 | 116 | 143 | 845 | 1,670 | 1,010 | 242 | 87 |
| 7 | 213 | 124 | 151 | 655 | 1,720 | 1,040 | 242 | 85 |
| 8 | 195 | 124 | 196 | 618 | 1,480 | 975 | 250 | 85 |
| 9 | 190 | 128 | 170 | 534 | 1,600 | 850 | 252 | 88 |
| 10 | 210 | 124 | 151 | 455 | 1,730 | 797 | 223 | 87 |
| 11 | 228 | 120 | 155 | 415 | 1,640 | 735 | 217 | 107 |
| 12 | 200 | 113 | 186 | 432 | 1,600 | 680 | 220 | 127 |
| 13 | 198 | 113 | 211 | 415 | 1,350 | 640 | 205 | 102 |
| 14 | 228 | 110 | 217 | 410 | 1,350 | 600 | 200 | 94 |
| 15 | 210 | 110 | 253 | 468 | 1,360 | 590 | 193 | 94 |
| 16 | 200 | 110 | 360 | 515 | 1,100 | 565 | 186 | 97 |
| 17 | 190 | 120 | 480 | 597 | 995 | 530 | 175 | 98 |
| 18 | 171 | 120 | 445 | 652 | 850 | 460 | 163 | 91 |
| 19 | 171 | 106 | 475 | 735 | 860 | 422 | 158 | 81 |
| 20 | 160 | 110 | 495 | 925 | 925 | 415 | 147 | 81 |
| 21 | 148 | 106 | 533 | 1,100 | 930 | 398 | 138 | 76 |
| 22 | 148 | 110 | 572 | 1,130 | 900 | 345 | 135 | 87 |
| 23 | 175 | 113 | 643 | 1,130 | 1,020 | 331 | 129 | 75 |
| 24 | 180 | 104 | 685 | 1,200 | 1,140 | 310 | 118 | 70 |
| 25 | 164 | | 710 | 1,060 | 1,010 | 287 | 121 | 69 |
| 26 | 164 | | 760 | 1,010 | 1,050 | 280 | 121 | 87 |
| 27 | 160 | 105 | 735 | 1,010 | 1,140 | 262 | 110 | 190 |
| 28 | 156 | | 670 | 880 | 1,020 | 335 | 105 | 125 |
| 29 | 160 | | 735 | 795 | 855 | 330 | 103 | 113 |
| 30 | 138 | | 751 | 905 | 1,020 | 277 | 100 | 113 |
| 31 | 140 | | | 895 | | 240 | 98 | |

NOTE.—No gage-height record Nov. 25-30; discharge based on temperature record. Braced figures give mean discharge for period indicated. Quantities have been changed slightly to comply with the rules of computations used by U. S. Geol. Survey.

*Monthly discharge of Uncompahgre River near Colona, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 265 | 138 | 180 | 11,100 |
| November | 148 | 104 | 116 | 6,900 |
| April | 760 | 114 | 384 | 22,800 |
| May | 1,200 | 410 | 761 | 46,800 |
| June | 1,730 | 850 | 1,250 | 74,400 |
| July | 1,080 | 240 | 603 | 37,100 |
| August | 252 | 98 | 176 | 10,800 |
| September | 190 | 69 | 94.6 | 5,630 |

NOTE.—Monthly discharge computed by U. S. Geol. Survey from daily-discharge record furnished by the U. S. Bureau of Reclamation.

### UNCOMPAHGRE RIVER AT DELTA, COLO.

LOCATION.—In NW. ¼ sec. 24, T. 15 S., R. 96 W., at railroad bridge half a mile west of Delta, Delta County. No tributaries between station and mouth, 1½ miles downstream.

DRAINAGE AREA.—1,110 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 26, 1924, to September 30, 1926. From April 29, 1903, to October 31, 1923, station maintained 3½ miles upstream. Records comparable except for return seepage water entering river between.

GAGE.—Bristol float-type water-stage recorder at right abutment; inspected by Bureau of Reclamation employee.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Bed composed of silt and gravel. Control shifts during extremely high water. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.82 feet at 3 a. m. June 7 (discharge, 1,420 second-feet); minimum stage recorded, 1.42 feet from 5 a. m. to 8 a. m. April 15 (discharge, 44 second-feet).

1903–1926: Maximum discharge recorded, 2,490 second-feet at 7.30 p. m. June 12, 1921; minimum discharge recorded since diversion through Gunnison tunnel began in 1910, 7 second-feet on several days during July, 1910.

ICE.—No data, as records are discontinued during winter.

DIVERSIONS.—Ditches above station divert normal flow during irrigation season; records represent chiefly return seepage water.

REGULATION.—See diversions.

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

COOPERATION.—Field data furnished by United States Bureau of Reclamation.

*Discharge measurements of Uncompahgre River at Delta, Colo., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Apr. 13 | 1.61 | 85 | June 17 | 2.19 | 349 | July 17 | 1.94 | 218 |
| Apr. 27 | 3.01 | 868 | July 13 | 2.14 | 309 | | | |

NOTE.—Measurements made by United States Bureau of Reclamation.

*Daily discharge, in second-feet, of Uncompahgre River at Delta, Colo., for the year ending September 30, 1926*

| Day | Oct | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 206 | 407 | | 91 | 500 | 789 | 401 | 288 | 98 |
| 2 | 164 | 389 | | 137 | 400 | 959 | 356 | 248 | 101 |
| 3 | 211 | 356 | | 126 | 300 | 891 | 268 | 197 | 101 |
| 4 | 189 | 345 | | 94 | 268 | 959 | 351 | 189 | 94 |
| 5 | 193 | 345 | | 104 | 367 | 993 | 606 | 197 | 108 |
| 6 | 324 | 335 | | 122 | 857 | 1,030 | 573 | 185 | 122 |
| 7 | 430 | 303 | | 148 | 586 | 1,160 | 775 | 248 | 126 |
| 8 | 447 | 288 | | 197 | 379 | 789 | 775 | 351 | 115 |
| 9 | 319 | 288 | | 156 | 335 | 721 | 613 | 401 | 118 |
| 10 | 351 | 230 | | 104 | 234 | 789 | 496 | 471 | 108 |

*Daily discharge, in second-feet, of Uncompahgre River at Delta, Colo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 483 | 176 | | 74 | 197 | 823 | 453 | 258 | 118 |
| 12 | 447 | 164 | | 61 | 225 | 857 | 390 | 152 | 145 |
| 13 | 471 | 156 | | 68 | 185 | 959 | 309 | 148 | 160 |
| 14 | 520 | 152 | | 51 | 164 | 620 | 309 | 197 | 133 |
| 15 | 527 | 150 | | 63 | 156 | 687 | 293 | 197 | 115 |
| 16 | 527 | 145 | | 148 | 185 | 586 | 225 | 189 | 122 |
| 17 | 471 | | | 319 | 283 | 288 | 206 | 176 | 118 |
| 18 | 459 | | | 367 | 335 | 202 | 215 | 176 | 118 |
| 19 | 496 | | | 490 | 356 | 172 | 211 | 168 | 104 |
| 20 | 465 | | | 553 | 586 | 351 | 172 | 164 | 108 |
| 21 | 442 | | | 436 | 436 | 351 | 164 | 160 | 98 |
| 22 | 447 | | | 586 | 508 | 263 | 156 | 168 | 94 |
| 23 | 447 | | | 721 | 407 | 373 | 185 | 152 | 101 |
| 24 | 453 | | | 857 | 483 | 424 | 193 | 164 | 91 |
| 25 | 418 | | | 891 | 520 | 185 | 193 | 152 | 91 |
| 26 | 413 | | | 823 | 373 | 215 | 215 | 145 | 111 |
| 27 | 407 | | | 789 | 620 | 340 | 220 | 133 | 115 |
| 28 | 413 | | | 700 | 789 | 351 | 234 | 129 | 137 |
| 29 | 418 | | 81 | 650 | 520 | 238 | 298 | 133 | 129 |
| 30 | 418 | | 81 | 600 | 553 | 229 | 309 | 129 | 141 |
| 31 | 418 | | | | 721 | | 278 | 111 | |

NOTE.—Discharge estimated Nov. 15–16 because of ice and interpolated Apr. 28 to May 3 because of missing gage heights.

*Monthly discharge of Uncompahgre River at Delta, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 527 | 164 | 400 | 24,600 |
| November 1–16 | 407 | 145 | 264 | 8,380 |
| April | 891 | 51 | 351 | 20,900 |
| May | 857 | 156 | 414 | 25,500 |
| June | 1,160 | 172 | 586 | 34,900 |
| July | 775 | 156 | 337 | 20,700 |
| August | 471 | 111 | 199 | 12,200 |
| September | 160 | 91 | 115 | 6,840 |

### SAN MIGUEL RIVER AT NATURITA, COLO.

LOCATION.—In T. 46 N., on line between Rs. 15 and 16 W., at highway bridge in Naturita, Montrose County. Nearest tributary, Basin Creek, enters half a mile downstream.

DRAINAGE AREA.—1,080 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 26, 1918, to September 30, 1926.

GAGE.—Chain gage fastened to upstream side of bridge; read by Mrs. A. R. Payson.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders and is rough. Control at rapids 300 feet downstream; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.2 feet at 7.30 a. m. May 6 and 6.30 a. m. June 6 (discharge, 1,790 second-feet); minimum discharge probably occurred during winter.

1918–1926: Maximum stage, 7.5 feet from high-water mark during night of May 4, 1921 (discharge, 6,000 second-feet); minimum stage recorded, 0.05 foot on August 31, 1918 (discharge, 38 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Water diverted by San Miguel River for irrigation of 8,100 acres, the greater part of which is above station. Also, 15,000 acres irrigated by tributaries above station.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of San Miguel River at Naturita, Colo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 205 | 197 | 170 | 89 | 114 | 1,450 | 1,310 | 904 | 232 | 60 |
| 2 | 197 | 197 | 180 | 100 | 114 | 1,430 | 1,370 | 866 | 218 | 60 |
| 3 | 187 | 205 | 213 | 111 | 114 | 1,400 | 1,400 | 866 | 218 | 55 |
| 4 | 187 | 197 | 192 | 147 | 114 | 1,480 | 1,380 | 851 | 246 | 54 |
| 5 | 205 | 180 | 158 | 124 | 164 | 1,440 | 1,380 | 936 | 218 | 53 |
| 6 | 326 | 180 | 158 | 102 | 252 | 1,620 | 1,670 | 947 | 232 | 51 |
| 7 | 381 | 180 | 128 | 94 | 381 | 1,440 | 1,580 | 830 | 276 | 53 |
| 8 | 276 | 164 | 114 | 108 | 420 | 1,430 | 1,560 | 747 | 326 | 51 |
| 9 | 232 | 168 | 143 | 108 | 351 | 1,360 | 1,590 | 688 | 246 | 50 |
| 10 | 224 | 173 | 147 | 125 | 389 | 1,150 | 1,570 | 641 | 192 | 47 |
| 11 | 232 | 180 | 94 | 111 | 400 | 1,000 | 1,590 | 595 | 168 | 66 |
| 12 | 302 | 164 | 91 | 138 | 462 | 920 | 1,500 | 572 | 168 | 99 |
| 13 | 292 | 164 | 86 | 114 | 506 | 882 | 1,430 | 550 | 158 | 69 |
| 14 | 270 | 151 | 86 | 132 | 595 | 866 | 1,390 | 484 | 168 | 59 |
| 15 | 246 | 138 | 75 | 164 | 604 | 893 | 1,370 | 471 | 187 | 55 |
| 16 | 224 | 168 | 70 | 180 | 788 | 893 | 1,310 | 471 | 138 | 59 |
| 17 | 224 | 164 | 75 | 192 | 830 | 958 | 1,310 | 441 | 128 | 56 |
| 18 | 218 | 164 | 70 | 246 | 882 | 1,010 | 1,150 | 420 | 125 | 59 |
| 19 | 218 | 147 | 75 | 187 | 1,060 | 1,030 | 1,000 | 389 | 120 | 50 |
| 20 | 224 | 147 | 81 | 197 | 766 | 1,240 | 947 | 381 | 108 | 51 |
| 21 | 232 | 147 | 75 | 173 | 947 | 1,580 | 947 | 389 | 97 | 53 |
| 22 | 240 | 147 | 91 | 158 | 1,520 | 1,480 | 866 | 351 | 91 | 68 |
| 23 | 246 | 147 | 81 | 180 | 1,270 | 1,400 | 947 | 292 | 91 | 60 |
| 24 | 261 | 164 | 63 | 213 | 1,370 | 1,540 | 974 | 261 | 81 | 53 |
| 25 | 240 | 132 | 91 | 197 | 1,430 | 1,510 | 1,000 | 252 | 75 | 51 |
| 26 | 240 | 111 | 78 | 168 | 1,400 | 1,450 | 947 | 224 | 70 | 66 |
| 27 | 240 | 102 | 75 | 158 | 1,380 | 1,430 | 893 | 224 | 75 | 132 |
| 28 | 232 | 86 | 78 | 132 | 1,370 | 1,300 | 814 | 362 | 70 | 116 |
| 29 | 224 | 63 | ------- | 120 | 1,370 | 1,240 | 798 | 428 | 66 | 80 |
| 30 | 218 | 63 | ------- | 94 | 1,440 | 1,180 | 762 | 283 | 70 | 81 |
| 31 | 205 | ------- | ------- | 132 | ------- | 1,070 | ------- | 246 | 66 | ------- |

*Monthly discharge of San Miguel River at Naturita, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 381 | 187 | 240 | 14,800 |
| November | 205 | 63 | 153 | 9,100 |
| December | ---------- | ---------- | 80 | 4,920 |
| January | ---------- | ---------- | 75 | 4,610 |
| February | 213 | 63 | 108 | 6,000 |
| March | 246 | 89 | 145 | 8,920 |
| April | 1,520 | 114 | 763 | 45,400 |
| May | 1,620 | 866 | 1,260 | 77,500 |
| June | 1,670 | 762 | 1,230 | 73,200 |
| July | 947 | 224 | 528 | 32,500 |
| August | 326 | 66 | 152 | 9,350 |
| September | 132 | 47 | 63.9 | 3,800 |
| The year | 1,670 | ---------- | 400 | 290,000 |

NOTE.—Mean discharge for December and January based on temperature record.

## GREEN RIVER BASIN

### GREEN RIVER NEAR DANIEL, WYO.

LOCATION.—Near line between Tps. 32 and 33 N., R. 110 W., at highway bridge 6 miles southeast of Daniel, Sublette County. No large tributary within several miles.

DRAINAGE AREA.—932 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—April 1, 1915, to September 30, 1926. State engineer maintained station at this point during 1913 and 1914.

GAGE.—Chain gage on downstream side of bridge; read by Ellis Price.

DISCHARGE MEASUREMENTS.—Made from 2-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control 100 feet downstream at small rapids; shifting at long intervals. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.9 feet at 4 p. m. June 9 (discharge, 1,930 second-feet); minimum discharge occurred during winter.

1913–1926: Maximum stage recorded, 7.0 feet at 10 a. m. on June 16, 1918 (discharge, 8,750 second-feet); minimum discharge occurred during winter.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 18,000 acres from Green River above Daniel station.

REGULATION.—None, except natural regulation of Green River lakes.

ACCURACY.—Stage-discharge relation slightly shifting. Rating curve used October 1 to December 3 and curve used March 28 to September 30 are both well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean gage height to rating tables. Records good.

The following discharge measurements were made:

May 13, 1926: Gage height, 3.04 feet; discharge, 916 second-feet.

July 18, 1926: Gage height, 2.72 feet; discharge, 661 second-feet.

September 23, 1926: Gage height, 2.05 feet; discharge, 259 second-feet.

*Daily discharge, in second-feet, of Green River near Daniel, Wyo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 528 | 322 | 251 | | 412 | 1,210 | 1,100 | 1,210 | 474 | 528 |
| 2 | 482 | 326 | 251 | | 417 | 1,320 | 1,100 | 1,210 | 474 | 628 |
| 3 | 498 | 317 | 251 | | 412 | 1,320 | 1,100 | 1,210 | 501 | 528 |
| 4 | 475 | 322 | | | 291 | 1,430 | 1,100 | 1,210 | 542 | 514 |
| 5 | 430 | 300 | | | 282 | 1,550 | 1,100 | 1,320 | 797 | 528 |
| 6 | 462 | 289 | | | 282 | 1,430 | 1,320 | 1,320 | 890 | 528 |
| 7 | 436 | 297 | | | 282 | 1,320 | 1,320 | 1,100 | 797 | 501 |
| 8 | 404 | 304 | | | 327 | 1,100 | 1,550 | 1,210 | 754 | 463 |
| 9 | 382 | 308 | | | 890 | 990 | 1,800 | 1,320 | 754 | 439 |
| 10 | 349 | 331 | | | 1,100 | 844 | 1,800 | 1,320 | 890 | 412 |
| 11 | 360 | 345 | | | 890 | 890 | 1,670 | 1,210 | 940 | 391 |
| 12 | 393 | 336 | | | 990 | 940 | 1,550 | 1,100 | 844 | 370 |
| 13 | 436 | 317 | | | 1,100 | 890 | 1,550 | 844 | 797 | 356 |
| 14 | 468 | 304 | | | 1,210 | 1,550 | 1,430 | 754 | 754 | 332 |
| 15 | 423 | 304 | | | 1,430 | 1,670 | 1,320 | 710 | 644 | 309 |
| 16 | 349 | 297 | | | 1,670 | 710 | 1,100 | 700 | 620 | 304 |
| 17 | 331 | 289 | | | 1,550 | 797 | 890 | 680 | 581 | 304 |
| 18 | 322 | 274 | | | 1,550 | 797 | 754 | 661 | 565 | 287 |
| 19 | 317 | 267 | | | 1,670 | 890 | 653 | 702 | 565 | 278 |
| 20 | 308 | 254 | | | 1,550 | 1,100 | 596 | 797 | 565 | 274 |

*Daily discharge, in second-feet, of Green River near Daniel, Wyo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 297 | 241 | | | 1,430 | 1,100 | 542 | 797 | 557 | 267 |
| 22 | 304 | 238 | | | 1,210 | 1,320 | 514 | 710 | 521 | 249 |
| 23 | 289 | 238 | | | 710 | 1,210 | 474 | 694 | 474 | 249 |
| 24 | 278 | 244 | | | 386 | 1,210 | 445 | 644 | 468 | 236 |
| 25 | 281 | 244 | | | 890 | 1,210 | 417 | 557 | 480 | 256 |
| 26 | 285 | 244 | | | 890 | 1,210 | 434 | 565 | 480 | 260 |
| 27 | 293 | 244 | | | 940 | 1,210 | 528 | 542 | 463 | 253 |
| 28 | 304 | 251 | | 549 | 990 | 1,210 | 628 | 542 | 445 | 249 |
| 29 | 281 | 251 | | 356 | 1,100 | 1,100 | 940 | 501 | 494 | 256 |
| 30 | 336 | 251 | | 386 | 1,100 | 1,210 | 1,100 | 480 | 535 | 296 |
| 31 | 313 | | | 401 | | 1,210 | | 463 | 573 | |

NOTE.—No gage-height record July 16–17; discharge interpolated.

*Monthly discharge of Green River near Daniel, Wyo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 528 | 278 | 368 | 22,600 |
| November | 345 | 238 | 285 | 17,000 |
| April | 1,670 | 282 | 932 | 55,500 |
| May | 1,670 | 710 | 1,160 | 71,300 |
| June | 1,800 | 417 | 1,030 | 61,300 |
| July | 1,320 | 463 | 874 | 53,700 |
| August | 940 | 445 | 621 | 38,200 |
| September | 628 | 236 | 362 | 21,500 |

### GREEN RIVER AT GREEN RIVER, WYO.

LOCATION.—In sec. 22, T. 18 N., R. 107 W., at Union Pacific Railroad pumping station 100 feet below railroad bridge at Green River, Sweetwater County. No tributary within several miles.

DRAINAGE AREA.—7,670 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 2, 1895, to October 31, 1906; March 1, 1915, to September 30, 1926.

GAGE.—Chain gage on left bank at pumping station; read by E. H. Craver.

DISCHARGE MEASUREMENTS.—Made from 2-span highway bridge.

CHANNEL AND CONTROL.—Bed composed of boulders. Control of well-compacted small boulders 400 feet downstream. During winter of 1924–25 city placed two cribs on control, shortening it considerably.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.39 feet at 8 a. m. July 11 (discharge, 5,550 second-feet); minimum discharge occurred during winter.

1895–1906; 1915–1926: Maximum stage recorded, 12.3 feet at 5 p. m. June 19, 1918 (discharge, 22,200 second-feet); minimum discharge recorded, 160 second-feet November 17, 1898.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 16,000 acres from Green River between station near Daniel and Green River station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. Rating curve fairly well defined between 400 and 15,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean gage height to rating tables. Records good except for periods affected by ice, for which they are fair.

The following discharge measurements were made:
May 16, 1926: Gage height, 2.84 feet; discharge, 2,020 second-feet.
September 29, 1926: Gage height, 1.74 feet; discharge, 588 second-feet.
September 29, 1926: Gage height, 1.74 feet; discharge, 592 second-feet.

*Daily discharge, in second-feet, of Green River at Green River, Wyo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,450 | 1,240 | 780 | 802 | 2,700 | 3,990 | 1,450 | 1,060 | 850 |
| 2 | 1,380 | 1,180 | 820 | 755 | 2,910 | 3,770 | 1,450 | 950 | 850 |
| 3 | 1,310 | 1,120 | 880 | 802 | 3,770 | 3,550 | 1,760 | 950 | 900 |
| 4 | 1,310 | 1,120 | 950 | 1,060 | 3,770 | 3,330 | 1,930 | 950 | 850 |
| 5 | 1,240 | 1,240 | 1,030 | 1,310 | 3,990 | 3,120 | 1,930 | 1,060 | 850 |
| 6 | 1,310 | 1,060 | 1,080 | 1,310 | 4,220 | 3,120 | 2,110 | 1,060 | 950 |
| 7 | 1,310 | 900 | 1,060 | 1,450 | 4,710 | 3,120 | 2,110 | 1,180 | 850 |
| 8 | 1,310 | 802 | 1,000 | 2,300 | 4,460 | 3,330 | 2,110 | 1,930 | 850 |
| 9 | 1,380 | 950 | 930 | 2,500 | 3,990 | 3,550 | 2,910 | 1,600 | 850 |
| 10 | 1,310 | 1,120 | 890 | 2,910 | 3,770 | 4,220 | 4,460 | 1,600 | 802 |
| 11 | 1,310 | 1,120 | 940 | 3,120 | 3,330 | 4,460 | 4,980 | 1,600 | 802 |
| 12 | 1,310 | 1,120 | 920 | 3,120 | 3,120 | 4,460 | 3,990 | 1,760 | 802 |
| 13 | 1,600 | 1,120 | 1,060 | 3,120 | 2,910 | 4,220 | 3,550 | 1,760 | 755 |
| 14 | 1,520 | 950 | 1,050 | 3,120 | 2,700 | 4,220 | 2,910 | 1,600 | 755 |
| 15 | 1,380 | 850 | 1,220 | 3,120 | 2,500 | 4,220 | 2,700 | 1,600 | 755 |
| 16 | 1,380 | 755 | 1,110 | 2,910 | 1,930 | 3,990 | 2,110 | 1,310 | 755 |
| 17 | 1,380 | 755 | 1,310 | 2,700 | 1,930 | 3,550 | 1,760 | 1,310 | 707 |
| 18 | 1,310 | 708 | 1,520 | 3,120 | 2,110 | 3,120 | 1,600 | 1,180 | 707 |
| 19 | 1,240 | 660 | 1,760 | 3,120 | 2,500 | 2,700 | 1,600 | 1,060 | 707 |
| 20 | 1,240 | 615 | 1,760 | 2,910 | 2,700 | 2,300 | 1,600 | 1,060 | 660 |
| 21 | 1,180 | 615 | 1,930 | 3,120 | 2,910 | 1,930 | 1,450 | 1,060 | 660 |
| 22 | 1,120 | 660 | 1,450 | 2,910 | 3,550 | 1,760 | 1,600 | 1,060 | 615 |
| 23 | 1,120 | 708 | 1,760 | 2,700 | 4,460 | 1,600 | 1,600 | 1,000 | 615 |
| 24 | 1,060 | 802 | 1,930 | 2,700 | 4,460 | 1,450 | 1,450 | 1,060 | 615 |
| 25 | 1,060 | 802 | 2,110 | 2,300 | 4,460 | 1,310 | 1,450 | 1,060 | 570 |
| 26 | 1,060 | 850 | 2,700 | 2,110 | 4,980 | 1,180 | 1,310 | 950 | 570 |
| 27 | 1,060 | 950 | 2,110 | 1,930 | 4,980 | 1,060 | 1,310 | 900 | 615 |
| 28 | 1,060 | 900 | 1,760 | 2,110 | 4,460 | 1,060 | 1,180 | 950 | 615 |
| 29 | 1,060 | 850 | 1,310 | 2,300 | 4,220 | 1,060 | 1,180 | 802 | 615 |
| 30 | 1,120 | 802 | 1,310 | 2,300 | 3,990 | 1,180 | 1,180 | 850 | 660 |
| 31 | 1,180 | ---- | 1,060 | ---- | 3,990 | ---- | 1,180 | 850 | ---- |

NOTE.—Stage-discharge relation affected by ice Mar. 1–11; discharge based on temperature record and comparison with records of flow of Big Horn River at Thermopolis.

*Monthly discharge of Green River at Green River, Wyo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 1,600 | 1,060 | 1,260 | 77,500 |
| November | 1,240 | 615 | 911 | 54,200 |
| March | 2,700 | 780 | 1,340 | 82,400 |
| April | 3,120 | 755 | 2,330 | 139,000 |
| May | 4,980 | 1,930 | 3,560 | 219,000 |
| June | 4,460 | 1,060 | 2,860 | 170,000 |
| July | 4,980 | 1,180 | 2,060 | 127,000 |
| August | 1,930 | 802 | 1,200 | 73,800 |
| September | 950 | 570 | 739 | 44,000 |

### GREEN RIVER AT GREEN RIVER, UTAH

LOCATION.—In NW. ¼ SW. ¼ sec. 15, T. 21 S., R. 16 E., at highway bridge 1 mile southeast of Green River, Emery County. San Rafael River enters from right 22 miles downstream.

DRAINAGE AREA.—40,600 square miles (measured on base maps).

RECORDS AVAILABLE.—October 21, 1894, to October 15, 1899; February 16, 1905, to December 31, 1911; June 21, 1924, to September 30, 1926. Records obtained at Little Valley, 7 miles downstream, December 18, 1910, to June 20, 1924, give practically the same flow.

GAGE.—Stevens continuous water-stage recorder on downstream side of bridge pier near right bank, installed September 19, 1924; inspected by H. T. Howland.

DISCHARGE MEASUREMENTS.—Made from cable at old ferry site, 7 miles below gage.

CHANNEL AND CONTROL.—Bed composed of gravel and sand. One channel at all stages. Left bank high and not subject to overflow; right bank lower and may be overflowed at extreme stages. However, water is confined by highway and Denver & Rio Grande Western Railroad bridges. There is a well-defined break in slope three-quarters of a mile downstream.

EXTREMES OF DISCHARGE.—Maximum stage during year, 10.67 feet at 10 p. m. May 26; maximum discharge, 24,500 second-feet May 9; minimum stage, 4.84 feet at 1 p. m. December 20 (discharge, 1,140 second-feet).

1894–1899; 1905–1926: Maximum discharge recorded, 68,800 second-feet May 29, 1897; minimum stage recorded, —0.95 foot on December 1, 1919 (discharge, 510 second-feet).

ICE.—Stage-discharge relation affected by ice nearly every winter.

DIVERSIONS.—Below practically all diversions.

REGULATION.—Some regulation due to irrigation.

ACCURACY.—Stage-discharge relation changed several times during the year; affected by ice December 20–31 and January 4 to February 4. Standard rating curve well defined. Operation of water-stage recorder satisfactory during year except from August 12 to September 4, during which time two daily readings were obtained. Daily discharge ascertained by applying to rating table mean daily gage height; shifting-control method used October 1–5 and May 9 to September 30. Gage heights during ice-affected period were only affected for part of each day; discharge for this period ascertained by computing an effective gage height and applying it to rating curve. Records good.

COOPERATION.—Since December 16, 1917, station has been maintained in cooperation with Utah Power & Light Co.

*Discharge measurements of Green River at Green River, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 21 [a] | 6.14 | 2,880 | Mar. 25 | 7.63 | 7,630 | June 22 | 7.93 | 9,280 |
| Dec. 10 | 6.13 | 2,850 | Apr. 30 | 9.30 | 17,200 | Aug. 11 [a] | 6.84 | 5,580 |
| Jan. 6 [a] | 5.95 | 2,560 | May 18 [a] | 8.28 | 9,580 | Aug. 26 | 5.54 | 2,190 |
| Jan. 7 [a] | 5.77 | 1,850 | June 16 [a] | 9.03 | 14,100 | Sept. 19 [a] | 5.13 | 1,430 |

[a] Made by engineer of Utah Power & Light Co.

*Daily discharge, in second-feet, of Green River at Green River, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4,040 | 3,620 | 2,880 | 2,040 | 1,760 | 2,500 | 5,560 | 17,200 | 23,700 | 4,600 | 2,700 | 1,760 |
| 2 | 3,820 | 3,620 | 2,970 | 2,060 | 1,760 | 2,600 | 4,980 | 17,800 | 21,700 | 4,250 | 2,520 | 1,740 |
| 3 | 3,680 | 3,620 | 3,160 | 2,080 | 1,830 | 2,700 | 4,560 | 18,500 | 19,600 | 3,990 | 2,440 | 1,700 |
| 4 | 3,540 | 3,620 | 3,110 | 2,120 | 1,970 | 3,040 | 4,190 | 19,300 | 19,000 | 3,870 | 2,410 | 1,700 |
| 5 | 6,280 | 3,620 | 3,180 | 2,120 | 2,000 | 3,280 | 4,020 | 19,500 | 19,200 | 3,870 | 2,460 | 1,660 |
| 6 | 9,990 | 3,760 | 3,260 | 2,120 | 2,040 | 3,410 | 3,760 | 21,300 | 18,700 | 3,990 | 2,480 | 1,700 |
| 7 | 4,660 | 3,760 | 3,040 | 2,200 | 2,120 | 3,960 | 4,040 | 22,900 | 17,600 | 4,500 | 2,620 | 1,680 |
| 8 | 5,320 | 3,760 | 2,790 | 2,120 | 2,150 | 4,440 | 4,280 | 23,500 | 17,000 | 4,690 | 2,770 | 1,740 |
| 9 | 5,490 | 3,620 | 2,730 | 1,970 | 2,200 | 4,280 | 4,890 | 24,000 | 16,500 | 5,520 | 3,180 | 1,760 |
| 10 | 5,490 | 3,620 | 2,810 | 1,970 | 2,200 | 4,130 | 6,470 | 23,500 | 16,400 | 6,540 | 3,520 | 1,730 |
| 11 | 6,020 | 3,490 | 2,810 | 1,970 | 2,230 | 4,660 | 8,420 | 20,300 | 16,200 | 9,250 | 5,290 | 1,730 |
| 12 | 6,580 | 3,360 | 2,770 | 1,900 | 2,280 | 4,690 | 11,600 | 17,700 | 15,300 | 16,100 | 5,120 | 2,280 |
| 13 | 6,200 | 3,360 | 2,540 | 1,900 | 2,330 | 4,310 | 10,800 | 15,500 | 14,800 | 13,600 | 6,240 | 1,820 |
| 14 | 6,200 | 3,360 | 2,520 | 1,900 | 2,370 | 4,660 | 10,300 | 13,700 | 14,300 | 12,400 | 5,980 | 1,640 |
| 15 | 5,490 | 3,360 | 2,560 | 1,970 | 2,390 | 5,220 | 10,600 | 12,300 | 14,600 | 10,200 | 5,420 | 1,560 |
| 16 | 5,150 | 3,360 | 2,520 | 1,970 | 2,480 | 5,460 | 10,400 | 11,200 | 14,000 | 8,720 | 4,410 | 1,540 |
| 17 | 4,980 | 3,300 | 2,100 | 1,830 | 2,460 | 5,910 | 10,100 | 10,200 | 13,100 | 7,580 | 4,070 | 1,510 |
| 18 | 4,820 | 3,240 | 1,440 | 1,760 | 2,480 | 6,500 | 9,900 | 9,710 | 12,600 | 6,700 | 4,130 | 1,440 |
| 19 | 4,660 | 3,180 | 1,250 | 1,760 | 2,520 | 7,660 | 10,100 | 9,800 | 12,100 | 5,950 | 3,730 | 1,410 |
| 20 | 4,500 | 3,110 | 1,240 | 1,700 | 2,540 | 7,910 | 10,600 | 10,900 | 8,980 | 5,320 | 3,310 | 1,410 |
| 21 | 4,500 | 2,930 | 1,420 | 1,700 | 2,540 | 8,200 | 12,000 | 12,500 | 8,070 | 4,720 | 3,040 | 1,400 |
| 22 | 4,340 | 2,730 | 1,580 | 1,830 | 2,460 | 8,940 | 13,800 | 14,800 | 9,160 | 4,130 | 2,860 | 1,400 |
| 23 | 4,190 | 2,680 | 1,830 | 1,830 | 2,520 | 8,630 | 14,900 | 17,100 | 8,330 | 3,760 | 2,620 | 1,380 |
| 24 | 4,040 | 2,620 | 2,200 | 1,900 | 2,420 | 8,200 | 15,800 | 19,800 | 7,700 | 3,520 | 2,420 | 1,340 |
| 25 | 3,990 | 2,660 | 2,200 | 1,830 | 2,420 | 7,860 | 17,300 | 22,100 | 7,010 | 3,390 | 2,390 | 1,310 |
| 26 | 3,900 | 2,730 | 2,120 | 1,760 | 2,390 | 7,370 | 18,300 | 23,900 | 6,430 | 3,260 | 2,180 | 1,260 |
| 27 | 3,760 | 2,620 | 2,120 | 1,700 | 2,410 | 6,890 | 17,700 | 23,700 | 5,910 | 2,970 | 2,090 | 1,290 |
| 28 | 3,760 | 2,600 | 2,200 | 1,640 | 2,420 | 6,890 | 16,000 | 23,400 | 5,560 | 2,950 | 2,030 | 1,260 |
| 29 | 3,620 | 2,620 | 2,120 | 1,700 | ------- | 7,050 | 16,000 | 23,300 | 5,180 | 2,860 | 1,860 | 1,280 |
| 30 | 3,620 | 2,730 | 2,040 | 1,760 | ------- | 6,350 | 16,700 | 23,000 | 4,890 | 2,770 | 1,930 | 1,830 |
| 31 | 3,620 | ------- | 2,040 | 1,700 | ------- | 5,950 | ------- | 22,900 | ------- | 2,790 | 1,860 | ------ |

*Monthly discharge of Green River at Green River, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 9,990 | 3,540 | 4,850 | 298,000 |
| November | 3,760 | 2,600 | 3,220 | 192,000 |
| December | 3,260 | 1,240 | 2,370 | 146,000 |
| January | 2,200 | 1,640 | 1,900 | 117,000 |
| February | 2,540 | 1,760 | 2,270 | 126,000 |
| March | 8,940 | 2,500 | 5,600 | 344,000 |
| April | 18,300 | 3,760 | 10,300 | 613,000 |
| May | 24,000 | 9,710 | 18,200 | 1,120,000 |
| June | 23,700 | 4,890 | 13,100 | 780,000 |
| July | 16,100 | 2,770 | 5,770 | 355,000 |
| August | 6,240 | 1,860 | 3,230 | 199,000 |
| September | 2,280 | 1,260 | 1,580 | 94,000 |
| The year | 24,000 | 1,240 | 6,050 | 4,380,000 |

### NEW FORK NEAR BOULDER, WYO.

LOCATION.—About sec. 8, T. 32 N., R. 108 W., at highway bridge 1 mile west of Boulder, Sublette County. Nearest tributary, Boulder Creek, enters one-eighth of a mile below.

DRAINAGE AREA.—578 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 11, 1915, to September 30, 1926.

GAGE.—Vertical staff on downstream side of left abutment; read by Martin T. Brandt.

DISCHARGE MEASUREMENTS.—Made from 2-span bridge or by wading

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting at long intervals. No well-defined control. At high-water stages there are two overflow channels, one around right end of bridge and other from New Fork to Boulder Creek.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.5 feet from 8 a. m. June 10 to 8 a. m. June 11 (discharge, 1,450 second-feet); minimum discharge probably occurred during winter.

1915–1926: Maximum stage recorded, 8.7 feet at 6 a. m. June 17, 1918 (discharge, 12,300 second-feet); minimum discharge, 42 second-feet December 15–17, 1915.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 13,400 acres from New Fork above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. Rating curve used October 1 to December 14 and curve used April 1 to September 30 are both well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean gage height to rating table. Records excellent except for ice-affected periods, for which they are fair.

The following discharge measurements were made:

May 13, 1926: Gage height, 3.16 feet; discharge, 570 second-feet.

July 18, 1926: Gage height, 3.08 feet; discharge, 517 second-feet.

September 23, 1926: Gage height, 2.11 feet; discharge, 133 second-feet.

*Daily discharge, in second-feet, of New Fork near Boulder, Wyo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 376 | 272 | 195 | 147 | 406 | 1,140 | 585 | 318 | 190 |
| 2 | 367 | 272 | 180 | 116 | 536 | 1,100 | 585 | 298 | 190 |
| 3 | 358 | 276 | 170 | 107 | 634 | 1,080 | 558 | 338 | 204 |
| 4 | 349 | 284 | 160 | 112 | 707 | 1,070 | 585 | 298 | 224 |
| 5 | 336 | 297 | 171 | 103 | 767 | 1,070 | 585 | 279 | 217 |
| 6 | 326 | 288 | 171 | 107 | 827 | 1,080 | 558 | 298 | 204 |
| 7 | 354 | 280 | 160 | 190 | 815 | 1,150 | 558 | 298 | 204 |
| 8 | 354 | 275 | 150 | 268 | 755 | 1,250 | 612 | 298 | 197 |
| 9 | 349 | 270 | 145 | 500 | 755 | 1,350 | 695 | 382 | 197 |
| 10 | 331 | 270 | 140 | 558 | 707 | 1,450 | 755 | 382 | 190 |
| 11 | 314 | 272 | 148 | 585 | 662 | 1,430 | 755 | 382 | 187 |
| 12 | 340 | 269 | 145 | 525 | 624 | 1,370 | 640 | 406 | 187 |
| 13 | 340 | 265 | 140 | 558 | 574 | 1,350 | 640 | 406 | 184 |
| 14 | 331 | 260 | 140 | 450 | 510 | 1,310 | 612 | 406 | 184 |
| 15 | 326 | 250 | 135 | 378 | 475 | 1,200 | 585 | 382 | 180 |
| 16 | 318 | 240 | ------- | 351 | 470 | 1,080 | 530 | 360 | 164 |
| 17 | 309 | 230 | ------- | 334 | 520 | 992 | 530 | 360 | 152 |
| 18 | 297 | 230 | ------- | 302 | 568 | 908 | 530 | 360 | 147 |
| 19 | 288 | 225 | ------- | 298 | 646 | 815 | 530 | 360 | 141 |
| 20 | 288 | 230 | ------- | 302 | 725 | 743 | 585 | 338 | 141 |
| 21 | 280 | 235 | ------- | 298 | 888 | 640 | 558 | 338 | 136 |
| 22 | 280 | 235 | ------- | 302 | 1,080 | 596 | 530 | 338 | 130 |
| 23 | 272 | 230 | ------- | 310 | 1,140 | 541 | 480 | 338 | 130 |
| 24 | 265 | 220 | ------- | 306 | 1,200 | 475 | 406 | 298 | 130 |
| 25 | 250 | 210 | ------- | 306 | 1,310 | 392 | 406 | 279 | 130 |
| 26 | 250 | 200 | ------- | 310 | 1,310 | 435 | 382 | 256 | 130 |
| 27 | 257 | 198 | ------- | 330 | 1,250 | 445 | 430 | 238 | 125 |
| 28 | 269 | 191 | ------- | 338 | 1,210 | 465 | 406 | 228 | 125 |
| 29 | 284 | 216 | ------- | 347 | 1,210 | 500 | 360 | 231 | 158 |
| 30 | 297 | 231 | ------- | 378 | 1,210 | 480 | 338 | 228 | 217 |
| 31 | 284 | ------- | ------- | ------- | 1,200 | ------- | 338 | 207 | ------- |

NOTE.—Stage-discharge relation affected by ice Nov. 7–10, 14–20, 23–26, Dec. 2–4, 7–10, 12–13, 15; discharge based on temperature and gage-height records and on comparison with records of discharge of Pine Creek at Pinedale.

*Monthly discharge of New Fork near Boulder, Wyo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 376 | 250 | 311 | 19,100 |
| November | 297 | 191 | 247 | 14,700 |
| December 1–15 | 195 | 135 | 157 | 4,670 |
| April | 585 | 103 | 317 | 18,900 |
| May | 1,310 | 406 | 829 | 51,000 |
| June | 1,450 | 392 | 930 | 55,300 |
| July | 755 | 338 | 537 | 33,000 |
| August | 406 | 207 | 320 | 19,700 |
| September | 224 | 125 | 170 | 10,100 |

### PINE CREEK AT PINEDALE, WYO.

LOCATION.—In sec. 4, T. 33 N., R. 109 W., near highway bridge at Pinedale, Sublette County. No large tributary between station and mouth, 3 miles below.

DRAINAGE AREA.—128 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 8, 1915, to September 30, 1926.

GAGE.—Gurley water-stage recorder installed May 4, 1926, at left bank 30 feet upstream from highway bridge and referred to staff gage used previously; inspected by J. W. Smith.

DISCHARGE MEASUREMENTS.—Made from 2-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control at rapids just below gage; somewhat shifting at long intervals. Banks subject to overflow at extremely high water.

EXTREMES OF DISCHARGE.—Water-stage recorder not operating during period of maximum stage; maximum daily discharge estimated by comparison with record of New Fork near Boulder, 630 second-feet on June 10; minimum discharge occurred during winter.

1915–1926: Maximum stage recorded, 5.0 feet at 8 a. m. and 5 p. m. June 17, 1918 (discharge, 2,310 second-feet); minimum discharge recorded, 4 second-feet November 14–16, 1921.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 5,100 acres from Pine Creek above Pinedale and 280 acres below.

REGULATION.—Flow naturally regulated by Fremont Lake, which has an area of about 8 square miles and drains 110 square miles.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice during winter. Rating curve well defined. Gage read to hundredths twice daily October 1 to May 3, after which date operation of water-stage recorder was fairly satisfactory, except for periods as explained in footnote to daily-discharge table. Daily discharge ascertained by applying mean gage height to rating table. Records good except for periods of missing gage heights and when affected by ice, for which they are fair.

The following discharge measurements were made:

May 12, 1926: Gage height, 2.25 feet; discharge, 217 second-feet.

July 17, 1926; Gage height, 2.07 feet; discharge, 162 second-feet.

September 22, 1926: Gage height, 1.32 feet; discharge, 35.9 second-feet.

*Daily discharge, in second-feet, of Pine Creek at Pinedale, Wyo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 119 | 71 | 60 | 22 | 66 | 510 | 178 | 123 | 73 |
| 2 | 114 | 71 | 60 | 18 | 84 | 490 | 184 | 127 | 71 |
| 3 | 112 | 70 | 60 | 18 | 101 | 480 | 191 | 129 | 74 |
| 4 | 108 | 70 | 50 | 16 | 116 | 470 | 200 | 133 | 76 |
| 5 | 106 | 70 | 40 | 18 | 139 | 465 | 197 | 137 | 76 |
| 6 | 112 | 70 | 42 | 23 | 165 | 485 | 191 | 136 | 74 |
| 7 | 104 | 70 | 44 | 27 | 184 | 530 | 181 | 135 | 73 |
| 8 | 103 | 70 | 46 | 39 | 224 | 590 | 184 | 145 | 71 |
| 9 | 99 | 72 | 49 | 34 | 254 | 620 | 200 | 156 | 71 |
| 10 | 97 | 74 | 49 | 23 | 245 | 625 | 224 | 165 | 67 |
| 11 | 97 | 78 | 46 | 22 | 220 | 617 | 220 | 165 | 63 |
| 12 | 97 | 82 | 46 | 22 | 212 | 609 | 212 | 167 | 60 |
| 13 | 97 | 87 | 45 | 21 | 208 | 593 | 194 | 162 | 60 |
| 14 | 97 | 87 | 42 | 18 | 197 | 569 | 181 | 167 | 57 |
| 15 | 97 | 84 | 40 | 17 | 188 | 538 | 172 | 178 | 53 |
| 16 | 92 | 82 | ------ | 18 | 188 | 492 | 169 | 167 | 49 |
| 17 | 90 | 77 | ------ | 19 | 200 | 429 | 160 | 162 | 44 |
| 18 | 87 | 77 | ------ | 20 | 212 | 383 | 154 | 154 | 42 |
| 19 | 84 | 71 | ------ | 24 | 208 | 377 | 149 | 147 | 40 |
| 20 | 82 | 67 | ------ | 30 | 250 | 365 | 143 | 141 | 38 |
| 21 | 80 | 66 | ------ | 34 | 300 | 318 | 135 | 141 | 35 |
| 22 | 77 | 65 | ------ | 39 | 359 | 281 | 131 | 143 | 36 |
| 23 | 77 | 67 | ------ | 44 | 390 | 236 | 125 | 139 | 34 |
| 24 | 74 | 68 | ------ | 46 | 450 | 208 | 118 | 131 | 32 |
| 25 | 74 | 66 | ------ | 41 | 492 | 185 | 137 | 131 | 30 |
| 26 | 73 | 66 | ------ | 33 | 508 | 162 | 135 | 115 | 30 |
| 27 | 73 | 63 | ------ | 39 | 508 | 165 | 151 | 100 | 28 |
| 28 | 76 | 63 | ------ | 44 | 522 | 178 | 143 | 85 | 27 |
| 29 | 77 | 60 | ------ | 49 | 530 | 167 | 137 | 84 | 25 |
| 30 | 74 | 60 | ------ | 52 | 535 | 162 | 131 | 79 | 29 |
| 31 | 74 | ------ | ------ | ------ | 530 | ------ | 127 | 76 | ------ |

NOTE.—Stage-discharge relation affected by ice Nov. 3–12, 21–23, Dec. 4–8, 11, 14–15; no gage-height record Apr. 1–3, May 20–21, 30–31, June 1–10, 25, Aug. 26–27; discharge based on comparison with records of flow of New Fork near Boulder.

*Monthly discharge of Pine Creek at Pinedale, Wyo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 119 | 73 | 91.1 | 5,600 |
| November | 87 | 60 | 71.5 | 4,250 |
| December 1–15 | 60 | 40 | 47.9 | 1,430 |
| April | 52 | 16 | 29 | 1,730 |
| May | 535 | 66 | 283 | 17,400 |
| June | 625 | 162 | 410 | 24,400 |
| July | 224 | 118 | 166 | 10,200 |
| August | 178 | 76 | 136 | 8,360 |
| September | 76 | 25 | 51.3 | 3,050 |

### HAMS FORK AT DIAMONDVILLE, WYO.

LOCATION.—In SW. ¼ sec. 24, T. 21 N., R. 116 W., at highway bridge at Diamondville, Lincoln County. No large tributary within many miles.

DRAINAGE AREA.—386 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—October 1, 1918, to September 30, 1926.

GAGE.—Vertical staff attached to downstream side of bridge; read by T. L. Stewart.

DISCHARGE MEASUREMENTS.—Made from 2-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of small boulders and well-compacted gravel. Control 200 feet downstream at small rapids, which shifts at long intervals. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.86 feet at 5 p. m. April 21 and May 6 (discharge, 522 second-feet); minimum stage recorded, 1.21 feet at 8 a. m. August 31 (discharge, 2 second-feet).

1918–1926: Maximum stage recorded, 4.55 feet at 8 a. m. May 11, 1923 (discharge, 3,250 second-feet); minimum discharge, river dry August 29–31, 1919.

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

DIVERSIONS.—Adjudicated diversions from Hams Fork and tributaries for irrigation of 7,620 acres above station and 8,090 acres below.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean gage height to rating table. Records excellent except for period of missing gage heights, for which they are fair.

The following discharge measurements were made:

May 15, 1926: Gage height, 2.32 feet; discharge, 203 second-feet.

July 16, 1926: Gage height, 1.63 feet; discharge, 28.5 second-feet.

September 24, 1926: Gage height, 1.34 feet (datum of gage raised 0.49 foot; gage height referred to new datum, 0.85 foot); discharge, 6.4 second-feet.

*Daily discharge, in second-feet, of Hams Fork at Diamondville, Wyo., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 40 | | 113 | 425 | 124 | 10 | 19 | 4 |
| 2 | 36 | 37 | | 60 | 425 | 113 | 8 | 12 | 5 |
| 3 | 36 | 40 | 50 | 53 | 425 | 103 | 9 | 17 | 11 |
| 4 | 33 | 40 | | 54 | 407 | 113 | 10 | 18 | 10 |
| 5 | 37 | 16 | | 67 | 401 | 109 | 11 | 18 | 11 |
| 6 | 40 | 5 | | 116 | 495 | 131 | 14 | 15 | 10 |
| 7 | 43 | 25 | | 300 | 489 | 101 | 19 | 15 | 11 |
| 8 | 45 | 26 | 60 | 306 | 438 | 95 | 23 | 23 | 13 |
| 9 | 47 | 24 | | 425 | 407 | 95 | 29 | 19 | 13 |
| 10 | 42 | 27 | | 450 | 364 | 89 | 35 | 19 | 13 |
| 11 | 42 | 26 | | 438 | 358 | 81 | 47 | 25 | 12 |
| 12 | 47 | 35 | | 438 | 306 | 63 | 48 | 24 | 12 |
| 13 | 50 | ------- | 90 | 438 | 272 | 65 | 46 | 19 | 13 |
| 14 | 50 | ------- | | 382 | 224 | 55 | 48 | 20 | 12 |
| 15 | 50 | ------- | 146 | 370 | 213 | 54 | 42 | 16 | 12 |
| 16 | 45 | ------- | 142 | 388 | 218 | 50 | 29 | 14 | 11 |
| 7 | 42 | ------- | 146 | 419 | 229 | 47 | 30 | 11 | 12 |
| 18 | 42 | ------- | 131 | 382 | 244 | 45 | 33 | 8 | 12 |
| 19 | 41 | ------- | 131 | 425 | 239 | 41 | 33 | 6 | 10 |
| 20 | 42 | ------- | 120 | 382 | 300 | 31 | 32 | 4 | 8 |
| 21 | 40 | ------- | 124 | 489 | 300 | 35 | 21 | 4 | 7 |
| 22 | 40 | ------- | 135 | 476 | 306 | 27 | 17 | 4 | 8 |
| 23 | 40 | ------- | 165 | 419 | 300 | 26 | 16 | 4 | 8 |
| 24 | 37 | ------- | 198 | 376 | 294 | 20 | 14 | 4 | 6 |
| 25 | 37 | ------- | 234 | 382 | 283 | 16 | 19 | 3 | 6 |
| 26 | 37 | ------- | 188 | 358 | 266 | 10 | 15 | 4 | 6 |
| 27 | 35 | ------- | 151 | 346 | 272 | 11 | 7 | 4 | 9 |
| 28 | 37 | ------- | 109 | 370 | 218 | 11 | 11 | 5 | 8 |
| 29 | 40 | ------- | 106 | 370 | 174 | 10 | 12 | 4 | 7 |
| 30 | 40 | ------- | 67 | 395 | 160 | 8 | 17 | 4 | 11 |
| 31 | 42 | ------- | 81 | ------- | 128 | ------- | 17 | 2 | ------- |

NOTE.—No gage-height record Mar. 1–14; discharge based on temperature record and comparison with records of flow of Bear River near Evanston. Braced figures give mean discharge for period indicated.

*Monthly discharge of Hams Fork at Diamondville, Wyo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 50 | 33 | 41.0 | 2,520 |
| November 1–12 | 40 | 5 | 28.4 | 676 |
| March | 234 | ---------- | 106 | 6,520 |
| April | 489 | 53 | 333 | 19,800 |
| May | 495 | 128 | 309 | 19,000 |
| June | 131 | 8 | 59.3 | 3,530 |
| July | 48 | 7 | 23.3 | 1,430 |
| August | 25 | 2 | 11.7 | 719 |
| September | 13 | 4 | 9.7 | 577 |

### LITTLE SNAKE RIVER NEAR LILY, COLO.

LOCATION.—In sec. 20, T. 7 N., R. 98 W., at highway bridge near mouth of canyon 6 miles above Lily, Moffat County. No tributary between station and mouth of river at Lily.

DRAINAGE AREA.—3,730 square miles (measured on base maps of Colorado and Wyoming).

RECORDS AVAILABLE.—June 9 to August 14, 1904; May 1, 1922, to September 30, 1926.

GAGE.—Stevens water-stage recorder; inspected by Baxter L. Waddell. Datum raised 0.48 foot October 1, 1925.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 10.5 feet at 1 p. m. May 27 (discharge, 14,200 second-feet); minimum stage —0.36 foot August 31 and September 3–4 (discharge, 12 second-feet).

1904; 1922–1926: Maximum stage in 1926; minimum discharge, river dry August 7 to September 11, 1924.

DIVERSIONS.—Adjudicated diversions for irrigation of 28,700 acres from Little Snake River and tributaries above station.

REGULATION.—None.

COOPERATION.—Complete records furnished by State engineer.

*Daily discharge, in second-feet, of Little Snake River near Lily, Colo., for the year ending September 30, 1926*

| Day | Oct. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 1 | 23 | ------- | 820 | 3,340 | 4,420 | 263 | 33 | 16 |
| 2 | 25 | ------- | 820 | 3,470 | 4,560 | 216 | 30 | 13 |
| 3 | 26 | ------- | 790 | 3,860 | 4,420 | 270 | 22 | 12 |
| 4 | 30 | ------- | 730 | 4,000 | 4,210 | 350 | 18 | 12 |
| 5 | 91 | ------- | 1,530 | 4,280 | 4,000 | 330 | 18 | 18 |
| 6 | 210 | ------- | 1,620 | 4,490 | 3,210 | 310 | 16 | 28 |
| 7 | 1,210 | ------- | 1,290 | 4,560 | 2,140 | 370 | 24 | 33 |
| 8 | 700 | ------- | 2,610 | 3,860 | 2,200 | 290 | 16 | 62 |
| 9 | 450 | ------- | 2,730 | 4,210 | 1,980 | 450 | 20 | 69 |
| 10 | 398 | ------- | 1,530 | 3,340 | 1,870 | 520 | 20 | 350 |
| 11 | 418 | ------- | 1,450 | 2,730 | 1,670 | 310 | 44 | 136 |
| 12 | 450 | ------- | 1,450 | 2,430 | 1,530 | 234 | 64 | 160 |
| 13 | 670 | ------- | 1,370 | 2,200 | 1,450 | 191 | 69 | 116 |
| 14 | 418 | ------- | 1,370 | 1,920 | 1,370 | 167 | 71 | 71 |
| 15 | 378 | ------- | 1,290 | 1,720 | 1,250 | 156 | 50 | 74 |
| 16 | 378 | ------- | 1,370 | 1,620 | 1,330 | 136 | 37 | 82 |
| 17 | 378 | ------- | 1,530 | 1,720 | 1,130 | 126 | 30 | 132 |
| 18 | 378 | ------- | 1,820 | 1,920 | 1,050 | 104 | 25 | 160 |
| 19 | 378 | ------- | 2,080 | 2,370 | 970 | 87 | 28 | 69 |
| 20 | 378 | ------- | 2,430 | 2,730 | 890 | 71 | 20 | 74 |

*Daily discharge, in second-feet, of Little Snake River near Lily, Colo., for the year ending September 30, 1926*—Continued

| Day | Oct. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 21 | 398 | ------- | 2,490 | 2,850 | 910 | 64 | 18 | 78 |
| 22 | 418 | ------- | 2,610 | 3,470 | 730 | 52 | 28 | 82 |
| 23 | 398 | 1,130 | 3,730 | 3,660 | 700 | 49 | 16 | 69 |
| 24 | 398 | 1,100 | 4,560 | 3,660 | 645 | 44 | 13 | 74 |
| 25 | 378 | 1,060 | 3,210 | 3,860 | 595 | 41 | 13 | 89 |
| 26 | 430 | 990 | 2,790 | 4,070 | 545 | 30 | 15 | 96 |
| 27 | 450 | 885 | 3,090 | 3,860 | 520 | 30 | 13 | 126 |
| 28 | 398 | 820 | 3,280 | 8,950 | 495 | 29 | 16 | 156 |
| 29 | 418 | 820 | 3,340 | 5,330 | 382 | 24 | 15 | 178 |
| 30 | 430 | 820 | 3,380 | 5,670 | 278 | 30 | 15 | 270 |
| 31 | 430 | 790 | ------- | 4,350 | ------- | 30 | 12 | ------- |

NOTE.—No gage-height record June 18–21; discharge interpolated.

*Monthly discharge of Little Snake River near Lily, Colo., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 1,210 | 23 | 385 | 23,700 |
| March 23–31 | 1,130 | 790 | 935 | 16,700 |
| April | 4,560 | 730 | 2,100 | 125,000 |
| May | 8,950 | 1,620 | 3,560 | 219,000 |
| June | 4,560 | 278 | 1,720 | 102,000 |
| July | 520 | 24 | 173 | 10,600 |
| August | 71 | 12 | 26.7 | 1,640 |
| September | 350 | 12 | 96.8 | 5,760 |

### ASHLEY CREEK NEAR VERNAL, UTAH

LOCATION.—In sec.1, T. 3 S., R. 20 E., three-quarters of a mile above heading of power canal of Utah Power & Light Co. and 12 miles northwest of Vernal, Uintah County. Dry Fork enters from right 4 miles downstream.

DRAINAGE AREA.—101 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 6, 1914, to September 30, 1926. From October 8, 1911, to June 5, 1914, fragmentary records obtained at power plant. Records also available for a point below Dry Fork from March 15, 1900, to December 31, 1904.

GAGE.—Stevens continuous water-stage recorder on left bank three-quarters of a mile above heading of power canal; inspected by Lee Hall and Kenneth Richardson.

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

CHANNEL AND CONTROL.—Bed steep and rough, composed of gravel and cobbles, subject to change during high water. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage during year, 7.90 feet at 9 p. m. May 20 (discharge, 729 second-feet); minimum stage, 5.85 feet March 23 (discharge, 29 second-feet).

1911–1925: Maximum discharge, 2,050 second-feet at 9 p. m. May 29, 1921; minimum discharge, 26 second-feet February 7, 1920.

ICE.—None.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation remained permanent following a slight shift on October 6. Rating curves well defined. Water-stage recorder operated satisfactorily except as stated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph or weekly gage readings. Records for estimated periods fair; others good.

*Discharge measurements of Ashley Creek near Vernal, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 6 | 6.04 | 55.8 | June 10 [a] | 6.58 | 159 | Aug. 9 | 6.19 | 85.3 |
| May 2 | 7.00 | 288 | June 27 | 6.28 | 103 | Aug. 30 | 6.06 | 59.6 |

[a] Made by engineer of Utah Power & Light Co.

*Daily discharge, in second-feet, of Ashley Creek near Vernal, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82 | 91 | 63 | 44 | | | 30 | 340 | 270 | 98 | 83 | 61 |
| 2 | 86 | 95 | 63 | 44 | | | 30 | 334 | 253 | 95 | 83 | 59 |
| 3 | 86 | 89 | 61 | | 34 | 31 | 31 | 385 | 237 | | 93 | 59 |
| 4 | 88 | 91 | 59 | | | | 30 | 458 | 224 | | 96 | 59 |
| 5 | 128 | 83 | 57 | | | | 30 | 528 | 212 | | 96 | 59 |
| | | | | 43 | | | | | | 110 | | |
| 6 | 247 | 87 | 57 | | 33 | 31 | 30 | 402 | 198 | | 96 | 59 |
| 7 | 149 | 87 | 57 | | | | 31 | 311 | 187 | | 96 | 59 |
| 8 | 131 | 85 | 57 | | | | 33 | 264 | 182 | | 91 | 57 |
| 9 | 125 | 83 | 55 | 41 | 32 | | 34 | 237 | 172 | | 85 | 57 |
| 10 | 119 | 81 | 55 | | | 30 | 35 | 215 | 160 | 112 | 95 | 55 |
| 11 | 117 | 81 | 54 | | | | 36 | 198 | 156 | | 89 | 55 |
| 12 | 116 | 81 | 54 | | 31 | | 36 | 198 | 154 | | 83 | 54 |
| 13 | 110 | 81 | 54 | | | 30 | 36 | 190 | 156 | 100 | 83 | 54 |
| 14 | 98 | 81 | 52 | | | 30 | 38 | 201 | 154 | | 81 | 54 |
| 15 | 91 | 81 | 52 | | | 30 | 42 | 237 | 139 | | 79 | 52 |
| | | | | 38 | 31 | | | | | | | |
| 16 | 91 | 81 | | | | 30 | 66 | 250 | 135 | 93 | 76 | 52 |
| 17 | 106 | 81 | 51 | | | 30 | 114 | 296 | 131 | 93 | 76 | 47 |
| 18 | 108 | 78 | | | | 30 | 165 | 318 | 127 | 93 | 76 | 45 |
| 19 | 104 | 76 | 50 | | 31 | 31 | 195 | 346 | 123 | 91 | 76 | 44 |
| 20 | 102 | 76 | | | | 31 | 192 | 507 | 125 | 91 | 74 | 44 |
| 21 | 100 | 74 | | | | 30 | 224 | 564 | 125 | 93 | 74 | 44 |
| 22 | 106 | 74 | | 35 | 31 | 30 | 231 | 543 | 117 | 95 | 72 | 44 |
| 23 | 108 | 72 | 48 | | | 29 | 227 | 549 | 104 | 91 | 68 | 44 |
| 24 | 100 | 70 | | | | 30 | 247 | 487 | 104 | 89 | 64 | 44 |
| 25 | 100 | 68 | | | | 30 | 292 | 363 | 102 | 87 | 64 | 42 |
| | | | | 35 | | | | | | | | |
| 26 | 98 | 68 | | | 31 | 30 | 334 | 322 | 102 | 87 | 64 | 41 |
| 27 | 98 | 66 | 47 | | 31 | 30 | 346 | 315 | 102 | 87 | 63 | 42 |
| 28 | 96 | 66 | | | 31 | 31 | 351 | 284 | 102 | 89 | 63 | 42 |
| 29 | 96 | 64 | 45 | | | 30 | 385 | 281 | 100 | 89 | 63 | 42 |
| 30 | 93 | 63 | | 35 | ------- | 30 | 380 | 318 | 100 | 85 | 61 | 44 |
| 31 | 93 | ------- | | 35 | ------- | 30 | ------- | 288 | ------- | 83 | 61 | ------ |

NOTE.—Recorder not operating and discharge interpolated or estimated between weekly gage readings Dec. 16 to Mar. 12 and July 1–15. Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Ashley Creek near Vernal, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 247 | 82 | 109 | 6,700 |
| November | 95 | 63 | 78.5 | 4,670 |
| December | 63 | ---------- | 52.1 | 3,200 |
| January | ---------- | ---------- | 38.5 | 2,370 |
| February | ---------- | ---------- | 31.8 | 1,770 |
| March | ---------- | 29 | 30.3 | 1,860 |
| April | 385 | 30 | 142 | 8,450 |
| May | 564 | 190 | 340 | 20,900 |
| June | 270 | 100 | 152 | 9,040 |
| July | ---------- | 83 | 97.1 | 5,970 |
| August | 96 | 61 | 78.2 | 4,810 |
| September | 61 | 41 | 50.5 | 3,000 |
| The year | 564 | 29 | 100 | 72,700 |

### UTAH POWER & LIGHT CO.'S TAILRACE[1] NEAR VERNAL, UTAH

LOCATION.—In NW. ¼ sec. 18, T. 3 S., R. 21 E., at Vernal power plant of Utah Power & Light Co. (acquired in November, 1925, from Vernal Milling & Light Co.), 10 miles northwest of Vernal, Uintah County.

RECORDS AVAILABLE.—May 3 to September 30, 1917, and March 18, 1920, to September 30, 1926.

GAGE.—Indicating gage in office of power plant, actuated by float in stilling well in tailrace; read by employees of power company.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel straight for 50 feet below gage. Banks high; one channel at all stages. Bed of gravel and cobbles.

ICE.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined. Float gage read to hundredths hourly throughout year. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used October 1 to December 5. Records fair.

COOPERATION.—Gage-height record furnished by Utah Power & Light Co.

*Discharge measurements of Utah Power & Light Co.'s tailrace near Vernal, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 6 | 4.48 | 18.8 | June 10 [a] | 4.68 | 27.1 | Aug. 30 | 4.38 | 17.7 |
| Do | 4.48 | 19.3 | June 27 | 4.28 | 13.6 | | | |
| May 2 | 4.40 | 18.7 | Aug. 9 | 4.46 | 16.4 | | | |

[a] Made by engineer of Utah Power & Light Co.

*Daily discharge, in second-feet, of Utah Power & Light Co.'s tailrace near Vernal, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 22 | 26 | 21 | 20 | 23 | 21 | 20 | 20 | 14 | 14 | 17 |
| 2 | 28 | 26 | 24 | 23 | 23 | 22 | 21 | 18 | 20 | 17 | 17 | 15 |
| 3 | 27 | 25 | 25 | 20 | 19 | 24 | 20 | 20 | 21 | 18 | 17 | 15 |
| 4 | 23 | 25 | 24 | 23 | 22 | 23 | 19 | 20 | 21 | 15 | 16 | 15 |
| 5 | 28 | 26 | 17 | 23 | 22 | 23 | 21 | 20 | 21 | 15 | 15 | 13 |
| 6 | 27 | 26 | 20 | 23 | 23 | 22 | 21 | 19 | 18 | 16 | 15 | 15 |
| 7 | 28 | 24 | 26 | 23 | 19 | 19 | 21 | 20 | 21 | 16 | 15 | 15 |
| 8 | 27 | 21 | 24 | 23 | 22 | 23 | 21 | 20 | 21 | 17 | 14 | 15 |
| 9 | 28 | 25 | 24 | 22 | 23 | 21 | 21 | 18 | 21 | 16 | 16 | 15 |
| 10 | 28 | 25 | 25 | 20 | 23 | 23 | 21 | 20 | 22 | 15 | 14 | 16 |
| 11 | 24 | 24 | 25 | 23 | 23 | 22 | 19 | 20 | 22 | 14 | 16 | 15 |
| 12 | 27 | 24 | 25 | 22 | 22 | 22 | 22 | 20 | 21 | 15 | 17 | 13 |
| 13 | 28 | 25 | 20 | 23 | 22 | 21 | 22 | 20 | 18 | 15 | 17 | 15 |
| 14 | 28 | 24 | 25 | 22 | 20 | 19 | 22 | 20 | 21 | 15 | 16 | 14 |
| 15 | 27 | 22 | 23 | 22 | 23 | 21 | 22 | 20 | 20 | 15 | 14 | 15 |
| 16 | 26 | 24 | 23 | 22 | 22 | 21 | 21 | 18 | 22 | 15 | 17 | 16 |
| 17 | 27 | 24 | 23 | 20 | 22 | 21 | 22 | 19 | 22 | 15 | 17 | 16 |
| 18 | 23 | 25 | 23 | 19 | 22 | 22 | 22 | 20 | 22 | 14 | 17 | 17 |
| 19 | 28 | 25 | 23 | 0 | 22 | 21 | 21 | 17 | 18 | 15 | 16 | 13 |
| 20 | 28 | 26 | 18 | 0 | 22 | 21 | 21 | 20 | 0 | 15 | 17 | 16 |
| 21 | 27 | 24 | 22 | 6 | 20 | 19 | 20 | 20 | 6 | 16 | 15 | 14 |
| 22 | 27 | 21 | 23 | 0 | 22 | 23 | 20 | 19 | 14 | 16 | 14 | 15 |
| 23 | 27 | 24 | 23 | 0 | 21 | 21 | 21 | 18 | 15 | 15 | 16 | 15 |
| 24 | 27 | 24 | 22 | 1 | 22 | 22 | 20 | 19 | 15 | 14 | 16 | 14 |
| 25 | 23 | 26 | 20 | 10 | 23 | 21 | 18 | 19 | 15 | 14 | 16 | 15 |
| 26 | 27 | 21 | 22 | 6 | 22 | 22 | 19 | 19 | 15 | 16 | 17 | 13 |
| 27 | 27 | 24 | 20 | 22 | 23 | 21 | 19 | 19 | 14 | 16 | 16 | 15 |
| 28 | 27 | 25 | 24 | 23 | 20 | 19 | 20 | 19 | 14 | 17 | 15 | 15 |
| 29 | 27 | 21 | 24 | 23 | ------ | 21 | 20 | 19 | 15 | 16 | 13 | 16 |
| 30 | 27 | 26 | 23 | 22 | ------ | 21 | 20 | 17 | 16 | 16 | 15 | 16 |
| 31 | 27 | ------ | 23 | 20 | ------ | 22 | ------ | 19 | ------ | 16 | 16 | ------ |

[1] Published prior to 1926 as Vernal Milling & Light Co.'s tailrace.

*Monthly discharge of Utah Power & Light Co.'s tailrace near Vernal, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 28 | 10 | 26.2 | 1,610 |
| November | 26 | 21 | 24.1 | 1,430 |
| December | 26 | 17 | 22.9 | 1,410 |
| January | 23 | 0 | 17.0 | 1,050 |
| February | 23 | 19 | 21.8 | 1,210 |
| March | 24 | 19 | 21.5 | 1,320 |
| April | 22 | 18 | 20.6 | 1,230 |
| May | 20 | 17 | 19.2 | 1,180 |
| June | 22 | 0 | 17.7 | 1,050 |
| July | 18 | 14 | 15.5 | 953 |
| August | 17 | 13 | 15.7 | 965 |
| September | 17 | 13 | 15.0 | 893 |
| The year | 28 | 0 | 19.7 | 14,300 |

### DUCHESNE RIVER NEAR TABIONA, UTAH

LOCATION.—In SW. ¼ sec. 17, T. 2 S., R. 6 W., Uinta special base and meridian, at highway bridge 8 miles southeast of Tabiona, Duchesne County. Rock Creek enters from left 6 miles downstream.

DRAINAGE AREA.—352 square miles.

RECORDS AVAILABLE.—January 16, 1919, to September 30, 1926.

GAGE.—Stevens steel-tape gage on downstream side of bridge; read by Leonard Brown.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge.

CHANNEL AND CONTROL.—Channel composed of gravel and sand. Left bank high and not subject to overflow. Right bank overflowed at extremely high stage allowing water to pass around bridge. Gravel riffle 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.22 feet at 6.30 p. m. May 23 (discharge, 950 second-feet); minimum discharge, 40 second-feet from August 29–31.

1919–1926: Maximum discharge, about 2,500 second-feet June 13, 1921 (uncertain because gage readings for that time are doubtful and river was over right bank); minimum discharge, 40 second-feet August 29–31, 1926.

ICE.—River freezes over each winter.

DIVERSIONS.—Some small diversions for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly April 14–23. Rating curves 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. Records good.

*Discharge measurements of Duchesne River near Tabiona, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 8 | 9.63 | 107 | June 29 | 9.82 | 133 |
| Apr. 29 | 11.02 | 425 | Sept. 3 | 9.45 | 80.0 |

*Daily discharge, in second-feet, of Duchesne River near Tabiona, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 139 | 141 | 112 | | 85 | 84 | 93 | 451 | 755 | 93 | 73 | 42 |
| 2 | 137 | 134 | 109 | | 90 | 87 | 89 | 580 | 705 | 96 | 73 | 42 |
| 3 | 135 | 104 | 107 | | 86 | 96 | 107 | 548 | 695 | 110 | 157 | 58 |
| 4 | 139 | 93 | 100 | | 87 | 103 | 109 | 540 | 652 | 104 | 150 | 50 |
| 5 | 139 | 94 | 109 | | 85 | 112 | 117 | 524 | 636 | 117 | 100 | 51 |
| 6 | 146 | 90 | 110 | | 86 | 98 | 118 | 516 | 612 | 135 | 84 | 65 |
| 7 | 174 | 100 | 109 | | 89 | 94 | 117 | 476 | 492 | 118 | 94 | 67 |
| 8 | 172 | 106 | 103 | | 89 | 103 | 114 | 468 | 439 | 128 | 94 | 78 |
| 9 | 150 | 106 | 101 | | 87 | 114 | 117 | 388 | 445 | 120 | 89 | 86 |
| 10 | 150 | 103 | 100 | | 86 | 107 | 123 | 361 | 439 | 112 | 155 | 89 |
| 11 | 170 | 110 | 100 | | 93 | 103 | 128 | 297 | 376 | 109 | 104 | 75 |
| 12 | 161 | 110 | 109 | | 87 | 112 | 127 | 321 | 350 | 107 | 87 | 80 |
| 13 | 159 | 127 | 109 | | 89 | 109 | 144 | 319 | 330 | 104 | 90 | 76 |
| 14 | 159 | 110 | 101 | | 87 | 112 | 150 | 324 | 313 | 103 | 89 | 76 |
| 15 | 159 | 110 | 101 | | 80 | 110 | 159 | 327 | 292 | 100 | 87 | 82 |
| 16 | 170 | 125 | 98 | 80 | 89 | 115 | 157 | 424 | 257 | 100 | 85 | 80 |
| 17 | 164 | 112 | 100 | | 83 | 125 | 186 | 451 | 257 | 98 | 85 | 77 |
| 18 | 163 | 109 | 99 | | 87 | 123 | 190 | 564 | 213 | 97 | 80 | 76 |
| 19 | 157 | 110 | 98 | | 85 | 127 | 209 | 648 | 204 | 85 | 73 | 77 |
| 20 | 146 | 112 | 98 | | 86 | 118 | 255 | 710 | 190 | 77 | 67 | 80 |
| 21 | 144 | 114 | 101 | | 82 | 117 | 252 | 790 | 182 | 73 | 56 | 85 |
| 22 | 142 | 110 | 100 | | 87 | 107 | 262 | 800 | 178 | 71 | 56 | 76 |
| 23 | 139 | 112 | 103 | | 80 | 110 | 260 | 950 | 146 | 67 | 54 | 81 |
| 24 | 141 | 109 | 101 | | 85 | 103 | 264 | 780 | 159 | 70 | 44 | 80 |
| 25 | 134 | 110 | 94 | | 87 | 109 | 277 | 750 | 134 | 72 | 42 | 77 |
| 26 | 134 | 112 | 96 | | 84 | 101 | 284 | 735 | 115 | 80 | 41 | 77 |
| 27 | 139 | 109 | 91 | | 81 | 100 | 338 | 600 | 97 | 150 | 41 | 78 |
| 28 | 139 | 115 | 87 | | 81 | 96 | 364 | 560 | 75 | 78 | 41 | 82 |
| 29 | 134 | 107 | 86 | | ------- | 97 | 421 | 612 | 120 | 69 | 40 | 85 |
| 30 | 134 | 109 | 85 | | ------- | 100 | 442 | 710 | 104 | 73 | 40 | 86 |
| 31 | 139 | ------- | 85 | | ------- | 100 | ------- | 745 | ------- | 69 | 40 | ------ |

NOTE.—Braced figure gives estimated mean discharge for period indicated. Discharge Dec. 18, 19, and July 26 estimated because gage was not read.

*Monthly discharge of Duchesne River near Tabiona, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 174 | 134 | 149 | 9,160 |
| November | 141 | 93 | 110 | 6,550 |
| December | 112 | 85 | 100 | 6,150 |
| January | ---------- | ---------- | [a]80 | 4,920 |
| February | 93 | 81 | 85.8 | 4,770 |
| March | 127 | 84 | 106 | 6,520 |
| April | 442 | 89 | 199 | 11,800 |
| May | 950 | 297 | 557 | 34,200 |
| June | 755 | 75 | 332 | 19,800 |
| July | 150 | 67 | 96.3 | 5,920 |
| August | 157 | 40 | 77.8 | 4,780 |
| September | 89 | 42 | 73.8 | 4,390 |
| The year | 950 | 40 | 164 | 119,000 |

[a] Estimated.

### DUCHESNE RIVER AT DUCHESNE, UTAH

LOCATION.—In NE. ¼ NW. ¼ sec. 1, T. 4 S., R. 5 W., Uinta special base and meridian, at Seventh Street Bridge in Duchesne, Duchesne County. Strawberry River enters from right 1 mile downstream.

DRAINAGE AREA.—660 square miles.

RECORDS AVAILABLE.—December 3, 1917, to September 30, 1926.

GAGE.—Vertical staff gage on downstream side of left bridge abutment; read by E. S. Winslow.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 100 feet above gage and several hundred feet below. Bed composed of gravel and cobbles. The head of a long heavy gravel riffle is a short distance below gage. Banks are low but not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.80 feet May 22 and 24 (discharge, 2,430 second-feet); minimum stage, 0.85 foot September 1 and 2 (discharge, 70 second-feet).

1918–1926: Maximum stage recorded, 8.65 feet (chain gage) at noon June 10, 1922 (discharge, 4,420 second-feet); minimum stage recorded 0.6 foot August 4, 5, 7–14, 27–31, September 1–4, 1924 (discharge, 50 second-feet).

ICE.—Stream freezes every winter.

DIVERSIONS.—Below all diversions above mouth of Strawberry River. Numerous diversions above and below station.

REGULATION.—None except by diversion.

ACCURACY.—Stage-discharge relation shifting. Rating curves fairly well defined. Gage read to half-tenths once daily throughout year. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

*Discharge measurements of Duchesne River at Duchesne, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 8 | 1.06 | 194 | June 25 | 1.29 | 276 | Sept. 1 | 0.85 | 69.9 |
| Apr. 29 | 1.56 | 553 | June 29 | 1.21 | 237 | | | |

*Daily discharge, in second-feet, of Duchesne River at Duchesne, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 165 | 203 | 189 | 144 | 165 | 189 | 189 | 593 | 1,840 | 223 | 84 | 70 |
| 2 | 165 | 213 | 189 | 165 | 189 | 213 | 189 | 648 | 1,760 | 212 | 84 | 70 |
| 3 | 165 | 241 | 203 | 165 | 189 | 213 | 165 | 704 | 1,840 | 212 | 78 | 84 |
| 4 | 165 | 213 | 189 | 165 | 165 | 213 | 165 | 898 | 1,760 | 223 | 121 | 78 |
| 5 | 269 | 213 | 213 | 189 | 189 | 213 | 165 | 1,120 | 1,760 | 236 | 102 | 91 |
| 6 | 495 | 213 | 213 | 165 | 189 | 189 | 189 | 1,120 | 1,760 | 290 | 102 | 84 |
| 7 | 302 | 203 | 213 | 165 | 189 | 189 | 213 | 968 | 1,520 | 290 | 121 | 84 |
| 8 | 269 | 203 | 194 | 144 | 189 | 189 | 213 | 829 | 1,440 | 369 | 223 | 84 |
| 9 | 241 | 213 | 189 | 165 | 189 | 165 | 213 | 766 | 1,280 | 330 | 195 | 84 |
| 10 | 241 | 203 | 189 | 165 | 213 | 165 | 213 | 593 | 1,200 | 330 | 290 | 91 |
| 11 | 269 | 213 | 203 | 165 | 213 | 189 | 213 | 544 | 1,120 | 306 | 277 | 91 |
| 12 | 269 | 213 | 203 | 165 | 241 | 189 | 189 | 495 | 1,120 | 290 | 236 | 84 |
| 13 | 269 | 213 | 213 | 165 | 241 | 213 | 189 | 452 | 1,040 | 290 | 223 | 84 |
| 14 | 269 | 203 | 213 | 165 | 241 | 213 | 189 | 409 | 960 | 290 | 223 | 84 |
| 15 | 269 | 224 | 175 | 165 | 241 | 213 | 189 | 452 | 748 | 256 | 195 | 84 |
| 16 | 269 | 241 | 189 | 144 | 269 | 213 | 213 | 593 | 623 | 256 | 167 | 91 |
| 17 | 241 | 269 | 203 | 144 | 269 | 213 | 269 | 766 | 564 | 256 | 167 | 91 |
| 18 | 241 | 241 | 213 | 144 | 269 | 189 | 302 | 1,120 | 512 | 223 | 158 | 91 |
| 19 | 241 | 213 | 213 | 144 | 269 | 189 | 334 | 1,360 | 460 | 195 | 144 | 84 |
| 20 | 241 | 213 | 213 | 165 | 269 | 189 | 334 | 1,920 | 460 | 167 | 130 | 91 |
| 21 | 215 | 213 | 203 | 144 | 250 | 213 | 334 | 2,120 | 369 | 144 | 121 | 91 |
| 22 | 213 | 213 | 213 | 144 | 241 | 213 | 302 | 2,430 | 369 | 121 | 121 | 84 |
| 23 | 213 | 213 | 213 | 165 | 241 | 213 | 334 | 2,260 | 330 | 102 | 114 | 84 |
| 24 | 213 | 213 | 203 | 165 | 213 | 189 | 334 | 2,430 | 330 | 91 | 106 | 84 |
| 25 | 213 | 203 | 203 | 165 | 213 | 165 | 334 | 2,090 | 290 | 91 | 99 | 84 |
| 26 | 213 | 203 | 213 | 144 | 189 | 189 | 409 | 1,760 | 256 | 91 | 91 | 91 |
| 27 | 213 | 203 | 213 | 165 | 189 | 189 | 452 | 1,680 | 256 | 99 | 84 | 99 |
| 28 | 213 | 189 | 189 | 165 | 189 | 165 | 505 | 1,520 | 236 | 91 | 84 | 99 |
| 29 | 189 | 189 | 165 | 165 | ------- | 144 | 544 | 1,680 | 223 | 121 | 84 | 99 |
| 30 | 189 | 189 | 165 | 165 | ------- | 165 | 593 | 1,680 | 223 | 102 | 84 | 117 |
| 31 | 203 | ------- | 144 | 189 | ------- | 189 | ------- | 1,790 | ------- | 84 | 78 | ------ |

*Monthly discharge of Duchesne River at Duchesne, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 495 | 165 | 237 | 14,600 |
| November | 269 | 189 | 213 | 12,700 |
| December | 213 | 144 | 198 | 12,200 |
| January | 189 | 144 | 160 | 9,840 |
| February | 269 | 165 | 218 | 12,100 |
| March | 213 | 144 | 193 | 11,900 |
| April | 593 | 165 | 283 | 16,800 |
| May | 2,430 | 409 | 1,220 | 75,000 |
| June | 1,840 | 223 | 888 | 52,800 |
| July | 369 | 84 | 206 | 12,700 |
| August | 290 | 78 | 141 | 8,670 |
| September | 117 | 70 | 87.6 | 5,210 |
| The year | 2,430 | 70 | 338 | 245,000 |

### DUCHESNE RIVER AT MYTON, UTAH

LOCATION.—In NW. ¼ sec. 25, T. 3 S., R. 2 W., Uinta special base and meridian, at highway bridge at Myton, Duchesne County. Lake Fork enters from left 3 miles upstream.

DRAINAGE AREA.—2,750 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 26, 1899, to November 30, 1910, and July 26, 1911, to September 30, 1926, fragmentary.

GAGE.—Chain gage on upstream rail near left end of steel highway bridge; read by C. J. Preece.

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

CHANNEL AND CONTROL.—Bed of coarse gravel; banks comparatively low but not likely to be overflowed, although subject to erosion during high water. Gravel riffle 200 feet below gage; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.34 feet at 6 p. m. May 21 (discharge, 3,570 second-feet); minimum stage, 1.12 feet at 9 a. m. September 2 (discharge, 12 second-feet).

1899–1926: Maximum stage recorded, 7.94 feet at 8 a. m. June 10, 1922 (discharge from extension of rating curve, 12,800 second-feet); minimum discharge, 6 second-feet September 4–9, 1924.

ICE.—Stage-discharge relation affected by ice every winter.

DIVERSIONS.—Much of the low-water flow of river and its tributaries is diverted for irrigation above station. In Strawberry Valley 50,000 to 75,000 acre-feet is diverted annually to the Great Basin.

REGULATION.—Annual run-off is affected by the United States Bureau of Reclamation reservoir on Strawberry River, one of the main tributaries.

ACCURACY.—Stage-discharge relation changed during winter and again on August 10. Normal rating curve well defined. Gage read to hundredths four or five times a week from October 1 to May 5 and daily for the remainder of year. Daily discharge ascertained by applying mean daily gage height to rating table, using two parallel shifts. Discharge estimated or interpolated for days of missing gage heights. Records fair.

*Discharge measurements of Duchesne River at Myton, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 19[a] | 2.19 | 348 | Apr. 30 | 2.94 | 836 | Sept. 1 | 1.13 | 132 |
| Dec. 5 | 2.21 | 358 | June 26 | 1.84 | 208 | | | |
| Mar. 17 | 2.21 | 388 | June 30 | 1.62 | 131 | | | |

[a] Made by engineer of Utah Power & Light Co.

*Daily discharge, in second-feet, of Duchesne River at Myton, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 260 | 336 | 343 | 340 | | | 292 | 954 | 1,980 | 124 | 28 | 14 |
| 2 | 245 | 333 | 353 | 348 | | | 304 | 958 | 3,600 | 110 | 38 | 12 |
| 3 | 241 | 358 | 348 | 325 | | | 304 | 962 | 1,960 | 104 | 42 | 30 |
| 4 | 250 | 384 | 343 | 310 | 300 | 375 | 324 | 1,100 | 1,600 | 110 | 140 | 40 |
| 5 | 400 | 354 | 363 | 315 | | | 343 | 1,250 | 1,680 | 116 | 140 | 38 |
| 6 | 922 | 323 | 390 | 318 | | | 396 | 1,660 | 1,460 | 121 | 140 | 47 |
| 7 | 730 | 333 | 417 | 326 | 454 | | 448 | 1,310 | 1,530 | 204 | 113 | 46 |
| 8 | 541 | 325 | 443 | 334 | | 314 | 471 | 1,100 | 1,350 | 426 | 204 | 38 |
| 9 | 500 | 317 | 300 | 343 | | 334 | 494 | 858 | 1,220 | 426 | 389 | 44 |
| 10 | 448 | 309 | 358 | 340 | | 353 | 517 | 818 | 1,160 | 426 | 1,120 | 51 |
| 11 | 480 | 325 | 333 | 338 | | 334 | 488 | 712 | 1,020 | 348 | 796 | 44 |
| 12 | 523 | 341 | 384 | 326 | 450 | 314 | 460 | 650 | 834 | 323 | 290 | 44 |
| 13 | 500 | 358 | 358 | 314 | | 329 | 432 | 611 | 890 | 212 | 228 | 47 |
| 14 | 482 | 358 | 333 | 320 | | 343 | 432 | 579 | 761 | 192 | 204 | 44 |
| 15 | 448 | 343 | 309 | 326 | | 358 | 441 | 541 | 705 | 174 | 185 | 35 |
| 16 | 448 | 328 | 285 | 333 | | 360 | 451 | 579 | 585 | 137 | 163 | 46 |
| 17 | 448 | 333 | 301 | 333 | 460 | 363 | 460 | 657 | 454 | 110 | 150 | 38 |
| 18 | 442 | 338 | 317 | 333 | | 360 | 460 | 1,140 | 443 | 102 | 150 | 38 |
| 19 | 437 | 343 | 333 | | | 356 | 460 | 1,610 | 389 | 79 | 130 | 38 |
| 20 | 424 | 343 | 338 | 270 | | 353 | 489 | 2,500 | 348 | 96 | 118 | 42 |
| 21 | 410 | 343 | 343 | | 460 | 328 | 518 | 3,570 | 323 | 72 | 104 | 30 |
| 22 | 384 | 358 | 338 | 250 | | 304 | 547 | 3,420 | 318 | 74 | 91 | 38 |
| 23 | 397 | 373 | 333 | | | 314 | 563 | 2,950 | 290 | 51 | 72 | 32 |
| 24 | 410 | 384 | 333 | | | 311 | 579 | 3,000 | 254 | 42 | 47 | 38 |
| 25 | 397 | 394 | 334 | | 476 | 307 | 595 | 2,590 | 212 | 42 | 33 | 37 |
| 26 | 384 | 378 | 336 | 250 | | 304 | 611 | 2,110 | 196 | 38 | 33 | 47 |
| 27 | 376 | 363 | 337 | | 450 | 295 | 668 | 1,610 | 174 | 35 | 33 | 70 |
| 28 | 367 | 353 | 338 | | | 286 | 725 | 1,540 | 167 | 26 | 21 | 72 |
| 29 | 358 | 343 | 336 | | ------- | 276 | 782 | 1,470 | 156 | 26 | 20 | 68 |
| 30 | 348 | 333 | 334 | | ------- | 267 | 874 | 1,570 | 156 | 33 | 18 | 107 |
| 31 | 338 | ------- | 333 | | ------- | 280 | ------- | 1,810 | ------- | 30 | 16 | ------ |

NOTE.—Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Duchesne River at Myton, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 922 | 241 | 430 | 26,400 |
| November | 394 | 309 | 347 | 20,600 |
| December | 443 | 285 | 343 | 21,100 |
| January | 348 | ---------- | 298 | 18,300 |
| February | ---------- | ---------- | 422 | 23,400 |
| March | ---------- | 267 | 334 | 20,500 |
| April | 874 | 292 | 498 | 29,600 |
| May | 3,570 | 541 | 1,490 | 91,600 |
| June | 3,000 | 150 | 854 | 50,800 |
| July | 426 | 26 | 142 | 8,730 |
| August | 1,120 | 16 | 170 | 10,500 |
| September | 107 | 12 | 43.8 | 2,610 |
| The year | 3,570 | 12 | 448 | 324,000 |

### STRAWBERRY RIVER AT DUCHESNE, UTAH

LOCATION.—In SW. ¼ NE. ¼ sec. 2, T. 4 S., R. 5 W., Uinta special base and meridian, at Winslow ranch, three-quarters of a mile west of post office at Duchesne, Duchesne County, three-quarters of a mile above mouth of Indian Canyon Creek, a small tributary entering from south, and 1½ miles above confluence with Duchesne River.

DRAINAGE AREA.—1,040 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 10, 1908, to November 30, 1910, and March 16, 1914, to September 30, 1926.

GAGE.—Enameled vertical staff on downstream side of right abutment of bridge; read by E. S. Winslow.

DISCHARGE MEASUREMENTS.—Made from cable just below bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for several hundred feet above and below gage. Bed of sand and fine gravel. Natural channel about 50 feet wide is constricted at bridge to 36 feet. Banks comparatively low; covered with underbrush; left bank subject to overflow at very high stages. Gravel riffle 200 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.0 feet at 7 a. m. August 10 (discharge, 1,270 second-feet); minimum stage, 4.05 feet at 7 p. m. July 26 (discharge, 33 second-feet).

1908–1926: Maximum stage recorded, 7.7 feet (old datum) on May 27, 1922 (discharge, 3,230 second-feet); minimum discharge, 30 second-feet November 20, 1914. Records obtained prior to 1914 incomplete.

ICE.—Stage-discharge relation affected by ice every winter.

DIVERSIONS.—50,000 to 75,000 acre-feet of water from Strawberry Valley Reservoir (capacity, 250,000 acre-feet), about 40 miles above station, is diverted annually by tunnel to Spanish Fork drainage basin. Some water is also diverted from upper end of Strawberry Valley to basin of Provo River.

REGULATION.—Since 1912 flow of river has been affected by operation of Strawberry Valley Reservoir.

ACCURACY.—Stage-discharge relation not permanent. Two rating curves are fairly well defined. Gage read to half-tenths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table. Discharge for ice-affected periods estimated from one discharge measurement, temperature records, observer's notes, and hydrographic comparison with all Duchesne River stations. Records fair.

*Discharge measurements of Strawberry River at Duchesne, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 8 | [a] 4.40 | 68.0 | June 25 | 4.26 | 52.5 | Sept. 1 | 4.10 | 37.3 |
| Apr. 29 | 5.33 | 366 | June 29 | 4.18 | 45.6 | | | |

[a] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Strawberry River at Duchesne, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 52 | 66 | 73 | | | | 73 | 362 | 144 | 42 | 42 | 37 |
| 2 | 52 | 70 | 73 | | | | 87 | 354 | 144 | 46 | 37 | 37 |
| 3 | 52 | 66 | 73 | | | | 91 | 362 | 131 | 46 | 86 | 42 |
| 4 | 52 | 66 | 58 | | | | 91 | 375 | 124 | 50 | 63 | 37 |
| 5 | 95 | 66 | 60 | | | | 91 | 396 | 119 | 63 | 63 | 37 |
| 6 | 388 | 66 | 62 | | | 90 | 107 | 477 | 119 | 74 | 57 | 37 |
| 7 | 95 | 61 | 65 | | | | 218 | 396 | 119 | 383 | 449 | 37 |
| 8 | 95 | 58 | 68 | | | | 250 | 354 | 213 | 76 | 534 | 37 |
| 9 | 77 | 70 | | | | | 228 | 346 | 144 | 92 | 362 | 37 |
| 10 | 66 | 73 | | | | | 243 | 282 | 124 | 124 | 855 | 37 |
| 11 | 107 | 77 | | | | 111 | 260 | 274 | 131 | 101 | 131 | 37 |
| 12 | 82 | 77 | | | | 101 | 206 | 244 | 108 | 203 | 92 | 37 |
| 13 | 77 | 73 | | | | 91 | 189 | 237 | 108 | 80 | 80 | 37 |
| 14 | 73 | 77 | | | | 101 | 162 | 220 | 101 | 68 | 63 | 37 |
| 15 | 73 | 82 | | | 70 | 101 | 178 | 203 | 96 | 60 | 60 | 37 |
| 16 | 73 | 87 | | 60 | | 111 | 178 | 203 | 96 | 54 | 60 | 37 |
| 17 | 66 | 73 | | | | 122 | 189 | 230 | 96 | 54 | 60 | 37 |
| 18 | 66 | 87 | | | | 122 | 189 | 237 | 86 | 47 | 54 | 37 |
| 19 | 66 | 82 | | | | 111 | 250 | 237 | 76 | 42 | 54 | 37 |
| 20 | 66 | 70 | 65 | | | 101 | 260 | 256 | 76 | 39 | 54 | 37 |
| 21 | 58 | 73 | | | | 111 | 218 | 274 | 73 | 37 | 54 | 37 |
| 22 | 58 | 73 | | | | 111 | 250 | 267 | 68 | 37 | 47 | 37 |
| 23 | 58 | 70 | | | | 111 | 243 | 256 | 60 | 37 | 47 | 37 |
| 24 | 58 | 73 | | | | 101 | 250 | 237 | 57 | 37 | 47 | 37 |
| 25 | 58 | 73 | | | | 101 | 243 | 220 | 55 | 37 | 47 | 37 |
| 26 | 58 | 73 | | | | 101 | 284 | 197 | 47 | 35 | 47 | 42 |
| 27 | 66 | 73 | | | | 101 | 322 | 188 | 47 | 45 | 42 | 42 |
| 28 | 66 | 73 | | | | 101 | 362 | 172 | 47 | 80 | 42 | 47 |
| 29 | 66 | 73 | | | ------- | 101 | 362 | 150 | 46 | 92 | 42 | 47 |
| 30 | 66 | 73 | | | ------- | 91 | 362 | 144 | 46 | 54 | 42 | 47 |
| 31 | 66 | ------- | | | ------- | 101 | ------- | 144 | ------- | 45 | 37 | ------ |

NOTE.—Gage heights affected by ice Dec. 5 to Mar. 10; braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Strawberry River at Duchesne, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 388 | 52 | 79.1 | 4,860 |
| November | 87 | 58 | 72.5 | 4,310 |
| December | ---------- | ---------- | 65.4 | 4,020 |
| January | ---------- | ---------- | [a] 60 | 3,690 |
| February | ---------- | ---------- | [a] 70 | 3,890 |
| March | 122 | ---------- | 100 | 6,150 |
| April | 362 | 73 | 215 | 12,800 |
| May | 477 | 144 | 268 | 16,500 |
| June | 213 | 46 | 96.7 | 5,750 |
| July | 383 | 35 | 73.5 | 4,520 |
| August | 855 | 37 | 121 | 7,440 |
| September | 47 | 37 | 38.5 | 2,290 |
| The year | 855 | 35 | 105 | 76,200 |

[a] Estimated.

### WEST FORK OF LAKE FORK NEAR MOUNTAIN HOME, UTAH

LOCATION.—In NE. ¼ sec. 19, T. 2 N., R. 5 W., Uinta special base and meridian half a mile below Moon Lake and 13 miles northwest of Mountain Home, Duchesne County.

DRAINAGE AREA.—108 square miles (measured on topographic map).

RECORDS AVAILABLE.—From September 18, 1921, to September 30, 1926; not operated during winter.

GAGE.—Stevens continuous water-stage recorder on right bank; attended by engineers of United States Indian Service and Geological Survey.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel steep and rough. Bed composed of boulders and gravel. Right bank high; left bank low. One channel at all stages. Rock riffle control 25 feet below gage; practically permanent. Stage of zero flow at gage height −0.2 foot; determined October 11, 1921.

EXTREMES OF DISCHARGE.—Maximum stage during year, 2.70 feet at 2 a. m. May 21 (discharge, 1,080 second-feet); minimum stage not determined.

1921–1926: Maximum stage, 3.50 feet at 1 p. m. June 13, 1923 (discharge, 1,940 second-feet); minimum stage not determined.

DIVERSIONS.—None above station.

REGULATION.—Flow affected by storage and release of water from Brown Duck Lake Reservoir.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Water-stage recorder record broken. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph. Discharge estimated July 24 to August 25. Records of daily discharge good; estimated periods fair.

The following discharge measurement was made:

May 4, 1926: Gage height, 1.37 feet; discharge, 279 second-feet.

*Daily discharge, in second-feet, of West Fork of Lake Fork near Mountain Home, Utah, for the year ending September 30, 1926*

| Day | May | June | July | Aug. | Sept. | Day | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ------ | 585 | 142 | | 44 | 16 | 194 | 260 | 140 | | 42 |
| 2 | ------ | 608 | 137 | | 41 | 17 | 267 | 234 | 135 | | 42 |
| 3 | ------ | 645 | 135 | | 48 | 18 | 363 | 218 | 132 | | 42 |
| 4 | 270 | 614 | 166 | | 53 | 19 | 519 | 203 | 130 | | 42 |
| 5 | 351 | 608 | 174 | | 52 | 20 | 833 | 197 | 128 | 75 | 42 |
| 6 | 351 | 603 | 171 | | 49 | 21 | 1,030 | 183 | 128 | | 42 |
| 7 | 311 | 557 | 177 | | 49 | 22 | 930 | 174 | 119 | | 42 |
| 8 | 278 | 473 | 185 | 75 | 53 | 23 | 873 | 171 | 114 | | 42 |
| 9 | 231 | 444 | 188 | | 45 | 24 | 810 | 171 | | | 42 |
| 10 | 206 | 407 | 183 | | 41 | 25 | 620 | 169 | | | 42 |
| 11 | 185 | 402 | 169 | | 40 | 26 | 524 | 163 | | 59 | 42 |
| 12 | 169 | 398 | 158 | | 39 | 27 | 483 | 160 | 100 | 58 | 41 |
| 13 | 153 | 363 | 147 | | 41 | 28 | 430 | 158 | | 56 | 41 |
| 14 | 142 | 334 | 150 | | 41 | 29 | 493 | 153 | | 54 | 40 |
| 15 | 147 | 299 | 145 | | 41 | 30 | 585 | 145 | | 52 | 40 |
| | | | | | | 31 | 568 | ------ | | 52 | ------ |

NOTE.—Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of West Fork of Lake Fork near Mountain Home, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| May 4-31 | 1,030 | 142 | 440 | 24,400 |
| June | 645 | 145 | 336 | 20,000 |
| July | 188 | ------ | 137 | 8,420 |
| August | ------ | 52 | 71.2 | 4,380 |
| September | 53 | 39 | 43.4 | 2,580 |
| The period | ------ | ------ | ------ | 59,800 |

### LAKE FORK NEAR MYTON, UTAH

LOCATION.—In sec. 21, T. 3 S., R. 2 W., Uinta special base and meridian, 100 yards below highway bridge, half a mile above confluence with Duchesne River, and 3½ miles northwest of Myton, Duchesne County.

DRAINAGE AREA.—468 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 3, 1900, to December 31, 1903; June 13, 1907, to November 30, 1910; July 26, 1911, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank, inspected by Anton Verholc.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel fairly straight for several hundred feet above and below gage. Banks high and not subject to overflow. Bed composed of silt and gravel. Gravel riffle about 300 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, 4.56 feet at 10 a. m. May 21 (discharge, 1,180 second-feet); minimum discharge, 3 second-feet July 24–26 and September 1 and 2.

1900–1903; 1907–1926; maximum stage, 9.4 feet June 22 and 23, 1917 (discharge, 4,350 second-feet); minimum discharge July 24, 1916, probably zero.

ICE.—Stage-discharge relation seriously affected by ice every winter.

DIVERSIONS.—No diversions below station; several canals of the United States Indian Service and some privately-owned canals divert above for irrigation. Some return water from irrigation enters a short distance above station.

REGULATION.—Flow affected by irrigation diversions.

ACCURACY.—Stage-discharge relation permanent; affected by ice during winter. Rating curve well defined. Water-stage recorder operated satisfactorily except as stated in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table. Discharge for periods of missing gage height and periods of ice effect estimated by comparison with records for Duchesne River stations or interpolated. Daily discharge good; estimated periods fair.

*Discharge measurements of Lake Fork near Myton, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 5 | [a] 2.36 | 131 | June 26 | 1.22 | 16.8 |
| Apr. 30 | 1.68 | 57.9 | Sept. 1 | 1.00 | 3.2 |

[a] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Lake Fork near Myton, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 104 | | | | | 60 | 115 | 221 | 10 | 8 | 3 |
| 2 | 45 | 162 | 135 | | | | 73 | 122 | 233 | 17 | 7 | 3 |
| 3 | 42 | 162 | | | | 75 | 73 | 76 | 323 | 20 | 8 | 7 |
| 4 | 126 | 150 | | | | | 81 | 117 | 313 | 26 | 16 | 7 |
| 5 | 287 | 143 | 131 | | | | 80 | 241 | 287 | 31 | 22 | 8 |
| 6 | 240 | 136 | | | | 46 | 85 | 287 | 241 | 34 | 28 | 9 |
| 7 | 210 | 136 | | | | 50 | 87 | 150 | 256 | 38 | 29 | 13 |
| 8 | 190 | 138 | | 100 | 125 | 55 | 98 | 55 | 187 | 46 | 85 | 13 |
| 9 | 175 | 140 | | | | 72 | 120 | 26 | 115 | 53 | 50 | 19 |
| 10 | 162 | 138 | 130 | | | 55 | 90 | 22 | 61 | 41 | 40 | 18 |
| 11 | 241 | 143 | | | | 85 | 76 | 22 | 39 | 45 | 30 | 18 |
| 12 | 225 | 145 | | | | 72 | 70 | 19 | 35 | 37 | 40 | 20 |
| 13 | 210 | 155 | | | | 104 | 80 | 16 | 133 | 20 | 30 | 23 |
| 14 | 200 | 160 | | | | 89 | 80 | 16 | 48 | 15 | 30 | 21 |
| 15 | 190 | 152 | | | | 74 | 76 | 15 | 35 | 22 | 28 | 19 |

*Daily discharge, in second-feet, of Lake Fork near Myton, Utah, for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 185 | 174 | | | | 68 | 64 | 21 | 30 | 15 | 24 | 16 |
| 17 | 180 | 157 | | | | 72 | 56 | 74 | 25 | 10 | 26 | 16 |
| 18 | 177 | 167 | | | | 68 | 48 | 56 | 25 | 10 | 31 | 16 |
| 19 | 172 | 160 | | | | 74 | 66 | 143 | 34 | 10 | 24 | 15 |
| 20 | 160 | 150 | | | | 68 | 70 | 455 | 34 | 7 | 21 | 14 |
| 21 | 155 | | | | | 65 | 49 | 920 | 34 | 10 | 21 | 9 |
| 22 | 160 | | | | 125 | 61 | 40 | 835 | 34 | 9 | 21 | 10 |
| 23 | 164 | | 125 | 100 | | 57 | 30 | 760 | 30 | 6 | 18 | 9 |
| 24 | 160 | | | | | 53 | 39 | 688 | 20 | 3 | 16 | 8 |
| 25 | 155 | 145 | | | | 49 | 30 | 439 | 15 | 3 | 16 | 8 |
| 26 | 152 | | | | | 45 | 25 | 313 | 14 | 3 | 15 | 10 |
| 27 | 148 | | | | | 41 | | 213 | 9 | 4 | 15 | 15 |
| 28 | 140 | | | | | 37 | | 68 | 12 | 4 | 8 | 18 |
| 29 | 125 | | | | ------- | 46 | | 53 | 11 | 6 | 7 | 21 |
| 30 | 115 | | | | ------- | 51 | 44 | 150 | 9 | 4 | 5 | 24 |
| 31 | 105 | ------- | | | ------- | 56 | ------- | 221 | ------- | 6 | 4 | ------ |

NOTE.—No gage-height record and mean discharge estimated Oct. 1, 2, 6, 9, 12–17, 29–31, Mar. 7, 14, 21–26, Apr. 22, 23, 26–29, June 16–18, 23–25, July 13, 14, Aug. 9–13, 29–31. Stage-discharge relation affected by ice and discharge estimated from Nov. 19 to Mar. 5. Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Lake Fork near Myton, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 287 | 42 | 163 | 10,000 |
| November | 174 | 104 | 147 | 8,750 |
| December | ---------- | ---------- | 128 | 7,870 |
| January | ---------- | ---------- | [a] 100 | 6,150 |
| February | ---------- | ---------- | [a] 125 | 6,940 |
| March | 104 | 37 | 64.1 | 3,940 |
| April | 120 | ---------- | 62.2 | 3,700 |
| May | 920 | 15 | 216 | 13,300 |
| June | 323 | 9 | 95.4 | 5,680 |
| July | 53 | 3 | 18.2 | 1,120 |
| August | 85 | 4 | 23.3 | 1,430 |
| September | 24 | 3 | 13.7 | 815 |
| The year | 920 | 3 | 96.3 | 69,700 |

[a] Estimated.

### UINTA RIVER NEAR NEOLA, UTAH

LOCATION.—In SE. ¼ sec. 26, T. 2 N., R. 2 W., Uinta special base and meridian, 800 feet above tailrace of Uinta Power & Light Co.'s plant (Pole Creek unit) and 9 miles north of Neola, Duchesne County. Pole Creek enters from left 1½ miles downstream.

DRAINAGE AREA.—181 square miles.

RECORDS AVAILABLE.—July 30, 1921, to September 30, 1926; fragmentary.

GAGE.—Chain gage installed on left bank September 2, 1926, to same datum and at same location as old staff gage; read by L. V. Crapo.

DISCHARGE MEASUREMENTS.—Made by wading or from log bridge 1,000 feet below gage.

CHANNEL AND CONTROL.—Channel steep and rough. Bed composed of boulders and gravel. Banks fairly high but probably subject to overflow, if channel changes, which may readily occur during high water.

ICE.—River freezes over every winter.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during the year. Rating curve fairly well defined. Gage read to hundredths once or twice daily, except as stated in footnote to daily-discharge table. Daily discharge ascertained by applying daily or mean daily gage height to rating table. Discharge estimated for days of missing gage heights by comparison with records of flow of Duchesne River near Tabiona, Whiterocks River near Whiterocks, Ashley Creek near Vernal, and a study of precipitation records. Records fair.

*Discharge measurements of Uinta River near Neola, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 7 | 0.22 | 119 | June 28 | 1.03 | 308 |
| May 1 | .88 | 252 | Sept. 2 | .26 | 112 |

*Daily discharge, in second-feet, of Uinta River near Neola, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 151 | 103 | 88 | | 62 | 62 | 260 | 705 | 288 | 162 | 110 |
| 2 | | 155 | 103 | 78 | | 58 | ------- | 285 | 750 | 285 | 160 | 106 |
| 3 | | 160 | 142 | 81 | 70 | 66 | ------- | 379 | 795 | 279 | | 110 |
| 4 | | 140 | 135 | 71 | | 64 | ------- | 528 | 682 | 368 | | 113 |
| 5 | | 125 | 129 | 73 | | 62 | ------- | 687 | 750 | 391 | 200 | 106 |
| 6 | | 113 | 99 | 71 | 68 | 66 | ------- | 554 | 700 | 315 | | 104 |
| 7 | | 129 | 99 | 64 | 66 | 76 | ------- | 391 | 660 | 361 | 269 | 103 |
| 8 | 240 | 121 | 76 | 66 | 66 | 62 | ------- | 298 | 602 | 357 | 227 | 106 |
| 9 | | 129 | 76 | 66 | 66 | 62 | ------- | 236 | 567 | 398 | 279 | 99 |
| 10 | | 129 | 101 | 64 | 68 | 62 | ------- | 224 | 507 | 368 | 308 | 93 |
| 11 | | 113 | 108 | 66 | 68 | 60 | ------- | 207 | 486 | 282 | 248 | 93 |
| 12 | | 117 | 86 | 68 | 64 | 62 | ------- | 196 | 453 | 292 | 230 | 96 |
| 13 | | 125 | 87 | 71 | 58 | 64 | ------- | 180 | 486 | 279 | 213 | 96 |
| 14 | | 121 | 76 | 84 | | 62 | ------- | 202 | 406 | 257 | 185 | 93 |
| 15 | | 165 | 73 | 81 | | 64 | ------- | 196 | 383 | 282 | 180 | 90 |
| 16 | 219 | 133 | 73 | 78 | 58 | 66 | ------- | 260 | 361 | 298 | 170 | 90 |
| 17 | 213 | 115 | 81 | 76 | | 68 | ------- | 445 | 332 | 332 | 165 | 87 |
| 18 | 207 | 100 | 87 | 78 | | 66 | ------- | 554 | 318 | 320 | 158 | 87 |
| 19 | 202 | 93 | 96 | 78 | | 64 | ------- | 700 | 298 | 310 | 160 | 87 |
| 20 | 196 | 90 | 76 | 81 | 58 | 66 | ------- | 912 | 290 | 298 | 151 | 86 |
| 21 | 180 | 93 | 73 | | 60 | 66 | ------- | 1,020 | 280 | 301 | 151 | 86 |
| 22 | 185 | 99 | 78 | | 63 | 68 | ------- | 975 | 272 | 285 | 142 | 84 |
| 23 | 196 | 121 | 88 | | 66 | 64 | ------- | 1,010 | 266 | 242 | 146 | 86 |
| 24 | 180 | 110 | 87 | | | 66 | ------- | 975 | 292 | 224 | 133 | 87 |
| 25 | 155 | 110 | 68 | 75 | | 64 | ------- | 687 | 279 | 188 | 129 | 93 |
| | | | | | 66 | | | | | | | |
| 26 | 160 | 99 | 81 | | | 64 | ------- | 615 | 298 | 222 | 125 | 96 |
| 27 | 160 | 105 | 96 | | | 64 | ------- | 606 | 282 | 230 | 121 | 99 |
| 28 | 165 | 110 | 96 | | 66 | 62 | ------- | 486 | 318 | 239 | 121 | 99 |
| 29 | 151 | 103 | 99 | 73 | ------- | 64 | ------- | 571 | 279 | 202 | 121 | 96 |
| 30 | 142 | 103 | 103 | 72 | ------- | 66 | ------- | 705 | 282 | 180 | 115 | 127 |
| 31 | 146 | ------- | 96 | 72 | ------- | 62 | ------- | 660 | ------- | 170 | 115 | ------ |

NOTE.—No gage-height record; discharge estimated or interpolated Oct. 1–15, Nov. 4, 5, 17, 18, 27, Dec. 4, Jan. 21–28, 30, 31, Feb. 1–5, 14–18, 24–27, May 19, June 6, 20, 21, July 18, 19, Aug. 3–6, 16, 17, 30, 31, Sept. 19, 20.

*Monthly discharge of Uinta River near Neola, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | ---------- | 142 | [a] 210 | [a] 12,900 |
| November | 165 | 90 | 119 | 7,080 |
| December | 142 | 73 | 92.6 | 5,690 |
| January | 88 | 64 | 74.2 | 4,560 |
| February | ---------- | ---------- | 64.2 | 3,570 |
| March | 76 | 58 | 64.3 | 3,950 |
| April | ---------- | ---------- | [a] 95 | [a] 5,650 |
| May | 1,020 | 180 | 516 | 31,700 |
| June | 795 | 266 | 446 | 26,500 |
| July | 398 | 170 | 285 | 17,500 |
| August | ---------- | 115 | 177 | 10,900 |
| September | 127 | 84 | 96.9 | 5,770 |
| The year | 1,020 | ---------- | 188 | 136,000 |

[a] Estimated.

### WHITEROCKS RIVER NEAR WHITEROCKS, UTAH

LOCATION.—In sec. 18, T. 2 N., R. 1 E., Uinta special base and meridian, 8 miles north of Whiterocks, Uintah County. United States Whiterocks Canal diverts from left side and Farm Creek Canal from right side 2 miles below station.

DRAINAGE AREA.—118 square miles.

RECORDS AVAILABLE.—August 1, 1921, to September 30, 1926, at present site; fragmentary. November 8, 1917, to June 2, 1921, at a point about 2 miles downstream below diversion of United States Whiterocks Canal and above Farm Creek Canal; 1899 to 1904 and 1907 to 1910, somewhere in vicinity of present site. Records are comparable.

GAGE.—Stevens continuous water-stage recorder on left bank.

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

CHANNEL AND CONTROL.—Narrow box canyon. Stream bed is steep and rough; composed of boulders and gravel. Channel is subject to change by erosion during high water.

EXTREMES OF DISCHARGE.—Not determined for 1926.

1918–1926: Maximum stage recorded, 5.40 feet at 9 p. m. June 20 and 7 p. m. June 21, 1922 (discharge, 2,750 second-feet); minimum discharge less than 14 second-feet in the winter of 1920-21.

ICE.—Stream freezes over every winter.

DIVERSIONS.—After August 1, 1921, above all diversions.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent during year. Standard rating curve fairly well defined. Operation of water-stage recorder satisfactory April 7 to May 5 and August 31 to September 30. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph. Records fair.

*Discharge measurements of Whiterocks River near Whiterocks, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 7 | [a] 2.35 | 62.2 | June 28 | 2.21 | 117 |
| May 3 | 2.40 | 273 | Aug. 31 | 2.04 | 68.4 |

[a] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Whiterocks River near Whiterocks, Utah, for the year ending September 30, 1926*

| Day | Apr. | May | Sept. | Day | Apr. | May | Sept. | Day | Apr. | May | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ------ | 274 | 72 | 11 | 45 | ------ | 75 | 21 | 72 | ------ | 59 |
| 2 | ------ | 257 | 72 | 12 | 45 | ------ | 87 | 22 | 81 | ------ | 59 |
| 3 | ------ | 324 | 78 | 13 | 45 | ------ | 81 | 23 | 81 | ------ | 59 |
| 4 | ------ | 426 | 87 | 14 | 45 | ------ | 78 | 24 | 87 | ------ | 57 |
| 5 | ------ | 550 | 81 | 15 | 49 | ------ | 75 | 25 | 106 | ------ | 57 |
| 6 | ------ | ------ | 78 | 16 | 57 | ------ | 69 | 26 | 123 | ------ | 57 |
| 7 | 47 | ------ | 78 | 17 | 61 | ------ | 66 | 27 | 143 | ------ | 55 |
| 8 | 47 | ------ | 81 | 18 | 61 | ------ | 66 | 28 | 168 | ------ | 55 |
| 9 | 47 | ------ | 78 | 19 | 72 | ------ | 64 | 29 | 191 | ------ | 53 |
| 10 | 45 | ------ | 75 | 20 | 66 | ------ | 61 | 30 | 248 | ------ | 81 |
| | | | | | | | | 31 | ------ | ------ | ------ |

FISH CREEK NEAR SCOFIELD, UTAH

LOCATION.—In sec. 10, T. 12 S., R. 7 E., below Horsley Dam of Price River Irrigation District, 5 miles northeast of Scofield, Carbon County, and 10 miles above point where Fish Creek and White River unite to form Price River.

DRAINAGE AREA.—163 square miles (measured on Forest Service map, 1920).

RECORDS AVAILABLE.—November 17, 1917, to September 30, 1921, and June 15, 1925, to September 30, 1926; fragmentary.

GAGE.—Vertical enameled staff gage on left bank below outlet tunnel at dam; installed April 27, 1926; read by S. W. Robertson and J. W. Boothe.

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

CHANNEL AND CONTROL.—One channel at all stages. Right bank is high; left bank lower but probably not subject to overflow. Railroad embankment a few feet back from left bank can not be overflowed. Stream bed gravel and sand. Riffle a short distance below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.30 feet at 4 p. m. May 21 (discharge, 381 second-feet); minimum discharge 2 or 3 second-feet in middle of winter.

ICE.—Stream freezes over every winter.

DIVERSIONS.—Some small diversions for irrigation above station.

REGULATION.—Flow completely regulated after May, 1926, by dam and reservoir of Price River Irrigation District, capacity 66,000 acre-feet.

ACCURACY.—Stage-discharge relation permanent during period. Rating curve well defined. Staff gage read to hundredths once or twice daily except as stated in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Daily gage-height record furnished by Price River Irrigation District.

*Discharge measurements of Fish Creek near Scofield, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Apr. 27 | 5.55 | 200 | June 21 | 5.34 | 150 | July 15 | 4.46 | 29.3 |
| June 4 [a] | 5.16 | 116 | June 30 [a] | 5.23 | 131 | Aug. 6 [a] | 4.25 | 23.6 |
| June 14 [a] | 4.60 | 46.6 | July 7 [a] | 5.09 | 110 | Aug. 23 | 4.27 | 23.6 |
| June 19 [a] | 5.40 | 167 | July 15 [a] | 5.06 | 108 | | | |

[a] Made by water commissioner of Price River Irrigation District.

*Daily discharge, in second-feet, of Fish Creek near Scofield, Utah, for the year ending September 30, 1926*

| Day | Apr. | May | June | July | Aug. | Sept. | Day | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ------ | 267 | 120 | 127 | 87 | | 16 | ------ | 241 | 47 | 26 | 83 | |
| 2 | ------ | 272 | 120 | 135 | 66 | | 17 | ------ | 166 | 47 | 26 | 67 | |
| 3 | ------ | 282 | 120 | 156 | 24 | | 18 | ------ | 237 | 47 | 25 | 58 | |
| 4 | ------ | 284 | 120 | 152 | 24 | | 19 | ------ | 324 | 91 | 25 | 47 | |
| 5 | ------ | 282 | 120 | 146 | 24 | | 20 | ------ | 289 | 162 | 25 | 39 | |
| 6 | ------ | 274 | 120 | 140 | 24 | | 21 | ------ | 304 | 156 | 25 | 32 | 14 |
| 7 | ------ | 267 | 47 | 108 | 24 | | 22 | ------ | 324 | 154 | 25 | 29 | |
| 8 | ------ | 230 | 47 | 120 | 24 | 14 | 23 | ------ | 299 | 150 | 25 | 25 | |
| 9 | ------ | 302 | 47 | 117 | 24 | | 24 | ------ | 246 | 148 | 25 | 24 | |
| 10 | ------ | 312 | 47 | 113 | 24 | | 25 | ------ | 241 | 146 | 25 | 24 | |
| 11 | ------ | 306 | 47 | 108 | 24 | | 26 | ------ | 246 | 142 | 46 | 21 | 13 |
| 12 | ------ | 309 | 47 | 110 | 24 | | 27 | 196 | 241 | 142 | 107 | 20 | 14 |
| 13 | ------ | 196 | 46 | 110 | 24 | | 28 | 191 | 241 | 136 | 97 | 19 | 13 |
| 14 | ------ | 77 | 47 | 107 | 24 | | 29 | 230 | 136 | 135 | 94 | 18 | 13 |
| 15 | ------ | 174 | 47 | 60 | 24 | | 30 | 239 | 118 | 131 | 120 | 17 | 13 |
| | | | | | | | 31 | ------ | 118 | ------ | 117 | 16 | ------ |

NOTE.—No gage-height record Aug. 28 to Sept. 25; discharge estimated. Braced figures gives estimated mean discharge for periods indicated.

*Monthly discharge of Fish Creek near Scofield, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | Run-off in acre-feet | Month | Discharge in second-feet | | Run-off In acre-feet |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | | | Maximum | Minimum | |
| April 27–30 | 239 | 191 | 1,700 | August | 87 | 16 | 1,990 |
| May | 324 | 77 | 15,100 | September | | | 827 |
| June | 162 | 46 | 5,900 | | | | |
| July | 156 | 25 | 5,240 | The period | | | 30,800 |

### PRICE RIVER NEAR HELPER, UTAH

LOCATION.—In SE. ¼ sec. 36, T. 13 S., R. 9 E., at highway bridge three-quarters of a mile above diversion dam of Price River Irrigation Co., 2 miles south of Helper, Carbon County, and 3 miles below Spring Creek.

DRAINAGE AREA.—530 square miles (measured on topographic maps).

RECORDS AVAILABLE.—February 21, 1904, to September 30, 1926.

GAGE.—Chain gage on highway bridge; inspected by D. S. Rowley.

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

CHANNEL AND CONTROL.—Bed of stream composed of gravel and sand. Control is a riffle of gravel and cobbles.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.4 feet at 11 a. m. October 5 (discharge determined from extension of rating curve, 1,400 second-feet); minimum stage recorded, 6.48 feet September 22–28 (discharge, 9 second-feet).

1904-1926: Summer floods occur nearly every year and often greatly exceed any recorded stage. Maximum stage recorded, for which discharge was determined, 8.43 feet at 9 p. m. June 25, 1917 (discharge determined from extension of rating curve, 8,500 second-feet); minimum discharge, 4 second-feet during December, 1905, January, 1906, and August 8, 1925.

ICE.—Stage-discharge relation affected by ice nearly every winter.

DIVERSIONS.—Main diversions from Price River are below station.

REGULATION.—Flow regulated after May, 1926, by storage reservoir on Fish Creek, which is main tributary to Price River.

ACCURACY.—Stage-discharge relation changed several times during year. Standard rating curves fairly well defined. Gage read to hundredths once daily with occasional omissions and twice daily during periods of rapidly changing stage. Daily discharge ascertained by applying mean daily gage height to rating table using shifting-control method. Discharge for periods of ice effect estimated from temperature records, observer's notes, and one meter measurement. Discharge interpolated or estimated from observer's notes for days for which no gage heights were obtained and for small flood October 4-6. Records fair.

*Discharge measurements of Price River near Helper, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 9 | 6.77 | 33.9 | Apr. 28 | 8.00 | 353 | Aug. 25 | 6.70 | 22.4 |
| Jan. 7 [a] | [b]6.62 | 10.5 | June 17 [a] | 7.01 | 49.4 | | | |
| Mar. 26 | 7.09 | 90.5 | June 25 | 7.42 | 134 | | | |

[a] Made by engineer of Utah Power & Light Co.
[b] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Price River near Helper, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 28 | 26 | | | 52 | 68 | 430 | 129 | 124 | 79 | 13 |
| 2 | 24 | 76 | 26 | | 20 | 159 | 65 | 430 | 127 | 127 | 84 | 12 |
| 3 | 20 | 37 | 24 | | | 104 | 65 | 430 | 127 | 132 | 83 | 12 |
| 4 | 50 | 30 | 23 | 10 | | 66 | 82 | 430 | 127 | 137 | 39 | 12 |
| 5 | 500 | 24 | 21 | | 35 | 66 | 102 | 446 | 117 | 150 | 39 | 12 |
| 6 | 250 | 20 | 21 | | 28 | 52 | 317 | 456 | 112 | 137 | 38 | 11 |
| 7 | 63 | 20 | 21 | 10 | 35 | 52 | 244 | 430 | 99 | 124 | 38 | 11 |
| 8 | 46 | 20 | 23 | | 31 | 48 | 641 | 298 | 57 | 115 | 35 | 11 |
| 9 | 37 | 20 | 26 | | 28 | 44 | 128 | 350 | 57 | 120 | 33 | 11 |
| 10 | 37 | 20 | 33 | | 31 | 45 | 128 | 405 | 51 | 124 | 38 | 11 |
| 11 | 37 | 20 | 20 | | 35 | 45 | 126 | 395 | 51 | 115 | 33 | 11 |
| 12 | 46 | 23 | 20 | | 35 | 60 | 126 | 376 | 51 | 115 | 33 | 11 |
| 13 | 39 | 17 | 20 | | 26 | 73 | 138 | 358 | 51 | 115 | 31 | 10 |
| 14 | 37 | 20 | 24 | 15 | 28 | 240 | 151 | 138 | 51 | 115 | 27 | 10 |
| 15 | 37 | 20 | | | 35 | 66 | 165 | 244 | 49 | 110 | 27 | 10 |
| 16 | 37 | 20 | | | 35 | 301 | 185 | 272 | 49 | 49 | 27 | 10 |
| 17 | 37 | 26 | | | 25 | 410 | 210 | 250 | 49 | 45 | 38 | 10 |
| 18 | 37 | 21 | | | 30 | 126 | 241 | 244 | 51 | 41 | 48 | 10 |
| 19 | 36 | 16 | | | 35 | 86 | 272 | 279 | 51 | 34 | 48 | 10 |
| 20 | 35 | 16 | | | 35 | 106 | 210 | 358 | 120 | 34 | 45 | 10 |
| 21 | 34 | 16 | | | 34 | 98 | 286 | 448 | 120 | 38 | 36 | 10 |
| 22 | 33 | 16 | 15 | | 33 | 89 | 298 | 537 | 122 | 29 | 28 | 9 |
| 23 | 33 | 16 | | | 28 | 93 | 317 | 501 | 115 | 29 | 24 | 9 |
| 24 | 33 | 17 | | | 22 | 126 | 337 | 285 | 122 | 27 | 24 | 9 |
| 25 | 33 | 18 | | 20 | 40 | 111 | 350 | 274 | 129 | 27 | 21 | 9 |
| 26 | 31 | 20 | | | 31 | 97 | 386 | 266 | 124 | 27 | 19 | 9 |
| 27 | 33 | 21 | | | 28 | 93 | 350 | 270 | 124 | 27 | 17 | 9 |
| 28 | 31 | 21 | | | 40 | 84 | 368 | 274 | 124 | 106 | 16 | 9 |
| 29 | 30 | 23 | | | ------- | 79 | 430 | 274 | 127 | 103 | 17 | 16 |
| 30 | 28 | 24 | | 23 | ------- | 74 | 430 | 137 | 124 | 90 | 16 | 27 |
| 31 | 28 | ------- | | 20 | ------- | 68 | ------- | 132 | ------- | 106 | 15 | ------ |

NOTE.—Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Price River near Helper, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 500 | 20 | 57.3 | 3,520 |
| November | 76 | 16 | 22.9 | 1,360 |
| December | 33 | ---------- | 18.8 | 1,160 |
| January | ---------- | ---------- | 15.7 | 965 |
| February | 40 | ---------- | 30.1 | 1,670 |
| March | 410 | 44 | 104 | 6,400 |
| April | 641 | 65 | 241 | 14,300 |
| May | 537 | 132 | 336 | 20,700 |
| June | 129 | 49 | 93.6 | 5,570 |
| July | 150 | 27 | 86.2 | 5,300 |
| August | 84 | 15 | 35.4 | 2,180 |
| September | 27 | 9 | 11.1 | 660 |
| The year | 641 | 9 | 88.0 | 63,800 |

### HUNTINGTON CREEK NEAR HUNTINGTON, UTAH

LOCATION.—In SE. ¼ sec. 6, T. 17 S., R. 8 E., at old Cunha ranch, 7 miles northwest of Huntington, Emery County. Below all main tributaries, except Fish Creek.

DRAINAGE AREA.—188 square miles (measured on Forest Service map, 1920).

RECORDS AVAILABLE.—May 3, 1909, to September 30, 1926; fragmentary.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by Joseph Cunha.

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

CHANNEL AND CONTROL.—Bed composed of gravel and sand. Control of coarse gravel; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.45 feet at 4 p. m. September 11 (discharge, 755 second-feet); minimum stage, 1.24 feet at 7 p. m. November 5 (no flow, probably caused by ice jam above).

1909–1926: Maximum discharge, 1,340 second-feet at 9.30 p. m. May 25, 1920, and at 11 p. m. May 25, 1922. Discharge may have been greater in 1921. Minimum stage, 1.24 feet at 7 p. m. November 5, 1926 (no flow, probably caused by ice jam above).

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

DIVERSIONS.—Several small ditches from tributaries above station.

REGULATION.—A small storage reservoir on Huntington Creek above the station controls distribution of flow to a slight extent.

ACCURACY.—Stage-discharge relation changed slightly at low-water stages. Rating curves well defined between 30 and 700 second-feet; extended above. Operation of water-stage recorder satisfactory except during winter. Daily discharge ascertained by applying to rating tables mean daily gage height determined from recorder graph. Records good except for winter estimates, which are fair.

*Discharge measurements of Huntington Creek near Huntington, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 13 | [a] 2.06 | 35.6 | May 1 | 3.25 | 273 | Aug. 24 | 2.01 | 34.3 |
| Mar. 14 | 1.92 | 34.1 | June 24 | 2.53 | 101 | | | |

[a] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Huntington Creek near Huntington, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 33 | | 37 | 332 | 293 | 108 | 63 | 30 |
| 2 | 32 | 36 | | 37 | 349 | 274 | 115 | 64 | 30 |
| 3 | 32 | 35 | | 38 | 396 | 250 | 113 | 70 | 30 |
| 4 | 32 | 33 | | 38 | 446 | 227 | 115 | 67 | 29 |
| 5 | 50 | 20 | | 46 | 450 | 211 | 115 | 67 | 29 |
| 6 | 55 | 28 | | 46 | 336 | 200 | 115 | 73 | 29 |
| 7 | 43 | 36 | 40 | 46 | 287 | 186 | 110 | 71 | 30 |
| 8 | 87 | 29 | | 47 | 268 | 180 | 106 | 73 | 30 |
| 9 | 36 | 35 | | 48 | 225 | 176 | 102 | 67 | 28 |
| 10 | 35 | 31 | | 50 | 198 | 164 | 101 | 67 | 28 |
| 11 | 36 | 36 | | 48 | 183 | 157 | 102 | 58 | 38 |
| 12 | 38 | 34 | | 48 | 178 | 147 | 102 | 54 | 40 |
| 13 | 38 | 31 | | 50 | 171 | 136 | 99 | 53 | 35 |
| 14 | 36 | 28 | 37 | 67 | 188 | 147 | 97 | 51 | 33 |
| 15 | 35 | | 43 | 94 | 250 | 113 | 95 | 52 | 32 |
| 16 | 33 | | 47 | 121 | 306 | 104 | 95 | 50 | 32 |
| 17 | 31 | | 44 | 124 | 367 | 95 | 95 | 48 | 32 |
| 18 | 31 | | 45 | 132 | 392 | 89 | 97 | 46 | 31 |
| 19 | 31 | | 42 | 140 | 446 | 101 | 89 | 44 | 31 |
| 20 | 31 | | 42 | 132 | 515 | 117 | 75 | 43 | 31 |
| 21 | 31 | | 40 | 164 | 507 | 113 | 77 | 42 | 31 |
| 22 | 31 | 30 | 43 | 186 | 474 | 110 | 73 | 41 | 31 |
| 23 | 32 | | 48 | 188 | 450 | 110 | 73 | 38 | 31 |
| 24 | 31 | | 54 | 203 | 400 | 106 | 73 | 35 | 31 |
| 25 | 31 | | 47 | 230 | 322 | 104 | 75 | 33 | 30 |
| 26 | 32 | | 43 | 271 | 287 | 101 | 80 | 31 | 33 |
| 27 | 33 | | 42 | 300 | 265 | 97 | 84 | 30 | 35 |
| 28 | 33 | | 39 | 329 | 271 | 106 | 68 | 30 | 33 |
| 29 | 33 | | 40 | 349 | 287 | 124 | 66 | 32 | 39 |
| 30 | 31 | | 39 | 349 | 296 | 123 | 62 | 31 | 39 |
| 31 | 31 | | 39 | | 306 | | 60 | 30 | |

NOTE.—Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Huntington Creek near Huntington, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 55 | 31 | 34.6 | 2,130 |
| November | 36 | 20 | 30.8 | 1,830 |
| December | | | [a] 35 | 2,150 |
| January | | | [a] 35 | 2,150 |
| February | | | [a] 35 | 1,940 |
| March | 54 | | 41.7 | 2,560 |
| April | 349 | 37 | 132 | 7,860 |
| May | 515 | 171 | 327 | 20,100 |
| June | 293 | 89 | 149 | 8,870 |
| July | 115 | 60 | 91.5 | 5,630 |
| August | 73 | 30 | 50.1 | 3,080 |
| September | 40 | 29 | 32.0 | 1,900 |
| The year | 515 | 20 | 83.2 | 60,100 |

[a] Estimated.

### COTTONWOOD CREEK NEAR ORANGEVILLE, UTAH

LOCATION.—In SW. ¼ sec. 10, T. 18 S., R. 7 E., at Sitterud ranch, 5 miles northwest of Orangeville, Emery County.

DRAINAGE AREA.—200 square miles (measured on Forest Service map, 1920).

RECORDS AVAILABLE.—May 1, 1909, to September 30, 1926; fragmentary.

GAGE.—Stevens continuous water-stage recorder on left bank near ranch house; inspected by George Sitterud.

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

CHANNEL AND CONTROL.—Bed rough; shifting. Banks fairly high but have been overflowed by sudden floods, to which the stream is subject. Control of gravel and sand.

EXTREMES OF DISCHARGE.—Maximum stage during year, 6.9 feet at 4 p. m. September 11 (discharge, 1,210 second-feet); minimum discharge less than 10 second-feet during winter.

1909–1926: Maximum stage recorded, 9.1 feet about 10 p. m. August 22, 1922 (discharge estimated from extension of rating curve, 2,500 second-feet). Minimum discharge recorded, 5 second-feet September 21, 1910.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Two or three small ditches divert water above station, but all the main ditches take out below.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed several times during year. Standard rating curve fairly well defined. Water-stage recorder operated successfully, except as stated in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

*Discharge measurements of Cottonwood Creek near Orangeville, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 13 | [a] | 19.2 | May 2 | 4.65 | 266 | Aug. 24 | 3.48 | 21.3 |
| Mar. 13 | 3.56 | 31.7 | June 24 | 4.28 | 76.9 | | | |

[a] Stage-discharge relation affected by ice.

*Daily discharge, in second-feet, of Cottonwood Creek near Orangeville, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 16 | 15 | | 20 | 252 | 354 | 68 | 25 | 14 |
| 2 | 17 | 21 | 12 | | 20 | 282 | 337 | 62 | 24 | 14 |
| 3 | 17 | 15 | 10 | | 23 | 324 | 321 | 62 | 25 | 13 |
| 4 | 18 | 12 | ------- | | 28 | 389 | 288 | 72 | 40 | 13 |
| 5 | 55 | 11 | ------- | | 36 | 360 | 258 | 73 | 21 | 13 |
| 6 | 37 | 11 | ------- | | 40 | 330 | 244 | 81 | 33 | 13 |
| 7 | 24 | 14 | ------- | 25 | 37 | 298 | 235 | | 75 | 14 |
| 8 | 23 | 12 | ------- | | 34 | 267 | 230 | | 50 | 13 |
| 9 | 20 | 14 | ------- | | 32 | 244 | 224 | | 37 | 13 |
| 10 | 17 | 14 | ------- | | 34 | 224 | | 50 | 52 | 13 |
| 11 | 24 | 17 | ------- | | 36 | 208 | | | | 68 |
| 12 | 28 | 13 | ------- | | 37 | 210 | 175 | 44 | 20 | 37 |
| 13 | 23 | 12 | 19 | 24 | 34 | 205 | | 42 | | 24 |
| 14 | 21 | 11 | ------- | 29 | 40 | 210 | | 40 | | 24 |
| 15 | 22 | 17 | ------- | 34 | 55 | 246 | | 38 | 18 | 23 |
| 16 | 21 | 17 | ------- | 33 | 77 | 324 | 130 | 37 | 18 | 22 |
| 17 | 21 | 22 | ------- | 30 | 86 | 404 | 120 | 37 | 18 | 21 |
| 18 | 20 | 20 | ------- | 25 | 86 | 464 | 111 | 36 | 18 | 20 |
| 19 | 20 | 14 | ------- | 22 | 116 | 523 | 105 | 36 | 20 | 18 |
| 20 | 22 | 14 | ------- | 22 | 99 | 627 | 103 | 34 | 20 | 17 |
| 21 | 22 | 13 | ------- | 20 | 116 | 627 | 99 | 36 | 21 | 17 |
| 22 | 24 | 13 | ------- | 20 | 137 | 619 | 90 | 32 | 21 | 20 |
| 23 | 24 | 14 | ------- | 23 | 137 | 559 | 82 | 30 | 21 | 21 |
| 24 | 18 | 20 | ------- | 27 | 148 | 495 | 77 | 29 | 21 | 22 |
| 25 | 18 | 20 | ------- | 27 | 167 | 422 | 75 | 30 | 17 | 22 |
| 26 | 22 | 18 | ------- | 24 | 194 | 382 | 73 | 27 | 16 | 25 |
| 27 | 22 | 17 | ------- | 28 | 219 | 347 | 72 | 29 | 16 | 28 |
| 28 | 21 | 15 | ------- | 33 | 238 | 354 | 75 | 28 | 15 | 28 |
| 29 | 21 | 14 | ------- | 25 | 255 | 361 | 73 | | 16 | 44 |
| 30 | 16 | 13 | ------- | 23 | 258 | 354 | 70 | 26 | 15 | 30 |
| 31 | 16 | ------- | ------- | 22 | ------- | 354 | ------- | | 15 | ------- |

NOTE.—No gage-height record Mar. 1–12, May 5–6, June 7, 8, 10–15, July 7–11, July 29 to Aug. 1, Aug. 8, 11–14; discharge interpolated or estimated. Braced figures give estimated mean discharge for periods indicated.

*Monthly discharge of Cottonwood Creek near Orangeville, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 55 | 16 | 22.3 | 1,370 |
| November | 22 | 11 | 15.1 | 898 |
| December | ---------- | ---------- | [a] 15 | [a] 922 |
| January | ---------- | ---------- | [a] 15 | [a] 922 |
| February | ---------- | ---------- | [a] 20 | [a] 1,110 |
| March | ---------- | ---------- | 25.5 | 1,570 |
| April | 258 | 20 | 94.6 | 5,630 |
| May | 627 | 205 | 363 | 22,300 |
| June | 354 | 70 | 163 | 9,700 |
| July | ---------- | ---------- | 42.9 | 2,640 |
| August | 75 | 15 | 24.8 | 1,520 |
| September | 68 | 13 | 22.1 | 1,320 |
| The year | 627 | ---------- | 69.0 | 49,900 |

[a] Estimated.

## PARIA RIVER BASIN

### PARIA RIVER AT LEES FERRY, ARIZ.

LOCATION.—On unsurveyed land half a mile above mouth and a mile northwest of Lees Ferry, Coconino County. Paria River enters Colorado River at Lees Ferry.

DRAINAGE AREA.—1,520 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 22, 1923, to September 30, 1926.

GAGE.—Vertical staff gage on left bank installed October 13, 1925; read by Jerry and Elmer Johnson. Prior to October 13, a slope gage 2,000 feet upstream was used.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Channel straight for 100 feet above and several hundred feet below gage. Right bank is earth of former flood plain, now cultivated farm land and not subject to overflow. Left bank is high rock cliff. Bed composed of sand and gravel. Gravel riffle 30 feet downstream from gage forms low-water control. Extreme high water in Colorado River may cause backwater for a short period at a time of year when discharge of Paria River is low and uniform.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.5 feet at 5 p. m. October 5 (discharge, 16,100 second-feet); minimum stage, 0.30 foot on June 25 (discharge, 1 second-foot).

1924–1926: Maximum stage recorded, 17.5 feet at 5 p. m. October 5, 1926 (discharge, 16,100 second-feet); minimum discharge, probably zero on several nights of December and January for years ending September 30, 1924 and 1925, when river was frozen solid.

ICE.—Some ice is apt to occur each winter at this station.

DIVERSIONS.—About 1,000 acres irrigated from Paria River. Station is below all diversions.

REGULATION.—None.

ACCURACY.—Gaging station destroyed by flood on October 5. New station 2,000 feet downstream installed October 13. A discharge measurement by surface floats made during the flood on October 5 and later referenced to the gage installed October 13 bridges this gap in the record. Stage-discharge relation at the new station permanent except for slight changes for low stage. Rating curves well defined below 100 second-feet and extended to 16,100 second-feet as measured on October 5. Gage read to hundredths once a day except for some omissions of one or more days October to May as indicated in footnote to table of daily discharge. Additional readings made during periods of floods. Daily discharge ascertained by applying daily gage height to rating table. Discharge interpolated or estimated for days when gage was not read. Discharge for days of floods are poor. Records good.

*Discharge measurements of Paria River at Lees Ferry, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 5 | 17.5 | [a]16,100 | Mar. 26 | 0.54 | 8.0 | June 18 | 0.34 | 1.9 |
| Nov. 3 | 1.09 | 77.2 | Apr. 15 | .92 | 32.9 | July 10 | .41 | 3.4 |
| Dec. 15 | .65 | 11.8 | Apr. 21 | .96 | 39.0 | Sept. 2 | .38 | 2.7 |
| Jan. 10 | .73 | 19.6 | May 7 | .91 | 33.0 | | | |
| Feb. 23 | .68 | 16.0 | May 29 | .39 | 3.4 | | | |

[a] Measurement made by timing drift over measured distance and later measuring cross sections.

*Daily discharge, in second-feet, of Paria River at Lees Ferry, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 17 | 20 | 18 | 31 | 14 | 50 | 10 | 2 | 4 | 16 | 3 |
| 2 | 12 | 21 | 18 | 30 | 34 | 14 | 40 | 10 | 2 | 3 | 6 | 3 |
| 3 | 12 | 77 | 17 | 21 | 17 | 16 | 22 | 20 | 2 | 2 | 6 | 2 |
| 4 | 16 | 46 | 15 | 16 | 34 | 16 | 19 | 31 | 2 | 3 | 5 | 2 |
| 5 | 5,500 | 41 | 13 | 12 | 42 | 16 | 17 | 23 | 2 | 5 | 19 | 2 |
| 6 | 2,650 | 36 | 13 | 9 | 36 | 16 | 100 | 26 | 2 | 25 | 20 | 2 |
| 7 | 150 | 31 | 14 | 12 | 22 | 16 | 63 | 29 | 2 | 13 | 125 | 3 |
| 8 | 40 | 26 | 14 | 15 | 22 | 14 | 59 | 25 | 2 | 13 | 155 | 19 |
| 9 | 35 | 22 | 14 | 18 | 21 | 16 | 275 | 21 | 2 | 5 | 39 | 14 |
| 10 | 35 | 17 | 15 | 20 | 24 | 14 | 250 | 17 | 2 | 4 | 110 | 4 |
| 11 | 35 | 17 | 15 | 21 | 22 | 17 | 85 | 13 | 2 | 2 | 45 | 22 |
| 12 | 35 | 17 | 14 | 22 | 20 | 17 | 74 | 12 | 2 | 3 | 14 | 600 |
| 13 | 36 | 17 | 13 | 19 | 22 | 16 | 85 | 11 | 2 | 3 | 7 | 63 |
| 14 | 26 | 17 | 11 | 16 | 34 | 16 | 100 | 10 | 2 | 3 | 6 | 25 |
| 15 | 24 | 17 | 12 | 17 | 22 | 14 | 34 | 10 | 2 | 3 | 3 | 17 |
| 16 | 23 | 16 | 17 | 18 | 24 | 16 | 26 | 8 | 2 | 3 | 11 | 14 |
| 17 | 22 | 16 | 17 | 18 | 26 | 16 | 29 | 6 | 2 | 3 | 8 | 14 |
| 18 | 22 | 15 | 13 | 19 | 17 | 14 | 30 | 5 | 2 | 2 | 12 | 14 |
| 19 | 22 | 14 | 14 | 19 | 11 | 16 | 130 | 5 | 2 | 3 | 6 | 14 |
| 20 | 20 | 14 | 18 | 20 | 26 | 18 | 50 | 5 | 2 | 3 | 5 | 14 |
| 21 | 19 | 14 | 16 | 20 | 18 | 18 | 44 | 3 | 2 | 3 | 4 | 13 |
| 22 | 17 | 14 | 14 | 19 | 16 | 28 | 25 | 3 | 2 | 3 | 3 | 13 |
| 23 | 20 | 15 | 14 | 18 | 16 | 16 | 23 | 3 | 2 | 3 | 3 | 12 |
| 24 | 17 | 16 | 14 | 18 | 14 | 14 | 20 | 3 | 2 | 2 | 2 | 12 |
| 25 | 20 | 15 | 24 | 19 | 12 | 9 | 16 | 3 | 1 | 2 | 2 | 12 |
| 26 | 19 | 14 | 15 | 19 | 17 | 8 | 13 | 3 | 2 | 2 | 2 | 125 |
| 27 | 18 | 14 | 18 | 18 | 14 | 11 | 12 | 3 | 2 | 2 | 2 | 31 |
| 28 | 17 | 14 | 10 | 18 | 16 | 16 | 12 | 3 | 2 | 150 | 2 | 45 |
| 29 | 17 | 20 | 13 | 21 | ------- | 14 | 11 | 3 | 2 | 52 | 3 | 26 |
| 30 | 17 | 20 | 17 | 24 | ------- | 6 | 10 | 3 | 2 | 45 | 3 | 160 |
| 31 | 17 | ------- | 20 | 28 | ------- | 6 | ------- | 3 | ------- | 22 | 3 | ------- |

NOTE.—Discharge Oct. 5-12 estimated from measurement made Oct. 5 and observer's notes. Discharge interpolated Oct. 16, 18, 20-21, 26-27, 29, 31, Nov. 5, 7-9, 12-13, 15-19, 21, 23, 25, 27, 30, Dec. 2, 4, 6-10, 12, 21, 29-30, Jan. 7, 9, 11, 13, 15-17, 19-20, 22, 24, 26-27, 29-31, Feb. 1, 16, 24, Mar. 19, Apr. 24-25, 28, May 1, 3, 6, 8-9, 12, 14, 16, 19, 23, 28. Discharge estimated Apr. 18 and 20.

*Monthly discharge of Paria River at Lees Ferry, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 5,500 | 12 | 288 | 17,700 |
| November | 77 | 14 | 21.7 | 1,290 |
| December | 24 | 10 | 15.2 | 935 |
| January | 30 | 9 | 18.8 | 1,160 |
| February | 42 | 11 | 22.5 | 1,250 |
| March | 28 | 6 | 14.8 | 910 |
| April | 275 | 10 | 57.5 | 3,420 |
| May | 31 | 3 | 10.6 | 652 |
| June | 2 | 1 | 2.0 | 119 |
| July | 150 | 2 | 12.6 | 775 |
| August | 155 | 2 | 20.9 | 1,290 |
| September | 600 | 2 | 43.3 | 2,580 |
| The year | 5,500 | 1 | 44.3 | 32,100 |

## LITTLE COLORADO RIVER BASIN

### LITTLE COLORADO RIVER AT GRAND FALLS, ARIZ.

LOCATION.—In T. 24 N., R. 11 E., unsurveyed, on Navajo Indian Reservation at Grand Falls, 38 miles northeast of Flagstaff, Coconino County. Clear Creek enters from left about 60 miles upstream. Moenkopi Wash enters from right about 40 miles downstream. Little Colorado River enters Colorado River 70 miles below this station.

DRAINAGE AREA.—22,100 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 15, 1925, to September 30, 1926.

GAGE.—Water-stage recorder on left bank, 1,000 feet downstream from Grand Falls, installed January 5, 1926. Staff gage used November 15, 1925, to January 4, 1926.

DISCHARGE MEASUREMENTS.—Made from cable 663 feet downstream from gage or by wading near gage.

CHANNEL AND CONTROL.—Bed composed of bedrock and deposits of gravel and silt. Banks not subject to overflow. Rock riffle about 200 feet downstream from gage. High-water control is rock channel extending several miles below station and is not subject to appreciable change.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period November 15, 1925, to September 30, 1926, 22.5 feet at 9 a. m. September 27 (discharge, 21,600 second-feet); minimum discharge, no flow on various days throughout the period.

ICE.—River freezes over at gage for short periods during December and January when weather is coldest and when river is very low. Backwater from ice is for the most part negligible.

DIVERSIONS.—Water diverted for irrigation in upper basin. Acreage irrigated above this station not known. No diversions below this station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent, except for discharge below 50 second-feet, when scouring and filling of sand may affect velocity of approach to control. Rating curve well defined from 50 to 4,000 second-feet; extended above. Operation of water-stage recorder satisfactory except as shown in footnote to daily-discharge table. Staff gage read twice a day to hundredths November 15 to January 4. Daily discharge ascertained by applying daily mean gage height to rating table or from hourly discharge for days of considerable range in stage, except as noted in footnote to daily-discharge table. Records good.

*Discharge measurements of Little Colorado River at Grand Falls, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 6 | 5.45 | 25.8 | Mar. 13 | 6.70 | 266 | May 19 | 5.50 | 35.6 |
| Dec. 8 | 5.37 | 24.3 | Mar. 28 | 7.42 | 594 | July 15 | 4.75 | .8 |
| Dec. 9 | 6.11 | 113 | Apr. 11 | 9.80 | 2,440 | Aug. 18 | 6.03 | 91.4 |
| Jan. 12 | 5.22 | 16.1 | Apr. 19 | 7.94 | 923 | | | |

*Daily discharge, in second-feet, of Little Colorado River at Grand Falls, Ariz., for the year ending September 30, 1926*

| Day | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 24 | 28 | 18 | 0 | 558 | | 0 | 0 | 31 | 0 |
| 2 | | 26 | 30 | 24 | 0 | 398 | | 0 | 0 | 17 | 0 |
| 3 | | 22 | 24 | 28 | 0 | 265 | | 0 | 0 | 9 | 0 |
| 4 | | 16 | 26 | 24 | 0 | 585 | 300 | 0 | 0 | 7 | 0 |
| 5 | | 24 | 25 | 20 | 0 | 793 | | 0 | 0 | 6 | 0 |
| 6 | | 26 | 21 | 17 | 0 | 1,940 | | 0 | 0 | 4 | 14 |
| 7 | | 19 | 19 | 15 | 0 | 2,550 | 355 | 0 | 0 | 3 | 15 |
| 8 | | 20 | 18 | 18 | 0 | 6,260 | 1,720 | 0 | 0 | 193 | 9 |
| 9 | | 110 | 15 | 17 | 0 | 4,550 | 735 | 0 | 0 | 592 | 6 |
| 10 | | 130 | 17 | 16 | 0 | 2,730 | 235 | 0 | 0 | 645 | 5 |
| 11 | | 123 | 18 | 10 | 0 | 2,390 | 98 | 0 | 0 | 188 | 3 |
| 12 | | 108 | 18 | 8 | 54 | 1,760 | 80 | 0 | 0 | 138 | 1,670 |
| 13 | | 96 | 16 | 7 | 220 | 1,340 | 73 | 0 | 102 | 121 | 1,560 |
| 14 | | 85 | 13 | 6 | 284 | 1,490 | 73 | 0 | 7 | 92 | 313 |
| 15 | 106 | 49 | 10 | 5 | 238 | 1,140 | 66 | 0 | 3 | 124 | 108 |
| 16 | 106 | 30 | 13 | 3 | 235 | 1,060 | 60 | 0 | 4 | 130 | 37 |
| 17 | 102 | 26 | 13 | 1 | 300 | 1,060 | 54 | 0 | 1 | 141 | 28 |
| 18 | 86 | 21 | 10 | 0 | 669 | 998 | 46 | 0 | 0 | 117 | 26 |
| 19 | 82 | 26 | 10 | 0 | 627 | 895 | 35 | 0 | 0 | 112 | 32 |
| 20 | 72 | 19 | 10 | 0 | 536 | 1,410 | 22 | 0 | 0 | 53 | 162 |
| 21 | 59 | 13 | 8 | 1 | 485 | 2,070 | 15 | 0 | 0 | 30 | 102 |
| 22 | 50 | 15 | 10 | 1 | 541 | 1,750 | 9 | 0 | 0 | 20 | 54 |
| 23 | 44 | 15 | 10 | 0 | 480 | 1,380 | 3 | 0 | 0 | 12 | 36 |
| 24 | 41 | 16 | 10 | 0 | 354 | 830 | 1 | 0 | 0 | 4 | 25 |
| 25 | 38 | 18 | 11 | 0 | 328 | 530 | 0 | 0 | 0 | 1 | 20 |
| 26 | 34 | 19 | 11 | 0 | 403 | 385 | 0 | 0 | 0 | 0 | 17 |
| 27 | 31 | 14 | 12 | 0 | 744 | | 0 | 0 | 0 | 0 | 13,900 |
| 28 | 37 | 20 | 12 | 0 | 603 | | 0 | 0 | 0 | 0 | 4,430 |
| 29 | 31 | 28 | 13 | ------- | 830 | 300 | 0 | 0 | 34 | 0 | 1,170 |
| 30 | 26 | 29 | 13 | ------- | 817 | | 0 | 0 | 124 | 0 | 421 |
| 31 | ------- | 30 | 13 | ------- | 693 | ------- | 0 | ------- | 72 | 0 | ------- |

NOTE.—Discharge July 13–21 computed by shifting-control method. Discharge interpolated Jan. 23–30 and Feb. 15–18. Discharge estimated from study of recorder graph and rainfall data March 12, April 24–30, May 1–7, 9–17, Sept. 15–19, 21–26, 30. Gage-height record incomplete as follows: Dec. 10–19, somewhat affected by ice; Jan. 23–30, water in well frozen; Feb. 15–17, sand bar formed in front of well; Apr. 24–30, May 1–7, 9–17, Sept. 15–19, 21–26, 30, float on mud.

*Monthly discharge of Little Colorado River at Grand Falls, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| November 15–30 | 106 | 26 | 59.1 | 1,880 |
| December | 130 | 13 | 39.3 | 2,420 |
| January | 30 | 8 | 15.4 | 947 |
| February | 28 | 0 | 8.5 | 472 |
| March | 830 | 0 | 305 | 18,800 |
| April | 6,260 | 265 | 1,410 | 83,900 |
| May | 1,720 | 0 | 177 | 10,900 |
| June | 0 | 0 | 0 | 0 |
| July | 124 | 0 | 11.2 | 689 |
| August | 645 | 0 | 90.0 | 5,530 |
| September | 13,900 | 0 | 805 | 47,900 |
| The period | 13,900 | 0 | 273 | 173,000 |

### ZUNI RIVER AT BLACKROCK, N. MEX.

LOCATION.—At reservoir on Zuni Indian Reservation at Blackrock, McKinley County. Rio de las Nutrias, nearest large tributary, enters from north 4 miles above.

DRAINAGE AREA.—About 660 square miles.

RECORDS AVAILABLE.—Yearly discharge July 1, 1903, to June 30, 1905, July 1, 1908, to June 30, 1910. Monthly discharge October 1, 1910, to September 30, 1926. Record since July 1, 1908, shows inflow into reservoir.

METHOD OF COLLECTING DATA.—From July 1, 1903, to June 30, 1905, records were obtained by the ordinary stream-gaging methods. Reservoir completed in 1908. Record beginning July 1, 1908, obtained by means of gage in reservoir and capacity curve for reservoir, quantity of water released from the reservoir during the periods of inflow being taken into consideration.

EXTREMES OF DISCHARGE.—Channel dry greater part of the year below point where it leaves mountains, but stream is subject to sudden floods of considerable volume and usually of short duration.

DIVERSIONS.—Reservoir at Ramah, about 18 miles above station, capacity of which is given as 4,240 acre-feet, is used to irrigate about 1,150 acres in T. 11 N., R. 16 W. There are other small ponds or reservoirs in drainage area.

COOPERATION.—Record furnished by the United States Indian Service, through H. F. Robinson, supervising engineer, Albuquerque, N. Mex.

*Monthly discharge of Zuni River at Blackrock, N. Mex., for the year ending September 30, 1926*

| Month | Run-off in acre-feet | Month | Run-off in acre-feet | Month | Run-off in acre-feet |
|---|---|---|---|---|---|
| October | 85 | March | 721 | August | 681 |
| November | 0 | April | 664 | September | 1,380 |
| December | 0 | May | 554 | | |
| January | 40 | June | 0 | The year | 5,000 |
| February | 238 | July | 636 | | |

## BRIGHT ANGEL CREEK BASIN

### BRIGHT ANGEL CREEK NEAR GRAND CANYON, ARIZ.

LOCATION.—In the Grand Canyon of Arizona, on Kaibab Trail to north rim, a quarter of a mile above point where creek enters Colorado River and 11 miles by trail from Grand Canyon, Coconino County.

DRAINAGE AREA.—102 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1926.

GAGE.—Vertical staff on left bank; read by D. H. Barber and K. C. McCarter.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Channel steep and rough. Left bank not subject to overflow. Right bank subject to overflow by occasional short floods. Bed composed of gravel and boulders. Boulder riffle just below gage. Control generally changed by each flood.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.5 feet at 11 p. m. July 27 (discharge estimated by extension of rating curve, 1,000 second-feet); minimum stage, 0.65 foot at 4 p. m. October 26 (discharge, 16 second-feet).

1924–1926; Maximum stage recorded, 6.5 feet at 11 p. m. July 27, 1926 (discharge from extension of rating curve, 1,000 second-feet); minimum discharge, 16 second-feet October 26, 1926.

ICE.—None.

DIVERSIONS.—Water for irrigating a few acres at Phantom ranch is diverted about three-quarters of a mile above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined from 18 to 250 second-feet, extended above. Gage read to hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records good.

*Discharge measurements of Bright Angel Creek near Grand Canyon, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 10 | 0.68 | 20.3 | Feb. 18 | 0.67 | 21.2 | June 9 | 1.16 | 36.2 |
| Oct. 26 | .65 | 15.8 | Feb. 22 | .68 | 21.4 | June 23 | .98 | 27.3 |
| Oct. 29 | .67 | 20.4 | Feb. 26 | .65 | 20.4 | June 29 | .97 | 28.0 |
| Nov. 7 | .69 | 22.1 | Mar. 10 | .70 | 21.7 | July 7 | .93 | 23.8 |
| Nov. 17 | .67 | 21.0 | Mar. 17 | .76 | 25.3 | July 13 | .92 | 26.1 |
| Nov. 21 | .67 | 20.6 | Mar. 24 | .85 | 30.4 | July 24 | .89 | 23.8 |
| Nov. 26 | .67 | 20.8 | Mar. 29 | .97 | 33.6 | July 30 | .73 | 23.1 |
| Dec. 7 | .71 | 21.6 | Apr. 7 | 1.40 | 86 | Aug. 9 | .76 | 22.8 |
| Dec. 15 | .69 | 21.4 | Apr. 16 | 1.75 | 129 | Aug. 16 | .76 | 22.7 |
| Dec. 24 | .67 | 21.3 | Apr. 21 | 1.90 | 149 | Aug. 25 | .74 | 21.6 |
| Dec. 30 | .67 | 20.9 | Apr. 30 | 2.65 | 250 | Aug. 30 | .75 | 23.5 |
| Jan. 9 | .64 | 20.0 | May 13 | 1.95 | 117 | Sept. 10 | .70 | 21.5 |
| Jan. 16 | .65 | 19.6 | May 20 | 2.00 | 127 | Sept. 18 | .70 | 19.9 |
| Jan. 23 | .66 | 20.1 | May 24 | 1.75 | 108 | Sept. 28 | .71 | 22.7 |
| Jan. 30 | .66 | 20.1 | May 27 | 1.50 | 83 | | | |
| Feb. 11 | .65 | 20.4 | June 3 | 1.24 | 45.7 | | | |

*Daily discharge, in second-feet, of Bright Angel Creek near Grand Canyon, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 20 | 21 | 20 | 22 | 20 | 41 | 236 | 54 | 28 | 24 | 22 |
| 2 | 20 | 23 | 38 | 21 | 20 | 20 | 40 | 207 | 49 | 28 | 24 | 22 |
| 3 | 20 | 21 | 26 | 21 | 20 | 20 | 53 | 204 | 46 | 26 | 22 | 22 |
| 4 | 20 | 24 | 21 | 20 | 20 | 21 | 40 | 201 | 44 | 26 | 23 | 22 |
| 5 | 21 | 26 | 21 | 21 | 20 | 21 | 61 | 235 | 41 | 26 | 22 | 22 |
| 6 | 32 | 22 | 21 | 21 | 20 | 22 | 112 | 235 | 40 | 26 | 23 | 22 |
| 7 | 21 | 22 | 21 | 21 | 20 | 21 | 96 | 229 | 39 | 24 | 23 | 26 |
| 8 | 20 | 22 | 21 | 21 | 20 | 21 | 180 | 204 | 39 | 25 | 23 | 23 |
| 9 | 20 | 22 | 20 | 20 | 20 | 24 | 136 | 184 | 37 | 26 | 22 | 22 |
| 10 | 20 | 22 | 21 | 20 | 20 | 24 | 114 | 157 | 34 | 26 | 22 | 22 |
| 11 | 21 | 22 | 20 | 20 | 20 | 22 | 104 | 131 | 33 | 25 | 22 | 44 |
| 12 | 21 | 22 | 22 | 20 | 21 | 21 | 88 | 120 | 33 | 25 | 22 | 24 |
| 13 | 21 | 21 | 22 | 20 | 24 | 21 | 94 | 117 | 33 | 26 | 22 | 22 |
| 14 | 20 | 21 | 22 | 20 | 26 | 21 | 94 | 112 | 32 | 25 | 22 | 21 |
| 15 | 20 | 21 | 22 | 20 | 21 | 22 | 106 | 111 | 31 | 25 | 22 | 21 |
| 16 | 20 | 21 | 21 | 20 | 24 | 24 | 123 | 107 | 32 | 25 | 22 | 21 |
| 17 | 19 | 21 | 21 | 20 | 22 | 26 | 152 | 116 | 31 | 25 | 21 | 20 |
| 18 | 19 | 20 | 21 | 20 | 21 | 26 | 156 | 123 | 30 | 24 | 22 | 20 |
| 19 | 19 | 20 | 22 | 20 | 21 | 29 | 173 | 127 | 29 | 24 | 21 | 21 |
| 20 | 18 | 20 | 22 | 20 | 20 | 30 | 156 | 127 | 29 | 24 | 21 | 21 |
| 21 | 18 | 20 | 22 | 20 | 21 | 29 | 149 | 123 | 29 | 24 | 21 | 21 |
| 22 | 18 | 19 | 22 | 20 | 21 | 26 | 173 | 122 | 28 | 24 | 21 | 21 |
| 23 | 19 | 20 | 22 | 20 | 20 | 28 | 195 | 116 | 28 | 24 | 21 | 22 |
| 24 | 17 | 21 | 21 | 20 | 21 | 30 | 224 | 112 | 27 | 24 | 21 | 22 |
| 25 | 17 | 21 | 21 | 20 | 21 | 34 | 238 | 102 | 28 | 24 | 20 | 22 |
| 26 | 16 | 20 | 21 | 19 | 20 | 36 | 248 | 94 | 26 | 24 | 20 | 35 |
| 27 | 17 | 21 | 21 | 19 | 20 | 35 | 256 | 85 | 27 | 64 | 20 | 22 |
| 28 | 19 | 20 | 21 | 19 | 20 | 34 | 256 | 77 | 27 | 32 | 22 | 22 |
| 29 | 20 | 21 | 21 | 20 | ------- | 34 | 258 | 69 | 28 | 26 | 22 | 23 |
| 30 | 20 | 20 | 21 | 20 | ------- | 34 | 250 | 64 | 29 | 24 | 21 | 22 |
| 31 | 19 | ------- | 20 | 20 | ------- | 36 | ------- | 60 | ------- | 24 | 22 | ------ |

*Monthly discharge of Bright Angel Creek near Grand Canyon, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 32 | 16 | 19.7 | 1,210 |
| November | 26 | 19 | 21.2 | 1,260 |
| December | 38 | 20 | 21.9 | 1,350 |
| January | 21 | 19 | 20.1 | 1,240 |
| February | 26 | 20 | 20.9 | 1,160 |
| March | 36 | 20 | 26.2 | 1,610 |
| April | 258 | 40 | 146 | 8,690 |
| May | 236 | 60 | 139 | 8,550 |
| June | 50 | 26 | 33.8 | 2,010 |
| July | 64 | 24 | 26.5 | 1,630 |
| August | 24 | 20 | 21.8 | 1,340 |
| September | 44 | 20 | 23.1 | 1,370 |
| The year | 258 | 16 | 43.4 | 31,400 |

## VIRGIN RIVER BASIN

### VIRGIN RIVER AT VIRGIN, UTAH

LOCATION.—In NW. ¼ sec. 27 or NE. ¼ sec. 28, T. 41 S., R. 12 W., a few hundred feet above point where river enters a steep, narrow gorge and three-quarters of a mile west of Virgin, Washington County.

DRAINAGE AREA.—1,010 square miles (measured on topographic map).

RECORDS AVAILABLE.—April 18, 1909, to September 30, 1926; fragmentary. Prior to February, 1915, the station was half a mile above Virgin where the flow is practically the same as at present site.

GAGE.—Chain gage on right bank near lower end of sandstone bluff; read by Lawrence Earl.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge 7 miles below gage.

CHANNEL AND CONTROL.—Bed consists of sand and gravel. Right bank high; left bank low and is overflowed. One channel at all stages. Principal control is a gravel bar a short distance below gage; shifting.

EXTREMES OF DISCHARGE.—Not determined for this year.

1909–1926: Maximum stage recorded, 11.6 feet at upper station October 27, 1912 (discharge estimated, 12,000 second-feet). Minimum discharge, 24 second-feet, July 1, 2, 4, and 5, 1909.

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

DIVERSIONS.—Above all important diversions.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve poorly defined. Gage read to hundredths three or four times a week. Daily discharge ascertained by applying gage height to rating table, using shifting-control method and interpolating or estimating discharge for days when gage was not read. Records poor.

*Discharge measurements of Virgin River at Virgin, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 14 | 2.98 | 137 | June 12 | 2.61 | 93.4 |
| May 7 | 3.34 | 564 | Aug. 31 | 2.45 | 61.5 |

*Daily discharge, in second-feet, of Virgin River at Virgin, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 130 | | | 1,010 | 194 | 84 | 281 | |
| 2 | | | 184 | 130 | | 84 | | 715 | | | | |
| 3 | | 84 | 116 | 165 | 139 | | 242 | 684 | 194 | 73 | | 64 |
| 4 | | | | | | 102 | | | | | | 64 |
| 5 | | | | 139 | | | 1,790 | | 184 | | 84 | 68 |
| 6 | 156 | 79 | 84 | | 123 | 90 | 1,370 | 550 | | | | |
| 7 | | 73 | | | | | 937 | 565 | 148 | | | |
| 8 | | | 84 | | 90 | | 1,010 | | | 130 | | 73 |
| 9 | 51 | | | 130 | | 84 | 609 | | 139 | 139 | | |
| 10 | 60 | 84 | | | | | | 508 | | | 116 | |
| 11 | 60 | | 116 | | 64 | 84 | | 446 | | 84 | | |
| 12 | | 79 | | 130 | 68 | | 466 | | 92 | | 90 | |
| 13 | | | | | 116 | 84 | 508 | | | 79 | | |
| 14 | 64 | 73 | 130 | 123 | | | | 440 | 73 | | | 68 |
| 15 | | | | | | 123 | | 419 | | 64 | | |
| 16 | | | 130 | 139 | 156 | | 508 | | | | 55 | 84 |
| 17 | 64 | 73 | | | | 109 | | | 73 | 90 | | |
| 18 | | | 123 | | 55 | | 624 | 440 | | | 51 | 84 |
| 19 | 55 | 73 | | 116 | | | 639 | | 64 | 90 | | |
| 20 | | | 123 | | 55 | 102 | | 299 | | 84 | 51 | 90 |
| 21 | 51 | 73 | | 116 | | | | | 64 | | | |
| 22 | | | 123 | | 55 | 95 | | 193 | | 68 | 60 | 84 |
| 23 | | 84 | | 130 | | | | | | 60 | | |
| 24 | 55 | | | | | | 494 | | 68 | | 64 | |
| 25 | | 79 | | 109 | 60 | 90 | | 270 | 64 | 60 | | 90 |
| 26 | 55 | | 123 | | | | 762 | | | | | |
| 27 | | | 123 | 95 | 73 | 84 | | 270 | | | | 95 |
| 28 | | 84 | | | | | 794 | | | | 68 | |
| 29 | 51 | 79 | | | | 90 | | 247 | 64 | | | |
| 30 | | 79 | 123 | 90 | | | 609 | | | | 60 | 130 |
| 31 | 51 | | 123 | | | | | | | 130 | 62 | |

*Monthly discharge of Virgin River at Virgin, Utah, for the year ending September 30, 1926*

| Month | Run-off in acre-feet | Month | Run-off in acre-feet | Month | Run-off in acre-feet |
|---|---|---|---|---|---|
| October | 4,270 | March | 5,780 | August | 5,360 |
| November | 4,930 | April | 39,000 | September | 5,340 |
| December | 7,260 | May | 26,600 | | |
| January | 7,550 | June | 6,130 | The year | 123,000 |
| February | 5,050 | July | 5,870 | | |

### MUKUNTUWEAP RIVER [2] NEAR SPRINGDALE, UTAH

LOCATION.—Near center of sec. 15, T. 41 S., R. 10 W., 200 feet above highway bridge half a mile north of south entrance to Zion National Park, 3 miles northeast of Springdale, Washington County, and 5 miles above confluence with Virgin River.

DRAINAGE AREA.—Not determined.

RECORDS AVAILABLE.—June 6 to November 6, 1923, and April 24, 1925, to September 30, 1926, fragmentary.

GAGE.—Vertical staff on left bank, read by R. T. Evans and E. H. Husman.

DISCHARGE MEASUREMENTS.—Made by wading or from suspension footbridge 3 miles above gage.

[2] Formerly called Zion Creek.

CHANNEL AND CONTROL.—Bed of stream composed of sand, gravel, and large boulders. Banks high and not subject to overflow; sparse growth of willows; one channel at all stages. Control is boulder riffle at head of rather steep section of channel; shifts occasionally.

ICE.—None.

DIVERSIONS.—Two small canals with combined capacity of about 4 second-feet divert a short distance above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed the first part of April and again during the last part of July. Rating curves fairly well defined. Gage read to hundredths three or four times a week. Daily discharge ascertained by applying mean daily gage height to rating table. Discharge estimated or interpolated for days of missing gage heights. Records fair except for estimated days of sudden floods, which may be poor.

*Discharge measurements of Mukuntuweap River near Springdale, Utah, during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 14 | 4.43 | 45.6 | June 12 | 4.64 | 83.8 |
| May 6 | 6.05 | 460 | Aug. 31 | 4.24 | 43.9 |

*Daily discharge, in second-feet, of Mukuntuweap River near Springdale, Utah, for for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 67 | | 60 | | 53 | 60 | 113 | 520 | | 62 | 56 | 43 |
| 2 | 66 | | 194 | | 54 | 62 | 113 | | 125 | 60 | 56 | 43 |
| 3 | 66 | 55 | 100 | | 63 | 64 | 122 | 490 | | 58 | 57 | 43 |
| 4 | 75 | | 75 | | 53 | 66 | 448 | | 119 | 58 | 54 | 43 |
| 5 | 150 | 49 | 73 | 52 | 53 | 70 | 480 | | | 60 | 52 | 43 |
| 6 | 250 | | 66 | | 53 | 75 | 660 | 460 | | 56 | 60 | 44 |
| 7 | 88 | | | | 60 | 80 | 660 | 480 | 106 | 60 | 55 | 62 |
| 8 | 66 | 53 | | | 62 | 100 | 610 | 440 | | 53 | 65 | 55 |
| 9 | | | 58 | 51 | 73 | 150 | 710 | 402 | | 52 | 75 | 48 |
| 10 | | | | | 67 | 80 | 635 | 402 | 93 | 51 | 52 | 48 |
| | 75 | | | | | | | | | | | |
| 11 | | 57 | 51 | | 64 | | 450 | 332 | 88 | 50 | 51 | 75 |
| 12 | | | 52 | 52 | 60 | | 242 | 300 | 84 | 49 | 51 | 54 |
| 13 | 91 | | 53 | | 65 | | 290 | 300 | | 48 | 50 | 50 |
| 14 | 82 | | 45 | | 70 | | 332 | 300 | | 46 | 50 | 49 |
| 15 | 74 | 55 | | | 74 | | 350 | 290 | | 45 | 75 | 48 |
| | | | | | | 85 | | | | | | |
| 16 | 83 | | 49 | 53 | | | 366 | 280 | 74 | 45 | 55 | 48 |
| 17 | 80 | 53 | | | 70 | | 366 | 275 | | 45 | 52 | 48 |
| 18 | 53 | 53 | | | | | 402 | 216 | | 45 | 50 | 48 |
| 19 | 51 | 53 | | 51 | 66 | | 366 | 216 | | 46 | 50 | 48 |
| 20 | 60 | 54 | 53 | | 66 | 113 | 420 | 216 | 63 | 44 | 50 | 47 |
| 21 | 60 | 56 | | | 66 | 60 | 480 | 200 | 62 | 43 | 50 | 48 |
| 22 | 73 | 57 | | 49 | 66 | 53 | 480 | 192 | 62 | 43 | 49 | 48 |
| 23 | 66 | | 53 | | | | 480 | 192 | 60 | 43 | 48 | 48 |
| 24 | 66 | | | | 64 | 57 | 520 | 192 | 58 | 42 | 48 | 48 |
| 25 | | 55 | 53 | | | | 500 | 180 | 57 | 42 | 47 | 58 |
| 26 | | | 53 | 50 | 61 | 61 | 480 | 169 | 56 | 75 | | 68 |
| 27 | | | 53 | | 61 | 58 | 520 | 158 | 54 | 52 | 47 | 51 |
| 28 | 60 | 53 | 53 | | 60 | 54 | 520 | 148 | 53 | 90 | | 48 |
| 29 | | 53 | 53 | | | 52 | 565 | 138 | 56 | 57 | | 75 |
| 30 | | 53 | 53 | 52 | | 51 | 542 | 135 | 63 | 58 | 47 | 60 |
| 31 | | | 53 | 52 | | 75 | | 132 | | 56 | 43 | |

NOTE.—Sudden floods and discharge estimated Oct. 6, July 26, 28, Aug. 6, 15, Sept. 11, and 29. Braced figures gives estimated mean discharge for periods indicated.

*Monthly discharge of Mukuntuweap River near Springdale, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | | | 77.0 | 4,730 |
| November | | | 54.2 | 3,230 |
| December | | | 60.7 | 3,730 |
| January | | | 51.3 | 3,150 |
| February | | 53 | 63.3 | 3,520 |
| March | | | 74.8 | 4,600 |
| April | 710 | 113 | 441 | 26,200 |
| May | 520 | 132 | 298 | 18,300 |
| June | | 53 | 81.7 | 4,860 |
| July | | 42 | 52.7 | 3,240 |
| August | | 43 | 52.8 | 3,250 |
| September | | 43 | 51.3 | 3,050 |
| The year | 710 | 42 | 113 | 81,900 |

### SANTA CLARA CREEK NEAR CENTRAL, UTAH

LOCATION.—In sec. 11, T. 39 S., R. 16 W., just above bridge at R. H. Hunt ranch, 1 mile southeast of Central, Washington County, on road to Pine Valley. Hunts Spring, which has fairly constant discharge of about 3 second-feet, enters 40 feet below gage.

DRAINAGE AREA.—84 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 21, 1909, to September 30, 1926.

GAGE.—Vertical enamel staff nailed to cottonwood tree on left bank about 50 feet above bridge; read by Mrs. R. H. Hunt.

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

CHANNEL AND CONTROL.—Stream bed consists of gravel and sand. Banks fairly high but may be overflowed at extreme stages; one channel at all stages. A riffle formed by small boulders 40 feet below gage is fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.00 feet at 4 p. m. April 19 (discharge, 105 second-feet); minimum stage recorded, 0.96 foot January 7, 9, 11, and 19 (discharge, 4 second-feet).

1909–1926: Maximum stage recorded, 5.00 feet at 11 a. m. October 6, 1916 (discharge, 1,450 second-feet); minimum discharge, 4 second-feet January 8, 1920, and January 6–11 and 19, 1926.

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

DIVERSIONS.—The New Castle Reclamation Co. has a reservoir on Grass Valley Creek. Water is diverted into reservoir from Santa Clara Creek above town of Pine Valley and when available is exchanged for direct flow diverted into a tunnel through rim of the Great Basin for irrigation of lands outside the Colorado River Basin. The Central Canal diverts water about 2 miles above station for irrigation of lands near Central. This canal has been measured when it was carrying 16 second-feet.

REGULATION.—Flow affected by the diversions and storage above.

ACCURACY.—Stage-discharge relation shifted slightly during high water. Rating curves fairly well defined. Gage read to hundredths once daily three or four days a week. Daily discharge ascertained by applying daily gage height to rating table and interpolating discharge for days when gage was not read. Records fair.

The following discharge measurements were made:

December 13, 1925: Gage height, 1.15 feet; discharge, 9.2 second-feet.

May 6, 1926: Gage height, 1.64 feet; discharge, 46.4 second-feet.

June 11, 1926: Gage height, 1.24 feet; discharge, 16.6 second-feet.

*Daily discharge, in second-feet, of Santa Clara Creek near Central, Utah, for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7 | 11 | 10 | 6 | 5 | 7 | 10 | 39 | 15 | 12 | 9 | 8 |
| 2 | 7 | 17 | 10 | 6 | 5 | 7 | 11 | 41 | 15 | 12 | 9 | 8 |
| 3 | 7 | 13 | 11 | 6 | 5 | 6 | 12 | 43 | 14 | 12 | 9 | 8 |
| 4 | 7 | 13 | 11 | 5 | 6 | 11 | 15 | 44 | 15 | 12 | 9 | 8 |
| 5 | 17 | 13 | 11 | 5 | 6 | 9 | 17 | 45 | 23 | 12 | 9 | 8 |
| 6 | 23 | 13 | 11 | 4 | 6 | 7 | 93 | 47 | 20 | 13 | 9 | 8 |
| 7 | 20 | 12 | 10 | 4 | 6 | 5 | 75 | 20 | 18 | 13 | 9 | 8 |
| 8 | 16 | 11 | 10 | 4 | 6 | 7 | 62 | 31 | 16 | 12 | 9 | 8 |
| 9 | 13 | 12 | 10 | 4 | 6 | 7 | 43 | 27 | 18 | 12 | 9 | 8 |
| 10 | 12 | 11 | 10 | 4 | 6 | 7 | 31 | 23 | 17 | 11 | 9 | 8 |
| 11 | 15 | 12 | 10 | 4 | 6 | 7 | 31 | 23 | 15 | 10 | 9 | 8 |
| 12 | 15 | 11 | 10 | 5 | 6 | 7 | 31 | 23 | 15 | 9 | 9 | 8 |
| 13 | 15 | 12 | 10 | 5 | 6 | 7 | 31 | 20 | 14 | 10 | 9 | 8 |
| 14 | 14 | 11 | 10 | 5 | 6 | 8 | 31 | 15 | 13 | 10 | 8 | 8 |
| 15 | 14 | 12 | 9 | 5 | 5 | 12 | 32 | 20 | 13 | 9 | 8 | 8 |
| 16 | 14 | 11 | 9 | 5 | 5 | 10 | 34 | 25 | 13 | 9 | 8 | 8 |
| 17 | 14 | 11 | 10 | 5 | 6 | 8 | 34 | 29 | 14 | 9 | 8 | 8 |
| 18 | 13 | 11 | 10 | 5 | 8 | 8 | 50 | 35 | 15 | 9 | 8 | 8 |
| 19 | 13 | 10 | 10 | 4 | 8 | 7 | 105 | 39 | 15 | 9 | 7 | 8 |
| 20 | 13 | 10 | 7 | 5 | 7 | 7 | 43 | 52 | 14 | 9 | 7 | 8 |
| 21 | 13 | 11 | 6 | 5 | 7 | 7 | 43 | 43 | 13 | 9 | 7 | 8 |
| 22 | 13 | 10 | 5 | 5 | 7 | 7 | 48 | 37 | 12 | 9 | 7 | 8 |
| 23 | 12 | 10 | 5 | 5 | 7 | 8 | 54 | 36 | 12 | 9 | 7 | 8 |
| 24 | 11 | 10 | 6 | 5 | 6 | 8 | 54 | 31 | 12 | 9 | 7 | 8 |
| 25 | 13 | 10 | 6 | 5 | 7 | 8 | 54 | 28 | 12 | 9 | 7 | 8 |
| 26 | 12 | 10 | 6 | 5 | 7 | 7 | 54 | 23 | 12 | 10 | 6 | 8 |
| 27 | 11 | 10 | 6 | 5 | 7 | 7 | 43 | 22 | 12 | 12 | 6 | 8 |
| 28 | 11 | 10 | 6 | 5 | 7 | 7 | 42 | 20 | 12 | 9 | 6 | 8 |
| 29 | 11 | 11 | 6 | 5 | ------- | 9 | 41 | 18 | 12 | 9 | 6 | 8 |
| 30 | 11 | 10 | 6 | 5 | ------- | 9 | 41 | 18 | 12 | 9 | 6 | 8 |
| 31 | 11 | ------- | 6 | 5 | ------- | 10 | ------- | 17 | ------- | 9 | 7 | ------- |

*Monthly discharge of Santa Clara Creek near Central, Utah, for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 23 | 7 | 12.8 | 787 |
| November | 17 | 10 | 11.3 | 672 |
| December | 11 | 5 | 8.5 | 523 |
| January | 6 | 4 | 4.9 | 301 |
| February | 8 | 5 | 6.2 | 344 |
| March | 12 | 5 | 7.7 | 473 |
| April | 105 | 10 | 42.2 | 2,510 |
| May | 52 | 15 | 30.1 | 1,850 |
| June | 23 | 12 | 14.4 | 857 |
| July | 13 | 9 | 10.2 | 627 |
| August | 9 | 6 | 7.8 | 480 |
| September | 8 | 8 | 8.0 | 476 |
| The year | 105 | 4 | 13.7 | 9,900 |

## GILA RIVER BASIN

### GILA RIVER NEAR DUNCAN, ARIZ.

LOCATION.—In SE. ¼ sec. 18, T. 19 S., R. 20 W. New Mexico principal meridian, in New Mexico, 1¾ miles below intake of Sunset Canal, 9 miles east of Arizona-New Mexico State line, and 14 miles east of Duncan, Greenlee County, Ariz.

DRAINAGE AREA.—3,280 square miles (measured on topographic map).

RECORDS AVAILABLE.—Discharge measurements only, January 10, 1923, to September 30, 1926. Miscellaneous measurements were made near this point from April 24 to November 21, 1922. Recording gage station 2 miles upstream maintained May 1, 1914, to September 30, 1915.

GAGE.—None.

DISCHARGE MEASUREMENTS.—Made by wading near road crossing from old town of San Antonio.

CHANNEL AND CONTROL.—Bed composed of sand and silt. Banks not well defined; subject to overflow. No well-defined control.

DIVERSIONS.—Station is above diversions for irrigation in Duncan Valley, except Sunset Canal, which diverts water 1¾ miles above station for irrigating 1,800 acres. About 3,500 acres are irrigated from Gila River above Duncan Valley.

REGULATION.—None except by diversions for irrigation.

ACCURACY.—No gage heights obtained. Discharge measurements only. Records show inflow to Duncan Valley, except for water diverted by Sunset Canal.

*Discharge measurements of Gila River near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| | *Sec.-ft.* | | *Sec.-ft.* | | *Sec.-ft.* |
| Oct. 1 | 79 | Feb. 6 | 66 | Aug. 10 | 15.1 |
| Nov. 4 | 81 | Mar. 5 | 62 | Aug. 30 | 1.7 |
| Dec. 1 | 84 | June 26 | 2.9 | Sept. 21 | 36.4 |
| Jan. 5 | 94 | July 19 | 45.2 | | |

### GILA RIVER AT YORK, ARIZ.

LOCATION.—In SE. ¼ sec. 19, T. 6 S., R. 31 E., below all canal headings in Duncan Valley, at York, Greenlee County.

DRAINAGE AREA.—3,920 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 15, 1923, to September 30, 1926. Discharge measurements only. Miscellaneous measurements made near this point April 26 and July 19, 1922.

GAGE.—None.

DISCHARGE MEASUREMENTS.—Made by wading near road crossing.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Banks well defined, not subject to overflow. No well-defined control.

DIVERSIONS.—About 11,500 acres are irrigated from Gila River above this station. Water for about 8,000 acres diverted by Duncan Valley canals.

REGULATION.—None except by diversions for irrigation.

ACCURACY.—No gage heights obtained. Discharge measurements only. Records show outflow from Duncan Valley, below all diversions.

*Discharge measurements of Gila River at York, Ariz., during the year ending September 30, 1926*

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| | *Sec.-ft.* | | *Sec.-ft.* | | *Sec.-ft.* |
| Oct. 4 | 54 | Jan. 6 | 133 | Aug. 12 | 36.3 |
| Nov. 5 | 107 | Feb. 7 | 77 | Aug. 30 | 8.8 |
| Dec. 2 | 72 | Mar. 7 | 82 | Sept. 22 | 25.5 |

### GILA RIVER NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In NE. ¼ sec. 31, T. 6 S., R. 28 E., 1 mile below intake of Brown Canal and 10 miles east of Solomonsville, Graham County. San Francisco River enters from right 10 miles upstream.

DRAINAGE AREA.—7,910 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 21, 1914, to September 30, 1926.

GAGE.—Water-stage recorder on left bank, directly opposite J. W. Earven ranch; inspected by J. W. Earven.

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

CHANNEL AND CONTROL.—Bed composed of gravel, sand, and silt. Left bank high and not subject to overflow. Right bank low and may be overflowed during large floods. Gravel riffle 500 feet downstream from gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 4.58 feet at 1.30 a. m. April 7 (discharge, 5,660 second-feet); minimum stage, from water-stage recorder, 1.08 feet at 5.30 p. m. September 6 (discharge, 57 second-feet).

1914–1926: Maximum stage, determined from floodmarks on gage, 14.0 feet January 19, 1916 (discharge, about 100,000 second-feet from extension of rating curve); minimum discharge, 26 second-feet July 4, 1923.

DIVERSIONS.—Station is above diversions for irrigation in Safford Valley, except Brown Canal which diverts water 1 mile above station for irrigating 820 acres. Brown Canal wasteway returns some water to river below this station. About 14,000 acres is irrigated from Gila River and tributaries above Safford Valley.

REGULATION.—None except by diversions for irrigation.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 10,000 second-feet and extended above. Operation of water-stage recorder satisfactory except for a few short periods. Daily discharge ascertained by applying mean daily gage height to rating table, except as shown in footnote to table of daily discharge; shifting-control method used for the entire year. For days of considerable range in stage daily discharge determined from hourly discharge. Records good.

*Discharge measurements of Gila River near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 3 | 1.21 | 136 | Mar. 24 | 1.64 | 318 | July 17 | 1.31 | 129 |
| Nov. 11 | 1.54 | 221 | Apr. 16 | 2.97 | 1,940 | Aug. 8 | 1.52 | 175 |
| Dec. 12 | 1.47 | 214 | Apr. 18 | 2.90 | 1,600 | Aug. 28 | 1.14 | 67 |
| Jan. 12 | 1.57 | 223 | May 9 | 2.86 | 1,460 | Sept. 19 | 1.50 | 182 |
| Feb. 4 | 1.42 | 187 | May 29 | 1.92 | 389 | | | |
| Mar. 1 | 1.19 | 122 | June 23 | 1.10 | 91 | | | |

*Daily discharge, in second-feet, of Gila River near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 133 | 278 | 160 | 204 | 175 | 122 | 2,060 | 1,700 | 321 | 82 | 630 | 64 |
| 2 | 125 | 266 | 160 | 321 | 186 | 125 | 1,800 | 1,530 | 289 | 82 | 460 | 64 |
| 3 | 133 | 255 | 214 | 321 | 190 | 131 | 1,610 | 1,450 | 261 | 82 | 278 | 60 |
| 4 | 136 | 249 | 272 | 368 | 186 | 136 | 1,530 | 1,580 | 228 | 80 | 200 | 60 |
| 5 | 136 | 238 | 224 | 382 | 186 | 147 | 1,450 | 1,480 | 219 | 102 | 145 | 60 |
| 6 | 139 | 226 | 224 | 321 | 179 | 382 | 1,640 | 1,450 | 204 | 139 | 115 | 58 |
| 7 | 133 | 215 | 224 | 289 | 179 | 730 | 4,380 | 1,660 | 190 | 131 | 123 | 58 |
| 8 | 128 | 204 | 214 | 266 | 179 | 560 | 3,030 | 1,660 | 183 | 118 | 149 | 60 |
| 9 | 120 | 209 | 204 | 255 | 175 | 512 | 2,840 | 1,480 | 168 | 105 | 118 | 63 |
| 10 | 880 | 219 | 200 | 244 | 172 | 478 | 2,470 | 1,290 | 147 | 98 | 122 | 752 |
| 11 | 1,400 | 219 | 200 | 233 | 172 | 590 | 2,140 | 1,260 | 136 | 105 | 373 | 672 |
| 12 | 478 | 219 | 214 | 224 | 172 | 600 | 1,820 | 1,230 | 125 | 433 | 543 | 340 |
| 13 | 600 | 219 | 214 | 214 | 164 | 530 | 1,980 | 1,090 | 122 | 396 | 278 | 334 |
| 14 | 650 | 200 | 209 | 209 | 153 | 452 | 2,080 | 958 | 115 | 261 | 373 | 228 |
| 15 | 550 | 200 | 204 | 209 | 153 | 405 | 2,050 | 834 | 110 | 190 | 347 | 179 |
| 16 | 550 | 204 | 200 | 204 | 160 | 368 | 2,030 | 756 | 108 | 157 | 659 | 147 |
| 17 | 550 | 200 | 200 | 200 | 160 | 360 | 1,940 | 675 | 105 | 122 | 398 | 169 |
| 18 | 540 | 190 | 195 | 200 | 157 | 347 | 1,660 | 620 | 102 | 108 | 272 | 219 |
| 19 | 478 | 186 | 195 | 200 | 157 | 334 | 1,580 | 560 | 102 | 96 | 186 | 186 |
| 20 | 428 | 186 | 195 | 200 | 153 | 314 | 1,460 | 494 | 96 | 85 | 153 | 147 |
| 21 | 375 | 179 | 200 | 195 | 147 | 314 | 1,430 | 469 | 96 | 133 | 136 | 131 |
| 22 | 340 | 168 | 195 | 190 | 145 | 354 | 1,380 | 412 | 93 | 105 | 118 | 115 |
| 23 | 334 | 164 | 186 | 186 | 147 | 334 | 1,270 | 360 | 91 | 115 | 102 | 112 |
| 24 | 347 | 164 | 186 | 183 | 139 | 328 | 1,260 | 328 | 87 | 485 | 100 | 105 |
| 25 | 360 | 195 | 183 | 183 | 136 | 321 | 1,320 | 328 | 87 | 817 | 87 | 102 |
| 26 | 375 | 190 | 183 | 179 | 133 | 553 | 1,400 | 321 | 87 | 476 | 74 | 118 |
| 27 | 363 | 179 | 186 | 179 | 131 | 1,040 | 1,370 | 368 | 89 | 494 | 71 | 482 |
| 28 | 352 | 168 | 186 | 179 | 125 | 249 | 1,400 | 412 | 85 | 412 | 67 | 368 |
| 29 | 340 | 168 | 183 | 179 | ------- | 1,580 | 1,730 | 390 | 85 | 340 | 65 | 302 |
| 30 | 319 | 160 | 190 | 179 | ------- | 3,930 | 1,940 | 375 | 85 | 488 | 65 | 266 |
| 31 | 299 | ------- | 219 | 175 | ------- | 2,710 | ------- | 347 | ------- | 412 | 65 | ------ |

NOTE.—Recorder clock not running Oct. 13–17, 27–31, Nov. 5–7, and 12. Staff gage read Oct. 29. Discharge for period Oct. 13–17 estimated from recorded range in stage and by comparison with record of Gila River near San Carlos. Discharge interpolated Oct. 27–28, 30–31, Nov. 5–7, and 12.

*Monthly discharge of Gila River near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 1,400 | 120 | 390 | 24,000 |
| November | 278 | 160 | 204 | 12,100 |
| December | 272 | 160 | 201 | 12,400 |
| January | 382 | 175 | 228 | 14,000 |
| February | 190 | 125 | 161 | 8,940 |
| March | 3,930 | 122 | 624 | 38,400 |
| April | 4,380 | 1,260 | 1,870 | 111,000 |
| May | 1,700 | 321 | 899 | 55,300 |
| June | 321 | 85 | 141 | 8,390 |
| July | 817 | 80 | 234 | 14,400 |
| August | 659 | 65 | 222 | 13,600 |
| September | 752 | 58 | 201 | 12,000 |
| The year | 4,380 | 58 | 448 | 325,000 |

### GILA RIVER NEAR ASHURST, ARIZ.

LOCATION.—In sec. 30, T. 5 S., R. 24 E., below all canal headings in Safford Valley and 1½ miles southeast of Ashurst, Graham County.

RECORDS AVAILABLE.—December 24, 1920, to September 30, 1926.

DIVERSIONS.—About 38,000 acres is irrigated from Gila River and tributaries above this station.

*Discharge measurements of Gila River near Ashurst, Ariz., during the year ending September 30, 1926*

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| | *Sec.-ft.* | | *Sec.-ft.* | | *Sec.-ft.* |
| Oct. 2 | 27.8 | Feb. 26 | 4.4 | Aug. 9 | 2.4 |
| Nov. 14 | 49.7 | Mar. 23 | 8.7 | Aug. 26 | 1.0 |
| Dec. 14 | 52 | May 27 | 3.5 | Sept. 18 | 3.3 |
| Jan. 10 | 153 | June 29 | 3.5 | | |
| Feb. 5 | 30.5 | July 16 | 4.2 | | |

### GILA RIVER NEAR SAN CARLOS, ARIZ.

LOCATION.—In T. 3 S., R. 18 E., unsurveyed, half a mile above San Carlos dam site on San Carlos Indian Reservation and 6½ miles west of San Carlos.

RECORDS AVAILABLE.—April 29, 1914, to September 30, 1925. July 11, 1899, to November 27, 1905, at point half a mile south of San Carlos and below San Carlos River. August 17, 1910, to February 5, 1911, at point just below Arizona Eastern Railroad bridge and half a mile above San Carlos River.

GAGE.—Water-stage recorder installed July 3, 1924, on right bank.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 11.9 feet at 10.30 p. m. April 6 (discharge, 9,960 second-feet): no flow July 8–10, August 31, and September 3–10.

1914–1926: Maximum stage, 25.5 feet January 20, 1916 (discharge estimated, 130,000 second-feet); minimum discharge, no flow June 28 to July 1, 1919, and July 8–10, August 31, September 3–10, 1926.

DIVERSIONS.—About 38,000 acres is irrigated from Gila River and tributaries above this station.

ACCURACY.—Stage-discharge relation not permanent; probably fairly permanent for high stages but changed for low stages by each flood. Daily discharge ascertained by shifting-control method. Records good.

Records of discharge for certain high-water periods in the years ending September 30, 1915 and 1916, revised on basis of a comparison, by means of hydrographs, of discharge at the San Carlos station with the discharge at the stations on Gila River near Solomonsville and at Kelvin, are given in the table on page 90. The revised records for the Kelvin station, published in this report and based on discharge measurements of the flood in 1926, were used in revising the records for the San Carlos station.

*Discharge measurements of Gila River near San Carlos, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 10 | 3.44 | 187 | Mar. 30 | 8.96 | 3,750 | July 21 | 1.48 | 0.5 |
| Dec. 9 | 3.54 | 271 | Apr. 1 | 7.89 | 2,340 | Aug. 3 | 3.08 | 74 |
| Jan. 10 | 3.80 | 303 | Apr. 13 | 7.47 | 1,920 | Aug. 13 | 2.28 | 26.5 |
| Jan. 14 | 3.70 | 280 | Apr. 19 | 7.07 | 1,760 | Aug. 24 | 2.31 | 5.5 |
| Feb. 2 | 3.33 | 196 | May 6 | 5.87 | 1,500 | Sept. 1 | 2.17 | .8 |
| Feb. 9 | 2.86 | 107 | May 14 | 5.00 | 570 | Sept. 14 | 2.72 | 61 |
| Feb. 24 | 2.53 | 56 | May 25 | 3.00 | 92 | Sept. 24 | 1.74 | .7 |
| Mar. 2 | 2.42 | 47.4 | June 29 | 1.74 | .4 | Sept. 27 | 4.98 | 563 |
| Mar. 20 | 3.04 | 113 | July 13 | 1.96 | 15.3 | Sept. 28 | 4.27 | 347 |
| Mar. 29 | 8.12 | 3,430 | | | | | | |

*Revised daily discharge, in second-feet, of Gila River near San Carlos, Ariz., for high-water periods in the years ending September 30, 1915 and 1916*

| Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|---|---|
| 1914 | | 1915 | | 1915 | | 1916 | |
| Dec. 19 | 12,500 | Jan. 12 | 1,000 | Feb. 7 | 3,700 | Jan. 18 | 25,000 |
| Dec. 20 | 35,000 | Jan. 13 | 900 | Feb. 8 | 2,500 | Jan. 19 | 46,000 |
| Dec. 21 | 32,000 | Jan. 14 | 900 | Feb. 9 | 2,200 | Jan. 20 | 100,000 |
| Dec. 22 | 27,000 | Jan. 15 | 870 | Feb. 10 | 1,800 | Jan. 21 | 57,000 |
| Dec. 23 | 32,000 | Jan. 16 | 850 | Feb. 11 | 1,500 | Jan. 22 | 25,000 |
| Dec. 24 | 31,000 | Jan. 17 | 800 | Feb. 12 | 2,200 | Jan. 23 | 10,000 |
| Dec. 25 | 24,000 | Jan. 18 | 800 | Feb. 13 | 2,800 | Jan. 24 | 7,500 |
| Dec. 26 | 17,500 | Jan. 19 | 750 | Feb. 14 | 3,500 | Jan. 25 | 6,000 |
| Dec. 27 | 13,000 | Jan. 20 | 750 | Feb. 15 | 3,000 | Jan. 26 | 7,000 |
| Dec. 28 | 9,000 | Jan. 21 | 750 | Feb. 16 | 2,500 | Jan. 27 | 12,000 |
| Dec. 29 | 8,500 | Jan. 22 | 750 | Feb. 17 | 2,000 | Jan. 28 | 15,000 |
| Dec. 30 | 6,000 | Jan. 23 | 700 | Feb. 18 | 2,000 | Jan. 29 | 23,000 |
| Dec. 31 | 4,500 | Jan. 24 | 700 | Feb. 19 | 2,800 | Jan. 30 | 18,000 |
| | | Jan. 25 | 700 | Feb. 20 | 7,500 | Feb. 25 | 3,000 |
| 1915 | | Jan. 26 | 700 | Feb. 21 | 12,000 | Feb. 26 | 2,800 |
| Jan. 1 | 4,500 | Jan. 27 | 700 | Feb. 22 | 10,000 | Feb. 27 | 2,500 |
| Jan. 2 | 3,000 | Jan. 28 | 700 | Feb. 23 | 7,000 | Feb. 28 | 2,700 |
| Jan. 3 | 2,800 | Jan. 29 | 10,000 | Feb. 24 | 5,000 | Feb. 29 | 3,300 |
| Jan. 4 | 2,500 | Jan. 30 | 25,000 | Feb. 25 | 4,000 | Mar. 1 | 4,000 |
| Jan. 5 | 2,300 | Jan. 31 | 32,000 | Feb. 26 | 3,500 | Mar. 2 | 4,700 |
| Jan. 6 | 2,000 | Feb. 1 | 20,000 | Feb. 27 | 3,300 | Mar. 3 | 3,900 |
| Jan. 7 | 1,800 | Feb. 2 | 10,000 | Feb. 28 | 3,000 | Mar. 20 | 1,600 |
| Jan. 8 | 1,600 | Feb. 3 | 8,000 | | | Mar. 21 | 1,500 |
| Jan. 9 | 1,500 | Feb. 4 | 7,000 | 1916 | | Mar. 22 | 1,500 |
| Jan. 10 | 1,300 | Feb. 5 | 6,000 | Jan. 16 | 3,500 | Mar. 23 | 2,000 |
| Jan. 11 | 1,200 | Feb. 6 | 5,000 | Jan. 17 | 15,000 | Mar. 24 | 3,500 |

NOTE.—Discharge for periods given in the above table supersede the records published in Water-Supply Papers 409 and 439.

*Daily discharge, in second-feet, of Gila River near San Carlos, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 99 | 232 | 182 | 224 | 165 | 51 | 2,470 | 1,740 | 58 | 1 | 36 | 1 |
| 2 | 88 | 241 | 189 | 268 | 176 | 46 | 1,930 | 1,670 | 53 | 1 | 44 | 1 |
| 3 | 77 | 226 | 241 | 337 | 151 | 48 | 1,670 | 1,570 | 47 | 1 | 55 | 0 |
| 4 | 73 | 209 | 414 | 448 | 151 | 48 | 1,540 | 1,450 | 48 | 1 | 61 | 0 |
| 5 | 70 | 195 | 288 | 442 | 147 | 53 | 1,480 | 1,320 | 42 | 1 | 41 | 0 |
| 6 | 65 | 189 | 286 | 406 | 139 | 144 | 3,200 | 1,380 | 36 | 1 | 60 | 0 |
| 7 | 60 | 178 | 280 | 361 | 123 | 191 | 6,250 | 1,370 | 34 | 1 | 69 | 0 |
| 8 | 57 | 168 | 271 | 313 | 110 | 273 | 4,470 | 1,400 | 30 | 0 | 36 | 0 |
| 9 | 54 | 168 | 256 | 300 | 99 | 283 | 4,340 | 1,310 | 28 | 0 | 29 | 0 |
| 10 | 53 | 174 | 245 | 288 | 96 | 298 | 3,040 | 1,200 | 27 | 0 | 23 | 0 |
| 11 | 307 | 158 | 247 | 293 | 93 | 421 | 2,460 | 984 | 24 | 488 | 63 | 56 |
| 12 | 792 | 152 | 243 | 296 | 90 | 346 | 2,170 | 818 | 21 | 100 | 185 | 319 |
| 13 | 466 | 134 | 243 | 288 | 87 | 296 | 1,830 | 676 | 20 | 15 | 35 | 94 |
| 14 | 488 | 127 | 241 | 268 | 84 | 254 | 1,890 | 573 | 18 | 8 | 39 | 59 |
| 15 | 587 | 116 | 239 | 256 | 81 | 224 | 2,180 | 530 | 16 | 3 | 103 | 106 |
| 16 | 448 | 132 | 228 | 247 | 78 | 191 | 2,110 | 427 | 14 | 1 | 228 | 50 |
| 17 | 448 | 135 | 228 | 226 | 75 | 142 | 1,880 | 355 | 14 | 1 | 222 | 43 |
| 18 | 454 | 127 | 226 | 230 | 72 | 118 | 1,830 | 273 | 12 | 1 | 167 | 22 |
| 19 | 427 | 129 | 219 | 239 | 69 | 110 | 1,750 | 203 | 12 | 1 | 110 | 15 |
| 20 | 389 | 108 | 226 | 228 | 66 | 109 | 1,530 | 161 | 9 | 2 | 75 | 10 |
| 21 | 389 | 95 | 222 | 232 | 63 | 121 | 1,350 | 131 | 8 | 1 | 45 | 7 |
| 22 | 329 | 91 | 236 | 224 | 60 | 98 | 1,250 | 110 | 6 | 8 | 25 | 4 |
| 23 | 308 | 88 | 219 | 209 | 57 | 88 | 1,120 | 103 | 4 | 1 | 11 | 2 |
| 24 | 300 | 108 | 211 | 205 | 54 | 88 | 963 | 95 | 2 | 1 | 3 | 1 |
| 25 | 303 | 155 | 203 | 203 | 53 | 95 | 903 | 88 | 2 | 1 | 2 | 5 |
| 26 | 303 | 191 | 219 | 213 | 52 | 134 | 887 | 91 | 1 | 236 | 1 | 530 |
| 27 | 288 | 142 | 230 | 193 | 52 | 139 | 903 | 91 | 1 | 406 | 1 | 727 |
| 28 | 276 | 152 | 209 | 185 | 51 | 546 | 919 | 77 | 1 | 237 | 1 | 415 |
| 29 | 264 | 158 | 209 | 172 | ------- | 2,180 | 959 | 71 | 1 | 98 | 1 | 288 |
| 30 | 254 | 168 | 222 | 158 | ------- | 4,000 | 1,500 | 82 | 1 | 89 | 1 | 222 |
| 31 | 241 | ------- | 219 | 149 | ------- | 3,760 | ------- | 65 | ------- | 37 | 0 | ------ |

NOTE.—Discharge interpolated because of faulty gage-height record Feb. 10–23, Aug. 19–23, and Sept. 19–23.

*Monthly discharge of Gila River near San Carlos, Ariz., for the years ending September 30, 1915, 1916, and 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| 1914–15 | | | | |
| October | 6,150 | 116 | 1,170 | 71,900 |
| November | 3,220 | 250 | 781 | 46,500 |
| December | 35,000 | 490 | 8,420 | 518,000 |
| January | 32,000 | 700 | 3,380 | 208,000 |
| February | 20,000 | 1,500 | 5,140 | 285,000 |
| March | | | 3,570 | 220,000 |
| April | | | 3,870 | 230,000 |
| May | | | 1,130 | 69,500 |
| June | | | 193 | 11,500 |
| July | | | 907 | 55,800 |
| August | | | 500 | 30,700 |
| September | 620 | 57 | 267 | 15,900 |
| The year | 35,000 | | 2,440 | 1,760,000 |
| 1915–16 | | | | |
| October | 164 | 26 | 66.7 | 4,100 |
| November | 134 | 26 | 71.5 | 4,250 |
| December | 387 | 130 | 222 | 13,600 |
| January | 100,000 | 387 | 12,600 | 777,000 |
| February | 9,010 | 2,140 | 3,290 | 189,000 |
| March | 5,210 | 1,500 | 2,970 | 176,000 |
| April | 2,410 | 533 | 1,080 | 64,300 |
| May | 968 | 127 | 403 | 24,800 |
| June | 121 | 17 | 57.3 | 3,410 |
| July | 190 | 12 | 87.6 | 5,390 |
| August | 1,770 | 144 | 788 | 48,500 |
| September | 2,670 | 128 | 720 | 42,800 |
| The year | 100,000 | 12 | 1,860 | 1,350,000 |
| 1925–26 | | | | |
| October | 792 | 53 | 282 | 17,300 |
| November | 241 | 88 | 155 | 9,220 |
| December | 541 | 182 | 248 | 15,200 |
| January | 448 | 149 | 261 | 16,000 |
| February | 176 | 51 | 92.6 | 5,140 |
| March | 4,000 | 46 | 480 | 29,500 |
| April | 6,250 | 887 | 2,030 | 121,000 |
| May | 1,740 | 65 | 659 | 40,500 |
| June | 58 | 1 | 19.7 | 1,170 |
| July | 488 | 0 | 56.2 | 3,460 |
| August | 228 | 0 | 57.2 | 3,520 |
| September | 727 | 0 | 99.2 | 5,900 |
| The year | 6,250 | 0 | 370 | 268,000 |

NOTE.—Monthly discharge for December, 1914, January and February, 1915, January, February, and March, 1916, supersede the figures published in Water-Supply Papers 409 and 439. Monthly discharge for remaining months in years ending September 30, 1915 and 1916, republished in order to complete the record.

### GILA RIVER AT KELVIN, ARIZ.

LOCATION.—In sec. 12, T. 4 S., R. 13 E., 1,000 feet below Mineral Creek and 1 mile west of Kelvin, Pinal County.

RECORDS AVAILABLE.—January 26, 1911, to September 30, 1926.

GAGE.—Water-stage recorder on left bank.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 16.2 feet at 10 p. m. September 28 (discharge, 82,000 second-feet); minimum discharge, 2 second-feet July 4–11 and September 6.

1911–1926: Maximum stage recorded, 19.5 feet about noon January 20, 1916, determined from floodmarks (discharge from extension of rating curve, about 132,000 second-feet). No flow on June 29 to July 11, 1913.

DIVERSIONS.—Station is above diversions for Florence-Casa Grande Valley. About 38,000 acres is irrigated from Gila River above this station. Acreage irrigated from San Pedro River not known.

ACCURACY.—Stage-discharge relation not permanent. Daily discharge ascertained by shifting-control method. Records good.

Records of discharge for certain high-water periods in the years ending September 30, 1915, 1916, and 1917, revised on basis of rating curve determined from discharge measurements of the flood in 1926, are given in the table below.

*Discharge measurements of Gila River at Kelvin, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 9 | 2.43 | 204 | Apr. 12 | 3.83 | 2,360 | Aug. 23 | 1.77 | 34.2 |
| Dec. 8 | 2.40 | 315 | Apr. 20 | 3.50 | 1,580 | Sept. 1 | 1.39 | 3.2 |
| Jan. 9 | 2.54 | 343 | May 5 | 3.31 | 1,120 | Sept. 13 | 2.24 | 139 |
| Jan. 16 | 2.48 | 332 | May 15 | 2.96 | 622 | Sept. 28 | 13.2 | [a]44,000 |
| Feb. 1 | 2.49 | 241 | May 24 | 2.22 | 135 | Do | 14.2 | [a]62,000 |
| Feb. 10 | 2.20 | 133 | July 1 | 1.66 | 2.5 | Do | 16.2 | [b]82,000 |
| Feb. 23 | 1.97 | 72 | July 12 | 2.39 | 173 | Sept. 29 | 6.33 | 6,870 |
| Mar. 3 | 2.00 | 61 | July 22 | 1.55 | 3.0 | Do | 5.54 | 4,040 |
| Mar. 19 | 2.25 | 148 | Aug. 2 | 1.84 | 44.1 | Sept. 30 | 4.38 | 2,120 |
| Apr. 2 | 3.68 | 2,080 | Aug. 14 | 2.14 | 196 | | | |

[a] Measured by timing floating driftwood over a measured distance of 1,350 feet and from cross section taken on Oct.20, 1926.
[b] Computed by means of Kutter's formula from levels on cross section and slope taken on Oct. 20–22, 1926.

*Revised daily discharge, in second-feet, of Gila River at Kelvin, Ariz., for high-water periods in the years ending September 30, 1914–1917*

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| 1914 | | 1915 | | 1915 | |
| Aug. 19 | 7,550 | Jan. 1 | 8,000 | July 27 | 9,750 |
| Dec. 18 | 6,130 | Jan. 29 | 15,600 | July 28 | 5,980 |
| Dec. 19 | 17,700 | Jan. 30 | 36,600 | July 29 | 5,160 |
| Dec. 20 | 49,600 | Jan. 31 | 40,400 | | |
| Dec. 21 | 49,600 | Feb. 1 | 23,000 | 1916 | |
| Dec. 22 | 32,400 | Feb. 2 | 9,750 | Jan. 18 | 26,800 |
| Dec. 23 | 54,100 | Feb. 3 | 9,750 | Jan. 19 | 48,700 |
| Dec. 24 | 55,000 | Feb. 4 | 9,750 | Jan. 20 | 105,000 |
| Dec. 25 | 29,200 | Feb. 5 | 8,680 | Jan. 29 | 24,500 |
| Dec. 26 | 20,500 | Feb. 20 | 11,600 | Jan. 30 | 19,100 |
| Dec. 27 | 16,900 | Feb. 21 | 15,600 | Oct. 15 | 36,800 |
| Dec. 28 | 14,000 | Feb. 22 | 11,600 | | |
| Dec. 29 | 12,000 | Feb. 23 | 8,680 | | |
| Dec. 30 | 9,030 | Feb. 24 | 6,420 | | |
| Dec. 31 | 6,720 | July 26 | 9,390 | | |

NOTE.—Discharge for periods given in the above table supersede the records published in Water-Supply Papers 389, 409, 439, and 459.

*Daily discharge, in second-feet, of Gila River at Kelvin, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 109 | 294 | 225 | 276 | 256 | 66 | 2,800 | 1,430 | 99 | 3 | 68 | 3 |
| 2 | 87 | 264 | 452 | 276 | 500 | 61 | 2,120 | 1,380 | 81 | 3 | 48 | 3 |
| 3 | 78 | 258 | 2,510 | 363 | 321 | 61 | 1,880 | 1,230 | 70 | 3 | 43 | 7 |
| 4 | 68 | 240 | 771 | 692 | 215 | 64 | 1,700 | 1,200 | 66 | 2 | 41 | 7 |
| 5 | 66 | 220 | 379 | 596 | 200 | 61 | 1,610 | 1,080 | 66 | 2 | 113 | 3 |
| 6 | 73 | 215 | 349 | 560 | 186 | 113 | 2,240 | 1,080 | 61 | 2 | 64 | 2 |
| 7 | 66 | 190 | 356 | 460 | 168 | 181 | 5,620 | 1,020 | 59 | 2 | 416 | 59 |
| 8 | 57 | 200 | 342 | 415 | 154 | 215 | 4,870 | 1,150 | 52 | 3 | 588 | 124 |
| 9 | 52 | 195 | 300 | 370 | 145 | 342 | 4,400 | 1,070 | 48 | 2 | 105 | 61 |
| 10 | 50 | 190 | 321 | 363 | 137 | 458 | 3,590 | 1,040 | 43 | 2 | 48 | 57 |
| 11 | 47 | 190 | 288 | 356 | 121 | 480 | 2,750 | 936 | 43 | 2 | 59 | 24 |
| 12 | 374 | 176 | 321 | 356 | 125 | 572 | 2,330 | 894 | 41 | 258 | 270 | 121 |
| 13 | 540 | 168 | 294 | 363 | 125 | 388 | 2,020 | 810 | 39 | 87 | 799 | 172 |
| 14 | 406 | 154 | 288 | 370 | 121 | 356 | 2,020 | 732 | 36 | 33 | 163 | 117 |
| 15 | 540 | 141 | 288 | 370 | 109 | 307 | 2,060 | 644 | 29 | 20 | 106 | 178 |

*Daily discharge, in second-feet, of Gila River at Kelvin, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 656 | 141 | 328 | 356 | 105 | 276 | 2,000 | 480 | 26 | 11 | 203 | 93 |
| 17 | 560 | 150 | 307 | 335 | 102 | 235 | 1,860 | 388 | 24 | 6 | 288 | 163 |
| 18 | 530 | 158 | 328 | 314 | 96 | 190 | 1,740 | 342 | 21 | 4 | 246 | 93 |
| 19 | 480 | 154 | 307 | 321 | 96 | 150 | 1,700 | 307 | 17 | 3 | 186 | 68 |
| 20 | 442 | 154 | 276 | 321 | 96 | 129 | 1,570 | 252 | 15 | 3 | 133 | 39 |
| 21 | 433 | 137 | 288 | 294 | 90 | 145 | 1,360 | 215 | 12 | 3 | 90 | 26 |
| 22 | 406 | 125 | 300 | 294 | 81 | 137 | 1,240 | 181 | 10 | 27 | 57 | 17 |
| 23 | 321 | 121 | 314 | 288 | 68 | 113 | 1,230 | 158 | 8 | 43 | 36 | 9 |
| 24 | 328 | 121 | 294 | 276 | 73 | 90 | 1,100 | 137 | 7 | 19 | 25 | 8 |
| 25 | 314 | 316 | 294 | 264 | 68 | 93 | 965 | 117 | 6 | 109 | 19 | 14 |
| 26 | 294 | 276 | 264 | 252 | 73 | 102 | 880 | 113 | 5 | 70 | 14 | 3,910 |
| 27 | 288 | 282 | 288 | 264 | 66 | 129 | 866 | 109 | 4 | 1,000 | 10 | 6,430 |
| 28 | 282 | 240 | 282 | 246 | 66 | 158 | 824 | 109 | 3 | 692 | 7 | 36,600 |
| 29 | 270 | 225 | 270 | 240 | ------- | 1,820 | 894 | 99 | 3 | 186 | 6 | 8,710 |
| 30 | 270 | 225 | 282 | 230 | ------- | 4,250 | 1,070 | 93 | 3 | 121 | 4 | 2,020 |
| 31 | 321 | ------- | 294 | 215 | ------- | 3,900 | ------- | 99 | ------- | 87 | 3 | ------ |

*Monthly discharge of Gila River at Kelvin, Ariz., for the years ending September 30, 1914–1917 and 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| 1913–14 | | | | |
| October | 1,440 | 42 | 198 | 12,200 |
| November | 1,900 | 42 | 508 | 30,200 |
| December | 870 | 316 | 425 | 26,100 |
| January | 330 | 305 | 328 | 20,200 |
| February | 780 | 95 | 361 | 20,000 |
| March | 395 | 62 | 156 | 9,590 |
| April | 81 | 14 | 37.2 | 2,210 |
| May | 16 | 2 | 7.1 | 437 |
| June | 465 | 1 | 65.6 | 3,910 |
| July | 4,310 | 50 | 1,900 | 121,000 |
| August | 7,550 | 420 | 2,300 | 142,000 |
| September | 4,050 | 120 | 903 | 53,700 |
| The year | 7,550 | 1 | 609 | 441,000 |
| 1914–15 | | | | |
| October | 8,800 | 120 | 1,300 | 79,900 |
| November | 3,700 | 370 | 810 | 48,200 |
| December | 55,000 | 400 | 12,400 | 760,000 |
| January | 40,400 | 1,020 | 4,880 | 300,000 |
| February | 23,000 | 1,100 | 5,910 | 328,000 |
| March | 5,800 | 2,930 | 3,800 | 234,000 |
| April | 8,090 | 2,030 | 4,030 | 240,000 |
| May | 2,450 | 505 | 1,170 | 71,900 |
| June | 480 | 83 | 257 | 15,300 |
| July | 9,750 | 45 | 1,530 | 94,100 |
| August | 2,800 | 340 | 1,090 | 66,700 |
| September | 1,350 | 60 | 323 | 19,200 |
| The year | 55,000 | 45 | 3,120 | 2,260,000 |
| 1915–16 | | | | |
| October | 381 | 65 | 132 | 8,120 |
| November | 236 | 74 | 138 | 8,210 |
| December | 472 | 178 | 354 | 21,800 |
| January | 105,000 | 506 | 13,300 | 817,000 |
| February | 8,200 | 2,230 | 3,050 | 175,000 |
| March | 5,120 | 1,780 | 2,700 | 166,000 |
| April | 1,960 | 635 | 1,110 | 66,000 |
| May | 915 | 180 | 448 | 27,500 |
| June | 180 | 53 | 106 | 6,310 |
| July | 510 | 29 | 233 | 14,300 |
| August | 1,940 | 258 | 818 | 50,300 |
| September | 3,230 | 157 | 891 | 53,000 |
| The year | 105,000 | 29 | 1,950 | 1,410,000 |

*Monthly discharge of Gila River at Kelvin, Ariz., for the years ending September 30, 1914–1917 and 1926*—Continued

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| 1916–17 | | | | |
| October | 36,800 | 86 | 3,460 | 212,000 |
| November | 1,020 | 288 | 519 | 30,900 |
| December | 370 | 258 | 293 | 18,000 |
| January | 10,500 | 300 | 1,750 | 108,000 |
| February | | | 885 | 49,200 |
| March | 1,270 | 513 | 724 | 44,500 |
| April | 773 | 282 | 479 | 28,500 |
| May | 603 | 98 | 243 | 14,900 |
| June | 89 | 24 | 45.0 | 2,680 |
| July | 2,700 | 24 | 543 | 33,400 |
| August | 2,220 | 30 | 601 | 37,000 |
| September | 970 | 37 | 179 | 10,700 |
| The year | 36,800 | 24 | 815 | 590,000 |
| 1925–26 | | | | |
| October | 656 | 47 | 284 | 17,500 |
| November | 316 | 121 | 197 | 11,700 |
| December | 2,510 | 225 | 394 | 24,200 |
| January | 692 | 215 | 345 | 21,200 |
| February | 500 | 66 | 142 | 7,890 |
| March | 4,250 | 61 | 505 | 31,100 |
| April | 5,620 | 824 | 2,040 | 121,000 |
| May | 1,430 | 93 | 610 | 37,500 |
| June | 99 | 3 | 33.2 | 1,980 |
| July | 1,000 | 2 | 90.6 | 5,570 |
| August | 799 | 3 | 137 | 8,420 |
| September | 36,600 | 2 | 1,970 | 117,000 |
| The year | 36,600 | 2 | 560 | 405,000 |

NOTE.—Monthly discharge for August and December, 1914, January, February, and July, 1915, and January and October, 1916, supersede the figures published in previous water-supply papers. Monthly discharge for the remaining months in years ending Sept. 30, 1914–1917, republished in order to complete the record.

### GILA RIVER AT ASHURST-HAYDEN DAM, NEAR FLORENCE, ARIZ.

LOCATION.—In sec. 8, T. 4 S., R. 11 E., at Ashurst-Hayden Dam, 10 miles northeast of Florence, Pinal County.

RECORDS AVAILABLE.—July 1, 1923, to September 30, 1926.

GAGE.—Chain gage on upstream wing wall at left end of Ashurst-Hayden Dam. Zero of gage is 10.00 feet below crest of dam.

CHANNEL AND CONTROL.—Bed composed of sand and silt filled in about flush with crest of dam except on left bank, where bed is below crest of dam, owing to sluicing. Dam is 120 feet downstream from gage. There are four sluice gates in the dam with top of opening 6½ feet below crest of dam. One or more of these are open a large part of the time.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 8.0 feet at midnight September 28; minimum stage, crest of dam dry on various days.

1923–1926: Maximum stage recorded, 8.0 feet at midnight September 28, 1926; minimum stage, crest dry on various days each year.

DIVERSIONS.—Water diverted from Gila River below gage by Ashurst-Hayden Dam. First canal gate opening is 22 feet below gage. About 38,000 acres is irrigated from Gila River above thisd am. Acreage irrigated from San Pedro River not known.

ACCURACY.—Stage-discharge relation not determined. No discharge measurements made. Only height of water on crest of dam determined. Gage read to hundredths twice daily. No determination of amount of water by-passed through sluice gates of dam.

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

*Daily height, in feet, of Gila River at Ashurst-Hayden Dam, near Florence, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ------ | 0.44 | ------ | ------ | ------ | ------ | 1.40 | 1.05 | ------ | ------ | ------ |
| 2 | ------ | .40 | [a]0.10 | ------ | 0.54 | ------ | 1.10 | 1.13 | ------ | ------ | ------ |
| 3 | ------ | .40 | 1.57 | 0.22 | .39 | ------ | 1.19 | 1.00 | ------ | ------ | ------ |
| 4 | ------ | .40 | .84 | .62 | [a].32 | ------ | 1.16 | .96 | ------ | ------ | ------ |
| 5 | ------ | .39 | ------ | .55 | ------ | ------ | 1.19 | .97 | ------ | ------ | ------ |
| 6 | ------ | .36 | ------ | .51 | ------ | ------ | 1.20 | 1.05 | ------ | ------ | ------ |
| 7 | ------ | .33 | .56 | .53 | ------ | ------ | 2.10 | .95 | ------ | ------ | [a]3.1 |
| 8 | ------ | .32 | .43 | .52 | ------ | ------ | 1.70 | .95 | ------ | 0.55 | ------ |
| 9 | ------ | .32 | .41 | .49 | ------ | 0.10 | 1.70 | 1.00 | ------ | ------ | ------ |
| 10 | ------ | .31 | .40 | .49 | ------ | .31 | 1.60 | .96 | ------ | ------ | ------ |
| 11 | ------ | .31 | .38 | .48 | ------ | .37 | 1.50 | .94 | ------ | ------ | ------ |
| 12 | [a]0.64 | .32 | .38 | .48 | ------ | .46 | 1.25 | .85 | [b]0.40 | [a].50 | ------ |
| 13 | .74 | [a].32 | .37 | .48 | ------ | .29 | 1.20 | .74 | ------ | .90 | ------ |
| 14 | .64 | ------ | .38 | .48 | ------ | .26 | 1.25 | .70 | ------ | ------ | ------ |
| 15 | .69 | ------ | .39 | .46 | ------ | .25 | 1.20 | .60 | ------ | ------ | ------ |
| 16 | .76 | ------ | .38 | .46 | ------ | .08 | 1.40 | .49 | ------ | ------ | ------ |
| 17 | .63 | ------ | .37 | .46 | ------ | ------ | 1.30 | .43 | ------ | ------ | .20 |
| 18 | .64 | ------ | .37 | [a].46 | ------ | ------ | 1.20 | .21 | ------ | ------ | ------ |
| 19 | .60 | ------ | .39 | ------ | ------ | ------ | 1.22 | .05 | ------ | ------ | ------ |
| 20 | .58 | ------ | .38 | ------ | ------ | ------ | 1.25 | ------ | ------ | ------ | ------ |
| 21 | .53 | ------ | .37 | ------ | ------ | ------ | 1.05 | ------ | ------ | ------ | ------ |
| 22 | .51 | ------ | [a].36 | ------ | ------ | ------ | 1.00 | ------ | ------ | ------ | ------ |
| 23 | .47 | ------ | ------ | ------ | ------ | ------ | .85 | ------ | ------ | ------ | ------ |
| 24 | .45 | ------ | ------ | ------ | ------ | ------ | .75 | ------ | ------ | ------ | ------ |
| 25 | .41 | [a].40 | ------ | ------ | ------ | ------ | .65 | ------ | ------ | ------ | ------ |
| 26 | .41 | ------ | ------ | ------ | ------ | ------ | .69 | ------ | ------ | ------ | 2.60 |
| 27 | .38 | [a].10 | ------ | ------ | ------ | ------ | .76 | ------ | 1.62 | ------ | 2.59 |
| 28 | .40 | ------ | ------ | ------ | ------ | ------ | .71 | ------ | .77 | ------ | 4.73 |
| 29 | .40 | ------ | ------ | ------ | ------ | .84 | .75 | ------ | .20 | ------ | 2.91 |
| 30 | .40 | ------ | ------ | ------ | ------ | 1.90 | .90 | ------ | ------ | ------ | 1.38 |
| 31 | .58 | ------ | ------ | ------ | ------ | 1.88 | ------ | ------ | ------ | ------ | ------ |

[a] Flow for half a day. [b] Flow for quarter of a day.

NOTE.—Gage heights in above table show head on crest of dam. No water over crest of dam on days for which no record is given.

### GILA RIVER AT GILLESPIE DAM, ARIZ.

LOCATION.—In SE. ¼ NE. ¼ sec. 28, T. 2 S., R. 5 W., at Gillespie Dam, Maricopa County. Hassayampa River enters from right 8 miles upstream.

DRAINAGE AREA.—48,100 square miles.

RECORDS AVAILABLE.—August 4, 1921, to September 30, 1926.

GAGE.—Water-stage recorder on left wing wall 10 feet upstream from crest of Gillespie Dam, installed July 28, 1924. Zero of gage at mean elevation of crest of dam and 753.8 feet above mean sea level.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.95 feet at 6 a. m. September 30 (discharge, 38,300 second-feet); minimum stage, crest of dam dry on various days during year.

1921–1926: Maximum stage recorded, 6.0 feet on December 28, 1923 (discharge, 70,000 second-feet); minimum stage, crest of dam dry for various periods each year.

DIVERSIONS.—Water diverted from Gila River by Gillespie Dam. When water is below crest of dam a gate is kept open which turns a small quantity of water downstream to satisfy prior rights. About 275,000 acres is irrigated from Gila River and tributaries above this dam.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined from 100 to 10,000 second-feet. From 10,000 to 150,000 second-feet, rating has been extended by using formula for broad-crested weirs, $Q=2.64LH^{\frac{3}{2}}$, and assumed velocities of approach based on observed conditions. Below 100 second-feet rating varies somewhat on account of accumulation of moss or trash on crest of dam. Water discharged through sluice gates, separately computed, and included in daily discharge. Records good.

*Discharge measurements of Gila River at Gillespie Dam, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 4 | 0.10 | 158 | Mar. 13 | 0.01 | 25 | May 23 | | [a] 11.8 |
| Jan. 20 | .12 | 188 | Apr. 15 | 1.02 | 4,450 | Sept. 8 | 0.15 | 304 |
| Feb. 27 | .04 | 38 | Apr. 16 | .88 | 3,570 | | | |

[a] Water below crest of dam; discharge measured in river channel half a mile downstream.

*Daily discharge, in second-feet, of Gila River at Gillespie Dam, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105 | 195 | 105 | 120 | 155 | 45 | 3,880 | 500 | 0 | 0 | 63 | 0 |
| 2 | 60 | 240 | 120 | 120 | 155 | 45 | 3,140 | 560 | 0 | 0 | 41 | 0 |
| 3 | 35 | 135 | 175 | 135 | 135 | 32 | 2,150 | 851 | 0 | 0 | 0 | 0 |
| 4 | 28 | 155 | 910 | 195 | 120 | 27 | 1,700 | 880 | 0 | 0 | 0 | 0 |
| 5 | 570 | 195 | 1,150 | 240 | 120 | 36 | 1,470 | 800 | 0 | 0 | 0 | 0 |
| 6 | 4,070 | 175 | 720 | 460 | 120 | 32 | 6,690 | 695 | 0 | 0 | 0 | 0 |
| 7 | 821 | 195 | 430 | 370 | 105 | 62 | 20,400 | 660 | 0 | 0 | 156 | 64 |
| 8 | 861 | 195 | 315 | 370 | 120 | 70 | 25,200 | 645 | 0 | 0 | 43 | 381 |
| 9 | 1,360 | 155 | 290 | 340 | 81 | 60 | 19,200 | 560 | 0 | 0 | 160 | 2,420 |
| 10 | 840 | 120 | 215 | 315 | 45 | 60 | 14,400 | 590 | 0 | 0 | 65 | 2,700 |
| 11 | 600 | 120 | 155 | 315 | 45 | 60 | 14,400 | 590 | 0 | 0 | 0 | 2,350 |
| 12 | 460 | 105 | 135 | 290 | 53 | 35 | 8,470 | 573 | 0 | 0 | 0 | 1,320 |
| 13 | 370 | 90 | 135 | 290 | 60 | 32 | 7,000 | 540 | 0 | 0 | 0 | 170 |
| 14 | 315 | 90 | 125 | 265 | 90 | 1 | 5,640 | 560 | 0 | 0 | 0 | 335 |
| 15 | 265 | 90 | 105 | 240 | 105 | 0 | 4,300 | 470 | 0 | 0 | 0 | 235 |
| 16 | 524 | 105 | 90 | 215 | 75 | 0 | 3,460 | 385 | 0 | 0 | 0 | 170 |
| 17 | 495 | 105 | 90 | 215 | 75 | 0 | 3,000 | 310 | 0 | 240 | 0 | 75 |
| 18 | 460 | 90 | 90 | 240 | 60 | 0 | 2,400 | 102 | 0 | 0 | 0 | 0 |
| 19 | 430 | 90 | 90 | 215 | 45 | 0 | 1,950 | 0 | 0 | 0 | 0 | 0 |
| 20 | 430 | 75 | 75 | 195 | 35 | 0 | 2,200 | 0 | 0 | 0 | 0 | 0 |
| 21 | 430 | 75 | 90 | 175 | 33 | 0 | 3,580 | 0 | 0 | 0 | 0 | 0 |
| 22 | 370 | 75 | 109 | 175 | 32 | 0 | 3,880 | 0 | 0 | 0 | 0 | 0 |
| 23 | 315 | 90 | 155 | 175 | 15 | 0 | 2,500 | 0 | 0 | 0 | 0 | 0 |
| 24 | 265 | 90 | 155 | 155 | 36 | 0 | 1,650 | 0 | 0 | 0 | 0 | 0 |
| 25 | 265 | 90 | 175 | 175 | 35 | 0 | 1,200 | 0 | 0 | 0 | 0 | 0 |
| 26 | 265 | 105 | 195 | 155 | 20 | 0 | 920 | 0 | 0 | 0 | 0 | 20 |
| 27 | 240 | 105 | 175 | 135 | 37 | 0 | 730 | 0 | 0 | 1,800 | 0 | 4,650 |
| 28 | 240 | 90 | 195 | 120 | 45 | 0 | 530 | 0 | 0 | 1,540 | 0 | 7,800 |
| 29 | 215 | 90 | 120 | 120 | ------ | 106 | 494 | 0 | 0 | 440 | 0 | 14,100 |
| 30 | 195 | 105 | 90 | 135 | ------ | 1,000 | 494 | 0 | 0 | 322 | 0 | 21,200 |
| 31 | 175 | ------ | 90 | 120 | ------ | 2,030 | ------ | 0 | ------ | 125 | 0 | ------ |

*Monthly discharge of Gila River at Gillespie Dam, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 4,070 | 28 | 519 | 31,900 |
| November | 240 | 75 | 121 | 7,200 |
| December | 1,150 | 75 | 228 | 14,000 |
| January | 460 | 120 | 219 | 13,500 |
| February | 155 | 15 | 73.3 | 4,070 |
| March | 2,030 | 0 | 120 | 7,380 |
| April | 25,200 | 494 | 5,570 | 331,000 |
| May | 880 | 0 | 331 | 20,400 |
| June | 0 | 0 | 0 | 0 |
| July | 1,800 | 0 | 144 | 8,850 |
| August | 160 | 0 | 17.0 | 1,050 |
| September | 21,200 | 0 | 1,930 | 115,000 |
| The year | 25,200 | 0 | 766 | 554,000 |

### SUNSET CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In NW. ¼ sec. 17, T. 19 S., R. 20 W. New Mexico principal meridian, in New Mexico 3 miles below intake, 9 miles east of Arizona-New Mexico State line, and 14 miles east of Duncan, Greenlee County, Ariz.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915. July 15, 1922, to September 30, 1926.

GAGE.—Vertical staff on right bank at Brooks ranch, read by M. H. Brooks.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. No well-defined control.

DIVERSIONS.—About 35 acres irrigated above station.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation continually changing. Standard rating curve well defined. Gage read to nearest two-hundredths twice a day with additional readings June to August. Daily discharge ascertained by applying mean daily gage height to rating table, shifting-control method used for entire year. Records good.

COOPERATION.—Supplementary gage readings from June 23 to August 31 and some discharge measurements during that period furnished by J. F. McGrath.

Canal diverts water from right side of Gila River in NW. ¼ sec. 20, T. 19 S., R. 20 W. New Mexico principal meridian, for irrigating 1,800 acres in the vicinity of Virden.

*Discharge measurements of Sunset Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 1 | 1.54 | 21.5 | Apr. 5 | 1.52 | 20.3 | July 20 | 2.34 | 38.5 |
| Nov. 4 | 1.70 | 19.5 | Apr. 24 | 1.50 | 16.8 | July 23 | 2.30 | 36.3 |
| Nov. 17 | 1.79 | 21.9 | Apr. 30 | 1.78 | 20.0 | Aug. 6 | 2.34 | 38.1 |
| Dec. 1 | 1.92 | 24.4 | May 10 | 1.83 | 19.9 | Aug. 10 | 2.07 | 30.3 |
| Dec. 15 | 2.02 | 23.9 | May 31 | 2.05 | 29.6 | Aug. 13 | 2.30 | 38.0 |
| Jan. 5 | 1.52 | 16.2 | June 25 | 2.17 | 29.6 | Aug. 20 | 2.32 | 36.2 |
| Jan. 20 | 1.37 | 12.4 | June 26 | 2.20 | 30.9 | Aug. 27 | 1.65 | 23.3 |
| Feb. 6 | 1.68 | 17.2 | July 2 | 1.92 | 24.2 | Aug. 30 | .74 | 3.8 |
| Feb. 20 | 2.10 | 29.9 | July 9 | 2.24 | 32.8 | Aug. 31 | .90 | 8.6 |
| Mar. 6 | 2.02 | 25.2 | July 18 | 2.24 | 35.0 | Sept. 21 | 2.21 | 36.2 |
| Mar. 17 | 1.92 | 25.6 | July 19 | 2.43 | 37.3 | | | |

*Daily discharge, in second-feet, of Sunset Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23 | 19 | 24 | 11 | 17 | 28 | 16 | 19 | 21 | 22 | 25 | 7.0 |
| 2 | 24 | 19 | 24 | 11 | 15 | 28 | 15 | 18 | 35 | 23 | 24 | 6.9 |
| 3 | 25 | 19 | 23 | 14 | 16 | 28 | 15 | 19 | 35 | 20 | 24 | 6.6 |
| 4 | 25 | 20 | 23 | 14 | 18 | 27 | 17 | 18 | 34 | 29 | 25 | 6.9 |
| 5 | 31 | 20 | 23 | 17 | 18 | 26 | 19 | 18 | 36 | 37 | 27 | 6.7 |
| 6 | 32 | 21 | 23 | 18 | 19 | 25 | 21 | 17 | 35 | 38 | 34 | 7.0 |
| 7 | 30 | 21 | 23 | 18 | 20 | 26 | 22 | 18 | 34 | 36 | 40 | 6.9 |
| 8 | 27 | 20 | 23 | 18 | 21 | 27 | 21 | 20 | 31 | 32 | 37 | 12 |
| 9 | 27 | 21 | 23 | 18 | 21 | 28 | 22 | 17 | 30 | 30 | 30 | 13 |
| 10 | 17 | 21 | 24 | 18 | 21 | 27 | 20 | 17 | 33 | 25 | 29 | 30 |
| 11 | 0 | 21 | 24 | 18 | 22 | 27 | 19 | 18 | 37 | 32 | 31 | 18 |
| 12 | 0 | 21 | 23 | 17 | 23 | 27 | 18 | 19 | 36 | 25 | 32 | 23 |
| 13 | 5 | 21 | 23 | 17 | 23 | 27 | 18 | 19 | 36 | 29 | 32 | 28 |
| 14 | 0 | 21 | 23 | 19 | 23 | 27 | 18 | 19 | 26 | 33 | 33 | 29 |
| 15 | 0 | 21 | 24 | 19 | 23 | 27 | 18 | 19 | 30 | 33 | 33 | 32 |

*Daily discharge, in second-feet, of Sunset Canal near Duncan, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 0 | 21 | 24 | 19 | 21 | 27 | 15 | 21 | 28 | 31 | 30 | 31 |
| 17 | 0 | 21 | 24 | 20 | 20 | 25 | 15 | 23 | 29 | 31 | 28 | 6.9 |
| 18 | 0 | 21 | 24 | 22 | 21 | 18 | 15 | 21 | 31 | 34 | 29 | 11 |
| 19 | 0 | 21 | 25 | 16 | 24 | 11 | 14 | 10 | 31 | 36 | 33 | 37 |
| 20 | 0 | 21 | 0 | 14 | 29 | 11 | 15 | 0 | 26 | 38 | 35 | 39 |
| 21 | 19 | 22 | 0 | 13 | 26 | 11 | 16 | 12 | 26 | 35 | 34 | 39 |
| 22 | 20 | 22 | 0 | 13 | 27 | 5.7 | 15 | 25 | 35 | 38 | 34 | 40 |
| 23 | 21 | 23 | 0 | 13 | 21 | 0 | 15 | 26 | 30 | 37 | 34 | 41 |
| 24 | 20 | 24 | 10 | 13 | 22 | 6.6 | 16 | 27 | 29 | 37 | 34 | 38 |
| 25 | 19 | 25 | 22 | 13 | 23 | 22 | 19 | 28 | 30 | 38 | 31 | 36 |
| 26 | 20 | 24 | 22 | 13 | 26 | 29 | 21 | 9 | 31 | 36 | 27 | 39 |
| 27 | 20 | 24 | 24 | 13 | 27 | 29 | 20 | 28 | 30 | 40 | 23 | 41 |
| 28 | 20 | 24 | 25 | 11 | 28 | 28 | 19 | 27 | 27 | 38 | 20 | 39 |
| 29 | 19 | 24 | 25 | 17 | ------- | 26 | 18 | 27 | 25 | 41 | 17 | 39 |
| 30 | 19 | 24 | 18 | 23 | ------- | 18 | 18 | 26 | 23 | 39 | 7.5 | 38 |
| 31 | 19 | ------- | 11 | 21 | ------- | 17 | ------- | 13 | ------- | 27 | 7.8 | ------- |

*Monthly discharge of Sunset Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 32 | 0 | 15.5 | 953 |
| November | 25 | 19 | 21.6 | 1,290 |
| December | 25 | 0 | 19.5 | 1,200 |
| January | 23 | 11 | 16.2 | 996 |
| February | 29 | 15 | 22.0 | 1,220 |
| March | 29 | 0 | 22.2 | 1,360 |
| April | 22 | 14 | 17.7 | 1,050 |
| May | 28 | 0 | 19.3 | 1,190 |
| June | 37 | 21 | 30.7 | 1,830 |
| July | 41 | 20 | 32.9 | 2,020 |
| August | 40 | 7.5 | 28.4 | 1,750 |
| September | 41 | 6.6 | 24.9 | 1,480 |
| The year | 41 | 0 | 22.6 | 16,300 |

### COSPER-WINDHAM CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In NW. ¼ sec. 11, T. 19 S., R. 21 W. New Mexico principal meridian, in New Mexico, three-quarters of a mile below intake, 4 miles east of Arizona-New Mexico State line, and 9 miles east of Duncan, Greenlee County, Ariz.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915. July 18, 1922, to September 30, 1926.

GAGE.—Vertical staff on left bank at Foster ranch; read by W. F. Foster.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. No well-defined control.

DIVERSIONS.—About 60 acres are irrigated above gage.

REGULATION.—By head gates. Stage in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Gage read twice a day to nearest even hundredth. Rating curve fairly well defined. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Discharge interpolated May 24 and 25. Records good.

Canal diverts water from right side of Gila River in SW. ¼ sec. 11, T. 19 S., R. 21 W. New Mexico principal meridian, for irrigating 800 acres in the vicinity of Virden. At certain times water is diverted from Sunset Canal by means of a feeder canal which enters Cosper-Windham Canal just above gage.

*Discharge measurements of Cosper-Windham Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 4 | 1.06 | 7.5 | Feb. 20 | 1.74 | 16.4 | June 26 | 0.94 | 2.4 |
| Nov. 17 | .85 | 4.3 | Mar. 6 | 1.94 | 20.5 | July 19 | 1.68 | 10.6 |
| Dec. 1 | 1.19 | 8.5 | Mar. 18 | 1.68 | 20.1 | Aug. 10 | 1.09 | 5.6 |
| Dec. 15 | 1.38 | 10.0 | Apr. 21 | 1.06 | 11.1 | Aug. 20 | 1.88 | 20.7 |
| Jan. 5 | 1.44 | 12.0 | Apr. 30 | 1.43 | 19.5 | Aug. 30 | .66 | .2 |
| Jan. 20 | 1.52 | 9.9 | May 10 | 1.60 | 19.3 | Sept. 21 | 1.34 | 9.4 |
| Feb. 6 | 1.30 | 9.0 | May 31 | 1.40 | 15.0 | | | |

*Daily discharge, in second-feet, of Cosper-Windham Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 8.2 | 8.6 | 9.0 | 10 | 16 | 1.9 | 22 | 22 | 7.0 | 7.1 | 0.3 |
| 2 | 21 | 7.2 | 8.2 | 9.1 | 11 | 14 | 5.8 | 22 | 17 | 8.2 | 8.1 | 7.6 |
| 3 | 20 | 6.8 | 4.6 | 9.0 | 8.8 | 17 | 6.6 | 21 | 18 | 7.4 | 10 | 3.0 |
| 4 | 20 | 7.9 | 1.4 | 9.1 | 6.6 | 20 | 2.8 | 21 | 11 | 7.7 | 7.9 | 0 |
| 5 | 17 | 7.6 | 0 | 9.9 | 7.7 | 20 | .8 | 22 | 18 | 7.2 | 3.6 | 0 |
| 6 | 18 | 7.2 | 0 | 13 | 9.9 | 21 | 8.0 | 22 | 28 | 7.0 | .8 | 0 |
| 7 | 18 | 7.0 | 7.0 | 12 | 9.0 | 22 | 18 | 23 | 22 | 6.6 | 2.7 | 0 |
| 8 | 16 | 5.8 | 16 | 11 | 8.6 | 0 | 19 | 23 | 15 | 7.6 | 1.8 | 7.9 |
| 9 | 16 | 4.9 | 13 | 11 | 8.4 | 0 | 19 | 21 | 12 | 2.6 | 0 | 8.1 |
| 10 | 0 | 5.6 | 11 | 10 | 8.6 | 0 | 18 | 20 | 14 | 6.5 | 1.4 | 9.9 |
| 11 | 0 | 5.1 | 11 | 9.9 | 9.9 | 0 | 16 | 18 | 12 | 6.1 | 8.8 | 7.5 |
| 12 | 0 | 4.9 | 11 | 9.0 | 15 | 0 | 14 | 16 | 11 | 6.4 | 4.6 | 15 |
| 13 | 0 | 4.6 | 11 | 8.4 | 17 | 13 | 16 | 14 | 7.6 | 9.1 | 7.9 | 9.1 |
| 14 | 0 | 4.3 | 10 | 8.1 | 16 | 23 | 19 | 11 | 8.2 | 11 | 6.5 | 10 |
| 15 | 0 | 4.3 | 10 | 7.2 | 16 | 22 | 19 | 8.1 | 6.4 | 6.8 | 23 | 12 |
| 16 | 0 | 4.6 | 11 | 7.0 | 14 | 21 | 17 | 4.2 | 4.3 | 8.6 | 20 | 15 |
| 17 | 0 | 4.3 | 10 | 6.6 | 15 | 21 | 17 | 11 | 4.1 | 12 | 18 | 17 |
| 18 | 0 | 4.3 | 10 | 7.1 | 12 | 22 | 17 | 21 | 4.1 | 4.8 | 19 | 11 |
| 19 | 0 | 3.4 | 10 | 7.2 | 11 | 22 | 18 | 22 | 2.0 | 4.8 | 22 | 6.4 |
| 20 | 0 | 2.7 | 10 | 9.5 | 13 | 21 | 14 | 23 | 2.1 | 5.2 | 18 | 8.8 |
| 21 | 0 | 2.7 | 10 | 9.0 | 0 | 24 | 11 | 21 | 3.2 | 3.0 | 8.4 | 10 |
| 22 | 0 | 4.9 | 10 | 8.6 | 0 | 24 | 9.9 | 24 | 2.0 | 8.4 | 3.8 | 10 |
| 23 | 0 | 4.9 | 10 | 7.1 | 0 | 23 | 16 | 24 | 1.7 | 8.1 | 6.2 | 11 |
| 24 | 0 | 11 | 10 | 4.2 | 0 | 23 | 26 | 22 | 3.0 | 8.4 | 6.6 | 7.4 |
| 25 | 0 | 9.3 | 9.3 | 6.5 | 0 | 22 | 25 | 21 | 3.0 | 9.1 | 6.4 | 7.1 |
| 26 | 0 | 14 | 9.0 | 9.7 | 7.5 | 21 | 24 | 19 | 2.2 | 10 | 7.4 | 8.4 |
| 27 | 0 | 10 | 9.0 | 10 | 17 | 20 | 24 | 20 | 3.1 | 5.0 | 6.5 | 12 |
| 28 | 4.1 | 9.1 | 8.8 | 10 | 18 | 19 | 23 | 20 | 1.7 | 5.8 | 1.0 | 19 |
| 29 | 9.3 | 9.0 | 8.6 | 10 | ------- | 16 | 23 | 19 | .9 | 9.7 | .8 | 15 |
| 30 | 9.1 | 8.6 | 8.6 | 9.5 | ------- | 4.8 | 22 | 18 | 4.8 | 8.4 | .1 | 14 |
| 31 | 9.0 | ------- | 8.8 | 9.5 | ------- | 0 | ------- | 21 | ------- | 7.7 | .4 | ------ |

*Monthly discharge of Cosper-Windham Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 22 | 0 | 6.44 | 396 |
| November | 14 | 2.7 | 6.47 | 385 |
| December | 16 | 0 | 8.90 | 527 |
| January | 13 | 4.2 | 8.94 | 550 |
| February | 18 | 0 | 9.64 | 535 |
| March | 24 | 0 | 15.9 | 978 |
| April | 26 | 0.8 | 15.7 | 934 |
| May | 24 | 4.2 | 19.2 | 1,180 |
| June | 28 | 0.9 | 8.81 | 524 |
| July | 12 | 2.6 | 7.30 | 449 |
| August | 23 | 0 | 7.70 | 473 |
| September | 19 | 0 | 8.75 | 521 |
| The year | 28 | 0 | 10.3 | 7,470 |

NOTE.—For the period Oct. 1 to May 31 water was diverted from Gila River to Cosper-Windham Canal. For the period June 1 to September 30, water was diverted to Cosper-Windham Canal from Gila River and by a feeder canal from Sunset Canal as follows:

| Month | Acre-feet diverted | | | Month | Acre-feet diverted | | |
|---|---|---|---|---|---|---|---|
| | Gila River | Feeder canal | Total | | Gila River | Feeder canal | Total |
| June | 469 | 55 | 524 | August | 360 | 113 | 473 |
| July | 191 | 258 | 449 | September | 281 | 240 | 521 |

### MODDLE CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In NW. ¼ sec. 10, T. 19 S., R. 21 W. New Mexico principal meridian, in New Mexico, half a mile below intake, 4 miles east of Arizona-New Mexico State line, and 9 miles east of Duncan, Greenlee County, Ariz.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915; July 17, 1922, to September 30, 1926.

GAGE.—Vertical staff on left bank; read by W. F. and J. L. Foster.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. No well-defined control.

DIVERSIONS.—None.

REGULATION.—By head gate. Stage in canal varies considerably with stage in Gila River.

ACCURACY.—Stage-discharge relation permanent October 21 to March 1, continually changing during other periods. Rating curves well defined. Gage read once a day to nearest even hundredth throughout the year with frequent omissions October 1 to June 16 and September 1–20. During period June 17 to August 31 gage read three times a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for period March 5 to September 30. Discharge interpolated for days when gage was not read, except discharge estimated October 2–15, March 31 to April 4, April 6–17, May 2–9, 23–29. Records good, June to September; fair for remainder of year on account of fragmentary gage-height record.

COOPERATION.—Supplementary gage-height record June 23 to August 31 and some discharge measurements made during that period, furnished by J. F. McGrath.

Canal diverts water from left side of Gila River in NW. ¼ sec. 11, T. 19 S., R. 21 W., New Mexico principal meridian for irrigating 2,200 acres in the vicinity of Franklin.

*Discharge measurements of Moddle Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 1 | 2.68 | 36.8 | Mar. 18 | 2.50 | 47.5 | July 18 | 2.11 | 35.2 |
| Nov. 1 | 2.19 | 16.3 | Apr. 5 | 2.00 | 36.3 | July 20 | 1.85 | 26.9 |
| Nov. 17 | 2.40 | 21.9 | Apr. 20 | 1.94 | 27.0 | July 23 | 2.20 | 38.4 |
| Dec. 1 | 2.58 | 27.0 | May 1 | 2.72 | 55.0 | Aug. 6 | 2.05 | 31.4 |
| Dec. 15 | 2.08 | 14.2 | May 10 | .54 | 0 | Aug. 11 | 1.41 | 14.1 |
| Jan. 5 | 2.74 | 32.2 | May 31 | 2.56 | 52.2 | Aug. 13 | 2.25 | 36.8 |
| Jan. 17 | 2.06 | 13.8 | June 25 | 1.07 | 7.2 | Aug. 27 | .95 | 4.5 |
| Feb. 7 | 2.00 | 8.5 | June 28 | .81 | 3.6 | Aug. 30 | .86 | 3.3 |
| Feb. 21 | 2.64 | 28.9 | July 2 | .70 | 2.1 | Sept. 22 | 1.70 | 18.3 |

*Daily discharge, in second-feet, of Moddle Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 43 | 15 | 27 | 19 | 7.5 | 34 | | 58 | 50 | 1.9 | 18 | 3.7 |
| 2 | | 14 | 28 | 19 | 11 | 37 | 48 | | 45 | 1.7 | 6.8 | 4.0 |
| 3 | | 16 | 30 | 26 | 14 | 40 | | | 46 | 1.3 | 5.7 | 4.6 |
| 4 | | 17 | 32 | 32 | 13 | 44 | | | 46 | 2.5 | 13 | 3.6 |
| 5 | | 16 | 34 | 32 | 11 | 47 | 36 | | 47 | 2.4 | 38 | 5.4 |
| | 20 | | | | | | | 30 | | | | |
| 6 | | 16 | 34 | 30 | 9.9 | 46 | | | 47 | 2.4 | 30 | 5.7 |
| 7 | | 15 | 34 | 27 | 8.5 | 45 | | | 48 | 3.7 | 50 | 5.7 |
| 8 | | 15 | 33 | 25 | 8.5 | 44 | | | 45 | 4.8 | 29 | 3.9 |
| 9 | | 15 | 34 | 22 | 8.5 | 44 | | | 40 | 2.8 | 24 | 2.7 |
| 10 | 0 | 15 | 34 | 19 | 8.5 | 45 | | 0 | 42 | 2.4 | 19 | 3.0 |
| 11 | 0 | 16 | 34 | 19 | 14 | 45 | 44 | 38 | 40 | 31 | 9.4 | 3.2 |
| 12 | 0 | 15 | 15 | 18 | 20 | 44 | | 47 | 32 | 68 | 19 | 7.8 |
| 13 | 0 | 14 | 15 | 18 | 25 | 43 | | 54 | 30 | 63 | 30 | 12 |
| 14 | 0 | 3 | 15 | 17 | 31 | 41 | | 56 | 32 | 54 | 17 | 16 |
| 15 | 0 | 0 | 15 | 16 | 31 | 40 | | 51 | 29 | 45 | 27 | 21 |
| 16 | 0 | 0 | 14 | 15 | 31 | 42 | | 46 | 29 | 51 | 11 | 21 |
| 17 | 0 | 22 | 16 | 14 | 32 | 45 | | 46 | 23 | 48 | 33 | 17 |
| 18 | 0 | 23 | 14 | 13 | 32 | 47 | 52 | 52 | 20 | 31 | 48 | 13 |
| 19 | 0 | 22 | 15 | 12 | 31 | 50 | 53 | 70 | 19 | 27 | 32 | 27 |
| 20 | 0 | 21 | 15 | 12 | 30 | 54 | 35 | 66 | 18 | 26 | 25 | 41 |
| 21 | 19 | 20 | 16 | 11 | 29 | 57 | 57 | 66 | 17 | 24 | 26 | 27 |
| 22 | 27 | 22 | 18 | 11 | 31 | 60 | 40 | 65 | 10 | 39 | 18 | 26 |
| 23 | 19 | 23 | 19 | 10 | 31 | 60 | 29 | | 8.0 | 37 | 12 | 27 |
| 24 | 18 | 24 | 17 | 9.4 | 32 | 59 | 4.9 | | 5.7 | 35 | 11 | 28 |
| 25 | 18 | 24 | 16 | 8.8 | 32 | 59 | 18 | | 5.1 | 26 | 9.7 | 39 |
| | | | | | | | | 60 | | | | |
| 26 | 18 | 25 | 17 | 8.3 | 33 | 59 | 31 | | 4.1 | 21 | 6.4 | 50 |
| 27 | 21 | 26 | 18 | 7.8 | 33 | 59 | 44 | | 3.8 | 19 | 4.3 | 27 |
| 28 | 21 | 26 | 19 | 7.4 | 34 | 59 | 57 | | 3.2 | 17 | 3.2 | 16 |
| 29 | 19 | 27 | 19 | 6.9 | ------- | 59 | 56 | | 2.9 | 14 | 2.9 | 19 |
| 30 | 17 | 27 | 19 | 7.1 | ------- | 59 | 60 | 54 | 2.4 | 27 | 3.0 | 22 |
| 31 | 16 | ------- | 19 | 7.2 | ------- | 59 | ------- | 54 | ------- | 54 | 3.0 | ------- |

*Monthly discharge of Moddle Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 43 | 0 | 13.4 | 824 |
| November | 27 | 0 | 17.8 | 1,060 |
| December | 34 | 14 | 22.1 | 1,360 |
| January | 32 | 6.9 | 16.1 | 990 |
| February | 34 | 7.5 | 22.6 | 1,260 |
| March | 60 | 34 | 49.2 | 3,030 |
| April | 60 | 4.9 | 43.1 | 2,560 |
| May | 70 | 0 | 47.8 | 2,940 |
| June | 50 | 2.4 | 26.3 | 1,560 |
| July | 68 | 1.3 | 25.3 | 1,560 |
| August | 50 | 2.9 | 18.9 | 1,160 |
| September | 50 | 2.7 | 16.7 | 994 |
| The year | 70 | 0 | 26.7 | 19,300 |

### VALLEY CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In SW. ¼ sec. 32, T. 18 S., R. 21 W. New Mexico principal meridian, in New Mexico, half a mile below intake, a mile east of Arizona-New Mexico State line, and 6 miles east of Duncan, Greenlee County.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915. July 17, 1923, to September 30, 1926.

GAGE.—Vertical staff on left bank; read by G. L. Hatch.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—No diversions above gage.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation continually changing. Standard rating curve fairly well defined. Gage read to nearest two-hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records good.

Canal diverts water from right side of Gila River in NW. ¼ sec. 4, T. 19 S., R. 21 W. New Mexico principal meridian, in New Mexico, for irrigating 1,500 acres in the vicinity of Duncan.

*Discharge measurements of Valley Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 1 | 1.82 | 18.1 | Feb. 6 | 1.40 | 9.6 | June 26 | 1.20 | 8.1 |
| Oct. 20 | 1.50 | 10.1 | Feb. 20 | 2.15 | 28.9 | July 19 | 1.99 | 24.5 |
| Nov. 4 | 1.90 | 21.2 | Mar. 17 | 2.26 | 33.1 | July 20 | 1.00 | 3.6 |
| Nov. 17 | 1.72 | 16.6 | Apr. 5 | 2.14 | 29.5 | Aug. 10 | 1.23 | 8.0 |
| Dec. 1 | 1.58 | 14.3 | Apr. 21 | 1.89 | 23.7 | Aug. 30 | 1.03 | 3.5 |
| Dec. 15 | 1.58 | 14.8 | Apr. 30 | 2.37 | 36.2 | Sept. 21 | 1.82 | 20.4 |
| Jan. 5 | 1.56 | 15.1 | May 10 | 2.15 | 29.9 | | | |
| Jan. 19 | 1.52 | 11.9 | May 31 | 1.92 | 30.9 | | | |

*Daily discharge, in second-feet, of Valley Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 15 | 16 | 16 | 12 | 7.0 | 8.4 | 36 | 31 | 6.7 | 26 | 3.8 |
| 2 | 22 | 19 | 16 | 16 | 11 | 3.6 | 15 | 36 | 26 | 7.0 | 6.1 | 3.3 |
| 3 | 16 | 20 | 17 | 17 | 12 | 0 | 30 | 36 | 22 | 7.4 | 13 | 3.5 |
| 4 | 13 | 17 | 17 | 17 | 12 | 0 | 32 | 36 | 22 | 8.8 | 9.8 | 3.2 |
| 5 | 12 | 21 | 17 | 17 | 12 | 0 | 31 | 35 | 26 | 8.4 | 11 | 3.3 |
| 6 | 11 | 20 | 17 | 18 | 11 | 0 | 31 | 34 | 31 | 8.7 | 8.7 | 3.1 |
| 7 | 11 | 17 | 17 | 17 | 12 | 0 | 33 | 34 | 29 | 8.5 | 8.0 | 3.0 |
| 8 | 11 | 18 | 17 | 15 | 11 | 0 | 33 | 32 | 29 | 9.0 | 8.4 | 3.0 |
| 9 | 11 | 14 | 15 | 14 | 12 | 0 | 32 | 32 | 41 | 9.0 | 8.2 | 2.8 |
| 10 | 25 | 12 | 15 | 15 | 11 | 0 | 34 | 30 | 33 | 8.4 | 8.2 | 23 |
| 11 | 14 | 13 | 15 | 14 | 11 | 0 | 33 | 28 | 29 | 19 | 21 | 16 |
| 12 | 12 | 15 | 15 | 14 | 6.8 | 0 | 31 | 27 | 31 | 29 | 8.2 | 13 |
| 13 | 13 | 16 | 16 | 14 | 6.8 | 19 | 31 | 29 | 32 | 28 | 8.7 | 11 |
| 14 | 12 | 18 | 16 | 13 | 17 | 35 | 31 | 29 | 27 | 28 | 8.4 | 12 |
| 15 | 11 | 22 | 16 | 13 | 31 | 35 | 29 | 27 | 8.0 | 17 | 39 | 8.0 |
| 16 | 11 | 20 | 16 | 13 | 30 | 35 | 27 | 25 | 9.4 | 20 | 41 | 5.2 |
| 17 | 11 | 19 | 15 | 13 | 31 | 33 | 26 | 24 | 9.4 | 25 | 39 | 4.4 |
| 18 | 11 | 17 | 15 | 13 | 31 | 32 | 29 | 25 | 9.6 | 25 | 31 | 4.7 |
| 19 | 11 | 18 | 15 | 13 | 32 | 34 | 25 | 27 | 10 | 15 | 29 | 4.7 |
| 20 | 9.8 | 18 | 15 | 13 | 33 | 35 | 27 | 40 | 10 | 4.6 | 16 | 7.0 |

*Daily discharge, in second-feet, of Valley Canal near Duncan, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 9.8 | 18 | 15 | 13 | 35 | 34 | 25 | 39 | 9.8 | 4.8 | 8.8 | 17 |
| 22 | 9.2 | 18 | 15 | 13 | 34 | 28 | 22 | 41 | 10 | 5.2 | 6.1 | 17 |
| 23 | 9.0 | 18 | 15 | 13 | 34 | 28 | 10 | 44 | 10 | 6.4 | 5.8 | 11 |
| 24 | 9.0 | 18 | 14 | 13 | 35 | 27 | 4.7 | 43 | 9.8 | 7.4 | 5.0 | 7.0 |
| 25 | 9.0 | 18 | 14 | 12 | 35 | 29 | 18 | 42 | 9.4 | 25 | 4.4 | 7.1 |
| 26 | 9.2 | 17 | 13 | 12 | 32 | 28 | 32 | 37 | 8.5 | 34 | 3.8 | 8.2 |
| 27 | 9.4 | 16 | 14 | 12 | 30 | 29 | 34 | 37 | 8.4 | 31 | 3.9 | 9.4 |
| 28 | 12 | 17 | 15 | 12 | 18 | 27 | 33 | 37 | 8.0 | 30 | 3.4 | 17 |
| 29 | 19 | 18 | 15 | 12 | ------- | 25 | 35 | 37 | 7.3 | 30 | 3.5 | 5.6 |
| 30 | 25 | 17 | 16 | 12 | ------- | 9.8 | 36 | 36 | 7.3 | 28 | 3.2 | 0 |
| 31 | 21 | ------- | 16 | 13 | ------- | 7.9 | ------- | 33 | ------- | 25 | 3.3 | ------- |

*Monthly discharge of Valley Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 25 | 9.0 | 13.1 | 806 |
| November | 22 | 12 | 17.5 | 1,040 |
| December | 17 | 13 | 15.5 | 953 |
| January | 18 | 12 | 13.9 | 855 |
| February | 35 | 6.8 | 21.4 | 1,190 |
| March | 35 | 0 | 17.5 | 1,080 |
| April | 36 | 4.7 | 27.3 | 1,620 |
| May | 44 | 24 | 33.8 | 2,080 |
| June | 41 | 7.3 | 18.5 | 1,100 |
| July | 34 | 4.6 | 16.8 | 1,030 |
| August | 41 | 3.2 | 12.9 | 793 |
| September | 23 | 0 | 7.91 | 471 |
| The year | 44 | 0 | 18.0 | 13,000 |

### DUNCAN CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In NE. ¼ sec. 29, T. 8 S., R. 32 E., 1 mile below intake and 2 miles east of Duncan, Greenlee County.

RECORDS AVAILABLE.—July 17, 1923, to September 30, 1926.

GAGE.—Vertical staff on left bank; read by Miss Ernestine Boyd.

DISCHARGE MEASUREMENTS.—Made by wading at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—About 20 acres irrigated above gage.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation continually changing. Rating curve fairly well defined. Gage read to hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Discharge estimated April 12–14, 16–19, and interpolated May 12. Records fair.

Canal diverts water from left side of Gila River in SW. ¼ sec. 28, T. 8 S., R. 32 E., for irrigating 250 acres in the vicinity of Duncan.

*Discharge measurements of Duncan Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Feb. 22 | 1.88 | 0.9 | May 31 | 2.78 | 6.6 | Aug. 30 | 2.30 | 3.4 |
| Apr. 20 | 1.62 | 1.0 | June 22 | 2.56 | 2.3 | Sept. 22 | 1.69 | .4 |
| Apr. 30 | 2.08 | 3.3 | July 20 | 2.67 | 4.9 | | | |
| May 10 | 2.36 | 6.2 | Aug. 10 | 2.35 | 2.6 | | | |

*Daily discharge, in second-feet, of Duncan Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.3 | 2.4 | | | | 1.1 | 3.4 | 5.5 | 4.1 | 5.3 | 3.3 |
| 2 | 6.6 | .6 | | | | 1.0 | 3.7 | 3.7 | 3.9 | 4.6 | 3.9 |
| 3 | 4.8 | | | 3.0 | | .8 | 3.8 | 3.7 | 4.2 | 3.2 | 3.8 |
| 4 | 4.8 | | | 2.9 | | .3 | 4.0 | 1.5 | 4.4 | 1.7 | 3.5 |
| 5 | 5.5 | | | 2.8 | | .7 | 4.3 | .7 | 4.1 | .7 | 3.6 |
| 6 | 5.2 | | | | | 1.2 | 4.8 | 3.3 | 4.3 | 1.1 | 3.6 |
| 7 | 6.0 | | | 1.4 | | .9 | 6.2 | | 4.6 | 3.0 | 3.5 |
| 8 | 4.8 | | | 1.6 | | 1.1 | 6.8 | 2.5 | 4.6 | 3.6 | 3.3 |
| 9 | 4.0 | | | | | .9 | 7.2 | 4.6 | 4.6 | 3.6 | 4.2 |
| 10 | 4.3 | | | 2.8 | | .9 | 6.3 | 4.8 | 4.4 | 3.2 | 2.1 |
| 11 | | | | 2.4 | | 1.3 | 5.0 | 4.8 | 5.0 | 3.6 | |
| 12 | | | | 2.4 | | .8 | 4.4 | 4.7 | 2.4 | 2.8 | |
| 13 | | | | | | .8 | 3.9 | 4.4 | | 3.6 | |
| 14 | | | | 1.4 | 0.3 | .8 | 3.9 | 4.3 | 1.4 | 3.7 | |
| 15 | | | | 1.6 | .2 | .8 | 4.6 | 4.6 | 1.5 | 5.2 | .1 |
| 16 | | | | | .2 | .8 | 4.6 | 4.2 | 3.0 | 5.2 | .1 |
| 17 | | | 1.8 | | .1 | .8 | 4.8 | 4.2 | 2.9 | 5.4 | |
| 18 | | | 1.8 | | .7 | .8 | 4.1 | 3.7 | 3.6 | 4.8 | |
| 19 | | | 1.2 | | .7 | .8 | 4.0 | 3.1 | 4.4 | 4.4 | .2 |
| 20 | | | | | 1.5 | 1.0 | 6.2 | 2.8 | 4.7 | 3.4 | .2 |
| 21 | | | | 4.1 | 1.6 | 1.3 | 5.4 | 2.9 | 4.5 | 2.9 | .5 |
| 22 | | | | 1.4 | 1.0 | 1.2 | 5.4 | 3.6 | 5.0 | 2.6 | .4 |
| 23 | | | | | | .5 | 5.6 | 3.7 | 1.1 | 2.2 | |
| 24 | | 2.1 | | | .8 | 1.0 | 6.6 | 4.0 | 5.3 | 2.3 | |
| 25 | | 1.0 | | 2.0 | 1.2 | 1.6 | 7.1 | 2.7 | 5.7 | 2.3 | |
| 26 | | | | 3.6 | 1.2 | 2.0 | 7.3 | 2.9 | 2.8 | 2.8 | |
| 27 | | | | 2.8 | 1.7 | 2.8 | 7.3 | 3.0 | 5.8 | 2.7 | .3 |
| 28 | | | | 1.4 | 1.4 | 2.7 | 7.3 | 3.3 | 5.8 | 3.0 | .4 |
| 29 | | | | | 3.2 | 3.4 | 7.1 | 3.9 | 5.6 | 3.6 | .2 |
| 30 | | | | | 2.1 | 3.7 | 7.0 | 3.2 | 5.3 | 3.8 | |
| 31 | | | | | 1.2 | | 6.5 | | 5.2 | 3.4 | |

NOTE.—No flow on days for which no discharge is given.

*Monthly discharge of Duncan Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 6.6 | 0 | 1.59 | 97.8 |
| November | 2.4 | 0 | .20 | 11.9 |
| December | 1.8 | 0 | .15 | 9.2 |
| January | 0 | 0 | 0 | 0 |
| February | 4.1 | 0 | 1.34 | 74.4 |
| March | 3.2 | 0 | .62 | 38.1 |
| April | 3.7 | .3 | 1.26 | 75.0 |
| May | 7.3 | 3.4 | 5.44 | 334 |
| June | 5.5 | 0 | 3.48 | 207 |
| July | 5.8 | 0 | 4.01 | 247 |
| August | 5.3 | .7 | 3.35 | 206 |
| September | 4.2 | 0 | 1.24 | 73.8 |
| The year | 7.3 | 0 | 1.90 | 1,370 |

### BLACK-McCLESKY CANAL AT DUNCAN, ARIZ.

LOCATION.—In SE. ¼ sec. 19, T. 8 S., R. 32 E., a quarter of a mile below intake at Duncan, Greenlee County.

RECORDS AVAILABLE.—July 17, 1923, to September 30, 1926. April 16 to September 30, 1915.

GAGE.—Vertical staff on right bank; read by F. M. Craig.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. No well-defined control.

DIVERSIONS.—No diversions above gage.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation continually changing. Rating curve fairly well defined. Gage read to two-hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records fair.

Canal diverts water from left side of Gila River in SE. ¼ sec. 19, T. 8 S., R. 32 E., for irrigating 400 acres in the vicinity of Duncan.

*Discharge measurements of Black-McClesky Canal at Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Feb. 22 | 1.28 | 12.8 | Apr. 30 | 2.26 | 22.0 | Aug. 10 | 1.15 | 6.5 |
| Mar. 6 | 1.48 | 15.5 | May 11 | 1.87 | 17.4 | Aug. 11 | 1.14 | 5.8 |
| Mar. 18 | 2.18 | 17.3 | June 1 | 3.02 | 25.8 | Aug. 31 | 1.26 | 3.6 |
| Apr. 5 | 1.10 | 3.7 | June 27 | 2.00 | 6.9 | Sept. 22 | 1.56 | 3.9 |
| Apr. 21 | .64 | 2.4 | July 19 | 2.14 | 11.7 | | | |

*Daily discharge, in second-feet, of Black-McClesky Canal at Duncan, Ariz., for the year ending September 30, 1926*

| Day | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 1 | | 14 | 17 | 24 | 24 | 1.0 | 5.5 | 3.1 |
| 2 | | 13 | 7.8 | 22 | 18 | .8 | 1.8 | 2.5 |
| 3 | | 13 | 6.7 | 18 | 14 | 1.2 | 15 | 2.3 |
| 4 | | 14 | 6.0 | 16 | 14 | 7.3 | 13 | 2.4 |
| 5 | | 15 | 4.0 | 16 | 13 | 6.5 | 13 | 2.1 |
| 6 | | 16 | 3.9 | 15 | 12 | 2.7 | 12 | 2.7 |
| 7 | | 17 | 5.7 | 14 | 10 | .3 | 10 | 2.3 |
| 8 | | 20 | 9.6 | 28 | 8.5 | .6 | 10 | 1.9 |
| 9 | | 21 | 8.6 | 25 | 6.5 | .4 | 31 | 19 |
| 10 | | 22 | 6.5 | 21 | 5.0 | .1 | 29 | 35 |
| 11 | | 19 | 4.2 | 18 | 3.3 | | 14 | 5.0 |
| 12 | | 21 | 2.6 | 15 | 2.9 | 26 | 10 | 5.9 |
| 13 | | 19 | 2.3 | 9.2 | 3.1 | 2.2 | 7.7 | 4.9 |
| 14 | | 17 | 11 | 8.3 | 3.1 | .2 | 7.3 | 1.8 |
| 15 | 6.9 | 17 | 16 | 6.2 | 2.2 | 2.0 | 43 | 9.5 |
| 16 | 14 | 16 | 15 | 4.6 | 1.6 | 16 | 28 | 9.7 |
| 17 | 12 | 18 | 11 | 5.5 | .5 | 15 | 21 | 12 |
| 18 | 13 | 18 | 9.9 | 36 | .6 | 17 | 16 | 8.3 |
| 19 | 12 | 17 | 6.3 | 32 | .6 | 13 | 7.8 | 3.6 |
| 20 | 11 | 13 | 3.9 | 31 | 4.0 | 15 | 3.8 | 2.0 |
| 21 | 12 | 17 | 3.1 | 30 | 4.4 | 3.8 | 3.9 | 3.0 |
| 22 | 12 | 18 | 3.5 | 27 | 3.1 | 1.6 | 2.0 | 5.0 |
| 23 | 11 | 14 | 10 | 26 | 4.3 | 14 | 8.5 | 4.2 |
| 24 | 9.7 | 12 | 22 | 28 | 3.7 | 13 | 15 | 5.7 |
| 25 | 10 | 14 | 23 | 28 | 3.3 | 3.3 | 8.9 | 6.5 |
| 26 | 9.2 | 19 | 22 | 34 | 2.9 | 7.6 | 8.5 | 16 |
| 27 | 9.2 | 29 | 23 | 34 | 4.0 | 24 | 6.0 | 5.4 |
| 28 | 9.5 | 12 | 22 | 33 | 2.9 | 27 | 4.6 | 2.7 |
| 29 | | 9.2 | 20 | 32 | 1.7 | 18 | 3.1 | 7.1 |
| 30 | | 19 | 23 | 32 | 1.6 | 23 | 4.7 | 8.3 |
| 31 | | 13 | | 27 | | 26 | 3.1 | |

NOTE.—No flow on days for which no discharge is given.

*Monthly discharge of Black-McClesky Canal at Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 |
| January | 0 | 0 | 0 | 0 |
| February | 14 | 0 | 5.41 | 300 |
| March | 29 | 9.2 | 16.7 | 1,030 |
| April | 23 | 2.3 | 11.0 | 655 |
| May | 36 | 4.6 | 2.24 | 1,380 |
| June | 24 | 0.5 | 5.96 | 355 |
| July | 27 | 0 | 9.31 | 572 |
| August | 43 | 1.8 | 11.8 | 726 |
| September | 35 | 1.8 | 6.66 | 396 |
| The year | 43 | 0 | 7.47 | 5,410 |

### COLMONERO CANAL NEAR DUNCAN, ARIZ.

LOCATION.—In SE. ¼ sec. 33, T. 7 S., R. 31 E., 3 miles below intake and 6 miles northwest of Duncan, Greenlee County.

RECORDS AVAILABLE.—September 19, 1914, to September 30, 1915. July 20, 1923, to September 30, 1926.

GAGE.—Vertical staff gage on left bank; read by Annie Zumwalt.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—About 12 acres irrigated above gage.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation continually changing. Rating curves fairly well defined. Gage read to hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Discharge estimated May 16–31. Records good.

Canal diverts water from right side of Gila River in SE. ¼ sec. 11, T. 8 S., R. 31 E., for irrigating 460 acres in the vicinity of Sheldon.

*Discharge measurements of Colmonero Canal near Duncan, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 2 | 0.83 | 3.8 | Apr. 5 | 0.98 | 6.7 | June 27 | 1.24 | 2.3 |
| Dec. 20 | .76 | 3.9 | Apr. 19 | 1.12 | 8.0 | July 19 | 1.42 | 6.1 |
| Jan. 7 | .41 | 1.4 | May 1 | 1.13 | 7.4 | July 20 | 1.40 | 5.9 |
| Jan. 20 | .16 | .2 | May 11 | 1.00 | 6.5 | Aug. 30 | .80 | 1.3 |
| Feb. 23 | 1.23 | 7.9 | June 1 | 1.50 | 7.6 | Sept. 22 | 1.20 | 4.1 |
| Mar. 17 | .64 | 6.1 | June 26 | 1.64 | 5.8 | | | |

*Daily discharge, in second-feet, of Colmonero Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Day | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ------- | 4.0 | 3.4 | ------- | 5.9 | 3.0 | 7.5 | 7.5 | 3.6 | 3.1 | 0.9 |
| 2 | ------- | 3.9 | 3.4 | ------- | 4.8 | 6.7 | 7.6 | 7.3 | 2.6 | 6.3 | 1.0 |
| 3 | ------- | 3.8 | 3.3 | ------- | 2.4 | 6.2 | 8.0 | 6.2 | 2.0 | 6.1 | .8 |
| 4 | ------- | 4.2 | ------- | ------- | ------- | 6.8 | 7.6 | 5.8 | 1.2 | 5.4 | 1.1 |
| 5 | ------- | 4.2 | ------- | ------- | ------- | 6.7 | 7.9 | 5.2 | 2.5 | 4.8 | 1.1 |
| 6 | ------- | 4.3 | ------- | ------- | ------- | 6.5 | 8.1 | 6.1 | 1.2 | 5.6 | 1.0 |
| 7 | ------- | 4.4 | 1.4 | ------- | ------- | 6.4 | 7.9 | 5.8 | .3 | 4.8 | 1.1 |
| 8 | ------- | 4.4 | 1.4 | ------- | ------- | 6.4 | 7.8 | 4.5 | .1 | 3.5 | .9 |
| 9 | ------- | 4.5 | 1.4 | ------- | 9.5 | 6.5 | 7.1 | 4.6 | ------- | 5.8 | 1.2 |
| 10 | ------- | 4.4 | 1.1 | ------- | 7.5 | 5.8 | 6.5 | 6.2 | ------- | 5.7 | .5 |
| 11 | ------- | 4.4 | 1.4 | 2.5 | 6.9 | 5.9 | 7.3 | 3.8 | ------- | ------- | 2.3 |
| 12 | ------- | 4.4 | 1.1 | 2.9 | 6.5 | 6.0 | 7.3 | 4.7 | 3.2 | ------- | 3.2 |
| 13 | ------- | 4.5 | 1.4 | 2.9 | 6.8 | 6.6 | 7.3 | 4.0 | 3.0 | ------- | 1.9 |
| 14 | ------- | 4.5 | 1.7 | 4.7 | 6.5 | 6.9 | 6.9 | 5.7 | 5.1 | ------- | 1.6 |
| 15 | ------- | 4.2 | ------- | 5.7 | 6.3 | 6.8 | 6.7 | 4.8 | 5.6 | ------- | 3.6 |
| 16 | ------- | 4.0 | ------- | 5.6 | 5.5 | 6.7 | | 5.5 | 6.0 | ------- | 4.7 |
| 17 | ------- | 4.0 | ------- | 5.8 | 5.2 | 5.3 | | 2.9 | 5.4 | 1.0 | 4.6 |
| 18 | ------- | 4.4 | ------- | 5.2 | 5.2 | 5.2 | | 1.1 | 5.1 | 3.9 | 4.9 |
| 19 | ------- | 4.5 | ------- | 5.6 | 7.7 | 8.1 | | .7 | 5.8 | 4.6 | 4.3 |
| 20 | 0.4 | 4.7 | .2 | 5.9 | 8.4 | 7.7 | | 2.8 | 5.9 | 3.8 | 4.0 |
| 21 | 2.4 | 4.7 | ------- | 6.0 | 7.9 | 7.1 | | 3.2 | 5.5 | 2.2 | 2.0 |
| 22 | 2.8 | 4.8 | ------- | 6.0 | 6.3 | 7.0 | | 3.5 | 2.6 | .8 | 3.0 |
| 23 | 2.6 | 4.8 | ------- | 5.9 | 7.2 | 6.0 | 7.0 | .4 | 5.5 | 1.4 | 3.5 |
| 24 | 3.4 | 4.9 | ------- | 7.0 | 6.3 | 5.7 | | .4 | 6.5 | 4.9 | 4.1 |
| 25 | 3.3 | 4.8 | ------- | 7.0 | 5.9 | 4.4 | | 2.2 | 6.7 | 3.4 | 3.7 |
| 26 | 3.6 | 4.9 | ------- | 7.0 | 6.4 | 5.3 | | 5.7 | 5.2 | 2.2 | 3.3 |
| 27 | 3.9 | 4.0 | .3 | 5.6 | 9.0 | 5.3 | | 3.9 | 7.3 | 3.8 | 2.5 |
| 28 | 3.9 | 3.7 | .3 | 6.2 | ------- | 5.3 | | 5.0 | 5.9 | 2.6 | 2.5 |
| 29 | 4.0 | 3.5 | .2 | ------- | ------- | 5.2 | | 4.3 | 7.3 | 3.6 | 5.2 |
| 30 | 4.1 | 3.2 | .1 | ------- | ------- | 5.5 | | 3.7 | 7.8 | 2.3 | 5.3 |
| 31 | ------- | 3.5 | ------- | ------- | ------- | ------- | | ------- | 5.7 | 1.7 | ------- |

NOTE.—No flow on days for which no discharge is given.

*Monthly discharge of Colmonero Canal near Duncan, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 0 | 0 | 0 | 0 |
| November | 4.1 | 0 | 1.15 | 68.4 |
| December | 4.9 | 3.2 | 4.27 | 263 |
| January | 3.4 | 0 | .71 | 43.7 |
| February | 7.0 | 0 | 3.48 | 193 |
| March | 9.5 | 0 | 4.65 | 286 |
| April | 8.1 | 3.0 | 6.10 | 363 |
| May | 8.1 | 6.5 | 7.21 | 443 |
| June | 7.5 | .4 | 4.25 | 253 |
| July | 7.8 | 0 | 4.02 | 247 |
| August | 6.3 | 0 | 3.01 | 185 |
| September | 5.3 | .5 | 2.66 | 158 |
| The year | 9.5 | 0 | 3.46 | 2,500 |

### YORK CANAL AT YORK, ARIZ.

LOCATION.—In SE. ¼ sec. 19, T. 6 S., R. 31 E., half a mile below intake, opposite suspension bridge at York, and 16 miles north of Duncan, Greenlee County.

RECORDS AVAILABLE.—May 15, 1923, to September 30, 1926, discharge measurements only. September 19,1914, to September 30, 1915.

GAGE.—None.

DISCHARGE MEASUREMENTS.—Made by wading near road crossing.
CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. No well-defined control.
DIVERSIONS.—None above measuring station.
REGULATION.—By head gate. Flow in canal varies with flow in Gila River.
ACCURACY.—No gage heights obtained. Discharge measurements only.

Canal diverts water from right side of Gila River in SW. ¼ sec. 29, T. 6 S., R. 31 E., for irrigating 286 acres in the vicinity of York.

The following discharge measurements were made during the year:
August 30, 1926: Discharge, 4.7 second-feet.
September 22, 1926: Discharge, 3.0 second-feet.

### BROWN CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In SE. ¼ SE. ¼ sec. 30, T. 6 S., R. 28 E., near Earven ranch, a quarter of a mile below intake and 10 miles east of Solomonsville, Graham County.
RECORDS AVAILABLE.—June 1, 1914, to September 30, 1915; December 20, 1920, to September 30, 1926.
GAGE.—Vertical enamel staff on right bank 10 feet below head gate; read by J. W. Earven.
DISCHARGE MEASUREMENTS.—Made by wading.
CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow.
DIVERSIONS.—No diversions above gage.
REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.
ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to half-tenths twice a day October 1 to December 31, and thereafter to nearest two-hundredths. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records good.

Canal diverts water from right side of Gila River in the SE. ¼ sec. 30, T. 6 S., R. 28 E., for irrigating about 820 acres east of Solomonsville.

*Discharge measurements of Brown Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 11 | 4.30 | 2.6 | Mar. 24 | 5.51 | 20.3 | July 17 | 5.18 | 13.2 |
| Dec. 12 | 5.04 | 11.3 | Apr. 16 | 5.24 | 14.0 | Aug. 8 | 5.30 | 14.9 |
| Jan. 12 | 4.91 | 11.4 | May 13 | 4.80 | 5.6 | Aug. 28 | 5.01 | 10.8 |
| Feb. 4 | 4.87 | 8.7 | May 29 | 5.34 | 12.5 | Sept. 19 | 5.03 | 10.6 |
| Mar. 1 | 95.08 | 13.0 | June 23 | 4.57 | 3.9 | | | |

*Daily discharge, in second-feet, of Brown Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2.6 | 12 | 26 | 26 | 13 | 26 | 29 | 3.4 | 2.8 | 17 | 2.3 |
| 2 | 0 | 2.6 | 23 | 27 | 26 | 16 | 31 | 31 | 5.3 | 2.7 | 18 | 2.6 |
| 3 | 0 | 2.6 | 23 | 12 | 26 | 15 | 32 | 31 | 5.6 | 2.7 | 18 | 2.8 |
| 4 | 0 | 2.6 | 23 | 24 | 20 | 14 | 31 | 31 | 5.8 | 2.6 | 25 | 2.7 |
| 5 | 0 | 2.6 | 22 | 24 | 26 | 13 | 31 | 31 | 6.1 | 5.3 | 26 | 2.6 |
| 6 | 0 | 2.6 | 22 | 24 | 33 | 8 | 32 | 31 | 16 | 7.3 | 25 | 2.7 |
| 7 | 0 | 2.6 | 22 | 24 | 22 | 13 | 31 | 31 | 16 | 5.3 | 4.2 | 2.6 |
| 8 | 0 | 2.6 | 22 | 24 | 0 | 15 | 31 | 38 | 6.6 | 2.4 | 12 | 2.8 |
| 9 | 0 | 2.6 | 22 | 25 | 0 | 15 | 31 | 38 | 6.7 | .8 | 16 | 2.6 |
| 10 | 0 | 2.6 | 22 | 13 | 0 | 15 | 31 | 39 | 2.1 | .8 | 21 | 6.9 |

*Daily discharge, in second-feet, of Brown Canal near Solomonsville, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 0 | 3.2 | 21 | 13 | 0 | 12 | 31 | 33 | 6.9 | 0.7 | 30 | 20 |
| 12 | 6.2 | 3.8 | 19 | 17 | 0 | 14 | 31 | 18 | 7.4 | 4.7 | 31 | 2.9 |
| 13 | 12 | 14 | 21 | 28 | 0 | 19 | 30 | 5.8 | 7.6 | 9.7 | 31 | 3.7 |
| 14 | 7.6 | 14 | 22 | 27 | 0 | 19 | 9 | 4.0 | 7.4 | 11 | 32 | 2.4 |
| 15 | 3.8 | 14 | 22 | 27 | 34 | 19 | 12 | .6 | 7.8 | 10 | 31 | 7.1 |
| 16 | 3.8 | 14 | 22 | 27 | 34 | 19 | 16 | 35 | 2.2 | 9.5 | 29 | 8.2 |
| 17 | 3.8 | 14 | 22 | 27 | 34 | 19 | 11 | 37 | 1.5 | 11 | 26 | 8.7 |
| 18 | 12 | 14 | 22 | 27 | 34 | 31 | 18 | 37 | 2.6 | 11 | 18 | 5.3 |
| 19 | 12 | 14 | 22 | 28 | 34 | 32 | 18 | 30 | 2.6 | 8.0 | 5.8 | 11 |
| 20 | 12 | 13 | 22 | 28 | 34 | 32 | 36 | 29 | 2.8 | 11 | 8.2 | 11 |
| 21 | 12 | 13 | 22 | 28 | 22 | 31 | 36 | 28 | 2.8 | 13 | 9.3 | 11 |
| 22 | 12 | 13 | 22 | 27 | 34 | 32 | 36 | 28 | 2.4 | 14 | 8.9 | 11 |
| 23 | 14 | 13 | 23 | 27 | 34 | 31 | 39 | 5.6 | 3.3 | 14 | 8.5 | 15 |
| 24 | 5.2 | 13 | 23 | 26 | 34 | 27 | 36 | 5.6 | 3.1 | 18 | 4.6 | 12 |
| 25 | .4 | 18 | 23 | 27 | 23 | 31 | 20 | 5.3 | 4.2 | 20 | .8 | 9.9 |
| 26 | .4 | 24 | 23 | 28 | 15 | 31 | 23 | 5.3 | 2.9 | 21 | .4 | 12 |
| 27 | .4 | 24 | 23 | 29 | 13 | 32 | 16 | 5.0 | 2.9 | 20 | .4 | 12 |
| 28 | .4 | 24 | 23 | 30 | 14 | 34 | 17 | 5.0 | 2.8 | 20 | 2.3 | 12 |
| 29 | 1.2 | 12 | 23 | 32 | ------- | 11 | 27 | 12 | 2.3 | 20 | 1.1 | 8.3 |
| 30 | 2.6 | 12 | 23 | 34 | ------- | 15 | 28 | 5.0 | 3.9 | 34 | 2.6 | 5.3 |
| 31 | 2.6 | ------- | 26 | 27 | ------- | 23 | ------- | 1.1 | ------- | 30 | 2.1 | ------- |

*Monthly discharge of Brown Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 14 | 0 | 4.01 | 247 |
| November | 24 | 2.6 | 10.3 | 613 |
| December | 26 | 12 | 22.0 | 1,350 |
| January | 34 | 12 | 25.4 | 1,560 |
| February | 34 | 0 | 20.4 | 1,130 |
| March | 34 | 8 | 21.0 | 1,290 |
| April | 39 | 9 | 26.6 | 1,580 |
| May | 39 | .6 | 21.5 | 1,320 |
| June | 16 | 1.2 | 5.07 | 302 |
| July | 34 | .7 | 11.1 | 682 |
| August | 32 | .4 | 15.0 | 922 |
| September | 20 | 2.3 | 7.31 | 435 |
| The year | 39 | 0 | 15.8 | 11,400 |

### BROWN CANAL WASTEWAY NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In SE. ¼ NE. ¼ sec. 31, T. 6 S., R. 28 E., near Earven ranch, 10 miles east of Solomonsville, Graham County.

RECORDS AVAILABLE.—December 20, 1920, to September 30, 1926.

GAGE.—Vertical enamel staff on right bank 200 feet below waste gate; read by J. W. Earven.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of silt. Channel straight. Banks not subject to overflow.

DIVERSIONS.—None.

REGULATION.—Complete regulation by waste gate of Brown Canal.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined. Gage read twice a day to half-tenths until January 17 and to two-hundredths thereafter. Daily discharge ascertained by applying mean daily gage height to rating tables. Records fair.

Wasteway returns water from Brown Canal to Gila River half a mile below station on Gila River near Solomonsville.

*Discharge measurements of Brown Canal wasteway near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 12 | 5.73 | 6.2 | Mar. 24 | 5.25 | 0.9 | Aug. 8 | 5.75 | 4.6 |
| Jan. 12 | 5.48 | 3.1 | Apr. 16 | 5.27 | .9 | Sept. 19 | 5.69 | 3.6 |
| Feb. 4 | 5.58 | 4.0 | May 29 | 5.85 | 9.6 | | | |
| Mar. 1 | 5.10 | .3 | July 17 | 5.25 | .8 | | | |

*Daily discharge, in second-feet, of Brown Canal wasteway near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 2.1 | | 0.2 | 4.7 | 1.4 | 0.1 | | 0.1 | |
| 2 | | 0.1 | 2.1 | | .3 | 1.2 | | .1 | | | |
| 3 | | .1 | .1 | | .2 | 2.4 | .1 | 1.0 | | | |
| 4 | | .1 | .1 | 1.4 | .0 | .3 | .6 | .6 | | | |
| 5 | | .1 | .1 | 2.6 | .6 | .4 | 2.4 | | | | |
| 6 | | .1 | .1 | 2.2 | .3 | 1.2 | 2.1 | .1 | | | |
| 7 | | .1 | .1 | .7 | .7 | | | .7 | | | |
| 8 | | .1 | .1 | | .3 | | | 2.1 | | 1.9 | |
| 9 | | .6 | .1 | | | | | 1.0 | | | |
| 10 | | 2.1 | .1 | | 1.6 | | | | | | |
| 11 | | 2.1 | .1 | | 2.4 | | | | | .2 | 0.1 |
| 12 | 0.1 | 2.9 | 1.2 | | 2.3 | | | | | | .4 |
| 13 | .1 | 2.1 | 3.1 | | 2.2 | | | .1 | | | |
| 14 | .1 | 2.1 | 3.1 | | 2.6 | | .1 | .1 | | 1.7 | |
| 15 | | 2.1 | 3.1 | .4 | 2.2 | .6 | .6 | .1 | | | |
| 16 | | 2.1 | 3.1 | 2.2 | 2.1 | 1.0 | | | | | |
| 17 | | 2.1 | 3.1 | 2.3 | | .8 | | | 0.3 | .4 | |
| 18 | | 2.1 | 3.4 | 2.3 | | .6 | .1 | | .8 | 1.7 | |
| 19 | | 2.1 | 3.5 | .7 | | 2.6 | 2.1 | | | .6 | 3.6 |
| 20 | | .1 | 3.6 | .5 | | 3.0 | .1 | | | .4 | 3.7 |
| 21 | | .1 | 1.2 | 2.4 | .6 | 3.5 | | | | | |
| 22 | | .1 | .1 | 2.1 | 2.2 | 3.5 | | | | | 3.9 |
| 23 | | .1 | | 2.4 | 2.4 | 3.4 | .1 | | | | 1.3 |
| 24 | | .1 | 3.5 | 2.3 | 1.7 | 5.2 | | | .1 | .1 | .1 |
| 25 | | .1 | .8 | 1.4 | .7 | 3.2 | | | .5 | .2 | |
| 26 | | .1 | 2.4 | | 2.2 | 5.0 | .1 | | 1.1 | .1 | |
| 27 | | .1 | 2.5 | | .7 | 4.7 | .1 | | 1.8 | .4 | 5.1 |
| 28 | | .1 | 2.6 | | .4 | 5.0 | .7 | | .7 | | 3.4 |
| 29 | | .1 | 2.4 | | .6 | 4.6 | 9.0 | | .2 | | .9 |
| 30 | | .1 | 2.5 | | .7 | 6.8 | .6 | | | | 2.3 |
| 31 | | .1 | | | .6 | | 1.1 | | | | |

NOTE.—No flow on days for which no discharge is given.

*Monthly discharge of Brown Canal wasteway near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 0.1 | 0 | 0.01 | 0.6 |
| November | 0 | 0 | 0 | 0 |
| December | 2.9 | 0 | .78 | 48.0 |
| January | 3.6 | 0 | 1.62 | 99.6 |
| February | 2.6 | 0 | .92 | 51.1 |
| March | 2.6 | 0 | .99 | 60.9 |
| April | 6.8 | 0 | 2.12 | 126 |
| May | 9.0 | 0 | .69 | 42.4 |
| June | 2.1 | 0 | .20 | 11.9 |
| July | 1.8 | 0 | .18 | 11.1 |
| August | 1.9 | 0 | .25 | 15.4 |
| September | 5.1 | 0 | .83 | 49.4 |
| The year | 9.0 | 0 | .71 | 516 |

### MICHELANA CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In NE. ¼ SW. ¼ sec. 3, T. 7 S., R. 27 E., at Moody ranch, a quarter of a mile below head gate and 6 miles northeast of Solomonsville, Graham County.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915; December 21, 1920, to September 30, 1926.

GAGE.—Vertical staff on right bank 30 feet below wagon bridge; read by Edwin Carpenter.

DISCHARGE MEASUREMENTS.—Made from footbridge.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. No well-defined control.

DIVERSIONS.—None above gage.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records good.

Canal diverts water from right side of Gila River in SW. ¼ sec. 31, T. 7 S., R. 28 E., for irrigating about 450 acres in vicinity of Solomonsville.

*Discharge measurements of Michelana Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 3 | 3.45 | 0.1 | Feb. 27 | 3.57 | 0.4 | June 24 | 3.75 | 1.3 |
| Nov. 11 | 4.10 | 4.2 | Mar. 23 | 4.60 | 11.8 | July 21 | 3.72 | 1.1 |
| Dec. 12 | 3.53 | .0 | Mar. 24 | 4.49 | 9.8 | Aug. 7 | 4.53 | 9.3 |
| Jan. 11 | 3.58 | .4 | Apr. 16 | 4.12 | 6.1 | Aug. 27 | 4.20 | 5.8 |
| Feb. 3 | 3.64 | .4 | May 13 | 4.04 | 4.3 | Sept. 20 | 3.79 | 1.5 |

*Daily discharge, in second-feet, of Michelana Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 5.2 | 0 | 0.5 | 0.3 | 0.2 | 2.8 | 5.3 | 5.3 | 2.4 | 6.0 | 6.8 |
| 2 | 0 | 4.4 | 0 | .5 | .3 | .2 | 1.3 | 3.6 | 5.1 | 3.2 | 7.8 | 6.8 |
| 3 | 0 | 3.3 | 0 | .5 | .3 | 4.7 | 1.0 | 3.3 | 5.1 | 3.2 | 2.8 | 7.1 |
| 4 | 0 | 4.6 | 0 | .5 | .3 | 5.7 | 1.0 | 7.4 | 5.3 | 4.1 | 2.5 | 6.9 |
| 5 | 0 | 5.1 | 0 | .5 | .4 | 4.7 | 1.0 | 6.8 | 5.3 | 6.1 | 2.2 | 6.9 |
| 6 | 0 | 5.4 | 0 | .5 | .4 | 5.2 | 1.0 | 4.6 | 4.9 | 9.1 | 10 | 6.7 |
| 7 | 2.0 | 5.1 | 0 | .5 | .4 | 5.0 | 15 | 3.2 | 4.2 | 8.4 | 11 | 6.7 |
| 8 | 3.9 | 5.0 | 0 | .5 | .3 | 3.8 | 14 | 4.1 | 3.5 | 7.7 | 10 | 6.5 |
| 9 | 3.9 | 4.9 | 0 | .5 | .4 | 2.6 | 13 | 5.0 | 1.8 | 6.2 | 11 | 6.7 |
| 10 | 4.7 | 4.8 | 0 | .4 | .6 | 1.8 | 11 | 6.0 | 1.8 | 5.5 | 10 | 5.8 |
| 11 | .5 | 4.4 | 0 | .4 | 2.2 | 1.7 | 7.6 | 5.4 | 2.6 | 5.5 | 12 | 7.8 |
| 12 | .6 | 4.2 | 0 | .4 | 2.2 | 1.7 | 7.6 | 5.1 | 3.0 | 5.5 | 13 | 5.3 |
| 13 | .4 | 4.0 | 0 | .4 | 0 | 1.7 | 7.1 | 4.0 | 3.0 | 5.2 | 14 | 1.5 |
| 14 | 0 | 3.7 | 0 | .3 | 0 | 1.7 | 5.4 | 2.6 | 3.0 | 5.0 | 12 | .6 |
| 15 | 0 | 3.7 | 0 | .3 | 0 | 9.1 | 6.5 | 1.8 | 3.0 | 5.0 | 7.8 | .4 |
| 16 | 0 | 3.8 | 0 | .3 | 0 | 9.1 | 6.0 | 8.8 | 2.9 | 4.0 | 7.4 | .2 |
| 17 | 0 | 4.2 | 0 | .4 | 0 | 9.4 | 5.9 | 8.2 | 2.9 | 3.1 | 7.8 | .2 |
| 18 | 0 | 4.3 | 0 | .4 | 0 | 9.4 | 5.6 | 7.5 | 2.9 | 1.5 | 8.2 | .7 |
| 19 | 0 | 4.2 | 0 | .4 | .4 | 9.4 | 4.8 | 7.2 | 2.9 | 7.7 | 8.5 | 1.4 |
| 20 | 0 | 4.0 | .5 | .4 | .8 | 9.4 | 3.8 | 6.7 | 2.9 | 4.0 | 6.1 | 1.5 |

*Daily discharge, in second-feet, of Michelana Canal near Solomonsville, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 2.8 | 3.8 | 0.5 | 0.4 | 0.8 | 9.4 | 3.3 | 5.8 | 2.8 | 1.7 | 6.8 | 2.2 |
| 22 | 5.7 | 3.6 | .8 | .4 | .8 | 10 | 2.9 | 5.6 | 2.4 | 6.6 | 6.2 | 2.7 |
| 23 | 5.7 | 3.3 | .8 | .4 | .6 | 12 | 4.6 | 5.5 | 1.6 | 7.1 | 6.0 | 3.0 |
| 24 | 5.7 | 3.1 | .9 | .4 | .4 | 10 | 8.4 | 5.3 | 1.5 | 6.6 | 5.9 | 2.7 |
| 25 | 5.7 | 2.6 | .9 | .6 | .3 | 10 | 8.4 | 5.2 | 1.3 | 3.7 | 8.1 | 3.6 |
| 26 | 5.6 | 2.1 | .9 | .5 | .2 | 9.4 | 8.9 | 5.3 | 1.3 | 4.0 | 6.9 | 2.7 |
| 27 | 5.4 | 1.1 | .8 | .5 | .3 | 9.5 | 12 | 5.6 | 1.3 | 8.0 | 6.3 | 6.6 |
| 28 | 5.4 | .5 | .8 | .5 | .2 | 9.5 | 12 | 5.6 | 1.6 | 6.7 | 6.2 | 2.0 |
| 29 | 5.4 | 0 | .9 | .5 | ------ | 9.4 | 11 | 5.6 | 2.0 | 6.5 | 6.1 | 2.5 |
| 30 | 5.2 | 0 | .9 | .5 | ------ | 8.8 | 7.6 | 5.5 | 2.0 | 5.5 | 6.2 | .8 |
| 31 | 5.2 | ------ | .9 | .5 | ------ | 8.8 | ------ | 5.4 | ------ | 5.9 | 6.3 | ------ |

*Monthly discharge of Michelana Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 5.7 | 0 | 2.38 | 146 |
| November | 5.4 | 0 | 3.61 | 215 |
| December | .9 | 0 | .31 | 19.1 |
| January | .6 | .3 | .45 | 27.7 |
| February | 2.2 | 0 | .46 | 25.5 |
| March | 12 | .2 | 6.56 | 403 |
| April | 15 | 1.0 | 6.68 | 397 |
| May | 8.8 | 1.8 | 5.39 | 331 |
| June | 5.3 | 1.3 | 2.97 | 177 |
| July | 9.1 | 1.5 | 5.31 | 326 |
| August | 14 | 2.2 | 7.78 | 478 |
| September | 7.8 | .2 | 3.84 | 228 |
| The year | 15 | 0 | 3.83 | 2,770 |

### FOURNESS CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In SE. ¼ SE. ¼ sec. 35, T. 6 S., R. 27 E., three-quarters of a mile below intake and 8 miles east of Solomonsville, Graham County.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915; December 20, 1920, to September 30, 1926.

GAGE.—Vertical staff on right bank 300 feet below waste gate; read by P. Miranda and J. Abeita.

DISCHARGE MEASUREMENTS.—Made by wading at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Channel small and uniform in cross section. No well-defined control.

DIVERSIONS.—No diversions above gage.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves well defined. Gage read to two-hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used March 24 to May 9 and August 9 to September 30. Discharge estimated December 1–11, 13–31, and January 7–10. Records good.

Canal diverts water from left side of Gila River in NE. ¼ sec. 1, T. 7 S., R. 27 E., for irrigating about 260 acres in the vicinity of Solomonsville.

*Discharge measurements of Fourness Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Dec. 12 | 3.95 | 0.0 | Mar. 24 | 5.50 | 11.7 | July 17 | 4.83 | 1.6 |
| Jan. 11 | 4.27 | .1 | Apr. 18 | 4.52 | .6 | Aug. 8 | 5.49 | 8.6 |
| Feb. 3 | 4.35 | .3 | May 9 | 5.04 | 3.6 | Aug. 28 | 4.79 | .9 |
| Feb. 27 | 4.71 | 2.9 | May 29 | 5.28 | 6.3 | | | |
| Mar. 23 | 5.50 | 11.2 | June 23 | 4.59 | .2 | | | |

*Daily discharge, in second-feet, of Fourness Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Nov. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10 | 0.2 | 2.8 | 8.6 | 8.9 | 4.4 | 0.3 | 9.2 | 1.0 |
| 2 | | 10 | .2 | 3.2 | 9.8 | 7.5 | 2.3 | .1 | 7.0 | 1.6 |
| 3 | | 10 | .4 | 3.7 | 9.8 | 5.7 | 1.5 | .4 | 4.4 | 1.3 |
| 4 | | 5.2 | .4 | 3.2 | 8.9 | 3.4 | .9 | | 7.6 | |
| 5 | | 1.2 | .4 | 3.9 | 9.7 | 3.9 | .4 | .5 | 5.7 | 1.8 |
| 6 | | 1.2 | .5 | 3.9 | 7.4 | 3.3 | | 1.5 | 0 | 1.5 |
| 7 | | | 3.7 | 2.2 | 8.8 | 4.9 | 8.9 | 2.1 | 1.6 | 1.1 |
| 8 | | .1 | 3.0 | 5.9 | 9.0 | 5.8 | 8.9 | 1.0 | 4.3 | 1.6 |
| 9 | | | 4.9 | 11 | 5.4 | 3.2 | 7.5 | .9 | 5.3 | 1.6 |
| 10 | | | 4.5 | 11 | 6.4 | 4.0 | 4.6 | .3 | 4.2 | 5.8 |
| 11 | | .1 | 4.1 | 12 | 6.2 | 4.0 | 1.8 | .4 | 6.9 | 3.4 |
| 12 | | 8.9 | 4.1 | 8.1 | 6.8 | 2.9 | 1.5 | 7.0 | 9.3 | |
| 13 | | 5.9 | 3.9 | 6.8 | 1.5 | 3.1 | 1.2 | 4.4 | 9.8 | |
| 14 | | 3.2 | 3.8 | 6.8 | .2 | 2.1 | .7 | | 4.4 | |
| 15 | | 5.5 | 3.9 | 9.0 | 2.2 | 1.1 | .6 | 1.0 | 8.4 | |
| 16 | | 8.1 | 6.2 | 12 | 2.0 | .3 | .9 | 1.1 | 8.5 | |
| 17 | | 8.9 | 6.8 | 12 | 1.1 | .9 | .8 | 1.0 | .7 | |
| 18 | | 2.8 | 6.2 | 12 | 1.8 | 2.3 | .4 | .7 | 7.7 | |
| 19 | | .4 | 6.8 | 12 | 5.6 | 5.5 | .4 | .4 | 4.5 | |
| 20 | | .2 | 5.2 | 10 | 5.5 | 7.4 | .3 | .1 | 3.2 | |
| 21 | 1.2 | .3 | 6.8 | 12 | 5.4 | 8.2 | .3 | 6. | 1.6 | |
| 22 | 3.7 | .2 | 3.2 | 11 | 5.4 | 8.2 | .4 | 4.6 | .6 | |
| 23 | 3.7 | 1.2 | 7.5 | 11 | 3.1 | 7.4 | .3 | 7.4 | 3.9 | |
| 24 | 3.7 | .6 | 7.4 | 11 | 3.0 | 5.5 | | 7.0 | 8.0 | |
| 25 | 3.7 | .2 | 8.0 | 11 | 5.7 | 4.4 | 1.4 | 3.3 | .6 | |
| 26 | 3.7 | .2 | 7.6 | 12 | 4.0 | 4.8 | 2.1 | | 4.1 | |
| 27 | 3.7 | .2 | 5.2 | 12 | 4.4 | 5.5 | 1.4 | .7 | 1.2 | |
| 28 | 3.7 | .2 | 2.8 | 9.7 | 7.2 | 6.6 | .1 | | 1.0 | 1.2 |
| 29 | 3.7 | .2 | | 4.5 | 7.7 | 6.3 | .4 | | 1.9 | |
| 30 | 3.7 | .2 | | .4 | 7.1 | 6.8 | .8 | 4.4 | 4.5 | .4 |
| 31 | | .2 | | .3 | | 5.5 | | 3.6 | 1.1 | |

NOTE.—No flow on days for which no discharge is given.

*Monthly discharge of Fourness Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 0 | 0 | 0 | 0 |
| November | 3.7 | 0 | 1.15 | 68.4 |
| December | 0 | 0 | 0 | 0 |
| January | 10 | .1 | 2.76 | 170 |
| February | 8.0 | .2 | 4.20 | 233 |
| March | 12 | .3 | 7.95 | 489 |
| April | 9.8 | .2 | 5.66 | 337 |
| May | 8.9 | .3 | 4.82 | 296 |
| June | 8.9 | 0 | 1.84 | 109 |
| July | 7.4 | 0 | 1.95 | 120 |
| August | 9.8 | 0 | 4.55 | 280 |
| September | 5.8 | 0 | .74 | 44.0 |
| The year | 12 | 0 | 2.97 | 2,150 |

### SAN JOSE CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In NW. ¼ NE. ¼ sec. 10, T. 7 S., R. 27 E., near Curtis ranch, 2 miles below intake, and 4 miles east of Solomonsville, Graham County.

RECORDS AVAILABLE.—April 1, 1914, to September 30, 1915; December 21, 1920, to September 30, 1926.

GAGE.—Continuous water-stage recorder installed April 13, 1922, 17 feet above concrete drop, 200 feet below waste gate, and 2 miles below heading.

DISCHARGE MEASUREMENTS.—Made from footbridge near gage.

CHANNEL AND CONTROL.—Wide, uniform section. Well-defined banks. Principal control is formed by concrete drop 17 feet below gage.

DIVERSIONS.—One diversion above gage, irrigating 90 acres.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation permanent, except for periods February 2–26, May 1–8, and May 29 to June 7. Standard rating curve well defined. Operation of water-stage recorder satisfactory, except as shown in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table or from hourly discharge for days of considerable range in stage, except as shown in footnote to daily-discharge table; shifting-control method used February 2–27 and May 1 to June 7. Records good.

Canal diverts water from left side of Gila River in the SW. ¼ sec. 36, T. 6 S., R. 27 E., for irrigating 3,000 acres in the vicinity of Solomonsville and Safford.

*Discharge measurements of San Jose Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 3 | 0.45 | 26.2 | Feb. 27 | 0.50 | 31.2 | June 24 | 0.45 | 26.2 |
| Nov. 12 | .58 | 39.0 | Mar. 23 | .73 | 57 | July 16 | .48 | 28.0 |
| Dec. 13 | .53 | 33.3 | Apr. 18 | .67 | 49.2 | Aug. 7 | .47 | 26.5 |
| Jan. 11 | .45 | 26.8 | May 9 | .78 | 71 | Aug. 27 | .47 | 27.3 |
| Feb. 3 | .65 | 48.8 | May 28 | .88 | 86 | Sept. 20 | .47 | 29.0 |

*Daily discharge, in second-feet, of San Jose Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | | 36 | 8.7 | 0 | 29 | 52 | 44 | 71 | 22 | 74 | 25 |
| 2 | 26 | | 48 | 17 | 1.2 | 26 | 52 | 46 | 64 | 24 | 69 | 27 |
| 3 | 26 | | 46 | 19 | 31 | 16 | 50 | 46 | 66 | 24 | 69 | 26 |
| 4 | 29 | | 44 | 16 | 49 | 25 | 50 | 43 | 62 | 23 | 72 | 26 |
| 5 | 30 | | 42 | 18 | 48 | 33 | 57 | 42 | 53 | 29 | 48 | 19 |
| 6 | 29 | 40 | 41 | 25 | 49 | 39 | 59 | 55 | 49 | 32 | 29 | 24 |
| 7 | 28 | | 38 | 32 | 49 | 44 | 54 | 69 | 42 | 28 | 38 | 25 |
| 8 | 28 | | 36 | 31 | 48 | 54 | 54 | 74 | 36 | 27 | 39 | 24 |
| 9 | 27 | | 36 | 28 | 49 | 53 | 59 | 74 | 31 | 19 | 33 | 24 |
| 10 | 33 | | 35 | 25 | 44 | 54 | 64 | 68 | 28 | 26 | 31 | 63 |
| 11 | 28 | 39 | 34 | 26 | 42 | 62 | 66 | 65 | 27 | 32 | 59 | 77 |
| 12 | 51 | 39 | 34 | 34 | 43 | 65 | 66 | 61 | 28 | 60 | 63 | 74 |
| 13 | 71 | 38 | 34 | 40 | 46 | 66 | 49 | 69 | 28 | 66 | 48 | 74 |
| 14 | 68 | 37 | 34 | 31 | 44 | 69 | 48 | 83 | 27 | 59 | 56 | 62 |
| 15 | 47 | 37 | 33 | 31 | 43 | 74 | 57 | 88 | 26 | 44 | 62 | 57 |
| 16 | 44 | 39 | 32 | 26 | 46 | 80 | 53 | 87 | 24 | 33 | 72 | 43 |
| 17 | 47 | 41 | 31 | 22 | 44 | 69 | 54 | 87 | 25 | 30 | 65 | 35 |
| 18 | 49 | 41 | 31 | 23 | 37 | 64 | 52 | 85 | 25 | 26 | 69 | 39 |
| 19 | 47 | 39 | 31 | 25 | 36 | 58 | 52 | 88 | 25 | 33 | 50 | 33 |
| 20 | 44 | 38 | 31 | 24 | 36 | 54 | 52 | 88 | 25 | 26 | 47 | 29 |

*Daily discharge, in second-feet, of San Jose Canal near Solomonsville, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 55 | 36 | 32 | 24 | 35 | 53 | 50 | 87 | 25 | 29 | 46 | 28 |
| 22 | 53 | 36 | 33 | 24 | 36 | 54 | 53 | 90 | 25 | 33 | 35 | 26 |
| 23 | 52 | 37 | 31 | 23 | 37 | 55 | 62 | 87 | 25 | 35 | 30 | 28 |
| 24 | 42 | 38 | 31 | 22 | 34 | 58 | 69 | 87 | 26 | 42 | 33 | 27 |
| 25 | 36 | 44 | 32 | 0 | 31 | 59 | 69 | 90 | 25 | 67 | 32 | 27 |
| 26 | 36 | 43 | 32 | 0 | 31 | 55 | 59 | 87 | 19 | 75 | 29 | 21 |
| 27 | | 40 | 33 | 0 | 30 | 62 | 58 | 77 | 23 | 64 | 27 | 18 |
| 28 | | 39 | 33 | 0 | 30 | 74 | 57 | 85 | 20 | 64 | 30 | 4.2 |
| 29 | 40 | 38 | 32 | 0 | ------- | 59 | 48 | 87 | 22 | 68 | 28 | 1.6 |
| 30 | | 37 | 33 | 0 | ------- | 50 | 36 | 83 | 22 | 69 | 27 | 0 |
| 31 | | ------- | 30 | 0 | ------- | 53 | ------- | 80 | ------- | 72 | 25 | ------- |

NOTE.—Clock stopped Oct. 1–2, Oct. 27 to Nov. 10, Jan. 9–10; clock stopped intermittently Feb. 19–26, Mar. 8–23, Aug. 5–6. Staff readings used Jan. 9–10, Feb. 19–26, Mar. 8–23, July 27–29, Aug. 5–6. Discharge estimated Oct. 1–2 and Oct. 27 to Nov. 10.

*Monthly discharge of San Jose Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | ---------- | ---------- | 40.4 | 2,480 |
| November | ---------- | ---------- | 39.2 | 2,330 |
| December | 48 | 30 | 34.8 | 2,140 |
| January | 40 | 0 | 19.2 | 1,180 |
| February | 49 | 0 | 37.5 | 2,080 |
| March | 80 | 16 | 53.7 | 3,300 |
| April | 69 | 36 | 55.4 | 3,300 |
| May | 90 | 42 | 74.3 | 4,570 |
| June | 71 | 19 | 33.1 | 1,970 |
| July | 75 | 19 | 41.3 | 2,540 |
| August | 74 | 25 | 46.3 | 2,850 |
| September | 77 | 0 | 32.9 | 1,960 |
| The year | 90 | 0 | 42.4 | 30,700 |

### MONTEZUMA CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In SE. ¼ NW. ¼ sec. 17, T. 7 S., R. 27 E., 1 mile below intake and 2 miles east of Solomonsville, Graham County.

RECORDS AVAILABLE.—April 1, 1914, to September 30, 1915; December 29, 1920, to September 30, 1926.

GAGE.—Water-stage recorder installed June 26, 1922, on left bank 200 feet below waste gate.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—None above gage.

REGULATION.—By head gates and waste gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying mean daily gage height to rating table or from hourly discharge for days of considerable range in stage; shifting-control method used for entire year. Records good.

Canal diverts water from left side of Gila River in NE. ¼ sec. 17, T. 7 S., R. 27 E., for irrigating 3,750 acres in the vicinity of Solomonsville and Safford.

*Discharge measurements of Montezuma Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 3 | 8.55 | 36.8 | Feb. 27 | 8.51 | 32.7 | June 24 | 8.30 | 26.7 |
| Nov. 12 | 9.24 | 63 | Mar. 23 | 9.30 | 68 | July 16 | 8.63 | 36.0 |
| Dec. 13 | 9.01 | 53 | Apr. 17 | 9.60 | 74 | Aug. 7 | 8.55 | 34.5 |
| Jan. 11 | 7.98 | 12.8 | May 9 | 9.75 | 86 | Aug. 27 | 8.36 | 25.2 |
| Feb. 4 | 8.84 | 46.0 | May 28 | 10.07 | 91 | Sept. 17 | 8.46 | 29.5 |

*Daily discharge, in second-feet, of Montezuma Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 42 | 52 | 48 | 57 | 32 | 77 | 93 | 69 | 24 | 76 | 29 |
| 2 | 37 | 39 | 52 | 32 | 57 | 32 | 80 | 91 | 64 | 22 | 74 | 36 |
| 3 | 37 | 38 | 53 | 31 | 52 | 34 | 84 | 89 | 64 | 22 | 85 | 34 |
| 4 | 45 | 52 | 56 | 29 | 47 | 34 | 81 | 85 | 63 | 22 | 77 | 27 |
| 5 | 51 | 68 | 53 | 28 | 51 | 36 | 79 | 91 | 58 | 26 | 56 | 26 |
| 6 | 48 | 66 | 55 | 28 | 52 | 42 | 69 | 95 | 53 | 34 | 44 | 26 |
| 7 | 47 | 66 | 55 | 27 | 50 | 54 | 63 | 103 | 52 | 32 | 34 | 26 |
| 8 | 43 | 65 | 54 | 26 | 50 | 65 | 61 | 93 | 48 | 33 | 38 | 26 |
| 9 | 39 | 63 | 54 | 26 | 47 | 69 | 75 | 87 | 44 | 26 | 37 | 26 |
| 10 | 44 | 62 | 54 | 26 | 45 | 71 | 70 | 86 | 38 | 27 | 38 | 46 |
| 11 | 57 | 62 | 54 | 18 | 44 | 77 | 73 | 84 | 28 | 26 | 65 | 83 |
| 12 | 66 | 62 | 54 | 12 | 43 | 80 | 76 | 94 | 25 | 46 | 78 | 83 |
| 13 | 67 | 62 | 54 | 11 | 43 | 80 | 76 | 92 | 26 | 68 | 68 | 77 |
| 14 | 66 | 61 | 53 | 11 | 42 | 76 | 79 | 83 | 23 | 72 | 70 | 76 |
| 15 | 67 | 60 | 53 | 11 | 42 | 75 | 80 | 73 | 22 | 52 | 66 | 77 |
| 16 | 67 | 61 | 53 | 29 | 45 | 73 | 77 | 68 | 21 | 41 | 74 | 52 |
| 17 | 66 | 61 | 53 | 56 | 45 | 72 | 74 | 79 | 20 | 37 | 70 | 39 |
| 18 | 63 | 61 | 53 | 54 | 43 | 72 | 73 | 82 | 21 | 36 | 65 | 52 |
| 19 | 60 | 60 | 54 | 55 | 46 | 67 | 68 | 74 | 24 | 35 | 60 | 44 |
| 20 | 59 | 59 | 53 | 57 | 50 | 64 | 79 | 70 | 22 | 28 | 53 | 38 |
| 21 | 57 | 58 | 52 | 56 | 50 | 64 | 81 | 64 | 22 | 27 | 50 | 32 |
| 22 | 52 | 58 | 52 | 55 | 46 | 68 | 77 | 73 | 22 | 24 | 37 | 31 |
| 23 | 49 | 58 | 52 | 55 | 42 | 67 | 78 | 82 | 30 | 25 | 25 | 31 |
| 24 | 50 | 58 | 51 | 55 | 39 | 66 | 91 | 81 | 28 | 28 | 31 | 26 |
| 25 | 50 | 57 | 51 | 58 | 37 | 68 | 86 | 80 | 38 | 68 | 29 | 27 |
| 26 | 50 | 52 | 50 | 58 | 37 | 87 | 92 | 80 | 26 | 79 | 28 | 34 |
| 27 | 48 | 52 | 50 | 58 | 35 | 89 | 92 | 88 | 25 | 80 | 25 | 53 |
| 28 | 47 | 52 | 50 | 57 | 34 | 81 | 90 | 90 | 26 | 80 | 24 | 53 |
| 29 | 47 | 52 | 50 | 58 | ------ | 76 | 86 | 84 | 26 | 76 | 28 | 51 |
| 30 | 46 | 52 | 50 | 58 | ------ | 70 | 81 | 81 | 25 | 77 | 29 | 48 |
| 31 | 44 | ------ | 51 | 56 | ------ | 79 | ------ | 79 | ------ | 80 | 33 | ------ |

NOTE.—Clock stopped Nov. 1–12, 17–30, Dec. 1–6, 16–20; staff readings (gage read twice a day to hundredths) used during these periods.

*Monthly discharge of Montezuma Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 67 | 37 | 52.2 | 3,210 |
| November | 68 | 38 | 57.3 | 3,410 |
| December | 56 | 50 | 52.6 | 3,230 |
| January | 58 | 11 | 40.0 | 2,460 |
| February | 57 | 34 | 45.4 | 2,520 |
| March | 89 | 32 | 65.2 | 4,010 |
| April | 92 | 61 | 78.3 | 4,660 |
| May | 103 | 64 | 83.7 | 5,150 |
| June | 69 | 20 | 34.8 | 2,070 |
| July | 80 | 22 | 43.6 | 2,680 |
| August | 85 | 24 | 50.5 | 3,110 |
| September | 83 | 26 | 43.6 | 2,590 |
| The year | 103 | 11 | 54.0 | 39,100 |

### UNION CANAL NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—In SE. ¼ NE. ¼ sec. 14, T. 7 S., R. 26 E., 1¾ miles below intake and 1½ miles northwest of Solomonsville, Graham County.

RECORDS AVAILABLE.—April 1, 1914, to September 30, 1915; January 1, 1921, to September 30, 1926.

GAGE.—Continuous water-stage recorder installed June 11, 1922, on left bank.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt and sand. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—None.

REGULATION.—By head gates. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Operation of water-stage recorder satisfactory, except as indicated in footnote to table of daily discharge. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method for entire year. Records good.

Canal diverts water from left side of Gila River in the NW. ¼ sec. 18, T. 7 S., R. 27 E., for irrigating 5,980 acres in the vicinity of Safford and Thatcher.

*Discharge measurements of Union Canal near Solomonsville, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 4 | 2.63 | 80 | Mar. 23 | 3.04 | 119 | Aug. 7 | 1.42 | 45.3 |
| Nov. 12 | 2.34 | 71 | Mar. 24 | 2.93 | 121 | Aug. 12 | 3.32 | 156 |
| Dec. 13 | 1.84 | 51 | Apr. 17 | 2.04 | 83 | Aug. 27 | .39 | 19.6 |
| Jan. 11 | 1.15 | 26.3 | May 12 | 2.95 | 115 | Sept. 17 | 1.21 | 46.7 |
| Feb. 3 | 2.52 | 83 | May 28 | 3.20 | 144 | Sept. 24 | .93 | 38.5 |
| Feb. 6 | 2.17 | 65 | June 24 | .59 | 22.6 | | | |
| Feb. 27 | 2.14 | 64 | July 16 | 1.75 | 66 | | | |

*Daily discharge, in second-feet, of Union Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64 | | 62 | 63 | 93 | 64 | 127 | 101 | 127 | 18 | 94 | 14 |
| 2 | 66 | | 67 | 74 | 80 | 67 | 127 | 94 | 118 | 18 | 85 | 12 |
| 3 | 74 | | 80 | 54 | 76 | 77 | 114 | 91 | 104 | 16 | 82 | 12 |
| 4 | 75 | | 62 | 40 | 67 | 75 | 116 | 89 | 97 | 16 | 70 | 13 |
| 5 | 66 | | 52 | 40 | 68 | 84 | 113 | 87 | 103 | 17 | 57 | 16 |
| 6 | 73 | 75 | 49 | 37 | 71 | 93 | 114 | 91 | 92 | 48 | 45 | 16 |
| 7 | 72 | | 49 | 40 | 64 | 103 | 115 | 97 | 93 | 56 | 37 | 16 |
| 8 | 74 | | 46 | 45 | 68 | 105 | 103 | 97 | 87 | 41 | 56 | 18 |
| 9 | 69 | | 49 | 44 | 76 | 107 | 91 | 94 | 84 | 36 | 38 | 20 |
| 10 | 93 | | 52 | 38 | 72 | 108 | 94 | 95 | 83 | 26 | 40 | 67 |
| 11 | 95 | | 52 | 27 | 66 | 106 | 90 | 101 | 77 | 23 | 122 | 114 |
| 12 | 82 | 71 | 51 | 26 | 70 | 110 | 86 | 112 | 71 | 64 | 135 | 125 |
| 13 | 84 | 70 | 51 | 40 | 75 | 104 | 93 | 125 | 62 | 114 | 130 | 123 |
| 14 | 89 | 68 | 50 | 51 | 73 | 108 | 100 | 134 | 57 | 96 | 124 | 79 |
| 15 | 82 | 66 | 49 | 51 | 73 | 114 | 103 | 128 | 52 | 74 | 122 | 63 |
| 16 | 90 | 65 | 46 | 51 | 72 | 116 | 94 | 133 | 50 | 63 | 127 | 47 |
| 17 | 97 | 63 | 45 | 49 | 73 | 115 | 88 | 131 | 48 | 53 | 122 | 52 |
| 18 | 98 | 61 | 55 | 52 | 78 | 114 | 89 | 130 | 46 | 39 | 105 | 86 |
| 19 | 98 | 63 | 66 | 32 | 70 | 110 | 82 | 135 | 40 | 26 | 83 | 77 |
| 20 | 89 | 65 | 64 | 5 | 68 | 108 | 78 | 138 | 38 | 26 | 62 | 66 |

*Daily discharge, in second-feet, of Union Canal near Solomonsville, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 82 | 66 | 66 | 0 | 70 | 107 | 78 | 130 | 36 | 28 | 40 | 60 |
| 22 | 91 | 68 | 65 | 0 | 69 | 117 | 76 | 124 | 33 | 49 | 47 | 50 |
| 23 | 98 | 70 | 63 | 0 | 66 | 124 | 71 | 128 | 23 | 36 | 49 | 43 |
| 24 | 89 | 74 | 63 | 0 | 74 | 130 | 74 | 128 | 20 | 61 | 32 | 36 |
| 25 | 84 | 79 | 64 | 0 | 69 | 128 | 78 | 137 | 21 | 126 | 27 | 29 |
| 26 | 75 | 84 | 64 | 0 | 57 | 140 | 85 | 137 | 20 | 132 | 21 | 50 |
| 27 | | 78 | 65 | 46 | 64 | 142 | 102 | 151 | 20 | 135 | 18 | |
| 28 | | 68 | 64 | 78 | 64 | 132 | 112 | 148 | 21 | 134 | 16 | |
| 29 | | 65 | 65 | 76 | ------- | 128 | 108 | 134 | 20 | 133 | 13 | |
| 30 | | 66 | 68 | 76 | ------- | 117 | 102 | 134 | 19 | 125 | 13 | |
| 31 | | ------- | 65 | 82 | ------- | 128 | ------- | 126 | ------- | 108 | 13 | ------- |

NOTE.—No gage-height record from recorder graph Oct. 26 to Nov. 24, July 19, Aug. 4, 5, 19, 20, Sept. 15, 26–30. Staff readings used Nov. 12, 13, 23. Discharge estimated Oct. 26 to Nov. 11, July 19, Sept. 26–30. Discharge interpolated Nov. 14–17, 19–22, 24, Aug. 4, 5, 19, 20, Sept. 15.

*Monthly discharge of Union Canal near Solomonsville, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 98 | 64 | 81.4 | 5,010 |
| November | 84 | 61 | 71.2 | 4,240 |
| December | 80 | 45 | 58.4 | 3,590 |
| January | 82 | 0 | 39.3 | 2,420 |
| February | 93 | 57 | 70.9 | 3,940 |
| March | 142 | 64 | 109 | 6,700 |
| April | 127 | 71 | 96.8 | 5,760 |
| May | 151 | 87 | 119 | 7,320 |
| June | 127 | 19 | 58.7 | 3,490 |
| July | 135 | 16 | 62.5 | 3,840 |
| August | 135 | 13 | 65.3 | 4,020 |
| September | 125 | 12 | 50.1 | 2,980 |
| The year | 151 | 0 | 73.6 | 53,300 |

### GRAHAM CANAL NEAR SAFFORD, ARIZ.

LOCATION.—In NE. ¼ SW. ¼ sec. 5, T. 7 S., R. 26 E., near Hatfield ranch, 1 mile below intake and 2 miles north of Safford, Graham County.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915; December 30, 1920, to September 30, 1926.

GAGE.—Vertical staff on left bank 600 feet below waste gate; read by J. M. Hatfield.

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

CHANNEL AND CONTROL.—Bed composed of silt; frequently covered by deposits of sand. No well-defined control. Banks not subject to overflow.

DIVERSIONS.—One diversion just above gage, irrigating 52 acres.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean gage daily height to rating table, using shifting-control method for entire year. Records good.

Canal diverts water from right side of Gila River in the NW. ¼ sec. 9, T. 7 S., R. 26 E., for irrigating 2,580 acres in the vicinity of Safford.

*Discharge measurements of Graham Canal near Safford, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 4 | 4.30 | 16.0 | Feb. 28 | 4.52 | 15.3 | July 18 | 4.34 | 3.7 |
| Nov. 13 | 5.28 | 55 | Mar. 25 | 6.04 | 75 | Aug. 8 | 4.70 | 10.8 |
| Dec. 14 | 5.37 | 59 | Apr. 16 | 5.56 | 48.5 | Aug. 29 | 4.55 | 6.6 |
| Jan. 13 | 5.37 | 60 | May 12 | 5.68 | 61 | Sept. 20 | 5.42 | 38.7 |
| Feb. 4 | 5.47 | 49.5 | May 30 | 5.98 | 76 | | | |
| Feb. 6 | 5.16 | 37.8 | June 25 | 4.50 | 10.1 | | | |

*Daily discharge, in second-feet, of Graham Canal near Safford, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 49 | 60 | 63 | 54 | 14 | 49 | 69 | 60 | 12 | 56 | 4.8 |
| 2 | 17 | 48 | 60 | 65 | 55 | 13 | 48 | 66 | 56 | 10 | 63 | 5.3 |
| 3 | 17 | 47 | 60 | 66 | 52 | 15 | 50 | 65 | 40 | 9.7 | 44 | 5.3 |
| 4 | 17 | 42 | 60 | 55 | 49 | 17 | 51 | 63 | 25 | 8.5 | 25 | 4.8 |
| 5 | 17 | 38 | 61 | 40 | 42 | 17 | 26 | 71 | 19 | 8.5 | 13 | 4.8 |
| 6 | 17 | 36 | 59 | 39 | 38 | 26 | 0 | 78 | 26 | 8.8 | 19 | 4.8 |
| 7 | 13 | 36 | 60 | 50 | 48 | 36 | 23 | 81 | 15 | 11 | 33 | 4.8 |
| 8 | 13 | 34 | 59 | 61 | 40 | 54 | 42 | 79 | 11 | 11 | 11 | 4.6 |
| 9 | 13 | 34 | 60 | 61 | 35 | 47 | 43 | 74 | 10 | 9.1 | 14 | 24 |
| 10 | 13 | 31 | 60 | 62 | 34 | 67 | 43 | 72 | 10 | 6.8 | 15 | 31 |
| 11 | 65 | 34 | 62 | 61 | 36 | 63 | 47 | 63 | 11 | 4.8 | 38 | 26 |
| 12 | 47 | 50 | 62 | 63 | 35 | 70 | 44 | 57 | 13 | 4.6 | 56 | 0 |
| 13 | 62 | 56 | 59 | 61 | 25 | 69 | 52 | 16 | 15 | 51 | 55 | 0 |
| 14 | 68 | 56 | 59 | 60 | 24 | 66 | 53 | 30 | 12 | 30 | 61 | 0 |
| 15 | 66 | 55 | 59 | 59 | 24 | 60 | 52 | 66 | 11 | 12 | 63 | 0 |
| 16 | 64 | 56 | 59 | 58 | 24 | 65 | 50 | 78 | 10 | 19 | 32 | 3.7 |
| 17 | 62 | 56 | 58 | 59 | 24 | 71 | 46 | 74 | 6.4 | 9.4 | 17 | 18 |
| 18 | 61 | 56 | 55 | 57 | 18 | 72 | 40 | 78 | 12 | 1.8 | 50 | 30 |
| 19 | 60 | 56 | 56 | 57 | 17 | 72 | 37 | 78 | 11 | 3.3 | 30 | 48 |
| 20 | 59 | 55 | 56 | 56 | 20 | 73 | 36 | 81 | 11 | 9.1 | 10 | 28 |
| 21 | 57 | 55 | 55 | 55 | 17 | 74 | 50 | 75 | 11 | 6.0 | 12 | 21 |
| 22 | 56 | 56 | 54 | 55 | 19 | 70 | 61 | 63 | 11 | 11 | 11 | 19 |
| 23 | 53 | 56 | 53 | 54 | 14 | 68 | 62 | 60 | 10 | 6.3 | 9.1 | 17 |
| 24 | 52 | 55 | 54 | 52 | 17 | 74 | 61 | 59 | 9.1 | 49 | 7.4 | 15 |
| 25 | 55 | 61 | 54 | 52 | 20 | 76 | 66 | 44 | 9.4 | 26 | 6.0 | 12 |
| 26 | 54 | 61 | 53 | 51 | 20 | 74 | 71 | 41 | 9.7 | 0 | 5.5 | 0 |
| 27 | 55 | 60 | 55 | 48 | 15 | 72 | 66 | 60 | 9.7 | 22 | 6.3 | 0 |
| 28 | 53 | 60 | 55 | 44 | 14 | 69 | 71 | 74 | 8.8 | 38 | 6.3 | 10 |
| 29 | 52 | 60 | 52 | 44 | ------ | 56 | 76 | 72 | 8.8 | 48 | 7.1 | 21 |
| 30 | 52 | 60 | 54 | 44 | ------ | 46 | 72 | 74 | 4.8 | 45 | 4.8 | 21 |
| 31 | 51 | ------ | 59 | 54 | ------ | 43 | ------ | 61 | ------ | 54 | 4.8 | ------ |

*Monthly discharge of Graham Canal near Safford, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 68 | 13 | 43.8 | 2,690 |
| November | 61 | 31 | 50.3 | 2,990 |
| December | 62 | 52 | 57.5 | 3,540 |
| January | 66 | 39 | 55.0 | 3,380 |
| February | 55 | 14 | 29.6 | 1,640 |
| March | 76 | 13 | 55.1 | 3,390 |
| April | 76 | 0 | 49.6 | 2,950 |
| May | 81 | 16 | 65.2 | 4,010 |
| June | 60 | 4.8 | 15.9 | 946 |
| July | 54 | 0 | 17.6 | 1,080 |
| August | 63 | 4.8 | 25.3 | 1,560 |
| September | 48 | 0 | 12.8 | 762 |
| The year | 81 | 0 | 40.0 | 28,900 |

### SMITHVILLE CANAL NEAR THATCHER, ARIZ.

LOCATION.—In NW. ¼ sec. 35, T. 6 S., R. 25 E., three-quarters of a mile below intake and 1½ miles north of Thatcher, Graham County.

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1915; December 23, 1920, to September 30, 1926.

GAGE.—Vertical enamel section on left bank 300 feet below waste gate; read by Patricia Vasquez, Roy Ratliff, and Ernest Munoz.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Uniform section. Banks not subject to overflow. No well-defined control.

DIVERSIONS.—None above gage.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to nearest half-tenth twice a day October 1 to December 31 and to hundredths January 1 to September 30. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used for entire year. Records good.

Canal diverts water from left side of Gila River in NE. ¼ sec. 35, T. 6 S., R. 25 E., for irrigating 1,760 acres in the vicinity of Pima.

*Discharge measurements of Smithville Canal near Thatcher, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 2 | 6.12 | 6.8 | Mar. 2 | 6.54 | 18.2 | July 18 | 6.10 | 15.4 |
| Nov. 12 | 6.64 | 22.7 | Mar. 25 | 6.90 | 38.4 | Aug. 9 | 6.60 | 27.0 |
| Dec. 14 | 6.94 | 31.0 | Apr. 18 | 6.75 | 31.1 | Aug. 29 | 5.85 | 7.6 |
| Jan. 13 | 6.65 | 15.8 | May 12 | 6.66 | 33.2 | Sept. 18 | 6.26 | 18.5 |
| Feb. 5 | 7.19 | 34.9 | May 30 | 6.95 | 41.6 | | | |
| Feb. 28 | 6.69 | 21.4 | June 25 | 5.94 | 10.8 | | | |

*Daily discharge, in second-feet, of Smithville Canal near Thatcher, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 2.7 | 16 | 30 | 12 | 21 | 29 | 49 | 40 | 6.4 | 63 | 7.1 |
| 2 | 4.8 | 2.0 | 17 | 33 | 19 | 17 | 33 | 36 | 39 | 7.9 | 56 | 7.1 |
| 3 | 13 | 2.6 | 39 | 17 | 25 | 15 | 33 | 39 | 39 | 6.7 | 49 | 7.7 |
| 4 | 15 | 1.8 | 35 | 21 | 42 | 17 | 34 | 42 | 32 | 6.7 | 26 | 7.1 |
| 5 | 13 | 1.2 | 35 | 18 | 34 | 24 | 35 | 37 | 31 | 9.3 | 17 | 7.3 |
| 6 | 13 | 2.2 | 36 | 17 | 30 | 29 | 35 | 38 | 32 | 11 | 17 | 7.5 |
| 7 | 14 | 2.2 | 33 | 17 | 25 | 37 | 44 | 37 | 29 | 9.3 | 35 | 8.1 |
| 8 | 13 | .5 | 32 | 16 | 26 | 13 | 36 | 39 | 29 | 9.1 | 18 | 8.5 |
| 9 | 14 | 1.8 | 8.5 | 16 | 23 | .8 | 31 | 38 | 29 | 8.3 | 23 | 10 |
| 10 | 15 | 8.5 | 30 | 10 | 26 | 0 | 30 | 35 | 27 | 9.1 | 17 | 41 |
| 11 | 37 | 28 | 19 | 16 | 22 | 0 | 28 | 34 | 21 | 8.9 | 35 | 47 |
| 12 | 12 | 27 | 19 | 15 | 25 | 0 | 36 | 31 | 17 | 8.5 | 46 | 49 |
| 13 | 18 | 23 | 19 | 15 | 26 | 0 | 42 | 25 | 16 | 53 | 33 | 51 |
| 14 | 17 | 24 | 25 | 16 | 19 | 0 | 45 | 21 | 16 | 31 | 40 | 45 |
| 15 | 11 | 24 | 32 | 15 | 24 | 0 | 44 | 21 | 15 | 14 | 49 | 42 |
| 16 | 12 | 24 | 18 | 15 | 19 | 0 | 43 | 10 | 16 | 0 | 51 | 36 |
| 17 | 10 | 22 | 18 | 17 | 22 | 0 | 44 | 12 | 15 | 0 | 47 | 21 |
| 18 | 5.6 | 24 | 18 | 19 | 23 | 0 | 31 | 14 | 11 | 7.5 | 48 | 19 |
| 19 | 2.3 | 21 | 31 | 18 | 23 | 55 | 26 | 22 | 11 | .13 | 33 | 22 |
| 20 | 3.0 | 19 | 7.3 | 21 | 23 | 43 | 28 | 21 | 11 | 7.5 | 24 | 18 |

*Daily discharge, in second-feet, of Smithville Canal near Thatcher, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 3.1 | 18 | 7.1 | 19 | 23 | 34 | 23 | 23 | 9.5 | 7.1 | 17 | 15 |
| 22 | 6.4 | 18 | 25 | 18 | 18 | 35 | 18 | 24 | 9.5 | 11 | 14 | 14 |
| 23 | 4.8 | 18 | 27 | 20 | 17 | 34 | 17 | 26 | 8.9 | 8.9 | 10 | 13 |
| 24 | 3.2 | 17 | 15 | 17 | 17 | 35 | 17 | 23 | 10 | 8.5 | 7.7 | 12 |
| 25 | 2.7 | 19 | 15 | 19 | 19 | 37 | 19 | 23 | 10 | 63 | 7.5 | 37 |
| 26 | .9 | 20 | 24 | 16 | 17 | 50 | 21 | 24 | 7.1 | 61 | 6.5 | 41 |
| 27 | .1 | 19 | 24 | 13 | 25 | 49 | 31 | 29 | 8.5 | 47 | 6.5 | 32 |
| 28 | 0 | 17 | 24 | 10 | 22 | 41 | 47 | 45 | 7.3 | 36 | 5.3 | 10 |
| 29 | .1 | 17 | 24 | 11 | ------- | 27 | 54 | 50 | 6.2 | 36 | 6.2 | 0 |
| 30 | .1 | 17 | 27 | 10 | ------- | 27 | 46 | 51 | 6.0 | 47 | 4.6 | 4.3 |
| 31 | .4 | ------- | 27 | 10 | ------- | 30 | ------- | 51 | ------- | 57 | 5.1 | ------ |

*Monthly discharge of Smithville Canal near Thatcher, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 37 | 0 | 8.63 | 531 |
| November | 28 | .5 | 14.7 | 875 |
| December | 39 | 7.1 | 23.4 | 1,440 |
| January | 33 | 10 | 16.9 | 1,040 |
| February | 42 | 12 | 23.1 | 1,280 |
| March | 55 | 0 | 21.6 | 1,330 |
| April | 54 | 17 | 33.3 | 1,980 |
| May | 51 | 10 | 31.3 | 1,920 |
| June | 40 | 6.0 | 18.6 | 1,110 |
| July | 63 | 0 | 19.7 | 1,210 |
| August | 63 | 4.6 | 26.4 | 1,620 |
| September | 51 | 0 | 21.3 | 1,270 |
| The year | 63 | 0 | 21.6 | 15,600 |

### DODGE-NEVADA CANAL NEAR PIMA, ARIZ.

LOCATION.—In NW. ¼ SE. ¼ sec. 18, T. 6 S., R. 25 E., 1 mile below intake and 1½ miles north of Pima, Graham County.

RECORDS AVAILABLE.—December 31, 1920, to September 30, 1926.

GAGE.—Vertical staff on right bank half a mile below waste gate and 200 feet upstream from siphon at county highway crossing; read by Millicent Crockett.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks vertical. Control affected by siphon 200 feet below gage.

DIVERSIONS.—One diversion above gage, irrigating 14½ acres.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gageread to nearest two-hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method for entire year. Discharge estimated December 2–23, 29, 30, and January 26 and 27. Records good.

Canal diverts water from left side of Gila River in the NW. ¼ sec. 20, T. 6 S., R. 25 E., for irrigating 1,250 acres in the vicinity of Pima.

*Discharge measurements of Dodge-Nevada Canal near Pima, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 2 | 1.43 | 18.9 | Feb. 28 | 1.26 | 14.8 | June 25 | 1.24 | 10.2 |
| Nov. 13 | 1.28 | 11.0 | Mar. 22 | 1.70 | 31.3 | July 18 | 1.30 | 11.9 |
| Dec. 11 | .83 | 1.3 | Apr. 19 | 1.50 | 26.0 | Aug. 9 | 1.25 | 10.2 |
| Jan. 13 | 1.07 | 9.0 | May 8 | 2.06 | 36.2 | Aug. 26 | 1.13 | 6.2 |
| Feb. 5 | .78 | 1.7 | May 30 | 1.61 | 23.4 | Sept. 18 | 1.25 | 8.6 |

*Daily discharge, in second-feet, of Dodge-Nevada Canal near Pima, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 19 | 8.4 | 20 | 18 | 14 | 5.8 | 23 | 22 | 9.0 | 20 | 5.6 |
| 2 | 14 | 19 | | 20 | 12 | 16 | 9.9 | 22 | 24 | 8.0 | 20 | 4.0 |
| 3 | 11 | 19 | | 21 | 8.3 | 17 | 0 | 21 | 22 | 8.3 | 14 | 4.0 |
| 4 | 11 | 20 | | 19 | 6.2 | 18 | 0 | 22 | 18 | 8.6 | 2.3 | 3.1 |
| 5 | 9.3 | 19 | | 17 | 5.9 | 11 | 39 | 26 | 13 | 8.3 | 1.8 | 2.8 |
| 6 | 9.0 | 18 | | 14 | 19 | 30 | 23 | 25 | 13 | 8.6 | 2.6 | 3.1 |
| 7 | 9.0 | 19 | | 14 | 17 | 64 | 31 | 28 | 14 | 7.7 | 25 | 3.1 |
| 8 | 9.3 | 19 | | 13 | 15 | 25 | 21 | 35 | 14 | 8.3 | 11 | 3.1 |
| 9 | 9.0 | 19 | | 12 | 16 | 21 | 15 | 37 | 8.0 | 3.7 | 12 | 3.3 |
| 10 | 8.6 | 20 | | 11 | 16 | 32 | 14 | 25 | 12 | 5.3 | 12 | 5.3 |
| 11 | 20 | 17 | | 9.6 | 15 | 28 | 13 | 22 | 13 | 6.5 | 30 | 27 |
| 12 | 5.0 | 16 | | 9.0 | 14 | 29 | 9.3 | 20 | 12 | 8.0 | 38 | 22 |
| 13 | 4.5 | 13 | 1 | 8.6 | 9.6 | 28 | 7.4 | 17 | 11 | 5.3 | 42 | 17 |
| 14 | 12 | 9.9 | | 7.7 | 15 | 26 | 7.4 | 14 | 12 | 4.3 | 34 | 18 |
| 15 | 6.8 | 8.3 | | 8.0 | 16 | 24 | 8.3 | 12 | 16 | 8.3 | 45 | 14 |
| 16 | 2.5 | 9.9 | | 9.0 | 17 | 24 | 7.4 | 11 | 15 | 2.0 | 43 | 11 |
| 17 | 2.2 | 9.9 | | 8.0 | 17 | 28 | 17 | 10 | 14 | 8.3 | 39 | 5.0 |
| 18 | 4.5 | 11 | | 7.7 | 16 | 36 | 27 | 12 | 13 | 12 | 35 | 5.6 |
| 19 | 4.0 | 12 | | 7.4 | 16 | 32 | 26 | 21 | 12 | 15 | 24 | 12 |
| 20 | 4.5 | 12 | | 7.4 | 15 | 24 | 26 | 26 | 9.3 | 7.7 | 16 | 14 |
| 21 | 9.3 | 12 | | 20 | 14 | 24 | 24 | 25 | 9.6 | 7.7 | 16 | 13 |
| 22 | 11 | 12 | | 32 | 16 | 30 | 23 | 26 | 8.6 | 7.1 | 16 | 9.9 |
| 23 | 17 | 11 | | 21 | 14 | 29 | 22 | 26 | 8.6 | 7.1 | 12 | 12 |
| 24 | 20 | 12 | 5.0 | 13 | 12 | 26 | 23 | 28 | 8.3 | 15 | 7.4 | 9.9 |
| 25 | 20 | 17 | 11 | 12 | 12 | 33 | 23 | 29 | 9.3 | 61 | 6.8 | 35 |
| 26 | 21 | 18 | 7.7 | 1 | 13 | 32 | 21 | 27 | 12 | 43 | 6.2 | 17 |
| 27 | 22 | 17 | 6.8 | 1 | 12 | 33 | 21 | 37 | 9.0 | 35 | 4.8 | 18 |
| 28 | 22 | 18 | 3.4 | 9.9 | 13 | 7 | 26 | 53 | 9.0 | 25 | 3.8 | 8.6 |
| 29 | 21 | 18 | 1 | 12 | ------- | 0 | 38 | 28 | 9.3 | 20 | 4.8 | 4.0 |
| 30 | 20 | 17 | 1 | 14 | ------- | 0 | 26 | 23 | 8.3 | 16 | 3.8 | 2.3 |
| 31 | 19 | ------- | 18 | 17 | ------- | 0 | ------- | 24 | ------- | 18 | 4.0 | ------ |

*Monthly discharge of Dodge-Nevada Canal near Pima, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 22 | 2.2 | 12.2 | 750 |
| November | 20 | 8.3 | 15.4 | 916 |
| December | 18 | ---------- | 2.72 | 167 |
| January | 32 | ---------- | 12.8 | 787 |
| February | 19 | 5.9 | 13 9 | 772 |
| March | 64 | 0 | 23.9 | 1,470 |
| April | 39 | 0 | 18.5 | 1,100 |
| May | 53 | 10 | 24.4 | 1,500 |
| June | 24 | 8.0 | 12.6 | 750 |
| July | 61 | 2.0 | 13.2 | 812 |
| August | 45 | 1.8 | 17.8 | 1,090 |
| September | 35 | 2 3 | 10.4 | 619 |
| The year | 64 | 0 | 14.8 | 10,700 |

### CURTIS-KEMPTON CANAL NEAR EDEN, ARIZ.

LOCATION.—In SE. ¼ NE. ¼ sec. 4, T. 6 S., R. 24 E., on Christensen ranch, 2 miles below intake and 1½ miles southeast of Eden, Graham County.

RECORDS AVAILABLE.—December 26, 1920, to September 30, 1926.

GAGE.—Vertical staff on left bank at ranch house 600 feet below waste gate; read by Rozella Hancock and Mrs. W. Carpenter.

DISCHARGE MEASUREMENTS.—Made from footbridge near gage.

CHANNEL AND CONTROL.—Bed composed of silt. Banks not subject to overflow. Control affected by two checks just below gage.

DIVERSIONS.—Three diversions above gage, irrigating 87 acres.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method for entire year. Records good.

Canal diverts water from right side of Gila River in the NW. ¼ sec. 12, T. 6 S., R. 24 E., for irrigating 1,650 acres in the vicinity of Eden.

*Discharge measurements of Curtis-Kempton Canal near Eden, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 2 | 4.45 | 5.5 | Mar. 22 | 6.03 | 32.0 | July 18 | 3.81 | 3.4 |
| Nov. 13 | 5.34 | 20.4 | Mar. 25 | 5.18 | 31.2 | Aug. 9 | 4.55 | 12.3 |
| Dec. 11 | 4.85 | 7.4 | Apr. 15 | 5.35 | 30.6 | Aug. 26 | 4.21 | 7.2 |
| Jan. 13 | 5.46 | 19.5 | May 8 | 5.45 | 41.4 | Sept. 18 | 4.71 | 16.4 |
| Feb. 26 | 4.73 | 16.8 | May 30 | 5.37 | 38.7 | | | |
| Feb. 28 | 4.77 | 18.1 | June 29 | 4.47 | 13.7 | | | |

*Daily discharge, in second-feet, of Curtis-Kempton Canal near Eden, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.7 | 22 | 18 | 17 | 36 | 15 | 24 | 32 | 29 | 0 | 29 | 6.3 |
| 2 | 4.4 | 22 | 17 | 17 | 0 | 19 | 22 | 36 | 27 | 9.7 | 28 | 6.9 |
| 3 | 3.3 | 23 | 17 | 17 | 0 | 15 | 22 | 30 | 17 | 9.0 | 26 | 6.3 |
| 4 | 3.8 | 23 | 17 | 17 | 0 | 19 | 21 | 32 | 13 | 10 | 25 | 7.0 |
| 5 | 3.8 | 23 | 16 | 19 | 0 | 16 | 24 | 41 | 10 | 9.8 | 16 | 0 |
| 6 | 5.8 | 23 | 16 | 19 | 0 | 24 | 25 | 39 | 12 | 9.5 | 9.5 | 4.9 |
| 7 | 7.3 | 22 | 16 | 20 | 0 | 36 | 16 | 41 | 0 | 11 | 16 | 6.3 |
| 8 | 7.0 | 22 | 16 | 20 | 0 | 36 | 29 | 44 | 6.4 | 9.5 | 12 | 6.2 |
| 9 | 7.4 | 22 | 16 | 19 | 0 | 36 | 12 | 44 | 6.0 | 8.9 | 13 | 6.0 |
| 10 | 7.6 | 22 | 16 | 19 | 0 | 36 | 19 | 46 | 11 | 8.7 | 7.7 | 5.7 |
| 11 | 32 | 22 | 12 | 20 | 0 | 40 | 19 | 44 | 9.8 | 8.1 | 0 | 35 |
| 12 | 30 | 22 | 16 | 20 | 0 | 42 | 21 | 35 | 5.2 | 7.7 | 0 | 31 |
| 13 | 31 | 22 | 17 | 19 | 14 | 42 | 26 | 25 | 9.0 | 8.0 | 0 | 15 |
| 14 | 28 | 22 | 16 | 19 | 12 | 43 | 26 | 22 | .7 | 5.4 | 10 | 33 |
| 15 | 26 | 21 | 16 | 19 | 12 | 39 | 29 | 24 | .4 | 7.0 | 28 | 17 |
| 16 | 23 | 21 | 16 | 19 | 11 | 30 | 24 | 25 | .2 | 3.8 | 28 | 20 |
| 17 | 20 | 21 | 16 | 19 | 12 | 24 | 24 | 31 | 0 | 3.1 | 23 | 17 |
| 18 | 19 | 22 | 16 | 22 | 12 | 31 | 23 | 30 | 0 | 3.1 | 31 | 16 |
| 19 | 19 | 21 | 16 | 26 | 12 | 35 | 22 | 34 | 0 | 3.1 | 29 | 6.4 |
| 20 | 21 | 21 | 16 | 28 | 12 | 38 | 20 | 29 | 5.7 | 3.5 | 16 | 9.5 |

*Daily discharge, in second-feet, of Curtis-Kempton Canal near Eden, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 22 | 22 | 16 | 28 | 17 | 43 | 21 | 36 | 6.0 | 5.7 | 13 | 6.4 |
| 22 | 22 | 20 | 16 | 33 | 14 | 31 | 20 | 38 | 6.0 | 6.6 | 6.6 | 6.4 |
| 23 | 22 | 19 | 16 | 33 | 14 | 42 | 22 | 36 | 5.7 | 6.9 | 8.7 | 12 |
| 24 | 23 | 20 | 16 | 34 | 8 | 40 | 28 | 30 | 9.4 | 6.0 | 6.4 | 0 |
| 25 | 23 | 19 | 17 | 33 | 18 | 33 | 33 | 20 | 13 | 19 | 7.0 | 5.9 |
| 26 | 22 | 19 | 16 | 34 | 15 | 31 | 41 | 22 | 13 | 26 | 7.3 | 30 |
| 27 | 22 | 20 | 16 | 36 | 16 | 36 | 40 | 37 | 9.8 | 38 | 6.9 | 24 |
| 28 | 22 | 20 | 16 | 37 | 16 | 30 | 39 | 47 | 9.8 | 35 | 6.5 | 20 |
| 29 | 22 | 20 | 16 | 36 | ------- | 13 | 40 | 37 | 12 | 33 | 7.1 | 10 |
| 30 | 22 | 19 | 17 | 35 | ------- | 10 | 43 | 39 | 9.5 | 33 | 6.8 | 8.0 |
| 31 | 22 | ------- | 16 | 36 | ------- | 25 | ------- | 39 | ------- | 35 | 6.4 | ------ |

*Monthly discharge of Curtis-Kempton Canal near Eden, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 32 | 3.3 | 17.6 | 1,080 |
| November | 23 | 19 | 21.2 | 1,260 |
| December | 18 | 12 | 16.1 | 990 |
| January | 37 | 17 | 24.8 | 1,520 |
| February | 36 | 0 | 9.0 | 500 |
| March | 43 | 10 | 30.6 | 1,880 |
| April | 43 | 12 | 25.8 | 1,540 |
| May | 47 | 20 | 34.4 | 2,120 |
| June | 29 | 0 | 8.55 | 509 |
| July | 38 | 0 | 12.4 | 762 |
| August | 31 | 0 | 13.9 | 855 |
| September | 35 | 0 | 12.6 | 750 |
| The year | 47 | 0 | 19.0 | 13,800 |

### FORT THOMAS CONSOLIDATED CANAL AT ASHURST, ARIZ.

LOCATION.—In NE. ¼ SE. ¼ sec. 30, T. 5 S, R. 24 E., 2 miles below intake, half a mile east of State highway, and 1 mile southeast of Ashurst, Graham County.

RECORDS AVAILABLE.—December 26, 1920, to September 30, 1926.

GAGE.—Vertical staff on right bank half a mile below waste gate; read by T. A. Lamb and V. A. Elkins.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage.

CHANNEL AND CONTROL.—Bed consists of silt and is frequently covered by moss. No well-defined control.

DIVERSIONS.—None above gage.

REGULATION.—By head gate. Flow in canal varies considerably with flow in Gila River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to nearest two-hundredths twice a day. Daily discharge ascertained by applying mean daily gage height to rating table, using shifting-control method for entire year. Records good.

Canal diverts water from left side of Gila River in the NW. ¼ sec. 4, T. 6 S., R. 24 E., for irrigating 2,240 acres in the vicinity of Fort Thomas.

*Discharge measurements of Fort Thomas Consolidated Canal at Ashurst, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 2 | 8.34 | 20.4 | Mar. 22 | 8.55 | 27.3 | Aug. 6 | 7.98 | 11.5 |
| Nov. 13 | 8.71 | 35.7 | Apr. 15 | 9.46 | 55 | Aug. 13 | 9.89 | 62 |
| Dec. 11 | 7.78 | 6.5 | May 8 | 8.73 | 32.0 | Aug. 26 | 7.77 | 6.7 |
| Jan. 10 | 9.77 | 72 | May 27 | 9.47 | 53 | Sept. 18 | 7.87 | 7.7 |
| Feb. 5 | 9.52 | 63 | June 29 | 7.95 | 8.2 | | | |
| Feb. 26 | 8.03 | 13.2 | July 15 | 8.07 | 10.4 | | | |

*Daily discharge, in second-feet, of Fort Thomas Consolidated Canal at Ashurst, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 56 | 80 | 0 | 39 | 13 | 61 | 75 | 47 | 7.6 | 68 | 5.5 |
| 2 | 21 | 55 | 84 | 0 | 39 | 12 | 61 | 68 | 38 | 7.6 | 74 | 5.5 |
| 3 | 18 | 54 | 86 | 0 | 56 | 13 | 59 | 66 | 28 | 7.2 | 74 | 5.4 |
| 4 | 19 | 53 | 82 | 0 | 58 | 11 | 61 | 44 | 28 | 6.2 | 37 | 5.4 |
| 5 | 17 | 53 | 14 | 40 | 60 | 22 | 60 | 36 | 28 | 4.7 | 20 | 5.2 |
| 6 | 16 | 49 | 0 | 73 | 40 | 78 | 31 | 37 | 28 | 4.0 | 14 | 5.4 |
| 7 | 14 | 52 | 0 | 73 | 31 | 93 | 31 | 37 | 28 | 3.2 | 13 | 5.0 |
| 8 | 13 | 54 | 0 | 74 | 38 | 97 | 51 | 31 | 26 | 2.8 | 19 | 4.6 |
| 9 | 14 | 49 | 0 | 74 | 25 | 82 | 48 | 34 | 25 | 1.8 | 23 | 4.4 |
| 10 | 14 | 46 | 0 | 71 | 25 | 75 | 54 | 17 | 26 | 1.7 | 21 | 6.2 |
| 11 | 90 | 44 | 6.6 | 72 | 24 | 78 | 49 | 9.8 | 26 | 3.1 | 37 | 78 |
| 12 | 42 | 36 | 0 | 74 | 27 | 71 | 40 | 5.7 | 26 | 3.1 | 28 | 43 |
| 13 | 40 | 35 | 0 | 71 | 29 | 71 | 56 | 36 | 25 | 68 | 60 | 0 |
| 14 | 41 | 46 | 0 | 65 | 29 | 70 | 60 | 10 | 24 | 24 | 63 | 1.6 |
| 15 | 54 | 61 | 0 | 61 | 28 | 74 | 54 | 10 | 24 | 9.3 | 68 | 3.9 |
| 16 | 54 | 62 | 0 | 60 | 29 | 73 | 57 | 13 | 21 | 9.5 | 73 | 7.2 |
| 17 | 53 | 58 | 0 | 62 | 29 | 73 | 51 | 6.6 | 19 | 6.8 | 74 | 8.4 |
| 18 | 54 | 52 | 0 | 58 | 10 | 67 | 47 | 38 | 19 | 6.4 | 62 | 6.8 |
| 19 | 54 | 51 | 0 | 54 | 15 | 52 | 45 | 76 | 19 | 5.0 | 33 | 5.5 |
| 20 | 54 | 50 | 0 | 57 | 16 | 35 | 46 | 74 | 19 | 3.6 | 18 | 5.2 |
| 21 | 55 | 50 | 0 | 58 | 14 | 37 | 45 | 73 | 19 | .8 | 14 | 3.9 |
| 22 | 52 | 48 | 0 | 60 | 14 | 28 | 44 | 71 | 16 | .3 | 12 | 3.8 |
| 23 | 51 | 50 | 0 | 58 | 13 | 40 | 38 | 71 | 15 | 0 | 8.0 | 4.0 |
| 24 | 53 | 48 | 0 | 54 | 14 | 40 | 39 | 50 | 11 | 0 | 5.7 | 4.1 |
| 25 | 53 | 54 | 0 | 54 | 15 | 55 | 38 | 56 | 7.2 | 81 | 5.4 | 42 |
| 26 | 54 | 87 | 0 | 55 | 14 | 77 | 39 | 60 | 5.4 | 32 | 5.7 | 73 |
| 27 | 54 | 84 | 0 | 56 | 15 | 83 | 41 | 52 | 14 | 42 | 4.6 | 74 |
| 28 | 54 | 83 | 0 | 54 | 11 | 76 | 43 | 77 | 6.8 | 46 | 5.4 | 49 |
| 29 | 55 | 82 | 0 | 46 | ------- | 85 | 44 | 68 | 8.2 | 50 | 4.6 | 34 |
| 30 | 54 | 82 | 0 | 41 | ------- | 76 | 46 | 66 | 8.4 | 54 | 5.5 | 28 |
| 31 | 55 | ------- | 0 | 39 | ------- | 70 | ------- | 61 | ------- | 57 | 5.4 | ------ |

*Monthly discharge of Fort Thomas Consolidated Canal at Ashurst, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 90 | 13 | 42.1 | 2,590 |
| November | 87 | 35 | 56.1 | 3,340 |
| December | 86 | 0 | 11.4 | 701 |
| January | 74 | 0 | 52.1 | 3,200 |
| February | 60 | 10 | 27.0 | 1,500 |
| March | 97 | 11 | 58.9 | 3,620 |
| April | 61 | 31 | 48.0 | 2,860 |
| May | 77 | 5.7 | 46.1 | 2,830 |
| June | 47 | 5.4 | 21.2 | 1,260 |
| July | 81 | 0 | 17.7 | 1,090 |
| August | 74 | 4.6 | 30.8 | 1,890 |
| September | 78 | 0 | 17.6 | 1,050 |
| The year | 97 | 0 | 35.8 | 25,900 |

### SAN PEDRO RIVER NEAR FAIRBANK, ARIZ.

LOCATION.—In T. 20 S., R. 21 E., unsurveyed, on old Spanish grant at ranch house of Boquillas Land & Cattle Co., 1½ miles south of Fairbank, Cochise County, and 4 miles below Charleston dam site.

DRAINAGE AREA.—1,300 square miles (measured on topographic maps and Greenidge map of Sonora).

RECORDS AVAILABLE.—September 28, 1912, to September 30, 1926; January 27, 1904, to August 31, 1906, and October 8, 1910, to November 15, 1911, for a station at Charleston; November 15, 1911, to September 28, 1912, for station at diversion dam of Boquillas Land & Cattle Co.

GAGE.—Continuous water-stage recorder on right bank, 300 feet downstream from ford leading to ranch house, until night of September 27–28, when recorder station was destroyed by flood.

DISCHARGE MEASUREMENTS.—Made from cable 150 feet upstream from gage, by wading near gage, or from highway bridge 1½ miles downstream from gage.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Banks high and steep but subject to overflow in extreme floods. Channel fairly straight with considerable fall. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum discharge, 98,000 second-feet about 1 a. m. September 28; minimum discharge, 1.3 second-feet at 10 p. m. June 13.

1912–1926: Maximum discharge, 98,000 second-feet about 1 a. m. September 28, 1926; minimum discharge, 0.5 second-foot January 27, 1923, and June 12, 1925.

DIVERSIONS.—Boquillas Land & Cattle Co. diverts water at a dam 1 mile above station for irrigation. No information on other diversions from San Pedro River above this station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve, well defined to 2,000 second-feet and fairly well defined to 28,000 second-feet. Rating curve for period August 29 to September 26, poorly defined; used for stages below 250 second-feet. Operation of water-stage recorder satisfactory, except as shown in footnote to table of daily discharge. Daily discharge ascertained by applying mean daily gage height to rating table or by taking mean of hourly discharge obtained by applying hourly mean gage height to rating table; shifting-control method used October 1 to August 17. Records good.

*Discharge measurements of San Pedro River near Fairbank, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Nov. 28 | 2.07 | 23.3 | June 14 | 1.68 | 1.5 | Sept. 27 | 16.0 | [b] 27,900 |
| Jan. 7 | 1.98 | 23.2 | July 4 | 1.76 | 3.6 | Sept. 28 | [c] 18.5 | [d] 98,000 |
| Feb. 9 | 1.89 | 14.7 | July 26 | 3.34 | 387 | Do | [e] 7.74 | 3,470 |
| Mar. 7 | 1.86 | 14.2 | July 27 | 2.61 | 92 | Sept. 30 | [e] 3.49 | 434 |
| Apr. 12 | 1.87 | 14.4 | Aug. 22 | 2.06 | 4.4 | | | |
| May 2 | 1.92 | 16.2 | Sept. 26 | 11.7 | [a] 10,100 | | | |

[a] Driftwood timed over a distance of 150 feet and some surface velocities obtained with current meter; area determined from cross section taken July 4, 1926.

[b] Driftwood timed over a distance of 150 feet; area from cross section taken July 4, 1926.

[c] Estimated; stage-discharge relation changed from previous rating.

[d] Computed by means of Kutter's formula from levels on cross section and slope taken Oct. 8 and 26, 1926.

[e] New gage at highway bridge 1½ miles downstream; referred to datum established Oct. 17, 1926.

*Daily discharge, in second-feet, of San Pedro River near Fairbank, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 32 | 19 | 20 | 17 | 15 | 14 | 17 | 4 | 3 | 37 | 11 |
| 2 | 2 | 30 | 21 | 21 | 22 | 14 | 14 | 16 | 3 | 3 | 20 | 8 |
| 3 | 2 | 29 | 19 | 21 | 22 | 15 | 14 | 15 | 3 | 3 | 23 | 8 |
| 4 | 2 | 26 | 17 | 25 | 18 | 14 | 14 | 11 | 2 | 4 | 44 | 38 |
| 5 | 2 | 23 | 16 | 26 | 14 | 14 | 15 | 10 | 2 | 3 | 5 | 30 |
| 6 | 3 | 21 | 18 | 26 | 14 | 13 | 15 | 10 | 2 | 3 | 81 | 13 |
| 7 | 2 | 19 | 18 | 22 | 14 | 14 | 14 | 8 | 2 | 3 | 49 | 9 |
| 8 | 2 | 19 | 17 | 22 | 14 | 14 | 15 | 8 | 2 | 2 | 72 | 18 |
| 9 | 3 | 18 | 15 | 21 | 14 | 14 | 14 | 8 | 2 | 2 | 50 | 38 |
| 10 | 3 | 18 | 14 | 20 | 16 | 14 | 14 | 8 | 2 | 2 | 64 | 30 |
| 11 | 3 | 18 | 14 | 19 | 16 | 15 | 14 | 8 | 2 | 3 | 5 | 62 |
| 12 | 3 | 18 | 13 | 18 | 16 | 14 | 14 | 7 | 2 | 4 | 5 | 184 |
| 13 | 39 | 19 | 13 | 18 | 16 | 15 | 18 | 6 | 2 | 2 | 10 | 80 |
| 14 | 16 | 19 | 13 | 19 | 16 | 14 | 14 | 6 | 2 | 2 | 80 | 54 |
| 15 | 4 | 20 | 13 | 18 | 15 | 12 | 15 | 6 | 2 | 2 | 5 | 154 |
| 16 | 5 | 20 | 13 | 17 | 15 | 12 | 15 | 5 | 2 | 2 | 38 | 110 |
| 17 | 5 | 21 | 13 | 18 | 15 | 12 | 15 | 5 | 2 | 2 | 50 | 66 |
| 18 | 6 | 21 | 14 | 17 | 14 | 13 | 14 | 5 | 2 | 2 | 5 | 28 |
| 19 | 6 | 22 | 15 | 17 | 12 | 12 | 14 | 4 | 2 | 2 | 5 | 25 |
| 20 | 5 | 22 | 14 | 18 | 12 | 14 | 14 | 4 | 2 | 3 | 4 | 20 |
| 21 | 6 | 22 | 14 | 18 | 13 | 17 | 14 | 4 | 2 | 7 | 4 | 17 |
| 22 | 6 | 21 | 15 | 18 | 14 | 13 | 14 | 4 | 2 | 115 | 4 | 16 |
| 23 | 6 | 20 | 15 | 18 | 14 | 12 | 14 | 3 | 2 | 51 | 4 | 14 |
| 24 | 8 | 19 | 15 | 17 | 15 | 15 | 14 | 3 | 2 | 34 | 4 | 50 |
| 25 | 9 | 21 | 15 | 17 | 15 | 32 | 14 | 3 | 2 | 38 | 4 | 43 |
| 26 | 9 | 22 | 15 | 17 | 16 | 38 | 14 | 6 | 2 | 270 | 4 | 2,970 |
| 27 | 8 | 24 | 16 | 17 | 18 | 19 | 15 | 6 | 2 | 110 | 4 | 28,800 |
| 28 | 8 | 23 | 17 | 17 | 17 | 15 | 14 | 5 | 2 | 60 | 4 | 22,200 |
| 29 | 16 | 22 | 17 | 17 | ------- | 15 | 22 | 5 | 2 | 40 | 52 | 1,070 |
| 30 | 86 | 23 | 18 | 17 | ------- | 15 | 19 | 4 | 2 | 20 | 37 | 438 |
| 31 | 44 | ------- | 19 | 17 | ------- | 14 | ------- | 4 | ------- | 9 | 15 | ------ |

NOTE.—Operation of recorder satisfactory except Nov. 4–26, July 29, 30, Aug. 2, 5, 11, 12, 15, 18–21. Staff readings used Nov. 7, 10, 14, 17, 21, and 24. Discharge interpolated Nov. 4–6, 8–9, 11–13, 15–16, 18–20, 22–23, 25–26. Discharge estimated July 29–30, Aug. 2, 5, 11–12, 15, 18–28. Recorder station completely destroyed by flood during night of Sept. 27. Discharge 1 p. m. Sept. 27 to 8 a. m. Sept. 28 estimated by hydrographic comparison with stations at Kelvin, San Carlos, and Gillespie Dam. Discharge 8 a. m. Sept. 28 to Sept. 30 computed from hydrograph.

*Monthly discharge of San Pedro River near Fairbank, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 86 | 2 | 10.4 | 640 |
| November | 32 | 18 | 21.7 | 1,290 |
| December | 21 | 13 | 15.6 | 959 |
| January | 26 | 17 | 19.1 | 1,170 |
| February | 22 | 12 | 15.5 | 861 |
| March | 38 | 12 | 15.5 | 953 |
| April | 22 | 14 | 14.8 | 881 |
| May | 17 | 3 | 6.9 | 424 |
| June | 4 | 2 | 2.1 | 125 |
| July | 270 | 2 | 26.0 | 1,600 |
| August | 81 | 4 | 25.4 | 1,560 |
| September | 28,800 | 8 | 1,890 | 112,000 |
| The year | 28,800 | 2 | 170 | 122,000 |

### SANTA CRUZ RIVER AT TUCSON, ARIZ.

LOCATION.—In sec. 14, T. 14 S., R. 13 E., at Congress Street Bridge at Tucson, Pima County. Rillito Creek enters from right 7 miles downstream.

DRAINAGE AREA.—2,260 square miles (measured on topographic maps and Greenidge map of Sonora, Mex.).

RECORDS AVAILABLE.—October 15,1905, to September 30, 1926.

GAGE.—Staff gage on downstream side of east bridge abutment; read by J. P. Kenny.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand. Channels wide and shallow. Control shifts at all stages.

EXTREMES OF DISCHARGE.—Maximum stage during year, 19.5 feet at 2 p. m. September 28 (discharge, 11,400 second-feet). River dry greater part of the time.

1905-1926: Maximum stage recorded, 19.5 feet at 2 p. m. September 28, 1926 (discharge, 11,400 second-feet). River dry greater part of each year at this point.

DIVERSIONS.—Diversions above the station for irrigation, amounts unknown.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined. Staff gage read to tenths once a day and at frequent intervals during floods. Daily discharge ascertained by applying mean daily gage height to rating table, except for September 27 and 28 for which mean of hourly discharge was used; shifting-control method used September 15 and 30. Discharge estimated January 4-13, February 2, March 8, 9, April 12, 13, July 16, 24, August 7, 10, 11, 20, and September 9, and 10. Record of flood of September 27–30, good; remainder of record fair.

COOPERATION.—Records for the period October 1 to December 31 furnished by University of Arizona, Prof. G. E. P. Smith, irrigation engineer.

*Discharge measurements of Santa Cruz River at Tucson, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Apr. 9 | 11.43 | 12.3 | Sept. 15 | 14.21 | 1,630 | Sept. 30 | 11.90 | 31.7 |
| July 21 | 11.68 | 81 | Sept. 27 | 13.94 | 1,610 | | | |
| Aug. 6 | 12.16 | 247 | Sept. 28 | 17.95 | 8,070 | | | |

*Daily discharge, in second-feet, of Santa Cruz River at Tucson, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 | 1 | | | | | | | |
| 2 | | 2 | 1 | | 1 | | | | | |
| 3 | | 1 | 1 | | | | | | | |
| 4 | | 1 | 1 | 15 | | | | | 2 | |
| 5 | | 1 | 1 | 10 | | | | | 104 | |
| 6 | | 1 | 1 | 3 | | | | | 104 | |
| 7 | | | 1 | 2 | | | | | 2 | |
| 8 | | | 1 | 1 | | 10 | | | | 38 |
| 9 | | | | 1 | | 6 | 12 | | 5 | 1 |
| 10 | | | | 1 | | | | | 2 | 2 |
| 11 | | | | 1 | | | | | 1 | |
| 12 | | | | 1 | | | 10 | | 44 | |
| 13 | | | | 1 | | | 8 | | 1 | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | 297 |
| 16 | | | | | | | | 1 | 3 | |
| 17 | | | | | | | | | 58 | |
| 18 | | | | | | | | | 30 | |
| 19 | | | | | | | | | 19 | |
| 20 | | | | | | | | | 2 | |
| 21 | | | | | | | | 95 | | |
| 22 | | | | | | | | | | |
| 23 | | | | | | | | | | |
| 24 | 20 | | | | | | | 6 | | |
| 25 | 25 | 165 | | | | | | | | |
| 26 | 1 | 5 | | | | | | | | |
| 27 | | 3 | | | | | | 14 | | 2,150 |
| 28 | | 3 | | | | | | | | 6,150 |
| 29 | | 2 | | | | | | | | 688 |
| 30 | | 2 | | | | | | | | 30 |
| 31 | 1 | | | | | | | | | |

NOTE.—Stream dry on days for which no record is given.

*Monthly discharge of Santa Cruz River at Tucson, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 25 | 0 | 1.5 | 92 |
| November | 165 | 0 | 6.2 | 369 |
| December | 1 | 0 | .3 | 16 |
| January | 15 | 0 | 1.2 | 71 |
| February | 1 | 0 | .04 | 2 |
| March | 10 | 0 | .5 | 31 |
| April | 12 | 0 | 1.0 | 60 |
| May | 0 | 0 | 0 | 0 |
| June | 0 | 0 | 0 | 0 |
| July | 95 | 0 | 3.7 | 228 |
| August | 104 | 0 | 12.2 | 750 |
| September | 6,150 | 0 | 312 | 18,600 |
| The year | 6,150 | 0 | 27.9 | 20,200 |

### RILLITO CREEK NEAR TUCSON, ARIZ.

LOCATION.—In sec. 23, T. 13 S., R. 13 E., at highway bridge on Oracle Road, 4 miles above confluence with Santa Cruz River, and 4 miles north of Tucson, Pima County.

DRAINAGE AREA.—897 square miles (measured on topographic maps).

RECORDS AVAILABLE.—January 12, 1911, to September 30, 1926.

GAGE.—Staff gage bolted to first concrete pier from left bank; read by Morgan Mason.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand which is constantly shifting. Control not well defined.

EXTREMES OF DISCHARGE.—Maximum stage, 17.7 feet at 1.45 p. m. September 27 (discharge, from extension of rating curve, 1,750 second-feet). Stream dry greater part of year.

1911–1926: Maximum stage occurred December 23, 1914 (discharge, greater than 16,000 second-feet). Stream dry greater part of each year.

DIVERSIONS.—Flood water is diverted for irrigation above station, amount unknown.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined. Gage read to tenths once a day, and at frequent intervals during floods. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used September 28. Records fair.

COOPERATION.—Records furnished by University of Arizona, Prof. G. E. P. Smith, irrigation engineer, for period October 1 to December 31.

*Discharge measurements of Rillito Creek near Tucson, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Mar. 30 | 15.10 | 19.6 | Sept. 16 | 15.45 | 43.6 | Sept. 28 | 15.28 | 2.8 |
| Apr. 9 | 14.90 | 4.4 | Do | 15.10 | 7.8 | | | |
| Apr. 13 | 15.25 | 41.9 | Sept. 27 | 16.69 | 727 | | | |

*Daily discharge, in second-feet, of Rillito Creek near Tucson, Ariz., for the year ending September 30, 1926*

| Day | Nov. | Mar. | Apr. | July | Aug. | Sept. | Day | Nov. | Mar. | Apr. | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 8 | | | | 16 | | | 2 | | | 23 |
| 2 | | | | | | | 17 | | | | | | 1 |
| 3 | | | | | | | 18 | | | | | | |
| 4 | | | | | | | 19 | | | | | | |
| 5 | | | | | | | 20 | | | | | | |
| 6 | | 26 | | | | | 21 | | | | | | |
| 7 | | | 33 | | | | 22 | | | | | | |
| 8 | | | | | 12 | | 23 | | | | 1 | | |
| 9 | | | 2 | | | | 24 | | | | 70 | | |
| 10 | | | 20 | | | | 25 | 1 | | | | | 2 |
| 11 | | | 10 | | 12 | | 26 | | | | | | |
| 12 | | | 20 | | 2 | 6 | 27 | | | | | | 451 |
| 13 | | | 112 | | | | 28 | | | | | | 2 |
| 14 | | | 72 | | | | 29 | | 16 | | | | |
| 15 | | | 15 | | | 6 | 30 | | 51 | | | | |
| | | | | | | | 31 | | 4 | | | | |

NOTE.—Stream dry on days for which no record is given.

*Monthly discharge of Rillito Creek near Tucson, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 0 | 0 | 0 | 0 |
| November | 1 | 0 | .03 | 2 |
| December | 0 | 0 | 0 | 0 |
| January | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 |
| March | 51 | 0 | 3.1 | 191 |
| April | 112 | 0 | 9.8 | 583 |
| May | 0 | 0 | 0 | 0 |
| June | 0 | 0 | 0 | 0 |
| July | 70 | 0 | 2.3 | 141 |
| August | 12 | 0 | .8 | 49 |
| September | 451 | 0 | 16.4 | 976 |
| The year | 451 | 0 | 2.7 | 1,940 |

### SALT RIVER NEAR CHRYSOTILE, ARIZ.

LOCATION.—In SE. ¼ sec. 5, T. 5 N., R. 18 E., on San Carlos Indian Reservation, at Big Peninsula Bend, near Chrysotile, Gila County. Black River joins White River to form Salt River about 15 miles upstream, and Cibecue Creek enters from right 8 miles downstream.

DRAINAGE AREA.—3,050 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 18, 1924, to September 30, 1926.

GAGE.—Water-stage recorder on left bank, installed October 2, 1924.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet downstream from gage or by wading half a mile downstream from gage.

CHANNEL AND CONTROL.—Bed composed of bedrock and deposits of gravel and silt, which scour and fill. Banks not subject to overflow. Bedrock riffle and falls 400 feet below gage. Extreme high-water control formed by narrowing of rock side walls a quarter of a mile below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.5 feet at 9 p. m. April 6 (discharge, 10,900 second-feet); minimum stage recorded, 1.60 feet at 1 a. m. September 11 (discharge, 150 second-feet).

1925–1926: Maximum stage recorded, 8.5 feet at 9 p. m. April 6, 1926 (discharge, 10,900 second-feet); minimum stage recorded, 1.48 feet on December 27, 1924 (discharge, 127 second-feet).

ICE.—Practically no ice forms at this station.

DIVERSIONS.—Only minor diversions above this station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent above 1,500 second-feet but not permanent for lower discharge because of filling and scouring of silt in channel between gage and principal control. Rating curve well defined between 150 and 8,000 second-feet and extended above and below. Operation of water-stage recorder satisfactory except May 20–25, when float was on mud. Daily discharge ascertained by applying mean daily gage height to rating table or, for days of considerable range in stage, by averaging the hourly discharge; shifting-control method used October 1 to March 25 and May 27 to September 30. Discharge interpolated May 20–25. Records good.

*Discharge measurements of Salt River near Chrysotile, Ariz., during the year ending September 30, 1926*

| Date | Gage height | Discharge | Date | Gage height | Discharge | Date | Gage height | Discharge |
|---|---|---|---|---|---|---|---|---|
| | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* | | *Feet* | *Sec.-ft.* |
| Oct. 1 | 1.90 | 303 | Mar. 21 | 3.10 | 1,230 | July 14 | 1.82 | 250 |
| Dec. 10 | 1.90 | 306 | Mar. 26 | 3.40 | 1,460 | Do | 1.82 | 230 |
| Jan. 15 | 1.74 | 235 | Mar. 28 | 3.57 | 1,650 | July 28 [a] | 2.02 | 396 |
| Feb. 8 | 1.79 | 211 | Mar. 31 | 4.33 | 2,730 | Aug. 4 | 1.89 | 266 |
| Feb. 23 [a] | 1.86 | 247 | Do | 4.47 | 2,900 | Aug. 5 | 1.87 | 274 |
| Feb. 25 | 1.86 | 242 | Apr. 14 | 4.64 | 3,230 | Aug. 25 | 1.68 | 198 |
| Do | 1.83 | 223 | May 7 | 5.49 | 4,510 | Sept. 15 | 1.69 | 180 |
| Do | 1.83 | 215 | May 26 | 2.95 | 1,040 | | | |
| Mar. 15 [a] | 3.19 | 1,420 | June 30 | 1.94 | 252 | | | |

[a] Made by permittee, Federal Power Commission project No. 425.

*Daily discharge, in second-feet, of Salt River near Chrysotile, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 305 | 319 | 272 | 263 | 223 | 254 | 2,060 | 4,090 | 774 | 245 | 382 | 160 |
| 2 | 295 | 334 | 276 | 272 | 227 | 263 | 2,310 | 3,890 | 782 | 227 | 392 | 160 |
| 3 | 281 | 345 | 295 | 281 | 219 | 286 | 2,360 | 3,470 | 750 | 227 | 324 | 175 |
| 4 | 272 | 370 | 334 | 286 | 202 | 329 | 2,230 | 3,120 | 735 | 249 | 276 | 178 |
| 5 | 263 | 365 | 319 | 286 | 198 | 438 | 2,030 | 3,440 | 838 | 249 | 258 | 171 |
| 6 | 272 | 370 | 319 | 272 | 198 | 646 | 5,610 | 4,140 | 854 | 272 | 249 | 164 |
| 7 | 300 | 376 | 319 | 258 | 198 | 1,790 | 8,220 | 4,500 | 838 | 272 | 290 | 160 |
| 8 | 281 | 370 | 319 | 258 | 207 | 1,170 | 5,350 | 3,790 | 798 | 254 | 324 | 157 |
| 9 | 267 | 387 | 309 | 245 | 207 | 1,040 | 5,720 | 3,220 | 728 | 236 | 300 | 157 |
| 10 | 276 | 387 | 305 | 236 | 207 | 1,570 | 4,530 | 2,970 | 682 | 207 | 267 | 153 |
| 11 | 345 | 398 | 300 | 232 | 215 | 2,030 | 3,680 | 2,820 | 640 | 1,120 | 263 | 160 |
| 12 | 392 | 398 | 295 | 254 | 215 | 1,420 | 3,310 | 2,640 | 598 | 709 | 607 | 236 |
| 13 | 387 | 398 | 290 | 254 | 219 | 1,300 | 3,030 | 2,640 | 566 | 249 | 360 | 211 |
| 14 | 398 | 392 | 290 | 254 | 223 | 1,270 | 3,030 | 2,660 | 528 | 249 | 350 | 178 |
| 15 | 392 | 382 | 272 | 254 | 249 | 1,330 | 2,970 | 2,670 | 516 | 227 | 442 | 302 |
| 16 | 420 | 350 | 245 | 245 | 263 | 1,410 | 2,680 | 2,490 | 480 | 219 | 503 | 542 |
| 17 | 462 | 350 | 227 | 245 | 254 | 1,390 | 2,660 | 2,090 | 444 | 207 | 387 | 286 |
| 18 | 474 | 340 | 227 | 241 | 249 | 1,320 | 2,860 | 1,790 | 409 | 202 | 365 | 241 |
| 19 | 474 | 319 | 249 | 219 | 241 | 1,260 | 2,760 | 1,550 | 392 | 194 | 334 | 211 |
| 20 | 438 | 305 | 281 | 232 | 236 | 1,240 | 3,680 | 1,400 | 365 | 202 | 295 | 198 |
| 21 | 426 | 290 | 276 | 215 | 241 | 1,220 | 3,120 | 1,300 | 340 | 207 | 281 | 182 |
| 22 | 404 | 272 | 249 | 202 | 241 | 1,220 | 2,910 | 1,210 | 334 | 232 | 249 | 175 |
| 23 | 382 | 263 | 249 | 182 | 241 | 1,220 | 3,230 | 1,140 | 324 | 310 | 232 | 160 |
| 24 | 387 | 263 | 249 | 190 | 245 | 1,230 | 3,500 | 1,100 | 314 | 272 | 215 | 157 |
| 25 | 382 | 267 | 254 | 194 | 232 | 1,320 | 3,550 | 1,060 | 295 | 290 | 202 | 160 |
| 26 | 370 | 281 | 245 | 207 | 236 | 1,430 | 3,410 | 1,040 | 286 | 286 | 194 | 1,000 |
| 27 | 350 | 286 | 245 | 202 | 241 | 2,230 | 3,150 | 1,030 | 276 | 480 | 186 | 382 |
| 28 | 340 | 281 | 249 | 211 | 245 | 1,630 | 3,280 | 990 | 267 | 387 | 175 | 319 |
| 29 | 324 | 290 | 258 | 207 | ------- | 1,830 | 4,500 | 926 | 263 | 410 | 171 | 300 |
| 30 | 324 | 281 | 258 | 207 | ------- | 2,880 | 4,740 | 838 | 249 | 444 | 168 | 281 |
| 31 | 324 | ------- | 263 | 211 | ------- | 2,420 | ------- | 798 | ------- | 474 | 164 | ------ |

*Monthly discharge of Salt River near Chrysotile, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 474 | 263 | 355 | 21,800 |
| November | 398 | 263 | 334 | 19,900 |
| December | 334 | 227 | 275 | 16,900 |
| January | 286 | 182 | 236 | 14,500 |
| February | 263 | 198 | 228 | 12,700 |
| March | 2,880 | 254 | 1,300 | 79,900 |
| April | 8,220 | 2,030 | 3,550 | 211,000 |
| May | 4,500 | 798 | 2,280 | 140,000 |
| June | 854 | 249 | 522 | 31,100 |
| July | 1,120 | 194 | 316 | 19,400 |
| August | 607 | 164 | 297 | 18,300 |
| September | 1,000 | 153 | 244 | 14,500 |
| The year | 8,220 | 153 | 830 | 600,000 |

### SALT RIVER NEAR ROOSEVELT, ARIZ.

LOCATION.—At site of former diversion dam for power canal, 10 miles above upper end of Roosevelt Reservoir and 20 miles east of Roosevelt, Gila County.

DRAINAGE AREA.—4,222 square miles (measured by United States Bureau of Reclamation).

RECORDS AVAILABLE.—October 1, 1913, to September 30, 1926.

GAGE.—Principal gage is vertical staff on left bank, bolted to concrete wall at head of canal. Temporary gages are used from time to time on account of the channel shifting away from the main gage.

DISCHARGE MEASUREMENTS.—Made from cable at dam site or by wading.

CHANNEL AND CONTROL.—Shifting sand and gravel.

EXTREMES OF DISCHARGE.—Maximum stage reported, 11.9 feet April 7 (discharge, 16,200 second-feet); minimum stage, 2.45 feet July 12 (discharge, 135 second-feet).

1913–1926: Maximum mean daily discharge, 79,200 second-feet January 19, 1916; minimum mean daily discharge, 135 second-feet July 12, 1926.

DIVERSIONS.—None of importance.

REGULATION.—None.

COOPERATION.—Daily-discharge record furnished by Salt River Valley Water Users' Association.

*Daily discharge, in second-feet, of Salt River near Roosevelt, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 287 | 307 | 251 | 273 | 234 | 293 | 2,340 | 4,250 | 710 | 230 | 600 | 168 |
| 2 | 275 | 304 | 247 | 282 | 258 | 297 | 2,020 | 3,850 | 687 | 185 | 417 | 168 |
| 3 | 259 | 300 | 263 | 285 | 277 | 318 | 2,460 | 3,420 | 660 | 237 | 406 | 168 |
| 4 | 249 | 307 | 267 | 298 | 268 | 336 | 3,420 | 3,150 | 667 | 175 | 365 | 180 |
| 5 | 243 | 323 | 278 | 297 | 253 | 385 | 3,250 | 2,940 | 675 | 187 | 319 | 197 |
| 6 | 336 | 325 | 265 | 293 | 237 | 606 | 3,750 | 3,180 | 787 | 235 | 276 | 193 |
| 7 | 391 | 329 | 297 | 265 | 232 | 755 | 16,200 | 3,920 | 830 | 167 | 319 | 177 |
| 8 | 301 | 328 | 291 | 257 | 228 | 1,580 | 12,500 | 3,940 | 770 | 172 | 294 | 186 |
| 9 | 282 | 315 | 270 | 247 | 237 | 1,280 | 7,180 | 3,200 | 685 | 160 | 347 | 178 |
| 10 | 248 | 316 | 275 | 235 | 243 | 1,200 | 6,900 | 2,750 | 640 | 148 | 329 | 175 |
| 11 | 260 | 359 | 267 | 228 | 249 | 1,730 | 5,700 | 2,400 | 582 | 138 | 290 | 175 |
| 12 | 343 | 357 | 257 | 222 | 247 | 2,040 | 4,450 | 2,120 | 540 | 135 | 369 | 480 |
| 13 | 401 | 312 | 248 | 217 | 260 | 1,610 | 3,820 | 3,460 | 535 | 1,620 | 692 | 456 |
| 14 | 383 | 305 | 246 | 230 | 265 | 1,460 | 3,380 | 1,720 | 505 | 367 | 385 | 287 |
| 15 | 418 | 298 | 241 | 235 | 283 | 1,350 | 3,100 | 1,580 | 467 | 340 | 452 | 227 |

*Daily discharge, in second-feet, of Salt River near Roosevelt, Ariz., for the year ending September 30, 1926*—Continued

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 669 | 294 | 238 | 235 | 293 | 1,410 | 3,080 | 1,360 | 417 | 327 | 454 | 612 |
| 17 | 672 | 278 | 216 | 231 | 297 | 1,460 | 2,800 | 1,290 | 411 | 327 | 560 | 670 |
| 18 | 721 | 277 | 206 | 242 | 300 | 1,480 | 2,710 | 1,220 | 406 | 240 | 418 | 299 |
| 19 | 763 | 270 | 196 | 230 | 297 | 1,400 | 2,810 | 1,220 | 364 | 234 | 355 | 241 |
| 20 | 672 | 269 | 210 | 230 | 294 | 1,330 | 3,050 | 1,120 | 350 | 228 | 321 | 220 |
| 21 | 568 | 262 | 212 | 234 | 285 | 1,320 | 3,740 | 1,050 | 312 | 225 | 287 | 202 |
| 22 | 477 | 260 | 233 | 235 | 281 | 1,330 | 2,960 | 1,020 | 267 | 237 | 260 | 197 |
| 23 | 440 | 256 | 228 | 217 | 277 | 1,300 | 2,880 | 1,000 | 255 | 283 | 237 | 195 |
| 24 | 397 | 268 | 217 | 197 | 278 | 1,300 | 3,060 | 985 | 222 | 367 | 226 | 179 |
| 25 | 384 | 255 | 253 | 188 | 285 | 1,340 | 3,220 | 960 | 220 | 390 | 223 | 175 |
| 26 | 384 | 262 | 241 | 212 | 291 | 1,520 | 3,280 | 925 | 207 | 371 | 198 | 180 |
| 27 | 373 | 276 | 242 | 216 | 287 | 1,520 | 3,050 | 915 | 200 | 345 | 193 | 1,560 |
| 28 | 366 | 283 | 245 | 216 | 287 | 2,170 | 2,960 | 915 | 200 | 591 | 191 | 612 |
| 29 | 340 | 268 | 246 | 219 | ------- | 1,800 | 3,020 | 915 | 185 | 413 | 184 | 587 |
| 30 | 335 | 261 | 259 | 223 | ------- | 2,060 | 4,280 | 865 | 180 | 653 | 176 | 452 |
| 31 | 316 | ------- | 263 | 219 | ------- | 2,470 | ------- | 775 | ------- | 435 | 171 | ------ |

*Monthly discharge of Salt River near Roosevelt, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 763 | 243 | 405 | 24,900 |
| November | 359 | 255 | 294 | 17,500 |
| December | 297 | 196 | 247 | 15,200 |
| January | 298 | 188 | 239 | 14,700 |
| February | 300 | 228 | 269 | 14,900 |
| March | 2,470 | 293 | 1,300 | 79,900 |
| April | 16,200 | 2,020 | 4,250 | 253,000 |
| May | 4,250 | 775 | 2,010 | 124,000 |
| June | 830 | 180 | 465 | 27,700 |
| July | 1,620 | 135 | 328 | 20,200 |
| August | 692 | 171 | 333 | 20,500 |
| September | 1,560 | 168 | 327 | 19,500 |
| The year | 16,200 | 135 | 872 | 632,000 |

### TONTO CREEK NEAR ROOSEVELT, ARIZ.

LOCATION.—In sec. 14, T. 6 N., R. 10 E., 6 miles above upper end of Roosevelt Reservoir and 15 miles northwest of Roosevelt, Gila County.

DRAINAGE AREA.—1,004 square miles (measured by United States Bureau of Reclamation).

RECORDS AVAILABLE.—October 1, 1913, to September 30, 1926.

GAGE.—Vertical staff on right bank. Location of gage is changed from time to time owing to shifting control.

DISCHARGE MEASUREMENTS.—Made by wading at low stages and by slope method at high stages.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel. Control shifts at high stages. Banks well defined.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge during year, 13,500 second-feet April 8; minimum mean daily discharge, 1 second-foot on various days June to September.

1913–1926: Maximum mean daily discharge, 20,000 second-feet December 28, 1923; minimum discharge, no flow September 4–10, 1924.

DIVERSIONS.—None of importance. The entire flow is discharged into Roosevelt Reservoir.

REGULATION.—None.

COOPERATION.—Records of daily discharge furnished by Salt River Valley Water Users' Association.

*Daily discharge, in second-feet, of Tonto Creek near Roosevelt, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 36 | 47 | 42 | 12 | 7 | 313 | 1,160 | 50 | 1 | 100 | 1 |
| 2 | 11 | 36 | 42 | 36 | 15 | 5 | 225 | 584 | 50 | 1 | 100 | 1 |
| 3 | 11 | 36 | 42 | 42 | 15 | 5 | 363 | 930 | 30 | 1 | 120 | 1 |
| 4 | 11 | 36 | 36 | 47 | 12 | 5 | 415 | 900 | 30 | 1 | 75 | 7 |
| 5 | 26 | 36 | 47 | 47 | 15 | 5 | 315 | 885 | 30 | 1 | 75 | 4 |
| 6 | 175 | 47 | 47 | 17 | 12 | 12 | 900 | 900 | 20 | 1 | 60 | 4 |
| 7 | 375 | 47 | 47 | 17 | 12 | 15 | 9,000 | 950 | 20 | 1 | 55 | 3 |
| 8 | 265 | 47 | 47 | 17 | 12 | 15 | 13,500 | 950 | 15 | 1 | 60 | 3 |
| 9 | 175 | 47 | 47 | 17 | 12 | 15 | 5,000 | 980 | 20 | 1 | 60 | 5 |
| 10 | 75 | 47 | 36 | 17 | 12 | 15 | 4,000 | 920 | 20 | 1 | 62 | 4 |
| 11 | 60 | 47 | 36 | 12 | 12 | 70 | 2,000 | 775 | 16 | 1 | 55 | 2 |
| 12 | 60 | 47 | 36 | 12 | 12 | 512 | 1,200 | 415 | 16 | 2 | 40 | 20 |
| 13 | 60 | 47 | 36 | 15 | 12 | 575 | 1,120 | 362 | 16 | 2 | 200 | 15 |
| 14 | 60 | 47 | 36 | 15 | 15 | 202 | 995 | 280 | 12 | 1 | 40 | 15 |
| 15 | 75 | 47 | 36 | 15 | 120 | 170 | 1,000 | 280 | 10 | 1 | 25 | 12 |
| 16 | 90 | 47 | 36 | 12 | 20 | 160 | 745 | 180 | 8 | 1 | 30 | 73 |
| 17 | 375 | 47 | 47 | 12 | 12 | 186 | 700 | 156 | 5 | 1 | 27 | 25 |
| 18 | 175 | 47 | 47 | 15 | 7 | 160 | 610 | 136 | 5 | 1 | 50 | 20 |
| 19 | 150 | 47 | 47 | 15 | 7 | 150 | 900 | 76 | 5 | 1 | 25 | 15 |
| 20 | 107 | 42 | 47 | 12 | 7 | 85 | 1,200 | 75 | 5 | 1 | 20 | 8 |
| 21 | 90 | 36 | 47 | 12 | 7 | 85 | 1,600 | 58 | 5 | 1 | 25 | 5 |
| 22 | 75 | 36 | 47 | 12 | 7 | 85 | 1,600 | 50 | 3 | 1 | 10 | 5 |
| 23 | 75 | 36 | 47 | 12 | 7 | 85 | 1,000 | 22 | 2 | 2 | 8 | 3 |
| 24 | 60 | 36 | 47 | 12 | 7 | 57 | 900 | 22 | 2 | 2 | 5 | 3 |
| 25 | 60 | 47 | 47 | 12 | 7 | 52 | 870 | 22 | 2 | 4 | 3 | 5 |
| 26 | 47 | 47 | 47 | 12 | 7 | 85 | 760 | 22 | 1 | 15 | 2 | 100 |
| 27 | 36 | 47 | 47 | 12 | 7 | 78 | 760 | 70 | 1 | 30 | 2 | 900 |
| 28 | 26 | 36 | 47 | 12 | 7 | 97 | 500 | 100 | 1 | 80 | 2 | 500 |
| 29 | 36 | 47 | 36 | 12 | ------ | 117 | 600 | 100 | 1 | 130 | 1 | 160 |
| 30 | 36 | 42 | 36 | 12 | ------ | 186 | 890 | 70 | 1 | 190 | 1 | 125 |
| 31 | 36 | ------ | 42 | 7 | ------ | 415 | ------ | 50 | ------ | 140 | 1 | ------ |

*Monthly discharge of Tonto Creek near Roosevelt, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 375 | 11 | 94.3 | 5,800 |
| November | 47 | 36 | 43.0 | 2,560 |
| December | 47 | 36 | 43.0 | 2,640 |
| January | 47 | 7 | 18.1 | 1,110 |
| February | 120 | 7 | 14.6 | 811 |
| March | 575 | 5 | 120 | 7,380 |
| April | 13,500 | 225 | 1,800 | 107,000 |
| May | 1,160 | 22 | 403 | 24,800 |
| June | 50 | 1 | 13.4 | 797 |
| July | 190 | 1 | 19.9 | 1,220 |
| August | 200 | 1 | 43.2 | 2,660 |
| September | 900 | 1 | 68.1 | 4,050 |
| The year | 13,500 | 1 | 222 | 161,000 |

### VERDE RIVER NEAR McDOWELL, ARIZ.

LOCATION.—In sec. 17, T. 5 N., R. 7 E., 500 feet upstream from mouth of Camp Creek and 10 miles north of McDowell, Maricopa County. Verde River enters Salt River 17 miles from this station.

DRAINAGE AREA.—5,550 square miles.

RECORDS AVAILABLE.—February 17, 1925, to September 30, 1926, at present site. August 14 to September 30, 1889; April 20, 1897, to November 11, 1899; January 1, 1901, to April 19, 1902; July 23–26, 1902; January 1, 1903, to February 16, 1925; at a point three-quarters of a mile above junction with Salt River.

GAGE.—Water-stage recorder in main channel. Staff gage on right bank.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and rock. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge during year, 27,500 second-feet April 7; minimum mean daily discharge, 96 second-feet July 11–12.

1897–1926: Maximum mean daily discharge, 61,500 second-feet November 27, 1905; minimum mean daily discharge, 32 second-feet July 19 and 20, 1904.

DIVERSIONS.—Only minor diversions upstream from this station.

REGULATION.—None.

COOPERATION.—Daily-discharge record furnished by Salt River Valley Water Users' Association.

*Daily discharge, in second-feet, of Verde River near McDowell, Ariz., for the year ending September 30, 1926*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 237 | 342 | 260 | 303 | 287 | 277 | 735 | 626 | 134 | 106 | 358 | 115 |
| 2 | 227 | 341 | 293 | 303 | 292 | 266 | 561 | 972 | 125 | 108 | 297 | 116 |
| 3 | 213 | 323 | 315 | 303 | 295 | 265 | 478 | 815 | 137 | 107 | 257 | 113 |
| 4 | 191 | 329 | 285 | 329 | 294 | 268 | 931 | 612 | 125 | 120 | 246 | 114 |
| 5 | 190 | 330 | 1,100 | 317 | 286 | 265 | 3,270 | 659 | 121 | 120 | 223 | 319 |
| 6 | 467 | 312 | 667 | 331 | 293 | 287 | 2,780 | 683 | 150 | 116 | 198 | 225 |
| 7 | 4,520 | 350 | 517 | 319 | 283 | 301 | 27,500 | 542 | 134 | 132 | 203 | 184 |
| 8 | 3,790 | 357 | 444 | 305 | 287 | 375 | 23,900 | 985 | 106 | 132 | 683 | 191 |
| 9 | 1,980 | 356 | 403 | 301 | 274 | 476 | 9,530 | 1,080 | 102 | 114 | 422 | 197 |
| 10 | 1,160 | 371 | 372 | 301 | 281 | 469 | 11,500 | 722 | 119 | 105 | 374 | 200 |
| 11 | 810 | 389 | 350 | 303 | 280 | 517 | 12,700 | 574 | 114 | 96 | 334 | 213 |
| 12 | 632 | 415 | 328 | 288 | 280 | 1,180 | 5,760 | 455 | 127 | 96 | 248 | 198 |
| 13 | 821 | 385 | 325 | 303 | 281 | 1,460 | 6,450 | 384 | 124 | 98 | 355 | 191 |
| 14 | 950 | 370 | 340 | 292 | 296 | 1,700 | 3,480 | 346 | 116 | 106 | 273 | 174 |
| 15 | 682 | 355 | 333 | 294 | 304 | 1,380 | 2,440 | 312 | 104 | 109 | 193 | 181 |
| 16 | 542 | 342 | 323 | 293 | 301 | 1,380 | 1,800 | 294 | 99 | 114 | 238 | 185 |
| 17 | 540 | 319 | 319 | 300 | 300 | 1,270 | 1,350 | 250 | 110 | 106 | 255 | 167 |
| 18 | 522 | 326 | 317 | 301 | 297 | 967 | 1,090 | 266 | 123 | 136 | 238 | 171 |
| 19 | 427 | 319 | 319 | 292 | 296 | 807 | 1,000 | 266 | 116 | 110 | 291 | 161 |
| 20 | 393 | 307 | 305 | 292 | 325 | 691 | 2,250 | 187 | 108 | 115 | 298 | 155 |
| 21 | 383 | 299 | 305 | 292 | 321 | 626 | 3,500 | 175 | 114 | 105 | 195 | 149 |
| 22 | 348 | 283 | 317 | 292 | 304 | 607 | 2,520 | 173 | 119 | 109 | 168 | 156 |
| 23 | 359 | 294 | 311 | 293 | 290 | 562 | 1,650 | 161 | 108 | 105 | 159 | 155 |
| 24 | 348 | 293 | 311 | 287 | 296 | 601 | 1,100 | 140 | 117 | 182 | 171 | 155 |
| 25 | 335 | 291 | 307 | 286 | 296 | 567 | 1,000 | 151 | 124 | 315 | 164 | 157 |
| 26 | 333 | 296 | 309 | 289 | 296 | 570 | 805 | 131 | 114 | 260 | 163 | 162 |
| 27 | 319 | 303 | 299 | 290 | 289 | 531 | 705 | 123 | 111 | 385 | 153 | 2,660 |
| 28 | 312 | 300 | 316 | 292 | 283 | 710 | 683 | 147 | 100 | 553 | 151 | 1,660 |
| 29 | 315 | 303 | 300 | 287 | ------- | 1,260 | 581 | 155 | 112 | 630 | 139 | 1,020 |
| 30 | 307 | 289 | 306 | 284 | ------- | 998 | 628 | 127 | 102 | 594 | 128 | 552 |
| 31 | 305 | ------- | 303 | 281 | ------- | 692 | ------- | 127 | ------- | 514 | 121 | ------ |

*Monthly discharge of Verde River near McDowell, Ariz., for the year ending September 30, 1926*

| Month | Discharge in second-feet | | | Run-off in acre-feet |
|---|---|---|---|---|
| | Maximum | Minimum | Mean | |
| October | 4,520 | 190 | 741 | 45,600 |
| November | 415 | 283 | 330 | 19,600 |
| December | 1,100 | 260 | 364 | 22,400 |
| January | 331 | 281 | 298 | 18,300 |
| February | 325 | 274 | 293 | 16,300 |
| March | 1,700 | 265 | 720 | 44,300 |
| April | 27,500 | 478 | 4,420 | 263,000 |
| May | 1,080 | 123 | 408 | 25,100 |
| June | 150 | 99 | 117 | 6,960 |
| July | 630 | 96 | 193 | 11,900 |
| August | 683 | 121 | 248 | 15,200 |
| September | 2,660 | 113 | 347 | 20,600 |
| The year | 27,500 | 96 | 704 | 509,000 |

## MISCELLANEOUS DISCHARGE MEASUREMENTS

Discharge measurements of streams in the Colorado River Basin at points other than regular gaging stations, made during the year ending September 30, 1926, are listed in the following table:

*Miscellaneous discharge measurements in Colorado River Basin during the year ending September 30, 1926*

| Date | Stream | Tributary to— | Locality | Gage height | Discharge |
|---|---|---|---|---|---|
| | | | | *Feet* | *Sec.-ft.* |
| Sept. 3 | North Fork of Duchesne River. | Duchesne River | SE. ¼ sec. 19, T. 1 N., R. 8 W., at confluence with West Fork, 4 miles northwest of Hanna, Utah. | | 37.8 |
| 3 | West Fork of Duchesne River. | do | SE. ¼ sec. 19, T. 1 N., R. 8 W., at confluence with North Fork, 4 miles northwest of Hanna, Utah. | | 23.7 |
| 2 | Uinta Power & Light Co's tail-race. | Uinta River | SW. ¼ sec. 25, T. 2 N., R. 2 W., at power plant 9 miles north of Neola, Utah. Water is diverted from Pole Creek in SE. ¼ sec. 14, T. 2 N., R. 2 W. | | 7.4 |
| Dec. 4 | Fish Creek | Price River | SW. ¼ sec. 26, T. 11 S., R. 8 E., at confluence with White River, 1 mile southeast of Colton, Utah. | | 3.9 |
| Mar. 26 | do | do | do | | 68.7 |
| Aug. 23 | do | do | do | | 24.0 |
| June 18 | Price River | Green River | SE. ¼ NW. ¼ sec. 12, T. 13 S., R. 9 E., at Utah Junction, 2 miles north of Helper, Utah. | 1.39 | 87.3 |
| 18 | do | do | do | 1.29 | 69.9 |
| 22 | do | do | do | 1.78 | 160 |
| 14 | do | do | do | 1.60 | 121 |
| 17 | do | do | do | 1.04 | 35.3 |
| 26 | do | do | do | .98 | 33.4 |
| 28 | do | do | do | 1.71 | 148 |
| Aug. 25 | do | do | do | .85 | 21.9 |
| Dec. 12 | do | do | SE. ¼ sec. 9, T. 18 S., R. 14 E., at Utah Power & Light Co's. gaging station at highway bridge at Woodside, Utah. | | 19.7 |
| Mar. 25 | do | do | do | 1.83 | 98.9 |
| Apr. 30 | do | do | do | 2.30 | 280 |
| 28 | White River | Price River | SW. ¼ sec. 26, T. 11 S., R. 8 E., at confluence with Fish Creek, 1 mile southeast of Colton, Utah. | | 96.7 |
| Aug. 25 | Price Canal | do | SE. ¼ NE. ¼ sec. 1, T. 14 S., R. 9 E., ½ mile below diversion, 3½ miles northwest of Price, Utah. | .98 | 20.4 |
| Mar. 17 | San Juan River | Colorado River | Shiprock, N. Mex | | 1,660 |
| Sept. 23 | Gila River | do | Below Duncan, Ariz | | 14.1 |
| Jan. 22 | do | do | Griffin Crossing near Yuma, Ariz | | 45.0 |
| Dec. 12 | Brown Canal | Diverts from Gila River. | Below wasteway near Solomonsville, Ariz. | | 4.2 |
| Oct. 30 | San Simon Creek | Gila River | Solomonsville, Ariz | | 109 |
| Sept. 25 | Black River | Salt River | Former gaging station near Fort Apache, Ariz. | .91 | 39. |
| 25 | White River | do | do | 1.36 | 32.4 |

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