1967

Water Resources Data for New Mexico

Part 1. Surface Water Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of New Mexico
and with other agencies

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United States Department of the Interior
Geological Survey - Water Resources Division

WATER RESOURCES DATA FOR NEW MEXICO, 1967

Part 1: Surface Water Records

Prepared in cooperation with

Office of the State Engineer
Interstate Stream Commission
State Department of Game and Fish
Pecos River Commission
State Highway Department
Rio Grande Compact Commission
Costilla Creek Compact Commission
Bureau of Reclamation, U. S. Department of the Interior
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1968

Water resources records, 1967, for New Mexico are in the following reports of the U. S. Geological Survey:

1. Water Resources Data for New Mexico
   Part 1: Surface Water Records

2. Water Resources Data for New Mexico
   Part 2: Water Quality Records

OCTOBER 1966

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WATER RESOURCES DATA FOR NEW MEXICO, 1967

Part 1: Surface Water Records

INTRODUCTION

The surface-water records for the 1967 water year for gaging stations, partial-record stations, and miscellaneous sites within the State of New Mexico are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U. S. Geological Survey, under the direction of W. E. Hale, District Chief, Water Resources Division.

This report is the seventh in a series presenting, annually, basic data on surface-water records by States. Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U. S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in New Mexico were contained in Parts 7, 8, and 9 of that series.

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and primarily for local needs. The records will be published in Geological Survey water-supply papers at 5-year intervals. These 5-year water-supply papers will show daily discharge and will be compiled on the same geographical areas previously used for the annual series; however, some of the 14 parts of conterminous United States will be further subdivided.

The records for New Mexico will be published in water-supply papers covering Part 7 for stations in the Lower Mississippi River drainage, Part 8 for Western Gulf of Mexico drainage, and Part 9 for Colorado River drainage. For 1960 water year, the WSP Numbers for these parts were 1711, 1712, 1713 respectively. A compilation of records for these parts through 1950 water year is contained in WSP Nos. 1311, 1312, 1313 respectively; a 1951-60 compilation series has WSP Nos. 1731, 1732, 1733. New Mexico records for 1961-65 water years will be published in WSP Numbers as follows: Part 7, WSP 1921, vol. 2; Part 8, WSP 1923, vol. 2; Part 9, WSP 1925, vol. 2 and WSP 1926, vol. 3. These are in preparation.

COOPERATION

The first gaging station established by the Geological Survey in the United States was on the Rio Grande at Embudo Jan. 1, 1889. Cooperation with the Territory of New Mexico began about 1907, and Territory or State cooperation in varying amounts continued until 1915, the work being directed from the Denver office. From 1916 to 1930 the State conducted its own stream-gaging program. In 1931 a new State cooperative program was begun and a Geological Survey district office established in Santa Fe. Agreements have also existed with county, municipal, and private organizations, and with other Federal agencies. Organizations that supplied data are acknowledged in station descriptions.

Organizations that assisted in collecting data through cooperative agreements with the Survey in 1967 are:

Office of the State Engineer, S. E. Reynolds.
Interstate Stream Commission, S. E. Reynolds, Secretary.
State Department of Game and Fish, Ladd S. Gordon, Director.
Pecos River Commission, Berkeley Johnson, succeeded by John W. Odell, Federal Representative and Chairman, T. E. Lusk, succeeded by Stephen L. Reveal, Commissioner for New Mexico, J. C. Wilson, Commissioner for Texas.
State Highway Department, T. B. White, succeeded by L. G. Boles, State Highway Engineer.
Rio Grande Compact Commission, Berkeley Johnson, Federal Representative and Chairman, A. Ralph Owens, Commissioner for Colorado, S. E. Reynolds, Commissioner for New Mexico, L. A. Scott, Commissioner for Texas.
Costilla Creek Compact Commission, S. E. Reynolds, Commissioner for New Mexico, A. Ralph Owens, Commissioner for Colorado.

Assistance in the form of funds or services was furnished by the following Federal Agencies.

Corps of Engineers, U. S. Army in the operation of 23 gaging stations.
White Sands Missle Range, Department of the Army in the operation of 2 gaging stations.
Bureau of Reclamation, U. S. Department of the Interior in the operation of 17 gaging stations.
Bureau of Public Roads, U. S. Department of Commerce for research study on small drainage areas.
Bureau of Indian Affairs, U. S. Department of the Interior in the operation of 4 gaging stations.
Fish and Wildlife Service, U. S. Department of the Interior in the operation of 2 gaging stations.
National Park Service, U. S. Department of the Interior in the operation of 1 gaging station.

Assistance in the form of funds or services was also given by the following organizations:

Forest Service, U. S. Department of Agriculture; Weather Bureau, U. S. Department of Commerce; the City of Ruidoso; Carlsbad Irrigation District; Public Service Company of New Mexico; Middle Rio Grande Conservancy District.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimes will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate and geology are similar to those in the undeveloped bench-mark basin.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Capacity, as applied to reservoirs, expresses space available for contents below a specific elevation or gage height; hence, capacity table.

The drainage area of a stream at a specific location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports, or pending reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete 8-digit number for each station, such as 09-3534.00, includes the part number "09" plus a six-digit number. In this report the nonessential zeros are not shown. For example, the complete number 09-3534.00 would appear as 9-3534, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained from a graphic water-stage recorder that gives a continuous chart, or a digital water-stage recorder that produces a punched tape at predetermined intervals of the stage fluctuations or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Low-flow measurements may also be made by volumetric methods or by use of portable flumes or weirs of rated capacity.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is in effect the shifting-control method.

At some gaging stations the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins.

For some gaging stations there are periods when no gage-height record or punched tape are obtained or the recorded gage height is so faulty that it cannot be used to compute the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1967 water year is shown on page III to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage is given if a system has been established. Under "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U. S. Coast and Geodetic Survey. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum daily discharge, and/or the minimum discharge if it is meaningful. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage gage or a nonrecording gage read at the time of the crest. Digital recorders are equipped with a crest-stage gage, or they may be operated with a companion graphic recorder. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks."

The daily table gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes in discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharges for several parts of a day. Digital recorders are usually equipped to subdivide the day into 24, 48, or 96 parts, one of these frequencies having been preselected.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. The maximum and minimum daily discharge during month are next. Total discharge, or runoff for the month is in acre-feet.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man, unless they are meaningful. Time of day is expressed in 24-hour local standard time, for example 12:30 a.m. is 0030, 1:30 p.m. is 1330.

In a general footnote, introduced by the word "Note", certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station, a table of daily contents, gage height or elevation on last day of month, monthly and annual change in contents, and notes calling attention to any change in capacity table. A skeleton capacity table covering minimum to maximum stage during year is included when daily contents is published.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "Remarks" states the degree of accuracy of the records. "Excellent" means that about 95 percent of daily discharges are within 5 percent; "good", within 10 percent; and "fair", within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

For some gaging stations the mean daily discharges and monthly means below 1 cfs are shown to more significant figures than in former years. This stems essentially from the use of digital recorders and the computer system and the objective is greater uniformity. The added refinement, in most cases, does not signify greater accuracy. However, for a few research stations on small drainage areas the added refinement for low flows is justified, and necessary to achieve a balanced ratio for study purposes.

OTHER DATA AVAILABLE

Data collected at partial-record stations and at miscellaneous sites are given at the end of each report. Data for partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table.

OTHER DATA AVAILABLE

Seepage investigations are presented following measurements at miscellaneous sites. These consist of text and tabulations summarizing data derived primarily from associated series of discharge measurements and observations made within a short time period along a given reach of channel, preferably during a period of relatively stable conditions. The objectives may vary, but usually include the study of seepage gains or losses, surface inflow, diversions (including pumps), areas of springs, water temperatures, low-flow characteristics of the area, and chemical quality (published in Part 2). These investigations may be repeated periodically or at random intervals for some reaches of certain channels. Indicated gains and/or losses as shown may be substantially affected by small inaccuracies of open channel measurements. Small differences between large measurements will have a lower degree of accuracy than the same differences between smaller measurements.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office. About half the gaging-station records in the state (through 1954 for Part 9, 1958 for Parts 7 and 8) have been analyzed by electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year. This information is now available in printed form under title, "Flow Characteristics of New Mexico Streams," an unnumbered special Report, from New Mexico State Engineer, Capitol Building, Santa Fe, N. Mex.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "Remarks" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

HYDROLOGIC CONDITIONS

Wide variations in hydrologic conditions and runoff characteristics are the rule in New Mexico. Water courses in the east, south, and central west are chiefly arroyo-type and derive a large part of their runoff from scattered storms of short duration. Rainfall patterns are unpredictable, and flood-frequency studies are difficult to make.

October runoff was normal, except for the Rio Grande which was deficient. Conchas Reservoir on the Canadian River was 109 percent of average, Alamogordo Reservoir on the Pecos River was 105 percent of average, and project storage in Elephant Butte and Caballo Reservoirs on the Rio Grande was 49 percent of average.

November was near normal except for the Rio Grande which was excessive because of release from Platoro Reservoir. December flows in the State were near normal except in the southwest corner, which was deficient, and for the west, which was excessive.

January and February runoff was deficient in the west and southeast and near normal elsewhere. Conchas Reservoir storage remained about 103 percent of average, Alamogordo Reservoir was up to 130 percent, and Elephant Butte and Caballo project storage was 58 percent.

During the period March to June there was a general compounding of below normal to deficient runoff. Record lows occurred at two index stations, Pecos River at Santa Rosa and Rayado Creek. During March soil moisture was termed "the worst in 10 years." The storage in Conchas, Alamogordo, and Elephant Butte and Caballo Reservoirs had dropped to 76, 27, and 31 percent of average, respectively.

July streamflow was near normal except for the upper Pecos, which was excessive, and the Grants area (Rio San Jose and tributaries) which experienced some flooding and moderate property damage.

August flows were generally excessive. The station Gila River near Gila had the highest daily flow since records began in 1927. Flood of August 13 on Mogollon Creek near Cliff reached a peak of 10,800 cfs, which is twice the 50 year flood. Other unusual peak flows occurred on the San Francisco River near Glenwood and on Lake Isabel Feeder Canal. Although considerable flooding occurred it was mostly in rural areas and damages were not great.

The year closed with streamflow excessive in the central and southwest part of the State and above normal elsewhere. Year-end reservoir storage, in percent of average was: Conchas, 101; Alamogordo, 107; Elephant Butte and Caballo, 37 (which is a low 8.4 percent of capacity). Navajo Reservoir on the San Juan River contained 625,800 acre-feet, 37 percent of capacity, but up 117,000 from last year.

In summary, the 1967 runoff in New Mexico was well below normal. The excessive flows of August and September were not sufficient to offset the extended periods of deficient streamflow.

To give a general picture by streams and basins, the 1967 annual runoff, in percent of long-term averages, is given for the following stations:

Vermejo River	60
Rayado Creek	41
Canadian River near Sanchez	55
Conchas River at Variadero	83
Ute Creek near Logan	100
Rio Grande near Cerro	76
Red River at mouth	78
Willow Creek near Park View	58
Santa Cruz River at Cundiyo	57
Rio Grande at Otowi (unadjusted)	52
Jemez River near Jemez	56
Rio Puerco near Bernardo	206
Pecos River near Pecos	60
Pecos River near Puerto de Luna	76
Rio Hondo at Diamond A Ranch	37
Delaware River near Red Bluff	48
Mimbres River near Mimbres	109
Animas River at Farmington	47
San Francisco River near Glenwood	85
Gila River near Gila	68

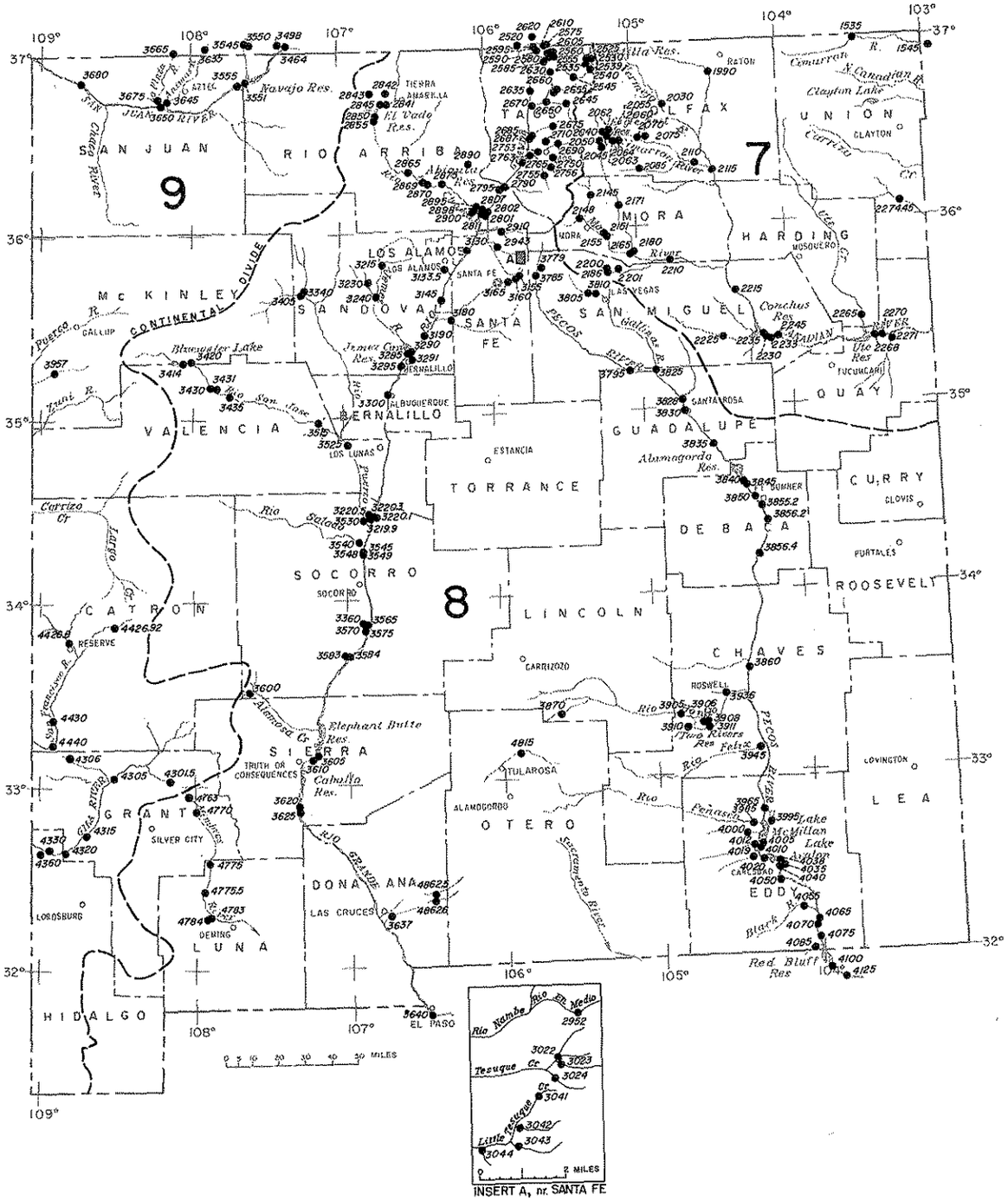

Figure 1.--Map of New Mexico showing location of active gaging stations.

7-1535. Cimarron River near Guy, N. Mex.

Location.--Lat 36°59'15", long 103°25'25", in SE¼ sec.21, T.32 N., R.33 E., on right bank 1.5 miles upstream from Baker damsite, 1.7 miles northwest of Valley, 3 miles upstream from Travesser Creek, 12 miles north of Guy, and 27 miles northwest of Kenton, Okla.

Drainage area.--545 sq mi.

Records available.--April 1942 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,900 ft (from topographic map). Prior to Oct. 1, 1943, at datum 0.44 ft higher.

Average discharge.--25 years, 11.8 cfs (8,540 acre-ft per year).

Extremes.--Maximum discharge during year, 4,310 cfs July 8 (gage height, 13.35 ft), from rating curve extended above 3,000 cfs as explained below; minimum, about 0.10 cfs Feb. 6, result of freezeup.
1942-67: Maximum discharge, 46,100 cfs Aug. 21, 1965 (gage height, 22.00 ft), from rating curve extended above 3,000 cfs on basis of slope-area measurements at gage heights 15.7 and 22.00 ft; no flow at times.

Remarks.--Records good except those below 2 cfs, which are fair and those for winter periods, which are poor. Diversions for irrigation of about 6,500 acres above station. Records of water temperatures and suspended sediment loads for water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.3	2.8	3.2	1.8	2.8	3.5	1.2	1.2	37	2.3	3.0	5.8
2	7.1	2.8	3.0	1.8	2.8	3.0	1.2	1.2	8.3	2.3	3.4	4.9
3	6.0	2.8	3.2	1.8	2.6	2.8	1.2	1.5	6.0	2.1	29	4.0
4	6.0	3.0	3.4	1.8	2.6	2.7	1.3	1.8	4.7	2.0	105	3.9
5	6.0	3.2	3.4	2.2	2.7	2.7	1.2	1.7	4.0	2.0	6.5	4.0
6	6.0	3.2	3.5	1.8	1.0	2.5	1.2	1.5	3.4	15	36	4.0
7	5.6	3.0	3.4	1.0	1.0	1.5	1.2	1.4	2.8	23	33	4.0
8	5.6	3.2	3.4	2.2	1.0	1.0	1.2	1.4	2.4	689	132	4.0
9	4.9	3.2	2.7	2.7	2.0	2.7	1.2	1.4	2.4	76	298	4.0
10	4.9	3.2	1.8	2.8	2.0	2.4	1.2	1.0	1.9	6.3	28	4.2
11	4.7	3.2	1.8	3.0	2.3	2.3	1.4	.79	2.3	340	13	4.4
12	4.0	3.2	2.4	3.0	1.7	2.3	1.5	.94	2.5	369	8.9	4.4
13	3.5	3.2	2.4	3.0	1.9	2.1	1.5	1.5	2.0	24	6.8	4.0
14	3.0	3.2	3.2	3.0	1.9	2.1	1.8	4.0	1.5	8.3	5.4	4.4
15	3.2	3.2	3.7	3.0	1.9	2.3	1.7	2.5	1.4	5.6	5.1	4.2
16	3.4	3.2	2.6	3.0	2.0	2.5	1.5	2.1	369	89	5.4	249
17	4.0	3.2	3.0	2.4	2.5	2.4	1.3	2.0	178	15	5.4	196
18	4.2	3.2	3.0	1.8	3.0	2.5	1.2	1.8	17	15	5.1	17
19	4.2	3.2	3.2	1.8	3.4	2.5	1.3	1.5	6.0	7.4	4.9	7.4
20	4.0	3.2	3.2	2.4	3.4	2.4	1.3	2.0	4.4	6.3	5.1	6.8
21	3.5	3.2	3.4	3.4	3.0	2.5	1.2	2.0	3.4	5.1	5.4	5.1
22	3.2	3.2	2.5	3.2	3.0	2.7	1.3	1.9	2.8	4.7	5.4	4.4
23	3.2	3.0	1.8	2.8	3.2	2.7	1.3	1.9	2.4	4.4	5.1	4.0
24	3.4	3.0	1.8	2.5	3.4	2.5	1.4	1.7	2.1	4.7	4.9	3.9
25	3.5	3.0	1.8	2.4	3.5	2.4	1.7	1.4	2.1	4.9	4.9	3.4
26	3.4	3.4	1.8	2.4	3.5	2.5	1.7	1.4	2.5	27	4.7	3.5
27	3.4	2.8	1.8	2.6	3.5	2.7	1.5	1.8	4.0	6.8	4.4	3.7
28	3.4	3.0	1.0	3.2	3.5	1.9	1.7	3.4	3.0	6.0	4.2	3.7
29	3.4	3.2	1.0	2.8	-	1.2	1.5	11	2.7	4.7	4.7	3.5
30	3.4	3.4	1.4	2.8	-----	1.2	1.3	8.9	2.5	4.0	9.9	3.4
31	3.2	-----	1.4	2.8	-----	1.2	-----	116	-----	3.7	9.9	-----
Total	135.6	93.6	79.2	77.2	71.1	71.7	41.2	184.63	684.5	1775.6	802.5	579.0
Mean	4.37	3.12	2.55	2.49	2.54	2.31	1.37	5.96	22.8	57.3	25.9	19.3
Max	8.3	3.4	3.7	3.4	3.5	3.5	1.8	116	369	689	298	249
Min	3.0	2.8	1.0	1.0	1.0	1.0	1.2	.79	1.4	2.0	3.0	3.4
Ac-ft	269	186	157	153	141	142	82	366	1,360	3,520	1,590	1,150

Cal yr 1966: Total 5,279.11 Mean 14.5 Max 762 Min .38 Ac-ft 10,470
Wtr yr 1967: Total 4,595.83 Mean 12.6 Max 689 Min .79 Ac-ft 9,120

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-16	0600	6.20	1,330	8- 8	1830	5.61	1,120
7- 8	1630	13.35	4,310	9-16	1915	9.00	2,450
7-11	2000	8.31	2,170				

7-1545. Cimarron River near Kenton, Okla.

Location.--Lat 36°56', long 102°57', in SE 1/4 sec.4, T.5 N., R.1 E., near right bank on downstream side of pier of county road bridge, 1.5 miles upstream from Carrizo Creek, 1.7 miles northeast of Kenton, 2.2 miles downstream from Carrizozo Creek, and at mile 594.0.

Drainage area.--1,106 sq mi, of which 68 sq mi is probably noncontributing.

Records available.--April 1904 to July 1905 (gage heights only), October 1950 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 4,262.08 ft above mean sea level, datum of 1929 (levels by State Highway Department). April 1904 to July 1905 staff gage at site 0.9 mile upstream at different datum. Oct. 1, 1950, to Sept. 19, 1967, graphic water-stage recorder at same site and at datum 5.00 ft higher.

Average discharge.--17 years (1950-67), 28.1 cfs (20,340 acre-ft per year).

Extremes.--Maximum discharge during year, 4,040 cfs July 18 (gage height, 7.76 ft); no flow at times.
1950-67: Maximum discharge, 43,400 cfs Oct. 17, 1965 (gage height, 22.32 ft, present datum), from rating curve extended above 7,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times in most years.

Remarks.--Records good except those for winter periods, which are fair. Extensive diversions for irrigation above station.

Cooperation.--Records furnished by Oklahoma district, Geological Survey.

Discharge, in cubic feet per second, water year October 1966 to September 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	25	2.8	4.2	4.5	.94	1.7	.46	1.4	53	2.5	12	6.5
2	20	2.2	3.9	5.0	.69	2.2	.69	1.4	18	4.9	11	6.5
3	18	2.2	3.6	5.8	.46	2.2	.69	2.2	32	6.9	7.5	1.7
4	16	2.2	4.2	6.4	.94	2.2	1.2	2.5	210	88	180	.69
5	14	2.2	4.2	7.0	2.2	2.2	1.2	3.1	24	15	30	1.7
6	13	2.8	4.2	6.8	1.7	2.0	.94	3.1	13	8.6	8.0	3.1
7	12	3.1	4.9	4.5	2.8	1.6	.46	2.2	11	7.9	6.2	1.7
8	12	2.8	4.2	3.5	2.0	1.2	.23	.94	7.9	14	22	1.4
9	12	2.8	4.5	4.0	2.8	1.1	.23	.69	6.5	644	146	102
10	12	3.6	2.7	5.0	2.2	1.6	.23	0	3.2	56	110	160
11	12	4.2	3.3	6.2	2.0	2.2	1.2	0	1.7	66	36	11
12	11	3.6	4.2	7.2	2.0	2.0	3.6	0	1.7	1,200	25	6.5
13	6.9	3.1	4.2	7.2	2.0	1.7	1.2	0	1.4	170	10	3.1
14	5.5	2.5	4.5	5.5	2.2	1.7	2.2	3.3	1.4	50	20	5.2
15	4.2	2.5	4.9	5.8	1.7	1.7	2.0	1.2	1.2	25	17	9.1
16	4.2	2.5	4.2	6.9	1.2	2.0	2.5	.94	125	20	31	5.5
17	4.5	3.6	4.5	6.9	1.7	2.2	2.8	.69	891	18	12	276
18	5.2	3.9	4.5	5.5	1.7	2.0	3.1	.46	117	756	8.0	56
19	3.9	3.6	4.5	4.9	2.0	2.2	2.5	.46	33	64	9.0	22
20	3.9	4.2	5.8	5.2	2.0	2.2	1.2	.46	28	33	12	18
21	3.1	4.2	6.5	5.2	1.7	2.0	1.4	.46	19	24	11	14
22	2.8	4.2	6.5	4.9	2.0	2.0	.94	.23	8.3	22	8.0	11
23	2.8	3.9	3.5	4.9	1.7	.94	.94	0	4.5	19	4.2	6.8
24	2.8	3.6	3.0	4.9	1.4	.94	.23	0	3.1	21	3.0	10
25	3.6	4.2	3.6	4.5	1.4	1.2	0	0	2.8	76	2.7	11
26	2.8	5.5	4.1	4.5	2.0	.69	0	0	2.2	29	3.6	11
27	2.8	5.2	3.8	4.5	2.0	.94	.69	0	14	28	1.7	12
28	3.1	5.2	3.0	4.2	1.7	.69	2.5	0	5.8	19	.69	12
29	3.1	5.8	2.5	2.8	------	.69	2.5	77	3.1	14	.69	11
30	3.3	4.5	3.3	1.7	------	.46	1.7	51	2.8	13	3.9	6.6
31	3.6	------	3.5	1.4	------	.69	------	14	------	15	20	------
TOTAL	249.1	106.7	128.5	157.3	49.13	49.14	39.53	167.73	1,645.6	3,529.8	772.18	803.09
MEAN	8.04	3.56	4.15	5.07	1.75	1.59	1.32	5.41	54.9	114	24.9	26.8
MAX	25	5.8	6.5	7.2	2.8	2.2	3.6	77	891	1,200	180	276
MIN	2.8	2.2	2.5	1.4	.46	.46	0	0	1.2	2.5	.69	.69
AC-FT	494	212	255	312	97	97	78	333	3,260	7,000	1,530	1,590

CAL YR 1966: TOTAL 12,042.91 MEAN 33.0 MAX 3,190 MIN 0 AC-FT 23,890
WAT YR 1967: TOTAL 7,697.80 MEAN 21.1 MAX 1,200 MIN 0 AC-FT 15,270

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-17	0600	6.31	2,350	7-12	0230	7.35	3,500
7-9	0400	6.08	2,140	7-18	0300	7.76	4,040

7-1990. Canadian River near Hebron, N. Mex.

Location.--Lat 36°47'10", long 104°27'45", in Maxwell Grant, near right bank at downstream end of bridge pier on U. S. Highways 64 and 85, 3¼ miles north of Hebron, Colfax County, 5 miles upstream from Chicorica Creek, and 8 miles south of Raton.

Drainage area.--229 sq mi.

Records available.--June 1946 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 6,248 ft (from topographic map). June 1, 1946 to Sept. 30, 1952, on bridge pier 150 ft upstream and Oct. 1, 1952 to July 13, 1955, on bridge pier 200 ft upstream, both at datum 2.00 ft higher. July 14, 1955 to Aug. 11, 1964, at present site at datum 0.90 ft higher. Aug. 12, 1964 to Aug. 17, 1965, at present site at datum 2.00 ft higher.

Average discharge.--21 years, 7.96 cfs (5,760 acre-ft per year).

Extremes.--Maximum discharge during year, 6,150 cfs July 24 (gage height, 6.74 ft), from rating curve extended above 1,300 cfs as explained below; no flow several days.
1946-67: Maximum discharge, 62,400 cfs June 17, 1965 (gage height, 28.2 ft, from floodmarks, present datum), from rating curve extended above 1,300 cfs on basis of slope-area measurement of peak flow; no flow for many days most years.
Flood in 1942 reached a stage of about 28 ft (present datum) at site 150 ft upstream, from information by local residents.

Remarks.--Records poor. Diversions above station for irrigation of a few hundred acres. Part or all of low flow can be diverted to left bank a few hundred yards above station for stock water, off-channel storage and irrigation. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	3.8	1.8	0	0.15	0.34	0.16	0.11	0.20	0.24	0.11	100
2	2.3	3.3	2.0	0	.10	.34	.16	.11	.34	.24	.13	215
3	1.4	2.6	2.0	0	.10	.24	.16	.11	.24	.20	86	55
4	1.8	2.6	2.5	0	.15	.20	.16	.09	.24	.24	48	24
5	2.0	2.6	2.5	0	.20	.10	.16	.09	.20	256	126	13
6	1.4	2.6	2.9	0	.20	.10	.16	.09	.20	299	9.4	9.4
7	1.2	2.9	3.3	0	.10	.20	.16	.09	.16	2.9	8.4	4.2
8	1.0	3.3	3.3	0	.10	.10	.16	.09	.13	19	63	3.3
9	1.0	3.3	2.0	0	.10	.29	.16	.09	.13	301	24	2.9
10	.89	3.3	.50	0	.20	.24	.16	.09	.11	245	148	10
11	.77	2.6	1.0	0	.30	.20	.20	.09	.13	1.0	74	3.3
12	.89	2.6	1.0	.20	.30	.20	.20	.09	.11	.66	51	2.9
13	.77	2.6	1.0	.10	.50	.20	.20	.13	.11	.56	20	1.2
14	.56	1.4	1.0	.10	.77	.16	.16	.13	.11	.34	5.0	.66
15	.47	2.0	1.0	.10	.50	.16	.13	.13	.20	62	23	1.6
16	.89	2.0	.75	.10	.30	.16	.13	.13	.24	65	17	1.4
17	2.3	1.8	1.0	.10	.20	.13	.13	.13	105	143	8.4	1.4
18	1.8	1.6	1.0	0	.20	.13	.13	.13	4.4	.77	3.3	1.4
19	1.8	1.8	1.0	0	.40	.13	.11	.13	.24	.24	1.2	1.2
20	1.8	1.4	1.0	.10	.30	.13	.11	.13	.16	75	1.8	1.2
21	2.3	1.6	1.0	.30	.20	.16	.11	.13	.13	90	1.2	1.2
22	2.3	1.6	.75	.50	.20	.16	.13	.13	8.9	100	.66	1.2
23	2.9	1.8	.50	.40	.30	.16	.13	.13	.40	20	.47	1.0
24	3.8	1.6	.30	.30	.20	.16	.11	.11	.29	562	.47	.89
25	3.8	1.6	.10	.20	.30	.20	.11	.11	.29	327	.34	.89
26	4.2	1.8	.10	.10	.60	.24	.11	.13	.24	166	.16	.89
27	3.8	1.6	.10	.10	.56	.24	.11	.24	.24	148	.02	1.0
28	3.8	1.8	0	.15	.40	.20	.11	.34	.24	30	.01	1.0
29	3.8	1.8	0	.20	-	.20	.09	.20	.20	.40	269	1.0
30	3.8	2.0	0	.20	-----	.20	.09	.20	.20	1.7	315	1.0
31	3.8	-----	0	.20	-----	.20	-----	.20	-----	1.1	435	-----
Total	65.94	67.3	35.40	3.45	7.93	5.87	4.20	4.10	123.78	2,918.59	1,740.07	463.13
Mean	2.13	2.24	1.14	.111	.283	.189	.140	.132	4.13	94.1	56.1	15.4
Max	4.2	3.8	3.3	.50	.77	.34	.20	.34	105	562	435	215
Min	.47	1.4	0	0	.10	.10	.09	.09	.11	.20	.01	.66
Ac-ft	131	133	70	6.8	16	12	8.3	8.1	246	5,790	3,450	919

Cal yr 1966 : Total 4,328.06 Mean 11.9 Max 614 Min 0 Ac-ft 8,580
Wtr yr 1967 : Total 5,439.76 Mean 14.9 Max 562 Min 0 Ac-ft 10,790

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-17	2030	3.78	1,420	7-24	1815	6.74	6,150
7- 5	2100	4.40	2,260	8- 4	2020	3.60	1,200
7- 9	1615	5.91	4,710	8- 8	1415	3.49	1,070
7-10	1530	5.65	4,260	8-29	1520	5.01	3,210
7-17	1545	4.34	2,180	8-30	1550	4.60	2,560
7-20	2200	3.49	1,040				

7-2030. Vermejo River near Dawson, N. Mex.

Location.--Lat 36°40'50", long 104°47'05", in Maxwell Grant, on left bank, 1½ miles north of Dawson, Colfax County, and 2 miles upstream from Rail Canyon.

Drainage area.--301 sq mi.

Records available.--October 1915 to July 1918, April 1919 to May 1921, January 1927 to September 1967. Monthly discharge only for some periods, published in WSP 1311.

Gage.--Water-stage recorder. Datum of gage is 6,383 ft above mean sea level, datum of 1929. Prior to Sept. 17, 1921, staff gage and Sept. 17, 1921, to May 31, 1923, water-stage recorder, at sites about 1 mile upstream at different datums. Feb. 25, 1927, to Sept. 23, 1953, water-stage recorder at several sites about three-quarters of a mile upstream at datums 8 to 12 ft higher.

Average discharge.--43 years (1915-17, 1919-20, 1927-67), 19.4 cfs (14,050 acre-ft per year).

Extremes.--Maximum discharge during year, 1,490 cfs Sept. 1 (gage height, 6.33 ft), from rating curve extended above 40 cfs as explained below; minimum, 0.59 cfs May 24, 25.
1927-67: Maximum discharge, 12,600 cfs June 17, 1965 (gage height, 15.25 ft), from rating curve extended above 400 cfs on basis of slope-area measurement of peak flow; no flow at times.
A major flood occurred Aug. 2, 1921, when discharge probably exceeded 10,000 cfs.

Remarks.--Records fair except those for December to February, which are poor. Diversions for irrigation of small acreage and mountain meadows above station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	4.7	5.2	4.5	11	5.2	1.0	0.82	1.5	2.1	17	164
2	4.1	4.4	5.2	4.4	8.0	5.2	1.0	1.0	2.7	5.3	25	77
3	4.7	4.9	2.5	4.5	8.0	4.9	1.0	1.3	4.9	7.1	50	55
4	4.1	5.2	2.5	4.7	8.5	4.4	1.2	1.2	3.5	4.4	34	45
5	4.7	4.7	3.0	4.7	9.0	4.4	1.1	1.2	3.0	3.8	56	40
6	4.9	4.9	3.0	5.0	7.0	4.0	1.0	1.0	2.3	15	30	36
7	5.2	5.2	3.3	4.0	6.0	3.0	1.1	.91	1.8	18	54	33
8	5.2	5.2	3.3	3.5	4.0	3.5	1.8	.82	1.6	37	27	31
9	5.2	5.2	2.0	3.8	4.5	3.7	1.2	.82	1.3	19	35	29
10	5.2	4.4	1.2	2.7	5.0	5.5	1.3	.74	1.1	49	132	28
11	5.2	5.5	2.0	3.0	4.0	4.9	2.3	.74	1.6	23	62	27
12	4.4	7.8	3.0	3.8	5.0	5.2	2.3	.74	1.9	11	48	25
13	4.7	7.8	3.0	5.0	7.0	4.9	2.5	.74	1.8	30	41	22
14	3.8	7.3	4.0	6.0	9.0	4.4	2.7	.74	1.1	7.8	44	22
15	2.5	7.8	5.0	7.3	7.0	4.1	2.3	.74	1.1	16	40	22
16	4.4	8.2	4.0	7.3	5.0	3.8	2.1	.91	1.1	82	67	22
17	9.6	7.3	5.0	4.0	4.5	4.4	2.1	.82	3.6	39	40	18
18	7.8	6.4	7.0	2.0	5.5	4.7	2.1	.82	7.4	24	33	17
19	6.0	6.4	7.0	4.0	6.5	4.7	1.6	.74	12	16	30	16
20	6.0	6.4	8.0	5.0	7.8	4.1	1.3	.82	15	14	29	17
21	4.4	5.5	8.0	6.8	5.0	4.7	1.3	.82	9.1	42	26	15
22	4.1	5.2	7.0	11	5.5	4.1	1.3	.82	6.4	29	24	15
23	4.7	5.2	5.5	12	6.0	2.5	1.3	.82	3.3	26	20	14
24	4.9	5.2	4.0	11	5.0	1.9	1.3	.66	4.4	98	16	14
25	4.9	5.2	2.5	10	6.0	2.1	1.3	.66	3.8	66	15	14
26	4.7	4.9	1.5	8.0	9.6	2.5	1.2	.74	3.3	78	15	16
27	4.9	3.5	2.0	8.5	7.3	2.1	1.0	.74	2.7	50	15	18
28	4.9	3.0	2.5	9.0	5.2	1.8	1.0	1.2	2.7	24	15	18
29	4.4	4.1	4.4	13	-	1.5	1.0	2.3	2.7	22	25	15
30	4.4	4.9	4.4	13	-----	1.3	.91	1.9	3.3	46	97	14
31	4.4	-----	4.9	12	-----	1.1	-----	1.6	-----	30	125	-----
Total	153.6	166.4	125.9	203.5	181.9	114.6	44.61	29.88	112.0	934.5	1,287	899
Mean	4.95	5.55	4.06	6.56	6.50	3.70	1.49	.964	3.73	30.1	41.5	30.0
Max	9.6	8.2	8.0	13	11	5.5	2.7	2.3	15	98	132	164
Min	2.5	3.0	1.2	2.0	4.0	1.1	.91	.66	1.1	2.1	15	14
Ac-ft	305	330	250	404	361	227	88	59	222	1,850	2,550	1,780

Cal yr 1966: Total 4,913.4 Mean 13.5 Max 242 Min 1.2 Ac-ft 9,750
Wtr yr 1967: Total 4,252.89 Mean 11.7 Max 164 Min .66 Ac-ft 8,440

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-24	1715	5.81	1,150	9- 1	1930	6.33	1,490

7-2040. Moreno Creek at Eagle Nest, N. Mex.

Location.--Lat 36°33'12", long 105°16'03", in Maxwell Grant, on left upstream wingwall of a multi-culvert structure under U. S. Highway 64, 200 ft west of intersection of highways U. S. 64 and State 38, about 800 ft upstream from flow line of Eagle Nest Reservoir and 1,000 ft west of Eagle Nest.

Drainage area.--73.8 sq mi.

Records available.--April 1928 to October 1955, June 1964 to September 1967. No winter records except 1932. Prior to October 1930 monthly discharge only, published in WSP 1311. Records for December 1930 to March 1931 published in WSP 732, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder and concrete control at present site since Oct. 3, 1952. Datum of gage is 8,195.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1957. Prior to May 9, 1928, staff gage at nearby site downstream from culvert at different datum. May 9, 1928 to June 9, 1952, water-stage recorder about 75 to 100 ft downstream at different datums within 1.3 ft of present datum. June 9 to Oct. 2, 1952, temporary staff gage about 300 ft upstream at different datum. Oct. 2, 1952 to Oct. 25, 1955, water-stage recorder at present site at datum 0.27 ft lower.

Extremes.--Maximum discharge during year, 204 cfs July 23 (gage height, 3.15 ft), from rating curve extended above 53 cfs by logarithmic plotting; no flow several days.
1928-55, 1964-67: Maximum discharge, 240 cfs Sept. 1, 1946; maximum gage height recorded, 3.16 ft Aug. 19, 1940, site and datum then in use; no flow at times.

Remarks.--Records fair. Diversions for irrigation of about 1,200 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	1.7				-	0.82	2.9	0.26	0.20	0.35	3.6
2	1.7	1.0				-	.82	3.6	.26	.06	.35	2.9
3	1.7	-				-	.91	3.4	.30	.06	.35	2.4
4	1.6	-				-	.74	3.8	.26	.06	.35	2.2
5	1.7	-				-	.66	3.2	.21	.06	.30	2.2
6	1.7	-				-	.66	3.2	.21	.06	.26	1.9
7	1.7	-				-	.74	2.7	.14	.09	.21	1.9
8	1.7	-				-	.66	2.5	.18	.06	.26	1.9
9	1.7	-				-	.66	2.7	.21	.04	.47	2.4
10	1.6	-				-	.74	2.9	.18	.04	3.6	2.1
11	1.6	-				-	.74	2.7	.26	.04	3.2	1.9
12	1.7	-				-	.74	2.4	.26	.09	2.1	1.6
13	1.6	-				3.0	.82	2.4	.26	.09	2.4	1.4
14	1.4	-				3.0	.74	1.7	.18	.09	3.6	1.2
15	1.4	-				2.5	.74	1.6	.18	.11	3.8	1.1
16	1.6	-				2.5	.66	1.7	.18	.30	4.5	1.1
17	2.1	-				3.0	.74	1.6	.30	.46	3.2	1.1
18	1.9	-				3.0	.74	1.6	.26	.35	2.1	1.1
19	1.7	-				3.0	.82	1.6	.46	.30	2.1	.91
20	1.7	-				2.0	.91	1.7	.52	.21	2.9	.82
21	1.7	-				1.5	.91	1.7	.35	.21	2.1	.74
22	1.7	-				1.0	.91	1.6	.35	.26	1.6	.66
23	1.6	-				.74	.91	1.3	.35	38	1.3	.59
24	1.6	-				.59	.91	1.3	.21	11	1.3	.59
25	1.6	-				.74	.91	1.3	.21	2.0	1.2	.74
26	1.6	-				.82	.82	1.8	.14	2.1	1.2	1.2
27	1.6	-				.59	.82	1.8	.12	.74	1.2	1.3
28	1.6	-				.59	.91	1.8	.10	.52	1.1	1.4
29	1.7	-			-	.59	1.3	1.3	.18	.46	1.3	1.1
30	1.7	-			- - - - -	.74	1.9	.35	.38	.40	3.3	.91
31	1.7	- - - - -			- - - - -	.74	- - - - -	.26	- - - - -	.35	4.7	- - - - -
Total	51.6	-	-	-	-	-	25.36	64.41	7.46	58.81	56.7	44.96
Mean	1.66	-	-	-	-	-	.845	2.08	.249	1.90	1.83	1.50
Max	2.1	-	-	-	-	-	1.9	3.8	.52	38	4.7	3.6
Min	1.4	-	-	-	-	-	.66	.26	.10	.04	.21	.59
Ac-ft	102	-	-	-	-	-	50	128	15	117	112	89

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-23	2000	3.15	204				

7-2045. Cieneguilla Creek near Eagle Nest, N. Mex.

Location.--Lat 36°29'00", long 105°15'40", in Maxwell Grant, on right bank a quarter of a mile downstream from Schoolhouse Draw, about 3,500 ft upstream from high-water line of Eagle Nest Reservoir, and 5 miles south of Eagle Nest, Colfax County.

Drainage area.--56 sq mi.

Records available.--April 1928 to September 1955, June 1964 to September 1967. No winter records except in water years 1932, 1948, 1951. Monthly discharge only for some periods, published in WSP 1311. Published as "near Therma" 1928-34.

Gage.--Water-stage recorder and concrete control. Datum of gage is 8,196 ft above mean sea level, datum of 1929. Prior to May 8, 1928, staff gage a quarter of a mile downstream at different datum. May 8, 1928 to Sept. 15, 1934, water-stage recorder a quarter of a mile downstream at different datum.

Extremes.--Maximum discharge during year, 84 cfs July 26 (gage height, 4.00 ft); minimum, 0.08 cfs June 29.
1928-55, 1964-67: Maximum discharge, 505 cfs June 16, 1965 (gage height, 5.61 ft), from rating curve extended above 81 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good. Diversions for irrigation of about 1,000 acres above station. Gage bypassed by ditch on right bank which enters creek about 300 ft downstream; ditch flow not included in record.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	2.3				-	7.0	0.60	1.3	0.18	1.6	12
2	1.7	2.0				-	7.0	1.4	1.2	.18	1.5	13
3	1.6	-				-	6.1	2.1	2.8	.20	1.9	11
4	1.6	-				-	3.8	1.2	1.9	.14	2.2	8.9
5	1.6	-				-	3.2	1.1	1.2	.30	3.5	8.0
6	1.7	-				-	4.4	1.3	.92	.22	3.4	6.8
7	1.7	-				-	4.4	1.2	.63	.20	2.2	6.2
8	1.6	-				-	4.1	1.2	.43	.22	2.0	7.5
9	1.6	-				-	3.6	1.3	.30	.14	5.4	11
10	1.6	-				-	3.8	1.1	.24	.37	18	7.3
11	1.8	-				-	4.1	.81	.22	.49	15	5.5
12	2.2	-				-	3.4	.77	.18	2.3	10	4.5
13	1.8	-				-	1.9	.63	.16	1.5	7.0	3.9
14	1.5	-				7.0	6.8	.81	.12	.74	5.7	3.9
15	1.6	-				6.3	10	.92	.16	.77	5.3	3.6
16	1.8	-				6.6	6.4	1.1	.20	1.2	6.6	3.5
17	2.6	-				9.1	4.4	.95	1.4	2.1	6.2	3.3
18	2.8	-				11	3.9	.81	1.1	1.4	5.5	3.1
19	2.5	-				17	3.8	.85	2.1	.99	4.7	3.1
20	2.3	-				10	2.2	.95	2.4	1.2	4.8	3.0
21	2.2	-				7.5	2.0	1.1	1.9	1.3	4.1	2.6
22	2.0	-				7.0	1.5	1.2	1.1	1.9	3.6	2.4
23	2.1	-				7.0	1.2	.92	.85	1.1	3.4	2.2
24	2.1	-				8.9	1.4	.55	.52	.85	3.5	2.1
25	2.2	-				7.7	1.7	.46	.39	2.2	3.2	2.4
26	2.2	-				6.0	1.4	1.2	.30	15	11	3.0
27	2.2	-				6.2	.99	1.2	.27	9.7	13	4.1
28	2.2	-			-	6.2	.81	1.2	.18	8.1	5.7	3.4
29	2.3	-				7.5	.74	1.8	.12	5.2	4.8	2.8
30	2.2	-				7.5	.70	1.6	.30	2.6	15	2.4
31	2.2					6.0		1.6		1.8	28	
Total	61.2	-	-	-	-	-	106.74	33.93	24.89	64.59	207.8	156.5
Mean	1.97	-	-	-	-	-	3.56	1.09	.830	2.08	6.70	5.22
Max	2.8	-	-	-	-	-	10	2.1	2.8	15	28	13
Min	1.5	-	-	-	-	-	.70	.46	.12	.14	1.5	2.1
Ac-ft	121	-	-	-	-	-	212	67	49	128	412	310

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

Peak discharge (base, 70 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-26	1630	4.00	84				

7-2050. Sixmile Creek near Eagle Nest, N. Mex.
(Formerly published as Six Mile Creek)

Location.--Lat 36°31'09", long 105°16'30", in Maxwell Grant, on left upstream wingwall of concrete control, 250 ft downstream from concrete box culvert on U. S. Highway 64, and 2½ miles southwest of Eagle Nest, Colfax County.

Drainage area.--10.5 sq mi.

Records available.--April 1928 to September 1955, July 1958 to September 1967. No winter records 1928-31, 1933-55. Prior to October 1930 monthly discharge only, published in WSP 1311. Records for December 1930 to March 1931 have been found to be unreliable and should not be used. Published as Sixmile Creek near Therma prior to October 1934 and as Six Mile Creek near Eagle Nest October 1937 (corrected) to September 1966.

Gage.--Water-stage recorder. Concrete control Sept. 11, 1931, to May 1933, and since Sept. 13, 1934. Datum of gage is 8,195.16 ft above mean sea level, datum of 1929. Prior to May 18, 1928, staff gage 88 ft upstream at datum 0.98 ft higher. May 18, 1928, to Sept. 11, 1938, water-stage recorder at site 88 ft upstream at datum 0.43 ft higher.

Average discharge.--10 years (1931-32, 1958-67), 2.31 cfs (1,670 acre-ft per year).

Extremes.--Maximum discharge during year, 11 cfs Aug. 10 (gage height, 1.20 ft); maximum gage height, 2.34 ft Jan. 10, backwater from ice; minimum discharge determined, 0.15 cfs Nov. 27, but may have been less during periods of ice effect.
1930-55, 1958-67: Maximum discharge not determined, occurred Apr. 11, 1937 (discharge probably exceeded 125 cfs); maximum gage height recorded, 3.38 ft Apr. 2, 1937 (ice jam), site and datum then in use; no flow at times.

Remarks.--Records good except those for winter period, which are poor. Diversions for irrigation of about 300 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.9	0.70	0.80	1.5	1.9	3.1	1.5	0.46	0.67	0.96	1.1
2	.96	1.7	.50	1.2	1.0	2.0	3.0	2.4	.46	.62	.90	1.0
3	.96	1.5	.60	.80	1.0	1.8	3.0	3.0	.67	.62	.84	1.0
4	1.0	1.6	.80	1.2	1.5	1.6	3.5	2.7	.58	.58	.90	1.3
5	.96	1.5	.80	1.5	.60	1.2	4.6	2.6	.50	.62	1.0	1.3
6	.90	1.6	1.8	1.6	.80	1.0	4.6	2.0	.50	.58	.90	1.1
7	.96	1.6	4.0	.70	1.0	.70	4.7	2.2	.50	.58	.72	1.1
8	1.1	1.4	1.6	.80	1.0	.80	4.6	2.4	.39	.54	.78	1.4
9	1.4	1.2	1.0	.90	1.4	1.0	4.6	2.4	.33	.50	1.7	1.8
10	1.4	1.0	.60	1.0	1.2	1.0	4.2	2.0	.30	.54	6.9	1.4
11	1.4	1.0	.70	1.2	1.0	1.0	3.6	2.0	.27	.46	5.2	1.3
12	1.4	1.0	1.0	1.2	1.3	1.2	3.1	1.8	.27	.72	3.4	1.1
13	1.0	.80	1.0	1.0	1.6	1.5	3.1	1.7	.27	.67	3.2	1.1
14	1.3	.70	1.0	1.0	1.8	1.7	3.2	1.8	.27	.54	3.1	1.1
15	1.4	.80	1.0	1.0	1.7	1.5	3.0	1.8	.27	.62	3.4	1.0
16	1.4	1.1	1.0	1.0	1.6	1.8	3.0	1.8	.33	1.1	3.5	1.1
17	1.5	1.1	1.5	1.0	1.4	2.0	2.7	1.8	.42	1.7	2.8	1.1
18	1.5	.80	1.4	1.0	1.6	3.0	2.8	1.8	.42	1.4	1.9	1.1
19	1.4	.70	1.4	.70	1.7	3.8	3.1	1.8	.82	1.0	1.9	1.1
20	1.4	.60	1.7	1.0	1.3	3.0	3.1	1.8	.62	.90	2.0	1.0
21	1.1	.60	1.4	1.0	1.0	2.5	3.0	1.8	.54	.84	1.7	.90
22	1.2	.83	1.3	1.0	1.3	2.5	2.5	1.8	.58	1.0	1.5	.90
23	1.6	.91	1.2	1.0	1.3	2.7	2.3	1.7	.50	1.1	1.4	.90
24	1.7	1.0	1.2	1.0	1.6	3.1	2.0	1.7	.42	2.3	1.4	.96
25	1.7	1.1	1.4	1.0	1.8	3.1	1.9	1.8	.42	2.0	1.3	1.1
26	1.7	.83	1.4	.60	2.0	2.5	1.8	2.8	.36	1.8	1.1	1.2
27	1.7	.40	1.2	.80	1.4	2.7	1.6	2.7	.36	1.2	1.1	1.4
28	1.5	.50	.80	.80	1.5	3.0	1.6	2.8	.46	1.1	.96	1.1
29	1.7	.70	.40	1.0	-	3.2	1.4	2.6	.78	.84	.96	1.0
30	1.9	.70	.60	1.3	- - - - -	3.4	1.5	.64	.72	.78	1.4	.96
31	1.9	- - - - -	.80	1.5	- - - - -	2.5	- - - - -	.58	- - - - -	.84	.15	- - - - -
Total	42.04	31.17	35.80	31.60	37.90	64.7	90.2	62.22	13.79	28.76	60.32	33.92
Mean	1.36	1.04	1.15	1.02	1.35	2.09	3.01	2.01	460	.928	1.95	1.13
Max	1.9	1.9	4.0	1.6	1.8	3.8	4.7	3.0	.82	2.3	6.9	1.8
Min	.90	.40	.40	.60	.60	.70	1.4	.58	.27	.46	.72	.90
Ac-ft	83	62	71	63	75	128	179	123	27	57	120	67

Cal yr 1966 : Total 711.36 Mean 1.95 Max 8.2 Min .14 Ac-ft 1,410
Wtr yr 1967 : Total 532.42 Mean 1.46 Max 6.9 Min .27 Ac-ft 1,060

Peak discharge (base, 15 cfs).--No peak above base.

7-2055. Eagle Nest Reservoir near Eagle Nest, N. Mex.

Location.--Lat 36°32'05", long 105°14'00", in Maxwell Grant, at upstream face of Eagle Nest Dam on Cimarron Creek, 2 miles southeast of Eagle Nest, Colfax County, and 6¼ miles west of Ute Park.

Drainage area.--167 sq mi.

Records available.--December 1927 to December 1944 (month-end contents only, published in WSP 1311), May 1950 to September 1967.

Gage.--Wire-weight gage since May 1950 read 1 to 4 times a month (at random intervals). Datum of gage is 8,056.8 ft above mean sea level, datum of 1929, leveling of 1965. Prior to 1950, nonrecording gage (type unknown) at same site and datum. Prior to October 1964 gage heights were raised by addition of 8,000 ft and called elevations.

Extremes.--Maximum contents observed during year, 22,700 acre-ft Oct. 6 (gage height, 104.85 ft); minimum observed, 15,500 acre-ft Aug. 8, 22 (gage height, 97.25 ft).
1927-44, 1950-67: Maximum contents observed, 78,800 acre-ft May 31, 1942 (gage height, 136.9 ft); minimum observed, 635 acre-ft Dec. 14, 1954 (gage height, 61.33 ft).

Remarks.--Reservoir is formed by concrete dam with spillway cut in natural rock, completed June 30, 1918; storage began in June 1917. Capacity, 79,120 acre-ft between gage heights 35.0 (sill of outlet gate) and 137.0 ft (crest of ungated spillway). Dead storage negligible. Records given herein represent usable contents and are based on 40 to 50 observations per year made at irregular intervals. Water released is used for irrigation. Lake is recreational area. Diversions for irrigation of about 2,500 acres above reservoir.

Cooperation.--Supplemental gage readings furnished by employee of Springer Land and Cattle Co. and by Cimarron Creek watermaster.

Capacity table, water year 1966-67
(gage-height, in feet, and contents, in acre-feet)

96.0	14,500	102.0	19,740
98.0	16,110	104.0	21,770
100.0	17,850	106.0	23,970

Contents, in acre-feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-	21,620	-	-	-	-	15,770	-
2	-	-	-	-	-	-	-	20,490	-	-	-	-
3	-	21,370	-	-	-	-	-	-	-	-	15,590	-
4	-	-	-	-	-	-	21,830	-	-	16,540	-	-
5	-	-	-	-	-	-	21,830	-	-	-	-	15,830
6	22,700	-	-	-	-	21,770	-	-	17,590	16,460	-	-
7	-	-	20,890	-	21,500	-	-	-	-	-	-	15,840
8	-	20,940	-	-	-	-	-	20,170	-	-	15,500	-
9	-	-	-	-	-	-	-	20,040	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	22,420	-	-	21,200	-	-	21,520	-	-	15,950	-	-
12	-	-	-	-	-	-	-	-	-	-	-	15,830
13	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	21,770	-	-	17,500	-	-	-
15	-	20,690	-	-	-	-	-	-	-	-	15,660	-
16	-	-	-	-	-	-	-	19,450	-	-	-	-
17	21,990	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	21,200	-	-	15,660	-	-
19	-	-	-	-	-	-	-	-	-	15,810	-	15,790
20	-	-	-	-	-	-	-	-	17,280	-	-	-
21	-	-	-	-	-	21,990	-	-	-	-	-	-
22	-	20,540	-	-	-	-	-	-	-	-	15,500	-
23	-	-	-	-	-	-	-	18,780	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	20,890	-	-	-	-	-
26	21,620	-	-	-	-	-	-	-	-	15,910	-	15,790
27	-	-	-	-	-	-	-	-	17,060	-	-	-
28	-	-	-	-	21,600	21,990	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	15,830	-
30	-	20,700	-	-	----------	-	20,600	18,220	16,800	-	-	15,800
31	21,500	----------	21,100	21,500	----------	21,900	----------	18,100	----------	15,800	15,830	----------
(†)	-	-	-	-	-	-	-	-	-	-	-	-
(‡)	-1,400	-800	+400	+400	+100	+300	-1,800	-2,500	-1,300	-1,000	+30	-30

Calendar year 1966..... ‡ -5,880
Water year 1967..... ‡ -7,100

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.
Note.--Contents interpolated at end of each month.

7-2060. Cimarron River below Eagle Nest Dam, N. Mex.
(Formerly published as Cimarron Creek below Eagle Nest Dam)

Location.--Lat 36°32'05", long 105°13'55", about sec.26, T.27 N., R.16 E. (projected), in Maxwell Grant, on left bank 300 ft downstream from Eagle Nest Dam, 2 miles southeast of Eagle Nest, and 6¼ miles west of Ute Park.

Drainage area.--167 sq mi.

Records available.--May 1950 to September 1967. Published as Cimarron Creek below Eagle Nest Dam October 1952 to September 1966.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 8,000 ft (from topographic map). Prior to May 15, 1951, at datum 0.81 ft higher. Oct. 1, 1964 to Sept. 19, 1966, digital water-stage recorder at present site and datum.

Average discharge.--17 years, 13.5 cfs (9,770 acre-ft per year).

Extremes.--Maximum discharge during year, 188 cfs July 5-6 (gage height, 2.41 ft); minimum determined, 0.04 cfs Nov. 22 to Mar. 2.
1950-67: Maximum discharge, 205 cfs June 14, 1955 (gage height, 2.79 ft); no flow many days most years.

Remarks.--Records good except those above 80 cfs which are fair, and those below 4 cfs, which are poor. Flow regulated by Eagle Nest Reservoir (see station 7-2055). Diversions for irrigation of about 2,500 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	16	0.04	0.04	0.04	0.04	24	30	94	29	27	17
2	18	16	.04	.04	.04	.04	24	37	90	34	27	15
3	19	42	.04	.04	.04	.30	24	40	88	38	27	10
4	24	57	.04	.04	.04	5.0	24	40	88	49	27	11
5	26	57	.04	.04	.04	7.0	29	31	39	71	27	9.6
6	26	56	.04	.04	.04	7.0	31	18	5.0	88	27	8.8
7	26	57	.04	.04	.04	6.7	31	43	5.0	52	27	8.5
8	28	57	.04	.04	.04	6.7	31	48	5.0	50	27	8.5
9	33	57	.04	.04	.04	6.7	26	50	4.1	43	27	8.5
10	33	38	.04	.04	.04	6.3	24	56	3.5	40	21	8.5
11	34	29	.04	.04	.04	6.3	24	56	17	36	7.8	8.1
12	34	24	.04	.04	.04	6.3	23	56	23	37	5.6	7.8
13	33	22	.04	.04	.04	6.3	23	36	25	16	5.6	7.8
14	34	22	.04	.04	.04	6.7	20	52	31	2.4	5.6	7.8
15	34	22	.04	.04	.04	6.7	8.5	77	31	11	5.6	8.1
16	34	22	.04	.04	.04	6.7	15	68	31	17	4.5	8.1
17	34	22	.04	.04	.04	6.7	31	59	7.6	6.7	.22	8.5
18	34	17	.04	.04	.04	6.3	31	56	17	6.0	.22	5.2
19	33	.90	.04	.04	.04	6.7	31	53	24	5.6	.22	.52
20	34	.70	.04	.04	.04	5.1	31	33	22	8.1	.22	.52
21	33	.10	.04	.04	.04	6.0	31	43	18	11	.22	.52
22	33	.04	.04	.04	.04	6.0	30	48	18	12	.22	.52
23	26	.04	.04	.04	.04	10	30	41	15	9.9	.22	.52
24	23	.04	.04	.04	.04	12	30	33	10	5.0	.22	.52
25	23	.04	.04	.04	.04	12	24	33	23	14	.22	.52
26	16	.04	.04	.04	.04	20	22	25	22	26	.22	.52
27	3.5	.04	.04	.04	.04	24	22	17	26	27	2.0	.52
28	2.4	.04	.04	.04	.04	24	22	80	33	27	17	.52
29	.90	.04	.04	.04	-	24	23	94	35	27	17	.52
30	4.8	.04	.04	.04	-----	24	30	94	35	27	17	3.2
31	16	-----	.04	.04	-----	24	-----	94	-----	27	17	-----
Total	766.60	635.06	1.24	1.24	1.12	295.58	769.5	1541	885.2	852.7	370.90	175.72
Mean	24.7	21.2	.040	.040	.040	9.53	25.6	49.7	29.5	27.5	12.0	5.86
Max	34	57	.04	.04	.04	24	31	94	94	88	27	17
Min	.90	.04	.04	.04	.04	.04	8.5	17	3.5	2.4	.22	.52
Ac-ft	1520	1260	2.5	2.5	2.2	586	1530	3060	1760	1690	736	349

Cal yr 1966 : Total 7,894.30 Mean 21.6 Max 168 Min 0 Ac-ft 15,660
Wtr yr 1967 : Total 6,295.86 Mean 17.2 Max 94 Min .04 Ac-ft 12,490

Note.--No gage-height record Nov. 21 to Mar. 3.

7-2062. McEvoy Creek near Eagle Nest, N. Mex.

Location.--Lat 36°33'00", long 105°13'30", in Maxwell Grant, on left bank 1.4 miles north of Eagle Nest Dam, and 2 miles east of Eagle Nest, Colfax County.

Drainage area.--1.95 sq mi.

Records available.--September 1961 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 8,600 ft (from topographic map). May 7, 1963 to Sept. 7, 1966, digital water-stage recorder at present site and datum.

Average discharge.--6 years, 0.197 cfs (143 acre-ft per year).

Extremes.--Maximum discharge during year, 1.04 cfs Aug. 16 (gage height, 0.68 ft); minimum, 0.042 cfs Dec. 11.
1961-67: Maximum discharge, 1.64 cfs May 21, 1965 (gage height, 0.82 ft); minimum, 0.003 cfs Nov. 3, 1962, result of freezeup.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.12	0.11	0.14	0.099	0.11	0.13	0.16	0.12	0.14	0.082	0.18	0.20
2	.11	.090	.15	.11	.11	.14	.16	.12	.15	.082	.16	.20
3	.099	.12	.16	.11	.11	.14	.16	.14	.15	.074	.18	.19
4	.11	.14	.16	.099	.11	.14	.16	.13	.14	.082	.16	.20
5	.12	.13	.16	.099	.11	.14	.18	.14	.13	.074	.15	.19
6	.11	.14	.19	.099	.11	[illegible]	.18	.13	.15	.074	.14	.19
7	.11	.16	.20	.099	.11	.14	.18	.13	.13	.074	.14	.19
8	.11	.16	.13	.090	.11	.14	.16	.13	.12	.074	.14	.20
9	.11	.15	.060	.067	.11	.14	.16	.13	.11	.074	.23	.19
10	.11	.11	.047	.053	.11	.15	.16	.13	.11	.082	.35	.19
11	.12	.12	.047	.047	.11	.15	.16	.13	.11	.074	.31	.18
12	.12	.16	.053	.053	.12	.15	.16	.13	.099	.11	.25	.16
13	.12	.15	.074	.074	.12	.15	.13	.12	.099	.099	.23	.16
14	.12	.15	.074	.082	.12	.15	.16	.14	.090	.13	.23	.16
15	.12	.16	.090	.074	.12	.15	.16	.13	.090	.20	.23	.16
16	.13	.18	.11	.074	.12	.15	.16	.13	.090	.26	.33	.16
17	.14	.16	.099	.082	.11	.15	.15	.12	.11	.25	.26	.16
18	.14	.15	.099	.082	.12	.16	.15	.13	.11	.19	.23	.16
19	.13	.14	.11	.090	.12	.19	.15	.13	.14	.15	.25	.15
20	.13	.16	.11	.099	.12	.19	.15	.13	.13	.16	.23	.15
21	.12	.18	.11	.099	.12	.19	.14	.13	.12	.15	.22	.15
22	.12	.16	.11	.099	.12	.18	.13	.12	.12	.14	.20	.15
23	.12	.16	.099	.099	.12	.18	.14	.12	.099	.22	.19	.15
24	.12	.16	.090	.090	.12	.18	.14	.11	.099	.31	.20	.15
25	.13	.16	.082	.090	.12	.18	.14	.11	.099	.43	.18	.15
26	.13	.15	.082	.090	.12	.18	.14	.18	.090	.39	.18	.16
27	.13	.082	.090	.099	.12	.18	.14	.15	.082	.28	.18	.18
28	.13	.099	.090	.099	.12	.18	.14	.18	.090	.25	.16	.15
29	.13	.18	.099	.099	-	.18	.14	.16	.090	.22	.20	.14
30	.13	.19	.099	.099	- - - - -	.18	.13	.15	.090	.19	.24	.14
31	.13	- - - -	.099	.099	- - - - -	.15	- - - - -	.14	- - - - -	.18	.23	- - - - -
Total	3.769	4.361	3.313	2.744	3.24	4.94	4.57	4.14	3.377	5.155	6.56	5.06
Mean	.122	.145	.107	.0885	.116	.159	.152	.134	.113	.166	.212	.169
Max	.14	.19	.20	.11	.12	.19	.18	.18	.15	.43	.35	.20
Min	.099	.082	.047	.047	.11	.13	.13	.11	.082	.074	.14	.14
Ac-ft	7.48	8.65	6.57	5.44	6.43	9.80	9.06	8.21	6.70	10.2	13.0	10.0

Cal yr 1966 : Total 44.433 Mean .122 Max .23 Min .047 Ac-ft 88.1
Wtr yr 1967 : Total 51.229 Mean .140 Max .43 Min .047 Ac-ft 102

Peak discharge (base, 0.60 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-23	1600	0.58	0.68	8- 9	2100	0.60	0.77
7-25	1300	.66	.94	8-16	1400	.68	1.04

7-2063. Tolby Creek near Eagle Nest, N. Mex.

Location.--Lat 36°31'20", long 105°13'30", in Maxwell Grant, on right bank, 1 mile upstream from mouth and 2.5 miles southeast of Eagle Nest, Colfax County.

Drainage area.--8.5 sq mi.

Records available.--October 1961 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 8,400 ft (from topographic map). June 14, 1963 to Sept. 8, 1965, digital water-stage recorder at same site and datum.

Average discharge.--6 years, 1,670 cfs (1,210 acre-ft per year).

Extremes.--Maximum discharge during year, 3.95 cfs Apr. 4 (gage height, 0.92 ft); minimum, 0.15 cfs Nov. 27, result of freezeup. 1961-67: Maximum discharge, 32.9 cfs Apr. 20, 1962 (gage height, 2.04 ft); minimum, 0.15 cfs Dec. 5, 1962, Nov. 27, 1966, result of freezeup.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.70	0.70	0.78	0.70	0.90	0.82	2.03	0.89	0.86	0.40	0.70	1.26
2	.70	.74	.82	.70	.90	.86	2.18	.93	1.16	.40	.78	1.20
3	.70	.74	.78	.70	.90	.86	2.25	.96	1.49	.40	.66	1.20
4	.66	.78	.86	.60	.80	.91	2.67	.91	1.15	.40	.70	1.10
5	.70	.73	.82	.60	.80	.86	2.76	.91	1.00	.46	.86	1.10
6	.74	.70	1.20	.60	.80	.82	2.33	.91	.91	.46	.70	1.00
7	.74	.70	1.61	.60	.78	.82	2.33	.86	.74	.46	.59	.96
8	.74	.82	1.05	.50	.82	.78	2.25	.86	.66	.43	.56	1.47
9	.74	.74	.74	.50	.82	.78	1.95	.86	.62	.38	1.09	1.86
10	.70	.70	.78	.46	.78	.82	1.88	.86	.59	.40	2.33	1.37
11	.78	.71	.86	.43	.78	.82	1.88	.78	.59	.46	1.95	1.31
12	.91	.74	.78	.56	.78	.82	1.74	.78	.56	.80	1.49	1.20
13	.78	.62	.70	.66	.78	.86	1.55	.74	.52	.76	1.26	1.15
14	.75	.70	.78	.74	.78	.86	1.68	.78	.46	.52	1.20	1.10
15	.75	.70	.82	.78	.80	.82	1.68	.82	.49	.62	1.15	1.10
16	.80	.74	.66	.78	.80	.96	1.55	.82	.52	1.15	1.51	1.10
17	.85	.74	.59	.78	.80	1.20	1.49	.74	1.10	1.43	1.37	1.05
18	.82	.70	.70	.78	.80	1.55	1.49	.70	1.22	1.10	1.10	.96
19	.82	.67	.74	.78	.80	1.61	1.49	.82	1.24	.82	1.22	.96
20	.78	.70	.70	.78	.82	1.31	1.43	.91	1.26	.70	1.26	.91
21	.78	.74	.70	.70	.82	1.37	1.31	.78	.86	.74	1.05	.86
22	.74	.70	.70	.70	.82	1.49	1.26	.74	.74	.66	.91	.82
23	.74	.70	.56	.74	.82	1.81	1.20	.66	.66	.59	.86	.78
24	.74	.74	.38	.82	.78	1.68	1.20	.62	.56	.78	.86	.78
25	.74	.74	.33	.86	.82	1.37	1.15	.62	.56	1.14	.78	.86
26	.74	.74	.30	.86	.86	1.31	1.10	1.74	.52	1.10	.74	.91
27	.78	.54	.56	.86	.86	1.43	1.15	1.31	.46	.91	.74	1.00
28	.78	.74	.70	.86	.86	2.11	1.10	1.15	.43	.78	.78	.91
29	.74	.82	.74	.86	-	1.95	1.05	1.43	.43	.66	.96	.82
30	.74	.78	.70	.91	-----	1.81	1.00	1.05	.46	.62	1.68	.78
31	.74	-----	.70	.91	-----	1.81	-----	.96	-----	.62	1.68	-----
Total	23.42	21.61	23.14	22.11	22.88	37.28	50.13	27.90	22.82	21.15	33.52	31.88
Mean	.755	.720	.746	.713	.817	1.203	1.671	.900	.761	.682	1.081	1.063
Max	.91	.82	1.61	.91	.90	2.11	2.76	1.74	1.49	1.43	2.33	1.86
Min	.66	.54	.30	.43	.78	.78	1.00	.62	.43	.38	.56	.78
Ac-ft	46.5	42.9	45.9	43.9	45.4	73.9	99.4	55.3	45.3	42.0	66.5	63.2

Cal yr 1966 : Total 424.52 Mean 1.163 Max 9.17 Min .30 Ac-ft 842
Wtr yr 1967 : Total 337.84 Mean .926 Max 2.76 Min .30 Ac-ft 670

Peak discharge (base, 9.00 cfs).--No peak above base.

7-2064. Clear Creek near Ute Park, N. Mex.

Location.--Lat 36°31'35", long 105°10'30", in Maxwell Grant, on right bank a quarter of a mile upstream from mouth, and 4 miles southwest of Ute Park, Colfax County.

Drainage area.--7.44 sq mi.

Records available.--September 1961 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 7,860 ft (from topographic map). May 9, 1963 to Sept. 8, 1966, digital water-stage recorder at same site and datum.

Average discharge.--6 years, 2.059 cfs (1,490 acre-ft per year).

Extremes.--Maximum discharge during year, 10.3 cfs Aug. 11 (gage height, 1.38 ft); minimum, 0.083 cfs Dec. 25-26.
1961-67: Maximum discharge, 151 cfs June 18, 1965 (gage height, 3.05 ft); minimum, that of Dec. 25-26, 1966.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.73	0.49	0.43	0.30	0.38	0.38	0.59	0.55	2.07	0.86	2.22	1.66
2	.70	.46	.43	.30	.38	.38	.62	.62	2.71	.82	2.15	1.54
3	.70	.46	.43	.30	.35	.38	.66	.62	2.88	.77	2.00	1.42
4	.70	.49	.43	.30	.35	.40	.73	.62	2.88	.82	2.69	1.42
5	.70	.46	.43	.30	.35	.38	.77	.62	2.79	.77	3.44	1.36
6	.66	.46	.55	.20	.35	.38	.70	.59	2.79	.73	2.62	1.30
7	.66	.46	.99	.15	.35	.35	.66	.55	2.71	.66	2.30	1.25
8	.62	.59	.59	.15	.35	.35	.66	.59	2.71	.62	2.30	1.25
9	.62	.55	.35	.15	.35	.35	.62	.59	2.62	.73	2.97	1.30
10	.59	.49	.32	.15	.35	.38	.59	.59	2.54	.77	7.37	1.19
11	.62	.52	.38	.22	.35	.40	.66	.62	2.38	.70	9.93	1.04
12	.70	.52	.32	.28	.35	.40	.66	.66	2.22	.82	8.51	.99
13	.62	.52	.32	.32	.35	.40	.59	.70	2.07	.77	8.01	.99
14	.59	.49	.35	.32	.35	.40	.62	.73	1.93	.70	8.34	.99
15	.62	.52	.38	.32	.32	.40	.62	.82	1.79	.70	8.85	.95
16	.62	.52	.32	.32	.32	.40	.62	.77	1.73	1.04	8.34	.90
17	.70	.52	.32	.35	.32	.46	.59	.70	1.86	1.14	7.06	.90
18	.66	.49	.32	.35	.32	.55	.59	.70	1.60	.90	6.05	.90
19	.62	.46	.32	.35	.33	.62	.62	.90	1.60	.90	5.38	.90
20	.59	.46	.32	.32	.35	.55	.59	.95	1.42	.90	4.64	.86
21	.59	.46	.35	.30	.35	.52	.59	.86	1.25	.90	4.07	.86
22	.55	.43	.35	.32	.35	.52	.59	.82	1.19	.86	3.55	.82
23	.55	.43	.24	.35	.32	.52	.59	.77	1.09	.90	3.16	.82
24	.59	.43	.12	.35	.32	.55	.59	.82	.99	2.06	2.88	.82
25	.59	.43	.094	.35	.32	.52	.59	.82	.95	3.13	2.62	.86
26	.55	.43	.16	.35	.35	.52	.59	1.79	.90	2.71	2.38	.86
27	.55	.38	.28	.35	.35	.55	.59	1.36	.90	2.58	2.07	.95
28	.52	.40	.30	.35	.35	.62	.55	1.42	.86	2.71	1.86	.86
29	.52	.43	.30	.35	-	.70	.55	1.73	.90	2.30	1.86	.77
30	.52	.43	.30	.35	-----	.70	.55	1.66	.90	2.07	2.00	.73
31	.49	-----	.30	.35	-----	.59	-----	1.79	-----	2.00	1.93	-----
Total	19.04	14.18	11.094	9.22	9.63	14.62	18.54	27.33	55.23	38.34	133.55	31.46
Mean	.614	.473	.358	.297	.344	.472	.618	.882	1.841	1.237	4.308	1.049
Max	.73	.59	.99	.35	.38	.70	.77	1.79	2.88	3.13	9.93	1.66
Min	.49	.38	.094	.15	.32	.35	.55	.55	.86	.62	1.86	.73
Ac-ft	37.8	28.1	22.0	18.3	19.1	29.0	36.8	54.2	110	76.0	265	62.4

Cal yr 1966 : Total 433.524 Mean 1.188 Max 8.92 Min .094 Ac-ft 860
Wtr yr 1967 : Total 382.234 Mean 1.047 Max 9.93 Min .094 Ac-ft 758

Peak discharge (base, 8.00 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-11	0530	1.38	10.3				

7-2070. Cimarron River near Cimarron, N. Mex.
(Formerly published as Cimarron Creek near Cimarron)

Location.--Lat 36°31'00", long 104°58'35", about sec.6, T.26 N., R. 19 E.(projected), in Maxwell Grant, on right bank 3.8 miles west of Cimarron.

Drainage area.--294 sq mi.

Records available.--May 1950 to September 1967. Published as Cimarron Creek near Cimarron October 1952 to September 1966.

Gage.--Water-stage recorder. Concrete control since Nov. 6, 1963. Datum of gage is 6,599.58 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 20.4 cfs (14,770 acre-ft per year).

Extremes.--Maximum discharge during year 589 cfs July 26 (gage height, 3.70 ft); no flow Feb. 8, 9.
1950-67: Maximum discharge, 15,500 cfs June 17, 1965 (gage height, 12.42 ft, from floodmark), from rating curve extended above 800 cfs on basis of slope-area measurements at gage heights 4.88 and 12.42 ft; no flow Sept. 14-30, Oct. 1-10, 1956, Feb. 18, 1960, Feb. 16, 1966, Feb. 8, 9, 1967.

Remarks.--Records good except those for winter period, which are poor. Flow regulated by Eagle Nest Reservoir (see station 7-2055). Diversions above station for irrigation of about 3,500 acres, part of which is below station. Cimarroncito ditch (locally known as Philmont ditch) diverts from left bank 1½ miles above station, flumes under creek ¼ mile above and bypasses station for off-channel storage and irrigation below; see tabulation below for monthly diversion.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	15	4.9	0.40	1.7	2.7	25	30	78	28	28	16
2	14	17	4.8	.40	1.0	2.6	26	32	83	46	31	15
3	16	23	4.8	.40	1.2	2.5	26	37	81	31	29	11
4	17	47	4.7	1.0	1.4	2.6	26	38	81	40	30	12
5	22	48	4.6	2.0	1.6	2.8	28	38	71	43	32	9.6
6	23	49	4.5	2.0	1.2	1.0	31	23	23	89	30	8.7
7	23	50	5.1	1.0	1.4	2.0	31	30	17	51	28	7.5
8	23	52	5.0	1.0	.40	2.2	31	38	14	47	28	6.8
9	27	52	4.5	2.0	.40	3.5	31	36	13	42	40	7.6
10	29	46	2.0	2.5	1.0	7.3	28	38	11	40	49	7.3
11	30	31	2.5	2.5	1.0	7.9	27	40	10	35	35	6.5
12	30	30	3.0	2.5	1.0	7.5	27	41	20	45	26	5.9
13	30	25	3.0	2.3	1.5	7.1	27	37	22	34	22	5.5
14	30	24	3.0	1.8	2.3	7.1	27	29	27	16	20	5.6
15	31	24	3.5	1.6	1.0	7.0	20	53	29	10	20	5.7
16	32	24	2.5	1.4	1.0	7.3	16	56	30	19	20	5.5
17	33	23	2.5	.40	1.0	7.5	23	47	29	19	19	5.4
18	32	23	3.0	.20	1.0	7.8	30	44	17	14	14	7.3
19	32	17	3.0	.40	1.0	7.9	31	43	25	12	12	9.8
20	32	11	3.0	1.5	1.0	8.1	31	37	26	9.8	12	6.0
21	32	8.5	3.0	2.0	.40	7.8	31	28	23	12	10	5.1
22	32	7.3	3.0	2.0	1.0	7.9	31	35	21	9.5	9.6	4.8
23	31	6.7	2.5	1.6	2.0	8.1	31	34	20	9.7	8.7	4.6
24	25	6.5	2.5	1.6	2.0	10	31	27	15	17	7.8	4.5
25	24	6.1	1.5	1.6	2.0	13	30	26	17	18	7.0	4.5
26	24	5.7	.40	1.0	2.6	14	25	26	21	57	6.5	4.4
27	16	5.5	.40	1.4	2.7	19	24	20	22	32	6.0	4.5
28	12	5.2	.40	1.4	2.7	21	24	34	27	31	7.1	4.4
29	9.8	5.1	.40	1.6	-	24	23	72	33	30	12	4.2
30	7.8	5.0	.60	1.6	----------	24	27	74	32	30	18	4.0
31	8.4	----------	1.0	1.6	----------	25	----------	75	----------	28	18	----------
Total	741.0	692.6	89.60	44.70	38.50	278.2	819	1,218	938	945	635.7	209.7
Mean	23.9	23.1	2.89	1.44	1.38	8.97	27.3	39.3	31.3	30.5	20.5	6.99
Max	33	52	5.1	2.5	2.7	25	31	75	83	89	49	16
Min	7.8	5.0	.40	.20	.40	1.0	16	20	10	9.5	6.0	4.0
Ac-ft	1,470	1,370	178	89	76	552	1,620	2,420	1,860	1,870	1,260	416
(†)	0	0	0	0	0	0	0	0	0	17	26	176

Cal yr 1966: Total 8,148.5 Mean 22.3 Max 141 Min .40 Ac-ft 16,160 † 822
Wtr yr 1967: Total 6,650.0 Mean 18.2 Max 89 Min .20 Ac-ft 13,190 † 219

† Diversion, in acre-feet, by Cimarroncito ditch which bypasses station; data furnished by Cimarron Creek watermaster.

7-2075. Ponil Creek near Cimarron, N. Mex.

Location.--Lat 36°34'35", long 104°56'55", about sec.8, T.27 N., R.19 E (projected), on left bank 1½ miles downstream from confluence of North and South Ponil Creeks and 5 miles northwest of Cimarron.

Drainage area.--171 sq mi.

Records available.--November 1915 to June 1919, August 1919 to July 1925, September 1925, September 1927 to July 1929, May 1950 to September 1967. Prior to May 1950 monthly discharge only, published in WSP 1311.

Gage.--Water-stage recorder. Datum of gage is 6,630 ft above mean sea level, datum of 1929. Prior to May 8, 1922, at site about an eighth of a mile downstream at different datum. May 8, 1922 to Aug. 8, 1929, at site about three-eighths of a mile upstream at different datum.

Average discharge.--28 years (1915-25, 1927-28, 1950-67), 12.3 cfs (8,900 acre-ft per year).

Extremes.--Maximum discharge during year, 865 cfs July 12 (gage height, 5.20 ft), from rating curve extended above 32 cfs as explained below; minimum, 0.03 cfs July 1-2.
1915-29, 1950-67: Maximum discharge, 5,630 cfs June 17, 1965 (gage height, 11.13 ft) from rating curve extended above 59 cfs on basis of slope-area measurements at gage heights 4.55, 5.80, 7.15, and 11.13 ft; no flow many days most years.
Flood in September 1948 reached a stage of about 7 ft, from floodmarks (discharge, about 1,900 cfs).

Remarks.--Records good except those for December to February, which are poor. Diversions for irrigation of 200 to 300 acres above station. Diversions 1,000 ft below station for irrigation of about 300 acres (about 1,200 acres total irrigated from Ponil Creek).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	2.4	1.9	0.70	1.0	2.7	2.4	1.3	2.7	0.07	7.7	1.9
2	3.1	2.4	1.9	.50	.80	2.4	2.6	1.4	3.2	.24	7.3	1.5
3	2.7	2.2	2.2	.50	.80	2.7	2.7	1.4	4.4	.16	7.3	1.2
4	2.7	2.2	1.9	.80	.80	2.7	2.9	1.4	4.2	.12	1.4	2.6
5	2.7	2.2	2.0	1.0	1.0	2.5	3.1	1.4	3.4	.16	1.9	2.2
6	2.7	2.2	1.9	1.5	1.0	2.1	3.1	1.3	2.7	1.5	1.3	1.5
7	2.6	2.2	2.2	.80	1.0	1.9	2.9	1.0	2.0	1.8	1.9	1.2
8	2.4	2.4	2.4	.50	1.0	1.9	2.9	.92	1.6	.48	1.4	2.0
9	2.4	2.4	1.0	.50	1.2	2.3	2.7	.92	1.0	.33	2.2	1.7
10	2.2	2.0	1.0	.80	1.4	2.9	2.7	.83	.75	.81	4.9	1.4
11	2.2	2.0	1.6	1.0	1.6	2.7	2.6	.67	.67	11	8.4	1.1
12	2.2	2.0	1.4	1.0	1.6	2.7	2.6	.60	1.0	68	6.7	8.5
13	2.0	2.0	1.6	1.0	1.8	2.7	2.6	.67	.43	15	5.4	7.7
14	2.0	2.0	1.9	1.0	2.2	2.4	2.4	.67	.38	6.1	4.9	7.7
15	2.2	2.2	1.7	1.0	2.0	2.2	2.2	.83	.43	16	3.7	7.3
16	2.6	2.2	1.0	1.0	1.7	2.4	2.6	.75	.48	19	3.7	7.3
17	3.4	2.2	1.5	.50	1.7	2.4	2.6	.67	.75	24	3.1	6.7
18	2.9	2.2	1.6	.50	1.7	2.6	2.7	.67	2.5	19	2.4	6.4
19	2.9	2.2	1.8	.50	1.7	2.9	2.7	1.1	3.8	12	2.2	6.1
20	2.6	2.2	1.8	1.0	1.5	3.1	2.4	1.6	2.0	9.4	2.0	5.8
21	2.4	2.2	1.6	1.0	1.5	2.9	2.2	1.3	1.7	9.4	1.7	5.2
22	2.4	2.0	1.4	1.2	1.5	2.9	2.0	.92	1.3	8.1	1.7	4.9
23	2.6	2.0	1.1	1.2	1.7	2.9	1.9	.67	.75	12	1.5	4.6
24	2.6	2.0	.80	1.0	2.0	3.1	1.9	.60	.54	25	1.3	4.6
25	2.6	2.0	.80	.80	2.5	3.7	1.7	.43	.48	20	1.1	4.9
26	2.4	2.0	.40	.60	2.7	3.2	1.6	.60	.38	35	1.0	5.5
27	2.4	1.5	.40	.80	2.7	2.9	1.6	.83	.22	30	1.0	6.7
28	2.2	1.5	.40	.80	2.7	2.6	1.4	2.2	.14	22	9.4	6.4
29	2.2	1.9	.40	.90	-	2.7	1.3	3.2	.14	21	9.3	5.2
30	2.2	1.9	.60	.90	-----	2.9	1.1	3.4	.16	22	1.6	4.3
31	2.4	-----	.60	.90	-----	2.7	-----	2.9	-----	11	2.3	-----
Total	78.1	62.8	42.80	26.20	44.80	82.7	70.1	37.15	44.20	434.17	748.0	298.8
Mean	2.52	2.09	1.38	.845	1.60	2.67	2.34	1.20	1.47	14.0	24.1	9.96
Max	3.4	2.4	2.4	1.5	2.7	3.7	3.1	3.4	4.4	68	84	26
Min	2.0	1.5	.40	.50	.80	1.9	1.1	.43	.14	.07	7.3	4.3
Ac-ft	155	125	85	52	89	164	139	74	88	861	1,480	593

Cal yr 1966: Total 1,812.72 Mean 4.97 Max 86 Min .01 Ac-ft 3,600
Wtr yr 1967: Total 1,969.82 Mean 5.40 Max 84 Min .07 Ac-ft 3,910

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7- 6	1500	3.41	239	7-26	2200	3.49	312
7-12	1600	5.20	865	7-30	1345	3.06	226

7-2085. Rayado Creek at Sauble Ranch, near Cimarron, N. Mex.

Location.--Lat 36°22'20", long 104°53'10", in sec.30, T.25 N., R.19 E.(projected), in Maxwell Grant, on right bank at Sauble Ranch, 2½ miles upstream from State Highway 21, 10 miles southwest of Cimarron and 16 miles upstream from mouth.

Drainage area.--65 sq mi.

Records available.--June to October 1908 (discharge measurements only), January 1909 to January 1910, July and August 1910, May 1911 to May 1913, July 1913 to February 1915, October 1915 to September 1918, March 1919 to September 1920, June 1923 to September 1924, March to May 1927, August 1927 to September 1967. Monthly discharge only for some periods, published in WSP 1311. Records for April and May 1910, as published in WSP 287, are unreliable and should not be used. Published as "at," "near," or "above Abreu's Ranch near Cimarron" prior to October 1925 and as Rayado River at Sauble Ranch, near Cimarron, October 1925 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 6,720 ft (from topographic map). Prior to May 4, 1911, chain or staff gage at site about 2 miles downstream at different datum. May 4, 1911 to Sept. 8, 1925, water-stage recorder about 3 miles upstream at 2 sites within 100 ft at 3 different datums. Sept. 9, 1925 to July 16, 1934, water-stage recorder at site 430 ft upstream at different datum. July 17, 1934 to Sept. 30, 1954, at site 290 ft downstream at datums 1.83 to 2.31 ft lower. Oct. 1, 1954 to June 16, 1965, at site 270 ft downstream at datum 2.83 ft lower.

Average discharge.--48 years (1911-12, 1913-14, 1915-20, 1923-24, 1927-67), 14.4 cfs (10,430 acre-ft per year).

Extremes.--Maximum discharge during year, 51 cfs Aug. 15 (gage height, 2.03 ft); maximum gage height, 2.21 ft Jan. 3, backwater from ice; minimum discharge, 1.4 cfs Dec. 9, result of freezeup.

1909-12, 1913-67: Maximum discharge, 9,000 cfs June 17, 1965 (gage height, 11.5 ft), from rating curve extended above 70 cfs on basis of logarithmic plotting and slope-area measurement of peak flow; minimum, 0.03 cfs Dec. 3, 1950 (may have been lower during periods of freezeup).

The major flood of June 10, 1913, destroyed the gage (stage and discharge not determined). Another major flood probably occurred Sept. 29 or 30, 1904.

Remarks.--Records good except those for winter periods, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	4.4	4.4	3.0	3.1	4.4	7.0	3.8	4.4	2.7	6.0	16
2	6.0	3.8	4.1	3.0	3.0	5.0	7.4	3.8	5.6	2.2	6.7	13
3	6.0	4.1	4.1	3.0	3.0	5.3	7.4	4.4	6.0	2.2	6.0	12
4	6.0	4.4	4.4	3.0	3.1	6.0	7.8	4.1	4.7	2.2	7.0	11
5	5.6	4.1	4.4	3.1	3.1	6.0	9.0	4.1	6.3	2.2	8.6	10
6	5.3	4.1	5.6	3.5	3.1	5.3	7.4	3.8	8.2	2.9	6.7	8.6
7	5.3	4.4	7.8	2.5	3.1	4.4	7.0	3.6	5.0	2.4	5.0	8.2
8	5.3	5.0	4.7	2.0	3.1	4.2	7.0	3.6	3.6	2.1	5.6	10
9	5.0	4.7	2.2	1.5	3.2	4.1	6.7	3.6	3.1	1.7	8.8	14
10	4.7	3.8	2.0	1.5	3.1	4.1	6.0	3.4	2.9	3.1	25	9.9
11	4.7	4.4	3.1	1.5	2.9	5.0	6.7	3.4	2.9	7.2	33	8.6
12	5.6	4.7	3.4	1.7	3.1	5.6	6.3	3.1	2.7	8.0	32	7.8
13	5.6	4.7	3.8	2.1	3.4	5.6	6.3	3.1	2.2	10	30	7.8
14	5.3	4.4	4.4	2.4	3.6	5.6	5.6	3.4	2.2	8.6	32	7.4
15	5.6	5.0	4.7	3.1	3.8	5.6	7.8	3.4	2.2	5.3	30	7.8
16	6.0	5.0	3.6	3.1	3.5	6.0	7.4	3.4	3.4	6.0	26	7.4
17	7.0	5.0	4.1	2.8	3.5	8.6	6.7	3.4	5.0	9.0	22	7.0
18	6.3	4.7	3.6	2.5	3.5	10	6.3	3.1	4.7	8.3	18	6.7
19	6.0	4.1	3.6	2.7	3.6	12	6.0	3.1	4.1	12	18	7.0
20	5.6	4.1	4.1	2.9	3.4	9.0	5.3	3.6	7.0	9.5	17	6.7
21	5.4	4.4	3.8	2.9	3.6	8.2	5.3	3.4	5.0	14	15	5.6
22	5.0	4.7	3.6	2.9	3.3	7.4	4.7	3.1	3.8	14	13	5.3
23	4.7	4.4	3.2	2.9	3.4	7.4	4.7	2.9	3.4	10	11	5.3
24	4.7	4.4	3.0	3.5	3.5	8.6	4.7	2.7	2.7	11	10	5.3
25	4.7	4.4	2.8	3.1	3.8	7.4	4.7	2.7	2.7	11	9.0	5.6
26	4.7	4.7	2.6	3.0	4.1	6.0	4.4	2.9	2.4	13	7.8	6.7
27	4.7	3.1	2.2	3.0	4.1	6.7	4.7	3.6	2.2	13	7.4	7.0
28	4.7	3.6	2.8	3.4	3.8	7.0	4.7	4.7	2.1	9.9	6.3	6.3
29	4.7	4.7	2.5	2.9	-	8.6	4.4	6.3	2.4	8.2	7.0	5.3
30	4.4	4.4	2.5	3.1	- - - - -	7.8	4.4	5.0	3.6	7.4	17	4.7
31	4.4	- - - - -	2.8	3.4	- - - - -	6.3	- - - - -	4.7	- - - - -	6.3	25	- - - - -
Total	165.0	131.7	113.9	85.0	94.8	203.2	183.8	113.2	116.5	225.4	471.9	244.0
Mean	5.32	4.39	3.67	2.74	3.39	6.55	6.13	3.65	3.88	7.27	15.2	8.13
Max	7.0	5.0	7.8	3.5	4.1	12	9.0	6.3	8.2	14	33	16
Min	4.4	3.1	2.0	1.5	2.9	4.1	4.4	2.7	2.1	1.7	5.0	4.7
Ac-ft	327	261	226	169	188	403	365	225	231	447	936	484

Cal yr 1966: Total 3,580.7 Mean 9.81 Max 103 Min 2.0 Ac-ft 7,100
Wtr yr 1967: Total 2,148.4 Mean 5.89 Max 33 Min 1.5 Ac-ft 4,260

Peak discharge (base, 100 cfs).--No peak above base.

7-2110. Cimarron River at Springer, N. Mex.
(Formerly published as Cimarron Creek at Springer)

Location.--Lat 36°21'30", long 104°35'50", in southeast corner of Maxwell Grant, on left bank at Springer, Colfax County, 270 ft downstream from bridge on State Highway 199, 6 miles downstream from Rayado Creek, and 6 miles upstream from mouth.

Drainage area.--1,032 sq mi.

Records available.--August 1907 to December 1909, January 1921 to February 1922, October 1924 to January 1926, September 1926 to September 1967. Published as Cimarron Creek at Springer October 1952 to September 1966.

Gage.--Water-stage recorder. Concrete control since Nov. 5, 1954. Altitude of gage is 5,770 ft (from nearby level line). July 13, 1907 to Dec. 31, 1909, staff gage and Dec. 20, 1919 to Feb. 8, 1930, chain gages at site 270 ft upstream at various datums to Nov. 19, 1924, and thereafter at datum 3.34 ft higher than present datum. Feb. 9, 1930 to July 12, 1934, water-stage recorder at site 270 ft upstream at datum 3.66 ft higher. July 13, 1934 to Apr. 13, 1942, water-stage recorder at site 30 ft downstream at different datum. May 8 to July 16, 1942, water-stage recorder at site 270 ft upstream at datum 3.33 ft lower. Apr. 25, 1963 to Aug. 17, 1966, digital water-stage recorder at present site and datum.

Average discharge.--43 years (1920-21, 1924-25, 1926-67), 18.6 cfs (13,470 acre-ft per year).

Extremes.--Maximum discharge during year, 260 cfs Aug. 15 (gage height, 4.55 ft); minimum, 0.28 cfs, Feb. 23.
1930-67: Maximum discharge, 29,500 cfs June 18, 1965 (gage height, 19.96 ft, from floodmarks), from rating curve extended above 1,800 cfs on basis of contracted-opening measurement of peak flow; no flow at times in 1954, 1956-57.
Maximum stage known, about 22 ft Sept. 29, 1904 (backwater from debris on railroad bridge). Another major flood occurred June 11, 1913. Maximum discharges of these floods probably exceeded 10,000 cfs, but probably were less than 1965 flood.

Remarks.--Records good except those for December to February, which are fair. Flow partly regulated by Eagle Nest Reservoir (see station 7-2055). Diversions for irrigation of about 23,000 acres above station and a few hundred acres between station and mouth.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	4.9	4.1	4.0	6.5	4.1	4.1	2.3	5.3	2.8	6.4	1 9
2	6.8	5.8	4.1	4.5	6.0	3.7	4.1	2.8	2 7	9.4	2 2	1 3
3	6.3	6.8	4.9	3.0	5.5	3.7	3.7	2.8	1 7	6.3	4 1	9.1
4	5.8	9.1	4.9	4.0	5.5	3.7	4.1	4.5	7.3	4.9	1 2	1 8
5	5.8	9.1	4.5	4.5	5.0	4.1	4.1	4.9	1 6	3.7	1 6	5 6
6	4.5	6.3	4.5	5.0	5.5	4.1	3.7	4.5	1 3	3.4	1 3	1 5
7	5.8	4.9	3.7	4.0	4.5	4.5	3.4	3.7	7.3	3.4	9.1	9.7
8	5.8	5.8	3.4	3.5	4.5	4.1	3.0	3.7	5.3	4.1	1 2	7.3
9	4.5	4.9	2.5	4.0	5.5	4.5	3.0	3.7	4.5	4.1	1 3	6.8
10	4.1	4.9	3.0	4.0	5.5	4.5	3.4	4.5	3.7	4.1	1 6	5.8
11	9.7	6.3	3.5	4.5	5.5	4.1	4.5	4.1	3.4	3.7	2 2	5.3
12	7.3	6.8	3.5	5.0	5.5	4.1	4.5	3.4	3.4	5.8	1 8	4.5
13	9.1	6.3	4.0	5.0	6.0	3.7	4.1	3.7	2.8	1 7	1 2	4.5
14	6.3	5.8	4.0	5.5	6.0	3.4	3.7	3.7	4.1	8.5	1 1	4.5
15	5.8	5.8	4.5	6.0	5.0	3.4	3.7	3.7	2.5	2 3	5 5	4.9
16	7.9	6.8	4.0	5.5	4.0	3.7	3.4	4.9	7.0	9.1	4 9	7.3
17	1 3	7.9	4.5	4.5	4.5	3.7	3.0	4.9	1 2	1 1	2 1	6.8
18	1 6	8.5	4.5	3.5	4.5	3.7	3.0	4.1	9.1	1 4	1 3	5.3
19	1 2	8.5	4.5	3.5	4.5	4.1	3.0	3.7	1 0	7.3	1 0	5.3
20	9.1	9.1	4.5	4.0	4.5	4.5	3.0	9.7	1 1	5.8	8.5	4.5
21	7.9	7.3	5.0	5.0	4.0	4.5	3.0	6.3	8.5	5.8	9.1	4.1
22	7.9	6.3	4.0	6.0	4.0	4.5	3.0	4.5	7.9	4.5	1 1	3.7
23	7.9	5.8	4.0	8.0	4.0	4.5	3.0	3.7	5.3	4.1	1 1	3.7
24	7.9	6.3	4.0	5.5	4.9	4.5	2.8	2.8	4.1	5.2	1 1	2.8
25	7.3	5.3	4.0	5.5	4.5	4.5	3.0	3.4	3.4	4.9	1 0	3.0
26	9.7	4.5	3.5	5.0	4.5	4.9	3.0	4.5	3.4	6.8	1 0	4.1
27	9.7	4.1	2.5	5.0	4.5	5.3	2.8	4.9	3.0	1 0 5	1 0	4.1
28	1 1	4.1	2.0	6.0	4.1	4.9	2.8	6.3	3.4	1 7	9.7	4.1
29	8.5	4.5	2.0	6.0	-	4.5	2.5	5.8	3.0	8.5	6.3	4.1
30	5.8	4.1	3.0	6.0	- - - - -	4.1	2.5	4.1	2.8	6.8	1 1	3.7
31	4.9	- - - - -	3.5	6.0	- - - - -	3.7	- - - - -	8.4	- - - - -	7.3	2 0	- - - - -
Total	239.0	186.6	118.6	151.5	138.5	129.3	100.9	138.0	216.5	327.3	499.1	250.0
Mean	7.71	6.22	3.83	4.89	4.95	4.17	3.36	4.45	7.22	10.6	16.1	8.33
Max	1 6	9.1	5.0	8.0	6.5	5.3	4.5	9.7	2 7	1 0 5	5 5	5 6
Min	4.1	4.1	2.0	3.0	4.0	3.4	2.5	2.3	2.5	2.8	6.3	2.8
Ac-ft	474	370	235	300	275	256	200	274	429	649	990	496

Cal yr 1966: Total 5,168.4 Mean 14.2 Max 1,140 Min 1.3, Ac-ft 10,250
Wtr yr 1967: Total 2,495.3 Mean 6.84 Max 105 Min 2.0 Ac-ft 4,950

Peak discharge (base, 500 cfs).--No peak above base.

7-2115. Canadian River near Taylor Springs, N. Mex.

Location (revised).--Lat 36°17'50", long 104°29'40", near center of sec.21, T.24 N., R.23 E., on left bank at head of gorge, 2.0 miles south of Taylor Springs, 2.2 miles downstream from Cimarron River, and 2.4 miles upstream from Chico Creek.

Drainage area.--2,850 sq mi.

Records available.--October 1939 to September 1958, water years 1959-64 (annual maximum), June 1964 to September 1967. Records for water year 1940 incomplete, yearly estimate published in WSP 1311.

Gage.--Water-stage recorder. Datum of gage is 5,636 ft above mean sea level, datum of 1929. Prior to June 10, 1964, water-stage recorder at site 1.7 miles downstream at different datum; operated as crest-stage station at that site and datum during water years 1959-64.

Average discharge.--22 years (1939-58, 1964-67), 108 cfs (78,190 acre-ft per year).

Extremes.--Maximum discharge during year, 3,250 cfs July 12 (gage height, 5.27 ft); no flow Jan. 19, result of freezeup.
1940-67: Maximum discharge, 162,000 cfs June 18, 1965 (gage height, 47.4 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum flood known prior to 1965 occurred Sept. 29, 1904 (discharge published as 91,100 cfs in WSP 842, 847).

Remarks.--Records good except those for July and those for winter period, which are poor. Diversions for irrigation of about 30,000 acres above station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	13	12	14	31	12	6.3	2.6	17	6.3	23	157
2	13	12	10	20	18	11	5.5	2.3	28	157	140	266
3	13	13	10	20	18	11	5.5	2.3	50	125	189	107
4	12	14	14	25	19	11	6.3	3.4	31	52	259	50
5	12	15	14	27	16	9.8	6.3	4.2	149	72	475	72
6	12	16	14	25	16	10	5.9	4.4	52	143	124	44
7	12	14	14	21	14	10	5.1	4.4	18	72	85	32
8	13	13	12	18	14	11	4.7	3.9	12	31	112	29
9	14	14	10	20	14	12	4.4	3.4	7.5	164	433	24
10	12	12	8.0	22	16	12	4.4	3.1	5.5	521	129	24
11	12	14	12	25	18	11	4.4	3.1	5.1	387	104	47
12	18	15	13	29	20	10	5.1	3.4	4.7	550	90	28
13	15	15	15	35	22	8.3	6.3	3.4	3.6	300	66	18
14	14	15	16	40	21	7.1	5.9	3.4	3.4	200	74	18
15	11	15	19	43	18	6.7	5.5	3.6	3.4	170	251	18
16	11	15	18	40	15	6.3	4.2	3.9	175	350	215	17
17	23	15	18	30	16	7.1	3.6	4.7	400	200	97	23
18	31	15	18	25	15	7.9	3.4	5.1	62	250	57	19
19	28	15	22	25	14	7.9	3.6	4.7	57	170	39	25
20	22	15	22	30	16	7.9	3.4	5.9	70	130	32	20
21	18	16	22	40	15	8.3	3.1	9.2	32	100	27	18
22	17	15	20	55	14	8.3	3.1	5.9	20	120	26	14
23	16	14	18	50	14	8.3	3.1	4.4	14	160	26	13
24	16	13	14	45	14	7.5	2.6	3.1	11	250	25	11
25	15	13	14	45	15	8.3	2.8	2.8	8.7	270	23	12
26	15	12	14	50	15	11	2.8	18	8.7	250	23	13
27	18	11	14	49	14	11	3.1	47	7.9	140	21	19
28	18	12	10	47	13	10	2.8	28	7.1	115	20	19
29	18	12	10	49	-	8.3	2.6	18	6.7	104	18	16
30	15	12	14	39	-----	7.5	2.3	22	6.3	41	106	15
31	14	-----	14	31	-----	6.7	-----	16	-----	29	277	-----
Total	492	415	455.0	1,034	465	285.2	128.1	249.6	1,276.6	5,629.3	3,586	1,188
Mean	15.9	13.8	14.7	33.4	16.6	9.20	4.27	8.05	42.6	182	116	39.6
Max	31	16	22	55	31	12	6.3	47	400	550	475	266
Min	11	11	8.0	14	13	6.3	2.3	2.3	3.4	6.3	18	11
Ac-ft	976	823	902	2,050	922	566	254	495	2,530	11,170	7,110	2,360

Cal yr 1966 : Total 16,115.4 Mean 44.2 Max 1,600 Min 2.8 Ac-ft 31,960
Wtr yr 1967 : Total 15,203.8 Mean 41.7 Max 550 Min 2.3 Ac-ft 30,160

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-12	1930	5.27	3,250				

7-2145. Mora River near Holman, N. Mex.
(Formerly published as Rio Agua Negra near Holman)

Location.--Lat 36°07'00", long 105°22'35", on right bank 150 ft upstream from bridge, 2½ miles south of Chacon, 4½ miles downstream from confluence of Luna and Lujan Creeks, 5.0 miles north of Holman, and 8½ miles southwest of Guadalupita, Mora County.

Drainage area.--57 sq mi.

Records available.--January 1953 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 7,876 ft (by barometer).

Average discharge.--14 years, 13.4 cfs (9,700 acre-ft per year).

Extremes.--Maximum discharge during year, 292 cfs Sept. 8 (gage height, 2.90 ft); minimum, about 0.06 cfs Jan. 18, result of freezeup.
1953-67: Maximum discharge, 4,700 cfs July 22, 1954 (gage height, 6.10 ft), from rating curve extended above 300 cfs on basis of slope-area measurement of peak flow; minimum, that of Jan. 18, 1967.
A major flood probably occurred Sept. 29, 1904 when the entire Mora River basin was in heavy flood.

Remarks.--Records good except those for winter period, which are poor. Diversions for irrigation of about 1,600 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	7.0	4.8	3.0	4.0	3.7	2.6	3.4	3.1	2.2	10	83
2	8.1	6.6	4.4	3.5	5.0	3.7	2.8	3.4	3.4	2.2	11	69
3	7.6	6.6	4.8	3.5	5.5	4.0	3.1	3.4	4.0	2.4	11	73
4	7.6	6.6	5.6	4.0	6.0	4.4	3.4	3.4	4.0	2.2	11	66
5	7.6	6.6	5.6	4.0	6.0	4.0	4.0	3.1	4.8	1.9	9.7	55
6	7.6	6.1	6.6	3.0	5.0	3.7	4.4	2.6	5.6	1.5	7.6	51
7	7.0	5.6	10	2.5	4.5	3.5	4.8	2.4	4.8	1.9	7.0	54
8	7.0	6.6	6.6	3.0	4.0	4.5	6.1	2.4	4.0	2.4	7.6	81
9	6.6	8.1	6.0	3.0	4.5	6.0	6.1	2.4	3.1	1.7	21	60
10	6.6	7.6	6.5	3.5	4.5	5.6	5.2	2.4	3.1	5.2	36	52
11	6.6	7.0	7.0	4.0	5.0	5.2	5.2	2.4	2.8	3.1	50	46
12	6.6	7.0	7.0	4.0	5.5	3.7	6.1	2.4	3.1	3.7	61	42
13	6.6	6.1	7.0	4.0	5.5	3.7	6.6	2.2	2.8	3.4	86	39
14	6.1	6.1	7.0	3.5	4.8	4.4	7.6	1.9	2.8	3.4	58	37
15	6.1	5.6	6.0	3.5	4.8	4.0	9.2	1.9	2.6	3.4	52	35
16	5.6	5.6	6.0	3.5	5.0	4.4	6.6	1.7	2.2	4.9	51	33
17	6.6	5.6	7.5	2.5	5.0	5.2	6.6	1.7	2.6	8.1	47	30
18	6.6	5.2	7.0	2.5	5.5	4.8	5.6	1.7	2.8	5.6	45	28
19	6.1	4.8	6.0	3.0	6.0	5.6	5.6	1.7	4.1	5.2	46	28
20	6.1	4.8	6.0	4.0	4.8	4.4	5.6	1.7	3.7	5.2	45	28
21	6.1	5.2	5.0	4.0	4.0	4.4	5.6	1.7	3.1	6.1	40	26
22	6.1	4.8	4.0	3.0	4.0	3.7	5.2	1.7	3.1	9.1	38	23
23	6.6	4.8	3.0	2.5	6.0	3.4	5.6	1.7	3.1	16	35	21
24	6.6	4.8	4.0	2.5	6.0	4.4	5.6	1.7	3.1	12	34	20
25	6.6	5.2	3.0	3.0	6.0	5.2	5.6	1.9	3.1	24	31	20
26	7.0	4.8	3.0	4.0	4.4	5.2	4.8	2.2	3.4	16	31	22
27	6.6	5.2	2.5	5.0	3.4	4.8	3.4	1.9	3.1	14	41	21
28	7.0	4.8	2.5	5.5	3.4	4.4	3.1	2.8	2.6	14	35	19
29	7.6	5.2	3.0	5.5	-	4.4	3.1	3.4	2.6	13	41	17
30	6.6	4.8	3.0	5.0	-----	3.7	3.1	3.7	2.4	12	56	16
31	6.6	-----	3.0	5.0	-----	2.8	-----	3.4	-----	12	85	-----
Total	210.2	174.8	163.4	112.5	138.1	134.9	152.3	74.3	99.0	217.8	1,139.9	1,195
Mean	6.78	5.83	5.27	3.63	4.93	4.35	5.08	2.40	3.30	7.03	36.8	39.8
Max	8.1	8.1	10	5.5	6.0	6.0	9.2	3.7	5.6	24	86	83
Min	5.6	4.8	2.5	2.5	3.4	2.8	2.6	1.7	2.2	1.5	7.0	16
Ac-ft	417	347	324	223	274	268	302	147	196	432	2,260	2,370

Cal yr 1966: Total 4,578.3 Mean 12.5 Max 276 Min 2.3 Ac-ft 9,080
Wtr yr 1967: Total 3,812.2 Mean 10.4 Max 86 Min 1.5 Ac-ft 7,560

Peak discharge (base, 150 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-13	1600	2.77	285	9- 8	1700	2.90	292
9- 3	1700	2.77	252				

7-2148. Rio la Casa near Cleveland, N. Mex.

Location.--Lat 35°58'30", long 105°23'10", in Mora Grant, on left bank 1½ miles southwest of Cleveland, Mora County.

Drainage area.--23.0 sq mi.

Records available.--May 1956 to September 1967. Prior to October 1964, published as Rio de la Casa near Cleveland.

Gage.--Water-stage recorder. Altitude of gage is 7,625 ft (by barometer).

Average discharge.--11 years, 14.0 cfs (10,140 acre-ft per year).

Extremes.--Maximum discharge during year, 231 cfs July 22 (gage height, 3.30 ft); minimum, 1.7 cfs Feb. 28.
1956-67: Maximum discharge, 2,260 cfs Aug. 6, 1959 (gage height, 6.00 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of peak flow; minimum, 0.08 cfs Oct. 30, 1958.

Remarks.--Records good except those for December to February, which are poor. Diversions for irrigation of about 100 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.5	2.7	3.0	2.3	3.0	2.7	2.8	5.2	8.4	3.0	18	22
2	3.9	2.4	2.8	2.4	2.0	2.8	3.0	4.1	10	3.2	19	20
3	3.9	2.7	2.8	2.5	2.2	2.7	3.6	5.0	12	3.4	16	18
4	3.9	2.7	3.0	2.6	2.5	2.8	4.1	5.0	10	2.8	18	19
5	4.3	2.5	3.0	2.5	3.0	2.8	4.7	5.7	10	2.8	19	19
6	4.1	2.5	3.6	2.5	2.5	2.5	4.1	5.5	11	3.8	14	17
7	3.9	2.4	6.3	2.2	2.5	2.2	4.7	5.7	11	6.0	13	17
8	3.9	3.0	4.1	2.2	2.2	2.5	5.5	6.8	9.8	9.5	14	16
9	3.8	3.2	3.5	2.2	2.5	2.7	5.5	8.0	9.0	5.5	34	15
10	3.6	3.0	2.5	2.5	2.5	2.8	4.5	8.7	8.4	5.7	102	14
11	3.6	3.0	3.0	2.5	2.5	3.2	5.0	8.0	8.0	15	113	13
12	3.8	3.0	2.8	3.0	2.5	3.2	4.3	8.0	7.3	20	123	12
13	3.6	3.4	2.8	3.0	2.5	3.2	3.6	7.6	6.8	14	104	11
14	3.2	3.4	2.8	2.2	2.5	3.0	3.6	7.6	6.3	11	94	10
15	3.4	3.4	2.8	2.5	2.3	2.8	3.6	7.0	5.7	11	85	10
16	3.6	3.4	2.7	2.5	2.6	2.8	3.4	7.0	5.0	11	76	10
17	4.3	3.4	2.9	2.2	2.8	3.0	3.8	6.8	5.7	21	61	9.4
18	3.6	3.4	2.8	2.2	3.0	3.4	3.9	7.0	8.4	17	51	8.7
19	3.8	3.2	3.0	2.5	2.9	3.9	4.5	7.3	7.0	14	43	8.4
20	3.6	3.2	2.9	2.5	2.2	3.8	5.0	7.3	6.5	14	40	11
21	3.4	3.2	2.8	2.5	2.0	3.6	4.7	7.0	6.5	18	34	8.4
22	3.6	3.2	2.5	2.5	2.0	3.4	4.7	6.5	5.7	32	28	7.6
23	3.6	3.2	2.2	2.3	3.0	3.2	4.7	7.0	5.0	27	27	7.0
24	3.2	3.2	2.5	2.2	3.0	3.4	4.7	7.0	4.5	25	25	7.0
25	3.4	3.0	2.5	2.0	2.7	3.4	5.2	8.0	4.1	52	22	8.4
26	3.2	3.0	2.5	2.2	2.7	3.2	5.0	8.7	3.9	54	28	16
27	3.2	2.8	2.0	2.0	2.7	3.2	6.3	9.4	3.8	41	26	17
28	3.0	3.2	2.0	2.2	2.7	3.2	6.5	10	3.4	34	21	13
29	3.0	3.2	2.3	3.0		3.4	6.8	11	3.8	28	22	10
30	2.8	3.2	2.3	3.0	- - - - -	3.0	6.5	9.8	3.8	23	26	9.8
31	3.0	- - - - -	2.3	3.0	- - - - -	2.7	- - - - -	9.4	- - - - -	21	27	- - - - -
Total	111.7	91.1	89.0	75.9	71.5	94.5	138.3	227.1	210.8	548.7	1,343	384.7
Mean	3.60	3.04	2.87	2.45	2.55	3.05	4.61	7.33	7.03	17.7	43.3	12.8
Max	4.5	3.4	6.3	3.0	3.0	3.9	6.8	11	12	54	123	22
Min	2.8	2.4	2.0	2.0	2.0	2.2	2.8	4.1	3.4	2.8	13	7.0
Ac-ft	222	181	177	151	142	187	274	450	418	1,090	2,660	763

Cal yr 1966: Total 3,566.7 Mean 9.77 Max 78 Min 2.0 Ac-ft 7,070
Wtr yr 1967: Total 3,386.3 Mean 9.28 Max 123 Min 2.0 Ac-ft 6,720

Peak discharge (base, 60 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-22	1445	3.30	231	8-13	1620	3.12	170
7-25	1430	3.01	136				

7-2151. La Cueva Canal below La Cueva, N. Mex.

Location.--Lat 35°56'44", long 105°15'19", in Mora Grant, on right bank 500 ft downstream from head and half a mile west of La Cueva, Mora County. Records published are for a point ½ mile downstream, below La Cueva wasteway.

Records available.--June 1956 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 7,015 ft (from topographic map).

Extremes.--1956-67: Maximum daily discharge, 32 cfs Aug. 21, 1957; no flow at times each year.

Remarks.--Records fair except those for December to February, which are poor. Canal diverts water from left bank of Mora River for irrigation and off-channel storage below La Cueva.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in Acre-feet
October	14	0.52	6.36	391
November	18	5.5	11.3	671
December	12	6.2	9.79	602
Calendar year 1966	21	0	5.16	3,730
January	6.2	3.1	4.58	282
February	9.2	2.6	4.40	245
March	10	1.8	5.51	339
April	5.3	1.9	3.25	193
May	3.4	.25	2.14	132
June	2.4	.30	1.44	86
July	12	.20	3.95	243
August	21	0	3.64	224
September	21	3.0	11.2	665
Water year 1967	21	0	5.62	4,070

Note.--This tabulation represents net flow at a point ½ mile downstream, below La Cueva wasteway, as determined by subtracting flow in wasteway from flow in canal above wasteway.

7-2155. Mora River at La Cueva, N. Mex.

Location.--Lat 35°56'15", long 105°15'05", in Mora Grant, on right bank 300 ft downstream from bridge on State Highway 3, a quarter of a mile southeast of La Cueva, Mora County, half a mile downstream from La Cueva damsite.

Drainage area.--173 sq mi.

Records available.--August 1903 to April 1905 (gage heights and discharge measurements only), May 1905 to July 1911, April 1931 to September 1967. Monthly discharge only for some periods, published in WSP 1311. Figures of daily discharge for February to April 1905 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 6,998.7 ft above mean sea level, datum of 1929. Aug. 25, 1903 to Sept. 29, 1904 (destroyed by flood of Sept. 29, 1904), and Feb. 22, 1905 to July 31, 1911, staff gages at sites about 300 ft upstream at different datums. Apr. 15, 1931 to Apr. 18, 1962, water-stage recorder at site 300 ft upstream at datum about 2 ft higher. Aug. 9, 1964 to Sept. 15, 1966, digital water-stage recorder at present site and datum.

Average discharge.--40 years (1906-10, 1931-67), 28.2 cfs (20,420 acre-ft per year).

Extremes.--Maximum discharge during year, 369 cfs Aug. 14 (gage height, 4.78 ft); minimum, 0.39 cfs Feb. 22, result of freezeup.
1931-67: Maximum discharge, 1,530 cfs Sept. 23, 1941, from rating curve extended above 400 cfs by logarithmic plotting; maximum gage height, 9.00 ft Aug. 5, 1966; no flow at times.
Flood of Sept. 29, 1904, may have exceeded 20,000 cfs; another major flood occurred June 11, 1913, but is believed less than that of 1904.

Remarks.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 7,000 acres, part of which is below station. Off-channel lakes make it possible to divert and store water during non-irrigation season. This record plus La Cueva Canal below La Cueva (see station 7-2151) equals total flow in valley cross section.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	11	2.6	3.5	6.6	1.1	6.3	2.4	0.63	2.1	5.5	123
2	13	10	2.8	3.5	5.0	1.6	6.3	1.9	.78	2.6	19	110
3	12	12	2.8	4.5	6.0	1.8	5.5	2.2	.70	2.6	14	105
4	14	14	2.8	5.5	5.8	1.6	4.9	1.8	.63	4.4	9.1	110
5	16	8.4	2.6	6.0	6.9	1.6	4.6	1.6	.70	2.6	9.1	104
6	16	.78	2.6	3.1	5.6	1.8	4.6	1.5	.78	2.8	8.3	92
7	14	1.8	2.6	2.0	5.4	1.5	4.9	1.5	1.1	3.5	9.1	97
8	14	3.1	2.6	3.0	6.6	1.8	4.6	2.1	1.1	2.2	9.9	109
9	13	4.2	2.1	4.1	7.6	1.5	4.2	2.1	1.1	3.7	47	127
10	10	4.9	1.8	4.5	8.4	1.5	3.5	2.1	1.1	3.9	214	103
11	9.1	7.5	1.9	5.4	8.3	1.5	2.8	1.9	1.1	3.7	205	88
12	8.3	6.3	1.9	5.0	8.7	4.3	2.6	1.8	.97	5.2	246	77
13	9.9	5.2	1.8	5.4	8.3	3.4	2.2	1.8	1.1	4.4	208	70
14	10	10	1.9	5.4	9.1	3.0	1.8	1.8	2.9	2.7	226	66
15	9.5	4.4	2.1	5.4	8.3	5.5	1.5	2.4	.97	3.2	195	69
16	12	2.8	1.9	5.4	8.7	7.2	1.6	3.1	.78	5.8	173	61
17	10	2.8	1.9	6.0	8.0	7.2	1.6	2.2	1.2	9.9	162	48
18	.87	2.8	2.1	5.0	7.0	6.9	2.1	1.4	1.4	4.1	140	40
19	.97	2.6	2.1	5.2	5.8	6.6	3.7	1.4	1.5	2.1	148	42
20	3.3	2.6	2.4	5.2	5.5	6.6	2.6	1.2	3.7	1.9	131	46
21	3.3	2.8	2.1	5.5	6.5	6.0	1.8	1.4	3.9	1.9	117	33
22	4.0	3.1	1.9	5.8	4.5	4.4	2.2	1.3	3.7	14	108	31
23	.63	2.8	1.5	5.5	.90	4.4	3.7	1.1	3.5	16	101	27
24	.78	3.1	1.5	7.5	.90	4.4	3.3	.87	2.4	9.0	92	21
25	1.6	3.1	1.5	5.8	.90	4.9	3.1	.78	2.8	46	91	23
26	2.6	2.6	1.5	5.8	1.1	7.2	3.1	.63	3.7	53	88	37
27	4.9	2.6	1.0	6.0	.97	7.2	3.1	.56	3.7	11	98	36
28	9.5	2.2	1.0	5.9	.78	7.2	3.1	.63	3.5	6.6	91	24
29	8.7	2.2	1.5	6.3	-	7.2	1.5	.70	2.4	6.0	75	18
30	7.5	2.4	1.5	6.3	-----	7.2	1.6	.63	3.5	5.5	90	15
31	7.9	-----	2.5	6.3	-----	6.9	-----	.63	-----	5.5	134	-----
Total	260.35	144.08	62.8	159.8	158.15	135.0	98.4	47.43	57.34	247.9	3,264.0	1,952
Mean	8.40	4.80	2.03	5.15	5.65	4.35	3.28	1.53	1.91	8.00	105	65.1
Max	16	14	2.8	7.5	9.1	7.2	6.3	3.1	3.9	53	246	127
Min	.63	.78	1.0	2.0	.78	1.1	1.5	.56	.63	1.9	5.5	15
Ac-ft	516	286	125	317	314	268	195	94	114	492	6,470	3,870

Cal yr 1966: Total 7,703.43 Mean 21.1 Max 406 Min .63 Ac-ft 15,280
Wtr yr 1967: Total 6,587.25 Mean 18.0 Max 246 Min .56 Ac-ft 13,070

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-14	0230	4.78	369				

7-2165. Mora River near Golondrinas, N. Mex.

Location.--Lat 35°53'40", long 105°09'30", in Mora Grant, at downstream end of left abutment of highway bridge, 1.2 miles upstream from Coyote Creek, 2 miles east of Golondrinas, Mora County, and 4 miles downstream from Cebolla River.

Drainage area.--267 sq mi.

Records available.--March 1915 to May 1921, October 1921 to March 1922, May, August to September 1922, July 1923 to July 1924, December 1924 to September 1967. Monthly discharge only 1915-30, published in WSP 1311.

Gage.--Water-stage recorder. Datum of gage is 6,734.1 ft above mean sea level, datum of 1929. Mar. 10, 1915 to June 4, 1921, water-stage recorder at site 3½ miles upstream at different datum. July 6, 1921 to Jan. 5, 1929, staff gage or water-stage recorder at present site at datum 1.0 ft higher.

Average discharge.--50 years (1915-20, 1921-22, 1923-67), 35.0 cfs (25,340 acre-ft per year).

Extremes.--Maximum discharge during year, 1,150 cfs Aug. 9 (gage height, 6.98 ft), from rating curve extended above 210 cfs as explained below; minimum, 0.56 cfs June 14.
1915-67: Maximum discharge, 14,000 cfs Aug. 22, 1952 (gage height, 14.4 ft), from rating curve extended above 660 cfs on basis of slope-area measurement of peak flow; no flow at times.
Floods of Sept. 29, 1904, and June 11, 1913, probably exceeded 25,000 cfs.

Remarks.--Records good except those for December to March, which are poor. Diversions for irrigation of about 12,000 acres above station. Off-channel lakes make it possible to divert and store water during non-irrigation season.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	7.4	4.9	4.0	8.5	4.1	4.5	1.3	1.2	0.78	7.9	142
2	17	8.5	4.9	4.5	8.0	3.9	4.1	1.3	4.6	.95	6.2	127
3	16	7.4	5.1	5.0	8.0	3.9	4.1	1.3	7.3	.86	18	111
4	16	7.9	4.9	5.5	8.0	4.1	3.7	1.4	2.9	.78	8.8	130
5	16	7.9	4.9	5.0	8.5	4.3	3.5	1.2	2.2	.78	9.2	117
6	17	6.0	4.9	4.5	7.5	4.0	3.5	1.2	1.3	.86	8.8	102
7	16	3.7	4.9	4.0	8.0	3.5	3.3	1.2	1.1	.86	7.7	92
8	15	3.7	4.9	4.5	7.5	4.5	3.3	1.2	.86	.86	7.0	128
9	14	4.5	4.5	5.0	8.5	5.5	3.1	1.2	.78	.86	110	145
10	14	5.1	4.0	5.5	9.0	5.0	3.3	.95	.78	.86	258	114
11	12	5.7	5.5	6.0	8.0	5.5	2.2	.95	.71	.78	192	104
12	12	6.8	5.5	7.0	8.5	5.5	1.8	.95	.71	1.3	269	89
13	9.7	6.0	5.5	7.0	8.5	5.5	1.8	.86	.71	2.0	217	79
14	8.5	7.0	5.5	6.5	8.8	5.0	1.8	.95	.65	1.8	261	74
15	10	7.4	5.0	7.0	8.0	4.5	1.8	.95	.65	1.2	227	76
16	9.7	5.3	5.0	7.0	8.0	4.5	1.8	.95	.71	1.4	225	70
17	14	4.7	5.5	6.5	7.5	4.7	1.8	.95	.86	6.2	200	58
18	7.7	4.5	5.5	7.0	8.0	4.7	1.8	.95	1.1	5.3	159	47
19	5.7	4.7	5.5	8.0	7.2	4.7	1.4	1.1	.71	4.1	162	48
20	5.7	4.5	5.5	8.5	6.6	4.7	1.3	1.1	.86	3.3	149	53
21	6.4	4.5	5.5	8.5	6.5	4.7	1.4	1.2	.86	1.3	136	41
22	6.4	4.1	5.0	8.3	6.0	5.1	1.6	1.2	.71	1.7	121	38
23	5.5	4.5	4.0	7.7	5.0	4.9	1.6	.95	.71	8.6	110	33
24	3.9	4.3	4.5	7.5	5.0	5.1	1.3	.95	.71	6.0	102	25
25	3.5	4.7	4.5	7.5	5.0	5.1	.95	.95	.71	14	101	26
26	3.9	4.5	4.0	7.5	4.7	5.1	1.2	1.4	.71	42	88	29
27	5.1	4.5	3.5	8.0	4.7	5.5	1.1	.95	.78	11	108	50
28	7.2	4.5	3.5	9.0	4.3	6.0	1.1	.95	.86	19	101	34
29	9.0	4.7	4.0	8.3	-	6.2	.95	.95	1.3	12	85	25
30	8.3	4.5	4.0	8.3	-----	6.0	.95	.86	.95	20	113	23
31	7.4	-----	4.0	8.3	-----	5.5	-----	.86	-----	12	151	-----
Total	320.6	163.5	148.4	206.9	201.8	151.3	66.05	33.18	38.99	183.43	3.7186	2,230
Mean	10.3	5.45	4.79	6.67	7.21	4.88	2.20	1.07	1.30	5.92	120	74.3
Max	18	8.5	5.5	9.0	9.0	6.2	4.5	1.4	7.3	42	269	145
Min	3.5	3.7	3.5	4.0	4.3	3.5	.95	.86	.65	.78	6.2	23
Ac-ft	636	324	294	410	400	300	131	66	77	364	7,380	4,420

Cal yr 1966 : Total 10,596.32 Mean 29.0 Max 787 Min .86 Ac-ft 21,020
Wtr yr 1967 : Total 7,462.75 Mean 20.4 Max 269 Min .65 Ac-ft 14,800

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 9	1800	6.98	1,150				

7-2171. Coyote Creek above Guadalupita, N. Mex.

Location.--Lat 36°10'30", long 105°13'35", in Mora Grant, on right bank 1½ miles north of Guadalupita, Mora County.

Drainage area.--71 sq mi.

Records available.--May 1956 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 7,700 ft (from topographic map).

Average discharge.--11 years, 10.1 cfs (7,310 acre-ft per year).

Extremes.--Maximum discharge during year, 121 cfs Aug. 16 (gage height, 2.98 ft); minimum, 0.54 cfs May 16.
1956-67: Maximum discharge, 1,820 cfs June 17, 1965 (gage height, 6.70 ft), from rating curve extended above 150 cfs on basis of slope-area measurement of peak flow; minimum, 0.04 cfs June 16, 1963.

Remarks.--Records good except those for winter period, which are poor. Diversions for irrigation of about 2,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	3.6	3.8	2.0	3.5	5.5	3.9	1.6	2.6	1.7	3.0	31
2	4.0	3.6	4.0	2.0	3.0	7.2	3.8	1.7	3.2	1.3	3.6	26
3	3.9	3.6	3.9	2.0	3.0	8.0	3.5	1.8	3.0	1.2	3.4	22
4	3.8	3.5	3.8	2.0	3.5	8.6	3.2	1.7	2.6	1.2	3.8	28
5	3.5	3.4	4.0	2.0	3.5	8.5	3.1	1.7	2.8	1.3	3.5	30
6	3.5	3.4	5.8	2.0	3.0	6.5	3.0	1.6	2.8	1.3	3.1	27
7	3.5	3.8	8.0	1.5	2.5	6.0	3.0	1.6	2.2	2.4	2.8	25
8	3.5	4.8	8.0	1.7	2.5	5.0	2.8	1.6	2.0	4.2	2.4	22
9	3.5	9.2	4.5	2.0	3.0	5.0	3.0	1.6	2.0	3.0	5.0	40
10	3.4	8.1	4.5	2.2	3.0	5.0	3.0	1.5	2.2	3.0	10	35
11	3.4	6.3	4.5	2.0	2.5	5.3	3.1	1.7	1.8	2.8	31	30
12	3.5	5.5	4.0	2.0	2.5	5.5	3.1	1.6	1.8	2.6	38	25
13	3.5	5.0	4.0	2.5	3.0	7.2	3.2	1.3	1.5	2.8	38	22
14	3.5	4.5	4.0	2.5	3.4	7.4	3.9	1.3	1.6	2.4	32	20
15	3.4	4.5	3.9	2.5	3.4	7.0	3.9	1.3	1.3	2.2	31	20
16	3.4	4.7	3.4	2.5	3.0	6.5	3.9	.97	1.3	2.6	62	17
17	4.2	4.7	3.6	2.5	2.7	6.5	4.0	.97	2.2	4.8	52	15
18	4.3	4.2	3.4	2.5	2.7	6.5	4.3	.92	2.6	3.9	32	12
19	4.3	4.0	3.2	3.0	2.7	7.2	4.3	.82	5.1	3.6	30	10
20	4.3	4.2	3.2	3.0	2.7	7.0	3.9	.77	5.3	3.8	29	9.0
21	4.2	4.0	3.0	3.0	2.7	6.5	3.9	.97	4.2	3.9	25	8.3
22	3.9	4.0	2.5	3.0	2.7	6.3	3.8	.97	3.6	3.4	21	8.0
23	3.4	4.0	2.5	3.0	2.7	5.8	3.4	.87	3.2	3.0	18	7.2
24	3.2	4.0	2.0	2.5	2.7	5.5	3.1	.97	2.8	2.8	16	6.7
25	3.2	4.2	2.0	2.5	3.0	5.3	2.6	.97	2.6	3.0	14	6.7
26	3.0	4.2	2.0	3.0	4.3	5.0	2.6	1.0	2.4	4.6	13	6.7
27	3.2	3.8	1.5	3.5	4.3	4.8	2.4	1.1	2.0	3.5	15	7.6
28	3.4	3.8	1.5	3.5	4.5	4.8	2.0	1.4	1.8	3.1	13	7.2
29	3.8	3.9	1.5	3.5	-	4.7	1.6	3.0	1.7	3.0	12	6.7
30	4.0	3.6	1.5	3.5	-----	4.5	1.6	2.8	1.8	3.1	21	6.5
31	3.9	-----	2.0	3.5	-----	4.2	-----	2.6	-----	2.8	39	-----
Total	113.8	134.1	109.5	78.9	86.0	188.8	96.9	44.70	76.0	88.3	622.6	537.6
Mean	3.67	4.47	3.53	2.55	3.07	6.09	3.23	1.44	2.53	2.85	20.1	17.9
Max	4.3	9.2	8.0	3.5	4.5	8.6	4.3	3.0	5.3	4.8	62	40
Min	3.0	3.4	1.5	1.5	2.5	4.2	1.6	.77	1.3	1.2	2.4	6.5
Ac-ft	226	266	217	156	171	374	192	89	151	175	1230	1070

Cal yr 1966 : Total 2,793.31 Mean 7.65 Max 87 Min .97 Ac-ft 5,540
Wtr yr 1967 : Total 2,177.20 Mean 5.96 Max 62 Min .77 Ac-ft 4,320

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-16	1600	2.98	121				

7-2180. Coyote Creek near Golondrinas, N. Mex.

Location.--Lat 35°54'40", long 105°09'50", in Mora Grant, on left bank a third of a mile downstream from Coyote Creek damsite, 2 miles upstream from mouth, and 2 miles northeast of Golondrinas, Mora County.

Drainage area.--215 sq mi.

Records available.--April 1928 to September 1967. Prior to October 1930 monthly discharge only, published in WSP 1311.

Gage.--Water-stage recorder. Altitude of gage is 6,820 ft (from topographic map). Prior to Apr. 26, 1938, at site 0.4 mile downstream at different datum (staff gage prior to Apr. 20, 1929). Apr. 26, 1938 to Sept. 25, 1946, at site 139 ft downstream at same datum.

Average discharge.--39 years, 11.9 cfs (8,620 acre-ft per year).

Extremes.--Maximum discharge during year, 238 cfs Aug. 15 (gage height, 3.85 ft); minimum, 0.30 cfs May 10.
1928-67: Maximum discharge, 4,050 cfs Aug. 17, 1961 (gage height, 9.60 ft), from rating curve extended above 250 cfs on basis of slope-area measurements at gage heights 5.54, 7.74, and 9.60 ft; maximum gage height, 10.1 ft Aug. 30, 1936 (site and datum then in use); no flow Aug. 4, 1945, Apr. 10, May 9, 10, 1956.

Remarks.--Records good except those for December to February, which are poor. Diversions (including off-channel storage) for irrigation of about 4,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	4.0	6.4	5.0	8.1	2.6	0.85	0.48	3.2	2.0	0.92	45
2	5.7	4.4	6.4	5.0	8.0	2.2	.78	.53	4.8	1.8	1.2	34
3	5.7	4.0	6.4	5.0	8.0	1.8	.85	.59	3.4	1.8	2.7	30
4	5.2	4.2	6.4	5.5	8.0	1.4	.85	.59	2.6	1.8	4.4	30
5	3.9	4.2	6.1	5.5	8.5	1.4	.71	.48	2.4	1.6	3.4	38
6	3.8	4.2	6.1	5.0	8.5	1.3	.65	.38	2.4	1.4	6.2	31
7	3.9	4.2	6.6	4.5	8.0	1.1	.78	.38	2.2	1.4	4.2	30
8	3.9	4.2	6.4	5.0	8.0	1.2	.92	.34	2.0	1.4	4.0	29
9	3.9	4.4	6.5	5.5	9.0	1.3	.92	.34	1.8	1.4	13	71
10	3.9	5.3	6.5	6.0	10	1.2	.85	.34	1.8	1.4	45	64
11	4.0	5.3	7.0	6.0	9.8	1.0	.92	.38	1.8	1.6	49	41
12	5.0	5.5	7.0	6.5	9.2	.92	.92	.43	1.8	2.2	81	33
13	3.9	4.6	7.5	6.5	10	.92	.85	.43	1.5	2.0	87	28
14	3.6	5.0	8.0	6.0	8.1	.78	.65	.53	1.4	1.0	94	25
15	3.6	5.0	7.5	6.0	7.3	.65	.59	.53	1.5	1.0	90	32
16	3.6	5.5	7.5	5.9	6.5	.71	.48	.53	1.6	1.3	65	25
17	3.8	5.5	8.0	5.0	6.5	.71	.43	.53	2.0	1.6	81	22
18	3.5	5.5	7.6	5.0	6.5	.85	.43	.53	2.0	1.5	47	20
19	3.6	5.5	8.5	5.5	5.5	.78	.48	.59	2.0	1.4	50	20
20	3.5	5.5	8.5	6.0	5.5	.85	.48	.71	2.6	.85	50	16
21	3.4	5.7	8.0	6.5	5.5	.65	.53	.65	2.4	.85	50	13
22	3.5	6.9	7.0	7.1	5.0	.59	.59	.59	2.6	.71	37	13
23	3.5	7.1	6.0	6.5	4.5	.65	.53	.53	2.2	.78	30	13
24	3.5	7.1	5.0	6.5	4.5	.71	.53	.48	2.2	.78	25	11
25	3.4	6.9	4.5	6.5	4.0	.65	.53	.53	2.4	.92	22	11
26	3.2	6.6	4.5	7.0	2.9	.71	.53	.71	2.4	.85	20	11
27	3.4	6.9	4.0	7.5	2.6	.71	.53	.71	2.2	.71	18	11
28	4.4	7.3	4.0	8.0	2.6	.71	.59	.71	2.2	.78	19	11
29	4.6	6.1	4.5	7.6	-	.78	.53	.65	2.6	.85	16	9.8
30	4.2	6.1	4.5	7.3	-----	.85	.53	.59	2.6	.92	20	8.6
31	3.9	-----	5.0	7.5	-----	.85	-----	.53	-----	1.0	78	-----
Total	124.7	162.7	197.9	188.5	190.6	31.53	19.81	16.32	68.6	39.60	1114.02	776.4
Mean	4.02	5.42	6.38	6.08	6.81	1.02	.660	.526	2.29	1.28	35.9	25.9
Max	5.7	7.3	8.5	8.0	10	2.6	.92	.71	4.8	2.2	94	71
Min	3.2	4.0	4.0	4.5	2.6	.59	.43	.34	1.4	.71	.92	8.6
Ac-ft	247	323	393	374	378	63	39	32	136	79	2210	1540

Cal yr 1966 : Total 3,359.05 Mean 9.20 Max 143 Min .48 Ac-ft 6,660
Wtr yr 1967 : Total 2,930.68 Mean 8.03 Max 94 Min .34 Ac-ft 5,810

Peak discharge (base, 180 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-13	1730	3.72	205	9-10	1530	3.68	220
8-15	1930	3.85	238				

7-2186. Sapello Canal at Sapello, N. Mex.

Location.--Lat 35°46'10", long 105°15'00", in Las Vegas Grant, on right bank 20 ft downstream from highway crossing in Sapello, San Miguel County.

Records available.--June 1956 to September 1967.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 7,010 ft (from topographic map).

Extremes.--1956-67: Maximum daily discharge, 2.8 cfs June 1, 1957; no flow for many days each year.

Remarks.--Records poor. Canal diverts water from right bank upstream from Sapello River gage (see station 7-2200) for irrigation of land downstream.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in Acre-feet
October	0.24	0	0.025	1.5
November	.50	.33	.405	24
December	.33	0	.122	7.5
Calendar year 1966	1.4	0	.235	170
January	0	0	0	0
February	0	0	0	0
March	1.5	0	.516	32
April	1.0	.45	.767	46
May	.84	.45	.565	35
June	.80	0	.310	18
July	.83	0	.226	14
August	.25	0	.010	.6
September	0	0	0	0
Water year 1967	1.5	0	.246	178

7-2200. Sapello River at Sapello, N. Mex.

Location.--Lat 35°46'10", long 105°15'05", in Las Vegas Grant, on downstream end of bridge pier nearest left bank, on State Highway 3, in town of Sapello, San Miguel County, half a mile downstream from Manuelitas Creek.

Drainage area.--132 sq mi.

Records available.--May to October 1915, January 1916 to November 1918, February 1919 to May 1921, July to September 1921, July 1956 to September 1967. Monthly discharge only for some periods, published in WSP 1311. Gage heights and discharge measurements published under same name for August 1903 to March 1904 are for a site above Manuelitas Creek, and are not equivalent. Records for November to December 1915, December 1918, January 1919, and October 1921 to December 1928 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 6,910 ft (by barometer). May 1915 to September 1921, staff gage at site 300 ft upstream at different datum.

Average discharge.--16 years (1915-20, 1956-67), 23.5 cfs (17,010 acre-ft per year).

Extremes.--Maximum discharge during year, 2,590 cfs Aug. 9 (gage height, 5.80 ft), from rating curve extended above 350 cfs as explained below; minimum, 0.33 cfs May 15, result of regulation.
1915-20, 1956-67: Maximum discharge determined, 6,420 cfs Aug. 5, 1966 (gage height, 7.50 ft), from rating curve extended above 350 cfs on basis of computation of flow over dam at gage height 7.40 ft; no flow at times.

Remarks.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 4,200 acres. Station bypassed by Sapello Canal (see station 7-2186).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	3.2	3.2	3.2	4.8	3.4	1.3	0.79	5.3	0.59	4.5	75
2	6.0	3.2	3.2	3.0	4.2	2.9	1.2	.79	18	.59	14	62
3	5.7	3.2	3.2	2.8	4.2	2.7	1.2	.79	3.8	.59	8.2	54
4	5.4	3.9	3.2	3.9	4.2	2.5	1.2	.79	1.5	.67	4.2	49
5	5.7	3.4	3.2	3.3	4.2	2.7	1.0	.79	1.3	.67	3.8	52
6	6.0	3.4	3.2	3.1	3.6	2.5	1.0	.79	1.2	.76	7.3	46
7	6.0	3.4	3.2	2.8	3.5	2.5	.92	.79	.95	.85	4.5	46
8	6.0	3.4	4.5	2.8	3.7	2.9	.92	.79	.85	.95	10	42
9	5.7	3.7	3.0	3.0	4.0	3.4	.92	.68	.76	9.8	409	47
10	5.4	3.9	3.0	3.2	4.5	3.4	.92	.68	.76	4.3	683	46
11	5.1	3.7	3.1	3.5	4.5	3.2	.92	.68	.76	1.2	232	34
12	5.1	3.7	3.2	4.0	4.8	3.2	.92	.68	.67	31	165	29
13	4.8	3.4	3.2	4.5	5.4	2.7	.92	.79	.67	47	124	26
14	4.5	3.4	3.4	5.1	6.8	2.0	.92	.79	.67	7.3	172	25
15	4.8	3.2	3.4	5.7	5.4	2.2	.79	.79	.59	4.2	136	24
16	5.7	3.2	3.2	5.7	4.5	2.2	.79	.68	.59	6.1	138	25
17	6.4	3.2	3.4	5.1	3.9	2.2	.79	.68	.85	28	143	24
18	5.7	3.4	3.4	4.5	4.2	2.0	.92	.68	.95	11	86	21
19	5.1	3.4	3.2	4.6	4.2	1.8	.92	.68	.67	8.0	101	21
20	4.8	3.4	3.7	4.9	4.5	1.6	.79	.79	.67	9.4	63	20
21	4.2	3.4	3.7	5.4	3.7	1.5	.79	.79	.76	6.2	56	19
22	4.2	3.4	3.7	6.8	3.7	1.5	.92	.68	.67	3.8	46	17
23	4.2	3.4	2.9	5.4	3.7	1.5	1.2	.68	.67	3.4	38	16
24	4.2	3.7	3.2	4.2	4.0	1.5	1.0	.57	.59	21	36	15
25	4.2	3.7	3.2	4.2	3.4	1.3	.92	.57	.67	43	31	15
26	4.2	3.7	2.9	3.7	3.7	1.3	.92	.68	.76	17	28	15
27	4.2	3.4	2.8	3.7	3.7	1.3	.79	.79	.76	10	38	25
28	4.2	3.4	2.7	4.2	3.7	1.3	.79	.79	.67	12	47	19
29	3.9	3.7	2.7	4.5	-	1.3	.68	.79	.67	7.1	38	16
30	3.9	3.4	2.9	5.1	-----	1.3	.68	.68	.67	6.2	68	15
31	3.7	-----	3.0	5.7	-----	1.3	-----	.68	-----	5.1	106	-----
Total	155.0	103.9	99.6	131.6	118.7	67.1	27.95	22.62	48.40	307.77	3,040.5	940
Mean	5.00	3.46	3.21	4.25	4.24	2.16	.932	.730	1.61	9.93	98.1	31.3
Max	6.4	3.9	4.5	6.8	6.8	3.4	1.3	.79	18	47	683	75
Min	3.7	3.2	2.7	2.8	3.4	1.3	.68	.57	.59	.59	3.8	15
Ac-ft	307	206	198	261	235	133	55	45	96	610	6,030	1,860

Cal yr 1966 : Total 5,499.05 Mean 15.1 Max 1,220 Min .25 Ac-ft 10,910
Wtr yr 1967 : Total 5,063.14 Mean 13.9 Max 683 Min .57 Ac-ft 10,040

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 9	1640	5.80	2,590				

7-2201. Lake Isabel feeder canal near Sapello, N. Mex.

Location (revised).--Lat 35°44'40", long 105°09'25", in Mora Grant, 20 feet upstream from concrete crossing, 1 mile northwest of Los Alamos, 2 miles downstream from canal heading, and 5 miles southeast of Sapello, San Miguel County.

Records available.--September 1956 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 6,790 ft (revised) above mean sea level, datum of 1929. Prior to Aug. 10, 1967, at site 650 ft upstream at datum 2.93 ft higher. Oct. 1, 1964 to Sept. 14, 1966, digital water-stage recorder at upstream site and datum.

Extremes.--1956-67: Maximum daily discharge, 322 cfs Aug. 2, 1965; no flow at times.

Remarks.--Records good except those for August and those for winter periods, which are poor. Canal diverts water from left bank of Sapello River to fill Lake Isabel which stores water for irrigation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in Acre-feet
October	7.0	2.7	5.13	315
November	3.8	0	1.42	85
December	3.5	0	.870	53
Calendar year 1966	242	0	7.72	5,590
January	3.5	0	2.42	149
February	4.0	0	1.72	95
March	0	0	0	0
April	.09	0	.019	1.1
May	0	0	0	0
June	7.4	0	.370	22
July	21	0	1.95	120
August	150	0	16.4	1,010
September	4.0	.44	2.30	137
Water year 1967	150	0	2.75	1,990

7-2210. Mora River near Shoemaker, N. Mex.

Location.--Lat 35°48', long 104°47', in S½ sec.11, T.18 N., R.20 E. (projected), in Mora Grant, on left bank 4½ miles east of Shoemaker, and 23 miles upstream from mouth.

Drainage area.--1,104 sq mi, of which 71 sq mi is probably noncontributing.

Records available.--October 1914 to July 1915, October 1915 to August 1918, May 1919 to July 1924, September to November 1924, March to July 1925, June 1927 to September 1967. Prior to October 1930, monthly discharge only, published in WSP 1311.

Gage.--Water-stage recorder. Altitude of gage is 6,170 ft (from topographic map). Prior to Oct. 10, 1934, at site 2,000 ft upstream at different datum.

Average discharge.--49 years (1914-18, 1919-24, 1927-67), 59.6 cfs (43,150 acre-ft per year).

Extremes.--Maximum discharge during year, 6,300 cfs Aug. 10 (gage height, 8.94 ft); minimum, 0.42 cfs June 10.
1914-67: Maximum discharge, 15,200 cfs June 3, 1948 (gage height, 12.79 ft), from rating curve extended above 2,800 cfs on basis of slope-area measurements at gage heights 10.09 and 12.79 ft; no flow at times.
Floods of Sept. 29, 1904, and June 11, 1913, probably exceeded 30,000 cfs.

Remarks.--Records good. Diversions for irrigation of about 26,000 acres above station. Off-channel lakes make it possible to divert and store water during non-irrigation season. Records of chemical analysis and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	3.8	7.1	19	4.8	3.5	1.7	2.9	0.81	0.91	5.9	271
2	15	3.5	7.1	20	5.1	2.9	2.9	3.2	1.2	.91	4.1	216
3	14	3.5	7.5	18	5.1	3.8	2.9	2.5	1.9	.91	3.2	182
4	13	3.8	8.7	20	4.5	2.9	2.2	2.2	1.3	1.0	32	182
5	14	4.8	8.7	22	4.1	3.2	2.9	2.9	2.9	1.5	11	180
6	12	4.1	9.1	24	4.5	3.5	1.9	2.5	2.2	49	2.2	160
7	13	4.1	8.7	19	3.8	3.2	2.2	2.2	1.2	5.5	1.3	147
8	13	4.1	8.7	15	4.1	3.2	2.9	1.5	.66	8.0	1.5	165
9	11	4.1	8.7	17	4.1	2.9	3.2	1.3	.55	3.2	1.9	192
10	8.3	5.1	8.3	19	4.1	2.5	3.5	.91	.50	1.7	2050	191
11	8.3	4.5	8.7	19	4.1	2.5	3.5	.81	.50	1.5	418	197
12	8.3	4.5	8.7	21	4.1	2.5	3.5	.91	.81	155	398	149
13	7.9	4.5	8.7	21	4.1	2.5	3.2	1.2	.91	129	337	132
14	8.7	4.5	9.6	21	4.1	2.2	2.9	1.2	.66	42	391	120
15	8.3	4.5	12	21	4.5	2.5	2.9	1.7	.55	13	358	171
16	7.5	4.1	9.6	21	3.8	2.5	2.9	2.2	.73	5.5	447	189
17	7.9	4.5	8.3	22	3.2	2.9	2.9	1.7	.81	19	426	122
18	7.5	4.1	8.7	28	3.5	2.5	3.5	1.3	.91	13	334	101
19	6.7	4.1	8.3	21	3.8	2.5	4.5	1.3	.81	98	271	87
20	6.3	4.1	8.3	19	3.8	2.5	3.5	1.7	1.5	157	308	82
21	4.8	4.1	9.1	22	3.5	2.5	2.9	1.7	.91	25	249	80
22	4.5	7.9	11	27	3.2	2.5	2.9	1.3	.81	12	234	67
23	4.5	9.6	9.6	26	3.2	2.9	2.5	1.9	.66	7.5	195	60
24	4.5	8.7	9.1	23	3.2	2.9	2.5	1.9	.50	5.5	173	51
25	4.5	7.1	12	19	3.5	2.5	2.2	.91	.55	5.5	160	45
26	3.8	6.3	14	19	3.5	2.9	1.5	.81	.60	3.2	149	43
27	3.8	7.1	13	18	3.5	2.9	1.7	.91	.81	11	140	52
28	3.8	7.1	14	7.5	3.5	2.2	2.5	1.7	1.0	6.7	149	67
29	3.5	7.1	16	7.1	-	1.5	2.2	1.9	1.2	78	145	59
30	4.5	7.1	17	7.1	-----	1.5	2.2	1.9	1.3	14	128	46
31	4.1	-----	13	5.9	-----	2.2	-----	1.0	-----	4.5	292	-----
Total	251.0	156.4	316.3	588.6	110.3	83.2	82.7	52.06	29.75	878.53	7,815.1	3,806
Mean	8.10	5.21	10.2	19.0	3.94	2.68	2.76	1.68	0.992	28.3	252	127
Max	15	9.6	18	28	5.1	3.8	4.5	3.2	2.9	157	2,050	271
Min	3.5	3.5	7.1	5.9	3.2	1.5	1.5	.81	.50	.91	1.3	43
Ac-ft	498	310	627	1,170	219	165	164	103	59	1,740	15,500	7,550

Cal yr 1966 : Total 13,281.53 Mean 36.4 Max 1,030 Min .50 Ac-ft 26,340
Wtr yr 1967 : Total 14,169.94 Mean 38.8 Max 2,050 Min .50 Ac-ft 28,110

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-19	2215	3.90	870	8-10	0300	8.94	6,300

7-2215. Canadian River near Sanchez, N. Mex.

Location.--Lat 35°39'15", long 104°22'40", in SW¼ sec.34, T.17 N., R.24 E., on right bank 1,000 ft downstream from bridge on State Highway 65, 1 mile upstream from Lagartija Creek, 3 miles northeast of Sanchez, 10 miles downstream from Mora River and 24 miles southwest of Mosquero.

Drainage area.--6,015 sq mi, of which 303 sq mi is probably noncontributing.

Records available.--April 1912 to December 1914, October 1935 to September 1967. Monthly discharge only for some periods, published in WSP 1311.

Gage.--Water-stage recorder. Altitude of gage is 4,495 ft (from topographic map). Apr. 12, 1912 to Dec. 31, 1914, at two sites within 100 ft about 3 miles upstream at different datums. October 1935 to June 1965 at site 1,000 ft upstream at datum 7.32 ft higher prior to October 1963 (revised) and 5.32 ft higher thereafter. June 1965 to October 1966 at site 0.6 mile upstream at datum about 20 ft higher.

Average discharge.--34 years (1912-14, 1935-67), 229 cfs (165,800 acre-ft per year).

Extremes.--Maximum discharge during year, 11,300 cfs July 12 (gage height, 12.15 ft), from rating curve extended above 5,000 cfs by logarithmic plotting; no flow Apr. 20 to June 1.
1912-14, 1935-67: Maximum discharge, 145,000 cfs June 18, 1965 (gage height, about 38.1 ft, from floodmarks, present site and datum), from rating curve extended above 91,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
The flood of Sept. 29 or 30, 1904 probably exceeded 100,000 cfs, but is believed to have been less than the peak of June 18, 1965.

Remarks.--Records good except those for April to September, which are fair, and those for December and January, which are poor. Diversions for irrigation of about 56,000 acres above station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	22	19	32	41	17	3.7		0	12	173	260
2	38	22	19	33	43	16	3.1		1.9	90	866	470
3	33	23	18	34	46	18	2.9		179	171	223	418
4	32	22	18	36	55	18	2.9		73	327	202	383
5	29	21	18	37	39	16	2.9		219	361	244	306
6	28	20	20	38	32	16	3.3		405	423	470	271
7	27	18	18	34	29	16	3.3		1,130	362	462	226
8	25	18	18	29	24	15	3.1		184	299	202	214
9	25	18	18	23	20	16	3.1		69	133	178	193
10	24	19	16	26	20	16	2.9		39	87	1,710	330
11	23	20	10	30	18	14	2.5		24	651	1,300	380
12	26	21	11	33	16	12	.97		16	3,780	582	254
13	25	19	14	36	18	11	1.7		9.8	2,950	562	187
14	23	19	16	41	18	9.8	.77		6.1	937	494	178
15	21	19	21	44	21	9.8	.29		3.5	422	488	419
16	20	17	16	45	23	12	.07		3.1	257	496	414
17	20	18	16	43	24	9.8	.43		42	229	970	369
18	21	19	20	31	23	8.2	.51		176	1,100	904	178
19	21	19	18	28	22	8.7	.23		220	558	868	143
20	21	19	21	30	21	8.7	0		111	654	374	128
21	20	19	20	33	19	6.8	0		89	486	362	123
22	24	18	20	38	16	6.1	0		246	288	316	113
23	28	18	18	48	16	6.1	0		121	205	285	111
24	26	18	16	53	17	6.4	0		165	158	244	96
25	24	17	15	48	17	6.4	0		102	158	208	83
26	23	17	14	49	18	6.4	0		53	522	190	75
27	22	16	14	52	18	6.4	0		31	578	173	64
28	21	17	20	50	17	5.4	0		22	550	158	58
29	21	17	25	53	-	3.5	0		20	442	158	64
30	21	18	28	53	-----	3.1	0		31	257	158	96
31	21	-----	30	46	-----	3.1	-----		-----	229	156	-----
Total	774	568	565	1,206	691	327.7	38.67	0	3,791.4	17,676	14,176	6,604
Mean	25.0	18.9	18.2	38.9	24.7	10.6	1.29	0	126	570	457	220
Max	41	23	30	53	55	18	3.7	0	1,130	3,780	1,710	470
Min	20	16	10	23	16	3.1	0	0	0	12	156	58
Ac-ft	1,540	1,130	1,120	2,390	1,370	650	77	0	7,520	35,060	28,120	13,100

Cal yr 1966 : Total 37,071.5 Mean 102 Max 1,890 Min 4.2 Ac-ft 73,530
Wtr yr 1967 : Total 46,417.77 Mean 127 Max 3,780 Min 0 Ac-ft 92,070

Peak discharge (base, 4,500 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-12	0200	12.15	11,300				

7-2225. Conchas River at Variadero, N. Mex.

Location.--Lat 35°24'10", long 104°26'35", in NE¼NE¼ sec.36, T.14 N., R.23 E., on left bank 1.5 miles northeast of Variadero and 15 miles west of Conchas Dam.

Drainage area.--523 sq mi, of which 130 sq mi is probably noncontributing.

Records available.--October 1936 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,430 ft (from topographic map). Prior to Mar. 30, 1942, at site 1½ miles upstream at different datum. Mar. 30, 1942 to May 18, 1950, at present site at datum 0.5 ft higher.

Average discharge.--31 years, 17.8 cfs (12,890 acre-ft per year).

Extremes.--Maximum discharge during year, 2,600 cfs July 6 (gage height, 5.60 ft), from rating curve extended above 760 cfs as explained below; no flow many days.
1936-67: Maximum discharge, 44,000 cfs Sept. 1, 1942 (gage height, 19.96 ft, present datum), from rating curve extended above 760 cfs on basis of slope-area measurements at gage heights 10.5 and 19.96 ft (present datum); no flow many days.

Remarks.--Records good except those for period of no gage-height record, which are poor. Diversions for irrigation of about 300 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.67	0.07	0.08	0.14	0.06	0.06	0	0	0.30	0	1.6	40
2	.42	.08	.08	.12	.06	.06	0	0	25	9.3	124	20
3	.30	.08	.08	.11	.06	.05	0	0	15	198	37	15
4	.18	.08	.08	.12	.06	.04	0	0	.93	8.5	78	5.0
5	.16	.09	.08	.12	.06	.04	.01	0	.34	1.1	188	30
6	.14	.08	.07	.09	.07	.07	0	0	.12	542	46	35
7	.12	.07	.07	.08	.07	.07	0	0	.08	110	14	20
8	.11	.08	.07	.08	.08	.07	0	0	.02	24	5.6	12
9	.09	.08	.08	.08	.08	.05	0	0	0	5.1	4.2	6.0
10	.08	.09	.08	.09	.08	.03	0	0	0	73	305	5.0
11	.07	.09	.09	.08	.09	.03	0	0	0	44	102	4.0
12	.06	.09	.09	.08	.08	.03	0	0	0	247	39	3.0
13	.05	.08	.09	.08	.07	.02	0	0	0	332	18	2.0
14	.03	.09	.08	.08	.05	.03	0	0	0	55	60	2.0
15	.03	.09	.09	.08	.03	.03	0	0	0	14	48	300
16	.06	.08	.08	.08	.03	.03	0	0	0	10	35	150
17	.08	.08	.07	.07	.05	.04	0	0	0	230	141	60
18	.09	.09	.07	.07	.05	.04	0	0	0	115	452	30
19	.08	.11	.07	.07	.06	.05	.01	0	0	40	46	18
20	.07	.08	.07	.07	.07	.05	0	0	0	47	20	8.8
21	.03	.08	.07	.07	.07	.04	0	0	0	38	9.0	5.1
22	.03	.09	.07	.06	.07	.03	0	0	0	14	7.0	3.3
23	.05	.09	.07	.06	.07	.04	0	0	0	4.2	5.0	2.1
24	.06	.09	.07	.06	.07	.03	0	0	0	2.5	4.0	1.5
25	.07	.09	.07	.05	.07	.02	0	0	0	3.5	3.0	1.1
26	.08	.09	.07	.06	.07	.03	0	0	0	14	2.0	.93
27	.07	.09	.07	.07	.08	.02	0	0	0	27	2.0	.79
28	.08	.09	.07	.07	.07	.01	0	62	0	7.1	2.0	.61
29	.08	.09	.09	.07	-	0	0	129	0	3.5	2.0	.56
30	.07	.08	.08	.07	-----	0	0	6.6	0	2.4	100	.42
31	.07	-----	.11	.06	-----	0	-----	1.4	-----	1.8	200	-----
Total	3.58	2.56	2.41	2.49	1.83	1.11	.02	199.0	41.79	2.223.0	2.100.4	782.21
Mean	.115	.085	.078	.080	.065	.036	.001	6.42	1.39	71.7	67.8	26.1
Max	.67	.11	.11	.14	.09	.07	.01	129	25	542	452	300
Min	.03	.07	.07	.05	.03	0	0	0	0	0	1.6	.42
Ac-ft	7.1	5.1	4.8	4.9	3.6	2.2	.04	395	83	4.410	4.170	1.550

Cal yr 1966: Total 2,020.52 Mean 5.54 Max 393 Min 0 Ac-ft 4,010
Wtr yr 1967: Total 5,360.40 Mean 14.7 Max 542 Min 0 Ac-ft 10,630

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7- 6	1100	5.60	2,600	8-18	0215	4.82	1,900
7-12	2100	4.47	1,500	about 9-15	-	†4.80	1,830

† Recorded range-in-stage.
Note.--No gage-height record Aug. 21 to Sept. 19.

7-2230. Bell Ranch Canal below Conchas Dam, N. Mex.

Location.--Lat 35°24'00", long 104°11'05", in SE¼ sec.28, T.14 N., R.26 E., in Pablo Montoya Grant, on left bank 1,270 ft downstream from Conchas Dam and 24 miles north of Newkirk.
Records available.--October 1942 to September 1967. Prior to October 1965, published as "near Conchas Dam."
Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 4,150 ft (from headgate elevations).
Extremes.--1942-67: Maximum daily discharge, 21 cfs July 10-13, Sept. 7-10, 1948, June 27, Aug. 7, 1951; no flow many days each year.
Remarks.--Records good. Canal diverts from Conchas Reservoir for irrigation of about 700 acres on Bell Ranch.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in Acre-feet
October	8.6	0	5.11	314
November	0	0	0	0
December	0	0	0	0
Calendar year 1966	17	0	3.20	2,320
January	0	0	0	0
February	5.9	0	1.46	81
March	5.9	0	1.93	119
April	13	.49	6.47	385
May	9.8	0	5.72	352
June	4.3	0	.14	8.5
July	8.6	0	4.65	286
August	9.0	0	2.98	183
September	9.4	0	4.65	276
Water year 1967	13	0	2.77	2,000

7-2233. Conchas Canal below Conchas Dam, N. Mex.

Location.--Lat 35°21'45", long 104°10'15", in S½ sec.3, T.13 N., R.26 E., on left bank at upstream end of tunnel transition section, about 1 mile downstream from headgates in Conchas Dam and 22 miles north of Newkirk.
Records available.--September 1945 to June 1949, April 1954 to June 1955, September 1961 to September 1967.
Gage.--Water-stage recorder and concrete control. Datum of gage is 4,156.9 ft above mean sea level (from Bureau of Reclamation elevation of concrete structure). Prior to Nov. 19, 1948, at site three-quarters of a mile upstream at different datum.
Extremes.--1945-49, 1954-55, 1961-67: Maximum daily discharge, 751 cfs Aug. 31, 1961; no flow during most of each winter period.
Remarks.--Records good. No diversion or wasteway between canal headworks and gage. Water is diverted from Conchas Reservoir for irrigation of about 35,000 acres on Tucumcari Project (1966 conditions). Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in Acre-feet
October	285	0	117	7,200
November	206	0	22.2	1,320
December	356	0	92.8	5,710
Calendar year 1966	470	0	146	105,400
January	0	0	0	0
February	0	0	0	0
March	268	0	59.6	3,660
April	390	282	333	19,820
May	365	214	285	17,520
June	344	81	215	12,800
July	318	.19	108	6,650
August	380	123	255	15,710
September	311	.06	215	12,770
Water year 1967	390	0	142	103,200

7-2235. Conchas Reservoir at Conchas Dam, N. Mex.

Location.--Lat 35°24'10", long 104°11'25", in SW¼ sec.23, T.14 N., R.26 E., in Pablo Montoya Grant, stilling well within concrete portion of Conchas Dam on Canadian River, and about 24 miles north of Newkirk.

Drainage area.--7,409 sq mi, of which 433 sq mi is probably noncontributing.

Records available.--December 1938 to September 1967. Prior to October 1965, published as "near Conchas Dam."

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929.

Extremes.--Maximum contents during year, 300,400 acre-ft Oct. 1 (elevation, 4,195.35 ft); minimum, 225,700 acre-ft June 2 (elevation, 4,185.71 ft).
1938-67: Maximum contents, 479,600 acre-ft Apr. 24, 1942 (elevation, 4,208.41 ft); minimum after initial filling, 82,840 acre-ft Sept. 12, 13, 1964 (elevation, 4,156.05 ft); minimum elevation, 4,155.80 ft Sept. 24, 1954.

Remarks.--Reservoir is formed by dam consisting of concrete main section and earthfill wings, completed Sept. 15, 1939; storage began Dec. 29, 1938. Capacity, 352,600 acre-ft between elevations 4,060.0 and 4,201.0 ft (crest of 300-foot ungated service spillway); inactive storage, 79,600 acre-ft at elevation 4,155 ft. Reservoir usually not drawn below elevation, 4,157.35 ft (sill of irrigation outlet), capacity 86,990 acre-ft, except for minor sluicing and operation of small powerplant; during 1954-55, 1964 there was some pumping into Conchas Canal. Capacity of 198,200 acre-ft between elevations 4,201.0 (crest of 300-foot ungated service spillway) and 4,218.0 ft (crest of 3,000-foot ungated emergency spillway) acts as detention storage in the control of floods. Figures given herein represent total contents. Reservoir is used for irrigation, flood control, and recreation. Diversion above station for irrigation of about 57,000 acres. Direct diversions through Conchas Dam to Conchas Canal and Bell Ranch Canal (see stations 7-2230, 7-2233) irrigate about 36,000 acres near Tucumcari, and on Bell Ranch.

Cooperation.--Records furnished by Corps of Engineers.

Capacity table, water year 1966-67
(elevation, in feet, and contents, in acre-feet)

4,184	214,200	4,192	272,500
4,186	227,700	4,194	288,900
4,188	241,900	4,196	306,100
4,190	256,900		

Contents, in acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300,400	289,100	285,000	278,400	278,800	278,300	271,400	245,700	226,100	227,200	267,900	281,500
2	299,800	288,900	284,400	278,400	279,000	278,200	270,600	244,900	225,700	226,800	269,600	281,700
3	299,100	288,900	283,800	278,400	279,000	278,100	270,000	244,100	235,300	226,800	270,300	282,000
4	298,200	288,800	283,100	278,400	279,000	278,000	269,300	243,400	235,500	227,200	270,800	282,100
5	297,600	288,800	282,400	278,400	279.000	278,000	268,500	242,800	235,600	227,600	270,900	282,300
6	297,000	288,700	281,500	278,300	279,000	277,900	267,800	242,100	235,800	229,100	271,300	282,400
7	296,300	288,600	280,700	278,300	279,000	277,900	267,000	241,400	237,600	229,800	271,800	282,300
8	295,700	288,500	280,100	278,300	278,900	277,900	266,200	240,800	238,200	230,200	271,900	282,000
9	295,100	288,300	279,400	278,300	278,900	277,800	265,300	240,100	237,900	230,100	271,900	281,900
10	294,600	288,100	279,000	278,300	278,900	277,700	264,500	239,400	237,500	230,100	273,200	281,900
11	294,000	287,900	278,800	278,400	279,000	277,600	263,800	238,500	237,200	230,200	276,800	282,100
12	293,400	287,900	278,800	278,400	279,000	277,500	263,000	237,500	236,700	241,800	279,000	282,000
13	292,800	287,800	278,800	278,400	279,000	277,500	262,300	236,700	236,200	252,000	279,500	281,500
14	291,900	287,800	278,800	278,400	279,000	277,400	261,500	235,900	235,300	255,000	280,000	281,100
15	291,300	287,800	278,800	278,400	279,900	277,200	260,600	235,400	234,500	255,800	279,600	282,000
16	290,900	287,800	278,700	278,400	278,800	277,200	259,800	234,600	234,000	257,100	279,900	283,700
17	290,800	287,400	278,600	278,500	278,800	277,100	258,900	233,900	233,600	257,900	281,600	284,400
18	290,600	287,000	273,600	278,500	278,700	277,100	258,100	233,100	233,100	259,800	283,400	284,300
19	290,600	286,800	278,600	278,500	278,600	277,000	257,300	232,500	233,000	261,300	283,700	284,000
20	290,400	286,800	278,600	278,500	278,500	277,000	256,200	231,700	232,800	262,400	283,700	284,100
21	290,000	286,700	278,600	278,500	278,500	276,900	255,200	231,100	232,300	263,300	283,800	284,200
22	289,900	286,700	278,500	278,500	278,400	276,700	254,400	230,400	232,300	263,700	283,900	284,200
23	289,800	286,600	278,400	278,500	278,400	276,500	253,100	229,800	231,700	263,900	283,600	284,000
24	289,600	286,600	278,400	278,500	278,300	276,200	252,200	228,800	231,100	263,800	283,300	283,700
25	289,600	286,500	278,400	278,600	278,300	275,800	251,300	228,000	230,800	264,500	282,900	283,400
26	289,600	286,500	278,400	278,600	278,400	275,400	250,400	227,100	230,400	265,900	282,500	283,100
27	289,500	286,400	278,400	278,600	278,400	274,600	249,500	226,300	229,800	266,900	282,000	282,900
28	289,400	286,300	278,400	278,800	278,300	274,100	248,600	227,400	229,100	267,400	281,500	282,600
29	289,400	286,000	278,400	278,800	-	273,600	247,700	227,600	228,400	268,000	281,100	282,500
30	289,300	285,700	278,400	278,800	----------	272,800	246,600	227,200	227,800	268,100	281,900	282,100
31	289,200	----------	278,400	278,800	----------	272,100	----------	226,700	----------	268,100	282.000	----------
(†)	4,194.03	4,193.61	4,192.73	4,192.77	4,192.71	4,191.95	4,183.64	4,185.85	4,186.02	4,191.44	4,193.16	4,193.18
(‡)	-11,800	-3,500	-7,300	+400	-500	-6,200	-25,500	-19,900	+1,100	+40,300	+13,900	+100

Calendar year 1966..... ‡ -66,100
Water year 1967..... ‡ -18,900

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

7-2245. Canadian River below Conchas Dam, N. Mex.

Location.--Lat 35°24'30", long 104°10'10", in SW¼ sec.27, T.14 N., R.26 E., in Pablo Montoya Grant, on right bank 2.8 miles downstream from Conchas Dam, and 24 miles north of Newkirk.

Drainage area.--7,417 sq mi, of which 433 sq mi is probably noncontributing.

Records available.--May 1936 to December 1938, January 1942 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,021.90 ft above mean sea level, datum of 1929. Prior to Dec. 13, 1941, at site 0.7 mile downstream at datum 6.2 ft higher.

Average discharge.--26 years (1941-67), 85.7 cfs (62,040 acre-ft per year).

Extremes.--Maximum discharge during year, 191 cfs July 12 (gage height, 5.71 ft); minimum daily discharge, 1.2 cfs July 24.
1936-67: Maximum discharge, 73,000 cfs June 3, 1937 (may have been affected by construction work on Conchas Dam); maximum gage height, 20.34 ft May 30, 1938, present datum (backwater from temporary construction dam); no flow at times.

Remarks.--Records poor. Flow regulated by Conchas Reservoir (see preceding page). Diversions above station for irrigation of about 90,000 acres, 36,000 of which are below station. Bell Ranch Canal (see station 7-2230) diverts directly from Conchas Dam and flumes from right to left bank just above River gage for irrigation of about 700 acres on Bell Ranch. Conchas Canal (see station 7-2233) diverts directly from Conchas Dam and bypasses gage for irrigation of about 35,000 acres around Tucumcari.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	3.5	3.5	3.2	3.5	3.8	3.3	3.3	3.5	2.8	1.4	3.5
2	3.3	3.5	3.5	3.2	3.5	3.6	3.3	3.3	5.0	2.6	1.6	3.5
3	3.2	3.5	3.6	3.2	3.3	3.6	3.2	3.3	1 3	2.8	1.7	3.2
4	3.2	3.6	3.6	3.0	3.3	3.6	3.3	3.3	4.1	2.8	1.8	3.0
5	3.3	3.6	3.6	3.0	3.2	3.8	3.2	3.3	3.2	5.7	2.0	3.0
6	3.5	3.6	3.6	3.0	3.2	3.6	3.0	3.2	3.3	6.7	1.9	3.2
7	3.5	3.6	3.6	3.0	3.0	3.5	3.2	3.0	3.3	3.5	1.9	3.0
8	3.5	3.6	3.6	3.0	3.2	3.5	3.3	3.0	2.8	3.0	1.7	3.0
9	3.3	3.3	3.5	3.2	3.5	3.6	3.0	3.2	2.5	2.8	1.8	3.0
10	3.5	3.3	3.5	3.2	3.5	3.6	3.0	3.0	2.4	4.8	2.6	3.2
11	3.5	3.3	3.3	3.3	3.5	3.5	3.2	2.8	2.4	5.4	2.8	2.8
12	3.6	3.5	3.3	3.3	3.5	3.5	3.2	3.6	2.4	37	2.8	2.8
13	3.6	3.5	3.2	3.3	3.3	3.6	3.0	4.6	2.4	17	2.8	3.5
14	3.3	3.6	3.2	3.3	3.3	3.5	3.0	3.0	2.3	4.1	2.2	4.1
15	3.5	3.6	2.8	3.2	3.2	3.5	3.0	3.2	2.3	2.8	2.0	4.6
16	3.6	3.5	3.0	3.2	3.2	3.6	3.0	3.0	4.1	2.8	2.3	3.8
17	3.5	3.5	3.2	3.0	3.3	3.6	2.8	3.0	4.5	3.8	2.2	3.6
18	3.5	3.6	3.2	3.2	3.5	3.5	3.2	2.8	3.3	2.8	1.9	3.3
19	3.5	3.8	3.2	3.3	3.8	3.5	3.3	2.8	2.8	2.8	1.8	3.3
20	3.5	3.9	3.2	3.3	4.5	3.5	3.2	2.8	2.8	2.3	1.7	3.3
21	3.5	3.6	3.2	3.2	4.6	3.5	3.2	3.2	2.8	1.8	1.7	3.2
22	3.3	4.5	3.8	3.2	3 8	3.3	3.3	3.2	3.0	1.7	1.7	3.2
23	3.3	4.6	3.8	3.2	3.6	3.5	3.2	3.5	3.2	1.3	1.6	3.2
24	3.3	3.8	3.2	3.3	3.6	3.3	3.3	3.3	2.8	1.3	1.9	3.2
25	3.9	3.5	3.0	3.2	3.6	3.3	3.9	3.3	3.0	1.2	3.3	3.2
26	4.5	3.5	3.0	3.2	3.6	3.2	4.3	3.3	3.5	1.4	2.5	3.2
27	3.8	3.5	3.3	4.3	3 8	3.2	3.6	3.5	4.6	1.5	2.8	3.2
28	3.6	3.5	3.2	4.3	3.6	4.1	3.5	3.9	3.5	1.4	3.0	3.2
29	3.5	3.3	3.2	3.6	-	4.6	3.5	3.9	3.2	1.5	3.2	3.2
30	3.5	3.3	3.2	3.5	- - - - -	3.3	3.5	3.6	3.0	1.4	3.5	3.2
31	3.5	- - - - -	3.2	3.5	- - - - -	3.3	- - - - -	3.5	- - - - -	1.2	4.1	- - - - -
Total	108.4	108.0	103.3	101.9	98.8	110.1	98.0	101.7	105.0	134.0	70.2	98.7
Mean	3.50	3.60	3.33	3.29	3.53	3.55	3.27	3.28	3.50	4.32	2.26	3.29
Max	4.5	4.6	3.8	4.3	4.8	4.6	4.3	4.6	13	37	4.1	4.6
Min	3.2	3.3	2.8	3.0	3.0	3.2	2.8	2.8	2.3	1.2	1.4	2.8
Ac-ft	215	214	205	202	196	218	194	202	208	266	139	196

Cal yr 1966: Total 1,470.4 Mean 4.03 Max 28 Min 2.8 Ac-ft 2,920
Wtr yr 1967: Total 1,238.1 Mean 3.39 Max 37 Min 1.2 Ac-ft 2,460

7-2265. Ute Creek near Logan, N. Mex.

Location.--Lat 35°26'55", long 103°31'40", in SW¼SE¼ sec.10, T.14 N., R.32 E., on right bank upstream from flow line of Ute Reservoir, 3½ miles upstream from State Road 155, 4 miles north of Harding-Quay County line, 9 miles northwest of Logan and 10 miles upstream from mouth.

Drainage area.--2,060 sq mi, of which 617 is probably noncontributing.

Records available.--August 1904 to June 1906 and April 1909 to May 1914 (gage heights and discharge measurements only), January 1942 to September 1967. Records of discharge for August 1904 to June 1906, April 1909 to December 1911, published in WSP 307, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 3,840 ft (from topographic map). Prior to Aug. 1, 1911, staff gage at site 5½ miles downstream at different datum. Aug. 1, 1911 to May 23, 1914, water-stage recorder at site 5⅝ miles downstream at different datum. January 1942 to December 1955, water-stage recorder at site 4 miles downstream at datum of 3,758.50 ft above mean sea level; at that site at datum 1.00 ft lower December 1955 to September 1964.

Average discharge.--25 years, 28.5 cfs (20,630 acre-ft per year).

Extremes.--Maximum discharge during year, 6,270 cfs July 5 (gage height, 5.32 ft); no flow most of time.
1942-67: Maximum discharge, 24,500 cfs May 28, 1946, July 12, 1951 (gage height, 8.4 ft, site and datum then in use), from rating curve extended above 7,700 cfs on basis of slope-area measurements at gage heights 5.2 and 7.2 ft; no flow most of time.
Flood of May 1, 1914, reached a stage of 22.95 ft, site and datum then in use. Another major flood reached a stage of 16.0 ft (1942 datum) sometime in 1941, from information furnished by Bureau of Reclamation (discharge, about 70,000 cfs).

Remarks.--Records poor. Diversions for irrigation of a few hundred acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0	0	40.0	6.7	0	0
2							0	0	143	22	0	0
3							0	0	435	352	.52	0
4							0	0	349	202	245	0
5							0	0	178	534	225	0
6							0	0	110	597	77	0
7							.72	0	1.020	82	20	0
8							0	0	195	40	2.2	0
9							0	0	24	15	147	32
10							0	0	3.0	37	186	13
11							0	0	0	222	75	0
12							0	0	0	781	55	0
13							0	0	0	688	90	0
14							0	0	0	123	98	0
15							0	0	0	50	22	9.0
16							0	0	0	141	8.5	2.2
17							0	0	42	452	1.8	0
18							0	0	41	139	.05	0
19							0	0	46	197	.03	146
20							0	0	20	60	29	157
21							0	0	16	17	9.3	50
22							0	0	149	6.2	0	.36
23							0	0	64	.15	0	0
24							0	0	42	0	0	0
25							0	0	22	2.0	0	0
26							0	0	8.0	24	0	0
27							0	0	2.2	25	0	0
28							0	407	0	5.6	0	0
29							0	265	1.6	0	17	0
30							0	258	12	0	23	0
31								99		0	0	
Total	0	0	0	0	0	0	.72	929	2.962.8	4.820.65	1.331.40	409.56
Mean	0	0	0	0	0	0	.024	30.0	98.8	156	42.9	13.7
Max	0	0	0	0	0	0	.72	407	1.020	781	245	157
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	1.4	1.840	5.880	9.560	2.640	812

Cal yr 1966 : Total 1,722.43 Mean 4.72 Max 298 Min 0 Ac-ft 3,420
Wtr yr 1967 : Total 10,454.13 Mean 28.6 Max 1,020 Min 0 Ac-ft 20,740

Peak discharge (base, 4,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7- 5	2300	5.32	6,270				

7-2268. Ute Reservoir near Logan, N. Mex.

Location.--Lat 35°20'35", long 103°26'40", in NW¼ sec.21, T.13 N., R.33 E., on face of Ute Dam on Canadian River 2½ miles southwest of Logan and 3½ miles downstream from Ute Creek.

Drainage area.--11,140 sq mi, of which 1,110 sq mi is probably noncontributing.

Records available.--May 1963 to September 1967.

Gage.--Inclined cable gage and vertical staff gage. Datum of gage is at mean sea level (levels by Interstate Stream Commission).

Extremes.--Maximum contents during year, 115,100 acre-ft July 13 (elevation, 3,761.3 ft); minimum, 96,480 acre-ft May 27, 28 (elevation, 3,756.7 ft).
1963-67: Maximum contents, that of July 13, 1967; minimum, 22,230 acre-ft Aug. 7, 1964 (elevation, 3,726.2 ft).

Remarks.--Reservoir is formed by earthfill dam 121 ft high above streambed, 2,050 ft long; an earth-dike section on north (left) bank of Canadian River is 2,860 ft long and has a maximum height of 27 ft; a concrete spillway section 840 ft long is constructed between main embankment and the dike. Construction completed in May 1963; storage began Dec. 13, 1962. Capacity, 109,600 acre-ft at elevation 3,760.0 ft (crest of 840-ft ungated service spillway). Top of dam is at elevation 3,801.0 ft. Maximum design capacity of 307,000 acre-ft at elevation 3,791.0 ft (31 ft above crest of 840-ft spillway) allows 197,400 acre-ft of capacity for protection of the structure. Dead storage, 20,710 acre-ft at elevation 3,725.0 ft (crest of outlet tower); inactive pool of 49,870 acre-ft below elevation 3,741.6 ft is maintained for fish and wildlife. Figures given herein represent total contents. Reservoir is planned to furnish water for municipal and industrial uses and for recreational purposes; some incidental flood control. Diversions above station for irrigation of about 90,000 acres. Records of chemical analyses and water temperatures for water year 1967 are published in part 2 of this report.

Cooperation.--Records furnished by New Mexico Interstate Stream Commission.

Capacity table, water year 1966-67
(elevation, in feet, and contents, in acre-feet)

3,756	93,840	3,760	109,600
3,758	101,500	3,762	118,100

Contents, in acre-feet, at 0800 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107,900	105,500	104,300	103,100	102,300	101,500	100,300	98,400	103,100	109,200	109,600	110,000
2	107,900	105,500	103,900	103,100	102,300	101,500	100,300	98,400	103,900	109,200	109,600	109,600
3	107,500	105,500	103,900	103,100	102,300	101,500	100,300	98,400	104,700	109,600	109,600	109,600
4	107,500	105,500	103,900	103,100	102,300	101,500	100,300	98,400	107,900	110,000	109,600	109,600
5	107,500	105,500	103,900	102,700	102,300	101,500	100,300	98,400	109,200	110,000	110,000	109,600
6	107,500	105,500	103,900	102,700	102,300	101,500	100,300	98,400	109,600	112,900	110,000	109,600
7	107,100	105,500	103,900	102,700	102,300	101,500	99,950	98,400	110,800	111,300	109,600	109,600
8	107,100	105,500	103,900	102,700	102,300	101,100	99,950	98,020	111,300	110,000	109,600	109,600
9	107,100	105,500	103,900	102,700	102,300	101,100	99,950	98,020	110,400	110,000	109,600	109,600
10	106,700	105,500	103,500	102,700	102,300	101,100	99,950	98,020	109,600	109,600	109,600	110,000
11	106,700	105,500	103,500	102,700	101,900	101,100	99,950	98,020	109,600	112,100	109,600	109,600
12	106,700	105,500	103,500	102,700	101,900	101,100	99,950	98,020	109,600	110,800	109,600	109,600
13	106,700	105,100	103,500	102,700	101,900	101,100	99,950	98,020	109,600	115,100	109,600	109,600
14	106,700	105,100	103,500	102,700	101,900	101,100	99,950	97,630	109,600	113,800	110,400	109,600
15	106,700	105,100	103,500	102,700	101,900	101,100	99,950	97,630	109,200	111,300	110,000	109,600
16	106,700	104,700	103,500	102,700	101,900	101,100	99,560	97,630	109,200	110,800	109,600	-
17	106,300	104,700	103,500	102,700	101,900	101,100	99,560	97,630	109,200	111,700	109,600	-
18	106,300	104,700	103,500	102,700	101,900	100,700	99,560	97,250	109,200	110,400	109,600	109,600
19	106,300	104,700	103,500	102,700	101,900	100,700	99,560	97,250	109,200	111,700	109,600	109,600
20	106,300	104,700	103,100	102,700	101,900	100,700	99,560	97,250	109,200	110,400	109,600	110,800
21	106,300	104,700	103,100	102,700	101,500	100,700	99,560	97,250	109,200	110,000	109,600	110,800
22	106,300	104,700	103,100	102,700	101,500	100,700	99,170	97,250	109,200	110,000	109,600	109,600
23	105,900	104,300	103,100	102,700	101,500	100,700	99,170	96,860	109,200	109,600	109,600	109,600
24	105,900	104,300	103,100	102,700	101,500	100,700	99,170	96,860	109,200	109,600	109,600	109,600
25	105,900	104,300	103,100	102,700	101,500	100,700	98,790	96,860	109,200	111,300	109,600	109,600
26	105,900	104,300	103,100	102,700	101,500	100,300	98,790	-	109,200	110,000	109,600	109,600
27	105,900	104,300	103,100	102,700	101,500	100,300	-	96,480	109,200	109,600	109,200	109,600
28	105,900	104,300	103,100	102,700	101,500	100,300	98,790	96,480	109,200	109,600	109,200	109,200
29	105,500	104,300	103,100	102,700	-	100,300	98,400	101,500	109,200	109,600	109,200	109,200
30	105,500	104,300	103,100	102,300	----------	100,300	98,400	103,100	109,200	109,600	109,200	109,200
31	105,500	----------	103,100	102,300	----------	100,300	----------	103,100	----------	109,600	109,200	----------
(†)	3,759.0	3,758.7	3,758.4	3,758.2	3,758.0	3,757.7	3,757.2	3,758.4	3,759.9	3,760.0	3,759.9	3,759.9
(‡)	-2,400	-1,200	-1,200	-800	-800	-1,200	-1,900	+4,700	+6,100	+400	-400	0

Calendar year 1966..... ‡ +16,550
Water year 1967..... ‡ + 1,300

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

7-2270. Canadian River at Logan, N. Mex.

Location.--Lat 35°21'20", long 103°25'20", in NE¼ sec.15, T.13 N., R.33 E., on left bank 1,100 ft upstream from bridge on U. S. Highway 54, half a mile south of Logan, 1½ miles upstream from Chicago, Rock Island & Pacific Railroad Co. bridge, 2 miles downstream from Ute Dam, 4¼ miles upstream from Revuelto Creek (formerly Tucumcari Creek), and 5½ miles downstream from Ute Creek.

Drainage area.--11,141 sq mi, of which 1,110 sq mi is probably noncontributing.

Records available.--June 1904 to November 1905 (gage heights and discharge measurements only), December 1908 to September 1909, February 1910, April to July 1910, August 1910 to September 1911 (gage heights and discharge measurements only), October 1911 to May 1914, January to May 1924, September 1924 to July 1925, January 1927 to April 1934, August 1934 to September 1967. Monthly discharge only for some periods, published in WSP 1311. Records for December 1909, January 1910, and May to July 1934, published in WSP 267, 287, and 762 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder at present site since Aug. 5, 1910; at different datums prior to Oct. 21, 1928, and at datum 1.54 ft lower Oct. 21, 1928, to Sept. 30, 1934. Datum of present gage is 3,668.1 ft above mean sea level, datum of 1929. Prior to Aug. 5, 1910, staff gages 1½ miles downstream at different datums (datum of gage, 3,651 ft above mean sea level Dec. 22, 1908 to Aug. 4, 1910).

Average discharge.--15 years (1908-9, 1911-13, 1926-38), 392 cfs (283,800 acre-ft per year), prior to completion of Conchas Dam; 24 years (1938-62), 257 cfs (186,100 acre-ft per year), prior to completion of Ute Dam; 5 years (1962-67) 25.1 cfs (18,170 acre-ft per year).

Extremes.--Maximum discharge during year, 3,510 cfs July 13 (gage height, 9.03 ft); minimum, 0.95 cfs May 10.
1930-67: Maximum discharge, 219,000 cfs Sept. 22, 1941 (gage height, 29.3 ft, from floodmarks), from rating curve extended above 75,000 cfs by logarithmic plotting; no flow at times prior to completion of Ute Dam.
Maximum discharge known, 278,000 cfs Sept. 30, 1904 (gage height, about 36.5 ft, site and datum used in 1909), from rating curve extended above 14,000 cfs, from Ninth Biennial Report of State Engineer.

Remarks.--Records fair. Flow regulated by Conchas Reservoir, 45 miles upstream (see station 7-2235) and Ute Reservoir, 2 miles upstream (see station 7-2268). Diversions for irrigation of about 90,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	2.5	3.0	3.0	3.0	2.5	2.3	1.6	1.4	5.7	15	77
2	3.5	2.5	3.0	3.0	3.0	2.5	2.3	1.9	1.6	5.8	7.5	63
3	2.7	2.7	3.0	2.7	3.0	2.5	2.3	1.9	1.6	27	7.1	33
4	2.7	2.7	3.0	2.5	3.0	2.5	2.5	1.9	1.2	182	21	14
5	2.7	2.7	3.0	2.7	3.0	2.5	2.3	1.9	2.2	223	301	7.5
6	2.7	2.5	3.0	2.5	3.0	2.7	2.1	1.9	26	1,810	223	6.0
7	2.7	2.5	3.2	3.0	3.0	3.0	2.3	1.9	364	765	202	5.2
8	2.7	2.5	3.2	2.7	3.0	2.5	2.3	1.8	858	314	133	4.8
9	2.5	2.5	3.0	2.6	3.0	2.3	2.1	1.8	381	115	110	5.4
10	2.5	2.7	3.0	2.7	3.0	2.3	2.3	1.4	110	359	141	53
11	2.5	2.7	3.0	2.7	3.0	2.3	3.2	1.6	46	1,160	136	44
12	2.5	2.7	3.2	2.7	3.0	2.3	2.5	1.9	22	879	112	30
13	2.5	2.5	3.2	3.0	2.7	2.3	1.8	2.1	18	3,020	88	8.3
14	2.5	2.5	3.2	2.7	2.5	2.3	2.1	2.1	12	1,880	458	6.2
15	2.5	2.5	3.0	2.7	2.5	2.5	2.1	2.1	4.0	560	212	5.7
16	2.5	2.5	3.2	2.7	2.7	2.7	2.1	2.1	3.0	162	92	6.0
17	2.7	2.5	3.2	2.7	2.7	3.0	2.1	1.9	3.0	790	54	7.1
18	2.7	2.7	3.2	3.0	2.7	3.0	2.3	1.9	4.7	438	48	6.0
19	2.5	2.7	3.2	2.5	2.7	3.2	2.3	1.9	13	863	30	6.5
20	2.5	2.7	3.2	2.7	3.0	3.0	2.1	1.9	14	417	30	701
21	2.3	2.7	3.2	2.7	3.0	3.0	2.1	1.9	5.5	176	21	694
22	2.3	2.5	3.2	2.7	2.7	3.2	2.1	1.9	16	90	18	342
23	2.5	2.7	3.0	2.7	2.7	3.5	2.1	1.6	27	36	38	114
24	2.5	2.7	2.7	2.7	2.7	3.2	2.1	1.6	15	18	30	37
25	2.5	2.7	3.0	3.0	2.7	2.7	1.8	1.4	8.3	16	17	20
26	2.5	2.7	2.7	3.0	2.7	2.7	1.8	1.6	11	260	8.7	8.7
27	2.7	2.5	3.0	3.0	3.0	2.7	1.8	1.6	5.8	395	6.8	2.1
28	2.7	2.7	2.7	3.0	2.7	2.7	1.6	2.5	7.2	158	7.5	1.9
29	2.7	2.7	2.5	3.0	-	2.7	1.6	1.8	5.0	83	6.2	1.8
30	2.7	2.7	2.7	3.0	-----	2.3	1.4	1.6	4.0	57	5.4	2.0
31	2.5	-----	3.0	3.0	-----	2.3	-----	1.6	-----	33	16	-----
Total	80.7	78.4	93.7	86.6	79.7	82.9	63.8	56.6	1,991.5	15,297.5	2,595.2	2,313.2
Mean	2.60	2.61	3.02	2.79	2.85	2.67	2.13	1.83	66.4	493	83.7	77.1
Max	3.5	2.7	3.2	3.0	3.0	3.5	3.2	2.5	858	3,020	458	701
Min	2.3	2.5	2.5	2.5	2.5	2.3	1.4	1.4	1.2	5.7	5.4	1.8
Ac-ft	160	156	186	172	158	164	127	112	3,950	30,340	5,150	4,590

Cal yr 1966: Total 3,474.0 Mean 9.52 Max 774 Min 1.6 Ac-ft 6,890
Wtr yr 1967: Total 22,819.8 Mean 62.5 Max 3,020 Min 1.2 Ac-ft 45,260

7-2271. Revuelto Creek near Logan, N. Mex.

Location.--Lat 35°20'30", long 103°23'40", in SW¼NW¼ sec.24, T.13 N., R.33 E., on right bank a quarter of a mile upstream from bridge on State Highway 39, 2 miles upstream from mouth, and 2 miles southeast of Logan.

Drainage area.--786 sq mi.

Records available.--August 1959 to September 1967. Unpublished records collected by Bureau of Reclamation for the period October 1941 to July 1947 are for a site 500 ft downstream at different datum. They are not equivalent because of major irrigation development; major peaks should be comparable.

Gage.--Water-stage recorder. Datum of gage is 3,672 ft above mean sea level, datum of 1929.

Average discharge.--8 years, 58.9 cfs (42,640 acre-ft per year).

Extremes.--Maximum discharge during year, 17,000 cfs Aug. 23 (gage height, 11.42 ft); no flow many days.
1959-67: Maximum discharge, 26,700 cfs July 9, 1960 (gage height, 14.3 ft), from rating curve extended above 13,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
1941-47: Maximum discharge determined, about 13,400 cfs Sept. 18, 1946 (gage height, 9.04 ft, site and datum then in use), computed by Bureau of Reclamation.
A peak of 26,100 cfs (time and date unknown; gage height, 12.9 ft) was measured by slope-area method in May 1957.

Remarks.--Records poor. Low flows supplemented by surface and ground water return from irrigation in vicinity of Tucumcari. Records of chemical analyses and water temperatures for water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	0.25	0	0.94	0.44	0.34	4.6	7.2	35	11	10	45
2	6.6	.06	.12	.44	.80	0	3.8	9.0	139	106	7.0	35
3	8.4	.03	0	.34	.20	0	3.4	13	97	376	5.0	25
4	7.7	.04	3.7	.34	.20	0	3.4	14	48	172	208	20
5	9.0	.06	11	.06	.20	0	2.4	14	20	104	72	22
6	12	.07	9.8	.34	.20	.34	1.8	14	9.8	70	48	20
7	14	.10	9.0	.15	.15	.34	1.8	14	5.5	129	43	17
8	13	.10	9.0	.25	.10	.34	3.8	14	3.4	48	25	12
9	13	.12	9.0	.50	.10	.06	4.6	14	.80	207	20	10
10	9.8	.12	14	1.0	.15	.50	4.2	13	.34	283	30	35
11	8.4	.06	7.7	1.5	.25	.41	12	13	.06	376	25	30
12	4.6	0	20	2.0	.20	.60	6.6	13	.94	126	20	20
13	4.6	0	28	0	.30	.26	6.6	13	2.1	2,270	50	10
14	4.6	0	24	0	.40	.22	5.5	13	1.8	198	105	5.0
15	4.2	.06	17	0	.50	.29	12	14	.80	66	70	5.0
16	7.7	.06	11	0	.30	.67	11	15	.55	28	50	5.0
17	7.7	.12	5.0	0	.34	.67	11	15	181	21	30	8.0
18	14	.12	3.8	0	.44	.94	11	15	32	14	36	5.0
19	13	.12	1.8	0	.25	1.5	12	15	14	984	26	75
20	9.8	2.8	1.3	0	.25	.94	11	15	7.2	102	19	325
21	4.2	1.5	.67	0	.25	.67	9.8	15	4.6	21	59	250
22	4.6	.34	.34	0	.25	.80	9.0	15	2.4	4.6	66	150
23	4.6	.02	.34	0	.25	.63	11	15	.94	1.3	2,180	75
24	4.2	0	.80	0	.25	.53	11	15	.34	.12	156	25
25	3.0	0	.55	0	.25	.46	14	15	.34	0	30	15
26	3.8	0	.55	0	.34	1.5	14	15	.67	1,370	20	10
27	2.1	0	.80	0	.55	.39	14	15	2.4	170	15	8.0
28	1.3	0	1.5	0	.34	.23	12	18	3.4	64	20	7.0
29	.80	0	1.0	0	-	5.8	11	65	21	45	25	6.0
30	.80	0	1.0	0	-----	8.4	7.7	100	12	39	20	5.0
31	.25	-----	1.5	.25	-----	5.5	-----	45	-----	20	25	-----
Total	207.75	6.15	194.27	8.11	8.25	33.33	246.0	600.2	647.38	7,426.02	3,515.0	1,280.0
Mean	6.70	.205	6.27	.262	.295	1.08	8.20	19.4	21.6	240	113	42.7
Max	14	2.8	28	2.0	.80	8.4	14	100	181	2,270	2,180	325
Min	.25	0	0	0	.10	0	1.8	7.2	.06	0	5.0	5.0
Ac-ft	412	12	385	16	16	66	488	1,190	1,280	14,730	6,970	2,540

Cal yr 1966: Total 12,803.20 Mean 35.1 Max 2,200 Min 0 Ac-ft 25,390
Wtr yr 1967: Total 14,172.46 Mean 38.8 Max 2,270 Min 0 Ac-ft 28,110

Peak discharge (base, 3,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-13	0700	7.86	7,290	8-23	1545	11.42	17,000
7-26	0415	5.90	3,520				

Note.--No gage-height record Aug. 25 to Sept. 30.

7-2272 (revised). Tramperos Creek near Stead, N. Mex.
(Formerly Major Longs Creek near Stead)

Location.--Lat 36°04'15", long 103°12'10", in NW¼NW¼ sec.10, T.21 N., R.35 E., on left bank 10 ft upstream from bridge on State Highway 18, 2 miles south of Stead, 26 miles south of Clayton.

Drainage area.--556 sq mi, approximately.

Records available.--October 1964 to May 1966 (annual maximum only). June 1966 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,540 ft (from topographic map). Prior to October 1966 published as Major Longs Creek (7-2274.45).

Extremes.--Maximum discharge during year, 1,850 cfs July 5 (gage height, 11.17 ft), from rating curve extended above 50 cfs on basis of slope-area measurements at gage heights 14.0 and 16.5 ft; no flow for most of time.
1964-67: Maximum discharge, 12,300 cfs Oct. 17, 1965 (gage height, about 16.5 ft), by slope-area method; no flow for most of time.
A flood in 1904 reached a stage of about 29 ft (discharge about 45,500 cfs) with only a single span bridge and a flood in 1937 reached a stage of about 22 ft (discharge about 31,600 cfs) with the present bridge (information from State Highway Department).

Remarks.--Records poor. Minor regulation by detention reservoirs and stock ponds.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0	0	3.4	8.8	0.28	0
2							0	0	2.6	7.4	0	0
3							0	0	3.7	6.7	.87	0
4							0	0	2.6	6.0	9.6	0
5							0	0	.42	218	4.2	0
6							0	0	4.1	262	1.2	0
7							0	0	180	29	3.3	0
8							0	0	34	12	7.5	0
9							0	0	6.0	7.0	6.3	0
10							0	0	4.3	4.0	10	148
11							6.5	0	3.7	104	7.0	19
12							0	0	3.6	55	6.6	17
13							0	0	2.0	13	3.7	15
14							0	0	0	10	2.7	14
15							0	0	0	9.8	1.0	14
16							0	0	0	7.2	.78	13
17							0	0	0	18	.78	12
18							0	0	0	24	.39	12
19							0	0	0	13	.26	12
20							0	0	0	8.8	.08	13
21							0	0	0	6.0	0	11
22							0	0	0	3.7	0	10
23							0	0	0	1.7	0	9.3
24							0	0	0	.91	0	6.9
25							0	0	0	6.1	0	4.9
26							0	0	0	2.7	0	2.4
27							0	0	1.2	3.1	0	2.0
28							0	28	413	6.0	0	2.3
29					-		0	6.4	100	3.0	0	.39
30					- - - - -		0	2.6	14	.78	0	0
31		- - - - -			- - - - -		- - - - -	7.9	- - - - -	.26	0	- - - - -
Total	0	0	0	0	0	0	6.5	44.9	778.62	857.95	66.54	338.19
Mean	0	0	0	0	0	0	.22	1.45	26.0	27.7	2.15	11.3
Max	0	0	0	0	0	0	6.5	28	413	262	10	148
Min	0	0	0	0	0	0	0	0	0	.26	0	0
Ac-ft	0	0	0	0	0	0	13	89	1,540	1,700	132	671

Cal yr 1966 : Total - Mean - Max - Min - Ac-ft -
Wtr yr 1967 : Total 2,092.70 Mean 5.73 Max 413 Min 0 Ac-ft 4,150

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7- 5	2220	11.17	1,850	9-10	0230	11.00	1,700
7-11	2130	10.40	1,230				

8-2515. Rio Grande near Lobatos, Colo.

Location.--Lat 37°05', long 105°45', in sec.22, T.33 N., R.11 E., on right bank at highway bridge, 6 miles north of Colorado-New Mexico State line, 7 miles downstream from Culebra Creek, 10 miles east of Lobatos, and 14 miles east of Antonito.

Drainage area.--7,700 sq mi, approximately (includes 2,940 sq mi in closed basin in northern part of San Luis Valley, Colo.).

Records available.--June 1899 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Published as "at Cenicero" 1899-1901, and as "near Cenicero" 1902-4.

Gage.--Water-stage recorder. Datum of gage is 7,427.63 ft above mean sea level, datum of 1929. Prior to Nov. 8, 1910, staff or chain gage at same site and datum.

Average discharge.--68 years, 608 cfs (440,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,110 cfs Aug. 13 (gage height, 2.78 ft); maximum gage height, 4.21 ft Dec. 21 (backwater from ice); minimum daily discharge, 25 cfs Oct. 1.
1899-1967: Maximum discharge observed, 13,200 cfs June 8, 1905 (gage height, 9.1 ft), from rating curve extended above 8,000 cfs; no flow at times in 1950-51, 1956.
Maximum stage known, probably since at least 1828, occurred June 8, 1905.

Remarks.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals, diversions for irrigation, and return flow from irrigation areas. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report as "above Culebra Creek, near Lobatos."

Cooperation.--Records furnished by Colorado district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	115	345	190	280	430	120	48	270	120	122	154
2	28	133	365	195	280	460	115	48	242	105	260	202
3	32	450	375	200	270	490	108	44	250	98	242	209
4	31	643	370	200	285	490	102	48	302	90	254	212
5	32	720	350	220	300	400	102	44	370	78	242	202
6	38	768	370	215	280	315	90	41	544	71	226	192
7	40	792	370	215	250	370	95	38	728	67	223	174
8	38	824	460	215	300	345	95	37	840	65	226	145
9	40	848	450	210	290	365	76	44	736	62	262	139
10	55	848	335	210	290	380	71	65	594	58	335	133
11	73	864	242	205	290	375	62	98	502	58	514	133
12	71	872	254	200	280	306	55	105	440	65	808	136
13	69	880	262	205	280	282	58	73	325	60	1,060	125
14	60	889	274	210	285	262	56	70	242	58	934	115
15	56	898	325	215	285	226	73	65	209	62	916	112
16	58	925	278	220	290	209	76	65	202	67	907	108
17	78	760	290	230	300	206	69	60	198	76	808	95
18	95	472	295	235	300	195	73	70	209	102	594	90
19	102	425	300	235	300	198	76	65	246	154	455	90
20	115	400	305	235	300	188	65	65	278	238	385	100
21	122	390	310	240	305	212	71	60	490	270	330	95
22	120	410	300	240	305	206	71	65	664	230	278	90
23	115	380	280	245	305	195	67	56	562	184	226	88
24	125	390	260	240	320	188	65	69	400	160	212	82
25	130	390	250	250	320	184	58	184	310	167	170	76
26	128	385	230	265	330	167	48	230	286	160	148	69
27	118	375	210	270	350	164	44	350	230	118	148	65
28	105	350	200	265	390	157	44	435	174	112	142	69
29	128	340	190	260	-	142	44	370	145	142	130	73
30	125	325	180	270	- - - - -	136	44	400	133	120	122	76
31	120	- - - - -	185	275	- - - - -	120	- - - - -	360	- - - - -	122	120	- - - - -
Total	2,472	17,261	9,210	7,080	8,360	8,363	2,193	3,772	11,121	3,539	11,799	3,649
Mean	79.7	575	297	228	299	270	73.1	122	371	114	381	122
Max	130	925	460	275	390	490	120	435	840	270	1,060	212
Min	25	115	180	190	270	120	44	37	133	58	120	65
Ac-ft	4,900	34,240	18,270	14,040	16,580	16,590	4,350	7,480	22,060	7,020	23,400	7,240

Calendar year 1966: Max 1,280 Min 25 Mean 353 Ac-ft 255,400
Water year 1967 : Max 1,060 Min 25 Mean 243 Ac-ft 176,200

8-2520. Rio Grande at Colorado-New Mexico State line

Location.--Lat 37°00', long 105°43', in SE¼ sec.36, T.1 N., R.75 W., on left bank a quarter of a mile upstream from Colorado-New Mexico State line, 1½ miles upstream from Costilla Creek, and 5¾ miles west of Jaroso.

Records available.--October 1953 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 7,390 ft (from topographic map).

Average discharge.--14 years, 274 cfs (198,400 acre-ft per year).

Extremes.--Maximum discharge during year, 944 cfs Aug. 13 (gage height, 3.82 ft); minimum daily, 24 cfs Oct. 1.
1953-67: Maximum discharge, 4,150 cfs May 29, 1958 (gage height, 7.07 ft); no flow at times in 1956.
Flood of June 8, 1905 (daily discharge, 13,100 cfs at station near Lobatos 5.8 miles upstream) was probably the greatest since at least 1828.

Remarks.--Records good except those for winter period, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records furnished by Colorado district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	103	346	195	285	425	97	36	286	115	112	138
2	25	106	356	200	285	460	101	42	249	103	192	204
3	28	352	365	205	280	490	92	44	252	92	283	210
4	31	579	362	205	285	495	82	46	289	84	252	222
5	31	666	349	210	305	410	80	46	359	78	258	210
6	33	707	356	220	290	305	76	40	494	68	231	201
7	36	725	365	220	260	360	80	38	635	66	228	189
8	35	743	428	220	295	330	80	35	748	63	222	146
9	36	766	452	215	295	359	74	36	676	61	274	143
10	40	780	356	215	295	365	68	44	579	57	314	138
11	64	790	243	210	295	368	63	68	490	55	459	130
12	66	800	264	205	285	311	50	101	445	70	662	130
13	59	800	280	210	285	277	57	74	343	61	905	128
14	55	810	302	215	290	246	54	57	261	57	835	118
15	50	815	305	220	290	228	63	61	204	59	805	112
16	52	835	289	225	295	201	66	59	198	68	800	108
17	66	752	280	230	305	192	64	68	201	64	738	97
18	80	490	286	240	305	180	64	66	207	99	603	90
19	88	431	302	240	305	180	64	61	237	120	476	88
20	92	411	320	240	305	175	59	57	268	228	414	99
21	101	394	308	245	310	189	61	66	435	280	359	99
22	108	401	289	245	310	192	63	74	587	258	314	90
23	101	388	261	250	310	178	59	64	563	186	258	88
24	110	391	219	245	325	175	57	64	411	169	231	84
25	115	398	225	255	325	172	55	155	330	155	198	76
26	115	391	230	265	335	152	48	228	298	172	157	70
27	108	388	220	275	350	143	42	327	246	120	152	64
28	88	362	210	270	395	141	38	452	183	106	152	66
29	110	352	200	265	-	120	34	385	149	125	135	68
30	112	336	185	270	-----	103	33	398	128	122	197	70
31	108	-----	185	280	-----	99	-----	391	-----	118	130	-----
Total	2.167	16.262	9.138	7,205	8.495	8.021	1.924	3.683	10.751	3.479	11.346	3.676
Mean	69.9	542	295	232	303	259	64.1	119	358	112	366	123
Max	115	835	452	280	395	495	101	452	748	280	905	222
Min	24	103	185	195	260	99	33	35	128	55	112	64
Ac-ft	4,300	32,260	18,120	14,290	16,850	15,910	3,820	7,310	21,320	6,900	22,500	7,290

Cal yr 1966: Total 128,180 Mean 351 Max 1,270 Min 24 Ac-ft 254,200
Wtr yr 1967: Total 86,147 Mean 236 Max 905 Min 24 Ac-ft 170,900

8-2525. Costilla Creek above Costilla Dam, N. Mex.

Location.--Lat 36°53'50", long 105°15'20", in Sangre de Cristo Grant, on left bank 2 miles upstream from Costilla Dam and 17 miles southeast of Costilla, Taos County.

Drainage area.--25.1 sq mi.

Records available.--April 1937 to September 1967 (no winter records). Published as "above reservoir, near Costilla" 1937-51. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Concrete control since Sept. 17, 1965. Datum of gage is 9,429 ft above mean sea level, datum of 1929. Prior to July 9, 1940, at wooden control 660 ft downstream at datum 10.65 ft lower. July 9, 1940, to July 22, 1954, at concrete control 600 ft downstream at datum 8.87 ft lower. July 23, 1954, to June 16, 1959, 200 ft upstream at datum 1.41 ft higher. June 17, 1959, to Sept. 16, 1965, present site at datum 1.12 ft lower.

Extremes.--Maximum discharge during year, 56 cfs July 23 (gage height, 2.80 ft), from rating curve extended above 16 cfs on basis of slope-area measurement of peak flow; minimum determined, 0.88 cfs Oct. 14, result of freezeup.
1937-67: Maximum discharge, 3,870 cfs July 22, 1954 (gage height, 6.3 ft, from floodmarks, present site and datum), on basis of slope-area measurement of peak flow; minimum determined, 0.1 cfs Nov. 11, 1964, result of freezeup.
The flood in 1954 destroyed the gaging station and is highest known since about 1909, from information by local range rider.

Remarks.--Records good. A total of about 1,300 acres is irrigated above this station and Casias Creek near Costilla (see station 8-2530), proportion between streams varying with current conditions.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	2.0					-	2.5	5.5	2.9	7.0	17
2	2.6	-					-	2.0	6.0	3.3	9.4	15
3	2.6	-					-	2.5	7.2	3.3	6.7	17
4	2.6	-					-	2.5	6.5	3.4	6.9	16
5	2.6	-					-	2.7	6.0	3.2	7.2	13
6	2.6	-					-	2.7	6.7	2.8	6.5	16
7	2.5	-					-	2.6	5.5	3.2	7.2	12
8	2.5	-					-	2.7	4.9	2.4	11	12
9	2.5	-					-	2.8	4.6	2.1	17	12
10	2.4	-					-	2.8	4.4	2.2	33	12
11	2.5	-					-	2.7	4.4	3.4	24	11
12	2.6	-					-	2.6	4.1	6.4	25	8.4
13	2.4	-					-	2.6	3.6	3.6	26	7.2
14	2.4	-					-	2.7	3.4	4.1	23	6.9
15	2.6	-					-	2.6	3.2	4.1	21	6.9
16	2.7	-					-	2.7	3.7	15	28	6.5
17	3.4	-					-	2.7	9.8	8.1	22	6.5
18	3.0	-					-	2.7	7.8	6.9	21	6.2
19	2.8	-					-	2.9	9.0	6.0	20	8.7
20	2.7	-					-	3.2	6.7	5.8	18	6.7
21	2.6	-					-	3.2	6.0	5.8	16	6.0
22	2.4	-					-	3.2	4.2	6.0	12	5.1
23	2.4	-					-	3.3	4.2	13	12	4.6
24	2.6	-					-	3.9	3.6	7.2	12	4.7
25	2.6	-					-	4.2	3.6	12	11	6.0
26	2.6	-					3.9	6.0	3.6	6.7	12	7.4
27	2.6	-					3.9	5.5	3.4	4.9	12	7.7
28	2.6	-					3.5	9.0	3.2	3.9	12	5.3
29	2.6	-					3.4	8.6	3.3	3.7	22	4.7
30	2.5	-			- - - - -		3.0	5.0	3.1	3.7	32	4.2
31	2.5	- - - - -			- - - - -		- - - - -	6.0	- - - - -	4.2	25	- - - - -
Total	80.7	-					-	111.1	151.2	163.3	517.9	272.7
Mean	2.60	-					-	3.58	5.04	5.27	16.7	9.09
Max	3.4	-					-	9.0	9.8	15	33	17
Min	2.4	-					-	2.0	3.1	2.1	6.5	4.2
Ac-ft	160	-					-	220	300	324	1,030	541

Cal yr : Total Mean Max Min Ac-ft
Wtr yr : Total Mean Max Min Ac-ft

Peak discharge (base, 40 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-23	1430	2.80	56	8-16	1545	2.68	44
7-25	1415	2.59	41	8-29	2200	2.72	47
8-10	0230	2.77	50				

8-2530. Casias Creek near Costilla, N. Mex.

Location.--Lat 36°53'50", long 105°15'35", in Sangre de Cristo Grant, on left bank 200 ft downstream from road crossing, 2 miles upstream from Costilla Dam, and 17 miles southeast of Costilla, Taos County.

Drainage area.--16.6 sq mi.

Records available.--April 1937 to September 1967 (no winter records). Nov. 1-7, 1947, and Nov. 1-8, 13-16, 1948, discharge records have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder and concrete control. Datum of gage is 9,404 ft above mean sea level, datum of 1929. Prior to July 18, 1940, water-stage recorder and wooden control 100 ft downstream at datum 1.56 ft lower.

Extremes.--Maximum discharge during year, 51 cfs July 23 (gage height, 1.29 ft); minimum determined, 0.69 cfs Apr. 13, result of freezeup.
1937-67: Maximum discharge, 122 cfs June 11, 1957; maximum gage height recorded, 1.90 ft June 14, 1938 (backwater from Costilla Reservoir); minimum discharge determined, that of Apr. 13, 1967.

Remarks.--Records good. A total of about 1,300 acres is irrigated above this station and Costilla Creek above Costilla Dam (see station 8-2525), proportion between streams varying with current conditions.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	3.8					-	4.0	3.5	3.0	6.0	14
2	4.3	-					-	3.8	4.0	3.0	8.0	14
3	4.3	-					-	3.8	4.3	2.8	5.5	14
4	4.0	-					-	4.0	4.0	2.8	4.3	14
5	4.0	-					-	3.5	3.8	2.5	4.3	14
6	4.3	-					-	3.5	4.0	2.5	5.2	13
7	4.0	-					-	3.5	3.2	2.8	5.2	12
8	4.0	-					-	3.8	3.0	2.2	5.2	13
9	4.0	-					-	4.0	2.8	2.0	7.9	13
10	3.8	-					-	4.0	2.5	2.5	15	11
11	4.0	-					3.5	4.0	2.5	2.8	10	11
12	4.0	-					3.5	3.2	2.5	3.5	12	11
13	3.8	-					3.0	1.8	2.5	2.8	10	10
14	3.8	-					4.6	1.8	2.5	2.8	9.1	10
15	3.8	-					6.5	1.8	2.5	3.0	8.7	11
16	3.8	-					4.6	1.8	3.5	8.1	11	9.6
17	4.6	-					3.8	1.8	6.6	5.2	8.7	9.1
18	4.0	-					3.8	1.8	5.2	3.8	7.5	9.1
19	4.0	-					3.8	2.2	5.8	3.5	7.5	10
20	3.8	-					3.8	2.5	4.9	3.8	6.6	9.1
21	3.8	-					3.5	2.5	4.9	3.8	6.2	8.7
22	3.8	-					3.5	2.5	4.9	3.2	6.2	8.3
23	3.8	-					3.5	2.5	4.3	9.4	5.5	8.8
24	4.0	-					3.5	2.8	3.8	5.2	5.5	7.5
25	4.0	-					3.5	2.8	3.5	8.3	5.2	8.3
26	4.0	-					3.5	4.3	3.5	5.5	5.8	10
27	4.0	-					3.5	4.3	3.0	3.8	5.5	9.6
28	4.3	-					3.8	5.5	3.0	3.5	5.2	7.9
29	4.0	-					3.8	4.9	3.5	3.5	9.1	7.9
30	4.3	-			-----		4.0	4.0	3.5	3.5	16	7.0
31	4.3	-----			-----		-----	4.0	-----	4.0	21	-----
Total	124.9	-					-	100.7	111.5	119.1	248.9	315.9
Mean	4.03	-					-	3.25	3.72	3.84	8.03	10.5
Max	4.6	-					-	5.5	6.6	9.4	21	14
Min	3.8	-					-	1.8	2.5	2.0	4.3	7.0
Ac-ft	248	-					-	200	221	236	494	627

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-23	1430	1.29	51				

8-2535. Santistevan Creek near Costilla, N. Mex.

Location.--Lat 36°53'05", long 105°16'50", in Sangre de Cristo Grant, on left bank 200 ft upstream from road crossing, 0.9 mile upstream from Costilla Dam, and 16 miles southeast of Costilla, Taos County.

Drainage area.--2.15 sq mi.

Records available.--April 1937 to September 1967 (no winter records). Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 9,492 ft above mean sea level, datum of 1929. Prior to June 27, 1940, water-stage recorder and wooden control at same site at datum 0.99 ft lower.

Extremes.--Maximum discharge during year, 5.1 cfs July 10 (gage height, 0.64 ft); minimum determined, 0.14 cfs Apr. 30, result of freezeup.
1937-67: Maximum discharge recorded, 18 cfs Aug. 11, 1941, July 12, 1957; maximum gage height recorded, 1.73 ft Aug. 11, 1941; minimum discharge recorded, 0.10 cfs Nov. 13-17, 1948, Apr. 29, Nov. 1, 1963, Nov. 20-22, 1964.

Remarks.--Records good. No diversion above or below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.79	0.79					-	0.50	1.1	1.1	1.8	2.0
2	.73	-					-	.50	1.3	1.1	1.6	2.0
3	.73	-					-	.55	1.3	1.1	1.4	2.2
4	.73	-					-	.67	1.2	1.1	1.4	2.1
5	.67	-					-	.73	1.1	1.0	1.4	2.0
6	.67	-					-	.67	1.2	1.1	1.6	1.9
7	.67	-					-	.67	1.1	1.0	1.4	1.9
8	.67	-					-	.73	1.1	.93	1.6	2.0
9	.67	-					-	.79	1.1	.93	1.9	1.8
10	.67	-					-	.79	1.2	1.6	2.2	1.9
11	.67	-					-	.73	1.2	1.4	2.1	2.1
12	.61	-					0.40	.67	1.2	1.5	2.0	1.8
13	.55	-					.30	.67	1.2	1.1	2.0	1.9
14	.55	-					.55	.67	1.3	1.2	2.1	1.9
15	.73	-					.61	.67	1.3	1.4	2.0	1.9
16	.67	-					.61	.73	1.5	2.2	2.1	1.7
17	.73	-					.55	.73	1.6	1.9	2.0	1.7
18	.67	-					.55	.73	1.4	1.6	2.0	1.8
19	.67	-					.55	.73	1.4	1.6	2.0	2.0
20	.61	-					.55	.79	1.4	1.6	1.9	1.9
21	.67	-					.45	.79	1.4	1.5	2.0	1.9
22	.67	-					.50	.73	1.4	1.4	1.9	1.9
23	.73	-					.50	.73	1.3	1.4	1.9	1.9
24	.73	-					.55	.79	1.2	1.4	1.9	1.8
25	.73	-					.55	.79	1.2	1.5	1.8	1.8
26	.67	-					.55	1.3	1.2	1.4	1.9	1.7
27	.79	-					.55	1.1	1.1	1.4	1.8	1.6
28	.79	-					.61	1.3	1.1	1.4	1.8	1.4
29	.73	-					.61	1.3	1.2	1.4	2.2	1.4
30	.79	-			-----		.50	1.1	1.1	1.4	2.4	1.3
31	.79	-----			-----		-----	1.1	-----	1.5	2.4	-----
Total	21.55	-					-	24.75	37.4	42.16	58.5	55.2
Mean	0.695	-					-	0.798	1.25	1.36	1.89	1.84
Max	0.79	-					-	1.3	1.6	2.2	2.4	2.2
Min	0.55	-					-	0.50	1.1	0.93	1.4	1.3
Ac-ft	43	-					-	49	74	84	116	109

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

Peak discharge (base, 6 cfs).--No peak above base.

8-2539. Costilla Reservoir near Costilla, N. Mex.
(Formerly published as Costilla Lake near Costilla, N. Mex.)

Location.--Lat 36°52'35", long 105°16'45", on face of Costilla Dam on Costilla Creek in Sangre de Cristo Grant, 16 miles southeast of Costilla, Taos County.

Drainage area.--54.6 sq mi.

Records available.--May 1922 to September 1967. Records prior to 1961 published in WSP 1732.

Gage.--Inclined staff gage, painted on base of railroad rail on left side of control tower of Dam. Datum of gage is 107 ft above mean sea level, datum of 1929, leveling of 1964.

Extremes.--Maximum contents observed during year, 6,770 acre-ft May 15 (gage height, 9,486.2 ft); minimum, 2,170 acre-ft Aug. 8 (gage height, 9,463.2 ft).
1922-67: Maximum contents, 15,100 acre-ft June 30, 1940 (gage height, 9,511.4 ft); no contents October 1925 to February 1926, September 1956.

Remarks.--Lake is formed by earth-fill dam faced with broken stone. Storage began in 1920. Capacity, 15,700 acre-ft between gage heights 9,405.0 ft (bottom of lower intake) and 9,513.0 ft (crest of ungated spillway cut in natural rock). By order of New Mexico State Engineer (first issued in 1942) storage was limited to 14,540 acre-ft maximum, and 10,880 acre-ft for not to exceed 45 days (revised to 60 days in 1949). Diversions for irrigation of about 1,300 acres above Reservoir. Contents computed from intermittent gage readings and capacity table (based on original survey) furnished by New Mexico State Engineer.

Capacity table (gage height, in feet, and contents, in acre-feet)

9,463	2,140	9,471	3,440	9,479	5,050
9,465	2,430	9,473	3,810	9,481	5,500
9,467	2,750	9,475	4,210	9,484	6,220
9,469	3,090	9,477	4,620	9,487	6,980

Contents, in acre-feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	4,330	-	-	-	-	-	-	5,730	-	2,780	2,850
2	-	-	4,740	-	-	-	-	-	5,640	-	2,730	-
3	-	-	-	-	-	-	-	-	-	3,930	2,460	-
4	-	-	-	5,000	-	-	-	-	-	3,830	2,390	2,950
5	-	-	-	-	-	-	-	6,640	5,660	3,660	-	2,950
6	-	-	-	-	-	-	-	-	5,590	3,520	-	-
7	-	-	-	-	-	-	-	-	5,520	3,390	2,340	3,100
8	-	-	4,850	-	-	-	-	-	5,450	-	2,170	3,210
9	-	-	-	-	-	-	-	-	5,390	-	2,280	-
10	-	-	-	-	-	-	-	-	-	3,530	2,370	-
11	-	-	-	-	-	-	-	-	-	3,390	2,430	2,980
12	-	-	-	-	-	-	6,310	-	5,320	3,240	-	2,970
13	-	-	-	-	-	-	-	-	5,200	3,140	-	-
14	-	-	-	-	-	-	-	-	5,090	3,020	2,590	-
15	-	-	-	-	-	-	-	6,770	4,980	-	2,590	2,850
16	4,090	-	-	-	-	-	-	6,690	4,870	-	2,620	-
17	-	-	-	-	-	5,780	-	6,640	-	2,950	2,620	-
18	-	-	-	-	-	-	-	6,540	-	-	2,750	2,920
19	-	-	-	-	-	-	-	6,440	4,900	-	-	-
20	-	-	-	-	-	-	-	-	4,830	-	-	-
21	-	-	-	-	-	-	6,490	-	4,720	-	2,880	-
22	-	-	-	-	-	-	-	6,410	4,580	-	2,880	-
23	-	-	-	-	-	-	-	6,290	4,450	-	-	2,900
24	-	-	-	-	-	-	-	6,170	-	3,120	2,730	-
25	-	-	-	-	-	-	-	6,070	-	3,000	2,730	-
26	-	-	-	-	-	-	-	5,950	4,390	2,920	-	-
27	-	-	-	-	-	-	6,560	-	4,290	2,850	-	-
28	-	-	-	-	5,510	-	-	-	4,190	2,750	2,920	-
29	-	-	-	-	-	-	-	5,970	4,090	-	2,880	-
30	-	4,700	-	-	----------	-	6,580	5,880	3,990	-	-	2,980
31	4,300	----------	5,000	5,190	----------	6,050	----------	5,830	----------	2,770	2,830	----------
(†)	-	-	-	-	-	-	-	9,482.4	9,473.9	-	9,467.5	-
(‡)	+450	+400	+300	+190	+320	+540	+530	-750	-1,840	-1,220	+60	+150

Calendar year 1966..... † -2,790
Water year 1967..... † -870

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.
Note.--Contents interpolated Oct. 31, Nov. 30, Dec. 31, Jan. 31, Feb. 28, Mar. 31, Apr. 30, July 31, Sept. 30.

8-2540. Costilla Creek below Costilla Dam, N. Mex.

Location.--Lat 36°52'25", long 105°16'45", in Sangre de Cristo Grant, on left bank 125 ft downstream from Costilla Dam and 16 miles southeast of Costilla, Taos County.

Drainage area.--54.6 sq mi.

Records available.--April 1937 to September 1967 (no winter records 1937-44, 1948-49). Prior to October 1951, published as "below reservoir near Costilla." Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder and concrete control. Datum of gage is 9,290 ft above mean sea level, datum of 1929.

Average discharge.--21 years (1944-47, 1949-67), 16.3 cfs (11,800 acre-ft per year).

Extremes.--Maximum discharge during year, 85 cfs July 9-11 (gage height, 1.57 ft); minimum, 0.04 cfs Sept. 30.
1937-67: Maximum discharge, 286 cfs May 9,10, 1942 (gage height, 2.65 ft); no flow at times.

Remarks.--Records good. Flow regulated by Costilla Reservoir (see station 8-2539). Diversions for irrigation of about 1,300 acres above Reservoir.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.11	0.14	0.11	0.07	0.07	0.07	0.07	0.09	45	3.1	65	20
2	.09	.14	.11	.07	.07	.07	.07	.09	15	27	64	4.1
3	.09	.14	.11	.07	.07	.07	.07	.07	2.5	70	64	16
4	.09	.11	.10	.07	.07	.07	.07	.07	19	76	21	40
5	.09	.11	.09	.07	.07	.07	.07	.07	46	82	4.3	40
6	.09	.11	.08	.07	.07	.07	.07	.05	46	81	20	40
7	.09	.11	.07	.07	.07	.07	.07	.05	40	27	38	40
8	.11	.11	.07	.07	.07	.07	.07	.05	36	4.7	31	16
9	.14	.11	.07	.07	.07	.07	.07	.05	14	34	31	4.3
10	.14	.11	.07	.07	.07	.07	.07	.05	5.5	85	23	12
11	.17	.11	.07	.07	.07	.07	.07	.05	28	81	7.6	32
12	.17	.11	.07	.07	.07	.07	.07	.05	65	70	2.2	35
13	.20	.11	.07	.07	.07	.07	.07	.05	62	54	12	34
14	.17	.11	.07	.07	.07	.07	.07	.05	60	17	29	34
15	.24	.11	.07	.07	.07	.07	.07	23	60	4.3	29	13
16	.24	.11	.07	.07	.07	.07	.07	51	19	13	21	4.7
17	.24	.11	.07	.07	.07	.07	.07	54	4.1	14	17	10
18	.20	.11	.07	.07	.07	.07	.07	54	23	4.6	7.3	19
19	.20	.11	.07	.07	.07	.07	.07	20	56	4.7	3.5	19
20	.20	.11	.07	.07	.07	.07	.07	2.3	68	4.7	3.7	19
21	.20	.11	.07	.07	.07	.07	.07	25	75	4.7	13	19
22	.20	.11	.07	.07	.07	.07	.07	62	75	4.7	18	19
23	.20	.11	.07	.07	.07	.07	.09	62	24	26	18	19
24	.20	.11	.07	.07	.07	.07	.09	62	3.5	60	18	19
25	.20	.11	.07	.07	.07	.07	.09	60	24	58	7.9	19
26	.20	.11	.07	.07	.07	.07	.09	21	58	58	3.7	20
27	.20	.11	.07	.07	.07	.07	.11	5.2	58	56	20	20
28	.17	.11	.07	.07	.07	.07	.11	22	58	19	54	19
29	.17	.11	.07	.07	-	.07	.11	50	58	4.9	54	6.5
30	.17	.11	.07	.07	-----	.07	.09	48	19	28	54	.04
31	.17	-----	.07	.07	-----	.07	-----	46	-----	65	54	-----
Total	5.15	3.39	2.35	2.17	1.96	2.17	2.32	668.34	1,166.6	1,141.3	808.2	612.64
Mean	0.166	0.113	0.076	0.070	0.070	0.070	0.077	21.6	38.9	36.8	26.1	20.4
Max	0.24	0.14	0.11	0.07	0.07	0.07	0.11	62	75	85	65	40
Min	0.09	0.11	0.07	0.07	0.07	0.07	0.07	0.05	2.5	3.1	2.2	0.04
Ac-ft	10	6.7	4.7	4.3	3.9	4.3	4.6	1,330	2,310	2,260	1,600	1,220

Cal yr 1966 : Total 6,472.82 Mean 17.7 Max 117 Min 0 Ac-ft 12,840
Wtr yr 1967 : Total 4,416.59 Mean 12.1 Max 85 Min 0.04 Ac-ft 8,760

8-2545. Costilla Creek near Amalia, N. Mex.

Location.--Lat 36°52'33", long 105°23'22", in Sangre de Cristo Grant, on right bank 40 ft downstream from third bridge upstream from Amalia, 2 miles (revised) downstream from Latir Creek, 5⅝ miles (revised) southeast of Amalia, Taos County, and 10½ miles (revised) southeast of Costilla.

Drainage area.--152 sq mi.

Records available.--May 1949 to September 1959, April 1961 to September 1967 (no winter records).

Gage.--Water-stage recorder. Concrete control since Sept. 27, 1965. Datum of gage is 8,512 ft above mean sea level, datum of 1929. May 1949 to May 2, 1956, at site 40 ft upstream at datum 0.81 ft lower. May 3, 1956 to Sept. 27, 1965, at site 10 ft downstream at datum 1.81 ft lower.

Extremes.--Maximum discharge during year, 315 cfs July 12 (gage height, 2.93 ft), from rating curve extended above 110 cfs by logarithmic plotting; minimum recorded, 1.5 cfs May 1, result of freezeup.
1949-59, 1960-67: Maximum discharge recorded, 689 cfs Apr. 25, 1958; maximum gage height recorded, 3.85 ft May 13, 1958, site and datum then in use (backwater from debris); minimum discharge recorded, 1.4 cfs June 23, 1963.

Remarks.--Records good. Flow regulated by Costilla Reservoir (capacity, 15,700 acre-ft, original survey). Diversions for irrigation of about 1,300 acres above Costilla Reservoir.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1						-	11	62	10	75	44
2	6.7						-	13	44	17	74	24
3	6.2						-	13	26	69	73	28
4	6.5						-	12	31	74	47	52
5	7.2						-	12	63	81	21	50
6	7.2						-	12	66	81	25	49
7	-						-	11	57	52	51	48
8	-						-	12	51	18	44	39
9	-						-	13	37	22	45	24
10	-						-	13	21	78	51	23
11	-						-	13	30	83	37	47
12	-						-	13	77	83	26	51
13	-						-	12	74	57	29	50
14	-						-	13	70	32	48	48
15	-						-	18	70	15	46	36
16	-						-	53	46	25	42	20
17	-						-	61	25	36	35	22
18	-						13	61	27	20	29	32
19	-						14	42	70	16	23	32
20	-						13	16	78	16	25	31
21	-						12	22	84	16	26	30
22	-						12	67	84	14	33	30
23	-						12	69	49	32	33	30
24	-						12	69	14	57	32	30
25	-						12	69	18	58	26	31
26	-						11	54	64	59	20	32
27	-						13	27	64	54	27	32
28	-						14	34	64	37	57	30
29	-						14	70	64	19	60	23
30	-				- - - - -		12	64	39	26	67	11
31	-	- - - - -			- - - - -		- - - - -	64	- - - - -	78	67	- - - - -
Total	-	-	-	-	-	-	-	1,033	1,569	1,335	1,294	1,029
Mean	-	-	-	-	-	-	-	333	52.3	43.1	417	34.3
Max	-	-	-	-	-	-	-	70	84	83	75	52
Min	-	-	-	-	-	-	-	11	14	10	20	11
Ac-ft	-	-	-	-	-	-	-	2,050	3,110	2,650	2,570	2,040

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

8-2555. Costilla Creek near Costilla, N. Mex.

Location.--Lat 36°58'00", long 105°30'25", in Sangre de Cristo Grant, on right bank 70 ft downstream from bridge on State Road 196, half a mile upstream from diversion dam and 1.6 miles southeast of Costilla, Taos County.

Drainage area.--195 sq mi.

Records available.--March 1936 to September 1967 (no winter records 1936-41). Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Concrete control since Oct. 13, 1952. Altitude of gage is 7,900 ft (from topographic map). Prior to June 18, 1944, at site 200 ft downstream at different datum. June 18, 1944, to Sept. 30, 1964, at site 0.3 mile upstream at different datum.

Average discharge.--26 years (1941-67), 42.7 cfs (30,910 acre-ft per year).

Extremes.--Maximum discharge during year, 196 cfs Aug. 14 (gage height, 3.24 ft); minimum determined, 1.1 cfs Feb. 21, result of freezeup.
1936-67: Maximum discharge, 1,150 cfs May 11, 1942 (gage height, 5.37 ft, site and datum then in use); minimum determined, 0.6 cfs Mar. 13, 1965, result of freezeup.
The greatest flood known occurred in 1886, from information by local residents.

Remarks.--Records good except those for December thru February, which are poor. Regulation by Costilla Reservoir 20 miles upstream (capacity, 15,700 acre-ft, original survey). Diversions for irrigation of about 2,000 acres above station. Records of chemical analyses and water temperatures for water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	7.6	7.7	3.5	8.9	8.0	15	11	55	18	68	64
2	11	6.4	8.0	3.5	6.5	9.0	15	16	46	15	72	31
3	10	7.6	9.2	3.5	5.0	10	16	15	25	52	71	27
4	10	9.2	9.6	3.5	6.0	11	17	13	24	64	61	56
5	10	7.6	9.2	4.0	7.0	7.0	22	14	49	71	30	61
6	10	8.3	10	4.0	5.0	5.0	17	13	57	70	34	61
7	8.9	8.6	15	3.0	5.0	9.0	15	12	53	59	59	59
8	8.0	9.2	11	3.0	5.0	12	16	13	49	27	58	53
9	8.0	9.2	5.0	3.5	5.5	14	17	14	43	19	61	34
10	7.3	7.4	4.5	4.0	6.0	13	16	13	23	66	75	28
11	7.3	10	5.0	4.0	5.5	13	16	13	21	79	59	43
12	7.3	10	6.0	5.0	5.5	11	15	14	59	83	45	50
13	6.4	8.6	6.0	4.5	6.0	11	13	13	63	73	40	50
14	6.4	8.3	6.0	4.5	7.0	12	13	13	60	51	62	50
15	6.4	8.9	6.5	4.5	5.5	11	22	13	61	24	60	46
16	6.7	9.2	6.0	4.5	5.0	11	20	45	51	32	59	27
17	8.3	9.6	6.0	4.5	5.0	13	18	54	28	48	48	25
18	8.3	8.9	6.0	4.5	5.5	21	18	54	23	33	42	34
19	8.9	8.4	6.0	4.5	6.0	26	17	47	54	24	33	37
20	9.2	8.6	6.0	5.0	6.0	18	16	20	67	21	34	36
21	9.2	9.2	5.0	5.5	5.0	17	15	18	74	22	30	34
22	8.6	9.2	4.0	6.0	5.0	15	13	46	78	21	38	33
23	8.3	8.9	4.0	6.0	6.0	16	13	53	62	24	37	32
24	7.6	9.2	3.5	6.0	6.0	16	14	55	22	64	37	32
25	8.0	8.3	4.0	6.0	7.0	16	13	56	18	62	33	35
26	8.0	8.3	4.0	5.0	8.0	12	13	59	51	68	23	36
27	8.0	5.5	4.5	6.0	7.0	14	14	35	56	63	25	37
28	8.3	5.0	3.5	7.0	7.5	14	15	29	58	49	64	34
29	8.9	7.5	3.0	7.0	-	16	15	65	58	23	66	31
30	8.6	9.2	3.0	8.0	-----	13	14	60	50	19	76	19
31	8.6	-----	4.0	8.6	-----	10	-----	58	-----	66	81	-----
Total	265.5	251.9	191.2	152.1	168.4	404.0	473	954	1,438	1,410	1,581	1,195
Mean	8.56	8.40	6.17	4.91	6.01	13.0	15.8	30.8	47.9	45.5	51.0	39.8
Max	15	10	15	8.6	8.9	26	22	65	78	83	81	64
Min	6.4	5.0	3.0	3.0	5.0	5.0	13	11	18	15	23	19
Ac-ft	527	500	379	302	334	801	938	1,890	2,850	2,800	3,140	2,370

Cal yr 1966 : Total 12,759.7 Mean 35.0 Max 134 Min 3.0 Ac-ft 25,310
Wtr yr 1967 : Total 8,484.1 Mean 23.2 Max 83 Min 3.0 Ac-ft 16,830

Peak discharge (base, 250 cfs).--No peak above base.

8-2605. Costilla Creek below diversion dam, at Costilla, N. Mex.

Location.--Lat 36°58'03", long 105°31'00", in Sangre de Cristo Grant, on right bank 650 ft downstream from diversion dam and 1.1 miles southeast of Costilla, Taos County.

Drainage area.--197 sq mi.

Records available.--April 1952 to September 1967 (no winter records).

Gage.--Digital water-stage recorder with crest-stage gage and concrete control. Datum of gage is 7,861 ft above mean sea level, datum of 1929. Prior to Aug. 19, 1964, graphic water-stage recorder at same site and datum.

Extremes.--Maximum discharge recorded during year, 128 cfs Aug. 14 (gage height, 2.52 ft), from rating curve extended above 1.9 cfs by logarithmic plotting; minimum determined, 0.04 cfs July 23.
1952-67: Maximum discharge recorded, 525 cfs July 22, 1954; maximum gage height, 5.05 ft July 24, 1957; no flow Oct. 14, 1963.
The greatest flood known occurred in 1886, from information by local residents. Flood of May 11, 1942, probably exceeded 1,000 cfs, based on records for upstream station (see station 8-2555).

Remarks.--Records good below 2 cfs, fair above. Flow partly regulated by Costilla Reservoir about 21 miles upstream (capacity, 15,700 acre-ft, original survey), and by canal headgates or sluice gates at diversion dam. Diversions above station for irrigation of about 5,000 acres, 3,000 of which are below station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	.80						-	.31	.35	.28	.86	4.3
2	.80						-	.32	.37	.19	.86	.12
3	.80						-	.31	.33	.15	.76	.09
4	.70						-	.33	.30	.18	.60	1.5
5	.70						-	.34	.56	.25	.39	2.2
6	-						-	.34	.63	.24	1.9	1.9
7	-						-	.34	.53	.43	3.8	1.9
8	-						-	.34	.45	.23	6.9	1.4
9	-						-	.36	.40	.25	9.2	.94
10	-						-	.35	.29	.69	28	.71
11	-						-	.36	.27	.60	14	.63
12	-						-	.38	.43	4.1	2.0	.61
13	-						-	.38	.44	8.6	.75	.57
14	-						-	.38	.42	.69	13	.56
15	-						-	.41	.38	.12	7.8	.52
16	-						-	.33	.25	.14	6.6	.39
17	-						.15	.24	.22	.20	1.9	.30
18	-						.15	.26	.21	.10	.76	.45
19	-						.18	.23	.38	.10	.13	.41
20	-						.18	.38	.36	.11	.57	.26
21	-						.18	.37	.32	.10	.24	.24
22	-						.31	.56	.17	.08	.61	.23
23	-						.42	.52	.11	.33	.96	.16
24	-						.39	.48	.14	6.3	.83	1.0
25	-						.41	.50	.13	4.3	.74	1.2
26	-						.38	.58	.21	4.9	.77	1.1
27	-						.38	1.0	.23	1.3	.50	1.0
28	-						.38	.80	.21	.51	3.0	.89
29	-				------		.39	2.9	.27	.52	3.5	.87
30	-				------		.38	.37	.50	.72	6.2	.80
31	-	------			------		------	.37	------	1.0	8.9	------
TOTAL	-						-	15.14	9.86	37.71	127.03	27.25
MEAN	-						-	.49	.33	1.22	4.10	.91
MAX	-						-	2.9	.63	8.6	28	4.3
MIN	-						-	.23	.11	.08	.13	.09
AC-FT	-						-	30	20	75	252	54

8-2610. Costilla Creek at Garcia, Colo.

Location.--Lat 36°59'20", long 105°31'54", in Sangre de Cristo Grant, on left bank 200 ft downstream from old highway bridge, a quarter of a mile upstream from New Mexico-Colorado State line, and 0.6 mile south of Garcia.

Drainage area.--200 sq mi, approximately.

Records available.--June 1944 to September 1967 (no winter records).

Gage.--Water-stage recorder. Altitude of gage is 7,758 ft (from topographic map). Prior to Apr. 20, 1950, at site 1,000 ft downstream at datum about 2.6 ft lower.

Extremes.--Maximum discharge during year, 85 cfs Aug. 14 (gage height, 3.57 ft); no flow most of time.
1944-67: Maximum discharge, 460 cfs July 24, 1957 (gage height, 4.76 ft); no flow for many days most years.
The greatest flood known occurred in 1886, from information by local residents. Flood of May 11, 1942 probably reached a discharge of 1,000 cfs.

Remarks.--Records poor. Flow partly regulated by Costilla Reservoir about 23 miles upstream (capacity, 15,700 acre-ft, original survey). Diversions above station for irrigation of about 5,500 acres, 2,000 of which are below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-		0		0	0	1.1
2						-		0		0	0	0
3						-		0		0	0	0
4						-		0		0	0	0
5						-		0		0	0	0.05
6						-		0		0	.36	0
7						-		0		0	1.3	0
8						-		0		0	4.3	0
9						-		0		0	6.7	0
10						-		0		0	28	0
11						-		0		0	11	0
12						-		0		.42	.75	0
13						-		0		7.5	.04	0
14						-		0		0	9.6	0
15						-		0		0	6.3	0
16						-		0		0	5.6	0
17						-		0		0	.71	0
18						-		0		0	0	0
19						-		0		0	0	0
20						-		0		0	0	0
21						-		0		0	0	0
22						-		0		0	0	0
23						-		0		0	0	0
24						-		0		.73	0	0
25						-		0		.52	0	0
26						-		0		3.3	0	0
27						0		0		.15	0	0
28						0		0		0	.19	0
29					-	0		.70		0	0	0
30					- - - - -	0		0		0	1.8	0
31		- - - - -			- - - - -	0	- - - - -	0	- - - - -	0	2.9	- - - - -
Total	0	-	-	-	-	-	0	0.70	0	12.62	79.55	1.15
Mean	0	-	-	-	-	-	0	0.023	0	0.407	2.57	0.038
Max	0	-	-	-	-	-	0	0.70	0	7.5	28	1.1
Min	0	-	-	-	-	-	0	0	0	0	0	0
Ac-ft	0	-	-	-	-	-	0	1.4	0	25	158	2.3

Cal yr	: Total	Mean	Max	Min	Ac-ft
Wtr yr	: Total	Mean	Max	Min	Ac-ft

Peak discharge (base, 200 cfs).--No peak above base.

Principal diversions from Costilla Creek, New Mexico-Colorado

Records of discharge are collected at 7 gaging stations on 3 diversions from Costilla Creek. Each of these stations is equipped with a water-stage recorder (digital, as noted) and a Parshall flume. Water diverted is used for irrigation in the Sangre de Cristo Grant in New Mexico and Colorado below the gaging station on Costilla Creek near Costilla, N. Mex. Records collected during irrigation seasons only except for No. 8-2620.

8-2560. Acequia Madre at Costilla, N. Mex.--Lat 36°58'02", long 105°30'57", 275 ft downstream from diversion dam. Records available, May 1944 to September 1967. Acequia diverts from right bank of Costilla Creek. Digital recorder. Prior to July 23, 1964, graphic recorder.

8-2575. Cordillera ditch at Garcia, Colo.--Lat 36°59'42", long 105°31'39", 570 ft south of New Mexico-Colorado State line. Records available, June 1944 to September 1967. Ditch diverts from Acequia Madre for irrigation in Colorado. Digital recorder. Prior to July 22, 1964, graphic recorder.

8-2580. Cerro Canal at Costilla, N. Mex.--Lat 36°57'55", long 105°31'07", 1,400 ft downstream from diversion dam. Records available, April 1944 to September 1967. Canal diverts from left bank of Costilla Creek. Digital recorder. Prior to July 22, 1964, graphic recorder.

8-2585. Association ditch at Costilla, N. Mex.--Lat 36°57'38", long 105°32'03", 100 ft downstream from new diversion from Cerro Canal. Records available, May 1955 to September 1967. Ditch diverts from left bank of Cerro Canal.

8-2590. Cerro Canal near Jaroso, Colo.--Lat 36°59'42", long 105°34'35". Records available, June 1944 to September 1967. Flow measured is delivered to Colorado and to New Mexico branch of Cerro Canal. Digital recorder. Prior to Apr. 21, 1966, graphic recorder.

8-2595. New Mexico branch Cerro Canal near Jaroso, Colo.--Lat 36°59'44", long 105°34'47", 225 ft downstream from headgate. Records available, June 1944 to September 1967. Canal diverts from left bank of Cerro Canal for irrigation in New Mexico.

8-2620. Eastdale No. 1 intake canal near Jaroso, Colo.--Lat 37°02'40", long 105°37'00", 750 ft downstream from headgate. Records available, June 1944 to September 1967. Canal diverts from right bank of Costilla Creek to Eastdale Reservoir No. 1 for irrigation in Colorado.

Diversions, in acre-feet, water year October 1966 to September 1967

Month	8-2560. Acequia Madre	8-2575. Cordillera ditch	8-2580. Cerro Canal at Costilla	8-2585. Association ditch	8-2590. Cerro Canal near Jaroso	8-2595. New Mexico branch Cerro Canal	8-2620. Eastdale No. 1 intake canal
October	-	-	-	-	-	-	0
November	-	-	-	-	-	-	0
December	-	-	-	-	-	-	0
Calendar year 1966	-	-	-	-	-	-	1,450
January	-	-	-	-	-	-	0
February	-	-	-	-	-	-	0
March	-	-	-	-	-	-	244
April	9.9	-	926	27	690	-	512
May	319	4.7	1,530	301	757	74	247
June	627	20	2,200	796	829	105	0
July	628	28	2,090	674	892	122	0
August	699	86	2,170	714	959	182	2.9
September	404	77	1,910	889	588	87	37
Water year 1967	-	-	-	-	-	-	1,040

8-2630. Latir Creek near Cerro, N. Mex.

Location.--Lat 36°49'45", long 105°32'50", in S½SW¼ sec.15, T.30 N., R.13 E., on right bank at mouth of canyon, 100 ft upstream from heading of Cerro community ditch and 6 miles northeast of Cerro.

Drainage area.--10 sq mi, approximately.

Records available.--June 1937 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Records for April and May 1937, published in WSP 828, have been found to be unreliable (unknown portion of flow bypassing gage) and should not be used.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 8,280 ft (from topographic map).

Average discharge.--30 years, 6.14 cfs (4,450 acre-ft per year).

Extremes.--Maximum discharge during year, 66 cfs Aug. 6 (gage height, 1.94 ft); minimum, 0.29 cfs Apr. 13.
1937-67: Maximum discharge determined, 126 cfs June 18, 1965, from rating curve extended above 57 cfs by logarithmic plotting; maximum gage height recorded, 4.2 ft July 19, 1945 (log jam; discharge not determined, but may have exceeded 126 cfs); minimum discharge, 0.1 cfs Jan. 24, 25, 29, 1961.

Remarks.--Records good except those for the winter period, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	2.5	2.2	1.9	2.1	2.1	2.5	2.1	4.5	2.8	4.9	7.0
2	2.8	2.6	2.1	1.9	1.8	2.4	2.6	2.4	4.9	2.8	4.3	6.1
3	2.8	2.8	2.2	2.0	1.6	2.4	2.9	2.1	5.5	2.6	3.6	5.5
4	2.6	2.9	2.2	2.1	1.6	2.2	3.6	2.6	5.9	2.6	3.4	5.3
5	2.8	2.6	2.2	2.3	1.6	2.1	3.3	2.9	6.1	2.6	3.3	5.1
6	2.6	2.8	2.4	2.3	1.5	2.1	2.7	3.1	6.6	2.6	6.8	5.1
7	2.6	2.8	2.4	2.0	1.5	2.1	3.0	3.5	5.7	2.6	4.9	4.9
8	2.6	2.8	2.4	1.7	1.5	2.1	2.8	4.5	5.1	2.6	4.9	4.9
9	2.6	2.8	2.2	1.9	1.5	2.1	2.5	4.9	4.5	2.5	5.1	4.7
10	2.6	2.8	1.8	2.0	1.5	2.1	2.4	4.3	4.1	2.5	12	4.3
11	2.5	2.6	2.0	2.1	1.5	2.1	2.5	3.8	3.8	3.1	10	4.1
12	2.6	2.6	2.0	2.1	1.5	2.1	2.4	3.3	3.4	5.0	12	4.1
13	2.5	2.4	2.1	2.1	1.6	2.1	1.2	3.0	3.3	3.4	9.2	4.0
14	2.4	2.4	2.1	2.1	1.7	2.1	3.1	3.0	3.1	3.0	8.4	3.8
15	2.4	2.4	2.1	2.1	1.7	2.1	2.5	2.6	3.8	3.1	9.6	3.6
16	2.6	2.4	2.1	2.1	1.7	2.1	2.2	3.0	3.8	5.4	9.2	3.6
17	2.8	2.4	2.2	2.1	1.7	2.4	2.1	3.3	5.3	9.0	7.7	3.8
18	2.5	2.4	2.2	2.0	1.7	2.5	2.4	3.4	5.1	12	7.3	3.8
19	2.6	2.4	2.2	1.8	1.7	2.4	2.5	3.6	5.1	7.3	6.8	4.5
20	2.6	2.4	2.2	1.9	1.7	2.2	2.6	3.4	4.3	6.8	6.1	3.8
21	2.5	2.4	2.1	2.0	1.7	2.2	2.5	3.8	4.1	6.4	5.7	3.4
22	2.5	2.4	1.9	2.2	1.8	2.4	2.6	4.0	4.0	5.3	5.3	3.3
23	2.5	2.4	1.8	2.4	1.8	2.6	2.8	4.3	3.8	4.9	5.1	3.1
24	2.5	2.2	1.7	2.4	2.0	2.6	2.9	4.1	3.3	4.3	4.9	3.1
25	2.6	2.2	1.8	2.3	2.0	2.5	2.5	4.5	3.3	4.9	4.7	3.6
26	2.5	2.1	1.9	2.3	2.0	2.4	2.9	7.2	3.0	4.3	5.5	3.6
27	2.6	2.1	1.9	2.1	2.0	2.2	3.8	6.4	2.8	3.6	5.3	3.8
28	2.8	2.2	1.7	2.1	2.1	2.4	4.0	6.6	2.8	3.3	5.5	3.4
29	2.8	2.4	1.6	2.2	-	2.4	3.8	6.6	3.0	3.3	6.1	3.1
30	2.8	2.4	1.7	2.2	- - - - -	2.1	2.5	5.3	2.8	3.3	6.1	3.1
31	2.6	- - - - -	1.9	2.2	- - - - -	2.4	- - - - -	4.9	- - - - -	4.7	9.1	- - - - -
Total	81.0	74.6	63.3	64.9	48.1	70.0	82.1	122.5	126.8	132.6	202.8	125.5
Mean	2.61	2.49	2.04	2.09	1.72	2.26	2.74	3.95	4.23	4.28	6.54	4.18
Max	2.8	2.9	2.4	2.4	2.1	2.6	4.0	7.2	6.6	12	12	7.0
Min	2.4	2.1	1.6	1.7	1.5	2.1	1.2	2.1	2.8	2.5	3.3	3.1
Ac-ft	161	148	126	129	95	139	163	243	252	263	402	249

Cal yr 1966: Total 1,540.7 Mean 4.22 Max 31 Min 1.6 Ac-ft 3,060
Wtr yr 1967: Total 1,194.2 Mean 3.27 Max 12 Min 1.2 Ac-ft 2,370

Peak discharge (base, 40 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-6	1545	1.94	66				

Note.--No gage-height record Jan. 13 to Feb. 20.

8-2635. Rio Grande near Cerro, N. Mex.

Location.--Lat 36°44'05", long 105°41'05", in N½ sec.20, T.29 N., R.12 E., on left bank 4 miles southwest of Cerro, 5½ miles northwest of Questa, and 7 miles upstream from Red River.

Drainage area.--8,440 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--May 1948 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 7,100 ft (from river-profile map).

Average discharge.--19 years, 346 cfs (250,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,140 cfs Aug. 2 (gage height, 6.55 ft); minimum, 67 cfs Oct. 2.
1948-67: Maximum discharge, 9,740 cfs June 22, 1949 (gage height, 15.78 ft); minimum, 43 cfs Sept. 22, 1956.

Remarks.--Records good. Diversions above station for irrigation of about 620,000 acres in Colorado and 7,000 acres in New Mexico.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	153	341	202	289	422	147	78	353	159	166	162
2	69	149	357	199	282	444	147	81	289	147	297	188
3	69	190	375	204	271	489	148	88	267	139	290	220
4	73	524	373	206	284	492	142	90	287	130	268	230
5	76	685	366	213	295	479	135	89	348	123	273	232
6	74	735	359	216	287	377	133	89	446	117	253	218
7	77	758	375	216	253	282	129	85	595	119	250	220
8	85	794	388	216	302	344	129	84	788	109	235	196
9	84	815	485	214	290	348	128	78	760	107	293	175
10	83	842	330	211	292	393	118	78	678	105	293	171
11	87	845	268	204	290	386	99	85	555	105	359	170
12	111	860	230	202	289	362	101	108	515	105	542	164
13	112	863	260	206	281	305	98	127	429	115	880	164
14	104	875	281	211	287	285	101	107	328	100	902	162
15	99	884	289	214	290	261	98	93	269	100	818	155
16	97	902	298	220	289	246	107	94	238	118	818	152
17	104	899	285	230	300	230	107	93	237	117	791	149
18	116	628	274	238	302	220	105	98	246	111	682	139
19	128	477	285	232	302	214	107	95	246	138	526	138
20	136	438	305	236	302	217	107	88	284	184	430	136
21	141	416	312	240	309	210	103	84	344	259	375	141
22	150	401	297	240	305	232	105	91	551	287	334	141
23	151	426	281	247	305	217	106	95	658	235	292	134
24	149	392	257	235	320	213	104	87	495	208	249	132
25	156	405	224	252	320	206	102	89	384	183	234	128
26	161	407	207	265	336	202	99	199	326	194	200	125
27	159	399	269	273	353	186	95	270	297	184	180	116
28	152	380	242	268	382	182	89	428	241	146	179	111
29	139	364	229	266	-	176	85	426	193	143	176	114
30	158	348	223	274	-----	156	79	399	170	164	167	115
31	156	-----	213	279	-----	153	-----	433	-----	156	225	-----
Total	3,528	17,254	9,278	7,129	8,407	8,929	3,353	4,429	11,817	4,607	11,977	4,798
Mean	114	575	299	230	300	288	112	143	394	149	386	160
Max	161	902	485	279	382	492	148	433	788	287	902	232
Min	69	149	207	199	253	153	79	78	170	100	166	111
Ac-ft	7,000	34,220	18,400	14,140	16,680	17,710	6,650	8,780	23,440	9,140	23,760	9,520

Cal yr 1966: Total 140,518 Mean 385 Max 1,340 Min 69 Ac-ft 278,700
Wtr yr 1967: Total 95,506 Mean 262 Max 902 Min 69 Ac-ft 189,400

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-2	1715	6.55	1,140				

8-2645. Red River below Zwergle damsite, near Red River, N. Mex.

Location.--Lat 36°40'25", long 105°22'50", in NE¼SW¼ sec.7, T.28 N., R.15 E. (projected), on right bank 2,000 ft upstream from Goose Creek, 1.9 miles downstream from Bear Canyon, 2¾ miles southeast of Red River, and at mile 24.1.

Drainage area.--25.7 sq mi.

Records available.--April 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Datum of gage is 8,871.88 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 53 cfs July 25 (gage height, 2.53 ft); minimum recorded, 2.0 cfs Feb. 28, but may have been less during periods of ice effect.
1963-67: Maximum discharge, 216 cfs June 19, 1965 (gage height, 3.38 ft); minimum recorded, 0.7 cfs Feb. 8, 1965, but may have been less during periods of ice effect.

Remarks.--Records good except those for January and February, which are fair. No diversion above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	9.3	8.0	6.0	6.6	6.4	10	14	33	20	19	20
2	12	9.0	8.0	7.0	6.4	6.4	11	14	35	19	18	19
3	12	9.3	8.0	6.5	6.4	6.4	11	14	43	19	17	18
4	12	9.7	8.0	6.4	6.6	6.4	14	13	46	19	17	18
5	12	9.7	8.3	5.6	6.6	5.9	16	14	47	18	17	18
6	12	9.3	12	5.0	6.0	5.9	14	14	50	17	17	17
7	12	9.3	12	4.3	5.6	6.6	14	15	48	17	17	18
8	12	10	9.7	4.7	6.0	6.4	14	18	45	17	18	19
9	12	9.7	7.6	5.2	6.6	6.6	14	22	42	17	23	20
10	12	10	8.8	5.6	8.0	6.4	14	25	40	17	33	19
11	11	10	9.7	6.0	7.6	6.6	14	25	39	17	29	18
12	11	10	8.6	6.6	7.2	6.6	13	24	37	17	29	17
13	11	9.7	9.3	6.6	8.2	6.6	10	23	34	16	29	17
14	10	9.0	9.7	6.6	8.0	6.6	12	23	33	14	29	18
15	10	9.0	9.3	7.4	8.0	6.1	13	20	33	15	29	17
16	10	9.0	9.7	8.0	7.8	6.9	13	21	33	19	29	17
17	11	9.0	7.6	6.6	7.6	8.3	13	23	33	28	26	17
18	10	9.0	8.6	6.6	6.6	9.0	13	26	33	27	25	17
19	10	8.6	8.6	6.6	6.6	9.0	14	29	40	23	24	17
20	10	8.6	8.3	6.6	6.4	8.0	14	29	39	22	24	16
21	10	8.6	8.0	7.0	6.4	9.0	14	29	37	21	23	16
22	9.7	8.6	7.6	7.4	7.3	9.3	14	30	34	20	21	15
23	10	8.3	6.4	6.9	6.6	10	14	35	33	20	21	15
24	10	8.6	6.6	6.6	6.6	10	14	40	30	20	20	15
25	10	8.6	8.0	7.3	6.6	10	14	42	28	26	19	16
26	10	8.3	8.0	7.3	6.9	9.0	14	47	27	24	21	16
27	10	8.3	7.0	6.9	6.4	10	16	43	25	21	22	17
28	9.7	8.3	5.4	7.6	5.6	10	17	45	24	20	21	16
29	9.7	8.3	5.0	7.6	-	10	18	44	24	20	20	15
30	10	8.3	5.0	7.3	-----	9.7	17	40	22	19	21	14
31	10	-----	5.0	6.9	-----	9.7	-----	37	-----	19	21	-----
Total	334.1	271.4	251.8	202.7	191.2	243.8	413	838	1067	608	699	512
Mean	10.8	9.05	8.12	6.54	6.83	7.86	13.8	27.0	35.6	19.6	22.5	17.1
Max	13	10	12	8.0	8.2	10	18	47	50	28	33	20
Min	9.7	8.3	5.0	4.3	5.6	5.9	10	13	22	14	17	14
Ac-ft	663	538	499	402	379	484	819	1660	2120	1210	1390	1020

Cal yr 1966 : Total 6,843.2 Mean 18.7 Max 105 Min 3.5 Ac-ft 13,570
Wtr yr 1967 : Total 5,632.0 Mean 15.4 Max 50 Min 4.3 Ac-ft 11,170

Peak discharge (base, 65 cfs).--No peak above base.

8-2650. Red River near Questa, N. Mex.

Location.--Lat 36°42'10", long 105°34'03", in NE¼SE¼ sec.32, T.29 N., R.13 E. (projected), on left bank 1¼ miles upstream from Cabresto Creek and 1.5 miles east of Questa.

Drainage area.--113 sq mi.

Records available.--April to October 1910 and January to September 1911 (gage heights and discharge measurements only), October 1912 to September 1925 (fragmentary prior to September 1915), January to March 1926, September 1926 to September 1967. Published as "above Questa" January 1926 to September 1930, and as Rio Colorado near Questa October 1930 to September 1947. Monthly discharge only for some periods, published in WSP 1312. Previously published figures of discharge for October to December 1925 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Wood or concrete control since Mar. 20, 1936. Datum of gage is 7,451.92 ft above mean sea level, datum of 1929 (1957 adjustment). Apr. 5 to Oct. 14, 1910, and Jan. 27 to Sept. 4, 1911, staff gages at sites 1½ and 3½ miles upstream, respectively, each at different datum. Oct. 6, 1912, to Aug. 21, 1920, chain gage at site 200 ft upstream at various datums. Aug. 22, 1920, to June 16, 1921, staff gage at present site at datum 2.29 ft lower. June 17, 1921 to Apr. 30, 1934, water-stage recorder at present site at datum 2.55 ft lower and May 1, 1934, to Oct. 3, 1938, at datum 1.41 ft lower.

Average discharge.--54 years (1912-25, 1926-67), 55.0 cfs (39,820 acre-ft per year).

Extremes.--Maximum discharge during year, 224 cfs Aug. 4 (gage height, 3.49 ft); minimum, 4.4 cfs Jan. 7, result of freezeup.
1930-67: Maximum discharge, 886 cfs May 25, 1942, from rating curve extended above 450 cfs by logarithmic plotting; maximum gage height, 4.10 ft June 19, 1965; minimum discharge, 1.5 cfs Nov. 23, 1957.
The peak of June 15, 1921, may have equaled or exceeded the peak of May 25, 1942.

Remarks.--Records good except those for December to February, which are fair. Diversions for irrigation of a few hundred acres above station. Figures of discharge do not include flow in South ditch which diverts from left bank 1,500 ft upstream and bypasses gage for irrigation and stock water below. See tabulation below for monthly diversion of South ditch (record of daily discharge available in district files).
Tailings pipelines from Molybdenum Corp. of America refinery 5½ miles upstream also bypass gage on left bank. This water is pumped from wells located adjacent to Red River 3 miles upstream from gage. Tailings lines discharge into settling pond 3 miles downstream. Effluent from this pond enters Red River as surface water and is included in discharge at Red River at mouth, near Questa (see station 8-2670). See tabulation below for monthly discharge through tailings pipelines (discharge furnished by Molybdenum Corp. of America). Refinery began operations Jan. 1, 1966.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	16	13	9.2	13	11	13	17	55	29	34	38
2	16	14	13	9.6	13	11	13	18	55	27	35	36
3	16	14	13	8.1	12	11	14	17	66	27	30	35
4	17	15	14	7.8	13	11	14	14	69	27	41	35
5	17	14	14	7.2	12	11	15	15	72	27	40	36
6	18	14	15	6.9	12	9.0	15	15	82	27	37	34
7	18	15	18	5.9	13	9.5	15	17	88	25	36	34
8	17	15	15	6.0	12	10	16	19	85	27	34	34
9	16	15	10	7.0	13	10	16	22	77	25	44	36
10	15	14	10	8.0	14	9.9	16	26	68	25	73	34
11	16	14	10	9.0	13	11	16	29	63	25	63	32
12	17	15	10	10	13	11	16	30	58	27	65	29
13	17	14	10	10	12	11	15	29	54	29	61	28
14	16	14	10	10	12	10	15	30	50	26	61	28
15	16	14	9.9	10	11	9.9	17	29	51	25	61	27
16	15	14	10	12	11	10	17	27	49	34	56	27
17	17	15	10	10	10	11	16	28	52	53	49	27
18	17	15	10	10	11	12	16	30	48	53	44	26
19	18	15	10	10	11	12	16	33	53	40	43	27
20	22	15	10	10	11	12	16	34	57	39	45	25
21	22	14	10	11	10	12	18	34	58	38	43	24
22	21	14	10	12	10	12	18	34	54	39	41	22
23	20	14	9.0	11	11	12	18	40	51	36	37	22
24	19	14	8.0	11	11	13	18	45	46	36	34	21
25	19	14	8.6	11	11	13	19	51	42	45	33	23
26	19	14	9.9	13	11	12	17	61	39	46	34	25
27	19	13	9.6	13	10	12	16	65	38	36	40	25
28	19	14	7.2	14	11	13	17	68	35	34	37	24
29	19	13	5.9	14	-	15	18	70	34	32	36	23
30	18	13	7.2	14	-----	14	19	64	33	32	40	21
31	17	-----	9.2	13	-----	13	-----	58	-----	32	45	-----
Total	550	428	329.5	313.7	327	354.3	485	1069	1682	1023	1372	858
Mean	17.7	14.3	10.6	10.1	11.7	11.4	16.2	34.5	56.1	33.0	44.3	28.6
Max	22	16	18	14	14	15	19	70	88	53	73	38
Min	15	13	5.9	5.9	10	9.0	13	14	33	25	30	21
Ac-ft	1090	849	654	622	649	703	962	2120	3340	2030	2720	1700
(†)	40	71	14	0	0	67	145	114	177	123	125	88
(‡)	335	303	310	315	293	324	319	356	354	386	381	339

Cal yr 1966: Total 13,370.8 Mean 36.6 Max 207 Min 5.9 Ac-ft 26,520 † 587 ‡ 3,690
Wtr yr 1967: Total 8,791.5 Mean 24.1 Max 88 Min 5.9 Ac-ft 17,440 † 965 ‡ 4,020

Peak discharge (base, 160 cfs).--Aug. 4 (1930) 224 cfs (3.49 ft).

† Diversion, in acre-feet, by South ditch.
‡ Discharge, in acre-feet, through Molybdenum Corp. of America tailings pipelines.

8-2655. Llano ditch near Questa, N. Mex.

Location.--Lat 36°43'50", long 105°33'05" (revised), in SE¼SE¼ sec.21, T. 29 N., R.13 E., on left bank 150 ft downstream from heading, 3¼ miles northeast of Questa, and 3¾ miles upstream from mouth of Cabresto Creek.

Records available.--September 1943 to September 1967 (no winter records).

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 7,882 ft (revised) above mean sea level, datum of 1929.

Extremes.--1943-67: Maximum daily discharge recorded, 42 cfs June 6, 7, 1958; no flow for many days most years.

Remarks.--Records good. Ditch diverts water from right bank of Cabresto Creek for irrigation of about 800 acres near Questa.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	3.4	0	0.488	30
November	-	-	-	-
December	-	-	-	-
Calendar year 1966	-	-	-	-
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	0	0	0	0
May	.65	0	.036	2.2
June	.22	0	.015	.9
July	.08	0	.004	.2
August	12	0	1.20	74
September	0	0	0	0
Water year 1966-67	-	-	-	-

8-2660. Cabresto Creek near Questa, N. Mex.

Location.--Lat 36°43'45", long 105°33'10", in SE¼SE¼ sec.21, T.29 N., R.13 E., on right bank a quarter of a mile downstream from Llano ditch heading, 2½ miles downstream from Lake Fork, 3 miles northeast of Questa, and 3½ miles upstream from mouth.

Drainage area.--36.7 sq mi.

Records available.--September 1943 to September 1967.

Gage.--Digital water-stage recorder and crest-stage gage. Concrete control. Datum of gage is 7,845 ft above mean sea level (river-profile survey). Prior to July 10, 1964, graphic water-stage recorder at same site and datum.

Average discharge.--24 years, 9.64 cfs (6,980 acre-ft per year).

Extremes.--Maximum discharge during year, 24 cfs Aug. 29 (gage height, 1.60 ft); maximum gage height, 2.36 ft Dec. 29 (backwater from ice); minimum discharge, about 1.5 cfs Jan. 7, result of freezeup.
1943-67: Maximum discharge, 176 cfs June 8, 1957 (gage height, 4.44 ft); minimum, 0.44 cfs Dec. 2, 1950, result of freezeup. The high water of May 25, 1942, reached a stage of 4.18 ft (discharge probably exceeded 200 cfs).

Remarks.--Records good. Llano ditch (the only diversion above station) diverts from right bank a quarter of a mile above gage for irrigation of about 800 acres below. Flow regulated by Cabresto Reservoir (capacity, 732 acre-ft, after reconstruction in 1928) on Lake Fork 1 mile above its mouth.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	7.4	5.8	4.9	3.5	3.9	4.0	6.5	9.2	11	7.9	13	14
2	7.3	5.6	4.8	3.5	3.9	4.2	6.8	9.9	11	7.8	12	13
3	6.6	5.7	5.0	3.7	3.7	4.2	7.4	10	12	7.7	11	13
4	6.1	5.8	4.9	3.6	4.0	4.2	8.7	9.8	12	7.5	11	14
5	7.2	5.6	4.9	3.6	4.0	4.1	11	9.9	11	9.2	11	14
6	7.2	5.7	5.0	3.6	4.0	3.7	11	9.7	11	13	10	13
7	7.0	5.7	5.5	2.7	4.2	4.1	11	9.6	11	13	11	13
8	6.9	6.1	5.0	3.2	3.9	3.7	12	9.8	10	11	10	13
9	7.2	5.9	3.8	3.7	4.0	4.5	11	10	10	9.0	12	13
10	6.8	5.6	2.8	3.9	4.0	4.5	10	10	10	8.7	16	12
11	6.4	5.9	3.7	3.9	4.0	4.6	10	10	9.9	8.7	15	12
12	6.2	5.9	4.4	3.7	4.0	4.6	10	10	9.8	8.9	14	11
13	6.1	5.6	4.7	3.5	4.1	4.6	8.0	10	9.7	9.0	14	11
14	6.1	5.6	4.8	3.4	4.0	4.5	8.4	10	9.6	8.6	14	11
15	6.1	5.8	4.8	3.4	3.9	4.5	11	10	9.6	8.6	15	11
16	6.1	5.9	4.7	3.4	4.0	4.6	10	10	9.7	10	15	11
17	6.6	5.8	4.7	3.4	3.7	4.8	10	10	10	12	14	11
18	6.4	5.6	4.5	3.7	3.9	5.1	10	9.9	9.9	10	14	10
19	6.4	5.4	4.4	4.1	3.9	5.4	11	9.9	9.9	8.6	14	11
20	6.2	5.4	4.3	4.1	3.9	5.2	11	10	9.9	9.7	15	10
21	6.2	5.5	4.2	4.1	3.7	5.4	10	9.9	9.7	11	14	9.8
22	6.1	5.3	3.9	4.0	4.0	5.3	10	9.6	9.5	11	14	9.6
23	6.1	5.3	2.8	3.9	4.0	5.5	10	9.5	9.3	10	13	9.3
24	6.1	5.4	2.6	3.7	4.0	5.8	11	9.4	9.0	9.8	13	9.2
25	6.1	5.5	2.7	3.9	4.0	6.1	11	9.4	8.8	11	12	9.6
26	6.1	5.3	3.4	3.9	4.0	5.8	10	10	8.7	13	12	9.7
27	6.1	4.4	3.7	3.9	4.0	5.8	11	11	8.5	11	13	10
28	6.1	4.6	2.5	3.9	4.0	5.8	11	11	8.3	11	13	9.4
29	6.0	4.9	2.5	4.0	------	6.2	11	12	8.4	11	14	9.0
30	6.0	5.0	3.0	4.0	------	6.2	11	12	8.3	10	16	8.8
31	6.0	------	3.5	3.9	------	6.0	------	11	------	11	17	------
TOTAL	199.2	165.6	126.4	114.8	110.7	153.0	300.8	312.5	295.5	308.7	412	335.4
MEAN	6.43	5.52	4.08	3.70	3.95	4.94	10.0	10.1	9.85	9.96	13.3	11.2
MAX	7.4	6.1	5.5	4.1	4.2	6.2	12	12	12	13	17	14
MIN	6.0	4.4	2.5	2.7	3.7	3.7	6.5	9.2	8.3	7.5	10	8.8
AC-FT	395	328	251	228	220	303	597	620	586	612	817	665

CAL YR 1966: TOTAL 2,953.8 MEAN 8.09 MAX 28 MIN 2.5 AC-FT 5,860
WAT YR 1967: TOTAL 2,834.6 MEAN 7.77 MAX 17 MIN 2.5 AC-FT 5,620

8-2670. Red River at mouth, near Questa, N. Mex.

Location.--Lat 36°38'55", long 105°41'35" (revised), in SW¼NW¼ sec.20, T.28 N., R.12 E., on left bank 250 ft upstream from Rio Grande and 6.5 miles southwest of Questa.

Drainage area.--190 sq mi.

Records available.--October 1950 to September 1967. Monthly discharge only for October and November 1950, published in WSP 1732.

Gage.--Water-stage recorder. Altitude of gage is 6,600 ft (from topographic map).

Average discharge.--17 years, 79.5 cfs (57,560 acre-ft per year).

Extremes.--Maximum discharge during year, 189 cfs July 24 (gage height, 3.38 ft); minimum, 38 cfs Feb. 8.
1950-67: Maximum discharge, 730 cfs Aug. 12, 1964 (gage height, 6.05 ft); minimum, 29 cfs Feb. 13, 1965.

Remarks.--Records good. Diversions for irrigation of about 3,000 acres above station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	63	52	49	49	48	46	54	94	71	66	78
2	60	59	58	49	47	48	46	57	92	74	73	73
3	68	58	62	52	48	47	46	54	98	74	81	69
4	62	58	58	49	48	47	47	52	102	65	76	69
5	59	55	62	49	49	49	49	49	105	65	82	70
6	55	59	57	52	49	46	49	48	111	62	78	72
7	53	55	58	52	49	47	50	49	113	60	77	77
8	52	54	54	50	45	44	49	49	109	62	70	72
9	53	55	47	51	46	49	46	52	103	61	77	79
10	53	52	41	49	51	52	45	58	97	61	104	74
11	55	52	40	46	52	52	45	62	94	57	96	73
12	55	51	40	47	51	49	44	64	90	58	96	71
13	58	52	41	48	52	48	47	63	89	61	91	69
14	55	52	43	48	52	47	52	64	86	59	95	72
15	56	54	46	48	49	46	54	62	86	60	91	70
16	58	56	48	48	49	45	52	60	87	67	89	71
17	62	59	49	47	49	47	46	62	88	91	85	73
18	56	58	49	46	50	45	46	64	87	98	85	72
19	53	54	49	47	53	46	47	68	89	85	84	72
20	54	54	45	49	52	49	48	70	94	87	85	72
21	53	50	46	55	49	48	48	70	95	85	84	73
22	53	50	48	52	49	46	49	74	91	85	80	69
23	54	51	46	46	50	46	49	77	90	82	73	67
24	57	52	47	52	50	47	52	82	88	85	73	66
25	58	54	48	52	49	49	52	87	86	80	66	70
26	58	54	46	51	49	49	52	96	85	90	64	69
27	59	52	45	51	48	50	51	103	85	74	69	69
28	58	52	44	55	46	46	52	109	84	70	70	69
29	58	53	46	54	-	49	55	115	84	70	71	67
30	58	54	50	49	-----	48	53	107	78	67	77	63
31	59	-----	50	48	-----	46	-----	99	-----	65	83	-----
Total	1,756	1,632	1,515	1,541	1,380	1,475	1,467	2,180	2,780	2,231	2,491	2,130
Mean	56.6	54.4	48.9	49.7	49.3	47.6	48.9	70.3	92.7	72.0	80.4	71.0
Max	68	63	62	55	53	52	55	115	113	98	104	79
Min	52	50	40	46	45	44	44	48	78	57	64	63
Ac-ft	3,480	3,240	3,000	3,060	2,740	2,930	2,910	4,320	5,510	4,430	4,940	4,220

Cal yr 1966: Total 28,778 Mean 78.8 Max 260 Min 40 Ac-ft 57,080
Wtr yr 1967: Total 22,578 Mean 61.9 Max 115 Min 40 Ac-ft 44,780

Peak discharge (base, 220 cfs).--No peak above base.

8-2675. Rio Hondo near Valdez, N. Mex.

Location (revised).--Lat 36°32'30", long 105°33'20", in Carson National Forest, on right bank 500 ft upstream from first diversion, a quarter of a mile upstream from Forest Service boundary, 1½ miles east of Valdez, Taos County, 4 miles downstream from South Fork, and 9 miles upstream from mouth.

Drainage area.--36.2 sq mi.

Records available.--August 1934 to September 1967.

Gage.--Water-stage recorder. Concrete control since Oct. 28, 1938. Datum of gage is 7,654 ft (revised) above mean sea level, datum of 1929. Prior to Oct. 28, 1938, at datum 1.92 ft lower. June 29, 1964 to Aug. 3, 1966, digital water-stage recorder at present site and datum.

Average discharge.--33 years, 35.6 cfs (25,770 acre-ft per year).

Extremes.--Maximum discharge during year, 82 cfs May 29, 30, June 4 (gage height, 2.47 ft); maximum gage height, 4.27 ft Jan. 4 (ice jam); minimum discharge recorded, 6.8 cfs Mar. 8, result of freezeup.
1934-67: Maximum discharge, 541 cfs May 13, 1941, from rating curve extended above 300 cfs by logarithmic plotting; maximum gage height, that of Jan. 4, 1967 (ice jam); minimum discharge, about 1 cfs Jan. 27, 1942, result of freezeup.

Remarks.--Records good except those for December to February, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	15	13	8.0	12	10	18	27	72	34	33	45
2	19	15	13	8.0	11	11	19	27	72	34	33	40
3	19	15	13	9.0	12	11	22	27	75	32	30	35
4	19	15	14	10	12	11	24	27	78	32	30	35
5	18	14	14	11	12	11	28	27	73	32	30	35
6	18	14	17	12	11	10	27	27	77	30	33	30
7	18	15	18	11	11	11	25	28	75	29	34	30
8	18	15	15	10	11	10	26	29	71	29	32	30
9	17	15	15	10	11	11	26	36	68	28	36	30
10	17	14	12	11	12	11	25	42	64	28	52	30
11	17	15	13	11	11	11	24	44	63	27	53	29
12	17	14	14	11	11	11	24	44	58	27	64	28
13	16	14	14	11	11	12	21	43	56	27	61	28
14	15	14	14	11	11	12	23	43	55	26	58	27
15	16	14	13	11	11	12	23	42	55	26	58	27
16	16	14	14	11	11	12	22	38	55	30	58	27
17	16	14	14	11	10	12	21	38	53	47	55	27
18	16	13	13	11	10	14	22	42	50	46	53	27
19	16	13	13	12	10	15	22	49	56	38	52	27
20	16	13	13	12	10	14	24	52	52	36	50	27
21	16	13	13	11	9.0	15	24	50	49	36	50	26
22	15	13	13	11	9.0	15	24	52	47	34	49	26
23	15	13	11	11	9.0	16	24	53	47	33	47	26
24	15	14	9.0	11	9.7	17	25	58	46	33	44	26
25	15	14	10	11	9.7	18	25	64	46	38	43	26
26	15	14	10	12	9.7	17	24	70	46	37	43	26
27	15	12	10	12	9.7	17	26	71	44	36	42	26
28	15	13	8.0	11	10	17	27	73	43	35	39	25
29	15	13	7.0	11	-	18	30	77	42	34	38	24
30	15	13	7.0	11	-----	18	30	75	38	34	40	23
31	15	-----	8.0	12	-----	17	-----	71	-----	33	45	-----
Total	510	417	385.0	336.0	296.8	417	725	1446	1726	1021	1385	868
Mean	16.5	13.9	12.4	10.8	10.6	13.5	24.2	46.6	57.5	32.9	44.7	28.9
Max	20	15	18	12	12	18	30	77	78	47	64	45
Min	15	12	7.0	8.0	9.0	10	18	27	38	26	30	23
Ac-ft	1010	827	764	666	589	827	1440	2870	3420	2030	2750	1720

Cal yr 1966 : Total 11,357.0 Mean 31.1 Max 120 Min 7.0 Ac-ft 22,530
Wtr yr 1967 : Total 9,532.8 Mean 26.1 Max 78 Min 7.0 Ac-ft 18,910

Peak discharge (base, 100 cfs).--No peak above base.

8-2685. Arroyo Hondo at Arroyo Hondo, N. Mex.
(Formerly Rio Hondo at Arroyo Hondo, N. Mex.)

Location.--Lat 36°31'55", long 105°41'05", in Arroyo Hondo Grant (revised), on right bank 1 mile downstream from Arroyo Hondo and 1¼ miles upstream from mouth.

Drainage area.--65.6 sq mi.

Records available.--April 1910 to June 1912, fragmentary (gage heights and discharge measurements only), July 1912 to December 1928, and January 1932 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Published as "near Arroyo Hondo" prior to 1928.

Gage.--Water-stage recorder. Concrete control since Aug. 12, 1938. Datum of gage is 6,679 ft above mean sea level, datum of 1929. Prior to Feb. 29, 1928, staff gage at site 1.1 miles downstream at different datums. Feb. 29 to Dec. 31, 1928, and Jan. 21, 1932 to Aug. 13, 1934, staff gage at present site at datum 0.4 ft lower. Aug. 13, 1934 to Aug. 11, 1938, water-stage recorder at site half a mile downstream at different datum. Aug. 12, 1938 to Sept. 10, 1963, water-stage recorder on left bank at present datum. June 12, 1964 to Aug. 17, 1966, digital water-stage recorder at present site and datum.

Average discharge.--51 years (1912-28, 1932-67), 28.3 cfs (20,490 acre-ft per year).

Extremes.--Maximum discharge during year, 336 cfs Aug. 30 (gage height, 4.35 ft), from rating curve extended above 71 cfs on basis of slope-area measurement at gage height 4.30 ft; minimum, 6.4 cfs Apr. 4.
1938-67: Maximum discharge, 1,060 cfs July 19, 1948 (gage height, 3.75 ft), from rating curve extended above 200 cfs by logarithmic plotting; minimum, 3.8 cfs Aug. 1, 6, 1963.
Maximum gage height observed, 5.45 ft (site and datum then in use) Aug. 23, 1935 (discharge uncertain, but probably exceeded 1,100 cfs). A minimum daily discharge of 3 cfs occurred Oct. 19, 1912 (statement in WSP 328 that there was no flow in January and much of February 1912 is believed erroneous). Discharge not determined for the major floods of Oct. 6, 1911, Sept. 1, 1932, and July 22, 1934.

Remarks.--Records good except those above 50 cfs, which are poor. Diversions above station for irrigation of about 2,500 acres.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	7.9	8.1	14	18	14	13	10	33	9.6	9.0	40
2	7.4	7.9	8.1	14	18	14	13	13	33	11	10	37
3	7.4	8.1	8.3	13	17	15	10	10	39	10	10	33
4	7.2	8.1	9.0	14	18	17	6.9	9.6	41	9.3	9.3	28
5	7.4	8.1	8.8	18	18	17	7.6	9.3	41	9.0	8.8	29
6	7.2	8.1	9.6	19	17	16	7.6	9.6	43	9.3	9.0	27
7	7.4	8.1	15	14	19	17	7.8	7.8	39	9.6	9.3	27
8	7.4	8.8	11	13	16	16	7.9	7.4	36	9.0	10	24
9	7.4	9.3	9.3	15	18	17	7.9	7.2	32	8.6	16	20
10	7.4	8.6	12	17	17	16	8.8	7.2	29	8.3	40	19
11	7.4	8.6	20	18	16	16	7.9	7.4	29	8.3	39	18
12	7.6	9.3	21	18	16	14	7.6	7.8	24	8.6	49	17
13	7.6	9.0	21	19	17	14	9.6	7.6	16	8.1	48	19
14	7.4	8.6	22	19	18	14	13	7.4	15	8.1	47	19
15	7.4	8.8	22	19	18	13	11	7.0	14	9.8	47	19
16	7.8	8.8	20	19	17	12	9.8	6.9	14	12	47	18
17	9.8	8.8	20	19	17	11	9.3	7.0	13	13	46	18
18	7.9	8.8	20	17	17	12	7.8	7.0	14	13	45	18
19	7.9	8.8	20	17	17	14	7.4	6.7	15	11	45	17
20	7.9	8.8	20	18	16	12	7.4	7.0	16	12	44	16
21	7.8	8.8	20	18	16	12	8.1	8.6	16	23	42	15
22	7.8	8.6	19	18	16	11	8.1	9.0	16	27	39	12
23	7.6	8.6	16	18	16	12	7.6	8.3	16	22	29	12
24	7.6	8.8	13	18	16	16	7.0	10	14	14	20	12
25	7.6	9.0	15	18	17	18	6.9	17	12	15	15	15
26	7.6	8.8	17	17	17	14	6.9	34	11	14	20	16
27	8.6	8.3	18	17	16	11	6.9	33	11	12	25	16
28	10	8.3	13	18	14	13	7.0	38	11	12	22	18
29	10	8.3	11	18	-	14	7.4	40	10	9.0	23	19
30	10	8.3	11	18	-----	14	7.9	38	9.8	8.6	40	17
31	9.3	-----	12	19	-----	13	-----	37	-----	10	43	-----
Total	246.2	257.1	470.2	531	473	439	255.1	435.8	662.8	364.2	906.4	615
Mean	7.94	8.57	15.2	17.1	16.9	14.2	8.50	14.1	22.1	11.7	29.2	20.5
Max	10	9.3	22	19	19	18	13	40	43	27	49	40
Min	7.2	7.9	8.1	13	14	11	6.9	6.7	9.8	8.1	8.8	12
Ac-ft	488	510	933	1,050	938	871	506	864	1,310	722	1,800	1,220

Cal yr 1966: Total 6,146.7 Mean 16.8 Max 75 Min 7.2 Ac-ft 12,190
Wtr yr 1967: Total 5,655.8 Mean 15.5 Max 49 Min 6.7 Ac-ft 11,220

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-21	1700	4.30	323	8-30	1500	4.35	336

8-2687. Rio Grande near Arroyo Hondo, N. Mex.

Location.--Lat 36°32'05", long 105°42'35", in NW¼ sec.31, T.27 N., R.12 E., on right bank 350 ft downstream from Rio Hondo, 400 ft downstream from State Road 111 bridge, 2⅛ miles west of Arroyo Hondo and 11⅝ miles northwest of Taos.

Drainage area.--8,760 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--February 1963 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 6,460 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,760 cfs Aug. 12 (gage height, 3.65 ft); minimum, 173 cfs Oct. 2.
1963-67: Maximum discharge, 4,400 cfs June 22, 1965 (gage height, 5.81 ft); minimum, 136 cfs Aug. 2, 1963.

Remarks.--Records excellent. Diversions above station for irrigation of about 620,000 acres in Colorado and 15,000 acres in New Mexico.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	178	265	461	327	423	540	259	185	554	288	288	337
2	180	265	474	316	419	570	259	193	474	302	361	319
3	185	268	506	312	407	612	259	195	453	268	490	360
4	180	550	506	316	411	623	249	198	470	256	407	375
5	180	760	502	319	432	617	246	190	520	243	423	383
6	183	851	488	334	423	544	243	190	606	237	403	379
7	180	879	506	335	383	423	240	188	772	237	387	387
8	185	913	516	330	415	484	237	183	955	228	375	368
9	188	934	590	334	427	466	237	183	976	223	415	327
10	185	955	530	334	419	511	228	185	892	214	502	327
11	188	969	444	323	436	535	217	193	760	208	520	316
12	208	990	356	323	432	511	211	208	686	214	752	312
13	217	990	387	327	423	444	208	246	606	217	969	302
14	208	990	411	334	427	415	214	234	497	220	1,080	305
15	206	1,000	432	341	432	383	220	214	440	208	1,010	295
16	203	1,020	423	349	419	364	217	211	399	237	997	291
17	214	1,040	419	356	436	341	214	208	399	262	969	288
18	217	828	415	368	440	330	211	214	403	265	872	281
19	228	617	411	368	444	323	208	220	403	268	722	281
20	240	559	419	368	444	327	211	214	440	295	623	278
21	243	535	432	379	440	323	208	211	461	411	559	278
22	252	520	427	379	444	330	208	217	656	440	506	278
23	262	540	383	383	440	334	211	226	811	407	453	265
24	259	516	375	371	457	327	208	226	692	371	403	256
25	265	525	334	379	457	327	208	231	549	341	375	262
26	271	530	334	403	466	323	206	327	484	356	349	256
27	271	520	356	407	479	302	198	436	453	330	330	252
28	265	506	379	411	502	291	193	580	407	291	323	246
29	249	488	352	403	-	291	188	645	352	262	327	243
30	262	474	337	407	-----	278	185	590	312	278	361	243
31	265	-----	330	411	-----	265	-----	612	-----	291	387	-----
Total	6,817	20,797	13,235	11,047	12,177	12,754	6,601	8,353	16,882	8,668	16,938	9,090
Mean	220	693	427	356	435	411	220	269	563	280	546	303
Max	271	1,040	590	411	502	623	259	645	976	440	1,080	387
Min	178	265	330	312	383	265	185	183	312	208	288	243
Ac-ft	13,520	41,250	26,250	21,910	24,150	25,300	13,090	16,570	33,480	17,190	33,600	18,030

Cal yr 1966: Total 196,641 Mean 539 Max 1,540 Min 178 Ac-ft 390,000
Wtr yr 1967: Total 143,359 Mean 393 Max 1,080 Min 178 Ac-ft 284,300

Peak discharge (base, 1,400 cfs).--Aug. 12 (1800) 1,760 cfs (3.65 ft).

8-2690. Rio Pueblo de Taos near Taos, N. Mex.

Location (revised).--Lat 36°26'20", long 105°30'10", in SW¼SE¼ sec.36, T.26 N., R.13 E., on right bank 2½ miles east of Taos Pueblo, 4½ miles northeast of Taos, and 6 miles upstream from Rio Lucero.

Drainage area.--66.6 sq mi.

Records available (corrected).--March to December 1910 (discharge measurements only). December 1910 to December 1916, January 1940 to December 1951. Water year 1952-62 (annual maximum only). October 1962 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Concrete control since Nov. 20, 1962. Altitude of gage is 7,400 ft (from topographic map). Prior to Dec. 19, 1910, staff gage, and Dec. 19, 1910 to Dec. 2, 1916, water-stage recorder (pressure type) at same site at different datums. Jan. 31, 1940 to Dec. 31, 1951, water-stage recorder and May 8, 1952 to Nov. 19, 1962, crest-stage gage 0.2 mile upstream at different datums.

Average discharge.--22 years (1910-16, 1940-51, 1962-67), 30.1 cfs (21,790 acre-ft per year).

Extremes.--Maximum discharge during year, 59 cfs Aug. 16 (gage height, 1.43 ft); maximum gage height, 1.79 ft Dec. 29 (ice jam); minimum discharge, 2.2 cfs Jan. 10, result of freezeup.
1910-16, 1940-67: Maximum discharge, 970 cfs May 14, 1941 (gage height, 3.90 ft, from floodmark, site and datum then in use), from rating curve extended above 290 cfs by logarithmic plotting; minimum (except 1952-62), about 0.9 cfs Jan. 9, 1964, result of freezeup.

Remarks.--Records good except those for December and January, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	7.0	6.4	4.5	7.3	7.7	20	30	38	12	12	29
2	9.2	6.7	6.1	4.5	7.0	8.0	20	29	39	12	12	28
3	8.8	7.7	6.7	5.0	6.7	8.8	23	27	40	12	11	27
4	8.8	8.0	7.0	5.5	6.7	9.2	26	25	41	11	12	28
5	8.8	7.3	7.3	6.0	7.0	8.8	35	24	41	12	12	28
6	8.4	7.7	9.2	6.0	7.7	8.0	34	24	41	11	17	27
7	8.0	7.0	23	4.5	6.7	8.8	32	24	40	10	14	29
8	8.0	8.0	14	4.5	6.7	8.0	32	28	39	11	14	30
9	7.7	8.4	7.3	4.5	8.4	8.4	31	32	35	9.5	17	42
10	7.7	7.7	5.4	5.0	8.0	9.2	28	36	32	9.2	30	38
11	7.7	8.0	5.5	5.5	6.7	11	28	39	30	9.2	38	34
12	9.2	7.7	5.5	6.0	7.3	10	27	36	28	9.5	51	30
13	8.0	7.3	5.5	6.0	7.7	10	20	34	26	10	46	28
14	7.7	7.3	6.0	6.0	6.7	10	29	33	24	8.8	42	26
15	7.7	7.7	6.0	6.0	6.7	10	28	30	23	8.4	41	24
16	7.3	7.7	6.0	6.0	6.4	10	25	28	22	10	53	22
17	8.0	7.3	6.0	5.5	7.0	12	24	28	23	22	47	21
18	8.4	7.3	6.5	5.5	7.7	15	25	29	22	24	42	20
19	8.0	6.7	7.0	6.0	7.0	20	29	32	27	18	39	19
20	8.0	7.0	7.0	6.7	6.7	17	31	34	23	17	38	18
21	7.3	7.0	7.0	6.7	6.4	16	31	32	21	17	34	17
22	7.0	7.0	6.0	6.7	6.4	16	30	31	20	17	31	16
23	7.0	7.0	6.0	6.4	7.0	18	29	32	19	15	29	16
24	7.0	7.0	6.0	6.4	6.7	20	29	35	17	14	28	15
25	7.3	7.0	6.0	6.4	6.7	20	29	40	16	14	25	16
26	7.3	7.0	6.0	6.7	7.0	17	28	46	15	14	27	16
27	7.3	5.1	5.0	7.0	7.0	17	28	47	14	12	27	17
28	7.0	5.8	4.0	6.0	7.0	18	30	47	14	12	26	16
29	7.0	6.4	4.0	6.0	-	21	33	48	14	11	26	14
30	7.0	7.0	4.0	6.7	-----	20	34	46	14	11	28	14
31	7.0	-----	4.5	6.7	-----	19	-----	41	-----	13	32	-----
Total	242.8	215.8	211.9	180.9	196.3	411.9	848	1,047	798	396.6	901	705
Mean	7.83	7.19	6.84	5.84	7.01	13.3	28.3	33.8	26.6	12.8	29.1	23.5
Max	9.2	8.4	23	7.0	8.4	21	35	48	41	24	53	42
Min	7.0	5.1	4.0	4.5	6.4	7.7	20	24	14	8.4	11	14
Ac-ft	482	428	420	359	389	817	1,680	2,080	1,580	787	1,790	1,400

Cal yr 1966: Total 7,250.5 Mean 19.9 Max 96 Min 4.0 Ac-ft 14,380
Wtr yr 1967: Total 6,155.2 Mean 16.9 Max 53 Min 4.0 Ac-ft 12,210

Peak discharge (base, 70 cfs).--No peak above base.

8-2710. Rio Lucero near Arroyo Seco, N. Mex.

Location.--Lat 36°30'30", long 105°31'50" (revised), in Antoine Leroux Grant, on right bank 200 ft upstream from diversion dam for Tenorio and Indian ditches, 2 miles southeast of Arroyo Seco, Taos County, and 7½ miles northeast of Taos.

Drainage area.--16.6 sq mi.

Records available.--April to December 1910 (discharge measurements and occasional gage heights), January 1911 to September 1915, March to December 1916 (fragmentary), October 1933 to December 1951, May 1952 to November 1962 (annual maximum only), October 1962 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Published as "near Taos," 1910-15. Fragmentary records for October 1915 to February 1916, published in WSP 438, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Concrete control since Nov. 21, 1962. Datum of gage is 8,051.44 ft above mean sea level, datum of 1929. April to Dec. 17, 1910, staff gage and Dec. 17, 1910 to Dec. 31, 1916, pressure-type water-stage recorder at site 50 ft downstream at different datum. Nov. 14, 1933 to Jan. 1, 1952 graphic water-stage recorder (wooden control after Mar. 17, 1936) at different datum. May 7, 1952 to Nov. 21, 1962, crest-stage gage at different datum. May 9, 1963 to Aug. 16, 1966, digital water-stage recorder at present site and datum.

Average discharge.--28 years (1910-15, 1933-51, 1962-67), 23.0 cfs (16,650 acre-ft per year).

Extremes.--Maximum discharge during year, 90 cfs July 17 (gage height, 1.56 ft); minimum, about 3 cfs Dec. 29, 30.
1911-15, 1933-67: Maximum discharge, 300 cfs May 13, 1941 (gage height, 3.12 ft, site and datum then in use); minimum determined (except 1952-62), about 1.4 cfs Nov. 2, 1951, result of freezeup.

Remarks.--Records good except those for December and January, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	7.9	6.3	4.0	5.2	5.1	11	18	31	16	22	28
2	11	7.6	6.6	4.0	5.2	5.2	12	16	31	16	21	28
3	11	7.9	6.3	4.0	5.2	5.2	13	14	33	16	21	28
4	11	7.6	6.3	4.5	5.2	5.2	15	14	37	16	21	28
5	11	7.4	6.3	5.5	5.2	5.2	18	14	40	15	22	27
6	11	7.4	7.1	5.5	5.2	5.2	16	15	41	15	23	27
7	11	7.4	7.4	4.5	5.2	5.1	15	16	40	15	23	27
8	11	7.6	6.0	4.5	5.2	5.2	16	20	37	15	23	28
9	11	7.4	5.0	5.0	5.2	5.2	16	26	35	14	27	30
10	11	7.1	5.0	5.0	5.2	5.1	14	29	33	14	38	31
11	11	7.6	6.0	5.0	5.2	5.2	14	29	32	13	47	30
12	11	7.9	6.0	5.0	5.1	5.1	13	28	30	14	69	29
13	10	7.9	7.0	5.0	5.1	5.5	12	27	28	13	72	28
14	10	8.3	7.0	5.0	5.1	5.8	14	26	28	13	67	28
15	10	8.3	6.5	5.0	4.9	5.8	11	23	27	14	62	27
16	10	7.9	6.5	5.0	4.9	5.8	12	22	26	17	60	25
17	10	7.9	7.0	4.5	4.9	6.8	12	23	26	43	57	24
18	10	7.6	7.0	4.5	4.9	7.4	13	28	25	50	51	23
19	10	7.6	7.0	4.5	4.9	7.9	14	29	29	38	48	23
20	10	7.9	6.5	4.9	4.9	7.6	16	29	28	34	44	22
21	10	7.6	6.0	5.1	4.9	8.3	16	28	27	31	40	20
22	9.0	7.6	6.0	5.1	4.9	8.7	15	29	26	29	36	20
23	9.0	7.6	6.0	5.1	4.9	10	15	32	25	27	34	19
24	9.0	7.6	5.0	5.1	4.9	11	15	35	23	26	33	18
25	9.0	7.6	6.5	5.1	4.9	11	15	38	22	25	31	20
26	9.0	7.4	6.5	5.1	4.9	11	14	41	21	23	30	20
27	9.0	6.8	6.5	5.1	4.9	10	16	37	20	23	29	20
28	9.0	6.8	4.5	5.2	4.9	11	18	38	19	22	28	18
29	8.7	7.1	3.5	5.2	-	11	19	41	18	22	27	18
30	8.7	7.1	3.5	5.2	-----	11	19	38	18	22	28	17
31	8.7	-----	4.0	5.5	-----	10	-----	34	-----	23	29	-----
Total	311.1	227.4	186.8	151.7	141.1	227.6	439	837	856	674	1,163	731
Mean	10.0	7.58	6.03	4.89	5.04	7.34	14.6	27.0	28.5	21.7	37.5	24.4
Max	11	8.3	7.4	5.5	5.2	11	19	41	41	50	72	31
Min	8.7	6.8	3.5	4.0	4.9	5.1	11	14	18	13	21	17
Ac-ft	617	451	371	301	280	451	871	1,660	1,700	1,340	2,310	1,450

Cal yr 1966 : Total 6,497.4 Mean 17.8 Max 61 Min 3.5 Ac-ft 12,890
Wtr yr 1967 : Total 5,945.7 Mean 16.3 Max 72 Min 3.5 Ac-ft 11,790

Peak discharge (base, 70 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-17	1830	1.56	90	8-15	1915	1.50	76
8-12	1730	1.52	81				

8-2750 Rio Fernando de Taos near Taos, N. Mex.

Location.--Lat 36°22'32", long 105°32'55", in W½NW¼ sec.27, T.25 N., R.13 E., on right bank in Carson National Forest, 2½ miles southeast of Taos.

Drainage area.--71.7 sq mi.

Records available.--April to September 1910 (gage heights and discharge measurements only), October 1910 to June 1911 (discharge measurements only), October 1912 to September 1917, October 1927 to December 1928 (corrected), and October 1962 to September 1967. Previously published figures of discharge for October 1917 to September 1927 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Concrete control since Oct. 1, 1962. Altitude of gage is 7,140 ft (from topographic map). Prior to January 1929, staff gage at various sites within 500 ft of present site at various datums.

Average discharge.--11 years (1912-17, 1927-28, 1962-67), 7.35 cfs (5,320 acre-ft per year).

Extremes.--Maximum discharge during year, 211 cfs Aug. 12 (gage height, 2.27 ft), from rating curve extended above 47 cfs on basis of slope-area measurement of peak flow; minimum, 0.02 cfs Jan. 14-18.
1962-67: Maximum discharge, that of Aug. 12, 1967; minimum, that of Jan. 14-18, 1967.
Peak discharge not determined prior to 1962; maximum daily discharge observed, 132 cfs May 2-6, 1914.
A flood of undetermined magnitude occurred July 21, 1921.

Remarks.--Records good. A few very small diversions above station for irrigation. Randall's ditch diverts from left bank 175 ft downstream from gage for irrigation below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.81	1.1	1.1	0.50	0.04	1.4	5.0	4.3	2.3	0.57	1.2	4.8
2	.81	.72	1.2	.38	.04	1.6	4.8	4.5	2.2	.50	1.0	4.3
3	.81	.81	1.4	.24	.04	2.3	4.8	4.8	4.1	.44	.72	3.6
4	.81	1.4	1.6	.28	.06	3.2	5.0	4.3	3.2	.38	.64	3.6
5	.81	.91	1.8	.24	.08	3.6	5.5	4.3	2.8	.28	.64	4.1
6	.91	1.0	2.2	.14	.08	2.8	5.5	4.1	2.7	.24	.64	3.2
7	1.0	1.2	4.1	.12	.10	3.0	5.5	3.6	2.5	.24	.72	2.8
8	1.0	1.4	3.0	.12	.12	2.5	5.7	3.8	2.5	.28	.72	2.8
9	.81	1.8	1.1	.12	.14	2.8	5.5	3.6	2.0	.20	1.2	2.8
10	.81	1.0	.50	.12	.20	3.0	5.2	3.6	1.8	.17	6.6	2.5
11	.81	1.4	.72	.10	.20	3.8	5.2	3.4	1.6	.17	3.6	2.3
12	.91	1.4	.72	.08	.10	4.3	5.2	3.0	1.6	.17	6.3	1.8
13	.91	1.4	.72	.05	.12	5.0	4.5	2.8	1.5	.17	4.1	1.5
14	.91	1.2	.81	.03	.08	5.0	4.8	2.8	1.4	.14	3.8	1.4
15	.81	1.5	.91	.02	.10	5.0	7.7	3.0	1.2	.12	3.2	1.4
16	.91	1.6	.81	.02	.14	5.2	7.7	2.5	1.1	.66	4.1	1.4
17	1.1	1.8	.91	.02	.20	11	6.4	2.5	1.1	.81	3.0	1.4
18	1.4	1.5	.91	.03	.32	12	6.4	2.5	1.5	1.0	2.5	1.4
19	1.2	1.4	.91	.03	.32	12	6.4	2.3	2.5	.57	2.2	1.2
20	1.1	1.4	.91	.04	.28	8.4	6.4	2.3	4.5	.50	2.5	1.5
21	1.1	1.5	.91	.04	.38	7.7	6.4	2.3	2.8	.72	2.5	1.4
22	1.1	1.6	.81	.04	.44	7.1	6.0	2.2	2.5	1.0	2.3	1.2
23	1.0	1.4	.64	.04	.50	6.7	6.0	2.0	2.0	3.0	2.2	1.2
24	1.0	1.4	.64	.04	.57	6.7	5.5	1.8	1.6	1.5	2.3	1.2
25	1.0	1.5	.64	.04	.64	6.4	5.2	1.5	1.2	1.1	2.3	1.4
26	1.0	1.4	.57	.04	1.0	5.2	5.0	1.8	1.0	3.0	3.1	2.0
27	1.1	.72	.57	.04	1.0	5.5	5.0	2.3	.91	1.5	4.8	2.2
28	1.1	.64	.57	.04	1.0	5.5	4.8	2.3	.72	1.0	3.6	2.0
29	1.1	.91	.57	.04	-	5.5	4.5	2.7	.64	.91	3.2	1.6
30	1.1	1.4	.57	.04	-----	5.2	4.5	2.5	.64	1.4	4.2	1.5
31	1.0	-----	.57	.04	-----	4.8	-----	2.5	-----	1.0	6.0	-----
Total	30.24	38.41	33.39	3.12	8.29	164.2	166.1	91.9	58.11	23.74	85.88	65.5
Mean	0.98	1.28	1.08	0.10	0.30	5.30	5.54	2.96	1.94	0.77	2.77	2.18
Max	1.4	1.8	4.1	0.50	1.0	12	7.7	4.8	4.5	3.0	6.6	4.8
Min	0.81	0.64	0.50	0.02	0.04	1.4	4.5	1.5	0.64	0.12	0.64	1.2
Ac-ft	60	76	66	6.2	16	326	329	182	115	47	170	130

Cal yr 1966: Total 1,280.02 Mean 3.51 Max 19 Min 0.39 Ac-ft 2,540
Wtr yr 1967: Total 768.88 Mean 2.11 Max 12 Min 0.02 Ac-ft 1,530

Peak discharge (base, 25 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-12	1645	2.27	211				

8-2753. Rio Pueblo de Taos near Ranchito, N. Mex.

Location (revised).--Lat 36°23'40", long 105°37'25", on left bank 1,100 ft downstream from Rio Fernando de Taos and 1.6 miles southwest of Ranchito, Taos County.

Drainage area.--199 sq mi.

Records available.--March 1957 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 6,747 ft above mean sea level, datum of 1929.

Average discharge.--10 years, 28.1 cfs (20,340 acre-ft per year).

Extremes.--Maximum discharge during year, 294 cfs Sept. 8 (gage height, 3.01 ft), from rating curve extended above 120 cfs by logarithmic plotting; maximum gage height, 4.35 ft Dec. 29 (ice jam); minimum discharge, 2.5 cfs May 25-26.
1957-67: Maximum discharge, 600 cfs May 13, 1958, from rating curve extended above 230 cfs by logarithmic plotting; maximum gage height, that of Dec. 29, 1966; minimum discharge, 0.8 cfs July 6, 1963, Aug. 6, 1964.

Remarks.--Records good except those for January, which are poor. Diversions for irrigation of about 9,000 acres above station. Anderson ditch diverts from right bank about 125 ft below gage.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	15	20	10	24	17	29	10	8.5	4.1	8.0	27
2	8.5	15	20	10	22	17	28	11	8.5	4.1	8.0	25
3	8.5	16	20	10	18	17	30	11	13	4.1	12	23
4	8.5	16	21	11	18	17	32	10	14	3.9	13	23
5	8.9	16	23	12	18	20	37	8.5	16	3.9	12	24
6	8.9	17	23	12	18	19	42	8.9	15	3.9	13	24
7	8.0	17	46	10	16	20	38	7.6	13	3.9	14	26
8	8.0	22	33	10	15	18	38	4.8	10	4.8	16	69
9	8.5	24	25	11	15	20	36	3.5	8.9	4.8	22	67
10	9.8	23	18	12	15	19	33	3.7	8.0	4.8	52	49
11	10	23	20	13	16	27	29	3.3	7.6	5.1	46	44
12	13	23	20	14	16	24	27	3.7	6.7	5.1	61	42
13	12	22	19	14	17	20	26	4.3	5.1	5.1	62	40
14	11	20	18	14	20	20	24	4.5	4.5	5.1	56	38
15	11	21	20	15	19	20	27	4.8	4.3	5.1	58	36
16	11	24	20	16	18	20	20	4.5	4.1	5.9	65	36
17	16	24	19	15	16	24	16	4.3	4.3	8.5	53	34
18	17	24	18	15	16	31	15	3.7	5.7	6.0	45	30
19	17	24	18	15	17	40	14	3.7	9.8	4.5	42	26
20	17	22	20	16	19	34	16	3.9	13	4.5	42	24
21	16	21	20	18	18	32	16	3.9	11	4.5	37	22
22	16	20	19	20	15	31	15	3.9	11	4.3	35	20
23	16	22	17	20	15	31	14	3.5	7.6	4.1	31	19
24	16	24	16	20	15	31	13	3.1	6.4	4.3	29	18
25	16	24	16	20	17	34	13	3.1	6.7	4.8	27	21
26	16	24	15	17	20	32	13	3.7	5.4	5.1	27	22
27	16	21	15	17	19	30	11	8.0	5.4	5.1	26	22
28	15	20	11	18	17	31	9.8	11	5.4	5.1	25	20
29	15	18	9.0	19	-	32	9.4	13	4.8	5.1	24	20
30	14	17	9.5	23	-----	33	8.9	11	4.8	6.4	26	20
31	15	-----	10	25	-----	30	-----	11	-----	8.9	30	-----
Total	392.5	619	598.5	472	489	791	680.1	194.9	248.5	154.9	1,017	911
Mean	12.7	20.6	19.3	15.2	17.5	25.5	22.7	6.29	8.28	5.00	32.8	30.4
Max	17	24	46	25	24	40	42	13	16	8.9	65	69
Min	8.0	15	9.0	10	15	17	8.9	3.1	4.1	3.9	8.0	18
Ac-ft	779	1,230	1,190	936	970	1,570	1,350	387	493	307	2,020	1,810

Cal yr 1966: Total 9,241.3 Mean 25.3 Max 105 Min 4.2 Ac-ft 18,330
Wtr yr 1967: Total 6,568.4 Mean 18.0 Max 69 Min 3.1 Ac-ft 13,030

Peak discharge (base, 130 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
9- 8	1915	3.01	294				

8-2755. Rio Grande del Rancho near Talpa, N. Mex.

Location.--Lat 36°18'02", long 105°34'53", in Rancho del Rio Grande Grant, on right bank 1½ miles downstream from Rito de la Olla (locally known as Pot Creek), 3 miles south of Talpa, Taos County, and 4 miles upstream from Rio Chiquito.

Drainage area.--83 sq mi, approximately.

Records available.--October 1952 to September 1967. Prior to October 1955, published as Rio Grande del Rancho near Ranchos de Taos, and October 1955 to September 1965 as Rio Grande de Ranchos near Talpa.

Gage.--Water-stage recorder. Datum of gage is 7,236 ft above mean sea level, datum of 1929. Prior to Nov. 11, 1952, staff gage at site 35 ft downstream at datum 0.39 ft lower.

Average discharge.--15 years, 19.7 cfs (14,260 acre-ft per year).

Extremes.--Maximum discharge during year, 95 cfs Aug. 9 (gage height, 3.03 ft); minimum determined, 2.5 cfs Feb. 23, result of freezeup.
1952-67: Maximum discharge, 435 cfs Sept. 10, 1964 (gage height, 4.01 ft); minimum, 0.2 cfs Jan. 5, 1955.

Remarks.--Records good except those for December to February, which are poor. Minor diversions upstream for irrigation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	6.6	5.5	3.5	5.4	6.4	15	40	24	14	13	37
2	6.6	6.2	5.7	3.5	5.2	6.4	16	40	23	14	13	37
3	6.6	5.7	6.0	3.5	5.0	6.6	18	38	25	18	14	36
4	6.4	6.3	6.4	4.0	5.0	6.8	20	34	24	15	14	36
5	6.6	6.0	6.8	4.0	5.5	6.8	26	32	22	13	14	36
6	6.8	6.2	7.7	3.5	5.5	5.7	29	31	23	12	15	33
7	6.4	6.3	15	3.0	5.0	5.0	29	31	22	12	13	32
8	6.4	7.4	10	3.0	5.0	5.5	30	32	20	12	13	32
9	6.4	7.5	6.5	3.5	5.0	6.3	31	33	19	11	21	34
10	6.3	6.6	4.5	4.0	5.1	7.5	30	35	18	10	33	32
11	6.4	6.8	5.0	4.5	5.2	16	30	38	17	10	38	30
12	7.0	6.8	5.5	4.0	5.4	11	30	38	16	11	51	28
13	6.8	6.6	6.0	4.0	5.5	9.7	29	38	15	12	57	27
14	6.4	6.3	7.0	3.5	5.7	8.9	28	37	14	10	60	26
15	6.4	6.6	6.5	3.5	5.6	8.4	32	34	14	10	58	24
16	6.6	6.8	6.0	3.5	5.4	8.4	31	32	14	12	54	24
17	7.5	6.8	5.5	3.5	5.0	9.1	29	30	16	18	50	22
18	7.2	6.4	5.0	3.5	5.0	10	30	29	17	18	44	21
19	7.0	6.0	5.5	3.7	5.5	18	32	28	25	13	40	20
20	7.0	6.0	6.0	4.0	6.0	14	36	29	23	12	39	20
21	6.9	6.3	6.0	4.3	5.0	13	38	28	22	14	35	18
22	6.8	6.4	5.0	4.5	5.1	12	38	26	21	13	32	17
23	6.8	6.6	4.5	4.4	5.3	12	38	26	20	13	30	16
24	6.6	6.6	5.0	4.5	5.6	13	38	25	20	14	29	15
25	6.6	6.8	6.0	4.7	6.0	14	38	25	18	14	27	16
26	6.6	6.4	6.0	4.7	6.6	13	38	27	18	14	26	16
27	6.4	5.7	4.5	4.9	6.0	13	38	28	17	13	27	16
28	6.4	5.4	3.5	4.9	5.5	13	38	26	16	13	24	15
29	6.4	5.4	3.0	5.2	-	14	40	28	16	12	25	14
30	6.4	6.0	3.0	4.9	- - - - -	16	43	26	16	13	30	13
31	6.6	- - - - -	3.5	5.4	- - - - -	14	- - - - -	25	- - - - -	13	34	- - - - -
Total	206.1	191.5	182.1	125.6	151.1	323.5	938	969	575	403	973	743
Mean	6.65	6.38	5.87	4.05	5.40	10.4	31.3	31.3	19.2	13.0	31.4	24.8
Max	7.5	7.5	15	5.4	6.6	18	43	40	25	18	60	37
Min	6.3	5.4	3.0	3.0	5.0	5.0	15	25	14	10	13	13
Ac-ft	409	380	361	249	300	642	1,860	1,920	1,140	799	1,930	1,470

Cal yr 1966 : Total 6,625.8 Mean 18.2 Max 89 Min 3.0 Ac-ft 13,140
Wtr yr 1967 : Total 5,780.9 Mean 15.8 Max 60 Min 3.0 Ac-ft 11,470

Peak discharge (base, 75 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 9	2240	3.03	95				

8-2756. Rio Chiquito near Talpa, N. Mex.

Location.--Lat 36°19'55", long 105°34'42", in Rancho del Rio Grande Grant, on right bank 1 mile southeast of Talpa, Taos County, and 2 miles upstream from mouth.

Drainage area.--37.0 sq mi.

Records available.--March 1957 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 7,223 ft above mean sea level, datum of 1929.

Average discharge.--10 years, 8.55 cfs (6,190 acre-ft per year).

Extremes.--Maximum discharge during year, 24 cfs Aug. 15 (gage height, 1.80 ft); minimum determined, 0.81 cfs Dec. 10, 23, result of freezeup.
1957-67: Maximum discharge, about 144 cfs May 13, 1958 (gage height, 2.24 ft), from rating curve extended above 50 cfs by logarithmic plotting; minimum, about 0.3 cfs Jan. 13, 1964, result of freezeup.

Remarks.--Records good except those for winter period, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.2	3.3	1.8	2.7	3.0	6.8	12	5.9	4.2	4.4	13
2	4.2	3.5	3.3	2.0	2.7	3.0	6.8	13	6.2	4.4	4.4	13
3	4.0	4.0	3.5	2.0	2.7	3.5	7.3	12	7.0	5.1	4.6	12
4	4.0	4.6	3.8	2.0	2.7	3.5	8.0	11	6.5	4.2	4.8	12
5	4.0	3.5	3.3	2.2	2.7	3.3	11	9.8	6.2	4.0	5.6	13
6	4.0	4.0	4.0	2.0	2.5	3.0	11	9.4	6.2	4.0	5.1	12
7	4.0	4.0	6.2	1.5	2.5	2.7	10	9.4	5.9	4.0	5.6	11
8	4.0	4.4	4.6	1.8	2.5	2.9	11	9.4	5.4	4.0	5.1	12
9	4.0	4.2	2.3	2.1	2.5	3.1	11	9.4	5.1	3.5	6.8	13
10	4.0	3.3	1.2	2.2	2.5	3.5	11	9.4	4.8	3.3	14	11
11	4.0	4.2	2.3	2.4	2.6	4.0	12	9.4	4.8	4.0	13	11
12	3.8	3.8	3.3	2.1	2.7	3.5	11	9.4	4.8	4.2	19	9.8
13	3.8	3.5	4.2	2.0	2.8	3.5	9.4	9.4	4.8	4.0	19	9.8
14	3.8	3.5	5.6	1.8	2.9	3.5	11	8.9	4.4	3.8	21	9.4
15	3.8	3.8	5.1	1.6	2.9	3.3	14	8.5	4.2	3.8	20	9.4
16	3.8	4.0	4.6	1.6	2.8	3.5	14	8.0	4.4	4.6	20	8.9
17	4.2	4.0	4.0	1.6	2.7	3.8	13	7.3	5.1	6.2	17	8.5
18	4.2	3.8	3.8	1.6	2.7	4.4	14	7.0	5.4	5.6	15	8.0
19	4.2	3.3	3.8	1.8	2.8	4.6	15	7.0	7.6	4.6	14	8.0
20	4.0	3.8	4.0	2.0	3.0	5.1	16	6.8	9.4	4.6	14	8.0
21	4.0	4.0	4.0	2.0	2.9	5.1	16	6.8	7.3	4.6	13	7.3
22	3.8	4.2	3.1	2.0	2.8	5.1	15	6.5	6.5	4.6	12	7.0
23	3.8	4.0	1.9	2.2	2.9	4.8	16	6.2	6.2	5.6	11	7.0
24	3.8	4.0	2.2	2.3	3.1	5.6	15	5.9	5.4	5.4	10	6.8
25	4.0	3.8	2.5	2.2	3.3	5.6	14	5.6	5.1	6.5	9.8	7.3
26	4.0	3.5	2.5	2.0	3.5	4.8	14	6.5	4.8	6.8	9.8	7.3
27	3.8	2.6	2.2	2.0	3.2	5.4	13	7.3	4.8	5.4	11	7.3
28	3.8	2.6	1.8	2.0	3.0	5.6	14	6.8	4.4	4.8	11	7.0
29	3.8	3.3	1.5	2.3	-	6.5	14	7.3	4.4	4.6	10	6.5
30	4.0	3.8	1.5	2.4	-----	6.5	14	6.8	5.1	4.6	11	6.2
31	4.0	-----	1.6	2.5	-----	5.9	-----	6.5	-----	4.6	14	-----
Total	122.8	113.2	101.0	62.0	78.6	131.6	368.3	258.7	168.1	143.6	355.0	282.5
Mean	3.96	3.77	3.26	2.00	2.81	4.25	12.3	8.35	5.60	4.63	11.5	9.42
Max	4.2	4.6	6.2	2.5	3.5	6.5	16	13	9.4	6.8	21	13
Min	3.8	2.6	1.2	1.5	2.5	2.7	6.8	5.6	4.2	3.3	4.4	6.2
Ac-ft	244	225	200	123	156	261	731	513	333	285	704	560

Cal yr 1966: Total 2,636.7 Mean 7.22 Max 26 Min 1.2 Ac-ft 5,230
Wtr yr 1967: Total 2,185.4 Mean 5.99 Max 21 Min 1.2 Ac-ft 4,330

Peak discharge (base, 35 cfs).--No peak above base.

Note.--No gage-height record Jan. 31 to Mar. 7.

8-2763. Rio Pueblo de Taos below Los Cordovas, N. Mex.

Location.--Lat 36°22'38", long 105°40'04", in Gijosa Grant, on left bank 2 miles southwest of Los Cordovas, Taos County, 2½ miles downstream from Rio Grande del Rancho, 4½ miles upstream from mouth.

Drainage area.--380 sq mi.

Records available.--March 1957 to September 1967.

Gage.--Digital water-stage recorder and crest-stage gage. Concrete control since July 16, 1963. Datum of gage is 6,652 ft above mean sea level, datum of 1929. Prior to July 16, 1963, graphic water-stage recorder at same site and datum.

Average discharge.--10 years, 50.1 cfs (36,270 acre-ft per year).

Extremes.--Maximum discharge during year, 1,280 cfs Aug. 9 (gage height, 5.56 ft), from rating curve extended above 420 cfs on basis of slope-area measurement at gage height 5.30 ft; minimum, 7.0 cfs July 2.
1957-67: Maximum discharge, 2,380 cfs Aug. 24, 1957 (gage height, 5.80 ft), from rating curve extended above 900 cfs on basis of logarithmic plotting; minimum, 3.0 cfs July 14, 17, 22, 23, 25, 1963.

Remarks.--Records good except those for December and January, which are fair. Diversions for irrigation of about 12,000 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	18	24	27	23	36	36	43	22	20	8.1	15	56
2	18	25	28	23	33	35	42	20	22	7.9	14	60
3	19	24	28	23	33	35	44	22	31	9.6	77	57
4	20	25	29	25	33	35	48	20	35	8.9	50	52
5	21	25	31	27	33	38	60	19	40	8.4	24	55
6	20	27	33	27	33	36	66	15	32	8.5	22	54
7	19	27	51	23	33	37	62	15	28	8.2	17	52
8	19	33	40	23	30	35	63	11	26	8.7	55	75
9	20	35	32	25	30	37	63	9.8	23	8.3	68	88
10	20	32	26	27	33	38	58	8.7	20	8.5	123	72
11	19	31	26	27	33	52	51	9.1	18	8.5	67	65
12	22	29	26	27	31	49	45	9.8	18	9.3	96	56
13	21	29	28	29	34	43	40	11	14	9.8	111	57
14	20	26	28	30	34	40	40	11	12	9.2	106	57
15	21	26	31	32	32	39	44	12	11	9.9	111	55
16	21	28	31	27	31	39	37	12	10	20	115	55
17	28	28	32	28	30	42	25	12	10	29	106	53
18	28	28	31	27	32	48	21	11	12	19	93	52
19	28	27	30	29	34	66	21	9.5	17	16	86	51
20	28	26	32	29	32	57	21	10	19	15	83	49
21	27	26	32	30	31	50	24	10	17	15	73	44
22	27	26	32	30	30	48	24	11	14	14	64	40
23	28	26	28	30	32	47	23	9.5	14	13	58	36
24	26	29	28	30	34	46	23	8.7	12	13	53	32
25	25	29	28	30	24	49	21	9.1	11	14	46	37
26	24	29	28	30	39	48	22	10	11	13	44	40
27	25	27	27	29	36	45	20	17	9.8	12	45	41
28	25	27	23	31	34	45	17	25	9.0	11	42	40
29	25	25	23	32	------	47	16	29	8.3	11	36	38
30	23	24	23	34	------	46	17	24	8.4	33	44	35
31	24	------	23	38	------	44	------	23	------	26	53	------
TOTAL	709	823	915	875	920	1,352	1,101	446.2	532.5	405.8	1,997	1,554
MEAN	22.9	27.4	29.5	28.2	32.9	43.6	36.7	14.4	17.8	13.1	64.4	51.8
MAX	28	35	51	38	39	66	66	29	40	33	123	88
MIN	18	24	23	23	30	35	16	8.7	8.3	7.9	14	32
AC-FT	1,410	1,630	1,810	1,740	1,820	2,680	2,180	885	1,060	805	3,960	3,080

CAL YR 1966: TOTAL 14,626 MEAN 40.1 MAX 123 MIN 10 AC-FT 29,010
WAT YR 1967: TOTAL 11,630.5 MEAN 31.9 MAX 123 MIN 7.9 AC-FT 23,070

Peak discharge (base, 230 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-30	2045	3.68	388	8- 8	1545	4.52	724
8- 3	about 1700	†5.30	1,120	8- 9	2345	5.56	1,280
8- 4	about 2130	-	about 500				

† From floodmarks.

8-2765. Rio Grande below Taos Junction Bridge, near Taos, N. Mex.

Location.--Lat 36°19'00", long 105°45'30", in N½ sec.15, T.24 N., R.11 E., on left bank 2 miles downstream from Rio Pueblo de Taos and bridge on State Highway 96 and 12 miles southwest of Taos.

Drainage area.--9,730 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--July 1925 to September 1967. Monthly discharge only July 1925 to September 1930, published in WSP 1312.

Gage.--Water-stage recorder. Datum of gage is 6,050.3 ft above mean sea level (planetable survey). Prior to Apr. 14, 1934, at bridge 2 miles upstream at different datum. Oct. 1, 1963 to Aug. 9, 1966, digital water-stage recorder at present site and datum.

Average discharge.--42 years, 732 cfs (529,900 acre-ft per year).

Extremes.--Maximum discharge during year, 4,800 cfs Aug. 3 (gage height, 7.18 ft); minimum, 206 cfs May 11.
1926-67: Maximum discharge, 9,730 cfs June 7, 1948, June 22, 1949; maximum gage height, 10.7 ft July 3, 1927 (site and datum then in use), from graph based on recorder record ending at a gage-height of 10.5 ft, 6 hours prior to peak; minimum discharge, 155 cfs Sept. 21, 1956.
Maximum flood known since at least 1888, about 14,000 cfs June 19, 1903, from records for Rio Grande at Embudo and estimated inflow. Other floods exceeding 10,000 cfs occurred June 9, 1905, May 28, 1920, and June 16, 1921, from comparison of records for stations near Lobatos and at Embudo.

Remarks.--Records good. Diversions above station for irrigation of about 620,000 acres in Colorado and 30,000 acres in New Mexico.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	326	521	364	480	591	331	225	640	320	320	448
2	216	320	535	358	474	619	326	230	542	326	481	405
3	225	315	556	353	468	655	326	240	528	315	931	448
4	225	502	563	370	454	685	320	240	549	290	769	454
5	225	779	563	375	480	685	326	235	591	280	507	474
6	225	875	549	393	487	640	326	230	662	275	454	468
7	225	909	577	387	442	494	315	225	803	275	423	468
8	230	934	570	370	468	535	315	216	969	265	480	480
9	235	960	619	370	480	521	315	216	1,030	260	613	468
10	235	987	598	375	480	570	305	211	943	250	778	423
11	240	987	507	381	494	598	285	216	827	250	662	405
12	255	996	411	381	480	591	275	235	747	255	1,080	393
13	270	1,000	429	381	480	521	265	270	723	255	1,370	387
14	265	1,010	442	387	480	480	270	270	577	265	1,170	393
15	260	1,020	480	387	480	454	280	255	507	255	1,170	387
16	260	1,050	461	399	474	429	270	245	442	275	1,150	375
17	275	1,070	454	405	480	411	265	245	442	336	1,120	375
18	285	934	461	405	487	411	255	245	435	331	1,010	370
19	285	685	454	411	500	417	255	255	454	320	867	358
20	300	626	480	411	500	411	255	250	480	336	755	353
21	305	598	480	429	487	399	255	245	514	423	685	353
22	315	584	494	429	494	393	255	250	678	500	612	348
23	320	584	448	435	494	411	250	260	851	487	563	336
24	320	577	435	429	521	399	255	265	763	411	500	320
25	320	584	387	429	521	411	250	265	633	399	448	326
26	331	584	387	442	528	405	250	320	549	393	423	331
27	331	577	417	448	542	387	240	474	507	381	405	331
28	331	570	417	461	556	375	235	577	448	342	387	310
29	315	549	399	454	-	375	225	739	387	305	381	305
30	315	542	385	454	-----	358	225	655	353	321	417	305
31	331	-----	375	468	-----	336	-----	655	-----	353	448	-----
Total	8,490	22,034	14,854	12,541	13,711	14,967	8,320	9,459	18,574	10,049	21,379	11,597
Mean	274	734	479	405	490	483	277	305	619	324	690	387
Max	331	1,070	619	468	556	685	331	739	1,030	500	1,370	480
Min	216	315	375	353	442	336	225	211	353	250	320	305
Ac-ft	16,840	43,700	29,460	24,870	27,200	29,690	16,500	18,760	36,840	19,930	42,400	23,000

Cal yr 1966 : Total 216,957 Mean 594 Max 1,670 Min 216 Ac-ft 430,300
Wtr yr 1967 : Total 165,975 Mean 455 Max 1,370 Min 211 Ac-ft 329,200

Peak discharge (base, 1,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 2	1930	5.44	1,880	8- 9	2350	5.97	2,640
8- 3	1715	7.18	4,800	8-12	2230	6.48	3,480
8- 4	2130	7.05	4,540				

8-2790. Embudo Creek at Dixon, N. Mex.

Location.--Lat 36°12'40", long 105°54'55", in NW¼SE¼ sec.19, T.23 N., R.10 E., at downstream end of bridge pier on U. S. Highway 64, 0.3 mile upstream from mouth, 0.4 mile east of Embudo Post Office, and 1.8 miles northwest of Dixon.

Drainage area.--305 sq mi.

Records available.--October 1923 to September 1955, April 1956 to September 1962 (annual maximum only), September 1962 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Datum of gage is 5,849.54 ft above mean sea level, datum of 1929. Prior to Nov. 30, 1938, at site about 1 mile upstream at different datums. Nov. 30, 1938, to Aug. 1, 1941, at site about three-quarters of a mile upstream at datum about 69.0 ft higher. April 1956 to Sept. 21, 1962, crest-stage gage.

Average discharge.--36 years (1923-25, 1926-55, 1962-67), 79.3 cfs (57,410 acre-ft per year).

Extremes.--Maximum discharge during year, 2,280 cfs Aug. 4 (gage height, 7.39 ft), from rating curve extended above 200 cfs on basis of slope-area measurement of peak flow; minimum, 4.0 cfs about July 10.
1923-67: Maximum discharge determined, that of Aug. 4, 1967; minimum, (except 1956-62), 0.06 cfs June 26, 27, 1950.

Remarks.--Records fair except those for January, February and July, which are poor. Diversions above station for irrigation of about 6,500 acres, a small part of which is below gage.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	22	29	20	32	24	39	28	17	5.6	8.2	95
2	16	24	28	20	25	26	38	30	17	5.6	9.5	86
3	17	23	28	22	24	26	40	26	20	5.6	11	76
4	19	23	34	25	25	26	44	22	23	4.9	121	75
5	20	23	32	25	25	28	58	19	19	4.9	130	78
6	22	22	35	28	26	23	63	17	20	4.8	110	70
7	21	24	65	25	24	23	59	14	21	4.8	120	68
8	18	26	47	25	20	25	59	11	17	4.8	140	65
9	18	32	30	26	24	30	57	8.7	18	4.8	169	75
10	16	30	22	28	25	32	52	8.7	16	4.8	291	64
11	19	31	29	29	26	48	49	8.7	13	5.4	331	54
12	23	29	30	30	23	29	44	8.9	10	6.4	278	47
13	22	27	31	30	28	24	39	9.5	11	8.0	259	44
14	23	25	34	30	30	21	37	12	10	5.8	214	42
15	23	25	35	30	28	20	50	10	11	5.0	217	38
16	23	26	31	30	26	20	43	9.5	10	8.0	217	37
17	28	26	31	29	26	25	43	8.7	15	23	197	33
18	28	26	32	25	29	30	43	8.4	22	27	160	35
19	27	25	31	24	32	53	49	8.4	22	19	141	33
20	25	25	33	23	30	43	58	7.9	23	20	133	32
21	23	27	34	25	22	39	59	7.9	26	12	118	27
22	22	27	30	26	20	35	53	7.9	23	10	104	25
23	22	26	20	26	22	32	47	7.4	21	10	87	22
24	22	26	20	26	23	36	44	6.9	16	9.6	80	21
25	22	26	21	27	23	39	40	6.2	15	12	69	29
26	22	26	26	24	28	35	35	7.4	12	9.7	65	39
27	22	23	32	25	22	35	38	8.7	9.2	8.8	70	55
28	21	22	25	26	20	34	38	11	6.9	8.8	56	46
29	21	26	18	26	-	39	33	17	6.4	8.7	59	38
30	21	30	18	26	-----	38	34	16	5.8	8.7	75	33
31	21	-----	25	29	-----	37	-----	15	-----	8.7	100	-----
Total	663	773	936	810	708	975	1,385	387.8	476.3	285.2	4,139.7	1,482
Mean	21.4	25.8	30.2	26.1	25.3	31.5	46.2	12.5	15.9	9.20	134	49.4
Max	28	32	65	30	32	53	63	30	26	27	331	95
Min	16	22	18	20	20	20	33	6.2	5.8	4.8	8.2	21
Ac-ft	1,320	1,530	1,860	1,610	1,400	1,930	2,750	769	945	566	8,210	2,940

Cal yr 1966: Total 18,623 Mean 51.0 Max 172 Min 14 Ac-ft 36,940
Wtr yr 1967: Total 13,021.0 Mean 35.7 Max 331 Min 4.8 Ac-ft 25,830

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 4	2200	7.39	2,280	8-13	1630	6.15	1,260
8- 9	2300	5.41	805				

8-2795. Rio Grande at Embudo, N. Mex.

Location.--Lat 36°12'20", long 105°57'50", in SW¼SW¼ sec. 23, T.23 N., R.9 E., on right bank a quarter of a mile downstream from bridge at Embudo and 2½ miles downstream from Embudo Creek.

Drainage area.--10,400 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--January 1889 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Figures of daily discharge published in WSP 358 for period Oct. 4 to Nov. 30, 1896, have been found to be unreliable and should not be used.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 5,789.14 ft above mean sea level, datum of 1929. Jan. 1 to Feb. 28, 1889, staff gage 1¼ miles upstream at different datum. March 1889 to December 1903, staff gage 1,300 ft upstream at different datum. September 1912 to June 1914, graphic water-stage recorder on downstream end of bridge pier at site 200 ft upstream at present datum. July 1914 to Mar. 25, 1963, graphic water-stage recorder at present site and datum.

Average discharge.--78 years, 1,025 cfs (742,100 acre-ft per year).

Extremes.--Maximum discharge during year, 3,550 cfs Aug. 3 (gage height, 6.55 ft); maximum gage height, 8.05 ft Jan. 9 (ice jam); minimum discharge, 216 cfs May 11.

1889-1903, 1912-67: Maximum discharge, 16,200 cfs June 19, 1903 (gage height, about 15.9 ft); minimum daily, 130 cfs June 30, 1902.

A flood of about 14,000 cfs occurred between May 20 and June 10, 1905, from a comparison of records for Lobatos and Otowi Bridge. Another major flood occurred Sept. 29 or 30, 1904.

Remarks.--Records good except those for January, which are fair. Diversions above station for irrigation of about 620,000 acres in Colorado and 40,000 acres in New Mexico.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	227	344	566	410	523	626	380	320	698	356	335	635
2	227	344	570	400	516	662	372	328	593	338	385	550
3	231	337	596	400	506	697	378	328	562	355	945	510
4	239	469	615	410	494	733	376	324	572	323	747	520
5	237	786	615	420	516	734	393	312	604	305	842	520
6	240	897	611	430	527	702	402	305	675	299	492	520
7	235	940	659	420	494	566	391	294	812	288	471	530
8	234	973	647	410	483	544	388	283	969	290	484	540
9	239	1,010	655	410	520	560	387	269	1,080	275	791	520
10	238	1,030	662	420	522	615	380	262	996	267	1,280	500
11	240	1,040	571	420	532	660	359	262	889	271	1,180	465
12	256	1,050	489	413	513	657	339	273	782	276	1,130	442
13	279	1,070	462	408	521	583	315	301	722	271	1,900	427
14	283	1,070	488	410	526	531	316	324	614	280	1,470	432
15	273	1,080	531	413	518	497	346	298	531	261	1,420	424
16	271	1,100	511	423	518	472	329	280	468	274	1,360	414
17	292	1,120	522	427	512	457	372	273	454	369	1,330	409
18	299	1,030	511	429	528	452	359	269	459	364	1,230	404
19	300	757	496	437	540	476	359	273	482	340	1,110	391
20	311	679	526	438	541	459	367	273	497	341	969	387
21	318	649	535	457	528	449	367	262	541	417	874	376
22	325	629	538	465	533	431	359	262	670	499	790	374
23	335	626	494	464	532	451	355	269	870	501	711	361
24	338	637	471	468	548	439	355	273	844	428	643	343
25	333	623	442	462	559	450	347	269	670	423	579	353
26	343	633	434	477	571	450	347	301	577	399	556	373
27	347	621	439	478	584	434	343	473	526	396	544	382
28	346	610	466	501	588	422	339	562	487	365	506	359
29	335	590	422	497	------	422	320	775	427	322	486	342
30	322	586	422	495	------	411	320	698	384	315	482	334
31	346	------	413	503	------	388	------	692	------	383	597	------
TOTAL	8,839	23,330	16,379	13,615	14,793	16,430	10,760	10,687	19,455	10,591	26,639	13,137
MEAN	285	778	528	439	528	530	359	345	649	342	859	438
MAX	347	1,120	662	503	588	734	402	775	1,080	501	1,900	635
MIN	227	337	413	400	483	388	315	262	384	261	335	334
AC-FT	17,530	46,270	32,490	27,000	29,340	32,590	21,340	21,200	38,590	21,010	52,840	26,060

CAL YR 1966: TOTAL 240,531 MEAN 659 MAX 1,880 MIN 227 AC-FT 477,100
WAT YR 1967: TOTAL 184,655 MEAN 506 MAX 1,900 MIN 227 AC-FT 366,300

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 3	2115	6.55	3,550	8-10	0430	5.63	2,630
8- 5	0130	6.10	3,100	8-13	0400	6.16	3,160

8-2801. San Juan lateral above San Juan Pueblo, N. Mex.

Location.--Lat 36°04'03", long 106°04'07", in SW¼NW¼ sec.11, T.21 N., R.8 E., on right bank upstream from second drop structure below division box, 500 ft downstream from Arroyo de Chinguague, 0.9 mile north of San Juan Pueblo, and 5 miles north of Espanola.

Records available.--April 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,660 ft (from topographic map). Prior to Mar. 4, 1965, at datum 3.51 ft higher. Apr. 17, 1964 to Aug. 7, 1966, digital water-stage recorder at same site.

Extremes.--1963-67: Maximum daily discharge, 20 cfs June 9, 1963; no flow for many days each year.

Remarks.--This is one of three ditch stations operated to gage flow bypassing Rio Grande above San Juan Pueblo, N. Mex. (see station 8-2811). Takeouts between division box and gage irrigate a few acres, but percentage of total acreage is small.

Cooperation.--Records furnished by Bureau of Reclamation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	1.9	0	0.396	24
November	1.6	0	.222	13
December	0	0	0	0
Calendar year 1966	19	0	.840	608
January	0	0	0	0
February	0	0	0	0
March	4.2	0	.270	17
April	14	0	2.92	174
May	14	.14	3.65	224
June	6.2	0	2.55	152
July	14	4.4	9.08	559
August	3.5	0	.314	19
September	8.4	0	1.73	103
Water year 1967	14	0	1.77	1,280

8-2802. San Juan Pueblo ditch above San Juan Pueblo, N. Mex.

Location.--Lat 36°03'55", long 106°04'10", in NW¼SW¼ sec.11, T.21 N., R.8 E., on right bank 1,000 ft downstream from Arroyo de Chinguague, 0.7 mile north of San Juan Pueblo, and 5 miles north of Espanola.

Records available.--March 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,660 ft (from topographic map). Prior to Mar. 4, 1965, at datum 4.00 ft higher. Apr. 17, 1964 to Aug. 10, 1966, digital water-stage recorder at same site.

Extremes.--1963-67: Maximum daily discharge, 26 cfs Aug. 22, 23, 1965; no flow for many days each year.

Remarks.--This is one of three ditch stations operated to gage flow bypassing Rio Grande above San Juan Pueblo, N. Mex. (see station 8-2811). Takeouts for irrigation above and below gage.

Cooperation.--Records furnished by Bureau of Reclamation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	6.7	0.05	2.45	151
November	.05	0	.002	.1
December	0	0	0	0
Calendar year 1966	24	0	3.84	2,780
January	0	0	0	0
February	0	0	0	0
March	5.3	0	.341	21
April	12	.01	4.64	276
May	16	.54	8.09	498
June	17	2.7	8.68	516
July	17	1.9	9.86	606
August	8.8	0	1.67	103
September	14	.16	4.86	289
Water year 1967	17	0	3.40	2,460

8-2807. Guique ditch near San Juan Pueblo, N. Mex.

Location.--Lat 36°04'06", long 106°04'42", in NW¼NE¼ sec.10, T.21 N., R.8 E., on right bank above farm road culvert, 1,500 ft downstream from Pueblito, 1.1 miles south of Guique, 1.1 miles northwest of San Juan Pueblo, and 5 miles north of Espanola.

Records.--April 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,660 ft (from topographic map). Prior to Mar. 4, 1965, at datum 3.50 ft higher. Apr. 16, 1964 to Aug. 8, 1966, digital water-stage recorder at same site.

Extremes.--1963-67: Maximum daily discharge, 19 cfs May 8, 1965; no flow for many days each year.

Remarks.--This is one of three ditch stations operated to gage flow bypassing Rio Grande above San Juan Pueblo, N. Mex. (see station 8-2811). Takeouts for irrigation above and below gage.

Cooperation.--Records furnished by Bureau of Reclamation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	12	1.8	8.14	501
November	11	0	5.28	314
December	0	0	0	0
Calendar year 1966	12	0	2.21	1,600
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	8.6	0	1.84	110
May	12	0	2.68	165
June	11	0	4.65	277
July	13	0	3.10	191
August	15	0	2.25	139
September	8.8	0	2.41	143
Water year 1967	15	0	2.54	1,840

8-2811. Rio Grande above San Juan Pueblo, N. Mex.

Location.--Lat 36°04'00", long 106°04'30", in NE¼SE¼ sec.10, T.21 N., R.8 E., on left bank three-quarters of a mile upstream from bridge on State Highway 74, three-quarters of a mile north of San Juan Pueblo, 1.8 miles upstream from Rio Chama, and 5 miles north of Espanola.

Drainage area.--10,550 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--March 1963 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 5,630 ft (from topographic map). May 1, 1964 to Aug. 9, 1966, digital water-stage recorder at present site and datum.

Extremes.--Maximum discharge during year, 2,730 cfs Aug. 4 (gage height, 3.56 ft); minimum, 166 cfs July 11.
1963-67: Maximum discharge, 4,900 cfs June 22, 1965 (gage height, 4.95 ft); minimum, 96 cfs Aug. 1, 1963.
For years of outstanding floods see records for station at Embudo.

Remarks.--Diversions above station for irrigation of about 620,000 acres in Colorado and 42,000 in New Mexico; bypass canals irrigate a few hundred acres below station (see stations 8-2801, 8-2802, 8-2807).

Cooperation.--Records furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	326	596	452	558	681	343	298	681	337	349	543
2	236	326	588	459	551	722	355	298	603	304	343	508
3	236	326	610	435	536	747	349	304	566	309	684	479
4	246	377	642	428	536	788	332	304	573	304	955	500
5	236	722	634	459	558	788	337	304	603	267	1,040	508
6	246	839	650	486	573	780	386	293	658	231	573	508
7	251	901	673	472	551	650	368	304	763	227	543	522
8	246	938	681	428	529	573	326	298	901	231	529	508
9	246	1,000	665	428	566	611	332	282	1,050	222	861	536
10	251	1,030	689	445	581	642	337	277	1,000	198	1,340	500
11	256	1,040	600	465	588	689	315	277	901	181	1,180	479
12	277	1,050	533	465	581	705	298	267	788	213	1,140	445
13	282	1,070	459	459	588	626	298	267	730	217	1,660	418
14	293	1,070	486	445	603	558	287	332	634	208	1,430	405
15	298	1,060	522	439	588	529	315	326	536	198	1,350	418
16	298	1,070	519	439	588	493	315	282	472	217	1,300	412
17	309	1,100	544	452	581	472	293	267	452	337	1,290	405
18	309	1,060	529	459	596	452	282	267	459	362	1,200	399
19	309	793	522	459	611	472	282	256	508	327	1,100	393
20	326	705	537	459	611	459	272	272	515	343	982	386
21	332	665	565	479	588	445	272	277	566	380	901	380
22	326	657	580	493	588	425	262	267	651	472	823	386
23	332	642	545	493	588	438	287	262	856	500	747	349
24	337	657	515	500	596	432	277	262	901	432	634	343
25	332	650	511	493	610	445	262	282	730	418	618	343
26	326	657	472	515	618	452	282	287	610	393	580	386
27	337	657	465	515	634	425	277	439	522	386	543	399
28	343	657	507	536	634	399	298	558	486	349	515	405
29	337	634	486	536	-	386	287	764	418	309	472	386
30	321	610	452	529	-----	405	293	714	368	293	472	362
31	332	-----	425	543	-----	374	-----	689	-----	349	529	-----
Total	9,042	23,289	17,202	14,665	16,330	17,063	9,219	10,576	19,501	9,514	26,683	13,011
Mean	292	776	555	473	583	550	307	341	650	307	861	434
Max	343	1,100	689	543	634	788	386	764	1,050	500	1,660	543
Min	236	326	425	428	529	374	262	256	368	181	343	343
Ac-ft	17,930	46,190	34,120	29,090	32,390	33,840	18,290	20,980	38,680	18,870	52,920	25,810

Cal yr 1966 : Total 235,150 Mean 644 Max 1,670 Min 231 Ac-ft 466,400
Wtr yr 1967 : Total 186,095 Mean 510 Max 1,660 Min 181 Ac-ft 369,100

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 4	0100	3.56	2,730	8-10	0615	3.31	2,420
8- 5	0515	3.25	2,330	8-13	0745	3.10	2,170

8-2841. Rio Chama near La Puente, N. Mex.

Location.--Lat 36°39'45", long 106°38'00", in Tierra Amarilla Grant, on right bank 0.7 mile downstream from Rito de Tierra Amarilla, 3 miles southwest of La Puente, Rio Arriba County, 6.7 miles upstream from flow line of El Vado Reservoir, and at mile 91.4

Drainage area.--480 sq mi, approximately.

Records available.--October 1955 to September 1967.

Gage.--Water-stage recorder. Concrete control since Nov. 9, 1965. Altitude of gage is 7,083 ft (from river-profile map).

Average discharge.--12 years, 312 cfs (225,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,110 cfs May 10 (gage height, 4.53 ft); minimum, 16 cfs Nov. 28.
1955-67: Maximum discharge, 8,040 cfs June 7, 1957 (gage height, 6.07 ft), from rating curve extended above 3,000 cfs on basis of logarithmic plotting and an inflow-outflow study of El Vado Reservoir; minimum, 4.0 cfs Sept. 19, 1956.
A discharge of about 9,000 cfs occurred Apr. 16, 1937, based on flow of Rio Chama at Park View with allowance for tributary inflow. A peak on May 21 or 22, 1926, may have exceeded 10,000 cfs.

Remarks.--Records good except those for April, which are fair, and those for winter periods, which are poor. Diversions for irrigation of about 10,300 acres above station (1962 determination).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	20	35	45	54	115	134	670	485	83	128	268
2	24	20	34	52	50	125	134	569	422	73	115	220
3	25	20	40	40	45	121	181	485	594	76	186	220
4	28	21	47	45	50	110	229	482	705	71	151	178
5	30	19	53	50	50	93	278	723	696	58	138	174
6	27	20	164	55	50	83	268	761	714	40	148	162
7	25	21	429	50	45	73	273	977	635	41	283	170
8	25	26	202	45	45	71	339	1,390	530	53	215	178
9	26	30	115	45	48	78	345	1,660	470	55	253	224
10	28	26	85	50	48	90	268	1,580	415	44	364	178
11	27	27	90	50	48	110	278	1,390	376	46	848	174
12	26	32	85	55	50	104	351	1,300	339	49	610	155
13	28	34	80	50	50	110	268	1,130	300	47	436	134
14	24	31	78	45	62	93	238	910	317	47	530	121
15	21	32	73	45	60	90	268	742	333	58	478	112
16	22	35	66	45	51	88	229	789	253	64	429	107
17	25	36	62	45	44	118	220	900	289	200	339	107
18	30	34	64	50	46	148	283	910	442	207	283	107
19	30	34	64	45	55	166	389	890	478	159	238	107
20	27	32	64	45	60	144	485	839	515	151	253	115
21	25	35	64	45	53	138	492	789	401	134	224	93
22	24	38	60	50	47	148	500	733	339	134	233	80
23	22	38	52	50	53	174	515	752	305	144	198	76
24	22	40	45	50	56	198	561	733	253	131	178	71
25	22	42	45	45	58	207	561	705	229	138	166	80
26	24	41	50	45	85	159	483	752	202	162	170	118
27	22	34	50	50	85	159	777	770	155	220	193	90
28	21	25	40	50	85	159	1,040	828	138	148	249	80
29	21	32	35	50	-	170	1,090	696	118	110	185	73
30	26	38	35	53	-----	170	1,010	569	96	96	198	68
31	24	-----	45	55	-----	134	-----	545	-----	121	376	-----
Total	771	913	2,451	1,495	1,533	3,946	12,487	26,969	11,544	3,160	8,795	4,040
Mean	24.9	30.4	79.1	48.2	54.8	127	416	870	385	102	284	135
Max	30	42	429	55	85	207	1,090	1,660	714	220	848	268
Min	20	19	34	40	44	71	134	482	96	40	115	68
Ac-ft	1,530	1,810	4,860	2,970	3,040	7,830	24,770	53,490	22,900	6,270	17,440	8,010

Cal yr 1966 : Total 104,594 Mean 287 Max 2,150 Min 19 Ac-ft 207,500
Wtr yr 1967 : Total 78,104 Mean 214 Max 1,660 Min 19 Ac-ft 154,900

Peak discharge (base, 2,000 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
5-10	0030	4.53	2,110				

8-2842. Willow Creek above Heron Reservoir, near Park View, N. Mex.

Location.--Lat 36°44'30", long 106°37'35", in Tierra Amarilla Grant, on right bank 3.6 miles west of Park View, Rio Arriba County, 7½ miles upstream from Horse Lake Creek, and at mile 9.6.

Drainage area.--112 sq mi.

Records available.--October 1962 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 7,210 ft (from topographic map). Prior to June 6, 1963, at datum 2.74 ft lower, and natural control.

Average discharge.--5 years, 10.6 cfs (7,670 acre-ft per year).

Extremes.--Maximum discharge during year, 1,600 cfs Aug. 11 (gage height, 3.88 ft); minimum recorded, 0.01 cfs Jan. 18-20.
1962-67: Maximum discharge, that of Aug. 11, 1967; no flow at times.

Remarks.--Records good except those below 1 cfs, which are fair, and those for January, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.10	1.4	0.41	0.03	0.14	44	5.6	0.10	5.6	0.98	6.3	11
2	.23	1.3	.34	.03	.10	88	5.1	.14	5.6	.98	2.1	5.8
3	.14	1.1	.41	.03	.10	73	5.1	.14	6.1	1.4	39	3.4
4	.10	.98	.76	.03	.10	57	5.4	.14	7.4	1.1	27	2.5
5	.07	.87	1.2	.05	.10	45	5.6	.41	8.3	.67	39	7.5
6	1.7	.87	7.4	.07	.07	35	5.6	.48	8.3	.67	12	2.0
7	1.6	.98	38	.05	.05	28	4.1	.18	5.8	.34	6.1	2.7
8	1.2	1.8	17	.02	.05	23	3.2	.44	5.1	1.4	9.7	2.9
9	1.1	3.1	5.4	.03	.03	25	3.1	2.5	4.1	2.5	179	5.0
10	.76	3.1	3.8	.05	.03	28	2.7	2.2	3.2	1.7	52	5.4
11	.67	2.4	2.0	.05	.03	31	2.4	2.2	3.2	1.2	383	4.1
12	.48	1.6	1.2	.10	.03	34	2.2	1.4	2.7	1.6	21	3.1
13	1.6	.58	.98	.10	.05	18	2.2	1.4	3.1	3.4	17	1.6
14	2.0	.40	.76	.10	.14	18	2.4	1.6	3.4	3.2	37	.87
15	2.5	.48	.48	.10	.10	18	2.7	1.4	4.4	2.5	19	.58
16	3.4	.76	.34	.07	.10	13	2.4	1.3	3.6	4.6	21	.48
17	2.4	.76	.23	.04	.07	25	1.6	1.2	22	5.6	4.6	.34
18	1.8	.67	.18	.01	.05	30	1.3	1.2	8.4	14	2.4	.41
19	1.7	.58	.18	.01	.10	27	1.2	1.4	4.6	6.1	20	.48
20	2.2	.58	.18	.01	.14	19	.87	1.6	7.1	3.6	14	.41
21	2.2	.67	.18	.02	.14	17	.87	1.4	5.4	2.4	2.9	.28
22	1.7	.58	.10	.03	.14	16	.58	1.6	4.6	2.5	1.7	.23
23	1.6	.48	.05	.03	.18	15	.48	2.5	3.6	2.0	1.2	.23
24	1.4	.41	.02	.05	1.1	16	.34	2.4	2.9	1.6	.98	.23
25	1.1	.34	.01	.03	5.5	16	.34	2.5	2.5	2.2	.76	.23
26	1.1	.28	.02	.02	77	11	.28	2.9	2.2	2.0	.67	.28
27	1.6	.34	.03	.04	53	12	.28	4.6	1.8	1.4	.58	.48
28	1.4	.34	.03	.05	76	8.7	.23	5.4	1.7	1.6	1.4	1.2
29	1.6	.34	.05	.10	-	9.3	.18	6.4	1.7	1.3	14	1.2
30	1.7	.41	.05	.10	-----	9.0	.14	5.4	1.2	1.1	51	.87
31	1.7	-----	.03	.18	-----	7.1	-----	5.1	-----	25	59	-----
Total	42.85	28.50	81.82	1.63	214.64	816.1	68.49	61.63	149.6	100.64	1045.39	65.80
Mean	1.38	0.950	2.64	0.053	7.67	26.3	2.28	1.99	4.99	3.25	33.7	2.19
Max	3.4	3.1	38	0.18	77	88	5.6	6.4	22	25	383	11
Min	0.07	0.28	0.01	0.01	0.03	7.1	0.14	0.10	1.2	0.34	0.58	0.23
Ac-ft	85	57	162	3.2	426	1,620	136	122	297	200	2,070	131

Cal yr 1966: Total 5,015.19 Mean 13.7 Max 304 Min 0.01 Ac-ft 9,950
Wtr yr 1967: Total 2,677.09 Mean 7.33 Max 383 Min 0.01 Ac-ft 5,310

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 3	1800	2.62	406	8-30	2230	2.70	457
8-11	0315	3.88	1,600				

8-2843. Horse Lake Creek above Heron Reservoir, near Park View, N. Mex.

Location.--Lat 36°42'30", long 106°44'50", in Tierra Amarilla Grant, on left bank 5½ miles upstream from mouth, 8 miles downstream from Horse Lake, and 13 miles west of Park View, Rio Arriba County.

Drainage area.--45 sq mi, approximately.

Records available.--October 1962 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 7,220 ft (from topographic map). Prior to June 10, 1963, at datum 1.77 ft higher.

Average discharge.--5 years, 0.843 cfs (610 acre-ft per year).

Extremes.--Maximum discharge during year, 277 cfs Aug. 14 (gage height, 2.88 ft), from rating curve extended as explained below; no flow most of time.
1962-67: Maximum discharge, 440 cfs Aug. 1, 1964 (gage height, 3.20 ft), from rating curve extended above 37 cfs on basis of slope-area measurement of peak flow; no flow most of time.

Remarks.--Records good. Diversions above station for irrigation of meadows and for off-channel stock tanks.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0		0	11			0	0	0.52	0.68
2			0		0	7.1			0	0	0	.01
3			0		0	3.3			0	0	.02	0
4			0		0	1.7			0	0	.87	0
5			0		0	.46			0	0	.44	0
6			1.7		0	.12			0	0	0	0
7			10		0	.01			0	0	.97	10
8			.38		0	0			0	0	0	.57
9			0		0	0			0	0	2.6	7.1
10			0		0	0			0	0	24	.06
11			0		0	.60			0	0	49	0
12			0		0	.21			0	.02	1.2	0
13			0		0	.12			0	0	12	0
14			0		0	0			0	0	44	0
15			0		0	0			0	0	14	0
16			0		0	0			0	.04	.94	0
17			0		0	0			.22	1.0	.10	0
18			0		0	0			.04	.08	.01	0
19			0		0	.01			.04	0	0	0
20			0		0	0			.06	.04	0	0
21			0		0	0			0	0	0	0
22			0		0	0			0	0	0	0
23			0		0	0			0	0	0	0
24			0		0	0			0	1.3	0	0
25			0		0	0			0	0	0	0
26			0		4.0	0			0	0	0	1.1
27			0		10	0			0	0	.09	.16
28			0		7.3	0			0	0	.02	0
29			0		-	0			0	0	0	0
30			0		-----	0			0	0	0	0
31		-----	0		-----	0	-----		-----	.36	.54	-----
Total	0	0	12.08	0	21.3	24.63	0	0	0.36	2.84	151.32	19.68
Mean	0	0	0.390	0	0.76	0.795	0	0	0.012	0.092	4.88	0.656
Max	0	0	10	0	10	11	0	0	.22	1.3	49	10
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	24	0	42	49	0	0	0.7	5.6	300	39

Cal yr 1966: Total 364.51 Mean 1.00 Max 15 Min 0 Ac-ft 723
Wtr yr 1967: Total 232.21 Mean 0.636 Max 49 Min 0 Ac-ft 461

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	2300	2.86	269	9- 7	1600	2.27	110
8-14	1530	2.88	277	9- 9	0445	1.83	53

8-2845. Willow Creek near Park View, N. Mex.

Location.--Lat 36°40'05", long 106°42'15", in Tierra Amarilla Grant, at Heron damsite (revised), 0.7 mile downstream from Horse Lake Creek, 8½ miles southwest of Park View, Rio Arriba County, and at mile 0.4.

Drainage area.--193 sq mi.

Records available.--May 1936 to September 1967 (no winter records prior to 1943). Monthly or yearly discharges only for some periods, published in WSP 1312.

Gage.--Water-stage recorders 0.7 mile upstream on Horse Lake Creek at mouth and 3 miles upstream on Willow Creek at steel bridge (construction of Heron Dam prevented collection of a record at Heron damsite subsequent to Nov. 8, 1965). At Heron damsite, datum of gage at time of discontinuance was 6,944.99 ft above mean sea level (Bureau of Reclamation datum). Prior to Oct. 1, 1937, at datum 0.79 ft higher. Apr. 19, 1949 to Aug. 8, 1951, at different datums. Aug. 9, 1951 to Sept. 30, 1960, at datum 0.41 ft higher.

Average discharge.--30 years (1936-38, 1939-67), 21.2 cfs (15,350 acre-ft per year).

Extremes.--Maximum discharge during year, 2,420 cfs Aug. 11, from rating curve extended above 1,100 cfs by logarithmic plotting; minimum determined, 0.15 cfs Jan. 19-23.
1936-67: Maximum discharge, 4,500 cfs Apr. 23, 1942 (gage height, 10.45 ft, site and datum then in use), from rating curve extended above 1,400 cfs on basis of slope-area measurement of peak flow; no flow at times.

Remarks.--Records good except those for Dec. 1 to Mar. 15, which are poor. Small diversions above station for irrigation and stock tanks. Subsequent to Nov. 8, 1965, published record is the composite of Horse Lake Creek at mouth and Willow Creek at steel bridge pending construction of Heron Dam.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	6.1	4.5	0.60	0.30	136	5.6	3.9	14	5.3	36	14
2	2.1	5.8	4.0	.60	.30	149	5.3	3.0	13	4.7	13	7.3
3	2.0	5.8	4.5	.60	.30	94	5.3	2.8	14	5.3	45	4.4
4	2.1	5.3	5.0	.60	.30	65	5.3	2.5	17	5.3	63	3.0
5	2.0	5.0	7.1	.60	.30	50	5.6	3.2	21	4.4	61	7.3
6	2.8	5.0	17	.60	.25	40	5.8	3.6	19	4.4	27	3.0
7	3.6	5.6	54	.55	.25	30	4.4	4.4	16	5.0	20	7.8
8	3.0	8.0	26	.50	.25	27	3.4	4.7	14	5.8	8.7	6.1
9	2.6	9.9	9.0	.45	.25	27	3.0	8.0	13	6.8	171	18
10	2.6	9.1	5.0	.40	.25	32	2.6	8.7	11	7.2	116	7.2
11	3.0	8.7	4.0	.40	.25	40	2.5	6.8	11	8.7	540	4.0
12	3.6	8.0	3.0	.40	.25	45	2.0	7.6	10	8.0	39	4.2
13	3.6	7.6	2.0	.40	.30	28	2.0	6.8	8.7	9.9	26	2.5
14	3.6	6.8	1.6	.35	.35	18	2.1	7.2	8.4	9.1	87	2.0
15	3.9	6.8	1.8	.30	.35	18	2.3	7.6	9.5	8.4	73	1.2
16	5.0	6.8	1.8	.25	.35	15	2.6	6.4	10	12	32	1.8
17	5.3	7.6	2.0	.20	.35	25	1.8	6.1	17	22	8.3	2.5
18	4.7	5.3	1.8	.20	.40	31	1.4	6.1	27	27	4.8	2.3
19	4.7	6.1	1.5	.15	.40	28	1.1	6.8	13	17	11	2.6
20	4.7	4.4	1.2	.15	.50	22	.76	6.8	16	13	26	2.5
21	5.3	5.0	1.1	.15	.40	18	.66	6.4	13	10	4.7	1.2
22	5.8	5.0	.98	.15	.40	17	.58	6.4	12	10	3.2	.98
23	5.0	5.8	.80	.15	.97	16	.37	6.8	11	11	2.1	2.3
24	5.6	5.6	.70	.20	3.4	16	.32	8.4	9.9	21	1.5	3.9
25	6.1	5.8	.60	.20	5.1	16	.28	8.7	8.7	13	1.4	4.4
26	5.3	5.0	.60	.20	75	13	.28	11	8.4	11	1.3	3.6
27	5.3	4.4	.60	.20	73	12	.25	15	7.6	9.9	1.9	3.2
28	5.6	3.6	.65	.20	78	9.1	.22	15	6.8	10	2.6	3.3
29	5.8	3.6	.70	.25	-	8.7	.63	18	6.4	9.1	1.7	4.2
30	6.8	4.2	.70	.30	- - - - -	9.1	2.3	14	6.1	9.1	32	3.2
31	6.4	- - - - -	.70	.30	- - - - -	7.6	- - - - -	14	- - - - -	47	78	- - - - -
Total	129.7	181.7	164.93	10.60	242.52	1062.5	70.75	236.7	372.5	350.4	1538.2	133.98
Mean	4.18	6.06	5.32	0.342	8.66	34.3	2.36	7.64	12.4	11.3	49.6	4.47
Max	6.8	9.9	54	0.60	78	149	5.8	18	27	47	540	18
Min	1.8	3.6	0.60	0.15	0.25	7.6	0.22	2.5	6.1	4.4	1.3	0.98
Ac-ft	257	360	327	21	481	2,110	140	469	739	695	3,050	266

Cal yr 1966: Total 7,504.92 Mean 20.6 Max 480 Min 0.15 Ac-ft 14,890
Wtr yr 1967: Total 4,494.48 Mean 12.3 Max 540 Min 0.15 Ac-ft 8,910

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-9	2030	-	1,440	8-11	0330	-	2,420

Note.--No gage-height record Dec. 29 to Jan. 30.

8-2850. El Vado Reservoir near Tierra Amarilla, N. Mex.

Location.--Lat 36°35'45" (corrected), long 106°43'55", in Tierra Amarilla Grant, at dam on Rio Chama, at village of El Vado, 13 miles southwest of Tierra Amarilla, Rio Arriba County, and at mile 77.7.

Drainage area.--873 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--January 1935 to September 1967.

Gage.--Water-stage recorder (records stages above spillway floor only) and inclined staff gage. Datum of gage is 8.21 ft above mean sea level, datum of 1929, leveling of 1953.

Extremes.--Maximum contents at 0730 hours during year, 23,900 acre-ft Aug. 29 to Sept. 30 (gage height, 6,814.7 ft); no contents Oct. 1 to Nov. 30.
1935-67: Maximum contents, 204,900 acre-ft June 4, 5, 1948 (gage height, 6,904.2 ft); no contents at times.

Remarks.--Reservoir is formed by rock-fill dam, steel faced. Storage began in January 1935. Capacity, 196,500 acre-ft between 6,759.0 ft and 6,902.0 ft (top of spillway gate). Dead storage, 1,060 acre-ft below 6,775.0 ft (sill of outlet works). Figures given herein represent total contents. Reservoir is used to impound water for irrigation by Middle Rio Grande Conservancy District. Prior to completion of rehabilitation of outlet works of El Vado Dam in December 1966 storage normally held in El Vado Reservoir was impounded in Abiquiu Reservoir (see station 8-2869), 46 miles downstream.

Cooperation.--Daily gage readings furnished by Middle Rio Grande Conservancy District. Capacity table furnished by Bureau of Reclamation.

Capacity table (gage height, in feet, and contents, in acre-feet)

6,760.3	0	6,765	180	6,780	2,190	6,805	15,770
6,761	10	6,768	310	6,785	4,100	6,810	19,730
6,762	30	6,770	490	6,790	6,510	6,815	24,180
6,763	50	6,772	700	6,795	9,240		
6,764	80	6,775	1,060	6,800	12,290		

Contents, in acre-feet, at 0730 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			10	1,140	1,140	1,140	1,260	20,750	21,180	22,160	22,250	23,900
2			20	1,140	1,140	1,140	1,260	21,180	21,180	22,160	22,250	23,900
3			50	1,140	1,140	1,140	1,260	21,180	21,180	22,160	22,250	23,900
4			130	1,140	1,140	1,140	1,350	21,180	21,180	22,160	22,250	23,900
5			260	1,140	1,140	1,140	1,500	21,180	21,180	22,160	22,250	23,900
6			810	1,140	1,140	1,140	1,760	21,180	21,180	22,160	22,250	23,900
7			1,170	1,140	1,140	1,140	2,130	21,180	21,180	22,160	22,250	23,900
8			1,500	1,140	1,140	1,140	2,550	21,180	21,180	22,160	22,250	23,900
9			1,140	1,140	1,140	1,140	3,070	21,180	21,180	22,160	22,250	23,900
10			1,110	1,140	1,140	1,140	3,590	21,180	21,180	22,160	22,250	23,900
11			1,110	1,140	1,140	1,140	4,100	21,180	21,180	22,160	23,710	23,900
12			1,140	1,140	1,140	1,140	4,640	21,180	21,180	22,160	23,710	23,900
13			1,140	1,140	1,140	1,220	5,160	21,180	21,180	22,250	23,710	23,900
14			1,140	1,140	1,140	1,220	5,700	21,180	21,180	22,250	23,710	23,900
15			1,140	1,140	1,140	1,220	6,250	21,180	21,180	22,250	23,710	23,900
16			1,140	1,140	1,140	1,190	6,770	21,180	21,180	22,250	23,710	23,900
17			1,140	1,140	1,140	1,200	7,140	21,180	21,180	22,250	23,710	23,900
18			1,140	1,140	1,140	1,220	7,510	21,180	21,180	22,250	23,710	23,900
19			1,140	1,140	1,140	1,280	7,890	21,180	21,180	22,250	23,710	23,900
20			1,140	1,140	1,140	1,310	8,560	21,180	21,180	22,250	23,710	23,900
21			1,140	1,140	1,140	1,350	9,410	21,180	21,180	22,250	23,710	23,900
22			1,140	1,140	1,140	1,260	10,240	21,180	21,180	22,250	23,710	23,900
23			1,140	1,140	1,140	1,260	11,090	21,180	21,180	22,250	23,710	23,900
24			1,140	1,140	1,140	1,260	11,970	21,180	21,180	22,250	23,710	23,900
25			1,140	1,140	1,140	1,260	12,820	21,180	21,180	22,250	23,710	23,900
26			1,140	1,140	1,140	1,260	13,630	21,180	21,180	22,250	23,710	23,900
27			1,140	1,140	1,140	1,260	14,460	21,180	21,180	22,250	23,710	23,900
28			1,140	1,140	1,140	1,260	15,770	21,180	21,180	22,250	23,710	23,900
29			1,140	1,140	--	1,260	17,530	21,180	21,180	22,250	23,900	23,900
30			1,140	1,140	----------	1,260	19,230	21,180	22,160	22,250	23,900	23,900
31		----------	1,140	1,140	----------	1,260	----------	21,180	----------	22,250	23,900	----------
(†)	6,758.6	6,759.1	6,775.5	6,775.5	6,775.5	6,776.2	6,809.4	6,811.7	6,812.8	6,812.9	6,814.7	6,814.7
(‡)	0	0	+1,140	0	0	+120	+17,970	+1,950	+980	+90	+1,650	0
Max	0	0	1,500	1,140	1,140	1,350	19,230	21,180	22,160	22,250	23,900	23,900
Min	0	0	10	1,140	1,140	1,140	1,260	20,750	21,180	22,160	22,250	23,900

Calendar year 1966..... ‡ +1,140
Water year 1967..... ‡ +23,900

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

8-2855. Rio Chama below El Vado Dam, N. Mex.

Location.--Lat 36°34'50", long 106°43'30", in Tierra Amarilla Grant, on left bank 1.5 miles downstream from El Vado Dam, Rio Arriba County, 2.7 miles upstream from Rio Nutrias, 13 miles southwest of Tierra Amarilla, and at mile 76.2.

Drainage area.--877 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--October 1913 to November 1915, April to November 1916, March, April 1920, September 1920 to August 1924, October 1935 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Published as "Chama River" prior to 1935, as near Tierra Amarilla 1913-14, 1935-47, as "near El Vado" 1915-16, and as "at El Vado" 1920-24.

Gage.--Water-stage recorder. Datum of gage is 6,696.12 ft above mean sea level, datum of 1929. Prior to October 1935, at site 1.5 miles upstream at different datum. October 1935 to September 1938 at site 1.1 miles upstream at datum 30.34 ft higher.

Average discharge.--5 years (1913-15, 1920-23), 448 cfs (324,300 acre-ft per year), prior to completion of El Vado Dam; 32 years (1935-67), 375 cfs (271,500 acre-ft per year), after completion of El Vado Dam.

Extremes.--Maximum discharge during year, 1,760 cfs Aug. 11 (gage height, 4.27 ft); minimum, 1.2 cfs Nov. 18.
1913-16, 1920-22, 1923-24: Maximum discharge observed, 9,000 cfs May 22, 1920 (gage height, 12 ft, site and datum then in use); minimum unknown.
1935-67: Maximum discharge, 6,010 cfs May 17, 1941 (gage height, 6.89 ft at present site and datum); no flow Mar. 25, 26, 31, 1955.

Remarks.--Records good except those for the winter period, which are fair. Flow regulated since 1935 by El Vado Reservoir (see station 8-2850). Diversions for irrigation of about 10,600 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	28	3.9	44	52	160	199	372	532	108	188	383
2	21	27	10	49	50	222	191	763	478	92	137	186
3	22	25	10	45	48	230	226	580	519	87	153	131
4	26	25	11	52	48	203	286	460	652	75	364	180
5	28	22	11	45	52	131	270	370	742	69	253	214
6	28	23	12	52	52	95	195	490	798	62	163	191
7	30	25	233	50	48	80	199	709	643	44	282	163
8	30	30	340	45	48	75	195	1,070	562	44	253	163
9	28	37	210	50	48	75	195	1,270	568	56	360	214
10	30	37	95	50	48	87	169	1,570	484	56	561	210
11	31	32	83	55	48	108	103	1,700	420	58	1,350	160
12	30	35	87	58	50	140	105	1,560	425	58	734	122
13	31	40	83	45	50	134	108	1,130	360	58	427	122
14	30	38	78	50	56	119	108	915	325	40	604	122
15	28	36	73	45	60	105	111	834	325	38	721	122
16	27	34	67	45	55	100	111	664	320	98	512	95
17	28	16	60	45	48	117	111	670	254	240	326	83
18	30	7.9	60	50	50	160	114	777	262	266	286	83
19	32	43	62	52	50	199	114	945	375	203	246	133
20	32	60	62	45	54	210	117	1,050	375	196	246	107
21	30	40	62	45	48	184	117	857	370	135	214	95
22	28	34	60	45	48	184	119	777	370	177	191	96
23	28	37	54	45	49	195	122	700	395	144	188	78
24	27	37	49	47	50	230	125	664	425	147	191	78
25	28	40	45	52	56	266	125	664	425	191	144	78
26	28	40	44	48	73	250	128	749	317	188	165	111
27	30	37	47	49	163	222	128	819	234	218	250	114
28	27	35	40	50	140	222	131	819	174	177	253	75
29	27	34	35	50	-	234	131	819	119	147	278	106
30	28	18	35	50	-----	238	134	621	146	83	267	72
31	30	-----	40	52	-----	218	-----	526	-----	71	480	-----
Total	873	972.9	2,161.9	1,505	1,642	5,193	4,487	25,914	12,394	3,626	10,787	4,087
Mean	28.2	32.4	69.7	48.5	58.6	168	150	836	413	117	348	136
Max	32	60	340	58	163	266	286	1,700	798	266	1,350	383
Min	20	7.9	3.9	44	48	75	103	370	119	38	137	72
Ac-ft	1,730	1,930	4,290	2,990	3,260	10,300	8,900	51,400	24,580	7,190	21,400	8,110

Cal yr 1966: Total 115,255.8 Mean 316 Max 1,260 Min 3.9 Ac-ft 228,600
Wtr yr 1967: Total 73,642.8 Mean 202 Max 1,700 Min 3.9 Ac-ft 146,100

8-2865. Rio Chama above Abiquiu Reservoir, N. Mex.

Location.--Lat 36°19'05", long 106°35'50", in NW¼ sec.14, T.24 N., R.3 E. (projected), on left bank 7.7 miles downstream from Río Gallina, 10 miles northwest of Youngsville, 16 miles upstream from Abiquiu Dam, 30 miles downstream from El Vado Dam, and at mile 47.4.

Drainage area.--1,600 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--August 1961 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 6,280 ft (from river-profile map). Oct. 1, 1963 to Sept. 30, 1966, digital water-stage recorder at same site and datum.

Average discharge.--6 years, 355 cfs (257,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,860 cfs Aug. 11 (gage height, 6.69 ft), from rating curve extended as explained below; minimum, about 9.5 cfs Dec. 3 (from reconstructed graph).
1961-67: Maximum discharge, 4,520 cfs Aug. 1, 1965 (gage height, 7.22 ft), from rating curve extended above 1,700 cfs by logarithmic plotting; minimum, 7.5 cfs Oct. 17, 18, 1963.

Remarks.--Records good except those for winter periods, which are poor. Flow regulated by El Vado Reservoir (see station 8-2850). Diversions for irrigation of about 15,000 acres above station. Records of suspended sediment loads and water temperatures for water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	28	28	50	65	176	207	147	501	137	153	568
2	20	26	13	50	65	219	198	725	492	100	180	264
3	20	26	11	50	65	242	200	660	426	97	251	151
4	24	28	21	50	65	222	256	518	665	89	462	137
5	29	28	34	50	65	180	313	365	750	78	840	226
6	30	27	86	50	65	128	202	404	800	70	269	358
7	29	29	144	50	65	102	200	605	720	60	421	200
8	30	32	404	50	60	91	200	1,020	546	50	399	290
9	31	36	258	52	60	86	198	1,270	536	55	507	313
10	30	41	159	54	60	85	202	1,500	501	60	793	261
11	31	41	84	56	60	103	137	1,710	389	60	2,670	182
12	33	36	95	58	60	115	117	1,650	382	103	1,240	145
13	31	40	100	60	65	149	119	1,280	361	135	610	130
14	31	41	90	55	77	141	119	908	301	69	699	130
15	31	40	80	55	72	121	119	968	298	48	796	130
16	29	39	75	55	70	112	121	710	298	112	702	126
17	26	40	67	55	66	105	121	690	275	886	397	98
18	27	31	65	55	60	136	119	725	222	472	281	94
19	29	14	70	55	64	191	119	896	354	200	283	95
20	33	39	70	60	65	214	119	1,060	365	268	281	155
21	34	62	70	60	68	195	122	950	361	134	256	88
22	32	43	70	60	63	188	124	795	361	174	198	115
23	31	38	65	65	65	186	126	750	361	173	195	88
24	29	41	55	70	69	214	128	675	407	175	193	85
25	29	41	50	70	70	253	130	665	411	200	191	84
26	28	43	55	65	85	269	134	695	371	226	322	86
27	28	40	55	60	131	226	130	800	256	191	872	201
28	27	37	50	60	180	219	134	806	200	224	404	89
29	25	39	40	65	-	224	139	800	157	157	574	79
30	26	36	40	65	-----	237	143	710	122	159	307	105
31	26	-----	45	65	-----	239	-----	518	-----	77	661	-----
Total	879	1,082	2,549	1,775	2,025	5,368	4,696	25,975	12,189	5,039	16,407	5,073
Mean	28.4	36.1	82.2	57.3	72.3	173	157	838	406	163	529	169
Max	34	62	404	70	180	269	313	1,710	800	886	2,670	568
Min	20	14	11	50	60	85	117	147	122	48	153	79
Ac-ft	1,740	2,150	5,060	3,520	4,020	10,650	9,310	51,520	24,180	9,990	32,540	10,060

Cal yr 1966 : Total 126,863 Mean 348 Max 1,350 Min 11 Ac-ft 251,600
Wtr yr 1967 : Total 83,057 Mean 228 Max 2,670 Min 11 Ac-ft 164,700

8-2869. Abiquiu Reservoir near Abiquiu, N. Mex.

Location.--Lat 36°14'15", long 106°25'35", in SW¼ sec.8, T.23 N., R.5 E., in Abiquiu Dam on Rio Chama, 6½ miles northwest of Abiquiu, and at mile 31.8.

Drainage area.--2,146 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--February 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929.

Extremes.--Maximum contents during year, 23,250 acre-ft Oct. 1 (elevation, 6,141.17 ft); no contents many days.
1963-67: Maximum contents, 99,580 acre-ft Sept. 13, 1965 (elevation, 6,186.61 ft); no contents at times.

Remarks.--Reservoir is formed by earth-fill dam, completed Feb. 5, 1963. Capacity, 1,223,100 acre-ft between elevations 6,060 (invert of outlet tunnel) and 6,350 ft (crest of spillway). No dead storage. Original plan for reservoir was to hold water for one day to desilt before release, and for flood control as needed. Reserve capacity for flood control will usually be more than adequate. Storage prior to Dec. 10, 1966, would normally have been held in El Vado Reservoir (see station 8-2850), 46 miles upstream. Outlet works of El Vado Reservoir were being rehabilitated which prevented normal storage.

Cooperation.--Records furnished by Corps of Engineers.

Capacity table (elevation, in feet, and contents, in acre-feet)

6,068	1	6,095	1,430	6,125	12,000
6,070	3	6,100	2,360	6,130	14,990
6,075	39	6,105	3,600	6,135	18,400
6,080	139	6,110	5,170	6,140	22,270
6,085	364	6,115	7,090	6,145	26,680
6,090	779	6,120	9,370	6,150	31,690

Contents, in acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23,250	22,990	1,090		0	113	353	517	1,470	1,280	1,440	1,470
2	23,240	22,980	1,070		0	169	320	1,060	1,500	1,270	1,480	1,390
3	23,210	22,620	1,060		0	256	316	1,140	1,460	1,280	1,570	1,340
4	23,200	21,460	1,080		0	322	383	1,040	1,730	1,280	2,010	1,410
5	23,210	20,330	992		0	343	483	1,050	1,620	1,270	2,470	1,470
6	23,210	19,220	738		0	256	461	1,030	1,400	1,290	1,940	1,710
7	23,220	18,120	322		0	217	458	1,300	1,360	1,310	2,090	1,490
8	23,180	17,050	323		0	171	461	1,460	1,300	1,300	2,260	1,490
9	23,180	15,970	384		0	84	451	1,500	1,290	1,270	2,360	1,390
10	23,180	14,910	196		0	0	447	1,570	1,350	1,300	2,360	1,370
11	23,180	13,900	0		0	7	462	1,620	1,290	1,320	5,370	1,370
12	23,180	12,860	0		0	10	464	1,560	1,280	1,320	4,850	1,420
13	23,180	11,860	0		0	37	482	1,310	1,270	1,380	3,020	1,430
14	23,160	10,860	0		0	33	489	1,260	1,270	1,300	2,060	1,420
15	23,140	9,880	27		0	13	489	1,560	1,320	1,300	1,740	1,420
16	23,130	8,860	6		0	10	484	1,380	1,290	1,310	1,530	1,410
17	23,120	7,880	2		0	7	475	1,380	1,330	2,080	1,440	1,370
18	23,110	6,790	9		0	32	475	1,370	1,290	1,620	1,400	1,390
19	23,110	5,420	2		0	130	473	1,400	1,310	1,310	1,670	1,400
20	23,120	4,130	2		0	146	470	1,490	1,290	1,480	1,480	1,420
21	23,070	2,360	5		0	133	471	1,460	1,280	1,340	1,400	1,380
22	23,070	1,060	4		0	112	473	1,390	1,290	1,350	1,410	1,440
23	23,080	1,110	2		0	107	475	1,430	1,290	1,380	1,400	1,420
24	23,070	1,100	2		0	134	481	1,400	1,310	1,440	1,400	1,370
25	23,060	1,100	2		0	196	487	1,410	1,310	1,410	1,400	1,400
26	23,060	1,100	2		0	274	492	1,400	1,360	1,290	1,540	1,420
27	23,040	1,100	3		25	278	492	1,490	1,270	1,240	2,090	1,520
28	23,020	1,090	2		94	264	488	1,480	1,310	1,300	1,350	1,420
29	23,010	1,100	2		-	283	495	1,480	1,330	1,260	1,440	1,400
30	23,000	1,100	2		----------	342	510	1,550	1,260	1,340	1,540	1,420
31	22,990	----------	2		----------	375	----------	1,460	----------	1,360	1,520	----------
(†)	6,140.86	6,092.72	6,069.28	-	6,078.20	6,085.17	6,087.05	6,095.20	6,093.92	6,094.54	6,095.60	6,094.96
(‡)	-290	-21,890	-1,098	-2	+94	+281	+135	+950	-200	+100	+160	-100
Max	23,250	22,990	1,090	0	94	375	510	1,620	1,730	2,080	5,370	1,710
Min	22,990	1,060	0	0	0	0	316	517	1,260	1,240	1,350	1,340

Calendar year 1966..... ‡ - 1,218
Water year 1967..... ‡ -21,860

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

Note.--Change in contents for calendar year 1966 obtained by summation of monthly values. Using new capacity table effective Mar. 1, 1966, contents on Dec. 31, 1965, would have been 181 acre-ft; change in contents during 1966 calendar year would be -179 acre-ft.

8-2870. Rio Chama below Abiquiu Dam, N. Mex.

Location.--Lat 36°14'10", long 106°25'00", in SE¼SE¼ sec.8, T.23 N., R.5 E., on right bank half a mile downstream from Abiquiu Dam, 6 miles northwest of Abiquiu, and at mile 31.3.

Drainage area.--2,147 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--October 1961 to September 1967. Monthly discharge only for October 1961.

Gage.--Water-stage recorder. Concrete control since Jan. 25, 1966. Altitude of gage is 6,040 ft (from river-profile map and topographic map). Prior to Jan. 25, 1966, at datum 1.60 ft lower.

Average discharge.--6 years, 377 cfs (272,900 acre-feet per year).

Extremes.--Maximum discharge during year, 1,880 cfs Aug. 12 (gage height, 5.09 ft); maximum gage height, 7.29 ft Jan. 14 (backwater from ice); minimum discharge, 12 cfs Oct. 8 (result of regulation).
1961-67: Maximum discharge, 2,990 cfs July 1, 1965 (gage height, 6.69 ft); maximum gage height, that of Jan. 14, 1967; minimum discharge, about 0.5 cfs Mar. 17, 1966 (result of regulation).

Remarks.--Records good except those for winter periods, which are poor. Flow largely controlled by El Vado Reservoir (see station 8-2850) about 46 miles upstream, and Abiquiu Reservoir (see station 8-2869) ½ mile upstream. Diversions for irrigation of about 17,600 acres above station. Records of suspended sediment loads and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	33	63	50	70	161	243	148	521	142	93	657
2	20	33	48	53	70	178	239	317	505	116	238	361
3	23	190	38	55	70	188	216	641	480	98	183	186
4	18	574	34	57	70	195	209	579	612	98	403	136
5	16	557	104	53	70	202	247	389	855	86	898	198
6	25	557	274	50	70	198	263	389	948	58	504	395
7	33	557	509	48	70	174	220	426	790	58	380	309
8	41	557	447	50	68	142	213	911	601	65	343	345
9	32	547	348	51	66	161	216	1,280	568	51	691	379
10	28	547	330	52	66	148	213	1,450	536	44	1,010	309
11	29	547	217	54	66	119	158	1,710	460	48	1,100	202
12	28	536	113	56	67	136	133	1,740	426	88	1,640	154
13	29	536	116	59	69	152	122	1,470	421	201	1,490	136
14	31	531	108	61	73	155	130	925	326	113	1,110	133
15	29	541	105	59	77	148	136	796	300	55	914	133
16	28	552	100	58	72	130	142	796	335	55	853	133
17	31	552	111	57	70	122	139	682	304	439	491	122
18	30	613	88	57	68	133	133	700	255	766	326	86
19	28	718	87	58	68	161	136	842	330	398	326	88
20	30	694	75	60	70	216	136	1,000	402	235	370	127
21	29	952	74	61	72	228	136	1,010	393	231	301	114
22	35	678	73	62	77	224	133	822	379	164	220	71
23	29	51	61	62	81	216	133	748	379	181	205	95
24	32	81	65	65	79	216	133	688	417	167	205	95
25	35	71	60	67	77	220	133	676	431	257	198	88
26	35	73	60	69	98	228	139	688	402	300	155	113
27	39	71	60	68	116	251	145	778	321	219	684	164
28	39	65	55	66	158	255	145	816	206	202	823	157
29	39	63	55	68	~	231	145	822	161	181	480	98
30	30	63	50	70	-----	205	145	736	161	133	321	105
31	30	-----	50	70	-----	220	-----	579	-----	105	641	-----
Total	924	12,140	3,978	1,826	2,148	5,713	5,031	25,554	13,225	5,354	17,596	5,689
Mean	29.8	405	128	58.9	76.7	184	168	824	441	173	568	190
Max	41	952	509	70	158	255	263	1,740	948	766	1,640	657
Min	16	33	34	48	66	119	122	148	161	44	93	71
Ac-ft	1,830	24,080	7,890	3,620	4,260	11,330	9,980	50,690	26,230	10,620	34,900	11,280

Cal yr 1966: Total 133,489 Mean 366 Max 1,430 Min 16 Ac-ft 264,800
Wtr yr 1967: Total 99,178 Mean 272 Max 1,740 Min 16 Ac-ft 196,700

8-2875. Rio Chama near Abiquiu, N. Mex.

Location.--Lat 36°13'00", long 106°15'00", in Juan Jose Lobato Grant, at downstream end of bridge pier on State Highway 96, 1¾ miles upstream from El Rito Creek, 5 miles downstream from Abiquiu, Rio Arriba County, 13.5 miles downstream from Abiquiu Dam, and at mile 18.2.

Drainage area.--2,284 sq mi, of which about 100 sq mi is probably noncontributing.

Records available.--October 1941 to September 1967 (discontinued). Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Datum of gage is 5,873.17 ft above mean sea level, datum of 1929.

Average discharge.--26 years, 398 cfs (288,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,560 cfs Sept. 7 (gage height, 5.37 ft); maximum gage height, 5.45 ft, June 20; minimum discharge, 12 cfs Oct. 5.
1941-67: Maximum discharge, 7,870 cfs July 28, 1952, from rating curve extended above 2,900 cfs by logarithmic plotting; maximum gage height, 6.38 ft Aug. 5, 1959; minimum daily discharge, 1 cfs June 11, 1947.

Remarks.--Records good except those for winter periods, which are poor. Flow regulated by El Vado Reservoir (see station 8-2850) and Abiquiu Reservoir (see station 8-2869). Diversions above station for irrigation of about 19,100 acres a few hundred of which is below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	27	72	50	88	156	239	125	492	137	71	765
2	18	25	69	50	84	175	235	211	486	93	148	350
3	15	42	50	55	90	184	218	603	468	88	257	229
4	17	522	47	60	88	188	194	603	655	88	268	114
5	15	528	64	55	83	191	228	404	833	81	738	153
6	14	540	204	55	81	191	267	325	923	65	584	363
7	23	516	405	50	79	178	210	398	788	50	275	592
8	25	540	447	50	83	147	194	739	589	52	370	295
9	31	534	329	52	83	147	194	1,230	554	48	859	360
10	21	540	316	55	86	164	191	1,340	547	38	1,030	315
11	20	546	238	57	90	116	156	1,610	456	38	1,190	246
12	20	552	115	60	77	130	116	1,640	409	73	1,780	135
13	21	540	110	63	81	145	99	1,410	398	150	1,700	125
14	24	546	110	65	99	150	101	872	330	146	1,290	123
15	30	552	100	66	90	142	105	666	267	47	990	123
16	26	552	98	64	88	125	116	746	291	44	980	128
17	28	552	95	61	90	116	112	589	271	348	561	118
18	32	576	90	59	88	118	110	603	224	650	345	90
19	28	698	88	61	81	153	110	746	255	447	311	71
20	28	649	92	63	83	184	110	923	458	191	355	84
21	32	837	85	65	77	221	110	950	355	218	330	145
22	44	815	85	67	81	221	110	797	335	145	224	57
23	32	41	83	71	84	207	110	682	320	150	204	81
24	29	77	78	75	83	210	110	603	325	150	210	92
25	36	69	75	75	84	218	114	589	350	154	194	95
26	36	69	75	75	95	228	118	610	350	243	175	103
27	35	70	65	75	108	243	120	698	299	197	514	110
28	36	66	60	75	145	255	123	770	218	161	896	164
29	35	64	55	75	-	239	123	770	142	164	496	88
30	34	70	53	80	-----	200	123	738	153	108	418	90
31	25	-----	50	86	-----	210	-----	554	-----	88	539	-----
Total	829	11,755	3,903	1,970	2,469	5,552	4,466	23,544	12,541	4,652	18,302	5,804
Mean	26.7	392	126	63.5	88.2	179	149	759	418	150	590	193
Max	44	837	447	86	145	255	267	1,640	923	650	1,780	765
Min	14	25	47	50	77	116	99	125	142	38	71	57
Ac-ft	1,640	23,320	7,740	3,910	4,900	11,010	8,860	46,700	24,870	9,230	36,300	11,510

Cal yr 1966: Total 130,604 Mean 358 Max 1,430 Min 14 Ac-ft 259,000
Wtr yr 1967: Total 95,787 Mean 262 Max 1,780 Min 14 Ac-ft 190,000

8-2890. Rio Ojo Caliente at La Madera, N. Mex.

Location.--Lat 36°20'59", long 106°02'38", in NW¼NE¼ sec.1, T.24 N., R.8 E., on left bank 400 ft upstream from bridge on State Highway 96, 2¼ miles south of La Madera, 2¾ miles downstream from confluence of Rio Vallecitos and Rio Tusas, and 3¼ miles north of Ojo Caliente.

Drainage area.--419 sq mi.

Records available.--April 1932 to September 1967.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 6,358.84 ft above mean sea level, datum of 1929. Prior to Apr. 23, 1934, at site about 2¾ miles upstream at different datum. Apr. 23, 1934 to June 22, 1936, at datum 12.58 ft lower and June 23, 1936 to Oct. 27, 1956, at datum 13.84 ft lower, both at site 1,400 ft downstream. Prior to Mar. 27, 1963, graphic water-stage recorder.

Average discharge.--35 years, 69.7 cfs (50,460 acre-ft per year).

Extremes.--Maximum discharge during year, 1,260 cfs Aug. 11 (gage height, 6.82 ft), from rating curve extended above 92 cfs on basis of slope-area measurement at gage height 7.25 ft; minimum, 1.9 cfs July 11, 12.
1932-67: Maximum discharge, 3,140 cfs Apr. 21, 1958, from rating curve extended above 1,300 cfs by logarithmic plotting; maximum gage height, 7.60 ft July 15, 1933, site and datum then in use; minimum discharge, 0.2 cfs Aug. 17, 1956.
A flood which occurred in May 1920 may have exceeded 3,200 cfs, from information by local resident.

Remarks.--Records fair. Diversions above station for irrigation of about 3,500 acres (1962 determination).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.2	9.4	14	13	19	21	55	62	31	4.5	31	35
2	6.2	9.5	14	15	18	24	57	54	33	4.2	27	24
3	6.2	9.8	14	15	19	28	68	47	40	4.2	65	16
4	6.2	9.6	17	14	18	31	79	40	48	4.1	66	13
5	6.2	9.5	17	15	18	31	102	50	48	3.9	68	11
6	6.5	10	24	15	19	26	92	52	47	3.7	41	37
7	6.5	10	105	14	18	22	89	53	38	3.2	32	28
8	6.5	12	52	13	17	21	103	72	28	2.4	28	19
9	6.7	13	26	12	17	22	93	90	22	2.2	51	21
10	7.0	11	17	12	18	25	72	79	18	2.2	152	20
11	7.4	10	25	12	18	30	75	61	15	2.2	454	17
12	7.4	10	25	13	17	28	82	52	13	3.7	168	15
13	7.4	11	23	14	17	36	62	42	10	5.7	124	13
14	7.4	11	23	16	18	32	56	39	8.4	6.1	121	13
15	7.4	12	23	16	17	29	71	37	7.8	6.1	134	12
16	7.0	12	19	17	17	30	67	32	6.8	6.5	99	13
17	8.1	13	19	17	17	43	63	30	7.0	32	62	12
18	8.5	12	20	17	17	63	72	29	7.4	17	43	12
19	8.9	12	19	16	18	75	97	30	7.8	13	36	12
20	8.8	13	18	17	18	64	102	29	9.1	11	34	12
21	8.4	14	18	16	16	58	90	27	9.5	11	28	11
22	9.0	14	18	17	16	57	79	25	8.7	11	26	11
23	9.0	13	14	17	17	60	80	21	6.6	11	19	10
24	8.6	14	13	17	17	69	84	19	4.9	20	15	9.8
25	8.4	15	15	17	18	72	91	19	4.7	49	14	11
26	8.8	15	15	17	21	61	64	27	4.5	43	46	12
27	8.6	14	15	18	19	63	91	50	4.0	28	18	14
28	8.9	13	13	18	19	65	111	43	3.8	24	13	13
29	9.2	13	13	18	------	74	104	52	3.4	23	16	12
30	9.4	15	12	18	------	65	94	43	3.7	21	29	11
31	9.5	------	12	19	------	53	------	36	------	26	52	------
TOTAL	240.3	359.8	672	485	498	1,378	2,445	1,342	499.1	404.9	2,112	469.8
MEAN	7.75	12.0	21.7	15.6	17.8	44.5	81.5	43.3	16.6	13.1	68.1	15.7
MAX	9.5	15	105	19	21	75	111	90	48	49	454	37
MIN	6.2	9.4	12	12	16	21	55	19	3.4	2.2	13	9.8
AC-FT	477	714	1,330	962	988	2,730	4,850	2,660	990	803	4,190	932

CAL YR 1966: TOTAL 17,621.0 MEAN 48.3 MAX 344 MIN 4.2 AC-FT 34,950
WAT YR 1967: TOTAL 10,905.9 MEAN 29.9 MAX 454 MIN 2.2 AC-FT 21,630

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-11	0130	6.82	1,260				

8-2895. Chamita ditch near Chamita, N. Mex.

Location.--Lat 36°04'45", long 106°06'40", in NE¼SE¼ sec.5, T.21 N., R.8 E., on left bank at head of flume over Arroyo de la Presa, 1 mile downstream from heading from Rio Chama, 1 mile northwest of Chamita, 1 1/8 miles northeast of Hernandez, and 6½ miles north of Espanola.

Records available.--March 1936 to April 1941, February 1963 to September 1967.

Gage.--Water-stage recorder at head of half-round metal flume control. Altitude of gage is 5,690 ft (from topographic map). Prior to April 1941 at site ½ mile upstream at different datums. Apr. 16, 1964 to Aug. 8, 1966, digital water-stage recorder.

Extremes.--1936-41, 1963-67: Maximum daily discharge, 40 cfs Aug. 3, 1938; no flow many days.

Remarks.--This is one of two ditches gaged to determine flow bypassing Rio Chama near Chamita, N. Mex. (see station 8-2900). Takeouts from ditch irrigate land above and below gage, or waste back to Rio Chama.

Cooperation.--Records furnished by Bureau of Reclamation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	11	1.1	5.10	314
November	15	0	5.72	341
December	4.6	0	.619	38
Calendar year 1966	18	0	4.80	3,470
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	17	0	10.5	627
May	18	1.3	11.7	717
June	18	.32	10.9	650
July	21	.32	11.7	721
August	12	0	3.41	209
September	18	0	6.84	407
Water year 1967	21	0	5.56	4,020

8-2898. Hernandez ditch at Hernandez, N. Mex.

Location.--Lat 36°04'20", long 106°07'10", in NE¼NW¼ sec.8, T.21 N., R.8 E., on right bank 75 feet upstream from culvert under U. S. Highway 285, 0.6 mile north of Hernandez, 1 mile downstream from heading on Rio Chama, 3 miles northwest of San Juan Pueblo and 6 miles northwest of Espanola.

Records available.--March 1963 to September 1967.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 5,670 ft (from topographic map). Prior to Mar. 5, 1965, at datum 1.01 ft higher. Apr. 16, 1964, to Sept. 30, 1965, digital water-stage recorder.

Extremes.--1963-67: Maximum daily discharge, 46 cfs July 3, 1964; no flow many days.

Remarks.--This is one of two ditches gaged to determine flow bypassing Rio Chama near Chamita, N. Mex. (see station 8-2900). Takeouts from ditch irrigate land above and below gage, or waste back to Rio Chama.

Cooperation.--Records furnished by Bureau of Reclamation.

Monthly diversion, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	22	1.4	13.6	835
November	18	0	8.18	487
December	25	0	4.47	275
Calendar year 1966	37	0	8.68	6,280
January	0	0	0	0
February	0	0	0	0
March	17	0	1.47	90
April	38	3.0	20.0	1,190
May	34	2.5	15.3	943
June	20	1.5	9.99	594
July	12	.30	5.26	323
August	18	0	4.61	283
September	24	0	5.92	352
Water year 1967	38	0	7.42	5,370

8-2900. Rio Chama near Chamita, N. Mex.

Location.--Lat 36°04'25", long 106°06'39", in NE¼NE¼ sec.8, T.21 N., R.8 E., at downstream end of pier nearest left bank of bridge on U. S. Highway 285, half a mile west of Chamita, 2½ miles northwest of San Juan Pueblo, and at mile 2.8.

Drainage area.--3,144 sq mi, of which at least 100 sq mi is probably noncontributing.

Records available.--October 1912 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Concrete control since Jan. 1, 1964. Datum of gage is 5,653.61 ft above mean sea level, datum of 1929. Prior to Oct. 4, 1933, at railroad bridge 2 miles downstream at different datums. Oct. 4, 1933, to Mar. 1, 1942, at site 50 ft downstream at datum 0.22 ft higher. March 2, 1942, to Dec. 31, 1963, at site 200 ft downstream, present datum.

Average discharge.--55 years, 546 cfs (395,300 acre-ft per year).

Extremes.--Maximum discharge during year, 8,150 cfs Aug. 9 (gage height, 7.95 ft), from rating curve extended above 2,500 cfs by logarithmic plotting; minimum, 1.3 cfs Oct. 4, 11.
1912-67: Maximum discharge, 15,000 cfs May 22, 1920; maximum gage height, 10.45 ft Aug. 22, 1961; no flow at times.
The floods of Sept. 29, 1904, and Oct. 4 or 5, 1911, probably exceeded 15,000 cfs. Another major flood occurred in 1884, from newspaper accounts.

Remarks.--Records good except those for August, which are fair, and those for January, which are poor. Diversions above station for irrigation of about 27,600 acres, a few hundred of which is below station. Flow partly regulated by El Vado Reservoir (see station 8-2850) and Abiquiu Reservoir (see station 8-2869), 75 and 29 miles upstream, respectively. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.9	8.8	70	45	126	169	265	164	522	95	157	1,080
2	9.4	11	70	50	116	217	272	140	500	85	89	460
3	4.7	16	61	55	116	211	258	511	500	56	415	328
4	1.5	380	60	60	116	217	229	577	726	47	418	119
5	2.1	490	56	65	123	217	258	460	902	50	948	112
6	2.0	490	157	65	119	223	302	337	1,030	45	824	416
7	2.1	490	490	55	116	217	280	420	944	34	280	679
8	3.1	490	566	50	109	174	250	628	670	12	502	409
9	3.0	500	410	48	109	150	265	1,200	577	10	1,420	373
10	3.3	511	355	50	106	198	242	1,280	577	9.4	1,850	337
11	1.8	533	319	60	106	145	211	1,640	490	8.0	1,890	302
12	3.5	522	145	65	99	155	150	1,720	440	13	1,830	126
13	4.5	511	131	70	99	164	140	1,590	391	57	1,790	92
14	6.1	522	126	75	106	174	119	1,080	373	140	1,400	80
15	9.4	544	112	80	112	174	126	706	258	54	1,060	90
16	9.4	544	109	80	102	164	131	847	319	44	1,170	106
17	12	555	95	75	95	160	140	646	319	459	718	112
18	9.4	555	87	65	99	174	136	622	265	902	410	106
19	9.1	718	90	65	99	229	140	694	242	871	328	90
20	7.6	718	109	70	99	250	155	860	515	270	382	95
21	11	808	116	75	95	280	140	944	382	200	346	109
22	17	1,070	109	80	92	295	126	769	346	160	180	75
23	16	152	109	80	92	280	145	694	328	100	145	61
24	12	88	89	92	95	280	136	634	319	105	155	78
25	16	99	80	90	99	288	136	610	373	120	109	87
26	15	95	78	87	119	295	131	634	355	258	131	95
27	11	95	82	96	136	295	145	730	280	204	424	109
28	12	82	57	102	164	310	180	821	223	119	1,170	186
29	13	68	61	102	-	310	180	834	106	119	606	106
30	14	68	56	109	-----	250	180	821	119	87	587	90
31	11	-----	54	112	-----	250	-----	634	-----	78	406	-----
Total	257.9	11,733.8	4,509	2,273	3,064	6,915	5,568	24,247	13,391	4,811.4	22,140	6,508
Mean	8.32	391	145	73.3	109	223	186	782	446	155	714	217
Max	17	1,070	566	112	164	310	302	1,720	1,030	902	1,890	1,080
Min	1.5	8.8	54	45	92	145	119	140	106	8.0	89	61
Ac-ft	512	23,270	8,940	4,510	6,080	13,720	11,040	48,090	26,560	9,540	43,910	12,910

Cal yr 1966 : Total 144,849.2 Mean 397 Max 1,670 Min 1.5 Ac-ft 287,300
Wtr yr 1967 : Total 105,418.1 Mean 289 Max 1,890 Min 1.5 Ac-ft 209,100

8-2910. Santa Cruz River at Cundiyo, N. Mex.

Location.--Lat 35°57'40", long 105°54'10", in SE¼NW¼ sec.17, T.20 N., R.10 E., on left bank 135 ft downstream from highway bridge at confluence of Rio Medio and Rio Frijoles, and 0.6 mile northwest of Cundiyo.

Drainage area.--86 sq mi, approximately.

Records available.--October 1930 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Concrete control since Jan. 3, 1954. Altitude of gage is 6,460 ft (from topographic map). Sept. 1, 1930, to Aug. 12, 1932, water-stage recorder at site about 1 mile downstream at different datum. Aug. 13, 1932, to Oct. 29, 1934, water-stage recorder at site 35 ft upstream at datum 0.42 ft higher. Oct. 30, 1934, to Jan. 2, 1954, water-stage recorder at present site at datum 0.64 ft lower.

Average discharge.--37 years, 29.3 cfs (21,210 acre-ft per year).

Extremes.--Maximum discharge during year, 289 cfs July 19 (gage height, 3.05 ft); maximum gage height, 3.16 ft Jan. 1 (backwater from ice); minimum discharge, 1.4 cfs Nov. 28, result of freezeup.
1930-67: Maximum discharge, 2,420 cfs Sept. 24, 1931 (gage height, 7.8 ft, site and datum then in use), from rating curve extended above 170 cfs by logarithmic plotting; minimum, 0.19 cfs Mar. 13, 1954, result of freezeup.

Remarks.--Records good except those for December and January, which are poor. Diversions for irrigation of about 1,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	12	9.0	8.5	9.0	9.0	15	20	22	9.0	13	43
2	13	10	8.0	8.5	9.0	9.8	16	20	23	7.5	12	40
3	14	12	10	8.5	9.8	10	18	19	28	7.8	12	36
4	13	12	11	9.0	9.4	11	20	18	26	7.8	14	36
5	13	10	11	9.0	9.0	9.4	25	19	24	8.2	17	34
6	14	13	11	9.0	9.0	9.0	24	18	24	7.1	15	32
7	13	12	15	8.5	9.0	9.0	24	20	26	8.2	19	34
8	13	12	11	8.0	8.5	9.0	26	20	20	7.8	16	33
9	13	12	5.4	8.0	9.4	9.0	21	24	18	7.5	30	38
10	13	9.8	4.0	8.5	9.0	9.0	18	26	16	7.8	60	31
11	13	13	7.0	8.5	8.5	9.0	21	26	16	9.8	62	29
12	14	11	10	9.0	9.8	9.0	20	27	15	10	71	26
13	13	11	9.5	9.0	9.4	12	12	26	14	11	81	24
14	12	12	10	9.0	8.5	12	19	26	15	9.4	65	23
15	12	12	11	9.0	7.8	12	20	24	14	8.5	62	23
16	13	13	10	9.0	8.5	12	16	24	14	12	53	24
17	14	13	10	8.2	8.5	14	17	23	14	29	45	24
18	13	12	10	8.0	8.5	15	17	23	18	25	41	22
19	13	11	11	8.0	8.5	18	20	25	22	26	38	21
20	13	12	10	8.5	7.8	14	21	25	26	20	36	25
21	14	12	11	9.0	8.2	15	20	24	21	18	33	20
22	13	11	10	9.0	8.5	15	19	21	17	16	30	20
23	13	11	10	9.0	8.5	15	18	22	14	12	28	19
24	12	11	11	10	9.0	17	19	22	11	14	26	18
25	13	11	9.0	10	8.5	17	20	22	11	12	24	26
26	13	10	9.0	10	9.0	14	19	27	10	12	24	28
27	13	3.7	9.0	10	8.5	14	23	31	9.4	11	25	34
28	12	5.5	8.5	11	8.5	14	23	29	9.4	15	25	26
29	13	11	8.5	11	-	17	24	28	9.4	14	26	24
30	12	12	8.0	10	-----	15	24	24	9.8	13	43	22
31	12	-----	8.0	9.4	-----	13	-----	24	-----	13	51	-----
Total	402	333.0	295.9	280.1	245.6	387.2	599	727	517.0	389.4	1,097	835
Mean	13.0	11.1	9.55	9.04	8.77	12.5	20.0	23.5	17.2	12.6	35.4	27.8
Max	14	13	15	11	9.8	18	26	31	28	29	81	43
Min	12	3.7	4.0	8.0	7.8	9.0	12	18	9.4	7.1	12	18
Ac-ft	797	660	587	556	487	768	1,190	1,440	1,030	772	2,180	1,660

Cal yr1966 : Total 10,526.5 Mean 28.8 Max 112 Min 3.7 Ac-ft 20,880
Wtr yr1967 : Total 6,108.2 Mean 16.7 Max 81 Min 3.7 Ac-ft 12,120

Peak discharge (base, 150 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-19	1600	3.05	289	8-13	1630	2.75	185

8-2943. Rio Nambe at Nambe Falls, near Nambe, N. Mex.

Location.--Lat 35°51'15", long 105°54'30", in SW¼ sec.29, T.19 N., R.10 E., on left bank at Nambe Falls, 4.4 miles southeast of Nambe Pueblo, 5.1 miles southeast of Nambe, and 8.4 miles upstream from Rio Tesuque.

Drainage area.--25.1 sq mi.

Records available.--May to December 1911, miscellaneous discharge measurements only. March 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,550 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,090 cfs Aug. 8 (gage height, about 6.0 ft, from floodmarks), from rating curve extended above 44 cfs on basis of field estimate of peak flow; minimum determined, 1.0 cfs Dec. 9, but may have been less during periods of ice effect.
1963-67: Maximum discharge, that of Aug. 8, 1967; minimum, that of Dec. 9, 1966.

Cooperation.--Records furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	4.2	5.8	3.6	4.0	3.3	4.5	5.8	8.0	4.2	6.4	13
2	7.2	3.8	4.8	3.6	4.0	3.3	5.1	6.1	8.0	4.0	5.4	13
3	7.2	4.7	4.3	3.6	4.5	3.5	5.8	5.8	11	4.0	5.4	11
4	7.2	4.7	3.5	3.6	4.2	3.5	6.1	5.8	9.8	3.5	6.4	11
5	7.2	4.4	3.3	3.6	4.0	3.5	6.4	6.4	9.4	3.3	5.8	11
6	7.2	4.5	3.3	3.6	4.0	3.8	6.4	6.8	9.8	3.1	4.8	11
7	7.2	4.8	3.1	3.6	4.2	3.8	6.8	6.8	9.8	3.1	5.4	12
8	7.2	4.8	2.4	3.6	4.2	3.8	6.8	7.6	8.9	3.1	23	14
9	7.2	4.8	1.0	3.6	4.5	4.0	6.1	8.4	8.4	2.9	31	21
10	7.2	4.7	1.3	3.6	3.8	3.5	6.1	9.4	8.0	2.7	24	25
11	6.1	5.1	4.8	3.6	4.5	4.0	6.4	8.9	7.6	3.1	20	21
12	6.1	5.8	4.8	3.6	5.6	3.8	6.1	8.9	7.6	3.3	15	20
13	6.5	5.1	4.0	3.6	4.5	3.5	4.2	9.4	6.8	4.0	17	17
14	6.4	5.1	4.8	3.6	4.0	3.5	6.1	9.8	6.4	3.3	17	13
15	6.8	5.1	3.8	3.6	3.8	3.8	6.1	8.9	6.1	3.1	15	12
16	7.0	5.1	2.0	3.6	3.8	3.5	5.4	8.9	5.8	6.2	14	12
17	7.6	5.4	6.1	3.6	4.0	4.2	5.4	8.9	5.8	8.9	14	8.9
18	7.3	5.1	7.2	3.6	4.2	4.5	6.1	7.6	7.6	5.8	13	8.4
19	6.7	5.1	5.4	3.6	3.8	5.1	6.8	7.6	7.2	4.2	12	6.8
20	6.7	5.1	4.8	3.7	3.5	4.5	6.4	8.4	6.8	5.8	11	7.2
21	6.5	5.4	3.3	3.7	3.8	4.2	6.1	9.4	5.8	5.4	11	5.8
22	5.8	5.4	3.3	3.7	4.5	4.0	6.1	8.9	5.4	4.5	11	5.4
23	5.6	5.4	3.4	3.7	3.8	4.2	6.1	9.4	5.1	4.5	11	5.1
24	5.8	5.1	3.4	3.8	3.5	4.8	6.1	9.4	4.8	4.8	11	6.1
25	5.3	5.4	3.4	3.8	3.3	4.5	6.4	9.4	5.1	5.1	10	11
26	5.1	5.3	3.4	3.8	3.5	4.2	6.1	10	4.8	5.4	9.8	11
27	5.1	4.0	3.5	3.8	3.3	4.5	6.8	9.8	4.5	5.1	8.9	9.8
28	4.8	8.0	3.5	3.8	3.3	4.5	6.8	9.8	4.2	5.8	9.8	8.9
29	4.5	7.2	3.5	3.9	-	4.8	7.2	9.8	4.5	5.4	11	8.9
30	4.5	7.2	3.5	3.9	-----	4.5	6.8	9.4	4.8	5.4	14	8.0
31	4.3	-----	3.6	3.9	-----	4.5	-----	8.9	-----	5.4	15	-----
Total	196.9	155.8	118.3	113.9	112.1	125.1	183.6	260.4	207.8	138.4	388.1	348.3
Mean	6.35	5.19	3.82	3.67	4.00	4.04	6.12	8.40	6.93	4.46	12.5	11.6
Max	7.6	8.0	7.2	3.9	5.6	5.1	7.2	10	11	8.9	31	25
Min	4.3	3.8	1.0	3.6	3.3	3.3	4.2	5.8	4.2	2.7	4.8	5.1
Ac-ft	391	309	235	226	222	248	364	516	412	275	770	691

Cal yr 1966 : Total 3,724.2 Mean 10.2 Max 28 Min 1.0 Ac-ft 7,390
Wtr yr 1967 : Total 2,348.7 Mean 6.43 Max 31 Min 1.0 Ac-ft 4,660

Peak discharge (base, 40 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-16	1430	1.39	127	9- 7	1615	1.15	73
8- 8	2000	about 6.0, from floodmarks	1,090				

8-2952. Rio En Medio near Santa Fe, N. Mex.

Location.--Lat 35°47'30", long 105°47'38", in Santa Fe National Forest, on right bank 300 ft east of Ski Basin parking area and 1½ miles northeast of Santa Fe, Santa Fe County.

Drainage area.--0.63 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 10,600 ft (from topographic map).

Extremes.--Maximum discharge during year, 4.33 cfs Aug. 29 (gage height, 1.03 ft); minimum, 0.23 cfs Mar. 5.
1963-67: Maximum discharge, 16.3 cfs July 16, 1965 (gage height, 1.70 ft), from rating curve extended above 4.50 cfs on basis of theoretical rating; minimum, 0.20 cfs Dec. 24, 1964, result of freezeup.

Remarks.--Records good except those for period of indefinite stage-discharge relation, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.59	0.45	0.40	0.36	0.33	0.29	0.45	0.60	0.45	0.34	0.39	1.47
2	.59	.44	.39	.37	.31	.29	.45	.65	.51	.33	.35	1.36
3	.56	.42	.40	.36	.31	.29	.50	.65	.49	.31	.36	1.39
4	.56	.42	.41	.36	.30	.27	.50	.65	.51	.31	.47	1.31
5	.59	.44	.41	.36	.30	.27	.50	.65	.48	.30	.39	1.26
6	.54	.44	.42	.37	.29	.28	.50	.65	.52	.30	.39	1.16
7	.52	.44	.41	.35	.29	.28	.50	.65	.48	.31	.37	1.16
8	.51	.44	.40	.35	.29	.28	.50	.65	.45	.31	.58	1.16
9	.51	.51	.39	.36	.29	.28	.50	.60	.44	.30	.85	1.16
10	.49	.49	.39	.36	.28	.27	.50	.60	.42	.30	1.40	1.06
11	.52	.49	.40	.35	.29	.27	.50	.60	.41	.31	1.31	1.02
12	.52	.48	.40	.35	.29	.29	.50	.60	.40	.34	1.53	.97
13	.52	.48	.39	.34	.29	.31	.50	.60	.39	.33	1.53	.89
14	.49	.48	.39	.34	.29	.33	.50	.60	.40	.30	1.59	.89
15	.49	.48	.39	.34	.28	.33	.45	.60	.39	.30	1.53	.89
16	.47	.49	.39	.34	.28	.35	.45	.60	.37	.41	1.42	.84
17	.52	.48	.37	.34	.28	.40	.45	.55	.43	.47	1.31	.80
18	.51	.47	.37	.34	.28	.45	.50	.55	.41	.36	1.16	.80
19	.51	.45	.37	.34	.29	.45	.50	.55	.45	.35	1.16	.97
20	.51	.45	.37	.33	.29	.40	.50	.55	.44	.37	1.16	.80
21	.51	.45	.37	.33	.29	.40	.50	.50	.42	.37	.97	.77
22	.49	.44	.36	.33	.28	.40	.50	.44	.41	.34	.93	.73
23	.48	.44	.35	.31	.28	.40	.50	.44	.39	.40	.89	.73
24	.48	.42	.34	.31	.28	.45	.55	.42	.40	.36	.80	.69
25	.45	.42	.34	.33	.28	.50	.55	.44	.40	.35	.80	1.02
26	.45	.41	.34	.33	.28	.50	.55	.49	.39	.34	.80	.97
27	.47	.39	.35	.33	.28	.45	.55	.49	.37	.36	.77	1.02
28	.45	.39	.35	.33	.28	.45	.60	.49	.36	.36	.73	.97
29	.45	.39	.35	.33	-	.45	.60	.49	.37	.35	1.17	.93
30	.44	.40	.35	.33	- - - - -	.45	.55	.48	.36	.34	1.62	.89
31	.48	- - - - -	.35	.33	- - - - -	.45	- - - - -	.48	- - - - -	.35	1.59	- - - - -
Total	15.67	13.39	11.71	10.60	8.10	11.28	15.20	17.31	12.71	10.57	30.32	30.08
Mean	.505	.446	.378	.342	.289	.364	.507	.558	.424	.341	.978	1.003
Max	.59	.51	.42	.37	.33	.50	.60	.65	.52	.47	1.62	1.47
Min	.44	.39	.34	.31	.28	.27	.45	.42	.36	.30	.35	.69
Ac-ft	31.1	26.6	23.2	21.0	16.1	22.4	30.1	34.3	25.2	21.0	60.1	59.7

Cal yr 1966 : Total 303.18 Mean .831 Max 3.51 Min .30 Ac-ft 601
Wtr yr 1967 : Total 186.94 Mean .512 Max 1.62 Min .27 Ac-ft 371

Peak discharge (base, 5.00 cfs).--No peak above base.

Note.--Indefinite stage-discharge relation Mar. 11 to May 21.

8-3022. North Fork Tesuque Creek near Santa Fe, N. Mex.

Location.--Lat 35°46'12", long 105°48'31", in Santa Fe National Forest, on left bank 75 ft upstream from culvert on State Highway 475, 250 ft upstream from Middle Fork Tesuque Creek, and 13 miles northeast of Santa Fe, Santa Fe County.

Drainage area.--1.60 sq mi.

Records available.--October 1962 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 9,670 ft (from topographic map). May 10, 1963, to Oct. 25, 1965, digital water-stage recorder at same site and datum.

Average discharge.--5 years, 1.504 cfs (1,090 acre-ft per year).

Extremes.--Maximum discharge during year, 4.01 cfs Aug. 9 (gage height, 0.98 ft); maximum gage height, 2.05 ft May 1 (ice jam); minimum discharge, 0.29 cfs Nov. 8, result of freezeup.
1962-67: Maximum discharge, 32.9 cfs Aug. 1, 1966 (gage height, 2.25 ft), from rating curve extended above 9.0 cfs on basis of theoretical rating; minimum determined, 0.09 cfs Nov. 16, 1962, result of freezeup.

Remarks.--Records good except those for December and January, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.06	0.66	0.57	0.50	0.41	0.50	0.84	.90	0.93	0.59	0.66	1.36
2	1.06	.65	.56	.50	.41	.67	.93	1.05	1.02	.60	.52	1.31
3	1.06	.65	.56	.50	.41	.68	.97	1.00	1.02	.59	.52	1.44
4	1.02	.65	.57	.50	.41	.59	1.02	1.02	.97	.57	.67	1.47
5	1.06	.65	.56	.50	.40	.52	1.02	1.02	.93	.57	.56	1.47
6	1.02	.66	.64	.50	.40	.52	.97	1.00	1.02	.59	.56	1.42
7	.97	.67	.60	.40	.40	.52	1.02	.97	.93	.59	.52	1.53
8	.97	.67	.56	.40	.40	.51	1.02	.97	.93	.56	.84	1.53
9	.93	.77	.56	.45	.39	.52	1.02	.93	.89	.52	1.04	1.75
10	.93	.75	.52	.45	.41	.56	1.02	.97	.84	.54	1.26	1.47
11	.93	.69	.52	.45	.40	.54	1.02	.97	.89	.52	1.21	1.47
12	.89	.67	.52	.45	.41	.59	.85	.97	.84	.56	1.47	1.42
13	.89	.70	.52	.44	.42	.66	.95	.97	.84	.54	1.65	1.42
14	.84	.65	.51	.44	.42	.71	1.00	1.02	.89	.51	1.90	1.42
15	.84	.69	.49	.42	.41	.71	.93	.97	.84	.51	1.97	1.42
16	.84	.69	.54	.40	.41	.86	.89	.97	.84	.70	2.04	1.42
17	.89	.67	.56	.40	.40	.93	.89	.93	.93	.77	2.11	1.42
18	.84	.64	.55	.39	.41	.93	.93	.93	.89	.57	2.18	1.36
19	.84	.62	.55	.39	.42	.84	.93	.93	.89	.57	2.18	1.53
20	.84	.62	.55	.40	.40	.84	.93	.93	.84	.59	2.11	1.40
21	.80	.62	.55	.39	.39	.80	.80	.89	.80	.56	1.97	1.31
22	.84	.60	.55	.39	.37	.84	.77	.89	.77	.59	1.90	1.31
23	.89	.60	.50	.39	.40	1.02	.85	.89	.73	.64	1.84	1.31
24	.80	.60	.50	.39	.40	1.02	.77	.89	.73	.56	1.65	1.26
25	.73	.60	.50	.40	.39	.93	.80	.93	.73	.52	1.65	1.71
26	.69	.56	.50	.40	.39	.89	.84	1.02	.69	.49	1.53	1.67
27	.69	.60	.55	.40	.39	.93	.84	.93	.67	.51	1.42	1.47
28	.69	.60	.50	.42	.41	.93	.88	.93	.66	.51	1.36	1.36
29	.71	.57	.50	.42	-	.89	.85	.93	.67	.51	1.56	1.36
30	.71	.57	.50	.42	-----	.84	.80	.93	.64	.52	1.53	1.42
31	.71	-----	.50	.42	-----	.84	-----	.93	-----	.54	1.36	-----
Total	26.98	19.34	16.66	13.32	11.28	23.13	27.35	29.58	25.26	17.51	43.74	43.21
Mean	.870	.645	.537	.430	.403	.746	.912	.954	.842	.565	1.411	1.440
Max	1.06	.77	.64	.50	.42	1.02	1.02	1.05	1.02	.77	2.18	1.75
Min	.69	.56	.49	.39	.37	.51	.77	.89	.64	.49	.52	1.26
Ac-ft	53.5	38.4	33.0	26.4	22.4	45.9	54.2	58.7	50.1	34.7	86.8	85.7

Cal yr 1966: Total 677.89 Mean 1.857 Max 7.72 Min .45 Ac-ft 1,340
Wtr yr 1967: Total 297.36 Mean .815 Max 2.18 Min .37 Ac-ft 590

Peak discharge (base, 7.00 cfs).--No peak above base.

8-3023. Middle Fork Tesuque Creek near Santa Fe, N. Mex.

Location.--Lat 35°46'03", long 105°48'26", in Santa Fe National Forest, on right bank 1,000 ft upstream from road culvert on State Highway 475, 1,100 ft upstream from mouth, 13 miles northeast of Santa Fe, Santa Fe County.

Drainage area.--0.43 sq mi.

Records available.--November 1961 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 9,800 ft (from topographic map). May 9, 1963, to Sept. 30, 1965, digital water-stage recorder at same site and datum.

Average discharge.--5 years, 0.305 cfs (221 acre-ft per year).

Extremes.--Maximum discharge during year, 1.89 cfs Aug. 8, Sept. 19 (gage height, 0.89 ft); minimum, 0.067 cfs July 6, 9, 14, 31. 1961-67: Maximum discharge, 4.55 cfs Aug. 24, 1966 (gage height, 1.27 ft), from rating curve extended above 2.20 cfs on basis of theoretical rating; minimum, 0.05 cfs Dec. 2, 1964 (corrected).

Remarks.--Records excellent except those for October and January, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.26	0.17	0.14	0.12	0.090	0.090	0.13	0.14	0.12	0.082	0.12	0.24
2	.26	.18	.13	.12	.090	.090	.15	.14	.14	.086	.090	.22
3	.26	.18	.14	.12	.090	.090	.17	.14	.14	.086	.086	.24
4	.25	.17	.14	.12	.090	.090	.19	.14	.13	.082	.12	.24
5	.26	.17	.13	.12	.090	.090	.19	.15	.12	.082	.095	.22
6	.25	.17	.17	.12	.095	.090	.19	.15	.15	.082	.11	.22
7	.24	.17	.16	.090	.095	.090	.20	.15	.13	.095	.099	.22
8	.24	.15	.15	.090	.090	.090	.20	.16	.12	.086	.19	.22
9	.23	.18	.14	.095	.090	.090	.18	.18	.11	.082	.19	.30
10	.23	.16	.13	.095	.090	.090	.18	.18	.11	.082	.21	.23
11	.23	.16	.13	.10	.090	.090	.18	.18	.11	.082	.15	.22
12	.22	.16	.14	.10	.090	.099	.15	.16	.11	.090	.21	.20
13	.22	.16	.14	.10	.086	.10	.14	.16	.11	.090	.19	.20
14	.23	.16	.14	.10	.086	.10	.15	.16	.11	.078	.16	.20
15	.23	.16	.13	.10	.090	.10	.15	.14	.10	.078	.13	.20
16	.23	.16	.13	.10	.090	.11	.15	.15	.099	.12	.12	.22
17	.22	.16	.13	.10	.090	.12	.15	.13	.14	.14	.12	.22
18	.21	.15	.13	.10	.090	.12	.16	.14	.12	.095	.13	.22
19	.21	.15	.13	.10	.090	.12	.18	.13	.12	.086	.17	.28
20	.21	.15	.13	.10	.090	.11	.16	.14	.12	.11	.20	.25
21	.21	.15	.13	.099	.090	.11	.15	.13	.11	.099	.22	.24
22	.21	.15	.12	.099	.090	.12	.15	.13	.10	.090	.23	.24
23	.20	.15	.11	.095	.090	.13	.15	.13	.099	.11	.24	.23
24	.20	.15	.11	.095	.086	.14	.15	.13	.099	.095	.25	.23
25	.19	.15	.11	.095	.086	.13	.15	.13	.099	.095	.27	.33
26	.16	.14	.12	.095	.086	.12	.15	.15	.095	.086	.25	.36
27	.16	.13	.12	.090	.090	.13	.16	.14	.090	.086	.25	.31
28	.18	.13	.12	.090	.090	.13	.16	.13	.090	.082	.25	.29
29	.18	.13	.11	.090	-	.13	.16	.13	.095	.078	.30	.27
30	.18	.13	.12	.090	- - - - -	.12	.14	.12	.086	.078	.29	.26
31	.18	- - - - -	.12	.090	- - - - -	.12	- - - - -	.12	- - - - -	.082	.25	- - - - -
Total	6.74	4.68	4.05	3.118	2.510	3.349	4.87	4.46	3.372	2.795	5.690	7.32
Mean	.217	.156	.131	.101	.0896	.108	.162	.144	.112	.0902	.184	.244
Max	.26	.18	.17	.12	.095	.14	.20	.18	.15	.14	.30	.36
Min	.16	.13	.11	.090	.086	.090	.13	.12	.086	.078	.086	.20
Ac-ft	13.4	9.28	8.03	6.18	4.98	6.64	9.66	8.85	6.69	5.54	11.3	14.5

Cal yr 1966: Total 147.28 Mean .404 Max 1.55 Min .11 Ac-ft 292
Wtr yr 1967: Total 52.954 Mean .145 Max .36 Min .078 Ac-ft 105

Peak discharge (base, 1.70 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 8	1920	0.89	1.89	9-19	1915	0.89	1.89

8-3024. South Fork Tesuque Creek near Santa Fe, N. Mex.

Location.--Lat 35°45'37", long 105°48'40", in Santa Fe National Forest, on left bank 150 ft upstream from road culvert on State Highway 475, 2,700 ft upstream from mouth, and 12 miles northeast of Santa Fe, Santa Fe County.

Drainage area.--0.47 sq mi.

Records available.--October 1962 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 9,740 ft (from topographic map). May 11, 1963, to Sept. 30, 1965, digital water-stage recorder at same site and datum.

Average discharge.--5 years, 0.259 cfs (188 acre-ft per year).

Extremes.--Maximum discharge during year, 0.50 cfs Aug. 8 (gage height, 0.54 ft); minimum, 0.067 cfs July 9, 10.
1962-67: Maximum discharge, 2.78 cfs Aug. 24, 1966 (gage height, 1.04 ft); minimum, that of July 9, 10, 1967.

Remarks.--Records good except those for January and March , which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.26	0.18	0.16	0.14	0.12	0.14	0.14	0.13	0.099	0.078	0.095	0.11
2	.26	.19	.16	.14	.12	.14	.14	.13	.11	.078	.078	.10
3	.25	.19	.16	.14	.12	.14	.15	.13	.11	.078	.078	.11
4	.25	.19	.16	.14	.12	.13	.17	.13	.10	.074	.099	.12
5	.25	.18	.18	.14	.12	.13	.17	.13	.099	.074	.086	.12
6	.25	.18	.19	.13	.12	.13	.16	.13	.11	.074	.10	.13
7	.24	.19	.17	.11	.12	.13	.16	.13	.099	.082	.090	.16
8	.23	.19	.16	.11	.13	.13	.16	.15	.095	.074	.14	.18
9	.23	.21	.15	.11	.13	.13	.15	.15	.090	.070	.14	.22
10	.23	.20	.15	.11	.13	.12	.15	.15	.090	.070	.18	.19
11	.22	.20	.15	.12	.13	.12	.15	.15	.090	.070	.13	.18
12	.22	.20	.15	.12	.13	.12	.15	.14	.090	.078	.17	.18
13	.22	.20	.15	.12	.13	.12	.13	.13	.086	.078	.16	.17
14	.22	.20	.15	.12	.13	.12	.13	.13	.078	.074	.15	.16
15	.23	.18	.15	.12	.13	.12	.13	.13	.078	.070	.12	.16
16	.23	.18	.15	.12	.13	.12	.13	.13	.078	.10	.11	.16
17	.22	.18	.15	.12	.14	.12	.13	.13	.10	.11	.10	.16
18	.20	.18	.15	.12	.14	.12	.13	.13	.090	.086	.099	.16
19	.20	.18	.15	.12	.14	.12	.14	.13	.090	.078	.095	.17
20	.20	.18	.15	.12	.14	.12	.13	.13	.086	.086	.090	.18
21	.20	.17	.14	.12	.14	.12	.13	.14	.082	.082	.090	.18
22	.20	.17	.14	.12	.14	.12	.13	.11	.078	.090	.086	.18
23	.20	.17	.13	.12	.14	.12	.13	.10	.078	.086	.082	.19
24	.19	.17	.13	.12	.14	.13	.12	.10	.078	.082	.086	.20
25	.18	.17	.13	.12	.14	.13	.12	.099	.078	.082	.090	.25
26	.18	.16	.14	.12	.14	.13	.12	.11	.082	.082	.090	.25
27	.18	.16	.14	.12	.14	.13	.12	.11	.078	.078	.099	.24
28	.18	.16	.14	.12	.14	.13	.14	.10	.078	.078	.095	.23
29	.18	.16	.13	.12	-	.13	.15	.099	.078	.074	.12	.22
30	.18	.16	.14	.12	- - - - -	.14	.13	.095	.074	.070	.12	.22
31	.18	- - - - -	.14	.12	- - - - -	.15	- - - - -	.099	- - - - -	.074	.11	- - - - -
Total	6.66	5.43	4.64	3.79	3.69	3.95	4.19	3.852	2.652	2.460	3.378	5.28
Mean	.215	.181	.150	.122	.132	.127	.140	.124	.0884	.0794	.109	.176
Max	.26	.21	.19	.14	.14	.15	.17	.15	.11	.11	.18	.25
Min	.18	.16	.13	.11	.12	.12	.12	.095	.074	.070	.078	.10
Ac-ft	13.2	10.8	9.20	7.52	7.32	7.83	8.31	7.64	5.26	4.88	6.70	10.5

Cal yr 1966 : Total	126.99	Mean	.348	Max	1.20	Min	.13	Ac-ft 252
Wtr yr 1967 : Total	49.972	Mean	.137	Max	.26	Min	.070	Ac-ft 99.1

Peak discharge (base, 1.30 cfs).--No peak above base.

8-3041. Little Tesuque Creek near Santa Fe, N. Mex.

Location.--Lat 35°44'42", long 105°49'39", in SW¼NE¼ sec.36, T.18 N., R.10 E., in Santa Fe National Forest, on right bank 1,200 ft upstream from East Boundary line of Hyde State park, 0.25 mile (by access road) east of State Highway 475, 9 miles northeast of Santa Fe.

Drainage area.--0.37 sq mi.

Records available.--June 1962 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 9,220 ft (from topographic map). May 11, 1963 to Sept. 30, 1965, digital water-stage recorder at same site and datum.

Average discharge.--5 years, 0.179 cfs (130 acre-ft per year).

Extremes.--Maximum discharge during year, 0.74 cfs Aug. 10 (gage height, 0.62 ft); minimum, 0.007 cfs July 5, 6, 10, 11.
1962-67: Maximum discharge, 2.28 cfs July 30, 1965 (gage height, 0.97 ft), from rating curve extended above 0.85 cfs on basis of theoretical rating; minimum, that of July 5, 6, 10, 11, 1967.

Remarks.--Records excellent.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.12	0.095	0.086	0.067	0.067	0.070	0.10	0.067	0.044	0.015	0.053	0.086
2	.12	.095	.086	.070	.067	.070	.11	.067	.060	.013	.027	.078
3	.11	.095	.090	.063	.067	.070	.12	.070	.067	.015	.025	.099
4	.11	.095	.095	.067	.067	.067	.15	.070	.060	.015	.060	.10
5	.11	.095	.090	.070	.067	.067	.15	.074	.050	.012	.042	.090
6	.11	.095	.15	.070	.067	.067	.13	.074	.063	.011	.12	.082
7	.11	.095	.12	.063	.067	.067	.13	.074	.053	.023	.074	.16
8	.10	.099	.086	.057	.063	.067	.13	.086	.039	.021	.15	.21
9	.10	.10	.070	.057	.063	.067	.11	.090	.036	.013	.19	.42
10	.10	.10	.070	.063	.063	.067	.11	.090	.034	.011	.36	.26
11	.10	.10	.074	.067	.063	.070	.12	.078	.034	.012	.20	.19
12	.10	.10	.067	.070	.063	.070	.10	.070	.032	.020	.37	.15
13	.099	.10	.074	.070	.063	.074	.090	.067	.029	.027	.30	.12
14	.099	.099	.078	.070	.063	.074	.095	.063	.029	.016	.25	.11
15	.10	.10	.078	.070	.067	.074	.090	.060	.029	.012	.16	.11
16	.10	.11	.070	.070	.067	.078	.090	.060	.025	.050	.13	.11
17	.12	.10	.086	.067	.067	.086	.090	.060	.052	.11	.099	.11
18	.11	.099	.078	.057	.063	.095	.095	.060	.052	.042	.090	.11
19	.11	.095	.070	.057	.067	.095	.10	.063	.044	.029	.082	.14
20	.11	.095	.078	.063	.067	.090	.090	.070	.036	.036	.078	.13
21	.11	.095	.078	.063	.067	.086	.082	.063	.034	034	.063	.12
22	.10	.095	.070	.067	.063	.095	.082	.057	.029	.057	.057	.11
23	.10	.095	.042	.063	.063	.10	.074	.057	.025	.050	.053	.11
24	.099	.095	.030	.063	.063	.11	.078	.053	.025	.027	.053	.10
25	.099	.095	.034	.063	.063	.10	.078	.053	.027	.027	.070	.19
26	.099	.086	.053	.060	.063	.095	.078	.074	.023	.027	.063	.15
27	.099	.086	.078	.060	.067	.099	.082	.067	.020	.027	.083	.13
28	.095	.086	.086	.060	.067	.10	.082	.057	.016	.021	.074	.12
29	.095	.090	.082	.063	-	.11	.086	.050	.020	.020	.090	.11
30	.095	.090	.074	.063	- - - - -	.10	.078	.047	.018	.020	.13	.10
31	.095	- - - - -	.070	.063	- - - - -	.095	- - - - -	.047	- - - - -	.018	.099	- - - - -
Total	3.224	2.875	2.393	1.996	1.824	2.575	3.000	2.038	1.105	.831	3.695	4.105
Mean	.104	.0958	.0772	.0644	.0651	.0831	.100	.0657	.0368	.0268	.119	.137
Max	.12	.11	.15	.070	.067	.11	.15	.090	.067	.11	.37	.42
Min	.095	.086	.030	.057	.063	.067	.074	.047	.016	.011	.025	.078
Ac-ft	6.39	5.70	4.75	3.96	3.62	5.11	5.95	4.04	2.19	1.65	7.33	8.14

Cal yr 1966: Total 82.402 Mean .226 Max 1.41 Min .030 Ac-ft 163
Wtr yr 1967: Total 29.661 Mean .0813 Max .42 Min .011 Ac-ft 58.8

Peak discharge (base, 1.00 cfs).--No peak above base.

8-3042. Little Tesuque Creek tributary No. 4 near Santa Fe, N. Mex.

Location.--Lat 35°44'08", long 105°50'00", on right bank in Hyde State Park, 1,000 ft upstream from mouth, and 8 miles northeast of Santa Fe, Santa Fe County.

Drainage area.--0.69 sq mi.

Records available.--October 1964 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 8,600 ft (from topographic map).

Extremes.--Maximum discharge during year, 0.97 cfs Aug. 10 (gage height, 0.96 ft); no flow June 21 to Aug. 8.
1964-67 (corrected): Maximum discharge, 1.94 cfs July 20, 1966 (gage height, 1.10 ft), from rating curve extended above 0.60 cfs on basis of theoretical rating; no flow at times.

Remarks.--Records good except those for October, November and August, which are fair.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.021	0.010	0.020	0.004	0.020	0.021	0.050	0.018	0.002		0	0.050
2	.023	.011	.020	.007	.021	.020	.057	.016	.004		0	.044
3	.020	.016	.020	.009	.021	.020	.060	.015	.004		0	.042
4	.020	.018	.021	.010	.021	.021	.074	.015	.003		0	.044
5	.020	.018	.025	.009	.021	.021	.074	.013	.004		0	.050
6	.020	.018	.025	.009	.021	.025	.060	.015	.009		0	.050
7	.027	.018	.036	.007	.021	.025	.057	.015	.008		0	.10
8	.027	.020	.036	.008	.023	.023	.057	.013	.006		0	.35
9	.023	.023	.029	.005	.023	.023	.053	.013	.006		.20	.63
10	.020	.023	.020	.005	.023	.023	.047	.013	.009		.49	.37
11	.018	.023	.013	.004	.021	.023	.047	.012	.011		.28	.27
12	.018	.023	.011	.002	.021	.032	.044	.010	.013		.47	.20
13	.020	.023	.011	.002	.020	.027	.036	.010	.013		.38	.16
14	.027	.023	.012	.002	.020	.029	.032	.009	.013		.31	.13
15	.032	.021	.012	.002	.020	.029	.032	.008	.012		.22	.11
16	.025	.023	.013	.002	.020	.029	.034	.007	.007		.17	.095
17	.013	.025	.016	.002	.020	.034	.034	.006	.002		.13	.086
18	.020	.027	.016	.002	.018	.047	.032	.006	0		.10	.074
19	.032	.025	.018	.002	.018	.067	.032	.005	0		.090	.070
20	.023	.023	.018	.003	.018	.053	.036	.009	0		.074	.086
21	.023	.021	.018	.004	.021	.047	.034	.008	0		.074	.067
22	.023	.021	.018	.004	.018	.047	.029	.008	0		.060	.060
23	.021	.021	.016	.003	.016	.053	.025	.008	0		.047	.050
24	.023	.021	.015	.004	.013	.063	.025	.008	0		.042	.047
25	.027	.021	.010	.006	.011	.060	.025	.009	0		.036	.069
26	.025	.021	.007	.008	.013	.050	.023	.015	0		.036	.095
27	.021	.020	.005	.011	.013	.050	.023	.009	0		.034	.078
28	.020	.015	.004	.012	.016	.057	.023	.006	0		.034	.063
29	.013	.016	.003	.015	-	.063	.021	.004	0		.034	.057
30	.011	.020	.003	.015	- - - - -	.063	.021	.002	0		.036	.053
31	.010	- - - - -	.002	.016	- - - - -	.050	- - - - -	.002	- - - - -		.050	- - - - -
Total	.666	.608	.493	.194	.532	1.195	1.197	.307	.126	0	3.397	3.650
Mean	.0215	.0203	.0159	.0063	.0190	.0385	.0399	.0099	.0042	0	.110	.122
Max	.032	.027	.036	.016	.023	.067	.074	.018	.013	0	.49	.63
Min	.010	.010	.002	.002	.011	.020	.021	.002	0	0	0	.042
Ac-ft	1.32	1.21	.98	.38	1.06	2.37	2.37	.61	.25	0	6.74	7.24

Cal yr 1966: Total 43.886 Mean .120 Max 1.01 Min .001 Ac-ft 87.0
Wtr yr 1967: Total 12.365 Mean .0339 Max .63 Min 0 Ac-ft 24.5

Peak discharge (base, 1.50 cfs).--No peak above base.

8-3043. Little Tesuque Creek tributary No. 3 near Santa Fe, N. Mex.

Location.--Lat 35°43'35", long 105°50'01", in Santa Fe National Forest, on right bank 1,900 ft upstream from mouth, and 8 miles northeast of Santa Fe, Santa Fe County.

Drainage area.--0.65 sq mi.

Records available.--September 1963 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 8,440 ft (from topographic map).

Extremes.--Maximum discharge during year, 0.36 cfs Sept. 10 (gage height, 0.455 ft); no flow most of time.
1963-67: Maximum discharge, 0.84 cfs Aug. 2, 1966 (gage height, 0.64 ft); no flow most of time.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											0	0
2											0	0
3											0	0
4											0	0
5											0	0
6											0	0
7											0	0
8											0	0
9											0	.088
10											0	.34
11											.049	.25
12											.19	.18
13											.25	.13
14											.21	.099
15											.16	.078
16											.13	.057
17											.095	.039
18											.067	.023
19											.047	.012
20											.032	.002
21											.021	0
22											.010	0
23											.001	0
24											0	0
25											0	0
26											0	0
27											0	0
28											0	0
29											0	0
30											0	0
31											0	
Total	0	0	0	0	0	0	0	0	0	0	1.262	1.298
Mean	0	0	0	0	0	0	0	0	0	0	.0407	.0433
Max	0	0	0	0	0	0	0	0	0	0	.25	.34
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0	0	2.50	2.57

Cal yr1966 : Total 16.844 Mean .0461 Max .58 Min 0 Ac-ft 33.4
Wtr yr1967 : Total 2.560 Mean .0070 Max .34 Min 0 Ac-ft 5.08

Peak discharge (base, 0.40 cfs).--No peak above base.

8-3044. Little Tesuque Creek tributary No. 2 near Santa Fe, N. Mex.

Location.--Lat 35°43'34", long 105°51'02", in SW¼SW¼ sec.2, T.17 N., R.10 E., on right bank in Santa Fe National Forest, 300 ft upstream from mouth and State Highway 475, 6¼ miles northeast of Santa Fe.

Drainage area.--0.45 sq mi.

Records available.--June 1962 to September 1967.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 7,960 ft (from topographic map).

Average discharge.--5 years, 0.0109 cfs (7.89 acre-ft per year).

Extremes.--Maximum discharge during year, 0.029 cfs Aug. 10 (gage height, 0.180 ft); no flow at times.
1962-67: Maximum discharge, 0.31 cfs Aug. 2, 1966 (gage height, 0.44 ft), from rating curve extended above 0.11 cfs on basis of theoretical rating; no flow at times each year.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.002	0.002	0.002	0.004	0.004	0.004	0.006	0.002	0.001		0	0.001
2	.002	.002	.002	.004	.004	.004	.006	.002	.001		0	.001
3	.002	.001	.002	.004	.004	.004	.005	.002	.001		0	.001
4	.002	.001	.002	.004	.004	.004	.005	.002	.001		0	.001
5	.002	.001	.003	.004	.004	.004	.005	.002	0		0	.001
6	.002	.001	.003	.004	.004	.004	.005	.002	0		0	.001
7	.002	.001	.004	.004	.004	.004	.005	.002	0		0	.001
8	.002	.002	.004	.004	.004	.004	.005	.002	0		0	.001
9	.002	.002	.004	.004	.004	.004	.004	.002	0		.004	.002
10	.002	.002	.003	.004	.004	.004	.004	.002	0		.025	.002
11	.002	.002	.003	.004	.004	.005	.004	.002	0		.016	.002
12	.002	.002	.003	.004	.004	.005	.004	.002	0		.025	.002
13	.002	.002	.003	.004	.004	.005	.004	.002	0		.025	.002
14	.002	.002	.003	.004	.004	.005	.004	.002	0		.021	.002
15	.002	.002	.003	.004	.004	.005	.004	.001	0		.016	.002
16	.002	.002	.003	.004	.004	.005	.004	.001	0		.012	.002
17	.002	.002	.003	.004	.004	.006	.004	.001	0		.010	.002
18	.002	.002	.003	.004	.004	.007	.004	.001	0		.009	.001
19	.002	.002	.004	.004	.004	.008	.003	.001	0		.006	.001
20	.002	.002	.004	.004	.004	.009	.003	.001	0		.004	.002
21	.002	.002	.004	.004	.004	.007	.003	.001	0		.003	.001
22	.002	.002	.004	.004	.004	.007	.002	.001	0		.002	.001
23	.001	.002	.004	.004	.004	.007	.002	.001	0		.002	.001
24	.001	.002	.003	.004	.004	.007	.002	.001	0		.002	.001
25	.002	.002	.003	.004	.004	.007	.002	.001	0		.002	.002
26	.002	.002	.003	.004	.004	.007	.002	.001	0		.002	.004
27	.002	.004	.003	.004	.004	.007	.002	.001	0		.001	.004
28	.002	.003	.004	.004	.004	.006	.002	.001	0		.001	.004
29	.002	.002	.004	.004	-	.006	.002	.001	0		.001	.004
30	.002	.002	.004	.004	- - - - -	.006	.002	.001	0		.001	.003
31	.002	- - - - -	.004	.004	- - - - -	.006	- - - - -	.001	- - - - -		.001	- - - - -
Total	.060	.058	.101	.124	.112	.173	.109	.045	.004	0	.191	.055
Mean	.0019	.0019	.0033	.0040	.0040	.0056	.0036	.0015	.0001	0	.0062	.0018
Max	.002	.004	.004	.004	.004	.009	.006	.002	.001	0	.025	.004
Min	.001	.001	.002	.004	.004	.004	.002	.001	0	0	0	.001
Ac-ft	.12	.12	.20	.25	.22	.34	.22	.089	.008	0	.38	.11

Cal yr 1966: Total 4.747 Mean .0130 Max .18 Min 0 Ac-ft 9.42
Wtr yr 1967: Total 1.032 Mean .0028 Max .025 Min 0 Ac-ft 2.05

Peak discharge (base, 0.09 cfs).--No peak above base.

8-3130. Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.

Location.--Lat 35°52'30", long 106°08'30", near right bank on downstream end of pier of former railway bridge, 400 ft downstream from bridge on State Highway 4, 1¾ miles southwest of San Ildefonso Pueblo, 2½ miles downstream from Pojoaque River, and 7 miles west of Pojoaque.

Drainage area.--14,300 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--February 1895 to December 1905, June 1909 to September 1967. Monthly discharge only for some periods, published in WSP 1312. In early reports this record was published as Rio Grande at water tank, as "at Rio Grande", and as "near Buckman."

Gage.--Water-stage recorder. Datum of gage is 5,488.48 ft above mean sea level, datum of 1929. Prior to May 19, 1904, and July 25 to Oct. 1, 1904, staff gage at site 180 ft upstream at datum 2.02 ft lower. May 19 to July 24, 1904, Oct. 2, 1904, to Dec. 31, 1905, and June 23, 1909, to May 31, 1910, staff gage or chain gage at present site and datum.

Average discharge.--68 years (1895-1905, 1909-67), 1,540 cfs (1,115,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,520 cfs Aug. 9 (gage height, 8.17 ft); minimum, 218 cfs Oct. 2-3.
1895-1905, 1909-67: Maximum discharge, 24,400 cfs May 23, 1920; maximum gage height, 14.5 ft Sept. 29, 1904 (present site and datum); minimum daily discharge, 60 cfs July 4, 5, 1902.
The 1920 flood is greatest since at least 1884 and probably since 1741; information from H. W. Yeo's file on floods.

Remarks.--Records good. Flow partly regulated by El Vado and Abiquiu Reservoirs (see stations 8-2850, 8-2869) on Rio Chama which contributes about 40 percent of total flow. Diversions above station for irrigation of about 619,000 acres in Colorado and 75,000 acres in New Mexico. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	227	364	702	471	702	824	589	430	1,200	453	494	1,230
2	230	372	696	504	684	910	633	400	1,120	409	422	746
3	224	368	715	495	673	948	627	689	1,070	388	798	650
4	230	632	746	499	655	1,020	574	962	1,140	364	1,270	553
5	230	1,200	746	564	673	1,050	595	771	1,530	341	1,540	538
6	234	1,440	817	584	696	1,050	690	569	1,690	304	1,080	631
7	243	1,490	1,150	533	684	918	667	655	1,740	297	579	1,150
8	240	1,560	1,400	514	600	758	584	719	1,640	300	710	977
9	240	1,610	1,100	495	661	778	616	1,350	1,660	266	2,640	994
10	246	1,640	1,080	533	673	817	600	1,400	1,560	262	4,250	895
11	237	1,630	986	564	696	860	558	1,770	1,380	246	2,820	824
12	252	1,610	765	553	667	881	485	1,910	1,240	256	2,890	633
13	266	1,620	627	558	667	831	471	1,860	1,150	333	4,020	564
14	282	1,610	679	564	673	771	430	1,400	1,030	368	3,330	514
15	300	1,630	708	548	673	727	444	881	811	345	2,710	550
16	300	1,640	702	564	661	667	476	1,070	758	361	2,600	553
17	314	1,680	684	564	633	633	462	811	771	841	2,170	553
18	329	1,630	673	570	661	627	435	784	781	1,160	1,800	523
19	326	1,490	655	570	679	690	457	845	785	994	1,530	476
20	337	1,350	684	580	679	739	471	1,100	922	600	1,410	467
21	348	1,340	702	590	673	752	462	1,240	994	600	1,320	490
22	360	1,810	702	600	650	739	430	1,080	910	622	1,090	457
23	372	930	673	600	673	733	467	918	1,100	616	948	422
24	380	739	579	600	667	733	448	860	1,170	589	874	422
25	376	746	564	600	702	739	426	838	1,080	543	739	489
26	380	758	528	600	715	765	418	867	910	611	708	495
27	384	778	548	620	758	733	400	1,110	824	622	690	523
28	392	765	548	640	765	727	453	1,360	715	490	1,210	564
29	376	727	490	650	-	696	457	1,610	543	453	831	485
30	372	702	476	650	-----	667	439	1,590	485	405	798	435
31	376	-----	467	679	-----	622	-----	1,350	-----	413	651	-----
Total	9,403	35,861	22,592	17,656	18,993	24,405	15,264	33,199	32,709	14,852	48,922	18,803
Mean	303	1,195	729	570	678	787	509	1,071	1,090	479	1,578	627
Max	392	1,810	1,400	679	765	1,050	690	1,910	1,740	1,160	4,250	1,230
Min	224	364	467	471	600	622	400	400	485	246	422	422
Ac-ft	18,650	71,130	44,810	35,020	37,670	48,410	30,280	65,850	64,880	29,460	97,040	37,300

Cal yr 1966: Total 399,622 Mean 1,095 Max 3,420 Min 224 Ac-ft 792,600
Wtr yr 1967: Total 292,659 Mean 802 Max 4,250 Min 224 Ac-ft 580,500

Peak discharge (base, 5,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-9	2230	8.17	9,520	8-13	2215	6.44	5,720

8-3133.5 Rito de los Frijoles in Bandelier National Monument, N. Mex.

Location.--Lat 35°47'08", long 106°16'50", in Bandelier National Monument, Sandoval County, 2,000 ft southeast of Ceremonial Cave, 3,600 ft upstream from Monument headquarters, 6 miles south of Los Alamos and 19 miles northwest of Santa Fe.

Drainage area.--17.5 sq mi.

Records available.--July 1963 to September 1967.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 6,140 ft (from topographic map).

Extremes.--Maximum discharge during year, 6.3 cfs Aug. 9 (gage height, 1.28 ft), from rating curve extended above 2.8 cfs on basis of theoretical rating; minimum, 0.16 cfs Dec. 24, July 11.
1963-67: Maximum discharge, 19 cfs June 18, 1965 (gage height, 1.49 ft), from rating curve extended above 5.0 cfs on basis of theoretical rating; minimum, 0.04 cfs July 22, 1966, result of regulation.

Remarks.--Records good. Pipe line diversion upstream not presently in use.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.64	0.76	0.96	0.90	1.1	0.96	0.83	0.77	0.59	0.38	0.77	2.5
2	.70	.81	.96	.90	1.1	.96	.83	.77	.71	.28	.59	2.2
3	.70	.81	.96	.90	.96	.96	.77	.77	1.0	.38	.59	2.1
4	.64	.88	1.0	.90	.96	1.0	.83	.77	.77	.43	.65	2.0
5	.70	.88	1.0	.90	1.0	1.0	.83	.77	.71	.28	.71	2.1
6	.70	.88	1.1	.90	1.0	1.0	.83	.71	.77	.28	.71	1.9
7	.70	.88	1.0	.90	1.0	1.0	.83	.71	.71	.28	1.1	2.5
8	.64	.94	1.2	.90	.90	.96	.83	.71	.65	.28	.82	2.3
9	.64	1.1	.77	.90	.83	1.0	.83	.77	.59	.24	2.3	2.2
10	.64	1.0	.43	.90	.90	1.0	.83	.77	.53	.24	2.0	2.1
11	.64	1.0	.77	.90	.90	1.1	.83	.77	.53	.20	2.4	1.8
12	.70	1.0	.83	.90	.83	1.1	.83	.77	.53	.33	2.5	1.7
13	.70	1.0	1.0	.96	.90	.96	.83	.83	.53	.53	2.1	1.6
14	.70	.94	.96	1.0	.96	.96	.83	.83	.48	.33	1.6	1.5
15	.76	.95	1.0	1.0	.90	.90	.83	.90	.48	.33	1.6	1.5
16	.88	.90	.90	1.0	.90	.90	.77	.90	.48	.65	1.5	1.4
17	.94	.96	.77	1.0	.83	.90	.71	.77	.65	1.0	1.3	1.4
18	.81	.90	.90	.90	.90	.90	.71	.71	.65	.65	1.2	1.3
19	.76	.83	.90	.90	.90	1.0	.71	.71	.71	.48	1.2	1.2
20	.81	.83	1.0	1.0	.90	1.0	.71	.71	.71	.48	1.7	1.2
21	.81	.77	.90	1.1	.83	1.0	.83	.65	.71	.48	1.7	1.2
22	.88	.77	.90	1.2	.90	.96	.83	.65	.65	.48	1.7	1.1
23	.94	.83	.53	1.2	.83	.90	.83	.59	.48	.53	1.6	1.1
24	.94	.83	.48	1.1	.90	.90	.83	.53	.43	.53	1.6	1.1
25	.94	.90	.71	1.0	.90	.90	.83	.53	.48	.96	1.6	1.3
26	.88	.90	.77	1.0	1.0	.90	.77	.71	.48	.71	1.6	1.7
27	.94	.90	1.0	1.0	1.0	.90	.77	.83	.48	.65	2.5	1.3
28	.81	.90	.96	1.0	.96	.90	.77	.77	.38	.53	2.0	1.2
29	.76	.96	.77	1.0	-	.90	.71	.90	.38	.48	2.0	1.1
30	.76	.96	.71	1.0	- - - - -	.83	.71	.59	.48	.53	1.9	1.0
31	.76	- - - - -	.83	1.1	- - - - -	.83	- - - - -	.59	- - - - -	.77	2.6	- - - - -
Total	23.82	26.97	26.97	30.26	25.99	29.48	23.88	22.76	17.73	14.70	48.14	48.6
Mean	.768	.899	.870	.976	.928	.951	.796	.734	.591	.474	1.55	1.62
Max	.94	1.1	1.2	1.2	1.1	1.1	.83	.90	1.0	1.0	2.6	2.5
Min	.64	.76	.43	.90	.83	.83	.71	.53	.38	.20	.59	1.0
Ac-ft	47	53	53	60	52	58	47	45	35	29	95	96

Cal yr 1966: Total 370.25 Mean 1.01 Max 5.0 Min 0.24 Ac-ft 734
Wtr yr 1967: Total 339.30 Mean 0.930 Max 2.6 Min 0.20 Ac-ft 673

Peak discharge (base, 4.0 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 9	2100	1.28	6.3				

8-3145. Rio Grande at Cochiti, N. Mex.

Location.--Lat 35°37'10", long 106°19'20", in SE¼NE¼ sec.17, T.16 N., R.6 E., on downstream end of concrete pier near left end of highway bridge, 1½ miles northeast of Cochiti, 3¾ miles north of Pena Blanca, and 8 miles upstream from Galisteo Creek.

Drainage area.--14,600 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--October 1924 to September 1967. Published as "near Cochiti" prior to 1928. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 5,224.70 ft above mean sea level, datum of 1929. Prior to July 16, 1925, staff gage 1 mile upstream at different datum. July 16, 1925, to Jan. 28, 1947, at or near right abutment of bridge at same datum. Jan. 28 to May 15, 1947, 600 ft upstream at same datum. July 16, 1925 to May 15, 1964, graphic water-stage recorder.

Average discharge.--43 years, 1,308 cfs (947,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,500 cfs Aug. 9 (gage height, 10.53 ft); minimum, 61 cfs July 12.
1927-67: Maximum discharge, 23,400 cfs May 15, 1941 (gage height, 10.93 ft); minimum, 0.7 cfs Aug. 10, 11, 1934.
The flood of May 23, 1920, probably exceeded 23,400 cfs, and is likely the highest since 1905.

Remarks.--Records good except those for June and July, which are fair and those for winter periods, which are poor. Diversions above station for irrigation of about 700,000 acres, 6,000 of which are irrigated below by Cochiti eastside and Sili main canals which bypass station. Possible regulation by two reservoirs on Rio Chama.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	175	384	760	438	789	934	520	430	970	310	390	1,190
2	339	408	760	501	791	1,030	652	298	956	400	266	1,080
3	180	422	796	510	779	1,070	604	366	942	350	482	942
4	101	493	832	507	757	1,160	520	922	942	320	1,260	830
5	101	1,080	832	580	754	1,200	460	856	1,330	240	1,500	662
6	101	1,240	880	643	795	1,190	544	640	1,470	110	1,450	638
7	108	1,400	1,150	634	809	1,010	580	688	1,490	110	686	1,190
8	192	1,520	1,480	556	710	698	480	604	1,380	140	518	1,070
9	322	1,620	1,270	490	748	684	616	996	1,360	250	2,140	1,010
10	198	1,660	1,200	583	788	693	556	1,030	1,330	160	7,580	1,010
11	120	1,690	1,200	580	805	865	420	1,500	1,310	60	3,760	886
12	116	1,730	1,010	580	758	1,010	366	1,730	1,030	80	3,310	674
13	139	1,730	784	580	777	886	322	1,730	818	85	4,660	554
14	177	1,670	724	602	790	761	298	1,310	746	134	4,460	542
15	275	1,660	760	591	753	719	290	800	700	220	2,870	542
16	388	1,690	772	499	727	648	490	900	640	248	2,780	710
17	247	1,780	724	500	704	567	357	700	680	844	2,400	746
18	221	1,760	748	500	711	580	282	700	720	1,260	1,950	626
19	231	1,600	724	510	719	748	314	800	740	942	1,690	460
20	223	1,510	724	510	708	796	357	950	700	554	1,470	370
21	233	1,430	736	538	688	724	366	1,050	984	270	1,310	450
22	326	1,780	772	607	679	736	375	998	758	494	1,100	518
23	424	1,260	748	631	688	700	510	746	858	578	914	440
24	311	760	712	634	704	688	411	650	1,030	470	818	506
25	242	796	652	636	729	724	290	650	914	380	698	370
26	241	787	664	641	754	868	290	700	730	400	674	470
27	251	796	640	631	813	772	282	900	640	440	770	420
28	268	808	688	661	842	700	314	1,220	520	354	1,240	506
29	342	760	664	701	------	700	430	1,360	360	322	1,040	506
30	428	712	544	705	------	640	568	1,380	310	430	984	470
31	389	------	500	750	------	544	------	1,150	------	298	746	------
TOTAL	7,409	36,936	25,450	18,029	21,069	25,045	12,864	28,754	27,358	11,353	55,916	20,388
MEAN	239	1,231	821	582	752	808	429	928	912	366	1,804	680
MAX	428	1,780	1,480	750	842	1,200	652	1,730	1,490	1,260	7,580	1,190
MIN	101	384	500	438	679	544	282	298	310	60	266	370
AC-FT	14,700	73,260	50,480	35,760	41,790	49,680	25,520	57,030	54,260	22,520	110,900	40,440
(†)	6,230	0	0	0	0	4,210	6,190	7,250	5,760	5,390	4,150	6,130

CAL YR 1966: TOTAL 386,121 MEAN 1,058 MAX 3,290 MIN 86 AC-FT 765,900
WAT YR 1967: TOTAL 290,571 MEAN 796 MAX 7,580 MIN 60 AC-FT 576,300

Peak discharge (base, 4,500 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-4	0830	5.99	4,580	8-13	2100	8.10	10,600
8-9	2300	10.53	21,500				

† Combined monthly diversion, in acre-ft, of Sili main and Cochiti eastside canals; records of this flow are furnished by Bureau of Reclamation.

8-3155. McClure Reservoir near Santa Fe, N. Mex.

Location.--Lat 35°41'20", long 105°50'10", in NE¼SW¼ sec.24, T.17 N., R.10 E., on outlet tower at McClure Dam on Santa Fe River, 2½ miles upstream from Nichols Reservoir, and 6 miles east of Santa Fe.

Drainage area.--17.4 sq mi.

Records available.--September 1929, July to October 1930, April 1931 to June 1946, September 1947 to September 1967 (see WSP 1312, 1732).

Gage.--Water-stage recorder. Datum of gage is 7,768.12 ft above mean sea level, datum of 1929. Prior to October 1, 1947, staff gages at same site and various datums all referred to the Public Service Company of New Mexico assumed datum, 165.9 ft lower.

Extremes.--Maximum contents during year, 2,850 acre-ft Oct. 1 (gage height, 99.9 ft); minimum, 436 acre-ft Aug. 8 (gage height, 51.8 ft).
1947-67: Maximum contents, 3,140 acre-ft June 25, 1960 (gage height, 103.7 ft); no contents January 25 to May 8, 1951.

Remarks.--Reservoir is formed by earth-fill dam, completed in 1926 (capacity, 503 acre-ft), raised 5 ft in 1935 (capacity 650 acre-ft), and raised 36.5 ft more in 1947. Capacities and changes in height of dam are for effective height of spillway which includes 1 ft of flash boards above concrete crest 1926 to July 1935, 2 ft August 1935 to September 1947, and varying heights of sandbag bulkheads from October 1947 to May 1953 when spillway was equipped with radial gates which open automatically at gage height about 103.1 ft (some adjustment possible). Capacity, 3,090 acre-ft between gage heights -0.2 ft (bottom of lowest outlet tube) and 103.1 ft. No dead storage. Water is for municipal use of city of Santa Fe.

Cooperation.--Supplementary stage readings and capacity table furnished by Public Service Co. of New Mexico.

Capacity table (gage height, in feet, and contents, in acre-feet)

10	1.9	25	47	40	201	70	1,050	100	2,860
15	8.0	30	83	50	394	80	1,550	105	3,240
20	22	35	133	60	668	90	2,160		

Contents, in acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,850	2,510	2,150	2,010	1,770	1,570	1,500	1,450	1,280	963	506	1,280
2	2,840	2,490	2,150	2,000	1,770	1,570	1,500	1,450	1,280	942	492	1,310
3	2,830	2,470	2,150	2,000	1,760	1,560	1,500	1,440	1,270	925	482	1,330
4	2,820	2,450	2,150	1,990	1,750	1,560	1,500	1,440	1,260	893	471	1,350
5	2,820	2,430	2,150	1,980	1,740	1,560	1,500	1,430	1,260	885	464	1,370
6	2,820	2,420	2,150	1,970	1,740	1,550	1,500	1,420	1,260	866	454	1,380
7	2,810	2,400	2,150	1,970	1,740	1,550	1,500	1,420	1,270	846	444	1,400
8	2,800	2,380	2,150	1,960	1,720	1,540	1,500	1,410	1,270	823	436	1,430
9	2,800	2,370	2,150	1,950	1,710	1,540	1,500	1,410	1,270	804	439	1,480
10	2,790	2,350	2,150	1,950	1,700	1,530	1,500	1,410	1,270	786	464	1,520
11	2,780	2,330	2,150	1,940	1,690	1,530	1,500	1,410	1,270	764	503	1,550
12	2,780	2,320	2,150	1,930	1,680	1,520	1,500	1,400	1,270	749	570	1,570
13	2,760	2,300	2,150	1,920	1,680	1,520	1,500	1,400	1,260	732	636	1,590
14	2,730	2,280	2,150	1,920	1,670	1,510	1,500	1,400	1,220	711	701	1,610
15	2,710	2,270	2,150	1,900	1,670	1,510	1,500	1,400	1,180	698	749	1,620
16	2,690	2,250	2,150	1,890	1,660	1,510	1,500	1,390	1,140	684	804	1,630
17	2,680	2,240	2,140	1,890	1,650	1,510	1,500	1,390	1,120	675	858	1,650
18	2,650	2,230	2,130	1,880	1,640	1,510	1,500	1,380	1,090	658	905	1,660
19	2,640	2,210	2,120	1,870	1,640	1,510	1,500	1,380	1,070	639	954	1,670
20	2,630	2,190	2,120	1,860	1,630	1,500	1,500	1,370	1,060	630	993	1,680
21	2,620	2,170	2,110	1,850	1,630	1,500	1,500	1,360	1,050	615	1,020	1,690
22	2,620	2,160	2,100	1,840	1,620	1,500	1,490	1,350	1,040	609	1,050	1,700
23	2,620	2,150	2,100	1,830	1,610	1,500	1,490	1,350	1,030	594	1,070	1,700
24	2,620	2,150	2,080	1,830	1,600	1,500	1,480	1,340	1,020	585	1,090	1,700
25	2,620	2,150	2,080	1,830	1,600	1,500	1,480	1,330	1,020	573	1,110	1,710
26	2,610	2,150	2,070	1,810	1,600	1,500	1,490	1,320	1,010	564	1,130	1,720
27	2,600	2,150	2,060	1,810	1,590	1,500	1,480	1,320	1,010	563	1,140	1,740
28	2,580	2,150	2,050	1,800	1,580	1,500	1,480	1,310	1,010	550	1,160	1,750
29	2,560	2,150	2,040	1,790	-	1,500	1,470	1,300	1,000	539	1,190	1,750
30	2,540	2,150	2,030	1,780	----------	1,500	1,460	1,300	988	527	1,230	1,770
31	2,520	----------	2,020	1,780	----------	1,500	----------	1,290	----------	516	1,260	----------
(†)	95.3	89.8	87.9	83.9	80.5	79.1	78.4	75.1	68.5	54.9	74.5	83.7
(ǂ)	-330	-370	-130	-240	-200	-80	-40	-170	-302	-472	+744	+510
Max	2,850	2,510	2,150	2,010	1,770	1,570	1,500	1,450	1,280	963	1,260	1,770
Min	2,520	2,150	2,020	1,780	1,580	1,500	1,460	1,290	988	516	436	1,280

Calendar year 1966..... ǂ -770
Water year 1967..... ǂ -1,080

† Gage height, in feet, at end of month.
ǂ Change in contents, in acre-feet.

8-3160. Santa Fe River near Santa Fe, N. Mex.

Location.--Lat 35°41'10", long 105°50'35", in NE¼SE¼ sec.23, T.17 N., R.10 E., on left bank 0.4 mile downstream from McClure Dam and 5½ miles east of Santa Fe.

Drainage area.--18.2 sq mi.

Records available.--January 1913 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1953, published as Santa Fe Creek near Santa Fe.

Gage.--Water-stage recorder and concrete control. Datum of gage is 7,718 ft above mean sea level, datum of 1929. Prior to Nov. 4, 1930, at site 1.5 miles downstream and Apr. 11, 1931, to September 1947 at site 0.3 mile upstream, each at different datum.

Average discharge.--54 years, 8.19 cfs (5,930 acre-ft per year).

Extremes.--Maximum discharge during year, 25 cfs June 13 (gage height, 2.26 ft); minimum, 0.34 cfs Aug. 19.
1913-67: Maximum discharge, 1,500 cfs Aug. 14, 1921 (gage height, 5.17 ft, site and datum then in use), from rating curve extended above 150 cfs by logarithmic plotting; minimum, 0.08 cfs July 31, Aug. 1, 1951.
Peaks which probably exceeded 1,000 cfs occurred Aug. 19, 1872, and Sept. 29 or 30, 1904. Without regulation the flood of Sept. 23, 1929, might have exceeded 1,500 cfs.

Remarks.--Records good except those below 1 cfs, which are fair. Flow regulated by McClure Reservoir (see station 8-3155), completed in 1926, raised in 1935 and again in 1947.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	11	1.5	5.6	5.2	4.5	2.4	5.6	7.3	12	8.8	1.8
2	5.2	11	1.5	5.6	5.2	4.5	2.4	5.6	7.3	11	8.4	1.9
3	5.2	11	1.5	5.6	4.9	4.5	2.4	5.4	7.3	11	8.4	2.1
4	5.2	10	1.5	5.6	4.9	4.3	2.4	5.4	7.0	11	8.4	2.2
5	4.9	10	1.5	5.6	4.7	4.3	2.4	5.4	4.4	11	8.4	2.4
6	4.9	10	1.5	5.6	4.9	4.1	2.4	5.4	1.2	11	8.4	2.4
7	4.7	10	1.5	5.6	4.9	4.1	2.4	5.4	1.2	11	8.4	2.4
8	4.7	10	1.4	5.6	4.9	4.1	2.4	5.4	1.2	10	8.4	2.5
9	4.7	10	1.4	5.6	4.7	4.1	2.4	5.4	1.2	10	8.8	2.7
10	4.5	10	1.4	5.6	4.7	4.1	2.4	5.4	1.2	10	10	2.7
11	4.5	10	1.4	5.6	4.7	4.1	2.4	5.4	1.2	10	5.8	2.8
12	4.5	10	1.4	5.6	4.7	4.1	2.5	5.4	1.2	10	1.5	3.0
13	11	10	1.4	5.6	4.7	4.1	2.5	5.4	11	10	1.1	3.0
14	16	10	1.4	5.6	4.7	4.1	2.5	5.4	23	10	.74	3.0
15	14	10	1.4	5.6	4.9	3.3	2.5	5.4	21	10	.56	3.0
16	11	9.8	3.5	5.4	4.9	2.5	2.5	5.4	19	10	.56	3.0
17	13	9.8	5.4	5.6	4.9	2.5	2.5	6.7	16	10	.44	3.0
18	13	9.8	5.4	5.9	4.7	2.5	2.5	8.4	13	10	.38	3.0
19	8.8	9.4	5.4	5.9	4.7	2.5	2.5	8.4	9.1	10	.38	3.0
20	5.6	9.4	5.4	5.9	4.7	2.5	2.5	8.4	8.1	10	.38	3.1
21	3.9	9.4	5.4	5.6	4.7	2.5	2.5	8.1	6.7	9.8	.56	3.1
22	3.0	9.4	5.4	5.6	4.7	2.5	2.5	8.1	5.2	9.8	.80	3.1
23	2.5	5.2	5.4	5.6	4.5	2.5	2.5	8.1	4.3	9.4	.92	3.1
24	2.2	1.5	5.4	5.6	4.5	2.5	2.5	8.1	3.3	9.4	1.1	3.1
25	1.9	1.5	5.4	5.4	4.7	2.5	2.5	8.1	2.8	9.4	1.2	3.3
26	6.7	1.5	5.4	5.4	4.5	2.5	2.5	7.8	2.5	9.4	1.3	3.3
27	11	1.5	5.4	5.4	4.5	2.5	3.9	7.8	2.2	9.4	1.4	3.3
28	11	1.5	5.4	5.4	4.5	2.5	5.6	7.8	1.8	9.4	1.4	3.3
29	11	1.5	5.4	5.4	-	2.5	5.6	7.6	1.6	9.1	1.6	3.3
30	11	1.5	5.4	5.4	-----	2.5	5.6	7.6	7.4	9.1	1.7	3.3
31	11	-----	5.4	5.2	-----	2.4	-----	7.6	-----	8.8	1.8	-----
Total	225.8	235.7	106.2	172.7	133.2	102.2	84.6	205.4	199.7	311.0	112.02	85.2
Mean	7.28	7.86	3.43	5.57	4.76	3.30	2.82	6.63	6.66	10.0	3.61	2.84
Max	16	11	5.4	5.9	5.2	4.5	5.6	8.4	23	12	10	3.3
Min	1.9	1.5	1.4	5.2	4.5	2.4	2.4	5.4	1.2	8.8	0.38	1.8
Ac-ft	448	468	211	343	264	203	168	407	396	617	222	169

Cal yr 1966 : Total 2,947.4 Mean 8.08 Max 33 Min 1.4 Ac-ft 5,850
Wtr yr 1967 : Total 1,973.72 Mean 5.41 Max 23 Min 0.38 Ac-ft 3,910

8-3165. Nichols Reservoir near Santa Fe, N. Mex.

Location.--Lat 35°41'20", long 105°52'40", in E½NE¼ sec.21, T.17 N., R.10 E., on outlet tower at dam on Santa Fe River, three-quarters of a mile upstream from Two Mile Reservoir, 2½ miles downstream from McClure Dam, and 3½ miles east of Santa Fe.

Drainage area.--22.8 sq mi.

Records available.--December 1942 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 7,313.2 ft above mean sea level, datum of 1929.

Extremes.--Maximum contents during year, 571 acre-ft Aug. 18-22 (gage height, 163.0 ft); minimum, 229 acre-ft May 15-17 (gage height, 146.8 ft).
1943-67: Maximum contents, 836 acre-ft June 8, 1952 (gage height, 171.8 ft); minimum, 16 acre-ft Feb. 11 to Mar. 10, 1944, Feb. 1-19, 1948.

Remarks.--Reservoir is formed by earth-fill dam. No storage prior to Mar. 16, 1943. Capacity, 796 acre-ft between gage heights 121.2 ft (bottom of lower operational gate) and 171.0 ft (top of flashboards in spillway). Dead storage, 14 acre-ft. Water is for municipal use of city of Santa Fe.

Cooperation.--Supplementary stage readings and survey to compute capacity table furnished by Public Service Co. of New Mexico.

Capacity table (gage height, in feet, and contents, in acre-feet)

110	0	125	26	140	139	155	375	170	776
115	2.6	130	51	145	202	160	491	175	943
120	10	135	89	150	279	165	625		

Contents, in acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	298	428	302	313	336	375	246	281	270	479	496
2	313	292	417	302	313	344	371	245	283	266	482	496
3	315	296	407	302	313	352	367	243	285	262	482	499
4	317	308	396	302	313	360	365	242	285	259	482	499
5	317	317	386	302	313	367	363	240	285	257	482	499
6	317	327	377	304	313	373	360	239	277	256	482	499
7	308	336	367	304	312	380	356	237	277	254	486	502
8	292	346	360	304	312	389	348	236	277	251	499	502
9	277	354	350	306	312	394	336	236	277	259	512	504
10	265	363	342	306	308	403	325	234	271	277	531	502
11	257	369	333	306	308	410	315	233	263	288	547	494
12	250	377	325	308	308	417	306	233	253	285	555	486
13	253	386	317	308	308	424	294	231	243	288	561	477
14	263	391	310	308	306	431	288	231	254	306	563	470
15	268	400	302	308	304	435	286	229	257	321	566	463
16	270	407	296	310	304	438	285	229	259	336	569	458
17	271	419	296	310	302	440	283	229	270	350	569	452
18	274	435	298	312	300	440	283	231	296	363	571	444
19	276	452	298	312	300	438	281	233	317	375	571	440
20	285	463	298	312	298	433	279	233	335	391	571	433
21	290	477	298	312	298	428	279	234	346	405	571	428
22	292	491	300	312	298	424	277	234	356	421	571	421
23	292	502	300	312	296	419	274	236	356	428	566	417
24	285	502	300	313	300	414	268	236	340	428	566	412
25	279	523	300	313	308	410	262	236	315	435	561	407
26	281	484	300	313	317	405	257	236	300	452	558	407
27	292	472	302	313	325	398	254	236	294	465	555	412
28	306	463	302	313	331	394	254	240	285	475	547	417
29	310	452	300	313	--	386	251	253	271	475	531	421
30	306	440	300	313	----------	384	248	263	270	477	518	426
31	302	----------	302	313	----------	380	----------	274	----------	479	504	----------
(†)	151.2	157.8	151.2	151.8	152.7	155.2	148.0	149.7	149.4	159.5	160.5	157.2
(‡)	-4	+138	-138	+11	+18	+49	-132	+26	-4	+209	+25	-78
Max	317	523	428	313	331	440	375	274	356	479	571	504
Min	250	292	296	302	296	336	248	229	243	251	479	407

Calendar year 1966..... † -393
Water year 1967..... ‡ +120

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

8-3180. Galisteo Creek at Domingo, N. Mex.

Location.--Lat 35°30'45", long 106°19'00", in SW¼ sec.21, T.15 N., R.6 E., in Santo Domingo Pueblo Grant, 160 ft downstream from highway bridge, 0.3 mile northeast of Domingo, 2⅝ miles east of Santo Domingo Pueblo, and 4 miles upstream from mouth.

Drainage area.--640 sq mi, approximately.

Records available.--October 1941 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 5,255.50 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to July 20, 1956, at site 160 ft upstream at same datum.

Average discharge.--26 years, 10.3 cfs (7,460 acre-ft per year).

Extremes.--Maximum discharge during year, 15,000 cfs Aug. 9 (gage height, 6.20 ft.); no flow on many days.
1941-67: Maximum discharge, 22,800 cfs Aug. 2, 1966, (gage height, 8.08 ft inside, 10.4 ft from floodmarks), from rating curve extended above 1,000 cfs on basis of field estimate of peak flow; no flow for most of time.
The floods of Sept. 23, 1929, and Aug. 20, 1935, probably exceeded 20,000 cfs. Discharge for the flood of Aug. 20, 1935, was estimated as 24,300 cfs by H. W. Yeo.

Remarks.--Records fair except for periods of no gage-height record which are poor. Diversions for irrigation of about 50 acres above station. Records of suspended sediment loads and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0.10	.20	0	0	0	0	0	0	0	0
2	0	0	.1	.20	0	0	0	0	215	0	0	0
3	0	0	.1	.20	0	0	0	0	451	0	0	0
4	0	0	.1	.20	0	0	0	0	237	0	163	0
5	0	0	.2	.20	0	0	0	0	50	0	218	0
6	0	0	.2	0	0	0	0	0	4.6	0	6	0
7	0	.1	.1	0	0	0	0	0	17	1.4	25	.15
8	0	.2	.1	.10	0	0	0	0	6.4	0	18	6.0
9	0	.2	.1	.10	0	0	0	0	3.0	0	1,280	0
10	0	.1	.1	.20	0	0	0	0	1.6	0	1,450	0
11	0	.1	.1	.20	0	0	0	0	1.2	10	140	0
12	0	.1	.2	.30	0	0	0	0	.79	303	22	0
13	0	.1	.1	.40	0	0	0	0	0	120	1.8	0
14	0	.1	.1	.60	0	0	0	0	0	0	.74	0
15	0	.1	.1	.70	0	0	0	0	0	0	.30	0
16	0	.1	.1	.30	0	0	0	0	0	316	133	32
17	0	.1	.1	1.2	0	0	0	0	52	36	39	70
18	0	.1	.1	.70	0	0	0	0	114	0.5	59	0
19	0	.1	.1	1.3	0	.98	0	0	2.6	0	.23	0
20	0	.1	.1	1.0	0	.30	0	.72	0	0.5	.18	0
21	0	.1	.1	.60	0	.24	0	.20	0	0	0	0
22	0	.1	.1	.50	0	.02	0	0	0	0	0	0
23	0	.2	.1	.30	0	0	0	0	0	0	128	0
24	0	.2	.1	.40	0	0	0	0	0	0	35	0
25	0	.1	.1	.40	0	0	0	0	0	0	0	27
26	0	.1	.1	.30	0	0	0	2.3	0	0	0	93
27	0	.1	.1	.60	.10	0	0	1.1	0	29	0	0
28	0	.1	.1	.40	0	0	0	.98	0	0.1	0	0
29	0	.1	.1	.40		0	0	.84	39	3.9	31	0
30	0	.1	.1	.40	- - - - -	0	0	0	7.5	.27	127	0
31	0	- - - - -	.1	.60	- - - - -	0	- - - - -	0	- - - - -	0	0	- - - - -
Total	0	2.8	3.4	13.00	0.10	1.54	0	6.14	1,202.69	820.67	3,877.25	228.15
Mean	0	.09	.11	.42	.004	.05	0	.20	40.1	26.5	125	7.36
Max	0	0.2	0.2	1.3	0.10	0.98	0	2.3	451	316	1,450	93
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	5.5	6.7	26	0.20	3.1	0	12	2,390	1,630	7,690	453

Cal yr 1966: Total 5,438.90 Mean 14.9 Max 3,330 Min 0 Ac-ft 10,780
Wtr yr 1967: Total 6,155.74 Mean 16.9 Max 1,450 Min 0 Ac-ft 12,210

Peak discharge (base, 3,000 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-3	0015	3.08	3,500	7-16	1745	3.35	4,300
7-12	0015	3.50	4,570	8-9	2230	6.20	15,000

Note.--No gage-height record Dec. 28 to Jan. 31.

8-3190. Rio Grande at San Felipe, N. Mex.

Location.--Lat 35°26'40", long 106°26'20", in SW¼NW¼ sec.17, T.14 N., R.5 E., in San Felipe Grant, on right bank 200 ft downstream from Tonque Arroyo, 1,800 ft upstream from steel highway bridge, three-quarters of a mile upstream from San Felipe Pueblo, and 11 miles northeast of Bernalillo.

Drainage area.--16,100 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--October 1925 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Datum of gage is 5,115.73 ft above mean sea level, datum of 1929, adjustment of 1951. Prior to Sept. 27, 1957, at site 1,800 ft downstream at datum 5.35 ft lower, except period May 16, 1945 to Sept. 30, 1946 when it was 5.94 ft lower than present datum.

Average discharge.--42 years, 1,390 cfs (1,006,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,700 cfs Aug. 10 (gage height, 8.83 ft); minimum, 89 cfs Oct. 3.
1927-67: Maximum discharge, 27,300 cfs June 26, 1937 (gage height, 11.13 ft, site and datum then in use), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 32 cfs July 7, 1934.
Other major floods occurred in 1874, 1884 and 1904.

Remarks.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 705,000 acres above station, some of which is irrigated below by Cochiti eastside main canal and San Felipe eastside acequia, which bypass station. Possible regulation by two reservoirs on Rio Chama.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	164	404	765	520	774	797	606	448	1,260	380	363	1,400
2	281	397	756	520	740	819	680	362	1,330	400	391	1,310
3	203	393	756	520	720	863	645	320	1,670	350	405	1,070
4	164	387	765	540	720	953	584	798	1,360	330	1,330	974
5	173	977	783	560	740	1,010	526	798	1,580	260	1,740	886
6	178	1,270	792	580	740	1,040	593	611	1,580	190	2,120	787
7	173	1,410	980	560	740	933	653	584	1,660	170	1,670	1,380
8	173	1,530	1,440	540	700	738	578	566	1,640	180	1,660	1,330
9	288	1,600	1,270	540	720	730	660	897	1,610	260	2,200	1,210
10	213	1,660	1,130	560	792	726	630	1,340	1,640	200	9,200	1,180
11	173	1,700	1,100	580	773	864	503	1,540	1,580	120	3,440	974
12	168	1,690	930	580	762	888	485	1,620	1,310	120	2,900	798
13	191	1,680	756	580	749	845	434	1,620	1,130	197	3,360	593
14	200	1,650	765	580	764	746	403	1,480	1,050	139	1,930	521
15	284	1,700	756	550	762	716	336	1,090	853	152	2,710	494
16	368	1,700	783	540	734	673	519	776	656	629	2,620	602
17	271	1,720	765	530	687	628	475	765	776	842	2,290	674
18	255	1,740	738	530	682	597	397	820	842	1,130	1,910	575
19	288	1,620	747	530	696	714	394	900	853	1,070	1,580	476
20	281	1,500	720	540	719	734	405	1,100	732	760	1,580	433
21	294	1,430	738	580	708	701	410	1,100	1,100	460	1,550	433
22	332	1,720	747	600	687	731	413	1,100	897	530	1,500	476
23	436	1,520	738	600	674	697	496	900	974	600	1,490	377
24	333	846	675	600	678	705	500	850	1,200	500	1,070	476
25	288	792	612	620	709	739	403	776	1,170	430	440	476
26	300	801	603	620	736	809	381	776	1,050	470	820	620
27	314	810	639	639	743	733	376	930	875	500	908	629
28	344	819	621	648	758	694	366	1,310	776	420	1,340	620
29	360	774	585	711	------	692	407	1,440	550	380	1,270	647
30	427	756	558	693	------	667	521	1,600	400	430	1,360	426
31	390	------	549	702	------	640	------	1,440	------	420	1,070	------
TOTAL	8,307	36,996	24,562	17,993	20,407	23,822	14,779	30,657	34,104	13,019	58,217	22,847
MEAN	268	1,233	792	580	729	768	493	989	1,137	420	1,878	762
MAX	436	1,740	1,440	711	792	1,040	680	1,620	1,670	1,130	9,200	1,400
MIN	164	387	549	520	674	597	336	320	400	120	363	377
AC-FT	16,480	73,380	48,720	35,690	40,480	47,250	29,310	60,810	67,640	25,820	115,500	45,320
(†)	1,580	0	0	0	0	2,640	4,060	4,970	3,710	3,790	2,890	4,100

CAL YR 1966: TOTAL 397,663 MEAN 1,089 MAX 4,140 MIN 105 AC-FT 788,800
WAT YR 1967: TOTAL 305,710 MEAN 838 MAX 9,200 MIN 120 AC-FT 606,400

Peak discharge (base, 5,000 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 6	2130	5.93	5,220	8-14	0100	6.43	6,040
8-10	0830	8.83	13,700				

† Monthly diversion, in acre-ft, of Cochiti eastside canal; record of this flow is furnished by Bureau of Reclamation.

8-3215. Jemez River below East Fork, near Jemez Springs, N. Mex.

Location.--Lat 35°49'39", long 106°38'51", in NW¼ sec.5, T.18 N., R.3 E., on left bank 0.4 mile downstream from East Fork and boundary of Santa Fe National Forest and 5.3 miles northeast of Jemez Springs.

Drainage area.--173 sq mi.

Records available.--July 1949 to October 1950 (gaged separately above East Fork), May 1951 to September 1957 (irrigation seasons only), March 1958 to September 1967. May 1951 to Sept. 9, 1966, graphic water-stage recorder at present site and datum.

Gage.--Digital water-stage recorder. Datum of gage is 6,702.7 ft above mean sea level (planetable survey). Prior to May 1951, at sites 3,000 ft upstream, at different datums and on separate channels. Prior to Sept. 9, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--10 years (1949-50, 1958-67), 24.2 cfs (17,520 acre-ft per year).

Extremes.--Maximum discharge during year, 1,130 cfs Sept. 14 (gage height, 4.74 ft); minimum "recorded", 3.7 cfs Nov. 27.
1949-50, 1958-67: Maximum discharge recorded, 2,520 cfs Apr. 21, 1958 (gage height, 7.35 ft), from rating curve extended above 1,100 cfs on basis of slope-area and contracted-opening measurements of peak flow; minimum, 3.2 cfs Dec. 3, 1963.

Remarks.--Records good except those for December and January, which are poor. No diversion above station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	8.6	10	10	9.0	13	21	15	9.4	9.3	9.4	14	25
2	8.6	9.9	10	9.0	14	34	15	10	9.5	8.6	15	20
3	8.6	9.9	11	10	14	32	15	11	12	8.6	14	19
4	8.6	10	13	10	13	29	15	10	11	9.0	17	17
5	8.6	9.9	14	9.5	13	23	15	10	11	8.6	19	16
6	8.6	11	12	9.0	14	14	15	10	11	9.0	29	17
7	8.6	11	10	7.0	13	12	15	9.9	9.9	9.2	69	28
8	9.4	13	10	7.0	11	12	15	10	9.4	9.5	32	40
9	10	15	10	8.0	11	11	14	10	9.0	8.8	81	69
10	9.9	11	9.0	9.0	11	12	14	10	8.6	8.4	78	43
11	9.9	14	9.0	10	11	18	14	10	8.6	9.2	57	28
12	10	13	10	10	10	21	14	10	9.0	11	81	24
13	10	13	11	11	11	26	14	10	9.0	11	114	23
14	9.9	13	12	11	13	21	14	9.9	9.0	11	59	25
15	11	13	12	11	14	17	16	10	9.0	9.9	67	16
16	11	13	10	12	12	19	15	10	9.0	11	62	16
17	11	13	10	10	10	24	13	10	11	50	41	15
18	11	12	12	8.0	11	26	12	10	12	22	30	15
19	11	12	12	7.0	12	33	12	10	12	16	28	14
20	11	12	12	8.0	14	33	11	10	13	13	31	14
21	11	12	12	10	10	26	11	10	13	11	32	13
22	11	12	11	10	9.9	22	11	9.9	11	11	27	13
23	11	12	10	13	11	20	9.8	9.6	10	11	21	13
24	10	12	10	13	11	20	9.9	9.4	9.4	15	19	12
25	10	12	9.9	12	13	19	9.8	9.3	9.4	25	19	26
26	10	12	5.6	9.0	17	18	9.6	9.8	9.4	21	19	53
27	10	9.0	6.0	10	14	16	10	11	9.0	27	22	37
28	9.9	9.4	6.0	11	12	16	10	9.9	9.0	16	23	25
29	9.9	12	6.0	11	------	16	9.9	9.9	9.0	19	25	21
30	10	11	7.0	12	------	17	9.7	9.7	9.4	23	30	18
31	10	------	9.0	13	------	16	------	9.7	------	16	26	------
TOTAL	308.1	352.1	311.5	309.5	342.9	644	383.7	308.4	300.9	448.2	1,201	715
MEAN	9.94	11.7	10.0	9.98	12.2	20.8	12.8	9.95	10.0	14.5	38.7	23.8
MAX	11	15	14	13	17	34	16	11	13	50	114	69
MIN	8.6	9.0	5.6	7.0	9.9	11	9.6	9.3	8.6	8.4	14	12
AC-FT	611	698	618	614	680	1,280	761	612	597	889	2,380	1,420

CAL YR 1966: TOTAL 8,029.5 MEAN 22.0 MAX 341 MIN 5.6 AC-FT 15,930
WAT YR 1967: TOTAL 5,625.3 MEAN 15.4 MAX 114 MIN 5.6 AC-FT 11,160

Peak discharge (base, 500 cfs, revised).--Sept. 14 (1130) 1,130 cfs (4.74 ft).

8-3230. Rio Guadalupe at Box Canyon near Jemez, N. Mex.

Location.--Lat 35°43'55", long 106°45'45", in E½ sec.6, T.17 N., R.2 E. (projected), in Canon de San Diego Grant, on left bank at downstream end of Guadalupe Box Canyon, 4.8 miles upstream from mouth, 5 miles southwest of Jemez Springs, and 7 miles north of Jemez.

Drainage area.--235 sq mi.

Records available.--May 1951 to September 1957 (irrigation seasons only), May 1958 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 6,015.5 ft above mean sea level, datum of 1929 (planetable survey). Prior to September 9, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--9 years (1958-67), 29.2 cfs (21,140 acre-ft per year).

Extremes.--Maximum discharge during year, 436 cfs Aug. 12 (gage height, 5.38 ft); minimum, 3.1 cfs Jan. 20.
1951-67: Maximum discharge determined, 1,440 cfs Apr. 21, 1958 (gage height, 7.6 ft, from floodmarks), from rating curve extended above 750 cfs on basis of slope-area measurements of peak flow; minimum, 2.9 cfs Feb. 28, 1962, Dec. 8, 1963.
Maximum discharge known probably occurred on May 13 or 14, 1941, when a discharge of 3,190 cfs was computed for a downstream station called Rio Guadalupe near Jemez Springs, with drainage area of 239 sq mi.

Remarks.--Records good except those for January, which are poor. Some regulation by San Gregorio Reservoir on Clear Creek, tributary to Rio de Las Vacas, to Rio Guadalupe (constructed July to October 1958, capacity, 345 acre-ft), and by transmountain diversion into Rio Puerco Basin for irrigation of 200 to 300 acres in vicinity of Cuba.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.1	5.6	6.9	6.0	6.6	13	17	20	11	4.7	11	22
2	6.1	5.4	6.9	6.0	7.0	14	17	20	9.9	4.4	9.1	18
3	6.1	4.8	7.3	7.0	7.5	16	19	20	10	4.4	8.4	17
4	6.1	4.8	7.9	7.0	7.2	17	21	18	13	4.7	15	17
5	6.4	4.7	9.6	7.0	7.3	15	23	18	15	4.7	37	15
6	6.6	4.8	13	6.0	7.0	12	26	18	15	4.3	35	19
7	6.3	4.8	32	5.0	7.6	11	30	17	12	4.7	33	20
8	6.2	4.8	20	5.0	7.9	11	35	16	9.9	4.7	24	23
9	6.0	5.2	13	5.5	8.7	11	39	17	8.1	4.4	33	25
10	5.9	5.4	9.0	6.5	8.0	12	35	18	7.5	4.5	96	25
11	5.9	5.5	7.0	6.8	7.9	13	37	18	7.2	5.0	93	17
12	6.0	5.6	8.0	7.0	8.0	14	40	16	7.1	17	201	15
13	5.9	5.7	9.0	7.2	7.7	15	29	15	6.7	6.9	160	13
14	5.7	5.7	9.4	7.5	8.1	14	28	16	6.3	6.4	97	11
15	5.7	6.4	10	7.7	8.1	12	39	15	6.5	5.7	71	34
16	5.8	7.6	10	8.0	8.0	13	30	16	6.3	5.4	57	11
17	5.9	7.4	8.0	7.0	8.4	15	29	16	7.0	17	44	11
18	6.0	7.3	10	5.0	8.2	19	29	15	7.5	18	36	10
19	5.9	7.1	9.8	4.0	8.3	24	34	14	7.7	13	41	9.9
20	5.7	7.0	9.6	4.0	8.2	20	41	13	8.5	10	30	9.3
21	5.7	7.1	9.1	4.2	8.1	19	38	13	12	11	26	9.1
22	5.5	7.2	8.3	4.4	8.1	17	34	12	11	12	22	8.3
23	5.7	7.5	8.0	4.7	7.8	16	32	12	8.3	10	20	8.0
24	5.7	7.4	8.0	4.8	7.9	17	33	11	7.0	9.0	19	7.6
25	5.7	7.5	9.0	5.2	8.3	19	32	11	6.6	12	18	11
26	5.7	7.5	7.0	4.5	11	19	25	10	6.0	14	16	17
27	5.6	6.8	4.7	4.5	14	17	31	13	5.6	12	16	16
28	5.7	6.6	3.9	5.0	13	16	31	14	5.2	11	20	13
29	5.7	6.8	5.0	5.2	------	18	27	13	5.0	10	22	11
30	5.5	7.0	6.0	5.9	------	19	24	11	4.9	9.5	37	9.3
31	5.6	------	6.0	6.6	------	19	------	11	------	9.1	32	------
TOTAL	182.4	187.0	291.4	180.2	233.9	487	905	467	253.8	269.5	1,379.5	452.5
MEAN	5.88	6.23	9.40	5.81	8.35	15.7	30.2	15.1	8.46	8.69	44.5	15.1
MAX	6.6	7.6	32	8.0	14	24	41	20	15	18	201	34
MIN	5.5	4.7	3.9	4.0	6.6	11	17	10	4.9	4.3	8.4	7.6
AC-FT	362	371	578	357	464	966	1,800	926	503	535	2,740	898

CAL YR 1966: TOTAL 8,629.0 MEAN 23.6 MAX 156 MIN 3.9 AC-FT 17,120
WAT YR 1967: TOTAL 5,289.2 MEAN 14.5 MAX 201 MIN 3.9 AC-FT 10,490

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-12	1500	5.01	297	9- 6	2300	4.22	108
8-12	0200	5.38	436	9-15	1000	4.99	294
8-19	1630	4.62	205				

8-3240. Jemez River near Jemez, N. Mex.

Location.--Lat 35°39'45", long 106°44'30", in NW¼ sec.33, T.17 N., R.2 E. (projected), in Canyon de San Diego Grant, on left bank 0.7 mile downstream from Rio Guadalupe and 3½ miles north of Jemez, Sandoval County.

Drainage area.--470 sq mi.

Records available.--June 1936 to May 1941 (published as Jemez Creek near Jemez), August 1949 to October 1950, May 1951 to September 1952 (irrigation seasons only), March 1953 to September 1954, May 1955 to September 1957 (irrigation seasons only), May 1958 to September 1967.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 5,622.3 ft above mean sea level, datum of 1929. June 22, 1936, to Mar. 11, 1937, at site 60 ft upstream at datum 0.50 ft higher. Mar. 12, 1937, to July 8, 1938, at present site at datum 0.70 ft higher. July 9, 1938, to May 6, 1941, at site 60 ft upstream at datum 0.70 ft higher. Prior to Mar. 22, 1963, graphic water-stage recorder.

Average discharge.--19 years (1936-40, 1949-50, 1953-67), 63.4 cfs (45,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,640 cfs Aug. 9 (gage height, 7.34 ft); minimum 8.2 cfs Jan. 19.
1936-41, 1949-67: Maximum discharge, 5,900 cfs Apr. 21, 1958, from rating curve extended above 2,200 cfs on basis of contracted-opening measurement; maximum gage height, 8.6 ft May 6, 1941, present datum; minimum discharge, 5.5 cfs Jan. 2, 1961.
Maximum flood known since at least 1890 occurred between May 6 and 15, 1941, after gage was destroyed (discharge probably exceeded 6,000 cfs), from information by local residents.

Remarks.--Records good. Diversions for irrigation of about 300 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	17	19	19	15	24	33	37	38	16	11	30	57
2	18	15	18	16	23	54	37	35	50	10	28	46
3	16	15	20	16	24	59	39	29	24	11	23	40
4	15	17	22	18	24	55	42	30	26	11	31	39
5	17	16	24	17	24	51	45	26	31	10	64	34
6	16	17	33	14	24	37	48	24	29	11	135	82
7	16	19	97	13	24	31	48	22	23	12	105	89
8	16	21	71	13	24	27	54	22	15	11	93	67
9	15	24	41	15	22	28	56	23	12	11	346	92
10	15	22	17	17	24	30	51	28	11	9.7	243	79
11	15	25	15	20	24	33	52	26	11	10	230	56
12	17	24	18	21	23	40	51	24	12	40	326	47
13	19	24	20	20	25	46	44	22	12	18	342	42
14	18	24	21	20	27	41	36	22	13	16	208	37
15	16	25	22	20	29	34	50	22	13	13	172	33
16	18	25	20	21	28	32	42	24	13	13	154	33
17	20	24	21	15	25	36	40	25	17	56	116	33
18	21	23	23	13	26	45	41	24	19	49	100	31
19	21	22	23	13	29	57	49	22	20	35	140	30
20	21	22	23	15	31	60	55	18	22	29	74	28
21	19	21	23	17	25	52	54	19	24	30	69	24
22	18	22	20	19	24	46	50	19	24	31	59	22
23	18	22	16	22	24	43	50	20	20	21	49	23
24	19	22	16	22	24	44	50	17	16	24	48	23
25	16	22	16	22	29	45	52	17	15	91	43	44
26	17	22	17	17	34	43	42	18	13	48	38	76
27	18	18	14	18	32	40	49	19	13	49	46	67
28	20	19	11	19	28	38	50	18	12	33	48	51
29	19	20	10	20	------	39	44	17	11	37	50	44
30	19	20	12	22	------	40	41	15	12	38	68	38
31	19	------	14	23	------	39	------	16	------	31	61	------
TOTAL	545	631	737	553	724	1,298	1,399	701	545	819.7	3,539	1,407
MEAN	17.7	21.0	23.8	17.8	25.9	41.9	46.6	22.6	18.3	26.4	114	46.9
MAX	21	25	97	23	34	60	56	38	50	91	346	92
MIN	15	15	10	13	22	27	36	15	11	9.7	23	22
AC-FT	1,090	1,250	1,460	1,100	1,440	2,570	2,770	1,390	1,090	1,630	7,020	2,790

CAL YR 1966: TOTAL 18,661 MEAN 51.2 MAX 450 MIN 10 AC-FT 37,050
WAT YR 1967: TOTAL 12,906.7 MEAN 35.4 MAX 346 MIN 9.7 AC-FT 25,600

Peak discharge (base, 1,000 cfs, revised).--Aug. 9 (2000) 2,640 cfs (7.34 ft); Aug. 19 (1700) 1,200 cfs (6.21 ft).

8-3285. Jemez Canyon Reservoir near Bernalillo, N. Mex.

Location.--Lat 35°23'40", long 106°32'45", in SW¼SW¼ sec.32, T.14 N., R.4 E., at corner of outlet works control tower of Jemez Canyon Dam, about 2½ miles upstream from mouth and 6 miles north of Bernalillo, N. Mex.

Drainage area.--1,034 sq mi.

Records available.--October 1953 to September 1967.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 2,005 acre-ft Sept. 7 (elevation, 5,154.00 ft); no contents for most of year.
1953-67: Maximum contents, 71,220 acre-ft June 8, 1958 (elevation, 5,213.36 ft); no storage for most of time.

Remarks.--Reservoir is formed by earth-fill dam, completed Oct. 19, 1953. Capacity, 183,200 acre-ft (from capacity table adopted July 1, 1963) between elevations 5,125.0 (sill of outlet gates) and 5,252.3 ft (operating deck of spillway). Maximum controlled capacity, 114,000 acre-ft at elevation 5,232.3 ft (floor of spillway which is located about three-quarters of a mile south of dam; flows directly to Rio Grande). Original plan for reservoir operation was to desilt all flow above 30 cfs by storage for one day before releasing to Rio Grande, and for possible detention during flood stage on Rio Grande.

Cooperation.--Capacity tables and records furnished by Corps of Engineers.

Capacity table, water year 1966-67 (elevation, in feet, and contents, in acre-feet

5,135.1	1	5,144	169	5,152	1,475
5,138	6	5,146	350	5,154	2,005
5,140	15	5,148	628	5,156	2,604
5,142	59	5,150	1,010	5,158	3,292

Contents, in acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	0	0	0
2									519	0	0	0
3									580	0	323	0
4									207	0	0	0
5									9	0	0	0
6									0	0	0	557
7									0	0	11	2,005
8									0	0	0	0
9									0	0	0	0
10									0	0	505	0
11									0	0	806	0
12									0	0	23	0
13									0	0	1,282	0
14									0	0	1,211	0
15									0	0	9	0
16									0	0	41	0
17									0	0	0	0
18									0	0	0	0
19									0	0	129	0
20									0	0	363	0
21									0	0	0	0
22									0	0	0	0
23									0	0	0	0
24									0	0	0	0
25									0	0	0	0
26									0	0	0	0
27									0	0	0	0
28									0	0	0	0
29									0	76	123	0
30									0	436	0	0
31										0	0	
(†)	0	0	0	0	0	0	0	0	0	0	0	0
(‡)	0	0	0	0	0	0	0	0	0	0	0	0

Calendar year 1966: (‡) 0
Water year 1966-67: (‡) 0

† Elevations, in feet, at end of month.
‡ Change in contents (daily table will show some months have storage).

8-3290. Jemez River below Jemez Canyon Dam, N. Mex.

Location.--Lat 35°23'10", long 106°31'45", in NE¼ sec.5, T.13 N., R.4E., on right bank three-quarters of a mile downstream from Jemez Canyon Dam, 1½ miles upstream from mouth, and 6 miles north of Bernalillo.

Drainage area.--1,038 sq mi.

Records available.--March 1936 to January 1938, March 1943 to September 1967. Published as "Jemez Creek" prior to 1948, and as "near Bernalillo" prior to 1954.

Gage.--Digital water-stage recorder. Datum of gage is 5,095.60 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 24, 1951, at site three-quarters of a mile upstream at datum 24.51 ft higher. Apr. 24, 1951, to June 25, 1958, at site 37 ft upstream at datum 4.40 ft above present datum. Supplementary water-stage recorder at gates on Jemez Canyon Dam at datum 5,125.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark) used at times since January 1953. Prior to Sept. 9, 1966, graphic water-stage recorder.

Average discharge.--25 years (1936-37, 1943-67), 49.6 cfs (35,910 acre-ft per year).

Extremes.--Maximum discharge during year, 1,850 cfs Sept. 8 (gage height, 8.54 ft); no flow for many days.
1936-38, 1943-67: Maximum discharge, 16,300 cfs Aug. 29, 1943 (gage height, 5.62 ft, site and datum then in use), from rating curve extended above 3,000 cfs by logarithmic plotting; no flow for many days most years.
A flood in 1900 was probably less than 16,000 cfs, but highest known outside period of record.

Remarks.--Records poor. Subsequent to October 1953, flow at this station can be completely regulated by Jemez Canyon Reservoir (see station 8-3285). However, reservoir is designed essentially for desilting and flood control rather than storage. Diversions for irrigation of about 3,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	14	16	2	12	16	17	20	7.9	11	40	62
2	0	16	14	2	12	23	15	20	16	7.6	9.8	57
3	0	13	17	2	13	27	17	22	1,060	5.8	38	50
4	0	13	16	2	14	28	18	22	864	0	206	45
5	0	12	19	2	15	30	18	18	158	0	38	95
6	0	16	24	2	13	32	22	17	49	0	46	61
7	0	15	45	2	14	26	28	18	11	0	61	400
8	0	13	57	2	13	26	28	20	4.9	0	68	1,170
9	0	13	38	2	13	22	28	22	1.8	0	62	136
10	0	13	20	5	12	22	28	24	1.5	0	78	138
11	0	14	15	10	9.1	17	22	24	1.5	17	404	77
12	0	17	20	15	10	6.2	24	.95	1.6	51	575	47
13	0	19	25	26	8.7	5.1	35	1.1	1.7	130	228	41
14	0	18	20	34	10	3.7	29	1.3	1.8	67	428	32
15	1.2	19	16	34	9.1	1.2	24	1.4	2.0	60	808	17
16	2.3	21	13	25	9.9	1.5	33	1.6	1.9	59	559	27
17	1.8	22	10	13	8.6	1.9	25	1.8	4.9	96	181	35
18	1.5	23	10	15	8.9	0.9	30	2.0	6.6	298	75	34
19	1.6	23	10	12	10	6.0	27	2.2	6.2	150	125	33
20	1.4	16	10	13	10	11	16	2.4	9.9	80	220	33
21	1.7	15	10	20	13	18	19	2.7	52	.19	149	13
22	1.4	12	7.4	19	9.6	16	16	3.0	16	0	67	3.2
23	2.7	14	4.0	18	11	23	12	3.4	14	.33	42	4.2
24	3.7	18	4.0	18	12	27	13	3.5	13	0	40	5.0
25	4.8	18	4.0	15	12	21	14	4.0	10	0	59	40
26	6.5	21	4.0	12	20	23	17	4.5	7.7	39	53	175
27	6.7	17	4.0	12	21	23	17	4.8	8.0	20	70	49
28	6.5	15	2.0	12	19	21	18	5.3	8.0	33	475	30
29	7.7	17	1.0	12	—	18	18	5.0	6.4	43	143	25
30	10	15	0	10	-----	16	18	5.5	8.0	122	378	22
31	11	-----	2.0	12	-----	16	-----	7.2	-----	177	69	-----
Total	72.5	492	457.4	380	342.9	528.5	646	292.65	2355.3	1466.92	5794.8	2956.4
Mean	2.34	16.4	14.8	12.3	12.2	17.0	21.5	9.44	78.5	47.3	187	98.5
Max	11	23	57	34	21	32	35	24	1,060	298	808	1,170
Min	0	12	0	2	8.6	.9	12	.95	1.5	0	9.8	3.2
Ac-ft	144	986	907	754	680	1,050	1,280	580	4,670	2,910	11,490	5,860

Cal yr 1966: Total 14,197.1 Mean 38.9 Max 828 Min 0 Ac-ft 28,160
Wtr yr 1967: Total 15,785.37 Mean 43.2 Max 1,170 Min 0 Ac-ft 31,310

8-3291. Bernalillo floodwater retarding reservoir No. 1 (Piedra Lisa Arroyo), near Bernalillo, N. Mex.

Location.--Lat 35°18'50", long 106°31'45", in NW¼ sec.33, T.13 N., R.4 E. (projected), in Bernalillo Grant, in reservoir 0.3 mile east of intersection of State Highways 44 and 422 and 1½ miles northeast of Bernalillo.

Drainage area.--4.1 sq mi, of which 2.0 sq mi has contouring, pitting and small dams to reduce runoff.

Records available.--September 1955 to September 1967.

Gage.--Water-stage recorder adjacent to outlet tower with fixed ports. Datum of gage is 5,169.98 ft above mean sea level (levels by Soil Conservation Service). Since July 21, 1958, supplementary outflow gage 390 ft below toe of dam, water-stage recorder and Parshall flume.

Average outflow.--12 years, 0.014 cfs (10.1 acre-ft per year).

Extremes.--Maximum outflow during year, 42.6 cfs July 29; no inflow or outflow except that of July 19, 26, 29, 30 and Aug. 11 and 29. 1955-67: Maximum outflow, 55 cfs July 19, 1956 (gage height, 11.23 ft). Maximum inflow, 2,330 cfs, July 19, 1956 (average for 5-minute interval), computed from outflow and change in reservoir contents. No inflow or outflow for most of time.

Remarks.--Records poor. Records of suspended sediment loads for the water year 1967 are published in part 2 of this report.

Reservoir is formed by earth-fill dam, completed in 1955. Capacity, 300 acre-ft (original survey, no dead storage). Gage height of spillway crest is 27 ft, crest of dam is 35 ft. Outlet tower has an inside opening 3 ft square and outlet pipe through dam is 2 ft in diameter. A total of 9 port openings are spaced at 5-ft vertical intervals on upstream and sides of tower. They are 2 ft wide by 1 ft high; sill of lowest upstream port is at gage-height 4.8 ft (modified in 1963) and lowest side ports at gage-heights 6.3 ft.

Outflow during water year October 1966 to September 1967, supplementary gage

Flow event	Date	Outflow (hours)	Maximum (cfs)	cfs-days	Runoff (acre-ft)
20	July 19	5.0	5.63	0.36	0.69
21	July 26	7.5	19.7	2.47	4.90
22	July 29, 30	17.0	43.0	15.3	30.3
23	Aug 9	2.0	6.66	0.12	0.24
24	Aug 11	5.0	5.63	0.26	0.52
25	Aug 29	3.0	11.9	0.54	1.07
Totals		39.5	-	19.05	37.72

8-3295. Rio Grande near Bernalillo, N. Mex.

Location.--Lat 35°17'05", long 106°35'45", in SE¼NW¼ sec.11, T.12 N., R.3 E. (projected), on right bank 2 miles northwest of Sandia Pueblo, 3 miles southwest of Bernalillo, 3.5 miles downstream from State Highway 44, and 8.5 miles downstream from Jemez River.

Drainage area.--17,300 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--May 1941 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder. Datum of gage is 5,030.57 ft above mean sea level, datum of 1929, adjustment of 1951. Supplemental water-stage recorder at a site 1,900 ft downstream used alternately 1953-58, 1961, 1964, 1966 at the same datum 1953-55, variable 1956-58 and 1.26 ft lower than primary gage in 1961.

Average discharge.--26 years, 1,065 cfs (771,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,400 cfs Aug. 10 (gage height, 5.78 ft); no flow for many days.
1941-67: Maximum discharge, 25,400 cfs May 16, 1941; maximum gage height, 6.83 ft Sept. 20, 1941; no flow at times.
Other major floods occurred as follows (based primarily on records for station at San Felipe); Sept. 23, 1929, about 23,000 cfs; Aug. 21, 1935, about 22,000 cfs; June 26, 1937, about 27,000 cfs.

Remarks.--Records fair except those for August and September, which are poor. Diversions above station for irrigation of about 710,000 acres, some of which is below station. Possible regulation by operation of two reservoirs on Rio Chama and flood-and-silt detention reservoir on Jemez River (see station 8-3285). Records of suspended sediment loads and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	127	710	378	660	617	301	59	815	103	101	1,000
2	0	182	693	382	673	529	298	38	708	59	113	1,410
3	0	217	666	322	650	646	291	4.7	1,400	43	87	1,080
4	0	238	660	337	652	711	247	80	1,230	30	1,110	917
5	0	425	692	358	635	770	215	258	1,460	15	1,360	710
6	0	661	687	359	649	801	190	209	1,300	2.6	1,810	565
7	0	1,250	807	314	651	726	239	199	1,460	0	1,090	1,100
8	0	1,430	1,280	358	628	562	230	232	1,410	0	723	1,800
9	0	1,570	1,050	352	577	475	218	273	1,350	0	1,420	1,290
10	0	1,760	891	351	630	518	230	718	1,390	0	7,280	1,080
11	0	1,850	1,010	443	601	599	188	1,010	1,420	0	4,380	798
12	0	1,660	1,000	566	615	632	170	1,390	1,060	29	3,370	435
13	0	1,610	770	628	608	572	164	1,620	677	25	3,130	290
14	0	1,690	709	585	605	450	148	1,510	628	13	3,950	233
15	0	1,700	785	536	610	427	116	1,000	501	1.3	3,330	186
16	0	1,540	764	512	594	396	124	444	350	27	3,040	189
17	0	1,660	702	569	594	354	145	591	299	411	2,830	327
18	0	1,580	700	573	569	318	101	420	560	408	2,330	260
19	0	1,560	640	552	588	341	75	393	418	444	1,950	147
20	0	1,470	598	550	603	375	60	435	387	409	1,860	132
21	0	1,300	576	649	588	371	46	716	536	158	1,440	117
22	0	1,670	636	650	581	373	46	821	529	127	1,120	117
23	0	1,440	642	656	570	385	48	581	406	220	765	104
24	0	697	537	639	592	392	69	455	594	198	892	88
25	0	713	548	662	602	383	46	434	710	194	516	97
26	0	745	530	644	657	408	20	404	594	184	409	291
27	0	757	601	609	686	392	23	438	402	270	474	229
28	0	784	628	605	684	345	5.3	740	348	193	1,090	162
29	0	769	682	660	-----	348	3.3	1,030	256	173	1,310	173
30	1.3	713	637	657	-----	364	45	1,350	196	311	1,210	147
31	43	-----	474	645	-----	347	-----	1,200	-----	324	1,140	-----
Total	44.3	33,968	22,305	16,101	17,352	14,927	4,101.6	19,052.7	23,394	4,371.9	55,630	15,474
Mean	1.43	1,132	720	519	620	482	137	615	780	141	1,795	516
Max	43	1,850	1,280	662	686	801	301	1,620	1,460	444	7,280	1,800
Min	0	127	474	314	569	318	3.3	4.7	196	0	87	88
Ac-ft	88	67,370	44,240	31,940	34,420	29,610	8,140	37,790	46,400	8,670	110,300	30,690

Cal yr 1966: Total 336,365.5 Mean 922 Max 3,080 Min 0 Ac-ft 667,200
Wtr yr 1967: Total 226,721.5 Mean 621 Max 7,280 Min 0 Ac-ft 449,700

Peak discharge (base, 5,000 cfs, revised).--Aug. 10 (1600) 13,400 cfs (5.78 ft); Aug. 14 (0330) 5,800 cfs (4.82 ft).

8-3300. Rio Grande at Albuquerque, N. Mex.

Location.--Lat 35°05'20", long 106°40'50", in SE¼ sec.13, T.10 N., R.2 E. (projected), in Atrisco Grant at downstream side of Old Town bridge on U.S. Highway 66 at Albuquerque.

Drainage area.--17,440 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--October 1941 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder. Datum of gages is 4,946.16 ft above mean sea level, datum of 1929. Prior to Sept. 18, 1947, at various sites at datum about 2.00 ft higher; Sept. 18, 1947, to Apr. 12, 1959, at site 550 ft to the left of present site; Apr. 13, 1959, to June 29, 1960, at site 150 ft to the right of present site. Supplemental water-stage recorders at sites 75 & 150 ft to right of present site used at various times since 1964. Prior to Sept. 6, 1966, graphic water-stage recorder.

Average discharge.--26 years, 1,059 cfs (766,700 acre-ft per year).

Extremes.--Maximum discharge during year, 13,300 cfs Aug. 10 (gage height, 7.82 ft); no flow at times.
1941-67: Maximum discharge, 25,000 cfs Apr. 24, 1942, from rating curve extended above 13,900 cfs by logarithmic plotting; maximum gage height, that of Aug. 10, 1967; no flow at times.

Remarks.--Records good except those for summer months which are fair. Possible regulation by operation of reservoirs on Rio Chama and by flood-and-silt-detention reservoir on Jemez River (see stations 8-2850, 8-2869, 8-3285). Diversions above station for irrigation of about 718,000 acres, several hundred of which are below station.

Cooperation.--Records for Albuquerque Riverside drain and Arenal, Armijo, and Atrisco canals furnished by Bureau of Reclamation.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	.50	104	737	478	677	752	455	15	859	100	274	625
2	0	101	739	456	669	720	382	32	803	53	225	1,200
3	10	133	748	414	667	759	384	30	1,180	34	203	730
4	0	141	766	356	646	752	315	13	872	90	369	554
5	0	269	744	396	635	771	266	66	1,060	10	637	542
6	0	712	795	382	619	807	186	216	1,260	2.9	812	439
7	0	1,080	848	412	631	794	186	179	1,280	4.4	910	737
8	0	1,210	1,250	446	651	703	237	161	1,330	4.4	470	1,430
9	0	1,410	1,420	357	598	529	210	160	1,310	2.1	776	1,050
10	0	1,530	1,140	382	633	506	235	442	1,310	10	8,660	795
11	4.7	1,620	1,010	488	675	474	197	787	1,300	4.4	4,570	718
12	13	1,640	986	632	704	587	221	1,080	1,200	2.5	3,780	466
13	4.1	1,680	848	751	721	545	288	1,060	969	11	3,430	333
14	18	1,680	782	761	695	479	197	988	757	5.7	4,400	251
15	30	1,660	788	753	698	423	98	810	604	3.3	3,350	203
16	31	1,680	778	764	721	362	71	519	368	3.3	2,910	175
17	34	1,780	768	802	689	324	81	479	225	407	2,590	218
18	12	1,860	722	798	690	256	61	403	518	388	2,050	262
19	0	1,820	692	733	708	266	50	309	505	429	1,510	184
20	5.1	1,670	686	679	738	304	50	274	519	378	1,430	121
21	0	1,620	679	718	743	327	57	361	422	160	1,260	73
22	2.2	1,580	682	797	721	317	48	486	669	102	1,020	48
23	3.7	1,700	679	761	709	342	59	459	454	87	773	41
24	12	902	620	759	709	340	49	374	489	80	810	27
25	3.6	786	535	732	691	362	39	336	630	75	525	44
26	2.8	778	537	710	728	416	36	289	560	382	483	76
27	6.4	797	533	671	775	471	30	305	404	580	472	198
28	2.7	824	544	629	784	413	20	464	263	466	777	122
29	2.0	792	556	626	------	411	20	687	174	389	1,110	111
30	0	730	567	689	------	569	20	808	162	350	945	70
31	32	------	525	671	------	550	------	894	------	147	974	------
TOTAL	230.00	34,269	23,705	19,003	19,325	15,633	4,548	13,486	22,456	4,761.0	52,505	11,843
MEAN	7.42	1,143	765	613	690	504	152	435	749	154	1,694	395
MAX	34	1,860	1,420	802	784	807	455	1,080	1,330	580	8,660	1,430
MIN	0	101	525	356	598	258	20	13	162	2.1	203	27
AC-FT	456	68,010	47,020	37,690	38,330	31,010	9,020	26,750	44,540	9,440	104,100	23,490
(†)	6,510	443	417	407	358	6,610	7,220	10,250	7,600	7,760	7,640	8,550

CAL YR 1966: TOTAL 328,551.00 MEAN 900 MAX 3,050 MIN 0 AC-FT 651,700
WAT YR 1967: TOTAL 221,819.00 MEAN 608 MAX 8,660 MIN 0 AC-FT 440,000

Peak discharge (base, 4,000 cfs).--Aug. 10 (2030) 13,300 cfs (7.82 ft); Aug. 14 (0730) 6,280 cfs (6.65 ft).

† Combined flow, in acre-ft, of Albuquerque Riverside drain and Arenal, Armijo, and Atrisco canals. This flow, which bypasses river gage, can be added to river records to get entire surface flow in valley cross-section.

8-3319.9 Rio Grande conveyance channel near Bernardo, N. Mex.

Location.--Lat 34°24'55", long 106°48'10", in E½ sec.11, T.2 N., R.1 E. (projected), in Sevilleta or Belen Grant, 0.2 mile south of U.S. Highway 60, 1.8 miles east of Bernardo, about 3 miles upstream from floodway, and 4 miles upstream from Rio Puerco.

Records available.--June 1936 to September 1937, October 1964 to September 1967. July 1943 to September 1964, included in composite flow of "Rio Grande near Bernardo". October 1960 to September 1964, monthly acre-feet published in WSP 1923 vol.2 (daily records available in district files). Beginning October 1952 flow in conveyance channel represents controlled diversion from Rio Grande. Prior to October 1952, records called "San Francisco Riverside drain near Bernardo", not equivalent.

Gage.--Digital water-stage recorder with concrete control. Datum of gage is 4,720.00 ft above mean sea level, datum of 1929, adjustment of 1951. Prior to October 1964, 0.2 mile upstream at various datums.

Average discharge.--15 years (1952-67), 462 cfs (334,500 acre-ft per year).

Extremes.--1952-67: Maximum daily discharge, 2,220 cfs Apr. 22, 1958; no flow many days most years.

Remarks.--Records excellent. Conveyance channel is 1 of 4 channels (see stations 8-3320.1, 8-3320.3, and 8-3320.5) carrying flow in valley cross-section. Original design and plan was for conveyance channel to carry flows up to about 2,000 cfs. For combined monthly flow in acre-ft of this channel, floodway, Bernardo interior drain and Lower San Juan Riverside drain see tabulation below daily table for station 8-3320.1. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	8.4	644	438	643	673	71	0	418	11	0	554
2	0	17	618	316	663	586	46	.54	458	1.0	0	242
3	0	33	624	316	673	535	36	.11	590	.46	0	446
4	0	38	600	321	686	563	21	0	1,130	.34	0	305
5	0	49	612	360	678	596	13	0	976	.18	7.0	172
6	0	62	618	451	646	619	1.5	0	1,290	.06	151	144
7	0	322	618	469	647	649	.90	0	1,240	0	496	140
8	0	510	637	495	675	626	.80	0	1,130	0	421	538
9	0	612	1,330	508	706	524	.90	0	934	0	224	1,130
10	0	912	1,210	447	658	358	.70	0	822	0	1,040	616
11	0	1,040	1,080	368	610	265	.60	0	738	0	1,130	837
12	0	1,100	974	394	629	220	.70	0	696	1.3	1,430	540
13	0	1,140	872	481	628	237	.83	0	542	0	1,220	467
14	0	1,210	721	575	647	272	22	57	280	0	1,240	293
15	0	1,260	612	638	630	236	1.0	300	235	0	1,180	209
16	0	1,300	651	654	620	219	.49	250	81	0	996	191
17	0	1,360	665	645	652	176	.39	134	43	34	976	151
18	0	1,390	672	687	644	111	.36	34	16	.26	1,060	133
19	0	1,490	658	696	641	76	.27	90	23	0	1,040	128
20	0	1,420	651	632	624	97	.26	98	90	0	1,020	130
21	0	1,330	651	599	647	111	.20	46	128	0	1,020	77
22	0	1,280	651	596	670	129	.16	85	164	0	912	49
23	0	1,450	651	700	678	123	.24	83	122	0	747	22
24	0	1,300	665	701	637	99	.16	116	174	0	592	10
25	0	756	651	708	631	120	.17	131	230	0	507	22
26	0	686	564	702	674	193	.14	115	430	0	447	34
27	0	679	540	682	734	253	.12	103	200	0	232	59
28	0	686	510	664	768	152	.07	79	140	0	132	149
29	0	693	552	627	-------	123	0	87	108	0	219	161
30	0	672	558	633	-------	136	0	62	48	0	686	140
31	0	-------	522	659	-------	73	-------	182	-------	0	661	-------
TOTAL	0	24,805.4	21,582	17,162	18,439	9,150	219.96	2,052.65	13,476	48.60	19,786.0	8,089
MEAN	0	827	696	554	659	295	7.33	66.2	449	1.57	638	270
MAX	0	1,490	1,330	708	768	673	71	300	1,290	34	1,430	1,130
MIN	0	8.4	510	316	610	73	0	0	16	0	0	10
AC-FT	0	49,200	42,810	34,040	36,570	18,150	436	4,070	26,730	96.9	39,240	16,040

CAL YR 1966: TOTAL 219,723.10 MEAN 602 MAX 1,560 MIN 0 AC-FT 435,800
WAT YR 1967: TOTAL 134,810.61 MEAN 369 MAX 1,490 MIN 0 AC-FT 267,200

8-3320.1 Rio Grande floodway near Bernardo, N. Mex.

Location.--Lat 34°25'03", long 106°48'00", in Belen or Sevilleta Grant on downstream side of bridge on U.S. Highway 60, 5 miles downstream from heading of conveyance channel and 2 miles east of Bernardo, Socorro County.

Drainage area.--19,230 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--June 1936 to January 1939, October 1941 to September 1967. Monthly discharge only October 1942 to June 1943 published in WSP 1312, and October 1960 to September 1964, published in WSP 1923 vol. 2 (daily records available in district files). Published as "Rio Grande near Bernardo" prior to October 1964. Prior to October 1952, flow of Bernardo interior drain was included only when it carried river overflow, the entire flow has been included from October 1952 to September 1964. Flow in the conveyance channel, formerly San Francisco Riverside drain, has been included in record prior to October 1964.

Gage.--Water-stage recorder. Datum of gage is 4,722.55 ft above mean sea level, datum of 1929, adjustment of 1951.

Average discharge.--19 years (1936-38, 1941-58) 1,142 cfs (826,800 acre-ft per year). Includes flow of floodway, conveyance channel, and Bernardo interior drain.
9 years (1958-67) 214 cfs (154,900 acre-ft per year). Floodway only.
9 years (1958-67) 777 cfs (562,500 acre-ft per year). Includes flow of floodway, conveyance channel, Bernardo interior drain, and Lower San Juan Riverside drain.

Extremes.--Maximum discharge during year, 6,570 cfs Aug. 10 (gage height, 6.94 ft); no flow most of time.
1936-39, 1941-67: Maximum discharge, 21,000 cfs April 25, 1942 (gage height, 6.90 ft); no flow for many days most years.

Remarks.--Records fair. Floodway is 1 of 4 channels (see stations 8-3319.9, 8-3320.3 and 8-3320.5) carrying flow in valley cross-section. For combined monthly flow in acre-ft of floodway, conveyance channel, Bernardo interior drain and Lower San Juan Riverside drain see tabulation below. Normal plan is for floodway to carry flow when capacity of conveyance channel (about 2,000 cfs) is exceeded. Diversions for irrigation of about 740,000 acres above station. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0		0	0
2									0		0	0
3									0		0	0
4									381		0	0
5									40		0	0
6									34		0	0
7									1.2		0	0
8									0		0	0
9									0		0	118
10									0		2,190	33
11									0		4,670	0
12									0		2,320	0
13									0		1,750	0
14									0		2,640	0
15									0		2,400	0
16									0		2,360	0
17									0		1,560	0
18									0		743	0
19									0		473	0
20									0		292	0
21									0		276	0
22									0		11	0
23									0		0	0
24									0		0	0
25									0		0	0
26									0		0	0
27									0		0	0
28									0		0	0
29									0		0	0
30									0		0	0
31											0	
Total	0	0	0	0	0	0	0	0	456.2	0	21,685	151
Mean	0	0	0	0	0	0	0	0	15.2	0	700	5.03
Max	0	0	0	0	0	0	0	0	381	0	4,670	118
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	905	0	43,010	300
(†)	4,800	52,650	47,130	38,350	40,280	26,920	8,700	14,460	40,560	6,760	93,220	29,670

Cal yr 1966: Total 40,611 Mean 111 Max 1,600 Min 0 Ac-ft 80,550 (†) Mean 836 Ac-ft 605,400
Wtr yr 1967: Total 22,292.2 Mean 61.1 Max 4,670 Min 0 Ac-ft 44,220 (†) Mean 557 Ac-ft 403,500

† Combined flow, in acre-ft and mean, in cfs, of floodway, conveyance channel, Bernardo interior drain, and Lower San Juan Riverside drain. Composite records good.

8-3320.3 Lower San Juan Riverside drain near Bernardo, N. Mex.

Location.--Lat 34°24'50", long 106°47'40", in SE¼NW¼ sec.12. T.2 N., R.1 E., on right bank, 1,400 feet downstream from bridge on U.S. Highway 60 and 2.5 miles east of Bernardo, Socorro County.

Records available.--June 1936 to September 1937, August 1954 to September 1967. Monthly discharge only August 1955 to September 1960, published in WSP 1732, and October 1960 to September 1964, published in WSP 1923 vol. 2 (daily records available in district files). Records collected under name of "La Joya Eastside drain" are equivalent.

Gage.--Water-stage recorder. Datum of gage is 4,722.35 ft above mean sea level, datum of 1929, adjustment of 1951.

Extremes.--1954-67: Maximum daily discharge, 200 cfs May 22, 1961; no flow for several days during 1963.

Remarks.--This drain is one of four channels (see stations 8-3319.9, 8-3320.1 and 8-3320.5) carrying flow in valley cross-section. For combined monthly flow in acre-ft of this drain, conveyance channel, floodway, and Bernardo interior drain see tabulation below daily table for station 8-3320.1.

Cooperation.--Since July 1958 records for this station or La Joya Eastside drain (records equivalent) furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	32	43	41	43	40	101	75	55	100	55	140
2	41	26	43	41	43	83	107	64	60	90	61	134
3	38	23	43	40	43	131	97	62	89	93	52	134
4	34	23	42	40	42	120	81	74	158	54	49	114
5	35	23	42	40	43	52	74	75	145	50	59	81
6	45	24	42	42	46	70	74	87	87	58	67	112
7	48	24	42	43	46	125	60	71	72	50	100	106
8	42	25	42	43	45	103	61	39	65	54	84	88
9	53	27	43	44	45	23	53	36	90	52	86	135
10	69	28	44	44	45	66	82	44	100	48	196	152
11	44	30	45	44	45	75	81	37	144	60	106	136
12	35	32	45	45	45	98	95	50	152	73	65	130
13	35	33	45	46	45	114	128	43	98	69	63	136
14	37	34	44	47	44	109	118	66	92	79	62	115
15	33	35	45	47	44	101	89	96	63	70	62	108
16	34	36	45	47	44	116	105	98	102	68	65	69
17	38	37	45	47	45	131	88	107	105	99	56	72
18	33	39	44	48	46	121	94	115	132	98	54	69
19	34	40	44	49	45	113	74	122	115	76	57	73
20	47	41	45	50	45	91	55	125	104	84	125	74
21	49	41	44	50	45	77	64	148	134	94	137	92
22	39	41	44	50	46	118	56	122	139	81	111	84
23	48	41	43	50	46	130	70	143	133	64	110	65
24	37	43	43	47	46	138	71	123	153	56	102	67
25	42	42	43	45	46	138	60	112	109	49	96	102
26	43	42	43	44	47	74	64	135	99	47	103	115
27	36	42	42	43	47	65	60	152	136	47	89	116
28	37	42	41	43	43	60	60	121	122	49	119	67
29	34	42	41	43		98	49	110	127	49	98	76
30	36	42	41	44	-----	163	47	130	128	52	134	69
31	34	-----	41	44	-----	138	-----	136	-----	51	137	-----
Total	1,252	1,030	1,339	1,391	1,255	3,081	2,318	2,918	3,308	2,064	2,760	3,031
Mean	40.4	34.3	43.2	45	45	99	77	94	110	66	89	101
Max	69	43	45	50	47	163	128	152	158	100	196	152
Min	33	23	41	40	42	23	47	36	55	47	49	65
Ac-ft	2,480	2,040	2,660	2,760	2,490	6,110	4,600	5,790	6,560	4,090	5,470	6,010

Cal yr 1966: Total 29,587 Mean 81.1 Max 106 Min 56 Ac-ft 58,690
Wtr yr 1967: Total 25,747 Mean 70.5 Max 196 Min 23 Ac-ft 51,070

8-3320.5 Bernardo interior drain near Bernardo, N. Mex.

Location.--Lat 34°24'55", long 106°49'15", in NE¼ sec.10, T.2 N., R.1 E. (projected), on downstream side of bridge on U.S. Highway 60 and 1.0 mile east of Bernardo.

Records available.--June 1936 to May 1937, October 1943 to September 1967. Monthly discharge only June 1936 to May 1937, published in WSP 828. October 1943 to September 1960 included in composite records for station 8-3320 "Rio Grande near Bernardo". October 1960 to September 1964 monthly acre-feet published in WSP 1923 vol. 2. Daily records available in district files beginning October 1943.

Gage.--Digital water-stage recorder. Datum of gage is 4,713.99 ft above mean sea level, datum of 1929, adjustment of 1951. June 4, 1936 to May 17, 1937, staff gage 150 ft downstream at datum 2.77 ft higher. October 1943 to Nov. 4, 1965, graphic water-stage recorder at same site and datum.

Extremes.--1952-67: Maximum daily discharge, 172 cfs Sept. 15, 1967; no flow at times.
Prior to October 1952, drain was subject to overflow from floodway.

Remarks.--Records good. This drain is 1 of 4 channels (see stations 8-3319.9, 8-3320.1, and 8-3320.3) carrying flow in valley cross-section. For combined monthly flow in acre-ft of this drain, conveyance channel, floodway, and Lower San Juan Riverside drain see tabulation below daily table for station 8-3320.1. Records of chemical analyses, suspended sediment loads, and water temperatures for water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	35	18	25	25	28	25	74	39	124	85	37	127
2	34	17	26	24	27	25	95	37	121	65	36	98
3	33	18	26	24	25	27	93	36	134	63	36	115
4	35	18	27	24	26	29	85	39	129	62	29	118
5	53	23	28	24	26	34	96	37	80	53	43	123
6	45	24	28	24	28	42	83	38	77	45	76	127
7	42	20	28	23	28	44	64	39	80	44	78	101
8	54	20	29	24	27	37	58	37	90	46	80	116
9	47	20	28	24	27	45	57	36	105	42	80	126
10	39	20	27	23	27	43	53	32	105	38	105	157
11	44	25	27	23	26	37	69	30	128	34	63	139
12	34	25	28	24	26	33	81	35	134	32	72	143
13	28	25	27	24	26	32	60	50	120	27	67	157
14	29	25	28	24	26	32	83	47	89	26	67	158
15	30	25	28	25	25	25	88	57	86	26	81	172
16	28	25	28	25	25	40	70	60	85	27	91	154
17	26	25	28	25	25	35	62	72	83	25	99	96
18	34	24	28	25	25	38	49	86	76	37	116	117
19	37	23	28	25	25	36	51	105	88	34	153	107
20	38	21	27	25	25	31	47	103	92	46	130	123
21	49	21	27	25	25	33	46	100	108	60	119	102
22	44	23	27	25	25	44	46	119	123	66	109	93
23	48	26	26	27	24	43	45	117	135	36	118	86
24	58	26	26	28	24	44	45	128	133	31	133	82
25	47	28	26	28	24	40	40	121	127	30	113	94
26	32	29	26	27	25	35	41	131	108	32	128	119
27	39	30	26	28	24	54	39	114	115	37	122	135
28	34	31	26	27	24	96	40	124	111	45	106	150
29	27	30	26	27	------	99	42	116	126	56	86	126
30	25	28	26	27	------	70	41	121	97	44	86	130
31	20	------	25	28	------	91	------	114	------	36	116	------
TOTAL	1,168	713	836	781	718	1,339	1,843	2,320	3,209	1,330	2,775	3,691
MEAN	37.7	23.8	27.0	25.2	25.6	43.2	61.4	74.8	107	42.9	89.5	123
MAX	58	31	29	28	28	99	96	131	135	85	153	172
MIN	20	17	25	23	24	25	39	30	76	25	29	82
AC-FT	2,320	1,410	1,660	1,550	1,420	2,660	3,660	4,600	6,360	2,640	5,500	7,320

CAL YR 1966: TOTAL 15,287 MEAN 41.9 MAX 104 MIN 17 AC-FT 30,320
WAT YR 1967: TOTAL 20,723 MEAN 56.8 MAX 172 MIN 17 AC-FT 41,100

8-3340. Rio Puerco above Arroyo Chico, near Guadalupe, N. Mex.

Location.--Lat 35°36'05", long 107°09'55", in SW¼ sec.21, T.16 N., R.3 W., on right bank 1.6 miles upstream from Arroyo Chico and 5½ miles northeast of village of Guadalupe, Sandoval County.

Drainage area.--420 sq mi, approximately.

Records available.--July 1951 to September 1967. Published as "Rio Puerco above Chico Arroyo, near Guadalupe" 1951-64.

Gage.--Digital water-stage recorder. Datum of gage is 5,950 ft above mean sea level, datum of 1929. Prior to Sept. 24, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--16 years, 13.1 cfs (9,480 acre-ft per year).

Extremes.--Maximum discharge during year, 6,940 cfs July 29 (gage height, 13.53 ft), from rating curve extended above 1,300 cfs on basis of slope-area measurements at gage heights 7.75 and 10.60 ft; no flow for many days.
1951-67: Maximum discharge, that of July 29, 1967; no flow for many days most years.
Flood of June 29, 1943, probably exceeded 5,000 cfs (based on records for stations above and below).

Remarks.--Records poor. Diversions for irrigation of about 3,700 acres above station in past years, but present diversion negligible.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0		0	0	.02		0	0	30	14
2			0		0	0	.02		0	0	5	13
3			0		0	0	.02		.63	0	10	13
4			0		0	0	.03		35	0	400	18
5			0		0	0	.03		44	0	100	47
6			0		0	0	.02		20	0	30	98
7			0		0	0	.01		10	0	80	165
8			17		0	0	.01		5	0	35	402
9			4.3		0	0	.01		0	0	10	256
10			.9		.6	0	.01		0	0	30	100
11			1.2		.3	0	.01		0	0	100	20
12			.2		.4	0	.03		0	4	500	5
13			0		.1	0	.07		0	8	400	3
14			0		.1	.04	.02		0	3	100	2
15			0		0	.02	.02		0	0	50	1
16			0		.1	.02	.02		0	0	20	0
17			0		.1	.02	.01		0	66	10	0
18			0		.1	.02	.01		0	118	6	0
19			0		0	.02	.01		0	10	4	0
20			0		0	.02	.02		.45	0	3	0
21			0		0	.02	.02		45	0	2	0
22			.1		.1	.02	0		20	0	2	0
23			.9		.1	.02	0		0	25	3	0
24			.9		0	.02	0		0	3	0	0
25			3.4		0	.03	.01		0	40	0	0
26			2.5		0	.02	0		0	200	21	330
27			0		0	.02	0		0	136	78	44
28			0		0	.01	0		0	100	56	5
29			0		-	.02	0		0	500	20	2
30			0		-----	.03	.02		0	100	100	1
31		-----	0		-----	.02	-----		-----	70	16	-----
Total	0	0	31.4	0	2.0	0.39	0.45	0	180.08	1,383	2,221	1,539
Mean	0	0	1.01	0	.071	.013	.015	0	6.00	44.6	71.6	51.3
Max	0	0	17	0	.6	.04	.07	0	45	500	500	402
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	62	0	4.0	0.8	0.9	0	357	2,740	4,410	3,050

Cal yr 1966: Total 4,240.23 Mean 11.6 Max 506 Min 0 Ac-ft 8,410
Wtr yr 1967: Total 5,357.32 Mean 14.7 Max 500 Min 0 Ac-ft 10,630

Peak discharge (base, 1,800 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-29	2100	13.53	6,940	9-26	0230	8.26	2,260
8-11	1515	8.51	2,410				

8-3405. Arroyo Chico near Guadalupe, N. Mex.

Location.--Lat 35°35'40", long 107°11'20", in NE¼ sec.30, T.16 N., R.3 W., on left bank a quarter of a mile upstream from mouth, 4½ miles northwest of Guadalupe, and 5½ miles southwest of Cabezon.

Drainage area.--1,390 sq mi, approximately.

Records available.--November 1943 to September 1967. Published as "Chico Arroyo near Guadalupe" 1943-64.

Gage.--Digital water-stage recorder. Concrete control prior to Aug. 11, 1967. Datum of gage is 5,923 ft above mean sea level, datum of 1929. Prior to Sept. 23, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--24 years, 24.8 cfs (17,950 acre-ft per year).

Extremes.--Maximum discharge during year, 5,610 cfs Aug. 11 (gage height, 8.51 ft), from rating curve extended as explained below; no flow for many days.
1943-67: Maximum discharge, 12,200 cfs July 17, 1953 (gage height, 15.1 ft), from rating curve extended above 2,900 cfs on basis of slope-area measurements at gage heights 9.6 and 12.8 ft; no flow for many days each year.

Remarks.--Records poor. Diversions for irrigation of about 100 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36		0.1	0	1.0	0.1	0.03	0	0.69	0.01	14	40
2	5.6		.1	0	.7	.1	.03	.01	1.3	.02	30	20
3	3.3		.1	0	.7	.1	.03	.02	1.8	.01	330	20
4	1.7		.1	0	.7	.1	.03	.02	59	.02	1,520	30
5	.1		.3	0	.6	0	.02	.01	25	.02	212	50
6	.1		.2	0	.4	.1	.02	0	7.0	.02	75	200
7	.1		.2	0	.3	0	.02	0	3.6	47	222	500
8	5.2		.5	0	.3	.1	.02	0	3.3	9.0	52	2,000
9	.6		.7	0	.3	.1	.02	0	1.5	3.0	28	600
10	.4		.5	0	.3	0	.02	0	.04	0	780	400
11	.1		.4	0	.2	0	.02	0	.04	6.5	2,000	100
12	.1		.3	0	.2	0	.02	0	.05	198	1,000	9.3
13	.1		.3	0	.2	0	.02	.01	.04	22	800	4.0
14	.1		.2	0	.2	.04	.02	0	.05	26	200	3.0
15	.1		.2	0	.2	.04	.03	0	.04	18	100	2.2
16	.1		.1	0	.2	.04	.02	.01	6.4	65	50	1.5
17	.1		0	0	.2	.04	.01	.02	12	802	20	.89
18	.1		0	0	.2	.04	.02	.03	4.7	370	10	.35
19	.1		0	0	.2	.04	.02	.03	4.7	14	6.0	.03
20	.1		0	0	.2	.04	0	.03	6.9	7.6	20	.93
21	.1		0	0	.2	.03	.01	.02	21	3.0	5.0	0
22	.1		0	0	.1	.03	.01	.03	8.5	1.0	2.0	0
23	.1		0	0	.1	.03	0	.03	.03	117	1.0	0
24	.1		0	0	.1	.03	.01	.03	.04	39	0	1.0
25	.1		0	0	.1	.03	.01	.04	.03	316	0	297
26	.1		0	.1	.2	.03	.01	.06	.03	302	20	559
27	.1		0	.1	.2	.02	.01	.02	0	613	1,000	10
28	.1		0	.1	.1	.03	.01	9.6	0	56	150	4.3
29	.1		0	.1		.03	.01	4.9	0	181	60	5.8
30	.1		0	.1	- - - - -	.02	0	3.6	0	84	250	5.9
31	.1	- - - - -	0	.1	- - - - -	.03	- - - - -	1.7	- - - - -	41	100	- - - - -
Total	55.2	0	4.3	1.0	8.7	1.29	0.5	20.22	167.78	3,341.2	9,057	4,865.2
Mean	1.78	0	0.13	.032	0.31	.042	.017	.652	5.59	108	292	162
Max	36	0	.7	.2	1.0	.1	.03	9.6	59	802	2,000	600
Min	.1	0	0	0	.1	0	0	0	0	0	0	0
Ac-ft	109	0	8.5	2.0	17	2.6	1.0	40	333	6,630	17,960	9,650

Cal yr 1966: Total 7,569.55 Mean 20.7 Max 606 Min 0 Ac-ft 15,010
Wtr yr 1967: Total 17,522.39 Mean 48.0 Max 2,000 Min 0 Ac-ft 34,760

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-17	1815	7.45	4,760	8-11	0700	8.51	5,610
7-29	2115	5.81	2,900	9-8	0430	8.18	5,290
8-4	0045	8.49	5,590	9-26	0330	6.63	4,270

Note.--No gage-height record most of time for Aug. 11 to Sept. 10.

8-3414. Bluewater Lake near Bluewater, N. Mex.

Location.--Lat 35°17'40", long 108°06'40", in SE¼ sec.4, T.12 N., R.12 W., on left end of dam and 9.5 miles west of Bluewater.

Drainage area.--201 sq mi.

Records available.--June 1927 to December 1950, April 1958 to September 1967. June 1927 to December 1950 in Water Bulletins (Nos. 10-20) of International Boundary and Water Commission (see also WSP 1732). January 1951 to June 1958 in files of Bluewater-Toltec Irrigation Co.

Gage.--Water-stage recorder. Datum of gage is 7,345.57 ft above mean sea level, datum of 1929. July 1958 to January 1961, inclined staff gage and supplemental staff sections at nearby site, same datum. Gage heights have been converted to sea-level elevations.

Extremes.--Maximum contents observed during year, 7,150 acre-ft Oct. 1 (elevation, 7,374.4 ft); minimum observed, 3,300 acre-ft Sept. 30 (elevation, 7,365.2 ft).

1927-50, 1958-67: Maximum contents determined, 47,100 acre-ft in April 1941 (date and elevation not available), from table then in use; no storage at times prior to 1947.

Remarks.--Reservoir is formed by concrete arch dam. Storage began in 1927. Capacity, 38,500 acre-ft at elevation 7,402.6 ft (crest of uncontrolled siphon spillway which is vented to avoid drawdown below crest), and 44,200 acre-ft at elevation 7,405.6 ft (crest of ungated spillway over dam). Dead storage, 3.4 acre-ft at elevation 7,345.4 ft (sill of lower outlet tube). Lake not usually drawn below conservation pool level (elevation, 7,365.36 ft), below which ownership is by State Game and Fish Department. Above this level, water is owned and used by Bluewater-Toltec Irrigation Co. Figures given herein represent total contents, based on table derived from 10-foot contour survey made in 1945 by Bureau of Reclamation. Prior to Jan. 27, 1961, contents computed from daily staff gage readings at about 0800; recorded gage heights at 2400 to September 1963; incomplete recorder record supplemented by monthly staff readings to September 1967.

Month-end elevations and contents, water year October 1966 to September 1967

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	7,374.4	7,150	-290
Oct. 31	7,374.0	6,920	-230
Nov. 30	7,373.6	6,700	-220
Dec. 31	7,373.4	6,600	-100
Calendar year 1966	-	-	+900
Jan. 31	7,373.2	6,490	-110
Feb. 28	7,373.0	6,380	-110
Mar. 31	7,372.6	6,180	-200
Apr. 30	7,371.9	5,830	-350
May 31	7,370.1	5,040	-790
June 30	7,368.3	4,340	-700
July 31	7,366.6	3,750	-590
Aug. 31	7,365.6	3,430	-320
Sept. 30	7,365.2	3,300	-130
Water year 1966-67	-	-	-3,850

8-3420. Bluewater Creek near Bluewater, N. Mex.

Location.--Lat 35°17'50", long 108°01'40", in W½SW¼ sec.5, T.12 N., R.11 W., on left bank 3½ miles northwest of Bluewater Village and 8 miles downstream from Bluewater Dam.

Drainage area.--209 sq mi.

Records available.--July 1912 to August 1915, April 1916 to June 1919, water years 1919-22, 1924, 1926 (annual maximum), January 1927 to September 1967. Figures of daily discharge for July 20-23, 1912, published in WSP 358, have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder. Altitude of gage is 6,720 ft (by barometer). Prior to Mar. 4, 1918, at site 113 ft upstream at different datums. Mar. 4, 1918, to Mar. 17, 1939, at site 83 ft upstream; Mar. 4, 1918, to June 28, 1919 (destroyed by flood), at datum 1.92 ft higher; Apr. 6, 1921, to Mar. 17, 1939, at datum 1.57 ft higher. Prior to Sept. 8, 1966, graphic water-stage recorder.

Average discharge.--45 years (1912-15, 1916-18, 1927-67), 9.67 cfs (7,000 acre-ft per year).

Extremes.--Maximum discharge during year, 71 cfs Sept. 10 (gage height, 3.98 ft); minimum, 0.34 cfs Sept. 25.
1912-22, 1924, 1926, 1927-67: Maximum discharge determined, about 4,000 cfs, during period July 12-19, 1919 (gage height, 13.5 ft, from flood marks, site and datum in use Mar. 4, 1918 to June 28, 1919), estimated; no flow at times.
Maximum flood known occurred Sept. 6, 1909, when Bluewater Dam washed out, stage and discharge not determined. For other major floods during period 1919-26, see WSP 1732, p. 429, and WSP 1682, p. 410.

Remarks.--Records good except those for winter period, which are poor. Flow regulated by Bluewater Lake (capacity at crest of uncontrolled siphon spillways, 38,500 acre-ft).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.6	1.3	1.5	1.0	1.5	1.1	1.2	.88	12	12	2.6	.88
2	1.6	1.3	1.5	1.0	1.5	1.2	1.2	.87	8.9	14	6.8	.84
3	1.6	1.5	1.5	1.0	1.5	1.2	1.1	.97	7.9	15	7.5	.82
4	1.6	1.5	1.7	1.0	1.5	1.2	1.1	.91	4.9	15	7.6	.74
5	1.7	1.6	1.7	1.0	1.5	1.3	1.1	.89	4.6	15	7.6	.73
6	1.7	1.6	1.6	1.0	1.5	1.3	1.1	.96	4.1	16	7.7	.68
7	1.7	1.8	1.5	1.0	1.5	1.5	1.1	.95	3.9	9.6	7.4	.74
8	1.7	1.9	1.5	1.0	1.3	1.5	1.0	.86	3.9	9.0	4.4	.82
9	1.7	1.9	1.5	1.0	1.2	1.5	1.1	5.2	3.9	6.5	4.1	1.6
10	1.6	1.8	1.4	1.0	1.0	1.3	1.1	5.2	3.9	6.8	4.2	9.2
11	1.6	1.9	1.6	1.0	1.0	1.3	1.1	12	4.1	7.2	4.9	3.5
12	1.6	1.9	1.5	1.0	1.0	1.3	1.1	16	4.1	9.6	3.0	1.2
13	1.6	1.9	1.5	1.0	1.0	1.1	1.1	16	5.8	10	1.4	.86
14	1.5	1.9	1.5	1.0	1.0	1.1	1.1	15	6.7	10	3.4	.72
15	1.6	1.9	1.5	1.0	1.0	1.0	1.1	15	6.7	11	2.8	.68
16	1.8	1.9	1.5	1.0	1.0	1.2	1.1	11	6.7	11	2.2	.68
17	1.7	1.9	1.5	1.0	1.0	1.1	1.1	11	8.1	10	2.4	.70
18	1.7	1.7	1.4	1.0	1.0	1.2	1.1	11	8.1	5.2	5.2	.62
19	1.6	1.8	1.3	1.0	1.0	1.2	1.1	11	11	6.5	5.2	.68
20	1.4	1.9	1.3	1.0	1.0	1.2	.97	8.9	10	6.5	5.1	.62
21	1.4	1.9	1.3	1.0	1.0	1.1	1.0	8.7	10	6.2	5.5	.55
22	1.4	1.9	1.4	1.0	1.0	1.2	.98	8.5	11	6.5	13	.50
23	1.4	1.9	1.5	1.4	1.0	1.2	.91	8.5	11	6.5	17	.55
24	1.4	1.9	1.5	1.5	1.0	1.1	.98	8.5	11	8.6	18	.55
25	1.4	1.7	1.5	1.5	1.0	1.2	.96	8.4	13	8.6	18	.62
26	1.5	1.6	1.5	1.5	1.0	1.3	.92	8.5	13	6.2	18	.68
27	1.4	1.5	1.5	1.5	1.0	1.2	.95	8.5	12	5.2	18	.62
28	1.4	1.5	1.5	1.5	1.0	1.0	.86	8.5	7.7	5.0	16	.61
29	1.4	1.5	1.5	1.5	------	1.1	.91	8.4	7.7	4.5	2.3	.63
30	1.4	1.5	1.0	1.5	------	1.2	.84	11	11	2.3	1.4	.55
31	1.3	------	1.0	1.5	------	1.2	------	12	------	3.3	1.0	------
TOTAL	48.0	51.8	45.2	35.4	32.0	37.6	31.28	244.09	236.7	268.8	223.7	33.17
MEAN	1.55	1.73	1.46	1.14	1.14	1.21	1.04	7.87	7.89	8.67	7.22	1.11
MAX	1.8	1.9	1.7	1.5	1.5	1.5	1.2	16	13	16	18	9.2
MIN	1.3	1.3	1.0	1.0	1.0	1.0	.84	.86	3.9	2.3	1.0	.50
AC-FT	95	103	90	70	63	75	62	484	469	533	444	66

CAL YR 1966: TOTAL 3,277.00 MEAN 8.98 MAX 33 MIN .50 AC-FT 6,500
WAT YR 1967: TOTAL 1,287.74 MEAN 3.53 MAX 18 MIN .50 AC-FT 2,550

8-3431. Grants Canyon at Grants, N. Mex.

Location.--Lat 35°09'40", long 107°50'15", in NE¼NE¼ sec.25, T.11 N., R.10 W., at Roosevelt Avenue, in the town of Grants, 0.2 mile east of intersection of Roosevelt and First Avenue and 1.1 mile upstream from confluence with Rio San Jose (formerly Bluewater Creek).

Drainage area.--13.0 sq mi.

Records available.--December 1961 to September 1967.

Gage.--Water-stage recorder and control formed by four culvert barrels. Altitude of gage is 6,450 ft (from topographic map).

Average discharge.--6 years, 0.227 cfs (164 acre-ft per year).

Extremes.--Maximum discharge during year, 1,510 cfs Sept. 8 (gage height, 5.38 ft); no flow for most of time.
1962-67: Maximum discharge, 1,550 cfs Aug. 26, 1963, (gage height, 5.10 ft), from rating curve extended above 218 cfs on basis of slope-area measurements at gage heights 3.17, 5.10 and 5.38 ft; maximum gage height, that of Sept. 8; no flow for most of time.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	0	0	0
2									0	0	0	0
3									0	0	0	0
4									.35	0	0	0
5									0	0	0	0
6									0	0	0	0
7									0	.58	0	14
8									0	0	0	80
9									0	0	2.5	10
10									0	0	0	0
11									0	0	35	0
12									0	0	0	0
13									0	0	0	0
14									0	0	0	0
15									0	0	0	0
16									0	0	0	0
17									.10	.15	0	0
18									0	0	0	0
19									0	0	0	0
20									0	0	0	0
21									0	.62	0	0
22									0	0	0	0
23									0	0	0	0
24									0	0	0	0
25									0	0	0	0
26									0	0	36	0
27									0	0	14	0
28									0	0	0	0
29									0	0	0	0
30									0	0	0	10
31										0	0	
Total	0	0	0	0	0	0	0	0	0.45	1.35	87.5	114
Mean	0	0	0	0	0	0	0	0	0.015	0.044	2.82	3.80
Max	0	0	0	0	0	0	0	0	0.35	0.62	36	80
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0.9	2.7	226	226

Cal yr 1966: Total 19.96 Mean .055 Max 6.5 Min 0 Ac-ft 40
Wtr yr 1967: Total 203.30 Mean 0.556 Max 80 Min 0 Ac-ft 403

Peak discharge (base, 175 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-11	1615	3.38	672	9-8	2115	5.38	1,510
8-26	2000	3.33	652				
9-7	1900	2.72	426				

8-3435. Rio San Jose near Grants, N. Mex.

Location.--Lat 35°04'30", long 107°45'00", in SE¼SE¼ sec.23, T.10 N., R.9 W., on right bank at west boundary of Acoma Pueblo Grant, 8½ miles southeast of Grants.

Drainage area.--2,300 sq mi, approximately, of which about 1,130 sq mi does not contribute directly to surface runoff.

Records available.--June 1936 to September 1967. Prior to October 1955, published as San Jose River near Grants.

Gage.--Digital water-stage recorder and concrete control. Datum of gage is 6,269.47 ft above mean sea level, datum of 1929. Prior to Sept. 8, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--31 years, 6.57 cfs (4,760 acre-ft per year).

Extremes.--Maximum discharge during year, 430 cfs Sept. 8 (gage height, 3.22 ft); minimum, 2.8 cfs June 25.
1936-67: Maximum discharge, 1,400 cfs Sept. 20, 1963 (gage height, 4.87 ft), from rating curve extended above 438 cfs on basis of slope-area measurements at gage heights 3.19 and 4.87 ft; minimum, 2.8 cfs June 25, 1967.
Maximum flood known probably occurred Sept. 6 or 7, 1909, following destruction of Bluewater Dam. The peak of Sept. 20, 1963, may have been exceeded by those of July 1919, August and September 1929, and August 1935.

Remarks.--Records good. Flow partly regulated by Bluewater Lake (capacity at crest of uncontrolled siphon spillway, 38,500 acre-ft). Diversions and ground-water withdrawal for irrigation of about 5,100 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.6	4.7	4.4	4.1	5.0	4.6	4.2	4.9	4.0	3.2	5.4	4.7
2	4.6	4.7	4.2	4.1	5.1	4.6	4.3	4.9	3.9	3.2	5.6	4.6
3	4.6	4.5	4.2	4.1	5.0	4.6	4.4	4.9	3.9	3.2	5.9	5.7
4	4.6	4.4	4.2	3.9	5.2	4.4	4.5	4.9	4.0	3.2	7.8	4.8
5	4.6	4.4	4.2	4.0	5.4	4.5	4.6	4.9	12	3.2	5.3	7.8
6	4.6	4.4	4.1	3.9	5.4	4.5	4.6	4.7	6.3	3.3	9.5	4.8
7	4.7	4.4	4.1	4.1	4.9	4.5	4.6	4.7	3.8	4.7	7.3	4.6
8	4.6	4.4	4.2	4.1	4.8	4.3	4.8	4.6	3.5	3.9	5.0	34
9	4.6	4.5	4.1	4.0	4.9	4.4	4.8	4.7	3.4	3.8	4.9	95
10	4.6	4.4	3.9	4.0	5.1	4.5	5.0	4.7	3.4	3.7	4.9	73
11	4.6	4.6	3.9	4.0	5.0	4.4	5.3	4.7	3.4	3.9	26	39
12	4.6	4.6	4.0	4.0	5.0	4.4	5.5	4.6	3.4	3.8	22	27
13	4.5	4.6	4.1	4.0	5.3	4.0	5.4	4.3	3.4	3.8	22	21
14	4.5	4.5	3.9	4.0	5.5	3.7	5.4	4.4	3.4	4.1	11	11
15	4.5	4.5	3.9	3.9	5.4	3.7	5.5	4.6	3.4	4.1	11	7.4
16	4.6	4.6	4.0	4.0	5.4	3.8	5.5	4.0	3.4	4.1	9.4	7.3
17	4.6	4.6	4.0	3.9	5.2	3.9	5.3	4.0	3.2	4.6	7.0	6.6
18	4.6	4.6	4.1	3.9	5.3	4.0	5.3	4.0	3.2	4.6	5.7	7.4
19	4.6	4.4	4.1	4.0	5.7	4.0	5.3	3.7	3.3	4.6	4.9	5.5
20	4.6	4.5	4.2	4.0	5.5	4.0	5.3	3.7	3.1	4.8	4.9	5.0
21	4.6	4.6	4.3	4.1	5.2	4.0	5.0	3.7	3.0	4.6	4.7	4.9
22	4.6	4.6	4.3	4.2	5.3	4.1	4.9	3.6	2.9	4.7	4.6	4.9
23	4.5	4.6	4.2	4.5	5.0	4.1	4.9	3.7	2.9	5.1	4.6	4.9
24	4.5	4.6	4.2	4.6	4.9	4.2	5.5	3.6	2.9	5.1	4.6	4.9
25	4.6	4.4	4.2	4.5	4.9	4.4	5.3	3.7	2.9	6.7	4.4	4.9
26	4.6	4.4	4.2	4.4	4.9	4.5	5.1	3.8	2.9	11	4.4	8.4
27	4.6	4.3	4.2	4.5	4.9	4.5	5.0	3.7	3.0	6.7	23	15
28	4.7	4.4	4.1	4.6	4.8	4.4	5.1	3.7	3.0	6.0	36	6.8
29	4.6	4.4	4.1	4.7	------	4.3	5.1	3.8	3.1	6.2	21	5.1
30	4.6	4.4	4.1	4.8	------	4.1	5.0	3.9	3.1	5.6	9.4	4.8
31	4.7	------	4.1	4.9	------	4.1	------	4.0	------	5.3	5.6	------
TOTAL	142.4	135.0	127.8	129.8	144.0	131.5	150.5	131.1	111.1	144.8	307.8	440.8
MEAN	4.59	4.50	4.12	4.19	5.14	4.24	5.02	4.23	3.70	4.67	9.93	14.7
MAX	4.7	4.7	4.4	4.9	5.7	4.6	5.5	4.9	12	11	36	95
MIN	4.5	4.3	3.9	3.9	4.8	3.7	4.2	3.6	2.9	3.2	4.4	4.6
AC-FT	282	268	253	257	286	261	299	260	220	287	611	874

CAL YR 1966: TOTAL 1,588.5 MEAN 4.35 MAX 17 MIN 3.2 AC-FT 3,150
WAT YR 1967: TOTAL 2,096.6 MEAN 5.74 MAX 95 MIN 2.9 AC-FT 4,160

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-11	1800	2.79	275	9-8	2100	3.22	430
8-27	0100	2.49	167				

8-3515. Rio San Jose at Correo, N. Mex.

Location.--Lat 34°58'05", long 107°11'15", in NE¼ sec.31, T.9 N., R.3 W., on right bank 0.7 mile upstream from State Highway 6, 0.8 mile northwest of Correo, and 14 miles upstream from mouth.

Drainage area.--3,660 sq mi, approximately, of which about 1,130 sq mi does not contribute directly to surface runoff.

Records available.--April 1943 to September 1967. Prior to October 1955, published as San Jose River at Correo.

Gage.--Digital water-stage recorder. Datum of gage is 5,492.43 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1958, water-stage recorder and concrete control at site 1 mile downstream at datum 17.55 ft lower.

Average discharge.--24 years, 11.5 cfs (8,330 acre-ft per year).

Extremes.--Maximum discharge during year, 1,580 cfs Aug. 13 (gage height, 3.89 ft), from rating curve extended above 700 cfs on basis of slope-area measurement at gage height 6.8 ft, discharge determined at former station downstream; no flow for many days.
1943-67: Maximum discharge, 7,150 cfs Aug. 11, 1955; maximum gage height, 20.7 ft Aug. 22, 1958, backwater from dam (site and datum then in use); no flow for long periods.
A flood which probably occurred Aug. 21, 1935, reached a stage of 15.4 ft, from floodmarks, former site and datum (discharge, about 11,000 cfs), but was probably exceeded by the flood of Sept. 23, 1929 (discharge not determined), based on study of records for Rio Puerco at Rio Puerco.

Remarks.--Records good except those for winter periods, which are poor. Flow partly regulated by Bluewater Lake (capacity at crest of uncontrolled siphon spillways, 38,500 acre-ft) and one small reservoir above station. Diversions and ground-water withdrawals for irrigation of about 7,800 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	8.7	1.6	0					0	0	10	8.3
2	0	9.0	1.8	0					0	0	.1	2.6
3	0	9.1	.80	0					29	0	0	.52
4	0	7.2	.10	0					21	0	79	.01
5	0	6.6	0	0					109	0	653	24
6	[illegible]	7.7	0	0					40	0	110	201
7	[illegible]	3.2	.20	0					1.0	1.7	26	150
8	[illegible]	3.0	.30	0					0	.02	17	212
9	[illegible]	2.2	.10	0					0	0	6.1	425
10	[illegible]	5.2	0	0					0	0	1.8	260
11	0	6.6	0	0					0	.54	56	136
12	0	4.1	0	0					0	.74	364	110
13	1.5	2.0	0	0					0	11	1010	44
14	2.0	2.1	0	.40					0	10	483	23
15	.8	3.6	0	1.2					0	3.0	376	18
16	0	2.7	0	4.9					0	.11	277	11
17	0	.50	0	2.1					.02	34	76	6.8
18	0	0	0	.30					16	36	45	16
19	0	0	0	0					319	9.4	30	10
20	.5	0	0	0					223	4.4	29	6.0
21	5.6	0	0	0					124	1.3	22	5.0
22	6.3	0	0	0					71	.23	16	2.6
23	6.0	0	0	0					25	0	16	1.2
24	1.3	0	0	0					15	0	15	.24
25	.2	0	0	0					6.5	0	27	.08
26	7.7	0	0	0					2.4	1.9	5.3	51
27	10	0	0	0					.46	64	22	12
28	9.0	0	0	0					0	15	60	11
29	9.8	0	0	0					0	3.1	35	26
30	9.8	1.0	0	0					0	.27	27	6.3
31	9.8	-----	0	0	-----		-----		-----	.37	19	-----
Total	80.3	84.5	4.90	8.90	0	0	0	0	1002.38	197.08	3913.3	1779.65
Mean	2.59	2.82	0.158	0.287	0	0	0	0	33.4	6.36	126	59.3
Max	10	9.1	1.8	4.9	0	0	0	0	319	64	1,010	425
Min	0	0	0	0	0	0	0	0	0	0	.1	.01
Ac-ft	159	168	9.7	18	0	0	0	0	1,990	391	7,760	3,530

Cal yr 1966: Total 2,005.09 Mean 5.49 Max 311 Min 0 Ac-ft 3,980
Wtr yr 1967: Total 7,071.01 Mean 19.4 Max 1,010 Min 0 Ac-ft 14,030

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-5	0700	3.40	881	8-13	0700	3.89	1,580

8-3525. Rio Puerco at Rio Puerco, N. Mex.

Location.--Lat 34°47'35", long 106°59'20", in NW¼ sec.31, T.7 N., R.1 W., in San Clemente Grant, on downstream end of pier nearest left abutment of the Atchison, Topeka and Santa Fe, Railway Co. bridge, 7 miles downstream from Rio San Jose.

Drainage area.--6,590 sq mi, approximately, of which at least 1,130 sq mi does not contribute directly to surface runoff.

Records available.--June 1909 to December 1912 (records fragmentary, gage heights only), March 1934 to September 1967. Records for January 1913 to December 1914 published in WSP 358, 388, and 408 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder and concrete control. Datum of gage is 5,008.59 ft above mean sea level, datum of 1929.

Average discharge.--33 years (1934-67), 60.6 cfs (43,870 acre-ft per year).

Extremes.--Maximum discharge during year, 12,600 cfs Aug. 12 (gage height, 4.64 ft); no flow for many days.
1934-67: Maximum discharge, 28,000 cfs Aug. 21, 1935 (gage height, 7.24 ft), by computation of peak flow over dam; no flow at times.
The damaging flood of Sept. 23, 1929, is the greatest since about 1880; it reached a stage of 18 ft (conditions prior to destruction of railroad bridge. Discharge, 37,700 cfs, by weir formula, from reports of State engineer). The flood of Aug. 12, 1929, reached a stage of about 16 ft (discharge, 31,300 cfs, by weir formula, from reports of State engineer). A flood on Oct. 4, 1913, reached a stage of 9.5 ft (discharge not determined) prior to construction of the concrete control.

Remarks.--Records good except those for August and September, which are fair. Diversions for irrigation of about 11,500 acres above station (includes 3,700 acres irrigated partly or entirely from wells).

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.0	12	.30	0	.68	0	0	0	0	.02	186	161
2	2.0	11	.30	0	.03	0	0	0	0	.02	48	96
3	2.0	12	1.0	0	.01	0	0	0	2.0	.02	9.6	58
4	2.0	12	1.9	0	.06	0	0	0	5.0	.02	676	32
5	1.0	10	1.5	0	.02	0	0	0	250	.02	1,600	290
6	1.0	9.9	.70	0	.12	0	0	0	200	.01	668	334
7	1.0	11	.40	0	0	0	0	0	40	.01	422	1,460
8	1.0	6.8	.30	0	0	0	0	0	18	108	394	2,170
9	.40	5.2	.20	0	0	0	0	0	13	46	485	2,540
10	.20	3.8	0	0	.01	0	0	0	10	19	430	1,080
11	0	4.5	0	0	.02	0	0	0	8.4	12	230	621
12	2.0	5.1	0	0	0	0	0	0	7.2	7.6	5,210	268
13	1.0	4.3	0	0	0	0	0	0	6.8	64	2,470	138
14	.10	3.5	0	0	0	0	0	0	6.8	148	2,990	60
15	0	2.5	0	.02	0	0	0	0	6.4	104	1,100	27
16	1.3	3.5	.30	.55	0	0	0	0	6.1	76	684	13
17	.40	3.4	.60	.55	0	0	0	0	5.7	92	323	8.4
18	0	2.5	.70	.55	0	0	0	0	5.4	1,070	175	26
19	0	.80	.60	1.4	0	0	0	0	253	180	84	5.4
20	.30	.50	.50	1.0	0	0	0	0	328	35	170	2.6
21	.10	.40	.60	.44	0	0	0	0	422	16	38	1.4
22	1.9	.40	.40	.68	0	0	0	0	40	5.8	6.4	.7
23	5.5	.40	.10	1.2	0	0	0	0	20	2.3	5.1	.2
24	5.8	.40	0	.35	0	0	0	0	10	47	38	.2
25	3.1	.40	0	.19	0	0	0	0	5.0	128	11	.2
26	.90	.40	.10	.24	0	0	0	0	3.0	294	63	1,740
27	5.1	.10	.60	.38	0	0	0	0	.55	878	282	540
28	9.5	.10	0	.35	0	0	0	0	.04	430	1,730	140
29	9.0	.40	0	.70	------	0	0	0	.03	114	220	54
30	10	.50	0	1.2	------	0	0	0	.02	771	110	33
31	9.6	------	0	.55	------	0	------	0	------	450	537	------
TOTAL	78.20	127.80	11.10	10.35	0.95	0	0	0	1,672.44	5,097.82	21,395.1	11,900.1
MEAN	2.52	4.26	.36	.33	.034	0	0	0	55.7	164	690	397
MAX	10	12	1.9	1.4	.68	0	0	0	422	1,070	5,210	2,540
MIN	0	.10	0	0	0	0	0	0	0	.01	5.1	.20
AC-FT	155	253	22	21	1.9	0	0	0	3,320	10,110	42,440	23,600

CAL YR 1966: TOTAL 9,553.40 MEAN 26.2 MAX 1,050 MIN 0 AC-FT 18,950
WAT YR 1967: TOTAL 40,293.81 MEAN 110 MAX 5,210 MIN 0 AC-FT 79,920

Peak discharge (base, 6,000 cfs, revised).--Aug. 12 (1315) 12,600 cfs (4.64 ft); Sept. 9 (0230) 6,500 cfs (3.69 ft).

8-3530. Rio Puerco near Bernardo, N. Mex.

Location.--Lat 34°24'30", long 106°51'10", in SE¼ sec.8, T.2 N., R.1 E., on bridge on former U.S. Highway 85 and ¼ mile upstream from Interstate Highway 25, 1.2 miles southwest of Bernardo, 3 miles upstream from mouth, and 18 miles south of Belen.

Drainage area.--7,350 sq mi, approximately, of which at least 1,130 sq mi does not contribute directly to surface runoff.

Records available.--November 1939 to September 1967. Fragmentary gage-height record and footnotes concerning no flow for the period September 1910 to August 1914, published in WSP 358 and 388, have been found to be in error and should not be used.

Gage.--Digital water-stage recorder. Datum of gage is 4,725.44 ft above mean sea level, datum of 1929.

Average discharge.--27 years (1940-67), 51.9 cfs (37,570 acre-ft per year).

Extremes.--Maximum discharge during year, 7,860 cfs Aug. 13 (gage height, 13.50 ft); no flow for extended periods.
1939-67: Maximum discharge, 18,800 cfs Sept. 23, 1941, from rating curve extended above 7,800 cfs by logarithmic plotting; maximum gage height, 13.8 ft Aug. 12, 1955; no flow for extended periods.
The greatest flood known since about 1880 occurred Sept. 23, 1929, from information by local residents (discharge, about 35,000 cfs, estimated on basis of peak at Rio Puerco). Another flood occurred Aug. 12, 1929 (discharge 30,600 cfs, by slope-area method, from reports of State engineer).

Remarks.--Records fair except those for August, which are poor. Diversions for irrigation of about 11,500 acres above station (includes 3,700 acres irrigated wholly or partly from wells). Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	3.9							0	0	194	193
2	14	3.9							0	0	49	59
3	6.9	4.8							.13	0	17	25
4	2.5	4.8							263	0	23	20
5	3.5	5.0							120	0	1,560	15
6	2.1	5.0							232	0	1,120	278
7	3.3	3.9							95	0	720	500
8	1.0	4.0							20	0	433	1,380
9	.2	4.4							7.0	64	596	2,420
10	0	2.0							.95	3.5	775	1,500
11	0	1.0							.04	.49	931	669
12	0	.4							0	0	1,700	430
13	0	0							0	0	4,770	209
14	0	.1							0	47	2,400	83
15	0	.2							0	50	2,500	28
16	0	0							0	15	1,160	8.0
17	0	0							0	11	504	8.0
18	0	0							90	568	168	10
19	0	0							16	854	185	21
20	0	0							308	115	79	8.0
21	0	0							475	29	177	5.8
22	0	0							363	12	46	3.8
23	0	0							88	2.8	29	2.9
24	0	0							18	.55	6.7	2.2
25	0	0							7.7	23	1.0	4.0
26	0	0							2.0	231	2.5	695
27	0	0							.07	235	3.0	1,650
28	0	0							0	894	1,190	290
29	0	0							4.4	148	451	100
30	0	0			-----				.13	19	134	33
31	1.7	-----			-----		-----		-----	802	304	-----
Total	57.2	43.4	0	0	0	0	0	0	2,110.4	24.1	24.3	22,228.2	10,650.7
Mean	1.85	1.45	0	0	0	0	0	0	70.3	133	717	355
Max	22	5.0	0	0	0	0	0	0	475	894	4,770	2,420
Min	0	0	0	0	0	0	0	0	0	0	1.0	2.2
Ac-ft	113	86	0	0	0	0	0	0	4,190	8,180	44,090	21,130

Cal yr 1966: Total 9,810.8 Mean 26.9 Max 1,060 Min 0 Ac-ft 19,470
Wtr yr 1967: Total 39,146.27 Mean 107 Max 4,770 Min 0 Ac-ft 77,650

Peak discharge (base, 2,000 revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-13	1600	13.50	7,860	9-9	1930	7.02	3,250
8-15	0930	7.92	4,280	9-27	0930	6.49	3,240
8-28	1800	6.31	2,520				

8-3540. Rio Salado near San Acacia, N. Mex.

Location.--Lat 34°17'50", long 106°54'00", in NW¼ sec.24, T.1 N., R.1 W., at former bridge site 0.3 mile upstream from bridge on Interstate Highway 25, 3.1 miles upstream from mouth, 2.9 miles north of San Acacia, and 15 miles north of Socorro.

Drainage area.--1,380 sq mi, approximately.

Records available.--October 1947 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,765 ft (from topographic map). Prior to Sept. 14, 1966 at site 1.7 miles downstream at different datum.

Average discharge.--20 years, 14.2 cfs (10,280 acre-ft per year).

Extremes.--Maximum discharge during year, 17,400 cfs Aug. 10 (gage height, 4.83 ft), from rating curve extended above 900 cfs as explained below; no flow most of time.
1947-67: Maximum discharge, 36,200 cfs July 31, 1965 (gage height, 5.54 ft, from floodmarks, present site and datum), from rating curve extended above 900 cfs on basis of slope-area measurement of peak flow; no flow most of time.
Another flood occurred Aug. 12, 1929 (discharge, 27,400 cfs, by slope-area method), from reports of State engineer.

Remarks.--Records poor. Diversions for irrigation of about 100 acres above station. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	0	10	0
2									0	0	29	45
3									41	0	0	59
4									278	0	170	0
5									24	0	194	158
6									49	0	165	21
7									0	0	231	242
8									0	0	13	244
9									0	0	221	.5
10									0	0	926	343
11									0	39	446	330
12									0	6.3	919	4.2
13									0	11	314	0
14									0	285	3.9	0
15									0	6.4	251	56
16									0	22	2.3	619
17									0	265	0	87
18									0	13	0	0
19									0	0	0	7.7
20									695	0	0	0
21									204	0	0	0
22									0	0	0	0
23									0	0	0	0
24									0	0	0	0
25									0	33	0	0
26									0	147	0	58
27									0	144	0	0
28									0	0	0	0
29									0	0	0	0
30									0	347	0	0
31										28	0	
Total	0	0	0	0	0	0	0	0	1,291	1,346.7	3,895.2	2,274.4
Mean	0	0	0	0	0	0	0	0	43.0	43.4	126	75.8
Max	0	0	0	0	0	0	0	0	695	347	926	619
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	2,560	2,670	7,730	4,510

Cal yr 1966: Total 4,332 Mean 11.9 Max 730 Min 0 Ac-ft 8,590
Wtr yr 1967: Total 8,807.3 Mean 24.1 Max 926 Min 0 Ac-ft 17,470

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-6	1830	3.25	3,100	8-12	0500	4.30	10,400
8-10	2200	4.83	17,400				

8-3545. Socorro main canal north at San Acacia, N. Mex.

Location.--Lat 34°15'15", long 106°53'45", in SE¼NW¼ sec.1, T.1 S., R.1 W., 0.5 mile downstream from point of diversion, on right bank at San Acacia.

Records available.--April 1936 to September 1967. Monthly discharge prior to October 1964 (daily records in district files).

Gage.--Digital water-stage recorder. Datum of gage is 4,660.16 ft above mean sea level, datum of 1929. Prior to Mar. 8, 1958, at site 300 ft upstream (in old channel) at datum 0.42 ft lower. Prior to Feb. 20, 1963, graphic water-stage recorder.

Extremes.--1936-67: Maximum daily discharge, 251 cfs July 30, 1965; no flow at times.

Remarks.--Records fair. This canal is 1 of 3 channels (see stations 8-3548, 8-3549) carrying flow in valley cross-section. For combined monthly flow in acre-ft of this canal, conveyance channel, and floodway see tabulation below daily table for station 8-3549. Canal diverts water from right bank of Rio Grande for irrigation of about 8,000 acres. Alamillo Acequia and 3 other smaller ditches divert water from canal above station for irrigation of about 400 acres. Discharge records collected at the canal heading October 1964 to September 1965, indicate 7,770 acre-ft or 9% of the initial canal flow was diverted before reaching the regular gaging station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	23	0	0	0	0	120	188	89	180	186	226	164
2	60	0	0	0	0	104	199	95	181	151	179	157
3	56	0	0	0	0	109	200	86	177	131	108	35
4	41	0	0	0	0	114	184	87	45	114	243	207
5	33	0	0	0	0	122	176	88	129	93	39	159
6	49	0	0	0	0	132	167	97	166	81	0	131
7	70	0	0	0	0	147	142	105	152	76	139	7.9
8	64	0	0	0	0	140	120	66	166	133	294	1.6
9	61	0	0	0	0	144	118	62	174	148	242	0
10	75	0	0	0	0	135	117	64	165	90	18	1.5
11	63	0	0	0	0	152	113	65	170	114	15	117
12	46	0	0	0	0	156	94	69	180	106	8.2	187
13	44	0	0	0	0	185	75	95	183	111	12	161
14	37	0	0	0	0	198	115	102	188	110	6.7	197
15	34	0	0	0	0	169	124	176	189	129	2.2	192
16	33	0	0	0	0	179	133	178	188	94	9.0	193
17	38	0	0	0	0	170	154	176	182	110	18	197
18	37	0	0	0	0	165	144	177	177	78	85	184
19	36	0	0	0	0	155	124	194	186	42	151	170
20	59	0	0	0	0	178	112	200	150	113	166	134
21	63	0	0	0	0	178	87	193	175	148	93	72
22	67	0	0	0	0	205	90	204	122	144	136	52
23	75	0	0	0	0	210	98	192	156	103	135	17
24	80	0	0	0	0	190	106	194	172	73	120	2.7
25	79	0	0	0	0	195	85	188	174	44	101	4.9
26	85	0	0	0	0	190	72	188	180	3.0	64	95
27	71	0	0	0	0	210	79	184	179	77	32	0
28	64	0	0	0	0	200	87	175	190	22	17	0
29	61	0	0	0	------	189	67	187	197	48	180	97
30	69	0	0	0	------	74	74	167	192	101	123	138
31	53	------	0	0	------	193	------	181	------	112	168	------
TOTAL	1,726	0	0	0	0	5,008	3,644	4,324	5,065	3,085.0	3,130.1	3,074.6
MEAN	55.7	0	0	0	0	162	121	139	169	99.5	101	102
MAX	85	0	0	0	0	210	200	204	197	186	294	207
MIN	23	0	0	0	0	74	67	62	45	3.0	0	0
AC-FT	3,420	0	0	0	0	9,930	7,230	8,580	10,050	6,120	6,210	6,100

CAL YR 1966: TOTAL 35,121.00 MEAN 96.2 MAX 237 MIN 0 AC-FT 69,660
WAT YR 1967: TOTAL 29,056.7 MEAN 79.6 MAX 294 MIN 0 AC-FT 57,630

8-3548. Rio Grande conveyance channel at San Acacia, N. Mex.

Location.--Lat 34°15'55", long 106°54'00", in SW¼ sec.1, T.1 S., R.1 W., on right bank 75 ft upstream from railway crossing, 1.2 miles downstream from San Acacia diversion dam, and 0.5 mile south of San Acacia.

Records available.--October 1958 to September 1967. October 1958 to September 1960, included in composite records for "Rio Grande at San Acacia". October 1960 to September 1964, monthly discharge published in WSP 1923 vol. 2. Daily records since 1958 available in District files.

Gage.--Digital water-stage recorder. Datum of gage is 4,652.5 ft above mean sea level (Bureau of Reclamation datum). Prior to 1958 all flow in floodway and Socorro main canal north. Prior to May 20, 1964, graphic water-stage recorder at same site and datum.

Average discharge.--9 years, 438 cfs (317,100 acre-ft per year).

Extremes.--1958-67: Maximum daily discharge, 1,950 cfs May 12, 13, 1966; no flow at times.

Remarks.--Records good. Conveyance channel is 1 of 3 channels (see stations 8-3545, 8-3549) carrying flow in valley cross-section. Original design and plan was for conveyance channel to carry all flows up to about 2,000 cfs. For combined monthly flow in acre-ft of this channel, floodway, and Socorro main canal north see tabulation below daily table for station 8-3549. Records of suspended sediment loads and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	51	59	693	513	682	646	68	.70	314	34	305	820
2	3.0	37	687	363	695	515	40	.80	407	20	106	403
3	3.0	56	684	343	727	509	30	.70	413	10	80	425
4	2.3	66	684	384	736	479	20	.70	1,540	1.2	114	391
5	2.8	71	678	387	728	469	10	.90	1,300	1.3	1,100	337
6	3.6	82	681	459	685	491	10	.90	1,280	1.2	1,490	438
7	3.7	258	720	483	682	556	10	.80	1,320	1.2	1,350	870
8	3.2	470	750	501	676	578	8.4	.60	1,040	51	972	1,650
9	3.1	587	1,320	504	701	548	7.4	.60	774	16	840	1,840
10	3.4	849	1,360	456	695	347	6.4	.50	748	7.9	865	1,790
11	2.3	1,020	1,170	452	637	245	4.6	.50	645	17	720	1,660
12	1.2	1,100	1,070	438	659	152	4.3	.35	645	1.9	1,050	930
13	1.1	1,160	985	489	658	179	3.8	.50	524	46	960	642
14	1.2	1,220	840	564	687	197	3.7	.60	296	129	540	405
15	1.1	1,270	723	633	689	185	3.8	80	164	51	846	245
16	1.1	1,310	726	672	698	170	3.8	227	59	29	1,100	288
17	1.2	1,340	726	672	715	149	3.7	152	49	341	1,240	177
18	1.1	1,350	735	699	715	119	3.6	29	77	169	1,380	100
19	1.1	1,430	705	726	708	65	3.4	31	50	1,030	1,480	95
20	1.7	1,400	708	681	685	34	3.1	73	788	166	1,250	98
21	1.1	1,330	705	642	698	22	3.0	69	711	35	1,320	78
22	1.2	1,280	684	621	722	31	3.0	42	645	30	1,010	38
23	1.1	1,330	696	702	712	59	3.0	112	212	20	791	31
24	1.1	1,420	708	733	693	59	3.0	97	205	13	664	29
25	1.0	852	708	753	672	55	3.0	114	199	32	465	28
26	1.0	750	627	751	708	60	2.0	135	277	250	451	124
27	1.0	735	594	739	738	130	1.5	154	197	207	259	1,490
28	1.0	732	567	710	744	54	1.0	124	92	646	770	784
29	1.0	735	585	683	------	105	1.0	85	70	227	813	360
30	.90	723	597	654	------	219	1.0	80	70	133	664	215
31	18	------	585	680	------	105	------	75	------	612	697	------
TOTAL	120.60	25,022	23,701	18,087	19,545	7,532	269.5	1,688.15	15,111	4,332.7	25,692	16,781
MEAN	3.89	834	765	583	698	243	8.98	54.5	504	140	829	559
MAX	51	1,430	1,360	753	744	646	68	227	1,540	1,030	1,490	1,840
MIN	.90	37	567	343	637	22	1.0	.35	49	1.2	80	28
AC-FT	239	49,630	47,010	35,880	38,770	14,940	535	3,350	29,970	8,590	50,960	33,280

CAL YR 1966: TOTAL 255,618.70 MEAN 700 MAX 1,950 MIN .30 AC-FT 507,000
WAT YR 1967: TOTAL 157,881.95 MEAN 433 MAX 1,840 MIN .35 AC-FT 313,200

8-3549. Rio Grande floodway at San Acacia, N. Mex.

Location.--Lat 34°15'28", long 106°53'30", in NE¼ sec.1, T.1 S., R.1 W. (projected), in Sevilleta Grant, 0.25 mile below San Acacia diversion dam, 2 miles downstream from Rio Salado, and 0.3 mile east of San Acacia.

Drainage area.--26,770 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--April 1936 to September 1966. Flow in the conveyance channel has been included prior to October 1964, and records published as, "8-3550. Rio Grande at San Acacia".

Gage.--Digital water-stage recorder. Datum of gage is 4,654.50 ft above mean sea level, datum of 1929, adjustment of 1951. Aug. 19, 1965 to Aug. 15, 1967 at same site at datum 1.89 ft. higher. Prior to Mar. 19, 1953, at several sites 0.1 mile upstream at different datums. Mar. 19, 1953 to Aug. 19, 1965, at site 0.4 mile downstream at datum 3.60 ft higher. Floodway is bypassed by Socorro main canal north and, since October 1958, by conveyance channel. Prior to October 1966, graphic water-stage recorder.

Average discharge.--22 years (1936-58), 1,192 cfs (863,000 acre-ft per year), prior to construction of conveyance channel; does not include Socorro main canal north.
9 years (1958-67), 270 cfs (195,500 acre-ft per year), flow of floodway only.
9 years (1958-67), 789 cfs (571,200 acre-ft per year), combined flow of floodway, conveyance channel and Socorro main canal north.

Extremes.--Maximum discharge during year, 9,850 cfs Aug. 14 (gage height, 9.30 ft); no flow at times.
1936-67: Maximum discharge, 27,400 cfs Aug. 5, 1936 (gage height, 10.75 ft, site and datum then in use); no flow at times.

Remarks.--Records fair. Floodway is 1 of 3 channels (see stations 8-3545, 8-3548) carrying flow in valley cross-section. For combined monthly flow in acre-ft of floodway, conveyance channel, and Socorro main canal north see tabulation below. Normal plan is for floodway to carry flow when combined capacities of conveyance channel (about 2,000 cfs) and Socorro main canal north (about 200 cfs) is exceeded, during periods of silt sluicing, and when river silt load is excessive. Diversions above station for irrigation of about 760,000 acres; this includes Socorro main canal north which bypasses station and irrigates about 8,000 acres. Records of suspended sediment loads and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.9	.60	.50	.40	.88	3.7	2.0	1.1	7.4	.82	12	3.6
2	2.4	1.0	.50	.60	.82	3.5	2.0	1.1	6.5	.62	5.8	5.8
3	2.2	2.0	.50	3.7	.82	3.4	1.9	1.1	6.8	.57	2.8	11
4	1.9	2.0	.50	14	.76	4.3	1.8	1.1	552	.82	42	2.4
5	1.9	.70	.70	3.4	.70	6.5	1.7	1.1	9.2	.57	180	3.6
6	2.2	.80	.80	2.3	.76	4.1	1.6	1.1	137	.54	24	7.6
7	2.8	1.8	.70	1.3	.76	4.6	1.3	1.1	26	.50	134	48
8	2.4	1.9	.50	1.1	.76	3.9	1.2	1.0	9.7	1.9	31	410
9	2.4	1.6	27	1.7	.76	5.8	1.1	1.0	13	3.4	24	1,050
10	2.2	1.4	2.5	.82	.82	2.8	1.1	.95	24	13	3,860	680
11	1.3	1.4	2.2	.82	.76	5.2	1.1	1.0	35	.29	7,020	310
12	1.1	1.4	1.1	.46	.76	3.9	1.3	1.1	28	.18	7,740	100
13	1.1	.70	.80	.54	.76	7.1	1.6	1.2	24	1.7	8,220	66
14	1.1	1.0	.70	.50	.88	10	1.6	1.4	20	4.9	7,020	42
15	1.0	.90	.60	.50	.88	6.8	1.8	4.3	20	5.8	6,140	75
16	1.0	1.4	.60	.54	.82	6.5	2.8	5.8	17	3.9	3,410	171
17	1.0	1.0	.60	.46	.82	5.8	2.6	5.8	17	74	2,430	66
18	.90	1.1	.70	.54	.76	5.8	2.4	4.3	22	39	500	36
19	.90	6.8	.60	.88	.76	4.3	2.3	4.9	20	2.8	100	62
20	1.0	3.8	.50	.76	.63	3.5	1.8	6.5	202	1.4	50	50
21	1.1	1.0	.60	.63	.76	3.4	1.8	4.6	12	.88	11	9.4
22	1.9	2.2	.80	.54	.70	3.5	1.7	4.9	192	.88	11	4.2
23	1.2	13	.80	.76	.70	4.6	1.7	5.8	5.8	.82	11	2.1
24	1.3	24	1.2	.82	.70	4.9	1.6	6.2	5.5	.76	10	3.9
25	1.4	.80	.80	.88	.63	5.5	1.6	6.8	4.9	.70	9.3	13
26	1.5	.70	.50	.82	.76	5.5	1.4	6.8	4.9	7.1	12	135
27	1.7	.30	.20	.82	2.2	7.4	1.4	7.4	12	15	11	332
28	1.8	.30	.30	.76	6.2	6.2	1.3	7.1	3.7	22	64	7.8
29	1.8	.40	.60	.76	------	6.5	1.2	8.3	4.3	6.8	6.5	16
30	1.8	.50	.60	.76	------	3.2	1.1	5.8	6.2	7.4	12	16
31	1.4	------	.40	.88	------	3.9	------	6.5	------	47	21	------
TOTAL	50.60	76.50	49.40	43.75	28.32	156.1	49.8	117.15	1,447.9	266.06	47,124.4	3,739.4
MEAN	1.63	2.55	1.59	1.41	1.01	4.87	1.66	3.78	48.3	8.58	1,520	125
MAX	2.9	24	27	14	6.2	10	2.8	8.3	552	74	8,220	1,050
MIN	.90	.30	.20	.40	.63	2.8	1.1	.95	3.7	.18	2.8	2.1
AC-FT	100	152	98	87	56	300	99	232	2,870	528	93,470	7,420
(†)	3,760	49,780	47,110	35,970	38,830	25,180	7,860	12,160	42,890	15,240	150,600	46,800

CAL YR 1966: TOTAL 7,544.80 MEAN 20.7 MAX 763 MIN 0 AC-FT 14,960 (†)Mean 816.9 Ac-ft 591,600
WAT YR 1967: TOTAL 53,149.38 MEAN 146 MAX 8,220 MIN .18 AC-FT 105,400 (†)Mean 657.7 Ac-ft 476,200

† Combined flow, in acre-ft and mean, in cfs, of floodway, conveyance channel, and Socorro main canal north.

8-3560. Socorro main canal south near San Antonio, N. Mex.

Location.--Lat 33°53'30", long 106°52'00", in NW¼ sec.8, T.5 S., R.1 E., on right bank 1½ miles upstream from Bosque del Apache Grant and 1¾ miles south of San Antonio.

Records available.--April 1937 to July 1938 (published as "at end near San Antonio"), March 1948 to September 1967.

Gage.--Digital water-stage recorder. Artificial control since Mar. 27, 1954. Datum of gage is 4,526.41 ft above mean sea level, datum of 1929. April 1937 to July 1938 at two different sites about 1½ miles downstream at different datums. March 1948 to November 1951 at site 30 ft upstream at datum 7.29 ft higher. Prior to Feb. 18, 1963, graphic water-stage recorder.

Extremes.--1937-38, 1948-67: Maximum daily discharge, 51 cfs Sept. 20, 1965; no flow for many days each year.

Remarks.--Records good. Diversions made at San Acacia into Socorro main canal north are the main source of water but may be supplemented by diversions from the conveyance channel at 3 points and from San Antonio Riverside drain, 2 miles above gage. Some diversions occur between gage and north boundary of U.S. Fish and Wildlife Refuge (Bosque del Apache Grant). This is 1 of 3 stations gaging flow into refuge.

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	21	0.2	7.49	460
November	11	0	.4	22
December	0	0	0	0
Calendar year 1966	48	0	14.5	10,500
January	0	0	0	0
February	0	0	0	0
March	35	0	7.48	460
April	35	0	11.6	688
May	41	0	9.79	602
June	36	4.4	17.6	1,050
July	50	0.06	17.5	1,080
August	41	0.02	19.6	1,210
September	46	0.31	12.7	754
Water year 1966-67	50	0	8.73	6,320

8-3565. San Antonio Riverside drain near San Antonio, N. Mex.

Location.--Lat 33°53'00", long 106°51'05", in SW¼SW¼ sec.9, T.5 S., R.1 E., on left bank 1 mile east of old U.S. Highway 85, and 1.2 miles upstream from boundary of Bosque del Apache Grant (wildlife refuge), and 2 miles southeast of San Antonio.

Records available.--March 1948 to September 1967. May 1936 to February 1938, at site 50 ft downstream from Elmendorf interior drain; records not equivalent.

Gage.--Digital water-stage recorder. Datum of gage is 4,524.33 ft above mean sea level (levels by Bureau of Reclamation). Mar. 15, 1948, to Mar. 31, 1949, site 1.2 miles downstream at datum 1.14 ft lower. Prior to Oct. 24, 1966, graphic water-stage recorder.

Extremes.--1948-67: Maximum daily discharge, 161 cfs May 31, 1957; no flow at times since 1959.

Remarks.--Records good. Diversions from drain above station, canal wasteways and interior drains entering channel above station. Flow represents 1 of 3 channels entering north boundary of Bosque del Apache Grant. Reduction in flow occurred after conveyance channel was completed in about 1957. Average pickup per mile between station and Grant boundary is about 5 percent (as determined from comparative discharge measurements).

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	5.0	1.4	2.21	136
November	9.3	1.7	5.96	355
December	10	7.0	8.01	492
Calendar year 1966	48	0	15.5	11,220
January	7.7	4.7	6.58	405
February	9.3	7.4	8.25	458
March	44	5.9	18.3	1,120
April	24	0.50	7.30	434
May	60	2.3	20.6	1,270
June	58	13	32.5	1,940
July	77	1.2	12.0	740
August	23	5.3	12.7	780
September	45	8.8	26.6	1,580
Water year 1966-67	60	0.50	13.4	9,710

8-3570. Elmendorf interior drain near San Antonio, N. Mex.

Location.--Lat 33°51'50", long 106°51'25", in NE¼ sec.20, T.5 S., R.1 E. (projected), in Bosque del Apache Grant (wildlife refuge), on right bank 2,000 ft downstream from north boundary of refuge, 1.0 mile east of railroad, and 3.7 miles south of junction of U.S. Highways 85 and 380.

Records available.--July 1936 to January 1938 (Published as "at end near San Antonio"), March 1948 to September 1967.

Gage.--Digital water-stage recorder and metal control. Datum of gage is 4,518.9 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). July 1936 to January 1938, staff gage at site 0.5 mile upstream in former channel at datum about 0.34 ft higher. Mar. 11, 1948, to Nov. 10, 1949, at site about 2,500 ft upstream in former channel at different datum. Nov. 11, 1949, to Feb. 7, 1956, at site 2,000 ft upstream in present channel at datum about 0.26 ft lower. Prior to Feb. 21, 1963, graphic water-stage recorder.

Extremes.--1948-67. Maximum daily discharge, 59 cfs Aug. 21, 1965; no flow at times.

Remarks.--Records good except those for February, which are poor. Flow past station represents 1 of 3 channels entering north boundary of Bosque del Apache Grant.

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	26	1.2	9.65	593
November	7.7	0.50	0.85	51
December	0.5	0.10	0.38	24
Calendar year 1966	54	0.1	16.2	11,730
January	0.5	0.10	0.41	25
February	0.4	0.40	0.40	22
March	35	0.82	18.2	1,120
April	34	0.32	11.2	664
May	35	1.8	13.4	822
June	50	15	29.4	1,750
July	51	0.07	16.9	1,040
August	42	1.4	14.7	904
September	29	8.9	17.2	1,020
Water year 1966-67	51	0.10	11.1	8,040

8-3575. San Antonio Riverside drain near San Marcial, N. Mex.

Location.--Lat 33°44'45", long 106°55'15", in Bosque del Apache Grant (wildlife refuge), on left bank 1.0 mile upstream from outlet to Rio Grande conveyance channel, 5 miles northeast of San Marcial, and 12 miles south of San Antonio.

Records available.--March 1948 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 4,487.12 ft above mean sea level, datum of 1929. Mar. 19, 1948, to July 28, 1960, at datum 2.00 ft higher. July 28, 1960, to may 14, 1962, at site 0.4 mile downstream at datum 1.42 ft lower. May 14, 1962 to Dec. 1, 1966 at present site at datum 2.00 ft higher. Prior to Oct. 24, 1966, graphic water-stage recorder.

Extremes.--1948-67: Maximum daily discharge, 226 cfs May 22, 1957; no flow at times.

Remarks.--Records good. Flow represents surface outflow from wildlife refuge. Diversion for irrigation of a few hundred acres above station.

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	37	6.8	18.4	1,130
November	22	5.7	7.93	472
December	9.9	7.7	9.05	556
Calendar year 1966	123	5.7	44.0	31,870
January	10	7.2	8.81	542
February	12	7.2	9.48	526
March	49	11	29.8	1,830
April	41	7.9	24.1	1,430
May	65	2.9	23.5	1,440
June	119	38	73.5	4,380
July	91	7.3	45.5	2,800
August	90	11	50.5	3,100
September	90	2.8	41.3	2,460
Water year 1966-67	119	2.8	28.6	20,670

8-3583. Rio Grande conveyance channel at San Marcial, N. Mex.

Location.--Lat 33°41'20", long 106°59'35", in Pedro Armendaris Grant No. 34, on right bank 0.4 mile northwest of Atchison, Topeka and Santa Fe Railway Co. bridge over floodway channel, 1.0 mile southwest of former site of San Marcial, Socorro County, 3.5 miles downstream from railroad bridge near Tiffany siding and 51 miles downstream from heading at San Acacia.

Records available.--April 1950 to September 1967. April 1950 to September 1960, included in composite records for "8-3585. Rio Grande at San Marcial." October 1960 to September 1964, monthly discharge published in WSP 1923 vol. 2. Daily records since 1950 available in district files.

Gage.--Digital water-stage recorder. Datum of gage is 4,454.00 ft above mean sea level (levels by Bureau of Reclamation). Prior to Apr. 29, 1958, at datum 4.19 ft higher. Apr. 14, 1950, to Feb. 28, 1954, bypass flow (included in composite) was measured in Tiffany channel at a site 4 miles upstream; prior to 1950 all flow through floodway. Prior to Oct. 13, 1966, graphic water-stage recorder.

Average discharge.--13 years, 442 cfs (320,000 acre-ft per year).

Extremes.--1954-67: Maximum daily discharge, 2,200 cfs May 14, 1966; no flow at times.

Remarks.--Records good. Original design and plan was for conveyance channel to carry all flows up to about 2,000 cfs. Conveyance channel is 1 of 2 channels (see station 8-3584) carrying flow in valley cross-section. For combined monthly flow in acre-ft of this channel and floodway see tabulation below daily table for station 8-3584. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	117	62	710	534	684	706	260	29	143	140	518	1,050
2	80	72	686	364	705	604	173	27	388	118	323	696
3	66	54	658	329	705	617	143	28	492	102	147	549
4	65	79	670	308	718	565	107	32	1,090	64	133	686
5	54	83	667	371	718	540	92	35	1,170	46	593	499
6	37	90	680	382	686	587	96	34	968	40	1,190	578
7	28	121	686	470	646	602	78	32	1,240	35	1,210	712
8	42	400	715	500	660	673	69	36	891	31	777	1,420
9	42	500	926	500	700	672	65	35	736	41	603	1,810
10	29	710	1,250	450	718	533	65	29	645	87	718	1,750
11	33	874	1,140	399	671	395	62	23	592	33	391	1,730
12	30	966	1,150	370	631	332	53	25	637	22	710	1,080
13	21	1,000	1,030	464	652	325	47	22	565	40	679	660
14	22	1,050	859	554	649	337	73	20	351	36	487	538
15	24	1,150	660	616	667	435	66	23	191	114	427	396
16	28	1,230	655	660	651	295	85	163	157	72	974	428
17	27	1,230	660	663	680	350	93	142	125	204	1,180	424
18	28	1,240	695	647	704	278	81	127	149	156	1,330	360
19	26	1,300	685	682	660	270	66	76	150	1,050	1,600	324
20	26	1,350	712	671	680	187	68	51	690	480	1,270	308
21	26	1,310	708	643	680	147	65	87	951	222	1,350	288
22	41	1,240	685	614	708	128	65	105	740	123	1,150	220
23	37	1,220	712	637	720	151	62	93	441	106	893	164
24	40	1,300	705	711	712	165	50	103	199	70	726	146
25	46	923	713	742	695	136	45	106	259	21	555	160
26	47	742	657	775	690	100	41	150	275	24	494	223
27	40	770	592	764	712	127	42	144	344	339	399	1,430
28	29	748	579	718	733	181	33	148	264	679	516	800
29	29	777	572	667		111	30	144	202	551	1,130	495
30	26	745	624	642	-----	340	26	118	162	519	632	255
31	23	-----	592	663	-----	317	-----	113	-----	778	708	-----
Total	1,209	23,336	23,033	17,510	19,235	11,206	2,301	2,300	15,207	6,343	23,813	20,179
Mean	39.0	778	743	565	687	361	76.7	74.2	507	205	768	673
Max	117	1,350	1,250	764	733	706	260	163	1,240	1,050	1,600	1,810
Min	21	54	572	308	631	100	26	20	125	21	133	146
Ac-ft	2,400	46,290	45,690	34,730	38,150	22,230	4,560	4,560	30,160	12,580	47,230	40,020

Cal yr 1966 : Total 285,113 Mean 781 Max 2,200 Min 21 Ac-ft 565,500
Wtr yr 1967 : Total 165,672 Mean 454 Max 1,810 Min 20 Ac-ft 328,600

8-3584. Rio Grande floodway at San Marcial, N. Mex.

Location.--Lat 33°40'50", long 106°59'15", in Pedro Armendaris Grant No. 33 on pier of the Atchison, Topeka, and Santa Fe Railway Co. bridge, 1.1 miles downstream from former site of San Marcial, Socorro County, and 18.5 miles southwest of San Antonio.

Drainage area.--27,700 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo).

Records available.--January 1895 to September 1967. Published as "Rio Grande at San Marcial" prior to October 1964 with flow in the conveyance channel included.

Gage.--Water-stage recorder. Datum of gage is 4,455.19 ft above mean sea level, datum of 1929. Prior to June 25, 1943, floodway had water-stage recorder, inverted rod, inclined staff, and wire-weight gages at several sites within 2 miles of present site at various datums. Prior to 1950 all flow through floodway.

Average discharge.--63 years (1895-58), 1,363 cfs (986,800 acre-ft per year), includes flow of conveyance channel.
9 years (1958-67), 181 cfs (131,000 acre-ft per year), flow in floodway only.
9 years (1958-67), 706 cfs (511,100 acre-ft per year), includes flow of floodway and conveyance channel.

Extremes.--Maximum discharge during year, 6,160 cfs Aug. 15 (gage height, 16.40 ft); no flow for most of time.
1895-1967: Maximum discharge, about 50,000 cfs Oct. 11, 1904; no flow at times.

Remarks.--Records fair. Floodway is 1 of 2 channels (see station 8-3583) carrying flow in valley cross-section. For combined monthly flow in acre-ft see tabulation below. Normal plan is for floodway to carry flow when capacity of conveyance channel (about 2,000 cfs) is exceeded. Diversions for irrigation of about 775,000 acres above station (includes about 13,800 acre-ft diverted from conveyance channel, as based on weekly measurements, data furnished by Bureau of Reclamation). Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	0	4.3	72
2									0	0	67	44
3									0	0	6.0	18
4									0	0	3.5	32
5									141	0	8.5	50
6									2.8	0	93	23
7									21	0	33	25
8									18	0	124	166
9									1.7	0	136	461
10									0	0	722	1,710
11									0	1.6	480	555
12									0	1.6	1,730	125
13									0	3.6	2,600	15
14									0	1.6	4,140	0
15									0	.55	5,510	0
16									0	0	5,390	0
17									0	0	4,400	60
18									4.6	19	1,750	18
19									1.2	1.9	446	5.0
20									1.5	27	181	0
21									28	2.0	30	0
22									8.2	0	54	0
23									47	0	10	0
24									1.0	0	0	0
25									0	0	0	0
26									0	0	0	0
27									0	0	0	177
28									0	0	0	163
29									0	5.7	203	6.1
30					-----				22	.99	50	0
31		-----			-----		-----		-----	0	37	-----
Total	0	0	0	0	0	0	0	0	298	65.54	27,678.6	3,725.1
Mean	0	0	0	0	0	0	0	0	9.93	2.11	893	124
Max	0	0	0	0	0	0	0	0	141	27	5,510	1,710
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	591	130	54,900	7,390
(†)	2,400	46,290	45,690	34,730	38,150	22,230	4,560	4,560	30,741	12,710	102,130	47,410

Cal yr 1966: Total 1,669 Mean 4.57 Max 330 Min 0 Ac-ft 3,310 (†) Mean 786 Ac-ft 568,800
Wtr yr 1967: Total 31,767.2 Mean 87.0 Max 5,510 Min 0 Ac-ft 63,010 (†) Mean 541 Ac-ft 391,600

(†) Combined flow, in acre-ft and mean, in cfs, of floodway and conveyance channel.

8-3600. Alamosa Creek near Monticello, N. Mex.

Location.--Lat 33°34'10", long 107°36'20", in SW¼ sec.31, T.8 S., R.7 W., on left bank at Alamosa damsite and below Old Fort Ojo Caliente, just downstream from Wildhorse Creek, 15 miles northwest of Monticello.

Drainage area.--403 sq mi.

Records available.--October to December 1929, May 1931 to April 1942, July 1956 to June 1958 (annual maximum only), July 1958 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Prior to 1966 published as Alamosa River.

Gage.--Water-stage recorder and crest-stage gage. Datum of gage is 6,142.04 ft above mean sea level, datum of 1929. Prior to Aug. 17, 1930, at different datum. May 2, 1931, to Dec. 14, 1939, water-stage recorder at datum 0.20 ft lower and Dec. 15, 1939, to Apr. 17, 1942, at present datum. July 16, 1956, to July 27, 1958, crest-stage gage only at present site and datum.

Average discharge.--19 years (1931-41, 1958-67), 8.52 cfs (6,170 acre-ft per year).

Extremes.--Maximum discharge during year, 3,130 cfs Aug. 10 (gage height, 7.20 ft); minimum, 5.4 cfs Nov. 24, 25.
1931-42, 1956-67: Maximum discharge, 10,800 cfs Aug. 13, 1964 (gage height, 14.04 ft), from rating curve extended above 390 cfs on basis of slope-area measurements at gage heights 6.66 and 12.0 ft; minimum determined, 5.2 cfs Jan. 9, 1932, Sept. 3, 1938, July 2, 3, 1965.
Maximum flood known probably occurred in 1895, from information by local residents. A flood in August 1943 was highest since 1917.

Remarks.--Records good except those for July to September, which are poor. No diversion above station. Entire normal flow diverted below station for irrigation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	6.0	5.8	6.2	6.2	6.4	7.3	6.8	6.2	9.0	14	6.4
2	7.3	6.2	5.8	6.2	6.2	6.4	7.3	6.8	6.0	9.4	7.7	79
3	7.3	6.2	6.0	6.2	5.4	6.2	7.3	7.0	5.8	11	13	6.4
4	7.3	6.2	6.0	6.4	6.4	6.2	7.5	6.8	5.8	8.4	81	21
5	7.3	6.2	6.0	6.4	6.4	6.4	7.5	6.6	7.7	7.4	18	20
6	7.0	6.2	6.2	6.2	6.4	6.4	7.8	6.4	8.3	7.4	60	22
7	7.3	6.2	6.4	6.0	6.4	6.4	7.5	6.0	8.6	21	19	20
8	7.3	6.2	6.6	6.0	6.4	6.6	7.5	5.8	8.0	8.0	10	19
9	7.3	6.2	6.6	6.0	6.4	6.6	7.5	6.0	8.0	6.4	95	39
10	7.3	6.2	6.6	6.0	6.4	6.6	7.3	6.0	8.0	16	129	36
11	7.0	6.4	6.6	6.2	6.4	6.6	7.0	6.0	8.3	16	8.0	20
12	7.0	6.4	6.8	6.2	6.4	6.8	7.0	6.2	8.3	11	9.0	12
13	7.3	6.4	7.0	6.2	6.4	6.8	7.0	6.2	8.6	17	8.0	10
14	7.3	6.4	6.8	6.2	6.4	6.8	7.0	6.2	8.8	8.0	7.0	9.0
15	7.3	6.4	6.8	6.4	6.4	6.8	6.8	6.2	9.1	7.1	82	8.0
16	7.3	6.4	6.8	6.4	6.4	6.8	6.8	6.4	9.1	10	10	53
17	7.3	6.4	6.8	6.2	6.4	6.8	6.8	6.4	28	6.7	8.0	10
18	7.3	6.4	6.8	6.2	6.4	7.0	6.8	6.4	8.8	6.0	7.0	9.0
19	7.0	6.4	6.8	6.2	6.4	7.5	6.8	6.4	9.1	6.0	8.0	8.0
20	6.8	6.2	6.8	6.2	6.4	7.5	6.8	6.4	11	6.0	8.0	7.0
21	6.4	6.0	6.6	6.2	6.6	7.5	7.0	6.4	9.3	6.0	8.0	7.0
22	6.2	5.8	6.8	6.2	5.6	7.5	7.0	6.2	9.3	5.0	8.0	6.0
23	6.0	5.6	6.6	6.2	6.6	7.8	7.0	6.4	9.3	12	7.0	6.0
24	6.0	5.4	6.6	6.2	6.6	7.8	6.8	6.4	9.3	20	7.0	10
25	6.0	5.4	6.6	6.2	6.6	7.8	6.8	6.4	9.3	10	7.0	67
26	6.0	5.6	6.4	6.2	5.6	7.8	6.8	6.4	9.1	10	7.0	12
27	6.0	5.6	6.4	6.2	5.6	7.8	6.8	6.6	8.8	12	8.0	9.0
28	5.8	5.6	6.4	6.2	6.6	7.5	6.6	6.6	8.8	9.0	10	8.0
29	5.8	5.8	6.4	6.2		7.3	6.8	6.6	16	8.5	8.0	8.0
30	6.0	5.8	6.4	6.2	- - - - -	7.0	6.8	6.6	9.3	9.0	6.7	7.7
31	6.0	- - - - -	6.4	6.2	- - - - -	7.3	- - - - -	6.4	- - - - -	9.0	6.4	- - - - -
Total	210.5	182.2	201.6	192.2	180.4	216.7	211.7	198.0	280.0	309.3	684.8	555.5
Mean	6.79	6.07	6.50	6.20	6.44	6.99	7.06	6.39	9.33	9.98	22.1	18.5
Max	7.3	6.4	7.0	6.4	6.6	7.8	7.8	7.0	28	21	129	79
Min	5.8	5.4	5.8	6.0	6.2	6.6	6.6	5.8	5.8	6.0	6.4	6.0
Ac-ft	418	361	400	381	358	430	420	393	555	613	1,360	1,100

Cal yr 1966: Total 2,995.6 Mean 8.21 Max 202 Min 5.4 Ac-ft 5,940
Wtr yr 1967: Total 3,422.9 Mean 9.38 Max 129 Min 5.4 Ac-ft 6,790

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-4	1400	5.90	1,860	9-2	1620	6.54	2,480
8-9	2200	5.07	1,160	9-25	1500	4.95	1,160
8-10	2100	7.20	3,130				
8-15	1800	4.85	1,010				

8-3605. Elephant Butte Reservoir at Elephant Butte, N. Mex.

Location.--Lat 33°09'15", long 107°11'30", in NW¼ sec.30, T.13 S., R.3 W. (survey by Bureau of Reclamation), at dam on Rio Grande, 1 mile west of Elephant Butte and 4 miles northeast of Truth or Consequences (Hot Springs), N. Mex.

Drainage area.--29,445 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--March 1915 to September 1967. Prior to January 1940 published in WSP 1312.

Gage.--Water-stage recorder. Datum of gage is 43.3 ft above mean sea level, datum of 1929. Oct. 16, 1939, to May 2, 1940, and prior to September 1930, staff gages.

Extremes.--Maximum daily contents during year, 366,800 acre-ft Jan. 26 (gage height, 4,321.84 ft); minimum daily, 122,900 acre-ft Aug. 7 (gage height, 4,293.03 ft).
1915-66: Maximum daily contents, 2,302,800 acre-ft June 16-18, 1942 (gage height, 4,409.19 ft); minimum daily after initial filling, 9,900 acre-ft Aug. 6, 1954 (gage height, 4,258.03 ft).

Remarks.--Reservoir is formed by concrete dam. Storage began Jan. 6, 1915. Dam completed May 13, 1916. Capacity, 2,195,000 acre-ft (survey of 1961) between gage heights 4,231.5 (sill of outlet gate) and 4,407.0 ft (crest of spillway). Capacity by original survey was 2,638,900 acre-ft. No adjustment made for decrease in capacity due to sedimentation between effective dates of capacity tables. No dead storage, surveys of 1957 and 1961. No storage allocated to flood control. Figures given herein represent usable contents. Water is used for power development and irrigation on Rio Grande Project of Bureau of Reclamation. Lake is major recreational area. Contents given herein are computed from mean daily gage heights.

Cooperation.--Records furnished by Bureau of Reclamation.

Capacity table, water year 1966-67 (gage heights, in feet, and contents, in thousands of acre-feet)

4,293	122.7	4,310	249.1
4,295	135.1	4,315	295.5
4,300	169.1	4,320	346.6
4,305	207.2	4,325	402.9

Contents, in thousands of acre-feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262.8	262.0	304.2	344.5	363.2	346.5	266.1	213.9	179.8	179.0	132.2	159.2
2	262.9	261.9	305.4	345.2	362.9	344.5	264.5	212.5	179.2	178.2	130.3	158.8
3	263.0	261.9	306.8	345.8	362.6	342.5	262.7	211.6	178.5	177.1	128.4	157.8
4	263.1	262.0	308.1	346.5	361.9	340.4	261.0	209.7	178.0	176.1	126.3	156.6
5	263.1	262.0	309.3	347.0	361.3	338.2	259.2	209.5	178.1	175.0	124.4	158.8
6	263.1	262.0	310.2	347.8	360.7	336.0	257.4	208.7	178.0	173.9	123.0	158.3
7	263.1	261.9	310.8	348.5	359.9	333.5	255.4	207.3	179.7	173.2	122.9	156.9
8	263.1	261.6	312.7	349.2	359.5	330.5	253.6	206.0	180.7	172.0	123.0	156.6
9	263.1	262.5	313.9	349.7	358.6	329.6	252.6	204.8	181.6	171.2	123.0	158.5
10	263.1	263.4	315.3	350.8	358.2	327.6	249.7	204.0	182.3	169.9	124.5	162.7
11	263.1	264.5	317.5	351.8	357.6	325.4	247.4	202.8	182.7	168.5	127.2	169.2
12	263.1	265.7	319.7	352.7	357.0	322.9	245.4	201.8	182.8	167.7	128.7	172.0
13	263.1	267.2	321.8	353.6	356.0	320.3	243.1	200.8	182.6	165.9	130.1	173.7
14	263.1	269.2	323.7	354.4	355.2	317.6	240.9	199.4	182.5	164.3	132.4	175.1
15	263.1	271.1	325.4	355.6	354.9	314.9	239.2	198.2	182.0	162.5	135.7	176.3
16	263.1	273.6	326.6	356.5	354.3	312.3	237.4	196.9	181.6	160.6	140.3	177.2
17	262.9	276.0	328.0	357.4	353.8	309.5	235.8	195.9	180.8	158.4	150.1	177.0
18	292.6	278.2	329.4	358.5	353.1	306.8	233.7	195.2	180.5	156.7	159.7	178.8
19	262.6	280.7	330.8	359.4	352.7	303.9	231.8	194.3	180.2	155.1	165.9	179.5
20	262.6	283.1	332.2	360.6	352.2	300.9	229.9	192.9	181.6	154.1	168.4	180.1
21	262.6	285.6	333.5	361.9	351.6	298.0	227.9	190.8	182.1	152.2	169.2	180.4
22	262.6	287.8	334.8	363.1	351.0	295.0	226.0	188.9	182.6	150.6	169.2	180.8
23	262.5	290.4	336.1	364.1	250.3	292.1	224.0	188.0	183.1	148.5	169.2	181.0
24	262.5	292.7	337.1	365.1	349.8	289.2	222.1	187.1	183.0	146.5	168.3	181.6
25	262.3	295.3	338.4	366.3	349.4	285.3	221.3	186.2	182.5	144.5	167.3	183.5
26	262.4	297.4	339.4	366.8	348.7	283.4	220.4	185.6	181.8	142.2	166.2	183.0
27	262.3	298.9	340.7	366.8	348.5	280.5	219.1	184.6	181.3	140.2	164.8	183.8
28	262.4	300.1	341.7	365.5	347.8	277.5	218.1	183.7	180.8	137.4	163.1	185.3
29	262.4	301.4	342.4	364.9		273.7	216.8	182.8	180.4	137.1	161.9	187.5
30	262.3	302.8	343.2	364.1	- - - - -	271.6	215.2	181.6	179.8	135.5	161.7	188.5
31	262.2	- - - - -	344.0	363.4	- - - - -	268.2	- - - - -	180.7	- - - - -	134.1	160.2	- - - - -
(†)	4,311.4	4,315.8	4,319.8	4,321.5	4,320.1	4,312.1	4,306.0	4,301.6	4,301.4	4,294.8	4,298.8	4,302.6
(‡)	-0.1	+40.6	+41.2	+19.4	-15.6	-79.6	-53.0	-34.5	-0.9	-45.7	+26.1	+28.3

Calendar year 1966: (‡) -173.2
Water year 1966-67: (‡) - 73.8

† Gage height, in feet, at end of month.
‡ Change in contents, in thousands of acre-feet.

8-3610. Rio Grande below Elephant Butte Dam, N. Mex.

Location.--Lat 33°08'45", long 107°12'20", in SW¼ sec.25, T.13 S., R.4W. (projected), in Pedro Armendaris Grant, on left bank 1.0 mile downstream from dam and 1½ miles upstream from Cuchillo Negro River.

Drainage area.--29,450 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--January 1915 to September 1967. Monthly or annual discharge only for some periods, published in WSP 1732. Figures of daily discharge, published in WSP 458 for October to December 1916, have been found to be unreliable and should not be used.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 4,242.09 ft above mean sea level, datum of 1929. Prior to Jan. 1, 1931, at one of three sites 0.1 to 1.0 mile upstream at different datums. Jan. 1, 1931, to Jan. 16, 1939, at site 400 ft downstream from dam at datum 12.80 ft higher than present datum. Jan. 17, 1939, to Dec. 31, 1940, at site 0.7 mile upstream at datums 0.06 ft lower and 1.36 ft lower Jan. 17 to Mar. 29, 1939, and Mar. 30, 1939, to Dec. 31, 1940, respectively. Jan. 1, 1941, to Apr. 23, 1942, at site 128 ft upstream from preceding gage at datum 0.91 ft lower than present gage. Prior to Feb. 2, 1963, graphic water-stage recorder.

Average discharge.--52 years, 1,017 cfs (736,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,040 cfs May 2 (gage height, 6.16 ft); minimum, 1.1 cfs Sept. 20.
1915-67: Maximum daily discharge, 8,220 cfs May 22, 1942; no flow at times prior to 1929.

Remarks.--Records good except those for April-July, which are fair. Flow regulated by Elephant Butte Reservoir (see station 8-3605). Diversion for irrigation of about 800,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	5.1	5.5	6.5	848	1,550	1,010	559	503	511	1,280	1,430
2	2.5	5.1	5.1	6.2	848	1,570	990	563	509	509	1,270	1,430
3	2.9	4.6	5.5	6.0	856	1,570	986	559	505	507	1,150	1,430
4	2.8	4.6	5.5	6.0	848	1,570	990	562	508	505	1,280	1,490
5	2.8	4.6	5.5	6.0	848	1,580	985	561	513	503	1,290	1,480
6	2.6	4.6	5.5	5.7	848	1,570	982	556	515	506	1,290	1,460
7	3.4	4.6	5.6	5.1	848	1,570	988	552	509	506	1,290	1,400
8	2.9	5.3	5.5	5.1	848	1,570	986	556	512	504	1,290	872
9	2.6	4.5	4.9	5.1	848	1,570	990	553	518	503	1,300	39
10	2.6	3.8	4.6	5.1	848	1,570	988	549	512	503	1,450	19
11	2.6	3.8	4.6	5.1	848	1,570	992	549	510	594	1,300	19
12	2.6	3.6	4.6	5.1	848	1,570	984	550	513	683	1,520	9.0
13	2.7	3.4	5.1	5.7	848	1,570	983	544	506	1,010	1,620	4.5
14	2.8	3.4	5.1	6.0	856	1,570	982	531	503	1,010	1,430	2.9
15	2.6	3.4	5.1	6.0	848	1,570	984	530	500	1,020	1,400	3.0
16	2.7	3.4	5.1	6.0	848	1,580	989	519	498	1,020	1,430	2.8
17	3.0	3.4	5.1	6.0	840	1,580	995	515	491	1,020	1,430	7.3
18	3.4	3.4	4.9	6.0	840	1,580	1,000	507	482	1,020	1,220	1.7
19	3.0	3.2	4.2	6.0	848	1,580	1,010	515	566	1,020	1,410	1.4
20	3.0	3.0	7.1	5.5	856	1,580	1,020	1,090	530	1,020	1,420	1.1
21	3.0	3.0	8.5	5.5	848	1,580	1,020	1,240	512	1,020	1,420	1.8
22	3.0	8.1	8.0	5.5	848	1,570	1,020	509	510	1,030	1,420	2.8
23	3.0	8.6	7.5	6.0	848	1,570	1,020	514	510	1,020	1,410	3.0
24	3.4	8.3	7.5	7.1	919	1,590	523	513	507	1,020	1,420	4.3
25	8.0	7.7	7.0	7.5	900	1,580	504	510	486	1,020	1,420	91
26	15	7.7	7.6	832	903	1,580	530	508	430	1,030	1,430	101
27	12	7.5	6.0	864	900	1,590	555	505	375	1,010	1,430	14
28	9.5	6.6	5.5	864	903	1,590	559	428	429	1,030	1,430	13
29	7.5	5.5	5.5	872	—	1,590	731	468	510	1,020	1,430	14
30	7.0	5.5	5.5	872	-----	1,580	808	470	510	1,020	1,430	10
31	6.3	-----	5.5	848	-----	1,570	-----	500	-----	1,080	1,430	-----
Total	133.4	149.3	178.2	5,297.8	24,037	48,830	27,104	17,585	14,982	25,774	42,940	11,357.6
Mean	4.30	4.98	5.75	171	858	1,575	903	567	499	831	1,385	379
Max	15	8.6	8.5	872	919	1,590	1,020	1,240	566	1,080	1,820	1,490
Min	2.2	3.0	4.2	5.1	840	1,550	504	428	375	503	1,150	1.1
Ac-ft	265	296	353	10,510	47,680	96,850	53,760	34,880	29,720	51,120	85,170	22,530

Cal yr 1966 : Total 333,051.9 Mean 912 Max 1,920 Min 1.4 Ac-ft 660,600
Wtr yr 1967 : Total 218,368.3 Mean 598 Max 1,820 Min 1.1 Ac-ft 433,100

8-3620. Caballo Reservoir near Arrey, N. Mex.

Location.--Lat 32°53'45", Long 107°17'30", in SE¼SW¼ sec.19, T.16 S., R.4 W., in control tower of Caballo Dam on Rio Grande, 0.5 mile downstream from mouth of Apache Canyon, 0.9 mile upstream from Bojarquez Bridge, 2 miles upstream from Percha diversion dam, 3.5 miles northeast of Arrey, and 5¼ miles south of Caballo, N. Mex.

Drainage area.--30,700 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--February 1938 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 43.3 ft above mean sea level, datum of 1929.

Extremes.--Maximum daily contents during year, 108,480 acre-ft March 4 (gage height, 4,155.03 ft); minimum daily, 22,860 acre-ft Sept. 17 (gage height, 4,133.72 ft).
1938-67: Maximum daily contents, 347,000 acre-ft Mar. 4, 1942 (gage height, 4,182.06 ft); minimum daily, 118 acre-ft Oct. 14, 1938 (gage height, 4,108.1 ft).

Remarks.--Reservoir is formed by earth-fill dam, completed Sept. 19, 1938. Storage began Feb. 8, 1938. Capacity (1958 survey), 344,000 acre-ft between gage heights 4,104 (bottom of tunnel entrance of gates) and 4,182 ft (gage height above which spillway gates operate automatically). No dead storage. Storage held for flood control, 100,000 acre-ft. Figures given herein represent usable contents. Water released from Elephant Butte Reservoir for power development is stored in Caballo Reservoir and released for irrigation on Rio Grande project of Bureau of Reclamation. Contents given herein are computed from mean daily gage heights.

Cooperation.--Records furnished by Bureau of Reclamation.

Capacity table, water year 1966-67 (gage height, in feet, and contents, in thousands of acre-feet)

4,132	18.88	4,140	40.31	4,148	71.28
4,134	23.52	4,142	47.03	4,150	80.76
1,136	28.61	4,144	54.42	4,152	91.03
4,138	34.19	4,146	62.50	4,155	108.2

Contents, in thousands of acre-feet, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48.19	50.75	52.00	53.17	64.66	106.85	83.93	90.50	75.28	56.16	31.99	40.25
2	48.22	50.79	52.07	53.24	66.25	107.69	83.88	89.72	75.05	54.93	32.05	40.38
3	48.22	50.86	52.11	53.17	67.97	108.42	83.88	89.46	74.96	57.89	31.96	40.44
4	48.37	50.94	52.15	53.21	69.67	108.48	83.83	88.93	74.91	56.06	32.25	40.57
5	48.62	50.98	52.15	53.24	71.24	107.75	84.03	88.36	74.77	52.22	32.85	40.64
6	48.65	51.02	52.15	53.40	73.10	106.31	84.23	87.99	74.82	51.28	33.82	40.61
7	48.91	50.98	52.22	53.47	74.63	104.75	84.58	87.57	74.91	50.35	34.34	40.61
8	49.95	50.86	52.22	53.43	76.03	103.13	84.83	86.68	74.77	49.38	34.91	40.67
9	50.06	51.09	52.30	53.47	77.77	101.66	85.18	86.15	74.44	48.51	35.15	40.77
10	50.10	51.13	52.30	53.47	79.51	100.45	85.59	85.69	74.21	47.82	38.90	40.77
11	50.10	51.17	52.38	53.51	81.26	99.37	85.79	85.08	74.07	47.10	42.12	40.84
12	50.17	51.20	52.42	53.47	82.77	98.45	86.26	84.63	73.52	46.34	44.62	40.87
13	50.17	51.28	52.42	53.51	84.28	97.48	86.94	84.18	72.68	45.97	48.94	40.94
14	50.24	51.28	52.45	53.62	85.84	102.00	87.73	83.78	72.12	46.03	51.36	41.46
15	50.24	51.32	52.56	53.62	87.52	100.51	88.46	83.07	71.61	46.03	52.87	41.49
16	50.20	51.36	52.53	53.66	89.30	93.33	89.25	82.47	71.10	45.83	54.00	41.43
17	50.24	51.39	52.53	53.74	90.77	91.85	90.24	81.97	69.98	45.45	54.77	41.46
18	50.24	51.47	52.60	53.77	92.23	90.24	91.19	81.42	69.49	45.17	54.97	41.59
19	50.28	51.51	52.64	53.81	93.88	88.56	92.01	80.86	68.46	44.45	55.48	41.66
20	50.31	51.54	52.68	53.85	95.68	87.20	92.67	80.42	69.72	43.49	56.08	41.62
21	50.35	51.54	52.75	53.89	97.53	86.42	93.27	80.91	69.98	42.48	56.87	41.79
22	50.38	51.62	52.87	53.92	99.08	86.00	93.60	81.21	69.18	41.69	55.21	41.92
23	50.46	51.66	52.87	53.85	100.51	85.44	93.93	80.71	68.24	40.94	56.83	41.92
24	50.53	51.70	52.87	53.96	102.18	84.88	94.04	79.84	67.12	40.22	56.20	41.95
25	50.56	51.77	52.87	54.00	103.55	84.38	93.77	78.88	65.77	39.53	55.28	42.02
26	50.60	51.88	52.83	54.23	105.17	83.63	93.22	78.10	64.27	38.34	53.85	42.08
27	50.56	51.85	52.94	55.76	108.21	83.10	92.45	77.48	62.93	37.28	52.45	42.18
28	50.60	51.92	53.10	57.58	106.91	82.52	91.58	76.85	61.18	36.26	51.32	42.25
29	50.64	51.96	53.13	59.36		82.47	90.71	76.32	59.28	34.79	49.88	42.31
30	50.68	52.03	53.02	61.14	- - - - -	82.82	90.82	76.08	57.82	33.26	47.82	42.41
31	50.71	- - - - -	53.10	62.89	- - - - -	83.32	- - - - -	75.56	- - - - -	32.19	45.52	- - - - -
(†)	4,143.0	4,143.4	4,143.6	4,146.1	4,154.8	4,150.5	4,152.0	4,148.9	4,144.9	4,137.3	4,141.6	4,134.9
(‡)	+2.67	+1.32	+1.07	+9.79	+44.02	-23.59	+7.50	-15.26	-17.74	-25.63	+13.33	-19.78

Calendar year 1966: (‡) +35.42
Water year 1966-67: (‡) -22.30

† Gage height, in feet, at end of month.
‡ Change in contents, in thousands of acre-feet.

8-3625. Rio Grande below Caballo Dam, N. Mex.

Location.--Lat 32°53'05", long 107°17'30", in NE¼SW¼ sec.30, T.16 S., R.4 W., on left bank 2,000 ft upstream from Interstate Highway 25, 4,200 ft downstream from Caballo Dam, 1¼ miles downstream from Apache Canyon, 1⅝ miles upstream from Percha diversion dam, 3 miles northeast of Arrey, and 5 miles south of Caballo.

Drainage area.--30,700 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--January 1938 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,140.9 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1938, at datum 7.0 ft higher, Oct. 7-12, 1938, at datum 6.0 ft higher, and Oct. 13, 1938, to Dec. 31, 1945, at datum 5.0 ft higher than present datum.

Average discharge.--29 years, 889 cfs (643,600 acre-ft per year).

Extremes.--Maximum daily discharge during year, 2,430 cfs Mar. 18; minimum daily, 0.9 cfs Feb. 21-26.
1938-67: Maximum daily discharge, 7,650 cfs May 20, 1942; minimum daily, 0.1 cfs Oct. 31 to Nov. 14, 1954, Nov. 7 to Dec. 31, 1955.

Remarks.--Records good. Flow regulated by Caballo Reservoir (capacity, 344,000 acre-ft, 1958 survey) and Elephant Butte Reservoir (capacity, 2,195,000 acre-ft, 1961 survey). Diversions for irrigation of about 800,000 acres above station. Figures of daily discharge do not include Bonita ditch which diverts from Caballo Dam and bypasses station for irrigation below. See monthly table below for record of ditch.

Cooperation.--Records furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.1	1.2	1.2	1.3	1020	1090	753	642	1220	1210	1910
2	1.3	1.1	1.2	1.2	1.3	1050	1030	771	615	1080	1230	1550
3	1.3	1.1	1.2	1.2	1.3	1210	955	743	591	974	1200	1400
4	1.2	1.3	1.2	1.2	1.3	1630	883	742	567	952	1080	1350
5	1.2	1.5	1.2	1.2	1.3	2080	846	745	507	983	1030	1060
6	1.1	1.7	1.2	1.2	1.3	2240	801	731	489	974	1000	1430
7	1.1	1.9	1.2	1.3	1.3	2290	769	743	509	991	1050	1410
8	1.1	2.1	1.2	1.3	1.3	2190	764	736	514	1010	1120	1440
9	1.2	2.3	1.2	1.3	1.3	2120	746	719	557	969	1200	1480
10	1.2	2.5	1.2	1.4	1.3	2060	706	710	680	922	683	1450
11	1.2	2.4	1.2	1.4	1.3	1990	651	708	677	958	800	1400
12	1.2	2.4	1.2	1.4	1.2	2010	602	717	684	1010	690	1660
13	1.3	2.3	1.2	1.4	1.2	2010	549	727	709	1010	322	1980
14	1.3	2.2	1.2	1.4	1.2	2220	506	736	753	997	620	1890
15	1.3	2.2	1.2	1.4	1.2	2310	462	762	806	1140	758	1340
16	1.4	2.1	1.2	1.4	1.2	2320	418	775	885	1220	914	872
17	1.4	2.0	1.2	1.4	1.1	2400	386	792	1020	1190	952	436
18	1.4	2.0	1.2	1.4	1.1	2430	420	791	1030	1300	943	22
19	1.4	1.9	1.2	1.4	1.0	2390	505	790	890	1460	890	3.4
20	1.5	1.8	1.2	1.4	1.0	2210	539	789	471	1510	801	2.4
21	1.5	1.8	1.2	1.4	0.9	1870	631	802	831	1480	844	2.0
22	1.5	1.7	1.2	1.4	0.9	1780	712	822	959	1420	1170	1.8
23	1.4	1.7	1.2	1.4	0.9	1770	688	833	1030	1430	1380	1.6
24	1.3	1.6	1.2	1.4	0.9	1810	686	856	1130	1330	1460	1.2
25	1.2	1.5	1.2	1.4	0.9	1840	729	885	1190	1560	1700	1.2
26	1.1	1.5	1.2	1.4	0.9	1840	795	854	1180	1670	1990	1.2
27	1.1	1.4	1.2	1.4	345	1840	817	770	1300	1600	1770	1.2
28	1.1	1.3	1.2	1.3	1020	1630	788	779	1440	1650	1650	1.2
29	1.1	1.3	1.2	1.3		1400	746	699	1430	1820	2020	1.2
30	1.1	1.2	1.2	1.3	-----	1360	746	697	1290	1720	2320	1.2
31	1.1	-----	1.2	1.3	-----	1210	-----	674	-----	1400	2250	-----
Total	39.0	52.9	37.2	41.5	1394.9	58530	20966	23651	25376	38950	37047	24099.6
Mean	1.26	1.76	1.20	1.34	49.8	1,888	699	763	846	1,256	1,195	803
Max	1.5	2.5	1.2	1.4	1,020	2,430	1,090	885	1,440	1,820	2,320	1,980
Min	1.1	1.1	1.2	1.2	0.9	1,020	386	674	471	922	322	1.2
Ac-ft	77.	105	74	82	2,770	116,100	41,590	46,910	50,330	77,260	73,480	47,800
(†)	0	0	0	0	0	174	128	220	96	190	52	58

Cal yr 1966: Total 307,708 Mean 843 Max 3,410 Min 0.7 Ac-ft 610,300
Wtr yr 1967: Total 230,185 Mean 631 Max 2,430 Min 0.9 Ac-ft 456,600

† Diversion, in acre-feet, by Bonita ditch. Bonita ditch diverts directly from Caballo Dam and this diversion is not included in the river records.

8-3637. Tortugas Arroyo near Las Cruces, N. Mex.

Location.--Lat 32°17'20", long 106°43'45", in SE¼SW¼ sec.22, T.23 S., R.2 E. (projected), in Dona Ana Bend Colony Grant, 30 ft downstream from flood detention dam, 1.2 miles northeast of New Mexico State University and 3.3 miles southeast of Las Cruces Post Office, Dona Ana County.

Drainage area.--20.7 sq mi.

Records available.--October 1962 to September 1967.

Gage.--Water-stage recorder and Parshall flume at downstream end of reservoir outlet pipe. Datum of gage is 4,071.62 above mean sea level (Soil Conservation Service bench mark).

Average discharge.--5 years (1963-1967) 0.24 (174 acre-ft per year).

Extremes.--Maximum discharge during year, about 100 cfs Aug. 6 (gage height, 2.48 ft); no flow most of time.
1963-67: Maximum discharge, that of Aug. 6, 1967; no flow most of time.

Remarks.--Records good except those for Aug. 6, which are poor. Records represent outflow from Tortugas Reservoir, completed in 1962. Records of suspended sediment loads for the water year 1967 are published in part 2 of this report.

Reservoir is designed to retard flood flows and detain silt. Dam is earth-fill, L-shaped, 3,400 ft long at crest and 44 ft high. Original capacity, 1,325 acre-ft at spillway crest. No dead storage, though deposition of silt is expected to reduce storage capacity. Outlet drop tower is 9' -2" x 4' -2" inside and 18'6" high. The tower has 9 rectangular outlet ports, each 8"x17", but 6 are presently closed. Tower is connected to downstream channel by a 30-inch diameter pipe. Records will be published in tabular form, as flow events.

Outflow during water year October 1966 to September 1967

Flow event	Date	Outflow (hours)	Maximum (cfs)	Cfs-days	Runoff (acre-ft)
19	June 6,7	9	10	1.05	2.1
20	June 17,18	9	0.5	0.05	0.1
21	June 19,20	25	25	9.61	19
22	June 29-July 1	31	28	14.3	28
23	July 13,14	22	15	3.58	7.1
24	Aug. 4,5	26	14	4.07	8.1
25	Aug. 5-10	114	100	175	347
26	Aug. 11	11	9.8	1.26	2.5
27	Aug. 15,16	19	14	3.11	6.2
28	Aug. 16,17	29	28	11.5	23
29	Sept. 4,5	24	22	6.46	13
30	Sept. 25	6	3.9	0.24	0.5
Totals		325	-	230.23	456.6

8-3640. Rio Grande at El Paso, Tex.

Location.--Lat 31°48'10", long 106°32'25", on downstream side of first pier from left abutment of Courchesne Bridge at El Paso, 1.7 miles upstream from American Dam, 5.6 miles upstream from Santa Fe Street - Juarez Avenue Bridge between El Paso and Cd. Juarez, Chihuahua, and at mile 1,249.9.

Drainage area.--32,207 sq mi, approximately (includes 2,940 sq mi in closed basin in San Luis Valley, Colo.).

Records available.--1889 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 3,722.30 ft above mean sea level (U.S.C. & G.S. datum).

Average discharge.--1938-1967 (calendar years), 542.9 cfs (393,067 acre-ft per year).

Extremes.--Maximum discharge during year, 5,160 cfs June 20 (gage height, 6.57 ft); minimum, 28.5 cfs Feb. 28. Extreme discharges are those passing the El Paso station.
1889-1915: Maximum discharge, 24,000 cfs June 12, 1905; no flow at times.
1915-1967: Maximum discharge, 13,500 cfs Sept. 3, 1925, subsequent to closing of Elephant Butte Dam; no flow at times.

Remarks.--Mean daily discharges for 1967 were computed by adding the flows in the American Canal and the flows at the river station below the American Dam. Because the mean daily discharges are rounded, the monthly sum for this station may not equal the sum of the monthly sums of the other two stations. Measurements are made at the El Paso station only during high flows. Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by International Boundary and Water Commission, United States and Mexico.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	83.9	79.8	65.5	57.1	32.6	467	343	418	726	987	875
2	139	81.4	82.3	66.1	57.4	74.3	506	393	423	582	825	915
3	135	84.5	77.8	62.2	54.4	429	473	431	371	649	560	899
4	134	84.6	73.4	61.9	49.8	436	522	418	354	542	502	732
5	132	80.9	72.8	65.5	46.8	644	528	369	378	474	580	737
6	131	80.0	74.5	65.2	48.7	1,380	533	358	310	356	682	883
7	133	80.1	74.9	61.9	47.3	1,310	430	383	284	375	685	617
8	131	80.0	73.8	53.5	48.9	1,180	434	377	260	382	515	568
9	126	81.2	73.5	54.1	47.3	1,120	414	409	243	385	612	600
10	118	82.6	71.0	71.2	47.3	919	416	406	208	375	1,240	516
11	120	80.4	72.2	65.6	42.6	989	464	375	207	385	524	529
12	118	80.0	74.8	68.0	38.7	874	441	335	229	370	750	563
13	110	80.0	77.4	71.3	38.7	862	416	302	353	423	618	583
14	108	79.2	80.7	72.9	42.6	979	420	342	306	343	500	576
15	98.9	80.7	76.7	64.8	42.7	789	428	360	299	392	503	602
16	100	81.4	75.6	65.7	41.5	833	435	371	284	389	344	569
17	98.6	80.7	75.3	64.9	42.9	797	418	402	287	362	330	507
18	96.9	78.6	74.9	63.2	41.6	747	380	401	303	508	412	328
19	92.0	77.4	76.2	60.7	40.4	875	364	386	439	513	471	342
20	89.4	76.7	75.1	59.8	39.2	933	384	360	1,870	411	425	264
21	92.7	78.2	76.8	55.9	38	909	370	384	481	430	433	220
22	92.7	76.4	78.1	54.2	38	648	308	405	394	528	465	168
23	89.3	75.9	75.3	54.8	38	576	324	433	295	542	360	154
24	86.1	77.1	68.3	53.9	38	531	420	455	402	583	315	134
25	86.0	77.6	67.9	53.9	38	581	456	425	403	673	409	188
26	85.6	78.7	73.3	53.2	36.7	574	415	442	518	613	472	172
27	87.2	77.7	75.1	53.2	36.6	676	392	433	541	522	626	163
28	88.1	80.5	71.3	52.4	31.1	701	418	415	568	638	789	157
29	83.7	79.5	68.0	53.9	-	712	408	434	612	635	789	143
30	84.0	77.3	72.5	53.8	-----	609	393	438	714	817	697	148
31	88.9	-----	68.6	55.5	-----	513	-----	420	-----	1,040	791	-----
Total	3,319.1	2,393.2	2,307.9	1,878.7	1,210.3	23,232.9	12,777	12,205	12,754	15,963	18,211	13,852
Mean	107	79.8	74.4	60.6	43.2	749	426	394	425	515	587	462
Max	144	84.6	82.3	72.9	57.4	1,380	533	455	1,870	1,040	1,240	915
Min	83.7	75.9	67.9	52.4	31.1	32.6	308	302	207	343	315	134
Ac-ft	6,583	4,747	4,578	3,726	2,401	46,082	25,343	24,209	25,298	31,663	36,122	27,475

Cal yr 1966 : Total 155,674.6 Mean 427 Max 1,870 Min 10.1 Ac-ft 308,782
Wtr yr 1967 : Total 120,104.1 Mean 329 Max 1,870 Min 31.1 Ac-ft 238,223

8-3779. Rio Mora near Terrero, N. Mex.
(Hydrologic bench-mark station)

Location.--Lat 35°46'38", long 105°39'26", in E½NE¼ sec.22, T.18 N., R.14 E., on left bank 450 ft upstream from bridge on State Highway 63, 600 ft upstream from mouth, and 3.1 miles by road north of Terrero.

Drainage area.--53.2 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 7,890 ft (from topographic map).

Extremes.--Maximum discharge during year, 235 cfs Aug. 14 (gage height, 2.85 ft); minimum, 1.3 cfs Dec. 10, result of freezeup.
1963-67: Maximum discharge, 451 cfs July 29, 1965 (gage height, 3.56 ft), from rating curve extended above 190 cfs by logarithmic plotting; minimum determined (corrected), 0.9 cfs Jan. 12-14, 1964, but may have been less during periods of ice effect.
Greatest flood since 1886 probably occurred Sept. 29, 1904 (based on statement for Pecos River near Pecos and history of that flood period).

Remarks.--Records good except those for December to February, which are poor. This bench-mark station was established to define hydrologic trend of the contiguous area. About 90 percent of the drainage is in the Pecos Wilderness Area and not subject to development, watershed management, or the building of highways; there is limited cattle grazing by permit. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	6.9	4.8	3.5	4.0	5.2	11	13	11	4.3	28	89
2	11	6.1	6.5	3.5	3.7	6.3	13	14	12	3.8	27	80
3	11	6.7	5.6	3.6	3.7	6.5	14	13	14	4.2	32	74
4	11	6.9	5.8	3.8	4.0	6.5	19	14	13	3.5	41	72
5	11	5.8	5.8	4.0	4.0	5.8	20	14	12	3.4	55	70
6	10	6.9	7.9	3.8	3.7	4.0	18	14	12	3.5	61	63
7	9.8	6.9	9.8	3.5	3.2	4.5	19	14	12	4.3	52	62
8	9.5	7.4	4.8	3.0	3.0	4.8	20	14	9.8	6.1	51	65
9	9.0	6.9	3.5	3.0	3.0	5.0	19	16	9.0	4.3	80	70
10	9.0	4.3	2.9	3.1	3.0	5.6	15	17	8.5	5.8	169	68
11	9.0	5.6	6.0	3.2	3.0	6.5	16	17	8.2	8.2	166	63
12	9.2	5.6	7.0	3.4	3.1	6.1	14	16	7.9	13	190	56
13	8.5	5.0	7.0	3.6	3.3	6.9	11	16	7.9	14	183	52
14	8.2	5.4	7.0	3.8	3.3	6.9	13	16	7.7	9.0	200	48
15	7.9	6.3	8.0	4.0	3.3	6.7	14	15	6.7	8.5	194	46
16	8.7	6.7	9.0	4.0	3.2	7.2	13	15	6.3	11	173	45
17	9.5	6.7	9.0	3.8	3.0	9.0	14	14	7.4	35	142	41
18	9.0	5.8	9.0	3.7	3.2	10	15	14	11	22	118	38
19	8.7	5.4	10	3.8	3.5	11	16	14	9.0	19	104	35
20	8.5	6.7	9.0	4.2	3.6	8.0	17	15	8.5	21	93	35
21	8.5	6.5	8.5	4.5	3.4	8.0	15	15	7.2	22	82	30
22	7.9	6.5	8.0	4.8	3.3	7.9	15	13	6.7	27	73	28
23	8.2	6.7	7.0	5.0	3.4	9.0	14	13	6.1	38	73	27
24	7.4	6.9	6.0	4.6	3.7	11	16	13	5.4	40	65	26
25	7.7	6.5	6.0	4.3	4.5	11	15	12	5.4	43	59	28
26	7.7	6.1	6.0	4.2	5.0	8.7	14	13	5.0	45	59	36
27	7.2	3.5	6.0	4.0	4.5	9.2	16	14	4.3	50	61	38
28	7.4	5.6	5.0	4.0	4.5	11	17	14	4.0	42	54	30
29	7.2	8.7	4.5	4.1	-	12	17	14	4.0	37	54	28
30	7.2	5.4	4.0	4.2	-----	11	16	12	5.4	33	84	25
31	6.9	-----	3.5	4.5	-----	9.2	-----	12	-----	30	103	-----
Total	273.8	186.4	202.9	120.5	100.1	240.5	466	440	247.4	610.9	2,926	1,468
Mean	8.83	6.21	6.55	3.89	3.58	7.76	15.5	14.2	8.25	19.7	94.4	48.9
Max	12	8.7	10	5.0	5.0	12	20	17	14	50	200	89
Min	6.9	3.5	2.9	3.0	3.0	4.0	11	12	4.0	3.4	27	25
Ac-ft	543	370	402	239	199	477	924	873	491	1,210	5,800	2,910

Cal yr 1966 : Total 8,721.8 Mean 23.9 Max 122 Min 2.9 Ac-ft 17,300
Wtr yr 1967 : Total 7,282.5 Mean 20.0 Max 200 Min 2.9 Ac-ft 14,440

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	0600	2.67	202	8-30	1930	2.18	112
8-14	2100	2.85	235				

8-3785. Pecos River near Pecos, N. Mex.

Location.--Lat 35°42'30", long 105°40'55", in NE¼NE¼ sec.17, T.17 N., R.12 E., on left bank at downstream side of bridge on private road, 600 ft upstream from Indian Creek, 2 miles downstream from Holy Ghost Creek, and 9 miles north of Pecos.

Drainage area.--189 sq mi (contributing area).

Records available.--August 1919 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Published as "near Cowles" 1919-25, "at Irvins Ranch" 1926-29, and as "at Irvins Ranch, near Pecos" 1930-39.

Gage.--Water-stage recorder. Datum of gage is 7,502.94 ft above mean sea level, datum of 1929.

Average discharge.--48 years, 98.6 cfs (71,380 acre-ft per year).

Extremes.--Maximum discharge during year, 830 cfs Aug. 10 (gage height, 3.92 ft); minimum, 8.3 cfs Nov. 27, result of freezeup.
1919-67: Maximum discharge, about 4,500 cfs Sept. 21 or 22, 1929 (gage height, 6.2 ft, from floodmark), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 4.1 cfs Dec. 8, 1963.
Flood of Sept. 29, 1904, was greatest since 1886, from information by local residents.

Remarks.--Records good except those for winter period, which are poor. Diversions for irrigation of about 75 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	25	21	18	22	20	37	48	53.0	26	61	196
2	39	24	24	18	22	23	41	45	55	25	63	174
3	39	25	21	19	24	24	47	48	68	25	66	161
4	38	26	24	20	27	24	51	47	63	24	71	158
5	38	23	25	20	25	22	64	50	59	22	101	151
6	39	26	32	19	23	18	58	48	61	22	126	139
7	38	25	47	17	21	19	59	47	63	25	116	134
8	37	29	28	16	21	20	68	51	53	29	105	144
9	35	28	21	16	22	23	59	61	47	24	207	161
10	35	23	20	17	23	25	50	66	45	29	537	144
11	34	29	25	18	23	28	55	66	44	37	442	136
12	34	29	25	20	25	26	50	64	42	47	498	125
13	34	26	22	21	25	26	39	61	41	51	452	114
14	31	26	22	22	25	26	45	59	39	34	474	108
15	31	28	29	22	22	26	51	56	38	30	430	103
16	32	30	32	22	20	26	44	56	37	41	370	103
17	35	29	39	21	22	32	50	56	41	103	314	97
18	32	25	38	20	23	35	50	56	53	68	266	93
19	32	24	39	20	22	41	51	58	48	53	233	89
20	32	26	41	22	20	31	51	59	44	59	217	103
21	32	26	38	23	18	32	51	58	42	58	196	88
22	31	25	35	24	18	32	50	53	38	64	174	80
23	31	25	29	25	18	31	50	55	34	84	174	76
24	29	25	25	23	19	38	51	56	31	89	164	75
25	31	24	25	22	20	39	51	58	30	98	146	82
26	31	24	25	21	20	32	50	61	29	108	144	108
27	29	14	25	21	18	34	53	70	26	103	144	119
28	28	20	20	21	19	37	58	68	25	91	130	97
29	28	25	18	22	-	42	61	68	26	78	127	86
30	26	23	17	23	-----	38	59	59	30	68	195	82
31	26	-----	17	25	-----	32	-----	58	-----	66	226	-----
Total	1,028	757	849	638	607	902	1,554	1,766	1,305	1,681	6,969	3,526
Mean	33.2	25.2	27.4	20.6	21.7	29.1	51.8	57.0	43.5	54.2	225	118
Max	41	30	47	25	27	42	64	70	68	108	537	196
Min	26	14	17	16	18	18	37	45	25	22	61	75
Ac-ft	2,040	1,500	1,680	1,270	1,200	1,790	3,080	3,500	2,590	3,330	13,820	6,990

Cal yr 1966 : Total 30,551 Mean 83.7 Max 348 Min 14 Ac-ft 60,600
Wtr yr 1967 : Total 21,582 Mean 59.1 Max 537 Min 14 Ac-ft 42,810

Peak discharge (base, 310 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	0500	3.92	830				

8-3795. Pecos River near Anton Chico, N. Mex.

Location.--Lat 35°10'45", long 105°06'30", in Anton Chico Grant, on right bank 2 miles upstream from Canyon Blanco, 2½ miles southeast of Anton Chico, Guadalupe County, and 10 miles downstream from Tecolote Creek.
Drainage area.--1,050 sq mi, approximately (contributing area).
Records available.--April 1910 to May 1916, October 1916 to September 1924, August to December 1925, January 1927 to September 1967. Monthly discharge only for some periods, published in WSP 1312.
Gage.--Digital water-stage recorder and crest-stage gage. Altitude of gage is 5,130 ft (from river-profile map). Prior to July 2, 1937, at five different sites from one-sixth mile to 8½ miles upstream at various datums. July 2, 1937, to June 21, 1951, at site 345 ft upstream at datum 2.42 ft higher. Prior to Apr. 22, 1963, graphic water-stage recorder.
Average discharge.--54 years (1910-15, 1916-24, 1926-67), 136 cfs (98,460 acre-ft per year).
Extremes.--Maximum discharge during year, 5,430 cfs July 6 (gage height, 9.06 ft); no flow at times.
1910-67: Maximum discharge, 40,300 cfs June 1, 1937 (gage height, 20.34 ft, from floodmarks, at site and datum then in use), by slope-area measurement; no flow at times.
The greatest flood since 1879 occurred Sept. 29, 1904 (discharge, about 73,000 cfs), from information by a local resident.
Remarks.--Records fair. Diversions above station for irrigation of about 4,900 acres (1959 determination) above and below station. Acequia del Bodo Juan Paiz (see table below) diverts water about 8 miles above gage and bypasses this station on left bank; ditch flow not included in record. Discharge measurements made at point opposite regular gage. A portion of this flow may be returned to the river about five miles downstream.

Discharge measurements, in cubic feet per second, of Acequia del Bodo Juan Paiz, water year October 1966 to September 1967

Date	Discharge	Date	Discharge	Date	Discharge
Oct. 12	23.6	Feb. 28	0	June 28	3.0
31	17.4	Mar. 20	0	Aug. 1	30.7
Nov. 21	10.2	Apr. 18	.23	23	34.0
Dec. 15	24.6	May 11	21.5	Sept. 14	38.8
Jan. 5	19.1	June 12	0	29	29.6
31	16.6				

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.7	5.3	7.6	5.5	.77	2.9	36	2.8	17	.84	144	236
2	8.5	7.6	13	6.0	.65	2.2	25	8.9	22	192	63	194
3	8.5	8.1	12	5.0	.50	4.5	5.8	13	217	153	184	196
4	5.3	9.0	10	5.5	.44	2.9	.63	7.5	101	6.0	192	760
5	8.1	9.9	11	5.5	.36	8.4	.71	8.1	73	1.8	51	248
6	3.0	9.4	10	5.0	.62	12	7.8	7.3	68	400	290	176
7	2.4	8.5	12	3.5	.35	14	8.0	3.5	50	376	141	200
8	8.5	9.4	11	3.0	.30	10	7.9	1.3	31	123	135	197
9	2.0	9.9	12	4.0	.30	10	9.1	1.1	21	48	138	407
10	2.0	9.4	10	5.0	.16	16	3.5	.83	13	18	1,860	260
11	3.0	11	5.9	10	.20	17	.45	.71	6.6	94	670	209
12	2.0	11	4.0	15	12	15	6.2	.92	2.4	295	685	165
13	3.3	10	9.0	15	8.7	7.3	15	1.0	.96	241	687	141
14	7.6	10	9.0	20	4.6	5.9	11	1.1	.80	85	679	126
15	9.0	10	8.6	19	3.2	7.2	10	3.8	1.5	35	667	800
16	7.6	9.9	9.6	16	2.5	10	8.8	1.9	1.3	15	681	350
17	8.5	9.0	9.1	12	13	13	2.9	3.3	41	332	608	158
18	7.6	8.5	9.1	9.5	6.4	8.4	4.0	2.5	26	134	494	137
19	7.6	8.1	8.1	9.6	5.2	7.7	4.7	6.3	7.5	188	403	111
20	8.1	9.0	8.7	10	4.1	13	1.3	7.5	7.6	286	318	106
21	8.5	9.4	6.6	13	2.2	23	5.5	9.1	2.6	88	322	104
22	9.0	9.0	4.6	15	.19	28	17	4.5	3.1	78	307	97
23	8.1	8.5	4.9	14	.09	26	5	2.9	5.8	64	224	93
24	4.3	11	6.4	12	.24	27	1.1	5.6	1.1	82	228	88
25	2.8	11	2.1	12	.81	24	.17	2.3	14	118	204	75
26	4.3	10	1.6	9.8	7.0	24	2.5	2.2	5.1	156	170	57
27	7.6	11	5.0	8.8	12	18	8.9	2.2	3.6	108	149	79
28	9.0	12	3.5	1.7	5.4	14	4.6	72	.86	171	146	125
29	7.2	9.4	2.5	1.7	—	16	4.0	32	.83	416	127	107
30	7.6	7.2	4.0	1.2	-----	27	3.6	18	1.5	86	118	96
31	7.2	-----	4.5	.82	-----	38	-----	16	-----	56	223	-----
Total	194.9	281.5	235.4	274.12	92.28	452.4	221.16	250.16	747.15	4,446.64	11,358	6098
Mean	6.29	9.38	7.59	8.84	3.30	14.6	7.37	8.07	24.9	143	366	203
Max	9.0	12	13	20	13	38	36	72	217	416	1,860	800
Min	2.0	5.3	1.6	.82	.09	2.2	.17	.71	.80	.84	51	57
Ac-ft	387	558	467	544	183	897	439	496	1,480	8,820	22,530	12,100

Cal yr 1966 : Total 33,766.80 Mean 92.5 Max 1,760 Min 0 Ac-ft 66,980
Wtr yr 1967 : Total 24,651.71 Mean 67.5 Max 1,860 Min 0.09 Ac-ft 48,900

Peak discharge (base, 3,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7- 2	1830	7.70	3,020	9- 4	--	8.75	4,800
7- 6	2200	9.06	5,430	9-15	0600	9.12	5,390
8-10	0700	8.59	4,560				

Note.--No gage height record Sept. 4

8-3805. Gallinas Creek near Montezuma, N. Mex.

Location.--Lat 35°39'00", long 105°19'10", in Las Vegas Grant, on left bank 2 miles west of Montezuma, San Miguel County, and 6 miles northwest of Las Vegas.

Drainage area.--84 sq mi, approximately.

Records available.--March to September 1915, June 1916 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1964 published as Gallinas River near Montezuma.

Gage.--Water-stage recorder. Altitude of gage is 6,950 ft (from topographic map).

Average discharge.--51 years (1916-67), 19.8 cfs (14,330 acre-ft per year).

Extremes.--Maximum discharge during year, 1,100 cfs Aug. 9 (gage height 4.30 ft), from rating curve extended above 500 cfs as explained below; minimum, 1.2 cfs Dec. 24, result of freezeup.
1915-67: Maximum discharge, 7,120 cfs Aug 2, 1966 (gage height, 9.7 ft, from floodmarks, from rating curve extended above 500 cfs on basis of slope-area measurements at gage heights 5.25, 8.25, and 9.7 ft; minimum, 0.20 cfs Dec. 13, 1964.
The greatest flood since about 1900 occurred the night of Sept. 29, 1904 (discharge not determined), from information by local residents and G. B. Monk's report on floods.

Remarks.--Records good except those for winter months and those above 300 cfs, which are poor. Diversions for irrigation of about 80 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	4.7	4.2	2.2	2.9	3.0	2.2	2.4	1.7	1.3	10	86
2	6.2	4.5	4.0	2.0	2.7	3.0	2.2	2.6	2.2	1.6	9.5	69
3	5.9	4.3	4.2	1.5	2.8	3.0	2.3	2.9	3.6	1.6	7.4	56
4	5.9	4.5	4.2	1.8	3.0	3.0	2.4	2.7	3.4	1.5	8.0	46
5	5.7	4.5	4.0	2.0	3.2	3.4	3.2	2.4	2.7	1.4	16	42
6	5.7	4.3	4.2	2.0	3.0	3.2	3.8	2.4	2.4	1.7	23	36
7	5.7	4.3	5.5	2.0	2.7	3.0	4.0	2.6	2.2	1.4	19	32
8	5.0	4.5	5.0	1.6	2.7	2.6	4.0	2.4	2.2	1.5	15	33
9	5.0	4.7	4.0	2.0	3.0	2.6	3.8	2.3	1.8	1.5	166	57
10	5.4	4.7	3.0	1.8	3.2	2.9	3.2	2.0	1.5	2.6	432	50
11	4.7	4.5	3.4	2.0	3.0	3.2	3.0	1.9	1.4	1.7	192	44
12	4.7	4.5	3.7	2.2	3.3	3.6	3.8	2.0	1.4	16	152	37
13	4.5	4.5	4.0	2.5	3.3	3.6	3.6	1.8	1.4	18	133	33
14	4.7	4.3	4.0	3.0	3.4	3.6	3.6	1.8	1.4	6.4	150	29
15	4.7	4.7	4.2	3.3	3.0	3.4	3.6	1.8	1.3	3.4	169	27
16	5.0	4.5	4.2	3.5	2.9	3.2	3.6	1.8	1.4	4.2	169	24
17	5.4	4.5	3.8	3.3	2.7	3.6	3.4	1.7	1.6	24	115	22
18	5.2	4.5	4.0	3.3	2.9	3.8	3.4	1.7	1.9	17	86	20
19	5.0	4.5	4.0	3.5	3.0	3.8	3.4	1.6	2.3	21	74	18
20	5.2	4.3	4.0	3.8	3.0	4.2	3.2	1.7	2.0	32	72	18
21	4.5	4.5	3.8	4.0	2.7	4.0	3.2	1.8	1.8	19	59	15
22	4.3	4.5	3.3	3.2	2.5	3.8	2.9	1.8	1.8	13	50	15
23	4.0	4.5	2.9	2.7	2.5	3.8	2.7	1.9	1.5	10	44	14
24	4.3	4.3	2.6	2.7	2.5	3.8	2.6	1.7	1.4	11	40	12
25	4.5	4.5	2.5	2.6	2.6	3.8	2.7	1.5	2.1	17	36	12
26	4.7	4.3	2.5	2.5	2.9	3.6	2.7	1.6	2.7	16	35	17
27	4.5	4.3	2.2	2.6	3.2	3.6	2.9	1.6	1.9	13	46	27
28	4.5	3.8	2.2	2.7	3.0	3.4	2.9	1.8	1.6	11	44	21
29	4.3	4.3	2.0	2.7	- - - - -	3.0	2.6	1.8	1.5	13	41	18
30	4.3	4.3	2.2	2.7	- - - - -	2.9	2.4	1.5	1.4	10	65	16
31	3.8	- - - - -	2.2	2.9	- - - - -	2.6	- - - - -	1.4	- - - - -	12	98	- - - - -
Total	153.8	133.1	110.0	80.6	81.6	104.0	93.3	60.9	57.5	304.8	2575.9	946
Mean	4.96	4.44	3.55	2.60	2.91	3.35	3.11	1.96	1.92	9.83	83.1	31.5
Max	6.5	4.7	5.5	4.0	3.4	4.2	4.0	2.9	3.6	32	432	86
Min	3.8	3.8	2.0	1.5	2.5	2.6	2.2	1.4	1.3	1.3	7.4	12
Ac-ft	305	264	218	160	162	206	185	121	114	605	5110	1880

Cal yr 1966: Total 5,220.4 Mean 14.3 Max 700 Min 2.0 Ac-ft 10,350
Wtr yr 1967: Total 4,701.5 Mean 12.9 Max 432 Min 1.3 Ac-ft 9,330

Peak discharge (base, 250 cfs).--Aug. 9 (2045) 1,100 cfs (4.30 ft).

8-3810. Gallinas Creek at Montezuma, N. Mex.

Location.--Lat 35°39'15", long 105°16'30", in Las Vegas Grant, at downstream end of middle pier of highway bridge, half a mile downstream from Montezuma, San Miguel County, and 5 miles northwest of Las Vegas.

Drainage area.--87 sq mi, approximately.

Records available.--August 1903 to September 1904 (gage heights only), October 1904 to May 1912, October 1912 to December 1966 (discontinued). Yearly estimate for water year 1912 (incomplete) and monthly discharge only for some periods, published in WSP 1312. Figures of daily discharge for the periods Oct. 8-22, 1904, and Jan. 1 to Feb. 20, 1906, published in WSP 177 and 213, respectively, have been found to be unreliable and should not be used. Prior to October 1964 published as Gallinas River at Montezuma.

Gage.--Water-stage recorder. Altitude of gage is 6,675 ft (from topographic map). Prior to Mar. 24, 1926, staff gage at site a quarter of a mile upstream. Gages at various datums prior to Sept. 3, 1942.

Average discharge.--62 years (1904-66), 19.1 cfs (13,830 acre-ft per year).

Extremes.--Maximum discharge during period October to December, 22 cfs Dec. 26 (gage height, 4.22 ft); minimum, 0.69 cfs Oct. 13.
1904-66: Maximum discharge, 9,140 cfs Aug. 4, 1957 (gage height, 11.8 ft, from floodmark), from rating curve extended above 450 cfs on basis of slope-area measurement of peak flow; no flow at times in 1934, 1956-57, 1963.
Flood of Sept. 30, 1904, is the highest since about 1900 (discharge, 11,600 cfs by slope-area method), from G. B. Monk's report on floods and WSP 147.

Remarks.--Records fair. Flow partly regulated at low flows by reservoirs owned by Public Service Co. of New Mexico. Diversions above station for irrigation of about 180 acres (1959 determination) and for Las Vegas city water supply.

Discharge, in cubic feet per second, for period October to December 1966

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	3.0	0.86									
2	2.5	3.0	.95									
3	3.2	2.0	.95									
4	4.4	1.2	1.2									
5	4.4	1.2	3.2									
6	3.5	1.3	4.7									
7	.95	1.2	5.8									
8	.86	1.2	5.4									
9	.86	.95	4.4									
10	.86	1.0	3.8									
11	.95	1.0	4.7									
12	.86	1.3	4.4									
13	.77	1.4	4.7									
14	.77	1.5	4.7									
15	.86	1.8	4.7									
16	.86	1.0	4.7									
17	1.2	.86	4.7									
18	2.5	1.0	5.0									
19	2.3	2.3	5.0									
20	2.5	3.5	4.4									
21	2.5	3.8	5.0									
22	3.0	2.5	4.4									
23	2.7	1.3	3.8									
24	2.5	1.3	3.2									
25	1.4	1.2	4.0									
26	2.1	.95	4.7									
27	2.7	1.0	4.0									
28	2.7	1.0	3.5									
29	3.0	.95	3.2									
30	2.7	.86	3.0		- - - - -		- - - - -		- - - - -			
31	2.5	- - - - -	1.8		- - - - -		- - - - -		- - - - -			- - - - -
Total	65.40	46.57	118.86									
Mean	2.11	1.55	3.83									
Max	4.4	3.8	5.8									
Min	.77	.86	.86									
Ac-ft	130	92	236									

Cal yr 1966 : Total 4,230.57 Mean 11.6 Max 508 Min 0 Ac-ft 8,390
Wtr yr 1967 : Total - Mean - Max - Min - Ac-ft -

8-3825. Gallinas River near Colonias, N. Mex.

Location.--Lat 35°11'10", long 104°54'40", in Anton Chico Grant, on right bank 1½ miles upstream from mouth, 2 miles south of San Miguel - Guadalupe County line, and 6½ miles northwest of Colonias, Guadalupe County.

Drainage area.--610 sq mi, approximately.

Records available.--January 1951 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,940 ft (from river-profile map).

Average discharge.--16 years, 16.9 cfs (12,240 acre-ft per year).

Extremes.--Maximum discharge during year, 6,170 cfs Aug. 16 (gage height, 13.48 ft); no flow most of time.
1951-67: Maximum discharge, 9,360 cfs June 16, 1963 (gage height, 16.65 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurements at gage heights 8.64, 12.74, 16.65, and 27.2 ft; no flow most of time.
Maximum flood known occurred about June 1, 1937, when a stage of about 27.2 ft was reached; discharge determined as 26,700 cfs by slope-area measurement made in 1951. A flood of about the same magnitude occurred Sept. 29-30, 1904.

Remarks.--Records poor. Diversions for irrigation of about 7,000 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	0.09	12	38
2									0	0	141	22
3									0	0	42	7.3
4									0	0	17	195
5									0	0	6.0	194
6									0	93	14	31
7									0	307	17	10
8									0	39	5.6	3.4
9									0	8.5	67	2.2
10									0	155	1610	1.6
11									0	239	210	1.6
12									0	530	99	1.9
13									0	258	82	1.3
14									0	77	54	.81
15									0	22	66	22
16									0	226	544	49
17									0	934	250	14
18									0	450	83	22
19									6.1	222	55	30
20									120	523	35	15
21									4.9	80	22	7.7
22									.09	25	13	4.9
23									0	10	6.3	3.4
24									0	1.0	64	1.7
25									0	0	7.0	1.3
26									0	0	2.5	.10
27									0	0	1.5	.87
28									0	0	0	.09
29									0	377	0	0
30									19	80	0	0
31										28	0	
Total	0	0	0	0	0	0	0	0	150.09	4,684.59	3525.9	682.17
Mean	0	0	0	0	0	0	0	0	5.00	151	114	22.7
Max	0	0	0	0	0	0	0	0	120	934	1610	195
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	298	9,290	6,990	1,350

Cal yr 1966: Total 3,988.53 Mean 10.9 Max 1,200 Min 0 Ac-ft 7,910
Wtr yr 1967: Total 9,042.75 Mean 24.8 Max 1,610 Min 0 Ac-ft 17,940

Peak discharge (base, 1,700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-12	2045	10.78	3,860	8-10	0630	12.17	4,990
7-16	2200	8.50	2,260	8-16	0915	13.48	6,170

8-3828. Pecos River above Los Esteros damsite, near Santa Rosa, N. Mex.

Location.--Lat 35°02'26", long 104°40'52", in Jose Perea Grant, on left bank 1.4 miles downstream from Catfish Falls, 1.6 miles southwest from mouth of Esteros Creek at Horseshoe Bend, and 11.5 miles north of Santa Rosa.

Drainage area.--2,430 sq mi, approximately.

Records available.--October 1965 to September 1967. Operated as a low-flow station only.

Gage.--Water-stage recorder. Altitude of gage is 4,625 ft (from topographic map).

Extremes.--Records of low flows only. No maximums or minimums will be published.

Remarks.--Records poor. Diversions for irrigation of about 12,000 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	19	19	21	16	15	14	10	8.5	6.9	23	46
2	21	20	19	20	18	14	14	10	-	7.3	132	135
3	21	19	19	18	17	15	14	10	-	-	101	76
4	21	19	20	18	17	16	14	10	-	67	125	71
5	22	19	19	20	16	16	13	10	82	10	-	-
6	23	19	19	22	17	17	14	10	42	6.0	241	304
7	22	19	19	18	17	16	14	9.0	33	-	234	113
8	21	20	19	15	14	16	13	11	22	-	74	89
9	21	20	19	18	16	15	12	10	14	52	-	126
10	21	20	19	23	16	14	12	10	10	36	-	250
11	21	19	19	21	16	14	12	9.5	10	-	-	148
12	22	19	18	19	16	14	12	9.3	9.5	-	-	91
13	21	19	18	17	16	14	11	9.3	8.9	-	-	44
14	21	19	19	16	15	14	11	8.9	8.1	301	-	24
15	22	19	18	16	14	14	10	10	5.9	58	-	-
16	23	18	19	16	16	14	10	9.7	5.9	24	-	-
17	23	18	20	15	16	14	9.7	9.7	8.1	-	-	292
18	21	18	19	15	16	14	11	9.7	10	-	-	74
19	21	19	19	14	16	14	10	9.7	14	-	-	40
20	21	19	19	13	17	14	10	9.7	34	-	-	35
21	20	19	19	14	17	14	10	10	38	319	-	32
22	20	19	19	15	16	15	11	9.3	13	95	-	22
23	20	19	19	16	16	15	11	8.9	11	58	145	22
24	21	20	21	16	16	14	10	8.5	8.9	50	150	20
25	21	20	21	16	16	14	9.0	8.5	9.3	-	144	18
26	20	20	19	16	17	14	9.0	8.5	8.5	178	76	18
27	19	20	10	16	17	14	8.0	8.9	7.7	113	42	18
28	18	21	10	16	16	14	10	12	7.7	47	16	18
29	18	20	10	16	- - - - -	14	8.0	10	7.7	-	7.7	25
30	19	20	20	16	- - - - -	14	9.0	12	8.1	-	37	25
31	19	- - - - -	23	16	- - - - -	14	- - - - -	8.9	- - - - -	63	17	- - - - -
Total	646	579	570	528	453	450	335.7	301.0	-	-	-	-
Mean	20.8	19.3	18.4	17.0	16.2	14.5	11.2	9.71	-	-	-	-
Max	23	21	23	23	18	17	14	12	-	-	-	-
Min	18	18	10	13	14	14	8.0	8.5	-	-	-	-
Ac-ft	1,280	1,150	1,130	1,050	899	893	666	597	-	-	-	-

Note.--Storm peaks occurred June 2-4, July 3, 7, 8, 11-13, 17-20, 25, 29, 30, Aug. 5, 9, 10, 22, Sept. 5, 15, 16. No gage-height record Aug. 11-21.

8-3830. Pecos River at Santa Rosa, N. Mex.

Location.--Lat 34°56'35", long 104°41'55", in NW¼SE¼ sec.3, T.8N., R.21 E., on left bank 0.6 mile upstream from bridge on U. S. Highway 66 in Santa Rosa and 1.9 miles upstream from Rio Agua Negra Chiquita.

Drainage area.--2,650 sq mi, approximately (contributing area).

Records available.--May 1903 to December 1905 (gage heights only), January to December 1906, February 1910 to July 1911, September 1912 to December 1924, March to May 1927, July 1927, January 1928 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Figures of daily discharge for Apr. 5-20, May 4-7, 11, Aug. 13, 16-18, 24, Sept. 7-9, 11, 13, 19, 21, 23, 25, 27, Oct. 1-31, Nov. 3, 4, 9, 11, 20, 22, 1910, and Feb. 1 to Mar. 31, June 1 to July 31, 1911, published in WSP 358 have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 4,537.56 ft above mean sea level, datum of 1929. May 5, 1903, to Dec. 31, 1906, staff gage at site 0.5 mile downstream at datum 6.68 ft lower. Feb. 2, 1910, to May 4, 1922, chain gage at site 0.6 mile downstream at different datum. May 5, 1922, to Sept. 30, 1936, water-stage recorder at site 800 ft downstream at datum 3.56 ft lower. Oct. 1, 1936, to June 1, 1937, water-stage recorder at site 800 ft downstream at datum 4.62 ft lower. June 2, 1937, to June 30, 1958, water-stage recorder at site 0.6 mile downstream at datum 7.79 ft lower. July 1, 1958, to Sept. 30, 1963, water-stage recorder at site 800 ft downstream at datum 4.16 ft lower. Supplemental water-stage recorder at site 800 ft downstream Oct. 1, 1963, to Sept. 13, 1967, datum 4.16 ft lower.

Average discharge.--51 years (1912-24, 1928-67), 144 cfs (104,300 acre-ft per year).

Extremes.--Maximum discharge during year, 15,100 cfs Aug. 10 (gage height, 10.27 ft); minimum, 1.8 cfs Dec. 29, result of freezeup.
1930-67: Maximum discharge, 55,200 cfs June 2, 1937 (gage height, 25.7 ft, site and datum then in use), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, that of Dec. 29, 1966.
The flood of June 2, 1937, is the greatest since about 1886. Flood of Sept. 30, 1904, reached a stage of 24.7 ft (site and datum then in use), discharge, 45,500 cfs, by Kutter's formula. Flood of June 9, 1903, reached a stage of 21.1 ft (same site and datum as in 1904), discharge, 34,000 cfs, by comparison with 1904 flood.

Remarks.--Records fair. Diversions for irrigation of about 12,000 acres (1959 determination) above station. Records of water temperatures and suspended sediment loads for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	22	21	23	20	16	14	12	11	11	40	28
2	22	22	20	22	20	13	13	13	12	12	67	162
3	22	25	20	21	20	13	13	14	192	198	113	118
4	21	23	21	21	20	14	13	14	452	100	39	95
5	22	23	21	22	18	16	14	14	108	14	470	1,060
6	22	23	21	26	17	18	17	14	44	5.8	190	274
7	23	22	21	20	18	20	17	14	36	821	122	145
8	22	23	22	17	16	17	18	13	27	220	75	103
9	22	23	22	21	20	18	18	14	19	49	372	120
10	22	23	20	26	17	17	17	13	14	38	4,590	278
11	23	23	22	23	20	17	17	13	14	88	1,190	187
12	23	23	22	32	18	17	17	11	13	195	530	120
13	22	23	25	26	17	16	14	11	11	823	524	75
14	22	22	25	24	17	16	14	11	8.8	232	488	55
15	23	22	23	24	17	16	14	11	8.8	75	816	231
16	23	22	21	23	16	17	13	11	11	24	1,270	700
17	25	22	23	21	17	18	13	10	12	817	1,180	300
18	23	23	23	20	17	17	16	10	15	620	823	100
19	23	23	22	23	18	17	16	10	15	562	570	40
20	23	23	22	23	17	18	13	10	18	554	413	35
21	23	23	22	23	18	17	13	10	51	298	295	30
22	23	23	22	23	18	17	13	10	15	80	311	25
23	23	25	21	22	17	17	14	8.9	12	24	262	25
24	23	26	22	21	17	17	14	8.2	11	15	120	22
25	25	26	26	22	18	16	13	8.9	12	15	160	21
26	25	25	20	22	18	17	13	8.9	13	180	96	21
27	23	23	13	22	21	16	13	8.9	12	75	75	21
28	23	23	13	22	20	14	12	10	11	40	46	21
29	23	22	11	20	-	14	13	17	11	425	31	21
30	23	22	23	20	-----	16	11	14	12	294	29	34
31	22	-----	25	20	-----	14	-----	13	-----	83	60	-----
Total	705	693	655	695	507	506	430	360.8	1,201.6	6,987.8	15,367	4,467
Mean	22.7	23.1	21.1	22.4	18.1	16.3	14.3	11.6	40.1	225	496	149
Max	25	26	26	32	20	20	18	17	452	823	4,590	1,060
Min	21	22	11	17	16	13	11	8.2	8.8	5.8	29	21
Ac-ft	1,400	1,370	1,300	1,380	1,010	1,000	853	716	2,380	13,860	30,480	8,860

Cal yr 1966: Total 29,644 Mean 81.2 Max 3,110 Min 11 Ac-ft 58,800
Wtr yr 1967: Total 32,575.2 Mean 89.2 Max 4,590 Min 5.8 Ac-ft 64,610

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	1430	10.27	15,100	8-17	0415	5.13	4,020

8-3835. Pecos River near Puerto de Luna, N. Mex.

Location.--Lat 34°44'00", long 104°31'30", in SE¼NW¼ sec.20, T.6 N., R.23 E., on left bank 9 miles southeast of Puerto de Luna and 17½ miles upstream from Alamogordo Dam.

Drainage area.--3,970 sq mi, approximately (contributing area).

Records available.--April 1938 to September 1967.

Gage.--Digital water-stage recorder and concrete control. Altitude of gage is 4,315 ft (from river-profile map). Prior to Apr. 15, 1954, at datum 1 ft higher. Apr. 24, 1938, to Dec. 8, 1965, graphic water-stage recorder.

Average discharge.--29 years, 221 cfs (160,000 acre-ft per year).

Extremes.--Maximum discharge during year, 10,100 cfs Aug. 10 (gage height, 7.12 ft); minimum, 59 cfs June 14, 15, 29.
1938-67: Maximum discharge, 48,600 cfs Sept. 1, 1942 (gage height, 17.00 ft), from rating curve extended above 7,400 cfs on basis of flow at Santa Rosa; minimum, 11 cfs Jan. 31, 1951.
Maximum flood known since at least 1886 occurred June 2, 1937, when peak at Santa Rosa was 55,200 cfs. Flood of July 24, 1895, was reported as "highest in 10 years." Other major floods occurred on June 9, 1903, Sept. 30, 1904, and May 1, 1914.

Remarks.--Records good. Diversions for irrigation of about 12,500 acres (1959 determination) above station. Discharge represents inflow to Alamogordo Reservoir (capacity, 110,700 acre-ft).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	92	90	92	86	94	81	70	65	84	250	118
2	88	91	87	90	86	92	80	73	63	83	155	123
3	87	92	90	92	87	88	80	75	228	141	198	212
4	87	94	92	92	91	90	83	76	496	275	219	169
5	89	95	95	95	90	93	76	74	270	133	459	900
6	92	95	92	99	88	96	73	72	147	126	364	409
7	94	93	93	86	92	94	74	70	129	802	202	255
8	94	93	92	88	94	93	74	70	99	481	235	179
9	88	93	90	92	89	90	76	70	88	281	212	172
10	89	93	86	88	89	92	77	67	75	146	4,210	257
11	91	91	88	92	91	91	82	66	70	130	2,700	269
12	91	90	92	94	91	91	86	67	70	1,110	802	203
13	88	89	96	96	90	92	83	69	64	1,330	663	167
14	84	89	97	94	90	92	81	68	62	426	610	141
15	86	90	93	91	87	92	83	71	61	300	726	140
16	90	91	91	91	86	93	82	69	66	200	1,120	944
17	90	89	91	89	86	95	77	67	72	570	1,400	445
18	89	91	95	90	88	95	78	65	82	1,220	843	261
19	87	90	95	91	89	95	74	67	70	748	508	176
20	88	93	95	91	92	95	75	69	69	580	411	184
21	86	92	95	90	92	95	72	68	78	480	340	161
22	87	89	99	87	90	94	72	66	98	250	291	129
23	88	85	97	87	92	103	73	66	81	150	313	101
24	89	88	95	87	92	81	75	64	66	110	216	94
25	91	90	96	89	94	86	76	68	67	100	221	93
26	90	91	96	89	96	89	74	68	69	250	198	92
27	91	84	98	89	97	89	73	67	64	180	157	94
28	91	86	86	90	96	89	71	65	64	130	132	92
29	91	88	86	87	-----	87	71	77	62	520	105	88
30	94	88	88	86	-----	82	68	75	213	465	100	84
31	93	-----	90	85	-----	82	-----	69	-----	300	125	-----
Total	2,771	2,715	2,866	2,799	2,531	2,830	2,300	2,148	3,208	12,101	18,495	6,752
Mean	89.4	90.5	92.5	90.3	90.4	91.3	76.7	69.3	107	390	597	225
Max	94	95	99	99	97	103	86	77	496	1,330	4,210	944
Min	84	84	86	85	86	81	68	64	61	83	100	84
Ac-ft	5,500	5,390	5,680	5,550	5,020	5,610	4,560	4,260	6,360	24,000	36,680	13,390

Cal yr 1966: Total 71,628 Mean 196 Max 3,170 Min 67 Ac-ft 142,100
Wtr yr 1967: Total 61,516 Mean 169 Max 4,210 Min 61 Ac-ft 122,000

Peak discharge (base, 5,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-12	2245	6.23	7,570	8-10	2230	7.12	10,100

8-3840. Alamogordo Reservoir near Fort Sumner, N. Mex.

Location.--Lat 34°35'30", long 104°23'10", in SW¼ sec.34, T.5 N., R.24 E., at dam on Pecos River, 5 miles northeast of Guadalupe, and 12 miles northwest of Fort Sumner.

Drainage area.--4,390 sq mi (contributing area).

Records available.--January 1939 to September 1967.

Gage.--Staff gage. Datum of gage is at mean sea level, Bureau of Reclamation datum.

Extremes.--Maximum contents at 0800 hours during year, 72,060 acre-ft Mar. 2-4 (elevation, 4,265.15 ft); minimum, 10,800 acre-ft May 29 (elevation, 4,234.40 ft).
1939-67: Maximum contents, 138,300 acre-ft May 23-30, June 1-10, July 21, Sept. 22, 23, 30, Oct. 12, Nov. 4, 5, 30, 1941 (elevation, 4,275.00 ft); maximum elevation 4,276.10 ft June 3, Sept 8, 1958; no storage July 28 to Aug. 2, 1951 (elevation, 4,200.70 ft).

Remarks.--Reservoir is formed by Alamogordo Dam, completed and storage began in August 1937. Capacity, 110,700 acre-ft at elevation 4,275.0 ft (top of spillway gates). No dead storage. No storage allocated for flood control. Figures given herein represent total contents.

Cooperation.--Elevation record furnished by Bureau of Reclamation and Carlsbad Irrigation District. Capacity table based on data furnished by Bureau of Reclamation.

Capacity table (elevation, in feet, and contents in acre-feet)

4,233	9,480
4,240	16,900
4,250	32,750
4,260	56,320
4,270	89,480

Contents, in acre-feet, at 0800 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59,330	57,610	61,690	66,110	68,160	71,890	70,910	64,560	11,040	14,140	33,140	50,300
2	59,330	57,750	61,830	66,270	68,310	72,060	70,910	62,890	11,040	14,200	33,140	50,300
3	59,180	57,750	61,980	66,430	68,480	72,060	70,750	60,950	11,180	14,700	33,230	50,300
4	59,180	57,900	62,130	66,580	68,640	72,060	70,580	58,900	11,580	14,940	33,910	50,300
5	59,040	58,040	62,280	66,740	68,800	71,890	70,580	57,180	12,800	15,220	34,490	50,430
6	59,040	58,180	62,430	66,900	68,960	71,890	70,580	55,210	13,110	15,280	35,500	52,310
7	59,040	58,320	62,430	66,900	69,120	71,890	70,580	53,260	13,430	15,400	36,000	52,720
8	59,040	58,470	62,580	67,060	69,290	71,730	70,420	51,360	13,760	17,090	36,100	52,990
9	59,040	58,610	62,740	67,210	69,290	71,560	70,420	49,380	13,920	17,670	35,190	52,990
10	59,040	58,750	62,890	67,370	69,450	71,400	70,260	47,330	14,040	18,180	35,390	53,120
11	59,040	58,900	63,040	67,530	69,610	71,400	70,100	45,330	14,140	18,320	41,560	53,390
12	59,040	59,040	63,190	67,680	69,770	71,230	70,100	43,270	14,200	18,380	42,590	53,390
13	58,900	59,180	63,340	68,000	69,770	71,230	69,940	41,450	14,140	21,230	41,790	53,390
14	**58,750**	59,330	63,500	68,160	69,940	71,230	69,770	39,350	14,090	23,180	40,990	53,530
15	**58,610**	59,480	63,500	68,310	70,100	71,230	69,770	37,440	14,040	23,640	40,120	53,670
16	58,470	59,620	63,650	68,310	70,100	71,230	69,610	35,500	13,980	23,950	42,360	53,670
17	58,320	59,770	63,800	68,160	70,260	71,230	69,610	33,430	13,920	24,270	42,470	55,630
18	58,320	59,920	63,950	68,160	70,420	71,400	69,450	31,420	13,980	25,910	45,210	56,040
19	58,180	60,060	64,110	68,160	70,420	71,400	69,450	29,380	13,980	27,790	46,700	56,320
20	58,180	60,210	64,260	68,160	70,580	71,560	69,290	27,440	13,920	29,020	47,450	56,320
21	58,040	60,360	64,410	68,160	70,580	71,560	69,120	25,570	13,920	29,930	48,210	56,320
22	58,040	60,510	64,560	68,000	70,750	71,560	69,120	23,720	13,870	30,660	48,730	56,470
23	57,900	60,510	64,720	68,000	70,910	71,560	69,120	21,740	13,820	30,850	49,120	56,470
24	57,900	60,660	64,870	68,000	71,070	71,400	69,120	19,740	13,760	30,940	49,520	56,320
25	57,750	60,800	65,020	67,840	71,230	71,400	69,120	17,670	13,760	30,940	49,780	56,320
26	57,750	60,950	65,170	67,840	71,400	71,230	68,960	15,750	13,700	30,850	49,910	56,320
27	57,610	61,100	65,330	67,680	71,560	71,230	68,960	13,760	13,700	30,940	50,170	56,180
28	57,610	61,240	65,480	67,680	71,730	71,230	68,960	11,780	13,700	31,040	50,300	56,180
29	57,610	61,390	65,640	67,680	- - - - -	71,230	68,800	10,800	13,650	31,040	50,300	56,040
30	57,470	61,540	65,800	67,840	- - - - -	71,230	66,740	10,840	13,980	32,270	50,300	55,910
31	57,470	- - - - -	65,960	68,000	- - - - -	71,070	- - - - -	10,990	- - - - -	32,650	50,300	- - - - -
(†)	4,260.40	4,261.80	4,263.25	4,263.90	4,265.05	4,264.85	4,263.50	4,234.60	4,237.50	4,249.95	4,257.80	4,259.85
(±)	-2,010	+4,070	+4,420	+2,040	+3,730	-660	-4,330	-55,750	+2,990	+18,670	+17,650	+5,610
Max	59,330	61,540	65,960	68,310	71,730	72,060	70,910	64,560	14,200	32,650	50,300	56,470
Min	57,470	57,610	61,690	66,110	68,160	71,070	66,740	10,800	11,040	14,140	33,140	50,300

Cal yr 1966: (†) +20,510
Wtr yr 1967: (±) - 3,570

† Elevation, in feet, at end of month.
± Change in contents, in acre-feet.

8-3845. Pecos River below Alamogordo Dam, N. Mex.

Location.--Lat 34°36'20", long 104°23'10", in lot 1, sec.2, T.4 N., R.24 E., on left bank 1,200 ft downstream from Alamogordo Dam, 1½ miles downstream from Alamogordo Creek, and 4½ miles northeast of Guadalupe.

Drainage area.--4,390 sq mi, approximately (contributing area).

Records available.--October 1912 to April 1926, August 1926 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1944, published as "near Guadalupe."

Gage.--Digital water-stage recorder and Parshall flume, with concrete control above top of flume. Datum of gage is 4,142.67 ft above mean sea level (Bureau of Reclamation datum). Prior to Sept. 10, 1936, at site 1½ miles upstream at different datum. Sept. 14, 1936, to Mar. 8, 1941, and June 11 to Sept. 21, 1941, at site a quarter of a mile downstream at different datums. Prior to Jan. 1, 1964, graphic water-stage recorder.

Average discharge.--23 years (1912-25, 1926-36), 236 cfs (170,900 acre-ft per year), prior to completion of Alamogordo Dam; 31 years (1936-67), 217 cfs (157,100 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,050 cfs Aug. 9-10 (gage height, 3.26 ft); minimum discharge, 0.45 cfs Aug. 6.
1912-67: Maximum discharge, 42,800 cfs Sept. 1, 1942, by computation of flow over spillway and through outlet gates of Alamogordo Dam by Bureau of Reclamation; maximum gage height, 15.5 ft May 1, 1914, site and datum then in use; no flow at times.

Remarks.--Records good. Diversion for irrigation of about 12,500 acres (1959 determination) above station. Flow regulated by Alamogordo Reservoir (see station 8-3840). Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	4.7	4.1	4.7	3.5	26	93	1,010	65	75	97	102
2	65	4.8	4.4	4.6	3.4	91	94	1,010	66	75	97	100
3	65	5.0	4.7	4.6	3.5	92	86	1,020	66	74	98	101
4	64	5.0	4.6	4.6	3.9	89	83	1,020	66	74	41	100
5	66	5.1	4.4	4.8	3.8	90	82	1,020	67	75	.64	100
6	68	5.0	4.5	4.6	3.5	91	81	1,020	20	74	24	100
7	66	5.0	4.5	4.3	3.0	92	82	1,010	1.0	74	92	101
8	63	5.0	4.6	4.5	2.9	91	84	1,020	1.0	75	345	101
9	63	5.1	4.5	4.7	3.0	97	84	1,020	1.0	75	1,050	100
10	76	5.1	4.4	5.0	3.2	83	78	1,020	1.0	81	1,050	100
11	80	5.3	4.4	5.1	3.4	68	81	1,020	30	84	1,020	100
12	83	5.3	4.7	5.1	3.7	68	83	1,020	84	84	1,010	100
13	88	5.2	4.7	5.1	3.9	62	80	1,020	85	85	1,010	100
14	92	5.2	4.9	6.6	3.9	50	80	1,020	84	86	1,030	101
15	91	5.2	4.7	60	3.8	48	78	1,020	84	87	1,030	101
16	94	5.3	4.5	99	3.8	47	78	1,020	84	86	1,040	101
17	92	5.2	4.9	99	3.8	47	69	1,020	84	85	329	101
18	88	5.0	5.1	99	4.0	44	68	1,020	84	86	7.4	101
19	89	4.9	5.3	99	4.2	46	79	1,020	84	86	6.9	101
20	87	4.8	5.4	99	4.3	58	81	1,020	84	86	44	101
21	86	5.0	5.7	97	4.3	79	81	1,020	84	84	83	101
22	88	5.1	5.2	97	4.2	83	81	1,020	85	84	66	101
23	88	5.4	4.8	97	4.2	91	81	998	85	86	67	101
24	89	4.7	5.0	97	4.4	88	77	998	86	95	68	101
25	92	5.8	4.9	97	4.4	91	67	980	86	100	69	101
26	92	4.6	4.7	97	4.4	90	81	1,010	77	98	71	101
27	93	4.6	4.7	80	4.5	93	82	1,020	74	98	71	101
28	94	4.7	5.0	73	4.9	93	83	1,020	74	99	70	101
29	93	4.5	5.0	50	-----	94	708	406	74	99	71	85
30	93	4.1	5.3	3.6	-----	93	1,010	66	75	98	71	78
31	72	-----	4.9	3.6	-----	93	-----	67	-----	97	90	-----
Total	2525	149.7	148.5	1415.5	107.8	2368	3975	28,975	1941.0	2645	10,218.94	2983
Mean	81.5	4.99	4.79	45.7	3.85	76.4	132	935	64.7	85.3	330	99.4
Max	94	5.8	5.7	99	4.9	97	1,010	1,020	86	100	1,050	102
Min	63	4.1	4.1	3.6	2.9	26	67	66	1.0	74	.64	78
Ac-ft	5,010	297	295	2,810	214	4,700	7,880	57,470	3,850	5,250	20,270	5,920

Cal yr 1966 : Total 64,394.00 Mean 176 Max 1,290 Min .50 Ac-ft 127,700
Wtr yr 1967 : Total 57,452.44 Mean 157 Max 1,050 Min .64 Ac-ft 114,000

8-3850. Fort Sumner main canal near Fort Sumner, N. Mex.

Location.--Lat 34°30'30", long 104°16'40", in SW¼SW¼ sec.1, T.3 N., R.25 E., on right bank 200 ft downstream from diversion dam on Pecos River, and 3¼ miles northwest of Fort Sumner.

Records available.--March 1939 to November 1943 (gage heights only March to November 1943), April 1954 to September 1967. Monthly discharge only for some periods, published in WSP 1732. Published as "Fort Sumner Irrigation District canal" 1939-40.

Gage.--Water-stage recorder. Datum of gage is 4,034.7 ft above mean sea level (Bureau of Reclamation Bench Mark). Prior to March 1954 at site 2.4 miles downstream at different datum. April 1954 to March 1965 at site 1.1 miles downstream at datum 1.7 ft lower.

Extremes.--1939-43, 1954-67: Maximum daily discharge, 174 cfs July 22, 1941; no flow many days.

Remarks.--Records fair. Canal diverts water from Pecos River for irrigation of about 6,600 acres (1961 determination) by the Fort Sumner Irrigation District.

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	92	60	75.6	4,650
November	36	0	1.20	71
December	0	0	0	0
Calendar year 1966	110	0	46.0	33,280
January	102	0	43.5	2,680
February	0	0	0	0
March	96	0	76.5	4,710
April	102	58	75.6	4,500
May	105	81	96.0	5,900
June	93	5.5	66.2	3,940
July	96	69	79.5	4,890
August	97	0	65.0	4,000
September	97	75	95.2	5,670
Water year 1967	105	0	56.6	41,000

8-3855.2. Pecos River below Fort Sumner, N. Mex.

Location.--Lat 34°21'00", long 104°10'20", in SW¼SW¼ sec.36, T.2N., R.26 E., on left bank 3/4 mile upstream from Taiban Creek and 9½ miles southeast of Fort Sumner.

Drainage area.--5,600 sq mi, approximately.

Records available.--August 1957 to May 1958, March 1962 to September 1967. Operated as a low-flow station only.

Gage.--Water-stage recorder. Altitude of gage is 3,920 ft (from river-profile map). Prior to Mar. 27, 1962, at different datum.

Extremes.--Records of low flows only; no maximums or minimums determined.

Remarks.--Records poor. Flow partly regulated by Alamogordo Reservoir (see station 8-3840). Diversions for irrigation of about 19,100 acres (1959 determination) above station. Discharge represents in general, return flow from irrigated areas in Fort Sumner Irrigation Project.

Discharge, in cubic feet per second, water year October 1967 to September 1968

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	56	18	16	22	16	37	-	72	19	27	34
2	46	40	18	14	24	16	32	-	116	23	23	38
3	36	32	18	12	23	18	38	-	93	67	24	29
4	34	30	18	14	21	16	36	-	78	39	-	24
5	36	29	18	14	20	18	30	-	50	31	123	34
6	37	28	18	15	20	22	28	-	70	28	51	24
7	40	27	18	13	20	22	31	-	60	30	40	36
8	36	26	17	10	20	26	34	-	42	28	36	37
9	32	27	17	12	20	25	34	-	36	27	-	42
10	32	25	16	14	18	31	32	-	32	37	-	33
11	29	24	15	13	18	31	31	-	29	30	-	31
12	27	23	16	14	18	27	32	-	28	25	-	33
13	31	23	17	14	18	37	32	-	27	28	-	32
14	31	22	17	13	17	37	32	-	27	21	-	30
15	32	22	18	13	16	30	29	-	27	16	-	36
16	32	22	17	18	16	28	27	-	28	19	-	36
17	41	20	18	17	16	36	32	-	37	24	-	34
18	40	20	18	16	16	34	28	-	30	24	186	34
19	38	20	18	18	16	28	28	-	30	19	113	30
20	39	20	18	20	16	34	27	-	25	18	83	36
21	36	20	18	22	16	26	25	-	18	18	65	44
22	36	20	17	20	15	25	24	-	19	18	76	49
23	42	20	14	24	15	36	24	-	20	20	70	56
24	49	19	15	23	14	32	24	-	22	16	68	53
25	56	19	17	22	16	28	24	-	20	22	68	54
26	56	19	16	31	16	31	24	-	18	27	57	38
27	51	18	17	42	16	30	25	-	18	27	53	53
28	57	18	14	47	15	32	28	-	18	27	37	48
29	57	18	12	51	- - - -	31	36	-	16	25	32	68
30	59	18	14	47	- - - - -	37	-	141	21	26	36	59
31	53	- - - - -	16	27	- - - - -	39	- - - - -	85	- - - - -	26	29	- - - - -
Total	1272	725	518	646	498	879	-	-	1127	805	-	1185
Mean	41.0	24.2	16.7	20.8	17.8	28.4	-	-	37.6	26.0	-	39.5
Max	59	56	18	51	24	39	-	-	116	67	-	68
Min	27	18	12	10	14	16	-	-	16	16	-	24
Ac-ft	2520	1440	1030	1280	988	1740	-	-	2240	1600	-	2350

Note.--Releases from Alamogordo Reservoir Apr. 30 to May 28, Aug. 9 - 17, storm peaks May 29, Aug. 4.

8-3856.2. Pecos River below Yeso Arroyo, near Fort Sumner, N. Mex.

Location.--Lat 34°13'40", long 104°13'45", in SW¼SE¼SE¼ sec.8, T.1 S., R.26 E., on left bank 0.9 mile downstream from Yeso Arroyo and 17 miles south of Fort Sumner.

Drainage area.--7,000 sq mi, approximately (contributing area).

Records available.--November 1964 to September 1967. Operated as a low-flow station only.

Gage.--Water-stage recorder. Altitude of gage is 3,845 ft (from river-profile map).

Extremes.--Records of low flows only; no maximums or minimums will be published.

Remarks.--Records poor. Flow partly regulated by Alamogordo Reservoir (see station 8-3840). Diversions for irrigation of about 19,100 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	58	18	15	26	16	33	-	90	16	25	31
2	45	62	18	14	22	14	30	-	-	29	22	35
3	37	42	18	12	22	14	32	-	199	130	19	31
4	29	35	19	13	22	16	32	-	101	56	-	25
5	28	31	19	14	21	15	28	-	65	30	-	30
6	33	30	19	14	19	17	24	-	62	-	133	27
7	30	28	18	13	19	20	24	-	74	76	-	32
8	35	28	18	11	18	21	25	-	46	46	-	35
9	30	29	18	12	17	24	25	-	37	55	-	41
10	29	29	17	13	17	24	26	-	31	75	-	37
11	31	26	15	13	18	37	25	-	29	36	-	36
12	26	25	15	13	18	28	23	-	28	28	-	35
13	25	24	16	14	18	28	23	-	26	131	-	36
14	26	23	16	15	16	39	25	-	26	46	-	36
15	26	23	17	13	16	35	24	-	26	25	-	37
16	30	21	18	12	15	28	21	-	28	19	-	41
17	37	21	18	24	15	30	23	-	31	23	-	39
18	41	21	19	18	15	37	26	-	35	26	-	37
19	37	20	18	17	16	32	19	-	29	21	-	41
20	37	21	18	19	15	31	19	-	30	20	-	37
21	36	21	18	24	16	29	18	-	23	17	-	76
22	31	21	19	24	15	20	16	-	18	16	84	41
23	36	21	15	24	15	20	16	-	19	16	-	45
24	47	22	15	26	14	32	16	-	22	15	-	42
25	52	22	17	24	14	25	15	-	25	14	-	49
26	58	20	16	26	16	24	16	-	24	29	-	32
27	55	19	16	37	17	24	16	-	22	24	-	35
28	55	19	14	52	16	26	17	-	35	25	37	38
29	64	19	12	52	-----	23	20	-	31	29	32	50
30	65	19	14	59	-----	28	-	-	29	20	34	52
31	65	-----	15	38	-----	33	-----	124	-----	22	31	-----
Total	1231	800	523	675	488	790	-	-	-	-	--	1159
Mean	39.7	26.7	16.9	21.8	17.4	25.5	-	-	-	-	-	38.6
Max	65	62	19	59	26	39	-	-	-	-	-	76
Min	25	19	12	11	14	14	-	-	-	-	-	25
Ac-ft	2440	1590	1040	1340	968	1570	-	-	-	-	-	2300

Note.--Release from Alamogordo Reservoir Apr. 30 to May 30, Aug. 10-19; storm peaks occurred June 2, July 6, Aug. 4, 5. No gage-height record Aug. 7-21, 23-27.

8-3856.4. Pecos River above Huggins Creek, near Roswell, N. Mex.

Location.--Lat 33°54'55", long 104°16'40", in NW¼SW¼NW¼ sec.36, T.4 S., R.25 E., on right bank 1.7 miles downstream from Hernandez Draw, 4.3 miles upstream from Huggins Creek, and 38 miles northeast of Roswell.

Drainage area.--7,800 sq mi, approximately (contributing area).

Records available.--October 1964 to September 1967. Operated as low-flow station only.

Gage.--Water-stage recorder. Altitude of gage is 3,680 ft (from river-profile map). Supplemental water-stage recorder since June 9, 1966, at site opposite base gage at same datum.

Extremes.--Records of low flows only; no maximums or minimums will be published.

Remarks.--Records poor. Flow partly regulated by Alamogordo Reservoir (see station 8-3840). Diversions for irrigation of about 19,100 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	67	14	7.0	53	12	19	-	-	29	12	28
2	47	58	14	13	30	11	25	-	-	-	10	22
3	40	63	14	10	20	9.1	28	-	-	-	5.2	25
4	29	40	14	12	18	8.5	25	-	-	-	-	28
5	24	28	15	14	18	9.1	29	-	-	101	-	38
6	21	20	15	15	17	11	25	--	83	-	-	34
7	22	18	14	7.0	15	8.5	21	-	58	-	89	29
8	22	16	13	5.0	14	9.1	18	-	67	72	83	19
9	24	18	12	6.0	15	12	16	-	46	30	58	20
10	21	20	9.0	8.0	17	15	16	-	33	21	-	21
11	20	16	9.0	7.0	20	18	19	-	25	63	-	28
12	20	15	9.0	6.0	19	18	17	-	20	29	-	18
13	16	14	10	18	18	34	15	-	15	60	-	15
14	10	14	13	20	17	20	12	-	13	148	-	18
15	10	15	15	15	15	20	12	-	9.7	63	-	19
16	13	15	17	11	12	38	15	-	21	22	-	17
17	15	15	15	8.5	13	30	13	-	20	10	-	18
18	19	15	15	6.0	12	21	12	-	17	14	-	18
19	26	14	15	7.0	12	30	13	-	20	19	-	16
20	26	14	15	11	12	38	19	-	14	13	-	53
21	24	14	14	12	12	26	14	-	16	6.0	-	42
22	22	14	13	14	11	30	9.7	-	14	3.0	-	86
23	19	14	11	16	9.7	22	7.3	-	7.9	2.0	77	42
24	18	16	9.0	17	9.7	15	6.1	-	5.2	1.0	92	32
25	26	17	10	17	9.7	14	4.9	-	5.5	1.0	126	33
26	42	16	14	19	9.7	20	4.0	-	10	7.0	75	34
27	53	13	16	16	12	16	3.7	-	7.9	6.0	65	29
28	49	12	12	22	12	15	4.0	-	5.2	5.0	55	18
29	49	13	10	49	- - - - -	15	3.7	-	-	6.0	46	25
30	65	14	8.0	60	- - - - -	16	2.5	-	65	7.0	32	22
31	70	- - - - -	6.0	70	- - - - -	12	- - - - -	-	- - - - -	5.2	26	- - - - -
Total	895	638	390.0	518.5	452.8	573.3	428.9	-	-	-	-	847
Mean	28.9	21.3	12.6	16.7	16.2	18.5	14.3	-	-	-	-	28.2
Max	70	67	17	70	53	38	29	-	-	-	-	86
Min	10	12	6.0	5.0	9.7	8.5	2.5	-	-	-	-	15
Ac-ft	1,780	1,270	774	1,030	898	1,140	851	-	-	-	-	1,680

Note.--Releases from Alamogordo Reservoir May 1-31, Aug. 10-19; storm peaks occurred June 2, 3, 29, July 2-4, 6, 7, Aug. 4-6.

8-3860. Pecos River near Acme, N. Mex.

Location.--Lat 33°32'10", long 104°22'40", in NW¼ sec.14, T.9 S., R.25 E., on right bank 1 mile southeast of Melena railroad station, 3 miles south of U. S. Highway 70, 3½ miles downstream from Salt Creek, 5 miles southwest of Acme, and 13 miles northeast of Roswell.

Drainage area.--11,380 sq mi, approximately (contributing area).

Records available.--September 1921 to June 1923, July 1937 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from river-profile map). Prior to Nov. 1, 1938, at site on highway bridge 3 miles upstream at various datums. Supplemental water-stage recorder since Oct. 25, 1963, at site opposite base gage at same datum.

Average discharge.--30 years (1937-67), 204 cfs (147,700 acre-ft per year).

Extremes.--Maximum discharge during year, 3,930 cfs May 30 (gage height, 7.60 ft); no flow several days.
1937-67: Maximum discharge, 45,000 cfs Sept. 23, 1941 (gage height, 13.71 ft), from rating curve extended above 26,000 cfs; no flow at times.
The flood of May 28, 1937, reached a discharge of 53,000 cfs (gage height, 14.82 ft, from floodmarks, site and datum then in use), by slope-area method, but may have been exceeded by the flood of Oct. 1, 1904. For other peaks prior to 1937, see station 8-3845.

Remarks.--Records fair. Flow regulated by Alamogordo Reservoir (see station 8-3840). Diversions for irrigation of about 20,000 acres (1959 determination) above station. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	35	9.3	8.0	37	6.0	5.0	115	188	34	0	20
2	25	37	9.3	10	41	5.6	5.0	600	195	12	0	19
3	25	36	9.3	8.0	30	5.3	4.7	625	389	256	0	17
4	28	37	9.3	9.0	23	5.0	8.9	679	262	80	29	14
5	22	32	9.7	10	20	4.4	11	734	167	105	720	14
6	20	24	9.7	10	17	4.4	9.3	772	122	45	207	18
7	18	21	9.3	7.0	15	4.4	11	782	79	94	118	29
8	16	18	8.9	6.0	13	3.9	10	772	52	68	58	15
9	14	14	8.5	5.0	13	4.2	8.1	782	56	30	51	13
10	12	14	7.6	6.4	12	3.6	6.4	810	39	14	789	8.9
11	12	18	8.0	7.0	12	4.2	4.7	762	29	11	1,320	8.1
12	10	16	7.5	7.0	12	5.0	3.9	820	21	14	920	8.1
13	8.5	15	5.5	8.0	11	7.2	3.6	762	15	12	880	8.1
14	6.0	14	7.0	9.0	11	7.2	3.6	820	10	12	970	5.6
15	4.4	14	10	11	9.3	14	2.7	840	7.2	35	910	5.3
16	3.0	13	11	13	7.6	9.7	2.2	890	114	15	1,640	5.3
17	2.5	13	10	12	7.2	9.3	1.3	840	119	11	1,240	6.4
18	2.7	12	10	8.5	6.4	17	1.4	890	30	6.8	880	5.3
19	3.3	12	9.3	6.7	5.6	16	2.0	870	15	4.2	430	4.7
20	4.7	11	9.7	5.4	5.6	15	.90	870	10	2.2	266	12
21	8.9	11	10	6.4	5.6	18	.45	830	7.0	1.3	122	14
22	9.7	12	10	10	6.0	20	.54	830	5.6	.27	90	16
23	8.5	12	9.7	8.9	5.6	17	.72	800	3.6	0	71	34
24	8.5	12	8.0	9.3	5.3	18	.09	810	3.0	0	63	22
25	7.6	13	8.5	9.7	4.7	13	0	810	2.3	0	66	17
26	8.1	12	9.0	9.7	5.0	8.1	0	840	1.3	0	73	17
27	13	11	8.5	9.7	5.6	6.0	0	840	.81	0	51	15
28	22	10	7.5	11	5.6	9.3	0	850	.72	0	41	16
29	28	9.7	6.5	10		7.6	0	1,320	22	0	35	11
30	27	9.3	7.0	13	- - - - -	5.0	0	1,490	84	0	29	6.8
31	32	- - - - -	7.0	30	- - - - -	5.0	- - - - -	365	- - - - -	0	22	- - - - -
Total	441.4	518.0	270.6	294.7	352.1	278.4	107.50	24,820	2049.53	862.77	12,091	405.6
Mean	14.2	17.3	8.73	9.51	12.6	8.98	3.58	801	68.3	78.3	390	13.5
Max	32	37	11	30	41	20	11	1,490	389	256	1,640	34
Min	2.5	9.3	5.5	5.0	4.7	3.6	0	115	.72	0	0	4.7
Ac-ft	876	1,030	537	585	698	552	213	49,230	4,070	1,710	23,980	804

Cal yr 1966 : Total 59,790.57 Mean 164 Max 2,670 Min 0 Ac-ft 118,600
Wtr yr 1967 : Total 42,491.60 Mean 116 Max 1,640 Min 0 Ac-ft 84,280

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
5-30	0000	7.60	3,930	8-16	2030	6.98	3,200

8-3870. Rio Ruidoso at Hollywood, N. Mex.

Location.--Lat 33°19'50", long 105°36'25", in NE¼ sec.30, T.11 S., R.14 E., on right upstream end of bridge on road leading to Ruidoso Downs, 0.9 mile east of Hollywood, 2⅝ miles downstream from Carrizo Creek, and 2½ miles east of Ruidoso.

Drainage area.--120 sq mi, approximately.

Records available.--March 1953 to September 1967.

Gage.--Digital water-stage recorder and crest-stage gage. Datum of gage is 6,365.42 ft above mean sea level, datum of 1929. Prior to October 14, 1961, at datum 0.30 ft higher. Oct. 14, 1961, to Mar. 8, 1962, at datum 0.60 ft higher. Mar. 9, 1962, to June 18, 1965, at datum 1.0 ft higher. Mar. 15, 1953, to Feb. 11, 1965, graphic water-stage recorder.

Average discharge.--14 years, 11.0 cfs (7,960 acre-ft per year).

Extremes.--Maximum discharge during year, 185 cfs Aug. 12 (gage height, 2.65 ft); minimum, 0.88 cfs June 24.
1953-67: Maximum discharge, 1,340 cfs June 17, 1965 (gage height, 9.05 ft), from rating curve extended above 110 cfs on basis of slope-area measurement of peak flow; minimum, 0.3 cfs Jan. 1, 1962, May 8-9, 1964.
The flood of Sept. 29, 1941, is probably the highest since at least 1904 (discharge not determined).

Remarks.--Records good. Figures of discharge do not include F. Herrera ditch-S., which diverts from right bank 1½ miles upstream and bypasses station for irrigation of 75 acres (1959 determination) below. See monthly table below for record of ditch. Village of Ruidoso diverts from right bank 7 miles upstream for municipal use and returns a portion of this to river as effluent from sewage disposal plant 1½ miles upstream from station. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	6.4	5.9	4.0	4.3	4.2	5.3	2.3	1.9	3.0	18	21
2	9.9	6.9	5.4	4.7	4.2	4.2	4.8	2.4	1.9	3.0	18	19
3	9.4	6.9	5.4	4.0	4.2	4.3	4.7	2.4	1.9	3.9	14	17
4	9.4	6.3	5.2	4.3	4.0	4.5	5.2	2.4	1.9	3.9	16	17
5	10	6.2	5.0	4.6	4.1	4.7	4.7	2.3	1.9	4.3	25	17
6	10	6.1	4.9	4.4	4.2	4.5	4.7	1.5	1.9	7.6	24	15
7	9.5	6.0	6.1	4.0	4.0	4.5	4.7	1.2	1.9	5.2	22	15
8	9.4	6.4	5.9	3.0	3.7	4.7	4.7	1.3	1.8	4.4	27	14
9	8.5	14	5.0	3.5	4.1	5.3	4.6	1.3	1.8	4.3	20	15
10	8.2	7.2	4.0	4.0	4.3	4.8	4.6	1.4	1.9	5.8	43	14
11	8.1	7.2	5.2	4.5	4.2	4.9	4.3	2.0	1.9	4.5	46	13
12	7.8	6.9	4.5	4.1	3.9	5.1	4.5	2.2	1.8	4.3	133	12
13	7.6	6.7	4.6	4.0	4.1	5.0	5.4	2.1	1.8	38	102	11
14	7.4	6.7	5.1	3.9	4.3	4.8	4.9	1.9	1.8	21	73	11
15	7.6	6.8	5.3	3.8	4.0	4.7	5.1	1.5	1.8	15	62	12
16	7.5	7.4	4.6	3.8	4.0	4.9	4.9	1.3	2.8	12	66	12
17	7.2	7.6	5.0	3.8	3.8	4.9	5	1.3	2.0	11	84	12
18	7.2	7.7	5.3	3.8	3.3	4.9	5.3	1.3	1.9	11	93	12
19	7.1	7.5	5.4	3.5	3.2	5.4	4.3	1.4	2.5	9.5	84	12
20	7.1	7.3	5.4	4.0	3.4	5.8	3.0	1.4	2.1	8.9	75	12
21	6.8	7.3	5.3	3.9	3.5	5.3	2.6	1.4	1.5	8.3	81	11
22	6.6	6.9	5.0	3.8	3.4	5.4	2.5	1.5	1.2	8.8	76	11
23	6.6	6.8	4.6	3.8	3.2	5.8	2.5	1.9	1.0	10	65	11
24	6.7	6.7	4.0	3.8	3.1	5.9	2.8	2.2	.92	8.1	54	11
25	6.5	6.6	5.1	3.8	3.4	5.4	3.1	2.1	1.5	7.3	45	14
26	6.5	6.4	4.7	3.8	4.2	5.1	2.9	2.2	1.5	16	38	14
27	6.5	6.1	5.4	3.8	4.9	5.3	2.6	1.8	3.0	11	37	12
28	6.4	6.1	4.5	3.8	4.0	5.6	2.4	1.9	3.1	22	30	11
29	6.4	6.1	4.0	4.0	-----	5.5	2.2	1.9	2.9	28	26	11
30	6.3	5.9	4.9	3.9	-----	5.2	2.1	1.9	3.7	26	22	10
31	6.3	-----	4.8	4.3	-----	5.3	-----	1.9	-----	22	21	-----
Total	241.5	209.1	155.5	122.4	109.0	155.9	120.4	55.6	59.52	348.1	1,540	399
Mean	7.79	6.97	5.02	3.95	3.89	5.03	4.01	1.79	1.98	11.2	49.7	13.3
Max	11	14	6.1	4.7	4.9	5.9	5.4	2.4	3.7	38	133	21
Min	6.3	5.9	4.0	3.0	3.1	4.2	2.1	1.2	.92	3.0	14	10
Ac-ft	479	415	308	243	216	309	239	110	118	690	3,050	791
(†)	4.6	1.0	0	0	9.4	21	57	89	85	28	6.0	.1

Cal yr 1966 : Total 7,331.1 Mean 20.1 Max 89 Min 4.0 Ac-ft 14,540
Wtr yr 1967 : Total 3,516.02 Mean 9.63 Max 133 Min .92 Ac-ft 6,970

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-12	1500	2.65	185	8-19	1900	2.10	119

† Diversion, in acre-feet, by F. Herrera ditch-S.

8-3905. Rio Hondo at Diamond A Ranch, near Roswell, N. Mex.

Location.--Lat 33°20'55", long 104°51'05", in NE¼NE¼ sec.20, T.11 S., R.21 E., on right bank 15 ft downstream from county road bridge at Diamond A Ranch, 13 miles upstream from Two Rivers Reservoir, 21 miles upstream from mouth of Rocky Arroyo, and 18 miles west of Roswell, Chaves County.

Drainage area.--947 sq mi (contributing area).

Records available.--May 1908 to August 1909, May 1939 to September 1967. Monthly discharge only for 1908-09, published in Technical Report No. 7, State of New Mexico, Streamflow and Reservoir Content 1888 - 1954.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,185 ft (from topographic map). Prior to Nov. 11, 1965, at site on opposite bank at same datum. Supplemental water-stage recorder on opposite bank since Nov. 11, 1965, at same datum.

Average discharge.--28 years (1939-67), 24.8 cfs (17,950 acre-ft per year).

Extremes.--Maximum discharge during year, 1,480 cfs Sept. 19 (gage height, 15.20 ft); no flow most of time.
1939-67: Maximum discharge, 54,800 cfs June 18, 1965 (gage height, 26.40 ft), from rating curve extended above 3,000 cfs on basis of slope-area measurement of peak flow; maximum gage height, 28.78 ft, Sept. 22, 1941; no flow most of time.
A flood on June 1, 1937, reached a discharge of 24,900 cfs at Riverside about 13 miles upstream. Other major floods occurred Oct. 31, 1901, Sept. 29, 30, 1904, and July 25, 1905.

Remarks.--Records poor. Diversions and ground-water withdrawals above station for irrigation of about 6,500 acres (1959 determination) above and below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	0.03	0			0	5.0	0	0.33
2		0		0	0	0			0	.27	0	0
3		0		0	0	0			0	0	0	0
4		0		0	0	0			88	0	0	.01
5		0		0	0	0			4.1	0	0	0
6		0		0	0	0			2.2	0	0	0
7		0		0	0	0			0	.50	2.0	0
8		0		0	0	0			0	0	0	0
9		0		2.3	0	0			0	8.3	50	0
10		0		.18	0	0			0	54	255	0
11		0		0	0	0			0	9.3	134	6.9
12		0		0	0	0			0	.02	89	.64
13		0		0	0	.10			0	0	189	0
14		0		0	0	.04			0	2.1	173	0
15		0		0	0	0			0	2.0	122	0
16		0		0	0	.08			0	0	122	0
17		0		0	0	0			0	0	190	0
18		0		0	0	0			0	0	132	0
19		0		0	0	0			0	0	116	146
20		0		0	0	0			0	0	213	130
21		0		0	0	0			0	0	178	25
22		0		0	0	0			0	0	103	17
23		0		0	0	0			0	0	85	11
24		0		0	0	0			0	0	91	6.1
25		0		.02	0	0			0	0	77	5.8
26		0		.87	0	0			0	0	74	4.0
27		.65		.14	0	0			0	0	68	40
28		0		1.1	0	0			0	0	109	13
29		0		.54	-----	0			0	0	16	3.2
30		0		0	-----	0			140	0	2.6	2.0
31		-----		0	-----	0	-----		-----	0	2.8	-----
Total	0	0.65	0	5.15	0.03	0.22	0	0	234.3	81.49	2,593.4	410.98
Mean	0	.022	0	.17	.001	.007	0	0	7.81	2.63	83.7	13.7
Max	0	.65	0	2.3	.03	.10	0	0	140	54	255	146
Min	0	0	0	0	.0	0	0	0	0	0	0	0
Ac-ft	0	1.3	0	10	.06	.40	0	0	465	162	5,140	815

Cal yr 1966: Total 4,523.07 Mean 12.4 Max 633 Min 0 Ac-ft 8,970
Wtr yr 1967: Total 3,326.22 Mean 9.11 Max 255 Min 0 Ac-ft 6,600

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	about 0430	14.14	1,320	9-19	about 2100	15.20	1,480

Note.--No gage height record Aug. 10, Sept. 19.

8-3906. Two Rivers Reservoir near Roswell, N. Mex.

Location.--Lat 33°17'55" long 104°43'20", in SW¼SE¼NE¼ sec.4, T.12 S., R.22 E., near center of Diamond A Dam on Rio Hondo, 13 miles southwest of Roswell, and lat 33°16'20", long 104°43'20", in NW¼SE¼NE¼ sec.16, T.12 S., R.22 E., at left end of Rocky Dam on Rocky Arroyo, 14 miles southwest of Roswell.

Drainage area.--1,030 sq mi (Rio Hondo, 963 sq mi; Rocky Arroyo, 64 sq mi).

Records available.--July 1963 to September 1967.

Gage.--Water-stage recorders. Datum of gages is at mean sea level, datum of 1929.

Extremes.--Maximum contents at 2400 hours of Rio Hondo Reservoir during year, 125 acre-ft Aug. 20 (elevation, 3,973.59 ft); no contents most of time. Maximum contents at 2400 hours of Rocky Arroyo Reservoir during year, 371 acre-ft Aug. 10 (elevation, 3,952.19 ft); no contents most of time.
1963-67: Maximum contents at 0800 hours of Rio Hondo Reservoir, 1,260 acre-ft July 29, 1965 (elevation, 3,985.7 ft); Rocky Arroyo Reservoir at 0800 hours, 6,090 acre-ft June 18, 1965 (elevation, 3,970.7 ft); no contents both reservoirs most of time.

Remarks.--Two Rivers Reservoir, completed July 16, 1963, is formed by earth-fill dams on Rio Hondo, which forms Rio Hondo Reservoir, and Rocky Arroyo, which forms Rocky Arroyo Reservoir. Above elevation 3,980.0 ft the pools of the two reservoirs combine to form Two Rivers Reservoir with a total capacity of 167,900 acre-ft at elevation 4,032.0 ft (crest of ungated spillway). Capacity of Rio Hondo Reservoir, 550 acre-ft between elevations 3,957.0 (sill of outlet gate) and 3,980.0 ft. Capacity of Rocky Arroyo Reservoir, 14,240 acre-ft between elevations 3,945.0 (sill of outlet gate) and 3,980.0 ft. No appreciable dead storage in Rio Hondo Reservoir. Dead storage in Rocky Arroyo Reservoir, 39 acre-ft. Primary objective of project is flood control. Outlet conduits in Rocky Dam have fixed openings. Figures given herein represent total contents (in table, reservoirs separated as indicated).

Cooperation.--Records furnished by Corps of Engineers.

Capacity table (elevation, in feet, and contents, in acre-feet)

Hondo Res.		Rocky Arroyo Res.	
3,953	0	3,937	0
3,957	2.7	3,940	1.4
3,964	20	3,943	16
3,970	47	3,946	57
3,974	140	3,950	202
		3,953	454

Contents, in acre feet, water year October 1966 to September 1967

	Hondo Res.	Rocky Arroyo Res.
August 10	119	371
20	125	0

Note.--Storage only on days listed above. Month-end, calendar year and water year contents were all zero.

8-3908. Rio Hondo below Diamond A Dam, near Roswell, N. Mex.

Location.--Lat 33°18'05", long 104°43'10", in NE¼SE¼NE¼ sec.4, T.12 S., R.22 E., on left bank, 500 ft downstream from outlet conduit of Diamond A Dam (Two Rivers Reservoir) and 13 miles southwest of Roswell.

Drainage area.--963 sq mi (contributing area).

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,949.68 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Extremes.--Maximum discharge during year, 474 cfs Sept. 20 (gage height, 3.95 ft); no flow most of time.
1963-67: Maximum discharge, 659 cfs July 29, 1965 (gage height, 4.91 ft); no flow most of time.

Remarks.--Records fair. Diversions and ground-water withdrawals for irrigation of about 6,500 acres (1959 determination) above station. This record represents the outflow from Two Rivers Reservoir through Diamond A Dam.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									1.0	6.0	0	0
2									22	0	0	0
3									.86	0	0	0
4									38	0	0	0
5									2.5	0	0	0
6									2.5	0	0	0
7									.42	0	1.5	0
8									0	0	0	0
9									0	0	8.8	0
10									0	6.6	251	0
11									0	2.9	117	0
12									0	0	41	0
13									0	3.2	125	0
14									0	2.4	92	0
15									0	0	51	0
16									0	0	54	0
17									0	0	91	0
18									0	0	73	0
19									0	0	61	.22
20									0	0	73	210
21									0	0	159	23
22									0	0	65	15
23									0	0	64	9.9
24									0	0	42	3.4
25									0	0	27	2.4
26									0	0	20	.75
27									0	0	14	23
28									0	0	39	8.0
29									0	0	19	1.5
30									105	0	8.0	0
31										0	1.0	
Total	0	0	0	0	0	0	0	0	172.29	21.1	1507.3	297.17
Mean	0	0	0	0	0	0	0	0	5.74	.68	48.6	9.91
Max	0	0	0	0	0	0	0	0	105	6.6	251	210
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	342	42	2,990	589

Cal yr 1966: Total 2,424.99 Mean 6.64 Max 409 Min 0 Ac-ft 4,810
Wtr yr 1967: Total 1,997.85 Mean 5.47 Max 251 Min 0 Ac-ft 3,960

8-3932 (revised). Rocky Arroyo above Two Rivers Reservoir, near Roswell, N. Mex.

Location.--Lat 33°17'07", long 104°47'47", in NE¼SW¼ sec.11, T.12 S., R.21½ E., on right bank, 2.1 miles upstream from mouth of Buchnan Draw, 5.2 miles upstream from Rocky Dam (Two Rivers Reservoir), and 17 miles southwest of Roswell, Chaves County.

Drainage area.--31 sq mi.

Records available.--May 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,055.45 ft (Corps of Engineers datum).

Extremes.--Maximum discharge during year, 1,240 cfs Aug. 10 (gage height, 8.66 ft), from rating curve extended above 350 cfs as explained below; no flow most of time.
1963-67: Maximum discharge, 3,580 cfs Sept. 1, 1966 (gage height, 10.86 ft), from rating curve extended above 350 cfs on basis of slope-area measurements at gage heights 9.64 and 10.86 ft; no flow most of time.

Remarks.--Records good. No diversions above station. Flow past station represents inflow to Two Rivers Reservoir.

Discharge, in cubic feet per second, October 1966 to September 1967

June 2..... 1.1
August 10..... 199
11..... .49

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1967	1.1	1.1	0	0.037	2.2
August	199.49	199	0	6.44	396
Calendar year 1966	1,534.60	708	0	4.20	3,040
Water year 1967	200.59	199	0	.55	398

Peak discharge (base 90 cfs).--Aug. 10 (0315) 1,240 cfs (8.66 ft).

Note.--Flow occurred only on days listed above.

8-3933 (revised). Rocky Arroyo below Rocky Dam, near Roswell, N. Mex.

Location.--Lat 33°15'55", long 104°42'05", in SE¼NE¼SE¼ sec.15, T.12 S., R.22 E., on left bank, 1½ miles downstream from Rocky Dam (Two Rivers Reservoir) and 13 miles southwest of Roswell.

Drainage area.--65 sq mi.

Records available.--May 1963 to September 1967

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,906.90 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Extremes.--Maximum discharge during year, 170 cfs Aug. 10 (gage height, 4.07 ft); no flow most of time.
1963-67: Maximum discharge, 548 cfs Aug. 21, 1966 (gage height, 4.57 ft), from rating curve extended above 260 cfs; no flow most of time.

Remarks.--Records fair. No diversions above station. This record represents the outflow from Two Rivers Reservoir through Rocky Dam plus any runoff in the 1½ miles of intervening area between the dam and the gage. Outlet conduits in Rocky Dam have fixed openings.

Discharge, in cubic feet per second, October 1966 to September 1967

June 3..... 2.9
4..... .02
6..... 1.2
7..... .14
Aug. 7..... 3.0
8..... .07
10.....126
11..... 39
Aug. 12..... 8.6
13..... 3.5
14..... 1.5
15..... 2.1
16..... .96
17..... .02
Sept. 20..... .06

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1967	4.26	2.9	0	0.14	8.4
August	184.75	126	0	5.96	366
September	.06	.06	0	.002	.1
Calendar year 1966	1,725.73	257	0	4.73	3,420
Water year 1967	189.07	126	0	.52	375

Note.--Flow occurred only on days listed above.

8-3936. North Spring River at Roswell, N. Mex.

Location.--Lat 33°23'45", long 104°32'55", in NW¼SW¼SE¼ sec.31, T.10 S., R.24 E., in Roswell Municipal Golf Course, on left bank 2,400 ft upstream from Montana Avenue, in Roswell.

Drainage area.--19.5 sq mi.

Records available.--May 1958 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

Average discharge.--9 years, 0.054 cfs (39 acre-ft per year).

Extremes.--Maximum discharge during year, 158 cfs Aug. 10 (gage height, 3.84 ft); no flow most of time.
1958-67: Maximum discharge, 387 cfs June 13, 1964 (gage height, 4.65 ft), from rating curve extended above 80 cfs on basis of slope-area measurement; no flow most of time.

Remarks.--Records good. No diversions above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

August 10..... 40
11..... 1.8

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
August 1967	41.8	40	0	1.35	83
Calendar year 1966	68.96	26	0	.19	137
Water year 1967	41.8	40	0	.11	83

Note.--Flow occurred only on days listed above.

8-3945. Rio Felix at old highway bridge, near Hagerman, N. Mex.

Location.--Lat 33°07'30", long 104°20'40", in SW¼ sec.4, T.14 S., R.26 E., near left bank on downstream side of abandoned bridge pier, 0.6 mile upstream from U. S. Highway 285, 1¼ miles northwest of Hagerman, and 2½ miles upstream from mouth.

Drainage area.--932 sq mi (contributing area).

Records available.--April 1939 to September 1967. March 1932 to April 1939 at site 1 mile downstream; records for periods of low flow not equivalent.

Gage.--Water-stage recorder. Datum of gage is 3,403.40 ft above mean sea level, datum of 1929.

Average discharge.--27 years, 17.0 cfs (12,310 acre-ft per year).

Extremes.--Maximum discharge during year, 1,520 cfs Aug. 10 (gage height, 11.36 ft); no flow most of time.
1939-67: Maximum discharge, 74,000 cfs Oct. 7, 1954 (gage height, 27.5 ft, from floodmarks), from rating curve extended above 12,000 cfs on basis of slope-area measurement at point 5½ miles upstream from gage (adjusted for channel storage); no flow for many periods.
Flood in 1954 is the highest since 1894, from information by local residents. Flood of Oct. 1, 1904, is probably second highest. Another major flood occurred in April 1915.

Remarks.--Records poor. Diversions for irrigation of about 350 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

June 17..... 133
18..... 3.4
19..... .34
30..... .41
July 1..... 8.0
July 2..... 0.36
August 10..... 416
11..... 111
12..... 3.3

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1967	137.15	133	0	4.57	272
July	8.36	8.0	0	.27	17
August	530.3	416	0	17.1	1,050
Calendar year 1966	10,651.88	8,580	0	29.2	21,130
Water year 1967	675.81	416	0	1.85	1,340

Peak discharge (base 500 cfs).--June 17 (0130) 571 cfs (8.64 ft); Aug. 10 (1130) 1,520 cfs (11.36 ft).

Note.--Flow occurred only on days listed above.

8-3955. Pecos River near Lake Arthur, N. Mex.

Location.--Lat 32°59'18", long 104°19'20", in SW¼NE¼ sec.27, T.15 S., R.26 E., on left bank 400 ft upstream from county bridge, 2½ miles east of Lake Arthur, 7 miles upstream from Cottonwood Creek, and 11 miles northeast of Artesia.

Drainage area.--14,760 sq mi, approximately (contributing area).

Records available.--August 1938 to September 1967.

Gage.--Digital water-stage recorder with crest-stage gage and rock control. Datum of gage is 3,327.07 ft above mean sea level, datum of 1929. Prior to Jan. 6, 1965, graphic water-stage recorder.

Average discharge.--29 years, 269 cfs (194,700 acre-ft per year).

Extremes.--Maximum discharge during year, 2,300 cfs May 30 (gage height, 5.97 ft); minimum, 0.13 cfs Aug. 3.
1938-67: Maximum discharge, 49,600 cfs Sept. 24, 1941 (gage height, 21.90 ft), from rating curve extended above 16,100 cfs on basis of slope-area measurement at gage height 21.77 ft; no flow at times in 1947, 1953-4, 1962, 1964.
Flood of May 30, 1937, reached a stage of 21.77 ft (discharge, 51,500 cfs, on basis of slope-area measurement of peak flow), but may have been exceeded by floods in 1904 and 1919.

Remarks.--Records good. Flow partly regulated by Alamogordo Reservoir (see station 8-3840). Diversions and ground-water withdrawals for irrigation of about 124,000 acres (1959 determination) above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	50	46	24	32	51	33	4.1	11	325	31	1.1	34
2	56	48	22	36	58	33	4.5	5.3	214	72	1.0	25
3	54	55	21	37	72	32	4.9	421	205	43	0.82	28
4	46	59	23	36	83	29	4.1	559	309	137	0.74	25
5	38	60	26	34	75	25	5.5	629	306	114	2.2	21
6	41	62	26	39	63	27	7.9	646	217	85	362	21
7	42	65	28	38	58	24	11	723	183	96	154	18
8	43	55	33	37	52	22	10	721	137	40	63	18
9	42	50	28	39	49	22	12	695	94	99	23	26
10	40	46	34	45	46	26	22	663	83	66	96	28
11	37	45	36	47	45	27	20	732	82	25	1,370	17
12	33	42	35	44	45	26	14	728	64	8.0	1,120	9.6
13	31	42	34	43	45	24	12	735	47	6.8	839	4.2
14	31	47	31	43	41	20	11	747	36	6.1	781	2.8
15	28	44	31	42	41	15	8.4	793	29	8.2	856	2.2
16	29	45	27	42	42	14	6.7	773	25	6.6	875	2.0
17	32	46	28	44	46	10	8.8	770	102	10	1,490	2.7
18	28	46	28	50	43	4.0	7.0	760	164	13	941	5.0
19	27	42	32	48	37	8.0	3.7	748	80	5.7	779	5.5
20	28	43	27	46	39	14	3.2	758	39	2.3	322	24
21	27	44	30	44	46	11	5.9	737	15	2.4	225	23
22	25	42	27	43	38	8.0	3.6	746	6.4	2.4	139	11
23	23	39	28	41	37	5.7	2.8	701	2.8	1.8	127	38
24	23	36	31	42	35	6.1	2.6	721	2.5	1.5	94	22
25	27	36	35	41	34	9.0	2.4	737	11	1.3	91	20
26	27	36	34	42	34	9.8	3.0	733	16	1.3	60	34
27	31	30	32	45	36	10	3.9	726	10	1.3	62	24
28	31	28	32	47	33	7.2	4.7	783	6.0	2.9	65	16
29	30	31	31	47	------	4.2	5.8	759	4.6	8.3	41	19
30	36	29	37	49	------	4.3	5.0	1,510	8.2	2.5	36	19
31	48	------	35	50	------	3.9	------	872	------	1.4	32	------
TOTAL	1,084	1,339	926	1,313	1,324	514.2	220.5	21,642.3	2,823.5	901.8	11,048.86	545.0
MEAN	35.0	44.6	29.9	42.4	47.3	16.6	7.34	698	94.1	29.1	356	18.2
MAX	56	65	37	50	83	33	22	1,510	325	137	1,490	38
MIN	23	28	21	32	33	3.9	2.4	5.3	2.5	1.3	.74	2.0
AC-FT	2,150	2,660	1,840	2,600	2,630	1,020	437	42,930	5,600	1,790	21,920	1,080

CAL YR 1966 TOTAL 72,479 MEAN 199 MAX 7,470 MIN 1.2 AC-FT 143,800
WAT YR 1967 TOTAL 43,682 MEAN 120 MAX 1,510 MIN .74 AC-FT 86,640

Peak discharge (base, 2,500 cfs).--No peak above base.

8-3965. Pecos River near Artesia, N. Mex.

Location.--Lat. 32°50'25", long 104°19'25", in NW¼NW¼ sec.18, T.17 S., R.27 E., near left bank on downstream end of bridge pier on State Highway 83, 4.3 miles east of Artesia, 7.0 miles north of mouth of Rio Penasco, and 17 miles north of McMillan Dam.

Drainage area.--15,300 sq mi, approximately (contributing area).

Records available.--September 1905 to June 1909, August 1909 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Records for Aug. 22-31, 1934, and October 1936 to April 1937, published in WSP 763 and 828, respectively, have been found to be unreliable and monthly figures only should be used. Prior to February 1936, published as "near Dayton."

Gage.--Water-stage recorder. Datum of gage is 3,291.05 ft (Bureau of Reclamation bench mark). Prior to Aug. 27, 1914, staff gage and Aug. 27, 1914, to Feb. 20, 1936, water-stage recorder at site 6½ miles downstream at different datum. Feb. 21, 1936, to Apr. 4, 1941, water-stage recorder at site 600 ft downstream at different datum.

Average discharge.--30 years (1905-8, 1909-36), 365 cfs (264,200 acre-ft per year), prior to completion of Alamogordo Reservoir; 31 years (1936-67), 290 cfs (210,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,300 cfs May 30 (gage height, 9.48 ft); minimum 0.30 cfs Aug. 1.
1905-67: Maximum discharge probably occurred May 30, 1937, when a discharge of 51,500 cfs was measured by slope-area method at a point 15 miles upstream (gage height, 14.7 ft, site and datum then in use); no flow at times in 1934, 1946-47, 1953-54, 1957, 1964-65.
Greatest flood known since at least 1893 occurred Oct. 2, 1904 (discharge not determined). (The peak inflow to Lake McMillan, which includes Rio Penasco and Fourmile Draw, was estimated as 82,000 cfs). The second highest flood occurred July 25, 1905 (discharge below Rio Penasco, 50,300 cfs, based on gain in storage and spill from Lake McMillan). The floods in August 1893 and October 1904 damaged McMillan Dam and washed out Avalon Dam.

Remarks.--Records fair, except those for discharges below 10 cfs, which are poor. Flow partly regulated by Alamogordo Reservoir (see station 8-3840) since August 1937. Diversions and ground-water withdrawals for irrigation of about 154,000 acres (1959 determination) above station. Discharge represents inflow to Lake McMillan which is part of the storage system for the irrigation of about 25,000 acres of the Carlsbad project. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	52	31	38	52	30	7.0	5.4	472	8.2	0.61	34
2	62	52	27	35	52	29	6.6	8.6	236	34	.45	33
3	67	54	24	37	62	28	6.6	143	167	57	.50	26
4	60	60	24	41	71	28	7.0	427	276	34	.61	26
5	56	64	27	39	76	34	6.6	545	273	144	.94	25
6	48	65	28	38	65	31	7.8	590	293	58	215	22
7	54	65	28	40	59	34	11	632	184	72	225	20
8	54	64	31	39	53	29	15	680	144	58	78	16
9	52	57	36	38	52	29	14	665	88	44	22	15
10	50	53	29	47	49	28	16	642	64	70	28	19
11	50	50	37	50	48	32	27	678	66	33	1060	20
12	47	49	39	51	46	34	26	688	64	7.4	1200	14
13	45	48	39	48	48	34	18	695	46	4.2	809	10
14	38	48	41	47	48	32	18	702	40	2.0	803	6.0
15	38	50	37	47	46	26	17	730	37	1.2	821	5.4
16	38	48	35	47	44	21	15	760	34	.94	845	4.2
17	41	47	34	48	48	22	12	750	34	4.2	1420	3.6
18	42	48	35	51	51	17	13	762	155	1.3	1060	3.2
19	37	48	34	57	45	11	12	748	106	.72	890	3.9
20	35	45	35	54	41	14	7.8	748	57	1.0	504	4.8
21	35	46	33	52	45	20	6.6	742	28	.72	251	17
22	34	45	33	51	49	18	7.8	760	12	.72	147	17
23	32	45	32	50	41	23	7.0	725	10	.83	105	13
24	28	42	33	47	40	16	5.1	722	6.0	.61	95	28
25	30	39	35	45	39	14	4.8	710	4.8	.61	65	21
26	34	38	38	43	39	15	4.5	725	9.1	.61	62	22
27	34	35	38	45	41	17	4.5	722	16	.61	46	28
28	38	32	37	49	40	17	4.8	750	8.2	.61	40	22
29	39	33	35	51	---	14	6.3	752	8.6	.61	43	19
30	38	35	36	51	-----	8.2	4.8	1220	8.6	.50	36	19
31	46	-----	41	51	-----	7.8	-----	1140	-----	.45	38	-----
Total	1360	1457	1042	1427	1390	713.0	319.6	20567.0	2947.3	642.04	10,911.11	517.1
Mean	43.9	48.6	33.6	46.0	49.6	23.0	10.7	663	98.2	20.7	352	17.2
Max	67	65	41	57	76	34	27	1220	472	144	1420	34
Min	28	32	24	35	39	7.8	4.5	5.4	4.8	0.45	0.45	3.2
Ac-ft	2700	2890	2070	2830	2760	1410	634	40790	5850	1270	21640	1030

Cal yr 1966: Total 71,101.75 Mean 195 Max 6,100 Min 0.45 Ac-ft 141,000
Wtr yr 1967: Total 43,293.15 Mean 119 Max 1,420 Min 0.45 Ac-ft 85,870

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
5-30	2300	9.48	2,300	8-17	1730	8.80	2,060

8-3985. Rio Penasco at Dayton, N. Mex.

Location.--Lat 32°44'30", long 104°22'30", in SW¼SW¼ sec.15, T.18 S., R.26 E., on right bank 3 ft upstream from crest of abandoned diversion dam, 1 mile northeast of old Dayton railway station, 3½ miles upstream from mouth, and 7 miles southeast of Artesia.

Drainage area.--1,070 sq mi, approximately.

Records available.--April 1951 to September 1967. Prior to October 1953, published as "near Dayton."

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,340.89 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 5.62 cfs (4,070 acre-ft per year).

Extremes.--Maximum discharge during year, 880 cfs Aug. 10 (gage height, 3.90 ft, from floodmarks); no flow most of time.
1951-67: Maximum discharge,29,800 cfs Aug. 23, 1966 (gage height,7.90 ft), from rating curve extended above 6,000 cfs on basis of indirect measurements at gage heights 6.82 and 7.90 ft; no flow most of time.
The greatest flood known occurred about Sept. 22, 1941, when a stage of about 9 ft (from old logs) was reached, and peak discharge for station near Dunken (about 50 miles upstream) was 70,000 cfs (as determined for that station in 1956, from floodmarks and rating curve extended above 36,300 cfs).

Remarks.--Records poor. Diversions and ground-water withdrawals for irrigation of about 3,200 acres (1959 determination) above station. Records of water temperatures and suspended sediment loads for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Aug. 10 225
11 ..... 5.0

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
August 1967	230.0	225	0	7.42	456
Calendar year 1966	10,169.5	9,490	0	27.9	20,170
Water year 1966-67	230.0	225	0	.63	456

Peak discharge (base 750 cfs).--Aug. 10 (time unknown) 880 cfs (3.90 ft).

Note.--Flow occurred only on days listed above. No gage-height record Aug. 10, 11.

8-3995. Pecos River (Kaiser Channel) near Lakewood, N. Mex.

Location.--Lat 32°41'22", long 104°17'53", in NW¼SE¼ sec.5, T.19 S., R.27 E., on left bank 3 miles upstream from high-water line of Lake McMillan, 6 miles northeast of Lakewood, 7 miles northeast of gates in McMillan Dam, and 12 miles southeast of Artesia.

Records available.--May 1950 to September 1967. Prior to October 1954, published as Kaiser Lake-McMillan Channel near Lakewood.

Gage.--Water-stage recorder. Datum of gage is 3,268.53 ft above mean sea level (Bureau of Reclamation bench mark). Prior to March 23, 1955, at site 3 miles downstream at datum 7.83 ft lower. Mar. 23, 1955, to Sept. 30, 1963, at present site at datum 2.00 ft higher.

Average discharge.--17 years, 156 cfs (112,900 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,540 cfs Aug. 12; no flow many days.
1950-67: Maximum daily discharge, 2,920 cfs July 12, 1960; no flow at times in most years.

Remarks.--Records good except those below 10 cfs, which are fair. Flow partly regulated by Alamogordo Reservoir (see station 8-3840). Diversions and ground-water withdrawals for irrigation of about 170,000 acres (1959 determination) above station. Above about 1,500 cfs flow will begin bypassing station and, depending on the magnitude and duration of flow, may reach Lake McMillan.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	47	32	35	53	34	8.3	1.8	458	4.2	0	31
2	54	49	26	33	53	32	7.8	2.4	246	8.4	0	28
3	59	50	23	33	62	28	7.4	69	186	53	0	24
4	54	54	21	35	76	28	7.4	385	241	34	0	22
5	49	58	21	35	84	32	7.4	482	257	107	0	21
6	42	59	27	34	75	32	7.0	535	300	73	74	21
7	43	60	26	35	62	32	8.7	585	190	50	218	18
8	47	64	29	33	56	32	11	663	157	70	110	15
9	45	54	34	32	53	26	11	666	105	29	42	10
10	41	52	30	40	50	28	12	645	73	65	15	11
11	39	49	30	45	49	28	16	671	67	41	769	13
12	38	47	36	49	46	33	21	692	65	13	1,540	13
13	35	45	36	47	46	31	16	697	49	1.8	880	6.0
14	28	42	38	46	47	30	13	708	34	.71	813	2.0
15	27	47	35	45	43	27	13	728	29	.20	799	0
16	29	46	32	45	43	22	11	760	28	0	818	0
17	30	45	29	45	43	20	8.7	741	23	0	1,200	0
18	34	46	29	46	50	20	8.7	744	102	0	1,280	0
19	29	45	30	53	49	14	9.2	736	116	0	821	0
20	28	45	32	53	42	13	7.0	723	67	0	500	0
21	29	42	29	50	43	15	4.8	723	33	0	272	0
22	28	45	29	47	50	20	4.0	734	15	0	189	12
23	27	42	28	47	45	19	4.8	710	7.8	0	117	7.0
24	24	42	27	45	39	16	3.7	697	5.8	0	108	17
25	23	36	29	41	39	16	2.6	723	4.2	0	74	17
26	27	36	34	39	39	12	2.4	726	3.7	0	70	17
27	28	35	35	39	39	18	2.4	715	9.2	0	48	19
28	32	33	33	45	42	13	2.2	721	12	0	40	19
29	33	30	32	47	-----	16	2.4	731	4.8	0	41	13
30	33	32	32	47	-----	11	2.6	967	5.2	0	30	8.8
31	36	-----	34	49	-----	8.7	-----	1,280	-----	0	30	-----
Total	1,121	1,377	938	1,315	1,418	706.7	243.5	19,961.2	2,893.7	550.31	10,898	364.8
Mean	36.1	45.9	30.3	42.4	50.6	22.8	8.12	644	96.5	17.8	352	12.2
Max	59	64	38	53	84	34	21	1,280	458	107	1,540	31
Min	23	30	21	32	39	8.7	2.2	1.8	3.7	0	0	0
Ac-ft	2,220	2,730	1,860	2,610	2,810	1,400	483	39,590	5,740	1,090	21,620	724

Cal yr 1966 : Total 64,907.52 Mean 178 Max 2,300 Min 0 Ac-ft 128,700
Wtr yr 1967 : Total 41,787.21 Mean 114 Max 1,540 Min 0 Ac-ft 82,880

8-4000. Fourmile Draw near Lakewood, N. Mex.

Location.--Lat 32°40'20", long 104°22'07", in SW¼NW¼SE¼ sec.10, T.19 S., R.26 E., in left side of channel 360 ft downstream from ford on Lakewood - Dayton road, 1.9 miles downstream from U. S. Highway 285, 2.8 miles north of Lakewood, 3.7 miles upstream from mouth, and 11.5 miles south of Artesia.

Drainage area.--265 sq mi, approximately.

Records available.--October 1951 to September 1967. Prior to October 1964, published as Four Mile Draw near Lakewood.

Gage.--Water-stage recorder. Datum of gage is 3,299.14 ft above mean sea level, datum of 1929. Oct. 1, 1951, to June 19, 1962, at site 1.8 miles upstream at datum 30.61 ft higher. June 19, 1962, to Oct. 12, 1966, at site 410 ft upstream at datum 6.08 ft higher.

Average discharge.--16 years, 3.70 cfs (2,680 acre-ft per year).

Extremes.--Maximum discharge during year, 2,210 cfs Aug. 10 (gage height, 5.74 ft), from rating curve extended above 120 cfs; no flow most of time.
1951-67: Maximum discharge, 29,300 cfs Aug. 23, 1966 (gage height, 19.9 ft, from floodmarks), from rating curve extended above 600 cfs on basis of slope-area measurement of peak flow; no flow most of time.
The flood of Aug. 23, 1966 (from information by local resident) is believed to be the greatest known.

Remarks.--Records fair. No known diversions above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

June 16 ..... 0.19
August 10 78
11 ..... 1.8

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1967	0.19	0.19	0	0.006	0.4
August	79.8	78	0	2.57	158
Calendar year 1966	15,186.77	13,000	0	41.6	30,120
Water year 1967	79.99	78	0	.22	159

Peak discharge (base, 200 cfs).--Aug. 10 (time unknown) 2,210 cfs (5.74 ft).

Note.--Flow occurred only on days listed above.

8-4005. Lake McMillan near Lakewood, N. Mex.

Location.--Lat 32°35'45", long 104°20'55", on SE¼ sec.2, T.20 S., R.26 E., near outlet gates of dam on Pecos River, 3 miles southeast of Lakewood.

Drainage area.--16,990 sq mi, approximately (contributing area).

Records available.--January 1939 to September 1967. Gage heights since January 1918 published in reports of Pecos River Commission.

Gage.--Float-tape gage. Datum of gage is 3,241.6 ft above mean sea level, Bureau of Reclamation datum.

Extremes.--Maximum contents at 0800 hours during year, 32,520 acre-ft Oct. 1-3 (gage height, 25.90 ft); minimum, 2,930 acre-ft May 3, 4 (gage height, 17.30 ft).
1939-67: Maximum contents observed, 68,500 acre-ft Sept. 26, 1941 (gage height, 29.95 ft); no storage for periods in 1944-54, 1957, 1964, 1965.

Remarks.--Lake is formed by McMillan Dam, completed and storage began in 1893. The structure was damaged by floods of October 1893 and Oct. 2, 1904. Capacity, 27,300 acre-ft between gage heights 0.0 ft (sill of outlet gate) and 24.9 ft (crest of spillway 2). Flashboards may be used to increase this capacity. Maximum capacity without spill, 33,620 acre-ft at gage height 26.1 ft (crest of spillway 1). No dead storage. No storage allocated to flood control. Figures given herein represent usable contents. Gage heights may be affected by variable drawdown due to flow through gates. Water is used for irrigation by Carlsbad Irrigation District.

Cooperation.--Gage-height record and capacity table furnished by Carlsbad Irrigation District.

Capacity table (gage height, in feet, and contents, in acre-feet)

17	2,400
20	8,980
23	18,680
26	33,060

Contents, in acre-feet, at 0800 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32,520	25,340	24,380	22,520	22,060	21,840	12,660	3,120	29,860	24,860	12,980	20,530
2	32,520	25,100	24,380	22,520	22,060	21,840	12,210	3,120	30,380	24,620	12,660	20,110
3	32,520	25,100	24,140	22,520	22,060	21,620	11,760	2,930	30,380	24,620	12,360	19,690
4	32,250	25,100	24,140	22,520	22,060	21,620	11,150	2,930	30,380	24,380	11,760	19,480
5	32,250	25,100	24,140	22,520	22,060	21,400	10,880	3,510	30,380	24,140	11,460	19,080
6	31,980	25,100	23,900	22,520	22,060	21,400	10,320	4,330	30,640	24,140	10,880	18,880
7	31,980	25,100	23,670	22,290	22,060	21,400	9,240	4,970	30,900	24,140	10,740	22,750
8	31,980	25,100	23,670	22,290	22,060	21,400	8,330	5,850	31,170	23,900	10,740	22,520
9	31,980	25,100	23,670	22,290	22,060	21,400	7,840	6,660	31,170	23,900	10,460	20,110
10	31,710	25,100	23,670	22,290	22,060	21,180	7,360	7,240	30,900	23,900	10,180	17,690
11	31,710	24,860	23,440	22,290	22,060	21,180	7,120	7,720	30,640	23,900	10,040	17,120
12	31,710	24,860	23,440	22,290	22,060	21,180	6,880	8,200	30,380	23,670	11,760	16,560
13	30,900	24,860	23,440	22,290	22,060	20,960	6,310	8,850	29,860	23,670	14,280	**16,200**
14	30,120	24,860	23,440	22,290	22,060	20,960	6,200	9,900	29,600	23,440	15,840	**15,480**
15	29,340	24,860	23,440	22,290	22,060	20,960	6,080	11,020	29,080	23,210	17,310	14,960
16	28,820	24,860	23,440	22,290	22,060	20,960	5,960	12,060	28,820	22,980	18,680	14,450
17	28,560	24,850	23,210	22,290	22,060	20,740	5,740	12,980	29,340	22,520	20,320	14,110
18	28,300	24,860	23,210	22,060	22,060	20,530	5,630	13,780	29,340	22,290	22,750	13,780
19	28,300	24,860	23,210	22,060	22,060	20,530	5,410	14,790	29,080	21,840	24,620	13,620
20	28,050	24,860	23,210	22,060	22,060	20,530	5,190	16,020	29,080	20,960	25,340	13,300
21	27,800	24,620	23,210	22,060	22,060	20,320	4,970	17,120	28,820	20,110	25,580	12,980
22	27,550	24,620	23,210	22,060	22,060	20,320	4,750	18,080	28,560	19,080	25,580	12,510
23	27,300	24,620	22,980	22,060	22,060	19,690	4,440	19,080	27,800	18,680	25,580	12,060
24	27,050	24,620	22,980	22,060	22,060	19,280	4,220	20,110	27,050	18,080	25,100	11,460
25	26,800	24,620	22,980	22,060	22,060	18,280	3,910	20,740	26,550	17,500	24,380	11,160
26	26,800	24,620	22,750	22,060	21,840	17,500	3,610	21,840	26,300	16,740	23,900	11,160
27	26,550	24,620	22,750	22,060	21,840	16,740	3,410	22,980	25,820	15,840	23,440	11,160
28	26,300	24,380	22,750	22,060	21,840	16,020	3,310	24,380	25,580	14,790	22,750	11,160
29	26,060	24,380	22,750	22,060	-----	15,300	3,220	25,340	25,340	13,940	22,060	11,020
30	26,060	24,380	22,750	22,060	-----	14,280	3,220	26,550	25,100	13,460	21,400	10,880
31	25,820	-----	22,750	22,060	-----	13,460	-----	28,300	-----	13,140	20,740	-----
(†)	24.60	24.30	23.95	23.80	23.75	21.55	17.45	25.10	24.45	21.45	23.50	20.70
(‡)	-7,240	-1,440	-1,630	-690	-220	-8,380	-10,240	+25,080	-3,200	-11,960	+7,600	-9,860
Max	32,520	25,340	24,380	22,520	22,060	21,840	12,660	28,300	31,170	24,860	25,580	22,750
Min	25,820	24,380	22,750	22,060	21,840	13,460	3,220	2,930	25,100	13,140	10,040	10,880

Cal yr 1966: (†) +16,900
Wtr yr 1967: (‡) -22,180

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.

8-4010. Pecos River below McMillan Dam, N. Mex.

Location.--Lat 32°35'40", long 104°21'00", in NE¼ sec.11, T.20 S., R.26 E., on left bank 700 ft downstream from gates in McMillan Dam and 3 miles southeast of Lakewood.

Drainage area.--16,990 sq mi, approximately (contributing area).

Records available.--January 1906 to March 1908, January 1909 to December 1911, August 1939 to December 1940, December 1946 to September 1967 (January 1906 and January 1910 to December 1911, gage heights and discharge measurements only). Published as "near Lakewood" 1906-11, and as "below McMillan Dam, near Lakewood" 1939-40.

Gage.--Water-stage recorder and rock control. Datum of gage is 3,238.21 ft above mean sea level, datum of 1929. January 1906 to December 1911 staff gage at three different sites within half a mile of present gage at different datums. August 1939 to December 1940 water-stage recorder at site 30 ft downstream at datum 0.10 ft higher; December 1946 to Mar. 11, 1957, at present site at datum 1.09 ft higher. Supplemental water-stage recorders on McMillan Dam spillways, Nos. 1 and 2, since July 9, 1960, and Apr. 6, 1960, respectively.

Average discharge.--22 years (1906-7, 1939-40, 1947-67), 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum daily discharge during year, 443 cfs Apr. 7 (gage height, 3.83 ft); no flow for many days.
1939-40, 1947-67: Maximum discharge, 16,500 cfs Aug. 23, 1966, includes flow of two spillways; no flow for many days.
Flood of Oct. 2, 1904, may have reached 60,000 cfs. This station may have had a higher discharge in August 1893 when part of McMillan Dam was blasted to prevent total destruction of the dam (that flood was described as "highest in 50 years" and it also destroyed Avalon Dam).

Remarks.--Records good. Flow regulated by Alamogordo Reservoir and Lake McMillan (see stations 8-3840, 8-4005). Flow over McMillan Dam spillways bypasses station but is gaged and included with discharge. Diversions and ground-water withdrawals for irrigation of about 171,000 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	64				0	253	0.05	0.49	0.03	100	127
2	2.9	64				0	212	40	85	0	101	127
3	2.9	25				0	210	55	120	0	157	127
4	6.3	.17				0	207	59	66	0	183	127
5	2.9	.14				0	230	90	1.4	0	183	95
6	2.9	.12				0	393	141	.68	0	127	76
7	2.9	.12				0	443	141	1.2	0	104	76
8	2.9	.12				0	354	143	1.9	0	141	76
9	1.9	.12				0	239	205	2.9	0	215	106
10	1.2	.08				0	132	294	1.9	0	33	147
11	1.2	.06				0	108	297	32	0	.20	210
12	176	.04				0	108	276	126	2.9	.15	210
13	345	.04				0	108	121	128	.15	.15	210
14	267	.04				0	108	67	95	.09	.15	210
15	154	.04				0	75	67	76	.07	.13	207
16	124	.03				0	60	128	55	.03	.13	147
17	82	.03				0	60	200	.41	0	.13	118
18	63	.01				0	61	185	.27	54	.13	85
19	63	0				0	61	75	.07	323	198	69
20	63	0				0	75	71	.07	364	225	108
21	63	0				0	108	71	48	364	128	207
22	63	0				139	108	71	200	223	114	205
23	63	0				282	106	71	241	165	197	200
24	63	0				313	106	141	208	163	233	132
25	61	0				313	106	137	136	285	233	73
26	61	0				313	71	77	98	357	233	17
27	61	0				313	17	27	73	423	230	.20
28	63	0				343	.15	.07	73	423	228	.17
29	63	0				427	.13	.03	73	192	228	.17
30	63	0				423	.09	.01	20	100	228	.17
31	63	-----				361	-----	.01	-----	100	151	-----
Total	2054.9	154.16	0	0	0	3227	4119.37	3250.17	1964.29	3539.27	3971.17	3492.71
Mean	66.3	5.14	0	0	0	104	137	105	65.5	114	128	116
Max	345	64	0	0	0	427	443	297	241	423	233	210
Min	1.2	0	0	0	0	0	.09	.01	.07	0	.13	.17
Ac-ft	4080	306	0	0	0	6400	8170	6450	3900	7020	7880	6930

Cal yr 1966: Total 51,788.5 Mean 142 Max 9,920 Min 0 Ac-ft 102,700
Wtr yr 1967: Total 25,773.04 Mean 70.6 Max 443 Min 0 Ac-ft 51,120

8-4012. South Seven Rivers near Lakewood, N. Mex.

Location.--Lat 32°35'20", long 104°25'20", in SE¼SE¼NW¼ sec.7, T.20 S., R.26 E., on downstream side of bridge on U. S. Highway 285, 0.4 mile south of Seven Rivers, 3 miles upstream from mouth, and 4 miles southwest of Lakewood, Eddy County.

Drainage area.--220 sq mi, approximately.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 3,276 ft (from topographic map). Prior to July 8, 1965, at site 400 ft upstream at datum 0.57 ft higher.

Extremes.--Maximum discharge during year, 12,300 cfs Aug. 10 (gage height, 15.10 ft), from rating curve extended as explained below; no flow most of time.

1963-67: Maximum discharge, 25,500 cfs May 30, 1965 (gage height, 20.0 ft, from floodmarks, present site and datum), from rating curve extended above 5,700 cfs on basis of slope-area measurements at gage heights 18.15 and 20.0 ft; no flow most of time.

Maximum discharge since at least 1941, about 30,000 cfs (gage height, 22.8 ft, from old debris on left bank, former site and datum), from rating curve extended above 5,700 cfs on basis of slope-area measurement at gage height 21.8 ft. Probable date of flood, Oct. 7, 1954.

Remarks.--Records poor. No known diversions above gage.

Discharge, in cubic feet per second, water year October 1966 to September 1967

June 16	14	July 3	141
17	.04	4	.32
30	231	Aug. 10	1,340
July 1	1.4	11	7.0

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1967	245.04	231	0	8.17	486
July	142.72	141	0	4.60	283
August	1,347.0	1,340	0	43.5	2,670
Calendar year 1966	11,511.44	9,300	0	31.5	22,830
Water year 1966-67	1,734.76	1,340	0	4.75	3,440

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-30	0600	8.78	2,330	8-10	0245	15.10	12,300
7- 3	0415	8.05	1,790				

Note.--Flow occurred only on days listed above.

8-4019. Rocky Arroyo at highway bridge, near Carlsbad, N. Mex.

Location.--Lat 32°30'20", long 104°22'28", in SE¼SE¼ sec.3, T.21 S., R.25 E., at downstream end of bridge pier nearest left bank on U. S. Highway 285, 2 miles upstream from mouth, and 10 miles northwest of Carlsbad.

Drainage area.--285 sq mi, approximately.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 3,248 ft (from topographic map).

Extremes.--Maximum discharge during year, 15,200 cfs Aug. 10 (gage height, 12.45 ft), from rating curve extended above 5,500 cfs as explained below; no flow most days.

1963-67: Maximum discharge, 31,600 cfs Aug. 23, 1966 (gage height, 15.35 ft), from rating curve extended above 5,500 cfs on basis of slope-area measurement of peak flow; no flow most days.

Since about 1941 the highest peak probably occurred Oct. 7, 1954, discharge 63,600 cfs (gage height, 19.2 ft, from highwater marks on downstream end of bridge pier), by slope-area measurement at site 5 miles upstream.

Remarks.--Records fair. Diversions for irrigation of 220 acres (from Agricultural Stabalization and Conservation Service) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0	24	0	0
2									0	1.1	0	0
3									0	58	0	0
4									0	8.7	0	0
5									0	.37	0	0
6									0	0	0	0
7									0	0	0	0
8									0	0	0	0
9									0	0	0	0
10									0	0	1,960	0
11									0	0	31	0
12									0	0	8.6	0
13									0	0	6.0	0
14									0	0	3.6	0
15									0	0	2.1	0
16									212	0	.99	0
17									131	0	.18	0
18									1.6	0	0	0
19									0	0	0	0
20									0	0	0	0
21									0	0	0	0
22									0	0	0	0
23									0	0	0	0
24									0	0	0	0
25									0	0	0	139
26									0	0	0	6.3
27									0	0	0	0
28									0	41	0	0
29									0	138	0	0
30									1,290	4.6	0	0
31										.10	0	
Total	0	0	0	0	0	0	0	0	1634.6	275.87	2012.47	145.3
Mean	0	0	0	0	0	0	0	0	54.5	8.90	64.9	4.64
Max	0	0	0	0	0	0	0	0	1,290	138	1,960	139
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	3,240	547	3,990	288

Cal yr 1966 : Total 19,671.17 Mean 53.9 Max 13,900 Min 0 Ac-ft 39,020
Wtr yr 1967 : Total 4,068.24 Mean 11.1 Max 1,960 Min 0 Ac-ft 8,070

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-16	2000	7.42	1,530	8-10	0245	12.45	15,200
6-30	0400	11.02	9,740	9-25	1645	6.48	1,140

8-4020. Pecos River at damsite 3, near Carlsbad, N. Mex.

Location.--Lat 32°30'40", long 104°20'00", in lot 14, sec.6, T.21 S., R.26 E., on right bank at damsite 3 of Carlsbad project of Bureau of Reclamation, about 1 mile upstream from flow line of Lake Avalon, 1.3 miles downstream from Rocky Arroyo, and 8 miles northwest of Carlsbad.

Drainage area.--17,980 sq mi, approximately (contributing area).

Records available.--August 1939 to December 1940, August 1944 to September 1967

Gage.--Water-stage recorder. Datum of gage is 3,171.31 ft above mean sea level (Bureau of Reclamation datum). Prior to Aug. 10, 1944, at site 1,000 ft downstream, at datum 1.00 ft higher. Aug. 10, 1944, to Dec. 31, 1966, at present site at datum 1.00 ft higher.

Average discharge.--24 years, 174 cfs (126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,100 cfs Aug. 10 (gage height, 12.25 ft); minimum, 27 cfs Apr. 29.
1939-40, 1944-67: Maximum discharge, 69,000 cfs Aug. 23, 1966 (gage height, 20.32 ft, from floodmark), from rating curve extended above 25,000 cfs on basis of slope-area measurement at gage height 18.53 ft; minimum, 4.3 cfs Aug. 5, 1954.
Peaks which probably exceeded 40,000 cfs occurred in August 1893, Oct. 2, 1904, July 25, 1905, Apr. 17, 1915, Aug. 7, 1916, and May 30, 1937, based primarily on records for station at Carlsbad. Peak of May 22, 1941, was estimated at 60,000 cfs. Floods of 1893 and 1904 originated above McMillan Dam and contributed to the two failures of Avalon Dam.

Remarks.--Records good. Flow regulated by Alamogordo Reservoir and Lake McMillan (see stations 8-3840, 8-4005). Diversions and ground-water withdrawals for irrigation of about 173,000 acres (1959 determination) above station. Discharge represents inflow to Lake Avalon.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	94	119	50	44	43	36	305	31	43	179	139	152
2	85	119	49	44	40	35	244	34	66	61	135	152
3	81	98	49	43	42	35	240	69	144	194	166	152
4	81	71	49	42	42	33	244	71	126	66	216	152
5	79	67	49	42	43	33	240	79	66	60	213	130
6	78	66	49	43	44	33	368	142	52	58	182	102
7	78	62	48	43	43	33	436	144	54	56	132	102
8	78	61	48	43	42	34	380	146	54	58	135	100
9	78	58	48	43	41	33	280	172	55	56	234	117
10	78	60	45	43	40	33	170	278	55	55	3,130	149
11	76	61	45	43	40	33	130	288	56	54	64	231
12	136	61	45	43	40	33	125	291	141	54	36	234
13	350	61	45	43	40	32	125	187	162	54	35	234
14	319	61	45	43	40	32	125	92	154	52	34	234
15	231	61	45	43	39	33	100	90	121	50	34	234
16	174	61	44	42	39	33	90	121	230	49	36	196
17	162	60	45	42	39	33	90	196	252	49	33	144
18	128	58	45	42	39	33	90	219	62	48	33	126
19	123	58	45	43	39	32	90	126	62	276	106	94
20	123	58	45	42	40	32	100	94	62	376	244	100
21	121	58	44	42	39	32	125	92	66	372	199	225
22	126	55	45	43	38	74	125	92	188	291	139	228
23	123	55	44	43	39	262	125	92	278	205	182	228
24	121	55	42	42	39	322	125	130	269	205	250	193
25	121	55	43	43	39	322	125	166	177	275	253	294
26	121	54	43	44	38	322	100	115	156	357	253	96
27	121	54	44	44	39	326	74	83	119	428	253	45
28	121	52	44	44	38	340	39	52	117	497	253	40
29	121	52	42	44	-----	417	33	44	117	421	253	40
30	119	52	42	43	-----	417	31	40	1,560	142	253	40
31	119	-----	44	43	-----	398	-----	42	-----	142	210	-----
Total	3,966	1,923	1,410	1,331	1,124	3,896	4,874	3,818	5,064	5,240	7,835	4,564
Mean	128	64.1	45.5	42.9	40.1	126	162	123	169	169	253	152
Max	350	119	50	44	44	417	436	291	1,560	497	3,130	294
Min	76	52	42	42	38	32	31	31	43	48	33	40
Ac-ft	7,870	3,810	2,800	2,640	2,230	7,730	9,670	7,570	10,040	10,390	15,540	9,050

Cal yr 1966: Total 104,459 Mean 286 Max 39,000 Min 19 Ac-ft 207,200
Wtr yr 1967: Total 45,045 Mean 123 Max 3,130 Min 31 Ac-ft 89,350

Peak discharge (base, 1,700 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-30	0515	9.40	6,520	8-10	0445	12.25	12,100

8-4035. Carlsbad main canal at head, near Carlsbad, N. Mex.

Location.--Lat 32°29'28", long 104°15'08", in N½SW¼SW¼ sec.12, T.21 S., R.26 E., on right bank 220 ft downstream from headgates in Avalon Dam and 5.0 miles north of Carlsbad.

Records available.--July 1939 to September 1967. Published as Carlsbad main canal near Carlsbad, August 1939 to December 1940. Monthly discharges only for January 1941 to March 1951, published in WSP 1732.

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,156.50 ft above mean sea level (Bureau of Reclamation datum). Prior to March 1951 at site 20 ft upstream at datum 0.9 ft higher.

Extremes.--1939-67: Maximum daily discharge, 526 cfs Sept. 15, 16, 1946; no flow many days.

Remarks.--Records good. Carlsbad main canal diverts water from Lake Avalon for irrigation of about 25,000 acres of Carlsbad Irrigation District. About 1,600 acres is irrigated on left bank of the Pecos River, most of it above gaging station on Pecos River at Carlsbad. The remaining acreage is on right bank, most of it downstream from Pecos River at Carlsbad gage.

Monthly discharge, in cubic feet per second, water year October 1966 to September 1967

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October	226	82	143	8,800
November	119	0	26.5	1,570
December	0	0	0	0
Calendar year 1966	448	0	74.1	53,660
January	0	0	0	0
February	0	0	0	0
March	389	0	148	9,100
April	339	61	167	9,940
May	234	56	110	6,780
June	203	34	102	6,080
July	408	0	184	11,320
August	379	126	211	6,531
September	230	56	143	8,530
Water year 1966-67	408	0	104	75,070

8-4038. Lake Avalon near Carlsbad, N. Mex.

Location.--Lat 32°29'25", long 104°15'00", in SW¼ sec.12, T.21 S., R.26 E., on headwall at outlet gate of dam on Pecos River, 5 miles north of Carlsbad.

Drainage area.--18,070 sq mi, approximately (contributing area).

Records available.--January 1939 to September 1967. Gage heights since January 1919 published in reports of the Pecos River Commission.

Gage.--Staff gage. Datum of gage is 3,157.0 ft above mean sea level, Bureau of Reclamation datum.

Extremes.--Maximum contents at 0800 hours during year, 4,560 acre-ft July 4-6 (gage height, 19.95 ft); minimum, 587 acre-ft May 6.
1939-67: Maximum contents, 11,000 acre-ft May 22, 1941 (gage height, 25.0 ft); no storage at times when natural flow was passing through reservoir.

Remarks.--Lake is formed by Avalon Dam. The original Eddy (Avalon) dam was completed and storage began in 1893. The dam was destroyed by flood of October 1893 (date of reconstruction not available), was destroyed again by flood of Oct. 2, 1904; present dam rebuilt in 1905-6. Capacity, 4,970 acre-ft between gage heights 0.0 (sill of outlet gates) and 20.4 ft (crest of spillway 2). No dead storage. No storage allocated to flood control. Figures given herein represent usable contents. Water is used by Carlsbad Irrigation District.

Cooperation.--Capacity table based on data furnished by Carlsbad Irrigation District.

Capacity table (gage height, in feet, and contents, in acre-feet)

14	406
16	1,510
18	2,930
20	4,610

Contents, in acre-feet, at 0800 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,170	1,220	2,450	3,730	4,430	4,520	1,580	845	1,130	4,480	1,700	1,800
2	2,850	1,220	2,510	3,770	4,430	4,520	1,510	712	1,010	4,430	1,580	1,410
3	2,620	1,280	2,550	3,810	4,430	4,520	1,480	686	1,040	4,300	1,410	1,380
4	2,360	1,320	2,620	3,810	4,430	4,520	1,280	686	1,250	4,560	1,280	1,350
5	2,120	1,320	2,660	3,850	4,480	4,520	1,010	636	1,410	4,560	1,320	1,410
6	1,940	1,250	2,660	3,850	4,480	4,480	738	587	1,380	4,560	1,480	1,440
7	1,770	1,160	2,660	3,890	4,480	4,520	872	712	1,350	4,480	1,410	1,380
8	1,610	1,070	2,740	3,940	4,480	4,480	1,070	818	1,280	4,380	1,280	1,350
9	1,540	928	2,850	3,940	4,480	4,480	1,320	764	1,190	4,340	1,130	1,250
10	1,440	818	2,890	4,020	4,480	4,480	1,380	686	1,130	4,200	3,980	1,100
11	1,320	872	2,970	4,020	4,480	4,480	1,280	818	1,070	3,980	4,520	1,010
12	1,130	982	3,010	4,070	4,480	4,480	1,220	982	1,040	3,690	3,980	1,040
13	1,070	1,070	3,050	4,120	4,520	4,480	1,040	1,190	1,160	3,370	3,730	1,100
14	1,350	1,160	3,090	4,120	4,520	4,480	1,130	1,250	1,280	3,010	3,410	1,130
15	1,510	1,250	3,130	4,160	4,520	4,480	1,220	1,130	1,250	2,740	3,010	1,160
16	1,670	1,350	3,170	4,200	4,520	4,200	1,250	900	1,130	2,440	2,550	1,380
17	1,800	1,450	3,210	4,200	4,520	3,810	1,250	791	1,670	2,160	2,080	1,440
18	1,840	1,540	3,250	4,250	4,520	3,170	1,190	900	1,700	1,740	1,700	1,540
19	1,840	1,620	3,290	4,250	4,520	3,010	1,130	1,130	1,640	1,320	1,350	1,480
20	1,800	1,700	3,330	4,250	4,520	2,620	1,070	1,160	1,540	1,350	1,250	1,250
21	1,800	1,770	3,370	4,300	4,520	2,190	982	1,220	1,350	1,580	1,410	1,250
22	1,770	1,840	3,410	4,300	4,520	1,700	955	1,220	1,040	1,770	1,350	1,190
23	1,770	1,910	3,450	4,340	4,520	1,320	1,040	1,190	1,070	1,840	1,130	1,320
24	1,740	2,000	3,490	4,340	4,520	1,160	1,100	1,100	1,220	1,740	1,010	1,580
25	1,640	2,080	3,530	4,340	4,520	1,100	1,130	1,130	1,440	1,440	1,010	1,700
26	1,540	2,150	3,570	4,380	4,520	1,220	1,190	1,280	1,580	1,280	1,070	2,190
27	1,440	2,200	3,610	4,380	4,520	1,350	1,220	1,380	1,610	1,220	1,190	2,120
28	1,350	2,250	3,650	4,380	4,520	1,380	1,130	1,380	1,510	1,280	1,410	1,980
29	1,280	2,350	3,650	4,380	-----	1,380	1,040	1,320	1,480	1,910	1,480	1,840
30	1,280	2,400	3,690	4,430	-----	1,440	928	1,280	2,400	1,980	1,480	1,770
31	1,250	-----	3,690	4,430	-----	1,610	-----	1,190	-----	1,880	1,580	-----
(†)	15.60	—	18.95	19.80	19.90	16.15	15.05	15.50	17.30	16.55	16.10	16.40
(‡)	-2,240	+1,150	+1,290	+740	+90	-2,910	-682	+262	+1,210	-520	-300	+190
Max	3,170	2,400	3,690	4,430	4,520	4,520	1,580	1,380	2,400	4,560	4,520	2,190
Min	1,070	818	2,450	3,730	4,430	1,100	738	587	1,010	1,220	1,010	1,010

Cal yr 1966: (†) +2,210
Wtr yr 1967: (‡) -1,720

† Gage height, in feet, at end of month.
‡ Change in contents, in acre-feet.
Note.--No gage height record Nov. 17-20, 22, 24, 26-30, Dec. 1.

8-4040. Pecos River below Avalon Dam, N. Mex.

Location.--Lat 32°28'53", long 104°15'43", in SW¼SW¼NE¼ sec.14, T.21 S., R.26 E., on right bank 5,200 ft below Avalon Dam and 4.5 miles northwest of Carlsbad.

Drainage area.--18,080 sq mi, approximately (contributing area).

Records available.--January 1906 to March 1907 (published as "at Avalon"), June 1951 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 3,130 ft (from topographic map). January 1906 to March 1907 staff gage at site half a mile upstream at different datum.

Average discharge.--16 years (1951-67), 40.5 cfs (29,320 acre-ft per year).

Extremes.--Maximum discharge during year, 4,110 cfs Aug. 10 (gage height 11.43 ft); no flow most of time.
1951-67: Maximum discharge, 55,500 cfs Aug. 23, 1966 (gage height, 26.4 ft, from floodmarks), from rating curve extended above 33,000 cfs on basis of computation of peak flow over Tansill Dam 5.8 miles downstream; no flow most of time.
Flood of Oct. 2, 1904, caused in part, by failure of Avalon Dam, was described at that time as the greatest flood known. Flood in August 1893 is probably second highest, and was described as "greatest in 50 years"; it damaged McMillan Dam and washed out the original Avalon Dam.

Remarks.--Records poor. Flow regulated by Alamogordo Reservoir, Lake McMillan and Lake Avalon (see stations 8-3840, 8-4005, 8-4038). Diversions and ground-water withdrawals above station for irrigation of about 198,000 acres (1959 determination). Station bypassed by Carlsbad main canal (see station 8-4035).

Discharge, in cubic feet per second, water year October 1966 to September 1967

August 10 700
11 10
12 1

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
August 1967	711	700	0	22.9	1,410
Calendar year 1966	66,747.40	33,600	0	183	132,400
Water year 1966-67	711	700	0	1.95	1,410

Note.--Flow occurred only on days listed above. No gage-height record Aug. 10-12.

8-4050. Pecos River at Carlsbad, N. Mex.

Location.--Lat 32°25'05", long 104°13'25", in NW¼SE¼ sec.6, T.22 S., R.27 E., in downstream end of pier near center of Greene Street Bridge in Carlsbad, half a mile upstream from Dark Canyon.

Drainage area.--18,100 sq mi, approximately (contributing area).

Records available.--May 1903 to March 1908 (January 1907 to March 1908, gage heights and discharge measurements only), May 1914 to September 1915, and April 1920 to September 1967 in reports of Geological Survey. Monthly discharges only for some periods, published in WSP 1312. Records (except maximum discharges) for October 1915 to March 1920, published in WSP 438, 458, 478, and 508, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 3,080.28 ft above mean sea level, datum of 1929. Prior to June 1, 1920, staff gages in immediate vicinity of present site, and at different datums prior to Jan. 6, 1938.

Average discharge.--19 years (1903-4, 1905-6, 1914-15, 1920-36), 255 cfs (184,600 acre-feet per year), prior to completion of Alamogordo Dam; 31 years (1936-67), 179 cfs (129,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,500 cfs Aug. 10 (gage height, 6.60 ft); minimum, 0.38 cfs Oct. 29.
1903-6, 1914-67: Maximum discharge probably exceeded 90,000 cfs Oct. 2, 1904 (gage height, 23.44 ft, present datum, from floodmarks); minimum determined, 0.1 cfs June 19, 1954.
Flood of Oct. 2, 1904, caused in part by failure of Avalon Dam, was deacribed at that time as "greatest flood known at Carlsbad." Flood in August 1893 is probably second highest, and was described as "greatest in 50 years"; it damaged McMillan Dam and washed out the original Avalon Dam.

Remarks.--Records good. Flow regulated by Alamogordo Reservoir, Lake McMillan, and Lake Avalon (see stations 8-3840, 8-4005, 8-4038), and at low stages by powerplant above station. Gage is bypassed on left bank by Carlsbad main canal east which irrigates several hundred acres adjacent to and below gage site, and on right bank by Carlsbad main canal south which with supplemental groundwater withdrawals irrigates about 23,000 acres below. This bypass flow is not presently gaged. Diversions and ground-water withdrawals above station for irrigation of about 198,000 acres (1959 determination). Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	25	27	5.6	22	35	19	17	9.6	16	21	11
2	23	28	26	5.6	20	30	20	17	11	17	13	13
3	24	28	25	4.5	23	29	20	16	15	20	12	15
4	24	28	71	3.0	24	29	20	14	15	17	12	14
5	28	30	282	1.6	25	30	19	15	14	17	13	12
6	26	32	74	3.6	18	30	15	14	13	17	18	11
7	25	32	60	3.6	27	30	17	12	13	17	19	11
8	22	32	58	3.6	17	32	17	11	10	17	19	11
9	20	30	55	3.6	24	26	16	17	10	16	13	11
10	20	30	53	3.6	24	2.5	14	17	9.1	15	601	11
11	20	30	52	3.8	24	2.2	15	16	8.6	15	20	11
12	21	30	52	4.5	24	2.2	15	17	8.6	14	14	12
13	21	29	52	12	24	20	13	16	7.6	14	14	12
14	21	29	51	13	24	19	13	17	6.8	14	13	11
15	20	29	51	14	22	17	15	15	7.8	14	12	12
16	20	29	49	15	22	17	15	17	75	15	11	13
17	20	28	51	15	20	20	14	17	25	15	11	13
18	21	27	51	14	20	24	17	14	17	15	12	13
19	21	27	50	15	21	28	26	13	20	15	13	17
20	22	27	50	16	22	24	28	15	20	15	15	13
21	25	26	48	17	36	24	25	10	19	17	14	13
22	22	24	48	17	71	25	20	12	15	17	13	12
23	24	24	46	17	61	26	20	11	15	16	14	13
24	23	24	46	17	20	24	26	13	15	16	12	13
25	24	24	46	17	22	27	25	12	15	14	12	17
26	58	25	44	16	36	25	24	12	14	15	13	17
27	60	28	44	16	38	26	22	12	14	20	13	13
28	33	28	44	16	35	24	20	13	15	19	13	15
29	.60	29	44	17	—	24	21	14	15	18	11	15
30	21	28	29	18	-----	22	17	12	17	20	10	15
31	30	-----	6.0	20	-----	20	-----	12	-----	20	11	-----
Total	762.60	840	1685.0	348.6	766	719.9	568	440	470.1	507	1,012	390
Mean	24.6	28.0	54.4	11.2	27.4	23.2	18.9	14.2	15.7	16.4	32.6	13.0
Max	60	32	282	20	71	35	28	17	75	20	601	17
Min	.60	24	6.0	1.6	17	2.2	13	10	6.8	14	10	11
Ac-ft	1,510	1,670	3,340	691	1,520	1,430	1,130	873	933	1,010	2,010	774

Cal yr 1966 : Total 73,394.04 Mean 201 Max 32,800 Min 0.52 Ac-ft 145,600
Wtr yr 1967 : Total 8,509.20 Mean 23.3 Max 601 Min 0.60 Ac-ft 16,880

8-4055. Black River above Malaga, N. Mex.

Location.--Lat 32°13'40", long 104°09'05", in SW¼ sec.12, T.24 S., R.27 E., on right bank 0.6 mile upstream from Black River diversion dam, 4.8 miles west of Malaga, Eddy County, and 7 miles upstream from mouth.

Drainage area.--343 sq mi.

Records available.--March to December 1940, December 1946 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 3,070 ft (from topographic map). March to December 1940 water-stage recorder and Cippoletti weir at site 0.3 mile downstream at different datum.

Average discharge.--20 years (1947-67), 15.0 cfs (10,860 acre-ft per year).

Extremes.--Maximum discharge during year, 6,630 cfs June 30 (gage height, 8.68 ft); minimum, 3.1 cfs Aug. 30, 31.
1946-67: Maximum discharge, 74,600 cfs Aug. 23, 1966 (gage height, 21.7 ft, from floodmarks), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights 12.60 and 21.7 ft; minimum, 1.6 cfs Mar. 13, 1964.
The flood of Aug. 23, 1966, is the greatest known; it exceeded the previous known maximum stage which occurred in 1908 by about 1 ft (from information by local resident). Flood of Sept. 20 or 21, 1941, reached a stage of 19.0 ft, determined in 1947 from well-defined floodmarks (discharge, 33,000 cfs, from rating curve extended above 1,400 cfs on basis of slope-area measurements at gage heights 8.41 and 12.60 ft).

Remarks.--Records excellent. Diversions and ground-water withdrawals for irrigation of about 1,000 acres (1959 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	8.5	9.8	15	16	8.1	12	12	7.6	46	9.8	3.6
2	16	9.0	9.8	15	15	8.1	15	13	9.0	24	9.0	3.9
3	16	9.0	9.8	14	15	8.1	15	13	9.4	20	9.0	6.8
4	15	9.0	9.8	14	15	7.6	15	13	64	15	8.5	10
5	11	9.0	11	14	16	7.6	15	13	27	13	5.4	9.8
6	9.0	8.5	14	15	15	7.6	15	13	23	13	4.2	9.8
7	8.5	8.5	14	15	14	7.6	15	12	27	11	3.6	8.5
8	8.5	8.1	16	15	13	7.2	16	12	13	11	3.9	7.2
9	8.1	7.6	15	15	9.8	7.6	16	12	12	9.4	4.4	6.8
10	8.1	8.1	15	15	9.4	8.1	15	11	12	9.8	7.2	5.7
11	8.1	8.1	15	15	9.0	7.6	14	11	11	9.8	3.9	5.0
12	8.1	8.1	15	15	9.0	7.2	15	11	14	9.8	3.6	5.0
13	7.6	8.1	15	15	9.4	6.8	15	11	14	9.4	3.6	4.4
14	7.2	8.1	15	16	9.4	6.1	17	11	14	6.8	3.6	3.9
15	7.2	8.5	14	16	9.4	6.4	17	11	13	4.7	3.6	3.9
16	7.2	8.5	14	15	9.0	6.8	17	11	44	4.4	3.4	3.6
17	7.2	8.5	14	15	9.0	6.8	17	10	54	3.9	3.4	3.9
18	7.2	8.5	15	15	9.0	6.8	17	10	19	3.6	3.4	4.7
19	7.2	9.0	15	15	9.0	7.2	17	11	15	3.6	3.4	4.4
20	7.2	9.0	16	15	9.0	7.2	17	11	13	4.2	3.9	3.6
21	7.2	9.0	17	15	8.5	7.2	15	10	13	6.4	4.4	3.6
22	7.2	9.4	17	15	8.1	7.2	14	9.8	13	6.8	4.4	3.6
23	7.2	9.4	16	15	8.1	7.6	12	7.6	12	6.1	4.0	11
24	7.2	9.4	15	15	8.5	7.6	13	6.4	12	5.0	3.8	12
25	7.6	11	15	16	8.5	7.2	12	5.7	23	4.7	3.8	12
26	7.6	10	15	16	8.5	6.4	12	5.7	16	5.4	3.6	12
27	7.6	9.8	15	16	9.0	7.2	12	5.7	13	9.4	3.4	9.8
28	7.6	9.8	15	16	8.5	7.2	13	5.7	10	10	3.4	9.8
29	8.1	10	15	16	-----	6.8	13	5.7	13	6.4	3.4	9.4
30	8.1	10	15	16	-----	6.4	12	4.7	1,270	8.5	3.4	9.4
31	8.5	-----	15	16	-----	6.8	-----	5.0	-----	9.0	3.4	-----
Total	273.3	267.5	442.2	471	297.1	224.1	440	304.0	1810.0	310.1	141.8	207.1
Mean	8.82	8.92	14.3	15.2	10.6	7.23	14.7	9.81	60.3	10.0	4.57	6.90
Max	16	11	17	16	16	8.1	17	13	1,270	46	9.8	12
Min	7.2	7.6	9.8	14	8.1	6.1	12	4.7	7.6	3.6	3.4	3.6
Ac-ft	542	531	877	934	589	444	873	603	3,590	615	281	411

Cal yr 1966: Total 21,006.9 Mean 57.6 Max 12,000 Min 3.5 Ac-ft 41,670
Wtr yr 1967: Total 5,188.2 Mean 14.2 Max 1,270 Min 3.4 Ac-ft 10,290

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-4	1745	3.65	932	6-30	0515	8.68	6,630

8-4065. Pecos River near Malaga, N. Mex.

Location.--Lat 32°12'30", long 104°01'20", in N½ sec.19, T.24 S., R.29 E., on right bank 3 miles southeast of Malaga, Eddy County, and 4 miles downstream from Black River.

Drainage area.--19,190 sq mi, approximately (contributing area).

Records available.--May 1920 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder. Datum of gage is 2,895.64 ft above mean sea level, datum of 1929. May 1, 1920, to Mar. 24, 1949, at datum 3 ft higher. Prior to Apr. 30, 1963, graphic water-stage recorder.

Average discharge.--16 years (1920-36), 274 cfs (198,400 acre-ft per year), prior to completion of Alamogordo Reservoir; 31 years (1936-67), 226 cfs (163,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,950 cfs June 30 (gage height, 10.80 ft); minimum, 12 cfs June 13-16.
1920-67: Maximum discharge, 120,000 cfs Aug. 23, 1966 (gage height, 42.1 ft, from floodmarks), from rating curve extended above 36,000 cfs on basis of slope-area measurement at gage height 42.1 ft; minimum,5.0 cfs Mar. 9, 1965.
Flood of Aug. 23, 1966, is the greatest known. A major flood occurred in 1904, discharge not determined. Flood of Aug. 7, 1916, reached a discharge of 70,000 cfs at Carlsbad, 27 miles upstream. Flood in September 1919 reached a stage of 29.4 ft, present datum (discharge, 40,400 cfs).

Remarks.--Records good. Flow regulated by storage in Alamogordo Reservoir, Lake McMillan, and Lake Avalon (see stations 8-3840, 8-4005, 8-4038), and by small diversion dams that divert for power or irrigation. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres (1959 determination). Harroun canal bypasses gage on left bank and irrigates approximately 1,000 acres adjacent to and below gage. This bypass is not gaged. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	50	27	63	53	22	29	19	17	15	118	23	20
2	44	31	63	45	21	26	19	18	15	65	24	22
3	42	37	62	43	21	23	19	18	16	152	24	22
4	43	37	62	44	21	21	19	18	18	75	22	24
5	44	38	62	43	21	20	20	18	61	38	22	22
6	43	39	219	40	20	26	20	19	25	29	19	22
7	44	41	102	38	19	26	20	18	19	25	18	22
8	43	43	93	37	19	26	24	18	18	24	18	21
9	50	42	74	37	20	24	21	18	16	24	29	21
10	50	44	78	37	21	20	20	17	15	23	34	21
11	55	51	64	36	20	20	19	16	14	23	203	20
12	45	61	64	36	19	22	18	16	13	23	71	21
13	45	63	64	29	20	21	17	16	13	22	32	20
14	40	63	64	24	27	20	18	16	13	23	25	20
15	47	65	82	24	36	19	18	16	13	22	22	21
16	42	64	84	25	31	19	19	16	20	21	21	21
17	40	63	82	25	25	21	19	16	276	21	22	22
18	38	53	81	25	21	21	19	16	132	20	21	21
19	40	49	81	25	21	20	19	16	44	21	21	21
20	53	45	79	25	20	20	18	16	25	21	23	21
21	52	44	78	26	20	19	17	16	19	20	23	23
22	54	45	67	24	26	19	17	16	18	22	23	23
23	51	46	70	23	27	21	17	16	16	21	23	21
24	45	46	60	23	44	21	17	16	20	20	22	20
25	45	49	61	23	42	20	18	16	89	19	22	25
26	37	63	77	22	28	19	18	17	37	19	21	22
27	34	63	76	22	23	21	17	16	26	19	21	28
28	58	59	72	22	23	20	17	16	21	19	21	24
29	65	61	61	22	------	19	18	16	20	19	20	22
30	43	62	58	22	------	19	18	15	964	20	20	21
31	30	------	58	23	------	19	------	15	------	20	20	------
TOTAL	1,412	1,494	2,361	943	678	661	559	514	2,011	1,008	930	654
MEAN	45.5	49.8	76.2	30.4	24.2	21.3	18.6	16.6	67.0	32.5	30.0	21.8
MAX	65	65	219	53	44	29	24	19	964	152	203	28
MIN	30	27	58	22	19	19	17	15	13	19	18	20
AC-FT	2,800	2,960	4,680	1,870	1,340	1,310	1,110	1,020	3,990	2,000	1,840	1,300

CAL YR 1966: TOTAL 146,269.0 MEAN 401 MAX 68,000 MIN 8.2 AC-FT 290,100
WAT YR 1967: TOTAL 13,225 MEAN 36.2 MAX 964 MIN 13 AC-FT 26,230

Peak discharge (base 1,800 cfs).--June 30 (1000) 3,950 cfs (10.80 ft).

8-4070. Pecos River at Pierce Canyon Crossing, near Malaga, N. Mex.

Location.--Lat 32°11'20", long 103°58'45", in NW¼NW¼SW¼ sec.27, T.24 S., R.29 E., on right bank 400 ft upstream from Pierce Canyon Crossing and 6 miles southeast of Malaga, Eddy County.

Drainage area.--19,260 sq mi, approximately (contributing area).

Records available.--July 1938 to September 1941, August 1951 to September 1967.

Gage.--Digital water-stage recorder. Datum of gage is 2,889.18 ft above mean sea level, datum of 1929. July 1938 to September 1941 at datum 1.19 ft higher. Prior to Nov. 30, 1965, graphic water-stage recorder.

Average discharge.--19 years, 190 cfs (137,600 acre-ft per year).

Extremes.--Maximum gage height during year, 6.41 ft, June 30 (discharge not determined); minimum discharge, 6.6 cfs June 1, 14.
1938-41, 1951-67: Maximum gage height, 31.6 ft (from floodmarks), Aug. 23, 1966; minimum discharge, 0.54 cfs May 30, 1965.

Remarks.--Records good except those above 200 cfs, which are poor. Flow regulated by storage in Alamogordo Reservoir, Lake McMillan, and Lake Avalon (see stations 8-3840, 8-4005, 8-4038), and by several small diversion dams that divert for power or irrigation. Diversions and groundwater withdrawals above station for irrigation of about 202,000 acres (1959 determination). Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	49	32	61	55	24	26	14	14	9.5	197	19	17
2	44	31	61	47	21	27	17	9.8	11	70	19	21
3	41	37	61	43	17	24	14	13	15	127	22	23
4	42	39	61	42	17	22	18	12	24	105	20	26
5	44	39	61	43	17	21	19	12	46	40	18	24
6	45	39	222	41	16	20	19	14	30	26	17	21
7	45	40	135	38	16	26	19	12	18	21	14	17
8	44	43	95	38	16	21	19	15	15	18	13	17
9	47	42	80	38	22	24	21	17	14	17	15	17
10	48	43	79	38	22	20	19	12	12	16	38	16
11	52	46	66	37	21	21	19	9.7	11	15	169	17
12	48	57	63	36	20	19	15	9.4	10	17	109	18
13	43	60	63	35	19	19	12	9.2	9.5	17	38	16
14	42	61	62	29	23	15	12	10	10	18	25	19
15	46	62	76	27	32	13	12	8.8	9.9	19	19	22
16	43	62	85	28	31	14	15	9.0	13	17	18	23
17	43	61	83	27	27	17	15	9.4	237	14	16	23
18	39	55	82	28	19	18	15	11	190	13	17	21
19	39	48	82	27	17	22	14	12	52	12	17	18
20	50	45	80	27	17	19	13	12	26	13	19	18
21	54	43	78	28	17	19	13	11	18	13	20	17
22	57	43	72	27	22	19	13	11	40	14	18	18
23	56	43	68	25	24	16	13	11	20	15	18	17
24	48	44	62	24	37	17	17	10	20	14	19	16
25	47	44	59	23	40	21	18	14	80	14	18	17
26	45	56	71	22	35	20	18	12	51	15	20	20
27	38	61	78	22	30	20	17	12	30	15	21	22
28	48	59	75	18	25	20	15	14	24	15	21	22
29	64	58	63	19	-------	17	16	14	21	15	21	18
30	54	60	57	23	-------	14	16	12	654	16	22	17
31	37	-------	57	24	-------	13	-------	11	-------	17	21	-------
TOTAL	1,442	1,453	2,398	979	644	604	477	363.3	1,720.9	955	861	578
MEAN	46.5	48.4	77.4	31.6	23.0	19.5	15.9	11.7	57.4	30.8	27.8	19.3
MAX	64	62	222	55	40	27	21	17	654	197	169	26
MIN	37	31	57	18	16	13	12	8.8	9.5	12	13	16
AC-FT	2,860	2,880	4,760	1,940	1,280	1,200	946	721	3,410	1,890	1,710	1,150

CAL YR 1966: TOTAL 145,480.5 MEAN 399 MAX 65,000 MIN 2.4 AC-FT 288,600
WAT YR 1967: TOTAL 12,475.2 MEAN 34.2 MAX 654 MIN 8.8 AC-FT 24,740

8-4075. Pecos River at Red Bluff, N. Mex.

Location.--Lat 32°04'30", long 104°02'20", in sec.1, T.26 S., R.28 E., on right bank at Red Bluff, 0.2 mile downstream from Red Bluff Draw and 5.5 miles upstream from Delaware River.

Drainage area.--19,540 sq mi, approximately (contributing area).

Records available.--October 1937 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 2,850.05 ft above mean sea level, datum of 1929.

Average discharge.--30 years (1937-67), 216 cfs (156,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,190 cfs June 22 (gage height, 7.59 ft); minimum, 7.2 cfs June 14.
1937-67: Maximum discharge, 111,000 cfs Aug. 23, 1966 (gage height, 33.32 ft), from rating curve extended above 30,000 cfs on basis of slope-area measurement of peak flow; minimum, 0.19 cfs Aug. 1, 1966.
The flood of Aug. 23, 1966,is probably greatest known. Flood in October 1904 reached a stage of 28.0 ft, from information by Panhandle and Santa Fe Railway Co. For dates of other historical floods see stations 8-4050, 8-4065.

Remarks.--Records good. Flow regulated by storage in Alamogordo Reservoir, Lake McMillan and Lake Avalon (see stations 8-3840, 8-4005, 8-4038), and by several small diversion dams that divert for power or irrigation. Diversions and groundwater withdrawals above station for irrigation of about 202,000 acres (1959 determination). Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 67

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	37	64	58	27	19	15	16	9.0	530	17	20
2	61	34	65	54	27	22	16	14	8.5	111	17	18
3	56	36	65	46	23	27	18	9.5	12	523	19	21
4	53	41	65	45	20	26	15	13	66	177	21	26
5	54	42	65	46	20	24	20	12	45	81	18	25
6	56	44	124	45	17	23	22	12	53	46	16	22
7	54	44	198	42	17	24	22	13	34	31	14	19
8	54	45	102	40	16	26	22	12	16	28	13	16
9	53	46	96	40	19	26	21	16	12	22	12	15
10	58	45	78	40	23	27	23	16	12	21	14	15
11	58	47	80	40	24	23	21	12	10	20	50	15
12	62	52	68	39	21	23	20	9.5	9.0	17	150	15
13	53	62	66	40	20	21	15	9.0	9.0	15	55	15
14	52	65	66	36	20	20	13	9.0	8.5	16	30	15
15	47	66	69	30	25	15	12	9.5	8.5	17	22	18
16	52	66	86	29	35	13	12	9.0	56	18	16	20
17	50	66	87	29	32	14	15	9.5	102	16	16	20
18	47	65	86	29	25	17	15	10	324	14	15	20
19	44	56	86	29	20	20	14	12	105	13	15	18
20	46	52	84	29	17	22	12	14	44	14	19	16
21	58	48	82	30	18	20	11	12	28	16	20	16
22	60	47	80	30	23	22	11	10	487	14	19	15
23	62	47	70	29	25	22	10	10	43	14	17	16
24	58	48	72	28	26	17	10	10	27	15	16	16
25	52	48	64	27	36	20	16	10	44	14	17	15
26	52	51	65	24	38	22	17	15	108	14	17	16
27	46	62	80	25	28	21	16	12	37	15	19	17
28	42	64	80	23	21	22	16	11	28	15	20	20
29	65	61	72	20		22	15	13	26	15	20	20
30	72	64	64	22	-----	18	16	12	469	15	20	18
31	50	-----	60	26	-----	15	-----	10	-----	15	21	-----
Total	1,696	1,551	2,489	1,070	663	653	481	362.0	2,240.5	1,892	755	538
Mean	54.7	51.7	80.3	34.5	23.7	21.1	16.0	11.7	74.7	61.0	24.4	17.9
Max	72	66	198	58	38	27	23	16	487	530	150	26
Min	42	34	60	20	16	14	10	9.0	8.5	13	12	15
Ac-ft	3,360	3,080	4,940	2,120	1,320	1,300	954	718	4,440	3,750	1,500	1,070

Cal yr 1966: Total 149,131.00 Mean 409 Max 50,710 Min 0.22 Ac-ft 295,800
Wtr yr 1967: Total 14,390.5 Mean 39.4 Max 530 Min 8.5 Ac-ft 28,540

Peak discharge (base 1,800 cfs).--June 22 (0015) 2,190 cfs (7.59 ft).

8-4085. Delaware River near Red Bluff, N. Mex.

Location.--Lat 32°01'25", long 104°03'15", in SE¼ sec.23, T.26 S., R.28 E., near center of channel on downstream side of pier of bridge on U. S. Highway 285, 3.5 miles upstream from mouth, 4 miles south of Red Bluff, and 14 miles south of Malaga.

Drainage area.--689 sq mi.

Records available.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to September 1967. Published as "near Malaga, N. Mex." 1912-13, and as "near Angeles, Tex." 1914-15.

Gage.--Digital water-stage recorder with crest-stage gage and concrete control. Datum of gage is 2,900.66 ft above mean sea level, datum of 1929. Prior to May 1914, at site 3 miles upstream at different datum. May 1914 to June 1915 at site 2½ miles downstream at different datum. Prior to Nov. 30, 1965, graphic water-stage recorder.

Average discharge.--30 years (1937-67), 14.3 cfs (10,350 acre-ft per year).

Extremes.--Maximum discharge during year, 2,930 cfs June 16 (gage height, 7.64 ft); no flow at times.
1912-13, 1914-15, 1937-67: Maximum discharge, 81,400 cfs Oct. 2, 1955 (gage height, 27.0 ft, from floodmark), from rating curve extended above 1,500 cfs on basis of slope-area measurements at gage heights 8.65, 12.84, 18.00, and 27.0 ft; no flow many days.
Maximum stage known since at least 1911, that of Oct. 2, 1955. Flood of June 27, 1938, reached a stage of 18.00 ft, from floodmark.

Remarks.--Records fair except those above 100 cfs, which are poor. One small upstream diversion.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.4	2.6	2.9	3.0	0.26	0.70	0.38	0	0.51	40	3.4	0.19
2	4.4	2.7	2.8	2.5	0.26	0.70	0.38	0.10	0.43	16	38	0.31
3	4.4	2.8	2.8	2.5	0.44	0.50	0.32	0.26	56	30	29	0.29
4	4.1	2.8	2.9	3.0	0.70	0.44	0.32	0.56	13	13	6.9	0.20
5	4.4	2.7	3.0	2.3	0.26	0.38	0.32	1.3	3.1	9.1	3.7	0.23
6	4.6	2.7	2.9	0.70	0.50	0.38	0.44	1.3	3.6	7.8	1.2	0.32
7	4.6	2.7	2.7	1.1	1.7	0.38	0.44	1.2	3.7	3.7	0.65	1.2
8	4.3	2.7	1.7	1.0	0.50	0.32	0.50	1.2	2.1	2.4	0.47	1.5
9	3.9	2.7	1.4	0.56	0.32	0.32	0.38	1.1	2.0	1.7	0.33	1.5
10	3.7	2.7	2.5	0.38	0.32	0.26	0.26	0.93	1.0	1.4	0.39	1.5
11	3.7	2.7	2.8	0.56	0.26	0.32	0.26	0.80	0.68	1.1	0.75	1.6
12	3.7	2.7	2.9	0.77	0.26	0.63	0.38	0.71	0.51	0.85	0.58	1.6
13	3.3	2.7	3.0	0.63	0.26	0.70	0.44	0.66	0.39	2.7	1.1	1.6
14	3.1	2.7	3.0	0.50	0.26	0.77	0.50	0.66	0.26	0.93	1.8	1.5
15	3.1	2.8	3.0	0.77	0.26	0.85	0.50	0.73	0.13	0.50	2.2	1.7
16	3.3	2.8	3.0	2.1	0.26	0.77	0.38	0.85	153	0.38	2.1	1.8
17	3.4	2.8	3.0	0.56	0.26	0.85	0.63	0.86	295	0.38	0.48	4.4
18	3.3	2.7	3.0	0.44	0.26	0.93	1.7	0.88	30	0.38	25	2.1
19	3.0	2.7	3.0	0.56	0.26	0.93	1.6	0.86	15	0.44	18	2.1
20	3.1	2.8	3.1	0.50	0.26	0.93	0.70	0.86	7.9	8.4	3.8	1.8
21	3.2	2.9	3.1	0.32	0.32	3.6	0	0.86	40	13	1.9	2.5
22	3.1	2.9	3.0	0.32	0.38	3.5	0	0.92	57	3.6	2.6	2.3
23	3.0	2.8	2.9	0.32	0.32	1.5	0	0.88	2.9	1.1	1.1	2.5
24	2.8	2.9	2.9	1.6	0.32	1.1	0	0.81	2.7	0.38	1.4	2.1
25	2.8	3.0	3.1	0.56	0.32	0.85	0	0.73	326	0.10	0.81	2.0
26	2.8	2.9	3.2	0.32	0.38	0.56	0.15	0.90	177	0.05	0.07	23
27	2.8	2.7	3.1	0.32	0.32	0.32	0	0.95	32	0.05	0.04	166
28	2.8	2.7	3.0	0.32	1.6	0.32	0	1.1	18	0.02	0.03	7.8
29	2.7	2.8	2.7	0.26	-------	0.26	0.10	0.80	27	58	0.05	4.7
30	2.7	2.8	3.0	0.26	-------	0.26	0	0.76	208	23	0.05	3.7
31	2.7	-------	3.1	0.26	-------	0.32	-------	0.63	-------	7.4	0.07	-------
TOTAL	107.2	82.9	88.5	29.29	11.82	24.65	11.08	25.16	1,478.91	247.86	147.97	244.04
MEAN	3.46	2.76	2.85	.94	.42	.80	.37	.81	49.3	8.00	4.77	8.13
MAX	4.6	3.0	3.2	3.0	1.7	3.6	1.7	1.3	326	58	38	166
MIN	2.7	2.6	1.4	.26	.26	.26	0	0	.13	.02	.03	.19
AC-FT	213	164	176	58	23	49	22	50	2,930	492	293	484

CAL YR 1966: TOTAL 14,802 MEAN 40.6 MAX 5,240 MIN 0 AC-FT 29,360
WAT YR 1967: TOTAL 2,499 MEAN 6.85 MAX 326 MIN 0 AC-FT 4,960

Peak discharge (base 1,700 cfs).--June 16 (2345) 2,930 cfs (7.64 ft).

8-4100. Red Bluff Reservoir near Orla, Texas

Location.--Lat 31°54'05", long 103°54'40", at right end of Red Bluff Dam on Pecos River, 3 miles upstream from Salt (Screwbean) Draw, and 4.5 miles north of Orla, Reeves County.

Drainage area.--20,720 sq mi, approximately (contributing area).

Records available.--February 1937 to September 1967. Monthly contents only for some periods, published in WSP 1312.

Gage.--Staff gage read at irregular intervals. Datum of gage is 0.30 ft below mean sea level, datum of 1929.

Extremes.--Maximum contents observed during year, 272,000 acre-ft Oct. 1 (gage height, 2,838.2 ft); minimum observed, 100,500 acre-ft Sept. 22-30 (gage height, 2,816.3 ft).

1937-67: Maximum contents observed, 352,000 acre-ft Sept. 27-28, 1941 (gage height 2,846.2 ft, observed on staff gage at service spillway, affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft May 13, 1948 (gage height, 2,781.4 ft).

Remarks.--Reservoir is formed by a rock-faced earth-fill dam 9,200 ft long. Dam completed and storage began in September 1936. The concrete service spillway is equipped with 12 tainter gates 25 ft wide by 15 ft high. The emergency spillway, located on the right bank, is 790 ft long. Water is used for power development and irrigation from Mentone to Grandfalls. Inflow partly regulated by major reservoirs above station include Alamogordo Reservoir, Lake McMillan, and Lake Avalon, with a total combined capacity of 154,400 acre-ft. Also several small diversion dams that divert water for power and irrigation. Contents computed from intermittent gage readings and figures given herein represent total contents. Data regarding dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Crest of emergency spillway	2,845.0	340,000
Top of tainter gates	2,842.0	310,000
Crest of service spillway	2,827.0	166,500
Bottom of two 7.0- by 9.0-foot conduits	2,764.0	3,000

Cooperation.--Gage height records and capacity curve furnished by Red Bluff Water Power and Control District. Capacity curve based on Geological Survey topographic map, survey of 1925. Records furnished by the Texas District.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272,000	--	245,000	242,000	235,000	227,000	206,400	172,100	159,000	148,800	128,800	106,200
2	271,000	255,000	245,000	241,000	234,000	227,000	205,500	171,300	159,000	148,800	128,200	105,600
3	271,000	254,000	245,000	--	234,000	227,000	204,600	169,700	158,300	148,800	127,600	105,100
4	--	254,000	245,000	--	234,000	226,000	203,700	168,900	158,300	149,400	126,400	105,100
5	270,000	253,000	244,000	241,000	233,000	226,000	202,800	168,900	158,300	149,400	125,800	104,600
6	270,000	253,000	--	--	233,000	225,000	201,900	168,100	158,300	148,800	124,600	104,000
7	270,000	252,000	244,000	241,000	--	225,000	201,000	167,300	158,300	148,800	123,400	103,500
8	269,000	251,000	244,000	240,000	232,000	224,000	200,100	166,500	157,600	148,100	123,400	103,000
9	--	251,000	--	--	232,000	224,000	199,200	166,500	156,900	148,100	--	103,000
10	269,000	251,000	244,000	240,000	232,000	223,000	--	165,800	156,200	147,400	121,000	103,000
11	269,000	250,000	244,000	239,000	--	223,000	196,500	165,800	154,800	147,400	119,800	102,500
12	269,000	250,000	--	239,000	231,000	222,000	194,700	165,000	154,100	146,800	119,200	102,500
13	269,000	249,000	243,000	--	231,000	222,000	--	164,200	152,700	145,500	118,000	102,000
14	--	249,000	243,000	238,000	231,000	221,000	191,100	--	152,000	144,800	117,400	--
15	267,000	249,000	--	238,000	--	--	190,200	163,500	150,700	144,200	116,800	102,000
16	267,000	249,000	--	238,000	231,000	220,000	188,400	162,800	150,000	142,900	115,600	101,500
17	266,000	249,000	--	237,000	--	220,000	186,600	162,800	150,000	142,200	115,000	101,500
18	266,000	248,000	243,000	237,000	230,000	219,000	185,700	162,000	149,400	141,000	113,900	101,500
19	266,000	248,000	243,000	237,000	230,000	218,000	184,800	162,000	150,000	140,300	113,400	101,000
20	266,000	248,000	243,000	236,000	--	217,000	183,000	162,000	150,000	139,000	112,800	101,000
21	264,000	248,000	--	236,000	229,000	216,000	182,200	161,200	149,400	138,400	111,700	--
22	--	248,000	--	236,000	--	215,000	180,400	161,200	150,000	137,200	111,200	100,500
23	263,000	247,000	--	236,000	229,000	215,000	179,600	161,200	150,000	136,600	110,600	100,500
24	--	247,000	242,000	--	228,000	214,000	177,900	160,500	150,000	135,400	110,000	100,500
25	260,000	247,000	--	235,000	228,000	213,000	177,000	160,500	149,400	134,200	109,500	100,500
26	259,000	--	242,000	--	228,000	212,000	176,200	160,500	150,000	133,600	109,000	100,500
27	259,000	--	--	235,000	--	211,000	--	--	149,000	133,000	108,400	100,500
28	258,000	247,000	242,000	235,000	227,000	210,000	174,500	159,800	149,400	131,800	107,800	100,500
29	257,000	246,000	242,000	235,000	--------	209,100	173,700	159,800	148,800	130,600	107,800	100,500
30	--	246,000	--	235,000	- - - - -	--	172,900	159,800	148,000	130,600	107,300	100,500
31	256,000	- - - - -	242,000	235,000	- - - - -	207,300	- - - - -	159,800	- - - - -	129,400	106,800	- - - - -
(†)	2,836.6	--	2,835.2	2,834.5	2,833.7	2,831.7	2,827.8	2,826.1	--	2,821.4	2,817.5	2,816.3
(±)	-16,000	-10,000	-4,000	-7,000	-8,000	-19,700	-34,400	-13,100	-11,000	-19,400	-22,600	-6,300

Cal yr 1966: (±) +190,400
Wtr yr 1967: (±) -171,500

† Gage height, in feet, at end of month.
± Change in contents, in acre-feet.
Note.--No gage height record Nov. 30, June 30, contents interpolated.

8-4125. Pecos River near Orla, Tex.

Location.--Lat 31°48'14", long 103°48'25", on left bank 600 ft upstream from Pasotex pipeline crossing, 6 miles southeast of Orla, Reeves County, 12 miles downstream from Salt (Screwbean) Draw, and 15 miles downstream from Red Bluff dam.

Drainage area.--21,300 sq mi, approximately (contributing area).

Records available.--May 1937 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 2,718.05 ft above mean sea level, datum of 1929.

Average discharge.--30 years, 207 cfs (149,900 acre-ft per year).

Extremes.--Maximum discharge during year, 697 cfs June 18 (gage height, 4.99 ft); minimum, 10 cfs Mar. 1.
1937-67: Maximum discharge, 23,700 cfs Sept. 29, 1941 (gage height, 20.74 ft); no flow at times in 1946 and 1965.

Remarks.--Records poor. Flow largely regulated by Red Bluff Reservoir (station 8-4100) and reservoirs above Carlsbad, N. Mex. Occasional runoff from draws between dam and station. Many diversions above Red Bluff Reservoir for irrigation. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Cooperation.--Records furnished by Texas district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	223	314	51	24	12	420	453	103	350	314	182
2	379	142	144	51	81	111	425	458	132	328	328	182
3	100	142	135	49	92	118	429	420	168	325	406	182
4	95	145	132	53	92	118	434	410	151	188	401	182
5	60	145	132	90	92	118	434	359	148	175	401	182
6	39	148	132	90	92	118	472	359	154	178	396	182
7	30	154	129	87	60	126	505	368	186	182	392	182
8	30	158	120	87	51	154	510	373	208	186	387	182
9	28	161	87	87	53	158	510	323	223	175	387	135
10	26	164	84	90	45	158	510	247	420	168	387	106
11	26	168	81	103	45	161	510	239	425	228	382	106
12	49	132	81	106	45	168	515	239	420	311	382	100
13	105	84	79	106	45	171	515	239	415	547	377	100
14	89	84	74	103	45	175	515	243	410	462	377	98
15	49	90	69	106	45	178	519	243	406	453	377	98
16	49	90	67	106	45	178	524	247	406	453	373	98
17	49	92	64	103	50	280	524	220	425	453	336	98
18	47	92	62	103	103	297	524	178	411	453	328	98
19	47	92	58	106	106	354	529	178	171	510	328	95
20	85	95	58	106	103	368	529	178	148	515	332	95
21	410	95	55	100	106	373	534	178	145	519	323	69
22	302	98	55	60	106	377	534	178	175	458	328	49
23	306	100	55	55	106	382	534	161	193	444	323	45
24	306	71	53	55	103	382	534	145	207	439	223	47
25	310	64	53	55	103	387	529	138	404	434	189	45
26	306	64	53	45	103	392	439	142	359	420	186	43
27	227	64	53	45	32	401	449	138	368	410	186	47
28	223	64	51	43	11	406	449	120	368	410	182	51
29	227	67	51	26	---	410	453	109	368	392	182	60
30	227	100	51	24	---	415	453	109	373	323	182	49
31	231	---	51	24	---	420	---	106	---	314	182	---
Total	4,540	3,388	2,683	2,315	1,984	7,866	14,761	7,498	8,490	11,203	9,877	3,188
Mean	146	113	86.5	74.7	70.9	254	492	242	283	361	319	106
Max	410	223	314	106	106	420	534	458	425	547	406	182
Min	26	64	51	24	11	12	420	106	103	168	182	43
Ac-ft	9,000	6,720	5,320	4,590	3,940	15,600	29,280	14,870	16,840	22,220	19,590	6,320

Cal yr 1966: Total 31,705.50 Mean 86.9 Max 3,180 Min 0.74 Ac-ft 62,890
Wtr yr 1967: Total 77,793 Mean 213 Max 547 Min 11 Ac-ft 154,300

8-4763. Mimbres River at McKnight damsite, near Mimbres, N. Mex.

Location.--Lat 32°56'12", long 108°00'52" (revised), in SW¼SE¼ sec.6, T.16 S., R.11 W., on right bank 0.3 mile upstream from Mimbres Ranger station, 0.4 mile downstream from Cottonwood Canyon and 8 miles northwest of Mimbres.

Drainage area.--97.3 sq mi.

Records available.--November 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 6,236.73 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 370 cfs Aug. 12 (gage height, 3.34 ft); no flow most of time.
1963-67. Maximum discharge, 646 cfs Aug. 18, 1964 (gage height, 3.74 ft), from rating curve extended above 220 cfs on basis of slope-area measurement of peak flow; no flow for many days most years.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5										0	1.8
2	1.4										0	2.4
3	1.3										0	2.2
4	1.2										0	16
5	1.2										0	2.8
6	1.1										0	2.8
7	1.1										0	5.1
8	.90										.79	5.2
9	.70										.45	8.1
10	.60										12	36
11	.40										30	54
12	.22										131	25
13	.09										94	8.6
14	.01										30	4.6
15	0										31	12
16	0										29	6.2
17	0										9.4	7.2
18	0										3.3	7.2
19	0										1.6	6.2
20	0										4.3	5.2
21	0										2.2	4.9
22	0										1.6	4.9
23	0										1.5	4.9
24	0										2.0	5.9
25	0										1.7	15
26	0										1.6	14
27	0										1.7	10
28	0										1.7	8.1
29	0										1.7	6.9
30	0										1.7	5.9
31	0										1.7	
Total	11.72	0	0	0	0	0	0	0	0	0	395.94	299.1
Mean	.378	0	0	0	0	0	0	00	0	0	12.8	9.97
Max	1.5	0	0	0	0	0	0	0	0	0	131	54
Min	0	0	0	0	0	0	0	0	0	0	0	1.8
Ac-ft	23	0	0	0	0	0	0	0	0	0	785	593

Cal yr 1966: Total 3,045.32 Mean 8.34 Max 100 Min 0 Ac-ft 6,040
Wtr yr 1967: Total 706.76 Mean 1.94 Max 131 Min 0 Ac-ft 1,400

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-12	1600	3.34	370	9-4	2200	3.29	346

8-4770. Mimbres River near Mimbres, N. Mex.

Location.--Lat 32°52'30", long 107°59'00", in SE¼NW¼ sec.33, T.16 S., R.11 W., on left bank, 0.7 mile downstream from Bear Canyon and 1½ miles northwest of Mimbres.

Drainage area.--152 sq mi.

Records available.--June 1921 to September 1930 (fragmentary), October 1930 to September 1967. Monthly discharge only for some periods, published in WSP 1312.

Gage.--Digital water-stage recorder. Concrete control since Mar. 26, 1938. Datum of gage is 5,972 ft above mean sea level, datum of 1929. Prior to Sept. 12, 1923, at site 10 ft downstream at datum 0.3 ft higher. Sept. 12, 1923, to Jan. 17, 1934, at datum of 0.1 ft lower. Prior to Nov. 2, 1966, graphic water-stage recorder.

Average discharge.--37 years, 10.2 cfs (7,380 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs June 19 (gage height, 6.20 ft); minimum, 2.2 cfs Jan. 18, May 25, 26.
1930-67: Maximum discharge determined, 1,560 cfs Aug. 2, 1952 (gage height, 6.22 ft), from rating curve extended above 230 cfs by logarithmic plotting; minimum, 0.7 cfs Aug. 10, 1951.

Remarks.--Records good. Some regulation by Bear Canyon Reservoir (capacity, 700 acre-ft). Diversions for irrigation of about 300 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.9	3.7	7.4	6.0	3.3	3.8	2.7	5.4	2.6	5.4	2.5	8.8
2	8.2	3.4	7.3	6.0	3.1	4.1	2.7	4.6	2.5	5.6	3.0	8.8
3	9.4	3.3	7.2	5.9	3.0	4.4	2.7	4.1	2.5	5.9	2.8	8.6
4	7.8	3.4	7.4	5.9	2.9	4.6	3.0	4.1	2.4	5.8	3.5	54
5	6.8	3.7	7.3	5.8	2.9	4.6	2.6	3.1	2.4	5.6	16	43
6	6.5	4.3	7.2	5.8	2.8	5.1	2.5	2.6	2.6	5.4	10	12
7	6.4	9.6	7.4	5.8	2.8	4.6	2.4	2.5	3.0	5.4	5.4	12
8	8.8	11	7.1	5.9	2.7	4.2	2.3	2.5	2.8	5.3	10	21
9	10	11	7.0	6.0	2.7	3.9	2.3	2.5	2.7	4.3	6.6	19
10	9.6	10	6.9	6.0	2.7	4.1	2.6	2.5	3.0	4.1	35	80
11	9.9	9.5	6.9	6.0	2.8	4.2	2.4	2.4	3.1	4.0	121	187
12	9.6	9.2	6.9	6.0	2.8	4.3	2.3	2.4	2.9	3.9	355	88
13	9.6	9.0	6.7	5.8	2.8	4.1	2.3	2.6	2.8	4.1	303	40
14	9.3	8.9	6.3	5.2	2.8	4.1	2.3	2.5	2.9	4.1	111	26
15	9.3	8.7	6.2	5.2	2.8	4.6	2.4	2.5	2.6	4.0	91	31
16	9.3	8.4	5.9	5.3	2.8	4.7	2.4	2.6	2.5	4.6	133	23
17	9.0	8.5	5.7	5.4	2.9	4.1	2.8	2.6	2.8	4.1	85	29
18	9.3	8.4	6.0	4.0	2.9	3.3	7.0	2.8	3.1	4.1	31	24
19	8.5	8.1	6.1	2.5	2.9	2.9	9.1	2.8	66	4.2	21	18
20	7.8	8.0	6.4	2.6	3.4	2.9	9.4	2.5	18	4.4	44	15
21	7.9	8.0	6.9	2.5	4.8	3.1	9.5	2.4	6.3	3.5	26	14
22	8.2	6.8	6.6	2.3	5.0	3.3	9.0	2.4	5.5	3.4	18	13
23	7.8	6.5	6.4	2.3	4.8	2.9	8.3	2.4	4.1	11	14	12
24	7.5	7.8	6.4	2.4	4.6	3.4	10	2.4	3.8	31	12	13
25	7.6	8.1	6.3	2.4	4.8	3.3	7.8	2.3	4.3	7.4	11	29
26	7.9	7.9	6.4	2.5	4.4	2.8	4.8	2.3	6.4	4.5	9.9	26
27	8.1	7.8	6.3	2.7	3.7	2.5	4.8	2.3	6.2	4.2	10	20
28	5.3	7.7	6.2	2.8	3.7	2.3	4.8	2.3	6.2	3.9	10	18
29	3.3	7.5	6.2	3.0	------	2.3	4.9	2.3	6.2	3.8	10	16
30	3.5	7.5	6.1	3.1	------	2.4	5.3	2.5	6.0	3.7	8.9	15
31	3.7	------	6.0	3.2	------	2.6	------	2.7	------	3.3	8.5	------
TOTAL	239.8	225.7	205.1	136.3	93.6	113.5	137.4	85.9	188.2	174.0	1,528.1	924.2
MEAN	7.74	7.52	6.62	4.40	3.34	3.66	4.58	2.77	6.27	5.61	49.3	30.8
MAX	10	11	7.4	6.0	5.0	5.1	10	5.4	66	31	355	187
MIN	3.3	3.3	5.7	2.3	2.7	2.3	2.3	2.3	2.4	3.3	2.5	8.6
AC-FT	476	448	407	270	186	225	273	170	373	345	3,030	1,830

CAL YR 1966: TOTAL 7,764.2 MEAN 21.3 MAX 208 MIN 2.9 AC-FT 15,400
WAT YR 1967: TOTAL 4,051.8 MEAN 11.1 MAX 355 MIN 2.3 AC-FT 8,040

Peak discharge (base, 290 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-19	2145	6.20	1,030	9-4	2215	5.21	594
8-12	1800	5.59	758				

8-4775. Mimbres River near Faywood, N. Mex.

Location.--Lat 32°35'10", long 107°55'10", in NW¼ sec.7, T.20 S., R.10 W., on right bank 6 miles northeast of Faywood Hot Springs, 10 miles northeast of Faywood, and 12 miles upstream from San Vicente Arroyo.

Drainage area.--440 sq mi.

Records available.--January 1909 to May 1914, January 1916 to December 1917, October 1920 to May 1921, October 1927 to September 1930, all fragmentary. October 1930 to September 1955, October 1963 to September 1967. Monthly discharge only for some periods, published in WSP 1312. Records for August and September 1934, published in WSP 763, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 5,033 ft above mean sea level, datum of 1929. Prior to Aug. 16, 1909, chain gage 300 ft upstream at different datums. Aug. 16, 1909, to Sept. 25, 1920, water-stage recorder at site 500 ft upstream at different datums (datum lowered 0.5 ft Jan. 21, 1915, and 1.0 ft Jan. 1, 1916). Water-stage recorder at present site since Sept. 26, 1920, at datums 2.0 ft higher Sept. 26, 1920, to Sept. 30, 1942, and 1 ft higher Oct. 1, 1942, to Sept. 30, 1949.

Average discharge.--29 years (1912-13, 1930-33, 1934-55, 1963-67), 13.7 cfs (9,920 acre-ft per year).

Extremes.--Maximum discharge during year, 5,820 cfs Aug. 11 (gage height, 9.01 ft), from rating curve extended above 600 cfs as explained below; minimum, 0.22 cfs July 25.
1930-54, 1963-67: Maximum discharge, 20,000 cfs Aug. 4, 1939 (gage height, 12 ft, present site and datum), from rating curve extended above 600 cfs on basis of slope-area measurements at gage heights 7.80 and 11.7 ft; no flow at times.

Remarks.--Records fair. Diversions for irrigation of 1,750 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	3.3	3.5	6.2	5.4	3.3	3.9	3.5	2.3	3.3	16	19
2	3.3	3.3	3.3	5.8	3.9	3.0	5.4	3.5	2.1	2.8	3.0	19
3	3.3	3.3	3.5	5.8	4.3	2.8	5.1	3.3	2.1	5.9	2.3	16
4	3.3	3.0	3.5	6.2	4.3	3.0	4.3	3.3	2.3	3.3	40	15
5	3.3	3.0	4.3	6.2	4.7	3.0	3.9	3.3	2.3	3.0	5.8	148
6	3.3	2.8	3.9	6.2	5.1	3.3	3.5	3.3	2.3	2.8	3.3	40
7	3.3	2.8	5.1	6.2	5.4	3.5	3.5	3.3	2.3	3.5	3.0	47
8	4.7	3.0	4.7	5.8	5.8	3.5	4.3	3.0	2.1	3.0	3.0	76
9	3.3	3.0	5.1	6.2	5.4	3.3	5.1	2.8	2.5	2.3	7.4	54
10	3.3	3.0	4.7	6.6	3.5	3.0	5.1	2.8	2.5	2.3	59	66
11	3.3	2.8	5.1	6.6	3.3	3.0	5.1	3.0	2.8	2.1	1,340	147
12	3.0	2.8	5.8	7.0	4.3	3.0	4.7	2.8	2.8	1.6	423	105
13	3.0	2.5	6.2	7.0	6.2	3.0	5.4	2.8	2.8	1.3	913	62
14	3.0	2.5	6.2	7.0	2.8	3.0	4.7	3.0	2.8	1.3	334	42
15	3.0	2.3	5.8	6.6	2.5	3.0	4.7	3.0	3.0	1.3	139	28
16	3.0	2.5	5.4	6.2	2.5	3.0	4.7	2.8	3.0	1.6	309	28
17	3.0	2.8	4.7	5.8	2.5	3.0	4.3	2.3	3.9	1.3	345	19
18	3.0	2.8	5.1	5.8	2.5	3.3	3.9	2.3	3.5	1.3	139	19
19	3.0	3.5	5.1	5.4	2.5	3.9	3.9	2.1	3.9	1.3	130	12
20	3.0	3.5	6.2	5.4	2.8	3.9	3.5	2.1	42	1.3	98	8.0
21	3.0	4.3	6.6	5.4	2.8	3.5	3.3	2.3	5.4	1.3	110	5.4
22	3.0	5.4	6.2	5.1	2.8	3.0	3.9	2.1	4.3	1.1	90	5.1
23	3.0	6.2	6.6	5.4	2.8	3.3	4.1	2.1	3.9	1.1	105	3.9
24	3.0	6.2	6.6	6.6	3.3	3.9	3.3	1.8	3.9	2.3	72	66
25	3.0	6.2	6.6	6.6	3.3	4.7	3.0	2.3	3.9	7.0	45	98
26	3.0	6.2	6.2	7.0	3.3	4.7	3.0	2.1	4.3	9.2	33	52
27	3.0	5.8	6.6	7.4	3.5	3.3	3.3	1.3	3.9	1.6	22	40
28	3.0	5.1	6.6	7.0	3.3	3.0	2.5	1.6	3.0	2.1	22	36
29	3.0	3.9	7.0	7.0		3.3	3.3	2.1	6.3	.88	21	33
30	3.0	3.5	7.4	6.6	- - - - -	4.3	3.5	2.1	4.7	2.5	19	19
31	3.0	- - - - -	7.0	6.6	- - - - -	3.9	- - - - -	2.1	- - - - -	.77	19	- - - - -
Total	97.9	111.3	170.6	194.7	104.8	104.7	122.2	80.2	136.9	76.45	4870.8	1328.4
Mean	3.16	3.71	5.50	6.28	3.74	3.38	4.07	2.59	4.56	2.47	157	44.3
Max	4.7	6.2	7.4	7.4	6.2	4.7	5.4	3.5	42	9.2	1,340	148
Min	3.0	2.3	3.3	5.1	2.5	2.8	2.5	1.3	2.1	0.77	2.3	3.9
Ac-ft	194	221	338	386	208	208	242	159	272	152	9,660	2,630

Cal yr 1966: Total 8,945.4 Mean 24.5 Max 384 Min 2.3 Ac-ft 17,740
Wtr yr 1967: Total 7,398.95 Mean 20.3 Max 1,340 Min 0 Ac-ft 14,680

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-11	0130	9.01	5,820	8-16	2200	4.54	840
8-13	0130	5.27	1,430				

8-4775.3 Mimbres River near Spalding, N. Mex.

Location.--Lat 32°27'55", long 107°56'50", in N½ sec.23, T. 21 S., R.11 W., on right bank 360 ft downstream from U.S. Highway 180, 1½ miles northeast of Spalding, 3 miles upstream from San Vicente Arroyo and 17 miles northwest of Deming.

Drainage area.--472 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,749.8 ft above mean sea level (levels by New Mexico State engineer).

Extremes.--Maximum discharge during year, 12,500 cfs Aug. 11 (gage height, 5.76 ft, from floodmarks), from rating curve extended above 1,000 cfs on basis of slope-area measurement at gage height 4.78 ft; no flow for most of time.
1963-67: Maximum discharge, that of Aug. 11, 1967; no flow for most of time.
Major floods probably occurred July 21, 1895, Sept. 9, 1938 and Aug. 4, 1939, by comparison with upstream station, nearby station, and newspaper accounts.

Remarks.--Records poor. Diversions for irrigation of about 2,900 acres (1967 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0		0	0
2									0		0	0
3									0		0	0
4									0		10	0
5									0		5.0	91
6									0		0	36
7									0		0	38
8									0		0	74
9									0		0	64
10									0		0	58
11									0		1,200	99
12									0		412	40
13									0		1,040	14
14									0		263	21
15									0		126	16
16									0		244	6.8
17									0		274	0
18									0		71	0
19									0		84	0
20									14		56	0
21									0		61	0
22									0		51	0
23									0		61	0
24									0		36	25
25									0		20	48
26									0		5.0	27
27									0		0	28
28									0		0	28
29									0		0	23
30									0		0	9.4
31											0	
Total	0	0	0	0	0	0	0	0	14	0	4,019	745.2
Mean	0	0	0	0	0	0	0	0	0.467	0	130	24.9
Max	0	0	0	0	0	0	0	0	14	0	1,200	99
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	28	0	7,970	1,480

Cal yr 1966 Total 5,021.5 Mean 13.8 Max 356 Min 0 Ac-ft 9,960
Wtr yr 1967: Total 4,779.2 Mean 13.1 Max 1,200 Min 0 Ac-ft 9,480

Peak discharge (base, 250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
	about						
8-11	0300	5.76	12,500	9-5	0630	3.75	373
8-16	2345	4.03	850	9-24	2115	3.87	417
8-19	1800	3.88	562				

8-4783. Wamel Canal at head, near Deming, N. Mex.

Location.--Lat 32°18'05", long 107°53'45", in NW¼SE¼ sec.17, T.23 S., R.10 W., on left bank 110 ft downstream from heading gates and the Mimbres River and 8½ miles west of Deming.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,468.5 ft above mean sea level (levels by New Mexico State engineer).

Extremes.--1963-67: Maximum daily discharge, 500 cfs Dec. 23, 1965; no flow for most of time.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									0		0	0
2									0		0	0
3									0		0	0
4									0		0	0
5									0		0	13
6									0		0	3.9
7									0		0	0
8									0		0	.69
9									0		0	3.5
10									0		0	0
11									0		140	21
12									0		84	41
13									0		168	14
14									0		69	2.2
15									0		36	0
16									0		28	0
17									0		82	0
18									.02		23	0
19									0		1.4	0
20									0		7.1	0
21									0		2.4	0
22									0		0	0
23									0		0	0
24									0		0	0
25									0		0	17
26									0		0	6.4
27									0		0	0
28									0		0	0
29									0		0	0
30									0		0	0
31											0	
Total	0	0	0	0	0	0	0	0	0.02	0	640.9	122.69
Mean	0	0	0	0	0	0	0	0	0.001	0	20.7	4.09
Max	0	0	0	0	0	0	0	0	.02	0	168	41
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0.04	0	1,270	243

Cal yr 1966: Total 1,224.85 Mean 3.36 Max 179 Min 0 Ac-ft 2,430
Wtr yr 1967: Total 763.61 Mean 2.09 Max 168 Min 0 Ac-ft 1,510

8-4784. Mimbres River below Wamel heading, near Deming, N. Mex.

Location.--Lat 32°18'05", long 107°53'45", in NW¼SE¼ sec.17, T.23 S., R.10 W., on right bank 200 ft downstream from Wamel Canal heading and 8½ miles west of Deming, N. Mex.

Drainage area.--1,101 sq mi.

Records available.--October 1963 to September 1967.

Gage.--Water-stage recorder and concrete control. Datum of gage is 4,468.9 ft above mean sea level (levels by New Mexico State engineer).

Extremes.--Maximum discharge during year, 820 cfs Aug. 11 (gage height, 4.00 ft, from floodmarks), from rating curve extended above 350 cfs on basis of logarithmic plotting; no flow for most of time.
1963-67: Maximum discharge, that of Aug. 11, 1967; no flow for most of time.

Remarks.--Records poor. Diversions for at least 3,000 acres (1967 determination) above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											0	0
2											0	0
3											0	0
4											0	0
5											0	0
6											0	0
7											0	0
8											0	0
9											0	0
10											0	0
11											310	0
12											68	0
13											372	0
14											151	0
15											67	0
16											63	0
17											133	0
18											23	0
19											.91	0
20											1.1	0
21											0	0
22											0	0
23											0	0
24											0	.01
25											0	.30
26											0	0
27											0	0
28											0	0
29											0	0
30											0	0
31											0	
Total	0	0	0	0	0	0	0	0	0	0	1189.01	0.31
Mean	0	0	0	0	0	0	0	0	0	0	38.4	.010
Max	0	0	0	0	0	0	0	0	0	0	372	0.30
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0	0	2,360	0.6

Cal yr 1966: Total 508.00 Mean 1.39 Max 99 Min 0 Ac-ft 1,010
Wtr yr 1967: Total 1189.32 Mean 3.26 Max 372 Min 0 Ac-ft 1,189.32

Peak discharge (base, 300 cfs).--August 11 (2100) 820 cfs (4.00 ft); August 13 (1030) 528 cfs (3.39 ft).

8-4815. Rio Tularosa near Bent, N. Mex.

Location.--Lat 33°08'40", long 105°53'50", in SE¼NW¼ sec.32, T.13 S., R.11 E., on right bank 50 ft downstream from bridge on U. S. Highway 70, 2.6 miles west of Bent, and 8.5 miles northeast of Tularosa.

Drainage area.--120 sq mi, approximately.

Records available.--December 1947 to September 1967.

Gage.--Digital water-stage recorder with crest-stage gage and concrete control. Altitude of gage is 5,450 ft (from topographic map). Prior to May 6, 1963, graphic water-stage recorder.

Average discharge.--19 years (1948-67), 9.52 cfs (6,890 acre-ft per year).

Extremes.--Maximum discharge during year, 3,160 cfs Aug. 4 (gage height, 4.36 ft), from rating curve extended above 160 cfs as explained below; minimum, 0.65 cfs Jan. 19.
1947-67: Maximum discharge, 4,280 cfs June 18, 1965 (gage height, 5.02 ft), from rating curve extended above 160 cfs on basis of slope-area measurement of peak flow; no flow May 14, 1955, result of unusual regulation.
A major flood probably occurred Sept. 3, 1938, when a peak of 9,640 cfs was computed for station near Tularosa. Another high peak may have occurred July 2, 1914.

Remarks.--Records poor. Diversion for irrigation of about 1,000 acres (1959 determination) above station. Records of chemical analyses and water temperatures for the water year 1967 are published in Part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	8.4	11	6.6	6.5	8.3	6.8	5.6	12	6.7	5.5	6.2
2	8.9	10	11	6.8	6.5	8.8	7.5	5.8	13	7.0	6.3	6.9
3	9.1	10	11	6.4	7.5	9.5	6.8	11	14	6.4	5.6	8.1
4	9.1	10	11	6.1	8.3	8.4	7.0	11	13	5.6	140	7.8
5	9.9	10	11	6.5	8.2	7.8	10	12	8.8	5.1	20	7.3
6	9.7	10	11	6.9	8.3	7.1	8.8	11	8.5	5.5	15	7.5
7	9.5	9.8	11	6.5	9.2	7.5	7.8	10	7.8	5.6	15	7.6
8	8.6	9.3	10	6.5	9.1	7.9	9.8	7.1	8.9	5.5	15	7.3
9	8.4	10	10	7.3	9.1	8.4	11	5.4	8.1	5.0	15	7.0
10	8.4	8.4	8.4	8.2	9.0	7.9	8.1	3.7	7.6	4.8	16	7.0
11	9.9	7.9	8.2	8.4	8.2	8.9	6.1	6.9	5.0	5.5	75	7.0
12	10	9.0	8.3	8.5	7.8	10	7.9	8.3	4.2	6.2	15	7.5
13	9.4	9.1	8.1	8.6	7.3	9.1	8.2	6.5	5.2	7.5	11	7.1
14	8.2	9.8	8.2	9.1	7.3	8.7	7.5	3.7	10	7.7	10	6.4
15	7.4	9.6	8.2	9.1	7.0	8.8	6.7	4.8	8.5	7.5	13	6.3
16	8.0	9.3	8.0	9.1	7.1	8.5	5.8	4.2	26	7.8	5.0	6.8
17	8.0	8.9	7.7	8.7	7.5	9.7	5.4	8.0	25	7.3	4.6	9.7
18	7.2	9.4	8.0	8.6	7.3	10	5.6	8.5	10	6.9	4.5	8.5
19	7.2	11	8.2	6.9	7.7	10	7.0	7.9	8.2	6.5	13	8.3
20	8.2	10	8.4	6.6	8.2	11	8.6	8.7	6.7	6.8	8.0	8.2
21	9.6	10	8.2	6.5	8.2	10	11	7.8	5.0	6.2	7.3	7.8
22	9.2	9.7	7.3	6.2	8.2	7.7	10	5.7	3.8	5.3	6.2	7.9
23	9.8	9.9	7.3	7.3	8.1	7.7	13	5.9	3.6	4.8	5.0	7.8
24	9.2	9.4	7.3	7.4	9.3	7.0	8.5	6.7	3.5	4.7	6.1	9.2
25	9.1	10	7.3	7.3	10	9.8	7.8	7.1	4.8	4.3	6.6	20
26	9.1	9.8	7.2	7.3	10	8.1	7.2	7.1	9.5	6.8	6.5	9.0
27	8.7	11	8.0	7.8	8.1	6.7	7.2	7.0	8.1	7.0	6.5	8.4
28	8.1	11	7.2	7.3	6.5	8.9	7.7	5.2	7.1	6.9	7.0	9.6
29	8.1	9.5	6.5	7.1	-----	9.2	7.2	4.7	7.0	6.3	6.4	7.4
30	8.2	11	6.6	6.5	-----	9.1	5.5	5.5	6.9	6.5	5.0	7.4
31	8.2	-----	6.5	6.2	-----	8.7	-----	12	-----	4.7	5.6	-----
Total	271.6	291.2	266.1	228.3	225.5	269.2	237.5	224.8	269.8	190.4	480.7	243.0
Mean	8.76	9.71	8.58	7.36	8.05	8.68	7.92	7.25	8.99	6.14	15.5	8.10
Max	10	11	11	9.1	10	11	13	12	26	7.8	140	20
Min	7.2	7.9	6.5	6.1	6.5	6.7	5.4	3.7	3.5	4.3	4.5	6.2
Ac-ft	539	578	528	453	447	534	471	446	535	378	953	482

Cal yr 1966: Total 3,146.1 Mean 8.62 Max 90 Min 1.9 Ac-ft 6,240
Wtr yr 1967: Total 3,198.1 Mean 8.76 Max 140 Min 3.5 Ac-ft 6,340

Peak discharge (base, 125 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8- 4	1245	4.36	3,160	8-19	1800	--	about 500
8-11	1515	3.83	1,880	9-25	0630	2.82	174
8-15	1900	2.80	160				

8-4862. Tularosa Valley Tributary at White Sands, N. Mex.

Location.--Lat 32°22'05", long 106°28'44", in SE¼NE¼ sec.25, T.22 S., R.4 E., on left upstream wingwall of culvert 2,000 ft south of Raritan Avenue in White Sands.

Drainage area.--21.0 sq mi.

Records available.--August 1965 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,230 ft (from topographic map).

Extremes.--Maximum discharge during year, 137 cfs Sept. 20 (gage height, 3.32 ft); no flow for most of time.
1965-67: Maximum discharge, 657 cfs June 29, 1966 (gage height, 5.25 ft in gage well, 5.7 ft from outside gage), from rating curve extended above 50 cfs on basis of slope-area measurements at gage heights 5.25 (5.7, outside) and 4.04 ft (4.7, outside); no flow for most of time.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												0
2												0
3												0
4												0
5												0
6												0
7												0
8												0
9												0
10												0
11												0
12												0
13												0
14												0
15												1.3
16												0
17												0
18												0
19												0
20												4.5
21												0
22												0
23												0
24												0
25												5.2
26												0
27												0
28												0
29												0
30					- - - - -							0
31		- - - - -			- - - - -		- - - - -		- - - - -			- - - - -
Total	0	0	0	0	0	0	0	0	0	0	0	11
Mean	0	0	0	0	0	0	0	0	0	0	0	0.27
Max	0	0	0	0	0	0	0	0	0	0	0	5.2
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0	0	0	22

Cal yr 1966: Total 99.36 Mean 0.27 Max 60 Min 0 Ac-ft 197
Wtr yr 1967: Total 11 Mean 0.03 Max 5.2 Min 0 Ac-ft 22

Peak discharge (base, 350 cfs).--No peak above base.

9-3464. San Juan River near Carracas, Colo.

Location.--Lat 37°00'47", long 107°18'39", in SE¼SW¼ sec.17, T.32 N., R.4 W., on right bank just above flow line of Navajo Reservoir and 3 miles northwest of Carracas, Colo., 7.2 miles upstream from Piedra River, and at mile 178.8.

Drainage area.--1,230 sq mi, approximately.

Records available.--October 1961 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 6,090 ft (from river-profile map). Prior to May 16, 1963, graphic water-stage recorder at same site and datum.

Average discharge.--6 years, 624 cfs (451,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3,620 cfs Dec. 7 (gage height, 5.51 ft); minimum, 55 cfs Dec. 26.
1961-67: Maximum discharge, 6,120 cfs May 22, 1965 (gage height, 6.85 ft); minimum, about 5 cfs Dec. 10, 1961, result of freezeup.
Maximum flood known occurred Oct. 5, 1911. Major floods occurred Sept. 5 or 6, 1909 and June 29, 1927.

Remarks.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 11,000 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	76	86	107	90	134	530	335	628	1,320	623	569	945
2	76	78	104	80	135	663	311	564	1,140	592	443	778
3	93	74	116	80	125	719	333	485	1,400	577	437	606
4	165	77	141	90	125	570	424	425	1,950	626	410	506
5	125	78	149	110	125	338	461	440	2,240	629	571	471
6	123	81	706	108	130	240	485	420	2,660	612	572	486
7	106	79	2,330	100	139	198	472	455	2,440	602	809	591
8	93	115	749	90	130	191	530	804	2,070	618	764	688
9	93	178	367	90	130	184	560	1,220	1,850	707	986	598
10	90	108	235	90	150	215	484	1,490	1,700	706	1,180	481
11	77	101	201	100	150	328	450	1,350	1,480	568	1,740	492
12	83	103	181	110	160	404	505	1,260	1,340	352	1,140	423
13	96	108	169	120	160	315	486	1,290	1,160	352	999	376
14	87	106	167	110	190	269	438	1,060	1,110	329	1,050	306
15	92	111	167	120	223	242	435	900	1,310	366	936	326
16	88	115	150	120	200	211	396	980	1,110	362	938	303
17	86	122	127	110	200	284	361	1,160	1,040	1,850	718	259
18	90	123	133	100	191	402	395	1,340	1,180	1,630	630	252
19	82	115	124	86	204	455	460	1,560	1,520	892	635	282
20	79	116	127	82	220	425	505	1,640	1,650	752	656	414
21	78	122	128	89	200	348	495	1,740	1,580	618	588	327
22	83	122	126	110	200	329	490	1,780	1,410	574	514	281
23	84	117	107	130	230	382	490	2,120	1,360	551	494	257
24	90	117	98	130	300	449	490	2,220	1,220	498	432	235
25	96	120	110	130	405	475	485	2,230	1,070	502	391	237
26	87	114	110	113	505	413	435	2,110	976	629	367	312
27	86	103	90	100	649	409	470	2,000	862	569	661	295
28	86	80	76	100	465	388	635	1,960	762	506	634	260
29	85	104	70	105	------	381	712	1,840	719	384	437	233
30	79	106	70	118	------	403	796	1,540	633	386	483	218
31	81	------	80	123	------	351	------	1,440	------	883	955	------
TOTAL	2,835	3,179	7,615	3,234	6,175	11,511	14,324	40,451	42,262	19,845	22,139	12,238
MEAN	91.5	106	246	104	221	371	477	1,305	1,409	640	714	408
MAX	165	178	2,330	130	649	719	796	2,230	2,660	1,850	1,740	945
MIN	76	74	70	80	125	184	311	420	633	329	367	218
AC-FT	5,620	6,310	15,100	6,410	12,250	22,830	28,410	80,230	83,830	39,360	43,910	24,270

CAL YR 1966: TOTAL 238,280 MEAN 653 MAX 3,350 MIN 70 AC-FT 472,600
WAT YR 1967: TOTAL 185,808 MEAN 509 MAX 2,660 MIN 70 AC-FT 368,500

Peak discharge (base, 2,500 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-7	0900	5.51	3,620	7-17	1100	4.76	2,560
6-7	0330	4.82	2,530				

9-3498. Piedra River near Arboles, Colo.

Location.--Lat 37°05'17", long 107°23'52", in NE¼SW¼ sec.21, T.33 N., R.5 W., on left bank 3 miles downstream from Ignacio Creek, 5.2 miles northeast of Arboles Post Office, 8 miles upstream from mouth.

Drainage area.--629 sq mi.

Records available.--August 1962 to September 1967. Gage operated 1895-1899, 1910-1927 at a site 7½ miles downstream at altitude 6,000 ft. Low flow records probably not equivalent.

Gage.--Digital water-stage recorder. Datum of gage is 6,147.52 ft above mean sea level (from Colorado State Highway Department bench mark). Prior to May 16, 1963, graphic water-stage recorder at same site and datum.

Average discharge.--5 years (1962-67), 308 cfs (223,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,520 cfs Dec. 7 (gage height, 3.46 ft); minimum, 11 cfs Oct. 1.
1962-67: Maximum discharge, 4,000 cfs Apr. 23, 1965 (gage height, 5.20 ft); minimum, 11 cfs Dec. 9, 1963, & Oct. 1, 1966.
Maximum flood known occurred Oct. 5, 1911. A major flood occurred Sept. 5 or 6, 1909.

Remarks.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 2,800 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	41	45	49	60	62	122	194	302	474	188	185	375
2	44	42	50	60	62	177	185	273	418	171	151	320
3	105	40	56	58	57	228	211	233	629	156	154	248
4	138	40	64	58	58	222	267	214	828	133	185	208
5	133	42	68	58	64	172	294	207	930	124	229	182
6	138	39	345	58	64	127	304	203	1,330	117	229	182
7	136	41	1,030	54	64	103	295	225	1,110	108	300	225
8	131	62	346	52	62	96	320	351	896	101	330	201
9	87	65	167	52	57	92	345	589	770	103	490	198
10	55	54	104	54	59	101	296	776	666	89	604	188
11	52	52	86	57	59	126	268	782	561	87	746	208
12	57	50	80	60	62	171	286	688	487	83	562	188
13	59	52	80	60	71	190	259	665	439	79	496	168
14	55	51	82	54	49	200	243	525	469	68	385	154
15	54	52	74	54	43	180	245	447	460	70	355	143
16	52	56	66	58	42	170	227	503	414	85	335	133
17	52	55	64	58	40	330	225	592	404	625	276	128
18	54	54	64	50	43	446	260	653	443	472	244	131
19	54	51	67	50	47	387	310	724	587	292	229	131
20	52	52	70	54	47	297	312	759	612	233	244	174
21	53	54	70	55	43	272	285	819	594	195	237	151
22	52	55	66	56	43	255	276	823	504	165	204	136
23	50	54	66	56	45	271	267	934	454	156	188	126
24	48	54	60	56	52	296	267	939	380	141	171	115
25	45	54	56	56	58	304	267	927	340	146	154	115
26	46	53	56	54	89	260	238	873	305	128	151	146
27	45	48	57	50	104	259	260	809	280	174	156	133
28	44	36	53	54	105	233	324	730	248	149	171	124
29	45	49	52	56	------	224	359	666	221	117	168	112
30	46	50	54	59	------	237	363	568	198	162	182	103
31	47	------	57	60	------	211	------	514	------	179	182	------
TOTAL	2,070	1,502	3,659	1,731	1,651	6,759	8,252	18,313	16,451	5,096	8,693	5,146
MEAN	66.8	50.1	118	55.8	59.0	218	275	591	548	164	280	172
MAX	138	65	1,030	60	105	446	363	939	1,330	625	746	375
MIN	41	36	49	50	40	92	185	203	198	68	151	103
AC-FT	4,110	2,980	7,260	3,430	3,270	13,410	16,370	36,320	32,630	10,110	17,240	10,210

CAL YR 1966: TOTAL 133,172 MEAN 365 MAX 1,870 MIN 36 AC-FT 264,100
WAT YR 1967: TOTAL 79,323 MEAN 217 MAX 1,330 MIN 36 AC-FT 157,300

Peak discharge (base, 1,500 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-7	0830	3.46	1,520				

9-3545. Los Pinos River at La Boca, Colo.

Location.--Lat 37°00'40", long 107°35'55", in S½ sec.15, T.32 N., R.7 W., on downstream end of right abutment of the Denver & Rio Grande Western Railroad Co. bridge at southeast edge of La Boca, 0.1 mile upstream from Spring Creek and 13 miles upstream from mouth.

Drainage area.--510 sq mi, approximately.

Records available.--October 1950 to September 1967. Monthly discharge only for some periods, published in WSP 1733.

Gage.--Digital water-stage recorder. Datum of gage is 6,143.58 ft above mean sea level, datum of 1929. Prior to Sept. 14, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--17 years, 189 cfs (136,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,260 cfs July 17 (gage height, 5.69 ft); minimum, about 25 cfs Dec. 29, result of freezeup.
1950-67: Maximum discharge, 6,400 cfs July 27, 1957 (gage height, 8.95 ft); minimum determined, 13 cfs Apr. 23, 1951 (may have been lower during periods of freezeup).
Maximum flood known occurred Oct. 5, 1911.

Remarks.--Records good except those for winter periods, which are poor. Flow regulated by Vallecito Reservoir (capacity, 126,280 acre-ft). Diversions for irrigation of about 33,000 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	145	56	38	45	80	74	65	125	185	112	131	198
2	155	43	38	45	90	78	64	125	180	112	123	176
3	183	40	40	35	65	76	64	115	172	112	127	154
4	182	43	58	35	60	74	67	102	217	106	126	193
5	173	41	67	45	60	65	72	110	202	122	120	170
6	173	39	508	50	60	57	72	220	217	174	177	172
7	170	40	866	35	60	64	62	102	148	125	245	172
8	170	65	271	35	56	67	59	98	145	129	204	166
9	161	92	124	50	56	65	56	92	148	127	209	147
10	140	59	92	60	60	60	60	88	130	128	240	144
11	146	48	90	70	69	50	53	84	122	140	241	143
12	120	47	82	80	60	76	47	180	132	143	236	131
13	112	47	85	80	70	72	57	214	142	144	221	119
14	143	45	77	70	86	68	72	120	168	155	231	120
15	191	43	72	70	98	65	72	122	160	152	188	118
16	179	43	64	70	82	64	72	199	145	170	173	115
17	173	44	61	56	70	70	70	100	150	690	169	113
18	122	45	55	45	60	78	60	98	165	258	147	98
19	110	44	50	45	60	86	53	95	160	170	135	119
20	105	44	46	60	72	82	48	98	160	162	135	129
21	108	45	41	80	56	76	59	98	150	162	133	115
22	128	45	60	90	54	74	52	105	130	148	137	112
23	138	44	55	90	54	76	57	102	120	138	111	113
24	152	42	61	90	59	80	70	112	110	135	114	114
25	158	40	66	80	64	80	67	125	105	155	119	145
26	152	38	75	60	67	78	72	120	98	165	120	155
27	135	36	60	60	67	74	86	130	88	150	127	134
28	132	36	38	65	67	72	92	155	90	140	120	133
29	138	37	30	72	------	68	86	208	108	135	111	132
30	138	36	30	76	------	72	90	160	120	140	126	129
31	86	------	35	80	------	68	------	190	------	150	167	------
TOTAL	4,518	1,367	3,335	1,924	1,862	2,209	1,976	3,992	4,367	5,049	4,963	4,179
MEAN	146	45.6	108	62.1	66.5	71.3	65.9	129	146	163	160	139
MAX	191	92	866	90	98	86	92	220	217	690	245	198
MIN	86	36	30	35	54	50	47	84	88	106	111	98
AC-FT	8,960	2,710	6,610	3,820	3,690	4,380	3,920	7,920	8,660	10,010	9,840	8,290

CAL YR 1966: TOTAL 73,957 MEAN 203 MAX 1,420 MIN 30 AC-FT 146,700
WAT YR 1967: TOTAL 39,741 MEAN 109 MAX 866 MIN 30 AC-FT 78,830

9-3550. Spring Creek at La Boca, Colo.

Location.--Lat 37°00'50", long 107°35'40", in S½ sec.15, T.32 N., R.7 W., on right bank in an excavated channel, a quarter of a mile upstream from mouth and a quarter of a mile east of La Boca.

Drainage area.--58 sq mi, approximately.

Records available.--October 1950 to September 1967. Monthly discharge only for some periods, published in WSP 1733.

Gage.--Digital water-stage recorder. Altitude of gage is 6,160 ft (from topographic map). Prior to September 14, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--17 years, 27.7 cfs (20,050 acre-ft per year).

Extremes.--Maximum discharge during year, 365 cfs Aug. 12 (gage height, 2.50 ft); minimum, about 1.0 cfs Dec. 29, result of freezeup.
1951-67: Maximum discharge, 580 cfs Aug. 12, 1964 (gage height, 4.35 ft), from rating curve extended above 260 cfs by logarithmic plotting; maximum gage height, 5.98 ft Mar. 9, 1960 (ice jam); minimum discharge, 0.6 cfs Nov. 27, 1960.

Remarks.--Records good except those for winter periods, which are poor. Part of flow is return waste from irrigation.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	9.8	7.5	2.0	11	5.0	3.3	35	66	31	46	69
2	42	9.5	6.6	3.0	10	4.5	2.9	33	91	30	38	60
3	46	9.1	6.8	2.0	6.9	4.5	2.9	34	96	32	40	52
4	44	9.1	17	2.0	5.7	6.0	2.8	29	79	33	39	66
5	45	10	25	4.9	6.0	6.0	2.6	31	67	31	39	58
6	46	10	70	6.0	6.7	5.0	2.5	20	70	19	65	60
7	46	12	65	4.0	6.1	3.0	2.4	27	61	29	102	64
8	45	22	11	3.0	7.0	3.5	2.9	49	57	33	71	67
9	46	24	6.7	3.0	6.1	4.0	4.9	73	65	39	79	63
10	47	14	5.0	4.0	7.0	3.9	4.5	34	60	42	115	58
11	50	14	5.0	5.7	8.0	15	3.4	31	60	39	116	56
12	44	14	5.4	7.0	6.8	10	2.6	36	56	43	125	52
13	48	12	6.3	6.0	7.6	4.9	2.7	16	56	44	100	43
14	49	12	4.6	6.0	8.5	4.8	29	22	85	48	86	40
15	31	11	5.6	7.0	9.0	4.5	7.8	36	65	52	80	40
16	19	10	4.9	7.0	5.0	4.2	8.0	23	58	65	73	43
17	17	9.0	5.4	4.1	5.0	4.2	8.7	27	53	128	59	44
18	14	8.4	5.3	2.0	6.0	4.4	15	30	54	52	58	47
19	14	7.4	4.1	2.0	5.5	4.5	10	31	56	48	53	67
20	15	9.1	4.0	4.0	5.7	4.3	11	27	44	51	52	62
21	14	8.9	5.1	6.0	5.0	3.9	9.9	27	39	47	55	56
22	13	8.7	4.5	8.0	5.0	3.7	10	33	38	48	48	54
23	13	8.2	4.0	8.0	5.0	3.6	14	35	34	48	39	51
24	13	8.1	5.0	8.0	5.0	3.6	20	41	36	48	39	47
25	13	7.7	6.0	7.0	6.0	3.7	9.2	42	36	67	41	66
26	12	8.0	7.0	3.8	8.0	3.6	14	44	37	67	39	59
27	12	7.6	4.7	2.0	5.0	3.7	17	46	31	62	38	52
28	12	7.6	3.0	3.0	5.0	3.7	24	60	29	57	36	52
29	12	8.2	2.0	3.0		3.8	24	56	31	46	38	47
30	10	8.1	1.9	6.0	- - - - -	3.8	29	53	36	49	46	42
31	10	- - - - -	2.0	8.0	- - - - -	3.5	- - - - -	83	- - - - -	50	59	- - - - -
Total	883	317.5	316.4	147.5	183.6	146.8	301.0	1,164	1,646	1,478	1,914	1,637
Mean	28.5	10.6	10.2	4.76	6.56	4.74	10.0	37.5	54.9	47.7	61.7	54.6
Max	50	24	70	8.0	11	15	29	83	96	128	125	69
Min	10	7.4	1.9	2.0	5.0	3.0	2.4	16	29	19	36	40
Ac-ft	1,750	630	628	293	364	291	597	2,310	3,260	2,930	3,800	3,250

Cal yr 1966: Total 10,216.4 Mean 28.0 Max 126 Min 1.9 Ac-ft 20,260
Wtr yr 1967: Total 10,134.8 Mean 27.8 Max 128 Min 1.9 Ac-ft 20,100

Peak discharge (base, 180 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-7	0745	2.79	302	8-12	1900	2.50	365
7-26	1515	2.38	293				

9-3551. Navajo Reservoir near Archuleta, N. Mex.

Location.--Lat 36°48'35", long 107°36'35", in SW¼SE¼ sec.18, T.30 N., R.7 W., in gage shaft of outlet works structure near right abutment of Navajo Dam on San Juan River at river mile 145.0, 5½ miles east of Archuleta and 33 miles east of Farmington.

Drainage area.--3,230 sq mi, approximately.

Records available.--June 1962 to September 1967.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, adjustment of 1944 (1944 adjustment applied Mar. 20, 1967, and datum lowered 0.27 ft).

Extremes.--Maximum contents during year, 650,300 acre-ft Aug. 14, 15 (elevation, 5,986.95 ft); minimum, 356,100 acre-ft Mar. 23 (elevation, 5,935.01 ft).
1962-67: Maximum contents, 854,000 (revised) acre-ft Aug. 3, 1965 (elevation, 6,012.4 ft); minimum after June 1964 (initial-filling period), 246,900 acre-ft Mar. 10, 11, 1965 (elevation, 5,906.4 ft).

Remarks.--Reservoir is formed by earth-rock-fill dam, completed in June 1963; storage began June 27, 1962. Capacity, 1,709,000 acre-ft between elevations 5,720 ft (upstream toe of dam) and 6,085 ft (crest of spillway). Usable capacity, 1,036,000 acre-ft above elevation 5,990.0 ft (minimum operating level). Reservoir will not usually be drawn below elevation 5,882.5 ft (sill of intake structure), leaving a minimum pool or dead storage of 175,200 acre-ft. Figures given herein are total contents and are based on daily elevations at midnight. Reservoir is used for irrigation storage, river regulation, desilting, flood control, and recreation.

Cooperation.--Records furnished by Bureau of Reclamation.

Capacity table, water year 1966-67 (elevation, in feet, and contents, in thousands of acre-feet)

5,935	356.0	5,965	507.1
5,940	378.2	5,970	537.1
5,945	401.3	5,975	568.6
5,950	425.7	5,980	601.7
5,955	451.4	5,985	636.3
5,960	478.5	5,990	672.5

Contents, in thousands of acre-feet, at 2400 hours, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	508.2	437.4	406.2	411.5	397.3	374.5	356.5	382.9	487.3	587.4	622.1	638.8
2	508.0	434.8	405.8	411.2	397.1	375.2	356.4	384.3	489.8	588.5	622.9	638.4
3	506.5	432.2	405.5	410.5	396.9	376.0	356.4	385.4	493.3	589.4	623.5	637.2
4	504.6	429.6	405.4	410.1	396.6	376.5	356.6	386.2	498.4	590.0	624.2	635.8
5	502.5	427.0	405.4	409.5	396.3	376.5	357.3	387.2	504.1	590.6	625.1	634.1
6	500.6	424.4	407.8	408.9	395.8	376.3	358.3	388.2	511.3	591.2	626.5	632.4
7	498.5	421.8	416.3	408.5	395.4	375.8	359.1	389.0	518.1	591.8	628.6	631.2
8	596.3	419.5	418.7	408.0	394.9	374.7	360.1	390.9	523.5	592.3	631.3	630.5
9	494.2	417.2	419.3	407.5	394.4	372.8	361.2	394.4	528.4	592.8	633.3	629.3
10	492.0	415.6	419.3	407.0	393.9	370.7	362.3	397.8	533.0	593.2	637.2	627.6
11	489.6	415.2	419.1	406.5	393.5	369.2	362.8	401.5	536.2	593.7	642.6	626.1
12	487.3	414.8	419.1	405.9	393.1	368.0	363.5	405.0	539.4	594.3	646.1	624.4
13	484.7	414.3	419.0	405.4	391.7	366.3	364.3	408.8	542.0	594.6	649.0	622.4
14	482.5	414.0	418.7	404.9	390.1	364.6	365.0	411.6	545.1	595.1	650.3	620.2
15	480.2	413.7	418.5	404.6	388.4	362.9	365.7	414.0	548.2	595.5	650.3	619.7
16	477.8	413.0	418.2	404.1	386.6	361.1	366.3	416.7	550.8	596.3	649.9	619.9
17	475.2	412.6	417.8	403.8	384.9	359.6	366.9	419.6	553.3	601.6	649.0	620.2
18	472.6	412.2	417.6	403.2	383.4	358.8	367.7	423.0	555.8	606.0	647.9	620.5
19	470.1	411.7	417.0	402.8	381.9	357.9	368.6	428.0	559.8	608.1	646.5	621.0
20	467.5	411.4	416.8	402.1	380.4	357.0	369.7	531.4	564.2	609.7	645.5	621.7
21	465.1	411.1	416.5	401.6	378.8	357.3	370.8	435.9	568.0	610.9	644.0	622.3
22	462.4	410.5	416.3	401.2	388.3	356.6	371.8	440.3	571.2	611.9	642.5	622.8
23	460.2	410.2	415.9	400.6	375.7	356.1	372.8	445.5	574.2	612.9	640.9	623.0
24	457.4	409.7	415.3	400.1	374.6	356.3	373.8	451.0	576.8	614.0	639.0	623.3
25	454.9	409.3	415.0	399.9	374.2	356.7	374.9	456.7	578.9	615.0	637.3	623.9
26	452.5	408.7	414.6	399.5	373.9	356.9	375.8	462.6	580.9	616.3	635.5	624.5
27	450.1	408.5	414.2	399.1	374.2	356.9	376.7	468.0	582.6	617.4	633.9	624.9
28	447.6	407.6	413.7	398.7	374.3	356.9	378.1	472.6	584.2	618.3	633.9	625.4
29	445.1	407.1	413.2	398.3		356.6	379.7	477.1	585.5	618.8	635.3	625.7
30	442.5	406.6	412.5	397.8	----------	356.6	381.5	480.9	586.5	619.7	635.8	625.8
31	440.0	----------	411.9	397.4	----------	356.6	----------	484.1	----------	621.2	637.6	----------
(†)	5.952.8	5.946.1	5.947.2	5.944.2	5.939.1	5.935.1	5.940.7	5.961.0	5.977.7	5.982.9	5.985.2	5.983.5
(‡)	-68.7	-33.4	+5.3	-14.5	-23.1	-18.8	+24.9	+102.6	+102.4	+34.7	+16.4	-11.8

Calendar year 1966: (‡) -4.0
Water year 1966-67: (‡) +117.1

† Elevations, in feet, at end of month.
‡ Change in contents, in thousands of acre-feet.

9-3555. San Juan River near Archuleta, N. Mex.

Location.--Lat 36°48'10", long 107°41'55", in N½ sec.20, T.30 N., R.8 W., on left bank at river mile 136.8, half a mile upstream from Gobernador Canyon, 0.8 mile northeast of Archuleta, and 7.2 miles downstream from Navajo Dam. Dec. 29, 1959, to Oct. 15, 1964, at site 0.4 mile upstream. Prior to Dec. 29, 1959, at site 5.0 miles upstream.

Drainage area.--3,260 sq mi, approximately.

Records available.--December 1954 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 5,655 ft (from river-profile survey). Dec. 29, 1959 to Oct. 15, 1964, at site 0.4 mile upstream at altitude 5 ft higher. Prior to Dec. 29, 1959, at site 5.0 miles upstream at altitude 55 ft higher. Dec. 29, 1959 to Sept. 12, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--12 years, 1,166 cfs (844,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,890 cfs March 13 (gage height, 4.59 ft); minimum, 82 cfs May 29, 30.
1954-67: Maximum discharge, 18,900 cfs July 27, 1957 (gage height, 11.00 ft, site and datum then in use); minimum determined, 8 cfs Feb. 28, 1963.

Remarks.--Records good. Flow completely regulated at Navajo Dam (see station 9-3551) except for minor inflow from 30 sq mi intervening drainage area. Diversions above station for irrigation of about 47,000 acres. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	443	1,630	408	401	408	699	618	318	269	311	345	996
2	443	1,620	407	404	408	657	627	318	293	311	347	1,760
3	1,060	1,620	394	408	408	655	609	318	219	306	349	1,750
4	1,460	1,590	408	408	411	699	600	318	366	306	345	1,770
5	1,600	1,540	408	408	414	706	464	322	296	306	350	1,740
6	1,640	1,620	420	403	440	708	355	322	296	301	378	1,740
7	1,630	1,610	440	402	480	698	375	322	299	311	358	1,750
8	1,640	1,610	408	401	480	871	375	322	300	308	357	1,760
9	1,640	1,610	401	401	480	1,570	382	314	306	307	1,050	1,700
10	1,630	1,290	401	401	480	1,580	382	290	305	304	369	1,700
11	1,640	352	401	401	480	1,580	434	276	304	317	360	1,700
12	1,630	398	408	488	480	1,580	414	258	307	350	355	1,710
13	1,640	398	394	388	902	1,610	408	255	305	347	350	1,690
14	1,620	401	388	390	1,380	1,580	408	266	300	338	1,030	1,700
15	1,630	402	394	395	1,360	1,580	408	269	301	319	1,740	994
16	1,630	397	401	395	1,280	1,570	414	266	291	329	1,780	330
17	1,500	401	401	395	1,190	1,560	360	266	304	310	1,800	329
18	1,220	401	401	398	1,210	1,560	297	266	289	320	1,770	335
19	1,220	407	485	401	1,200	1,570	304	269	308	324	1,810	344
20	1,450	406	409	407	1,180	1,560	304	269	313	325	1,760	343
21	1,630	404	408	414	1,170	1,410	304	269	312	322	1,790	340
22	1,630	402	408	414	1,210	1,260	308	272	307	322	1,750	340
23	1,630	401	408	512	1,200	1,190	311	266	306	325	1,770	334
24	1,630	405	408	414	1,060	897	311	283	301	325	1,740	340
25	1,630	405	408	403	739	852	311	290	299	325	1,740	343
26	1,630	405	412	388	690	843	308	288	297	326	1,750	345
27	1,640	405	414	388	687	834	314	291	297	325	1,730	341
28	1,370	469	414	388	693	825	318	292	302	323	1,050	346
29	1,520	403	414	388	------	825	318	160	306	321	338	350
30	1,630	401	408	474	------	816	318	105	307	320	326	346
31	1,620	------	401	408	------	708	------	296	------	326	322	------
TOTAL	45,926	23,803	12,680	12,686	22,520	35,053	11,659	8,636	9,005	9,910	31,309	29,566
MEAN	1,481	793	409	409	804	1,131	389	279	300	320	1,010	986
MAX	1,640	1,630	485	512	1,380	1,610	627	322	366	350	1,810	1,770
MIN	443	352	388	388	408	655	297	105	219	301	322	329
AC-FT	91,090	47,210	25,150	25,160	44,670	69,530	23,130	17,130	17,860	19,660	62,100	58,640

CAL YR 1966: TOTAL 484,331 MEAN 1,327 MAX 3,180 MIN 312 AC-FT 960,700
WAT YR 1967: TOTAL 252,753 MEAN 692 MAX 1,810 MIN 105 AC-FT 501,300

9-3635. Animas River near Cedar Hill, N. Mex.

Location.--Lat 37°02'15", long 107°52'25", in sec.7, T.32 N., R.9 W., on right bank three-quarters of a mile downstream from Florida River, 2.5 miles upstream from Colorado-New Mexico State line, and 8.5 miles north of Cedar Hill.

Drainage area.--1,090 sq mi, approximately.

Records available.--October 1933 to September 1967. Monthly discharge only for October and November 1933, published in WSP 1313.

Gage.--Digital water-stage recorder. Altitude of gage is 5,960 ft (from topographic map). Prior to Sept. 14, 1937, at datum between 1.52 and 1.36 ft higher. Sept. 15, 1937, to Sept. 30, 1946, at datum 1.36 ft higher. Oct. 1, 1946 to Sept. 12, 1966, graphic water-stage recorder at same site.

Average discharge.--34 years, 889 cfs (643,600 acre-ft per year).

Extremes.--Maximum discharge during year, 5,260 cfs Aug. 13 (gage height, 7.60 ft); minimum, about 140 cfs Dec. 29, result of freezeup.
1933-67: Maximum discharge, 13,100 cfs June 19, 1949 (gage height, 11.45 ft); minimum, 63 cfs Jan. 21, 1935.
Maximum flood known occurred Oct. 5 or 6, 1911.

Remarks.--Records good except those for winter period, which are poor. Diversions for irrigation of about 20,000 acres above station. During water years 1944-49, Twin Rocks Canal diverted above station for irrigation below. Possible regulation by Lemon Dam on Florida River (capacity, 40,100 acre-ft), storage started in November 1963.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	250	234	224	162	255	252	292	568	1,160	1,610	391	536
2	248	236	222	168	240	267	295	495	1,070	962	372	639
3	258	234	228	155	222	286	296	434	1,130	899	357	561
4	272	236	255	160	222	298	354	378	1,350	788	372	473
5	282	237	261	174	235	282	402	349	1,630	719	371	416
6	286	232	390	186	238	260	404	329	2,150	658	359	416
7	292	232	450	140	240	249	455	322	2,220	609	464	488
8	284	282	449	150	230	249	434	439	2,110	633	688	450
9	278	303	342	175	212	235	422	955	1,960	610	657	462
10	270	279	306	208	245	246	390	1,400	1,850	558	659	437
11	276	264	289	218	238	263	385	1,520	1,630	557	787	415
12	276	258	281	220	228	263	390	1,460	1,390	611	1,000	387
13	278	262	275	222	248	256	400	1,470	1,120	613	1,350	358
14	278	255	267	226	254	252	410	1,160	1,040	560	1,010	343
15	278	252	261	238	237	249	368	944	1,000	556	819	330
16	276	254	246	212	218	246	367	1,170	901	661	718	318
17	280	253	242	212	218	252	345	1,490	897	1,060	646	317
18	270	250	242	200	217	290	344	1,700	1,070	984	563	313
19	266	246	245	200	221	346	378	1,920	1,300	778	560	318
20	272	247	250	228	237	338	451	2,350	1,440	680	532	357
21	270	247	260	250	220	318	447	2,580	1,680	598	477	355
22	264	244	258	250	209	318	441	2,800	1,640	518	443	336
23	260	244	240	240	216	342	447	3,130	1,670	497	420	316
24	256	241	208	240	237	386	416	3,080	1,580	463	412	302
25	252	238	214	250	244	404	409	3,190	1,480	456	387	317
26	252	231	216	225	260	395	406	2,830	1,360	455	372	342
27	254	227	200	230	255	364	380	2,350	1,240	442	351	355
28	250	224	192	238	245	345	445	1,990	1,210	401	379	349
29	246	226	162	230	------	327	572	1,700	1,070	384	382	334
30	242	230	150	240	------	320	618	1,400	986	346	389	319
31	240	------	150	256	------	304	------	1,250	------	369	403	------
TOTAL	8,256	7,398	7,975	6,503	6,541	9,202	12,163	47,153	42,334	19,439	17,090	11,659
MEAN	266	247	257	210	234	297	405	1,521	1,411	627	551	389
MAX	292	303	450	256	260	404	618	3,190	2,220	1,060	1,350	639
MIN	240	224	150	140	209	235	292	322	897	346	351	302
AC-FT	16,380	14,670	15,820	12,900	12,970	18,250	24,120	93,530	83,970	38,550	33,900	23,130

CAL YR 1966: TOTAL 281,699 MEAN 772 MAX 3,860 MIN 150 AC-FT 558,700
WAT YR 1967: TOTAL 195,709 MEAN 536 MAX 3,190 MIN 140 AC-FT 388,200

Peak discharge (base, 4,000 cfs, revised).--Aug. 13 (1630) 5,260 cfs (7.60 ft).

9-3645. Animas River at Farmington, N. Mex.

Location.--Lat 36°43'20", long 108°12'00", in SE¼ sec.16, T.29 N., R.13 W., on left bank at bridge on former State Highway 17, 0.6 mile downstream from bridge on State Highway 17, and 1.3 miles upstream from mouth.

Drainage area.--1,360 sq mi, approximately.

Records available.--June 1904 to October 1905 (published as "near Farmington"). September 1912 to September 1967. Monthly discharge only for some periods, published in WSP 1313.

Gage.--Water-stage recorder. Altitude of gage is 5,278 ft (from bridge-profile plans). Prior to Nov. 1, 1905, chain gage at old bridge a quarter of a mile upstream at different datum. Sept. 17, 1912, to Oct. 4, 1938, water-stage recorder at site 0.6 mile downstream at lower datums (datum lowered 2.0 ft Aug. 15, 1927, and raised 0.2 ft Dec. 16, 1929).

Average discharge.--56 years, 932 cfs (674,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,030 cfs May 23 (gage height, 5.80 ft); minimum, 94 cfs May 8.
1904-5, 1912-67: Maximum discharge, about 25,000 cfs June 29, 1927 (gage height, 8.5 ft, site and datum then in use), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, 1.4 cfs Sept. 4, 1956.
Maximum flood known occurred Oct. 6, 1911, when a stage of about 16.5 ft was reached (present site and datum). Flood of Sept. 6, 1909, reached a stage of 11.1 ft, 1904-5 site and datum (discharge, about 19,000 cfs).

Remarks.--Records fair except those for January which are poor. Diversions for irrigation of about 30,000 acres above station. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	172	194	170	406	240	276	342	1,060	633	185	275
2	118	160	190	190	390	240	245	282	796	660	190	498
3	126	162	190	180	324	245	220	225	740	624	170	490
4	142	165	278	190	294	294	204	156	1,290	554	190	350
5	170	165	352	220	276	306	240	125	1,550	476	215	400
6	180	170	776	210	288	276	276	116	1,870	406	205	330
7	189	165	1,820	180	288	255	250	104	2,020	364	166	318
8	195	189	812	190	260	255	250	100	1,790	350	562	330
9	180	314	416	210	245	265	276	312	1,630	371	469	326
10	172	292	325	230	245	230	336	1,340	1,470	329	348	318
11	175	222	285	240	276	250	288	1,330	1,310	329	490	286
12	204	200	300	250	265	250	250	1,370	1,090	301	1,120	245
13	198	196	290	250	250	250	282	1,340	936	406	1,130	210
14	201	196	285	260	250	245	282	1,250	820	315	1,050	192
15	240	192	285	270	265	230	265	1,030	730	322	832	188
16	227	192	255	270	265	225	216	1,040	670	420	624	175
17	207	192	245	250	220	204	156	1,310	615	588	538	172
18	218	188	255	230	216	204	120	1,550	700	856	469	172
19	213	186	255	212	216	330	114	1,720	978	642	434	175
20	207	178	250	225	216	378	166	1,940	1,240	506	506	175
21	224	178	245	250	235	360	208	2,130	1,500	427	364	212
22	216	171	250	260	225	318	192	2,490	1,500	336	408	208
23	204	171	235	260	212	324	196	2,720	1,490	274	294	180
24	204	178	216	250	225	360	170	2,640	1,440	268	243	160
25	207	178	216	260	235	422	170	2,600	1,370	238	202	154
26	221	178	216	220	240	422	159	2,370	1,230	232	160	175
27	218	171	216	204	255	390	135	1,830	1,090	294	175	200
28	180	174	201	216	235	336	128	1,670	880	274	138	198
29	168	176	150	235		312	176	1,560	868	232	164	188
30	162	186	170	240	-----	312	306	1,290	670	215	170	168
31	170	-----	160	276	-----	300	-----	1,200	-----	185	202	-----
Total	5,852	5,657	10,333	7,098	7,317	9,028	6,552	39,482	35,343	12,427	12,413	7,468
Mean	189	189	333	229	261	291	218	1,274	1,180	401	400	249
Max	240	314	1,820	276	406	422	336	2,720	2,020	856	1,130	498
Min	116	160	150	170	212	204	114	100	615	185	138	154
Ac-ft	11,610	11,220	20,500	14,080	14,510	17,910	13,000	78,310	70,100	24,650	24,620	1,810

Cal yr 1966: Total 245,071 Mean 671 Max 3,500 Min 107 Ac-ft 486,100
Wtr yr 1967: Total 158,970 Mean 436 Max 2,720 Min 100 Ac-ft 315,300

Peak discharge (base, 4,000 cfs, revised).--May 23 (1600) 4,030 cfs (5.80 ft).

9-3650. San Juan River at Farmington, N. Mex.

Location.--Lat 36°43'25", long 108°13'30", in SE¼ sec.17, T.29 N., R.13 W., on left bank at river mile 97.4, 360 ft downstream from highway bridge, 4,000 ft downstream from Animas River and 1 mile west of Farmington.

Drainage area.--7,240 sq mi, approximately.

Records available.--June to December 1904, January 1905 to September 1906 (gage heights and discharge measurements only; discharge records for January to December 1905, published in WSP 175, have been found to be unreliable and should not be used), September 1912 to September 1967. Monthly discharge only for some periods, published in WSP 1313.

Gage.--Digital water-stage recorder. Datum of gage is 5,230.37 ft above mean sea level, datum of 1929. June 19, 1904, to May 10, 1906, wire-weight gage at site 1½ miles downstream at different datum. May 11 to Sept. 22, 1906, chain gage and Sept. 19, 1912, to July 2, 1918, staff gage, at site half a mile upstream at different datums. Nov. 1, 1921, to Nov. 18, 1933, water-stage recorder at site 360 ft upstream at datum 1.04 ft higher prior to October 1932, and 0.53 ft higher thereafter. Nov. 19, 1933 to Sept. 15, 1966, graphic water-stage recorder at same site and datum.

Average discharge.--55 years (1912-67), 2,474 cfs (1,791,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 9,400 cfs Aug. 10 (gage height, 5.60 ft); minimum, 272 cfs Apr. 26.
1912-67: Maximum discharge, about 68,000 cfs June 29, 1927 (gage height, 10.2 ft, site and datum then in use), from rating curve extended above 37,000 cfs; minimum, 14 cfs Aug. 22, 1939.
Maximum flood known occurred Oct. 6, 1911. Flood of Sept. 6, 1909, reached a stage of about 12.3 ft, site and datum in use May to September 1906.

Remarks.--Records good. Since June 1962 flow is partly controlled by operation of Navajo Reservoir. Diversions above station for irrigation of about 86,000 acres, 4,000 of which is irrigated by Farmers Mutual ditch (see table below) which diverts from Animas River and bypasses this station; ditch flow not included in record. At times this ditch may be supplied partly or entirely by diversion from San Juan River below this station. Records of chemical analyses and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge in cubic feet per second, of Farmers Mutual ditch, water year October 1966 to September 1967

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Oct. 3	100	Dec. 19	0	Mar. 1	50	May 2	142	July 10	146	Aug. 28	129
25	*135	30	0	16	0	11	*139	17	*158	Sept.18	157
31	135	Jan. 4	0	31	0	26	90.4	25	108	25	130
Nov. 23	* 98.7	16	0	Apr. 7	0	June 6	122	31	95.2	28	114
30	99.5	31	0	12	*141	8	* 2.12	Aug. 10	164		
Dec. 8	100	Feb. 24	*111	26	136	26	110	16	65.2		

* Result of discharge measurement.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	447	1,610	493	690	782	972	971	460	1,110	684	425	1,210
2	451	1,570	508	726	767	1,040	969	426	904	700	374	1,020
3	514	1,560	533	723	718	974	933	387	894	652	347	1,170
4	1,390	1,530	640	684	683	1,060	906	359	1,470	591	411	1,200
5	1,510	1,540	695	724	663	1,100	907	338	2,270	525	1,290	1,500
6	1,580	1,540	1,020	735	667	1,080	745	351	2,380	438	671	1,660
7	1,640	1,530	2,200	681	667	1,050	700	395	2,580	387	1,420	2,430
8	1,670	1,520	1,380	656	649	1,040	575	357	2,320	379	1,260	1,860
9	1,650	1,570	927	667	627	1,600	557	527	2,020	408	1,530	2,280
10	1,620	1,610	813	714	641	1,840	584	1,350	1,700	371	3,180	2,050
11	1,630	885	760	765	660	1,850	536	1,540	1,520	370	4,630	1,630
12	1,640	598	758	798	661	1,860	529	1,550	1,260	407	2,720	1,520
13	1,640	598	732	837	645	1,820	531	1,410	1,060	548	2,700	1,430
14	1,620	578	716	775	1,330	1,820	536	1,250	960	488	1,970	1,440
15	1,680	557	693	751	1,340	1,830	487	829	942	426	2,640	1,440
16	1,690	551	709	755	1,310	1,840	452	939	849	525	2,430	1,070
17	1,680	541	715	722	1,180	1,800	413	1,400	778	720	1,880	721
18	1,680	532	715	713	1,220	1,800	331	1,770	906	1,170	1,730	484
19	1,710	519	721	686	1,250	1,860	285	2,060	1,250	815	1,610	460
20	1,700	511	797	696	1,280	1,910	314	2,260	1,520	627	1,560	563
21	1,720	513	747	714	1,290	1,860	330	2,380	1,750	578	1,410	496
22	1,750	501	747	721	1,320	1,500	313	2,760	1,730	487	1,360	427
23	1,730	482	732	749	1,360	1,500	312	3,180	1,730	465	1,290	387
24	1,760	488	708	755	1,320	1,320	304	3,250	1,630	439	1,350	355
25	1,780	485	707	732	1,060	1,240	298	3,180	1,510	463	1,210	354
26	1,790	475	726	663	965	1,240	294	2,990	1,360	405	1,170	373
27	1,800	469	717	651	953	1,200	288	2,430	1,190	481	3,750	372
28	1,790	473	705	656	920	1,190	279	1,980	1,020	448	2,030	380
29	1,740	499	675	667	------	1,160	315	1,880	912	419	780	363
30	1,720	471	679	675	------	1,190	411	1,450	709	541	1,250	354
31	1,650	------	689	770	------	1,160	------	1,250	------	635	2,690	------
TOTAL	48,372	26,306	24,357	22,251	26,928	44,706	15,405	46,688	42,234	16,600	53,068	30,999
MEAN	1,560	877	786	718	962	1,442	514	1,506	1,408	535	1,712	1,033
MAX	1,800	1,610	2,200	837	1,360	1,910	971	3,250	2,580	1,170	4,630	2,430
MIN	447	469	493	651	627	972	279	338	709	370	347	354
AC-FT	95,940	52,180	48,310	44,130	53,410	88,670	30,560	92,600	83,770	32,930	105,300	61,490

CAL YR 1966: TOTAL 704,467 MEAN 1,930 MAX 6,250 MIN 366 AC-FT 1,397,000
WAT YR 1967: TOTAL 397,914 MEAN 1,090 MAX 4,630 MIN 279 AC-FT 789,300

Peak discharge (base,8,000 cfs, revised).--Aug. 10 (0600) 9,400 cfs (5.60 ft).

9-3665. La Plata River at Colorado-New Mexico State line

Location.--Lat 36°59'59", long 108°11'17", in NW¼SE¼ sec.10, T.32 N., R.13 W., on right bank at Colorado-New Mexico State line, 0.2 mile downstream from Ponds Arroyo and 4.8 miles north of La Plata, N. Mex.

Drainage area.--331 sq mi.

Records available.--January 1920 to September 1967. Monthly discharge only for some periods, published in WSP 1313.

Gage.--Water-stage recorder. Datum of gage is 5,975.15 ft above mean sea level, datum of 1929. Prior to Apr. 30, 1920, staff gage at site 2 miles upstream at different datum. May 1 to June 18, 1920, staff gage and June 19, 1920, to Sept. 30, 1924, water-stage recorder, at present site at datum 1.26 ft higher. Oct. 1, 1924, to Mar. 16, 1934, water-stage recorder at present site at datum 0.26 ft higher.

Average discharge.--47 years, 33.4 cfs (24,180 acre-ft per year).

Extremes.--Maximum discharge during year, 219 cfs Aug. 11 (gage height, 2.41 ft); maximum gage height, 4.13 ft Jan. 31 (backwater from ice); no flow July 15-17.
1920-67: Maximum discharge, 4,750 cfs Aug. 24, 1927 (gage height, 11.36 ft, present datum), from rating curve extended above 750 cfs on basis of slope-area measurement of peak flow; no flow at times in many years.

Remarks.--Records fair except those for winter period, which are poor. Diversions above station for irrigation of about 15,000 acres, mostly above station.

Cooperation.--Records furnished by Colorado district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	2.8	4.5		12	13	15	23	46	8.0	2.6	7.2
2	2.0	2.8	3.6		14	15	11	17	25	11	2.0	31
3	2.2	3.0	2.6		16	18	10	14	23	12	2.0	29
4	1.8	3.3	2.6		17	14	11	11	36	11	1.8	21
5	2.0	3.3	4.8		17	10	11	10	35	9.2	3.3	15
6	2.0	3.6	12		15	11	9.6	9.6	59	11	3.0	9.2
7	1.8	3.3	48		15	8.8	8.8	9.2	51	9.6	2.8	27
8	2.0	5.4	30		18	8.8	11	9.6	62	5.1	42	12
9	2.0	5.1	7.0		18	8.4	17	35	56	4.8	7.6	12
10	2.0	4.2	6.0		15	7.6	21	50	56	8.4	7.6	9.6
11	2.2	3.9			15	7.6	18	51	47	10	21	8.4
12	2.4	3.9			16	7.6	17	63	41	8.4	14	7.2
13	2.4	3.9			15	7.6	23	69	36	5.1	33	5.4
14	2.6	4.5			15	7.2	18	52	31	.30	43	4.5
15	2.8	4.5			17	7.2	17	37	27	0	36	4.2
16	3.0	4.2		5.5	16	6.0	16	49	15	0	34	3.9
17	2.0	3.9			17	6.0	12	77	9.6	0	12	3.6
18	2.0	3.9			17	6.4	9.6	83	9.6	2.0	7.6	3.6
19	2.0	4.2			15	6.8	11	64	17	3.9	21	3.9
20	1.8	4.2			15	9.6	18	81	25	3.0	13	4.2
21	2.0	4.2	4.5		15	10	21	88	37	3.3	7.2	3.9
22	1.8	4.5			15	8.8	22	94	33	3.0	6.8	3.0
23	1.4	4.5			15	14	24	85	26	6.8	3.9	2.8
24	1.6	4.5			14	25	22	69	23	4.8	5.1	2.4
25	1.8	4.5			14	25	22	87	19	3.9	5.1	1.8
26	1.6	4.8			15	23	22	73	15	4.8	5.4	2.4
27	1.6	5.7			12	19	17	58	14	4.2	4.8	2.6
28	2.2	5.7			12	18	19	70	14	3.6	4.2	2.6
29	2.6	5.1			-	16	24	64	11	3.0	5.1	2.4
30	2.0	4.8			- - - -	18	25	66	8.0	3.3	4.5	2.2
31	2.2	- - - - -			- - - -	18	- - - - -	58	- - - - -	3.0	6.4	- - - - -
Total	63.6	126.2	215.6	170.5	427	381.4	503.0	1,626.4	907.2	166.5	367.8	248.0
Mean	2.05	4.21	6.95	5.5	15.2	12.3	16.8	52.5	30.2	5.37	11.9	8.27
Max	3.0	5.7	48	-	18	25	25	94	62	12	43	31
Min	1.4	2.8	2.6	-	12	6.0	8.8	9.2	8.0	0	1.8	1.8
Ac-ft	126	250	428	338	847	756	998	3,230	1,800	330	730	492

Cal yr 1966 : Total 10,923.1 Mean 29.9 Max 186 Min 0 Ac-ft 21,670
Wtr yr 1967 : Total 5,203.2 Mean 14.3 Max 94 Min 0 Ac-ft 10,320

9-3675. La Plata River near Farmington, N. Mex.

Location.--Lat 36°44'30", long 108°14'45", in SW¼ sec.7, T.29 N., R.13 W., on right bank 1,300 ft upstream from bridge on U.S. Highway 550, 1,800 ft upstream from mouth, and 2½ miles northwest of Farmington.

Drainage area.--583 sq mi.

Records available.--March 1938 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 5,215 ft (from river-profile map).

Average discharge.--29 years, 24.2 cfs (17,520 acre-ft per year).

Extremes.--Maximum discharge during year, 1,160 cfs Aug. 12 (gage height, 4.95 ft), from rating curve extended above 130 cfs on basis of slope-area measurement at gage height 5.93 ft; no flow Mar. 27.
1938-67: Maximum gage height, 6.03 ft Sept. 10, 1939 (discharge not determined); no flow for long periods in some years. Major floods occurred Sept. 5 or 6, 1909, and Oct. 5 or 6, 1911.

Remarks.--Records fair except those for July and August and those for winter periods, which are poor. Diversions for irrigation of about 24,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.20	2.2	1.5	4.5	25	6.9	0.60	2.0	1.3	0.20	1.6	2.50
2	.20	2.2	1.8	5.5	25	6.3	.60	1.8	1.0	.20	.40	2.2
3	.50	1.6	2.0	7.0	24	6.0	.60	1.4	1.2	.20	.60	2.2
4	1.0	1.9	10	8.0	20	5.7	.60	1.3	14	.20	.50	1.2
5	1.3	1.4	8.4	9.0	17	6.0	.40	1.2	5.1	.20	12	1.3
6	.90	1.3	27	7.0	17	5.4	.40	1.2	2.4	.20	1.2	.60
7	.40	1.4	117	5.0	15	4.5	.40	.90	1.9	.10	1.9	88
8	.70	1.9	28	5.0	13	3.9	.30	1.0	1.3	.10	2.0	36
9	.40	1.6	13	5.5	14	4.5	.10	1.2	1.2	.10	13	7.0
10	.80	1.6	8.0	6.5	15	4.3	.30	1.0	.90	.10	97	3.3
11	1.2	1.4	7.0	8.0	15	3.9	.10	1.0	1.60	.20	4.0	2.0
12	.60	1.4	7.0	8.0	15	3.7	.20	1.2	1.4	.10	160	1.4
13	.40	1.4	8.0	7.0	16	3.5	.60	.80	1.6	.10	36	.90
14	.80	1.8	9.0	7.0	16	2.0	.90	1.0	1.4	.20	4.0	.80
15	.90	2.0	9.0	7.0	15	1.8	.90	.70	1.3	.10	6.8	.50
16	1.2	1.9	5.0	8.0	13	1.6	.40	1.0	1.0	.30	14	.40
17	1.6	1.6	4.0	8.0	10	1.6	.70	1.2	1.0	.20	4.3	.35
18	1.9	1.6	5.0	6.0	10	1.6	.70	1.4	1.3	.40	42	.30
19	1.8	1.9	8.0	6.0	11	1.4	.50	1.2	1.2	1.2	12	.50
20	1.3	1.9	7.0	9.0	11	1.6	1.2	1.0	1.2	.50	6.6	.70
21	1.3	2.0	8.0	10	9.0	.30	.60	.80	1.4	.30	11	.60
22	1.0	2.1	8.0	10	8.0	.20	.70	1.3	2.0	.30	4.5	.30
23	.80	2.2	7.0	10	8.0	.20	1.4	1.0	1.3	.40	5.7	.30
24	2.0	2.3	6.0	8.5	8.5	.10	1.4	1.6	1.3	.40	3.1	.30
25	1.8	2.2	6.0	8.0	9.0	.10	.90	1.2	.80	.40	2.9	.30
26	1.8	2.0	6.0	7.0	9.0	.10	.90	1.0	.60	.40	2.2	.30
27	1.2	1.8	7.0	8.0	7.0	0	.80	1.0	.40	38	6.6	.30
28	1.0	1.7	4.0	11	7.0	.80	.90	1.4	.30	8.7	2.4	.40
29	.80	1.6	3.5	15		.30	.90	1.3	.30	1.8	1.9	.50
30	1.4	1.3	3.7	20	- - - - -	.50	1.3	1.4	.30	8.5	3.3	.10
31	2.5	- - - - -	4.0	25	- - - - -	.60	- - - - -	1.4	- - - - -	1.6	2.9	- - - - -
Total	33.70	53.2	348.9	269.5	382.5	79.40	20.30	36.90	52.00	65.70	466.40	155.55
Mean	1.09	1.77	11.3	8.69	13.7	2.56	0.677	1.19	1.73	2.12	15.0	5.18
Max	2.5	2.3	117	25	25	6.9	1.4	2.0	14	38	160	88
Min	.20	1.3	1.5	4.5	7.0	0	.10	.70	.30	.10	.40	.10
Ac-ft	67	106	692	535	759	157	40	73	103	130	925	309

Cal yr 1966: Total 6,993.8 Mean 19.2 Max 182 Min 0 Ac-ft 13,870
Wtr yr 1967: Total 1,964.05 Mean 5.38 Max 160 Min 0 Ac-ft 3,900

9-3680. San Juan River at Shiprock, N. Mex.

Location.--Lat 36°47'35", long 108°43'55", in SW¼ sec.22, T.30 N., R.18 W., on left bank at river mile 61.0, 3 miles west of Shiprock and 6 miles downstream from Chaco River.

Drainage area.--12,900 sq mi, approximately.

Records available.--January to October 1911, February 1927 to September 1967. Monthly or yearly discharge only for some periods, published in WSP 1313.

Gage.--Digital water-stage recorder. Datum of gage is 4,848.68 ft above mean sea level (river-profile survey). Prior to Apr. 6, 1922, chain gage and Apr. 7, 1922, to Oct. 25, 1933, water-stage recorder, at site 3 miles upstream at different datum. Oct. 26, 1933, to Sept. 30, 1936, water-stage recorder at present site at datum 3.31 ft higher and Oct. 1, 1936, to Sept. 30, 1952, at datum 1.77 ft higher. Supplementary water-stage recorders (one equipped with digital water-stage recorder) at nearby sites, same datum, used at times.

Average discharge.--41 years (1926-67), 2,273 cfs (1,646,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 13,600 cfs Aug. 10 (gage height, 7.10 ft); minimum, 68 cfs Apr. 20.
1927-67: Maximum discharge, about 80,000 cfs Aug. 11, 1929 (gage height, 5.7 ft, site and datum then in use); minimum daily, 8 cfs Aug. 25-26, 1939.
Maximum flood known occurred Oct. 6, 1911, and reached a stage of 22 ft, site and datum then in use.

Remarks.--Records fair. Since 1962 flow partly regulated by Navajo Reservoir (see station 9-3551). Diversions for irrigation of about 118,000 acres above station. Ungaged canals bypass station on both right and left bank, though some of bypass flow is returned to river below gage. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	340	1,650	670	678	929	980	849	308	1,140	530	456	2,030
2	362	1,640	655	696	948	1,030	721	326	900	526	281	1,940
3	389	1,630	640	687	891	996	696	291	816	504	213	2,150
4	926	1,640	736	674	847	975	660	221	1,320	425	191	2,030
5	1,430	1,650	807	695	828	1,050	632	172	2,180	329	638	1,970
6	1,540	1,650	888	733	836	1,070	613	157	2,400	258	775	1,810
7	1,530	1,670	2,630	691	867	1,060	494	142	2,650	202	1,000	2,770
8	1,560	1,650	2,310	678	880	1,020	467	178	2,240	167	2,040	2,220
9	1,620	1,730	1,340	641	860	1,200	459	140	1,940	154	1,270	2,500
10	1,620	1,800	1,000	683	872	1,850	456	597	1,660	223	5,170	2,380
11	1,590	1,460	927	730	864	1,860	451	1,150	1,540	135	6,200	1,890
12	1,590	607	1,050	746	884	1,860	435	1,230	1,290	236	5,060	1,770
13	1,590	579	920	823	898	1,700	429	1,170	1,070	297	3,770	1,680
14	1,600	571	903	780	1,260	1,630	444	1,210	938	396	2,540	1,610
15	1,640	565	858	780	1,760	1,650	415	976	922	331	2,400	1,560
16	1,650	552	831	766	1,740	1,770	403	748	809	366	2,230	819
17	1,640	505	791	743	1,620	1,770	400	1,050	723	624	2,140	460
18	1,650	526	779	707	1,530	1,740	299	1,380	703	506	2,050	436
19	1,680	625	781	698	1,530	1,770	112	1,570	899	990	2,120	425
20	1,670	616	835	696	1,530	1,750	80	1,750	1,640	705	2,160	404
21	1,700	623	794	747	1,520	1,730	103	1,840	2,420	517	2,060	381
22	1,700	623	789	732	1,520	1,510	146	2,150	1,910	395	1,820	351
23	1,700	623	769	735	1,550	1,320	141	2,550	1,660	308	1,750	325
24	1,700	626	762	810	1,560	1,240	138	2,890	1,570	512	1,660	286
25	1,730	633	744	771	1,420	1,050	125	3,010	1,460	971	1,640	332
26	1,730	637	762	779	1,090	1,040	120	2,960	1,250	525	1,590	325
27	1,750	629	776	738	1,020	996	164	2,520	1,060	410	5,100	421
28	1,700	616	729	750	991	921	128	2,000	869	395	2,320	350
29	1,650	656	669	765	------	902	115	1,920	764	319	1,040	331
30	1,560	639	664	779	------	925	153	1,630	634	369	836	348
31	1,690	------	667	893	------	927	------	1,300	------	460	2,790	------
TOTAL	46,327	29,621	28,476	22,824	33,045	41,292	10,848	39,536	41,377	13,485	65,310	36,304
MEAN	1,494	987	919	736	1,180	1,332	362	1,275	1,379	435	2,107	1,210
MAX	1,750	1,800	2,630	893	1,760	1,860	849	3,010	2,650	990	6,200	2,770
MIN	340	505	640	641	828	902	80	140	634	135	191	286
AC-FT	91,890	58,750	56,480	45,270	65,540	81,900	21,520	78,420	82,070	26,750	129,500	72,010

CAL YR 1966: TOTAL 690,080 MEAN 1,891 MAX 6,300 MIN 222 AC-FT 1,369,000
WAT YR 1967: TOTAL 408,445 MEAN 1,119 MAX 6,200 MIN 80 AC-FT 810,100

Peak discharge (base, 8,500 cfs, revised)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-10	1145	7.10	13,600	8-27	1200	6.40	10,900
8-11	1800	6.96	13,200				

9-3795. San Juan River near Bluff, Utah

Location.--Lat 37°08'50", long 109°51'50", in SW¼ sec.7, T.42 S., R.19 E., on left bank 1,600 ft downstream from Gypsum Creek, 1,800 ft upstream from highway bridge, 20 miles southwest of Bluff, and 114 miles upstream from mouth.

Drainage area.--23,000 sq mi, approximately.

Records available.--October 1914 to September 1967. Monthly discharge only for some periods, published in WSP 1313.

Gage.--Water-stage recorder. Altitude of gage is 4,048 ft (from levels of Topographic Division, U.S.G.S.). Prior to Mar. 16, 1927, chain gages at sites about 1,700 ft downstream at different datums.

Average discharge.--53 years, 2,650 cfs (1,919,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 13,300 cfs Aug. 12 (gage height, 12.22 ft); minimum, 195 cfs May 12.
1914-17, 1927-67: Maximum discharge, 70,000 cfs Sept. 10, 1927 (gage height, 32.0 ft), from rating curve extended above 31,000 cfs; no flow July 3-13, 1934, Aug. 24-27, 29, 1939.
Flood of Oct. 6, 1911, which is greatest known at Shiprock, N. Mex., probably exceeded that of Sept. 10, 1927, at this station, but stage was not accurately determined.

Remarks.--Records good. Diversions for irrigation of approximately 200,000 acres above station. No diversion between station and mouth of river. Flow regulated by Navajo Reservoir since June 28, 1962 (see station 9-3551. in New Mexico report). Records of chemical analysis and suspended-sediment loads for the water year 1967 are published in Part 2 of this report.

Cooperation.--Records furnished by Utah district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	468	1,660	796	800	1,200	990	981	226	1,470	834	760	3,500
2	442	1,650	774	760	1,160	972	972	244	1,350	690	620	1,960
3	488	1,690	804	711	1,100	981	866	404	1,260	613	620	1,760
4	520	1,620	1,100	738	1,010	990	789	462	1,200	601	437	1,980
5	583	1,620	906	780	990	964	774	400	1,700	542	374	1,890
6	1,490	1,610	1,260	800	947	990	724	336	2,250	478	309	2,340
7	1,770	1,610	3,520	800	939	1,020	711	299	2,030	404	891	1,880
8	1,760	1,700	3,980	780	939	1,030	684	274	2,190	332	1,600	3,900
9	1,750	1,900	2,400	760	947	1,020	578	238	2,080	332	4,320	2,620
10	1,750	1,900	1,500	800	947	1,010	548	241	1,870	241	5,310	3,240
11	1,720	1,860	1,190	850	914	1,530	537	223	1,700	229	7,520	2,980
12	1,760	1,750	1,080	900	914	1,670	566	523	1,580	264	9,710	2,200
13	1,760	1,060	1,050	930	914	1,700	572	1,150	1,480	257	5,620	1,940
14	1,760	819	1,020	940	914	1,640	548	1,200	1,340	302	4,660	2,010
15	1,790	811	990	960	914	1,700	548	1,180	1,230	395	2,590	1,950
16	1,750	796	960	1,000	1,500	1,640	607	1,200	1,110	613	2,330	1,880
17	1,790	796	930	1,050	1,480	1,660	520	889	1,060	1,050	2,310	1,290
18	1,750	767	900	1,050	1,470	1,600	473	819	955	1,640	2,100	731
19	1,740	753	897	1,000	1,360	1,550	428	1,270	889	1,600	2,040	560
20	1,750	796	881	1,000	1,400	1,560	382	1,540	947	1,350	1,900	542
21	1,750	796	881	1,050	1,400	1,610	313	1,810	2,110	1,010	2,120	595
22	1,750	804	930	1,050	1,370	1,600	277	1,910	2,380	767	1,840	578
23	1,760	804	873	1,030	1,350	1,530	254	2,140	1,640	626	1,740	520
24	1,750	804	850	1,100	1,380	1,280	274	2,560	1,560	560	1,550	548
25	1,760	804	827	1,100	1,390	1,290	306	2,790	1,540	515	1,470	589
26	1,720	827	834	1,100	1,370	1,180	274	2,830	1,480	964	1,420	664
27	1,700	834	850	1,080	1,130	1,110	270	3,300	1,350	796	1,390	638
28	1,710	827	850	1,080	1,020	1,130	247	2,680	1,230	462	4,250	620
29	1,690	782	827	1,110	-----	1,050	274	2,210	1,020	483	2,000	704
30	1,640	782	782	1,110	-----	1,020	264	2,010	930	457	1,110	493
31	1,640	-----	767	1,200	-----	1,010	-----	1,800	-----	409	1,080	-----
Total	47,461	35,232	36,209	29,419	32,369	40,017	15,561	39,158	44,931	19,816	75,991	47,102
Mean	1,531	1,174	1,168	949	1,156	1,291	519	1,263	1,498	639	2,451	1,570
Max	1,790	1,900	3,980	1,200	1,500	1,700	981	3,300	2,380	1,640	9,710	3,900
Min	442	753	767	711	914	964	247	223	889	229	309	493
Ac-ft	94,140	69,880	71,820	58,350	64,200	79,370	30,860	77,670	89,120	39,300	150,700	93,430

Cal yr 1966: Total 780,488 Mean 2,138 Max 6,570 Min 280 Ac-ft 1,548,000
Wtr yr 1967: Total 463,266 Mean 1,269 Max 9,710 Min 223 Ac-ft 918,900

Peak discharge (base, 8,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-9	2200	10.57	10,000	8-11	0630	10.98	10,800
8-10	0430	11.00	10,800	8-12	2000	12.22	13,300

9-3957. Whitewater Arroyo near Cheechilgeetho, N. Mex.

Location.--Lat 35°15'35", long 108°55'15", in sec.23, T.12 N., R.20 W., on left bank in Navajo Indian Reservation, at highway bridge, 1¼ miles northwest of Cheechilgeetho and 14 miles north of Zuni.

Drainage area.--78.5 sq mi.

Records available.--June 1964 to September 1967 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 6,670 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,170 cfs June 19 (gage height, 4.18 ft); no flow for many days.
1964-67: Maximum discharge, 2,480 cfs July 30, 1964 (gage height, 7.80 ft), from rating curve extended above 35 cfs on basis of slope-area measurement at gage height 6.38 ft; no flow for many days.

Remarks.--Records poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.01	0.02	0.03	0	0.30	0	0.01	0.02	0	0	0.10	0
2	.01	.02	.03	0	.20	.02	.01	.02	0	0	.03	.20
3	.01	.02	.03	0	.10	.06	.01	.02	0	0	70	0
4	.01	.02	.50	.10	.10	.03	.02	.02	1.0	0	9.0	1.0
5	9.5	.02	2.4	.04	.10	.01	.05	.02	.20	0	38	.50
6	2.5	.02	2.4	.02	.06	0	.02	.02	.02	0	.10	29
7	.30	.02	5.5	0	.04	0	.01	.01	.01	0	.02	5.0
8	.10	.02	1.2	.01	.03	0	.01	.01	0	0	.01	5.0
9	.06	1.0	.50	.01	.02	0	.01	.01	0	0	10	1.0
10	.04	.30	.20	.02	.03	.01	.01	.01	0	0	10	10
11	.03	.02	.10	.02	.03	.05	.01	.01	0	5.0	3.0	5.0
12	.02	.01	.10	.02	.04	.05	.01	.01	0	1.0	1.0	1.0
13	.02	.01	.10	.02	.05	.03	.10	.01	.10	.50	.02	.50
14	.02	.02	.10	.02	.04	.01	.02	.01	.02	.10	.01	.05
15	.02	.03	.10	.02	.04	.01	.02	.01	.01	.05	0	.02
16	.02	.03	.10	.05	.04	.02	.02	.01	0	5.0	0	.01
17	.02	.03	.10	.02	.04	.05	.02	.01	0	1.0	0	0
18	.02	.03	.10	.02	.04	.04	.02	.01	1.0	.10	0	0
19	.02	.03	.10	.04	.06	.02	.02	.01	40	.02	0	0
20	.02	.03	.10	.05	.04	.01	.02	0	2.0	0	0	0
21	.02	.03	.04	.05	.02	.01	.01	0	.30	.40	0	0
22	.02	.03	.01	.05	.01	.01	.01	0	.10	0	0	0
23	.02	.03	.02	.05	.01	.01	.01	0	.02	1.0	1.0	0
24	.02	.02	.04	.05	.01	.01	.01	0	.01	9.0	.02	0
25	.02	.01	.06	.10	.01	.01	.01	0	0	2.0	.01	0
26	.02	.01	.06	.02	.01	.01	.01	0	0	.05	0	0
27	.02	.01	.20	.02	.01	.01	.01	0	0	.50	0	0
28	.02	.02	.10	.10	0	.01	.01	0	0	.10	2.0	0
29	.02	.03	.02	.20		.01	.01	.01	0	.05	1.0	0
30	.02	.03	.01	.30		.01	.01	.01	0	.02	2.0	0
31	.02		0	.40		.01		0		1.0	.05	
Total	12.97	1.92	14.35	1.82	1.48	0.53	0.52	0.27	44.79	26.89	147.37	58.28
Mean	0.418	0.064	0.463	0.059	0.053	0.017	0.017	0.009	1.49	0.867	4.75	1.94
Max	9.5	1.0	5.5	0.40	0.30	0.06	0.05	0.10	40	9.0	70	29
Min	0.01	0.01	0	0	0	0	0.01	0	0	0	0	0
Ac-ft	26	3.8	28	3.6	2.9	1.1	1.0	0.5	89	53	292	116

Cal yr 1966: Total 141.41 Mean 0.387 Max 37 Min 0.01 Ac-ft 280
Wtr yr 1967: Total 311.19 Mean 0.853 Max 70 Min 0 Ac-ft 617

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-19	2000	4.18	1,170	8-5	1700	3.40	860
8-3	2120	3.20	780	9-6	1415	3.28	692

Note.-No gage-height record for flows below 1 cfs for entire year.

9-4301.5. Sapillo Creek below Lake Roberts, near Silver City, N. Mex.

Location.--Lat 33°01'55", long 108°10'10", in SE¼SE¼ sec.34, T.14 S., R.13 W., on left bank 1,100 ft below Lake Roberts Dam about 1 mile upstream from former mining town of Meerschaum and 18 miles north of Silver City.

Drainage area.--78 sq mi.

Records available.--May 1964 to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 5,990 ft (from topographic map). Prior to May 21, 1966 at site 300 ft. downstream at different datums.

Extremes.--Maximum discharge during year, 912 cfs Aug. 12 (gage height, 5.20 ft); minimum, 0.1 cfs June 18.
1964-67: Maximum discharge, 1,210 cfs Sept. 23, 1964 (gage height, 5.58 ft), from rating curve extended above 166 cfs on basis of slope-area measurement of peak flow; no flow for many days.

Remarks.--Records good. Flow regulated by Lake Roberts (capacity 1,870 acre-ft).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.1	4.5	3.2	1.9	1.5	1.4	0.58	0.32	0.56	0.37	0.59	3.3
2	5.7	4.4	3.1	1.8	1.4	1.2	.46	.34	.59	.44	.32	3.5
3	5.5	4.4	3.0	1.7	1.4	1.2	.55	.35	.64	.41	.21	3.8
4	5.3	4.3	3.0	1.7	1.4	1.2	.58	.34	.83	.61	1.9	4.7
5	5.3	4.3	3.0	1.7	1.4	1.0	.55	.33	.94	1.0	6.7	5.8
6	5.3	4.3	2.9	1.7	1.3	1.0	.54	.32	.86	1.1	11	4.9
7	5.3	4.6	3.2	1.7	1.3	1.0	.50	.29	.63	1.2	4.4	6.7
8	5.7	4.7	3.0	1.7	1.1	1.0	.40	.24	.52	1.3	2.5	13
9	5.5	5.3	2.8	1.7	1.1	1.0	.34	.18	.42	1.2	1.8	10
10	5.3	4.8	2.6	1.6	1.1	.84	.31	.19	.35	1.1	6.3	11
11	5.3	4.5	2.5	1.5	1.1	1.1	.28	.27	.29	.95	59	15
12	5.2	4.3	2.4	1.5	1.1	1.0	.31	.29	.27	.72	291	13
13	5.0	4.2	2.3	1.5	1.1	.96	.47	.24	.24	.60	78	8.8
14	4.9	4.1	2.3	1.5	1.1	.85	.50	.31	.24	.59	18	6.8
15	5.2	4.1	2.3	1.4	1.1	.81	.50	.27	.25	.68	7.9	8.6
16	5.2	4.1	2.3	1.5	1.1	.84	.50	.28	.25	1.4	7.8	11
17	4.9	4.1	2.3	1.5	1.1	.85	.57	.30	.28	1.8	11	11
18	4.6	4.1	2.2	1.5	1.1	.84	.60	.36	.18	1.6	6.8	9.7
19	4.6	4.1	2.1	1.5	1.1	.85	.52	.78	.33	1.2	4.8	7.8
20	4.7	4.0	2.1	1.5	1.2	.82	.49	.94	.56	.86	4.0	6.4
21	4.7	4.0	2.0	1.5	1.2	.79	.49	.73	.55	.93	3.6	5.8
22	4.7	3.9	2.0	1.5	1.2	.79	.46	.68	.51	1.1	3.3	5.2
23	4.5	3.9	2.0	1.5	1.2	.80	.46	.65	.45	1.0	3.1	5.0
24	4.5	3.9	1.9	1.5	1.2	.79	.44	.65	.48	.93	3.2	5.5
25	4.5	3.9	1.9	1.5	1.2	.58	.40	.73	.51	.86	3.3	14
26	4.5	3.6	2.0	1.5	1.8	.55	.40	.65	.50	.92	3.3	13
27	4.7	3.4	2.3	1.5	1.8	.58	.39	.58	.47	.81	3.3	9.3
28	4.5	3.4	2.3	1.5	1.6	.58	.37	.65	.43	34	3.5	7.4
29	4.5	3.3	2.2	1.5		.58	.36	.57	.38	13	3.4	6.5
30	4.5	3.3	2.1	1.5		.65	.31	.56	.32	5.2	3.3	5.9
31	4.5		2.0	1.5		.65		.58		1.6	3.2	
Total	154.7	123.8	75.3	48.6	35.3	27.10	13.63	13.97	13.83	79.48	560.52	242.4
Mean	4.99	4.13	2.43	1.57	1.26	0.874	0.454	0.451	0.461	2.56	18.1	8.08
Max	6.1	5.3	3.2	1.9	1.8	1.4	.60	.94	.94	34	291	15
Min	4.5	3.3	1.9	1.4	1.1	.55	.28	.18	.18	.37	.32	3.3
Ac-ft	307	246	149	96	70	54	27	28	27	158	1,110	481

Cal yr 1966: Total 2,690.74 Mean 7.37 Max 90 Min 0.64 Ac-ft 5,340
Wtr yr 1967: Total 1,388.63 Mean 3.80 Max 291 Min 0.18 Ac-ft 2,750

9-4305. Gila River near Gila, N. Mex.

Location.--Lat 33°03'45", long 108°32'20", in NW¼ sec.30, T.14 S., R.16 W., on left bank at Hooker damsite, 1 mile upstream from Mogollon Creek, and 7 miles northeast of Gila.

Drainage area.--1,864 sq mi.

Records available.--April to December 1914, December 1927 to September 1967. Monthly discharge only December 1927 to September 1930, published in WSP 1313.

Gage.--Water-stage recorder. Datum of gage is 4,655.8 ft above mean sea level (river-profile survey). Prior to Dec. 31, 1928, at site 5 miles upstream at different datum. Dec. 31, 1928, to Jan. 7, 1942, at site 200 ft upstream at same datum.

Average discharge.--40 years (1927-67), 126 cfs (91,220 acre-ft per year).

Extremes.--Maximum discharge during year, 5,210 cfs Aug. 13 (gage height, 8.14 ft); minimum, 22 cfs July 3.
1929-67: Maximum discharge, 25,400 cfs Sept. 29, 1941 (gage height, 17.2 ft, from floodmark), from rating curve extended above 3,900 cfs on basis of velocity-area studies and logarithmic plotting; minimum, 15 cfs July 7, 1956.
Other major floods occurred in November 1905, December 1906, and January 1916.

Remarks.--Records good. Diversions for irrigation of about 500 acres above station. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	63	66	59	61	70	63	51	45	25	49	105
2	90	63	66	58	61	68	64	52	42	24	43	105
3	81	63	66	58	61	66	64	51	41	24	49	112
4	77	63	65	57	60	65	64	51	42	35	48	121
5	78	63	65	57	60	63	65	50	42	51	176	130
6	75	62	66	58	59	64	65	50	39	49	118	133
7	73	62	67	57	59	64	67	50	35	46	86	148
8	74	66	69	58	59	63	69	49	33	46	63	164
9	71	70	69	58	58	63	70	49	32	42	58	156
10	70	70	68	58	58	62	66	48	31	43	106	178
11	69	69	67	54	58	63	66	47	31	45	140	204
12	68	69	66	56	58	64	66	47	31	38	384	210
13	67	69	66	57	58	64	67	47	30	34	2,490	192
14	66	69	65	58	58	64	66	46	28	36	917	166
15	65	68	65	58	58	64	64	47	26	45	690	153
16	66	68	65	58	57	63	63	47	25	42	520	161
17	65	68	65	58	58	63	62	46	25	43	432	150
18	66	68	64	59	58	63	62	46	33	42	364	143
19	65	68	64	59	58	63	60	46	49	48	338	133
20	65	68	64	60	58	63	59	46	58	42	299	123
21	64	68	64	60	58	62	58	45	66	36	264	114
22	63	68	64	61	58	62	57	43	54	38	231	112
23	62	68	64	62	58	63	56	42	45	38	201	103
24	62	69	63	62	58	62	56	41	39	34	177	119
25	62	69	64	62	58	62	55	43	38	33	158	254
26	62	68	64	62	68	62	54	43	38	36	148	247
27	62	67	65	62	75	62	53	42	34	43	146	219
28	62	67	64	62	73	61	53	41	31	58	153	189
29	63	67	63	62		60	51	40	27	49	130	166
30	63	67	59	62	-----	63	50	41	26	51	128	150
31	63	-----	59	62	-----	63	-----	43	-----	48	110	-----
Total	2,129	2,007	2,011	1,834	1,681	1,964	1,835	1,430	1,116	1,264	9,216	4,660
Mean	68.7	66.9	64.9	59.2	60.0	63.4	61.2	46.1	37.2	40.8	297	155
Max	92	70	69	62	75	70	70	52	66	51	2,490	254
Min	62	62	59	54	57	60	50	40	25	24	43	103
Ac-ft	4,220	3,980	3,990	3,640	3,330	3,900	3,640	2,840	2,210	2,510	18,280	9,240

Cal yr 1966: Total 77,247 Mean 212 Max 2,210 Min 49 Ac-ft 153,200
Wtr yr 1967: Total 31,147 Mean 85.3 Max 2,490 Min 24 Ac-ft 61,780

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-13	0530	8.14	5,210				

9-4306. Mogollon Creek near Cliff, N. Mex.

(Hydrologic bench-mark station)

Location.--Lat 33°10'01", long 108°38'58", in SE¼ sec.13, T.13 S., R.18 W., 12 miles upstream from mouth, 14.2 miles north of Cliff.

Drainage area.--69 sq mi.

Records available.--March to September 1967.

Gage.--Digital water-stage recorder. Altitude of gage is 5,440 ft (from topographic map).

Extremes.--Maximum discharge during period March to September 1967, 10,800 cfs Aug. 12 (gage height, 14.5 ft, from floodmarks), from rating curve extended above 220 cfs on basis of slope-area measurement of peak flow; no flow for many days.

Remarks.--Records good except those for May, June, July, and August, which are poor.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					-	8.0	4.6	2.3	0.30	0	2.0	9.4
2					-	7.2	4.3	2.1	.30	0	1.0	14
3					-	7.0	4.2	1.9	.20	0	1.6	19
4					-	6.9	4.2	1.6	.10	0	3.0	19
5					-	6.5	6.6	1.3	.10	.45	7.0	30
6					-	6.0	8.0	1.2	.10	.40	5.0	39
7					-	5.4	8.1	1.1	.10	.30	3.0	33
8					-	4.8	7.2	1.0	.10	.10	4.0	30
9					-	4.4	6.3	.90	.10	0	5.0	31
10					-	4.2	5.8	.80	.15	0	20	30
11					-	4.3	5.0	.80	.20	0	90	38
12					-	4.5	4.8	.75	.20	0	500	31
13					-	4.3	5.3	.70	.20	0	350	25
14					-	4.5	5.0	.70	.20	0	220	20
15					-	4.5	4.4	.60	.10	0	100	17
16					-	4.5	3.9	.60	.05	0	100	16
17					-	4.6	3.5	.60	0	0	50	14
18					-	5.1	3.4	.60	.10	0	40	12
19					-	6.4	3.2	.65	.55	0	35	11
20					-	6.6	3.1	.70	.75	0	32	9.8
21					2.0	5.7	3.1	.70	.65	0	29	8.4
22					2.0	4.7	3.1	.70	.25	.10	26	8.4
23					2.3	4.4	3.2	.60	0	1.0	23	7.1
24					2.4	4.3	3.0	.55	0	9.0	21	14
25					2.5	4.4	2.8	.50	0	20	19	78
26					27.0	4.3	2.7	.40	0	40	18	55
27					22.0	4.0	2.6	.30	0	10	13	35
28					11.0	3.8	2.4	.20	0	12	14	26
29					- - - - -	3.6	2.1	.20	0	5.0	11	20
30					- - - - -	5.6	2.2	.20	0	4.0	10	16
31		- - - - -			- - - - -	5.9	- - - - -	.25	- - - - -	3.0	9.0	- - - - -
Total					-	160.4	128.1	25.50	4.80	105.35	1,761.6	716.1
Mean					-	5.17	4.27	0.823	0.160	3.40	56.8	23.9
Max					-	8.0	8.1	2.3	.75	40	500	78
Min					-	3.6	2.1	.20	0	0	1.0	7.1
Ac-ft					-	318	254	51	9.5	209	3,490	1,420

Cal yr 1966: Total - Mean - Max - Min - Ac-ft -
Wtr yr 1967: Total - Mean - Max - Min - Ac-ft -

9-4315. Gila River near Redrock, N. Mex.

Location.--Lat 32°43'30", long 108°40'30", in W½ sec.23 T.18 S., R.18 W., on left bank 0.2 mile downstream from Copper Canyon, a quarter of a mile upstream from lower end of box canyon, 4.7 miles northeast of Redrock, and 14 miles downstream from Mangas Creek.
Drainage area.--2,829 sq mi.
Records available.--September 1904 to May 1927, fragmentary (see WSP 1313), July 1927 to September 1955, October 1962 to September 1967. Published as "near Cliff" 1904-7, and as "near Red Rock" 1908 to 1955.
Gage.--Digital water-stage recorder. Altitude of gage is 4,090 ft (planetable survey). Prior to Dec. 31, 1907, staff gage at site 13½ miles upstream at different datum. May 14, 1908, to July 16, 1909, staff gage at site a quarter of a mile downstream at different datum.
Average discharge.--51 years (1905-6, 1908-10, 1912-55, 1962-67), 194 cfs (140,500 acre-ft per year).
Extremes.--Maximum discharge during year, 6,860 cfs Aug. 12 (gage height, 15.07 ft), from rating curve extended above 2,200 cfs on basis of logarithmic plotting; minimum, 13 cfs June 27.
1905-55, 1962-67: Maximum discharge, 40,000 cfs Sept. 29, 1941 (gage height, 31 ft, from floodmark), computed on basis of known peak flow for station below Blue Creek; minimum, 2.2 cfs Aug. 5, 1947.
Revisions.--Minimum discharge for 1966 water year is revised to 35 cfs June 19, superseding figure published in 1966 State report.
Remarks.--Records fair except those for July and August, which are poor. Diversions for irrigation of about 5,000 acres above station.
Revisions (water years).--Revised figures of discharge, in cubic feet per second, for the water year 1966, superseding those published in State report for 1966 (only the revised figures will be used in next WSP, with no mention of revisions), are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1966		1966-Con.		1966-Con.		1966-Con.		1966-Con.	
June 28	155	Aug. 4	331	Aug. 18	156	Sept. 1	116	Sept. 19	158
29	125	5	267	19	404	2	110	23	130
30	120	6	181	20	238	3	105	24	122
July 1	110	7	173	21	179	4	110	26	120
2	100	8	158	22	185	9	75	27	108
3	90	9	130	23	189	10	72	28	102
4	80	10	131	24	171	11	65	29	110
5	70	11	125	25	232	12	65	30	108
7	65	12	113	26	221	13	102		
8	65	13	108	27	181	14	78		
9	55	14	99	28	152	15	205		
10	55	15	91	29	142	16	218		
11	55	16	91	30	128	17	167		
12	55	17	88	31	125	18	160		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 1966	2,048	155	36	68.3	4,060
July	2,563	217	45	82.7	5,080
August	5,053	404	74	163	10,020
September	3,490	218	71	116	6,920
Water year 1965-66	139,645	12,400	36	383	277,000

Revised supplemental peaks.--Aug. 4 (2100) 2,900 cfs (11.35 ft); Aug. 19 (1715) 2,150 cfs (10.80 ft).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	57	82	72	72	78	60	43	31	22	82	142
2	116	60	82	77	69	75	58	46	35	17	88	134
3	119	64	87	82	64	74	66	51	30	20	76	145
4	115	62	90	82	64	72	66	47	26	23	80	141
5	110	58	92	82	64	75	59	46	28	23	74	252
6	109	57	95	80	77	77	55	41	32	20	165	185
7	105	56	102	71	80	77	53	39	33	20	144	165
8	102	62	98	76	80	78	54	39	30	22	147	279
9	94	66	94	81	80	83	52	42	30	26	144	192
10	83	66	96	72	82	78	51	41	24	23	134	289
11	84	70	98	70	74	75	52	41	24	22	242	256
12	83	80	95	69	70	74	54	41	27	25	3,350	232
13	70	82	92	65	64	80	58	44	25	22	4,270	216
14	69	80	91	69	59	72	65	41	24	42	1,700	196
15	69	78	87	68	57	75	66	44	22	31	2,110	187
16	72	77	84	65	57	78	64	43	22	35	1,090	167
17	74	78	82	57	61	72	65	45	20	75	1,020	161
18	71	83	76	63	63	70	64	50	21	43	740	151
19	71	83	83	69	62	59	72	50	22	30	760	142
20	70	86	82	71	64	61	65	50	20	28	570	130
21	63	84	77	66	61	51	64	50	20	32	400	116
22	69	89	75	65	62	48	53	45	22	41	350	116
23	69	89	74	68	62	48	57	34	21	98	300	113
24	63	91	77	72	62	51	47	36	20	64	270	130
25	55	89	81	78	61	51	55	34	18	83	240	329
26	51	87	82	75	75	46	49	37	18	49	200	308
27	53	88	80	75	77	52	54	35	15	51	190	259
28	58	89	68	74	77	45	56	34	18	218	180	225
29	59	88	70	81		50	49	32	20	112	170	207
30	59	83	71	83	-----	65	43	36	22	86	160	194
31	57	-----	71	80	-----	63	-----	39	-----	70	142	-----
Total	2,444	2,282	2,614	2,258	1,900	2,053	1,726	1,296	720	1,473	19,588	5,759
Mean	78.8	76.1	84.3	72.8	67.9	66.2	57.5	41.8	24.0	47.5	632	192
Max	119	91	102	83	82	83	72	51	35	218	3,350	329
Min	51	56	70	57	57	45	43	32	15	17	74	113
Ac-ft	4,850	4,530	5,180	4,480	3,770	4,070	3,420	2,570	1,430	2,920	38,850	11,420

Cal yr 1966: Total 99,966 Mean 274 Max 12,400 Min 36 Ac-ft 198,300
Wtr yr 1967: Total 44,113 Mean 121 Max 3,350 Min 15 Ac-ft 87,500
Peak discharge (base, 3,000 cfs, revised).--Aug. 12 (1145) 6,860 cfs (15.07 ft); Aug. 15 (0200) 6,160 cfs (14.33 ft).

9-4320. Gila River below Blue Creek, near Virden, N. Mex.

Location.--Lat 32°38'55", long 108°50'45", in SE¼SW¼ sec.18, T.19 S., R.19 W., on left bank at head of canyon, 1¼ miles downstream from Blue Creek, 10 miles east of Virden, and 16 miles upstream from New Mexico - Arizona State line.

Drainage area.--3,203 sq mi, excluding Animas River basin.

Records available.--May to November 1914, March to September 1915, July 1927 to September 1967. July 1927 to May 1931 monthly discharge only, published in WSP 1313, computed as sum of flow at Virden Bridge, 8½ miles downstream, and in Sunset Canal. Published as Gila River near Duncan, Arizona, 1914-15 and as Gila River at Fuller's Ranch, near Duncan, Arizona, 1931-38.

Gage.--Water-stage recorder at present site and datum since July 8, 1931. Altitude of gage is 3,875 ft (from river-profile map). May 11, 1914, to Sept. 30, 1915, at site 6 miles downstream, 1,000 ft upstream from intake of Sunset Canal. June 1 to July 7, 1931, staff gage at present site and datum.

Average discharge.--40 years (1927-67), 166 cfs (120,200 acre-ft per year); median of yearly mean discharges, 130 cfs (94,100 acre-ft per year).

Extremes.--Maximum discharge during year, 11,500 cfs Aug. 12 (gage height, 17.7 ft); minimum, 11 cfs July 8 (gage height, 2.94 ft). 1927-67: Maximum discharge, 41,700 cfs Sept. 29, 1941 (gage height, 25.78 ft); minimum, 1 cfs July 14, 1934.

Remarks.--Records good prior to July 15 and fair thereafter. Station is above all Duncan Valley diversions. Diversions for irrigation of about 6,200 acres above station.

Cooperation.--Records furnished by Arizona district.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	55	84	83	82	77	57	42	33	17	107	146
2	115	57	82	84	78	77	56	44	31	15	209	135
3	125	58	77	88	75	76	59	47	32	13	71	137
4	123	65	83	89	74	74	63	47	28	15	370	148
5	119	69	83	89	71	75	62	47	28	16	244	208
6	119	59	95	90	71	76	54	45	28	13	258	188
7	115	57	98	82	65	78	52	43	26	13	155	164
8	111	56	103	82	65	80	49	40	27	12	137	236
9	102	61	99	81	65	82	47	40	26	16	170	194
10	90	64	98	81	67	81	45	39	26	23	143	251
11	86	65	101	80	65	79	47	37	24	28	344	231
12	85	70	103	76	65	78	47	37	24	20	4,380	222
13	77	76	102	76	65	78	51	38	22	19	4,800	214
14	71	79	98	76	61	78	54	42	18	20	2,670	200
15	70	76	97	76	61	74	61	42	18	31	2,240	190
16	70	75	93	76	63	69	61	41	16	604	1,150	180
17	70	73	91	69	64	66	54	41	15	128	1,250	170
18	70	74	91	69	65	63	60	45	15	91	806	160
19	70	76	91	73	66	57	54	45	15	42	743	150
20	70	77	93	76	65	63	49	43	18	36	714	140
21	70	79	91	76	65	60	43	42	18	34	430	140
22	70	79	88	75	65	53	48	38	18	36	405	130
23	70	85	86	75	65	51	48	35	18	71	356	120
24	70	86	87	76	65	49	48	36	16	63	360	387
25	70	88	92	81	64	57	46	42	15	61	288	475
26	60	86	93	81	67	49	45	34	16	681	268	378
27	60	83	92	79	74	49	45	34	15	166	252	328
28	60	86	84	81	75	51	49	34	13	322	222	262
29	60	88	83	83	-	48	47	36	14	137	200	216
30	60	85	83	84	----------	54	45	38	15	135	185	203
31	60	----------	83	84	----------	64	----------	40	----------	117	157	----------
Total	2,572	2,187	2,824	2,471	1,893	2,066	1,546	1,254	628	2,995	24,084	6303
Mean	83.0	72.9	91.1	79.7	67.6	66.6	51.5	40.5	20.9	96.6	777	210
Max	125	88	103	90	82	82	63	47	33	681	4,800	475
Min	60	55	77	69	61	48	43	34	13	12	71	120
Ac-ft	5,100	4,340	5,600	4,900	3,750	4,100	3,070	2,490	1,250	5,940	47,770	12,500

Cal yr 1966: Total 104,967 Mean 288 Max 3,040 Min 35 Ac-ft 208,200
Wtr yr 1967: Total 50,823 Mean 139 Max 4,800 Min 12 Ac-ft 100,800

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-16	1930	16.8	10,100	8-12	0500	17.7	11,500
7-26	2000	13.8	6,030	8-15	0600	11.3	3,930
8-4	1830	11.2	3,750				

9-4330. Sunset Canal near Virden, N. Mex.

Location.--Lat 32°39'20", long 108°56'00", in NW¼ sec.17, T.19 S., R.20 W., on left bank 1.7 miles downstream from intake and 4.5 miles southeast of Virden.

Records available.--October 1914 to September 1915, July 1922 to September 1931, January 1936 to September 1967. Monthly discharge only January 1936 to December 1938, published in WSP 1313. Prior to 1939, published as "near Duncan, Ariz."

Gage.--Digital water-stage recorder and Parshall flume. Altitude of gage is 3,790 ft (from topographic map). Oct. 1, 1914, to Sept. 30, 1915, staff gage at site 0.4 mile upstream and July 15, 1922, to Sept. 30, 1931, staff gage at site 0.5 mile downstream at different datums. Mar. 9, 1936, to Feb. 20, 1942, water-stage recorder and submerged rectangular weir at site 300 ft downstream at different datum. Feb. 21, 1942 to Oct. 14, 1964, graphic water-stage recorder at same site and datum.

Extremes.--1914-15, 1922-31, 1936-67: Maximum daily discharge, 62 cfs Sept. 21, 22, 1929; no flow at times.

Remarks.--Records excellent. Canal diverts from right bank of Gila River in SW¼NW¼ sec.21, T.19 S., R.20 W., for irrigation of about 2,750 acres in Virden-Duncan Valley. No diversion between intake and station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	12	15	17	17	14	16	15	17	12	27	21
2	23	13	14	17	17	14	17	16	17	11	28	21
3	25	13	14	17	16	13	16	16	16	8.2	29	22
4	28	12	15	18	16	13	16	16	16	9.4	31	22
5	28	13	15	18	16	13	16	16	16	12	31	23
6	28	13	15	18	16	13	16	16	17	11	32	20
7	32	13	15	15	16	13	16	15	17	9.4	24	18
8	33	13	15	13	16	14	16	15	17	7.4	29	20
9	32	12	15	10	15	14	16	15	16	9.4	28	19
10	24	10	15	16	15	13	16	17	16	17	33	20
11	26	5.6	15	14	15	13	16	18	16	19	36	20
12	31	5.0	16	11	16	12	17	17	16	19	14	30
13	32	5.0	17	16	16	12	16	15	16	17	0	34
14	30	5.0	17	12	15	13	16	15	14	14	0	33
15	27	5.0	17	2.0	14	13	16	15	13	19	0	33
16	25	5.0	17	4.4	14	13	16	16	11	15	10	34
17	27	5.2	17	5.5	13	13	16	15	10	11	17	33
18	29	5.1	17	5.3	13	13	16	16	9.7	18	24	27
19	21	4.8	17	5.7	13	12	16	16	10	15	32	18
20	14	3.4	17	6.1	13	14	16	16	13	16	33	17
21	13	4.9	16	6.2	13	12	15	16	13	18	34	16
22	13	7.3	16	6.0	12	12	16	16	14	17	35	18
23	14	11	15	2.2	12	11	15	16	14	18	34	18
24	13	13	15	4.3	13	6.4	15	16	12	17	35	19
25	12	14	16	7.4	13	6.2	16	16	11	17	35	19
26	12	13	15	11	14	6.2	15	16	11	21	34	21
27	12	7.7	15	13	14	6.2	15	16	11	25	34	22
28	13	12	15	15	14	6.4	15	16	8.2	26	34	26
29	13	15	16	17		8.5	15	17	8.8	25	34	19
30	12	14	17	17	-----	14	15	17	9.4	25	34	8.8
31	12	-----	17	17	-----	16	-----	17	-----	25	28	-----
Total	678	285.0	488	357.1	407	366.9	474	496	406.1	503.8	829	671.8
Mean	21.9	9.50	15.7	11.5	14.5	11.8	15.8	16.0	13.5	16.3	26.7	22.4
Max	33	15	17	18	17	16	17	18	17	26	36	34
Min	12	3.4	14	2.0	12	6.2	15	15	8.2	7.4	0	8.8
Ac-ft	1,340	565	968	708	807	728	940	984	805	999	1,640	1,330

Cal yr 1966: Total 6,523.0 Mean 17.9 Max 35 Min 0 Ac-ft 12,940
Wtr yr 1967: Total 5,962.7 Mean 16.3 Max 36 Min 0 Ac-ft 11,830

9-4360. New Model Canal near Virden, N. Mex.

Location.--Lat 32°40'30", long 108°59'30", in NE¼ sec.10, T.19 S., R.21 W., 1 mile downstream from intake, 1 mile southeast of Virden, and 3¾ miles east of State line.

Records available.--October 1914 to September 1915, July 1922 to September 1931, January 1936 to September 1967. Monthly discharge only January 1936 to December 1938, published in WSP 1313. Published as Model Canal near Duncan, Ariz., 1914-15, as Moddle Canal near Duncan, Ariz., 1922-31, and as Moddle Canal near Virden, N. Mex., 1936-51.

Gage.--Digital water-stage recorder and Parshall flume. Altitude of gage is 3,745 ft (from topographic map). Prior to Nov. 25, 1926, staff gage and Nov. 25, 1926, to Feb. 21, 1942, graphic water-stage recorder at several sites within half a mile upstream at different datums. Feb. 22, 1942 to Oct. 14, 1964, graphic water-stage recorder at same site and datum.

Extremes.--1914-15, 1922-31, 1936-67: Maximum daily discharge, 74 cfs Sept. 9, 1930; no flow at times.

Remarks.--Records excellent. Canal diverts from left bank of Gila River in NE¼SE¼ sec.11, T.19 S., R.21 W., for irrigation of about 2,450 acres in Virden-Duncan Valley. For additional history and gage data, see page 599 of WSP 1313.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	0	0				0	1.70	1.5	0	0	0
2	12	0	0				0	2.0	1.6	0	0	0
3	19	0	0				0	.45	1.8	0	15	0
4	18	5.3	0				0	0	1.5	0	9.9	0
5	17	7.2	0				0	4.1	.49	0	1.8	0
6	15	4.7	0				0	5.3	.12	0	.22	0
7	13	4.2	0				0	4.3	.06	0	0	0
8	10	5.0	0				0	3.9	.35	0	0	0
9	8.2	6.6	0				0	4.4	.27	0	.05	4.0
10	9.5	7.2	0				0	5.1	.05	0	0	4.2
11	11	8.2	0				0	3.0	.14	0	0	2.6
12	10	8.9	0				0	2.5	0	0	1.1	1.2
13	5.5	9.5	0				0	2.0	0	0	0	0
14	6.8	9.3	0				0	2.1	0	0	0	0
15	11	9.1	0				0	1.5	0	0	0	4.8
16	14	8.3	0				0	1.7	0	0	0	22
17	16	8.2	0				0	1.8	0	0	0	25
18	15	8.1	0				0	2.2	0	0	0	25
19	9.6	8.2	0				.65	1.6	0	0	0	24
20	0	8.0	0				2.4	1.4	0	0	0	10
21	0	7.3	1.2				.89	1.6	0	0	0	2.9
22	0	6.6	.80				2.5	1.2	0	0	0	2.6
23	0	6.3	0				1.8	.28	0	0	0	1.9
24	0	6.4	0				1.8	1.4	0	0	0	1.5
25	0	6.1	0				1.1	3.3	0	0	0	.53
26	0	4.3	0				2.3	2.9	0	4.5	0	12
27	0	0	0				2.8	1.5	0	.62	0	20
28	0	0	0				3.7	1.8	0	0	0	14
29	0	0	0				2.4	2.7	0	0	0	12
30	0	0	0		-----		2.0	1.8	0	0	0	10
31	0	-----	0		-----		-----	2.1	-----	0	0	-----
Total	220.6	162.9	2.00	0	0	0	24.34	71.63	7.88	5.12	28.07	200.23
Mean	7.12	5.43	0.065	0	0	0	0.811	2.31	0.263	0.165	0.906	6.67
Max	19	9.5	1.2	0	0	0	3.7	5.3	1.8	4.5	15	25
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	438	323	4.0	0	0	0	48	142	16	10	56	397

Cal yr 1966: Total 2,678.5 Mean 7.34 Max 29 Min 0 Ac-ft 5,310
Wtr yr 1967: Total 722.77 Mean 1.98 Max 25 Min 0 Ac-ft 1,430

9-4426.8 San Francisco River near Reserve, N. Mex.

Location.--Lat 33°44'30", long 108°46'15", in SW¼NE¼ sec.35, T.6 S., R.19 W., on left bank 500 ft upstream from mouth of Rainbow Bridge Canyon and 2 miles northwest of Reserve.

Drainage area.--350 sq mi, approximately.

Records available.--March 1959 to September 1967.

Gage.--Digital water-stage recorder, crest-stage gage, and concrete control. Altitude of gage is 5,850 ft (from topographic map). Prior to Feb. 27, 1963, graphic water-stage recorder at same site and datum.

Average discharge.--8 years, 21.0 cfs (15,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs July 16 (gage height, 3.73 ft in gage well, 4.4 ft from outside floodmarks), from rating curve extended above 460 cfs on basis of slope-area measurement of peak flow; minimum, 1.3 cfs Dec. 27, 28, July 3.
1959-67: Maximum discharge, that of July 16, 1967; minimum, 1.0 cfs Mar. 16, 1959.
Maximum stage known, about 15 ft, as determined in 1962 from old floodmarks. Major floods of Nov. 26, 1905 and Dec. 3, 1906, exceeded 20,000 cfs at Alma (downstream). See WSP 1313.

Remarks.--Records good. Possible minor regulation by one small reservoir. Diversions for irrigation of about 500 acres above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	10	6.6	6.8	5.2	6.3	5.0	4.2	2.7	2.8	1.7	160	20
2	10	6.6	6.6	4.8	5.5	5.0	4.0	2.7	2.8	1.6	63	70
3	9.0	6.6	7.5	4.9	5.8	5.0	3.8	2.7	2.9	1.6	76	40
4	8.1	6.6	7.2	5.2	5.4	5.0	3.8	2.7	2.9	1.6	148	25
5	7.7	7.2	7.8	6.1	5.4	5.0	4.0	2.7	2.8	1.8	178	20
6	7.1	7.7	7.9	5.9	6.1	5.0	3.9	2.7	2.6	1.9	116	35
7	6.5	7.9	15	4.3	5.2	5.0	3.8	2.6	2.3	1.8	103	90
8	6.0	9.6	11	4.2	4.8	5.0	3.9	2.6	2.3	2.5	119	70
9	5.6	11	8.3	4.7	5.1	5.0	3.5	2.6	2.2	2.5	141	50
10	5.0	8.7	6.4	5.2	5.9	5.2	3.4	2.5	2.2	2.5	80	92
11	4.6	8.9	8.2	5.5	5.7	5.8	3.5	2.5	2.1	2.3	195	76
12	4.1	8.4	7.5	5.8	4.8	5.5	3.6	2.6	2.2	2.3	165	39
13	3.7	8.2	7.1	6.8	5.5	5.0	3.7	2.7	2.1	2.8	126	28
14	3.3	7.8	7.2	6.7	5.5	4.9	3.5	2.5	2.1	3.1	83	29
15	3.0	7.8	7.7	6.6	5.3	4.7	3.5	2.5	2.1	2.8	66	26
16	2.7	7.7	6.2	6.8	5.2	4.8	3.2	2.6	2.0	58	50	25
17	2.7	7.7	6.1	7.2	4.6	4.9	3.2	2.6	2.1	15	40	31
18	4.0	7.1	6.4	5.7	5.1	4.6	3.2	2.7	2.5	11	35	23
19	6.9	7.3	6.5	5.8	5.3	4.7	3.2	2.7	2.6	7.0	30	20
20	7.5	7.5	7.0	7.1	5.5	4.9	3.1	2.9	7.7	3.7	80	18
21	7.7	7.3	6.8	7.1	5.0	4.8	3.1	2.8	2.8	2.7	70	17
22	7.2	7.2	6.9	7.6	5.0	4.8	3.1	2.8	2.4	5.9	35	17
23	7.2	7.2	5.2	7.2	5.0	4.1	3.1	2.7	2.2	22	30	15
24	7.1	7.2	5.7	5.8	5.0	3.8	3.0	2.8	2.2	70	25	15
25	7.2	7.2	9.2	8.2	5.0	3.8	3.0	3.2	2.3	16	60	14
26	7.2	7.0	8.9	6.1	5.0	3.8	2.9	3.4	2.2	6.0	25	12
27	7.2	6.1	5.9	6.5	5.0	4.1	2.9	3.1	2.1	25	20	11
28	7.2	6.5	4.6	6.6	5.0	4.1	2.8	2.9	2.0	62	30	11
29	7.2	7.8	4.2	6.3	------	4.1	2.8	2.8	1.9	272	60	9.4
30	7.2	6.9	4.1	5.9	------	5.7	2.7	3.0	1.8	144	25	8.6
31	7.1	------	5.7	6.4	------	4.8	------	3.0	------	118	20	------
TOTAL	197.0	227.3	221.6	188.2	148.0	147.9	101.4	85.3	75.2	878.1	2,454	957.0
MEAN	6.35	7.58	7.15	6.07	5.29	4.77	3.38	2.75	2.51	28.3	79.2	31.9
MAX	10	11	15	8.2	6.3	5.8	4.2	3.4	7.7	272	195	92
MIN	2.7	6.1	4.1	4.2	4.6	3.8	2.7	2.5	1.8	1.6	20	8.6
AC-FT	391	451	440	373	294	293	201	169	149	1,740	4,870	1,900

CAL YR 1966: TOTAL 15,207.6 MEAN 41.7 MAX 514 MIN 2.7 AC-FT 30,160
WAT YR 1967: TOTAL 5,681.0 MEAN 15.6 MAX 272 MIN 1.6 AC-FT 11,270

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-16	1315	3.73	1,320	8- 4	2030	2.60	615
7-24	1445	2.45	540	8-11	1545	3.23	990
7-28	2200	3.51	1,170				

9-4426.92. Tularosa River above Aragon, N. Mex.

Location.--Lat 33°53'30", long 108°30'56", in NW¼ sec.9, T.5 S., R.16W., on right bank 0.4 mile upstream from first diversion, 1.4 miles northeast of Aragon, and 8 miles upstream from Apache Creek.

Drainage area.--94 sq mi.

Records available.--June to September 1967. 1955 to 1965 at site 0.6 mile upstream (drainage are, 89 sq mi), annual maximum only.

Gage.--Digital water-stage recorder and concrete control. Altitude of gage is 6,750 ft (from topographic map).

Extremes.--Maximum discharge during year, 224 cfs July 30 (gage height, 2.47 ft), from rating curve extended above 10 cfs as explained below; minimum, 1.5 cfs June 22.
1955-67: Maximum discharge, that of July 30, 1967 from rating curve extended above 10 cfs by logarithmic plotting; minimum determined, 0.80 cfs Sept. 18, 1966.

Remarks.--Records excellent below 10 cfs; poor above.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.8	2.8	2.8	3.0	2.9	3.0	2.9	2.9	3.0	2.8	2.7	2.8
2	2.8	2.8	2.8	3.0	2.9	3.0	2.9	3.0	3.0	2.7	2.7	2.9
3	2.8	2.8	2.8	2.9	2.9	2.9	2.9	3.0	3.0	2.8	2.7	2.9
4	2.9	2.8	2.8	3.0	2.9	2.9	2.9	3.0	3.1	2.8	2.6	9.1
5	2.9	2.8	2.8	3.0	2.9	3.0	2.9	3.0	2.9	2.8	2.6	2.8
6	2.8	2.8	2.8	3.0	2.9	2.9	2.9	3.0	3.0	2.9	2.5	2.9
7	2.8	2.8	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	4.9	2.8
8	2.8	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.7	2.8
9	2.8	3.1	2.8	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.9	2.8
10	2.7	2.9	2.8	3.1	2.9	2.9	2.9	3.0	3.0	2.8	2.8	2.8
11	2.7	2.9	2.8	3.1	2.8	2.9	2.9	3.0	3.0	2.8	2.7	2.8
12	2.7	2.9	2.8	3.1	2.8	2.9	3.0	3.0	2.9	2.8	2.7	2.8
13	2.7	2.9	2.8	3.1	2.9	2.9	2.9	3.0	2.9	2.8	2.9	2.8
14	2.7	2.9	2.8	3.1	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.8
15	2.7	2.9	2.9	3.1	2.8	2.9	2.9	3.0	2.9	2.8	2.6	2.8
16	2.7	2.9	2.9	3.1	2.9	2.9	2.9	3.0	2.9	2.8	2.8	2.8
17	2.7	2.8	2.9	3.1	2.8	2.9	3.0	3.0	2.8	2.8	2.9	2.8
18	2.7	2.8	3.0	3.1	2.9	2.9	3.0	3.0	2.8	2.8	2.7	2.8
19	2.7	2.8	3.0	3.1	2.8	3.0	3.0	3.0	2.9	2.8	2.7	2.8
20	2.7	2.8	3.0	3.1	2.9	2.9	3.0	3.0	2.9	2.8	2.7	2.8
21	2.7	2.8	3.0	3.1	2.9	2.9	3.0	3.0	3.0	2.8	2.7	2.8
22	2.7	2.8	3.0	3.1	2.9	2.9	3.1	3.0	2.9	2.8	2.7	2.8
23	2.8	2.8	3.0	3.1	2.9	2.9	3.0	3.0	2.8	2.8	2.7	2.9
24	2.8	2.8	3.1	3.1	2.9	2.9	3.0	3.0	2.9	4.4	2.7	2.8
25	2.8	2.8	3.1	3.1	2.9	2.9	3.0	3.1	2.9	2.8	2.9	2.8
26	2.8	2.8	3.1	3.0	3.1	2.9	3.0	3.1	2.8	4.7	2.8	2.8
27	2.8	2.8	3.0	2.9	3.0	2.9	2.9	3.0	2.8	2.8	2.8	2.8
28	2.8	2.8	3.0	2.9	3.0	2.9	2.9	3.0	2.9	2.7	2.8	2.8
29	2.9	2.8	3.0	2.9	------	2.9	3.0	3.0	2.8	2.7	2.8	2.8
30	2.8	2.8	3.0	2.9	------	3.0	2.9	3.0	2.8	19	2.8	2.7
31	2.8	------	3.0	2.9	------	2.9	------	3.0	------	6.8	2.9	------
TOTAL	85.8	85.2	90.6	93.8	81.1	90.4	88.3	92.7	87.1	110.4	87.1	90.6
MEAN	2.77	2.84	2.92	3.03	2.90	2.92	2.94	2.99	2.90	3.56	2.81	3.02
MAX	2.9	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.1	19	4.9	9.1
MIN	2.7	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.8	2.7	2.5	2.7
AC-FT	170	169	180	186	161	179	175	184	173	219	173	180

CAL YR 1966: TOTAL MEAN MAX MIN AC-FT
WAT YR 1967: TOTAL 1,083.1 MEAN 2.97 MAX 19 MIN 2.5 AC-FT 2,150

Peak discharge (base, 20 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-24	1930	1.58	21	8-7	2030	1.72	33
7-26	2000	1.60	23	9-4	1800	1.88	55
7-30	2230	2.47	224				

9-4430. San Francisco River near Alma, N. Mex.

Location.--Lat 33°21'50", long 108°54'50", in SE¼SW¼ sec.4, T.11 S., R.20 W., on right bank 1½ miles downstream from Alma, 4 miles northwest of Glenwood and 6 miles upstream from Whitewater Creek.

Drainage area.--1,546 sq mi.

Records available.--September 1904 to January 1914, fragmentary (see WSP 1313), January 1964 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 4,800 ft (from topographic map). Prior to Aug. 11, 1912, staff gages at various sites, within 500 ft of each other, three-quarters of a mile upstream, at different datums. Aug. 11, 1912, to Feb. 2, 1914, staff gage at approximately present site and datum.

Extremes.--Maximum discharge during year, 6,230 cfs Aug. 12 (gage height, 7.24 ft); no flow for many days.
1904-14, 1964-67: Maximum stage or discharge not determined; no flow at times.
Discharges of 25,000 cfs, Nov. 26, 1905 and 21,000 cfs Dec. 3, 1906 (gage heights, 14 ft and 13.4 ft, respectively, datum then in use), were measured by float-area method. Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 90,000 cfs (or greater) were computed at Clifton, Ariz.

Remarks.--Records good. Diversions for irrigation of about 1,500 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	4.0	12	7.2	12	0.9				0	143	24
2	20	0.3	12	7.8	12	0.7				0	130	112
3	17	0	13	6.6	12	0.7				0	86	34
4	15	0	13	6.0	11	2.8				0	194	31
5	14	0	13	7.8	11	2.4				0	338	30
6	15	0	13	9.6	11	2.4				0	286	52
7	16	0	13	9.0	10	2.8				0	100	124
8	16	0	13	5.6	9.6	2.4				0	162	102
9	16	0	13	5.2	9.0	2.8				0	167	64
10	15	0	11	5.6	8.4	2.4				0	309	107
11	14	10	10	7.2	7.8	2.0				0	611	134
12	13	12	11	9.0	7.2	1.7				0	2,720	75
13	13	13	11	10	6.6	2.0				0	784	50
14	11	9.0	10	11	7.2	1.2				0	560	53
15	11	9.0	9.6	12	6.6	0.9				0	197	57
16	11	9.6	9.6	12	6.0	0.7				0	119	42
17	11	11	9.0	11	5.6	0.5				72	80	40
18	11	8.4	8.4	11	5.2	0.5				51	57	42
19	11	9.0	8.4	10	5.6	0.5				34	45	35
20	11	7.2	8.4	10	4.8	0.3				24	123	31
21	11	8.4	8.4	11	3.6	0.3				11	99	29
22	11	8.4	9.0	13	0.9	0.2				234	45	28
23	6.6	7.8	8.4	15	0.9	0.05				17	39	28
24	2.0	9.6	7.8	15	0.7	0.05				6.0	38	26
25	1.4	12	8.4	14	0.5	0.05				26	90	29
26	2.0	12	11	14	1.4	0				12	31	36
27	2.0	12	11	14	2.8	0				25	26	30
28	4.4	12	11	13	1.7	0				70	47	27
29	4.0	12	6.0	13		0				233	86	27
30	0.3	12	4.4	13	- - - - -	0				193	35	27
31	2.8	- - - - -	4.4	13	- - - - -	0	- - - - -		- - - - -	105	25	- - - - -
Total	368.5	208.7	311.2	321.6	181.1	31.25	0	0	0	1,113	7,772	1,526
Mean	11.9	6.96	10.0	10.4	6.47	1.01	0	0	0	35.9	251	50.9
Max	60	13	13	15	12	2.8	0	0	0	234	2,720	134
Min	0.3	0	4.4	5.2	0.5	0	0	0	0	0	25	24
Ac-ft	731	414	617	638	359	62	0	0	0	2,210	15,420	3,030

Cal yr 1966: Total 31,475.3 Mean 86.2 Max 1,270 Min 0 Ac-ft 62,430
Wtr yr 1967: Total 11,833.35 Mean 32.4 Max 2,720 Min 0 Ac-ft 23,470

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-22	2000	4.75	3,200	8-12	1300	7.24	6,230
7-28	2000	2.73	1,090	8-25	1730	3.25	1,250
8-6	0100	3.60	1,810	9-2	2030	3.14	1,170

9-4440. San Francisco River near Glenwood, N. Mex.

Location.--Lat 33°15'05", long 108°52'40", in NE¼NW¼ sec.23, T.12 S., R.20 W., on left bank at river mile 64.6, a quarter of a mile upstream from hot springs, 5 miles south of Glenwood, and 6 miles downstream from Whitewater Creek.

Drainage area.--1,653 sq mi.

Records available.--October 1927 to September 1967. Monthly discharge only for some periods, published in WSP 1313.

Gage.--Water-stage recorder. Datum of gage is 4,552.06 ft above mean sea level, datum of 1929. Prior to Feb. 15, 1934, at site 4½ miles upstream at datum 98.82 ft higher.

Average discharge.--40 years, 64.4 cfs (46,620 acre-ft per year).

Extremes.--Maximum discharge during year, about 8,000 cfs Aug. 12 (gage height not determined), estimated on basis of record at upstream station near Alma; minimum, 2.6 cfs June 17.
1927-67: Maximum discharge, 8,200 cfs Dec. 30, 1965; minimum, 1.5 cfs Aug. 6, 1961.
Major floods probably occurred Jan. 19 and Oct. 14, 1916 when discharges of 90,000 cfs (or greater) were computed for station at Clifton, Ariz. On Nov. 26, 1905, a peak of 25,000 cfs was measured (by float-area method) at station at Alma (about 12 miles upstream, drainage area, 1,560 sq mi); a similar measurement of 21,000 cfs was made at the Alma station for peak of Dec. 3, 1906.

Remarks.--Records good prior to July 29, poor thereafter. Diversions for irrigation of about 2,000 acres above station. One small reservoir (capacity unknown) in headwaters. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1967 are published in part 2 of this report.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	153	23	29	21	21	18	17	17	12	14	170	35
2	58	22	29	22	22	18	18	18	9.2	9.6	150	130
3	45	22	30	21	21	18	19	18	14	9.3	100	80
4	40	21	30	21	21	18	19	18	15	13	100	50
5	38	21	31	21	20	17	19	18	15	11	400	40
6	37	21	32	20	17	16	19	18	14	9.7	300	70
7	37	21	32	20	17	18	19	20	14	10	150	160
8	39	21	31	23	16	17	17	19	14	11	170	140
9	38	22	31	23	14	17	14	17	14	11	200	100
10	36	22	29	23	14	16	14	17	15	15	400	130
11	35	22	29	24	13	17	12	18	15	12	700	150
12	34	28	28	26	14	18	10	17	16	17	3,500	100
13	35	31	28	27	13	17	10	18	19	20	1,000	90
14	34	29	28	27	16	16	12	17	16	13	700	90
15	34	26	29	28	17	14	16	17	19	12	300	90
16	35	27	28	27	17	15	17	18	13	13	200	70
17	31	26	27	28	16	16	17	18	10	39	150	65
18	29	24	27	27	15	17	17	15	9.0	33	120	70
19	26	27	27	25	16	14	16	12	14	21	100	60
20	24	25	27	25	16	14	13	14	16	16	200	50
21	32	26	28	26	16	14	17	16	7.0	12	170	45
22	36	27	28	27	15	16	18	16	7.0	144	100	40
23	33	27	28	28	15	18	17	16	5.5	49	90	35
24	26	28	26	26	15	19	19	17	8.5	30	80	35
25	24	31	28	25	16	17	19	16	8.7	100	120	35
26	23	31	28	23	20	17	20	16	10	144	70	40
27	23	30	29	22	18	16	23	16	10	229	50	35
28	23	30	26	22	18	16	23	16	9.8	144	70	35
29	23	29	23	22	------	16	22	16	11	287	100	35
30	23	30	22	20	------	18	17	16	12	220	60	35
31	23	------	21	21	------	18	------	15	------	150	40	------
TOTAL	1,127	770	869	741	469	516	510	520	372.7	1,819.6	10,060	2,140
MEAN	36.4	25.7	28.0	23.9	16.8	16.6	17.0	16.8	12.4	58.7	325	71.3
MAX	153	31	32	28	22	19	23	20	19	287	3,500	160
MIN	23	21	21	20	13	14	10	12	5.5	9.3	40	35
AC-FT	2,240	1,530	1,720	1,470	930	1,020	1,010	1,030	739	3,610	19,950	4,240

CAL YR 1966: TOTAL 45,786 MEAN 125 MAX 1,530 MIN 17 AC-FT 90,820
WAT YR 1967: TOTAL 19,914.3 MEAN 54.6 MAX 3,500 MIN 5.5 AC-FT 39,500

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
7-22	2200	4.72	1,660	7-27	1745	5.92	2,490
7-26	1930	3.69	940	8-12	unknown	not determined	about 8,000

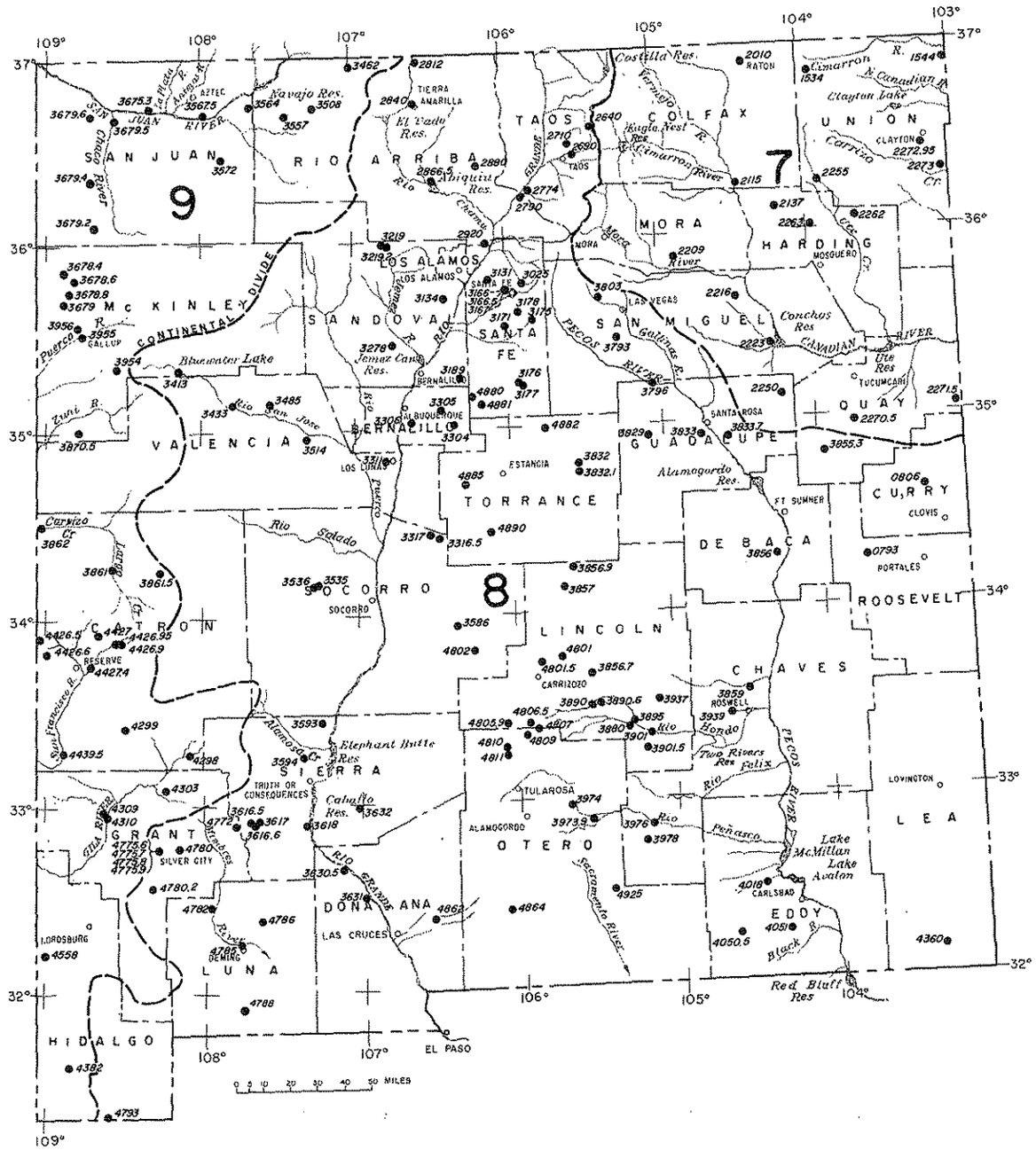

Figure 2.--Map of New Mexico showing location of partial-record stations.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analysis, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the state at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a general picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1967

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Rio Grande basin				
8-3865	Rio Ruidoso near Ruidoso, N. Mex.	SW¼ sec.19,T.11 S., R.13 E., at Mescalero Apache Indian Reservation boundary, 3 miles west of Ruidoso.	17.2	1953-67	3-20-67 6-27-67 9-22-67	3.21 2.51 7.10
8-3866	Carrizo Creek at Ruidoso, N. Mex.	SW¼ sec.26, T.11 S., R.13 E., at mouth at Ruidoso.	24.2	1953-67	3-20-67 6-27-67 9-22-67	2.40 2.17 2.21
		Gila River basin				
9-4299*	Snow Creek near Mogollon, N. Mex.	Lat 33°24'50", long 108°29'40", about 1,000 ft below Gila Wilderness boundary, 17.5 miles east of Mogollon.	89.6	1958-67	10-22-66	0.78

* Also a crest-stage station.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum stage has been determined; for some stations, publication of discharge is delayed pending definition of stage-discharge relationship.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Arkansas River basin					
7-1544	Carrizozo Creek near Kenton, Okla.	NE¼ sec.31, T.31 N., R.37 E., under bridge on New Mexico State Highway 18, 4 miles southwest of Kenton.	111	1953-67	7-12-67	7.54	3,460
7-2010	Raton Creek at Raton, N. Mex.	Lat 36°54', long 104°26', 60 ft above bridge on State Highway 72 at Raton.	14.4	1953-67	6-10-67	5.15	680
7-2137	Canadian River tributary near Mills, N. Mex.	NE¼ sec.3, T.22 N., R.25 E., on downstream end of left bridge abutment on State Highway 39, 6 miles north of Mills.	a4.2	1954-67		d5.1	(†)
7-2209	Dog Creek near Shoemaker, N. Mex.	Lat 35°49'32", long 104°53'28", 0.5 mile above Valmora-Shoemaker road, and 1.8 miles northwest of Shoemaker.	11.2	1954-67	9- 5-67	7.65	515
7-2216	Lagartija Creek tributary near Sanchez, N. Mex.	SW¼SE¼ sec.5, T.16 N., R.24 E., at bridge on State Highway 65, 0.9 mile northeast of Sanchez.	a1	1961-67	7-11-67	3.40	341
7-2223	Trementina Creek at Trementina, N. Mex.	NW¼ sec.8, T.14 N., R.24 E., at bridge on State Highway 65 at Trementina.	a65	1959-67	8-24-59 6-24-60 7- 7-61 7- 6-62 8- 9-63 9-23-64 9-11-65 10-17-65 6- 3-67	6.73 5.89 2.82 d8.00 3.55 d6.2 d12.0 7.61 8.29	2,770 1,600 220 4,400 385 1,900 14,100 3,600 4,600
7-2250	Pajarito Creek at Newkirk, N. Mex.	SW¼SW¼ sec.24, T.10 N., R.25 E., on downstream side of bridge on U. S. Highway 66, 1 mile east of Newkirk.	a35	1954-67	7-12-67	4.30	1,050
7-2255	Ute Creek near Gladstone, N. Mex.	On line of secs. 14 and 23, T.24 N., R.28 E., on bridge on State Highway 58, 3 miles east of Gladstone.	256	1953-67	7-11-67	.77	(†)
7-2262	Bueyeros Creek at Bueyeros, N. Mex.	E½ sec.7, T.20 N., R.31 E., on upstream end of right abutment of bridge on State Highway 102 at Bueyeros.	a34	1957-67	1967	(e)	-
7-2263	Carrizo Creek near Roy, N. Mex.	NW¼SE¼ sec.16, T.21 N., R.28 E., 800 ft below State Highway 120, and 15 miles northeast of Roy.	a68	1954-67	7-12-67	4.42	525
7-2270.5	Plaza Larga Creek tributary near Ragland, N. Mex.	NE¼ sec.15, T.7 N., R.30 E., at culvert on State Highway 18, 1.2 miles northwest of Ragland.	a.5	1952-67	5-29-67	6.86	205
7-2271.5	Arroyo del Puerto near Endee, N. Mex.	SW¼SW¼ sec.26, T.10 N., R.36 E., at bridge on State Highway 93, 5.4 miles south of Endee.	a25	1961-67	7- 6-67	6.07	(†)
7-2272.95	Sandy Arroyo tributary near Clayton, N. Mex.	NW¼ sec.21, T.25 N., R.34 E., above culvert on State Highway 58, 8 miles southwest of Clayton.	4.3	1952-67	5-28-67	d4.62	193
7-2273	Sandy Arroyo near Clayton, N. Mex.	At center of boundary of secs. 2 and 3, T.24 N., R.35 E., on downstream side of bridge on State Highway 18, 7.5 miles south of Clayton.	a42	1953-67	1967	(c)	<5
		Brazos River basin					
8-0793	Blackwater Draw tributary near Floyd, N. Mex.	NW¼SW¼ sec.13, T.1 S., R.30 E., 0.5 mile below section road and 10 miles west of Floyd.	a10	1963-67	3-19-67	1.45	(†)
8-0806	Running Water Draw near Clovis, N. Mex.	In NE¼ sec.31, T.4 N., R.36 E., ½ mile upstream from State Highway 18 and 8 miles north of Clovis.	109	1953-56 1957-64‡ 1965-67	4-11-67	4.82	1,200

Explanation of symbols used with partial-record crest-stage station listings are given at end of the tables.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rio Grande basin					
8-2774	Rio Grande tributary at Rinconada, N. Mex.	SW¼NW¼ sec.21, T.23 N., R.10 E., at culvert on U. S. Highway 64, 0.6 mile west of Rinconada.	.02	1952-67	1967	(c)	(†)
8-2812	Wolf Creek near Chama, N. Mex.	Lat 36°57'20", long 106°32'10", at bridge on State Highway 17, and 4½ miles northeast of Chama.	27.7	1959-67	4- 3-66 5- 9-67	2.20 2.54	235 390
8-2840	Rito de Tierra Amarilla at Tierra Amarilla, N. Mex.	Lat 36°41'55", long 106°33'25", 400 ft below culvert on U. S. Highway 84, at Tierra Amarilla.	49.7	1957-67	8- 1-67	4.96	(†)
8-2866.5	Arroyo Seco above Abiquiu Reservoir, N. Mex.	Lat 36°18'55", long 106°29'05", in Piedra Lumbre Grant, 300 ft upstream from bridge on U. S. Highway 84, 0.2 mile northwest of entrance to Ghost Ranch and about 12 miles northwest of Abiquiu.	144	1966-67	7-12-67	4.51	470
8-2880	El Rito near El Rito, N. Mex.	Sec.19, T.25 N., R.7 E., 3 miles northwest of El Rito.	b50.5	1932-51‡ 1952-67	1967	(c)	<50
8-2920	Santa Clara Creek near Espanola, N. Mex.	SW¼SW¼ sec.11, T.20 N., R.7 E., 5½ miles southwest of Espanola.	34.5	1936-41‡ 1949-50‡ 1952-67	1967	(c)	<40
8-3025	Tesuque Creek above diversions, near Santa Fe, N. Mex.	NW¼ sec.5, T.17 N., R.10 E., 500 ft above point of diversion of Cajon Grande ditch, 1 mile above Little Tesuque Creek, and 4 miles northeast of Santa Fe.	11.7	1936-51‡ 1953-67	8- 9-67	3.43	167
8-3131	Canada Ancha tributary near Santa Fe, N. Mex.	Lat 35°44'05", long 106°07'00", in Caja del Rio Grant, 9 miles northwest of Santa Fe.	1.23	1940-48m 1952-67	8- 9-67	6.39	298
8-3134	Bland Canyon near Cochiti, N. Mex.	Lat 35°42'11", long 106°24'56", 200 ft south of Forest Service Road, 0.3 mile inside Santa Fe National Forest, 7.5 miles north of Cochiti.	a9	1962-67	8-10-67	2.42	174
8-3166	North Frijoles Arroyo near Santa Fe, N. Mex.	Lat 35°43'10", long 105°57'30", within city limits of Santa Fe and 2.6 miles northwest of State Capitol in Santa Fe.	0.33	1958-67	9-13-58	d5.44	194
					5-23-59	(e)	f140
					7-14-60	d5.00	67
					9-19-61	5.56	230
					7-30-62	5.15	90
					6-21-63	5.32	77
					9-23-64	5.12	f15
					7-14-65	5.96	300
					8-24-66	5.77	360
					8-22-67	5.83	300
8-3166.5	Arroyo de los Frijoles, Locust Tree Reach, near Santa Fe, N. Mex.	Lat 35°42'13", long 105°58'19", within city limits of Santa Fe and 2.2 miles northwest of State Capitol in Santa Fe.	1.30	1957-67	8-24-57	d8.2	1,900
					9-13-58	d7.12	1,320
					8- 7-59	(e)	f25
					7-14-60	d5.76	360
					9-19-61	d6.30	f650
					7-25-62	d6.1	450
					9-21-63	d5.9	316
					9-23-64	d5.22	f20
					5-12-65	d6.95	993
					8-24-66	(e)	f1,000
					8-22-67	d6.48	1,250
8-3167	Arroyo de los Frijoles near Santa Fe, N. Mex.	Lat 35°42'05", long 106°00'30", in SE¼ sec.17, T.17 N., R.9 E., 4 miles west of State Capitol in Santa Fe.	2.92	1957-67	8-24-57	d14.6	5,340
					9-13-58	de12.65	3,060
					8- 7-59	10.74	f25
					8- 4-60	11.32	152
					9-19-61	11.36	250
					7-25-62	12.05	f1,300
					9-21-63	11.35	391
					9-23-64	11.12	f25
					5-12-65	11.74	337
					8- 1-66	d13.44	3,060
					8- 9-67	12.33	1,280

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rio Grande basin--Continued					
8-3171	Arroyo Yupa tributary near Cerrillos, N. Mex.	SW¼ sec.13, T.15 N., R.7 E., 300 ft above culvert on U. S. Highway 85, 1.4 miles southwest of Turquoise Trading Post, and 6.5 miles north of Cerrillos.	0.47	1957-67	8-10-67	d3.66	568
8-3175	Galisteo Creek at Canoncito, N. Mex.	NW¼NW¼ sec.7, T.15 N., R.11 E., above railroad bridge, 0.2 mile above Apache Canyon at Canoncito.	11.3	1955-56 1959-67	8-10-67	2.75	640
8-3176	San Cristobal Arroyo near Galisteo, N. Mex.	Lat 35°22'55", long 105°51'05", at bridge on U. S. Highway 285, 5½ miles east of Galisteo.	116	1955-67	6- 3-67	7.48	2,450
8-3177	Jaspe Arroyo tributary near Galisteo, N. Mex.	Lat 35°21'55", long 105°50'40", at culvert on U. S. Highway 285, 6 miles southeast of Galisteo.	a1.5	1952-67	7-18-53 6-15-58 7-16-59 7- 6-60 7- 7-61 9- 1-62 9- 1-64 5-13-65 6- 3-67	13.96 14.11 13.82 13.27 13.90 13.28 13.44 14.55 18.64	b193 b209 b172 b122 b185 b122 b137 b272 947
8-3178	Canada de las Minas tributary near Santa Fe, N. Mex.	Lat 35°36'27", long 105°54'42", at culvert on U. S. Highway 84, 85, and 285, 1.3 miles northeast of Seton Village, and 5.7 miles south of Santa Fe.	.56	1952-67	1967	(c)	10
8-3189	San Pedro Creek near Golden, N. Mex.	Lat 36°13'45", long 106°18'00", 1 mile below bridge on State Highway 10 and 5½ miles southwest of Golden.	45.2	1953-67	8- 9-67	3.45	2,550
8-3219	Rio de las Vacas near Senorita, N. Mex.	Lat 35°59'35", long 106°47'45", at bridge on side road, 0.1 mile south of State Highway 126 and 6.5 miles east of Senorita.	26.8	1957-67	8-12-67	4.42	400
8-3219.2	Rock Creek near Senorita (Cuba), N. Mex.	NW¼SW¼ sec.6, T.20 N., R.2 E., 1 mile east of State Highway 126, 8 miles east of village of Senorita, and 11 miles east of Cuba.	a3.7	1960-67	3-27-67	2.12	(†)
8-3278	Arroyo Ojito at Zia Pueblo, N. Mex.	SE¼SE¼ sec.21, T.15 N., R.2 E., 100 ft upstream from culvert on State Highway 44, in Zia Pueblo Grant, 0.7 mile south of Zia Pueblo.	17.7	1961-67	8-10-67	4.89	(†)
8-3304	Juan Toro Canyon near Miera, N. Mex.	NW¼SE¼ sec.7, T.9 N., R.6 E., 150 ft east of State Highway 10, 1 mile southeast of Cedro, and 4½ miles northwest of Miera.	1.57	1959-67	8-10-67	1.10	40
8-3305	Tijeras Arroyo at Albuquerque, N. Mex.	Lat 35°03'40", long 106°28'40", 300 ft south of U. S. Highway 66 and 0.4 mile southeast of city limits of Albuquerque.	75.3	1943-48‡ 1958-67	1962 9-21-63 9- 4-64 7-25-65 8-17-66 6-24-67	(c) 2.11 2.70 3.79 2.02 6.85	250 390 1,050 2,400 300 6,500
8-3306	Tijeras Arroyo near Albuquerque, N. Mex.	SE¼SW¼ sec.17, T.9 N., R.3 E., at culvert on State Highway 47, 5.7 miles south of Central Avenue in Albuquerque.	133	1952-67	6-24-67	d3.20	2,530
8-3311	Belen Highline Canal tributary near Los Lunas, N. Mex.	Lat 34°49'20", long 106°49'10", above culvert on State Highway 6, 5.0 miles west of Los Lunas.	.16	1952-53 1955-67	6- 4-67	6.17	(†)
8-3316.5	Canada Montoso near Scholle, N. Mex.	SW¼SW¼ sec.12, T.2 N., R.4 E., 130 ft upstream from dip on abandoned highway, 700 ft upstream from bridge on U. S. Highway 60, 3.6 miles southwest of Scholle.	a35	1961-67	8- 9-67	d7.02	4,700
8-3317	Abo Arroyo tributary near Scholle, N. Mex.	Lat 34°24'10", long 106°30'35", at culvert on U. S. Highway 60, 2.5 miles southeast of junction of U. S. Highway 60 and State Highway 6, and 5.5 miles southwest of Scholle.	a.2	1954-67	8- 9-67	17.73	275

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rio Grande basin--Continued					
8-3413	Bluewater Creek above Bluewater Dam, near Bluewater, N. Mex.	NE¼ sec.20, T.12 N., R.12 W., 2.3 miles south of Bluewater Dam, and 8 miles west of Bluewater.	a75	1953-67	8- 9-67	2.18	92
8-3485	Encinal Creek near Casa Blanca, N. Mex.	NW¼NW¼ sec.34, T.11 N., R.6 W., 1.8 miles north of village of Encinal and 6.8 miles north of Casa Blanca.	6.19	1937-39† 1959-67	9- 9-67	d11.5	4,330
8-3535	La Jencia Creek near Magdalena, N. Mex.	NE¼SW¼ sec.1, T.2 S., R.4 W., 3½ miles northwest of Magdalena.	195	1957-67	8-14-67	7.94	3,950
8-3536	La Jencia Creek tributary near Magdalena, N. Mex.	NE¼SE¼ sec.13, T.2 S., R.4 W., at Santa Fe Railroad bridge, 2.7 miles northeast of Magdalena.	5.67	1957-67	8-14-67	1.25	(†)
8-3586	Chupadera Wash tributary at Bingham, N. Mex.	NE¼SW¼ sec.12, T.5 S., R.5 E., 75 ft upstream from culvert on U. S. Highway 380, 0.1 mile west of Bingham.	1.29	1961-67	8- 4-67	3.07	350
8-3593	San Jose Arroyo near Monticello, N. Mex.	NW¼SW¼ sec.3, T.10 S., R.4 W., at head of box canyon just below major tributary, 800 ft below culvert on U. S. Highway 85, 13 miles northeast of Monticello.	a27	1959-67	9-24-67	2.38	(†)
8-3594	Lumber Canyon tributary near Monticello, N. Mex.	NE¼NE¼ sec.5, T.11 S., R.4 W., at culvert on U. S. Highway 85, 0.2 mile north of road to Red Rock Ranger station, and 10.5 miles east of Monticello.	a.9	1952-67	8- 9-67	2.37	233
8-3616.5	Percha Creek near Kingston, N. Mex.	NE¼NE¼ sec.15, T.16 S., R.8 W., at bridge on State Highway 180, 3.3 miles east of Kingston.	21.5	1953-67	8-13-67	4.75	750
8-3616.6	Percha Creek tributary near Kingston, N. Mex.	NW¼SW¼ sec.14, T.16 S., R.8 W., 500 ft above culvert on State Highway 180, and 3.5 miles east of Kingston.	.58	1957-67	1967	94.31	-
8-3617	Percha Creek near Hillsboro, N. Mex.	SE¼NW¼ sec.18, T.16 S., R.7 W., 150 ft south of State Highway 180, and 2 miles west of Hillsboro.	35.4	1957-67	8-13-67	6.95	3,500
8-3618	Percha Creek at Caballo Dam near Arrey, N. Mex.	SW¼ sec.24, T.16 S., R.5 W., at bridge on U. S. Highway 85, 0.5 mile above mouth and Caballo Reservoir, and 3.5 miles north of Arrey.	119	1953-67	8- 7-67	3.12	3,130
8-3630.5	Arroyo Angostura near Rincon, N. Mex.	SE¼ sec.13, T.19 S., R.3 W., 140 ft below dip on U. S. Highway 85, and 2.2 miles southwest of Rincon.	a8.5	1959-67	6-19-67	d2.0	(†)
8-3631	Rio Grande tributary near Radium Springs, N. Mex.	NW¼NW¼ sec.9, T.21 S., R.1 W., above culvert on U. S. Highway 85, 120 ft above mouth, and 1.4 miles west of Radium Springs.	.40	1955-67	8-15-67	4.94	105
8-3632	Aleman Draw at Aleman, N. Mex.	SW¼ sec.13, T.15 S., R.2 W., on Santa Fe Railroad bridge, 140 ft above dip on Engle-Rincon road, and ½ mile west of Aleman.	a27	1959-67	8- 7-67	d19.1	16,400
8-3793	Tecolote Creek at Tecolote, N. Mex.	Lat 35°27'20", long 105°16'55", on bridge on U. S. Highway 85 at Tecolote.	122	1954-67	8-10-67	5.02	360
8-3796	Pecos River tributary near Dilia, N. Mex.	Lat 35°12'50", long 105°04'50", above culvert on U. S. Highway 84, and 1.7 miles northwest of Dilia.	.16	1952-67	7- 8-67	d6.49	168
8-3803	Sandoval Canyon at Gallinas, N. Mex.	Lat 35°41'19", long 105°21'17", about 500 ft upstream from culvert on State Highway 65, at north edge of Gallinas.	7.6	1957 1961-67	9-25-67	1.22	38
8-3829	Pecos River tributary near Pintada, N. Mex.	Lat 34°58'06", long 105°05'38", in Anton Chico Grant, 1,500 ft south of U. S. Highway 66, 6.8 miles north of Pintada.	a16	1961-67	7-12-67	2.29	650
8-3832	Pintada Arroyo tributary near Clines Corners, N. Mex.	Lat 34°50'40", long 105°35'05", above culvert on U. S. Highway 285, 12.2 miles south of Clines Corners.	29.2	1952-67	6- 3-67	1.70	59

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rio Grande basin--Continued					
8-3832.1	Pintada Arroyo tributary near Encino, N. Mex.	Lat 34°48'40" long 105°34'00", above culvert on U. S. Highway 285, 0.1 mile south of ranch road, and 12½ miles northwest of Encino.	a1	1959-67	1967	(c)	<10
8-3833	Pintada Arroyo near Santa Rosa, N. Mex.	NE¼ sec.29, T.8 N., R.21 E., 300 ft above culvert on U. S. Highway 54, and 4½ miles southwest of Santa Rosa.	896	1959-67	7-12-67	d3.59	1,880
8-3833.7	Pecos River tributary near Puerto de Luna, N. Mex.	SW¼NW¼ sec.32, T.8 N., R.22 E., 25 ft upstream from culvert on State Highway 91, 3.1 miles north of Puerto de Luna.	.37	1961-67	7-12-67	5.96	18
8-3855.3	Alamosa Creek tributary near Jordan, N. Mex.	SW¼SW¼ sec.27, T.7 N., R.28 E., 500 ft upstream from dip on State Highway 156, 6.9 miles west of Jordan.	a10	1962-67	5-29-67	2.72	f80
8-3856	Yeso Arroyo near Fort Sumner, N. Mex.	SE¼ sec.35, T.1 N., R.25 E., at abandoned bridge 1 mile below State Highway 20, and 14.5 miles south of Fort Sumner.	242	1937 1952-67	6- 3-67	4.22	(†)
8-3856.7	Aragon Creek tributary near Encinoso, N. Mex.	NE¼NE¼ sec.22, T.7 S., R.14 E., 0.3 mile upstream from wooden bridge on dirt road, 1.2 miles north of State Highway 48, 4.3 miles west of Encinoso.	6.07	1961-67	6- 3-67	4.28	760
8-3856.9	Bonita Canyon tributary near Corona, N. Mex.	SE¼SW¼ sec.7, T.1 S., R.13 E., above culvert on U. S. Highway 54, and 1.8 miles southwest of Corona.	a.6	1959-67	8-13-59 7-13-60 8-11-61 7-24-62 1963 1964 8-13-65 8- 2-66 7-17-67	1.70 1.66 (c) 1.47 (c) (c) 2.05 1.61 3.82	31 30 f<1 22 <20 0 43 28 112
8-3857	Cloud Canyon near Gallinas, N. Mex.	SW¼ sec.15, T.2 S., R.12 E., above culvert on U. S. Highway 54, and 2.0 miles southwest of Gallinas.	a10	1957-67	1967	(c)	<25
8-3859	Salt Creek tributary near Roswell, N. Mex.	NE¼NE¼ sec.17, T.9 S., R.24 E., at culvert on U. S. Highway 285, 4.7 miles north of junction of U. S. Highways 70 and 285, and 10 miles north of Roswell.	.04	1952-67	8-10-67	.70	(†)
8-3880	Rio Ruidoso at Hondo, N. Mex.	NE¼SW¼ sec.4, T.11 S., R.17 E., ½ mile above confluence with Rio Bonito, and ½ mile southwest of Hondo.	290	1931-55‡ 1956-67	8-10-67	5.11	547
8-3890	Rio Bonito near Fort Stanton, N. Mex.	SW¼ sec.16, T.9 S., R.15 E., at bridge on U. S. Highway 380, 2.5 miles northeast of Fort Stanton.	a85	1955-67	1967	(c)	(†)
8-3890.6	Rio Bonito tributary near Fort Stanton, N. Mex.	SW¼SW¼ sec.15, T.9 S., R.15 E., at culvert on U. S. Highway 380, 150 ft above mouth, and 3.5 miles northeast of Fort Stanton.	.72	1955-67	1967	(c)	(†)
8-3895	Rio Bonito at Hondo, N. Mex.	NE¼NW¼ sec.4, T.11 S., R.17 E., at bridge on U. S. Highway 70, at Hondo.	h295	1931-55‡ 1956-67	9-18-67	2.02	340
8-3901	Rio Hondo at Picacho, N. Mex.	NW¼NW¼ sec.15, T.11 S., R.18 E., by road bridge just off U. S. Highway 70, 1.3 miles northwest of Picacho.	715	1956-62‡ 1963-67	9-19-67	14.19	4,050
8-3901.5	Gallo Canyon near Picacho, N. Mex.	NE¼NE¼ sec.8, T.12 S., R.18 E., 500 ft east of road, 5 miles south of Picacho.	a2	1962-67	8-10-67	6.90	(†)
8-3937	Pancho Canyon near Arabela, N. Mex.	SE¼SE¼ sec.19, T.9 S., R.18 E., 200 ft downstream from dip on State Highway 368, 5.6 miles south of Arabela.	a16	1962-67	8-10-67	2.72	(†)
8-3939	Eight Mile Draw near Roswell, N. Mex.	SW¼NE¼ sec.32, T.10 S., R.23 E., and 6.5 miles west of Roswell.	397	1941 1952-67	8-10-67	14.94	(†)
8-3973.9	Curtis Canyon near Mayhill, N. Mex.	SE¼NE¼ sec.4, T.17 S., R.14 E., ¼ mile above SCS dam, 0.4 mile west of State Highway 130, and 2.5 miles southwest of Mayhill.	10.3	1959-67	1967	(c)	(†)

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Rio Grande basin--Continued					
8-3974	Hyatt Canyon near Cloudcroft, N. Mex.	NW¼NW¼ sec.9, T.16 S., R.13 E., ½ mile south of State Highway 83, and 7 miles east of Cloudcroft.	3.08	1953-67	8-10-67	1.56	86
8-3976	Rio Penasco near Dunken, N. Mex.	NW¼NE¼ sec.35, T.16 S., R.17 E., on bridge on State Highway 24, 5 miles north of Dunken.	583	1952-56 1956-62‡ 1963-67	8-10-67	8.44	(†)
8-3978	Bluewater Creek near Dunken, N. Mex.	SE¼NE¼ sec.33, T.17 S., R.17 E., 300 ft above dip on State Highway 24, and 1.3 miles south of Dunken.	143	1958-67	1967	(c)	(†)
8-4018	Rocky Arroyo near Carlsbad, N. Mex.	SW¼ sec.23, T.21 S., R.24 E., 0.1 mile north of State Highway 137, 0.7 mile above dip on State Highway 137, and 14 miles west of Carlsbad.	254	1953-66i			
		Mimbres River basin					
8-4772	Iron Creek near Kingston, N. Mex.	Lat 32°54'50", long 107°46'35", 50 ft east of State Highway 180, 1.6 road miles west of Emory Pass, and 4.5 miles west of Kingston.	.74	1955-67	8- 5-67	3.45	(†)
8-4775.6	Little Walnut Creek near Silver City, N. Mex.	NW¼NE¼ sec.28, T.17 S., R.14 W., 85 ft above dip on Bear Mountain Road, and 2 miles north of Silver City.	5.10	1959-67	8- 4-67	3.05	830
8-4775.7	Silva Creek tributary at Silver City, N. Mex.	SE¼SW¼ sec.27, T.17 S., R.14 W., 350 ft above dip on Little Walnut Road, and 0.7 mile north of boundary of Silver City.	2.12	1958-67	8- 4-67	1.85	113
8-4775.8	Silva Creek at Silver City, N. Mex.	Lat 32°46'41", long 108°16'41", 190 ft above Twelfth Street Bridge at Silver City.	10.0	1958-67	8- 4-67	3.59	1,140
8-4775.9	Pinos Altos Creek at Silver City, N. Mex.	Lat 32°46'52", long 108°16'04", 2 blocks below U. S. Highway 260 at Silver City	4.63	1958-67	1967	(c)	(†)
8-4780	Cameron Creek at Central, N. Mex.	SW¼NE¼ sec.36, T.17 S., R.13 W., 2,500 ft above culvert on U. S. Highway 260, at north edge of Central.	18.8	1954-67	8- 4-67	4.24	(†)
8-4782	Mimbres River tributary near Spalding, N. Mex.	NW¼SE¼ sec.5, T.22 S., R.10 W., at culvert on U. S. Highway 260, 0.7 mile northeast of junction with State Highway 61, 4.5 miles southeast of Spalding.	1.17	1952-67	8-10-67	2.29	(†)
8-4785	Mimbres River at Deming, N. Mex.	On section line 22 and 27, T.23 S., R.9 W., at bridge on U. S. Highway 260, at north end of Deming.	1,370	1954-67	8-10-67	2.43	790
8-4786	Mimbres basin tributary near Florida, N. Mex.	Near boundary of sec.25 and 36, T.22 S., R.8 W., above culvert on State Highway 26, and 5 miles southwest of Florida.	a.4	1959-67	8-11-67	3.75	(†)
8-4788	Seventysix Draw tributary near Waterloo, N. Mex.	Lat 31°56'34", long 107°44'38", upstream from culvert on State Road 11, 3.9 miles southeast of Waterloo, and 7.9 miles north of Columbus.	.2	1967	8- 4-67	7.30	222
8-4793	Deer Creek tributary near Antelope Wells, N. Mex.	Sec.6, T.34 S., R.18 W., 0.1 mile below dip on State Highway 79, 2½ miles east of San Luis Pass, and 12 miles west of Antelope Wells.	4.3	1959-67	7-14-67	1.96	290
		Tularosa Valley					
8-4801	White Oaks Canyon at White Oaks, N. Mex.	NW¼SW¼ sec.20, T.6 S., R.13 E., 40 ft upstream from culvert on State Highway 349, 1 mile northeast of White Oaks.	1.14	1961-67	8- 5-67	1.04	(†)
8-4801.5	White Oaks Canyon near Carrizozo, N. Mex.	NW¼SE¼ sec.6, T.7 S., R.11 E., 100 ft upstream from culvert on U. S. Highway 54, 6 miles north of Carrizozo.	31	1959 1961-67	8-16-67	4.94	1,940
8-4802	Taylor Canyon tributary near Bingham, N. Mex.	SE¼NE¼ sec.15, T.6 S., R.7 E., 200 ft north of U. S. Highway 380, 12 miles southeast of Bingham.	2.66	1961-67	10- 5-66	1.27	(†)
8-4805.9	Tularosa basin tributary near Oscura, N. Mex.	SW¼NW¼ sec.25, T.10 S., R.8 E., 50 ft below culvert on U. S. Highway 54, and 5.2 miles south of Oscura.	3.22	1958-67	1967	(c)	(†)
8-4806.5	Minnie Hall Draw near Three Rivers, N. Mex.	NE¼SE¼ sec.35, T.10 S., R.9 E., 8 miles northeast of Three Rivers.	9.70	1956-67	9-25-67	12.14	(†)

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Tularosa Valley--Continued					
8-4807	Indian Creek near Three Rivers, N. Mex.	SW¼NE¼ sec.10, T.11 S., R.10 E., 150 ft above diversion dam, and 11½ miles east of Three Rivers.	a6.8	1956-58‡ 1959-67	8-10-67	4.42	315
8-4809	Indian Creek at mouth near Three Rivers, N. Mex.	Lat 33°22'45", long 105°57'25", 75 ft above diversion dam, 0.35 mile above mouth, and 5¾ miles east of Three Rivers.	10.9	1956-58‡ 1959-67	8-10-67	4.74	530
8-4810	Three Rivers at Three Rivers, N. Mex.	NE¼SW¼ sec.3, T.12 S., R.9 E., 150 ft below Southern Pacific Railroad bridge, 400 ft above bridge on U. S. Highway 54, and 1.3 miles south of Three Rivers.	96.0	1956-67	8- 5-67	d7.5	£15,000
8-4811	Tularosa basin tributary near Three Rivers, N. Mex.	SW¼SE¼ sec.3, T.12 S., R.9 E., at culvert on U. S. Highway 54, 1.6 miles south of Three Rivers.	13.8	1952-67	8- 5-67	.73	1,350
8-4862	Black Prince Canyon tributary near Organ, N. Mex.	NE¼SE¼ sec.33, T.21 S., R.4 E., above culvert on U. S. Highway 70, 2.3 miles east of San Augustin Pass, and 4.0 miles east of Organ.	.73	1959-67	8- 6-67	.98	(†)
8-4864	Tularosa basin tributary near Orogrande, N. Mex.	SE¼SE¼ sec.1, T.22 S., R.8 E., at bridge on U. S. Highway 54, and 2.7 miles northeast of Orogrande.	2.53	1959-67	6-30-67	2.05	(†)
		Estancia Valley					
8-4880	Estancia Valley tributary at Cedar Grove, N. Mex.	NE¼NE¼ sec.21, T.11 N., R.7 E., 50 ft upstream from culvert on State Highway 344, 0.1 mile south of Cedar Grove.	1.21	1955 1961-67	8- 9-67	9.14	(†)
8-4881	Juan Tomas Canyon near Edgewood, N. Mex.	SE¼NE¼ sec.19, T.10 N., R.7 E., 140 ft upstream from culvert on U. S. Highway 66, 2.5 miles northwest of Edgewood.	a20	1962-67	1967	(c)	(†)
8-4882	Osita Draw near Clines Corners, N. Mex.	SW¼NW¼ sec.17, T.9 N., R.11 E., 100 ft upstream from culvert on U. S. Highway 66, 7.5 miles west of Clines Corners.	a10	1961-67	8-10-67	3.19	400
8-4885	Canon de Torreon at Torreon, N. Mex.	Lat 34°43'20", long 106°17'50", at culvert on State Highway 19, in Torreon.	18.2	1954-67	8- 9-67	4.23	4,310
8-4890	Canada del Leon near Mountainair, N. Mex.	SE¼ sec.10, T.2 N., R.7 E., ¼ mile above culvert on State Highway 10, and 8.4 miles southeast of Mountainair.	3.9	1953-67	8-10-67	4.75	225
		Salt basin					
8-4925	Cornucopia Canyon near Pinon, N. Mex.	NE¼ sec.6, T.21 S., R.16 E., 0.2 mile above dip in ranch road, and 7.5 miles south of Pinon.	17.2	1959-67	1967	(c)	< 200
		San Juan River basin					
9-3462	Rio Amargo at Dulce, N. Mex.	NW¼ sec.1, T.31 N., R.2 W., under bridge on State Highway 17, at Dulce.	168	1956-67	7-17-67	7.64	(†)
9-3508	Vaqueros Canyon near Gobernador, N. Mex.	SW¼ sec.17, T.29 N., R.4 W., 100 ft east of State Highway 17 and 4.2 miles east of Gobernador.	a60	1956-67	8- 9-67	3.19	166
9-3557	Gobernador Canyon near Gobernador, N. Mex.	NW¼ sec.36, T.29 N., R.6 W., 0.2 mile south of State Highway 17, and 4 miles southwest of Gobernador.	a22	1956-67	9- 7-67	7.52	1,150
9-3564	Manzanares Canyon near Turley, N. Mex.	NW¼SW¼ sec.8, T.29 N., R.8 W., 600 ft above culvert on State Highway 17, and 4.2 miles east of Turley.	a3.1	1956-67	8- 7-67	1.36	(†)
9-3567.5	Valdez Draw near Bloomfield, N. Mex.	NE¼SW¼ sec.20, T.29 N., R.10 W., above culvert on State Highway 17, 4 miles east of Bloomfield.	a1.3	1956-67	8- 9-67	g3.81	-
9-3572	Gallegos Canyon tributary near Nageezi, N. Mex.	SW¼NE¼ sec.11, T.25 N., R.10 W., at culvert on State Highway 44, 1.1 miles northwest of Huerfano Trading Post, and 12.5 miles northwest of Nageezi.	.20	1952-67	8-31-67	2.54	153

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		San Juan River basin--Continued					
9-3675.3	San Juan River tributary near Kirtland, N. Mex.	NW¼NE¼ sec.15, T.29 N., R.14 W., on upstream side of abandoned culvert, 200 ft above U. S. Highway 550, 0.4 mile above mouth, and 3.3 miles east of Kirtland.	a3.0	1951-67	9- 1-67	6.73	535
9-3678.4	Yazzie Wash near Mexican Springs, N. Mex.	Lat 35°50'40", long 108°53'00", 5.0 miles northwest of Mexican Springs, and 23 miles north of Gallup.	a2.1	1953-54 1956-67	9-15-67	6.03	1,275
9-3678.6	Chusca Wash near Mexican Springs, N. Mex.	Lat 35°48'40", long 108°50'50", 1.8 miles northwest of Mexican Springs, and 20 miles north of Gallup.	a8.7	1953-67	9-15-67	6.11	6,400
9-3678.8	Catron Wash near Mexican Springs, N. Mex.	Lat 35°46'15", long 108°49'40", 1.5 miles south of Mexican Springs and 18 miles north of Gallup.	26.9	1954 1956-67	9-15-67	6.22	4,750
9-3679	Black Springs Wash near Mexican Springs, N. Mex.	Lat 35°45'40", long 108°49'00", 2.5 miles south of Mexican Springs and 17 miles north of Gallup.	7.05	1954-67	9-15-67	.92	545
9-3679.2	Chaco River tributary near Naschitti, N. Mex.	Lat 36°05'55", long 108°41'50", on bridge on U. S. Highway 666, 2.4 miles north of Naschitti, and 39 miles north of Gallup.	12.0	1967	6-29-67	10.80	(†)
9-3679.4	Theodore Wash near Newcomb, N. Mex.	Lat 36°21'39", long 108°43'09", on bridge on U. S. Highway 666, 5.2 miles north of Newcomb.	37.4	1967	8-10-67	5.57	(†)
9-3679.5	Chaco River near Waterflow, N. Mex.	NE¼ sec.19, T.29 N., R.16 W., at Stanolind, 7 miles southwest of Waterflow, and 8 miles southeast of Shiprock.	4,350	1959-67	8- 9-67	d7.68	6,500
		Little Colorado River basin					
9-3861	Largo Creek near Quemado, N. Mex.	NE¼SE¼ sec.8, T.1 N., R.16 W., on downstream side of briege on ranch road 2½ miles southwest of Quemado.	151	1954-67	6-19-67	2.51	420
9-3861.5	Mangas Creek tributary near Pietown, N. Mex.	About at corner common secs. 13, 14, 23 and 24, T.1 N., R.13 W., above culvert on U. S. Highway 60, 1.3 miles west of Pietown Post Office.	a.08	1952-67	6-15-67	2.03	(†)
9-3862	Carrizo Creek near Salt Lake, N. Mex.	SE¼ sec.3, T.3 N., R.21 W., on downstream side of bridge, 1.3 miles east of New Mexico-Arizona State line and 15 miles west of Salt Lake.	h560	1957-67	7-23-67	5.29	(†)
9-3870.5	Galestena Canyon tributary near Black Rock, N. Mex.	SE¼ sec.30, T.9 N., R.17 W., 100 ft below bridge on State Highway 32 and 10.5 miles southeast of Black Rock.	a19	1957-67	8- 9-67	2.98	155
9-3954	Puerco River tributary near Fort Wingate, N. Mex.	Lat 35°25'55", long 108°33'30", 0.5 mile below culvert on secondary road between Fort Wingate and McGaffey and 3 miles south of Fort Wingate.	14.5	1949 1953-67	1967	(c)	(†)
9-3955	Puerco River at Gallup, N. Mex.	SW¼NW¼ sec.15, T.15 N., R.18 W., on right bank north of the Santa Fe RR freight depot, 1,500 ft above Second Street Bridge at Gallup.	558	1940-46‡ 1956-67	7-16-67	d9.67	6,500
9-3956	Puerco River tributary near Gamerco, N. Mex.	SE¼NE¼ sec.7, T.16 N., R.18 W., above abandoned culvert on former U. S. Highway 666, 0.5 mile north of junction of U. S. Highway 666 and State Highway 68, 4.5 miles north of Gamerco.	.42	1951-67	8- 8-67	2.96	j200
		Gila River basin					
9-4298	Diamond Creek near Beaverhead, N. Mex.	NE¼NW¼ sec.7, T.12 S., R.12 W., 3.5 miles west of State Highway 61, 4 miles above Gila River and 13 miles south of Beaverhead.	106	1957-67	7-29-67	2.20	(†)

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Gila River basin--Continued					
*9-4299	Snow Creek near Mogollon, N. Mex.	Lat 33°24'50", long 108°29'40", 1,000 ft below Gila Wilderness boundary and 17.5 miles east of Mogollon.	89.6	1958-67	7-29-67	10.86	k490
9-4303	Copperas Canyon near Pinos Altos, N. Mex.	NE¼SW¼ sec.17, T.14 S., R.13 W., on east side of Copperas Canyon road and 15 miles north of Pinos Altos.	a4	1963-67	1967	(c)	0
9-4309	Duck Creek at Cliff, N. Mex.	SW¼SW¼ sec.28. T.15 S., R.17 W., at Cliff below bridge on State Highway 211, and 0.6 mile above mouth.	228	1957-67	8- 4-67	11.09	6,900
9-4310	Gila River near Cliff, N. Mex.	SE¼SW¼ sec.4, T.16 S., R.17 W., on downstream end of pier of bridge on U. S. Highway 260, 1½ miles downstream from Bear Creek, 1½ miles south of Cliff, and 2½ miles southwest of Gila.	2,438	1942-51 1952-67	8-13-67	12.01	13,200
9-4382	Animas Creek near Cloverdale, N. Mex.	NE¼ sec.33, T.31 S., R.20 W., near head of small box canyon, 0.1 mile west of State Highway 338, and 11 miles north of Cloverdale.	157	1959-67	7-14-67	4.44	540
9-4426.5	Trout Creek near New Mexico-Arizona State line near Luna, N. Mex.	NE¼SW¼ sec.34, T.4 S., R.21 W., at culvert on Luna-Underwood Lake road, about 1 mile east of New Mexico-Arizona State line, and 8 miles northwest of Luna.	a9.9	1958-67	7-29-67	9.89	(†)
9-4426.6	Trout Creek near Luna, N. Mex.	NW¼ sec.29, T.5 S., R.20 W., 500 ft downstream from bridge on Luna-Red Hill road and 2.6 miles north of Luna.	a32	1954-67	7-29-67	3.27	860
9-4426.9	Tularosa River near Aragon, N. Mex.	NW¼ sec.3, T.5 S., R.16 W., about 100 ft to the left of State Highway 12 and 2 miles northeast of Aragon.	a89	1955-67	1967	g5.14	-
9-4426.95	Rito Negrito at Aragon, N. Mex.	NW¼NW¼ sec.18, T.5 S., R.16 W., above culvert on State Highway 12, at west edge of Aragon.	9.46	1958-67	8-12-67	1.27	(†)
9-4427	Apache Creek near Apache Creek, N. Mex.	NE¼SE¼ sec.25, T.4 S., R.18 W., 7 miles north of Apache Creek.	94.6	1957-67	8-12-67	2.19	335
9-4427.4	Tularosa River near Reserve, N. Mex.	SE¼ sec.33, T.6 S., R.18 W., 150 ft west of Eagle Peak Lookout road and 3.3 miles northeast of Reserve.	426	1956-67	7-30-67	5.14	590
9-4439.5	Colt Canyon at Pleasanton, N. Mex.	SE¼NE¼ sec.14, T.12 S., R.20 W., 175 ft above abandoned dip, 350 ft above culvert on U. S. Highway 260, about 1 mile south of Pleasanton.	3.1	1959-67	8-13-67	n9.42	(†)
9-4558	Steins Creek at Steins, N. Mex.	SW¼SE¼ sec.9, T.24 S., R.21 W., at culvert on State Highway 14, 0.9 mile west of Steins.	1.3	1959-67	6-19-67	2.54	(†)

† Discharge not yet determined.
‡ Operated as continuous-record gaging station.
* Also low-flow station.
a Approximately.
b Revised.
c Peak did not reach bottom of gage.
d From floodmark.
e Gage height not determined.
f Estimated.
g Affected by backwater.
h Contributing area.
i Discontinued at end of water year.
j May not have been peak for year.
k May be affected by regulation upstream.
m Operated as a continuous-record gaging station by SCS.
n New site and datum.
< Less than.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger (†). Listings are in downstream order, by basins, streams, and individual measuring points. The order of major basins in this report will be: LOWER MISSISSIPPI BASIN, WESTERN GULF OF MEXICO BASINS, COLORADO RIVER BASIN.

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Arkansas River basin						
Chicorica Creek	Canadian River	Lat 36°46'10", long 104°23'45", in S½ sec.4, T.29 N., R.24 E., at highway bridge near east boundary of Maxwell Grant, 300 ft downstream from Una de Gato Creek, 4¼ miles northeast of Hebron, and 9 miles south of Raton, N. Mex.	381	1945-52†	2-25-66	1.69
					3-15-66	2.55
					4-12-66	1.80
					5- 6-66	.52
					6-28-66	.44
					7-26-66	11.4
					8-18-66	3.80
					9-20-66	1.11
					11- 4-66	3.07
					12- 6-66	2.70
					12-21-66	2.93
					2- 8-67	2.07
					3- 3-67	1.70
					3-29-67	.66
					5- 4-67	.15
					5-24-67	.11
					6-15-67	.10
					7-28-67	1.61
					8-17-67	6.91
					9-12-67	3.34

Measurements at miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Arkansas River basin--Continued				
Tributary	Conchas River	Lat 35°36'18", long 104°53'55", in Las Vegas Grant at culvert on State Road 65, 12½ miles northwest of Trujillo, N. Mex.	3.43	None	7- 5-67	†4,530
Conchas River	Canadian River	Lat 35°36'25", long 104°52'09", in Las Vegas Grant at culverts on State Road 65, 11 miles northwest of Trujillo, N. Mex.	18.6	None	7- 5-67	†9,810
Plaza Larga Creek	Revuelto Creek	SE¼SW¼ sec.19, T.11 N., R.33 E., below Barranca Creek, ½ mile above U.S. Highway 66, 14 miles east of Tucumcari, N. Mex.	-	1964-65	10-11-65	11.4
					11- 3-65	* .83
					1- 4-66	*1.65
					2-11-66	*2.12
					3-11-66	* .64
					4- 1-66	* .14
					5- 6-66	18.0
					6-10-66	8.24
Left-bank drain	Plaza Larga Creek	N½SW¼ sec.19, T.11 N., R.33 E., below Barranca Creek, ¼ mile above U.S. Highway 66, 14 miles east of Tucumcari, N. Mex.	-	None	5- 6-66	*0.07
Revuelto Creek	Canadian River	SE¼NE¼ sec.19, T.11 N., R.33 E., below mouth of Plaza Larga Creek, ½ mile below U.S. Highway 66, 14 miles east of Tucumcari, N. Mex.	-	1958-60, 1964-65	10-11-65	11.3
					11- 3-65	* .69
					1- 4-66	*1.51
					2-11-66	*1.87
					3-11-66	* .44
					4- 1-66	* .04
					5- 6-66	18.7
					5-10-66	7.78
Rana Canyon	Canadian River	SW¼NW¼ sec.15, T.13 N., R.36 E., at mouth 13 miles north of Glenrio, N. Mex.	-	1964-65	10- 4-65	0
					10-11-65	0
					11- 3-65	0
					1- 4-66	0
					2-11-66	* .25
					3-11-66	* .02
					4- 1-66	* .02
					5- 6-66	0
					6-10-66	0
Martin Draw	Canadian River	NE¼NW¼ sec.15, T.13 N., R.36 E., at mouth 13 miles north of Glenrio, N. Mex.	-	1964-65	10- 4-65	0
					10-11-65	0
					11- 3-65	0
					1- 4-66	* .04
					2-11-66	* .04
					3-11-66	* .03
					4- 1-66	* .03
					5- 6-66	* .03
					6-10-66	0
Canadian River	Arkansas River	Lat 35°21', long 103°06', in NW¼ sec.15, T.13 N., R.36 E., 300 ft below Martin Draw, 0.5 mile below Rana Canyon, about 6 miles upstream from New Mexico-Texas State line and 13 miles north of Glenrio, N. Mex.	-	1964-65	10- 4-65	336
					10-11-65	326
					10-25-65	300
					11- 3-65	307
					11-10-65	17.4
					11-17-65	9.54
					11-26-65	7.88
					12-11-65	10.2
					12-20-65	24.7
					1- 4-66	21.7
					1-11-66	8.77
					1-18-66	6.68
					1-26-66	14.6
					2- 4-66	17.1
					2-11-66	11.4
					2-18-66	8.88
					2-25-66	8.23
					3- 4-66	17.4
					3-11-66	7.28

Measurements at miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Arkansas River basin--Continued				
Canadian River	Arkansas River	Continued			3-18-66	5.09
					3-25-66	4.92
					4- 1-66	4.34
					4- 8-66	4.77
					4-15-66	11.8
					4-22-66	9.29
					5- 6-66	15.6
					5-13-66	14.9
					5-20-66	8.96
					5-27-66	9.13
					6- 3-66	151
					6-10-66	5.76
					6-17-66	8.30
					6-28-66	15.0
		Rio Grande basin				
Rio Chama	Rio Grande	Lat 36°39'44", long 106°41'58", at river mile 86.1, 0.3 mile upstream from mouth of Willow Creek, and 8.5 miles southwest of Tierra Amarilla, N. Mex.	-	1965-66	10-11-66	*25.3
					9-28-67	82.1
Willow Creek	Rio Chama	Lat 36°39'45", long 106°42'15", at Rio Chama river mile 85.8, 250 ft above mouth, 8.8 miles southwest of Tierra Amarilla, N. Mex.	194	1965-66	10-11-66	*2.79
					9-28-67	*2.78
Rio Chama	Rio Grande	Lat 36°39'40", long 106°43'08", at river mile 84.8, 0.0 mile downstream from Willow Creek and 9.6 miles southwest of Tierra Amarilla, N. Mex.	-	1965-66	10-11-66	*29.5
					9-28-67	83.9
Alamosa Creek	Rio Grande	SE¼NW¼ sec.31, T.11 S., R.4 W., at bridge on U.S. Highway 85 and 13 miles northwest of Truth or Consequences, N. Mex.	643	None	9- 4-67	†27,500
Silver Springs Canyon	Elk Canyon	SE¼SE¼ sec.14, T.15 S., R.13 E., at Parshall flume 1 mile downstream from Mescalero Apache Indian Reservation boundary, 7.2 miles northeast of Cloudcroft, N. Mex.	-	1961-66	3-20-67	*0.58
					6-27-67	.49
					9-22-67	* .34
Black River	Pecos River	NE¼SE¼ sec.3, T.26 S., R.24 E., below Mayes Ranch, 10 miles southwest of White City, N. Mex.	-	1953-66	12- 8-66	e2.04
					3-11-67	e .91
					6-13-67	e .85
					9-14-67	e .82
Rattlesnake Springs	Black River	SE¼SW¼ sec.23, T.25 S., R.24 E., 5 miles south of Carlsbad Caverns, 7.2 miles southwest of White City, and 25 miles southwest of Carlsbad, N. Mex.	-	1952-66	12- 8-66	e3.04
					3-11-67	e1.48
					6-13-67	f1.26
					9-14-67	e2.24
Blue Springs	Black River	SW¼ sec.27, T.24 S., R.26 E., above all diversions 5½ miles east of White City, N. Mex.	-	1907, 1919-20, 1923, 1935, 1952-66	11-30-66	e16.9
					2-28-67	e13.8
					6-13-67	e11.4
					9-14-67	e10.7
Pecos River	Rio Grande	SE¼SW¼NE¼ sec.17, T.24 S., R.29 E., at Fishing Rock Crossing, 4 miles east of Malaga N. Mex.	-	1953-54, 1962-66	10- 7-66	42.9
					11- 4-66	35.8
					12- 2-66	63.2
					12-30-66	55.5
					2- 3-67	20.6
					3- 3-67	24.9
					3-31-67	20.1
					4-28-67	17.2
					6- 9-67	20.3
					7- 7-67	24.0
					8- 4-67	21.6
					9-12-67	20.6

Measurements at miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Rio Grande basin--Continued				
Pecos River	Rio Grande	NE¼NE¼NE¼ sec.20, T.24 S., R.29 E., at old ford near well USGS 11, 4½ miles southeast of Malaga, N. Mex.	-	1962-66	10- 7-66	42.8
					11- 4-66	36.3
					12- 2-66	61.3
					12-30-66	55.7
					2- 3-67	h16.7
					3- 3-67	24.9
Do.....	....do.....	NW¼NE¼SE¼ sec.20, T.24 S., R.29 E., 0.5 mile downstream from well USGS 11 and 4½ miles southeast of Malaga, N. Mex.	-	-	3-31-67	h14.4
					4-28-67	h 9.9
					6- 9-67	12.8
					8- 4-67	h18.2
					9-12-67	h14.2
Do.....	....do.....	SE¼NW¼ sec.33, T.24 S., R.29 E., at first ford 2.6 miles below Pierce Canyon Crossing.	-	1959, 1961-64, 1966	11- 4-66	42.8
					12- 2-66	64.1
					12-30-66	59.9
					2- 3-67	18.3
					3- 3-67	25.6
					3-31-67	13.2
					4-28-67	15.6
					6- 9-67	14.9
					7- 7-67	25.8
					8- 4-67	18.5
					9-12-67	18.1
		San Juan River basin				
San Juan River	Colorado River	SE¼ sec.18, T.29 N., R.9 W., ar river mile 125, at State Highway 17, 1 mile east of Blanco, N. Mex.	3,560	1927-55‡ 1962-63	7- 6-67	87.4
					7-13-67	139
					7-21-67	121
					7-28-67	114
					9-28-67	181
					11-14-67	273
					11-20-67	294
Do.....	....do.....	SE¼ sec.21, T.29 N., R.13 W., at river mile 99, above Animas River, 1 mile south of Farmington, N. Mex.	a5,880	1962-65	7- 6-67	164
					7-13-67	281
					7-21-67	231
					7-28-67	233
					8-28-67	331
					11-14-67	353
					11-20-67	361
Hogback Indian Canal	San Juan River	E½ sec.8, T.29 N., R.16 W., at river mile 75, below Hogback diversion, 7½ miles east of Shiprock, N. Mex.	-	1963-65	9-29-67	170
San Juan River	Colorado River	E½ sec.8, T.29 N., R.16 W., at river mile 75, below Hogback diversion, 7.2 miles east of Shiprock, N. Mex.	-	1963-65	9-29-67	283
		Gila River basin				
Sapillo Creek	Gila River	SW¼ sec.33, T.14 S., R.13 W., in Gila National Forest, above Heart Bar Ranch, 0.7 mile downstream from Meadow Creek, 2 miles downstream from Lake Roberts dam and 18 miles north of Silver City, N. Mex.	-	1962, 1964-66	10-10-66	5.68
					11-17-66	*3.77
					11-29-66	*3.25
					12- 1-66	*1.76
					3- 6-67	*1.56
					4- 4-67	* .57
					4-20-67	* .28
					5- 4-67	* .31
					5-18-67	0
					6-13-67	* .10
					7-18-67	* .08
					8- 9-67	* 1.59
					10-25-67	*3.12
					11-13-67	*3.08
Lobo Creek	....do.....	SE¼ sec.32, T.15 S., R.17 W., 0.4 mile upstream from bridge on U.S. Highway 260, 0.6 mile upstream from mouth and 0.9 mile southwest of Cliff, N. Mex.	a12.7	-	8- 4-66	4,890

Measurements at miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 1967

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Gila River basin--Continued						
Mangas Creek	Gila River	NW¼SE¼SW¼ sec.5, T.17 S., R.16 W., about 2,300 ft downstream from old CCC Camp, 9½ miles southeast of Gila, N. Mex.	-	1953-56 1965-66	10-24-66 11-18-66 12-16-66	*1.51 *1.56 *1.77
New Model Canal	Gila River	NE¼SW¼ sec.6, T.19 S., R.21 W., 500 ft above New Mexico-Arizona State line and 2 3/4 miles west of Virden, N. Mex.	-	1939-53‡ 1953-66	10- 1-66 10-18-66 10-24-66 11- 4-66 11-28-66 12- 7-66 12-14-66 12-21-66 1-16-67 3- 7-67 3-25-67 4-17-67 5- 4-67 6-12-67 7- 4-67 7-19-67 8-21-67	3.00 0 2.81 0 0 2.97 0 0 0 0 0 0 0 0 0 0 0

* Base flow.
† Peak flow.
‡ Former gaging station.
a Approximately.
e Spring flow.
f Discharge affected by pumping for Carlsbad Caverns water supply.
h Discharge affected by diversion between Fishing Rock Crossing and this site.

See paragraph under SUPPLEMENTAL DATA, page 7. A seepage or low-flow investigation along a watercourse involves discharge measurements or observations of no flow at selected sites in a given reach of the channel, plus measurements of inflow and diversions, field commentary relative to observations, water samples and temperatures, and any other relevant data. Measuring sites are described to the extent that they may be used in subsequent investigations. Sometimes temporary recording installations are used to supplement records at regular gaging stations in the study of flow trends. 24-hour time is used (0500 equals 5 a.m.; 1730 equals 5:30 p.m.).

Field work proceeds from the most upstream measuring site. Hydrographers may alternate measurements, or the main reach may be subidvided and hydrographers assigned to each subreach, with overlap measurements to be made at joining points (These would be listed together, the discharge above the line representing last measurement of the hydrographer working the upper reach).

Processed data are tabulated and published in the current WSP or, beginning with 1961, Water Resources Data for New Mexico, Part I. The results of chemical analyses will be published in Part 2 of this report. Indicated gains or losses may sometimes appear incompatible because of diurnal or other flow variations, or because of small inaccuracies in open-channel measurements. Trends in a given reach may vary with the seasons, or because of regulation. Successive investigations can serve to delineate a sustained trend, or a progressive change in trend.

RIO GRANDE BASIN

Rio Chama - near La Puente to mouth
Rio Grande - San Juan Pueblo to Otowi Bridge

Reach.--From the regular gage "Rio Chama near La Puente" (Rio Chama river mile 91.4) to the mouth of Rio Chama (mile 0.0) and from the regular gage "Rio Grande above San Juan Pueblo" (Rio Grande river mile 17.2) to the regular gage "Rio Grande at Otowi Bridge near San Ildefonso" (mile 0.0). Rio Chama enters the Rio Grande at mile 15.2. There was no storage in El Vado Reservoir on Rio Chama at mile 77.7 because of reconstruction of the outlet works. Storage of 23,000 acre-ft impounded in Abiquiu Reservoir on Rio Chama at mile 31.8 would have normally been stored in El Vado.

Most of the channel of Rio Chama from La Puente to river mile 26 is through a deep canyon with little or no flood plain. Irrigation through this reach is confined almost entirely to areas along tributary streams. Downstream from river mile 26 the valley widens and there is extensive irrigation by diversions from Rio Chama. The reach of the Rio Grande included in this investigation contains several thousand acres of irrigated land adjacent to the river but irrigated primarily from tributary streams. Most of the irrigated lands through the reach of the investigation consist of small farms and orchards. U.S.G.S. Plan and Profile of Rio Chama (1934-35) and of Rio Grande (1933-35) were used to determine river mile; U.S.G.S. topographic maps were used to determine location; and, N. Mex. State Engineer Hydrographic Survey maps were used to determine the names and locations of irrigation ditches. No water samples were obtained.

Previous investigations.--None.

Date.--Oct. 11, 13, 1966.

Summary.--General weather conditions were favorable. Streamflow conditions at the various regular gaging stations were as follows:

Rio Chama near La Puente (8-2841) - Oct. 11 - discharge decreased from 28 cfs at 0400 hours to 26 cfs at 1500 hours.

Rio Chama below El Vado Dam (8-2855) - Oct. 11 - discharge increased from 30 cfs at 0500 hours to 31 cfs at 1200 hours.

Rio Chama above Abiquiu Reservoir (8-2865) - Oct. 11 - discharge increased from 29 cfs at 0600 hours to 32 cfs at 1500 hours.

Rio Chama below Abiquiu Dam (8-2870) - discharge constant at 27 cfs from 1200 hours Oct. 12 to 1300 hours Oct. 13.

Rio Chama near Abiquiu (8-2875) - Oct. 13 - discharge decreased from 23 cfs at 1000 hours to 20 cfs at 1500 hours and then remained constant to 1900 hours.

Chamita ditch near Chamita (8-2895) - Oct. 13 - discharge practically constant at 3.8 cfs from 0500 hours to 1300 hours and then decreased to 3.2 cfs at 1800 hours.

Hernandez ditch at Hernandez (8-2898) - Oct. 13 - discharge practically constant at 13 cfs from 0700 hours to 1900 hours.

Rio Chama near Chamita (8-2900) - Oct. 13 - discharge increased from 3.9 cfs at 1000 hours to 4.5 cfs at 1500 hours and then remained constant to 1800 hours.

San Juan lateral above San Juan Pueblo (8-2801) - Oct. 13 - discharge increased from 1.2 cfs at 0500 hours to 1.3 cfs at 0700 hours and then remained constant to 1230 hours.

San Juan Pueblo ditch above San Juan Pueblo (8-2802) - Oct. 13 - discharge increased from 1.2 cfs at 0100 hours to 1.3 cfs at 0800 hours and to 6.8 cfs at 0830; discharge then decreased to 1.6 cfs at 0930 hours and to 1.0 cfs at 1400 hours.

Guique ditch near San Juan Pueblo (8-2807) - Oct. 13 - discharge increased from 4.9 cfs at 0600 hours to 5.5 cfs at 1000 hours and then decreased to 2.8 cfs at 1200 hours; discharge then increased to 4.1 cfs at 1500 hours.

Rio Grande above San Juan Pueblo (8-2811) - Oct. 13 - discharge increased from 241 cfs at 0100 hours to 252 cfs at 1000 hours and then remained constant to 2400 hours.

Rio Grande at Otowi Bridge, near San Ildefonso (8-3130) - Oct. 13 - discharge increased from 259 cfs at 1100 hours to 275 cfs at 1600 hours and then remained practically constant to 2400 hours.

All ditches which bypassed sites of river measurements on Rio Chama were measured and included in the tabulation so that total flow across the valley may be determined at each site. This was also done on the Rio Grande above San Juan Pueblo. Total surface flow across the valley was measured for the Santa Cruz River near Sombrillo and the Pojoaque River at San Ildefonso (main river channel dry at this site).

All known tributaries and diversions of Rio Chama were measured except those tributaries from the right (west) bank between Abiquiu Dam and the village of Abiquiu. Those which were dry were not listed in the tabulation. No attempt was made to measure return flow from any diversion. Indicated gains and losses listed in the tabulation may be affected by these returns.

Discharge measurements were rated as good (± 5%) or good to fair (± 5 to 8%). Overall results of this investigation are rated as good to excellent.

Rio Chama - near La Puente to mouth
Rio Grande - San Juan Pueblo to Otowi Bridge

River mile	Stream	Location	Time	Water temp. °F	Discharge, in cubic feet per second		
					Main stream	Tributary or Diversion	Indicated gain or loss
		October 11, 1966					
91.4	Rio Chama	Lat 36°39'45", long 106°38'00", near La Puente (gaging station 8-2841)	0900	47	27.0	-	-
86.1	do	Lat 36°39'45", long 106°42'00", above mouth of Willow Creek (miscellaneous measurement site)	1110	46	25.3	-	-1.7
85.8 (mouth)	Willow Creek*	Lat 36°39'45", long 106°42'15", 250 ft above mouth	1210	47	-	+2.79	-
85.8	Rio Chama	Lat 36°39'45", long 106°42'45", just below mouth of Willow Creek	1300	-	28.7	-	+.6
84.8	do	Lat 36°39'40", long 106°43'10", below mouth of Willow Creek (miscellaneous measurement site)	1425	48	29.5	-	+.8
79.0 (mouth)	Boulder Creek*	Lat 36°37'05", long 106°45'20", near mouth in El Vado Reservoir (reservoir dry)	1520	-	-	+.10	-
76.2	Rio Chama	Lat 36°34'50", long 106°43'30", 1.5 miles below El Vado Dam (gaging station 8-2855)	0835	47	30.5	-	+.9
73.4 (mouth)	Rio Nutrias†	Lat 36°33'10", long 106°42'55", 250 ft upstream from mouth	1115	50	-	+.10	-
73.3	Rio Chama	Lat 36°33'05", long 106°42'55", below mouth of Rio Nutrias	1050	53	31.0	-	+.4
62.7 (mouth)	Rio Cebolla†	Lat 36°27'40", long 106°42'10", 300 ft upstream from mouth	1420	57	-	+.10	-
62.4	Rio Chama	Lat 36°27'30", long 106°42'10", below mouth of Rio Cebolla	1415	58	31.2	-	+.1
55.0	do	Lat 36°22'10", long 106°40'45", below mouth of Rio Gallina	0900	52	31.4	-	+.2
47.4	do	Lat 36°19'05", long 106°35'50", above Abiquiu Reservoir (gaging station 8-2865)	1050	54	30.3	-	-1.1
41.2	do	Lat 36°16'15", long 106°32'15", at head of Abiquiu Reservoir (present level)	1435	62	31.9	-	+1.6
36.6 (mouth)	Arroyo Seco†	Lat 36°17'10", long 106°28'05", 600 ft above old highway bridge	1215	-	-	+.09	-
32.8 (mouth)	Canones Creek*	Lat 36°13'55", long 106°26'35", 1.1 miles above mouth	1630	62	-	+4.20	-
		October 13, 1966					
31.3	Rio Chama	Lat 36°14'10", long 106°25'00", below Abiquiu Dam (gaging station 8-2870)	0830	60	27.2	-	-
26.1 (head)	Jose Pablo Gonzales ditch†	Lat 36°12'45", long 106°20'50", at head	0930	53	-	-15.9	-
23.9	Rio Chama	Lat 36°12'45", long 106°19'25", 200 ft below mouth of Abiquiu Creek	1055	59	19.0	-	+7.7
-	Jose Pablo Gonzales ditch†	Lat 36°12'45", long 106°19'25", adjacent to river mile 23.9	1130	59	-	(a 7.56)	(-8.34)
20.3 (head)	Acequia de la Puente*	Lat 36°13'00", long 106°16'35", 0.3 mile below head	1030	53	-	-5.83	-
20.1 (head)	Valentine Martinez*	Lat 36°13'05", long 106°16'35", 300 ft below head	1150	59	-	-.36	-
20.1 (head)	Acequia Marino†	Lat 36°13'05", long 106°16'35", 200 ft below head	1220	61	-	-2.34	-

Rio Chama - near La Puente to mouth
Rio Grande - San Juan Pueblo to Otowi Bridge

River mile	Stream	Location	Time	Water temp. °F	Discharge, in cubic feet per second		
					Main stream	Tributary or Diversion	Indicated gain or loss
		October 13, 1966 (Continued)					
18.7 (head)	Ferran ditch†	Lat 36°13'00", long 106°15'10", 200 ft below head	0840	50	-	-0.78	-
18.2	Rio Chama	Lat 36°13'00", long 106°14'50", at State Highway 96 near Abiquiu (gaging station 8-2875)	1310	58	20.1	-	+10.4
-	Acequia de la Puente*	Lat 36°12'45", long 106°15'15", at State Highway 96 adjacent to river mile 18.2	1240	59	-	(a 5.89)	(+.06)
-	Ferran ditch†	Lat 36°13'00", long 106°14'50", at State Highway 96 adjacent to river mile 18.2	1410	58	-	(a .33)	(-.45)
16.3 (head)	Martinez ditch†	Lat 36°11'50", long 106°13'40", 150 ft below head	0940	58	-	-3.02	-
14.8 (head)	Acequia del Rio de Chama†	Lat 36°11'15", long 106°12'40", 750 ft below head	1040	59	-	-7.51	-
14.7 (head)	Martinez & Durones ditch*	Lat 36°11'15", long 106°12'30", 100 ft below head	1130	59	-	-16.7	-
8.0	Rio Chama	Lat 36°07'40", long 106°08'55", 2,000 ft above head of Chili ditch	1340	65	24.9	-	+32.0
7.6	Chili ditch*	Lat 36°07'15", long 106°09'05", at head	1430	66	-	-4.30	-
6.3 (mouth)	Rio Ojo Caliente†	Lat 36°07'25", long 106°07'25", 1.5 miles above mouth	1310	68	-	+.29	-
4.1 (head)	Chamita ditch†	Lat 36°05'05", long 106°07'30", 500 ft below head	1400	69	-	-4.32	-
4.1 (head)	Hernandez ditch*	Lat 36°05'05", long 106°07'35", 150 ft below head	1440	69	-	-14.4	-
-	Chamita ditch†	Lat 36°04'45", long 106°06'40", 0.4 mile upstream from U.S. Highway 285 (gaging station 8-2895)	1250	55	-	(a 3.84)	(-.48)
-	Hernandez ditch*	Lat 36°04'20", long 106°07'10", at U. S. Highway 285 adjacent to river mile 2.8 (gaging station 8-2898)	1540	64	-	(a 12.7)	(-1.7)
2.8	Rio Chama	Lat 36°04'25", long 106°06'40", at U. S. Highway 285, near Chamita (gaging station 8-2900)	1400	67	4.41	-	+2.2
2.0	Salazar ditch*	Lat 36°03'50", long 106°06'35", 50 ft below head	1545	68	-	-4.00	-
-	San Juan lateral†	Lat 36°04'05", long 106°04'10", 0.9 mile north of San Juan Pueblo (gaging station 8-2801)	0820	52	-	(a 1.32)	-
-	San Juan Pueblo ditch†	Lat 36°03'55", long 106°04'10", 0.7 mile north of San Juan Pueblo (gaging station 8-2802)	0945	54	-	(a 1.55)	-
-	Guique ditch*	Lat 36°04'15", long 106°04'40", 1.1 miles northwest of San Juan Pueblo (gaging station 8-2807)	1155	59	-	(a 2.81)	-
17.2	Rio Grande	Lat 36°04'00", long 106°04'30", ¾ mile upstream from State Highway 74 and San Juan Pueblo (gaging station 8-2811)	1050	60	252	-	-
-	Lomita-Herrera ditch*	Lat 35°59'10", long 106°02'20", at road crossing near Sombrillo (adjacent to Santa Cruz River)	0940	55	-	(a .64)	-

Rio Chama - near La Puente to mouth
Rio Grande - San Juan Pueblo to Otowi Bridge

River mile	Stream	Location	Time	Water temp. °F	Discharge, in cubic feet per second		
					Main stream	Tributary or Diversion	Indicated gain or loss
		Oct. 13, 1966 (Continued)					
10.8 (mouth)	Santa Cruz River†	Lat 35°59'10", long 106°02'20", at road crossing near Sombrillo, 2 miles upstream from mouth	0915	60	-	(b .06)	-
-	La Mesilla - Ortega-Garcia ditch†	Lat 35°59'10", long 106°02'20", at road crossing near Sombrillo (adjacent to Santa Cruz River)	0835	50	-	(a 8.74)	-
9.0 (mouth)	Santa Clara Creek*	Lat 35°58'35", long 106°10'15", 6 miles upstream from mouth (crest-stage gage 8-2920)	0910	50	-	(b 3.72)	-
4.1	Rio Grande	Lat 35°55'15, long 106°06'55", opposite Black Mesa	1120	58	267	-	-
-	Acequia del Montoya†	Lat 35°53'50", long 106°06'55", at road crossing at San Ildefonso (adjacent to Pojoaque River)	1110	59	-	(a .12)	-
-	Acequia del Medio†	Lat 35°53'35", long 106°07'10", at road crossing at San Ildefonso (adjacent to Pojoaque River)	1200	60	-	(a .10)	-
0.0	Rio Grande	Lat 35°52'30", long 106°08'30", at Otowi Bridge (gaging station 8-3130)	1350	56	270	-	+3

Note.--Measurements not involved in the computation of gains or losses of the Rio Chama or Rio Grande are enclosed in parentheses.
* Right bank tributary or diversion.
† Left bank tributary or diversion.
a Add to river discharge at this site to determine total flow of valley cross section.
b No surface flow at mouth.

Pecos River Streamflow Evaluation

During the period Feb. 7 to Mar. 14, 1967, five related series of discharge measurements were made on the Pecos River from the gaging station, "below Fort Sumner" to the gaging station, "near Acme." These measurements were made in conjunction with an evaluation study of the Pecos River from below Alamogrodo Dam to near Acme, N. Mex.

River mile locations are from the U. S. G. S. Pecos River Plan and Profile maps.

Location	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Pecos River below Fort Sumner, N. Mex. (regular gage) SW¼SW¼ sec.36, T.2N., R.26 E., river mile 176.6	Feb.7	19.8	Feb.20	15.6	Feb.28	15.7	Mar.7	21.0	Mar.13	35.0
SE¼SW¼SW¼ sec.11, T.1 N., R.26 E., river mile 173.7	Feb.7	20.4	Feb.20	16.4	Feb.28	16.4	Mar.7	19.2	Mar.13	36.5
Pecos River below Yeso Arroyo near Fort Sumner, N. Mex. (regular gage) SW¼SE¼SE¼ sec.8, T.1 S., R.26 E., river mile 163.3	Feb.7	19.3	Feb.21	16.1	Feb.28	16.4	Mar.7	19.2	Mar.13	24.5
NE¼NE¼SE¼ sec.4, T.3 S., R.25 E., river mile 147.7	Feb.8	12.3	Feb.21	14.4	Feb.28	17.4	Mar.7	15.9	Mar.13	23.5
Pecos River above Huggins Creek (regular gage) NW¼SW¼NW¼ sec.36, T.4 S., R.25 E., river mile 128.8	Feb.9	12.9	Feb.20	12.0	Feb.27	13.7	Mar.6	12.9	Mar.14	17.8
NW¼SE¼NE¼ sec.9, T.6 S., R.26 E., river mile 118.0	Feb.8	14.1	Feb.22	10.6	Mar.1	11.7	Mar.8	6.47	Mar.14	21.9
Pecos River near Acme, N. Mex. (regular gage) NW¼ sec.14, T.9 S., R.25 E., river mile 94.0	Feb.9	6.47	Feb.22	6.33	Mar.1	6.08	Mar.8	4.02	Mar.14	6.35