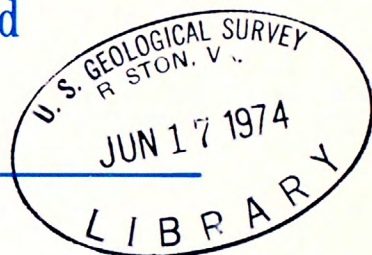


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FLOOD CHARACTERISTICS OF OKLAHOMA STREAMS

Techniques For Calculating Magnitude And
Frequency Of Floods In Oklahoma, With
Compilations Of Flood Data Through 1971

U. S. GEOLOGICAL SURVEY
WATER RESOURCES INVESTIGATION 52-73



Prepared in cooperation with
STATE OF OKLAHOMA
DEPARTMENT OF HIGHWAYS
and
U. S. DEPARTMENT OF TRANSPORTATION
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by V. B. Sauer

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January 1974

UNITED STATES DEPARTMENT OF THE INTERIOR

Rogers C. B. Morton, Secretary

GEOLOGICAL SURVEY

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Cover photograph. — Chikaskia River at county road bridge about 4 miles southeast of Blackwell, flood of October 1973. Photograph furnished by Corps of Engineers, Tulsa District.

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FLOOD CHARACTERISTICS OF OKLAHOMA STREAMS

by V. B. SAUER

ABSTRACT

The 2-, 5-, 10-, 25-, 50-, and 100-year recurrence interval floods are related to basin and climatic parameters for natural streams in Oklahoma by multiple regression techniques through the mathematical model,

$$Q_x = aA^b S^c P^d,$$

where Q_x is peak discharge for recurrence interval x , A is contributing drainage area, S is main channel slope, P is mean annual precipitation, and a , b , c , and d are regression constants and coefficients. One equation for each recurrence interval applies statewide for all natural streams of less than 2,500 mi² (6,500 km²), except where manmade works, such as dams, flood-detention structures, levees, channelization, and urban development, appreciably affect flood runoff. The equations can be used to estimate flood frequency of a stream at an ungaged site if drainage area size, main channel slope, and mean annual precipitation are known. At or near gaged sites, a weighted average of the regression results and the gaging station data is recommended.

Individual relations of flood magnitude to contributing drainage area are given for all or parts of the main stems of the Arkansas, Salt Fork Arkansas, Cimarron, North Canadian, Canadian, Washita, North Fork Red, and Red Rivers. Parts of some of these streams, and all of the Neosho and Verdigris Rivers are not included because the effects of major regulation from large reservoirs cannot be evaluated within the scope of the report.

Graphical relations of maximum floods of record for eastern and western Oklahoma provide a guide to maximum probable floods.

A random sampling of the seasonal occurrence of floods indicated about two-thirds of all annual floods in Oklahoma occur during April through July. Less than one-half of one percent of annual floods occur in December.

A compilation of flood records at all gaging sites in Oklahoma and some selected sites in adjacent States is given in an appendix. Basin and climatic parameters and log-Pearson Type III frequency data and statistics are given for most station records. A second appendix gives a reprint of the U.S. Water Resources Council Bulletin 15 which describes procedures for fitting a log-Pearson Type III distribution to gaging station data.

INTRODUCTION

The preliminary planning and final design of highway bridges, culverts, embankments, dams, levees, and other structures near streams, requires a knowledge of the magnitude and frequency of flooding so that an economical and safe design can be attained. Flood-plain management and flood insurance rates are based on the best available information on flood magnitude and frequency. A knowledge of the seasonal occurrence of floods is sometimes necessary for scheduling construction and other related activities on or near streams. The purpose of this report is to provide methods of calculating the magnitude and frequency of floods for streams in Oklahoma and to define the seasonal occurrence of these floods. To accomplish this purpose, regression equations are developed for streams of less than 2,500 mi² (6,500 km²). For larger streams, individual analysis is provided for each stream. The report compares maximum floods of record to drainage basin size and shows the percentage of annual floods likely to occur during each month. Gaging station data are given in appendix A. The methods developed for calculating the magnitude and frequency of floods do not apply to urban areas nor to streams significantly affected by regulation of man-made controls, except for some of the large streams where the effects of regulation can be evaluated within the scope of this report.

Two previous reports define flood frequency for streams in Oklahoma. These reports, Patterson (1964), and Westfall and Patterson (1964), are basically identical and are based on the index-flood method described by Dalrymple (1960). Those reports are superseded by this report which is based on 13 years of additional data and many additional gaging station records, and which uses the log-Pearson Type III method for fitting a frequency curve to station data. Regionalization is accomplished by multiple regression analysis.

This report is the result of a cooperative agreement between the Oklahoma Department of Highways and the U.S. Geological Survey. It is based on data collected and published by the Geological Survey for many years as part of cooperative programs with various State and Federal agencies, principally the Corps of Engineers, Oklahoma Water Resources Board, and Oklahoma Department of Highways. Much of the small streams data used in this report was collected through a special project with the Oklahoma Department of Highways and the Federal Highway Administration. The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Highway Administration. This report does not constitute a standard, specification or regulation.

Acknowledgment and appreciation are expressed to Wilbert O. Thomas, Jr., for help in making the statistical analysis of the accuracy of the regression equations.

USE OF METRIC UNITS OF MEASUREMENT

The analyses and compilations in this report were made with English units of measurements. The equivalent metric units are given in the text and illustrations where appropriate. English units only are shown in tables where, because of space limitations, the dual system of English and metric units would not be practicable. To convert English units to metric units, the following conversion factors should be used:

<i>English units</i>		<i>Conversion factor</i>		<i>Metric units</i>
Length in inches (in)	x	2.540	=	centimeters (cm)
in feet (ft)	x	0.305	=	meters (m)
in miles (mi)	x	1.609	=	kilometers (km)
Area in square miles (mi ²)	x	2.590	=	square kilometers (km ²)
Volume in acre feet	x	1,233.5	=	cubic meters (m ³)
Slope in feet per mile (ft/mi)	x	0.189	=	meters per kilometer (m/km)
Runoff rate in cubic feet second (ft ³ /s)	x	0.0283	=	cubic meters per second (m ³ /s)
Unit runoff in cubic feet per second per square mile (ft ³ /s/mi ²)	x	0.0109	=	cubic meters per second per square kilometer (m ³ /s/km ²)

FLOOD RECORDS

Systematic collection of flood records (peak stage and discharge) began in Oklahoma between 1930 and 1940. During this period, many continuous-record gaging stations were installed throughout the State to define the flow characteristics of streams in Oklahoma. Some streams have records prior to 1930, but these records are generally fragmentary and in most cases only stream stages are available. Generally, the records prior to 1930 are for the large basins only. Since the 1930-1940 era, many additional streamflow stations have been installed.

The most notable addition to the collection of flood records occurred in the early 1960's when the small-streams flood-frequency program was initiated for the purpose of defining magnitude and frequency of floods on streams of less than 100 mi² (260 km²). During that time about 100 small-streams sites were instrumented for the collection of flood data. A number of these sites have since been discontinued because sufficient data have been collected or because the site was unusable, but more than 60 sites are still in operation at this time (1973).

The flood-frequency analysis for streams of less than 2,500 mi² (6,500 km²), which is presented in the following sections of this report, is based on flood records through 1971 at 119 sites. For this analysis, the only records used were those with at least 8 years of flood peak data and free of significant regulation and manmade effects. A summary of the distribution of data and average length of record per station is as follows:

<i>Drainage area, square miles (to convert to square kilometers multiply by 2.590)</i>	<i>No. of stations</i>	<i>Average length of record, years</i>
Less than 1	5	8
1 to 5	17	9
5 to 10	15	9
10 to 50	20	12
50 to 100	4	14
100 to 500	24	21
500 to 1,000	20	26
1,000 to 2,510	<u>14</u>	<u>29</u>
	119	17

The above summary indicates a fairly evenly distributed network of stations in regard to size of drainage basins, except for the range of 50 to 100 mi² (130 to 260 km²). The average length of record, however, is closely related to size of basin. This relation is the result of the general priority given to establishment of gaging stations through the years. In the early history of establishing streamflow stations, emphasis was placed on large streams; consequently, the longer records are for those streams.

The preceding summary emphasizes the primary need for longer records on streams of less than 100 mi² (260 km²). An answer to this need is presently being studied through the Oklahoma small-streams flood-frequency project, which is described in a preliminary report by Thomas and Corley (oral communication, 1973). It is anticipated that through this study, long records of annual peaks can be synthesized from climatological data and digital modeling of basins.

Appendix A of this report contains a listing of all flood records with at least five annual peaks for gaging stations in Oklahoma, and some selected nearby stations in adjacent states. A total of 297 stations is included. Figure 1, at the end of this report, is a map of Oklahoma showing the location of all stations listed in Appendix A. Basin characteristics and log-Pearson Type III data are also listed for most stations in Appendix A.

Gaging station numbers used throughout this report are U.S. Geological Survey numbers of the form 07146500. The first two digits (07) represent part 7, the lower Mississippi River basin. All streams in Oklahoma are within part 7. The final 6 digits is the station number and increase in a downstream direction. On figure 1, the numbers have been abbreviated to conserve space. Abbreviations consist of omitting the 07 prefix and showing the final two digits as a decimal, unless they are zeros, in which case they are omitted.

FLOOD-FREQUENCY RELATIONS

The relation of flood-peak magnitude to probability of occurrence, or recurrence interval, is generally referred to as a flood-frequency relation. Probability of occurrence is the percent chance of a given flood magnitude being exceeded in any one year. Recurrence interval is the reciprocal of probability of occurrence times 100, and is the average number of years between exceedances. It is emphasized that recurrence interval is an average interval. For instance, a flood having a probability of occurrence of 2 percent has a recurrence interval of 50 years. This does not mean that each 50 years this flood will be exceeded, but that it will be exceeded on the average of every 50 years. In fact, it may be exceeded in successive years, or even twice in the same year.

The probability of a flood of given magnitude occurring in a given period of time can also be calculated. For instance, there is a 64 percent chance that the 50-year flood will be exceeded at least once in a given 50-year period. Table 1 lists the probabilities of experiencing a flood of selected recurrence interval during various periods of time.

Table 1.—Probability that an event of given recurrence interval will be exceeded at least once during periods of various lengths.

Recurrence interval, years	Probability, in percent, for indicated period, in years.			
	5	10	50	100
2	97	99.9	a	a
10	41	65	99.5	a
50	10	18	64	87
100	5	10	39	63

a—Probability greater than 99.9 but less than 100 percent.

LOG-PEARSON TYPE III DISTRIBUTION

The flood-frequency relation for a stream where gaging station records are available can be defined by fitting the array of annual peak discharges (largest instantaneous discharge for each year) to a theoretical distribution. The U.S. Water Resources Council (1967) has recommended a uniform technique for determining flood-flow frequencies by fitting the logarithms of the annual peak discharges to a Pearson Type III distribution. This procedure is now generally accepted by most federal and state agencies, and is referred to as the log-Pearson Type III frequency relation.

The details of the log-Pearson Type III calculations are described in the Water Resources Council Bulletin 15 (1967). A reprint of this bulletin is contained in Appendix B.

Annual peak discharges for each gaging station used in this study were fitted to the log-Pearson Type III distribution. Appropriate adjustments were made where the computed curve did not give a reasonable fit of the data. These adjustments were generally minor and were made at only a few stations. The computed log-Pearson statistics (mean, standard deviation, and coefficient of skewness) are listed for most stations in Appendix A. Also listed are the computed discharges for the 2-, 5-, 10-, 25-, 50-, and 100-year floods.

ADJUSTMENT OF SHORT-TERM FLOOD-FREQUENCY CURVES

Many flood records, particularly for smaller basins, have been collected during the 8- to 12-year period prior to 1971. For a large part of the State, this period has been relatively dry. Rainfall records indicate about $\frac{2}{3}$ of these years had below normal rainfall. Flood records, too, are indicative of below normal flood activity and are not representative of long-term records. A study was made of all records of 20 years or more to relate the flood-frequency curve for the 1962-71 period to the all-inclusive long-term frequency curve. A ratio of the 2-year short-term peak to the 2-year long-

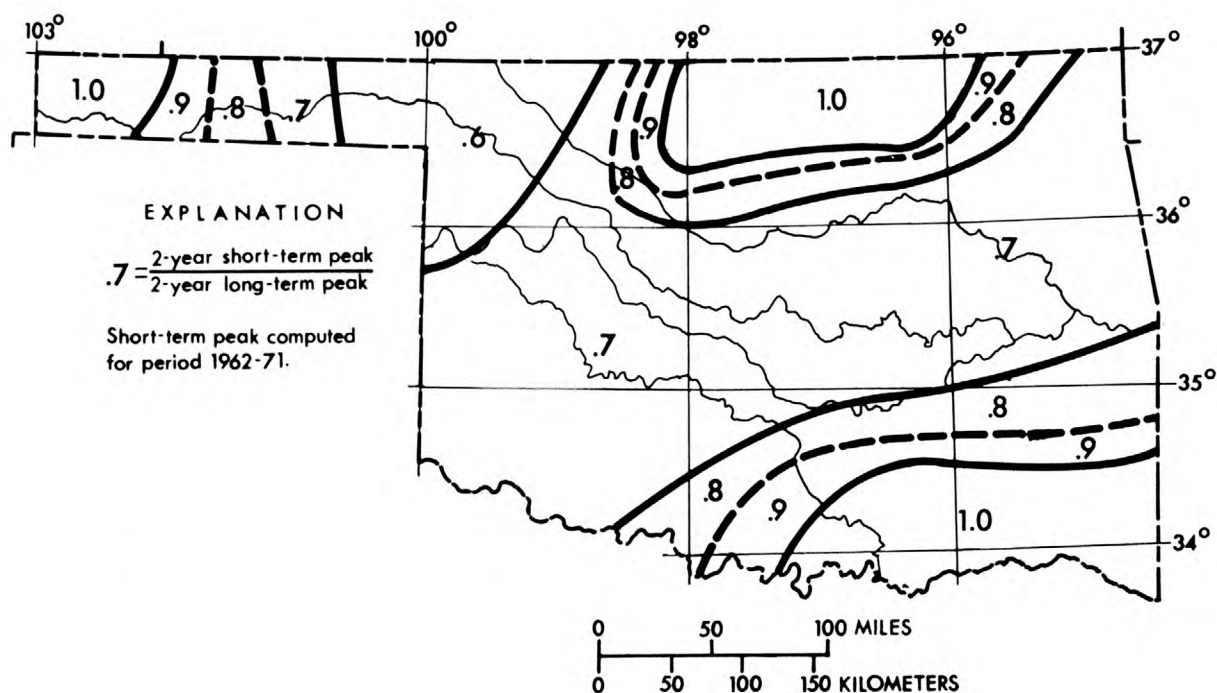


Figure 2. — Areal relation of short-term to long-term ratio for 2-year flood peaks.

term peak was computed for all long-term stations. These ratios, plotted on a State map, indicate a fairly consistent pattern. The same procedure was used for the 10-year flood. Areas of approximately equal ratios were defined as shown in figures 2 and 3.

Frequency curves for gaging stations operated during the period 1960-71 were adjusted by locating the basin on figures 2 and 3, determining the applicable ratios, and applying these ratios to the short-term 2-year and 10-year floods, respectively. The 5-year short-term flood was adjusted by using the mean of the ratios for the 2-year and 10-year floods. Only those frequency curves computed from records obtained during the period 1960 to 1971 were adjusted. These curves were not extended beyond the 10-year flood. Both the actual and adjusted values are shown in the flood-frequency listings in Appendix A.

Most of the adjustment ratios used to define figures 2 and 3 are calculated from stations of 100 mi² (260 km²) or more. Conversely, application of these ratios to adjust short-term frequency curves is mostly for small basins of less than 100 mi² (260 km²). The assumption has been made that the ratios are applicable to both large and small basins. If this assumption is correct, the adjusted short-term records of small basins should be more representative of long-term conditions.

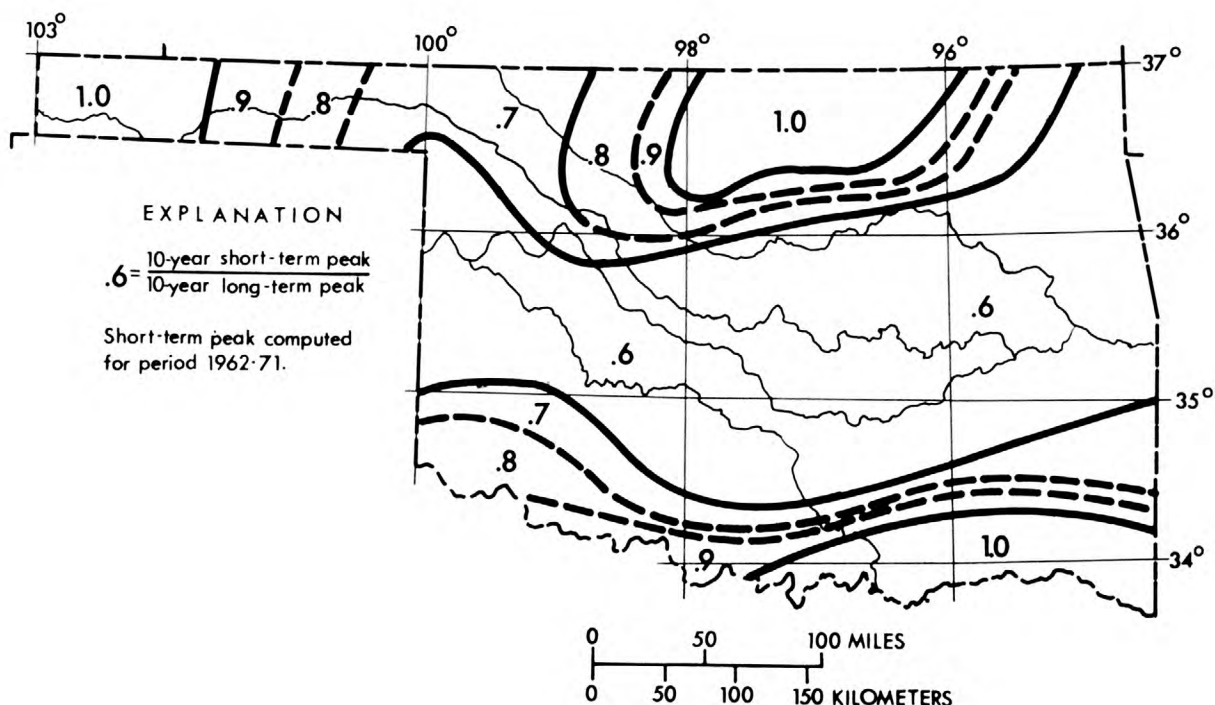


Figure 3. — Areal relation of short-term to long-term ratio for 10-year flood peaks.

FLOOD FREQUENCY AT UNGAGED SITES ON STREAMS OF LESS THAN 2,500 SQUARE MILES (6,500 km²)

Flood-frequency relations can be estimated for ungaged sites up to 2,500 mi² (6,500 km²) through the use of the equations and graphs presented in this section. The equations were developed by relating the 2-, 5-, 10-, 25-, 50-, and 100-year floods to basin and climatic characteristics. Although numerous basin and climatic parameters were investigated, the ones proving most significant for this study were drainage area size, main-channel slope, and mean annual precipitation. The basin and climatic parameters, equation development, and accuracy and limitations of the results are described in the following paragraphs.

BASIN AND CLIMATIC PARAMETERS

The following parameters are defined for use in this report.

(1) Drainage area, A.—The contributing drainage area of the basin, in square miles (mi²), or square kilometers (km²).

(2) Channel slope, S.—The slope, in feet per mile (ft/mi) or meters per kilometer (m/km), measured between two points along the main channel, one of which is located at 10 percent of the channel length and the other at 85 percent of the channel length. Channel length is measured upstream from the site to the basin divide. Generally, channel slope can be calculated from topographic maps, but very small basins may require a field survey.

(3) Annual precipitation, P.—The mean annual precipitation for the basin, in inches (in) or centimeters (cm), during the period 1931-60. See figure 4.

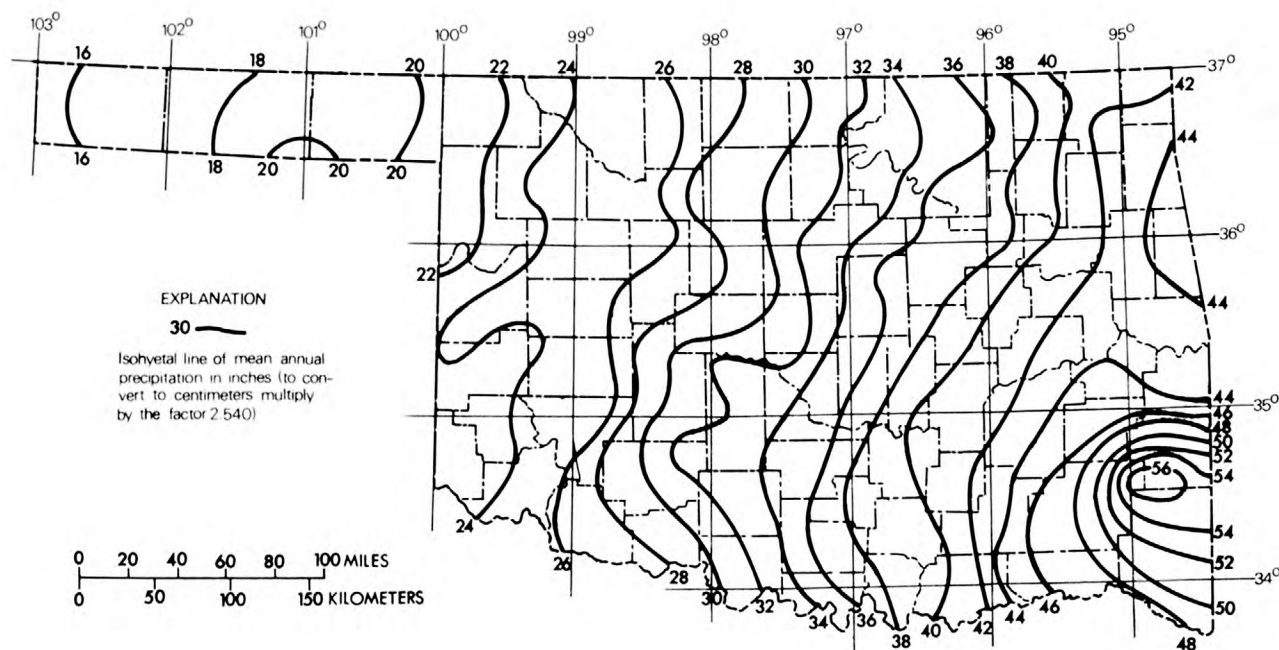


Figure 4. — Mean annual precipitation for Oklahoma for base period 1931-60.

RELATION OF FLOOD PEAKS TO BASIN AND CLIMATIC PARAMETERS

Standard multiple linear regression techniques were used to determine the relation of basin and climatic parameters to flood peaks of selected recurrence intervals. The following criteria were used to select the flood-frequency data for use in the multiple regression analysis:

- (1) Only stations of less than about 2,500 mi² (6,500 km²) and having predominantly natural flow were used.
- (2) Only records of 8 or more years length were used.
- (3) Flood-frequency curves for records of 8 to 12 years length during the period 1960-1971 were adjusted by the areal ratios defined in figures 2 and 3.
- (4) Only the 2-, 5-, and 10-year peaks were used for stations having less than 13 years of record.
- (5) The 2-, 5-, 10-, and 25-year peaks were used for stations having 13 to 19 years of record.
- (6) The 2-, 5-, 10-, 25-, 50-, and 100-year peaks were used for stations having 20 or more years of record.
- (7) For stations on the same stream and having drainage areas within 25 percent, only the longer record was used. If the drainage areas were within 10 percent, the records were combined if different periods were available.

The model used in the regression analysis is of the form,

$$Q_x = aA^b S^c P^d (I)$$

where Q_x =peak discharge, in cubic feet per second (ft³/s), or cubic meters per second (m³/s), for recurrence interval x ,

a =regression constant,

b , c , and d =regression coefficients, and

A , S , and P =basin and climatic parameters as defined in the previous section.

The coefficients b , c , and d were all significant at the 5 percent level of significance for all recurrence intervals, and in most cases at the 1 percent level of significance. One equation was developed for each recurrence interval and applies statewide for the range of drainage areas between about 0.5 and 2,500 mi² (1.3 and 6,500 km²). Tests were made to see if the relations varied regionally or with basin size but no significant trends could be detected. Tests were also made to verify that the frequency curves calculated for various sites by use of the equations were consistent in shape and slope with those determined from actual streamflow records. Comparisons of actual to calculated frequency curves indicated the slopes of the lower part of the curves (between the 2-year and 10-year floods) were in close agreement, but in numerous cases the calculated frequency curve was too steep in the range above the 10-year flood level. This was particularly true for small basins, and many of the calculated frequency curves had large positive skews, a condition not representative of actual data. The ratio of Q_{10}/Q_5 plotted versus Q_{50}/Q_{10} for actual records is a well-defined straight-line relationship on logarithmic plotting paper. The same type of plots for Q_{10}/Q_5 versus Q_{25}/Q_{10} , and Q_{10}/Q_5 versus Q_{100}/Q_{10} were also made and were likewise well defined by actual records. The multiple regression equations for Q_{25} , Q_{50} , and Q_{100} were therefore adjusted to conform with these relations. The regression equations for Q_2 , Q_5 , and Q_{10} have not been adjusted. These equations are defined by station data for 119 stations, whereas the equation for Q_{25} was defined by data from 61 stations, and the equations for Q_{50} and Q_{100} were defined by data from 45 stations. Considering that station values of Q_2 , Q_5 , and Q_{10} should be more accurate than values of Q_{25} , Q_{50} , and Q_{100} , and that more stations were used for the Q_2 , Q_5 , and Q_{10} regressions, it is reasonable to assume that the regression equations for Q_2 , Q_5 , and Q_{10} are more accurate than those for Q_{25} , Q_{50} , and Q_{100} and that the adjustments to the latter equations are justified.

An example is given to illustrate the method used to adjust the equations for Q_{25} , Q_{50} , and Q_{100} . The relation of Q_{10}/Q_5 to Q_{50}/Q_{10} is defined from station data by the equation,

$$\frac{Q_{50}}{Q_{10}} = 0.84 \left(\frac{Q_{10}}{Q_5} \right)^{2.30} \quad (2)$$

Substituting the regression equations for Q_5 and Q_{10} into the above equation and solving for Q_{50} results in the equation,

$$Q_{50} = 5.40 A^{0.69} S^{0.47} P^{1.12} \quad (7)$$

This same procedure was used to redefine the coefficients in the equations for Q_{25} and Q_{100} . The regression coefficients defined in this manner, when plotted on normal probability graph paper define a linear relation throughout the range from Q_2 to Q_{100} . The regression constant, although not linear, defines a smooth nonlinear relation. The adjusted equations have a slightly higher standard error than the original regression equations, but this increased error is not considered significant and is offset by providing consistent frequency curves that conform in shape and slope to frequency curves defined by station data. On this basis, the following equations are recommended for use within the limitations described in following sections of the report.

$$Q_2 = 0.0568 A^{0.67} S^{0.37} P^{2.00} \quad (3)$$

$$Q_5 = 0.498 A^{0.66} S^{0.40} P^{1.58} \quad (4)$$

$$Q_{10} = 1.081 A^{0.67} S^{0.42} P^{1.44} \quad (5)$$

$$Q_{25} = 2.56 A^{0.68} S^{0.44} P^{1.27} \quad (6)$$

$$Q_{50} = 5.40 A^{0.69} S^{0.47} P^{1.12} \quad (7)$$

$$Q_{100} = 9.14 A^{0.70} S^{0.48} P^{1.01} \quad (8)$$

The above equations are based on English units of measurements. To convert the final answers of discharge from cubic feet per second to the metric equivalent of cubic meters per second, multiply by the factor 0.0283.

The preceding equations for Q_2 , Q_5 , Q_{10} , Q_{25} , Q_{50} , and Q_{100} have been reduced to graphical form as shown in figures 5, 6, 7, 8, 9, and 10, respectively.

To illustrate the use of the curves in figures 5 through 10 the following example is given. The dotted lines on the figures correspond to this example.

$$A = 736 \text{ mi}^2 (1,906 \text{ km}^2)$$

$$S = 6.7 \text{ ft/mi} (1.27 \text{ m/km})$$

$$P = 35.5 \text{ in} (90.2 \text{ cm})$$

Enter the figures with drainage area (736 mi^2) along the top scale. Move downward to the channel-slope curves to 6.7 ft./mi. Move horizontally to the precipitation curves to 35.5 in. Move downward to the discharge scale. The following results were obtained for this example:

from figure 5, Q_2	=	12,000 ft^3/s (340 m^3/s),
from figure 6, Q_5	=	23,000 ft^3/s (650 m^3/s),
from figure 7, Q_{10}	=	33,000 ft^3/s (930 m^3/s),
from figure 8, Q_{25}	=	48,000 ft^3/s (1,390 m^3/s),
from figure 9, Q_{50}	=	68,000 ft^3/s (1,920 m^3/s), and
from figure 10, Q_{100}	=	85,000 ft^3/s (2,410 m^3/s).

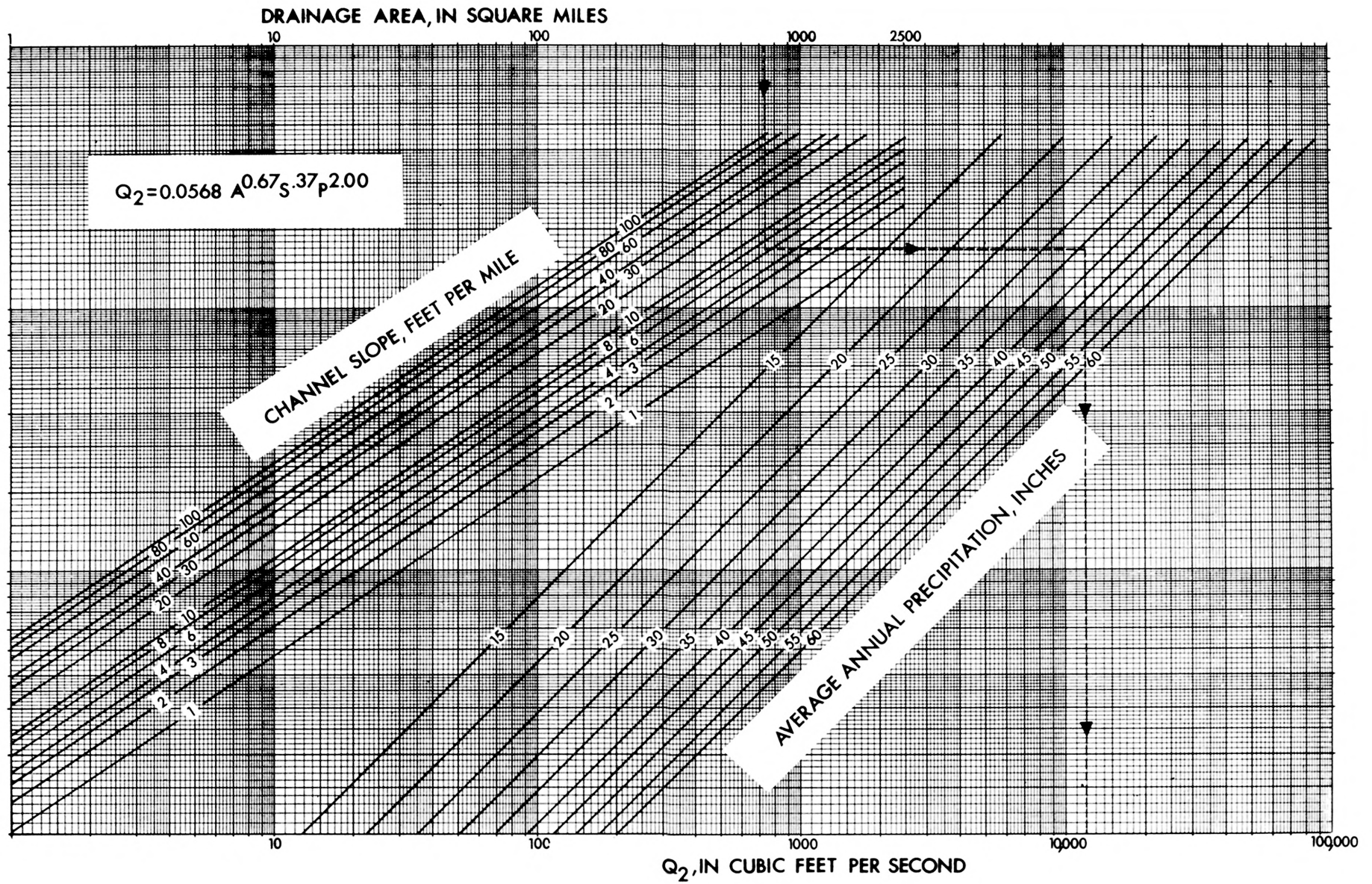


Figure 5. — Relation of 2-year flood peak to drainage area, slope, and precipitation.

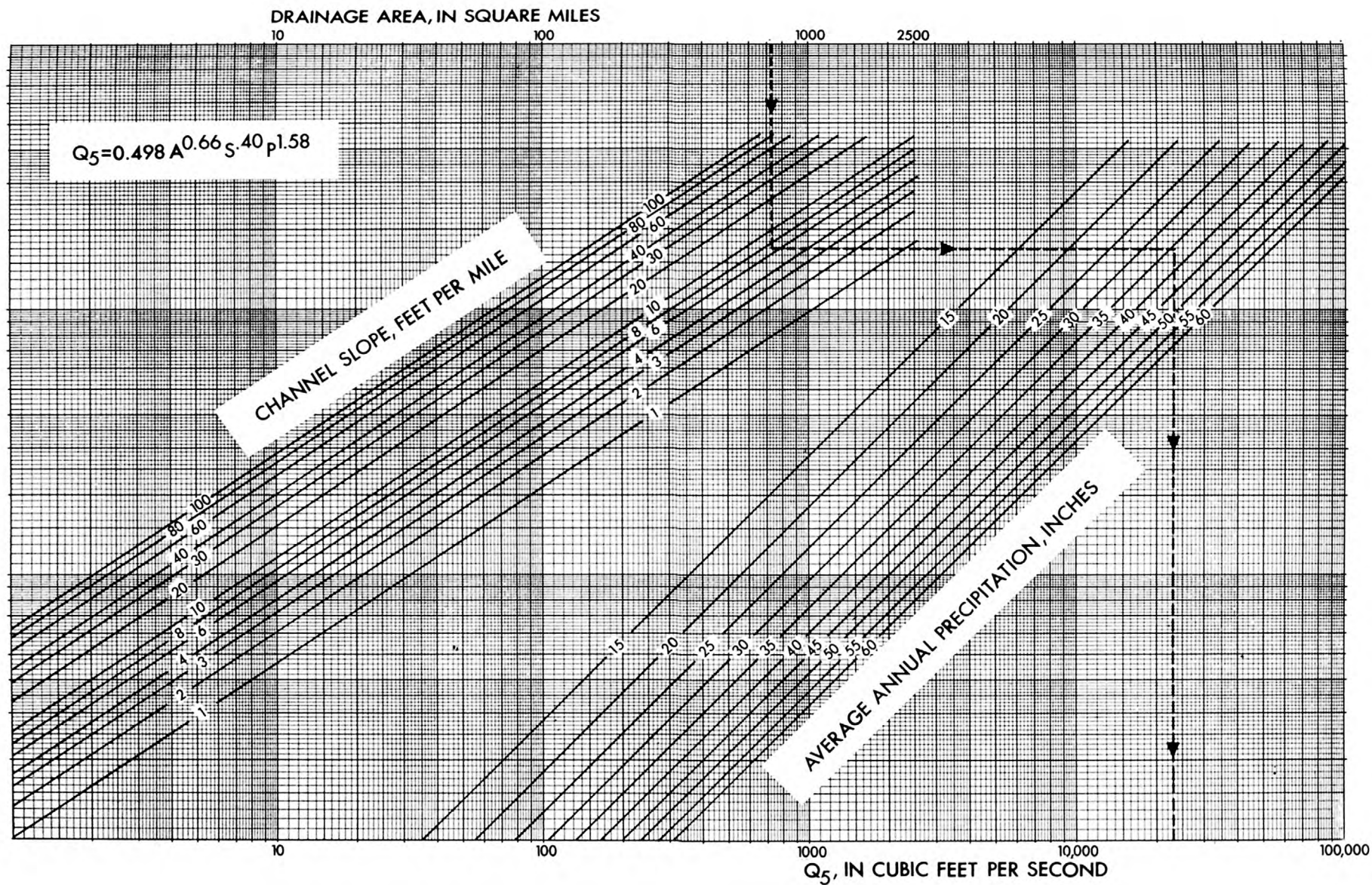


Figure 6. — Relation of 5-year flood peak to drainage area, slope, and precipitation.

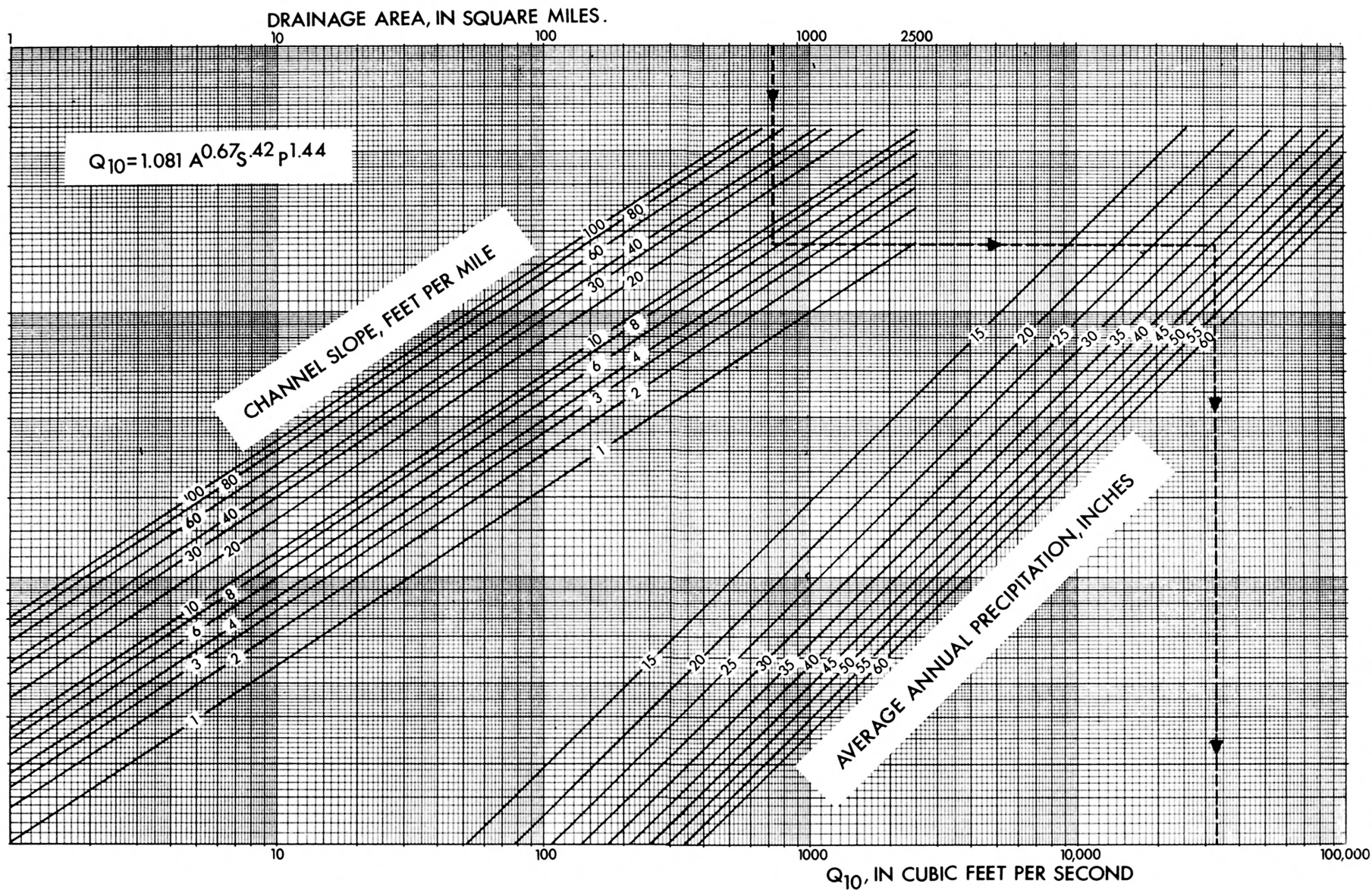


Figure 7. — Relation of 10-year flood peak to drainage area, slope, and precipitation.

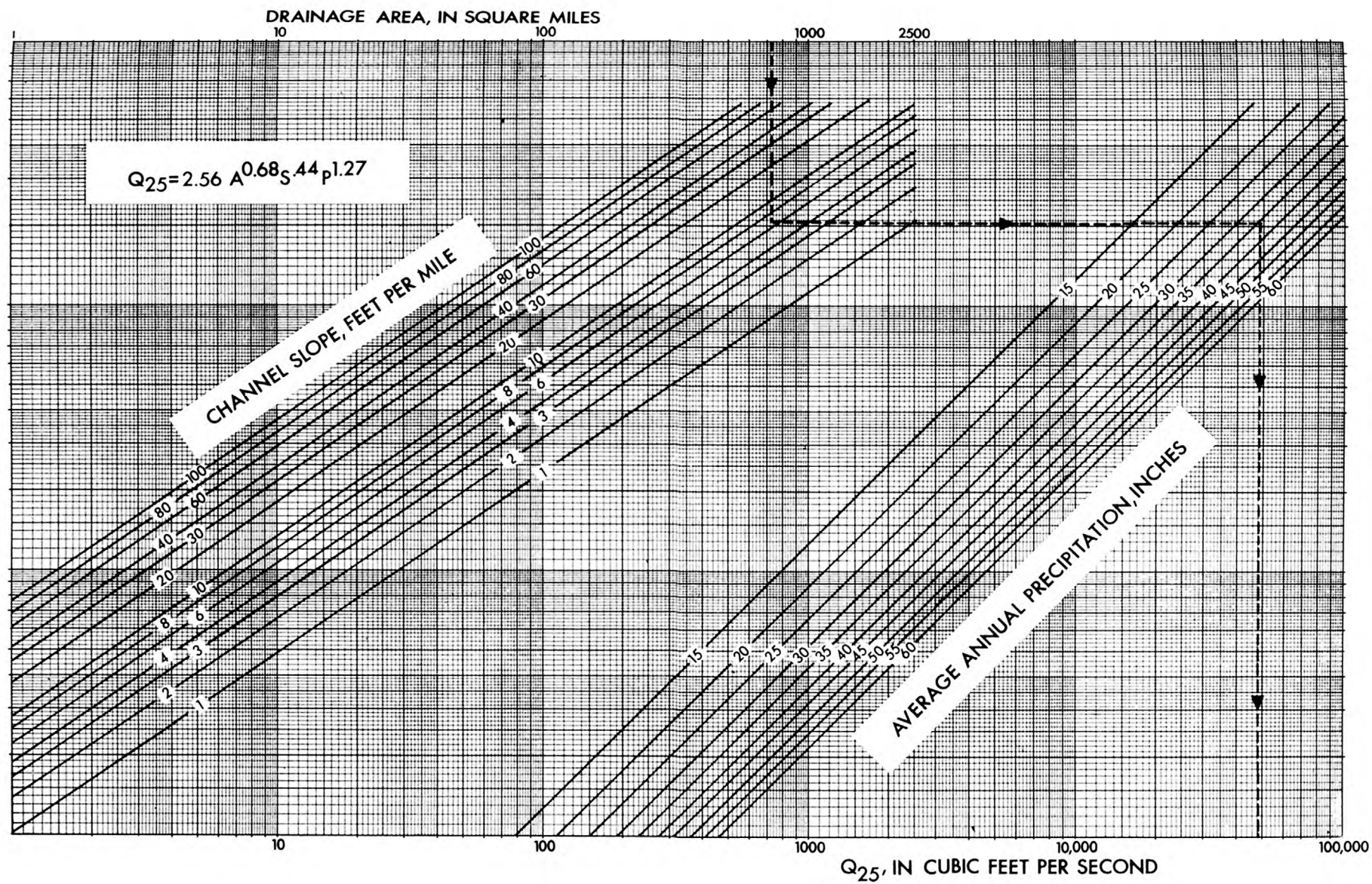


Figure 8. — Relation of 25-year flood peak to drainage area, slope, and precipitation.

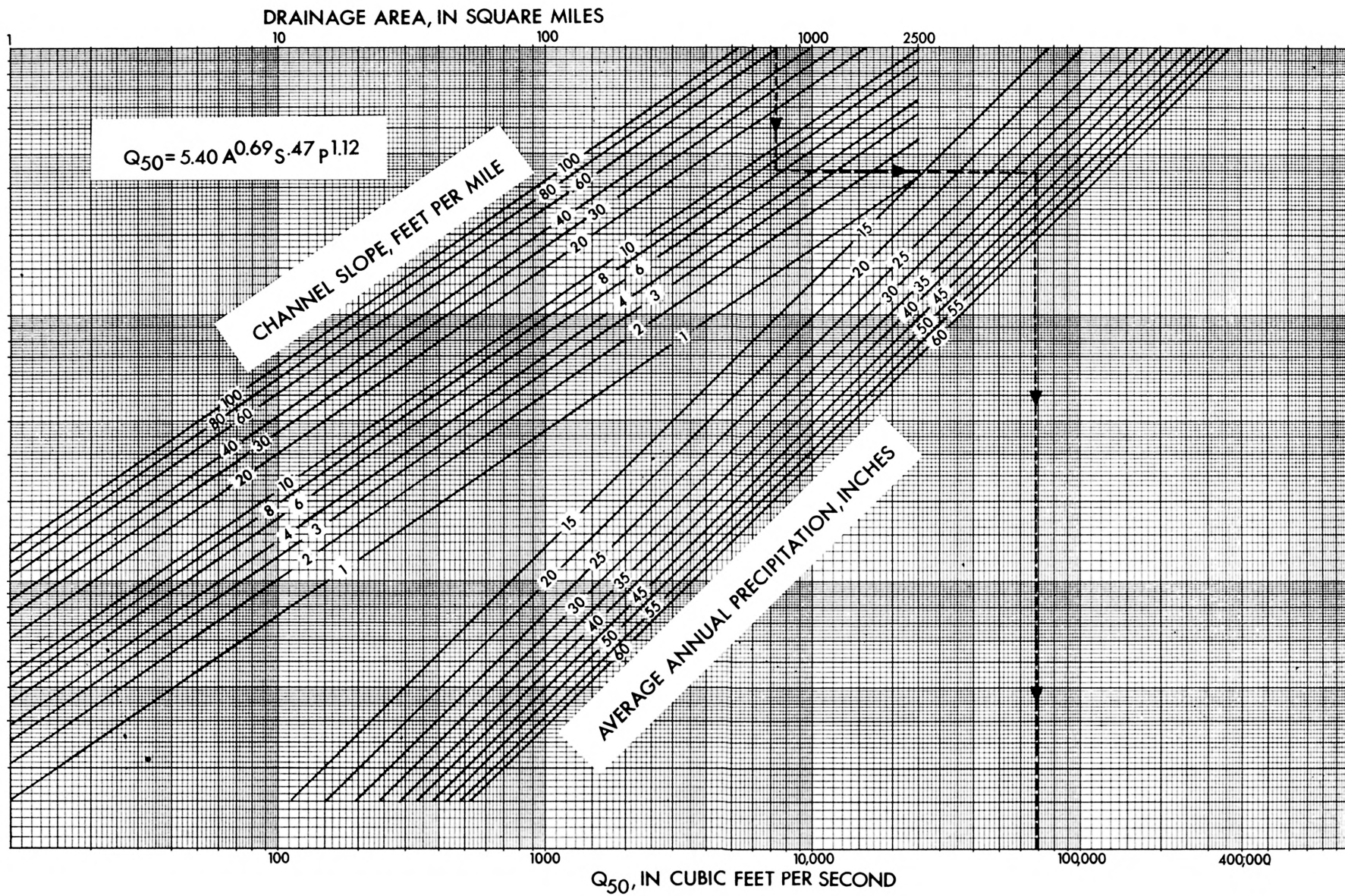


Figure 9. — Relation of 50-year flood peak to drainage area, slope, and precipitation.

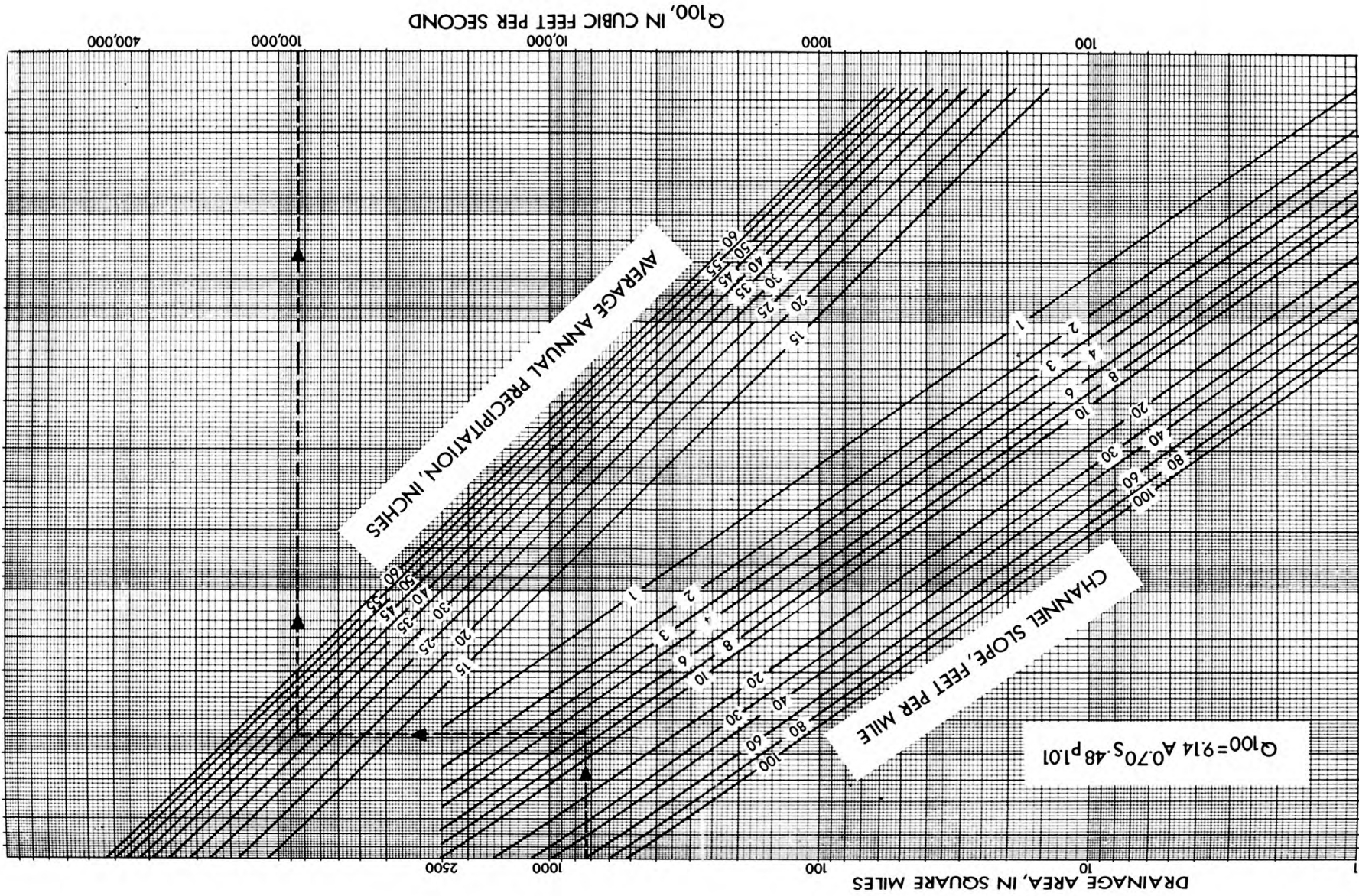


Figure 10. — Relation of 100-year flood peak to drainage area, slope, and precipitation.

ACCURACY

The accuracy of the regression equations can be expressed in two ways, percent or equivalent years of record. The accuracy in percent, referred to as standard error, is the range of error to be expected about two-thirds of the time. The standard error of the regression analysis is computed from the differences between station data and the regression equation. A large part of this error is the result of time-sampling errors in the actual records used in the regression analysis. Hardison (1971) has shown that in a regression analysis subject to time-sampling error the standard error of prediction is less than the standard error of regression provided the dependent variable has a certain measure of independence. This is in contrast to a classical regression analysis (no time-sampling error) where the standard error of prediction is always greater than the standard error of regression. By combining numerous records of various lengths and different periods of time into a regression analysis, the total period of time represented by the various station records is lengthened. Because annual peak records at gaging stations are nearly independent of one another, this has the effect of reducing time-sampling errors. Hardison (1971) also describes a method of converting the standard error of prediction to equivalent years of record. When converted to equivalent years of record, the standard error is expressed as the number of actual years of streamflow records needed to provide an estimate of equal accuracy. For instance, the 50-year flood for a basin of more than 100 square miles can be estimated from the equations or graphs with the same degree of accuracy, on the average, that could be obtained from 15 years of actual record. The standard error of prediction is ± 38 percent.

Table 2 gives the standard error of regression, standard error of prediction, and the corresponding equivalent years of record for basins of less than 100 mi² (260 km²), and basins greater than 100 mi² (260 km²) for the regression equations. The standard error of prediction was computed on the basis of an average cross-correlation coefficient of 0.25, as defined from a random selection of gaging stations. The large standard error for basins of less than 100 mi² (260 km²) is the result of the short time period during which most of the small-stream records have been collected. These errors basically represent large time sampling errors.

Table 2. — Accuracy of regression equations.

<i>Recurrence interval, years</i>	<i>Basins less than 100 mi² (260 km²)</i>			<i>Basins greater than 100 mi² (260 km²)</i>		
	<i>Standard error of regression, percent</i>	<i>Standard error of prediction¹</i>	<i>Equivalent years of record ¹</i>	<i>Standard error of regression, percent</i>	<i>Standard error of prediction ¹</i>	<i>Equivalent years of record ¹</i>
2	±67	±65	3	±43	±43	4
5	±60	±55	4	±41	±39	5
10	±64	±57	6	±41	±39	8
25	*	*	*	±40	±36	14
50	*	*	*	±43	±38	15
100	*	*	*	±50	±45	13

*Not computed because of insufficient data.

¹From Hardison (1971)

LIMITATIONS

The following limitations should be observed when using the regression equations and graphs:

- (1) They should not be used where dams, flood-detention structures, and other man-made works have a significant effect on peak discharges. Under such conditions, stream systems studies involving reservoir and open-channel routing may be required to evaluate flood frequency, which is beyond the scope of this report.
- (2) They should not be used in urban areas unless the effects of urbanization are insignificant.
- (3) The user is cautioned that the magnitude of error may be large for large recurrence interval floods for basins of less than 100 mi² (260 km²). Very limited data were available in this range and the magnitude of error of estimating the 25-, 50-, and 100-year floods could not be determined. The user is encouraged to contact the Oklahoma District Office, U.S. Geological Survey, Water Resources Division, Oklahoma City, Oklahoma, to obtain additional information that may be available for small basins.

FLOOD FREQUENCY AT OR NEAR GAGED SITES ON STREAMS OF LESS THAN 2,500 SQUARE MILES (6,500 km²)

Flood frequency at gaged sites of 100 to 2,500 mi² (260 to 6,500 km²) can be determined by a combined use of the regression equations, or graphs, and the gaging station frequency curve. The recommended procedure is to compute the discharge for the desired recurrence interval as a weighted average of the station value and the regression value. The weighted average is based on length of record of the station data and equivalent years of record for the regression value as determined from table 2. The equation,

$$Q_{x(w)} = \frac{Q_{x(s)} (N) + Q_{x(r)} (E)}{N + E} \quad (9)$$

is used to compute the weighted average, where

$Q_{x(w)}$ = the weighted discharge for recurrence interval x ,

$Q_{x(s)}$ = the station value of the flood for recurrence interval x ,

$Q_{x(r)}$ = the regression value of the flood for recurrence interval x ,

N = the number of years of station data used to compute $Q_{x(s)}$, and

E = the equivalent years of record for $Q_{x(r)}$ as determined from table 2.

An example computation is illustrated by using the station 07197000 Barren Fork at Eldon as follows:

Recurrence interval, x , (years)	$Q_{x(s)}$ (ft ³ /s)	N (years)	$Q_{x(r)}$ (ft ³ /s)	E (years)	$Q_{x(w)}$ (ft ³ /s)
2	14,400	23	13,000	4	14,000
5	25,400	23	24,000	5	25,000
10	33,300	23	35,000	8	34,000
25	43,700	23	48,000	14	45,000
50	51,500	23	66,000	15	57,000
100	59,300	23	80,000	13	67,000

The weighted values, $Q_{x(w)}$, are considered the best estimates for design purposes at the site of Barren Fork at Eldon.

Flood frequency at sites of 100 to 2,500 mi² (260 to 6,500 km²) which are not at, but are relatively near a gaging station and on the same stream can be calculated by a combined use of the regression equations or graphs and the nearby station data. The following procedure is suggested for use if the site has a drainage area within 50 percent of the drainage area of the gaging station. When this criteria is met the weighted value, $Q_{x(w)}$, and the regression value, $Q_{x(r)}$, for the gaged site should be computed as described in the preceding paragraphs. The ratio,

$$R = \frac{Q_{x(w)}}{Q_{x(r)}} \quad (10)$$

is then calculated for the gaged site. This ratio represents the correction needed to adjust the regression value, $Q_{x(r)}$, to the weighted value, $Q_{x(w)}$, at the gaged site. The calculations for determining the correction factor, R' , for an ungaged site that is near a gaged site on the same stream have been reduced to the equation,

$$R' = R - \frac{\Delta A}{0.5 A_g} (R - 1.00) \quad (11)$$

where ΔA is the difference between the drainage areas of the gaged and ungaged sites, and A_g is the drainage area of the gaged site. If the drainage area of the ungaged site is 50 percent more than or less than the gaged site, that is, $\Delta A/A_g$ is greater than 0.5, equation 11 should not be used, and the results of the regression equations should be used without adjustment.

The following example illustrates the calculations for determining a 50-year flood for an ungaged site which is near a gaged site on the same stream. For this example, the gaged site is the station 07197000 Barren Fork at Eldon and the ungaged site is located downstream where the drainage area equals 400 mi² (1,036 km²). Following are data and calculations needed for the gaged and ungaged sites, which are used to compute Q_{50} at the ungaged site.

(1) Gaged site, 07197000 Barren Fork at Eldon:

$A_g = 307$ mi² (795 km²)

$S = 13.4$ ft/mi (2.53 m/km)

$P = 43.9$ in (112 cm)

$N = 23$ years

$E = 15$ years

$Q_{50(s)} = 51,500$ ft³/s (1,457 m³/s), from station data

$Q_{50(r)} = 66,000$ ft³/s (1,870 m³/s), from regression equation 7, or fig. 9

$Q_{50(w)} = 57,000$ ft³/s (1,610 m³/s), from equation 9

$R = Q_{50(w)}/Q_{50(r)} = 57,000/66,000 = 0.86$, from equation 10.

(2) Ungaged site on Barren Fork

$A = 400$ mi² (1,036 km²)

$S = 12.5$ ft/mi (2.36 m/km)

$P = 44$ in (112 cm)

$Q_{50(r)} = 77,000$ ft³/s (2,180 m³/s), from regression equation 7, or figure 9

$\Delta A = 400 - 307 = 93$ mi² (241 km²)

$\frac{\Delta A}{A_g} = \frac{93}{307} = 0.30$ (This is less than 0.5, therefore R' should be computed from equation 11 and used to adjust $Q_{50(r)}$.)

$R' = 0.86 - \frac{93}{0.5 (307)} (0.86 - 1.00) = 0.94$ (from equation 11)

$Q_{50} = Q_{50(r)}(R') = 77,000 (0.94) = 72,000$ ft³/s (2,040 m³/s)

This is considered the best estimate for the 50-year peak discharge at the ungaged site on Barren Fork.

The site for which flood-frequency calculations are desired may sometimes be between two gaged sites on the same stream. The 50 percent rule should be applied to determine which gaged site, if any, should be used to make the adjustment. If the ungaged site is within 50 percent of both gaged sites, the frequency calculations for the ungaged site can be made by interpolation of the weighted station values Q_x for each gaged site. Again, interpolation should be on the basis of drainage area.

The weighting and interpolating procedures should not be used at gaged sites of less than 100 mi² (260 km²). At these sites, equivalent years of record for the regression equations have not been determined above the 10-year flood because of insufficient data. Almost all of the gaged sites of less than 100 mi² (260 km²) have short records collected during the low runoff period 1960-71, and the regression equations or graphs used directly will probably provide the best estimate of flood frequency for these streams. Again, the user is cautioned that estimates of large recurrence interval floods on small streams are subject to unknown errors because of the limited data available.

FLOOD FREQUENCY FOR LARGE STREAMS

Flood frequency of streams with drainage areas greater than 2,500 mi² (6,500 km²) are discussed separately in the following paragraphs. Several of these streams are regulated by reservoirs. Flood-frequency relations shown for the regulated streams are based on past regulation patterns and may change if regulation patterns are changed. Likewise, new reservoirs may change the flood-frequency relations. For these reasons, the user should assure himself that significant changes in regulation have not occurred since the cut-off date of this report (1971) before using the relations.

ARKANSAS RIVER

The Arkansas River main stem is highly regulated for most of its course through Oklahoma. Only the reach upstream from Keystone Lake might be considered unregulated, but even that part is regulated to some extent by reservoirs in Kansas and Colorado. Frequency curve calculations for the gaging stations 07146500 (at Arkansas City, Kansas), 07152500 (at Ralston, Oklahoma), and 07164500 (at Tulsa, prior to Keystone Lake) are used to develop the relations of flood frequency to drainage area shown in figure 11. These curves can be used to estimate magnitude and frequency of floods in the reach upstream from Keystone Lake.

A complete systems analysis, which is beyond the scope of this report, would be required to assess flood potential in the lower reaches of the Arkansas River, downstream from Keystone Lake. Keystone Lake has a capacity of nearly 2 million acre feet (nearly 2.5 billion m³), reservoirs on the Neosho and Verdigris Rivers (Arkansas River tributaries) have a combined capacity of over 5 million acre feet (over 6 billion m³), and reservoirs in the Illinois and Canadian River basins (downstream tributaries of the Arkansas River) have a combined capacity of about 8 million acre feet (about 10 billion m³). Several locks and dams on the main stem also have some effect on flood flows.

NEOSHO RIVER

The Neosho River main stem within Oklahoma is basically a chain of large lakes. A stream-systems analysis, which is beyond the scope of this report, would be required to determine flood-frequency relations for this stream.

VERDIGRIS RIVER

The Verdigris River main stem within Oklahoma is affected by regulation from Oologah Lake, and by several reservoirs in Kansas. Flood-frequency relations can be evaluated only by stream-systems analysis.

SALT FORK ARKANSAS RIVER

The Salt Fork Arkansas River has one significant lake, Great Salt Plains Lake, which affects floods in the stream downstream from the dam. The lake has been in operation since 1941 and records at stations 07150500 (near Jet) and 07151000 (at Tonkawa) include the effects of regulation. Figure 12 relates the flood discharge of various recurrence intervals to drainage area for the reach below Great Salt Plains Lake. Above the lake, figures 5 through 10 can be used by making a slight extrapolation.

Records are not available for the Salt Fork Arkansas River below the confluence with the Chikaskia River. The dashed lines shown on figure 12 for this reach are estimated by combining the frequency curves for the gage 07151000 (at Tonkawa) and the gage 07152000 Chikaskia River near Blackwell on the basis of drainage area raised to the 0.5 power. For the Salt Fork Arkansas River, only the intervening drainage area below Great Salt Plains Lake was used for these calculations.

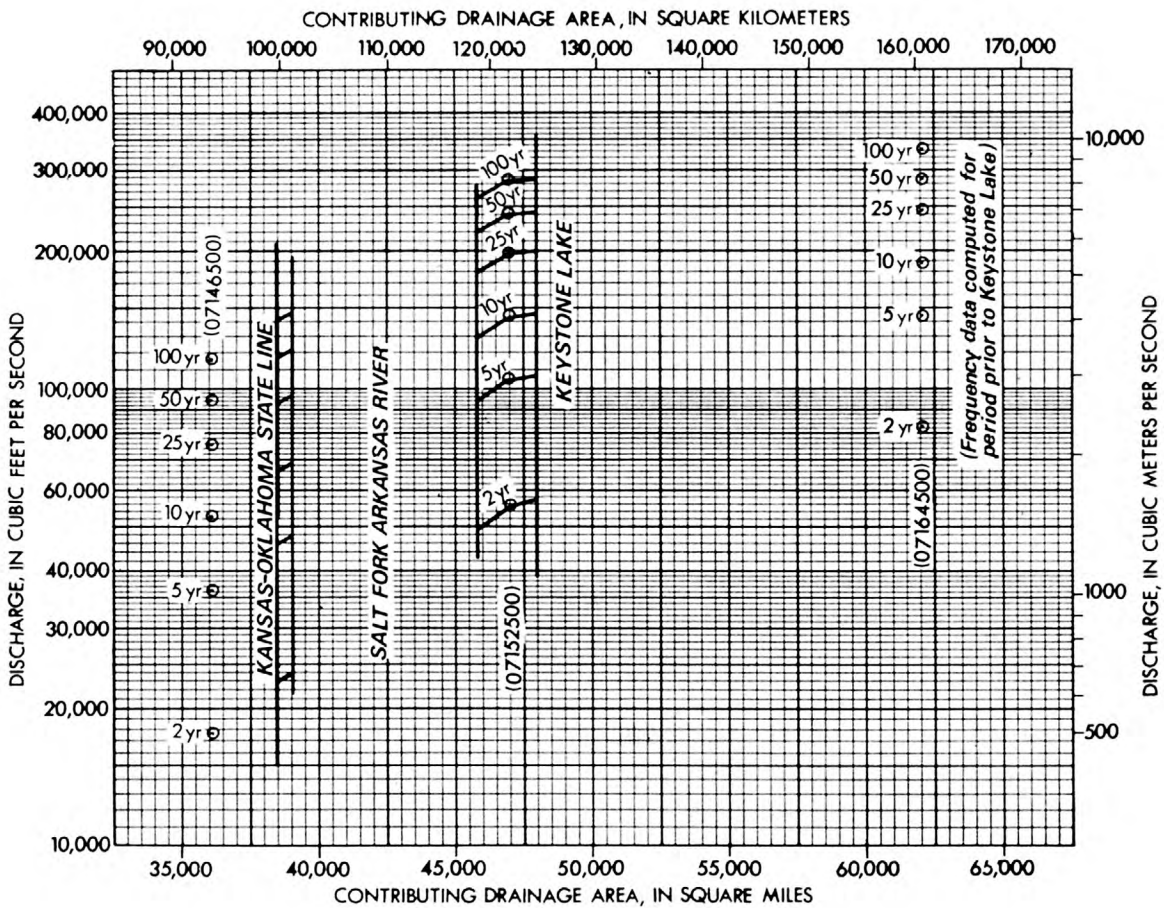


Figure 11. — Flood-frequency for Arkansas River upstream from Keystone Lake.

CIMARRON RIVER

Floods on the Cimarron River are the result of natural runoff because there are no lakes in the basin which have an appreciable effect on flood runoff. Figure 13 relates floods of various recurrence intervals to contributing drainage area. Flood-frequency for the reach of the Cimarron River in the western part of the Oklahoma Panhandle can be determined from figures 5 through 10.

NORTH CANADIAN RIVER

Several lakes in the North Canadian River basin have varying degrees of control on flood peak discharges. Canton Lake near Canton, Oklahoma, completed in 1948 on North Canadian River, has the greatest effect. Fort Supply Lake, completed in 1942 on Wolf Creek, has a minor effect on the low peaks. Lake Overholser (1917) and Lake Hefner diversions (1944) at Oklahoma City on North Canadian River have some effect on peak discharges. Nine gaging stations along the North Canadian River have been operated for sufficient periods of time to define flood frequency and the effects of the reservoirs. Figure 14 illustrates these characteristics. The extreme increases of the smaller floods below Lake Overholser are attributed to urban runoff from Oklahoma City.

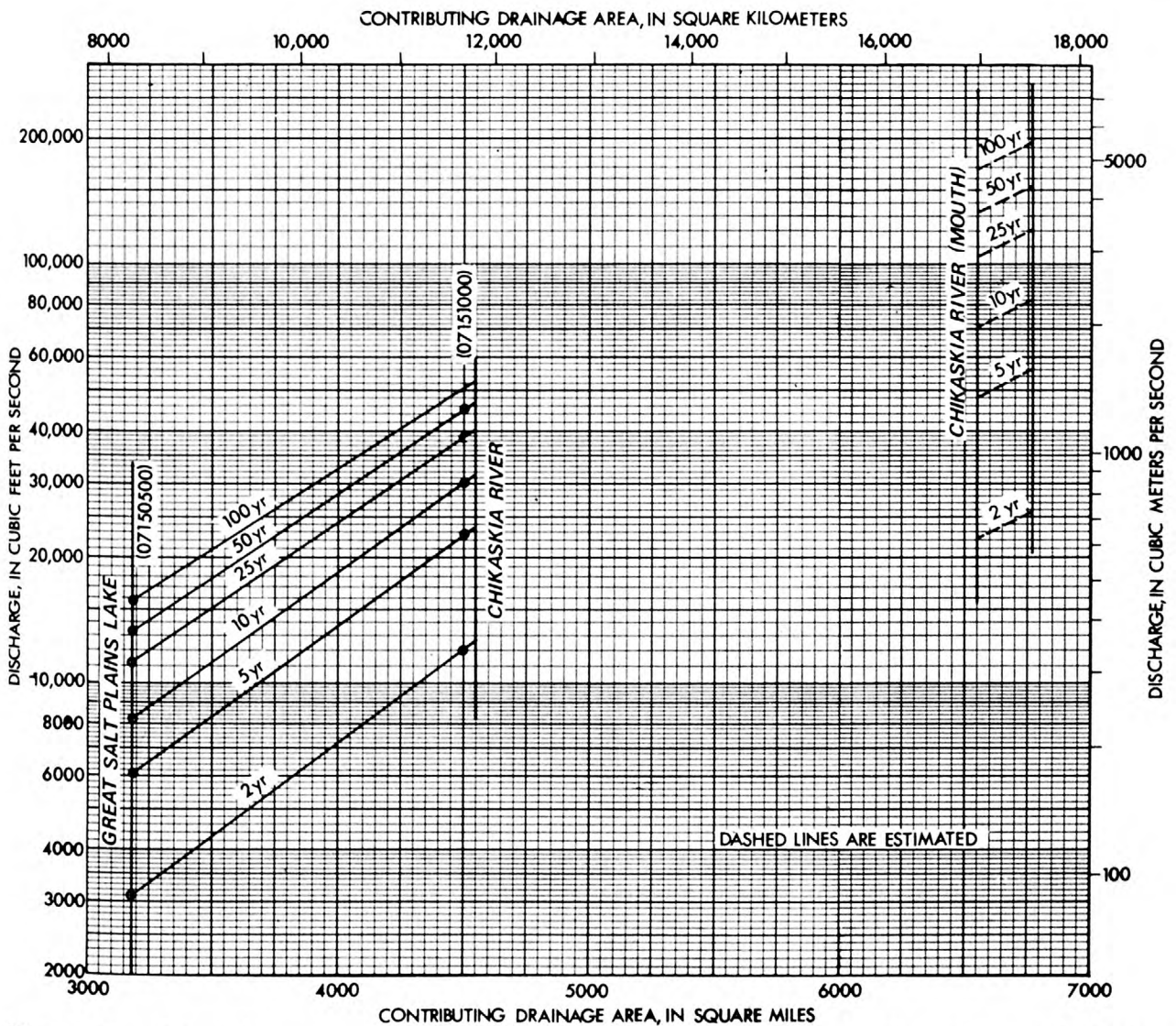


Figure 12. — Flood frequency for Salt Fork Arkansas River downstream from Great Salt Plains Lake.

Upstream from Beaver, Oklahoma, (07234000) the curves in figure 14 have been extrapolated on the basis of the weighted frequency results for the gaging station near Guymon (07232500, not shown on figure 14 because drainage area is less than 2,000 mi² (5,180 km²)). These extrapolations should be used only for drainage areas larger than 2,500 mi² (6,500 km²). For smaller drainage areas, the regression equations, or figures 5 through 10 should be used.

CANADIAN RIVER

Flood frequency along the Canadian River in Oklahoma is not well defined. Only two streamflow records, 07228500 (at Bridgeport) and 07231500 (at Calvin), are of sufficient length to provide reliable estimates of flood-frequency relations. Secondly, an unknown effect of regulation exists from Lake Meredith since 1964, which has a capacity of 2.4 million acre feet (about 3 billion m³), in Texas. The effects of regulation from Lake Meredith are probably not significant, however, in the lower reaches. Examination of the records of major floods indicates that large floods along the Canadian River in Oklahoma are largely generated below Lake Meredith. For instance, the maximum flood of record at Bridgeport was 150,000 ft³/s (4,200 m³/s) on June 23, 1948. At the gaging station 07228000 (near Canadian, Texas) just downstream from the site of Lake Meredith, this same flood was about 20,000 ft³/s (570 m³/s). The lake didn't exist at that time but even if the lake had existed, it would have had little or no effect on the peak at Bridgeport. At Calvin, the maximum flood of record was 174,000 ft³/s (4,920 m³/s) on May 11, 1950. At the upstream sites of Bridgeport and Canadian, Texas,

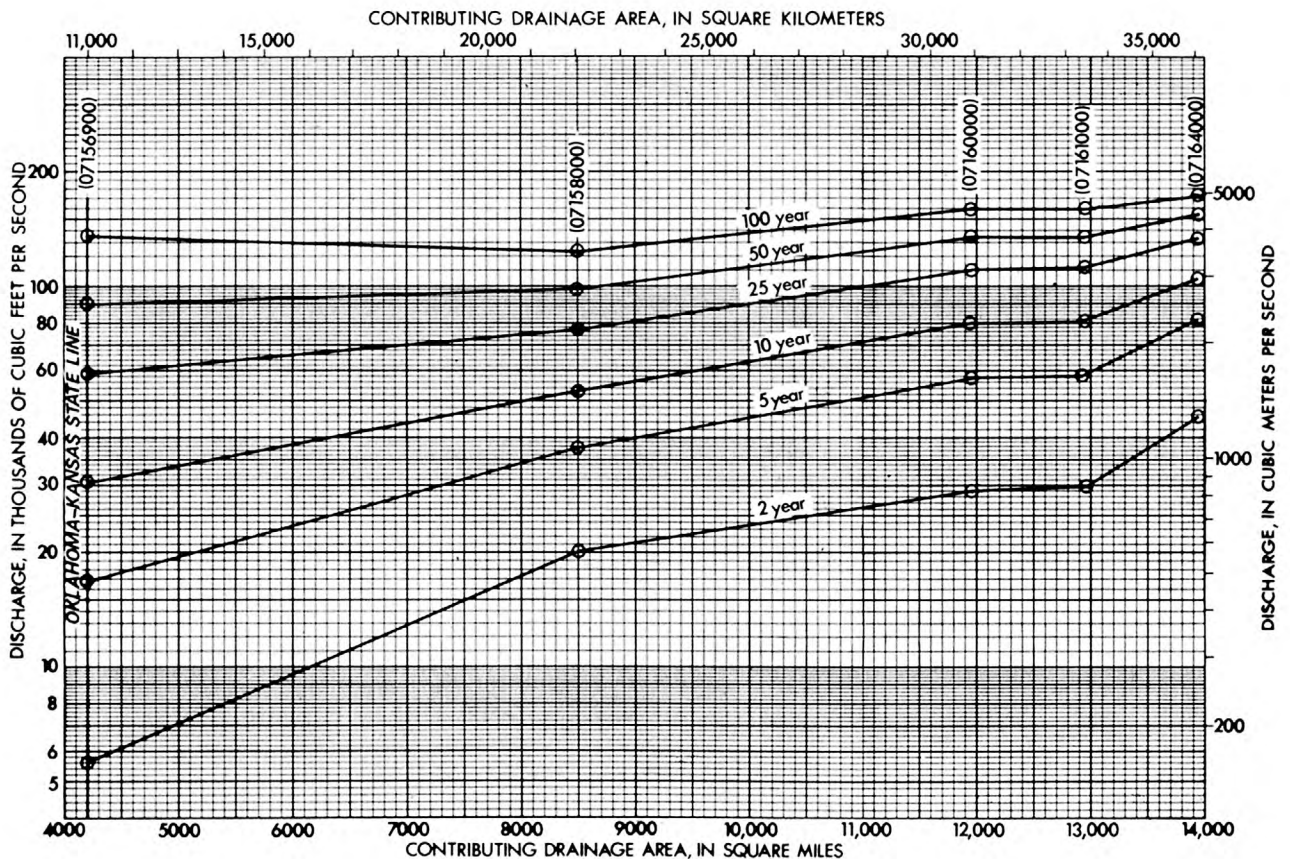


Figure 13. — Flood frequency for Cimarron River.

major floods did not even occur during this period, indicating that the flood at Calvin was generated entirely in the downstream reaches of the river. The frequency curves for Bridgeport and Calvin are therefore considered valid without adjustment for Lake Meredith. The gaging station 07228000 (at Canadian, Texas), however is close enough to the lake to be affected. The frequency curve used for this site is based on the record subsequent to closure of Lake Meredith and adjusted to a long-term basis using a factor of 0.7 as defined in figures 2 and 3. This is, at best, a very poor estimate of flood-frequency at station 07228000 but provides the basis for extending the curves shown in figure 15 to the State line. These curves can be used to estimate flood frequency along the main stem of the Canadian River in Oklahoma.

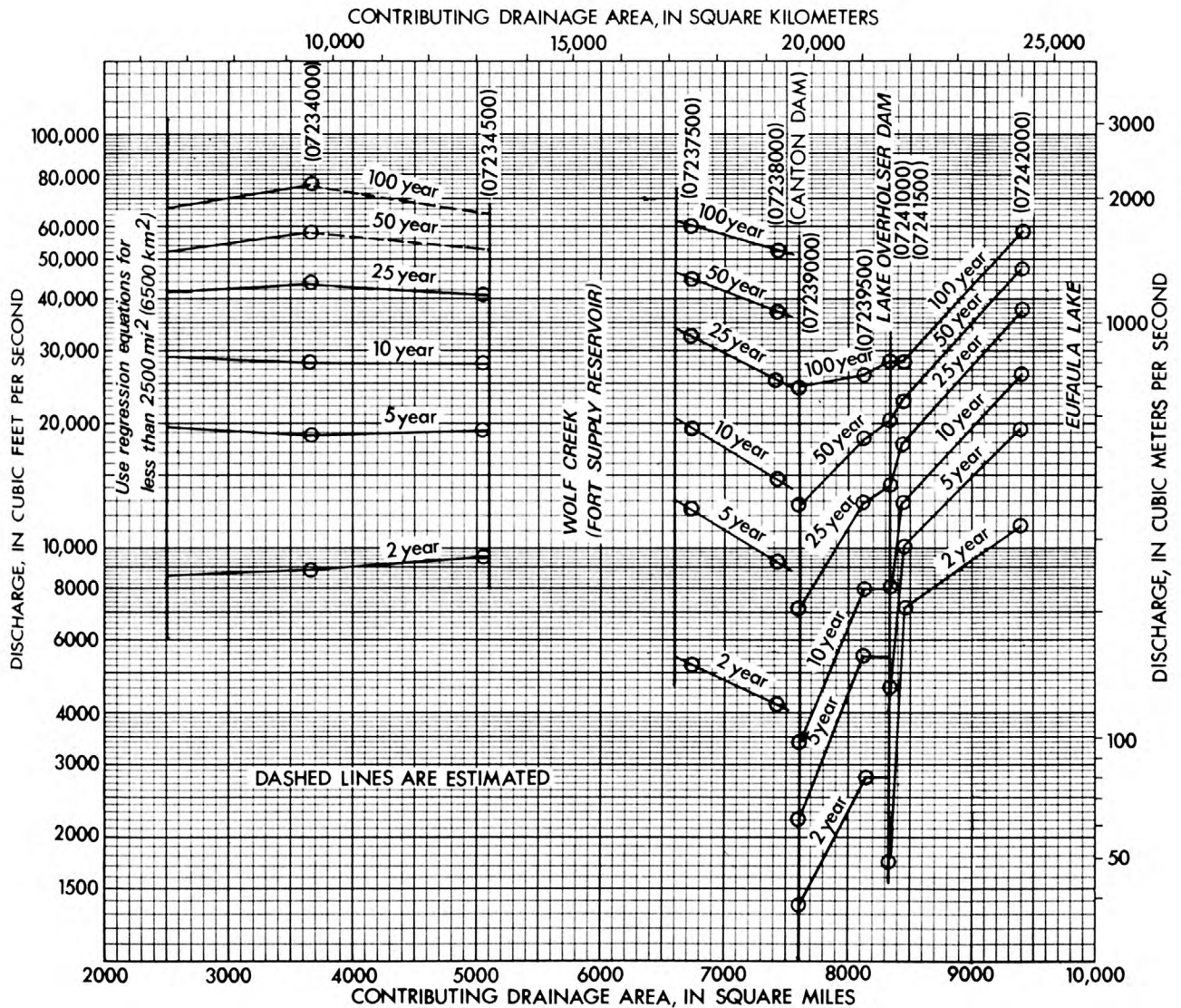


Figure 14. — Flood frequency for North Canadian River.

WASHITA RIVER

Flood frequency along the main stem of the Washita River is extremely difficult to assess because of extensive and continuing land and water resources development throughout the basin during the past 20 to 25 years. The Soil Conservation Service has applied land treatment measures throughout much of the basin, and about 1,000 flood-detention structures have been constructed. In addition, major reservoirs have been constructed at Foss (on Washita River), Fort Cobb (on Cobb Creek), and Sulphur (Lake of the Arbuckles on Rock Creek). These three reservoirs were completed in 1959, 1961, and 1966, respectively. Lake of the Arbuckles controls a relative small drainage area and has little effect on flood frequency along the main stem of the Washita River. Foss Lake and Fort Cobb Lake have significant effects on flood frequency in the main-stem reaches immediately downstream from the lakes, but their effect is diminished in the lower reaches. Many of the flood-detention structures were constructed prior to 1961, therefore, the stream-flow records since about 1961 contain the effects of most of the controls now in existence in the basin. The period 1961-71, however, is known to be a period of low runoff as defined in figures 2 and 3. These figures indicate the ratio of the frequency curve for the short-term period of the past 8 to 12 years to the long-term frequency curve is about .6 and .7 for the 2- and 10-year floods, respectively. The short-term frequency curves (1961-71) of main-stem stations upstream from Pauls Valley along the Washita River were divided

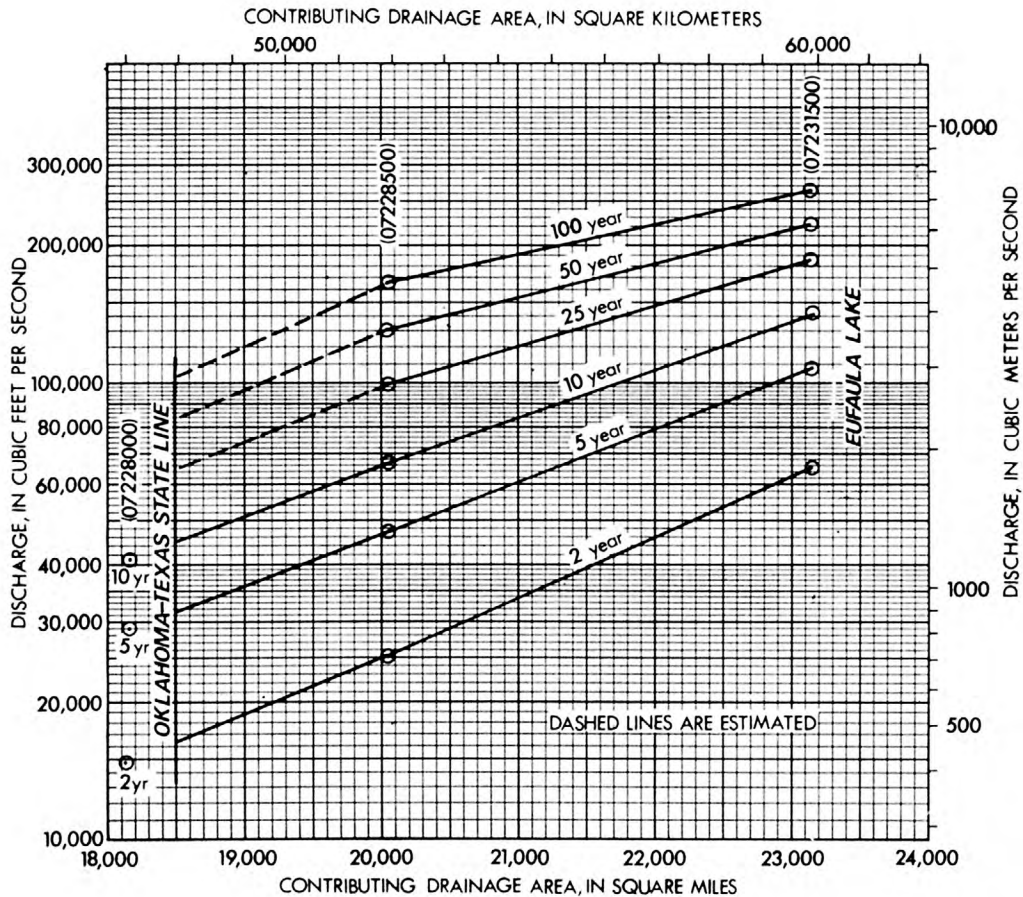


Figure 15. — Flood frequency for Canadian River.

by an average ratio of 0.65 to provide an estimate of flood frequencies in the upper reaches of the Washita River. The complete streamflow records for the gages near Pauls Valley (07328500) and near Durwood (07331000) were used, under the assumption that the major controls are far enough upstream to have an insignificant effect on flood frequencies in the lower reaches of the Washita River. The resulting frequency curves are related to drainage area as shown in figure 16. Although these curves are poor estimates, they probably represent as good an estimate as can be made from available data. A stream system analysis would be extremely difficult because of the many flood-detention structures and the unknown effects of the land-treatment measures, and is beyond the scope of this report.

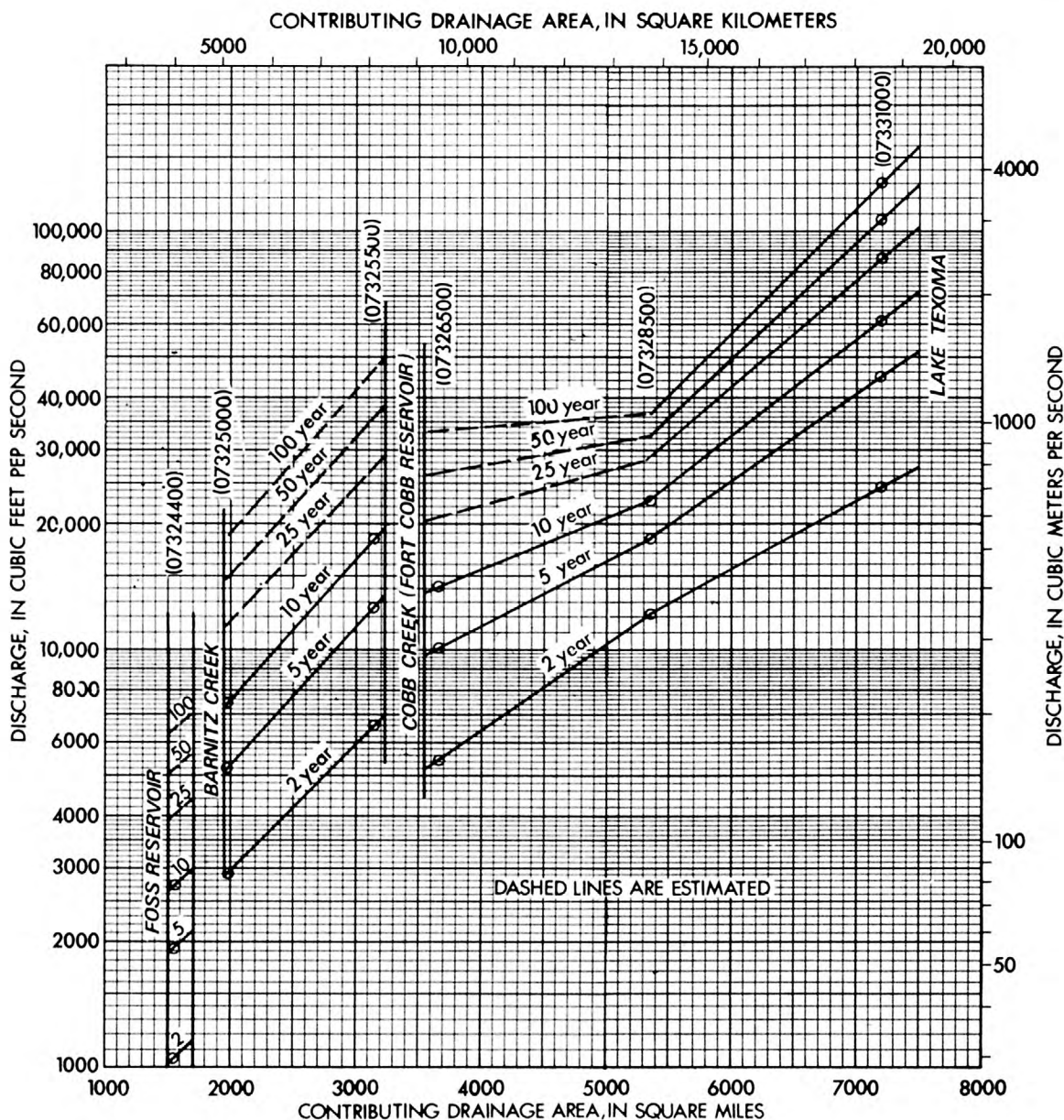


Figure 16. — Flood frequency for Washita River.

NORTH FORK RED RIVER

Flood frequency on the North Fork Red River below the confluence with the Elm Fork Red River has been estimated as shown in figure 17. Just upstream from this confluence Lake Altus has controlled flow from the North Fork Red River since 1943. Downstream from the confluence only one gaging station record, 07305000 North Fork Red River near Headrick, is available. The curves shown in figure 17 are based on the Headrick record and on estimated values of flood magnitude and frequency at the confluence of Elm Fork and North Fork Red Rivers. The estimated values at the confluence were based on a weighted average of the regression equation results and the frequency curve for the gaging station 07303500 Elm Fork Red River near Mangum. Most of the record at the Headrick gaging station has been collected after closure of Lake Altus in 1943 and includes the effects of regulation from the lake; however, the two largest peaks at this station occurred prior to 1943. These peaks, as well as records of others prior to 1943, were included in the flood-frequency computations for Headrick. It was concluded, after considerable study and comparison of records, that peaks of magnitude comparable to the two largest are still likely to occur.

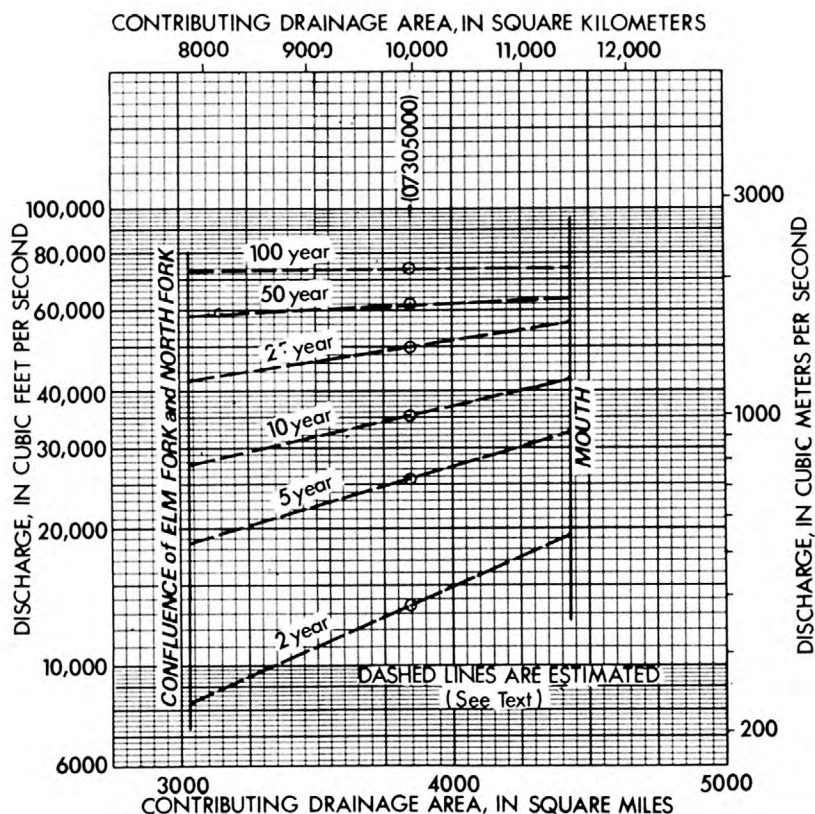


Figure 17. — Flood frequency for North Fork Red River downstream from confluence with the Elm Fork Red River.

RED RIVER

Flood frequency along the Red River is shown in figure 18. Lake Texoma was completed in 1943 and the frequency curves downstream from that point are based on records collected since that time. These records incorporate the effects of regulation by Lake Texoma. Upstream from Lake Texoma regulation by relatively small lakes on tributaries has little effect on flood frequency along the main stem of the Red River.

The streamflow records at the gages near Quanah (07299570) and Burkburnet (07308500) were started in 1959. The period 1960-71 is a period of relatively low runoff as indicated by long term records throughout the area. The records (1938-71) for the gage at Terral (07315500) indicate a ratio of the short-term period (1960-71) to the long-term period (1938-71) of 0.7. This ratio agrees closely with studies used to develop figures 2 and 3; therefore, the frequency curves for Quanah and Burkburnet were adjusted using the ratio of 0.7.

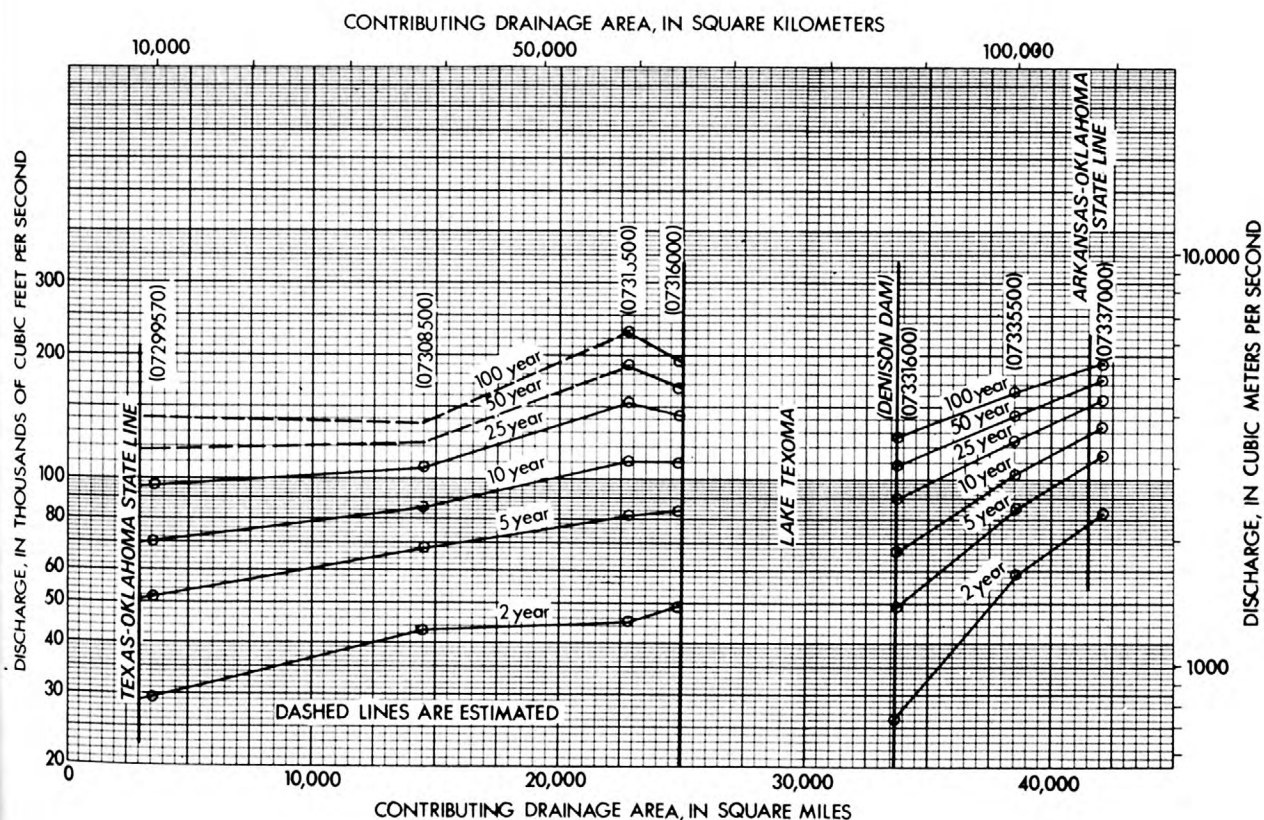


Figure 18. — Flood frequency for Red River.

MAXIMUM FLOODS OF RECORD

Flood records covering various periods of time have been collected at about 250 sites in Oklahoma. Additional records of outstanding flood events are available at about 75 miscellaneous sites. The maximum flood discharge known at each of these sites is tabulated in tables 3 and 4.

Flood magnitude in the eastern half of the State is generally higher than in the western half because rainfall in the eastern half is higher. Figures 19 and 20 illustrate the variation of maximum flood peaks with drainage area size.

Figure 19 is a plot for all sites east of the 98th meridian and figure 20 shows all sites west of the 98th meridian. Although the 98th meridian is a somewhat arbitrary dividing line, it forms an approximate boundary between the semi-arid west and the subhumid east. For some of the large basins that lie in both areas, the maximum floods have been plotted on both figures.

The 50-year flood was computed for each gaging station used in the regression analysis from the regression equation and basin characteristics. These calculated 50-year floods were used to develop the enveloping curves shown on figures 19 and 20. The maximum and minimum curves shown in each figure illustrate the variation of the 50-year flood resulting from variations in stream slope and mean annual precipitation. The points lying above the maximum curves, and in some cases those lying between the maximum and minimum curves, represent outstanding floods with recurrence intervals greater than 50 years. The dashed lines are extrapolations of the enveloping curves. The many points lying below the minimum curves in the small drainage area range are indicative of the short-term records collected during the past 8 to 10 years of relatively low runoff.

Figures 19 and 20 can only be used in a general way. They conceivably illustrate the probable maximum flood to be expected from various size drainage basins, but even this is not entirely true because other factors than drainage area size determine the magnitude of flood peaks. They add a certain amount of confidence to the use of the regression equations because the enveloping curves, which were developed from the regression equations, provide a good fit of the plotted maximum floods.

Table 3. — Maximum known discharges at gaging stations in Oklahoma.

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07148350	Salt Fork Arkansas River near Winchester	West	856	May, 1957	80,000	93.5
07148400	Salt Fork Arkansas River near Alva	West	1,009	Oct. 23, 1941	27,000	26.8
07149500	Salt Fork Arkansas River near Cherokee	West	2,439	Oct. 23, 1941	35,000	14.4
07150500	Salt Fork Arkansas River near Jet	West	3,194	May 19, 1938	25,900	8.11
07150580	Sand Creek tributary near Kremlin	East	7.21	June 17, 1969	660	91.5
07150870	Salt Fork Arkansas River tributary near Eddy	East	2.35	Sep. 16, 1969	1,320	562
07151000	Salt Fork Arkansas River at Tonkawa	West	4,520	May 20, 1938	40,800	9.03
07152000	Chikaskia River near Blackwell	East	1,859	June 10, 1923	100,000	53.8
07152360	Elm Creek near Foraker	East	18.2	June 24, 1969	9,200	505
07152410	Rock Creek near Shidler	East	9.13	May 18, 1965	1,740	191
07152500	Arkansas River at Ralston	East & West	46,850	June 11, 1923	200,000	4.27
07152520	Black Bear Creek tributary near Garber	East	0.97	Apr. 26, 1971	333	343
07153000	Black Bear Creek at Pawnee	East	576	Oct. 3, 1959	30,200	52.4
07153100	Ranch Creek at Cleveland Dam near Cleveland	East	21.9	Sep. 4, 1940	32,400	1,480
07154400	Carrizozo Creek near Kenton	West	111	July 6, 1958	15,600	141
07154500	Cimarron River near Kenton	West	1,038	Oct. 17, 1965	43,400	41.8
07154650	Tesequite Creek near Kenton	West	25.4	Aug. 6, 1971	7,250	285

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07155000	Cimarron River above Ute Creek near Boise City	West	1,879	Apr. 20, 1942	80,000	42.6
07155100	Cold Springs Creek tributary near Wheelless	West	11	Aug. 21, 1965	2,520	229
07155500	Cimarron River near Boise City	West	2,023	Apr. 20, 1942	80,000	39.5
07155510	Flagg Springs Creek tributary near Boise City	West	5.15	Aug. 21, 1965	2,700	524
07156900	Cimarron River near Forgan	West	4,220	Oct. 20, 1965	21,200	5.02
07157000	Cimarron River near Mocane	West	4,305	May 17, 1951	53,400	12.4
07157550	West Fork Creek near Knowles	West	4.22	Aug. 14, 1967	1,150	273
07157950	Cimarron River near Buffalo	West	7,117	June 11, 1965	9,280	1.30
07157960	Buffalo Creek near Lovedale	West	408	Aug. 9, 1967	15,800	38.7
07158000	Cimarron River near Waynoka	West	8,504	May 16, 1957	94,500	11.1
07158020	Cimarron River tributary near Lone Wolf	West	4.07	Apr. 18, 1970	880	216
07158080	Sand Creek tributary near Waynoka	West	1.61	Aug. 21, 1970	568	353
07158120	Cimarron River tributary near Isabella	West	0.62	May 7, 1969	207	334
07158180	Salt Creek tributary near Okeene	West	8.23	June 10, 1967	1,500	182
07158500	Preacher Creek near Dover	West	14.5	May 15, 1957	6,420	443
07158550	Turkey Creek tributary near Goltry	West	5.08	Apr. 18, 1970	1,100	217
07159000	Turkey Creek near Drummond	West	248	May 16, 1957	18,800	75.8
07159200	Kingfisher Creek near Kingfisher	West	157	June 11, 1967	17,600	112
07159500	Bluff Creek above Lake Hefner near Oklahoma City	East	1.62	June 16, 1955	1,070	660
07160000	Cimarron River near Guthrie	West	11,966	May 17, 1957	158,000	13.2
07160500	Skeleton Creek near Lovell	East	410	May 16, 1957	75,200	183
07160550	West Beaver Creek near Orlando	East	13.9	July 1, 1968	3,500	252
07161000	Cimarron River at Perkins	East & West	12,926	May 17, 1957	149,000	11.5
07163000	Council Creek near Stillwater	East	31	Oct. 2, 1959	25,000	806
07163020	Corral Creek near Yale	East	2.89	Sep. 21, 1965	1,260	436
07163500	Cimarron River at Oilton	East & West	13,743	June 21, 1935	72,300	5.26
07164000	Cimarron River at Mannford	East & West	13,923	May 18, 1957	145,000	10.4
07164500	Arkansas River at Tulsa	East & West	62,074	Oct. 5, 1959	246,000	3.96
07164940	Deep Creek near Olive	East	3.25	Sep. 5, 1971	433	133
07165500	Polecat Creek below Heyburn Lake near Heyburn	East	123	Sep. 4, 1940	26,000	211
07165550	Snake Creek near Bixby	East	50.0	Apr. 13, 1967	8,310	166
07171000	Verdigris River near Lenapah	East	3,639	May 20, 1943	137,000	37.6
07171120	Clear Creek tributary near Hollow	East	2.19	June 29, 1967	270	123
07171400	Verdigris River near Oologah	East	4,339	Sep. 19, 1961	27,900	6.43
07171500	Verdigris River near Sageeyah	East	4,402	May 21, 1943	138,000	31.3
07173000	Caney River near Hulah	East	736	Apr. 10, 1944	51,000	69.3
07174000	Little Caney River near Copan	East	424	Apr. 10, 1944	36,400	85.8
07174200	Little Caney River below Cotton Creek, near Copan	East	502	May 9, 1961	23,700	47.2
07174500	Caney River at Bartlesville	East	1,465	July 21, 1950	26,400	18.0
07174570	Dry Hollow near Pawhuska	East	1.67	Sep. 22, 1970	664	398
07174600	Sand Creek at Okesa	East	139	Sep. 13, 1961	14,700	106
07174700	Caney River near Ochelata	East	1,753	June 13, 1957	33,800	19.3

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07174720	Hogshooter Creek tributary near Bartlesville	East	0.94	June 24, 1969	919	978
07175000	Double Creek subwatershed No. 5 (Nellie Bly Creek) near Ramona	East	2.39	June 23, 1957	3,580	1,500
07175500	Caney River near Ramona	East	1,955	Oct. 3, 1945	38,500	19.7
07176000	Verdigris River near Claremore	East	6,534	May 21, 1943	182,000	27.9
07176500	Bird Creek at Avant	East	364	Oct. 2, 1959	32,400	89.0
07177000	Hominy Creek near Skiatook	East	340	Oct. 3, 1959	35,600	105
07177500	Bird Creek near Sperry	East	905	Oct. 3, 1959	90,000	99.4
07178000	Bird Creek near Owasso	East	1,022	Mar. 29, 1938	19,700	19.3
07178580	Otter Creek near Tiawah	East	15.2	Feb. 1, 1968	3,310	218
07178600	Verdigris River near Inola	East	7,911	May 21, 1943	224,000	28.3
07178640	Bull Creek near Inola	East	10.7	Apr. 30, 1970	960	89.7
07178650	Billy Creek tributary near Wagoner	East	5.71	Jan. 29, 1969	730	128
07185000	Neosho River near Commerce	East	5,876	July 15, 1951	267,000	45.4
07188000	Spring River near Quapaw	East	2,510	May 19, 1943	190,000	75.7
07188140	Flint Branch near Peoria	East	4.90	June 13, 1964	4,400	898
07189480	Wolf Creek near Grove	East	7.21	May, 1943	7,500	1,040
07189500	Neosho River near Grove	East	9,969	Apr. 15, 1927	133,000	13.3
07189700	Horse Creek at Afton	East	21.9	Apr. 30, 1970	1,920	87.7
07189720	Horse Creek tributary near Afton	East	0.81	Feb. 1, 1968	307	379
07190500	Neosho River near Langley	East	10,335	May 20, 1943	300,000	29.0
07190600	Big Cabin Creek near Pyramid Corners	East	71.1	Apr. 30, 1970	7,940	112
07191000	Big Cabin Creek near Big Cabin	East	466	May 18, 1943	63,000	135
07191220	Spavinaw Creek near Sycamore	East	133	May 19, 1961	15,000	113
07191260	Brush Creek near Jay	East	16.0	Apr. 30, 1970	2,650	166
07191500	Neosho River near Chouteau	East	11,546	May 20, 1943	400,000	34.6
07192000	Pryor Creek near Pryor	East	229	Oct. 3, 1959	32,000	140
07192500	Neosho River near Wagoner	East	12,307	May 21, 1943	400,000	32.5
07193500	Neosho River below Fort Gibson Lake, near Fort Gibson	East	12,495	May, 1943	400,000	32.0
07194500	Arkansas River near Muskogee	East & West	84,133	May 21, 1943	700,000	8.32
07194515	Mill Creek near Park Hill	East	2.57	Apr. 19, 1968	1,860	724
07195500	Illinois River near Watts	East	635	July 25, 1960	68,000	107
07196000	Flint Creek near Kansas	East	110	Aug. 14, 1961	23,600	215
07196010	Flint Creek tributary near Flint	East	0.94	May 14, 1970	142	151
07196380	Illinois River tributary near Tahlequah	East	3.59	May 10, 1970	1,560	435
07196500	Illinois River near Tahlequah	East	959	May 10, 1950	150,000	156
07197000	Baron Fork at Eldon	East	307	Apr. 3, 1957	37,600	122
07198000	Illinois River near Gore	East	1,626	May 11, 1950	180,000	111
07198500	Dirty Creek near Warner	East	227	May 10, 1943	42,000	185
07228290	Rough Creek near Thomas	West	10.4	June 10, 1967	5,230	503
07228450	Deer Creek tributary near Hydro	West	2.31	Sep. 21, 1965	1,050	455
07228500	Canadian River at Bridgeport	West	20,428	June 23, 1948	150,000	7.34
07228600	Canyon View Creek near Geary	West	11.8	Sep. 21, 1965	6,150	521
07228930	Worley Creek near Tuttle	East	11.2	Apr. 12, 1967	1,900	170
07228960	Canadian River tributary near Newcastle	East	3.32	Apr. 14, 1965	1,460	440
07229000	Canadian River near Newcastle	West	20,962	May 4, 1941	200,000	9.54
07229100	Canadian River near Noble	West	21,110	Sep. 22, 1965	35,500	1.68
07229220	Walnut Creek near Blanchard	East	1.26	Nov. 20, 1963	887	704
07229300	Walnut Creek at Purcell	East	202	Sep. 23, 1970	17,200	85.1

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07229420	Julian Creek tributary near Asher	East	2.28	May 13, 1968	2,000	877
07230000	Little River below Lake Thunderbird, near Norman	East	257	May 25, 1957	34,600	135
07230500	Little River near Tecumseh	East	456	June, 1932	60,000	132
07230800	Salt Creek near Dewright	East	210	May 19, 1960	7,900	37.6
07231000	Little River near Sasakwa	East	865	May 11, 1950	44,600	51.6
07231280	Arbeca Creek near Allen	East	2.26	Oct. 8, 1970	2,600	1,150
07231320	Leader Creek near Atwood	East	0.72	Oct. 8, 1970	1,470	2,040
07231500	Canadian River at Calvin	East & West	23,151	May 11, 1950	174,000	7.52
07231560	Middle Creek near Carson	East	7.40	May 13, 1968	5,460	738
07231950	Pine Creek near Higgins	East	9.99	May 26, 1965 & Apr. 23, 1966	8,600	861
07232000	Gaines Creek near Krebs	East	588	Feb. 18, 1938	70,000	119
07232500	Beaver River near Guymon	West	1,175	June 15, 1964	55,400	47.1
07232550	South Fork tributary near Guymon	West	0.26	June 16, 1968	48	185
07232650	Aqua Frio Creek near Felt	West	31.0	Aug. 19, 1965	1,900	61.3
07233000	Coldwater Creek near Hardesty	West	767	June 25, 1947	21,500	28.0
07233850	Sharp Creek tributary near Turpin	West	1	June 10, 1969	72	72
07234000	Beaver River at Beaver	West	3,685	Oct. 8, 1946	70,000	19.0
07234050	North Fork Clear Creek tributary near Balko	West	4.00	Aug. 22, 1965	1,800	450
07234100	Clear Creek near Elmwood	West	170	Oct. 16, 1968	20,000	118
07234290	Clear Creek tributary near Catesby	West	9.18	June 9, 1968	1,480	161
07234500	Beaver River near Fort Supply	West	5,068	Oct. 9, 1946	50,000	9.87
07235500	Wolf Creek near Shattuck	West	961	Oct. 22, 1941	24,000	25.0
07235700	Little Wolf Creek tributary near Gage	West	17.6	May 13, 1969	5,200	295
07236000	Wolf Creek near Fargo	West	1,386	June 23, 1957	81,600	58.9
07237000	Wolf Creek near Fort Supply	West	1,498	June 24, 1939	14,200	9.48
07237500	North Canadian River at Woodward	West	6,777	Oct. 10, 1946	42,000	6.20
07237750	Cottonwood Creek near Vici	West	11.5	June 24, 1965	950	82.6
07237800	Bent Creek near Seiling	West	139	Apr. 18, 1970	4,810	34.6
07238000	North Canadian River near Seiling	West	7,414	May 19, 1951	33,000	4.45
07239000	North Canadian River at Canton	West	7,601	Oct. 12, 1946	24,800	3.26
07239050	North Canadian River tributary near Eagle City	West	0.52	June 11, 1967	501	963
07239500	North Canadian River near El Reno	West	8,143	Oct. 28, 1941	15,000	1.84
07241000	North Canadian River below Lake Overholser near Oklahoma City	West	8,323	Oct., 1923	135,000	16.2
07241500	North Canadian River near Oklahoma City	West	8,455	June 3, 1932	100,000	11.8
07241880	Sand Creek near Cromwell	East	9.48	Apr. 30, 1970	2,110	223
07242000	North Canadian River near Wetumka	East & West	9,391	Apr. 15, 1945	66,000	7.03
07242100	Wewoka Creek near Wetumka	East	396	May 19, 1960	11,300	28.5
07242160	Alabama Creek near Weleetka	East	16.5	Apr. 12, 1967	4,100	248
07242180	Stidham Creek tributary near Dustin	East	2.56	May 13, 1968	622	243
07242500	Bellcow Creek at Chandler	East	46	May 23, 1952	2,910	63.3
07243000	Dry Creek near Kendrick	East	69	June 25, 1958	5,020	72.8

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07243500	Deep Fork near Beggs	East	2,018	May 11, 1943	66,800	33.1
07243550	Adams Creek near Beggs	East	5.90	Apr. 29, 1970	3,350	568
07244000	Deep Fork near Dewar	East	2,307	Oct., 1908	85,000	36.8
07244790	Brooken Creek near Enterprise	East	5.66	May 13, 1968	4,200	742
07245000	Canadian River near Whitefield	East & West	37,876	May 10, 1943	281,000	7.4
07245090	Vian Creek near Vian	East	19.6	Apr. 20, 1966	7,320	373
0724550	Sallisaw Creek near Sallisaw	East	182	Apr. 15, 1945	110,000	604
07246000	Sans Bois Creek near Keota	East	346	Feb. 18, 1938	30,000	86.7
07246500	Arkansas River near Sallisaw	East & West	125,516	May 27, 1957	544,000	4.3
07246600	Cache Creek near Cowlington	East	20.6	Apr. 5, 1964	3,070	149
07246610	Pecan Creek near Spiro	East	0.90	May 13, 1968	602	669
07246630	Big Black Fox Creek near Long	East	5.32	Oct. 12, 1969	2,500	470
07247500	Forche Maline near Red Oak	East	122	May 19, 1960	41,500	340
07248500	Poteau River near Wister	East	993	May 16, 1945	78,600	79.2
07299570	Red River near Quanah, Texas	West	3,552	June 7, 1960	64,000	18.0
07299705	Bitter Creek near Hollis	West	11.3	June 1, 1968	830	73.5
07299720	Mule Creek near Eldorado	West	3.84	Sep. 20, 1965	1,740	453
07300150	Salt Fork Red River tributary near Vinson	West	7.49	Mar. 5, 1965	1,180	158
07300500	Salt Fork Red River at Mangum	West	1,357	May 16, 1957	72,000	53.1
07301455	Turkey Creek near Erick	West	19.8	June 13, 1964	2,520	127
07301480	Short Creek near Sayre	West	9.12	Oct. 9, 1968	1,900	208
07301495	Indian Creek near Carter	West	24.9	Oct. 9, 1968	2,350	94.4
07301500	North Fork Red River near Carter	West	1,938	May 26, 1959	53,400	27.6
07302000	North Fork Red River near Granite	West	2,095	May 18, 1935	28,000	13.4
07303000	North Fork Red River below Altus Dam, near Lugert	West	2,116	May 18, 1951	16,100	7.6
07303400	Elm Fork of North Fork Red River near Carl	West	416	Apr. 27, 1962	17,900	43.0
07303450	Deer Creek near Plainview	West	27.8	May 25, 1969	2,200	79.1
07303500	Elm Fork of North Fork Red River near Mangum	West	838	May 12, 1947	30,600	36.5
07304500	Elk Creek near Hobart	West	549	Oct. 4, 1955	22,400	40.8
07305000	North Fork Red River near Headrich	West	3,845	Prior to 1927	85,000	22.1
07305500	West Otter Creek at Snyder near Mountain Park	West	132	June 6, 1953	14,200	108
07306500	West Otter Creek at Mountain Park	West	164	May 16, 1947	5,110	31.2
07308500	Red River near Burkburnett, Texas	West	14,634	Oct. 19, 1965	62,800	4.2
07309480	Canyon Creek near Medicine Park	West	3.35	July 3, 1967	2,200	657
07311000	East Cache Creek near Walters	West	675	May 18, 1951	28,200	41.8
07311200	Blue Beaver Creek near Cache	West	24.6	May 6, 1969	3,050	124
07311410	Red Creek near Snyder	West	6.12	July 1, 1968	800	131
07311420	Deadman Creek tributary at Manitou	West	2.57	July 13, 1968	980	381
07311500	Deep Red Run near Randlett	West	617	Sep. 22, 1969	48,700	78.9
07312850	Nine Mile Beaver Creek near Elgin	West	6.29	May 10, 1964	2,000	318
07312950	Little Beaver Creek near Marlow	West	35.4	May 31, 1968	6,400	181
07313000	Little Beaver Creek near Duncan	West	158	May 25, 1957	47,500	301
07313500	Beaver Creek near Waurika	West	563	May 18, 1951	65,300	116

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07313600	Cow Creek at Waurika	West	193	May 19, 1955	29,500	153
07315500	Red River near Terral	West	22,787	June 8, 1941	197,000	8.65
07315680	Cottonwood Creek tributary near Loco	West	1.74	June 22, 1965	2,100	1,210
07315700	Mud Creek near Courtney	East	572	Apr. 13, 1967	10,900	19.1
07315880	Demijohn Creek near Wilson	East	5.74	Apr. 12, 1967	2,300	401
07315900	Walnut Bayou near Burneyville	East	314	Sep. 24, 1970	3,860	12.3
07316000	Red River near Gainesville, Texas	East & West	24,846	June 9, 1941	168,000	6.76
07316130	Wilson Creek tributary near McMillan	East	2.97	May 12, 1968	1,090	367
07316140	Brier Creek near Powell	East	12.0	May 17, 1968	5,260	438
07316500	Washita River near Cheyenne	West	794	Apr. 29, 1954	69,800	87.9
07317500	Sandstone Creek subwatershed No. 16A near Cheyenne	West	5.16	May 26, 1959	2,710	525
07318000	Sandstone Creek subwatershed No. 16 near Cheyenne	West	16.25	May 23, 1954	18,900	1,160
07318500	Sandstone Creek subwatershed No. 14 near Cheyenne	West	1.02	Apr. 18, 1957	1,160	1,140
07319000	Sandstone Creek subwatershed No. 17 near Cheyenne	West	10.13	Apr. 29, 1954	6,030	595
07319500	Sandstone Creek near Berlin	West	40.9	Apr. 30, 1954	5,710	140
07320000	Sandstone Creek subwatershed No. 10A near Elk City	West	2.87	Aug. 16, 1968	1,700	592
07320500	Sandstone Creek subwatershed No. 6 near Elk City	West	6.46	May 3, 1957	1,870	289
07321000	Sandstone Creek subwatershed No. 5 near Elk City	West	3.89	Aug. 16, 1968	2,850	733
07321500	Sandstone Creek subwatershed No. 3 near Elk City	West	0.62	Apr. 18, 1957	1,780	2,870
07322000	Sandstone Creek subwatershed No. 9 near Elk City	West	3.13	June 8, 1971	2,420	773
07322500	East Branch Sandstone Creek near Elk City	West	23.0	May 25, 1959	1,130	49.1
07323000	Sandstone Creek near Cheyenne	West	83.1	Apr. 30, 1954	6,360	76.5
07323500	Sandstone Creek subwatershed No. 22 near Cheyenne	West	2.25	Apr. 29, 1954	3,300	1,470
07324000	Sandstone Creek subwatershed No. 1 near Cheyenne	West	5.33	Apr. 18, 1957	4,280	803
07324400	Washita River near Foss	West	1,551	Apr. 19, 1957	14,000	9.03
07324500	Barnitz Creek near Arapaho	West	243	May 16, 1951	7,700	31.7
07325000	Washita River near Clinton	West	1,977	May 16, 1951	66,800	33.8
07325500	Washita River at Carnegie	West	3,129	May 18, 1949	50,000	16.0
07326000	Cobb Creek near Fort Cobb	West	313	May 17, 1949	35,000	112
07326500	Washita River at Anadarko	West	3,656	May 25, 1903	29,000	7.93
07327000	Sugar Creek near Gracemont	West	208	May 17, 1949	32,000	154
07327490	Little Washita River near Ninnekah	West	208	May 10, 1964	7,560	36.3
07327500	Little Washita River at Ninnekah	West	227	May 16, 1947	36,000	159

Table 3. — Maximum known discharges at gaging stations in Oklahoma. (cont.)

Station Number	Gaging station and location	Basin East or West of 98th Meridian	Contributing drainage area (mi ²)	Maximum known discharge		
				Date	ft ³ /sec	ft ³ /sec/mi ²
07328000	Washita River near Tabler	West	4,706	Apr. 7, 1927	53,600	11.4
07328030	Big Dry Creek near Alex	East	7.57	May 9, 1964	2,450	324
07328040	Little Dry Creek near Alex	East	0.88	July 1, 1968	280	318
07328070	Winter Creek near Alex	East	33	Sep. 22, 1970	2,420	73.3
07328100	Washita River at Alex	West	4,787	May 7, 1969	9,350	1.95
07328500	Washita River near Pauls Valley	West	5,330	May 18, 1957	35,800	6.72
07329000	Rush Creek at Purdy	East	145	May 10, 1950	30,000	207
07329500	Rush Creek near Maysville	East	206	May 18, 1957	38,500	187
07329870	Honey Creek near Davis	East	18.7	Oct. 8, 1970	7,000	374
07329900	Rock Creek at Dougherty	East	138	May 17, 1957	25,600	186
07330500	Caddo Creek near Ardmore	East	298	Mar. 15, 1945	22,300	74.8
07331000	Washita River near Durwood	East & West	7,202	May 19, 1957	98,000	13.6
07331410	Buzzard Creek near Reagan	East	4.30	May 13, 1968	1,040	242
07331600	Red River at Denison Dam near Denison, Texas	East & West	33,784	May 21, 1935	201,000	5.95
07332070	Rock Creek near Achille	East	0.72	Apr. 21, 1967	1,090	1,510
07332400	Blue Creek at Milburn	East	203	Oct. 8, 1970	35,100	713
07332500	Blue River near Blue	East	476	Feb. 17, 1938	34,400	72.3
07333000	North Boggy Creek near Stringtown	East	136	Apr. 3, 1957	7,600	55.9
07333330	Chickasaw Creek tributary near Stringtown	East	3.19	Apr. 20, 1971	4,930	1,550
07333500	Chickasaw Creek near Stringtown	East	32.7	Oct. 14, 1962	18,800	575
07333800	McGee Creek near Stringtown	East	86.6	Apr. 26, 1957	10,200	118
07334000	Muddy Boggy Creek near Farris	East	1,087	June 17, 1945	61,900	56.9
07335000	Clear Boggy Creek near Caney	East	720	Feb., 1938	54,600	75.8
07335310	Rock Creek near Boswell	East	0.94	May 13, 1968	550	585
07335320	Bokchito Creek near Soper	East	16.6	May 13, 1968	4,300	259
07335500	Red River at Arthur City, Texas	East & West	38,595	May 28, 1908	400,000	10.4
07335700	Kiamichi River near Big Cedar	East	40.1	Oct. 30, 1967	16,300	406
07335760	Kiamichi River tributary near Albion	East	1.50	Mar. 29, 1965	900	600
07336000	Tenmile Creek near Miller	East	68	May 2, 1958	5,930	87.2
07336500	Kiamichi River near Belzoni	East	1,423	Oct., 1915	72,000	50.6
07336520	Frazier Creek near Oleta	East	19.4	Aug. 28, 1964	4,200	216
07336710	Rock Creek near Sawyer	East	3.39	Apr. 23, 1964	995	294
07336780	Perry Creek near Idabel	East	7.53	Apr. 22, 1964	4,400	584
07336785	Bokchito Creek near Garvin	East	2.96	Jan. 30, 1969	925	312
07337220	Big Branch near Ringold	East	1.99	May 17, 1968	1,460	734
07337500	Little River near Wright City	East	645	May 6, 1961	78,200	121
07337900	Glover Creek near Glover	East	315	May, 1961	88,200	280
07337920	Fifteen Creek near Glover	East	1.23	May 17, 1968	885	720
07338000	Little River near Idabel	East	1,173	Feb. 18, 1938	86,000	73.3
07338500	Little River below Lukfata Creek, near Idabel	East	1,226	Feb., 1938	86,000	70.1
07338520	Yanubbee Creek near Broken Bow	East	9.10	Jan. 30, 1969	2,800	308
07338780	Mountain Fork tributary near Smithville	East	0.85	Nov. 12, 1969	370	435
07339000	Mountain Fork near Eagletown	East	787	May 20, 1960	101,000	128

Table 4. — Peak discharge at miscellaneous sites.

Stream and place of determination	Contributing Drainage area (mi ²)	Basin East or West of 98th Meridian	Peak Discharge		
			Date	ft ³ /sec	ft ³ /sec/mi ²
1940 WATER YEAR					
Lagoon Creek near Jennings	47	East	Sept. 4, 1940	43,600	928
Ranch Creek near Hallett	17.1	East	Sept. 4, 1940	32,400	1,890
1941 WATER YEAR					
Spavinaw Creek near Spavinaw	400	East	Apr. 19, 1941	86,400	216
1943 WATER YEAR					
Polecat Creek near Sapulpa	325	East	May 9, 1943	61,000	188
Little Deep Fork near Depew	69.9	East	May 9, 1943	17,000	243
Spring Creek near Locust Grove	116	East	May 17, 1943	26,000	224
Warren Branch near Peona	12.0	East	May 18, 1943	4,200	350
Tar Creek near Commerce	37.3	East	May 18, 1943	9,700	260
Bird Creek near Nelogoney	195	East	May 19, 1943	29,000	149
Black Bear Cr. near Skedee	590	East	May 19, 1943	22,000	37
Deep Fork near Stroud	1,093	East	May 18, 1943	42,000	38
Hudson Creek near Narcissa	13.4	East	May 18, 1943	15,000	1,120
Panther Creek near Bartlesville	7.5	East	May 19, 1943	5,500	733
Horse Creek near Collinsville	8.55	East	May 22, 1943	2,540	297
Brush Creek near Jay	25.4	East	May, 1943	3,600	142
Caney Creek near Wauhillau	75.4	East	May, 1943	17,000	225
Dry Creek near Davenport	144	East	May, 1943	20,000	139
1945 WATER YEAR					
East Fork Big Creek (Tiger Creek) near Bowlegs	0.89	East	Apr. 14, 1945	3,000	3,370
Coon Creek near Wewoka	10	East	Apr. 14, 1945	11,000	1,100
Wewoka Creek at Lima	75	East	Apr. 14, 1945	88,000	1,170
1948 WATER YEAR					
Deer Creek at Hydro	280	West	June 22, 1948	31,000	111
Deer Creek tributary near Hydro	4.46	West	June 22, 1948	8,500	1,910
Lariat Creek near Geary	14.0	West	June 22, 1948	19,000	1,360
Lariat Creek tributary near Geary	0.84	West	June 22, 1948	2,100	2,500
Kingfisher Creek near Kingfisher	322	West	June 23, 1948	55,000	171
1949 WATER YEAR					
Rainey Mt. Creek Trib. near Mt. View	2.60	West	May 17, 1949	3,300	1,270
Crawfish Creek near Mt. View	7.45	West	May 18, 1949	5,800	779
Rainy Mountain Creek near Mountain View	316	West	May 18, 1949	38,000	120
Cottonwood Creek near Guthrie	353	East	May 19, 1949	44,000	125
North Fork Walnut Creek near Blanchard	49.2	East	May 28, 1949	36,400	740
1950 WATER YEAR					
Knee Creek near Lahoma	17.4	West	May 8, 1950	11,200	644
Cow Creek near Comanche	64.8	East	May 10, 1950	43,200	667
Willow Creek at Duncan	3.87	East	May 10, 1950	5,890	1,520
Greenleaf Spillway near Braggs	85.8	East	May 10, 1950	20,100	234
Spring Creek near Locust Grove	116	East	May 10, 1950	41,200	355
Owl Creek near Paoli	5.85	East	May 10, 1950	4,740	810
Middle Boggy Creek at Enid	12.3	East	July 29, 1950	5,830	474

Table 4. — Peak discharge at miscellaneous sites. (cont.)

Stream and place of determination	Contributing Drainage area (mi ²)	Basin East or West of 98th Meridian	Peak Discharge		
			Date	ft ³ /sec	ft ³ /sec/mi ²
1951 WATER YEAR					
Beaver Creek tributary near Arapaho	0.81	West	May 16, 1951	1,590	1,960
Deer Creek near Custer City	90.2	West	May 16, 1951	46,400	514
Deer Creek tributary 1 near Custer City	6.74	West	May 16, 1951	7,030	1,040
Little Deer Creek near Thomas	4.96	West	May 16, 1951	6,230	1,230
Turtle Creek near Arapaho	16.1	West	May 16, 1951	10,900	677
Big Creek Trib. near Cushing	3.31	East	June 13, 1951	3,000	906
Sand Creek near Waynoka	1.62	West	July 4, 1951	990	611
1953 WATER YEAR					
Otter Creek Trib. at Roosevelt	3.45	West	June 5, 1953	2,670	774
Otter Creek near Roosevelt	47.0	West	June 6, 1953	16,300	323
1954 WATER YEAR					
Four Mile Creek near El Reno	8.51	East	Nov. 19, 1953	6,390	751
Rush Creek near Raydon	69.6	West	Apr. 29, 1954	53,700	772
1955 WATER YEAR					
Hackberry Creek near Hardesty	116	West	May 16, 1955	22,100	191
Dry Creek near Comanche	24.8	East	May 18, 1955	5,320	215
Cow Creek at Waurika	191	East	May 19, 1955	29,500	154
Wildhorse Creek near Velma	145	East	May 19, 1955	19,300	133
Deep Fork Trib. at Oklahoma City	1.05	East	July 16, 1955	908	865
1956 WATER YEAR					
Dry Creek near Clinton	10.3	West	Oct. 4, 1955	8,170	793
1957 WATER YEAR					
Huckberry Creek near Waukomis	31	East	May 16, 1957	16,500	532
Clear Creek near Enid	15.8	East	May 16, 1957	3,890	246
Anderson Creek near Freedom	28.7	West	May 16, 1957	12,900	449
Eagle Chief Creek near Carmen	306	West	May 16, 1957	31,800	104
Long Creek near Freedom	42	West	May 16, 1957	17,300	412
South Boggy Creek at Enid	3.66	East	May 16, 1957	3,750	1,020
Walnut Creek near Lone Grove	133	East	May 17, 1957	63,000	474
Criner Creek near Payne	55	East	May 17, 1957	12,600	229
1958 WATER YEAR					
Carrizozo Creek tributary near Kenton	0.15	West	July 6, 1958	307	2,047
Cimarron River tributary (No. 3) near Kenton	4.9	West	July 6, 1958	2,410	492
1970 WATER YEAR					
Lightning Creek at SE 19th St. at Okla. City	14.3	East	May 29, 1970	4,840	338
Lightning Creek at SW 74th St. at Okla. City	3.96	East	May 29, 1970	2,720	687
1971 WATER YEAR					
Lake Arbuckle inflow	126	East	Oct. 8, 1970	80,000(a)	635
Rock Creek at Sulphur	39.2	East	Oct. 8, 1970	27,800	709
Rock Creek tributary (site 9) near Sulphur	1.18	East	Oct. 8, 1970	6,350(b)	5,400
Travertine Creek near Sulphur	3.0	East	Oct. 8, 1970	16,500	5,500

(a) Determined by Bureau of Reclamation, by rate-of-change in contents method.

(b) Determined by Soil Conservation Service, by rate-of-change in contents method.

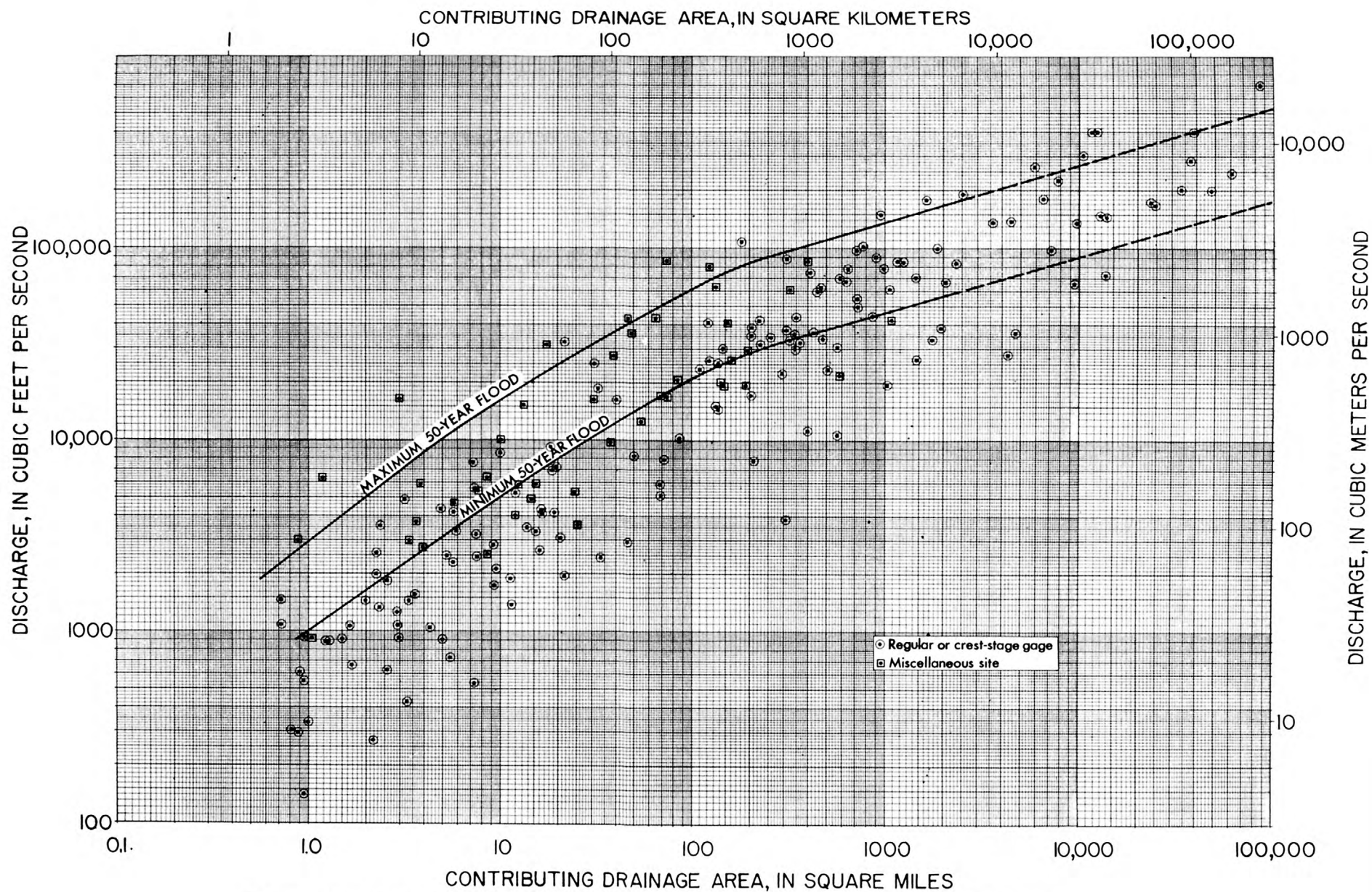


Figure 19. — Relation of maximum known floods to drainage area in eastern Oklahoma.

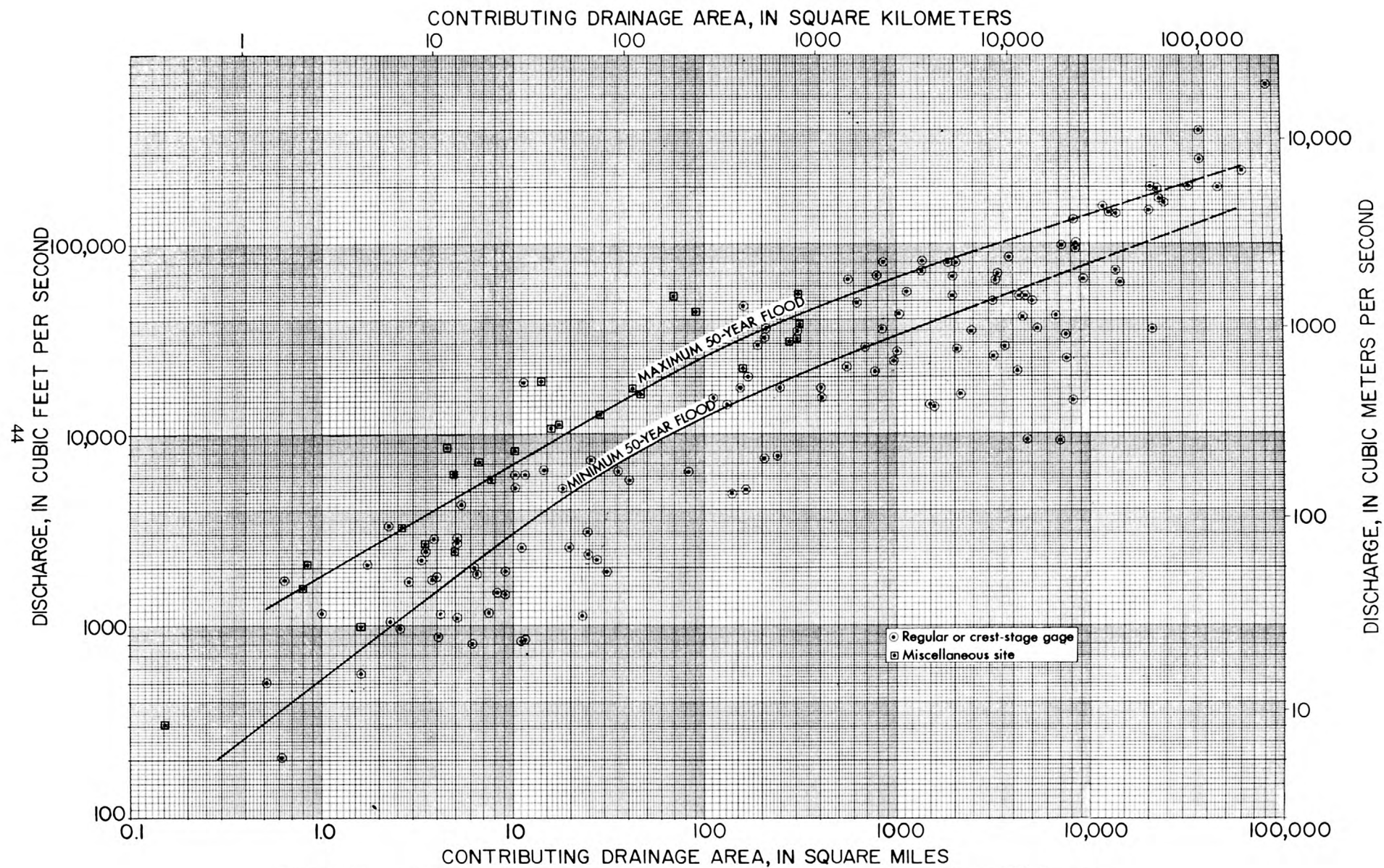


Figure 20. — Relation of maximum known floods to drainage area in western Oklahoma.

SEASONAL OCCURRENCE OF FLOODS

A random sampling of gaging stations records throughout Oklahoma was made to analyze the seasonal occurrence of floods. Twenty three stations were selected, and the month of occurrence of the annual peaks was tabulated for each station. These were reduced to percentages as shown in figure 21. The spring and early summer months, April through July, have the highest occurrence of annual floods. More than two-thirds of all annual floods occur during these four months. December is the least likely month to have an annual flood with less than one-half of one percent chance.

SUMMARY

Flood records at 297 gaging stations in and near Oklahoma have been tabulated for this report. The flood-frequency relation and associated statistics were derived for most stations having 8 or more years of record by fitting the array of annual peaks to a log-Pearson Type III distribution. Selected recurrence-interval floods from the 2-year through the 100-year level were tabulated for each record depending on the number of years of record used to calculate the flood-frequency curve. Many of the flood records collected during the 1960-71 period are not indicative of long-term conditions because of low runoff in parts of Oklahoma. An adjustment, based on all stations having 20 or more years of record, was developed and applied to the short-term frequency curves to make them more representative of long-term conditions.

The flood-frequency data for unregulated streams of less than 2,500 mi² (6,500 km²) were related to basin characteristics through multiple linear regression techniques. Drainage area size, main channel slope, and mean annual precipitation were the most significant of several parameters tested in the analysis. Equations were developed for the 2-, 5-, 10-, 25-, 50-, and 100-year floods. The equations for the 25-, 50-, and 100-year floods were adjusted to ensure that the shape and slope of frequency curves developed from the equations were consistent with frequency curves developed from station data. For basins larger than 100 mi² (260 km²), the standard error of prediction of the

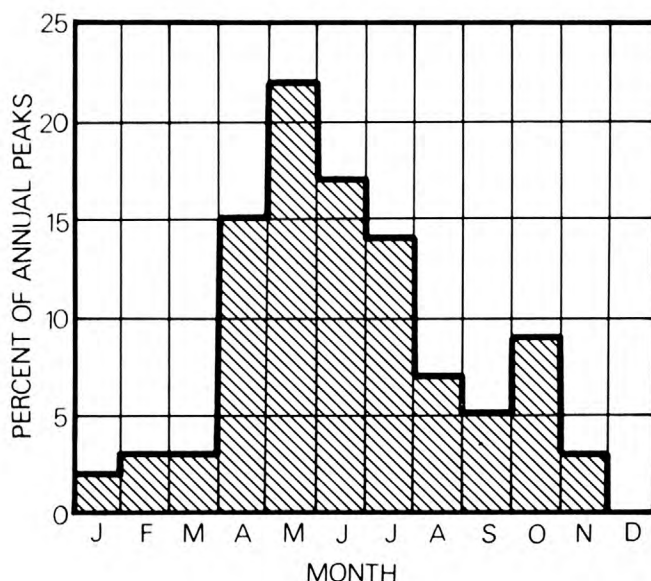


Figure 21. — Seasonal occurrence of floods.

equations is on the order of ± 40 percent; for smaller basins the standard error of prediction through the 10-year flood level is about ± 60 percent and above the 10-year flood level is unknown because of insufficient data. The equations are recommended for estimating flood-frequency at ungaged sites of unregulated, natural basins of up to 2,500 mi² (6,500 km²). At or near gaging stations, a weighting procedure based on length of record is recommended.

Flood-frequency is related to drainage area size for streams larger than 2,500 mi² (6,500 km²). Relations are given for parts of the Arkansas, Salt Fork Arkansas, Cimarron, North Canadian, Canadian, Washita, North Fork Red, and Red Rivers. Regulation on some of these streams precludes the definition of flood frequency in certain reaches, except where records are adequate to define the effects of regulation. Flood frequency for lower reaches of the Arkansas River, and all of the Neosho and Verdigris Rivers in Oklahoma, is not defined because of extensive regulation.

Relations of maximum floods of record to drainage area size provide a graphical guide to maximum probable floods in eastern and western Oklahoma. The 50-year flood based on the regression equations define enveloping curves which illustrate the range to be expected from variations in slope and rainfall.

Seasonal variations indicate most flood activity occurs during the months April through July and the least activity is in December.

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- U.S. Water Resources Council, 1967, A uniform technique for determining flood-flow frequencies: U.S. Water Resources Council Bull. 15, 15 p.
- Westfall, A. O., and Patterson, J. L., 1964, Floods in Oklahoma, Magnitude and frequency: U.S. Geol. Survey open-file report, 105 p.

APPENDIXES

APPENDIX A

FLOOD DATA AT GAGING STATIONS

Explanation of Tables

The following tables contain flood data for gaging stations having 5 or more years of record through the 1971 water year. The tables contain a brief description of the gage location, type of gage, gage datum (if known), historical data, and occasional explanatory remarks.

A listing of the following basin characteristics are given for each gaging station, if available:

(1) Total drainage area, in square miles, is the total area of the basin upstream from the gaging station.

(2) Noncontributing drainage area, in square miles, is the area within the basin that does not contribute surface runoff because of natural causes, such as closed basins and depressions. Areas upstream from man-made lakes and reservoirs are not considered noncontributing.

(3) Contributing drainage area, in square miles, is the difference between total and noncontributing drainage area. This is the area which is considered to contribute directly to surface runoff.

(4) Channel slope, in feet per mile, is the slope measured between two points along the main channel, one of which is located at 10 percent of the channel length and the other at 85 percent of the channel length. Channel length is measured upstream from the site to the basin divide.

(5) Annual precipitation, in inches, is the average annual precipitation determined at the center of the basin from figure 4 of this report. Figure 4 is based on the period 1931-60.

(6) Bankful stage, in feet, is the gage height (based on the latest datum) in the vicinity of the gage at which one or both banks are overtopped by floods.

The log-Pearson Type III flood-frequency data, as calculated from the station data, are given for most stations. All annual peaks shown were used in the calculations except where noted. Those stations for which the 2-, 5-, and 10-year floods were adjusted according to figures 2 and 3 of the report have both the unadjusted and adjusted values shown. The adjusted values are shown in parentheses following the unadjusted values. Log-Pearson Type III statistics are for the unadjusted data.

The tables of peak stages and discharges show all peaks above a selected base as indicated in the remarks paragraph, except in some cases, such as crest-stage gages, where only the annual maximum is shown. A line in the water year column indicates a break in record; a line in the gage height column indicates a change in datum; a line in the date and discharge column indicates a change in gage location; and a continuous line from the date column through the discharge indicates a change in gage location and datum.

Explanation of footnotes is given on each page except for the footnote *** which denotes data not determined.

ARKANSAS RIVER BASIN

07146500 ARKANSAS RIVER AT ARKANSAS CITY, KANS.

LOCATION.--Lat 36°03'23", long 97°03'32", in NE 1/4 NE 1/4 NE 1/4 sec.35, T.34 S., R.3 E., Cowley County, near left bank at downstream side of bridge on U.S. Highway 166, 0.1 mile downstream from St. Louis - San Francisco Railway Co. bridge, 0.5 mile west of Arkansas City, 5.4 miles upstream from Walnut River and at mile 701.4.

GAGE.--Water-stage recorder. Datum of gage is 1,050.04 ft above mean sea level (levels by Corps of Engineers). Sept. 23, 1902, to July 31, 1906, nonrecording gage at site 0.5 mile upstream at datum 9.5 ft higher. Sept. 10, 1921, to Sept. 27, 1929, nonrecording gage and Sept. 28, 1929, to Aug. 28, 1956, water-stage recorder at site 0.5 mile upstream at datum 2.97 ft higher than present datum. Gage heights from 1922 to 1956 converted to present datum.

HISTORICAL DATA.--Flood of June 10, 1923, "according to the recollection of old residents, exceeded the flood of 1877" as reported in U.S. Weather Bureau Climatological Data of June 1923.

REMARKS.--Flow moderately regulated by John Martin Reservoir since 1943 and Cheney Reservoir since 1964. Diversions above station for irrigation. Base for partial-duration series, 10,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 43,713
Noncontributing = 7,607
Contributing = 36,106
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 17,900
Q₅ = 36,600
Q₁₀ = 52,300
Q₂₅ = 75,300
Q₅₀ = 94,600
Q₁₀₀ = 116,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.237
Standard deviation = 0.384
Skew = -0.237

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 25	9.2	10,100	1935	Jun. 5	20.42	23,200	1948	Mar. 21	17.15	12,200
	Jun. 3	11.3	16,700		Jul. 1	18.0	13,200		Jun. 24	17.71	13,700
1904	Jun. 5	13.4	24,800	1936	Jun. 6	15.12	6,440		Jul. 1	21.57	29,600
	Jul. 10	15.2	40,300	1937	Jun. 1	16.9	11,400		Jul. 11	18.13	15,500
1905	May 3	9.4	9,900		Jul. 20	17.03	11,700		Jul. 16	22.07	32,200
	Jun. 2	9.4	9,900	1938	May 21	19.50	19,600	1949	Jul. 25	22.61	35,000
1906	Sep. 21	-	5,000		May 25	17.6	13,200		Aug. 16	19.24	19,500
					Jun. 28	17.4	12,300		Jan. 17	16.87	12,200
1922	Mar. 17	19.2	16,400		Aug. 18	16.92	11,400		Jan. 25	17.44	13,900
	Apr. 11	20.8	22,600	1939	Jun. 29	18.19	14,800		Feb. 13	19.45	20,100
	Jul. 14	22.1	28,600	1940	Sep. 5	16.95	11,400		Feb. 19	19.23	19,700
	Jul. 19	18.7	14,800	1941	Jun. 11	18.90	17,200		Feb. 27	18.69	17,500
1923	Jun. 10	28.43	103,000		Jul. 4	18.31	15,400		May 2	17.37	13,600
1924	Oct. 15	16.3	12,800	1942	Oct. 26	19.45	19,100		May 19	19.39	19,700
	May 2	21.5	22,400		Apr. 27	19.76	20,700	1950	May 23	18.95	18,400
1925	Sep. 23	12.93	2,710		May 7	18.37	16,400		Jun. 1	16.84	12,200
1926	Sep. 5	16.31	7,760		Jun. 22	24.83	45,800		Jun. 8	19.70	20,800
					Jul. 2	18.02	14,400		Jun. 16	18.75	17,800
1927	Oct. 4	23.94	45,300		Sep. 5	16.45	10,000		Jun. 21	19.71	20,800
	Apr. 9	22.8	36,300	1943	Oct. 6	17.55	12,800		Jul. 17	19.37	20,900
	Apr. 20	19.2	17,100		May 19	17.95	14,100		Jul. 19	20.47	24,800
	Aug. 4	19.29	17,600	1944	Mar. 19	16.65	11,000		Aug. 2	22.74	36,200
	Aug. 20	20.29	21,600		Mar. 23	17.49	13,500		Aug. 21	16.77	13,200
1928	Apr. 7	17.3	12,100		Apr. 13	20.07	23,400	1951	Sep. 1	16.63	12,900
	Jun. 9	18.4	15,800		Apr. 24	28.21	73,500		May 2	20.57	25,300
	Jun. 18	19.46	19,900		May 2	20.34	24,800		May 19	26.47	66,000
1929	Nov. 17	17.1	11,600		Jun. 6	20.19	23,900		May 23	21.94	31,800
	Apr. 20	17.4	12,400	1945	Oct. 4	16.57	10,600		Jun. 9	20.17	23,800
	Jun. 8	18.4	15,800		Dec. 7	19.77	20,700		Jun. 25	21.17	27,900
	Jun. 24	19.6	20,200		Apr. 18	24.94	51,600		Jul. 1	24.02	44,400
	Jul. 16	16.8	10,800		Apr. 29	17.00	11,600		Jul. 14	21.40	29,000
1930	May 11	16.84	11,700		Sep. 30	21.99	30,500		Jul. 24	17.31	14,300
1931	Jun. 16	15.17	7,800	1946	Jan. 6	13.28	3,810	1952	Sep. 8	19.27	20,500
1932	Jun. 21	15.19	7,340	1947	Mar. 14	17.22	12,200		Sep. 14	17.43	14,600
					Apr. 15	23.07	36,000		Sep. 26	18.27	17,200
1933	Aug. 21	17.25	11,700		May 21	17.16	11,700	1953	Apr. 24	15.45	9,170
	Aug. 29	18.14	14,600		May 25	17.50	12,400	1954	Apr. 1	15.69	5,360
	Sep. 3,4	18.81	16,800		May 29	17.07	11,500	1955	May 29	14.10	7,260
1934	Apr. 7	11.74	1,880		Jun. 22	17.44	12,900	1956	May 26	15.92	11,600
					Jun. 29	17.77	13,700		Oct. 4	19.35	21,500
1935	May 23	19.94	21,400	1948	Feb. 29	17.69	13,500	1957	May 18	25.55	73,100
	May 31	21.14	28,300		Mar. 3	17.59	13,200		May 25	13.02	10,000
									Jun. 12	15.93	17,400
									Jun. 25	14.75	14,000
									Jun. 29	22.20	41,800
									Sep. 21	13.14	10,400

ARKANSAS RIVER BASIN

07146500 ARKANSAS RIVER AT ARKANSAS CITY, KANS. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Apr. 3	14.62	12,100	1962	Oct. 10	16.33	15,200	1965	Sep. 22	17.85	24,000
	Jul. 4	17.70	22,100		Nov. 2	18.20	20,800				
	Jul. 18	16.62	18,500		May 30	17.15	18,300	1966	Jun. 27	12.31	5,840
	Aug. 2	15.52	14,700		Jun. 3	18.50	26,100				
	Sep. 18	17.32	20,600		Jul. 15	15.01	12,900	1967	Jun. 30	17.04	17,700
					Sep. 16	14.50	11,400		Jul. 6	16.06	14,700
1959	May 12	15.12	12,700		Sep. 23	14.70	12,000				
	Jul. 17	14.77	11,600					1968	Aug. 18	17.97	25,000
				1963	Sep. 4	13.68	7,660				
1960	Oct. 3	21.01	39,100					1969	Oct. 18	19.28	32,300
	Oct. 14	15.72	13,400	1964	Aug. 29	13.20	6,600		Apr. 28	18.10	25,700
	Mar. 28	16.89	17,600						May 9	15.92	16,000
	May 6	15.48	12,600		Nov. 4	14.57	10,000		Jun. 24	17.20	21,400
	Aug. 25	18.38	23,900		Nov. 17	23.20	54,400		Sep. 17	15.03	12,400
	Aug. 28	18.10	22,500		Apr. 3	14.77	12,400				
					May 27	14.57	11,200	1970	Apr. 2	14.79	10,900
1961	Mar. 27	14.87	11,200		Jun. 6	19.36	31,300		Apr. 19	19.90	31,500
	May 6	23.68	46,100		Jun. 11	18.35	26,200		Jun. 13	16.30	15,800
	Jul. 24	17.66	19,200		Jun. 28	18.40	26,500		Jun. 16	14.93	11,300
	Aug. 19	16.60	16,000		Jul. 8	14.52	11,700		Jun. 21	15.31	12,400
	Sep. 15	15.15	11,900		Sep. 7	15.20	13,700				
					Sep. 20	15.26	13,900	1971	Jun. 16	13.93	8,320

07148350 SALT FORK ARKANSAS RIVER NEAR WINCHESTER, OKLA.

LOCATION.--Lat 36°57'43", long 98°46'55", in NE 1/4 SE 1/4 sec.26, T.29 N., R.15 W., Woods County, near left bank on downstream side of pier of county road bridge, 1 mile northeast of Winchester, 2.5 miles upstream from Greenwood Creek, 4.9 miles downstream from Yellowstone Creek, 5 miles downstream from State line, 19 miles northwest of Alva, and at mile 156.2.

GAGE.--Water-stage recorder. Datum of gage is 1,409.6 ft above mean sea level.

HISTORICAL DATA.--Flood in May 1957 reached a stage of 15.4 ft (discharge 80,000 cfs, estimated from logarithmic rating curve extension), from information by county engineers.

REMARKS.--Base for partial-duration series, 5,000 cfs. Log-Pearson calculations based on all annual peaks except 1957.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 856
Noncontributing = 0
Contributing = 856
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 7,320
Q₅ = 19,800
Q₁₀ = 32,500
Q₂₅ = 54,100
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.845
Standard deviation = 0.554
Skew = -0.258

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May	15.4	a 80,000	1964	May 6	6.99	1,200	1968	Aug. 18	9.77	9,740
1960	Aug. 9	8.83	5,170	1965	Jun. 5	9.18	7,140	1969	Oct. 17	10.86	17,100
	Aug. 26	10.91	18,000		Jun. 10	10.93	15,800		Aug. 26	9.55	8,630
					Jun. 13	10.82	18,200		Sep. 2	9.77	9,740
1961	May 4	9.13	6,890						Sep. 16	10.25	12,500
	Aug. 13	9.07	6,500	1966	Oct. 18	7.12	1,380	1970	Apr. 18	7.85	2,740
	Aug. 19	13.95	52,000								
1962	Sep. 17	9.42	7,900	1967	Jun. 29	8.93	6,110	1971	Apr. 23	7.10	1,350
	Sep. 29	9.50	8,380		Apr. 3	10.50	14,200				
1963	Jun. 23	10.90	17,400	1968	Jun. 25	8.70	5,290				

a Annual peak only.

ARKANSAS RIVER BASIN

07148400 SALT FORK ARKANSAS RIVER NEAR ALVA, OKLA.

LOCATION.--Lat 36°48'45", long 98°38'50", in SW1/4SW1/4 sec.18, T.27 N., R.13 W., near left bank on downstream side of pier of bridge on State Highway 14, 1 mile northeast of Alva, 19 miles upstream from Medicine Lodge River, and at mile 126.0.

GAGE.--Water-stage recorder. Datum of gage is 1,297.04 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--According to the Atchison, Topeka and Santa Fe Railway Co., a notable flood occurred July 7, 1904, which was 0.8 ft lower than the flood of May 8, 1922, at railway bridge three-quarters of a mile upstream. Peak stage for 1922 furnished by Corps of Engineers.

REMARKS.--Records computed by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 8,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,009
Noncontributing = 0
Contributing = 1,009
Channel slope (ft/mi) = 14.8
Annual precip. (in) = 23.8
Bankful stage (ft) = 6.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 13,800
Q₅ = 20,100
Q₁₀ = 24,800
Q₂₅ = 31,500
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.150
Standard deviation = 0.187
Skew = 0.352

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	May 8	10.3		1943	Oct. 3	7.00	14,000	1949	May 16	9.43	26,200
1938	Apr. 27	7.51	17,000	1944	Apr. 10	6.80	13,000	1950	May 19	7.27	12,300
	May 4	5.70	8,800		Apr. 22	7.60	13,500		Jun. 4	6.70	9,700
	May 19	7.95	19,900	1945	Jun. 26	7.20	8,900		Jun. 8	7.00	11,000
	May 23	8.42	22,300		Jul. 10	6.57	8,240		Jun. 13	7.87	16,000
	May 31	7.00	14,500		Sep. 28	8.65	16,200		Sep. 4	7.12	11,500
	Aug. 16	8.90	25,300	1946	Jun. 18	6.60	8,330		Sep. 11	7.77	15,400
	Sep. 13	5.95	10,000					1951	Jul. 28	7.65	10,700
1939	Jun. 27	6.10	9,900	1947	Apr. 10	6.72	8,660	1951	May 17	7.84	17,500
1940	Aug. 30	5.98	9,500		Apr. 13	6.64	8,330		May 22	6.62	11,000
					Jun. 4	6.70	8,660		Jun. 21	6.52	10,600
1941	Sep. 1	6.43	8,150		Jun. 21	7.10	10,100		Jun. 24	6.88	12,500
1942				1948				1957	Jun. 30	8.52	21,700
	Oct. 23	9.08	27,000		Jun. 28	8.26	12,500		May 16	10.6	-
	Apr. 19	6.40	8,110		Aug. 14	8.20	15,200				
	Apr. 24	6.70	8,760								

ARKANSAS RIVER BASIN

07149000 MEDICINE LODGE RIVER NEAR KIOWA, KANS.

LOCATION.--Lat 37°02'17", long 98°28'04", in SE 1/4 SW 1/4 sec.36, T.34 S., R.11 W., Barber County, at downstream side of bridge on State Highway 14, 200 ft downstream from the Atchison, Topeka and Santa Fe Railway Co. bridge, 1.5 miles northeast of Kiowa, and at mile 22.2.

GAGE.--Water-stage recorder. Datum of gage is 1,286.99 ft above mean sea level (levels by Corps of Engineers). May 1895 to October 1896, nonrecording gage at site 2 miles upstream at different datum. Feb. 11, 1938, to Sept. 30, 1944, water-stage recorder at present site at datum 3.00 ft higher. Oct. 1, 1944, to Sept. 30, 1950, and Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site and datum. Gage heights from 1938 to 1944 converted to present datum.

HISTORICAL DATA.--Floods of May 8, 1922, and June 1957 reached stages of about 16 and 15.5 ft, respectively, present site and datum, from the Atchison, Topeka and Santa Fe Railway Co. records and information by local resident.

REMARKS.--Records for 1938-50 furnished by Corps of Engineers. Base for partial-duration series, 3,700 cfs. Log-Pearson calculations based on all annual peaks shown except 1964 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 903
Noncontributing = 0
Contributing = 903
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 10.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,910
Q₅ = 8,410
Q₁₀ = 11,200
Q₂₅ = 15,100
Q₅₀ = 18,400
Q₁₀₀ = 22,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.693
Standard deviation = 0.276
Skew = 0.030

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1896	Jun. 25	a7.5	-	1945	Sep. 28	9.82	9,600	1957	Jun.	a15.5	-
1922	May 8	a16.	-	1946	Apr. 15	7.80	5,070	1960	Aug. 26	9.04	3,870
1938	May 5	11.05	a13,000	1947	Apr. 10	8.75	7,210	1961	Aug. 20	9.20	4,060
1939	Nov. 3	7.87	2,740		Apr. 13	7.60	4,100	1962	Jun. 1	9.20	4,060
1940	Jun. 7	8.10	5,020		May 20	7.42	3,700	1963	Jun. 22	8.60	3,130
1941	May 5	8.40	5,660	1948	Mar. 1	8.40	5,000	1964	May 6	4.73	376
	Jun. 9	8.72	6,360		Jun. 22	8.96	6,670	1965	Jun. 6	11.07	6,420
1942	Oct. 22	11.75	16,000		Jun. 28	9.54	8,700		Jun. 13	9.36	4,420
	Apr. 19	8.75	6,600	1949	Aug. 13	9.50	8,520	1966	Oct. 19	6.59	1,740
	Jun. 29	9.30	8,070		May 7	8.63	5,760	1967	Apr. 14	6.76	1,890
1943	Oct. 4	9.48	8,190		May 17	9.90	11,100	1968	Aug. 11	7.19	1,650
1944	Apr. 10	8.62	5,680		May 19	9.00	6,190	1969	Oct. 17	11.16	6,730
	Apr. 22	9.52	7,900		May 21	8.74	5,380		Sep. 3	9.66	4,430
	May 3	8.24	4,890		Jun. 5	9.64	8,360	1970	Jun. 12	8.59	3,150
1945	Apr. 15	8.90	7,700		Jun. 9	9.06	8,550	1971	Jun. 3	9.31	3,610
	Apr. 21	8.10	5,340		Jun. 13	8.75	7,440				
	Sep. 22	8.00	5,110	1950	Sep. 5	10.19	13,100				
	Sep. 24	9.70	9,510		Sep. 11	8.54	6,740				
					Aug. 1	7.30	2,460				
				1955	May 26	8.07	3,340				

a Annual peak only.

ARKANSAS RIVER BASIN

07149500 SALT FORK ARKANSAS RIVER NEAR CHEROKEE, OKLA.

LOCATION.--Lat 36°49', long 98°19', in SW1/4NW1/4 sec. 18, T.27 N., R.10 W., near right bank at downstream side of piling of abandoned Atchison, Topeka and Santa Fe Railway Co. bridge, 0.7 mile downstream from Medicine Lodge River, 4 miles northeast of Cherokee, and at mile 106.3.

GAGE.--Nonrecording prior to May 14, 1941; recording thereafter. Datum of gage is 1,155.94 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2,439
Noncontributing = 0
Contributing = 2,439
Channel slope (ft/mi) = 11.9
Annual precip. (in) = 24.0
Bankful stage (ft) = 9.0

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 13,600
Q₅ = 23,700
Q₁₀ = 31,600
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.130
Standard deviation = 0.291
Skew = -0.075

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	May 4	8.24	4,680	1945	Sep. 28	10.66	14,000	1949	Feb. 8	11.46	7,500
1942	Oct. 23	11.7	35,000	1946	Apr. 15	8.18	5,760		May 7	10.25	6,420
	Apr. 19	10.50	10,800						May 14	9.89	5,070
	Apr. 25	9.60	7,320	1947	Nov. 6	8.77	5,050		May 17	11.98	32,300
	Jun. 30	9.30	6,560		Mar. 13	9.67	8,850		May 19	11.45	18,900
1943	Oct. 4	10.35	10,300		Apr. 10	9.65	8,720		May 24	10.60	9,380
1944	Apr. 10	9.81	13,500		Apr. 13	10.70	13,900		Jun. 5	11.21	16,300
	Apr. 22	9.95	14,800		May 18	9.40	7,600		Jun. 9	10.60	9,380
	May 4	8.87	7,000		May 21	9.48	7,970		Jun. 14	11.15	15,600
1945	Apr. 16	9.25	7,700		May 24	9.32	7,050		Sep. 5	11.0	13,600
	Apr. 22	8.71	5,450		Jun. 4	8.83	5,420		Sep. 11	11.35	18,600
	Jun. 26	8.98	8,900		Jun. 21	9.79	9,390	1950	Jul. 29	10.60	9,380
	Jul. 10	8.82	7,500	1948	Jun. 28	11.26	15,300		Aug. 1	10.50	8,580
	Sep. 25	8.60	5,020		Jul. 16	9.94	5,230	1957	May 17	11.37	-
					Aug. 15	11.65	23,300				

a Annual peak only.

ARKANSAS RIVER BASIN

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OKLA.

LOCATION.--Lat 36°45'11", long 98°07'44", in NE 1/4 NE 1/4 sec.11, T.26 N., R.9 W., Alfalfa County, near center of span on downstream side of county road bridge, 0.6 mile downstream from Great Salt Plains Dam, 4 miles upstream from Wagon Creek, 6 miles northeast of Jet, and at mile 102.7.

GAGE.--Water-stage recorder. Datum of gage is 1,092.20 ft above mean sea level (levels by Corps of Engineers). Mar. 17, 1938, to Apr. 26, 1953, water-stage recorder at site 200 ft upstream (datum 5.00 ft higher prior to Oct. 1, 1950).

REMARKS.--Flow regulated since June 1941 by detention storage in Great Salt Plains Reservoir. Only annual peaks are shown. Log-Pearson calculations based on all annual peaks for period 1942-71. Records 1937-50 furnished by Corps of Engineers and reviewed by Geological Survey.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3,202
Noncontributing = 8
Contributing = 3,194
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 13.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,140
Q₅ = 6,010
Q₁₀ = 8,180
Q₂₅ = 11,100
Q₅₀ = 13,300
Q₁₀₀ = 15,600

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.471
Standard deviation = 0.360
Skew = -0.427

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	May 19	8.80	25,900	1950	Aug. 3	4.44	4,410	1961	Aug. 22	8.37	3,820
1939	Apr. 5	5.88	4,920	1951	Jul. 2	11.67	9,650	1962	Jun. 5	7.56	2,550
1940	May 18	5.09	2,700	1952	Apr. 23	8.35	3,600	1963	Jun. 25	9.24	5,030
1941	May 7	5.74	4,340	1953	Jul. 16	6.21	757	1964	Apr. 12	5.65	624
1942	Oct. 25	7.35	8,300	1954	May 26	6.99	1,470	1965	Jun. 15	7.95	3,680
1943	Oct. 6	4.31	2,670	1955	Jun. 20	9.80	4,700	1966	Mar. 22	5.88	930
1944	Apr. 23	5.62	4,680	1956	Oct. 5	7.19	1,540	1967	Jun. 23	6.04	1,130
1945	Sep. 30	5.15	4,640	1957	May 18	12.13	9,820	1968	Aug. 21	5.74	848
1946	Oct. 16	2.66	999	1958	Jun. 28	9.20	4,490	1969	May 7	6.72	2,090
1947	Apr. 15	5.62	5,880	1959	Sep. 26	8.35	3,470	1970	Apr. 20	7.92	3,820
1948	Aug. 16	6.01	6,820	1960	Oct. 4	9.80	5,670	1971	Jun. 9	5.80	936
1949	May 21	6.82	8,970								

07150580 SAND CREEK TRIBUTARY NEAR KREMLIN, OKLA.

LOCATION.--Lat 36°33'00", long 97°48'38", in SE 1/4 SW 1/4 sec.14, T.24 N., R.6 W., Garfield County, at county road bridge, 1.2 miles east of Kremlin.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 24, 1966.

REMARKS.--Only annual peaks are shown. Log-Pearson calculations based on all annual peaks shown except 1966 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 7.21
Noncontributing = 0
Contributing = 7.21
Channel slope (ft/mi) = 19.3
Annual precip. (in) = 28.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 333
Q₅ = 458
Q₁₀ = 540
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.522
Standard deviation = 0.165
Skew = -0.027

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 6	6.84	540	1967	Jun. 20	6.20	410	1970	Apr. 1	5.40	280
1965	Nov. 17	5.56	304	1968	Aug. 17	5.25	250	1971	Sep. 17	4.77	192
1966	Apr. 22	1.41	6	1969	Jun. 17	6.65	660				

ARKANSAS RIVER BASIN

07150870 SALT FORK ARKANSAS RIVER TRIBUTARY NEAR EDDY, OKLA.

LOCATION.--Lat 36°41'42", long 97°25'30", in SW 1/4 SW 1/4 sec.28, T.26 N., R.2 W., Kay County, at culvert on U.S. Highway 60, 3.0 miles southeast of Eddy.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.35

Noncontributing = 0

Contributing = 2.35

Channel slope (ft/mi) = 19.8

Annual precip. (in) = 28.0

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 256

Q₅ = 545

Q₁₀ = 849

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.443

Standard deviation = 0.367

Skew = 0.567

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 25	11.63	100	1967	Jun. 20	11.60	98	1970	Apr. 1	13.06	315
1965	Nov. 17	12.73	265	1968	Aug. 17	14.08	489	1971	Jun. 2	13.05	313
1966	Jul. 23	12.38	210	1969	Sep. 16	18.44	1,320				

ARKANSAS RIVER BASIN

07151000 SALT FORK ARKANSAS RIVER AT TONKAWA, OKLA.

LOCATION.--Lat 36°40'13", long 97°18'33", in NW 1/4 SE 1/4 sec.4, T.25 N., R.1 W., Kay County, near right bank on downstream side of pier of bridge on U.S. Highway 77 in Tonkawa, 4 miles downstream from Thompson Creek, 7.8 miles upstream from Chikaskia River, and at mile 33.8.

GAGE.--Water-stage recorder. Datum of gage is 930.22 ft above mean sea level (Corps of Engineers bench mark). September 1903 to October 1905, nonrecording gage near present site at different datum. Jan. 2, 1936, to Jan. 22, 1939 nonrecording gage, and Jan. 23, 1939, to June 20, 1960, water-stage recorder at site 100 ft upstream at same datum.

HISTORICAL DATA.--Maximum stage for water year 1904 is from records for a staff gage operated by Geological Survey (datum unknown). The discharge was estimated on basis of a few discharge measurements made during 1904-5 and shape of rating curve used in 1938.

REMARKS.--Some regulation since June 1941 by Great Salt Plains Lake, 69.5 miles upstream. Log-Pearson calculations based on all annual peaks (shown except 1966 which was considered an outlier. Base for partial-duration series, 11,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 4,528
 Total
 Noncontributing = 8
 Contributing = 4,520
 Channel slope (ft/mi) = 6.39
 Annual precip. (in) = 25.0
 Bankful stage (ft) = 17.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 12,100
 Q₅ = 22,700
 Q₁₀ = 30,100
 Q₂₅ = 39,000
 Q₅₀ = 45,300
 Q₁₀₀ = 51,200

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.039
 Standard deviation = 0.371
 Skew = -0.693

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Jul. 11	14.6	25,000	1946	Oct. 17	7.80	1,080	1957	Jun. 25	21.14	21,200
1923	Jun. 10	26.8	-	1947	Apr. 14	18.53	16,600		Jul. 3	19.17	17,200
1935	Jun.	23.0	-		May 16	18.35	16,000	1958	Jul. 7	12.72	5,720
1936	Jun. 6	15.53	11,400	1948	May 10	16.58	12,700	1959	Sep. 26	16.65	10,900
1937	Jun. 10	16.62	14,000		Aug. 15	17.22	13,300	1960	Oct. 5	23.48	28,400
	Sep. 9	16.76	14,500	1949	Feb. 13	17.09	13,300		Aug. 27	16.68	11,100
1938	May 20	22.82	40,800		Mar. 31	16.60	12,600	1961	May 9	17.90	15,200
	May 24	21.94	34,500		May 21	19.33	19,600		May 22	16.98	13,000
	Jun. 1	17.41	16,300		May 29	16.85	13,000		Sep. 13	21.17	22,600
	Aug. 17	16.27	13,900		Sep. 6	16.29	12,100	1962	Nov. 2	22.10	24,300
1939	Apr. 6	16.08	14,600	1950	Jul. 30	14.71	9,650	1963	Jul. 11	13.27	6,400
1940	Jun. 10	8.21	1,620	1951	May 19	17.36	14,300		Aug. 30	10.40	3,460
1941	Jun. 10	15.58	12,500		May 22	18.71	17,200	1964	Oct. 26	17.39	12,200
1942	Oct. 27	16.06	12,200		Jun. 26	17.43	13,800		Nov. 18	21.69	21,400
	Apr. 26	17.70	15,500		Jul. 2	20.14	22,600	1965	Apr. 23	5.78	550
	Jun. 22	16.69	13,400		Jul. 4	19.35	19,200	1966	Jun. 22	11.81	4,810
1943	May 20	17.86	16,500	1952	Apr. 22	12.81	6,620	1967	Aug. 19	16.02	10,300
1944	Apr. 23	19.26	22,500	1953	Jul. 12	10.26	3,370	1968	May 16	16.73	11,200
1945	Dec. 5	18.05	16,800	1954	May 26	9.93	2,380	1969	Apr. 21	20.30	20,700
	Apr. 16	20.06	23,500	1955	Jun. 19	16.10	9,470	1970	Jul. 24	10.42	4,110
	Sep. 30	17.35	14,300	1956	Oct. 3	17.51	12,100	1971			
				1957	Apr. 23	16.90	11,100				
					May 17	20.82	19,600				
					May 25	19.70	18,500				

ARKANSAS RIVER BASIN

07151500 CHIKASKIA RIVER NEAR CORBIN, KANS.

LOCATION.--Lat 37°08', long 97°36', on west line of sec.36, T.33 S., R.3 W., near left bank on downstream side of pier of bridge on State Highway 49, 1 mile upstream from Prairie Creek, 3 miles west of Corbin, and at mile 67.5.

GAGE.--Water-stage recorder. Datum of gage is 1,108.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Mar. 23, 1951, wire-weight gage at same site and datum.

HISTORICAL DATA.--Flood of June 9, 1923, which destroyed the bridge then at the gage site, reached a stage of 28.0 ft on the apron of a granary located 300 ft left and 200 ft downstream from the gage, from floodmark remembered by local resident in 1950.

REMARKS.--Base for partial-duration series, 2,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 794
 Noncontributing = 0
 Contributing = 794
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 8,970
 Q₅ = 21,900
 Q₁₀ = 35,600
 Q₂₅ = 60,300
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 3.965
 Standard deviation = 0.452
 Skew = 0.163

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Jun. 9	28.0	60,000	1956	Oct. 4	9.71	4,610	1961	Mar. 27	7.33	2,620
									May 5	16.37	16,600
1950	Aug. 30	11.0	a6,100	1957	Apr. 23	10.74	5,610		Jul. 21	10.75	5,620
					May 14	11.00	5,900		Jul. 23	8.31	3,370
1951	May 1	10.01	4,910		May 17	22.31	38,100		Aug. 21	8.03	3,120
	May 17	22.50	35,100		May 25	9.65	4,570	1962	Oct. 10	7.92	2,940
	May 22	12.50	8,100		Jun. 12	14.28	11,700		Nov. 2	10.18	4,900
	Jun. 7	14.00	10,700		Jun. 23	8.05	3,160		May 29	8.00	3,000
	Jun. 24	15.80	14,500		Jun. 27	15.52	14,300		Jul. 5	9.32	4,090
	Jun. 30	8.63	3,600		Jul. 1	9.45	4,300				
	Jul. 14	16.08	15,100	1958	Mar. 29	6.79	2,100	1963	Jul. 11	11.80	7,100
1952	Jun. 5	5.83	1,630		Jun. 21	7.71	2,770				
					Jun. 25	9.71	4,560	1964	Aug. 30	9.50	4,100
1953	Mar. 31	7.50	2,760	1959	Jul. 14	8.02	3,120	1965	Nov. 16	17.70	18,800
	Aug. 3	9.70	4,600		Jul. 22	11.32	6,320		Apr. 3	12.09	7,140
1954	May 24	6.30	1,920		Sep. 25	9.50	4,350		Apr. 5	7.70	2,660
									May 14	9.06	3,860
1955	May 26	17.55	18,800	1960	Oct. 2	17.86	21,100		May 26	15.41	13,100
	Jun. 6	9.71	4,610		Oct. 13	12.69	8,470		Jun. 5	14.23	10,700
	Jun. 16	9.10	4,000		Aug. 26	9.24	4,120		Jun. 13	11.90	6,880
	Jun. 18	11.20	6,340						Jun. 25	7.50	2,500
1956	Oct. 2	11.76	7,060	1961	Oct. 25	7.98	3,080		Jun. 27	10.93	5,730
					Oct. 31	7.31	2,610		Sep. 6	10.35	5,150

a Maximum Aug. 9 to Sept. 30; probably was exceeded during period of no record.

ARKANSAS RIVER BASIN

07152000 CHIKASKIA RIVER NEAR BLACKWELL, OKLA.

LOCATION.--Lat 36°48'31", long 97°16'39", in NE 1/4 NW 1/4 sec.23, T.27 N., R.1 W., Kay County, near left bank on downstream side of pier of St. Louis-San Francisco Railway Co. bridge at northeast edge of Blackwell, 0.2 mile downstream from Bitter Creek, and at mile 28.2.

GAGE.--Water-stage recorder. Datum of gage is 967.41 ft above mean sea level (levels by Corps of Engineers). Nonrecording prior to Jan. 25, 1939. Prior to Apr. 29, 1938, at site 2-3/4 miles upstream at unknown datum; Apr. 29, 1938, to Apr. 16, 1952, at site 0.6 mile upstream at datum 8.06 ft higher.

HISTORICAL DATA.--Flood of June 10, 1923 reached a stage of about 34 ft, present site and datum, from information by local residents (dicharge, 100,000 cfs).

REMARKS.--Base for partial-duration series, 8,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 1,859
 Total
 Noncontributing = 0
 Contributing = 1,859
 Channel slope (ft/mi) = 7.25
 Annual precip. (in) = 28.1
 Bankful stage (ft) = 26

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 18,200
 Q₅ = 41,000
 Q₁₀ = 60,900
 Q₂₅ = 91,100
 Q₅₀ = 117,000
 Q₁₀₀ = 145,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.239
 Standard deviation = 0.438
 Skew = -0.294

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Jun. 10	34.0	100,000	1948	Aug. 14	24.28	23,100	1959	Jul. 16	27.22	13,700
1936	Jun. 6	24.70	10,800	1949	Nov. 2	17.45	8,970	1959	Jul. 23	29.58	20,000
1937	May 31	27.09	12,900		Jan. 25	20.69	13,300	1960	Sep. 26	27.99	15,500
	Jun. 10	22.32	8,600		Feb. 13	18.16	9,550	1960	Oct. 2	32.15	48,000
	Sep. 9	22.30	8,600		Feb. 27	18.07	9,470	1960	Oct. 14	27.24	13,700
1938	May 6	15.42	9,130		May 20	18.65	9,900	1960	Aug. 27	23.80	8,820
	May 20	24.05	26,800		May 25	19.65	11,100	1961	May 6	31.87	36,500
	May 24	17.61	10,800		Sep. 6	19.58	11,100	1961	May 8	25.20	11,200
1939	Nov. 4	14.25	8,340		Sep. 12	19.88	11,600	1961	Sep. 13	26.09	11,900
1940	Jun. 9	10.38	6,040	1950	Aug. 2	16.88	8,070	1962	Oct. 11	26.40	12,100
1941	Apr. 16	16.38	8,820	1951	May 1	16.35	8,250	1962	Nov. 2	30.59	27,000
	Jun. 10	15.47	8,190		May 18	26.59	53,000	1963	Jul. 12	27.97	15,500
1942	Apr. 26	17.06	10,100		May 23	21.86	19,100	1963	Aug. 26	23.38	8,460
	Apr. 28	14.27	8,190		Jun. 8	20.79	15,600	1965	Oct. 26	29.28	20,000
	Jun. 22	27.48	85,000		Jun. 23	23.78	27,000	1965	Nov. 4	27.25	12,500
1943	May 20	20.18	12,200		Jun. 25	25.89	40,300	1965	Nov. 17	33.08	64,000
1944	Apr. 11	20.31	12,400		Jul. 1	22.47	22,100	1965	May 27	26.65	11,200
	Apr. 23	27.31	82,000		Jul. 15	26.01	43,700	1965	Jun. 6	26.59	11,200
	Apr. 27	15.35	8,840	1952	Jun. 5	20.90	8,130	1965	Jun. 14	25.81	10,300
	Sep. 29	17.07	8,500	1953	Aug. 4	19.65	7,280	1965	Sep. 21	25.44	9,900
1945	Oct. 3	20.00	11,800	1954	May 25	12.33	3,120	1966	Dec. 25	6.21	1,200
	Dec. 5	24.07	25,800	1955	May 27	a25.56	39,300	1967	Jul. 20	18.68	5,650
	Apr. 12	17.15	8,830		Jun. 19	a15.30	8,760	1967	Aug. 18	31.00	31,000
	Apr. 17	25.13	35,800	1956	Oct. 3	28.19	14,600	1969	Apr. 28	25.58	10,400
	Sep. 29	24.12	25,800	1957	Apr. 21	23.80	10,000	1969	May 15	23.85	8,740
1946	Apr. 16	12.74	6,200		Apr. 24	25.28	12,600	1969	May 17	24.81	9,610
1947	Apr. 14	24.86	31,000		May 15	21.74	8,690	1969	Jun. 2	23.98	8,490
	May 21	17.96	9,390		May 18	32.56	55,000	1969	Jun. 25	30.50	26,000
	May 25	17.28	8,900		May 26	24.97	10,700	1970	Apr. 2	23.30	8,810
1948	Jun. 29	21.24	13,800		Jun. 13	28.30	14,800	1970	Apr. 19	32.26	45,200
	Jul. 5	16.26	8,250		Jun. 24	24.67	11,000	1970	Jun. 13	25.47	11,300
	Jul. 16	23.52	20,200	1958	Jun. 28	30.20	20,500	1971	Aug. 23	17.48	5,350
					Jul. 2	23.73	10,200				

a Gage destroyed by storm; gage heights obtained at site and datum used Apr. 29, 1938, to Apr. 16, 1952.

ARKANSAS RIVER BASIN

07152360 ELM CREEK NEAR FORAKER, OKLA.

LOCATION.--Lat 36°52'08", long 96°36'50", in SE 1/4 SW 1/4 sec.25, T.28 N., R.6 E., Osage County, at county road bridge, 2.8 miles west of Foraker.

GAGE.--Crest-stage gage. Stage-rainfall recorder since April 8, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 18.2
 Noncontributing = 0
 Contributing = 18.2
 Channel slope (ft/mi) = 17.5
 Annual precip. (in) = 33.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,200
 Q₅ = 3,480
 Q₁₀ = 5,830
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.043
 Standard deviation = 0.584
 Skew = -0.354

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 11	3.10	180	1967	Jun. 11	7.05	1,740	1970	Apr. 1	7.00	1,700
1965	Apr. 2	7.00	1,700	1968	Oct. 7	6.90	1,640	1971	Jul. 4	2.98	145
1966	Jun. 7	5.90	1,120	1969	Jun. 24	14.0	9,200				

07152410 ROCK CREEK NEAR SHIDLER, OKLA.

LOCATION.--Lat 36°44'50", long 96°37'30", in SW 1/4 NE 1/4 sec.11, T.26 N., R.6 E., Osage County, at concrete ford of oil field service road at upstream end of Lake Phillips, 3.0 miles southeast of Shidler.

GAGE.--Crest-stage gage. Stage-rainfall recorder since April 13, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 9.13
 Noncontributing = 0
 Contributing = 9.13
 Channel slope (ft/mi) = 19.8
 Annual precip. (in) = 33.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	May 18	10.05	1,740	1968	May 13	9.00	1,090	1970	Oct. 12	9.28	1,260
1966	Sep. 2	9.15	1,180	1969	Jun. 24	9.00	1,090	1971	Jul. 4	8.82	1,000
1967	Jun. 11	8.96	1,070								

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OKLA.

LOCATION.--Lat 36°30'09", long 96°43'22", in NW 1/4 sec.1, T.23 N., R.5 E., Osage County, near left bank on downstream side of pier of bridge on State Highway 18 at Ralston, 2 miles downstream from Salt Creek, 2 miles upstream from Grayhorse Creek, and at mile 594.0.

GAGE.--Water-stage recorder. Datum of gage is 776.70 ft above mean sea level. Oct. 1, 1925, to Nov. 13, 1935, nonrecording gage at site of former highway bridge 1,200 ft downstream at same datum. Nov. 14, 1935, to Feb. 23, 1939, nonrecording gage at present site and datum.

HISTORICAL DATA.--Flood of June 11, 1923, reached a stage of 23.8 ft, referred to outside gage on basis of stages observed in 1923 and 1944 at site 1,200 ft downstream. Flood of Apr. 25, 1944, reached a stage of 23.65 ft from outside gage.

REMARKS.--Slight regulation since December 1943 by John Martin Reservoir on Arkansas River (capacity, 662,900 acre-ft) and since June 1941 by Great Salt Plains Reservoir on Salt Fork Arkansas River (capacity, 292,400 acre-ft). Records prior to Mar. 27, 1938, computed on basis of once-daily gage readings. Records 1948-55 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 30,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 54,465
Noncontributing = 7,615
Contributing = 46,850
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 16.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 54,900
Q₅ = 104,000
Q₁₀ = 143,000
Q₂₅ = 197,000
Q₅₀ = 240,000
Q₁₀₀ = 285,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.723
Standard deviation = 0.346
Skew = -0.287

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	-	18.0	-	1939	Jun. 28	8.48	19,200	1951	May 20	19.23	106,000
1923	May 27	10.4	32,400	1940	Sep. 5	10.26	27,800	1951	May 24	17.70	95,500
	Jun. 3	12.5	48,000					1951	Jun. 10	14.35	61,200
	Jun. 11	23.0	200,000	1941	Apr. 17	12.34	41,200	1951	Jun. 27	17.42	91,100
	Jun. 18	12.0	43,400	1941	Jun. 11	13.59	51,000	1951	Jul. 3	21.45	135,000
1924	Oct. 16	11.8	42,000	1942	Oct. 26	12.89	45,400	1951	Jul. 16	20.28	120,000
	May 2	11.7	41,300	1942	Apr. 9	11.21	34,000	1951	Sep. 15	11.57	36,200
1925	Apr. 27	6.4	11,300		Apr. 21	12.94	45,400	1952	Jun. 6	10.48	25,800
1926	Sep. 5	10.4	32,400		Apr. 30	13.04	46,200	1953	May 31	8.80	17,500
1927	Oct. 6	18.7	108,000		Jun. 24	18.54	94,000	1954	May 2	9.07	18,700
	Apr. 11	15.4	73,000	1943	Dec. 28	10.60	32,200	1955	May 29	12.71	36,300
	Apr. 21	15.7	77,400		May 20	18.12	97,200	1956	May 29	12.71	36,300
	Aug. 5	14.5	68,500	1944	Mar. 23	11.43	37,900	1956	Oct. 5	14.64	49,200
	Aug. 20	10.9	39,300		Apr. 12	15.34	68,400	1957	Apr. 25	11.70	33,300
1928	Oct. 3	13.2	56,800		Apr. 25	22.82	179,000	1957	May 20	21.41	120,000
	Jun. 12	13.9	63,100		Sep. 29	10.23	31,300	1957	May 23	14.21	51,000
	Jun. 21	15.0	73,000	1945	Oct. 4	10.74	34,600	1957	May 26	15.13	57,900
1929	Nov. 20	15.3	76,300		Dec. 7	15.55	76,000	1957	Jun. 1	12.40	37,900
	Apr. 22	12.3	49,400		Mar. 25	10.82	34,000	1957	Jun. 13	17.46	77,900
	Apr. 25	9.9	32,400		Apr. 13	11.78	42,700	1957	Jun. 18	13.41	42,000
	May 12	12.0	47,000		Apr. 19	19.55	124,000	1957	Jun. 26	15.97	67,900
	May 19	12.2	48,600		Jun. 29	10.33	34,000	1957	Jul. 1	19.88	112,000
	Jun. 3	9.9	32,400		Jul. 1	13.59	57,800	1958	Mar. 25	11.24	32,300
	Jun. 24	11.7	44,900	1946	Oct. 2	19.48	110,000	1958	Jul. 7	14.86	56,800
	Jul. 12	11.4	42,800	1947	Apr. 16	18.50	114,000	1959	Jul. 17	14.65	54,800
1930	Apr. 30	9.8	31,800		May 17	11.87	44,500	1959	Jul. 24	10.87	30,500
	May 7	10.2	34,400		May 22	11.24	39,600	1959	Sep. 26	11.38	34,400
	May 13	12.1	47,800		May 27	10.56	35,800	1960	Oct. 5	21.62	158,000
1931	Jun. 14	9.5	28,200	1948	Jul. 1	13.19	52,800	1960	Oct. 15	12.39	41,000
1932	Jun. 23	10.6	33,700		Jul. 18	14.93	70,200	1960	Aug. 29	12.19	41,800
1933	Aug. 30	9.3	25,700		Jul. 26	11.74	43,100	1961	May 8	21.22	165,000
1934	Apr. 8	6.4	11,700		Aug. 17	12.72	51,800	1961	Jul. 25	11.40	34,000
1935	May 15	14.7	65,600	1949	Jan. 18	10.63	32,400	1961	Sep. 14	18.50	114,000
	May 21	16.0	77,800		Jan. 25	12.70	45,900	1962	Oct. 12	14.56	75,600
	Jun. 1	14.1	60,300		Feb. 14	14.78	65,400	1962	Nov. 4	17.83	103,000
	Jun. 4	11.4	39,100		Feb. 20	11.60	40,600	1962	Jun. 5	10.82	30,500
1936	Jun. 7	9.9	26,600		Mar. 1	12.57	50,200	1963	Jul. 13	8.76	19,700
1937	Jun. 11	13.0	47,500		Apr. 1	10.47	33,600	1964	Aug. 28	9.00	21,100
1938	May 23	16.44	75,600		May 21	15.30	70,700	1965	Nov. 6	11.34	34,100
					May 26	13.68	55,500	1965	Nov. 18	22.60	171,000
				1950	Jul. 18	15.90	75,300	1965	Apr. 5	11.23	32,900
					Aug. 4	17.60	92,800	1965	Jun. 8	13.97	51,600
					Aug. 10	11.12	37,100				
				1951	May 3	14.15	54,200				

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OKLA. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sep. 23	12.70	46,200	1968	Aug. 20	14.10	52,800	1969	Jun. 27	16.42	77,000
									Sep. 18	11.14	32,500
1966	Jun. 9	6.74	10,400	1969	Oct. 20	11.98	37,700				
					Mar. 25	10.88	30,600	1970	Apr. 3	12.59	42,400
1967	Jul. 26	12.54	42,000		Apr. 29	13.99	53,000		Apr. 20	18.33	101,000
					May 18	12.16	38,900		Jun. 15	11.12	32,400
1968	May 26	11.71	36,700		Jun. 3	12.54	41,900				
								1971	Jun. 13	8.14	17,100

07152520 BLACK BEAR CREEK TRIBUTARY NEAR GARBER, OKLA.

LOCATION.--Lat.36°23'25", long 97°37'20", in SE 1/4 SE 1/4 sec.9, T.22 N., R.4 W., Garfield County, at culvert on oil U.S. Highway 64, 4.0 miles southwest of Garber.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 2, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 0.97
 Noncontributing = 0
 Contributing = 0.97
 Channel slope (ft/mi) = 42.3
 Annual precip. (in) = 28.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 63
 Q₅ = 164
 Q₁₀ = 263
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 1.778
 Standard deviation = 0.512
 Skew = -0.247

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 18	1.75	63	1967	Jun. 11	1.22	31	1970	Apr. 1	0.70	8
1965	Nov. 17	2.53	124	1968	May 13	1.55	50	1971	Apr. 26	4.60	333
1966	Apr. 22	1.19	29	1969	Sep. 16	3.19	180				

ARKANSAS RIVER BASIN

07153000 BLACK BEAR CREEK AT PAWNEE, OKLA.

LOCATION.--Lat 36°20'37", long 96°47'57", on east line of SE 1/4 NE 1/4 sec.31, T.22 N., R.5 E., Pawnee County, on downstream side of left pier of bridge on State Highway 18 in north Pawnee, 300 feet downstream from Skedee Creek, and at mile 23.4.

GAGE.--Water-stage recorder. Datum of gage is 802.73 ft above mean sea level (levels by Corps of Engineers). Prior to Sept. 21, 1944, nonrecording gage at present site and datum, except for Aug. 27, 1953, to Apr. 29, 1954, nonrecording gage at site 500 ft downstream at same datum.

REMARKS.--Records 1944-55 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 4,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 576
Noncontributing = 0
Contributing = 576
Channel slope (ft/mi) = 4.05
Annual precip. (in) = 30.2
Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,300
Q₅ = 10,100
Q₁₀ = 14,800
Q₂₅ = 23,100
Q₅₀ = 31,500
Q₁₀₀ = 42,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.758
Standard deviation = 0.311
Skew = 0.650

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 25	27.30	a15,600	1953	Jul. 14	10.56	2,610	1960	Jul. 6	18.53	6,400
1943	May 19	28.19	a17,800	1954	May 2	11.16	2,810	1961	Jun. 14	18.56	6,470
1945	Dec. 7	17.86	6,500	1955	May 11	16.37	5,130	1961	Jul. 17	13.91	4,140
	Mar. 26	16.21	5,390		May 22	21.74	8,640		Sep. 14	27.16	15,400
	Apr. 13	16.15	5,460		May 28	21.78	8,720	1962	Oct. 12	21.68	8,880
	Apr. 17	20.62	8,750	1956	Oct. 5	16.96	5,430		Nov. 4	13.97	4,100
	Jun. 22	16.00	5,580						Jun. 7	15.70	4,780
	Jun. 29	15.76	5,460	1957	Apr. 20	20.73	7,680		Jun. 9	15.01	4,740
	Sep. 30	28.11	17,500		Apr. 23	16.23	4,930	1963	Sep. 16	12.84	3,620
1946	Jun. 29	15.43	4,900		May 18	25.26	12,200				
1947	Apr. 16	22.55	9,390		May 22	18.10	6,090	1964	Aug. 28	8.96	2,250
	May 17	17.31	5,340		May 27	18.48	6,370	1965	Nov. 19	9.73	2,520
1948					Jun. 12	18.95	6,740				
	Aug. 8	16.45	4,890		Jun. 25	22.56	9,720	1966	Jul. 25	13.48	4,100
1949					Jul. 3	14.28	4,000				
	May 19	15.37	4,410	1958	Jul. 12	13.97	3,880	1967	Jun. 26	7.81	1,780
	May 21	15.70	4,550					1968	Apr. 3	10.39	3,040
	May 27	16.16	4,790	1959	Jul. 16	18.72	6,540				
1950					Jul. 22	14.63	4,340	1969	Apr. 17	12.70	4,440
	Aug. 3	15.58	3,830		Sep. 27	19.21	6,890				
1951	Jul. 3	14.76	4,280	1960	Oct. 3	31.43	30,200	1970	Apr. 30	10.89	3,490
1952					May 29	14.58	4,340	1971	Sep. 6	10.18	3,050
	Jun. 7	16.18	4,790								

a Annual peak only.

ARKANSAS RIVER BASIN

07153100 RANCH CREEK AT CLEVELAND DAM, NEAR CLEVELAND, OKLA.

LOCATION.--Lat 36°17'00", long 96°34'35", in SW1/4NE1/4 sec.20, T.21 N., R.7 E., on intake tower at Cleveland Dam on Ranch Creek, a quarter of a mile upstream from Carpenter Creek, half a mile upstream from Turkey Creek, and 6-1/2 miles southwest of Cleveland.

GAGE.--Water-stage recorder and concrete-spillway control. Datum of gage is 743.0 ft above mean sea level (from construction plans).

HISTORICAL DATA.--A discharge of 32,400 cfs occurred Sept. 4, 1940, at a site about 4 miles upstream (result of contracted-opening measurement).

REMARKS.--Records of discharge are outflow from reservoir, determined from stage-discharge relation for concrete uncontrolled spillway. Reservoir is formed by earth dam rebuilt prior to record. Capacity at elevation 763.0 ft (crest of concrete spillway), 2,450 acre-ft (surface area, 186 acres). Only annual peaks are shown. Log-Pearson calculations based on all annual peaks except 1940, 1953, and 1956 which were considered outliers.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 21.9
Noncontributing = 0
Contributing = 21.9
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,620
Q₅ = 3,750
Q₁₀ = 6,030
Q₂₅ = 10,300
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.238
Standard deviation = 0.412
Skew = 0.368

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Sep. 4	-	32,400	1951	May 1	20.88	330	1957	May 21	26.55	7,260
1945	Sep. 30	22.92	2,210	1952	Oct. 28	21.37	676	1958	Mar. 23	21.47	763
1946	May 30	21.62	898	1953	Apr. 6	20.16	9	1959	Sep. 25	21.35	660
1947	May 16	22.50	1,770	1954	Apr. 30	-	a1,200	1960	Oct. 2	29.20	11,800
1948	Jun. 23	22.26	1,500	1955	May 20	23.22	2,570	1961	Sep. 13	25.38	5,470
1949	May 19	24.13	3,690	1956	May 31	-	b80	1962	Jun. 7	22.90	2,210
1950	May 26	22.77	2,040					1963	Mar. 30	21.48	772

a Estimated.

b Daily discharge.

07154400 CARRIZO CREEK NEAR KENTON, OKLA.

LOCATION.--Lat 36°52'55", long 103°01'05", in NE1/4 sec.31, T.31 N., R.37 E., under bridge on New Mexico State Highway 18, about 4 miles southwest of Kenton, Okla.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown. Log-Pearson calculations based on all annual peaks shown except 1962 and 1964 which were considered outliers.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 111
Noncontributing = 0
Contributing = 111
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 11.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,370
Q₅ = 7,050
Q₁₀ = 10,200
Q₂₅ = 14,800
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.512
Standard deviation = 0.395
Skew = -0.241

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	--	-	9,160	1958	Jul. 6	12.22	15,600	1963	Aug.	5.99	2,180
1954	Aug.	7.52	3,600	1959	Aug.	3.83	940	1964	--	-	< 100
1955	May 19	7.35	3,400	1960	Sep. 8	3.64	850	1965	Jun. 17	-	5,950
1956	Aug. 18	9.52	6,230	1961	Jun.	3.47	780	1966	Jun. 17	7.84	3,800
1957	Aug. 18	7.64	3,750	1962	Jul.	1.56	245	1967	Jul. 12	7.54	3,640

ARKANSAS RIVER BASIN

07154500 CIMARRON RIVER NEAR KENTON, OKLA.

LOCATION.--Lat 36°56'48", long 102°57'28", in SE 1/4 sec.4, T.5 N., R.1 E., Cimarron County, near right bank on downstream side of pier of county road bridge, 1.5 miles upstream from North Carrizo Creek, 1.7 miles northeast of Kenton, 2.2 miles downstream from Carrizozo Creek, and at mile 594.0.

GAGE.--Water-stage recorder. Datum of gage is 4,262.08 ft above mean sea level, (levels by State Highway Department). Oct. 1, 1950, to Sept. 19, 1967, water-stage recorder at same site and at datum 5.00 ft higher.

HISTORICAL DATA.--Corps of Engineers report that a major flood occurred in May 1914.

REMARKS.--Extensive diversions for irrigation above station. Log-Pearson calculations based on all annual peaks except 1970 which was considered to be an outlier. Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,106
Noncontributing = 68
Contributing = 1,038
Channel slope (ft/mi) = 26.2
Annual precip. (in) = 16.0
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 7,830
Q₅ = 17,800
Q₁₀ = 27,100
Q₂₅ = 42,100
Q₅₀ = 55,800
Q₁₀₀ = 71,600

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.886
Standard deviation = 0.430
Skew = -0.085

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Aug. 21	5.96	2,850	1961	Jun. 3	9.43	10,000	1966	Jun. 18	8.27	4,800
					Jul. 7	5.98	3,100		Jul. 20	6.95	3,070
1952	Aug. 23	6.12	3,130		Jul. 10	6.80	4,310		Jul. 24	7.70	3,960
									Aug. 20	6.28	2,340
1953	Jun. 29	7.05	4,630	1962	Jul. 30	5.59	2,530		Sep. 16	8.80	5,610
	Jul. 3	6.65	4,000						Sep. 27	10.95	10,100
	Aug. 17	8.00	6,610	1963	Apr. 1	5.25	2,100				
					Jul. 13	6.24	3,480	1967	Jun. 17	6.31	2,350
1954	Jul. 23	7.00	4,630		Aug. 10	10.30	12,800		Jul. 9	6.08	2,140
	Aug. 7	7.86	6,390		Aug. 13	9.04	8,970		Jul. 12	7.35	3,500
	Aug. 13	10.67	14,100		Sep. 16	5.50	2,400		Jul. 18	7.76	4,040
					Sep. 22	9.45	10,000				
1955	Oct. 6	7.40	5,790	1964	Aug. 8	6.58	4,000	1968	Jul. 25	11.28	2,320
	May 20	10.02	11,800						Aug. 10	11.09	2,150
				1965	May 24	12.06	6,860		Aug. 28	12.81	4,100
1956	Jun. 28	6.32	3,820		Jun. 17	15.92	23,400	1969	Jun. 17	11.54	2,570
	Aug. 18	9.35	10,000		Aug. 19	9.75	7,410		Aug. 23	12.22	3,340
					Aug. 20	7.30	3,440		Sep. 10	11.18	2,230
1957	Aug. 18	7.78	6,780		Aug. 22	13.10	16,800		Sep. 17	14.17	6,240
					Aug. 23	8.48	5,100				
1958	Jul. 6	13.67	26,300		Sep. 18	8.47	5,100	1970	Aug. 8	7.81	418
					Sep. 20	8.96	5,950				
1959	Jul. 13	6.26	3,160	1966	Oct. 17	17.32	43,400	1971	Aug. 7	9.16	960
1960	Sep. 9	8.64	7,970								

ARKANSAS RIVER BASIN

07154650 TESESQUITE CREEK NEAR KENTON, OKLA.

LOCATION.--Lat 36°53'52", long 102°54'04", in NE 1/4 SE 1/4 sec.13, T.5 N., R.1 E., Cimarron County, at county road bridge, 3.9 miles east of Kenton.

GAGE.--Crest-stage gage. Stage-rainfall recorder April 24, 1964 to July 16, 1969.

REMARKS.--Only annual peaks are shown. Log-Pearson calculations based on all annual peaks shown except for 1970 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 25.4
Noncontributing = 0
Contributing = 25.4
Channel slope (ft/mi) = 36.5
Annual precip. (in) = 16.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 2,200
Q₅ = 5,760
Q₁₀ = 8,850
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 3.282
Standard deviation = 0.558
Skew = -0.655

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 8	12.75	700	1967	Aug. 14	11.60	230	1970	Oct. 12	10.18	1
1965	Aug. 21	16.00	2,950	1968	Jul. 24	13.40	1,040	1971	Aug. 6	19.81	7,250
1966	Oct. 17	19.40	6,720	1969	Jun. 17	17.00	3,900				

07155000 CIMARRON RIVER ABOVE UTE CREEK NEAR BOISE CITY, OKLA.
(Published as "near Garret" May 1905 to July 1907)

LOCATION.--Lat 36°55', long 102°36', in SE1/4 sec.10, T.5 N., R.4 E., on right bank 1,000 ft downstream from Kohler's dam, 1 mile upstream from Cold Springs Creek, 5.5 miles upstream from Ute Creek, 14 miles northwest of Boise City, and at mile 560.0.

GAGE.--Nonrecording prior to 1942 at site half a mile upstream at unknown datum; recording thereafter. Datum of last used gage, 3,932.85 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

HISTORICAL DATA.--Flood in 1914 was 3 or 4 ft higher than in 1942, from information by local resident. Channel capacity has greatly increased due to erosion since 1914.

REMARKS.--Base for partial-duration series, 1,700 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1,955
Noncontributing = 76
Contributing = 1,879
Channel slope (ft/mi) = 21.0
Annual precip. (in) = 16.0
Bankful stage (ft) = 16

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 8,880
Q₅ = 20,000
Q₁₀ = 31,700
Q₂₅ = 53,300
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 5.974
Standard deviation = 0.401
Skew = 0.392

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Sep. 27	12.25	5,000	1948	Jun. 1	5.76	4,060	1951	May 15	10.22	17,200
					Jun. 21	5.27	3,260		May 21	4.77	3,480
1942	Apr. 20	20.1	80,000		Aug. 4	4.48	1,760		Jun. 5	3.58	1,760
					Aug. 7	7.00	6,040		Jun. 12	3.73	1,980
1943	Aug. 6	6.90	5,000		Sep. 8	9.68	13,000		Jul. 12	5.03	4,190
	Aug. 26	5.68	3,920						Aug. 21	7.67	9,350
1944	May 29	4.77	1,800	1949	Jun. 5	8.70	10,200	1952	Aug. 24	4.30	2,720
					Jul. 12	4.49	2,290				
1945	May 30	8.0	8,660	1950	Jun. 17	4.23	2,580	1953	Jun. 29	4.60	3,140
	Aug. 21	7.8	7,930		Jun. 19	7.23	8,220		Jul. 3	10.16	17,200
					Jun. 22	3.79	1,950		Jul. 11	6.03	5,720
1948	May 28	8.29	9,130		Jul. 13	4.02	2,200		Aug. 6	3.50	1,710
	Aug. 15	8.31	9,150		Jul. 20	5.05	3,920		Aug. 17	8.14	10,300
					Jul. 28	9.66	15,000				
1947	Jul. 3	5.00	2,910		Aug. 1	9.49	14,300	1954	Jul. 23	8.25	10,600
	Jul. 7	4.82	2,640		Aug. 14	4.06	2,310		Jul. 28	4.97	3,780
	Aug. 15	7.09	6,500		Aug. 26	7.80	9,580		Aug. 7	6.8	7,350
					Aug. 29	7.26	8,460		Aug. 13	9.61	14,700

ARKANSAS RIVER BASIN

07155100 COLD SPRINGS CREEK NEAR WHEELLESS, OKLA.

LOCATION.--Lat 36°46'20", long 102°48'16", in SE 1/4 NE 1/4 sec.35, T.4 N., R.2 E., Cimarron County, at county road multi-barrel culvert, 6.0 miles northeast of Wheelless.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 16, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 11.0
Noncontributing = 0
Contributing = 11.0
Channel slope (ft/mi) = 29.1
Annual precip. (in) = 16.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 102
Q₅ = 879
Q₁₀ = 1,920
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.580
Standard deviation = 0.700
Skew = -0.417

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 8	12.06	239	1967	--	-	0	1970	--	-	0
1965	Aug. 21	18.83	2,520	1968	--	-	0	1971	Apr. 30	15.40	1,160
1966	Oct. 17	12.36	300	1969	Jul. 4	10.74	38				

07155500 CIMARRON RIVER NEAR BOISE CITY, OKLA.

LOCATION.--Lat 36°55'15", long 102°31'15", in NE1/4NE1/4 sec.9, T.5 N., R.5 E., on downstream side of central pier of bridge on U.S. Highway 287, 2 miles downstream from Ute Creek, 13 miles north of Boise City, and at mile 551.5.

GAGE.--Water-stage recorder. Datum of gage is 3,859.86 ft above mean sea level (State Highway Commission bench mark).

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 1,700 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,214
Noncontributing = 191
Contributing = 2,023
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 7.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May	17.23	-	1940	Jun. 10	6.25	21,000	1941	Jul. 13	4.82	3,840
					Jul. 5	4.85	8,760		Jul. 16	6.06	8,250
1938	Sep. 4	8.0	39,200		Aug. 8	4.94	9,950		Jul. 25	5.18	5,320
					Sep. 4	6.20	20,500		Aug. 20	5.82	6,810
1939	Oct. 9	4.04	5,490						Sep. 22	10.00	60,200
	Jan. 8	3.16	2,220	1941	Oct. 1	6.30	17,900				
	May 4	7.10	29,100		May 2	7.75	30,600	1942	Oct. 22	5.80	17,100
	May 26	3.28	2,360		May 23	7.80	29,600		Apr. 20	11.90	80,000
	Jun. 28	3.50	2,800		Jun. 2	5.06	8,990		Apr. 24	4.39	4,990
	Jul. 1	3.55	2,760		Jun. 7	4.44	4,480		Jun. 22	6.62	18,000
	Jul. 17	4.35	6,750		Jun. 17	5.20	4,700		Jul. 10	5.64	3,330
	Aug. 4	3.91	3,960		Jun. 26	6.10	8,250		Jul. 19	5.90	6,100
	Aug. 20	6.00	18,800		Jul. 4	6.50	11,900		Sep. 2	6.00	7,750

a Annual peak only.

ARKANSAS RIVER BASIN

07155510 FLAGG SPRINGS CREEK TRIBUTARY NEAR BOISE CITY, OKLA.

LOCATION.--Lat 36°52'30", long 102°31'10", in NE 1/4 NE 1/4 sec.28, T.5 N., R.5 E., Cimarron County, on downstream side of multi-barrel masonry box culvert on State Highway 3, 10 miles north of Boise City.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 16, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 5.15
Noncontributing = 0
Contributing = 5.15
Channel slope (ft/mi) = 29.1
Annual precip. (in) = 16.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Aug. 21	9.62	2,700	1968	--	-	0	1970	--	-	0
1966	Jul. 23	6.00	1,400	1969	Sep. 16	4.95	760	1971	Jul. 19	2.96	1
1967	Jul. 25	4.90	740								

07156800 CIMARRON RIVER NEAR LIBERAL, KANSAS

LOCATION.--Lat 37°09', long 100°45', in sec. 25, T. 33 S., R. 32 W., at bridge on U.S. Highway 54, 13 miles northeast of Liberal, and at mile 400.0.

GAGE.--Water-stage recorder and wire-weight gage. Datum of gage was 2,533.69 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). During 1895-96, 1903-5, staff gage at Chicago, Rock Island & Pacific Railway bridge a quarter of a mile upstream at different datum. Apr. 1, 1938, to Feb. 28, 1939, wire-weight gage only at described site and datum.

REMARKS.--Only annual peaks are shown. For Log-Pearson statistics based on combined records see 07156900.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 8,254
Noncontributing = 4,147
Contributing = 4,107
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1895	Jul. 28	8.7	-	1938	Sep. 5	11.0	23,000	1940	May 8	7.08	2,500
1896	Apr. 12	5.0	90	1939	Jul. 2	8.7	5,350	1941	Sep. 24	10.5	47,000
1905	Oct. 2	7.0	-					1942	Apr. 21	12.1	69,000

ARKANSAS RIVER BASIN

07156900 CIMARRON RIVER NEAR FORGAN, OKLA.

LOCATION.--Lat 37°00'45", long 100°29'39", in SE 1/4 SE 1/4 sec.8, T.35 S., R.24 E., Meade County, Kans., near center of span on downstream side of pier of bridge on Kansas State Highway 23, 0.8 mile north of Oklahoma-Kansas State line, 7.8 miles north of Forgan, and at mile 375.7.

GAGE.--Water-stage recorder. Altitude of gage is 2,325 ft (from topographic map).

REMARKS.--Extensive diversion for irrigation above station. Log-Pearson calculations based on all annual peaks for combined records of 07156800, 07156900, and 07157000. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 8,536
Noncontributing = 4,316
Contributing = 4,220
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,650
Q₅ = 16,800
Q₁₀ = 30,500
Q₂₅ = 58,500
Q₅₀ = 90,000
Q₁₀₀ = 134,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.770
Standard deviation = 0.548
Skew = 0.209

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Oct. 20	8.10	21,200	1968	Aug. 12	4.60	968	1970	Oct. 5	4.66	1,060
	Sep. 29	6.34	6,130								
				1969	Sep. 19	5.39	2,420	1971	Feb. 25	4.27	686
1967	Jun. 27	5.62	3,170								
	Aug. 9	5.75	3,650								

ARKANSAS RIVER BASIN

07157000 CIMARRON RIVER NEAR MOCANE, OKLA.

LOCATION.--Lat 36°59', long 100°19', in SW1/4NW1/4 sec.24, T.6 N., R.25 E., near right bank on downstream side of pier of bridge on county road, 6.5 miles northeast of Mocane, 14.7 miles upstream from Crooked Creek, and at mile 364.1.

GAGE.--Water-stage recorder. Datum of gage is 2,206.12 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 9, 1942, staff gage at same site and datum.

HISTORICAL DATA.--Local resident stated that flood in 1914 was 2 or 3 ft higher than that in April 1942 which exceeded by half a foot the flood in May 1951.

REMARKS.--Extensive diversions for irrigation above station. For Log-Pearson statistics based on combined records see 07156900. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 8,670
Noncontributing = 4,365
Contributing = 4,305
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 8

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	-	13.0	-	1951	Oct. 2	4.22	3,200	1957	Jun. 24	4.17	5,020
					May 14	5.07	7,720		Jul. 25	4.82	8,100
1942	Apr.	10.5	-		May 17	9.94	53,400		Aug. 3	3.78	3,330
					May 22	2.75	3,640		Aug. 30	3.90	3,830
1943	Oct. 14	-	3,000		Jun. 7	2.71	3,440		Sep. 11	3.93	3,960
					Jun. 23	3.25	6,150				
1944	May 31	3.69	2,970		Aug. 23	2.88	3,780	1958	Jun. 21	4.15	4,920
									Jun. 23	4.73	7,660
1945	Jun. 26	5.12	9,600	1952	Aug. 23	2.18	1,080		Jul. 8	6.75	21,300
									Aug. 19	4.87	8,460
1946	May 30	3.95	4,050	1953	Aug. 20	3.60	4,650	1959	May 4	3.43	3,360
1947	Oct. 6	4.38	5,520	1954	Aug. 9	3.60	3,010	1960	Jun. 8	3.70	3,330
	Oct. 8	5.03	8,150		Aug. 15	3.81	4,300				
1948	Aug. 14	4.60	4,300	1955	Aug. 14	4.85	6,920	1961	Aug. 18	3.18	2,930
	Sep. 11	4.69	5,330		May 18	5.00	7,610				
					May 22	5.45	11,200	1962	Jun. 9	3.39	2,380
1949	Jun. 4	5.30	8,200		May 26	4.24	5,790				
	Jun. 7	5.50	10,500					1963	Sep. 2	3.39	2,600
	Jun. 13	4.20	4,440	1956	Aug. 21	3.40	2,630				
								1964	Jun. 10	3.30	1,670
1950	Jul. 30	4.32	3,690	1957	May 16	5.06	9,300				
	Aug. 3	4.83	6,320		May 29	4.06	4,520	1965	Jun. 20	8.10	28,000
	Aug. 29	3.96	4,090		Jun. 1	3.73	3,130		Aug. 25	3.32	7,100
	Aug. 31	4.04	4,440								

ARKANSAS RIVER BASIN

07157500 CROOKED CREEK NEAR NYE, KANS.

LOCATION.--Lat 37°02'02", long 100°11'55", in southeast corner sec.1, T.35 S., R.27 W., Meade County, on left bank at upstream side of county road bridge, 6.5 miles east of Nye, and at mile 14.0

GAGE.--Water-stage recorder. Datum of gage is 2,163.79 ft above mean sea level, unadjusted. Prior to Sept. 12, 1942, nonrecording gage at same site and datum.

HISTORICAL DATA.--In 1943, resident supplied information to indicate stage had not exceeded 5.5 ft in past 10 years.

REMARKS.--Base for partial-duration series, 1,400 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,157
Noncontributing = 344
Contributing = 813
Channel slope (ft/mi) = 5.35
Annual precip. (in) = 18.5
Bankful stage (ft) = 5.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,490
Q₅ = 6,090
Q₁₀ = 9,210
Q₂₅ = 13,800
Q₅₀ = 17,500
Q₁₀₀ = 21,500

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.352
Standard deviation = 0.505
Skew = -0.519

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Aug. 5	2.03	118	1950	Aug. 29	6.28	2,880	1959	May 4	5.43	2,450
1944	Apr. 29	3.68	1,360	1951	May 14	6.72	4,370		Aug. 18	4.44	1,700
1945	Jun. 26	4.65	2,310		May 18	7.40	7,400	1960	Jun. 8	3.81	748
					May 23	7.59	10,000	1961	Jun. 6	5.83	3,090
					Jul. 2	5.47	3,070	1962	Jul. 24	7.00	5,680
1946	Aug. 27	4.78	2,530		Sep. 5	4.49	1,550				
				1952	Apr. 29	5.98	3,730	1963	Jul. 28	5.19	1,790
1947	Oct. 10	5.66	3,970		Jul. 11	5.68	3,210		Aug. 31	9.00	12,100
	Apr. 12	6.13	4,950	1953	Jul. 23	5.10	2,370				
1948	Jun. 28	4.18	2,080	1954	Jul. 23	4.47	1,320	1964	Jun. 15	5.53	2,280
	Aug. 1	3.72	1,400					1965	Jun. 10	4.20	770
	Aug. 9	3.89	1,610	1955	May 20	8.01	13,600	1966	Oct. 18	4.02	630
	Aug. 14	5.12	3,330		May 23	4.25	2,140	1967	Jul. 12	4.60	1,130
1949	Apr. 26	6.93	7,100		May 26	4.07	1,840	1968	Jun. 9	3.37	255
	May 16	5.28	3,490		Jun. 16	4.21	1,840	1969	Jun. 11	5.24	1,840
	Jun. 4	6.82	5,970		Jun. 20	4.56	2,290	1970	Apr. 18	4.63	1,050
	Jun. 9	4.65	2,150	1956	Jul. 3	4.38	1,640	1971	Aug. 6	3.81	486
	Jun. 13	5.00	3,570								
	Sep. 11	4.89	1,820	1957	May 16	6.24	4,220				
1950	Oct. 10	6.20	3,930		May 31	4.92	2,220				
	Oct. 12	6.50	4,660	1958	Jul. 5	5.01	1,860				
	Jul. 27	7.15	6,360		Aug. 20	7.94	13,200				
	Jul. 29	6.70	4,910								
	Aug. 22	6.08	2,980								

ARKANSAS RIVER BASIN

07157550 WEST FORK CREEK NEAR KNOWLES, OKLA.

LOCATION.--Lat 36°52'30", long 100°07'20", in SE 1/4 SE 1/4 sec.22, T.5 N., R.27 E., Beaver County, at county road culvert, 4.2 miles east of Knowles.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 27, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4.22
Noncontributing = 0
Contributing = 4.22
Channel slope (ft/mi) = 59.2
Annual precip. (in) = 20.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 113 (188)
Q₅ = 435 (669)
Q₁₀ = 850 (1,210)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.024
Standard deviation = 0.721
Skew = -0.228

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jul. 18	11.56	14	1967	Aug. 14	18.24	1,150	1970	Aug. 22	14.2	124
1965	May 14	14.58	60	1968	Jun. 15	14.15	120	1971	Jul. 22	10.80	9
1966	Aug. 9	17.05	242	1969	Aug. 22	18.0	500				

07157950 CIMARRON RIVER NEAR BUFFALO, OKLA.

LOCATION.--Lat 36°55'28", long 99°23'56", in NW 1/4 SW 1/4 sec.7, T.28N., R.20 W., Harper County, on left bank 800 ft downstream from unnamed tributary, 6 miles upstream from Keno Creek, 7 miles upstream from bridge on U.S. Highway 64, 14 miles northeast of Buffalo, and at mile 296.0.

GAGE.--Water-stage recorder. Altitude of gage is 1,650 ft (from river profile map).

REMARKS.--Extensive diversions for irrigation above station. Log-Pearson calculations based on all annual peaks except 1971 which was considered an outlier. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 11,930
Noncontributing = 4,813
Contributing = 7,117
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 4,250
Q₅ = 7,680
Q₁₀ = 10,000
Q₂₅ = 12,900
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.594
Standard deviation = 0.340
Skew = -0.617

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Jun. 8	3.88	3,310	1963	Jun. 23	4.67	5,600	1967	Aug. 10	3.22	1,480
					Sep. 1	4.43	4,990				
1961	Jul. 23	3.90	3,360	1964	Jun. 16	3.26	1,700	1968	Aug. 29	4.29	8,320
	Aug. 19	3.82	3,150					1969	Oct. 16	4.22	7,760
1962	Jun. 8	3.79	3,070	1965	Jun. 10	4.32	6,960		Aug. 25	3.78	4,480
	Jul. 25	3.91	3,360		Jun. 13	3.82	4,740		Sep. 1	3.93	5,510
	Sep. 17	4.28	4,540		Jun. 22	4.41	9,280		Sep. 20	3.67	3,350
	Sep. 20	3.84	3,100		Jun. 28	3.78	4,480				
1963	Jun. 7	4.33	4,690	1966	Oct. 21	4.28	8,240	1970	May 28	3.09	970
	Jun. 17	4.05	3,640		Sep. 3	3.71	4,060	1971	Feb. 28	2.73	380

ARKANSAS RIVER BASIN

07157960 BUFFALO CREEK NEAR LOVEDALE, OKLA.

LOCATION.--Lat 36°46'08", long 99°21'58", in NW 1/4 NW 1/4 sec.4, T.26 N., R.20 W., Harper County, near center of channel on downstream side of pier of bridge on State Highway 34, 1.2 miles east of Lovedale, 1.3 miles upstream from Sleeping Bear Creek, and at mile 7.6.

GAGE.--Water-stage recorder. Datum of gage is 1,602.56 ft above mean sea level (State Highway Department bench mark).

REMARKS.--Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 408
 Noncontributing = 0
 Contributing = 408
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Aug. 10	12.36	8,440	1968	Aug. 18	8.76	2,070	1970	Apr. 18	4.43	61
					Aug. 28	8.31	1,640				
1967	Aug. 9	14.80	15,800	1969	Sep. 16	7.76	1,190	1971	Jun. 9	5.71	283
1968	Mar. 30	10.19	3,920								

ARKANSAS RIVER BASIN

07158000 CIMARRON RIVER NEAR WAYNOKA, OKLA.

LOCATION.--Lat 36°31'02", long 98°52'45", near center of sec.35, T.24 N., R.16 W., Woods County, near left bank on downstream side of bridge on U.S. Highway 281, 0.8 mile downstream from Main Creek, 5 miles south of Waynoka, and at mile 247.0.

GAGE.--Water-stage recorder. Datum of gage is 1,367.50 ft above mean sea level (levels by Corps of Engineers). Feb. 4 to Mar. 3, 1938, nonrecording gage and Mar. 4, 1938, to Oct. 24, 1956, water-stage recorder, on former highway bridge 50 ft downstream at present datum.

REMARKS.--Extensive diversions for irrigation above station. Log-Pearson calculations based on all annual peaks except 1971 which was considered an outlier. Records for Oct. 1937 to Sept. 1951 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 10,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 13,334
 Noncontributing = 4,830
 Contributing = 8,504
Channel slope (ft/mi) = 9.4
Annual precip. (in) = 17.0
Bankful stage (ft) = 8.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q_2 = 20,200
 Q_5 = 37,800
 Q_{10} = 53,000
 Q_{25} = 76,700
 Q_{50} = 98,000
 Q_{100} = 122,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 4.314
 Standard deviation = 0.315
 Skew = 0.172

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May	14.0	-	1946	Jun. 29	6.64	8,570	1957	Apr. 17	7.72	17,400
1935	May 19	14.5	-	1947	Oct. 6	7.23	11,100	1957	Apr. 23	7.40	14,500
1938	Apr. 27	9.26	44,400	1947	Nov. 6	7.19	11,500	1957	May 2	7.83	19,000
	May 2	6.02	11,100	1947	Apr. 13	8.13	20,800	1957	May 10	9.06	34,000
	May 19	9.49	46,600	1947	May 15	7.27	10,100	1957	May 13	8.28	22,900
	May 23	10.70	60,000	1948	Jun. 28	9.35	34,600	1957	May 16	15.10	94,500
	May 31	7.17	22,300	1948	Jun. 28	9.35	34,600	1957	May 24	8.44	27,700
	Jun. 20	7.00	20,300	1949	May 7	7.25	10,500	1957	May 30	10.56	48,400
	Aug. 16	8.40	34,500	1949	May 16	10.00	42,900	1957	Jun. 10	8.31	26,500
	Sep. 7	7.2	22,300	1949	May 21	8.90	28,200	1957	Jun. 18	6.79	11,900
1939	Apr. 5	7.17	22,200	1949	Jun. 5	8.55	24,000	1957	Jun. 23	11.78	60,200
	Apr. 15	5.85	12,100	1949	Jun. 8	7.77	15,300	1957	Jul. 1	9.71	41,800
	Jun. 12	6.44	15,200	1949	Jun. 13	8.60	24,600	1957	Sep. 14	6.65	10,700
1940	May 19	7.50	19,500	1949	Jul. 27	7.80	15,800	1958	Jun. 26	8.34	16,400
	Jul. 2	7.05	15,100	1949	Sep. 12	7.68	14,800	1958	Jul. 9	7.85	13,000
	Aug. 9	6.95	14,100	1950	Jul. 19	8.03	18,400	1959	Sep. 24	9.31	27,300
1941	Apr. 15	7.80	22,600	1950	Jul. 25	8.45	22,800	1960	Jun. 8	9.87	33,500
	May 4	7.35	18,000	1950	Jul. 28	11.40	70,000	1960	Jul. 4	7.52	11,000
	May 20	7.70	19,500	1950	Aug. 2	8.90	32,600	1960	Aug. 18	7.86	13,600
	May 26	7.34	16,500	1950	Aug. 4	6.90	12,300	1961	May 4	7.72	10,700
	Jun. 9	8.10	26,100	1950	Aug. 30	6.72	10,700	1962	Sep. 17	8.03	15,400
	Sep. 25	8.35	29,700	1950	Sep. 16	6.83	11,900	1963	Jun. 24	9.10	15,800
1942	Oct. 23	9.70	45,100	1951	May 18	9.54	37,700	1964	Aug. 18	7.95	12,500
	Apr. 18	7.26	17,000	1951	May 23	8.69	28,300	1965	Jun. 22	8.35	15,400
	Apr. 22	10.50	55,000	1951	Jun. 22	8.18	17,900	1966	Oct. 21	8.33	16,300
1943	Oct. 3	9.10	31,700	1951	Jun. 24	9.58	33,900	1967	Aug. 9	9.12	20,900
	May 19	6.40	10,000	1951	Jun. 30	9.43	28,700	1968	Aug. 29	8.09	10,900
	Jul. 18	7.73	24,400	1951	Jul. 4	6.65	10,200	1969	Oct. 17	7.95	8,700
1944	Apr. 22	9.80	47,000	1952	May 1	6.87	7,640	1970	Apr. 18	8.05	10,000
	Jul. 10	7.33	14,400	1953	Jul. 12	6.30	6,010	1971	Feb. 28	5.89	661
	Jul. 25	9.00	30,600	1954	May 24	7.11	9,540				
1945	Oct. 2	7.20	13,100	1955	May 19	9.73	41,800				
	Jun. 27	7.32	13,900	1955	May 23	7.71	17,400				
	Sep. 28	8.00	20,400	1955	May 26	9.10	34,000				
				1955	Jun. 18	8.56	27,100				
				1955	Jun. 20	8.37	24,700				
				1956	Aug. 19	6.31	6,290				

ARKANSAS RIVER BASIN

07158020 CIMARRON RIVER TRIBUTARY NEAR LONE WOLF, OKLA.

LOCATION.--Lat 36°24'25", long 98°44'10", in SW 1/4 SE 1/4 sec.6, T.22 N., R.14 W., Major County,
at multi-barrel culvert on State Highway 15, 5.4 miles west of Lone Wolf.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4.07
Noncontributing = 0
Contributing = 4.07
Channel slope (ft/mi) = 37.1
Annual precip. (in) = 25.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 468 (669)
Q₅ = 697 (968)
Q₁₀ = 857 (1,140)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.670
Standard deviation = 0.206
Skew = -0.028

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jul. 17	5.75	236	1967	Jul. 4	5.98	310	1970	Apr. 18	5.24	880
1965	Sep. 18	5.00	760	1968	Aug. 28	4.50	520	1971	Jun. 11	4.21	404
1966	Sep. 2	4.84	680	1969	Jun. 17	4.01	325				

07158080 SAND CREEK TRIBUTARY NEAR WAYNOKA, OKLA.

LOCATION.--Lat 36°35'40", long 98°44'00", in NW 1/4 NE 1/4 sec.6, T.24 N., R.14 W., Woods County,
at multi-barrel culvert on U.S. Highway 281, 8.0 miles east of Waynoka.

GAGE.--Crest-stage gage. Stage-rainfall recorder since September 9, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1.61
Noncontributing = 0
Contributing = 1.61
Channel slope (ft/mi) = 62.4
Annual precip. (in) = 25.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 119 (170)
Q₅ = 327 (436)
Q₁₀ = 556 (695)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.077
Standard deviation = 0.520
Skew = 0.033

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 30	2.65	42	1967	Jun. 9	4.52	280	1970	Aug. 21	6.22	568
1965	Nov. 3	4.12	220	1968	Aug. 28	2.60	37	1971	Jun. 9	2.92	69
1966	Jul. 22	2.50	27	1969	Apr. 17	5.30	410				

ARKANSAS RIVER BASIN

07158120 CIMARRON RIVER TRIBUTARY NEAR ISABELLA, OKLA.

LOCATION.--Lat 36°16'30", long 98°21'00", in NW 1/4 NE 1/4 sec.26, T.21 N., R.11 W., Major County, at culvert on State Highway 8, 2.7 miles north of Isabella.

GAGE.--Crest-stage gage. Stage-rainfall recorder since May 3, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 0.62
Noncontributing = 0
Contributing = 0.62
Channel slope (ft/mi) = 76.0
Annual precip. (in) = 26.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 82 (102)
Q₅ = 143 (179)
Q₁₀ = 189 (236)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 1.900
Standard deviation = 0.300
Skew = -0.253

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	4.50	41	1967	Apr. 12	4.18	28	1970	Apr. 18	6.08	130
1965	Nov. 15	6.00	125	1968	Aug. 18	4.60	46	1971	Jun. 2	5.88	118
1966	Aug. 1	5.19	76	1969	May 7	7.2	207				

07158180 SALT CREEK TRIBUTARY NEAR OKEENE, OKLA.

LOCATION.--Lat 36°03'00", long 98°19'00", in SW 1/4 NW 1/4 sec.7, T.18 N., R.10 W., Blaine County, at multi-barrel culvert on State Highway 8, 4.4 miles south of Okeene.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 2, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 8.23
Noncontributing = 0
Contributing = 8.23
Channel slope (ft/mi) = 30.0
Annual precip. (in) = 26.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 286 (318)
Q₅ = 654 (743)
Q₁₀ = 1,090 (1,280)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.512
Standard deviation = 0.393
Skew = 0.858

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	3.65	148	1967	Jun. 10	7.25	1,500	1970	Sep. 22	3.60	140
1965	Nov. 16	6.40	1,000	1968	Aug. 18	3.63	144	1971	Jun. 11	4.55	328
1966	Sep. 12	4.14	228	1969	May 7	4.72	370				

ARKANSAS RIVER BASIN

07158400 SALT CREEK NEAR OKEENE, OKLA.

LOCATION.--Lat 36°06', long 98°12', in SW1/4 sec.20, T.19 N., R.9 W., on downstream side of left bank pier of bridge on county road, 2.2 miles downstream from Spring Creek, 7 miles east of Okeene, and at mile 2.2.

GAGE.--Water-stage recorder. Altitude of gage is 1,120 ft (from topographic map).

HISTORICAL DATA.--A stage of 16.1 ft occurred sometime after 1957, from floodmarks. A somewhat higher stage occurred in 1957 during backwater from Cimarron River, from information by local residents.

REMARKS --Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 196
Noncontributing = 0
Contributing = 196
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Oct. 10	10.66	2,870	1964	Oct. 20	11.94	3,630	1966	Aug. 31	9.58	2,210
	Nov. 2	14.59	6,490		May 10	11.18	3,170		Sep. 13	11.05	3,050
1963	May 25	9.32	2,050	1965	Nov. 3	10.85	2,930	1967	May 6	12.67	4,180
	Jul. 11	13.16	4,610		Nov. 16	14.75	6,840		Jun. 11	15.72	8,640
	Jul. 13	9.16	2,000		Nov. 17	14.38	5,870		Jun. 25	9.22	2,010
	Sep. 5	10.46	2,750		Sep. 21	10.13	2,510				

07158500 PREACHER CREEK NEAR DOVER, OKLA.

LOCATION.--Lat 36°02'37", long 98°00'48", in NW 1/4 NW 1/4 sec.13, T.18 N., R.8 W., Kingfisher County, at county road bridge, 7.1 miles northwest of Dover.

GAGE.--Crest-stage gage. Altitude of gage is 1,068 ft water-stage recorder 1952-1957 at datum 5.0 ft higher.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 14.5
Noncontributing = 0
Contributing = 14.5
Channel slope (ft/mi) = 14.8
Annual precip. (in) = 27.5
Bankful stage (ft) = 8

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 175
Q₅ = 840
Q₁₀ = 1,850
Q₂₅ = 4,170
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.218
Standard deviation = 0.832
Skew = -0.182

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 22	2.31	9	1957	May 15	9.1	6,420	1968	Jun. 22	6.80	510
1953	Jul. 24	4.73	431	1964	Aug. 7	6.77	502	1969	May 7	4.89	145
1954	May 24	3.08	32	1965	Jul. 4	6.40	410	1970	Apr. 18	-	50
1955	May 26	4.87	512	1966	Apr. 22	2.26	5	1971	Jun. 2	3.90	66
1956	Oct. 4	3.84	118	1967	Jun. 11	8.05	925				

ARKANSAS RIVER BASIN

07158550 TURKEY CREEK TRIBUTARY NEAR GOLTRY, OKLA.

LOCATION.--Lat 36°28'40", long 98°08'05", in SE 1/4 SW 1/4 sec.11, T.23 N., R.9 W., Alfalfa County, at multi-barrel culvert on State Highway 45, 4.1 miles south of Goltry.

GAGE.--Crest-stage gage. Stage-rainfall recorder since October 26, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 5.08
Noncontributing = 0
Contributing = 5.08
Channel slope (ft/mi) = 19.5
Annual precip. (in) = 27.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 223 (235)
Q₅ = 586 (617)
Q₁₀ = 976 (1,030)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.353
Standard deviation = 0.494
Skew = 0.059

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 5	7.59	423	1967	Jun. 20	4.60	56	1970	Apr. 18	10.6	1,100
1965	May 13	9.08	654	1968	Aug. 18	5.5	146	1971	Jun. 2	4.80	75
1966	Apr. 22	4.82	77	1969	Jun. 17	7.9	466				

07159000 TURKEY CREEK NEAR DRUMMOND, OKLA.

LOCATION.--Lat 36°19'05", long 98°00'03", in NE1/4NE1/4 sec.12, T.21 N., R.8 W., Garfield County, near right bank on downstream side of pile bent of county road bridge, 2.2 miles northeast of Drummond, 2.5 miles downstream from Clear Creek, and 9 miles southwest of Enid.

GAGE.--Crest-stage gage. Datum of gage is 1,148.22 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1970, water-stage recorder at same site and datum.

HISTORICAL DATA.--Flood of 1932 reached a stage of about 25 ft from information by local resident.

REMARKS.--Base for partial-duration series, 1,800 cfs. Only annual peaks are shown since 1971.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 248
Noncontributing = 0
Contributing = 248
Channel slope (ft/mi) = 5.70
Annual precip. (in) = 27.2
Bankful stage (ft) = 18.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 2,490
Q₅ = 6,000
Q₁₀ = 9,180
Q₂₅ = 14,100
Q₅₀ = 18,400
Q₁₀₀ = 23,100

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 3.371
Standard deviation = 0.477
Skew = -0.329

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	May 10	5.92	1,620	1955	May 9	7.88	2,520	1961	Sep. 24	7.03	1,900
					May 19	8.10	2,620				
1949	Mar. 30	8.46	2,800		Jun. 18	13.30	5,320	1962	Oct. 10	6.85	1,850
	May 19	7.26	2,240						Nov. 2	13.85	5,660
	May 21	6.69	1,970	1956	Oct. 2	6.23	1,750	1963	Jun. 23	10.08	3,350
	May 23	7.85	2,480						Jul. 13	11.82	4,370
	May 28	11.69	4,390	1957	Apr. 23	6.67	1,850				
	Jun. 4	6.79	2,020		May 3	6.58	1,840	1964	May 10	8.97	2,900
1950	May 8	17.36	10,200		May 16	21.61	18,800		Jun. 5	7.75	2,300
	May 10	8.29	2,710		May 25	8.58	2,660				
	Jul. 20	6.59	1,930		Jun. 10	12.39	4,550	1965	Nov. 17	13.36	5,380
	Jul. 29	20.44	16,300		Jun. 18	7.70	2,240				
	Aug. 1	8.12	2,620		Jun. 23	11.55	3,620	1966	Jun. 5	2.85	263
					Jun. 26	10.32	3,090				
1951	May 22	7.61	2,380		Jul. 1	7.15	1,840	1967	Sep. 4	10.05	3,420
	May 27	7.17	2,200	1958	Nov. 17	3.93	695				
	Jun. 21	8.31	2,710					1968	Aug. 18	8.55	2,480
	Jun. 30	8.17	2,660	1959	Sep. 25	6.32	1,590	1969	Apr. 16	9.53	3,120
	Jul. 4	7.46	2,340						May 8	8.70	2,550
1952	Apr. 22	2.35	254	1960	Oct. 2	11.40	4,130		Jun. 17	9.29	2,870
					Oct. 4	10.13	3,450				
1953	Jun. 5	4.94	1,230		May 28	14.18	5,950	1970	Apr. 27	9.88	3,190
					Jun. 11	8.46	2,650				
1954	May 25	4.25	908		Aug. 24	10.77	3,800				
					Aug. 26	13.23	5,240	1971	Jun. 3	4.11	473

ARKANSAS RIVER BASIN

07159200 KINGFISHER CREEK NEAR KINGFISHER

LOCATION.--Lat 35°50'03", long 98°03'57", in NW 1/4 SW 1/4 sec.28, T.16 N., R.8 W., Kingfisher County, at county road bridge, 7.6 miles west of Kingfisher.

GAGE.--Crest-stage gage. Altitude of gage is 1,050 ft (from topographic map). Water-stage recorder, Oct. 1966 to Sept. 1970.

REMARKS.--Base for partial-duration series, 1,500 cfs. Only annual peaks are shown since 1970.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 157
 Noncontributing = 0
 Contributing = 157
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Jun. 11	27.88	17,600	1968	May 14	17.87	1,160	1970	Sep. 23	12.30	341
	Jun. 25	23.03	5,250								
				1969	May 5	19.42	1,830	1971	Sep. 24	17.58	1,080
					May 7	19.66	1,960				

07159500 BLUFF CREEK ABOVE LAKE HEFNER, NEAR OKLAHOMA CITY, OKLA.

LOCATION.--Lat 35°32'33", long 97°35'46", in SW1/4 sec.2, T.12 N., R.4 W., on left bank at upstream side of weir at bridge in Lake Hefner recreational area, just upstream from Lake Hefner, 6-1/4 miles northwest of the State Capitol in Oklahoma City.

GAGE.--Water-stage recorder. Datum of gage is 1,199.86 ft above mean sea level, datum of 1929.

REMARKS.--During period of record about 9.5 percent of drainage is in urban area of Warr Acres. Some regulation by ponds in basin. Base for partial-duration series, 70 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 1.62
 Noncontributing = 0
 Contributing = 1.62
 Channel slope (ft/mi) = 60.0
 Annual precip. (in) = 31.0
 Bankful stage (ft) = 6.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 203
 Q₅ = 451
 Q₁₀ = 701
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 2.327
 Standard deviation = 0.397
 Skew = 0.279

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 9	2.55	192	1954	May 1	2.45	170	1957	May 24	2.21	122
	May 18	2.20	120						Jun. 22	2.37	154
	May 27	3.49	452	1955	May 19	3.46	441		Sep. 14	1.97	78
	Jul. 24	2.44	168		Jun. 16	4.95	1,070				
					Jun. 17	2.76	240	1958	Apr. 19	2.82	255
1952	May 23	1.78	47						Jun. 21	2.36	152
				1956	Oct. 2	2.58	199		Jun. 25	2.47	175
1953	Apr. 5	2.06	94								
	Jul. 20	2.28	136	1957	Apr. 22	2.15	110				

ARKANSAS RIVER BASIN

07159805 COTTONWOOD CREEK AT GUTHRIE, OKLA.

LOCATION.--Lat 35°53', long 97°26', in NE1/4 sec.8, T.16 N., R.2 W., near upstream side of bridge on State Highway 33 in northwest Guthrie, 2-1/2 miles upstream from mouth.

GAGE.--Reference point at tree and at street curb. Datum is at mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Data furnished by Ed Nelson, local resident, who has recorded all peaks above 924 ft since at least 1889 to 1956. Stage-discharge relation not defined.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 370
 Noncontributing = 0
 Contributing = 370
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 923

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1889	Apr.	927.1	-	1916	Apr.	927.5	-	1945	Apr. 16	925.6	-
1908	May 28	927.4	-	1921	Mar.	927.1	-	1947	Apr. 14	925.3	-
1910	Nov. 28	927.1	-	1927	Apr. 12	927.85	-	1949	May 19	929.6	-
1912	May	927.4	-	1941	May 4,5	925.2	-	1956	Oct. 3	924.7	-
									Oct. 5	925.2	-

ARKANSAS RIVER BASIN

07160000 CIMARRON RIVER NEAR GUTHRIE, OKLA.

LOCATION.--Lat 35°55'10", long 97°25'35", in NE 1/4 SE 1/4 sec.29, T.17 N., R.2 W., Logan County, on left bank 125 ft upstream from the Atchison, Topeka, and Santa Fe Railway Co. bridge, 1.2 miles downstream from Cottonwood Creek, 2.5 miles north of Guthrie, 6.5 miles upstream from Skeleton Creek, and at mile 121.8.

GAGE.--Water-stage recorder. Datum of gage is 900.50 ft above mean sea level (Corps of Engineers bench mark). Prior to Mar. 19, 1939, nonrecording gage at railway bridge 125 ft downstream at same datum. Since Sep. 14, 1967, supplementary water-stage recorder, at site 2,000 ft downstream and at datum 4.00 ft lower.

HISTORICAL DATA.--Flood in May 1935 is greatest known prior to flood of May 17, 1957, from information by Corps of Engineers. Other major floods are reported to have occurred in May 1914 and October 1926.

REMARKS.--Base for partial-duration series, 16,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 16,892
 Noncontributing = 4,926
 Contributing = 11,966
 Channel slope (ft/mi) = 6.80
 Annual precip. (in) = 20.1
 Bankful stage (ft) = 10

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 29,100
 Q₅ = 57,800
 Q₁₀ = 80,200
 Q₂₅ = 111,000
 Q₅₀ = 136,000
 Q₁₀₀ = 161,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.439
 Standard deviation = 0.378
 Skew = -0.396

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	May	16.5	90,000	1948	Jun. 29	9.98	28,800	1957	May 26	9.7	30,300
1938	Apr. 28	7.92	25,400	1949	Mar. 31	7.8	16,000	1958	Jun. 1	10.4	39,000
	May 20	10.7	46,300		May 20	12.98	51,500		Jun. 11	11.04	42,000
	May 24	10.10	42,100		May 22	12.74	48,500		Jun. 26	-	31,200
	Jun. 1	7.85	24,500		May 25	9.02	18,000	1959	Sep. 25	11.35	51,800
	Jun. 21	7.56	22,800		Jun. 7	8.68	16,700		Oct. 2	14.90	86,800
	Aug. 17	6.85	16,200		Jun. 15	9.62	21,500		Oct. 5	11.92	45,200
1939	Apr. 6	7.16	22,000	1950	May 8	8.58	18,000	1960	May 30	8.36	18,300
1940	Jul. 3	7.15	10,600		Jul. 26	8.88	22,800		Jun. 9	8.26	18,900
					Jul. 30	12.05	44,500		Aug. 28	8.10	17,600
					Aug. 2	11.10	32,300	1961	Sep. 14	11.62	48,500
1941	Apr. 16	8.13	23,600	1951	May 20	11.80	42,500		Nov. 2	9.54	27,600
	May 5	9.31	32,000		May 23	9.42	20,800		Jun. 10	9.63	28,500
	Jun. 10	9.87	21,400		May 26	8.78	17,400	1962	Jun. 24	9.58	34,000
1942	Oct. 25	11.40	41,400		Jun. 26	9.82	22,200		Sep. 17	8.23	18,200
	Apr. 10	9.22	26,200	1952	Jul. 1	10.41	27,900	1963	May 11	8.54	18,300
	Apr. 20	11.90	45,400		May 3	5.35	4,230		Nov. 17	8.55	19,500
	Apr. 23	10.19	34,400	1953	Jul. 20	6.70	5,620	1964	Sep. 21	12.30	54,900
	Apr. 26	10.59	38,200		May 26	8.66	11,000		Oct. 23	5.63	6,150
1943	May 20	11.57	42,900	1954	May 21	13.70	43,400	1965	Jun. 12	8.19	17,100
	Apr. 11	11.01	43,000		May 24	9.48	16,800		Jun. 16	6.21	8,250
1944	Apr. 23	9.15	27,800		May 27	11.89	30,600	1966	May 8	8.45	18,000
	Jun. 14	8.65	16,700		Jun. 19	11.13	28,200		Apr. 19	8.04	19,100
1945	Apr. 16	10.87	41,500	1955	Oct. 5	11.90	39,400	1967	Sep. 26	5.6	5,900
	Sep. 29	9.77	22,200		Apr. 24	9.67	20,700				
1946	Jun. 30	8.37	16,100		May 3	10.67	30,600	1968			
	Apr. 14	11.27	43,500		May 17	18.58	158,000				
1947	May 16	11.15	35,000		May 21	10.94	42,000	1969			
				1956							
1948	Jun. 24	11.32	37,700								

ARKANSAS RIVER BASIN

07160500 SKELETON CREEK NEAR LOVELL, OKLA.

LOCATION.--Lat 36°03'36", long 97°35'05", in NW 1/4 SW 1/4 sec.1, T.18 N., R.4 W., Logan County, near right bank on downstream side of pier of bridge on State Highway 74, 2 miles upstream from Otter Creek, 2.8 miles east of Lovell, and at mile 14.6.

GAGE.--Water-stage recorder. Datum of gage is 914.76 ft above mean sea level (State Highway Department bench mark). Prior to Dec. 5, 1949, nonrecording gage at site 60 ft downstream at datum 0.30 ft lower. Gage heights prior to Dec. 5, 1949, converted to present datum.

HISTORICAL DATA.--Local residents reported that flood in August 1932 was the highest known prior to 1957 and was considerably higher than the flood in 1912. The flood of July 30, 1950, was reported to be highest since 1932.

REMARKS.--Base for partial-duration series, 1,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 410
Noncontributing = 0
Contributing = 410
Channel slope (ft/mi) = 8.40
Annual precip. (in) = 29.0
Bankful stage (ft) = 25.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,230
Q₅ = 12,000
Q₁₀ = 21,600
Q₂₅ = 41,900
Q₅₀ = 65,500
Q₁₀₀ = 99,200

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.658
Standard deviation = 0.514
Skew = 0.380

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Aug. 17	32.0	-	1957	May 26	22.61	4,090	1963	Jun. 24	18.70	2,490
					May 30	21.00	3,380		Jul. 12	26.64	8,810
1949	May 20	24.01	-		Jun. 11	23.30	4,090		Jul. 14	23.58	5,190
					Jun. 19	19.86	2,740		Jul. 29	19.37	2,830
1950	Jul. 21	17.88	2,420		Jun. 24	26.21	7,370	1964	May 12	22.34	5,120
	Jul. 30	27.57	8,970		Jun. 27	23.51	4,620	1965	Nov. 18	23.28	5,290
1951	May 18	17.35	2,190		Jul. 2	19.83	2,840		Jun. 13	17.68	2,640
	May 23	17.78	2,340		Sep. 16	20.93	3,220		Sep. 22	15.59	1,990
	Jun. 15	16.73	2,040	1958	Apr. 3	18.10	2,400	1966	Aug. 8	13.93	1,540
	Jun. 22	18.28	2,520		May 30	15.83	1,710		Sep. 14	14.52	1,690
	Jul. 2	18.44	2,550		Jun. 21	16.91	1,960	1967	Jun. 11	16.76	2,470
1952	Aug. 9	10.20	638		Jun. 25	19.42	2,710	1968	Apr. 3	15.46	2,010
1953	Jun. 7	13.56	1,400		Sep. 10	18.82	2,520		May 14	14.64	1,740
1954	Dec. 4	13.90	1,430	1959	Sep. 25	25.10	5,900		Jul. 1	26.70	13,300
1955	May 9	26.80	7,650	1960	Oct. 4	28.60	14,600	1969	Apr. 18	20.23	4,040
	May 20	26.40	7,070		Feb. 6	16.74	1,840		Apr. 28	19.91	3,860
	May 26	28.72	11,100		Apr. 17	17.37	2,080		May 5	18.59	3,220
	Jun. 16	17.92	2,580		May 30	23.45	5,240		May 9	18.57	3,160
	Jun. 19	22.56	4,440		Jun. 7	24.73	6,080		May 17	18.18	3,030
	Jun. 23	16.70	2,140		Jul. 5	26.36	7,450		Jun. 19	19.47	3,640
1956	Oct. 4	27.10	7,960		Aug. 25	20.00	3,500		Sep. 17	16.22	2,470
				1961	Jun. 7	20.93	3,750	1970	Sep. 23	10.81	888
1957	Apr. 23	19.40	2,840		Sep. 13	29.95	28,300	1971	Sep. 26	11.29	970
	May 4	20.66	3,260	1962	Oct. 10	21.78	4,280				
	May 16	34.58	75,200		Nov. 3	23.03	5,180				
	May 21	21.57	3,620		Jun. 10	15.13	1,500				

ARKANSAS RIVER BASIN

07160550 WEST BEAVER CREEK NEAR ORLANDO, OKLA.

LOCATION.--Lat 36°08'45", long 97°28'05", in NW 1/4 NE 1/4 sec.12, T.19 N., R.3 W., Logan County, at county road bridge, 5.0 miles west of Orlando.

GAGE.--Crest-stage gage. Stage-rainfall recorder April 2, 1964 to July 2, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 13.9
 Noncontributing = 0
 Contributing = 13.9
 Channel slope (ft/mi) = 23.8
 Annual precip. (in) = 30.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q_2 = 701 (876)
 Q_5 = 1,790 (2,290)
 Q_{10} = 2,990 (3,990)
 Q_{25} = ***
 Q_{50} = ***
 Q_{100} = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 2.864
 Standard deviation = 0.469
 Skew = 0.237

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	2.55	195	1967	Jun. 24	6.20	1,130	1970	Sep. 22	3.01	270
1965	May 19	9.10	2,600	1968	Jul. 1	10.10	3,500	1971	Jun. 2	4.55	612
1966	Jul. 22	2.95	260	1969	Apr. 16	5.65	950				

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OKLA.

LOCATION.--Lat 35°57'32", long 97°01'49", in SW 1/4 SW 1/4 sec.7, T.17 N., R.3 E., Payne County, near right bank at downstream side of bridge on U.S. Highway 177, 1 mile south of Perkins, 1.5 miles upstream from Dugout Creek, 4 miles downstream from Wildhorse Creek, and at mile 87.3.

GAGE.--Water-stage recorder. Datum of gage is 819.88 ft above mean sea level (levels by Corps of Engineers). Prior to June 26, 1940, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood of Oct. 4, 5, 1926, reached a stage of 17.0 ft, from floodmarks, from information by Corps of Engineers.

REMARKS.--Only annual peaks are shown prior to 1940. Records from June 1939 to Sept. 1955 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 16,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 17,852
Total
Noncontributing = 4,926
Contributing = 12,926
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 11.0

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = 29,800
Q₅ = 58,500
Q₁₀ = 80,600
Q₂₅ = 111,000
Q₅₀ = 135,000
Q₁₀₀ = 159,000

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.450
Standard deviation = 0.370
Skew = -0.365

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	-	17.0	-	1945	Apr. 12	11.73	25,500	1957	May 17	19.53	149,000
					Apr. 17	13.92	41,900		May 21	15.75	94,000
1927	Oct. 5	17.0	a85,000		Sep. 30	12.56	34,100		May 26	12.22	33,000
1928	May 18	10.6	a12,800	1946	Jun. 30	11.03	16,000		Jun. 1	12.32	34,500
1929	Jun. 1	10.8	a14,000	1947	Apr. 14	13.63	45,500		Jun. 11	12.61	53,200
1930	May 17	10.4	a11,000		May 13	11.33	17,400		Jun. 19	9.67	19,000
1931	Apr. 18	10.1	a9,000		May 16	13.50	30,600	1958	Jun. 26	10.98	35,000
1932	Aug. 18	14.6	a52,000	1948	Jun. 24	13.26	34,500	1959	Sep. 26	13.0	55,500
1933	Sep. 4	10.5	a11,800		Jun. 29	12.87	29,400	1960	Oct. 3	16.4	98,600
1934	Sep. 3	9.5	a8,500	1949	May 19	15.22	65,300		Feb. 6	8.80	17,400
1935	Jun. 21	18.0	a100,000		May 22	14.00	46,400		May 30	10.58	29,300
1936	Jun. 6	12.8	a33,000		Jun. 7	11.07	17,200		Jun. 9	9.64	18,600
1937	Jun. 16	12.1	a24,500		Jun. 11	10.93	16,600	1961	Jun. 4	9.20	16,200
1938	May 24	13.2	a36,500		Jun. 15	11.90	21,000		Sep. 14	13.45	70,000
1940	Jul. 4	10.69	11,300	1950	May 9	10.05	17,600	1962	Oct. 11	9.50	21,000
1941	Apr. 17	11.90	24,600		Jul. 26	10.75	18,900		Nov. 3	10.66	33,000
	May 6	12.57	29,700		Jul. 31	13.80	49,000		Jun. 10	10.95	34,000
	May 22	11.88	20,800		Aug. 2	13.36	39,600	1963	Jun. 25	10.58	40,400
	May 24	11.14	17,300	1951	May 20	13.90	50,200	1964	May 12	9.92	25,500
	Jun. 11	12.70	31,600		May 23	11.50	25,000	1965	Nov. 18	9.54	25,000
1942	Oct. 16	11.70	23,100		May 26	10.73	18,900		Sep. 22	12.85	62,100
	Oct. 25	14.25	46,900		Jun. 15	10.73	18,100	1966	Oct. 23	6.80	7,900
	Apr. 10	12.40	30,600		Jun. 23	10.54	17,700	1967	Jun. 12	10.46	34,100
	Apr. 20	14.30	48,300		Jun. 26	11.53	27,200		Jun. 26	9.67	19,700
	Apr. 23	13.09	34,400	1954	Jul. 1	11.40	33,800	1968	Jul. 1	8.75	13,400
	Apr. 26	13.17	35,500		Jul. 5	10.67	18,900	1969	May 7	11.54	28,300
	Aug. 14	11.75	23,100	1955	May 21	14.80	49,600	1970	Apr. 20	9.40	15,000
1943	May 18	12.74	29,400		May 27	13.80	35,400	1971	Sep. 26	7.84	8,560
	May 20	14.08	46,600		Jun. 19	13.20	33,500				
1944	Apr. 11	14.08	55,700	1956	Oct. 5	13.39	53,700				
	Apr. 23	12.28	25,000	1957	Apr. 24	11.62	27,700				
	Jun. 14	11.93	17,000		May 3	11.51	28,300				

^a Discharges are estimated on the basis of subsequent ratings.

ARKANSAS RIVER BASIN

07163000 COUNCIL CREEK NEAR STILLWATER, OKLA.

LOCATION.--Lat 36°07'07", long 96°52'00", in SE 1/4 SW 1/4 sec.15, T.19 N., R.4 E., Payne County, on right bank 200 ft upstream from bridge on State Highway 51, 10 miles east of Stillwater, and at mile 10.0.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 838.28 ft above mean sea level, adjustment of 1912. Prior to May 4, 1934, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood of Apr. 27, 1912, reached a stage of 16.6 ft at gage, based on floodmarks set by local resident at site 900 ft downstream.

REMARKS.--Base for partial-duration series, 1,200 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 31
Total = 31
Noncontributing = 0
Contributing = 31
Channel slope (ft/mi) = 17.3
Annual precip. (in) = 32.5
Bankful stage (ft) = 10.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 2,210
Q₅ = 5,260
Q₁₀ = 8,880
Q₂₅ = 16,400
Q₅₀ = 25,100
Q₁₀₀ = 37,700

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 5.394
Standard deviation = 0.416
Skew = 0.727

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Apr. 27	16.6	14,400	1946	Jun. 26	8.03	1,490	1959	Jun. 27	8.00	1,500
					Jun. 29	8.35	1,630		Jul. 13	8.33	1,600
1934	May 3	7.20	1,260						Jul. 15	11.22	2,690
	Sep. 10	7.78	1,410	1947	Apr. 15	7.14	1,220		Jul. 22	10.61	2,410
					May 16	11.01	2,590		Jul. 27	12.47	3,790
1935	Oct. 17	7.34	1,290		Jun. 26	7.83	1,430		Aug. 6	13.01	4,490
	Jun. 21	11.92	2,900						Sep. 24	14.75	8,390
1936	Sep. 20	4.66	656	1948	Jun. 23	7.44	1,310				
					Jun. 28	10.07	2,220	1960	Oct. 2	18.9	25,000
1937	Sep. 7	8.79	1,480		Jul. 10	12.67	4,050		Oct. 4	11.9	3,170
1938	Mar. 28	13.34	5,000	1949	May 19	12.69	4,050		Feb. 4	-	-
	May 7	8.70	1,450		May 24	9.75	2,120		Apr. 16	-	-
	Jun. 11	9.97	1,940						May 5	13.88	6,170
	Aug. 16	10.10	1,980	1950	Jul. 10	10.93	2,540		May 29	-	-
					Jul. 21	11.22	2,690		Jul. 29	-	-
1939	Jun. 28	3.9	461		Jul. 29	9.27	1,930	1961	Jun. 4	10.15	2,250
1940	Apr. 11	6.02	822	1951	May 1	9.44	1,970		Jun. 14	10.85	2,490
					Sep. 9	8.19	1,560		Jul. 13	7.25	1,250
1941	May 4	9.43	1,980	1952	Oct. 6	4.86	680	1962	Nov. 2	9.32	1,930
	May 20	8.14	1,520		Jun. 5	8.34	1,600		May 28	7.25	1,250
	Jun. 9	9.60	2,050						Jun. 2	7.90	1,470
1942	Oct. 15	8.57	1,700	1953	Jul. 12	7.43	1,310		Jun. 9	8.33	1,600
	Oct. 22	9.79	2,120		Jul. 23	8.07	1,530	1963	Mar. 30	7.47	1,340
	Oct. 30	10.62	2,410	1954	May 1	7.89	1,470		Jul. 27	8.50	1,660
	Apr. 9	9.71	2,080					1964	Aug. 18	6.77	1,130
	Apr. 17	11.75	3,090	1955	May 19	8.18	1,560				
	Apr. 19	12.76	4,190		May 20	7.89	1,470	1965	Jan. 22	7.20	1,310
	Apr. 24	10.28	2,300						May 8	9.23	2,040
	Jun. 21	8.64	1,700	1956	Oct. 4	4.17	524		Jun. 21	9.44	2,110
	Jun. 24	13.42	5,170						Sep. 21	15.46	6,850
	Aug. 14	17.54	18,000	1957	May 20	17.01	16,400				
1943	May 10	10.31	2,300		Jun. 10	10.68	2,450	1966	May 16	9.99	2,180
	May 18	15.31	9,890		Jun. 12	9.82	2,110				
1944	Oct. 23	9.10	1,880		Jun. 18	8.49	1,660	1967	Jun. 25	5.68	846
	Apr. 10	9.15	1,910		Jun. 23	9.54	2,000				
	Jun. 8	7.50	1,340		Jun. 28	9.03	1,830	1968	Mar. 19	12.72	3,580
	Jun. 13	9.30	1,940		Jul. 1	8.16	1,560		Apr. 17	9.45	1,980
1945	Dec. 4	7.66	1,400	1958	Mar. 29	8.20	1,560	1969	Sep. 16	8.53	1,670
	Mar. 15	7.34	1,280		Jun. 25	8.03	1,500				
	Sep. 25	9.06	1,880		Jul. 5	7.64	1,370	1970	Apr. 30	8.83	1,770
	Sep. 30	11.20	2,690	1959	May 21	8.67	1,730	1971	Oct. 8	6.62	1,080
					Jun. 1	9.09	1,860				

a Annual peak only.

ARKANSAS RIVER BASIN

07163020 CORRAL CREEK NEAR YALE, OKLA.

LOCATION.--Lat 36°07'50", long 96°49'50", in NE 1/4 NW 1/4 sec.13, T.19 N., R.4 E., Payne County, at multi-barrel culvert on Old State Highway 51, 7.7 miles west of Yale.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 14, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2.89
Noncontributing = 0
Contributing = 2.89
Channel slope (ft/mi) = 53.9
Annual precip. (in) = 33.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 577 (721)
Q₅ = 831 (1,110)
Q₁₀ = 1,030 (1,470)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.781
Standard deviation = 0.176
Skew = 0.680

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 18	9.80	510	1967	Jun. 24	10.05	560	1970	Apr. 30	10.93	736
1965	Sep. 21	13.08	1,260	1968	Mar. 18	9.90	530	1971	Oct. 8	8.95	353
1966	May 16	11.42	834	1969	Sep. 16	9.38	426				

07163500 CIMARRON RIVER AT OILTON, OKLA.

LOCATION.--Lat 36°06', long 96°35', in SW1/4 sec.28, T.19 N., R.7 E., near center of span on downstream side of pier of bridge on State Highway 51, half a mile north of Oilton, 4-1/4 miles upstream from Buckeye Creek, and at mile 35.1.

GAGE.--Nonrecording prior to Sept. 30, 1938; recording thereafter. Datum of gage is 718.99 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Base for partial-duration series, 15,000-cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 18,669
Noncontributing = 4,926
Contributing = 13,743
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Oct.	21.3		1939	Jul. 2	9.15	9,550	1942	Jun. 21	10.83	21,100
1935	Mar. 24	10.26	17,200	1940	Sep. 4	12.11	29,200		Jun. 24	13.68	43,900
	May 15	11.00	22,600						Aug. 14	15.37	59,100
	May 20	13.96	45,800	1941	Apr. 17	10.97	21,400	1943	May 10	11.94	30,600
	Jun. 21	16.8	72,300		May 6	11.30	23,600		May 19	14.70	53,700
					Jun. 11	11.48	25,200				
1936	Jun. 6	12.07	30,900	1942	Oct. 16	10.53	19,700	1944	Oct. 23	10.85	19,400
1937	Jun. 16	11.63	26,500		Oct. 25	13.52	42,500		Apr. 11	13.22	47,500
1938	Mar. 28	12.85	38,400		Oct. 30	15.08	56,100		Apr. 24	10.86	22,300
	May 20	12.0	31,000		Apr. 9	12.20	33,500		Jun. 14	10.09	15,900
	May 24	12.36	34,600		Apr. 17	11.24	24,300	1945	Apr. 12	11.25	27,000
	Aug. 17	10.50	18,100		Apr. 21	14.90	54,600		Apr. 17	12.17	37,500
					Apr. 23	12.59	35,000		Sep. 30	14.56	52,800

ARKANSAS RIVER BASIN

07164000 CIMARRON RIVER AT MANFORD, OKLA.

LOCATION.--Lat 36°09'40", long 96°23'10", in SW1/4 NW1/4 sec.5, T.19 N., R.9 E., near left bank on downstream side of pier of bridge on country road, 0.5 mile north of Mannford, 1.5 miles downstream from House Creek, and at mile 17.7.

GAGE.--Water-stage recorder. Datum of gage is 682.92 ft above mean sea level (levels by Corps of Engineers). Nonrecording prior to Oct. 1, 1942, at site 1-1/8 miles upstream at datum 5.00 ft higher.

HISTORICAL DATA.--According to local residents, the flood in October 1908 was about 0.5 ft higher than that in 1940.

REMARKS.--Base for partial-duration series, 17,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 18,849
Noncontributing = 4,926
Contributing = 13,923
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 45,400
Q₅ = 80,600
Q₁₀ = 104,000
Q₂₅ = 132,000
Q₅₀ = 152,000
Q₁₀₀ = 170,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.620
Standard deviation = 0.334
Skew = -0.672

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	-	20.0	-	1945	Apr. 12	15.60	32,800	1952	Mar. 11	11.57	11,000
1936	Jul. 1	18.5	a53,000		Apr. 17	16.05	37,200				
					Sep. 30	20.40	62,500	1953	Jul. 12	12.40	14,800
1939	Jul. 2	8.10	7,300	1946	Jul. 1	13.18	15,400	1954	May 28	12.29	14,000
1940	Sep. 4	25.2	103,000	1947	Apr. 15	19.22	53,800	1955	May 22	19.20	54,000
1941	Apr. 17	11.70	22,100		May 16	17.90	44,800				
	May 6	11.97	24,800	1948	Jun. 23	18.40	48,100	1957	May 18	28.85	a145,000
	Jun. 11	12.10	23,600		Jun. 29	15.00	26,700				
1942	Oct. 16	10.60	28,900		Jul. 11	18.13	46,200	1959	Sep. 25	19.70	a61,600
	Oct. 24	13.64	45,500	1949	Feb. 7	16.12	33,400	1960	Oct. 3	27.37	131,000
	Oct. 30	18.00	70,000		May 19	23.58	78,400		May 31	14.91	29,400
	Apr. 9	13.10	34,000		May 23	18.10	45,400		Jun. 10	13.13	19,500
	Apr. 17	11.60	27,200		May 26	16.60	36,400		Aug. 29	12.77	18,000
	Apr. 19	17.00	63,000		Jun. 3	14.06	22,100	1961	May 8	14.21	18,000
	Apr. 25	12.70	32,200		Jun. 16	13.53	19,000		Jun. 5	13.77	20,900
	Jun. 21	11.15	25,400	1950	Jul. 21	14.40	25,900		Jun. 14	13.98	20,900
	Jun. 24	15.90	49,200		Jul. 27	13.06	17,400		Sep. 14	19.50	61,000
	Aug. 14	17.53	57,800		Jul. 31	17.20	43,600	1962	Oct. 12	13.15	19,400
1943	May 10	17.05	39,500		Aug. 2	16.62	36,400		Nov. 3	15.08	29,500
	May 19	19.40	56,500	1951	May 20	17.43	45,000		Jun. 7	13.90	22,800
1944	Oct. 23	13.93	22,000		Jun. 15	13.73	-		Jun. 9	16.83	39,900
	Apr. 11	17.17	46,800		Jun. 26	14.58	-	1963	Jun. 25	15.50	31,300
	Apr. 24	13.69	23,900		Jul. 2	15.17	-				

a Annual peak only.

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OKLA.

LOCATION.--Lat 36°08'37", long 96°00'13", in NW 1/4 sec.11, T.19 N., R.12 E., Tulsa County, near left bank on downstream side of pier of bridge on U.S. Highway 66 in Tulsa, 10.1 miles upstream from Polecat Creek, 15.1 miles downstream from Keystone Dam, and at mile 523.7.

GAGE.--Water-stage recorder. Datum of gage is 615.23 ft above mean sea level (Corps of Engineers bench mark). Prior to Feb. 2, 1939, nonrecording gage and Feb. 2, 1939, to Sept. 30, 1952, water-stage recorder at datum 3.00 ft higher.

HISTORICAL DATA.--Maximum stage since 1904, 22.8 ft June 13, 1923, present datum, from reports of U.S. Weather Bureau.

REMARKS.--Except for 109 sq mi intervening area, flow completely regulated by Keystone Lake since September 1964. Prior minor regulation by John Martin Lake in Colorado and by Great Salt Plains Lake. Records furnished by the Corps of Engineers and reviewed by the Geological Survey. Base for partial-duration series, 50,000 cfs. Only annual peaks are shown prior to 1926. Log-Pearson calculations based on all annual peaks prior to 1965.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 74,615
Noncontributing = 12,541
Contributing = 62,074
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 19

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 82,200
Q₅ = 145,000
Q₁₀ = 189,000
Q₂₅ = 247,000
Q₅₀ = 289,000
Q₁₀₀ = 332,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.891
Standard deviation = 0.315
Skew = -0.443

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	Jun. 3	7.1	-	1929	Apr. 25	10.9	69,500	1945	Dec. 8	11.85	84,900
1906	Sep. 20	8.0	-		May 14	11.1	72,100		Apr. 13	10.69	64,700
1907	Jan. 22	12.4	-		May 20	11.3	74,000		Apr. 18	15.40	140,000
1908	May 25	18.8	-		Jun. 8	9.1	50,600		Jul. 2	10.33	61,300
1909	Oct. 23	15.7	-		Jun. 25	9.8	57,900	1946	Oct. 1	16.70	165,000
1910	Nov. 17	9.5	-		Jul. 2	10.2	62,100				
1911	Aug. 7	14.2	-	1930	May 13	9.9	59,000	1947	Apr. 16	15.94	151,000
1912	Apr. 29	16.4	-		Jun. 15	9.5	55,000		May 18	11.83	87,600
1913	May 6	6.7	-	1931	Jun. 15	8.9	49,000		May 23	9.32	55,900
1914	May 5	10.2	-	1932	Aug. 19	10.5	65,500	1948	Jun. 23	10.50	67,100
1915	May 25	14.8	-	1933	Sep. 5	7.4	35,200		Jun. 30	10.38	65,900
1916	Jun. 15	11.6	-	1934	May 6	4.6	15,700		Jul. 11	9.70	58,000
1917	Jun. 8	7.0	-	1935	May 16	11.2	73,200		Jul. 19	10.76	70,700
1918	May 9	8.1	-		May 22	12.3	85,600	1949	Aug. 17	9.66	58,000
1919	Jun. 16	9.8	-		Jun. 2	10.7	67,700		Feb. 15	10.63	72,000
1920	Sep. 9	11.5	-		Jun. 21	13.3	98,200		Mar. 1	9.00	50,800
1921	Jun. 26	12.0	-	1936	Jun. 7	9.4	54,000		May 20	14.44	123,000
1922	Apr. 10	14.7	-	1937	Jun. 12	10.0	60,000	1950	Jul. 19	10.98	75,700
1923	Jun. 13	19.8	244,000	1938	Mar. 29	10.5	61,000		Jul. 21	10.32	67,100
1924	Oct. 16	12.5	-		May 23	12.62	96,100		Aug. 3	13.02	101,000
1925	Apr. 28	5.9	-	1939	May 25	12.55	94,800	1951	May 3	9.73	57,700
1926	Jun. 3	8.3	43,200	1940	Apr. 8	6.06	24,700		May 21	14.73	135,000
1927	Oct. 7	14.3	113,000	1941	Sep. 4	16.20	143,000		May 25	13.30	111,000
	Apr. 13	14.4	114,000	1942	Apr. 18	10.25	66,200		Jun. 10	10.00	61,200
	Apr. 21	12.4	86,800		Jun. 11	11.65	78,100		Jun. 27	12.86	102,000
	Aug. 5	13.1	95,800	1943	May 10	10.39	70,500		Jul. 4	15.70	149,000
1928	Jun. 13	10.5	65,500		May 20	16.50	173,000	1952	Jul. 17	14.18	123,000
	Jun. 22	11.5	76,500	1944	Apr. 12	13.12	102,000		Jun. 7	6.88	32,900
1929	Nov. 21	11.0	71,000		Apr. 26	17.00	172,000	1953	Jun. 1	7.04	17,000
	Apr. 14	10.2	62,100		May 4	10.08	63,500	1954	May 3	8.88	26,000
								1955	May 22	12.47	56,300
									May 29	12.87	60,700
									Jun. 21	11.73	54,500
								1956	Oct. 6	14.97	97,600
								1957	Apr. 23	12.06	59,000
									May 19	20.35	213,000
									May 21	21.53	235,000
									May 25	15.08	112,000
									Jun. 2	12.63	74,800
									Jun. 12	14.83	107,000
									Jun. 26	15.90	135,000
									Jul. 2	15.88	119,000
								1958	Jul. 8	11.55	62,200

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OKLA. (Cont.)
Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Jul. 17	12.12	68,300	1962	Nov. 4	14.53	114,000	1967	Jul. 1	7.65	26,600
	Jul. 27	10.88	53,800		Jun. 10	11.93	65,800	1968	May 28	8.10	32,600
	Sep. 26	12.90	78,800	1963	Jun. 26	8.73	32,900	1969	Jun. 29	9.10	40,100
1960	Oct. 5	22.00	246,000	1964	May 13	7.88	26,700	1970	Apr. 24	9.40	45,400
	Aug. 29	10.79	51,900	1965	Nov. 21	12.24	84,700	1971	Jul. 30	5.01	13,900
1961	May 9	17.32	164,000	1966	Jun. 11	4.06	6,540				
	Sep. 15	16.76	154,000								
1962	Oct. 12	13.36	93,100								

07164940 DEEP CREEK NEAR OLIVE, OKLA.

LOCATION.--Lat 36°00'10", long 96°25'30", in SE 1/4 SE 1/4 sec.26, T.18 N., R.8 E., Creek County, at culvert on State Highway 33, 3.6 miles southeast of Olive.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 14, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 3.25
Noncontributing = 0
Contributing = 3.25
Channel slope (ft/mi) = 31.0
Annual precip. (in) = 36.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Jun. 24	7.99	132	1969	Jun. 14	8.60	180	1971	Sep. 5	11.21	433
1968	Apr. 19	7.69	130	1970	Apr. 18	9.91	300				

ARKANSAS RIVER BASIN

07165500 POLECAT CREEK BELOW HEYBURN LAKE, NEAR HEYBURN, OKLA.
(Formerly published as Polecat Creek below Heyburn Reservoir, near Heyburn)

LOCATION.--Lat 35°56'09", long 96°17'30", in NE 1/4 SW 1/4 sec.19, T.17 N., R.10 E., on right bank 1,100 ft downstream from Heyburn Dam, 2 miles north of Heyburn, 3.4 miles upstream from Neversweat Creek, and at mile 48.4. Prior to Feb. 17, 1956 at site 3.2 miles downstream.

GAGE.--Water-stage recorder. Datum of gage is 718.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Feb. 22, 1949, wire-weight gage and Feb. 22, 1949, to Feb. 16, 1956, water-stage recorder at site 3.2 miles downstream at datum 11.53 ft lower.

HISTORICAL DATA.--Flood of Sept. 4, 1940, reached a stage of 31.5 ft, from floodmark, site and datum then in use.

REMARKS.--Flow regulated since September 1950 by Heyburn Lake, with occasional prior regulation from March 1950 by lake construction operations. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,600 cfs. Only annual peaks shown subsequent to 1949.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 123
Noncontributing = 0
Contributing = 123
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Sep. 4	31.5	a26,000	1949	May 19	28.53	17,300	1960	Oct. 4	14.32	1,750
1943	May 9	27.60	17,000	1950	Feb. 28	19.74	2,900	1961	Jun. 14	13.54	1,640
	May 17	23.54	9,290		Feb. 20	11.29	613		Jun. 7	15.40	1,780
	May 19	20.37	5,170	1952	May 23	14.94	1,180	1963	Jul. 11	10.10	1,090
1944	Oct. 23	21.00	5,810		Apr. 23	16.67	1,700	1964	Apr. 5	14.23	1,890
	Mar. 15	19.25	4,080	1954	May 2	15.89	1,610		Nov. 19	8.91	826
	May 2	19.00	3,920		May 24	11.15	718	1966	Jun. 7	-	1,220
1945	Mar. 15	23.00	8,490	1956	Sep. 13	6.10	154		Apr. 13	9.14	804
	Apr. 13	24.39	10,900		May 25	16.24	1,880	1968	Feb. 1	-	621
	Sep. 25	20.59	3,840	1958	Jun. 25	17.24	1,890		Mar. 24	7.85	1,270
	Sep. 28	22.46	6,150		Jul. 27	15.20	1,740	1970	Apr. 30	10.60	1,090
1946	Jan. 5	21.80	5,170	1959					Sep. 6	-	1,850
	May 7	21.12	4,340								
1947	Apr. 10	21.30	4,560								
	May 16	21.20	4,430								
1948	Jun. 22	20.70	3,860								
	Jun. 23	28.18	17,300								

a Annual peak only.

ARKANSAS RIVER BASIN

07165550 SNAKE CREEK NEAR BIXBY, OKLA.

LOCATION.--Lat 35°49'08", long 95°53'18", in NW 1/4 SW 1/4 sec.36, T.16 N., R.13 E., Okmulgee County, on right bank, 5.5 miles upstream from Duck Creek, 8.8 miles south of Bixby, and at mile 11.0.

GAGE.--Water-stage recorder July 1961 to Sept. 1970, crest-stage gage thereafter. Altitude of gage is 625 ft (from topographic map).

HISTORICAL DATA.--Flood prior to July 1961 reached a stage of about 22 ft, from flood marks.

REMARKS.--Log-Pearson calculations based on all annual peaks shown except for 1966 which was considered an outlier. Base for partial-duration series 700 cfs. Only annual peaks are shown since 1971.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 50.0
 Noncontributing = 0.0
 Contributing = 50.0
 Channel slope (ft/mi) = 24.3
 Annual precip. (in) = 38.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,660 (3,800)
 Q₅ = 4,650 (7,150)
 Q₁₀ = 6,540 (10,900)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.459
 Standard deviation = 0.267
 Skew = 0.789

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Jun. 7	15.27	1,540	1965	Jun. 12	11.57	779	1968	Jun. 1	14.62	1,340
	Jun. 9	15.58	1,630								
	Sep. 8	11.27	711	1966	Mar. 12	7.45	242	1969	Jan. 29	19.61	5,460
	Sep. 15	15.89	1,720						Feb. 22	13.62	1,070
	Sep. 20	11.38	728	1967	Apr. 13	21.13	8,310		Mar. 23	18.45	3,900
					Apr. 20	14.61	1,330		May 30	14.48	1,540
1963	Apr. 27	15.83	1,540		May 6	13.26	972				
								1970	Oct. 12	11.79	858
1964	Apr. 5	17.00	2,050	1968	Jan. 28	13.00	920		Apr. 30	18.94	4,480
	Jun. 14	11.59	762		Jan. 30	12.00	750		May 30	11.60	820
					Feb. 1	14.96	1,440		Jun. 1	12.23	946
1965	Apr. 6	15.10	1,510		Mar. 14	14.10	1,180		Jun. 12	12.79	1,070
	Apr. 8	15.09	1,480		Mar. 20	14.62	1,340				
	Apr. 15	16.86	2,020		Mar. 31	14.86	1,410	1971	Sep. 6	19.53	5,350
					Apr. 19	17.32	2,770				

ARKANSAS RIVER BASIN

07170500 VERDIGRIS RIVER AT INDEPENDENCE, KANS.

LOCATION.--Lat 37°13'26", long 95°40'43", in NW 1/4 NE 1/4 sec.32, T.32 S., R.16 E., Montgomery County, near right bank at downstream side of bridge on U.S. Highway 160, 1 mile east of Independence, 3.6 miles downstream from Elk River, and at mile 194.3.

GAGE.--Nonrecording prior to Dec. 25, 1933; recording thereafter. Datum of gage is 716.63 ft above mean sea level, datum of 1929. Apr. 20, 1904, to Sept. 28, 1905, at site three-quarters of a mile upstream at different datum. Nov. 14, 1921, to Sept. 30, 1929, at Myrtle Street bridge three-quarters of a mile upstream at datum 0.87 ft higher. Stages for floods in 1904, 1905, 1907, 1908, 1915, and 1918 adjusted to datum used 1921-29.

HISTORICAL DATA.--Flood in May 1885 reached a stage of about 38.9 ft, on basis of comparison of high-water marks of 1885 and July 8, 1904, in pumphouse of Independence water works, obtained in 1904 from F.N. Gordon, pump engineer.

Flood of Jan. 21, 1907, "---reached the highest mark except that of 1904 which was 18 inches higher," and flood of June 7, 1908, "---was 4 feet 9 inches below the highest, that of July 1904," according to the original notes by J.M. Altoffer, observer for U.S. Weather Bureau in Independence at that time.

Floods of Sept. 18, 1915, and May 18, 1918, reached stages of about 39.6 ft and 36.9 ft, respectively, on basis of comparison with stage of flood of July 8, 1904, from records of Independence City Water Department.

REMARKS.--Records furnished by Corps of Engineers since Oct. 1, 1951, and reviewed by Geological Survey. Some regulation by upstream reservoirs. Base for partial-duration series, 14,000 cfs. Only annual peaks are shown prior to 1922 and subsequent to 1949.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,892
Noncontributing = 0
Contributing = 2,892
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 36

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1885	May	38.9	40,000	1929	Nov. 19	43.93	60,700	1938	Jun. 2	31.39	21,400
					Dec. 18	30.0	20,600		Jun. 17	30.61	20,600
1904	Jul. 8	44.4	66,500		Jan. 11	27.3	17,900	1939	May 21	18.90	9,920
1905	Sep. 20	25.4	16,000		Apr. 14	25.7	16,400	1940	Apr. 19	24.48	14,700
1907	Jan. 21	42.9	52,000		Apr. 21	42.5	48,800	1941	Apr. 17	39.55	35,800
1908	Jun. 7	39.6	34,000		May 8	32.4	23,100		Jun. 4	34.95	25,600
					May 14	43.3	54,900		Jun. 11	35.86	27,000
1915	Sep. 18	39.6	34,000		May 19	32.6	23,300		Sep. 10	33.15	23,300
1918	May 18	36.9	29,000	1930	Jun. 3	24.0	14,800				
					Apr. 30	29.1	19,900	1942	Oct. 5	31.8	21,800
					May 8	30.29	21,100		Oct. 23	24.0	14,200
					May 12	23.9	14,800		Oct. 27	31.2	21,200
					Jun. 11	27.0	17,800		Nov. 1	31.85	21,800
1922	Mar. 14	37.7	30,000	1931	May 20	29.0	17,600		Apr. 10	29.65	19,600
	Apr. 10	44.41	66,500		Jun. 13	29.6	18,200		Apr. 21	29.5	19,500
	May 23	30.58	21,200	1932	Nov. 18	24.0	15,600		Apr. 30	25.5	15,600
	May 31	24.5	15,300		Nov. 25	36.18	26,600		Jun. 19	27.4	17,400
	Jul. 2	29.5	20,100		Jun. 22	33.2	25,700		Jun. 22	35.55	26,600
	Jul. 13	39.5	34,100	1933	May 13	30.25	18,800		Jun. 25	29.8	19,800
1923	May 26	27.8	18,400	1934	May 16	24.1	13,900		Sep. 6	34.5	25,000
	Jun. 12	40.11	35,900	1935	May 15	28.8	19,600		Sep. 20	23.75	14,000
	Jun. 18	38.0	30,600		May 22	32.76	23,700		Sep. 27	25.48	15,600
1924	Oct. 17	27.0	17,600		May 30	44.8	68,800	1943	Dec. 28	28.43	18,400
	Jun. 9	27.0	17,600		Jun. 3	33.08	24,100		May 7	31.71	21,700
	Aug. 7	23.5	14,400		Jun. 7	27.07	17,900		May 11	36.78	28,600
	Sep. 19	26.6	17,300		Jun. 10	23.24	14,200		May 19	47.6	114,000
1925	Nov. 14	25.3	16,000		Jun. 12	27.61	18,400		May 26	27.45	17,400
1926	Nov. 8	27.5	18,100		Jun. 17	39.34	34,600		Jun. 5	29.95	20,000
	Apr. 12	27.0	17,600		Jun. 27	36.46	28,200		Jun. 25	39.50	35,400
	Sep. 6	27.39	18,000	1936	Nov. 4	24.72	15,500	1944	Mar. 20	38.15	31,600
1927	Oct. 5	41.6	42,900		Nov. 28	31.53	22,400		Mar. 23	27.78	17,800
	Apr. 10	43.8	59,600	1937	Oct. 10	35.35	26,300		Apr. 11	43.06	51,400
	Apr. 20	45.24	76,900		Jun. 10	33.68	23,900		Apr. 24	43.7	56,300
	Jun. 21	40.5	37,400		Jul. 20	29.1	19,100		May 2	33.7	23,900
	Aug. 18	28.2	18,800	1938	May 21	38.44	32,300		Sep. 28	29.4	19,400
1928	Oct. 3	46.4	91,000		May 26	38.4	32,300	1945	Oct. 4	33.5	23,000
	Mar. 18	26.3	17,000						Dec. 6	35.5	26,000
	Jun. 10	35.0	25,900						Mar. 26	36.45	27,900
	Jun. 20	37.0	28,900						Apr. 17	47.28	117,000
									Apr. 29	29.1	17,900

ARKANSAS RIVER BASIN

07170500 VERDIGRIS RIVER AT INDEPENDENCE, KANS (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Jun. 18	25.1	14,300	1949	Feb. 28	25.83	14,800	1960	Oct. 6	37.12	29,400
	Jul. 2	33.35	22,800		Apr. 28	25.9	14,900				
	Sep. 26	40.15	37,700		Jun. 10	27.73	16,500	1961	May 6	47.03	110,000
1946	Oct. 12	41.6	44,800	1950	Jul. 19	37.18	29,400	1962	Nov. 4	39.60	35,000
	Apr. 24	24.82	14,000					1963	Oct. 1	23.95	13,800
1947	Mar. 14	28.73	17,500	1951	Jul. 1	46.50	104,000	1964	Jun. 10	10.9	3,680
	Apr. 7	35.05	25,200	1952	May 11	30.63	21,800	1965	Apr. 4	40.16	42,200
	Apr. 14	41.83	51,600	1953	Sep. 4	8.60	2,440	1966	May 12	11.84	4,620
	Apr. 26	30.0	18,800	1954	May 3	36.63	29,100	1967	Jul. 5	26.88	17,100
	May 17	25.92	14,900	1955	May 28	27.29	17,500	1968	Nov. 1	24.36	14,700
	May 22	32.94	22,200	1956	Jun. 2	13.28	5,140	1969	Jun. 9	27.95	19,300
1948	Jun. 23	38.52	32,500	1957	Jun. 3	35.35	27,500	1970	Apr. 21	31.96	24,200
	Jun. 26	33.32	22,700					1971	Jun. 10	22.83	13,900
	Jul. 12	26.28	15,300	1958	Mar. 25	35.88	27,300				
	Jul. 23	42.28	49,300	1959	Jul. 19	36.60	28,500				
1949	Nov. 2	25.25	14,400								
	Jan. 16	30.15	19,000								
	Jan. 24	29.75	18,600								
	Feb. 14	35.02	25,200								

ARKANSAS RIVER BASIN

07171000 VERDIGRIS RIVER NEAR LENAPAH, OKLA.

LOCATION.--Lat 36°51'05", long 95°35'06", at center of sec.3, T.27 N., R.16 E., Nowata County, near right bank on downstream side of pier of county road bridge, 2.8 miles east of Lenapah, 4.5 miles upstream from Cedar Creek, and at mile 144.6.

GAGE.--Water-stage recorder. Datum of gage is 644.89 ft above mean sea level.

REMARKS.--Some regulation by dams in Kansas, since April 1949. Log-Pearson calculations based on all annual peaks since 1950. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 23,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3,639
Noncontributing = 0
Contributing = 3,639
Channel slope (ft/mi) = 2.20
Annual precip. (in) = 35.0
Bankful stage (ft) = 30

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 24,000
Q₅ = 41,900
Q₁₀ = 57,700
Q₂₅ = 83,300
Q₅₀ = 107,000
Q₁₀₀ = 135,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.403
Standard deviation = 0.271
Skew = 0.500

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	May 21	19.88	17,600	1946	Jan. 6	26.38	25,300	1958	Mar. 26	27.80	25,900
1940	Apr. 19	18.25	15,000	1947	Apr. 8	25.62	24,100	1959	Jul. 16	30.76	29,100
1941	Apr. 19	33.66	39,300	1948	Apr. 16	35.88	51,900	1960	Oct. 5	30.5	28,600
	Jun. 5	26.03	26,700		Jun. 23	35.97	45,700		Oct. 14	29.33	26,600
	Jun. 10	32.02	36,400	1949	Jul. 25	35.23	41,500	1961	May 3	26.92	23,200
	Sep. 10	29.40	32,100		Jan. 16	27.53	25,600		May 8	39.78	121,000
1942	Oct. 3	32.34	35,100		Jan. 24	26.00	23,500		May 22	27.66	24,200
	Oct. 5	31.90	34,400	1950	Feb. 15	27.30	25,300		Sep. 17	35.98	45,700
	Oct. 31	32.28	35,100		Jul. 21	31.02	31,200	1962	Nov. 6	29.97	27,700
	Apr. 7	26.43	25,200	1951	Jul. 3	38.66	94,800	1963	Oct. 1	21.20	16,300
	Apr. 10	27.12	26,300		Jul. 15	37.36	68,900		Apr. 5	20.39	15,400
	Apr. 20	25.43	23,700	1952	Mar. 12	23.52	20,300	1965	Apr. 6	34.18	39,500
	Apr. 22	28.61	28,700		May 13	10.66	5,660		Jun. 23	26.80	24,400
	Sep. 7	25.74	24,200	1954	May 4	27.90	26,100	1966	Jun. 8	18.25	13,900
1943	May 11	34.40	38,700	1955	May 29	24.88	21,800	1967	Jun. 12	27.09	24,800
	May 20	40.44	137,000		Oct. 3	21.72	16,800		Jun. 30	25.97	23,300
	Jun. 27	29.92	28,700	1956	May 19	29.34	28,300	1968	May 26	21.93	18,200
1944	Mar. 22	28.88	27,600		May 22	26.62	24,100		Mar. 24	25.05	23,500
	Apr. 12	36.87	64,300		May 26	29.60	28,800	1969	Jun. 25	28.00	27,900
	Apr. 26	36.09	53,500		Jun. 4	27.38	25,300	1970	May 1	31.50	33,900
	May 2	27.94	26,000		Jun. 10	26.14	23,400		Jan. 4	20.0	17,000
	Sep. 29	26.45	23,900		Jun. 15	31.22	31,500				
1945	Oct. 5	30.55	30,600								
	Dec. 8	27.05	24,700								
	Mar. 28	27.44	26,800								
	Apr. 18	38.50	91,100								
1946	Oct. 3	36.03	50,700								

ARKANSAS RIVER BASIN

07171120 CLEAR CREEK TRIBUTARY NEAR HOLLOW, OKLA.

LOCATION.--Lat 36°52'50", long 95°16'00", in SW 1/4 NW 1/4 sec.27, T.28 N., R.19 E., Craig County, on downstream side of multi-barrel box culvert on State Highway 10, 1.2 miles south-east of Hollow.

GAGE.--Crest-stage gage. Stage-rainfall recorder since April 14, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2.19
Noncontributing = 0
Contributing = 2.19
Channel slope (ft/mi) = 23.4
Annual precip. (in) = 41.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Jun. 29	7.20	270	1969	Nov. 15	6.90	185	1971	Jan. 3	6.26	67
1968	Mar. 18	6.70	135	1970	May 15	6.93	194				

07171400 VERDIGRIS RIVER NEAR OOLOGAH, OKLA.

LOCATION.--Lat 36°25'17", long 95°41'01", in NW 1/4 sec.2, T.22 N., R.15 E., Rogers County, on right bank 0.3 mile downstream from Oologah Dam, 1.2 miles upstream from Fourmile Creek, 2 miles southeast of Oologah, and at mile 90.0.

GAGE.--Water-stage recorder. Datum of gage is 552.00 ft above mean sea level.

HISTORICAL DATA.--Flood in May 1943 reached a stage of 65.2 ft, from floodmarks. Flood of May 9, 1961, reached a stage of 52.8 ft.

REMARKS.--Some regulation by several dams in Kansas prior to May 1963 and completely regulated thereafter by Oologah Lake. Only annual peaks are shown. Records furnished by Corps of Engineers and reviewed by Geological Survey.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4,339
Noncontributing = 0
Contributing = 4,339
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May	65.2	-	1964	Apr. 7	26.86	15,200	1968	Nov. 3	30.08	19,000
1961	May 9	52.8	-	1965	Apr. 17	33.50	23,400	1969	Jul. 2	35.85	27,200
	Sep. 19	37.92	a27,900	1966	Jun. 9	17.88	5,620	1970	Oct. 20	32.40	22,600
1962	Nov. 7	33.30	21,500	1967	Jul. 8	26.98	15,200	1971	Jun. 12	22.89	11,000
1963	Oct. 2	28.38	16,000								

a Maximum for period June to September 1961.

ARKANSAS RIVER BASIN

07171500 VERDIGRIS RIVER NEAR SAGEEYAH, OKLA.

LOCATION.--Lat 36°23', long 95°40', in SW1/4NW1/4 sec.13, T.22 N., R.15 E., at Missouri Pacific Railroad Co. bridge, 1-1/4 miles downstream from Sweetwater Creek, 1-1/2 miles northwest of Sageeyah, 5.4 miles upstream from Caney River, and at mile 83.7.

GAGE.--Nonrecording prior to Feb. 10, 1939; recording thereafter. Datum of gage is 550.97 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Only annual peaks are shown prior to 1938. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 24,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 4,402

Noncontributing = 0

Contributing = 4,402

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = 35

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***

Q₅ = ***

Q₁₀ = ***

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Jul.	44.8	-	1934	Sep. 15	22.7	-	1942	Nov. 1	42.80	46,200
1909	Oct.	43.4	-	1935	Jun. 6	40.0	-		Apr. 8	32.51	26,600
1922	Apr.	43.2	-	1936	Sep. 29	29.0	-		Apr. 11	35.22	25,400
1927	Apr.	43.8	-	1937	Oct. 11	35.8	-	1943	Apr. 21	36.60	29,900
1928	Jun. 24	37.0	-	1938	Mar. 31	30.4	25,600		Jun. 24	38.15	31,300
1929	Apr. 26	40.4	-		May 28	42.1	34,600	1943	May 11	42.73	48,300
1930	May 2	35.3	-	1939	May 13	23.00	17,700		May 21	51.54	138,000
1931	Jun. 14	21.4	-	1940	Apr. 20	17.90	12,900	1944	Jun. 6	30.18	24,400
1932	Nov. 27	33.3	-	1941	Apr. 21	40.45	41,700		Jun. 28	31.53	27,700
1933	May 15	33.1	-		Jun. 12	39.60	32,800	1944	Mar. 23	30.95	27,000
					Sep. 11	34.47	30,000		Apr. 15	43.28	59,100
				1942	Oct. 7	42.18	40,300	1945	Apr. 30	38.65	41,000
					Oct. 24	31.73	24,100		Oct. 7	36.78	31,300
									Dec. 9	32.95	25,000
									Mar. 16	31.67	24,300
									Mar. 29	33.01	25,700
									Apr. 20	44.66	73,000
									Jul. 1	33.55	31,500

ARKANSAS RIVER BASIN

07172000 CANEY RIVER NEAR ELGIN, KANS.

LOCATION.--Lat 37°00'13", long 96°18'54", in NW1/4NW1/4SE1/4 sec.16, T.35 S., R.10 E., Chau-tauqua County, at county highway bridge, 2 miles west of Elgin, and at mile 117.8.

GAGE.--Water-stage recorder. Datum of gage is 763.32 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Sept. 13, 1961, at site 300 ft downstream at same datum.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 6,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 445
Noncontributing = 0
Contributing = 445
Channel slope (ft/mi) = 10.9
Annual precip. (in) = 36.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,600
Q₅ = 28,700
Q₁₀ = 38,000
Q₂₅ = 48,800
Q₅₀ = 55,900
Q₁₀₀ = 62,200

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.104
Standard deviation = 0.414
Skew = -0.890

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	May 21	6.39	4,280	1948	Jun. 22	12.97	9,990	1958	Apr. 3	19.29	17,900
1940	Jun. 10	4.10	2,020		Jun. 26	15.13	12,500		May 4	11.32	8,080
1941	Apr. 15	14.50	13,600		Jul. 11	9.70	6,600	1959	Jul. 15	22.90	23,600
	Jun. 9	15.38	14,700		Jul. 16	14.88	12,300		Jul. 22	22.30	22,400
1942	Oct. 26	13.40	12,200	1949	Jan. 16	10.33	7,220	1960	Oct. 2	17.63	15,700
	Oct. 31	13.82	12,700		Jan. 23	12.95	9,990		Oct. 4	19.00	17,500
	Apr. 9	8.83	6,890		Feb. 13	12.69	9,660		Oct. 13	22.91	23,600
	Apr. 19	14.77	14,000		Feb. 27	9.48	6,470	1961	Apr. 30	15.46	12,900
	Jun. 21	16.02	15,500		Mar. 30	9.06	6,100		May 6	31.86	49,600
	Sep. 4	14.54	13,600		Apr. 27	9.14	6,100		May 8	23.66	25,300
	Sep. 19	10.11	8,320		May 8	11.31	8,190		May 19	11.83	8,580
	Sep. 26	8.98	7,110		Sep. 18	17.10	15,000		May 22	13.56	10,600
1943	May 10	14.85	14,000	1950	Jun. 3	13.54	10,600		Sep. 13	34.70	62,000
	May 19	24.51	29,000		Jul. 16	23.28	23,400	1962	Oct. 10	13.43	10,400
1944	Mar. 22	8.53	6,560		Jul. 31	17.26	15,300		Oct. 13	17.14	15,000
	Apr. 10	29.80	35,500		Aug. 5	17.84	15,900		Nov. 2	21.48	21,100
	Apr. 19	9.50	7,660		Aug. 17	16.33	14,000		Nov. 16	17.57	15,700
	Apr. 23	17.67	17,700	1951	May 1	19.73	19,000	1963	Jan. 5	5.54	2,160
	Apr. 26	8.55	6,670		May 22	9.60	6,560	1964	Aug. 28	5.40	1,930
	Apr. 29	9.58	7,770		Jun. 9	14.32	11,600	1965	Nov. 17	19.39	18,000
	Sep. 28	17.85	17,800		Jun. 24	14.88	12,400		Apr. 3	20.68	19,900
1945	Oct. 2	16.05	14,800		Jun. 30	26.22	30,000	1966	Jun. 7	23.90	25,800
	Dec. 5	18.96	18,100		Jul. 13	24.60	27,000	1967	Jun. 11	13.16	10,100
	Mar. 24	23.52	23,700		Sep. 24	17.16	15,500		Jun. 29	11.04	7,780
	Mar. 29	9.55	7,770	1952	Mar. 10	15.76	13,500	1968	Apr. 3	9.72	6,590
	Apr. 16	21.32	20,700	1953	May 16	4.82	2,240		May 25	16.27	13,800
	Apr. 24	9.03	7,110	1954	May 1	17.80	16,300		Aug. 18	11.10	7,880
	May 9	9.00	7,110	1955	Oct. 12	9.80	6,990	1969	Mar. 23	12.10	8,890
	Jul. 1	12.18	10,600		May 26	17.80	16,300		Apr. 9	10.13	6,970
	Sep. 24	16.88	15,800	1956	Jun. 23	5.30	2,720		Apr. 27	9.20	6,090
	Sep. 28	19.53	18,700	1957	Apr. 23	9.76	7,210		May 30	10.00	6,880
	Sep. 30	25.05	26,100		May 16	14.50	12,100		Jun. 1	11.41	8,180
1946	Mar. 23	7.55	5,580		May 22	17.02	15,400		Jun. 24	22.74	23,200
1947	Apr. 5	10.14	7,770		May 25	21.00	22,000	1970	Oct. 12	10.87	7,690
	Apr. 10	12.45	10,300		Jun. 12	26.40	32,500		Apr. 1	15.38	12,800
	Apr. 13	21.33	20,700		Jun. 18	17.63	16,300		Apr. 19	19.23	17,800
	May 16	16.68	15,200		Jun. 27	10.49	7,880	1971	Sep. 25	6.71	2,940
	May 20	9.97	7,550	1958	Mar. 23	13.05	9,080				
1948	May 10	12.13	9,000								

a Maximum for period May 5 to Sept. 30, 1939; probably maximum for year.

ARKANSAS RIVER BASIN

07173000 CANEY RIVER NEAR HULAH, OKLA.

LOCATION.--Lat 36°55'06", long 96°04'15", in NW 1/4 SE 1/4 sec.12, T.28 N., R.11 E., Osage County, on left bank 1,000 ft downstream from the Atchison, Topeka, and Santa Fe Railway Co. bridge, 0.9 mile downstream from Hulah Dam, 1.5 miles upstream from Opossum Creek, 2.5 miles west of Hulah, and at mile 95.3.

GAGE.--Water-stage recorder. Datum of gage is 681.96 ft above mean sea level. Prior to Feb. 18, 1939, nonrecording gage and Feb. 18, 1939, to Sept. 30, 1948, water-stage recorder, at county road bridge 0.8 mile upstream at datum 3.00 ft higher.

HISTORICAL DATA.--A stage of 40.2 ft occurred at former site and datum, date unknown (probably in 1926), from floodmark, from information by Corps of Engineers.

REMARKS.--Flow completely regulated by Hulah Reservoir since February 1950. Only annual peaks are shown since 1950. Log-Pearson calculations based on all annual peaks since 1951. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 6,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 736
Noncontributing = 0
Contributing = 736
Channel slope (ft/mi) = 6.73
Annual precip. (in) = 35.5
Bankful stage (ft) = 34

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,360
Q₅ = 7,180
Q₁₀ = 8,860
Q₂₅ = 10,700
Q₅₀ = 11,900
Q₁₀₀ = 12,900

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.597
Standard deviation = 0.303
Skew = -0.848

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	-	40.2	-	1945	Oct. 3	35.10	11,100	1954	May 6	24.55	4,350
					Dec. 5	37.20	17,500				
1938	Mar. 28	32.70	10,500		Mar. 15	27.06	6,030	1955	Jun. 1	25.18	4,540
	May 20	35.90	15,100		Mar. 25	37.80	24,500				
	May 23	35.80	14,900		Apr. 16	37.96	24,700	1956	Oct. 7	18.55	2,300
	Jun. 1	27.40	6,880		Apr. 24	28.07	6,240				
	Jun. 7	30.60	8,600		Jul. 2	31.07	7,890	1957	Jun. 27	33.92	9,240
	Jun. 11	31.50	9,350		Sep. 25	36.50	14,200				
					Sep. 30	38.58	30,500	1958	Mar. 28	28.50	6,400
1939	May 22	21.90	4,700								
1940	Jun. 10	32.35	10,200	1946	Mar. 23	22.80	3,580	1959	Jul. 30	30.10	7,200
1941	Apr. 16	35.42	13,200								
	Apr. 19	27.92	6,590	1947	Apr. 11	29.52	6,600	1960	Oct. 23	31.30	7,820
	Jun. 10	37.46	19,100		Apr. 14	37.46	22,000				
					Apr. 25	30.66	7,390	1961	May 31	30.30	7,510
					May 16	36.20	14,800				
1942	Oct. 23	31.05	8,530					1962	Nov. 21	27.78	6,260
	Oct. 27	31.50	8,920	1948	Apr. 25	28.52	6,020				
	Oct. 31	30.52	8,030		May 10	34.04	10,200	1963	Jan. 8	b12.13	a 990
	Apr. 10	32.88	10,600		Jun. 22	34.52	10,800				
	Apr. 20	36.73	15,300		Jun. 26	32.06	7,880	1964	Aug. 31	14.58	1,460
	Jun. 21	36.48	14,800		Jul. 17	34.90	11,500				
	Sep. 5	31.58	8,530		Aug. 12	30.03	6,410	1965	Apr. 10	28.74	7,080
	Sep. 9	28.25	6,490								
	Sep. 19	27.77	6,320	1949	Jan. 16	31.02	5,860	1966	Jun. 11	25.27	5,520
	Sep. 26	27.70	6,280		Jan. 24	36.20	9,890				
					Feb. 13	33.03	7,040	1967	Jun. 15	16.12	2,050
1943	May 10	37.10	16,800		May 19	31.72	6,240				
	May 20	38.52	32,600		Sep. 19	34.90	8,640	1968	May 28	22.37	2,990
	Jun. 10	28.40	6,580	1950	Jul. 19	39.24	17,200				
1944	Apr. 10	39.45	51,000					1969	Jul. 7	27.83	4,780
	Apr. 20	27.68	6,490	1951	Jul. 9	33.55	7,930				
	Apr. 23	34.30	11,700					1970	Apr. 30	26.40	4,410
	Apr. 30	29.50	7,670	1952	Mar. 14	26.30	4,670				
	Sep. 28	34.68	10,200	1953	May 19	17.78	1,870	1971	Sep. 29	14.37	946

a Maximum daily.

b Occurred Jan. 7, 1963.

ARKANSAS RIVER BASIN

07174000 LITTLE CANEY RIVER NEAR COPAN, OKLA.
(Formerly published as "Caney Creek near Copan")

LOCATION.--Lat 36°58'15", long 95°56'05", on south line of sec.19, T.29 N., R.13 E., at downstream side of right pier of highway bridge, 500 ft downstream from the Atchison, Topeka, and Santa Fe Railway Co. bridge, 3-1/2 miles upstream from Cotton Creek, 5 miles north of Copan, and at mile 18.9.

GAGE.--Nonrecording prior to Sept. 12, 1947; recording thereafter. Datum of gage is 690.03 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to May 26, 1944, at site 500 ft upstream at same datum.

REMARKS.--For Log-Pearson statistics based on combined records see 07174200. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 424
Noncontributing = 0
Contributing = 424
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 20

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr. 10	30.58	36,400	1948	Jun. 23	26.68	12,200	1953	May 13	18.26	2,040
	Apr. 20	23.92	5,960		Jun. 27	25.44	7,390				
	Apr. 30	23.98	6,140		Jul. 18	26.54	11,400		May 3	26.19	10,800
	Sep. 29	24.01	6,140		Aug. 13	25.79	8,690				
1945	Oct. 4	25.68	11,900	1949	Jan. 24	25.30	7,090	1955	May 27	24.71	6,120
	Dec. 6	25.57	11,400		Feb. 14	24.35	5,200		Oct. 3	21.09	2,630
	Mar. 25	24.10	6,330		May 20	24.58	5,480	1957			
	Apr. 16	26.28	14,900	1950	Jun. 4	24.85	5,840		May 2	24.10	5,100
	Jul. 2	23.70	5,630		Jul. 19	27.38	16,100		May 18	25.60	9,000
	Jul. 11	23.72	5,630		Jul. 30	24.65	5,480		May 23	25.09	7,200
	Sep. 26	25.49	11,000		Sep. 22	24.30	5,080		May 26	25.75	9,900
	Sep. 29	25.46	11,000	1951	May 2	24.97	7,770		Jun. 2	24.10	5,100
1946	Oct. 1	25.94	12,900		Jun. 30	29.76	36,300		Jun. 13	26.81	15,600
					Jul. 14	25.79	10,700		Jun. 19	25.50	8,600
1947	Apr. 14	25.69	8,350	1952	Mar. 11	25.20	8,410	1958	Mar. 10	24.29	5,360
	Apr. 26	24.55	5,480						Mar. 24	25.64	9,000
	May 17	25.20	6,800						Apr. 4	25.75	9,900

ARKANSAS RIVER BASIN

07174200 LITTLE CANEY RIVER BELOW COTTON CREEK, NEAR COPAN, OKLA.
(Formerly published as "Caney Creek below Cotton Creek, near Copan")

LOCATION.--Lat 36°53'42", long 95°58'00", in W 1/2 sec.19, T.28 N., R.13 E., Washington County, near right bank on downstream side of pier of bridge on State Highway 10, 2 miles west of Copan, 4.2 miles downstream from Cotton Creek, and at mile 8.8.

GAGE.--Water-stage recorder. Datum of gage is 672.23 ft above mean sea level. Since Nov. 16, 1962, auxiliary water-stage recorder 6.0 miles downstream at datum, 10 ft lower.

HISTORICAL DATA.--Flood in April 1944 reached a stage of 29.3 ft, from floodmarks.

REMARKS.--Log-Pearson calculations based on all annual peaks for combined records of 07174000 and 07174200. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 502
Noncontributing = 0
Contributing = 502
Channel slope (ft/mi) = 8.80
Annual precip. (in) = 37.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,780
Q₅ = 17,900
Q₁₀ = 25,600
Q₂₅ = 37,100
Q₅₀ = 46,900
Q₁₀₀ = 57,600

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.932
Standard deviation = 0.378
Skew = -0.182

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Apr.	29.3	-	1962	Nov. 3	23.72	11,100	1967	Jun. 13	22.74	5,600
					Nov. 17	22.98	6,100				
1959	Jul. 17	23.55	8,000	1963	Jan. 6	18.57	2,160	1968	May 26	19.91	2,770
1960	Oct. 6	23.63	8,700					1969	Jun. 1	22.64	5,000
	Oct. 15	23.93	12,200	1964	Jun. 13	15.93	1,530		Jun. 25	22.97	6,550
1961	Apr. 22	22.95	5,950	1965	Apr. 4	24.04	13,500	1970	Apr. 30	22.72	5,480
	May 2	23.75	11,500								
	May 9	24.94	23,700	1966	Jun. 9	22.35	4,600	1971	Jan. 3	18.12	2,520
	May 23	23.52	9,660								
	Sep. 14	24.92	23,100								

ARKANSAS RIVER BASIN

07174500 CANEY RIVER AT BARTLESVILLE, OKLA.

LOCATION.--Lat 36°45', long 95°58', in SE1/4NE1/4 sec.7, T.26 N., R.13 E., near right bank on downstream side of pier of bridge on U.S. Highway 60 at Bartlesville, 0.7 mile downstream from Coon Creek, 3.2 miles upstream from Sand Creek, and at mile 67.0.

GAGE.--Nonrecording prior to Oct. 1, 1949, at site 2.5 miles upstream at datum 0.53 ft higher; recording Oct. 1, 1949, to Sept. 30, 1956. Datum of last used gage is 634.80 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--Peaks prior to 1937 are from floodmarks noted by water superintendent and tied in by levels by the Corps of Engineers.

REMARKS.--Considerable regulation since February 1950 by Hulah Reservoir 29.2 miles above station. Only annual peaks are shown prior to 1950. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 6,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,465

Noncontributing = 0

Contributing = 1,465

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = 29

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***

Q₅ = ***

Q₁₀ = ***

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	May 7	25.3	-	1943	May 19	23.40	-	1951	May 2	24.32	7,800
									May 4	23.92	7,600
1927	Oct. 3	41.80	-	1944	Apr. 11	41.07	-		May 24	21.74	6,580
1928	Oct. 3	22.2	-	1945	Apr. 17	19.18	-		Jul. 2	34.44	21,300
1929	Apr. 21	21.8	-	1946	Oct. 2	21.32	-		Jul. 16	21.67	6,580
									Sep. 24	23.27	7,300
1935	Jun. 19	18.3	-	1947	Apr. 15	18.65	-	1952	Nov. 12	22.38	6,900
									Mar. 18	20.75	6,180
1937	Oct. 11	17.7	-	1948	Jul. 19	18.30	-	1953	Jun. 6	13.93	3,280
1938	May 25	15.73	-	1949	Jan. 25	14.20	-	1954	May 2	27.20	7,300
1939	May 22	7.61	-						May 4	20.48	6,040
1940	Jun. 11	8.21	-	1950	Jun. 5	29.25	10,400	1955	May 26	24.15	6,550
					Jun. 11	24.80	8,050				
1941	Jun. 11	17.85	-		Jul. 21	35.62	26,400	1956	Oct. 7	11.76	2,580
					Aug. 2	32.98	16,000				
1942	Apr. 21	18.63	-		Aug. 7	27.32	9,320				
					Aug. 18	27.60	9,480				

a At last used site and datum.

ARKANSAS RIVER BASIN

07174570 DRY HOLLOW NEAR PAWHUSKA, OKLA.

LOCATION.--Lat 36°45'30", long 96°12'30", in NE 1/4 SE 1/4 sec.3, T.26 N., R.10 E., Osage County, at multi-barrel culvert on U.S. Highway 60, 9.5 miles northeast of Pawhuska.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1.67
Noncontributing = 0
Contributing = 1.67
Channel slope (ft/mi) = 83.0
Annual precip. (in) = 34.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Jul. 11	8.43	660	1968	May 25	7.00	215	1970	Sep. 22	8.44	664
1966	Jul. 22	6.44	86	1969	Jun. 24	8.05	528	1971	Jan. 3	6.67	133
1967	Jul. 25	8.42	657								

07174600 SAND CREEK AT OKESA, OKLA.

LOCATION.--Lat 36°43'10", long 96°07'56", in NW 1/4 NW 1/4 sec.21, T.26 N., R.11 E., Osage County, on downstream side of left abutment of county road bridge, 0.5 mile northeast of Okesa, 9 miles southwest of Bartlesville, and at mile 17.2.

GAGE.--Water-stage recorder. Datum of gage is 689.20 ft above mean sea level. Prior to May 25, 1960, nonrecording gage at same site and datum.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 139
Noncontributing = 0
Contributing = 139
Channel slope (ft/mi) = 13.5
Annual precip. (in) = 35.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,420
Q₅ = 9,190
Q₁₀ = 11,800
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.712
Standard deviation = 0.294
Skew = -0.464

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Oct. 2	23.57	10,400	1964	Aug. 28	18.00	6,950	1968	Apr. 3	12.12	3,320
									May 25	13.93	4,550
1961	May 5	12.10	3,200	1965	Nov. 17	12.33	3,640	1969	Mar. 23	14.54	4,970
	May 8	22.35	9,930		Jan. 22	14.06	4,780		Apr. 17	12.8	3,780
	Jul. 15	16.00	5,650		Apr. 3	15.29	3,560		Jun. 24	19.5	8,470
	Aug. 14	17.18	6,430		May 19	17.09	6,720				
	Sep. 4	12.04	3,140		Jun. 24	16.97	6,660				
	Sep. 13	27.7	14,700					1970	Apr. 1	14.80	5,180
1962	Nov. 2	16.68	6,100	1966	Jun. 7	8.74	1,570		Apr. 30	17.82	6,230
	Nov. 15	17.52	6,620						Jun. 12	15.20	5,460
	Sep. 15	16.84	6,170	1967	Jul. 25	12.18	3,380	1971	Sep. 5	11.80	3,120
					Sep. 27	12.30	3,450				
1963	May 5	9.40	1,810								

ARKANSAS RIVER BASIN

07174700 CANEY RIVER NEAR OCHELATA, OKLA.

LOCATION.--Lat 36°38'26", long 95°56'02", in SW 1/4 SW 1/4 sec.16, T.25 N., R.13 E., Washington County, near right bank on downstream side of pier of bridge on U.S. Highway 75, 3.5 miles upstream from Fish Creek, 4 miles northeast of Ochelata, 8 miles southeast of Bartlesville, and at mile 53.8.

GAGE.--Water-stage recorder. Datum of gage is 611.98 ft above mean sea level.

REMARKS.--Some regulation since Feb. 6, 1950, by Hulah Lake 42.4 miles upstream. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 7,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1,753
Noncontributing = 0
Contributing = 1,753
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 1	32.37	11,600	1960	Apr. 14	27.12	8,130	1965	Apr. 15	25.81	8,150
	May 17	36.45	15,700						Jun. 25	26.14	8,320
	May 23	28.71	8,970	1961	Apr. 21	28.45	9,410				
	May 26	36.85	16,100		May 5	30.28	10,600	1966	Jun. 12	20.96	5,670
	Jun. 2	34.49	13,400		May 9	38.32	28,400				
	Jun. 13	38.82	33,800		May 20	26.48	8,290	1967	Jul. 25	29.27	10,500
	Jun. 19	34.95	14,000		May 26	26.69	8,400				
	Jun. 24	36.83	16,100		Aug. 14	27.39	8,810	1968	Mar. 19	31.34	11,600
1958	Apr. 6	26.30	7,680		Sep. 4	31.54	11,400		Apr. 3	26.07	8,700
					Sep. 14	37.20	18,200				
1959	May 10	26.09	7,570	1962	Nov. 3	30.28	10,600	1969	Mar. 24	29.93	10,900
	May 18	31.00	10,500		Nov. 16	29.08	9,800		Jun. 1	26.54	8,820
	Jul. 16	36.24	15,600		Nov. 22	28.29	9,300		Jun. 25	33.32	13,900
	Jul. 20	31.09	10,600		Sep. 15	32.10	11,800		Jun. 27	33.52	14,100
	Jul. 23	38.42	24,700					1970	Oct. 13	29.78	11,100
1960	Oct. 3	36.16	15,600	1963	Jan. 7	15.44	3,060		Apr. 2	25.31	8,160
	Oct. 14	28.94	9,190						May 1	35.41	16,800
	Oct. 16	26.90	8,010	1964	Apr. 5	25.72	8,100		Jun. 2	27.27	9,280
	Oct. 24	26.16	7,620		Aug. 28	27.38	9,050		Jun. 12	29.03	10,300
				1965	Apr. 6	33.80	13,300	1971	Oct. 8	19.84	5,170

ARKANSAS RIVER BASIN

07174720 HOGSHOOTER CREEK TRIBUTARY NEAR BARTLESVILLE, OKLA.

LOCATION.--Lat 36°43'40", long 95°50'52", in SE 1/4 SE 1/4 sec.18, T.26 N., R.14 E., Washington County, at multi-barrel culvert on U.S. Highway 60, 4.9 miles east of junction with U.S. Highway 75 southeast of Bartlesville.

GAGE.--Crest-stage gage. Stage-rainfall recorder since April 4, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 0.94
 Noncontributing = 0
 Contributing = 0.94
 Channel slope (ft/mi) = 58.0
 Annual precip. (in) = 36.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sep. 21	8.32	351	1968	Mar. 19	9.60	500	1970	Oct. 12	9.07	473
1966	Jul. 22	6.20	74	1969	Jun. 24	11.30	919	1971	Oct. 8	8.11	318
1967	May 30	8.40	364								

a Gage height affected by backwater.

07175000 DOUBLE CREEK SUBWATERSHED NO. 5 (NELLIE BLY CREEK) NEAR RAMONA, OKLA.

LOCATION.--Lat 36°30'50", long 95°56'25", in SE 1/4 SE 1/4 sec.32, T.24 N., R.13 E., Washington County, near center of upstream side of dam on Nellie Bly Creek, 1.8 miles southwest of Ramona.

GAGE.--Water-stage recorder. Datum of gage is 688.00 ft above mean sea level (levels by Soil Conservation Service).

REMARKS.--Peak discharge (average for 5-minute interval) is inflow computed from change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.39
 Noncontributing = 0
 Contributing = 2.39
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	May 21	-	297	1960	Oct. 2	-	2,810	1965	Sep. 21	-	1,570
1956	Jun. 3	-	45	1961	Aug. 14	-	2,500	1966	Sep. 3	-	581
1957	Jun. 23	-	3,580	1962	Sep. 15	-	1,980	1967	Apr. 12	-	2,080
1958	Mar. 13	-	123	1963	Mar. 4	-	288	1968	Apr. 19	-	2,030
1959	Jul. 22	-	830	1964	-	-	-	1969	Jun. 27	-	883

ARKANSAS RIVER BASIN

07175500 CANEY RIVER NEAR RAMONA, OKLA.

LOCATION.--Lat 36°30'31", long 95°50'36", in NE 1/4 NW 1/4 sec.5, T.23 N., R.14 E., Washington County, near left bank on downstream side of pier of county road bridge, 1 mile upstream from Buck Creek, 2.2 miles downstream from Double Creek, 4.5 miles southeast of Ramona, and at mile 32.0.

GAGE.--Water-stage recorder. Datum of gage is 586.43 ft above mean sea level. Prior to Feb. 28, 1939, nonrecording gage at site 16.2 miles downstream at datum 21.41 ft lower. Prior to Feb. 15, 1946, nonrecording gage at present site and datum.

HISTORICAL DATA.--Data for peaks prior to 1935 and for 1943 and 1945 are from files of the Corps of Engineers.

REMARKS.--Some regulation since February 1950 by Hulah Lake 64.2 miles upstream (capacity, 295,100 acre-ft). Only annual peaks are shown prior to 1937. Records since 1948 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 7,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1,955
Noncontributing = 0
Contributing = 1,955
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 28

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Oct.	39.0	-	1949	Jan. 27	27.79	9,740	1961	Apr. 22	24.10	8,590
					Feb. 16	26.50	8,690		May 10	29.52	23,400
1929	Apr. 24	33.4	-		May 22	28.00	10,100		Jun. 3	24.54	8,790
1930	May 4,5	32.7	-						Jul. 15	26.25	9,640
1931	Jul. 21	20.4	5,000	1950	May 11	27.80	9,300		Aug. 14	28.46	12,000
					Jun. 6	27.37	10,100		Sep. 5	28.13	11,000
1932	Nov. 27	30.6	-		Jul. 23	29.42	21,800		Sep. 15	29.32	15,500
					Aug. 4	29.10	16,700	1962	Nov. 3	26.21	9,540
1935	Jun.	33.5	29,000		Aug. 20	26.85	8,870		Nov. 16	25.17	8,940
1936	Jun. 8	27.85	10,200	1951	Jul. 5	29.02	15,700		Nov. 22	25.17	8,940
1937	Oct. 13	32.05	18,000						Sep. 16	26.62	9,780
	Jun. 12	26.24	8,800	1952	Nov. 12	26.13	8,810	1963	Jan. 5	13.55	3,710
					Mar. 11	24.00	7,610	1964	Apr. 5	25.40	9,140
1938	Apr. 2	31.27	13,100	1953	May 12	22.28	7,050		Aug. 29	23.05	7,870
	May 25	30.0	11,400	1954	May 3	26.69	9,340	1965	Apr. 6	28.62	13,800
	Jun. 14	26.06	8,250						Apr. 15	23.62	9,130
1943	May 21	39.8	-	1955	May 29	25.50	8,650		Sep. 21	23.54	9,060
				1956	Oct. 8	11.54	2,570	1966	Jun. 12	17.79	5,820
1945	Oct. 7	28.88	15,600	1957	May 2	26.70	9,730	1967	Jul. 26	24.74	9,880
	Mar. 16	28.14	9,850		May 18	29.20	14,600				
	Mar. 28	28.45	11,400		May 27	29.17	14,400	1968	Mar. 20	27.90	12,600
	Apr. 19	29.28	21,600		Jun. 3	28.90	12,600		Apr. 4	21.84	8,040
	Jul. 3	28.50	11,700		Jun. 12	29.69	36,700				
1946	Oct. 3	30.12	38,500		Jun. 20	28.07	11,500	1969	Mar. 25	26.56	11,300
	Jan. 6	27.07	8,850		Jun. 25	29.11	16,000		Apr. 18	21.60	7,930
1947	Apr. 18	29.06	17,600	1958	Apr. 7	22.65	7,250		Jun. 2	24.31	9,600
	Apr. 27	26.41	8,390						Jun. 9	22.82	8,630
	May 20	27.82	9,410	1959	May 19	25.12	8,500		Jun. 15	21.88	8,100
					Jul. 18	29.16	13,300		Jun. 27	29.51	15,900
1948	Apr. 27	26.02	8,150		Jul. 24	29.76	22,300	1970	Oct. 13	27.70	11,700
	May 13	24.90	7,520						Apr. 2	21.64	7,950
	Jun. 26	29.30	19,900	1960	Oct. 6	29.46	16,200		May 2	29.16	14,900
	Jul. 13	26.65	8,520		Oct. 14	25.77	8,850		Jun. 3	26.87	11,600
	Jul. 21	28.94	14,800		Oct. 25	23.26	7,600				
	Aug. 17	28.44	11,300		Apr. 15	24.52	8,200	1971	Oct. 9	18.84	5,060
					May 6	25.42	8,650				

ARKANSAS RIVER BASIN

07176000 VERDIGRIS RIVER NEAR CLAREMORE, OKLA.

LOCATION.--Lat 36°18'26", long 95°41'52", in SE 1/4 SW 1/4 sec .10, T.21 N., R.15 E., Rogers County, near left bank on downstream side of pier of bridge on State Highway 20, 2.3 miles downstream from Caney River, 4.5 miles west of Claremore, 12.4 miles upstream from Bird Creek, and at mile 76.0.

GAGE.--Water-stage recorder. Datum of gage is 538.62 ft above mean sea level. Prior to Feb. 24, 1939, and May 17 to Aug. 24, 1967, nonrecording gage at same site and datum.

REMARKS.--Flow regulated since May 1963 by Oologah Lake 14.3 miles upstream; some regulation since April 1949 by Fall River Reservoir on Fall River in Kansas and since February 1950 by Hulah Lake on Caney River. Only annual peaks are shown for 1935 and since 1963. Records since 1950 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 24,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 6,534
Noncontributing = 0
Contributing = 6,534
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 38

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun.	46.2	64,200	1945	Mar. 29	38.10	32,800	1957	May 22	43.96	47,500
					Apr. 21	47.14	81,400		Jun. 5	41.98	37,900
1936	Sep. 28	33.95	29,500		Jul. 1	37.14	30,100		Jun. 15	46.51	68,500
									Jun. 25	38.36	35,800
1937	Oct. 11	41.20	38,700	1946	Oct. 4	46.98	73,000				
	Nov. 4	30.10	24,800		Jan. 7	38.90	31,800	1958	Mar. 27	33.82	30,800
	Jun. 13	35.30	31,100						Apr. 6	30.10	25,800
	Jul. 22	31.70	26,700	1947	Apr. 20	44.51	53,000				
					Apr. 26	38.29	32,300	1959	Jul. 25	43.53	47,200
1938	Mar. 31	38.12	34,600		May 24	35.56	28,800				
	May 29	42.10	39,900	1948	Jun. 27	46.41	61,000	1960	Oct. 5	45.76	60,500
1939	May 13	28.96	23,600		Jul. 15	37.91	30,400		Oct. 15	36.40	33,900
					Jul. 23	44.80	50,400		Apr. 15	30.61	26,200
1940	Apr. 21	18.20	12,200		Aug. 15	36.15	28,600		May 7	35.78	33,000
1941	Apr. 22	44.46	48,200	1949	Jan. 18	34.39	26,700	1961	May 11	50.06	116,000
	Jun. 14	44.30	45,100		Jan. 25	37.78	30,000		May 23	35.1	35,200
	Sep. 12	38.58	29,400		Feb. 17	39.03	31,000		Jul. 15	31.7	25,000
					May 21	38.58	30,800		Aug. 15	35.25	32,700
1942	Oct. 8	45.83	52,800		Jun. 10	31.91	24,400		Sep. 6	33.48	30,600
	Oct. 18	39.88	31,600						Sep. 19	38.45	36,600
	Nov. 2	46.60	64,200	1950	May 11	31.15	28,400	1962	Nov. 4	31.48	28,200
	Apr. 12	41.41	34,900		Jun. 4	33.30	26,000		Nov. 17	29.18	25,500
	Apr. 23	42.82	38,300		Jul. 23	40.00	37,200				
	Jun. 26	43.63	41,300		Jul. 30	30.30	25,200	1963	Oct. 3	22.44	17,900
	Sep. 9	34.27	26,400		Aug. 4	32.58	24,700				
1943	May 13	46.55	68,000	1951	Jul. 6	46.95	74,900	1964	Jun. 16	20.41	16,600
	May 21	55.05	182,000		Jul. 20	44.16	51,900	1965	Apr. 13	30.26	28,800
	Jun. 7	34.86	28,000	1952	Nov. 13	32.72	26,200	1966	Jun. 10	13.87	10,500
	Jun. 28	34.31	27,300		Mar. 12	34.04	27,600	1967	Jul. 8	20.99	17,800
1944	Mar. 16	34.26	25,800	1953	May 12	21.12	14,500	1968	Nov. 4	22.94	19,900
	Mar. 23	34.43	27,400					1969	Jun. 5	29.75	30,000
	Apr. 13	47.23	85,200	1954	May 4	38.12	32,900	1970	Apr. 22	24.58	24,000
	Apr. 30	41.47	36,600	1955	May 30	33.32	26,800	1971	Jan. 5	17.07	14,200
1945	Oct. 1	35.10	28,200	1956	Oct. 4	21.47	14,700				
	Oct. 7	41.40	36,400								
	Dec. 10	38.37	32,200								
	Mar. 16	37.54	30,400								

ARKANSAS RIVER BASIN

07176500 BIRD CREEK AT AVANT, OKLA.

LOCATION.--Lat 36°29'11", long 96°03'45", in NW 1/4 sec.7, T.23 N., R.12 E., Osage County, near left bank on downstream side of pier of county road bridge at Avant, 1.5 miles upstream from Candy Creek, and at mile 54.2.

GAGE.--Water-stage recorder. Datum of gage is 651.28 ft above mean sea level.

HISTORICAL DATA.--Flood in May 1943 reached a stage of 29.6 ft, from floodmark.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 6,000 cfs. Small diversions above station for municipal water supply of cities of Pawhuska and Barnsdall. Flood-frequency data determined from graphically fitted frequency curve.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 364
 Total = 364
 Noncontributing = 0
 Contributing = 364
 Channel slope (ft/mi) = 6.22
 Annual precip. (in) = 34.0
 Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 12,000
 Q₅ = 18,000
 Q₁₀ = 23,000
 Q₂₅ = 28,900
 Q₅₀ = 34,100
 Q₁₀₀ = 39,800

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May	29.6		1953	May 12	17.15	11,900	1961	Sep. 4	17.15	12,800
									Sep. 13	27.72	24,600
1945	Sep. 30	21.66	a15,600	1954	May 2	16.72	11,500		Sep. 27	8.09	6,980
1946	May 9	7.21	6,920	1955	May 12	7.80	7,320	1962	Nov. 2	12.80	9,130
					May 20	14.24	9,970		Nov. 16	13.76	9,760
1947	Oct. 23	8.09	7,440		May 23	7.70	7,270		Nov. 21	7.37	6,560
	Nov. 2	6.85	6,520		May 26	9.66	8,010		Jun. 9	9.69	7,780
	Apr. 25	10.32	8,190	1956	Oct. 5	3.69	1,320		Sep. 9	7.02	6,270
	May 16	14.97	10,400						Sep. 15	22.71	15,200
	Jun. 23	10.18	8,160	1957	Apr. 21	11.36	7,630	1963	Jan. 5	4.44	2,740
1948	Apr. 25	17.09	11,800		Apr. 23	8.17	6,810				
	Jun. 22	11.80	7,890		May 17	23.16	18,700	1964	Apr. 4	11.88	8,690
	Jun. 26	20.47	14,500		May 21	19.55	15,000				
	Jul. 11	12.16	8,950		May 22	11.88	8,690	1965	Apr. 3	11.30	8,450
	Jul. 15	13.43	9,550		May 25	25.35	21,100		Apr. 5	10.58	8,170
	Aug. 14	9.09	7,830		Jun. 1	16.23	11,900		May 19	6.80	6,110
1949	Jan. 23	9.10	7,830		Jun. 10	9.94	7,880		Sep. 21	17.63	13,100
	May 19	14.80	10,300		Jun. 12	29.00	25,400	1966	Sep. 2	5.00	3,780
	May 21	11.68	8,730		Jun. 18	18.40	14,800				
	Jul. 9	10.97	8,450		Jun. 23	24.38	21,100	1967	Jun. 11	8.78	7,330
1950	Apr. 29	13.37	9,550	1958	Mar. 23	5.25	4,100		Jul. 25	14.45	9,200
	May 10	14.84	10,300	1959	May 9	6.89	6,190	1968	Mar. 19	24.32	17,800
	May 26	18.77	13,100		May 18	17.00	12,600		Apr. 3	16.92	11,000
	Jun. 10	7.82	7,320		May 21	11.20	8,410		May 25	8.67	6,010
	Jul. 10	12.10	8,900		May 26	9.25	7,530	1969	Mar. 24	15.86	10,200
	Jul. 19	11.98	8,850		Jul. 15	17.21	12,800		Apr. 17	8.87	6,130
	Aug. 1	20.28	14,300		Jul. 19	15.64	11,300		Jun. 24	15.94	10,200
	Aug. 18	16.44	11,300		Jul. 22	13.16	9,370		Jun. 27	25.88	19,500
1951	May 1	13.13	9,400	1960	Oct. 2	31.40	32,400	1970	Oct. 12	19.41	12,400
	Jun. 21	16.17	11,200		Dec. 18	8.94	7,380		Apr. 1	10.00	6,380
	Jun. 30	16.14	11,100		Apr. 13	8.20	7,030		Apr. 30	25.86	18,200
	Jul. 13	13.57	9,650		May 6	16.72	12,300		Jun. 2	15.00	9,200
	Sep. 5	6.35	6,040		May 29	13.66	9,690		Jun. 12	11.28	7,030
	Sep. 24	9.65	7,980	1961	May 5	10.17	8,010	1971	Sep. 6	14.91	9,150
1952	Nov. 12	13.71	9,700		May 8	25.24	20,900		Sep. 18	13.22	8,130
	Mar. 10	9.58	7,980		Jul. 15	20.31	12,700				
	May 23	12.70	9,200		Aug. 14	25.04	20,700				

a Annual peak only, may have been exceeded in July 1945.

ARKANSAS RIVER BASIN

07177000 HOMINY CREEK NEAR SKIATOOK, OKLA.

LOCATION.--Lat 36°20'55", long 96°06'35", in SW 1/4 SE 1/4 sec.27, T.22 N., R.11 E., Osage County, near left bank on downstream side of pier of bridge on State Highway 20, 1 mile upstream from Tall Chief Creek, 6 miles west of Skiatook, and at mile 16.7.

GAGE.--Water-stage recorder. Datum of gage is 619.66 ft above mean sea level. Prior to May 26, 1945, nonrecording gage, and May 26, 1954, to Sept. 30, 1958, water-stage recorder at site 600 ft upstream at same datum.

HISTORICAL DATA.--Flood in May 1943 reached a stage of 35.0 ft, from floodmark.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs. Flood-frequency data determined from graphically fitted frequency curve.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 340
Noncontributing = 0
Contributing = 340
Channel slope (ft/mi) = 7.20
Annual precip. (in) = 34.5
Bankful stage (ft) = 28

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 7,800
Q₅ = 13,700
Q₁₀ = 18,400
Q₂₅ = 25,100
Q₅₀ = 30,700
Q₁₀₀ = 36,800

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May	35.0		1951	Jun. 22	31.30	9,160	1960	May 30	28.78	7,810
					Jul. 1	27.28	5,610				
1944	Apr. 11	27.41	8,210		Jul. 15	25.95	5,000	1961	May 5	24.96	5,620
									May 9	31.51	10,100
1945	Dec. 5	26.40	7,430	1952	Nov. 12	24.35	5,140		Jul. 15	34.25	13,000
	Mar. 15	28.00	8,690						Aug. 14	26.92	6,630
	Apr. 15	26.60	7,220	1953	May 3	24.07	5,000		Sep. 14	33.06	11,700
	Jul. 2	25.50	6,240								
1946	Oct. 1	33.60	12,900	1954	May 2	25.47	5,640	1962	Sep. 15	29.01	7,950
	Jan. 9	25.23	5,280					1963	Jan. 5	12.88	1,370
1947	Apr. 25	26.65	5,770	1955	May 21	23.92	4,920	1964	Apr. 5	30.04	8,720
	May 16	30.64	8,360					1965	Sep. 21	30.28	8,960
1948	Apr. 26	26.78	5,360	1956	Oct. 5	11.30	1,240	1966	Sep. 4	30.43	8,450
	Jun. 22	32.61	10,800					1967	Jul. 26	31.27	9,080
	Jul. 16	31.98	9,400	1957	Apr. 21	29.80	7,690	1968	Mar. 20	31.82	9,750
					May 17	30.48	8,390		Apr. 4	25.62	6,160
1949	May 19	31.63	9,520		May 21	34.42	13,200	1969	Mar. 24	28.37	7,360
	May 22	27.30	5,610		May 25	32.43	10,600				
	May 24	27.27	5,610		Jun. 2	30.20	8,090	1970	Oct. 12	28.31	6,760
	Jul. 10	35.06	14,200		Jun. 13	31.94	9,970		May 1	32.92	11,200
					Jun. 24	33.14	11,500	1971	Sep. 6	36.62	15,400
1950	May 11	30.26	8,030	1958	Mar. 24	22.60	3,630		Sep. 19	26.92	5,820
	May 26	29.93	7,610								
	Jul. 11	31.04	8,800	1959	May 26	25.40	5,570				
	Aug. 5	27.90	5,950		Jul. 15	24.54	5,080				
					Sep. 30	26.92	6,440				
				1960	Oct. 3	38.82	35,600				
					May 6	28.02	7,280				

ARKANSAS RIVER BASIN

07177500 BIRD CREEK NEAR SPERRY, OKLA.

LOCATION.--Lat 36°16'42", long 95°57'14", in NW 1/4 NW 1/4 sec.29, T.21 N., R.13 E., Tulsa County, on downstream side of right pier of county road bridge, 1.5 miles upstream from Delaware Creek, 2.4 miles downstream from Hominy Creek, 2.5 miles southeast of Sperry, and at mile 25.0.

GAGE.--Water-stage recorder. Datum of gage is 579.43 ft above mean sea level.

HISTORICAL DATA.--Flood in 1915 reached a stage similar to flood of Oct. 31, 1941 (30.14 ft), from information by local residents.

REMARKS.--Records since 1948 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 11,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 905
 Noncontributing = 0
 Contributing = 905
 Channel slope (ft/mi) = 4.14
 Annual precip. (in) = 34.5
 Bankful stage (ft) = 21

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 15,000
 Q₅ = 27,800
 Q₁₀ = 38,500
 Q₂₅ = 54,400
 Q₅₀ = 68,000
 Q₁₀₀ = 83,200

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.174
 Standard deviation = 0.321
 Skew = -0.008

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	May 13	17.48	10,100	1947	Apr. 26	22.32	11,000	1958	Mar. 24	15.84	7,180
1940	Sep. 5	19.53	11,300		May 17	25.48	14,200	1959	Jul. 16	20.20	10,300
1941	Apr. 16	19.86	11,500	1948	Jun. 23	27.29	16,600	1960	Oct. 3	32.60	90,000
	Jun. 11	28.46	23,000		Jun. 27	23.62	11,400		May 7	24.50	13,500
1942	Oct. 5	22.79	12,800		Jul. 17	24.77	12,400	1961	May 10	28.15	22,300
	Oct. 17	25.77	16,200	1949	May 20	26.55	15,000		Jul. 16	28.09	19,400
	Oct. 25	24.19	14,200	1950	May 11	26.65	15,000		Aug. 15	27.60	18,800
	Oct. 27	23.08	13,100		May 27	26.10	14,100		Sep. 15	29.09	32,100
	Oct. 31	30.14	45,700	1951	Jun. 23	25.58	13,400	1962	Sep. 16	24.81	13,800
	Apr. 8	28.56	24,000		Jul. 1	23.50	11,300	1963	Jul. 27	8.09	3,810
	Apr. 10	27.22	18,600	1952	Mar. 11	19.33	8,790	1964	Apr. 5	26.29	15,700
	Apr. 20	28.93	27,500	1953	May 13	20.90	9,640	1965	Sep. 22	22.24	11,500
	Jun. 22	29.31	31,900	1954	May 3	23.10	11,800	1966	Sep. 5	15.63	6,750
	Sep. 19	23.28	13,300	1955	May 21	20.40	10,600	1967	Jul. 26	22.88	11,000
1943	May 10	30.25	52,100	1956	Oct. 5	4.70	1,930	1968	Mar. 20	27.01	15,700
	May 18	31.68	72,200	1957	Apr. 22	21.90	11,200	1969	Mar. 25	25.34	12,500
	Jun. 5	26.68	17,700		May 18	26.89	15,500		Jun. 29	24.30	12,000
1944	Mar. 16	23.49	13,500		May 22	27.20	17,100	1970	Oct. 14	26.23	13,900
	Apr. 11	28.22	22,000		May 26	28.46	24,700		May 1	28.63	18,900
1945	Dec. 6	23.16	13,200		Jun. 2	24.83	13,600	1971	Sep. 7	29.02	18,900
	Mar. 16	25.17	15,200		Jun. 13	29.03	31,400		Sep. 19	22.53	11,800
	Apr. 16	26.74	17,500		Jun. 19	22.72	11,800				
	Jul. 2	28.73	25,200		Jun. 24	28.35	23,800				
	Sep. 26	22.65	11,900								
1946	Oct. 1	28.84	24,300								

ARKANSAS RIVER BASIN

07178000 BIRD CREEK NEAR OWASSO, OKLA.

LOCATION.--Lat 36°14'50", long 95°52'00", on east line NE1/4 sec.1, T.20 W., R.13 E., on upstream handrail near center of bridge on U.S. Highway 75, half a mile upstream from Ranch Creek, 1-1/2 miles southwest of Owasso, and 14 miles upstream from mouth.

GAGE.--Nonrecording. Datum of gage is 559.03 ft above mean sea level (Corps of Engineers bench mark).

REMARKS.--Peak-stage data prior to 1935 furnished by Corps of Engineers. Base for partial-duration series, 11,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,022
Noncontributing = 0
Contributing = 1,022
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 21

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Oct. 25	34.0	-	1931	May 4	19.2	12,200	1936	Sep. 27	17.14	8,490
1927	Apr. 15	28.5	-	1932	Nov. 24	21.0	12,000	1937	Oct. 8	24.76	15,500
1929	Apr. 15	26.3	17,000	1935	Jun.	26.2	16,900	1938	Mar. 29	26.2	19,700
1930	May 1	23.7	14,400						Aug. 17	21.0	14,500

07178580 OTTER CREEK NEAR TIAWAH, OKLA.

LOCATION.--Lat 36°14'32", long 95°33'21", in center of sec.1, T.20 N., R.16 E., Rogers County, on downstream side of bridge on State Highway 88, 1.2 miles southeast of Tiawah.

GAGE.--Crest-stage gage. Stage rainfall recorder since Aug. 16, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 15.2
Noncontributing = 0
Contributing = 15.2
Channel slope (ft/mi) = 12.2
Annual precip. (in) = 40.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Apr. 23	9.99	640	1968	Feb. 1	14.20	3,310	1970	Apr. 30	12.60	1,380
1967	Apr. 13	12.23	1,210	1969	Jan. 29	12.95	1,610	1971	Oct. 5	11.90	1,100

ARKANSAS RIVER BASIN

07178600 VERDIGRIS RIVER NEAR INOLA, OKLA.

LOCATION.--Lat 36°09'45", long 95°37'10", near northwest corner of sec.4, T.19 N., R.16 E., near right bank on downstream side of pier of bridge on State Highway 33, 1 mile upstream from Salt Creek, 6 miles west of Inola, and at mile 48.8.

GAGE.--Water-stage recorder. Datum of gage is 506.87 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1946, nonrecording gage at same site and datum.

REMARKS.--Flow regulated since May 1963 by Oologah Lake, 41.5 miles upstream; some regulation by lakes in Kansas since 1949 and by Hulah Lake since 1950. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 23,000 cfs. Only annual peaks are shown since 1969.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 7,911
 Total = 7,911
 Noncontributing = 0
 Contributing = 7,911
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 42

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Sep. 5	30.8	16,300	1947	May 25	42.39	31,700	1959	Jul. 26	45.90	44,700
1941	Nov. 27	39.76	27,600	1948	Jun. 27	52.40	77,000	1960	Oct. 5	52.50	101,000
	Apr. 23	49.79	49,800		Jul. 25	49.02	49,000		Mar. 17	52.30	23,800
	Jun. 15	49.39	47,600		Aug. 16	42.86	32,500		Apr. 16	38.06	32,200
	Sep. 12	44.06	34,800	1949	Jan. 19	39.00	26,700		May 8	42.58	40,300
1942	Oct. 8	50.83	63,000		Jan. 26	42.92	32,500		May 21	74.65	27,000
	Oct. 19	47.32	41,400		Feb. 18	43.55	33,600		May 31	36.22	29,200
	Nov. 1	52.00	105,000		May 23	46.46	38,900	1961	May 12	53.67	118,000
	Apr. 13	48.18	43,700		Jun. 11	38.28	25,800		Jul. 16	41.97	39,100
	Apr. 23	49.22	46,700	1950	May 12	43.31	32,400		Jul. 24	31.70	23,000
	Jun. 26	48.82	45,400		May 28	39.41	26,700		Aug. 16	42.18	39,500
	Sep. 8	40.27	28,300		Jun. 5	39.18	28,300		Sep. 6	39.23	34,000
	Sep. 20	37.41	24,100		Jul. 23	43.55	34,300		Sep. 18	44.38	43,100
1943	Dec. 30	37.73	24,500		Aug. 3	40.72	29,800		Sep. 28	34.05	26,100
	May 12	51.80	98,000	1951	Feb. 21	34.43	23,500	1962	Nov. 4	38.44	32,700
	May 21	54.93	224,000		Jun. 24	37.97	29,000		Nov. 17	37.17	30,800
	Jun. 7	41.10	29,600		Jul. 8	52.32	69,200		Nov. 23	34.44	26,700
1944	Mar. 17	43.25	33,200						Sep. 17	35.82	28,700
	Mar. 23	41.00	29,400	1952	Nov. 14	39.28	30,200	1963	Oct. 3	27.70	18,300
	Apr. 14	50.64	57,700		Mar. 12	40.78	32,400	1964	Apr. 5	33.14	26,800
	May 4	46.60	39,800	1953	Apr. 24	32.20	23,000	1965	Apr. 13	34.80	29,300
1945	Oct. 1	40.77	29,100	1954	May 5	43.03	37,100		Apr. 18	34.04	28,100
	Oct. 8	45.40	37,300	1955	May 30	37.68	29,500		Jun. 26	32.56	26,100
	Dec. 11	43.30	33,300	1956	Oct. 6	25.90	13,600	1966	Jun. 10	19.29	10,100
	Mar. 18	44.50	35,600	1957	Apr. 24	39.33	29,800	1967	Jul. 27	27.50	20,000
	Mar. 30	42.70	32,300		May 2	35.47	25,900	1968	Mar. 21	32.02	28,400
	Apr. 22	51.70	94,500		May 25	51.50	67,000		Apr. 5	29.40	23,800
	Jul. 5	44.30	35,200		Jun. 16	52.75	85,900	1969	Jun. 5	31.35	30,000
1946	Oct. 4	51.65	86,100	1958	Mar. 15	33.83	24,900	1970	May 1	32.28	39,600
	Jan. 8	43.94	33,800		Mar. 28	38.28	31,200				
	Feb. 20	37.10	23,400		Apr. 6	34.70	26,100				
1947	Apr. 11	43.05	32,800								
	Apr. 22	48.74	44,400								
	Apr. 28	45.38	36,800								

a Occurred Oct. 4, affected by backwater.

ARKANSAS RIVER BASIN

07178640 BULL CREEK NEAR INOLA, OKLA.

(Previously published as Bull Creek tributary)

LOCATION.--Lat 36°08'55", long 95°27'05", in NE 1/4 NW 1/4 sec.12, T.19 N., R.17 E., Rogers County, at county road bridge, 3.2 miles east of Inola.

GAGE.--Crest-stage gage. Stage-rainfall recorder Sept. 11, 1964, to Nov. 25, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 10.7
Noncontributing = 0
Contributing = 10.7
Channel slope (ft/mi) = 12.2
Annual precip. (in) = 40.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Jul. 14	7.90	445	1968	Jan. 28	9.54	830	1970	Apr. 30	10.50	960
1966	Apr. 23	7.30	290	1969	Mar. 23	9.75	835	1971	Oct. 5	10.00	890
1967	Apr. 13	7.20	265								

07178650 BILLY CREEK TRIBUTARY NEAR WAGONER, OKLA.

LOCATION.--Lat 35°57'32", long 95°27'41", in NE 1/4 NE 1/4 sec.14, T.17 N., R.17 E., Wagoner County, on downstream side of multi-barrel box culvert on State Highway 51, 5.0 miles west of Wagoner.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 25, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 5.71
Noncontributing = 0
Contributing = 5.71
Channel slope (ft/mi) = 12.1
Annual precip. (in) = 41.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	May 12	9.04	163	1968	Mar. 31	13.10	680	1970	Apr. 30	11.0	365
1967	Apr. 13	9.16	173	1969	Jan. 29	13.38	730	1971	Jun. 3	11.10	377

ARKANSAS RIVER BASIN

07183500 NEOSHO RIVER NEAR PARSONS, KANS.

LOCATION.--Lat 37°18'30", long 95°06'40", in NW1/4NE1/4 sec.33, T.31 S., R.21 E., Labette County, on right bank at intake structure of water filtration plan, 150 feet upstream from dam of Kansas Army Ammunition Plant, 8 miles southeast of Parsons, and at mile 201.4.

GAGE.--Water-stage recorder. Datum of gage is 810.25 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1929, nonrecording gage at bridge 2.2 miles upstream at datum 0.04 ft lower. Oct. 1, 1929, to Feb. 7, 1935, nonrecording gage, and Feb. 8, 1935, to Dec. 7, 1966, water-stage recorder at bridge 2.7 miles upstream at present datum.

REMARKS.--Flow moderately regulated by John Redmond Reservoir 142.3 miles upstream since 1963. Base for partial-duration series, 15,000 cfs. Only annual peaks shown since 1964.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 4,905
Total
Noncontributing = 0
Contributing = 4,905
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 25,600
Q₅ = 51,600
Q₁₀ = 76,900
Q₂₅ = 121,000
Q₅₀ = 164,000
Q₁₀₀ = 218,000

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.433
Standard deviation = 0.343
Skew = 0.430

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 15	22.86	25,100	1935	Jun. 1	27.46	41,700	1945	Sep. 25	20.00	17,800
	Mar. 28	23.16	25,800		Jun. 17	22.50	21,900				
	Apr. 13							1946	Oct. 3	24.49	25,600
	14	24.86	31,600	1936	Nov. 5	21.65	20,200		Jan. 6	23.66	23,200
	Jul. 13	21.56	22,100						Jun. 25	18.71	16,100
1923	Jun. 18	24.46	29,700	1937	Mar. 25	17.80	15,200	1947	Mar. 16	19.72	17,400
					May 23	18.27	15,900		Apr. 8	23.12	21,900
1924	Oct. 17	19.90	18,800		Jun. 10	21.50	20,100		Apr. 18	25.04	27,300
	Dec. 13	19.26	17,800		Jun. 15	24.45	26,500		Apr. 26	21.20	19,200
	Feb. 17	17.96	15,800	1938	May 16	20.00	18,100		May 21	19.82	17,500
	Aug. 7	18.96	17,300		May 29	26.20	33,400		Jun. 10	19.22	16,800
					Jun. 8	22.95	22,900	1948	Mar. 24	20.05	17,800
1925	Apr. 10	14.56	11,400		Jun. 17	23.96	25,300		May 12	18.54	15,800
1926	Nov. 9	19.16	18,000	1939	Apr. 5	9.21	4,980		Jun. 22	25.54	29,800
	Sep. 17	27.03	45,100						Jun. 26	19.49	17,200
1927	Oct. 8	25.31	34,100	1940	Apr. 18	17.23	14,500		Jul. 12	18.20	15,400
	Mar. 21	20.76	20,700						Jul. 27	30.74	87,800
	Apr. 3	21.32	21,700	1941	Jan. 19	18.97	16,800	1949	Jan. 16	21.98	20,100
	Apr. 9	26.08	38,800		Apr. 17	24.78	27,600		Jan. 24	21.27	19,300
	Apr. 22	27.41	47,800		Apr. 19	17.68	15,100		Feb. 16	23.51	22,800
	May 9	20.21	19,700		Jun. 7	24.97	28,300		May 25	20.21	18,000
	Jun. 20	23.52	26,800		Jun. 11	23.20	23,400		Jul. 7	20.37	18,300
	Aug. 9	20.26	19,800		Aug. 31	20.44	18,600	1950	Jul. 11	20.20	18,000
	Aug. 17	23.76	27,400		Sep. 11	26.09	32,900		Jul. 15	20.64	18,500
1928	Oct. 6	26.22	39,700	1942	Oct. 6	25.83	31,500		Jul. 20	24.90	27,000
	Jun. 2	22.46	24,100		Oct. 17	22.48	22,000		Aug. 7	18.90	16,400
	Jun. 20	23.96	28,000		Oct. 21	27.29	40,200		Sep. 1	20.73	18,600
1929	Nov. 24	27.49	48,100		Apr. 10	22.16	21,400	1951			
	Jan. 11	17.48	15,500		Apr. 30	17.55	15,000		May 8	22.01	22,100
	Apr. 11	17.49	15,500		Jun. 24	25.40	29,800		May 23	22.61	23,300
	Apr. 21	23.75	27,400		Sep. 9	20.28	18,500		Jun. 14	21.49	21,100
	May 7	19.56	18,700	1943	Dec. 29	19.54	17,200		Jun. 27	23.52	25,000
	May 15	24.36	29,300		May 11	23.94	23,600		Jul. 14	40.20	410,000
	Jul. 20	19.76	19,000		May 20	29.25	67,200		Jul. 26	19.73	17,900
					Jun. 13	18.08	15,200		Aug. 29	23.09	24,200
					Jun. 22	20.45	18,300		Sep. 13	27.25	43,800
1930	May 13	20.02	18,700	1944	Mar. 20	25.01	27,300	1952	Feb. 2	18.14	15,300
	Jun. 12	20.92	20,100		Apr. 12	25.68	30,800		Mar. 12	21.16	20,500
	Jun. 16	17.75	15,300		Apr. 27	29.70	83,500	1953	Apr. 2	10.65	4,110
1931	May 20	13.53	9,500		Jun. 21	21.42	19,400	1954	May 4	24.97	27,900
1932	Nov. 28	22.96	23,000		Sep. 29	22.21	20,400	1955			
	Jul. 13	20.46	18,200	1945	Oct. 3	21.87	20,000		May 28	19.94	18,600
1933	Apr. 22	19.0	17,200		Dec. 13	26.22	33,600	1956	Jun. 1	12.18	6,170
	May 13	23.62	18,900		Mar. 16	18.48	15,800				
					Mar. 20	20.85	18,800				
1934	May 17	18.03	15,700		Mar. 28	21.12	19,100				
					Apr. 21	29.02	63,200				
1936	May 21	24.57	27,000		May 31	18.40	15,700				
					Jul. 5	24.10	24,200				

ARKANSAS RIVER BASIN

07183500 NEOSHO RIVER NEAR PARSONS, KANS. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 19	22.80	23,600	1961	Nov. 2	21.25	20,800	1962	Sep. 26	24.61	27,200
	May 25	22.85	23,700		Dec. 12	18.12	15,700				
	Jun. 3	23.48	25,000		Apr. 1	19.01	17,100	1963	Oct. 1	21.96	22,100
	Jun. 14	23.30	24,600		Apr. 12	19.94	18,600				
					Apr. 26	19.40	17,700	1964	Jun. 14	23.50	25,000
1958	Mar. 11	21.18	20,500		May 1	23.93	25,900				
	Mar. 24	21.20	20,600		May 9	28.45	57,900	1965	Apr. 4	21.67	21,600
	Apr. 4	20.54	19,500		May 31	23.43	24,900				
	May 5	18.73	16,900		Jul. 26	17.94	15,400	1966	Oct. 1	14.86	10,200
	Jun. 28	19.56	18,100		Sep. 5	17.90	15,300				
	Jul. 13	24.58	27,200		Sep. 19	26.95	40,400	1967	Jun. 25	19.78	22,900
	Jul. 18	23.64	25,300		Sep. 26	17.80	15,200				
								1968	May 27	21.95	28,000
1959	May 24	17.98	15,900	1962	Oct. 15	21.19	20,700				
	Jul. 15	22.28	22,600		Nov. 1	23.28	24,600	1969	Jul. 4	20.73	25,600
					Nov. 7	24.82	27,600				
1960	Oct. 6	23.75	25,500		Nov. 17	19.34	17,600	1970	Apr. 22	22.28	30,800
	Mar. 29	19.94	18,600		Feb. 4	20.92	20,300				
	Apr. 15	17.84	15,700		Mar. 22	20.12	18,900	1971	Jun. 11	18.68	21,900
	May 7	21.23	20,600		Jun. 4	20.94	20,300				

ARKANSAS RIVER BASIN

07185000 NEOSHO RIVER NEAR COMMERCE, OKLA.

LOCATION.--Lat 36°55'43", long 94°57'26", in SW 1/4 SE 1/4 sec.5, T.28 N., R.22 E., Ottawa County on downstream side of left pier of county road bridge, 1.3 miles upstream from Mud Creek, 2.2 miles downstream from Four Mile Creek, 4.5 miles west of Commerce, and at mile 153.4.

GAGE.--Water-stage recorder. Datum of gage is 748.97 ft above mean sea level (Corps of Engineers bench mark).

REMARKS.--Flow regulated to some extent since 1963 by John Redmond Lake in Kansas, 190 miles upstream. Base for partial-duration series, 20,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 5,876
Noncontributing = 0
Contributing = 5,876
Channel slope (ft/mi) = 1.36
Annual precip. (in) = 35.4
Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 35,000
Q₅ = 63,400
Q₁₀ = 86,300
Q₂₅ = 119,000
Q₅₀ = 147,000
Q₁₀₀ = 177,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 4.541
Standard deviation = 0.309
Skew = -0.053

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Jun.	21.5	a55,000	1948	Jun. 24	23.38	85,000	1960	May 7	17.60	25,300
1927	Apr.	21.1	a50,000		Jul. 13	17.34	25,300	1961	Nov. 3	15.00	20,200
1935	May	20.8	a46,000		Jul. 28	24.43	93,200		Apr. 12	14.65	20,200
1938	May	19.8	a36,400	1949	Jan. 17	17.78	26,500		Apr. 26	14.78	20,400
					Jan. 25	17.95	27,000		May 8	22.98	78,600
1940	Apr. 19	12.28	14,900		Feb. 17	18.23	28,500		May 27	17.20	24,800
					May 20	15.54	21,400		Sep. 5	15.46	21,200
1941	Apr. 19	20.08	36,800		Jul. 8	16.35	23,300		Sep. 22	19.68	37,100
	Jun. 11	20.26	38,400	1950	Jun. 3	15.49	20,800	1962	Oct. 16	15.16	20,200
	Sep. 11	19.44	31,900		Jul. 21	20.08	37,500		Nov. 9	18.03	26,500
1942	Oct. 7	21.08	49,100	1951	May 9	15.20	20,800		Nov. 17	15.05	20,200
	Oct. 18	19.02	31,000		May 24	15.84	22,000		Feb. 5	14.96	20,000
	Nov. 1	22.06	64,800		Jun. 13	15.01	20,400		Jun. 5	15.33	20,800
	Apr. 11	18.78	29,800		Jul. 3	20.51	42,000	1963	Oct. 1	18.47	28,400
	Jun. 23	19.31	32,800		Jul. 15	-	267,000				
	Sep. 7	16.07	20,900		Jul. 16	34.03	-	1964	Jun. 15	20.24	40,000
1943	Dec. 28	17.86	25,000		Aug. 30	15.59	21,600				
	May 12	20.63	44,200		Sep. 14	20.68	48,400	1965	Apr. 5	19.39	35,300
	May 20	25.12	105,000	1952	Nov. 13	15.98	22,400		Jun. 11	15.56	21,700
	Jun. 5	15.06	20,200		Mar. 11	16.04	22,400	1966	Jun. 8	8.16	8,580
	Jun. 25	18.57	27,200	1953	May 13	5.57	4,500	1967	Jun. 12	15.05	20,700
1944	Mar. 22	18.93	31,600	1954	May 4	18.04	27,000		Jun. 26	16.11	22,200
	Apr. 12	20.00	41,300						Jun. 30	17.40	25,200
	Apr. 29	21.85	70,000	1955	May 29	17.11	24,800		Jul. 7	17.99	26,600
	Jun. 22	16.16	22,100		Jun. 28	16.16	22,800	1968	Nov. 2	17.57	26,100
	Aug. 27	15.56	21,100						May 28	18.27	27,800
	Sep. 30	17.00	23,400	1956	Oct. 5	10.98	13,300		Jun. 2	14.94	20,300
1945	Oct. 5	18.50	29,200	1957	May 25	19.71	36,200		Jul. 29	14.79	20,000
	Dec. 16	18.72	30,400		Jun. 3	18.82	29,700	1969	Mar. 25	18.6	28,900
	Mar. 16	15.70	20,800		Jun. 16	20.22	41,000		Jun. 4	16.90	24,000
	Mar. 21	17.90	25,600						Jun. 25	16.80	23,800
	Apr. 23	22.17	73,300	1958	Mar. 10	15.97	22,400		Jul. 6	16.60	23,300
	Jul. 3	17.34	23,800		Mar. 25	17.74	26,300	1970	Oct. 14	17.85	25,800
	Sep. 27	20.22	39,800		Apr. 5	17.05	24,600		Apr. 4	15.53	21,200
1946	Oct. 2	19.22	32,200		Jul. 14	20.05	39,000		Apr. 24	18.43	27,600
	Jan. 8	19.14	31,600		Jul. 18	17.86	26,800		May 2	19.51	32,900
					Jul. 28	14.76	20,000		May 16	18.34	28,000
1947	Apr. 21	18.43	27,600	1959	Jul. 17	19.51	32,200		Jun. 5	17.18	25,000
	Apr. 26	17.94	25,600						Jun. 23	15.86	22,100
	May 22	16.41	22,700	1960	Oct. 6	18.60	28,000		Sep. 24	15.05	20,500
1948	Mar. 24	16.30	23,100		Oct. 13	17.68	25,000	1971	Jan. 5	15.54	21,500
					Apr. 15	15.41	20,500				

a Annual peak only.

ARKANSAS RIVER BASIN
07186000 SPRING RIVER NEAR WACO, MO.

LOCATION.--Lat 37°14'45", long 94°33'55", on line between SE1/4 sec.7 and NE1/4 sec. 18, T.29 N., R.33 W., on left bank on downstream side of left pier of county highway bridge, three-quarters of a mile downstream from Blackberry Creek, 1-1/2 miles east of Waco, and 47.6 miles upstream from mouth.

GAGE.--Digital water-stage recorder. Datum of gage is 833.23 ft above mean sea level, datum of 1929. Prior to Oct. 6, 1934, chain gage, Oct. 6, 1934, to Feb. 22, 1935, wire-weight gage, and Feb. 23, 1935, to July 22, 1964, graphic water-stage recorder, at same site and datum.

REMARKS.--Base for partial-duration series, 13,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 1,164
Total
Noncontributing = 0
Contributing = 1,164
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLQOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	-	22	21,000	1938	May 31	18.50	16,000	1952	Nov. 12	16.28	14,000
					Jun. 16	17.23	14,300		Feb. 2	20.08	20,700
1924	May 29	20.12	18,200	1939	May 22	15.34	11,900	1953	Apr. 24	7.63	3,710
	Jun. 11	19.63	17,500	1940	Jul. 23	11.46	7,700	1954	Sep. 30	8.14	4,160
1925	Sep. 22	10.37	6,550	1941	Apr. 16	17.50	15,400	1955	Jun. 28	17.70	16,000
1926	Sep. 5	16.40	13,400		Apr. 20	24.66	38,800	1956	May 31	7.91	3,680
1927	Oct. 4	16.20	13,100	1942	Oct. 5	24.4	37,300	1957	May 23	19.12	16,400
	Apr. 1	23.58	28,100		Oct. 31	23.66	33,500		May 25	20.34	19,100
	Apr. 10	21.78	22,100	1943	Dec. 27	18.08	16,400		Jun. 2	19.20	16,600
	Apr. 15	20.13	18,400		May 11	22.75	29,900		Jun. 9	24.20	34,500
	Apr. 19	20.05	18,200		May 19	30.94	103,000		Jun. 14	18.52	15,400
	Jul. 23	18.10	15,500		Jun. 4	15.97	13,200	1958	Jul. 12	17.20	13,800
	Aug. 9	20.14	18,400	1944	Apr. 11	16.30	13,700	1959	Mar. 5	15.93	12,200
	Aug. 17	28.6	57,400		Jun. 20	16.60	14,200	1960	Oct. 3	21.35	22,400
1928	Oct. 2	17.26	14,500	1945	Mar. 20	16.18	13,600		May 6	17.07	13,700
	Jun. 10	20.80	19,800		Apr. 14	23.61	33,400	1961	May 1	17.70	15,300
	Jun. 18	16.30	13,300		Apr. 16	24.65	38,300		May 9	25.90	47,900
	Jun. 22	20.54	19,200		Apr. 22	17.38	15,600		May 23	16.25	13,400
1929	Apr. 9	20.57	19,400		May 27	17.33	15,400	1962	Mar. 21	11.38	7,480
	Apr. 20	21.15	20,600		Jun. 6	18.00	16,500	1963	Jun. 15	9.73	5,530
	May 13	22.65	25,000		Jun. 17	16.36	13,900	1964	Jun. 13	19.54	17,300
	May 19	19.78	17,900		Sep. 26	21.98	26,800	1965	Apr. 4	19.54	18,400
1930	Jun. 16	12.96	9,350	1946	Jun. 1	19.1	18,400	1966	May 16	11.97	7,500
1931	May 19	11.92	8,140	1947	Apr. 11	16.16	13,700	1967	Jul. 6	16.21	12,700
1932	Jun. 28	20.88	19,800		Apr. 25	24.6	38,300	1968	Feb. 2	16.08	12,600
1933	Dec. 25	17.84	15,100	1948	Jun. 22	24.63	38,300	1969	Nov. 3	17.71	15,100
	May 14	16.64	13,600		Jun. 26	17.62	15,900		Nov. 16	17.75	15,300
1934	Apr. 15	7.70	3,950		Jul. 26	18.79	17,800		Mar. 24	16.55	13,300
1935	Mar. 12	20.23	18,700	1949	Jan. 24	15.50	13,000	1970	May 1	22.73	29,200
	Jun. 7	18.00	15,300	1950	Aug. 28	24.50	37,800	1971	Sep. 7	17.52	14,800
1936	Sep. 28	15.70	12,500	1951	Feb. 21	19.52	19,200				
1937	Nov. 3	17.57	14,800		Jul. 1	15.95	13,700				
	Jan. 14	16.59	13,500		Jul. 4	16.20	13,900				
	Jun. 10	19.42	17,200		Sep. 10	16.43	14,200				
					Sep. 13	17.74	16,000				

^a Annual peak only.

ARKANSAS RIVER BASIN

07188000 SPRING RIVER NEAR QUAPAW, OKLA.

LOCATION.--Lat 36°56'04", long 94°44'45", in NE 1/4 SW 1/4 sec.5, T.28 N., R.24 E., Ottawa County, near center of span on downstream side of pier of county road bridge, 0.1 mile upstream from Rock Creek, 3 miles southeast of Quapaw, and at mile 13.9. Records include flow of Rock Creek.

GAGE.--Water-stage recorder. Datum of gage is 746.25 ft above mean sea level. Nonrecording gage on right bank at same datum used May 20 to Nov. 16, 1943.

HISTORICAL DATA.--Flood in December 1895 reached a stage similar to that of May 19, 1943, from information by local residents.

REMARKS.--Low and medium flow regulated by Riverton hydroelectric plant 15 miles upstream from station. Effect of regulation probably small for peaks above the base. Base for partial-duration series, 18,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,510
Noncontributing = 0
Contributing = 2,510
Channel slope (ft/mi) = 5.93
Annual precip. (in) = 44.2
Bankful stage (ft) = 20

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 30,800
Q₅ = 57,000
Q₁₀ = 78,600
Q₂₅ = 111,000
Q₅₀ = 138,000
Q₁₀₀ = 168,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.488
Standard deviation = 0.319
Skew = -0.016

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 13	30.0	-	1947	Apr. 26	26.46	53,000	1958	Jul. 12	20.2	30,800
									Jul. 18	16.28	18,700
1940	Jul. 24	11.60	8,480	1948	Jun. 23	30.20	74,600		Jul. 25	21.70	36,000
					Jul. 27	21.85	35,600		Jul. 28	17.2	21,300
1941	Apr. 16	20.40	26,300					1959	Mar. 5	17.14	20,200
	Apr. 20	29.66	63,200	1949	Jan. 24	16.83	20,100				
	Sep. 9	19.11	22,600		Feb. 16	17.16	21,300	1960	Oct. 3	25.35	49,600
1942	Oct. 6	27.92	50,300	1950	Jan. 14	16.19	18,200		Oct. 13	21.80	34,900
	Oct. 17	20.36	25,900		Jul. 10	17.22	20,600		May 6	19.09	25,900
	Oct. 26	18.56	21,400		Jul. 19	18.50	24,000	1961	May 1	17.83	23,800
	Nov. 1	29.31	56,200		Aug. 6	16.88	19,900		May 9	29.12	66,200
	Apr. 9	20.27	25,700		Aug. 29	27.59	54,800		May 23	16.47	19,900
	Jun. 19	17.58	19,100	1951	Feb. 21	21.52	33,800		Sep. 13	17.25	22,000
	Jun. 21	17.58	19,100		Jun. 22	17.97	23,500	1962	Sep. 22	17.66	23,500
	Sep. 7	17.90	19,800		Jun. 30	20.80	31,600				
	Sep. 19	19.22	23,300		Jul. 5	18.62	25,200	1963	Jun. 16	11.59	8,480
1943	Dec. 27	22.18	30,800		Jul. 11	16.83	20,300				
	May 11	28.2	54,500		Sep. 10	17.27	21,600	1964	Apr. 5	17.10	21,700
	May 19	43.4	190,000		Sep. 13	18.23	24,100		Jun. 14	25.03	49,100
	May 24	19.6	24,300	1952	Nov. 12	18.09	24,100	1965	Apr. 4	22.25	37,900
	Jun. 5	18.7	21,800		Nov. 16	16.56	20,000				
1944	Mar. 19	17.27	20,000		Feb. 3	19.72	28,900	1966	Jun. 7	13.73	12,800
	Apr. 11	19.62	26,200	1953	Apr. 24	12.90	11,500	1967	Jun. 29	16.13	18,900
	Jun. 21	22.77	36,100						Jul. 6	16.70	21,200
1945	Mar. 20	19.37	25,600	1954	Sep. 30	12.34	9,400	1968	Feb. 3	18.00	24,400
	Apr. 16	29.60	67,900						Mar. 20	17.04	22,400
	Apr. 22	19.56	28,000	1955	Jun. 28	20.20	29,800		May 25	17.28	22,500
	May 17	18.52	24,600					1969	Nov. 4	17.43	22,800
	May 25	17.77	22,600	1956	Sep. 30	14.10	12,700		Nov. 16	17.44	22,700
	May 28	20.26	30,200						Mar. 25	17.80	24,400
	Jun. 7	22.20	36,600	1957	May 23	21.37	34,900	1970	May 2	24.20	44,300
	Jun. 18	19.17	26,800		May 25	25.40	49,700	1971	Sep. 7	13.34	11,900
	Sep. 25	26.81	54,300		Jun. 3	20.59	32,100				
1946	May 31	22.26	37,000		Jun. 11	27.00	56,000				
					Jun. 15	21.8	36,300				
1947	Apr. 11	19.78	28,600	1958	Mar. 24	16.87	20,400				

ARKANSAS RIVER BASIN

07188140 FLINT BRANCH NEAR PEORIA, OKLA.

LOCATION.--Lat 36°52'25", long 94°41'35", in SW 1/4 SW 1/4 sec.26, T.28 N., R.24 E., Ottawa County, at upstream side of dam, 3.2 miles southwest of Peoria.

GAGE.--Crest-stage gage. Stage-rainfall recorder Sept. 10, 1964, to Nov. 26, 1969.

REMARKS.--Only annual peaks are shown. Log-Pearson calculations based on all annual peaks except 1964 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4.9
Noncontributing = 0
Contributing = 4.9
Channel slope (ft/mi) = 59.5
Annual precip. (in) = 42.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 568 (811)
Q₅ = 876 (1,350)
Q₁₀ = 1,110 (1,850)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.760
Standard deviation = 0.219
Skew = 0.165

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 13	17.42	4,400	1967	Jun. 25	14.1	600	1970	Oct. 12	14.40	825
1965	Apr. 3	14.27	722	1968	May 25	14.87	1,250	1971	Jan. 3	13.79	400
1966	May 15	13.60	285	1969	Jun. 21	13.81	412				

07188500 LOST CREEK AT SENECA, MO.

LOCATION.--Lat 36°50'28", long 94°36'30", in SE 1/4 SE 1/4 sec.36, T.25 N., R.34 W., on left bank on downstream side of Seneca Street Bridge in Seneca, half a mile upstream from Little Lost Creek and 9.5 miles upstream from mouth.

GAGE.--Crest-stage gage. Datum of gage is 839.96 ft above mean sea level, datum of 1929. Water-stage recorder October 1948 to September 1959.

REMARKS.--Base for partial-duration series, 175 cfs. Only annual peaks are shown since 1960.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 42
Noncontributing = 0
Contributing = 42
Channel slope (ft/mi) = 25.2
Annual precip. (in) = 42.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 656
Q₅ = 2,540
Q₁₀ = 5,540
Q₂₅ = 13,500
Q₅₀ = 24,800
Q₁₀₀ = 43,700

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.872
Standard deviation = 0.659
Skew = 0.500

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 16	11.7	-	1955	Mar. 20	1.80	187	1959	Apr. 18	1.50	186
					Jun. 27	1.96	218		May 17	1.56	197
1945	Sep.	11.7	-		Jul. 6	2.29	287		Sep. 30	3.01	555
					Jul. 17	1.90	206				
1949	Feb. 15	2.79	361	1956	May 31	1.49	132	1960	Oct. 2	12.98	20,000
	Apr. 27	2.39	252					1961	May 7	4.67	1,370
	Sep. 13	2.08	178	1957	Mar. 31	2.95	596	1962	Nov. 5	2.24	348
	Sep. 18	2.38	252		Apr. 3	1.98	281	1963	Mar. 8	1.17	128
1950	Jan. 13	2.37	249		Apr. 16	2.79	539	1964	Jun. 12	9.69	8,690
	May 11	2.15	207		Apr. 20	3.59	890	1965	Apr. 2	5.61	2,000
	Jul. 10	2.33	241		May 16	1.72	213	1966	May 16	1.49	113
	Aug. 27	6.78	3,280		May 21	7.54	4,690	1967	Jun. 29	3.55	600
	Sep. 15	2.89	377		May 25	8.21	5,760	1968	May 25	5.17	1,650
1951	Oct. 3	2.67	301		May 29	2.82	539	1969	Mar. 23	2.35	265
	Feb. 20	3.22	488		Jun. 2	2.65	486	1970	Apr. 30	4.43	1,200
	Jun. 30	8.05	4,600		Jun. 9	7.20	4,270	1971	Oct. 8	1.20	110
	Jul. 10	2.48	267		Jul. 1	1.72	208				
1952	May 23	3.18	472	1958	Mar. 23	2.25	361				
1953	Apr. 24	1.77	107		Mar. 30	1.70	210				
1954	Sep. 30	2.04	274		Jun. 21	1.77	230				
1955	Oct. 26	2.33	296		Jul. 7	2.48	337				
					Jul. 25	4.46	1,420				
					Jul. 28	1.71	231				
				1959	Mar. 5	2.36	372				

ARKANSAS RIVER BASIN

07189000 ELK RIVER NEAR TIFF CITY, MO.

LOCATION.--Lat 36°37'50", long 94°35'12", in NE 1/4 sec.22, T.22 N., R.34 W., McDonald County, on downstream side of right pier of bridge on State Highway 43, 0.8 mile downstream from Blackfoot Branch, 2.8 miles upstream from Buffalo Creek, 3 miles southeast of Tiff City, and at mile 15.8.

GAGE.--Water-stage recorder. Datum of gage is 750.61 ft above mean sea level (levels by Corps of Engineers). Sept. 6, 1960, to Aug. 24, 1961, at site 100 ft downstream.

REMARKS.--Base for partial-duration series, 9,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 872
 Noncontributing = 0
 Contributing = 872
 Channel slope (ft/mi) = 8.05
 Annual precip. (in) = 44.0
 Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 19,500
 Q₅ = 41,100
 Q₁₀ = 60,700
 Q₂₅ = 91,600
 Q₅₀ = 120,000
 Q₁₀₀ = 152,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.288
 Standard deviation = 0.587
 Skew = -0.024

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Apr. 12	11.62	9,480	1947	Apr. 25	16.10	21,400	1958	Jul. 26	18.53	26,000
1941	Apr. 16	21.46	48,000	1948	Aug. 15	10.50	8,410	1959	May 18	10.60	8,320
	Apr. 19	28.4	137,000	1949	May 20	11.29	9,860	1960	May 21	12.07	10,900
1942	Oct. 5	11.60	9,480	1950	Jan. 14	15.13	18,500	1961	May 5	17.57	23,200
	Oct. 31	19.69	36,400		May 11	21.72	45,900		May 7	21.48	40,500
	Apr. 9	12.66	11,700		Jul. 20	17.52	24,000		May 20	12.02	10,800
1943	Oct. 31	16.70	23,000		Aug. 6	19.60	33,000	1962	Jun. 3	7.27	3,480
	Nov. 6	12.99	12,400		Aug. 27	11.83	10,500	1963	Oct. 8	11.07	9,170
	Dec. 28	14.35	15,600	1951	Feb. 19	17.00	22,000		Oct. 13	10.97	9,000
	Apr. 12	12.26	11,000	1952	Aug. 22	11.85	10,300	1964	Jun. 14	22.58	48,600
	May 10	23.55	62,400	1953	Mar. 15	10.06	7,270	1965	Apr. 3	18.63	29,000
	May 18	23.60	62,900	1954	May 3	11.06	9,030		Apr. 6	14.89	17,100
1944	Apr. 11	15.36	18,500	1955	Feb. 20	14.69	16,100		Apr. 15	12.89	12,900
	Jun. 21	14.46	16,600		Mar. 21	11.47	9,750	1966	Feb. 10	14.63	15,700
1945	Feb. 22	14.90	18,000	1956	May 15	23.14	49,900	1967	Apr. 14	6.92	2,820
	Mar. 3	17.54	26,200	1957	Apr. 4	18.37	23,900	1968	Jan. 31	14.24	14,100
	Mar. 7	13.57	14,900		May 19	12.13	10,900		Feb. 2	17.68	23,400
	Mar. 19	16.16	21,700		May 21	24.72	70,800		Mar. 20	14.21	14,000
	Mar. 25	13.46	14,700		May 25	21.12	38,000	1969	Dec. 28	13.78	12,500
	Apr. 15	23.5	63,200		Jun. 3	12.85	12,200		Jan. 30	18.14	24,900
	May 10	12.46	12,200		Jun. 10	12.51	11,600		Mar. 24	14.76	14,600
	May 17	15.83	20,500		Jun. 13	11.66	10,200	1970	May 1	21.03	33,200
	May 27	11.20	10,400	1958	Mar. 24	12.75	12,200	1971	Oct. 27	13.90	12,700
	Jun. 18	10.61	9,320		May 3	13.53	13,500				
	Sep. 25	12.84	13,300		May 9	11.20	9,340				
1946	Feb. 14	13.79	15,200		Jul. 12	11.40	9,680				
	May 25	11.22	10,400								
1947	Dec. 10	15.94	20,800								
	Apr. 11	14.29	16,500								

ARKANSAS RIVER BASIN

07189480 WOLF CREEK NEAR GROVE, OKLA.

LOCATION.--Lat 36°37'18", long 94°44'50", in SW 1/4 NW 1/4 sec.28, T.25 N., R.24 E., Delaware County, on upstream side of county road concrete ford, 2.4 miles northeast of Grove.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 26, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 7.21

Noncontributing = 0

Contributing = 7.21

Channel slope (ft/mi) = 17.8

Annual precip. (in) = 43.0

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***

Q₅ = ***

Q₁₀ = ***

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May	-	7,500	1968	Feb. 1	7.52	1,500	1970	Sep. 3	7.45	1,420
1966	May 15	6.94	840	1969	Mar. 23	6.94	840	1971	Oct. 26	7.10	1,010
1967	Apr. 10	7.05	955								

ARKANSAS RIVER BASIN

07189500 NEOSHO RIVER NEAR GROVE, OKLA.
(Below Spring River, known locally as Grand River)

LOCATION.--Lat 36°36'45", long 94°49'25", in SE1/4 sec.27, T.25 N., R.23 E., near left bank on downstream side of former bridge on State Highway 25, 3 miles downstream from Spring Branch, 3-1/2 miles northwest of Grove, 8.2 miles downstream from Elk River, and at mile 105.4.

GAGE.--Nonrecording. Datum of gage is 666.94 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Base for partial-duration series, 23,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 9,969
Noncontributing = 0
Contributing = 9,969
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 24

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
-	-	a33.0	125,000	1929	Nov. 28	15.86	42,300	1935	Nov. 23	14.20	35,100
					Dec. 18	14.45	35,900		Mar. 12	26.10	90,500
1925	Mar. 20	10.0	19,400		Jan. 11	11.70	25,800		Mar. 25	12.32	27,900
					Apr. 9	20.80	64,900		May 20	16.55	45,400
1926	Nov. 9	12.05	26,200		Apr. 15	18.00	51,800		Jun. 8	34.0	130,000
	Sep. 5	23.0	72,100		Apr. 21	29.60	108,000		Jun. 18	20.9	65,300
	Sep. 22	14.50	35,600		May 9	21.38	67,700		Jun. 22	20.0	61,100
					May 13	29.50	107,000		Jun. 27	14.7	37,100
1927	Oct. 1	14.04	34,300		May 19	25.40	87,000				
	Oct. 5	24.64	83,100		Jun. 4	19.20	57,300	1936	Nov. 6	12.50	25,800
	Nov. 15	12.22	27,500		Jun. 8	16.10	43,100		Sep. 28	19.3	57,800
	Jan. 29	13.48	32,300		Jun. 13	13.30	31,600				
	Mar. 21	16.95	47,200		Jun. 20	13.80	33,500	1937	Oct. 8	17.0	47,200
	Apr. 1	23.00	75,400		Jun. 25	11.4	24,800		Nov. 3	20.0	61,100
	Apr. 15	b34.58	133,000		Jul. 8	11.5	25,100		Jan. 15	18.20	52,700
	Apr. 19	25.58	88,000						Jan. 31	18.45	53,600
	Apr. 25	18.26	53,200	1930	Feb. 5	13.10	30,800		Mar. 25	11.05	23,400
	May 8	12.54	28,600		Feb. 8	12.36	28,200		Apr. 22	11.88	26,500
	Jun. 22	21.56	68,700		May 1	18.75	55,500		May 24	11.49	25,100
	Jul. 23	10.98	23,400		May 12	13.75	33,500		Jun. 11	21.88	70,100
	Aug. 4	11.30	24,400		May 18	12.05	26,800		Jun. 16	21.0	65,800
	Aug. 10	20.10	61,600		Jun. 13	12.15	27,500		Jul. 20	11.20	24,100
	Aug. 19	25.10	85,500		Jun. 16	19.7	59,700		Sep. 10	18.0	51,800
1928	Oct. 3	22.00	70,600	1931	May 30	13.30	31,600	1938	Feb. 18	15.0	38,400
	Feb. 7	13.43	32,000						Mar. 31	18.46	54,100
	Mar. 17	12.51	28,600	1932	Nov. 25	13.08	30,800		Apr. 11	12.09	27,200
	Apr. 6	12.46	28,600		Jun. 22	11.80	26,100		May 8	13.75	33,500
	Apr. 23	18.70	55,000		Jun. 28	15.20	39,200		May 30	23.85	79,200
	Apr. 27	11.22	24,100						Jun. 1	20.45	63,000
	Jun. 2	22.62	73,500	1933	Dec. 25	23.28	76,300		Jun. 17	17.40	49,000
	Jun. 11	19.98	61,100		Apr. 22	14.50	36,300				
	Jun. 22	25.87	89,500		May 15	25.9	89,500	1939	May 14	15.6	40,900
	Jun. 29	13.28	31,600						May 23	13.99	34,300
	Jul. 1	12.38	28,200	1934	Sep. 30	10.4	21,300		May 27	12.31	27,900
	Aug. 4	20.98	65,800								

a Floodmark found in 1925; date unknown but may have occurred in April 1912, according to Weather Bureau records at Pensacola.

b This flood probably lower than that in December 1895.

ARKANSAS RIVER BASIN

07189700 HORSE CREEK AT AFTON, OKLA.

LOCATION.--Lat 36°41'50", long 94°57'20", in NE 1/4 NW 1/4 sec.33, T.26 N., R.22 E., Ottawa County, on downstream side of bridge on U.S. Highway 60 at east edge of Afton.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Jan. 28, 1970.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 21.9
Noncontributing = 0
Contributing = 21.9
Channel slope (ft/mi) = 7.70
Annual precip. (in) = 42.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Apr. 20	8.54	740	1968	Mar. 19	11.29	1,570	1970	Apr. 30	11.95	1,920
1967	Jun. 25	9.07	880	1969	Jun. 26	11.78	1,850	1971	Jan. 3	10.25	1,280

07189720 HORSE CREEK TRIBUTARY NEAR AFTON, OKLA.

LOCATION.--Lat 36°41'06", long 94°52'36", in SW 1/4 SE 1/4 sec.31, T.26 N., R.23 E., Ottawa County, upstream of multi-barrel box culvert on U.S. Highway 59, 5.0 miles east of Afton.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 26, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 0.81
Noncontributing = 0
Contributing = 0.81
Channel slope (ft/mi) = 42.6
Annual precip. (in) = 42.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Apr. 20	5.92	85	1968	Feb. 1	7.73	307	1970	Sep. 3	6.42	132
1967	Jul. 25	6.03	94	1969	Jun. 26	6.76	172	1971	Oct. 26	6.57	148

ARKANSAS RIVER BASIN

07190500 NEOSHO RIVER NEAR LANGLEY, OKLA.
(Below Spring River, known locally as Grand River)

LOCATION.--Lat 36°26'15", long 95°02'44", in SE 1/4 sec.27, T.23 N., R.21 E., Mayes County, on hillside of left bank, 0.5 mile upstream from bridge on State Highway 82, 1.5 miles south of Langley, 3.6 miles downstream from Pensacola Dam, 6.3 miles upstream from Big Cabin Creek, and at mile 73.4.

GAGE.--Water-stage recorder. Datum of gage is 607.65 ft above mean sea level (Corps of Engineers bench mark). Prior to Feb. 16, 1940, nonrecording gage at site 0.1 mile upstream at same datum. Feb. 10, 1954, to Sept. 30, 1963, water-stage recorder at site 0.5 mile downstream at same datum. Auxiliary water-stage recorders at sites 2.0 and 3.0 miles upstream at same datum.

HISTORICAL DATA.--Flood of Oct. 31, 1941, was reported by local resident as being higher than that in December 1895.

REMARKS.--Flow completely regulated since March 1940 by Lake O' The Cherokees. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 10,335
Noncontributing = 0
Contributing = 10,335
Channel slope (ft/mi) = ***
Annual precip (in) = ***
Bankful stage (ft) = 27

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun.	35.4	150,000	1949	Feb. 18	19.66	48,100	1960	Oct. 14	20.10	54,400
1940	Mar. 10	5.20	1,280	1950	Aug. 30	20.10	50,400	1961	May 9	35.70	178,000
1941	Apr. 20	35.43	150,000	1951	Jul. 18	36.25	158,000	1962	Jun. 11	12.79	24,000
1942	Oct. 31	36.20	158,000	1952	Nov. 13	22.11	58,700	1963	Oct. 2	15.35	36,100
1943	May 20	45.5	300,000	1953	Apr. 22	11.00	10,200	1964	Jun. 15	23.96	72,300
1944	Apr. 17	24.92	73,300	1954	Jul. 7	9.50	10,700	1965	Apr. 7	23.49	69,600
1945	Apr. 16	34.24	143,000	1955	Jun. 30	15.30	33,900	1966	Oct. 1	a13.75	12,600
1946	Oct. 5	22.20	60,900	1956	Dec. 7	9.50	10,700	1967	Jul. 1	17.60	36,800
1947	Apr. 27	24.73	73,200	1957	May 25	37.6	180,000	1968	May 29	b18.41	30,500
1948	Jun. 27	26.23	80,000	1958	Jul. 13	21.60	62,800	1969	Jul. 3	17.24	34,500
				1959	Jul. 19	15.65	35,000	1970	May 3	27.23	70,400
								1971	Jun. 28	c13.93	12,600

a Occurred Oct. 7, 1965.
b Occurred Mar. 21, 1968.
c Occurred June 7, 1971.

ARKANSAS RIVER BASIN

07190600 BIG CABIN CREEK NEAR PYRAMID CORNERS, OKLA.

LOCATION.--Lat 36°48'06", long 95°09'48", in SE 1/4 SE 1/4 sec. 21, T.27 N., R.20 E., Craig County, on left bank, 60 ft upstream from county road bridge, 1.2 miles west of Pyramid Corners, 5.2 miles west of Bluejacket, and at mile 34.4.

GAGE.--Water-stage recorder. Altitude of gage is 740 ft (from topographic map).

REMARKS.--Base for partial-duration series, 1,500 cfs. Log-Pearson calculations based on all annual peaks except 1966 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 71.1
 Noncontributing = 0
 Contributing = 71.1
 Channel slope (ft/mi) = 8.00
 Annual precip. (in) = 41.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,950 (5,270)
 Q₅ = 5,870 (8,390)
 Q₁₀ = 6,890 (10,600)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.557
 Standard deviation = 0.248
 Skew = -0.972

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 5	13.03	3,080	1967	Jun. 11	11.95	2,340	1969	Apr. 9	12.46	2,870
	Jun. 13	15.52	4,200		Jun. 29	13.32	2,850		Apr. 17	11.51	2,530
1965	Apr. 2	16.45	4,710	1968	Mar. 19	14.85	3,910		Jun. 24	15.01	3,730
	Apr. 5	13.25	3,160		Jul. 2	9.13	1,680		Jun. 27	13.50	3,080
	Jul. 14	9.32	1,540	1969	Nov. 15	12.01	2,690	1970	Oct. 12	12.74	2,640
	Sep. 21	13.68	3,370		Dec. 27	11.64	2,560		Apr. 30	18.02	7,940
1966	May 21	4.01	284		Jan. 29	9.38	1,770		May 15	13.40	2,940
					Mar. 23	12.72	2,970	1971	Jan. 3	8.31	1,220

ARKANSAS RIVER BASIN

07191000 BIG CABIN CREEK NEAR BIG CABIN, OKLA.

LOCATION.--Lat 36°31'00", long 95°08'18", in NW 1/4 SE 1/4 sec.35, T.24 N., R.20 E., Craig County, on downstream side of right pier of county road bridge, 2.3 miles upstream from Mustang Creek, 5 miles southeast of Big Cabin, and at mile 8.5.

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft above mean sea level (levels by Corps of Engineers). Auxiliary water-stage recorder 4.5 miles upstream at same datum.

HISTORICAL DATA.--In 1941, local residents reported that the flood in 1935 was the highest in 48 years.

REMARKS.--Stages for 1935 and 1941-43 are not complete as a partial-duration series. Records for 1948 computed by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 9,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 466
Noncontributing = 0
Contributing = 466
Channel slope (ft/mi) = 5.52
Annual precip. (in) = 41.5
Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 16,000
Q₅ = 30,100
Q₁₀ = 41,700
Q₂₅ = 58,500
Q₅₀ = 72,700
Q₁₀₀ = 88,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 4.197
Standard deviation = 0.535
Skew = -0.112

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun. 6	30.9	41,000	1949	Jun. 14	20.75	11,100	1961	May 5	22.00	12,600
1941	Apr. 19	27.5	27,300	1950	May 11	19.27	9,150	1961	May 9	22.25	21,900
	Jun. 10	27.7	28,000		May 26	20.62	10,800		May 20	26.66	22,200
1942	Oct. 5	31.1	42,000		May 30	20.95	11,400		May 22	21.19	11,600
	Sep. 20	23.5	15,600	1951	Oct. 3	19.98	10,100		Aug. 14	19.18	9,040
1943	May 10	32.0	46,500		Feb. 21	20.33	10,400		Sep. 4	24.77	17,000
	May 18	34.96	63,000		Jun. 30	30.76	40,700		Sep. 14	22.87	14,000
1944	Mar. 16	22.4	13,400	1952	Mar. 11	17.50	6,920	1962	Mar. 21	19.41	9,480
	Apr. 9	25.0	19,300	1953	Apr. 24	19.84	9,670		Sep. 16	19.81	9,960
	Apr. 11	19.8	9,800	1954	May 1	14.13	3,930	1963	Oct. 7	19.57	9,720
1945	Mar. 19	19.8	9,800	1955	Mar. 21	18.30	7,880	1964	Apr. 5	19.30	10,200
	Apr. 13	24.1	17,000	1956	Apr. 15	14.74	4,350		Jun. 14	20.26	12,000
	Apr. 16	23.0	14,500		May 1	19.66	9,860	1965	Apr. 3	25.32	21,700
	May 10	19.3	9,150		May 17	19.40	9,470		Sep. 22	18.92	9,550
	Sep. 25	25.5	20,800		May 21	25.65	18,900	1966	Apr. 24	13.04	3,580
1946	May 31	19.5	9,410		May 25	27.81	25,500	1967	Jun. 29	18.28	8,280
1947	Apr. 11	24.4	17,700		Jun. 2	19.10	9,090	1968	Oct. 31	18.82	9,430
	Apr. 25	28.25	29,900		Jun. 10	21.38	12,200		Jan. 30	19.29	10,200
	Apr. 27	19.8	9,800		Jun. 13	23.05	14,500		Mar. 20	21.82	14,800
	Jun. 23	20.9	11,300	1958	Mar. 24	19.90	10,100	1969	Jan. 30	18.82	9,430
1948	Jun. 23	28.78	33,800		Jul. 13	30.58	33,900		Mar. 24	20.19	11,700
	Jun. 27	21.80	12,500	1959	Mar. 5	20.39	10,500		Apr. 19	18.69	9,240
	Jul. 19	19.73	9,670		Jul. 16	22.24	12,800		Jun. 25	19.32	9,660
	Aug. 13	24.87	19,800		Jul. 23	21.73	12,300		Jun. 28	20.94	12,500
	Aug. 15	22.40	13,400	1960	Oct. 3	34.55	52,000	1970	Jun. 1	27.23	27,900
1949	May 20	21.43	12,000		May 6	19.80	9,760		Jun. 15	18.76	9,340
								1971	Jan. 3	16.81	6,890

a Stage affected by backwater from Neosho River.

ARKANSAS RIVER BASIN

07191220 SPAVINAW CREEK NEAR SYCAMORE, OKLA.

LOCATION.--Lat 36°19'57", long 94°38'24", in NE 1/4 NW 1/4 sec.4, T.21 N., R.25 E., Delaware County, on right bank 1.8 miles upstream from Cherokee Creek, 4.8 miles northeast of Row, 6.5 miles southeast of Sycamore, and at mile 35.0.

GAGE.--Water-stage recorder. Altitude of gage is 875 ft (from topographic map). Prior to Oct. 1, 1961, at site 1 mile upstream (published as "near Row, Okla."), and datum of gage at altitude 880 ft (from topographic map).

HISTORICAL DATA.--Flood of May 19, 1961, reached a stage of 15.61 ft, from floodmark at present site and datum, (discharge, 15,000 cfs, from rating curve extended above 4,000 cfs at former station 1 mile upstream).

REMARKS.--Base for partial-duration series, 2,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 133
Noncontributing = .0
Contributing = 133
Channel slope (ft/mi) = 20.0
Annual precip. (in) = 44.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,630 (3,760)
Q₅ = 7,070 (10,900)
Q₁₀ = 11,500 (19,200)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.394
Standard deviation = 0.534
Skew = -0.288

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Apr. 15	5.75	3,030	1962	Jul. 10	5.74	595	1967	Apr. 14	4.25	242
	May 6	8.33	7,530								
1961	May 5	7.95	6,860	1963	Oct. 7	8.66	1,940	1968	Feb. 1	9.62	2,580
	May 7	6.67	3,420								
	May 19	11.04	15,000	1964	Jun. 17	7.25	1,210	1969	Jan. 30	11.39	4,470
	Jul. 14	6.18	3,640								
	Jul. 23	6.17	3,560	1965	Apr. 3	10.05	2,920	1970	Apr. 30	14.95	12,000
	Aug. 14	10.75	14,400		Apr. 15	11.76	4,240				
				1966	Feb. 10	8.78	2,020	1971	Oct. 27	6.96	1,020

07191260 BRUSH CREEK NEAR JAY, OKLA.

LOCATION.--Lat 36°25'15", long 94°46'10", in NW 1/4 NW 1/4 sec.5, T.22 N., R.24 E., Delaware County, at bridge on State Highway 20, 1.2 miles east of Jay.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Apr. 21, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 16.0
Noncontributing = 0
Contributing = 16.0
Channel slope (ft/mi) = 31.2
Annual precip. (in) = 44.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 3	6.23	550	1968	Feb. 1	5.80	480	1970	Apr. 30	9.15	2,650
1966	Feb. 9	5.98	460	1969	Jan. 30	5.03	258	1971	Oct. 8	6.00	540
1967	Apr. 10	4.17	270								

ARKANSAS RIVER BASIN

07191500 NEOSHO RIVER NEAR CHOUTEAU, OKLA.

LOCATION.--Lat 36°14'13", long 95°13'35", in SE 1/4 SE 1/4 sec.1, T.20 N., R.19 E., Mayes County, at county road bridge between Locust Grove and Pryor, 2.5 miles downstream from Lake Hudson, 5.0 miles upstream from Pryor Creek, and 7.5 miles northeast of Chouteau, and at mile 44.7.

GAGE.--Water-stage recorder. Datum of gage is 551.83 ft above mean sea level (levels by Corps of Engineers). Prior to Apr. 3, 1941, nonrecording gage at bridge on State Highway 33, 5.7 miles downstream, at datum 15.46 ft lower. Auxiliary water-stage recorder since Oct. 4, 1963, at former site and supplemental water-stage recorder since Apr. 6, 1964 at Kerr Dam 2.5 miles upstream.

REMARKS.--Flow regulated since 1940 by Lake O' the Cherokees 32.3 miles upstream, and completely regulated since 1963 by Lake Hudson. Records for 1937-39 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 30,000 cfs. Only annual peaks are shown since 1964.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 11,546
Noncontributing = 0
Contributing = 11,546
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 25

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Apr. 19	44.5	a165,000	1944	May 2	20.89	71,500	1951	Oct. 4	13.15	31,200
1938	Feb. 18	23.40	66,800		May 6	20.79	71,000		Jun. 23	13.40	32,400
	Mar. 31	24.07	71,000		Jun. 22	15.60	43,100		Jul. 1	21.30	74,600
	May 9	16.85	34,900	1945	Mar. 8	13.80	31,700		Jul. 18	31.8	133,000
	May 31	26.18	83,600		Mar. 19	18.12	57,000		Sep. 18	15.88	47,100
	Jun. 10	20.63	52,700		Mar. 25	17.47	53,800	1952	Nov. 14	17.88	57,700
	Jun. 18	20.80	55,700		Apr. 16	35.00	164,000		Nov. 26	13.52	33,000
1939	May 14	21.00	54,700		Apr. 25	22.36	79,500		Feb. 4	14.23	37,100
	May 21	15.76	30,900		May 10	14.47	36,800		Mar. 11	15.52	44,800
	May 23	17.35	37,300		May 20	13.91	32,900	1953	Apr. 24	11.21	20,700
1940	Apr. 29	8.6	6,100		May 30	16.4	48,800		Jun. 23	8.42	9,760
					Jun. 8	13.74	33,600		Jun. 30	13.66	34,100
1941	Apr. 20	35.10	186,000		Jun. 19	14.86	40,700	1954	Jun. 23	8.42	9,760
	Jun. 11	23.92	82,300		Sep. 26	22.90	81,000	1955	Jun. 30	13.66	34,100
	Sep. 10	18.60	57,500	1946	Oct. 6	18.52	59,000	1956	May 15	9.75	14,600
	Sep. 17	13.79	36,000		Oct. 24	13.73	32,700	1957	May 1	18.21	59,200
1942	Oct. 6	30.70	115,000		Jan. 12	15.09	40,300		Jun. 16	30.80	127,000
	Oct. 16	20.51	66,200		Feb. 22	14.73	38,500		Jul. 4	25.32	96,200
	Nov. 1	36.45	205,000	1947	Jun. 4	14.61	37,900	1958	Mar. 25	17.00	53,100
	Apr. 10	22.00	73,100		Apr. 8	14.25	35,600		Mar. 30	15.10	42,500
	Apr. 28	17.60	52,900		Apr. 11	22.53	79,000		Apr. 4	16.18	48,800
	Jun. 13	14.22	37,800		Apr. 20	16.43	48,100		Jul. 13	24.80	93,600
	Jun. 22	18.94	58,800		Apr. 26	24.89	91,000		Jul. 27	18.15	59,200
	Jun. 27	17.10	50,600	1948	May 23	14.04	34,400		Jul. 29	14.85	41,000
	Jul. 12	12.75	31,600		Jun. 23	21.80	73,500	1964	Jun. 15	21.09	81,600
	Sep. 7	16.63	48,300		Jun. 27	25.32	92,500		Apr. 8	18.70	62,400
	Sep. 20	20.22	64,800		Jul. 13	13.65	33,200	1966	Oct. 11	13.40	35,400
1943	Oct. 4	14.62	39,500		Jul. 23	18.50	60,500	1967	Jun. 27	14.02	38,600
	Oct. 31	13.70	34,300	1949	Jul. 31	19.05	63,500	1968	May 29	b14.80	39,000
	Dec. 28	20.34	64,200		Aug. 14	16.09	47,500		Jul. 21	13.77	38,600
	May 11	38.35	214,000		Feb. 18	16.58	50,400	1969	May 4	20.70	55,000
	May 20	45.00	400,000		May 20	14.58	40,100	1971	Jan. 9	c13.73	37,700
	Jun. 7	20.18	63,700	1950	May 29	15.88	47,700				
	Jun. 25	16.96	47,700		Jun. 16	13.47	33,500				
1944	Jun. 29	14.42	33,800		May 11	21.58	76,500				
	Mar. 23	14.43	33,800		Jun. 11	13.05	31,200				
	Mar. 29	13.88	31,000		Jul. 28	15.84	47,100				
	Apr. 11	20.30	68,000		Aug. 11	15.42	44,800				
	Apr. 18	21.09	72,500		Aug. 30	16.62	51,500				
	Apr. 23	15.62	43,100								

a Annual peak only.

b Occurred on Feb. 2, 1968.

c Occurred on July 16, 1971.

07192000 PRYOR CREEK NEAR PRYOR, OKLA.

REMARKS.--Records for 1947-48 furnished by Corps of Engineers and reviewed by Geological Survey. Peak stages prior to 1947 from files of Corps of Engineers. Base for partial-duration series, 2,000 cfs.

LOG-PEARSON TYPE III

Drainage Area (sq mi)

Total	=	229
Noncontributing	=	0
Contributing	=	229
Channel slope (ft/mi)	=	5.52
Annual precip. (in)	=	41.2
Bankfull stage (ft)	=	16

Q	FREQUENCY	DATA (CPS)
Q ₂	=	4,930
Q ₅	=	11,400
Q ₁₀	=	18,100
Q ₂₅	=	30,100
Q ₅₀	=	42,200
Q ₁₀₀	=	***

Mean	= 3.709
Standard deviation	= 0.421
Skew	= 0.230

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 10	20.4	-	1952	Oct. 27	13.85	2,580	1959	Jul. 23	10.69	1,810
	May 18	18.85	11,000		Mar. 11	13.94	2,610	1960	Oct. 3	23.10	32,000
1944	Mar. 16	17.10	4,400	1953	Apr. 24	17.15	4,400		Dec. 27	12.63	2,250
1945	Apr. 14	19.6	17,500	1954	May 1	7.99	1,000		Apr. 17	13.88	2,400
1946	Feb. 19	13.8	2,540	1955	Sep. 30	11.93	2,120		May 6	16.67	3,850
1947	Apr. 25	18.4	8,800	1956	Oct. 5	11.67	2,060	1961	May 20	16.16	3,440
1948	Mar. 23	15.30	2,960		May 15	13.82	2,580		Mar. 31	11.77	2,020
	Jun. 23	18.95	11,600	1957	Apr. 3	11.35	2,030		May 7	17.04	4,400
	Jul. 16	17.41	5,120		Apr. 23	15.63	3,620		Jul. 15	19.62	14,000
	Aug. 15	17.60	5,700		May 2	15.87	3,760		Jul. 23	14.50	2,820
1949	Jan. 23	12.66	2,240		May 17	11.87	2,200		Aug. 15	19.39	12,200
	Feb. 15	16.12	3,240		May 21	18.84	11,400	1962	Sep. 4	17.57	5,050
	May 19	18.32	8,300		May 25	19.41	15,700		Sep. 13	17.91	5,800
	May 24	16.51	3,500		May 30	11.35	2,030		Nov. 2	14.25	2,700
1950	May 11	18.21	7,900		Jun. 1	17.28	4,920		Mar. 22	12.33	2,220
1951	Feb. 20	12.12	2,100		Jun. 15	18.26	7,850		Mar. 25	12.14	2,170
	Jul. 2	16.60	3,800	1958	Jun. 23	15.09	3,400		Apr. 10	15.24	3,160
					Mar. 24	11.77	2,100	1963	Sep. 15	13.61	2,550
									Mar. 5	9.74	1,500

ARKANSAS RIVER BASIN

07192500 NEOSHO RIVER NEAR WAGONER, OKLA.
(Below Spring River, known locally as Grand River)

LOCATION.--Lat 35°56', long 95°16', on south line of sec.22, T.17 N., R.19 E., on downstream side of left pier of bridge on State Highway 51, 5 miles southeast of Wagoner, 6 miles upstream from Fourteen Mile Creek, and at mile 13.7.

GAGE.--Nonrecording prior to Oct. 1, 1939, at site 1-1/4 miles downstream; recording thereafter at last used site. Prior to Dec. 20, 1925, at datum 0.17 ft higher. Oct. 6, 1937, to Sept. 30, 1939, at datum 4.03 ft lower. Datum of last used gage is 495.35 ft about mean sea level, datum of 1929 (Corps of Engineers bench mark). Gage heights after Mar. 14, 1949, computed from stage-relation curve and gage-height record at Fort Gibson damsite.

HISTORICAL DATA.--Flood in December 1896 was reported by local residents as being similar to that of Nov. 2, 1941, and flood in June 1935 as similar to that of Apr. 20, 1941. Flood of Apr. 30, 1912, was 0.1 ft lower than in 1927 at Wagoner Water Works.

REMARKS.--Flow regulated since March 1940 by Lake O' the Cherokees 63.3 miles above station. Records for 1937-39 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 35,000 cfs. Only annual peaks are shown prior to 1938.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 12,307
Noncontributing = 0
Contributing = 12,307
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 34

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Apr. 28	11.27	24,100	1942	Apr. 10	25.19	79,400	1945	May 11	16.77	37,300
					Apr. 25	20.00	49,800		May 30	18.74	48,700
1927	Apr. 16	a39.0	170,000		Apr. 28	23.40	68,100		Jun. 19	17.44	41,100
					Jun. 16	17.77	39,600		Sep. 27	24.97	85,200
1929	May 14	a34.2	122,000		Jun. 22	22.31	63,200				
					Jun. 27	20.00	50,800	1946	Oct. 6	20.78	58,100
1938	Feb. 19	23.40	63,200		Sep. 7	19.16	47,700		Jan. 12	17.76	42,200
	Apr. 1	24.70	70,000		Sep. 20	23.06	68,700		Feb. 19	17.10	38,600
	May 9	17.70	37,400						Jun. 4	16.81	37,600
	May 31	26.41	79,400	1943	Dec. 28	23.53	72,000				
	Jun. 11	21.56	54,500		May 11	39.35	215,000	1947	Apr. 8	17.15	39,600
	Jun. 18	20.70	50,200		May 21	45.2	400,000		Apr. 12	25.70	87,900
1939	May 14	21.10	52,100		Jun. 7	-	70,000		Apr. 20	18.84	48,100
	May 23	17.53	36,600		Jun. 25	-	48,300		Apr. 26	28.17	103,000
									May 23	17.60	41,700
1940	Jun. 28	10.49	10,500	1944	Mar. 23	17.12	35,000	1948	Jun. 28	32.26	99,800
					Apr. 11	22.34	66,500		Jul. 23	23.72	59,400
1941	Apr. 16	17.21	37,000		Apr. 18	23.68	74,400		Aug. 1	24.64	63,600
	Apr. 20	37.65	183,000		Apr. 23	18.48	45,400		Aug. 14	22.89	55,800
	Jun. 11	27.24	88,400		May 2	24.28	77,700				
	Sep. 11	21.61	58,000		Jun. 23	18.02	42,700	1949	Feb. 19	22.06	52,200
1942	Oct. 7	33.38	126,000	1945	Mar. 19	22.58	66,500		May 19	23.9	60,600
	Oct. 17	25.26	80,000		Mar. 25	20.19	53,600		May 29	17.88	47,200
	Oct. 22	20.63	54,000		Apr. 17	36.42	167,000		Jun. 11	15.54	36,400
	Nov. 2	38.78	190,000		Apr. 25	25.0	81,700				

a At site and datum used 1937-39.

ARKANSAS RIVER BASIN

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE, NEAR FORT GIBSON, OKLA.

LOCATION--Lat 35°51'15", long 95°13'45", in SE 1/4 NW 1/4 sec.19, T.16 N., R.20 E., Cherokee County, on left bank 1.1 miles downstream from Fort Gibson Dam, 4.5 miles north of Fort Gibson, and at mile 6.6.

GAGE--Water-stage recorder. Datum of gage is 483.75 ft above mean sea level. May 11, 1950, to Aug. 20, 1951 nonrecording gage and Aug. 21, 1951, to June 11, 1952, water-stage recorder, at site 4.4 miles downstream at datum 8.00 ft lower.

HISTORICAL DATA--Flood in May 1943 reached a stage of 43.0 ft, present site and datum, from high-water profile by Corps of Engineers.

REMARKS--Flow regulated by Lake O' the Cherokees (capacity, 2,197,000 acre-ft) and, since May 1950, by Fort Gibson Lake (Capacity, 1,284,000 acre-ft). Records furnished by Corps of Engineers and reviewed by Geological Survey. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 12,495
Noncontributing = 0
Contributing = 12,495
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 23

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May	a43.0	400,000	1955	Jul. 1	14.10	33,500	1963	Oct. 2	14.20	36,600
1950	May 11	22.10	57,000	1956	Oct. 6	12.01	11,600	1964	Jun. 15	20.32	74,100
	Aug. 3	b22.73	-	1957	May 26	37.60	223,000	1965	Apr. 7	17.90	60,700
1951	Jul. 18	b30.96	-	1958	Jul. 13	20.96	79,000	1966	May 20	10.84	19,600
	Jul. 20	b28.40	133,000	1959	Jul. 18	15.42	37,000	1967	Jun. 30	15.95	47,000
1952	Nov. 17	17.57	46,800	1960	Oct. 19	21.75	84,600	1968	Mar. 25	15.00	43,000
1953	Apr. 24, 25	12.84	25,700	1961	May 12	c27.40	115,000	1969	Jul. 3	16.47	50,700
1954	May 3	10.23	12,100	1962	Nov. 22	d13.90	28,300	1970	May 18	17.11	53,000
								1971	Oct. 28	11.20	-

a From high-water profile

b Affected by backwater.

c Occurred May 9, 1961.

d Occurred Nov. 5, 1961.

ARKANSAS RIVER BASIN

07194500 ARKANSAS RIVER NEAR MUSKOGEE, OKLA.

LOCATION.--Lat 35°46'10", long 95°17'55", in NW 1/4 sec.21, T.15 N., R.19 E., Muskogee County, on downstream side of left pier of bridge on U.S. Highway 62, 1.7 miles downstream from Neosho River, 3.5 miles northeast of Muskogee, and at mile 457.8.

GAGE.--Water-stage recorder. Prior to Feb. 22, 1939, nonrecording. Peak stages prior to March 1935 are adjusted to present site and datum from gage-relation curve and gage-height graphs based on once-daily readings at Oklahoma Gas & Electric Co. gage 1,600 ft downstream. Datum of gage is 471.38 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

HISTORICAL DATA.--Flood in 1833 was probably similar to that in 1943. It was 0.8 ft lower than 1943 flood at Webbers Falls 29 miles downstream.

REMARKS.--Natural flow of stream affected by several large storage reservoirs and power development since about 1940. Base for partial-duration series, 100,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 96,674
Noncontributing = 12,541
Contributing = 84,133
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 35

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1898	May	a39.5	b384,000	1937	Jun. 13	23.25	141,000	1949	Feb. 16	22.62	137,000
					Jun. 18	22.47	133,000		May 20	28.27	208,000
1923	Jun.	34.7	b295,000						Jun. 11	22.97	121,000
				1938	Mar. 30	21.39	108,000				
1926	Sep. 7	23.4	142,000		May 26	24.79	149,000	1950	May 11	23.15	141,000
					May 31	23.78	135,000		Jul. 22	23.46	138,000
1927	Oct. 6	31.4	248,000		Jun. 12	21.11	105,000		Aug. 3	25.10	157,000
	Apr. 3	23.8	145,000						Aug. 8	20.68	107,000
	Apr. 15	36.5	325,000	1939	May 14	18.20	77,800				
	Jun. 21	24.8	157,000					1951	May 22	23.20	144,000
	Aug. 5	24.9	160,000						May 26	22.68	138,000
	Aug. 20	23.2	139,000	1940	Sep. 5	24.68	161,000		Jul. 5	30.83	242,000
									Jul. 17	31.40	240,000
1928	Oct. 4	25.3	163,000	1941	Apr. 21	32.72	248,000		Sep. 16	21.23	111,000
	Apr. 24	20.0	103,000		Jun. 12	29.09	195,000				
	Jun. 14	23.0	137,000		Sep. 11	20.99	100,000	1952	Nov. 17	17.71	83,000
	Jun. 22	27.9	197,000								
	Aug. 5	26.0	172,000	1942	Oct. 7	27.39	173,000	1953	Apr. 25	15.99	66,600
					Oct. 17	25.85	151,000				
1929	Nov. 21	20.0	103,000		Oct. 27	26.00	153,000	1954	May 3	15.83	63,000
	Apr. 10	21.0	114,000		Oct. 31	37.23	304,000				
	Apr. 15	25.1	162,000		Apr. 10	27.42	176,000	1955	May 29	18.16	87,200
	Apr. 23	29.8	222,000		Apr. 22	24.13	138,000				
	May 10	23.0	137,000		Apr. 25	25.78	158,000	1956	Oct. 6	20.28	110,000
	May 15	31.5	249,000		Apr. 28	29.56	211,000				
	May 20	31.4	248,000		Jun. 25	28.97	198,000	1957	May 3	19.86	104,000
	Jun. 5	22.1	128,000						May 20	29.50	248,000
	Jun. 9	22.9	138,000	1943	Dec. 30	21.28	115,000		May 22	31.85	259,000
	Jun. 26	20.1	105,000		May 11	38.32	340,000		May 26	39.03	366,000
					May 21	48.20	700,000				
1930	May 14	20.9	114,000		Jun. 6	22.35	122,000	1958	Mar. 27	20.54	110,000
	Jun. 17	22.7	136,000						Jul. 14	22.66	138,000
1931	Jun. 16	16.0	63,000	1944	Mar. 24	20.91	111,000	1959	Jul. 18	22.04	125,000
					Apr. 12	27.44	187,000				
1932	Nov. 25	19.2	95,300		Apr. 17	26.06	171,000	1960	Oct. 7	34.00	286,000
					Apr. 27	27.64	189,000		May 7	19.62	103,000
1933	Dec. 26	21.5	121,000	1945	Oct. 7	19.68	103,000		May 10	20.62	114,000
	May 16	25.1	165,000		Dec. 8	21.08	116,000				
					Mar. 20	22.99	131,000	1961	May 9	32.70	295,000
1934	Apr. 9	14.9	57,200		Mar. 27	21.29	113,000		May 24	23.05	132,000
					Apr. 18	36.65	326,000		Sep. 15	26.87	183,000
1935	Nov. 23	19.9	103,000		Jul. 3	20.89	115,000	1962	Oct. 13	20.15	101,000
	Mar. 13	23.2	141,000	1946	Oct. 1	30.67	231,000		Nov. 5	23.82	158,000
	May 22	23.6	146,000								
	Jun. 9	30.8	243,000	1947	Apr. 16	27.31	196,000	1963	Oct. 3	15.38	60,300
	Jun. 17	29.8	229,000		Apr. 26	25.19	156,000		Jun. 16	18.87	96,400
	Jun. 22	28.0	204,000		May 18	22.39	128,000	1964	Apr. 8	20.25	109,000
	Jul. 1	21.4	120,000		May 23	22.36	128,000	1965	Oct. 1	11.80	28,900
1936	Sep. 29	19.54	98,000	1948	Jun. 24	30.25	224,000	1966	Jul. 1	17.59	76,400
					Jun. 30	28.62	203,000	1967	May 30	17.12	73,000
1937	Oct. 9	21.55	122,000		Jul. 19	24.10	145,000	1968	Jun. 27	18.72	94,900
	Jan. 16	19.67	100,000		Aug. 15	21.04	112,000	1969	Apr. 30	19.29	92,400
	Feb. 1	20.46	109,000					1970			

a Based on comparative elevations of floods in 1898 and 1927 at site 4 miles downstream.

b Annual peak only.

ARKANSAS RIVER BASIN

07194515 MILL CREEK NEAR PARK HILL, OKLA.

LOCATION.--Lat 35°48'37", long 95°04'07", in NE 1/4 NW 1/4 sec.3, T.15 N., R.21 E., Cherokee County, at multi-barrel culvert on U.S. Highway 62, 6.3 miles southwest of junction with State Highway 82 near Park Hill.

GAGE.--Crest-stage gage. Stage-rainfall recorder Oct. 27, 1964, to Nov. 25, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.57
Noncontributing = 0
Contributing = 2.57
Channel slope (ft/mi) = 107
Annual precip. (in) = 42.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 3	6.98	480	1968	Apr. 19	12.70	1,860	1970	Oct. 12	7.75	652
1966	Apr. 19	6.56	387	1969	Dec. 27	6.34	342	1971	Oct. 8	11.18	1,470
1967	Jun. 25	8.15	744								

07195500 ILLINOIS RIVER NEAR WATTS, OKLA.

LOCATION.--Lat 36°07'48", long 94°34'12", in NE 1/4 sec.18, T.19 N., R.26 E., Adair County, near right bank on downstream side of pier of bridge on U.S. Highway 59, 1.5 miles north of Watts, 4.5 miles downstream from Cincinnati Creek, and at mile 106.2.

GAGE.--Water-stage recorder. Datum of gage is 893.78 ft above mean sea level.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 635
Noncontributing = 0
Contributing = 635
Channel slope (ft/mi) = 8.50
Annual precip. (in) = 45.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 16,300
Q₅ = 34,300
Q₁₀ = 50,000
Q₂₅ = 73,900
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.201
Standard deviation = 0.395
Skew = -0.165

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 15	13.05	8,650	1960	Nov. 4	16.97	15,600	1967	Apr. 14	8.21	3,430
1957	Jan. 22	10.55	5,680		May 6	21.56	31,600				
	Apr. 3	24.73	49,000		May 21	15.08	11,900	1968	Oct. 31	11.70	6,940
	Apr. 23	11.25	6,340		Jul. 25	25.96	68,000		Dec. 15	10.62	5,690
	Apr. 26	10.03	5,020	1961	May 5	17.73	17,600		Dec. 22	11.70	6,940
	May 17	17.82	17,300		May 7	24.32	51,600		Jan. 30	10.91	6,020
	May 23	21.93	31,400		May 20	20.55	27,200		Feb. 2	17.35	16,800
	May 25	21.86	31,400		Jul. 17	9.96	5,070		Mar. 15	10.16	5,270
	Jun. 2	13.30	9,050		Aug. 14	19.10	21,800		Mar. 21	14.24	10,400
	Jun. 10	12.83	8,350						Jul. 2	13.28	9,050
				1962	Apr. 11	10.91	6,020	1969	Nov. 27	12.12	7,430
					Aug. 1	12.97	8,630		Dec. 28	18.23	18,000
1958	Nov. 8	11.18	6,140						Jan. 30	21.90	31,400
	Nov. 18	11.32	6,260						Mar. 24	15.64	12,800
	Feb. 7	10.40	5,210	1963	Oct. 8	9.69	4,770		Apr. 28	11.23	6,350
	Mar. 24	12.13	7,290								
	May 3	13.82	9,790	1963	May 11	8.98	4,100				
	Jul. 12	18.25	18,200					1970	Oct. 13	10.50	5,580
	Jul. 29	11.07	6,020	1965	Apr. 6	14.57	11,100		Apr. 24	12.26	7,640
	Aug. 8	13.15	8,870						May 1	19.37	21,100
1959	Mar. 5	14.92	11,600	1966	Jan. 2	10.30	5,320		Sep. 24	10.35	5,420
	Jul. 23	15.46	12,600		Feb. 9	20.54	26,800				
1960					Apr. 24	13.38	9,200	1971	Oct. 9	11.16	6,350
	Oct. 4	12.06	7,430						Oct. 27	20.48	25,200

ARKANSAS RIVER BASIN

07196000 FLINT CREEK NEAR KANSAS, OKLA.

LOCATION.--Lat 36°11'54", long 94°42'30", in SW 1/4 sec.24, T.20 N., R.24 E., Delaware County, near left bank on downstream side of pier of bridge on State Highway 33, 6 miles southeast of Kansas, 6 miles downstream from Sager Creek, and at mile 2.8.

GAGE.--Water-stage recorder. Datum of gage is 854.59 ft above mean sea level.

REMARKS.--Small diversions above station for irrigation. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 2,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 110
Noncontributing = 0
Contributing = 110
Channel slope (ft/mi) = 19.4
Annual precip. (in) = 44.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,900
Q₅ = 9,820
Q₁₀ = 15,800
Q₂₅ = 26,000
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.584
Standard deviation = 0.483
Skew = -0.087

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 15	8.42	1,370	1960	May 20	8.98	2,720	1965	Apr. 15	8.99	2,930
1957	Apr. 3	10.20	5,300	1961	May 7	11.47	8,780	1966	Feb. 9	8.98	2,930
	May 18	10.12	5,060		May 19	10.19	5,550				
	May 23	9.04	2,660		Jun. 14	9.01	2,930	1967	Jun. 25	8.05	1,210
	May 25	11.52	8,780		Aug. 14	15.66	23,600				
1958	Jul. 12	12.55	12,000	1962	Aug. 1	9.10	3,140	1968	Jan. 30	9.17	3,240
									Feb. 1	9.32	3,980
1959	Apr. 1	9.05	2,680	1963	Oct. 7	7.68	680	1969	Jan. 29	14.20	17,500
	Jul. 23	9.44	3,530	1964	Apr. 5	7.58	580	1970	Apr. 30	10.85	6,960
1960	Nov. 4	9.93	4,880	1965	Apr. 3	8.92	2,720	1971	Oct. 27	8.76	2,430
	Apr. 14	9.85	4,640		Apr. 6	9.07	3,040				
	May 6	12.47	11,700								

07196010 FLINT CREEK TRIBUTARY NEAR FLINT, OKLA.

LOCATION.--Lat 36°12'00", long 94°44'00", in SE 1/4 NW 1/4 sec.22, T.20 N., R.24 E., Delaware County, upstream of multi-barrel box culvert on State Highway 33, 1.8 miles northwest of Flint.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = .94
Noncontributing = 0
Contributing = .94
Channel slope (ft/mi) = 84.2
Annual precip. (in) = 44.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Jul. 20	4.6	18	1968	Jan. 30	4.40	8	1970	May 14	5.75	142
1967	Jun. 25	4.0	1	1969	Jan. 30	4.50	14	1971	-	-	0

ARKANSAS RIVER BASIN

07196380 ILLINOIS RIVER TRIBUTARY NEAR TAHLEQUAH, OKLA.

LOCATION.--Lat 35°58'45", long 94°55'25", in SE 1/4 SE 1/4 sec.2, T.17 N., R.22 E., Cherokee County, at multi-barrel culvert on State Highway 10, 4.9 miles northeast of Tahlequah.

GAGE.--Crest-stage gage and stage-rainfall recorder.

REMARKS.-- Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3.59

Noncontributing = 0

Contributing = 3.59

Channel slope (ft/mi) = 110

Annual precip. (in) = 43.0

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***

Q₅ = ***

Q₁₀ = ***

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 3	5.30	430	1968	Feb. 1	4.52	250	1970	May 10	9.30	1,560
1966	Apr. 23	4.40	225	1969	Jan. 29	7.05	650	1971	Oct. 8	7.45	780
1967	Jun. 25	3.1	33								

ARKANSAS RIVER BASIN

07196500 ILLINOIS RIVER NEAR TAHLEQUAH, OKLA.

LOCATION.--Lat 35°55'17", long 94°55'15", in SE 1/4 sec.26, T.17 N., R.22 E., Cherokee County, near center of span on downstream side of pier of bridge 0.2 mile downstream from U.S. Highway 62, 2.2 miles northeast of Tahlequah, 6.5 miles upstream from Barren Fork, and at mile 55.8.

GAGE.--Water-stage recorder. Datum of gage is 664.14 ft above mean sea level (Corps of Engineers bench mark). Prior to Feb. 23, 1939, nonrecording gage.

HISTORICAL DATA.--Peak stage data for 1916 and 1927 furnished by Corps of Engineers.

REMARKS.--Base for partial-duration series, 7,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 959
Noncontributing = 0
Contributing = 959
Channel slope (ft/mi) = 5.33
Annual precip. (in) = 44.5
Bankful stage (ft) = 11

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 20,300
Q₅ = 44,900
Q₁₀ = 68,200
Q₂₅ = 107,000
Q₅₀ = 142,000
Q₁₀₀ = 185,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.509
Standard deviation = 0.409
Skew = 0.025

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Jan.	26.	a112,000	1945	May 17	12.44	12,700	1957	May 24	17.48	31,500
					Jun. 12	12.88	14,600		May 26	18.17	35,100
1927	Apr.	22.3	a60,000	1946	Feb. 15	12.81	14,000		Jun. 3	13.10	13,500
					May 26	15.99	25,800		Jun. 11	12.34	11,400
1935	-	15.	a18,500	1947	Nov. 8	12.23	12,200	1958	Mar. 25	11.59	8,180
1936	Dec. 7	-	9,000		Nov. 11	12.03	11,600		May 4	12.20	9,440
1937	Jan. 10	11.98	9,580		Dec. 11	13.95	18,000		Jul. 13	16.89	25,800
	Jan. 16	13.65	14,500		Dec. 13	14.36	19,800	1959	Mar. 6	12.20	9,220
	Apr. 22	11.42	7,960		Apr. 12	10.97	9,160		Jul. 24	12.70	10,600
	Sep. 11	11.49	8,220		May 17	12.87	14,700	1960	Oct. 4	13.63	12,800
1938	Feb. 18	19.67	39,400		Jun. 3	11.49	10,500		Nov. 5	14.64	15,600
	Mar. 29	13.19	12,600	1948	Mar. 3	10.45	7,770		May 7	17.19	25,000
	May 24	13.14	12,300		Aug. 10	10.24	7,300		May 22	13.41	11,700
1939	Feb. 21	10.8	6,400		Aug. 13	14.16	19,100		Jul. 26	20.72	48,600
1940	Apr. 12	10.39	5,600		Aug. 15	19.21	41,400	1961	May 8	21.38	54,200
1941	Jan. 2	15.22	20,500	1949	Jan. 26	10.66	8,500		May 21	16.22	25,000
	Apr. 16	13.10	13,300		Jan. 29	10.58	8,250		Jul. 15	11.27	7,280
	Apr. 20	19.56	41,400		Feb. 16	13.29	16,000		Aug. 16	15.90	19,600
1942	Oct. 17	12.57	11,200		Mar. 28	10.44	8,010	1962	Aug. 2	10.99	7,900
	Nov. 1	17.71	30,000		May 20	13.36	16,700	1963	Oct. 9	8.12	3,660
	Apr. 10	11.83	9,200	1950	Jan. 5	10.80	9,240	1964	May 12	7.75	3,180
	Apr. 26	12.13	10,000		Jan. 15	12.70	14,800	1965	Apr. 4	12.07	10,000
	Apr. 29	15.41	20,600		Feb. 14	11.46	11,200		Apr. 7	13.15	12,400
1943	Oct. 31	16.66	25,800		May 10	27.94	150,000	1966	Feb. 11	17.58	26,000
	Nov. 6	13.60	14,200		Jul. 24	10.1	7,980		Apr. 25	12.23	9,670
	Nov. 9	13.64	14,200		Aug. 7	9.87	7,500	1967	Apr. 15	8.67	4,270
	Dec. 28	17.33	29,400	1951	Feb. 21	18.22	38,000	1968	Feb. 3	15.38	17,300
	May 11	25.37	93,200		Mar. 12	10.37	8,470		Mar. 21	13.34	11,900
	May 21	14.53	18,400	1952	Mar. 12	10.10	7,740	1969	Nov. 29	11.77	7,590
1944	Mar. 17	12.72	12,400		Apr. 13	10.24	7,980		Dec. 29	16.05	19,100
	Mar. 21	15.82	23,200	1953	Mar. 15	10.58	8,470		Jan. 31	19.09	31,900
	Apr. 12	11.06	8,300		Mar. 19	10.83	8,470		Mar. 25	14.09	13,500
	May 3	10.86	7,820		May 14	11.21	10,100	1970	May 2	14.50	14,400
1945	Feb. 22	14.85	19,800	1954	May 3	13.13	16,000		May 10	11.44	7,730
	Feb. 27	13.26	14,200	1955	Feb. 21	13.02	13,000	1971	Oct. 10	11.59	7,630
	Mar. 4	15.14	20,800		Mar. 22	13.55	14,800		Oct. 28	16.91	20,300
	Mar. 7	12.54	12,100	1956	May 16	11.40	8,350				
	Mar. 16	11.38	9,290	1957	Apr. 4	21.60	55,400				
	Mar. 20	21.12	51,000		Apr. 24	10.92	8,140				
	Mar. 25	11.38	9,040		May 19	16.16	23,800				
	Mar. 31	11.12	8,540								
	Apr. 15	23.60	68,800								

a Annual peak only.

ARKANSAS RIVER BASIN

07196900 BARON FORK AT DUTCH MILLS, ARK.

LOCATION.--Lat 35°52'48", long 94°29'11", on line between secs.21 and 22, T.14 N., R.33 W., Washington County, near right bank on downstream side of bridge on State Highway 59 at Dutch Mills, 2.2 miles downstream from Fly Creek, and 2.9 miles upstream from Arkansas-Oklahoma State line.

GAGE.--Water-stage recorder. Datum of gage is 986.47 ft above mean sea level.

REMARKS.--Base for partial duration series, 2,000 cfs. Log-Pearson calculations based on all annual peaks except 1963 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 43
Noncontributing = 0
Contributing = 43
Channel slope (ft/mi) = ***
Annual precip. (in) = 44.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 4,990
Q₅ = 10,800
Q₁₀ = 16,000
Q₂₅ = 23,900
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.685
Standard deviation = 0.413
Skew = -0.212

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Mar. 5	9.18	5,630	1961	Sep. 13	7.16	3,040	1968	Oct. 30	6.72	2,030
	Apr. 1	7.30	3,210						Feb. 1	7.46	2,790
	Apr. 19	6.84	2,740	1962	Nov. 2	5.96	1,850		Jul. 1	8.75	4,620
	May 16	7.08	3,020					1969	Dec. 27	7.77	2,900
	Jul. 23	11.02	9,750	1963	Aug. 10	3.04	174		Jan. 29	9.52	5,540
1960	Oct. 3	6.80	2,470	1964	May 11	6.30	1,950	1970	Oct. 12	7.22	2,290
	Nov. 3	9.38	5,990						Apr. 30	-	2,300
	May 5	12.12	12,800	1965	Jan. 2	5.71	1,360		May 10	7.51	2,610
	May 20	6.20	2,220						Sep. 22	7.49	2,590
	Jul. 25	11.67	11,700	1966	Jan. 1	6.99	2,660	1971	Oct. 8	7.45	2,540
1961	May 5	11.00	9,750		Feb. 9	8.89	5,950		Oct. 26	13.24	15,400
	May 7	9.98	7,250		Apr. 23	7.34	3,620		May 10	8.96	4,350
	Jul. 16	11.96	12,600	1967	Apr. 13	5.53	1,140		May 23	8.71	4,130

ARKANSAS RIVER BASIN

07197000 BARON FORK AT ELDON, OKLA.
(Formerly published as Barren Fork at Eldon)

LOCATION.--Lat 35°55'16", long 94°50'18", in SE 1/4 sec.27, T.17 N., R.23 E., Cherokee County, on downstream side of left pier of bridge on State Highway 51, 0.4 mile southeast of Eldon, 6 miles downstream from Tyner Creek, and at mile 8.8.

GAGE.--Water-stage recorder. Datum of gage is 701.14 ft above mean sea level (levels by Corps of Engineers). Prior to Dec. 14, 1948, nonrecording gage at same site and datum.

HISTORICAL DATA.--Peak-stage data for 1945 and 1948 furnished by Corps of Engineers. Flood of Apr. 15, 1945, reached a stage of 23.8 ft, from information by local resident.

REMARKS.--Base for partial-duration series, 6,000 cfs. Log-Pearson calculations based on all annual peaks except for 1963 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 307
Noncontributing = 0
Contributing = 307
Channel slope (ft/mi) = 13.4
Annual precip. (in) = 43.9
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,400
Q₅ = 25,400
Q₁₀ = 33,300
Q₂₅ = 43,700
Q₅₀ = 51,500
Q₁₀₀ = 59,300

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.139
Standard deviation = 0.312
Skew = -0.391

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Apr. 15	23.8	-	1955	Feb. 20	12.42	9,680	1963	Apr. 28	5.75	365
					Mar. 20	14.47	14,800				
1948	Aug. 14	19.8	a34,400		Jun. 6	11.53	7,800	1964	May 11	10.24	5,020
					Jun. 15	14.96	16,200				
1949	Jan. 24	11.21	7,220	1956	May 15	10.70	6,300	1965	Apr. 6	10.72	5,850
	Feb. 14	12.85	10,600								
	Mar. 26	10.62	6,480	1957	Apr. 3	20.33	37,600	1966	Jan. 2	11.60	7,330
	May 19	11.63	8,400		May 17	18.89	31,600		Feb. 9	16.19	19,100
	Jun. 14	10.76	6,660		May 23	18.70	31,100		Apr. 24	14.80	14,300
1950	Jan. 4	11.70	8,200		May 25	17.48	25,600	1967	Apr. 14	10.00	3,640
	Jan. 13	12.27	9,240		Jun. 1	11.98	8,400				
	Feb. 12	11.62	8,000		Jun. 9	15.5	18,000	1968	Feb. 1	14.65	11,500
	May 10	19.51	31,000						Mar. 21	13.23	10,200
1951	Feb. 20	18.65	27,800	1958	Jul. 13	14.75	15,700				
	Jul. 2	11.77	8,400	1959	Mar. 5	12.51	8,610	1969	Dec. 28	15.42	11,800
1952	Apr. 13	10.76	6,480		Jul. 23	14.07	12,200		Jan. 30	17.50	17,200
	May 23	11.03	6,840	1960	Nov. 4	13.50	10,800		Mar. 24	12.99	6,180
1953	Mar. 18	10.82	6,660		May 6	17.18	24,000	1970	Apr. 26	12.08	6,160
	May 12	12.03	9,240		Jul. 25	14.40	13,600		May 1	16.10	17,200
1954	May 2	16.78	21,600	1961	May 7	16.39	20,800		May 10	15.23	11,100
					Jul. 17	12.69	9,180		Sep. 23	13.92	8,180
									Sep. 26	14.51	9,400
				1962	Nov. 3	9.50	3,950	1971	Oct. 27	21.13	36,200

a Annual peak only.

ARKANSAS RIVER BASIN

07198000 ILLINOIS RIVER NEAR GORE, OKLA.

LOCATION.--Lat 35°34'23", long 95°04'97", in NE 1/4 SW 1/4 sec.27, T.13 N., R.21 E., Sequoyah County, on right bank 4.3 miles downstream from Tenkiller Ferry Dam, 4.5 miles northeast of Gore, and at mile 8.5.

GAGE.--Nonrecording prior to Apr. 2, 1926, and May 21, 1949, to Feb. 19, 1952; recording Apr. 15, 1939, to May 20, 1949, and since Feb. 20, 1952. Mar. 25, 1924, to Apr. 1, 1926, at site 2.4 miles downstream at altitude 467 ft. Apr. 15, 1939, to Feb. 19, 1952, at site 1.6 miles upstream at datum 9.60 ft higher than present gage. Datum of present gage is 473.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Except for 16 sq mi, intervening area, flow completely regulated since July 1952 by Tenkiller Ferry Lake. Log-Pearson calculations based on all annual peaks shown for period 1925-51 and represent natural flow conditions prior to regulation. Base for partial-duration series, 17,000 cfs. Only annual peaks shown since 1951.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1,626
Noncontributing = 0
Contributing = 1,626
Channel slope (ft/mi) = 5.30
Annual precip. (in) = 44.0
Bankful stage (ft) = 10

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 36,200
Q₅ = 76,500
Q₁₀ = 115,000
Q₂₅ = 180,000
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.571
Standard deviation = 0.376
Skew = 0.205

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Dec. 21	5.10	6,990	1947	Dec. 12	13.16	30,900	1959	May 10	8.00	4,510
					May 17	10.13	17,800				
1940	Aug. 17	10.20	17,600		Jun. 11	10.53	19,400	1960	Nov. 7	11.79	12,400
1941	Apr. 20	16.18	43,900	1948	Aug. 16	15.09	40,200	1961	Jun. 1	11.88	12,500
1942	Nov. 1	14.95	38,900	1949	Feb. 17	10.18	19,300	1962	Mar. 20	7.68	4,080
	Apr. 28	14.26	35,900		May 21	11.7	24,900				
1943	Nov. 1	12.20	27,100	1950	Jan. 15	10.24	17,300	1963	Feb. 14	7.80	4,290
	Nov. 8	11.17	22,900		May 11	30.2	180,000	1964	Aug. 19	7.96	3,590
	Dec. 29	13.37	32,200	1951	Feb. 22	12.50	27,200	1965	Apr. 15	11.39	9,950
	May 11	24.50	110,000								
	May 21	11.62	21,800	1952	Apr. 14	11.29	10,500	1966	Apr. 30	9.66	6,000
1944	Mar. 20	12.81	29,200	1953	May 12	6.41	1,160	1967	Jan. 19	8.02	3,990
1945	Feb. 23	11.06	22,500	1954	May 2	10.90	9,280	1968	Mar. 24	12.67	11,000
	Mar. 4	11.71	25,000	1955	Jun. 18	9.89	5,880	1969	Feb. 5	12.15	10,400
	Mar. 20	18.30	58,800	1956	Aug. 14	8.93	3,610	1970	May 6	10.56	7,550
	Apr. 15	25.38	118,000	1957	Jun. 9	13.70	18,100	1971	Nov. 2	10.73	8,100
	Jun. 10	16.28	45,900	1958	May 4	12.50	13,700				
1946	May 27	11.83	22,000								
	Jun. 30	10.46	17,100								

ARKANSAS RIVER BASIN

07198500 DIRTY CREEK NEAR WARNER, OKLA.

LOCATION.--Lat 35°33', long 95°18', in SE1/4 sec.32, T.13 N., R.19 E., near center of bridge on U.S. Highway 64, 4 miles north of Warner, 6-1/2 miles upstream from Georges Fork, and 6-1/2 miles downstream from Butter Creek.

GAGE.--Nonrecording. Datum of gage is 485.51 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 2,400 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 227
 Noncontributing = 0
 Contributing = 227
 Channel slope (ft/mi) = 4.96
 Annual precip. (in) = 42.0
 Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 10,200
 Q₅ = 26,000
 Q₁₀ = 42,100
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 3.999
 Standard deviation = 0.493
 Skew = -0.225

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb.	23.0	19,300	1943	Nov. 6	19.50	4,300	1945	Mar. 7	18.70	3,030
					Dec. 27	20.90	10,100		Mar. 16	20.40	7,680
1940	Aug. 19	18.42	2,360		May 10	26.00	42,000		Mar. 19	21.47	12,600
					May 17	18.58	2,590		Apr. 2	18.48	2,710
1941	Jan. 2	18.42	2,360		May 20	19.53	4,300		Apr. 14	24.17	30,800
					May 28	19.07	3,300		Jun. 11	22.00	15,300
1942	Oct. 16	21.20	11,900		Jun. 7	20.65	9,030		Jun. 23	18.33	2,570
	Oct. 31	22.9	17,800								
	Apr. 9	18.84	3,620	1944	Mar. 16	18.60	2,820	1946	Feb. 19	19.10	3,660
	Apr. 25	20.75	10,500		Mar. 20	19.41	4,220		Apr. 30	18.60	2,900
	Apr. 28	19.43	5,600		May 3	18.17	2,460		May 24	20.78	9,340
	May 3	19.50	5,950						Jun. 1	19.48	4,580
	May 5	19.50	5,950	1945	Feb. 22	19.78	5,490		Jun. 27	18.80	3,170
	May 20	20.26	8,750		Mar. 3	20.22	6,910				

a Annual peak only.

ARKANSAS RIVER BASIN

07228000 CANADIAN RIVER NEAR CANADIAN, TEX.

LOCATION.--Lat 35°56'01", long 100°22'06", Hemphill County, near left bank on downstream side of pier of bridge on U.S. Highways 60 and 83, 500 ft downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 miles downstream from Red Deer Creek, 1.6 miles northeast of Canadian, and at mile 433.9.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft above mean sea level. Apr. 21 to Dec. 15, 1938, nonrecording gage, and Dec. 16, 1938, to Sept. 30, 1953, water-stage recorder and nonrecording gages, at site 300 ft upstream at same datum.

HISTORICAL DATA.--Maximum stage known, about 20.0 ft Oct. 2, 1904. Other high stages occurred May 2, 1914, and Oct. 5, 1923 (about 12 ft), and May 31, 1937 (11.2 ft). Elevation of 1904 flood determined by levels to point given by Mr. Charles Peet, observer, in 1924. Information on floods in 1914, 1923, and 1927 furnished by Chief Engineer Office of Panhandle and Santa Fe Railroad.

REMARKS.--Some regulation by Conchas and Ute Lakes in New Mexico, and by Lake Meredith 75 miles upstream in Texas. No large diversions above station. Base for partial-duration series, 8,900 cfs. Only annual peaks shown since 1965. Log-Pearson calculations based on all annual peaks since 1963.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 22,866
Noncontributing = 4,688
Contributing = 18,178
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 10

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 10,400 (14,900)
Q₅ = 20,200 (28,900)
Q₁₀ = 28,500 (40,700)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.021
Standard deviation = 0.339
Skew = 0.091

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	May 16	5.91	9,600	1942	Jun. 8	8.40	44,300	1951	May 17	8.82	65,900
	May 18	6.62	16,400		Jun. 22	6.05	14,900		Jun. 5	7.75	19,900
	Jun. 1	6.75	20,500		Jun. 29	6.89	27,200		Jun. 24	7.60	15,400
	Jun. 9	7.18	34,600		Jul. 4	6.24	14,200		Sep. 7	7.27	9,320
	Jun. 16	6.85	25,100		Aug. 17	6.97	17,000	1952	Aug. 26	7.50	10,700
	Jun. 28	6.40	17,400		Sep. 4	7.75	38,600				
	Jul. 20	7.25	34,600		Sep. 7	6.98	25,200	1953	Jul. 20	7.73	15,600
	Sep. 8	7.50	37,000		Sep. 13	6.35	10,600		Jul. 23	7.61	14,700
					Sep. 20	6.50	9,410				
1939	Oct. 11	7.20	46,600	1943	Jul. 10	6.47	9,990	1954	May 24	7.18	9,050
	Jan. 9	7.56	48,300						Jul. 25	7.54	12,200
	Apr. 6	7.61	53,700	1944	Oct. 16	6.93	10,500	1955	Oct. 9	7.35	18,900
	May 7	6.01	13,100		Oct. 22	6.71	13,900		May 1	7.88	34,400
	Jun. 13	7.06	35,800		Jun. 4	6.90	11,000		May 20	8.43	36,800
	Jun. 22	7.94	68,600	1945	Oct. 2	7.02	8,860		Jun. 8	7.43	17,800
	Jun. 29	7.68	55,600						Jun. 28	9.25	79,000
	Aug. 3	6.70	21,300	1946	May 30	7.50	33,000	1956	May 26	7.25	21,200
	Aug. 5	7.15	31,600		Sep. 12	8.12	49,400	1957	May 25	9.30	77,600
	Aug. 12	6.82	26,700		Sep. 18	6.58	11,900		Jun. 2	6.86	9,640
1940	Nov. 26	6.70	11,400		Sep. 21	6.84	11,200		Jul. 30	6.78	11,300
1941	Apr. 30	7.00	27,400	1947	Oct. 5	7.98	46,500		Aug. 8	7.10	10,400
	May 3	9.60	110,000		Oct. 7	8.26	58,100		Aug. 18	7.40	16,400
	May 21	6.60	14,000		Oct. 11	6.96	23,900		Sep. 14	6.85	9,660
	May 24	8.25	49,100		May 15	6.83	14,800	1958	Jun. 20	7.22	11,703
	May 26	7.17	35,000	1948	Jun. 5	6.77	10,700		Jul. 5	7.16	12,800
	May 31	7.62	47,600		Jun. 7	6.75	10,300		Jul. 7	8.42	37,900
	Jun. 7	7.54	47,200		Jun. 21	7.14	22,200		Jul. 17	7.47	17,300
	Jun. 9	8.55	35,200		Jun. 25	7.01	20,100		Jul. 21	8.42	37,900
	Jun. 16	6.26	9,280		Aug. 15	6.75	14,000		Jul. 28	7.14	14,500
	Jun. 27	8.08	35,200		Aug. 17	6.60	11,400		Aug. 1	7.80	38,100
	Jul. 5	8.15	52,300	1949	May 7	7.18	29,900		Sep. 8	7.48	20,200
	Jul. 12	6.38	9,540		May 17	8.34	69,600	1959	May 5	7.25	15,700
	Jul. 15	7.15	20,600		May 19	6.77	19,800		Jul. 15	7.10	14,400
	Jul. 20	6.80	16,300		Jun. 4	7.62	20,700		Aug. 24	7.20	9,380
	Jul. 25	9.60	114,000		Jun. 8	6.92	9,970	1960	Jun. 8	7.66	21,300
	Aug. 21	7.60	35,700		Jun. 13	6.40	10,100		Jun. 9	7.71	23,500
	Aug. 24	7.91	43,800		Jul. 13	6.85	11,700		Jul. 11	7.59	21,100
	Sep. 23	9.80	122,000		Jul. 16	6.50	8,910		Jul. 6	7.30	14,500
1942	Oct. 1	8.98	91,600	1950	Jul. 8	7.84	24,400		Jul. 8	7.97	23,300
	Oct. 7	6.64	25,000		Jul. 19	7.05	14,800		Jul. 11	8.52	33,200
	Oct. 12	5.78	10,300		Jul. 21	7.65	22,800		Aug. 11	8.20	34,100
	Oct. 22	7.93	60,700		Jul. 24	6.98	13,000		Aug. 18	7.16	18,500
	Oct. 25	6.92	20,000		Jul. 29	7.30	17,700		Aug. 21	6.85	12,600
	Oct. 29	6.46	13,400		Aug. 1	7.46	16,000	1961	Oct. 19	7.31	19,200
	Apr. 20	7.35	21,600		Aug. 29	7.58	19,100		Jun. 7	6.63	10,400
	Apr. 22	6.98	14,800		Sep. 4	6.90	10,400				
	Apr. 24	6.94	18,200		Sep. 12	7.20	13,600				
	Apr. 26	8.08	41,900		Sep. 26	7.08	11,800				
	May 11	6.30	19,800								
	May 19	6.24	20,500								
	Jun. 2	6.55	12,200								

ARKANSAS RIVER BASIN
07228000 CANADIAN RIVER NEAR CANADIAN, TEX. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Aug. 1	9.10	40,400	1965	Jun. 26	7.38	13,200	1969	Oct. 9	7.70	38,900
1963	Sep. 3	6.81	4,830	1966	Jul. 24	6.34	10,600	1970	Sep. 22	7.83	8,820
1964	Jun. 14	6.10	2,890	1967	May 30	7.20	24,200	1971	Jun. 9	6.20	7,800
				1968	Jun. 10	6.55	12,100				

a Occurred June 12, 1965.

07228280 LITTLE ROBE CREEK NEAR OAKWOOD

LOCATION.--Lat 36°01'00", long 98°46'30", in NW 1/4 NW 1/4 sec.26, T.18 N., R.15 W., Dewey County, upstream of multi-barrel box culvert on State Highway 3, 7.0 miles northwest of Oakwood.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 17, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 6.3
Noncontributing = 0
Contributing = 6.3
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Jun. 6	6.14	19	1969	Sep. 10	6.09	17	1970	Sep. 22	4.96	< 1
1968	Sep. 24	6.53	35					1971		<5.00	< 5

07228290 ROUGH CREEK NEAR THOMAS, OKLA.

LOCATION.--Lat 35°48'08", long 98°47'15", in NW 1/4 SW 1/4 sec.3, T.15 N., R.15 W., Custer County, at county road bridge, 4.7 miles northwest of Thomas.

GAGE.--Crest-stage gage. Stage-rainfall recorder since June 26, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 10.4
Noncontributing = 0
Contributing = 10.4
Channel slope (ft/mi) = 41.0
Annual precip. (in) = 25.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = 472 (674)
Q₅ = 1,630 (2,330)
Q₁₀ = 3,160 (4,510)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 2.686
Standard deviation = 0.629
Skew = 0.115

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	4.79	51	1967	Jun. 10	17.80	5,230	1969	May 5	10.26	1,120
1965	Jun. 12	6.85	275	1968	Aug. 18	5.99	160	1970	Sep. 22	6.60	240
1966	Jul. 24	10.97	1,370					1971	Jul. 29	8.90	715

ARKANSAS RIVER BASIN

07228450 DEER CREEK TRIBUTARY NEAR HYDRO, OKLA.

LOCATION.--Lat 35°32'10", long 98°28'50", in NW 1/4 NW 1/4 sec.9, T.12 N., R.12 W., Caddo County, at county road culvert, 5.5 miles east of Hydro.

GAGE.--Crest-stage gage. Stage-rainfall recorder July 28, 1964, to June 20, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.31
Noncontributing = 0
Contributing = 2.31
Channel slope (ft/mi) = 59.0
Annual precip. (in) = 27.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 333 (476)
Q₅ = 642 (988)
Q₁₀ = 919 (1,530)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.533
Standard deviation = 0.331
Skew = 0.202

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	10.15	480	1967	Sep. 14	7.65	220	1969	May 5	6.84	158
1965	Sep. 21	14.54	1,050	1968	Jul. 1	11.54	650	1970	May 29	7.23	189
1966	Sep. 27	6.69	140					1971	Jun. 8	11.23	610

ARKANSAS RIVER BASIN

07228500 CANADIAN RIVER AT BRIDGEPORT, OKLA.

LOCATION.--Lat 35°34'00", long 98°22'45", in SE 1/4 SW 1/4 sec.28, T.13 N., R.11 W., Blaine County, on downstream side of left abutment of Chicago, Rock Island and Pacific Railroad Co. bridge, 1 mile north of Bridgeport, 2.8 miles upstream from Lumpmouth Creek, and at mile 267.1.

GAGE.--Water-stage recorder. Datum of gage is 1,384.25 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1947, at site 0.2 mile downstream at same datum. Oct. 1, 1947, to Sept. 30, 1948, nonrecording gage at present site and datum.

HISTORICAL DATA.--Flood in May 1914 reached a stage of about 19.4 ft; a higher stage probably occurred during flood in October 1904. Peak stages for 1914 and 1915 furnished by Chicago, Rock Island and Pacific Railroad Co.

REMARKS.--Some regulation by Conchas Reservoir in New Mexico since December 1935 and by Lake Meredith in Texas since October 1964. Records 1944-48 computed by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 15,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 25,229
Noncontributing = 4,891
Contributing = 20,428
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 14

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 25,300
Q₅ = 47,100
Q₁₀ = 67,000
Q₂₅ = 99,700
Q₅₀ = 130,000
Q₁₀₀ = 167,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.423
Standard deviation = 0.306
Skew = 0.366

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May 3	19.4	-	1951	May 17	11.74	65,000	1959	Sep. 24	12.10	57,100
1915	Apr.	15.9	-		May 20	10.25	42,000				
					Jun. 7	8.55	20,100	1960	Oct. 2	10.20	26,500
1945	Sep. 28	8.16	15,600		Jun. 10	8.55	15,000		Dec. 19	9.52	16,100
1946	Jun. 29	7.40	7,900	1952	May 23	8.50	9,300		Jun. 10	10.30	17,200
									Jul. 13	11.05	36,200
1947	Oct. 9	9.52	57,000	1953	Aug. 22	9.77	9,900		Aug. 13	9.62	17,200
	Oct. 13	7.50	20,800					1961	Oct. 18	10.20	24,000
	May 12	8.14	26,700	1954	May 24	10.34	16,100		Oct. 21	9.85	20,000
	May 16	8.77	35,000					1962	Nov. 2	9.95	23,400
	May 20	8.26	25,600	1955	May 19	11.04	23,700		Jun. 9	9.64	17,800
1948	Jun. 23	14.60	150,000		May 22	11.63	31,200		Aug. 2	10.57	28,500
				1956	Oct. 4	11.35	30,800		Sep. 17	9.45	17,800
1949	May 7	8.30	18,600					1963	Jun. 23	9.67	17,800
	May 19	9.93	42,000	1957	May 26	11.30	40,600				
	Jun. 5	9.00	21,800					1964	May 10	9.55	16,600
1950	Jul. 9	9.38	21,900	1958	Jun. 21	10.17	23,400				
	Jul. 20	8.73	18,000		Jul. 8	10.73	31,400				
	Jul. 23	9.57	28,000		Jul. 19	9.43	15,600	1970	Apr. 19	9.25	13,800
	Aug. 1	9.98	27,800		Jul. 23	10.10	22,800				
	Aug. 30	8.91	15,300	1959	May 26	10.10	18,800	1971	Jun. 9	10.24	24,500

ARKANSAS RIVER BASIN

07228600 CANYON VIEW CREEK NEAR GEARY, OKLA.

LOCATION.--Lat 35°32'55", long 98°15'50", in SE 1/4 NW 1/4 sec.4, T.12 N., R.10 W., Canadian County, at bridge on U.S. Highway 281 spur, 6.4 miles southeast of Geary.

GAGE.--Crest-stage gage. Stage-rainfall recorder May 5, 1964 to June 26, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 11.8
Noncontributing = 0
Contributing = 11.8
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	12.75	1,900	1967	Apr. 19	8.15	398	1969	Nov. 2	7.67	256
1965	Sep. 21	14.75	6,150	1968	Apr. 3	9.2	820	1970	May 29	5.81	5
1966	Aug. 18	6.35	15					1971	Jun. 3	8.85	650

07228930 WORLEY CREEK NEAR TUTTLE, OKLA.

LOCATION.--Lat 35°17'28", long 97°45'10", in SE 1/4 SW 1/4 sec.32, T.10 N., R.5 W., Grady County, at multi-barrel culvert on State Highway 37, 3.3 miles east of Tuttle.

GAGE.--Crest-stage gage and stage-rainfall recorder.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 11.2
Noncontributing = 0
Contributing = 11.2
Channel slope (ft/mi) = 6.30
Annual precip. (in) = 31.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Jul. 27	12.90	1,760	1967	Apr. 12	13.35	1,900	1970	May 14	12.55	1,660
1966	Sep. 13	10.70	1,140	1968	May 31	8.06	552	1971	Jun. 3	10.60	1,300
				1969	Jun. 14	13.15	1,840				

ARKANSAS RIVER BASIN

07228960 CANADIAN RIVER TRIBUTARY NEAR NEWCASTLE, OKLA.

LOCATION.--Lat 35°17'27", long 97°37'20", in NW 1/4 NE 1/4 sec.4, T.9 N., R.4 W., McClain County, at multi-barrel culvert on State Highway 37, 1.3 miles west of junction with U.S. Highway 62 north of Newcastle.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 3.32
Noncontributing = 0
Contributing = 3.32
Channel slope (ft/mi) = 49.1
Annual precip. (in) = 31.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 14	21.62	1,460	1967	Apr. 12	20.27	1,050	1970	Sep. 22	19.56	550
1966	Jun. 15	21.12	1,350	1968	Aug. 15	18.5	420	1971	Jun. 3	19.78	860
				1969	Jun. 14	18.75	500				

07229000 CANADIAN RIVER NEAR NEWCASTLE, OKLA.

LOCATION.--Lat 35°18', long 97°36', in NW1/4NW1/4 sec.35, T.10 N., R.4 W., near right bank on downstream side of pier of bridge on U.S. Highways 62 and 277, 4 miles north of Newcastle, 9 miles downstream from Worley Creek, and at mile 213.5.

GAGE.--Nonrecording prior to Jan. 31, 1939; recording thereafter. Datum of gage is 1,146.75 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Some regulation by Conchas Reservoir in New Mexico since December 1938 and by Lake Meredith in Texas since October 1964. Base for partial-duration series, 15,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 25,763
Noncontributing = 4,801
Contributing = 20,962
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 12

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	Oct. 3	18.5	-	1941	Jun. 10	6.49	42,600	1942	Apr. 27	7.57	52,700
					Jun. 29	5.90	16,100		Jun. 10	7.31	39,400
1939	Oct. 13	6.50	35,500		Jul. 27	8.39	142,000		Sep. 6	6.60	31,000
	Apr. 8	6.32	35,500		Aug. 23	6.57	52,800		Sep. 9	6.29	25,200
	Jun. 24	6.65	39,700		Aug. 28	5.70	24,300				
	Jul. 2	6.54	56,200		Sep. 25	8.0	150,000	1943	Oct. 19	6.05	20,000
1940	Jul. 3	4.57	5,300	1942	Oct. 2	7.10	53,400	1944	Apr. 10	8.17	66,000
					Oct. 6	5.62	19,900		Jun. 13	7.00	31,500
1941	May 4	9.2	200,000		Oct. 15	5.60	23,400				
	May 21	6.46	42,600		Oct. 24	7.19	54,500	1945	Apr. 15	6.00	19,500
	May 25	6.58	57,500		Apr. 19	5.84	20,800		Jun. 10	6.29	21,600
	May 28	5.06	16,300		Apr. 25	6.49	37,200		Jul. 10	6.10	15,400
	Jun. 2	5.69	33,400						Sep. 29	6.50	30,000

ARKANSAS RIVER BASIN

07229100 CANADIAN RIVER NEAR NOBLE, OKLA.
(Formerly published as "near Purcell")

LOCATION.--Lat 35°04'55", long 97°22'52", in N 1/2 sec. 14, T.17 N., R.2 W., McClain County, on right bank 80 ft upstream from the Atchison, Topeka, and Santa Fe Railway Co. bridge, 3.6 miles upstream from Chouteau Creek, 3.8 miles south of Noble, and at mile 190.8.

GAGE.--Water-stage recorder. Datum of gage is 1,045.29 ft above mean sea level. Oct. 1, 1958, to June 30, 1961, water-stage recorder at site 5.9 miles downstream at datum 28.15 ft lower (published as "near Purcell"). Oct. 1, 1963, to Feb. 28, 1964, nonrecording gage at present site and datum.

HISTORICAL DATA.--Floods in 1904 and 1937 reached a stage of about 18.0 ft, and flood of 1914 reached a stage of 16.9 at present site and datum, from information by Corps of Engineers.

REMARKS.--Occasional slight regulation by Conchas Reservoir in New Mexico since December 1938, and by Lake Meredith in Texas since October 1964. Base for partial-duration series, 8,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 25,911
Noncontributing = 4,801
Contributing = 21,110
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Oct. 3	10.99	22,000	1961	Oct. 19	10.96	18,200	1967	Jun. 12	6.44	9,860
	Dec. 20	9.36	10,000		Oct. 21	10.52	14,000				
	May 5	9.30	9,700					1968	May 14	7.2	20,200
	May 20	9.80	12,700	1964	May 11	6.88	15,500	1969	May 5	7.00	20,900
	Jun. 11	10.00	18,900								
	Jul. 13	11.20	26,000	1965	Jun. 29	6.65	12,900				
	Aug. 14	10.30	13,100		Sep. 22	8.46	35,500	1970	Sep. 23	6.77	11,800
	Aug. 21	10.10	13,700	1966	Sep. 14	6.40	9,460	1971	Jun. 10	6.35	10,400
				1967	Apr. 12	6.70	12,900				

07229220 WALNUT CREEK NEAR BLANCHARD, OKLA.

LOCATION.--Lat 35°07'20", long 97°42'15", in NW 1/4 SW 1/4 sec.35, T.8 N., R.5 W., Grady County, at culvert on U.S. Highway 62, 2.0 miles west of junction with State Highway 76 southwest of Blanchard.

GAGE.--Crest-stage gage. Stage-rainfall recorder Nov. 3, 1966, to June 3, 1971.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 1.26
Noncontributing = 0
Contributing = 1.26
Channel slope (ft/mi) = 70.8
Annual precip. (in) = 32.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 378 (540)
Q₅ = 652 (1,000)
Q₁₀ = 853 (1,420)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.564
Standard deviation = 0.293
Skew = -0.263

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Nov. 20	16.9	887	1967	Apr. 12	15.91	640	1969	May 6	14.88	624
1965	Sep. 20	13.86	495	1968	Sep. 4	10.45	150	1970	Sep. 22	12.13	313
1966	Jun. 15	11.64	264					1971	Jun. 3	10.44	150

ARKANSAS RIVER BASIN

07229300 WALNUT CREEK AT PURCELL, OKLA.

LOCATION.--Lat 34°59'56", long 97°22'00", in NW 1/4 NW 1/4 sec.13, T.6 N., R.2 W., McClain County, on downstream side of right bank pier of bridge on U.S. Highway 77, at south edge of Purcell, and at mile 1.0.

GAGE.--Water-stage recorder. Datum of gage is 1,017.68 ft above mean sea level (Oklahoma State Highway Department bench mark).

REMARKS.--Base for partial-duration series, 1,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 202
Total = 202
Noncontributing = 0
Contributing = 202
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Apr. 25	8.32	3,120	1968	May 7	7.43	1,530	1969	Jun. 14	11.79	6,840
	Jun. 16	9.88	6,900		May 25	9.49	3,810				
	Aug. 22	8.04	2,520		Jun. 7	8.49	2,700	1970	May 15	8.72	3,060
					Jul. 1	9.53	3,860		May 29	9.28	3,800
1967	Apr. 12	13.42	10,000		Aug. 13	9.18	3,440		Sep. 23	15.35	17,200
	Apr. 20	8.89	2,110								
1968	Apr. 19	7.47	1,570	1969	Oct. 9	8.44	2,340	1971	Oct. 8	8.6	2,090
					Jan. 29	8.23	2,330		Jun. 3	14.14	11,900
					May 7	13.25	9,700				

07229420 JULIAN CREEK TRIBUTARY NEAR ASHER, OKLA.

LOCATION.--Lat 34°59'09", long 96°58'48", in SW 1/4 SW 1/4 sec.15, T.6 N., R.3 E., Pottawatomie County, at multi-barrel culvert on State Highway 39, 3.4 miles west of Asher.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 2.28
Total = 2.28
Noncontributing = 0
Contributing = 2.28
Channel slope (ft/mi) = 35.0
Annual precip. (in) = 37.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 623 (891)
Q₅ = 1,410 (2,170)
Q₁₀ = 1,930 (3,220)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 2.694
Standard deviation = 0.535
Skew = -1.145

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	13.76	500	1967	Apr. 12	14.90	840	1969	Sep. 16	12.04	150
1965	Nov. 17	13.83	530	1968	May 13	18.14	2,000	1970	Jul. 12	15.05	900
1966	Aug. 11	11.22	45					1971	Oct. 8	16.36	1,330

ARKANSAS RIVER BASIN

07230000 LITTLE RIVER BELOW LAKE THUNDERBIRD, NEAR NORMAN, OKLA.
(Formerly published as "below Hog Creek, near Norman, Okla.)

LOCATION.--Lat 35°13'14", long 97°13'00", in NE 1/4 SE 1/4 sec.29, T.9 N., R.1 E., Cleveland County, at right bank of outlet channel, 170 ft upstream from State Highway 9, 1,200 ft downstream from Lake Thunderbird, 1 mile upstream from Prairie Creek, 13 miles east of Norman, and at mile 96.2.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 965.62 ft above mean sea level. Prior to Nov. 28, 1956, nonrecording gage 800 ft downstream at same datum. Nov. 28, 1956, to Oct. 14, 1964, water-stage recorder at site 800 ft downstream at same datum. Oct. 15, 1964, to Sept. 1, 1965, nonrecording gage at site 170 ft downstream at same datum.

REMARKS.--Flow completely regulated by Lake Thunderbird since March 1965. In prior years occasional small diversions above station for irrigation. Flood-frequency data determined from graphically fitted frequency curve for period prior to 1965 and represents natural flow conditions prior to regulation. Base for partial-duration series, 2,700 cfs. Only annual peaks are shown since 1965.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 257
Noncontributing = 0
Contributing = 257
Channel slope (ft/mi) = 5.50
Annual precip. (in) = 33.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 6,180
Q₅ = 10,800
Q₁₀ = 14,400
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Apr. 5	8.90	2,640	1958	Jun. 20	13.43	6,739	1963	Apr. 26	10.00	5,200
1954	Apr. 30	8.82	2,610	1959	Jul. 1	10.98	6,000	1964	May 11	10.80	6,200
1955	May 19	13.45	6,010		Jul. 15	7.72	2,840				
1956	Oct. 3	12.6	5,360		Sep. 3	8.20	3,290	1965	Nov. 20	a4.08	339
	Oct. 5	10.55	3,840		Sep. 25	9.60	4,600				
1957	Apr. 23	13.03	5,930	1960	Oct. 3	9.52	4,550	1966	Jun. 15	3.91	41
	May 13	13.92	6,760		Apr. 14	7.50	2,950	1967	Apr. 12	4.31	40
	May 18	12.76	5,690		May 5	11.97	7,200	1968	Apr. 19	5.52	-
	May 25	28.85	34,600		May 20	15.85	11,700	1969	Jan. 29	5.71	-
	Jun. 4	9.28	2,800		Jul. 23	15.10	10,800	1970	Sep. 23	7.05	-
	Jun. 15	21.44	17,800	1961	May 17	7.15	2,710	1971	Oct. 8	5.58	-
	Jun. 22	15.50	8,580		Sep. 13	8.95	4,010				
	Sep. 14	13.28	6,100	1962	Jun. 2	7.94	3,400				
					Jun. 9	11.35	6,600				

a Occurred Nov. 19, 1964.

ARKANSAS RIVER BASIN

07230500 LITTLE RIVER NEAR TECUMSEH, OKLA.

LOCATION.--Lat 35°10'25", long 96°55'55", near northwest corner sec.18, T.8 N., R.4 E., Pottawatomie County, on downstream side of center pier of bridge on U.S. Highway 177, 1.5 miles downstream from Dance Creek, 5 miles south of Tecumseh, and at mile 77.2.

GAGE.--Water-stage recorder. Datum of gage is 898.52 ft above mean sea level (levels by Corps of Engineers).

HISTORICAL DATA.--Flood in 1932 reached a stage of 25.58 ft (discharge 60,000 cfs, calculated from rating extension), from floodmark, furnished by Corps of Engineers.

REMARKS.--Flow regulated since March 1965 by Lake Thunderbird 19.2 miles upstream. Records 1944-48 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs. Log-Pearson calculations based on all annual peaks shown for period 1932-64, and represent natural flow conditions prior to regulation.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 456
 Total
 Noncontributing = 0
 Contributing = 456
 Channel slope (ft/mi) = 4.30
 Annual precip. (in) = 35.0
 Bankful stage (ft) = 11

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 8,840
 Q₅ = 17,000
 Q₁₀ = 26,100
 Q₂₅ = 44,600
 Q₅₀ = 65,700
 Q₁₀₀ = 95,700

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 4.009
 Standard deviation = 0.305
 Skew = 1.260

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Jun.	25.58	60,000	1950	Jul. 20	10.90	5,790	1960	Oct. 4	13.77	7,480
					Jul. 22	11.04	5,900		Nov. 3	12.36	5,550
1944	May 23	13.35	6,120						Apr. 29	13.97	7,800
	May 27	14.06	6,720	1951	May 1	12.93	6,370		May 6	14.04	7,800
					May 18	12.09	5,680		May 20	15.24	9,400
1945	Mar. 11	12.62	5,860						Jul. 23	15.61	10,100
	Mar. 15	13.88	6,670	1952	May 23	12.11	6,140		Aug. 21	14.15	7,160
	Mar. 19	13.87	6,090								
	Apr. 14	18.00	25,100	1953	Jul. 20	12.25	6,280	1961	Jul. 21	12.85	5,860
	May 12	12.70	6,090								
	Jun. 12	14.04	8,230	1954	Oct. 23	11.25	5,060	1962	Jun. 2	12.19	5,190
	Jul. 10	14.13	7,890		Apr. 30	12.82	6,310		Jun. 9	13.2	6,340
	Sep. 30	16.06	15,200	1955	May 19	14.87	8,700	1963	Apr. 27	12.78	5,860
1946	May 23	12.54	5,530					1964	Apr. 4	13.03	6,340
	May 29	13.07	6,080	1956	Oct. 5	12.00	5,640		May 11	15.05	8,920
	Jun. 29	13.38	6,380								
1947	Dec. 11	12.57	5,690	1957	Apr. 23	12.77	6,010	1965	Nov. 17	13.95	7,400
	Apr. 14	13.43	6,620		May 13	13.87	7,640				
	Apr. 24	11.86	5,040		May 17	14.74	9,200	1966	Aug. 31	13.32	6,220
	May 12	12.78	5,900		May 25	18.84	32,400				
	May 16	14.75	10,300		May 31	12.75	6,010	1967	Apr. 12	13.90	5,590
	Jun. 1	14.77	10,300		Jun. 4	12.62	5,770				
	Jun. 23	14.80	10,300		Jun. 15	14.95	9,800	1968	May 13	14.68	6,660
1948	Jun. 21	16.43	17,000		Jun. 23	13.34	6,700		May 25	13.29	5,130
	Jul. 23	13.14	6,240		Sep. 15	14.68	9,200				
					Sep. 21	13.05	6,250	1969	Jan. 29	14.10	5,960
1949	May 18	19.68	32,300	1958	Jun. 21	13.05	7,220		May 7	13.76	5,400
	May 26	11.86	5,210	1959	Sep. 25	12.66	5,890	1970	Jul. 12	13.25	5,060
	Jun. 10	15.10	11,200						Sep. 23	16.49	8,190
1950	May 11	17.20	20,600	1960	Oct. 2	14.60	9,000	1971	Oct. 8	15.27	6,870

ARKANSAS RIVER BASIN

07230800 SALT CREEK NEAR DEWRIGHT, OKLA.

LOCATION.--Lat 35°03', long 96°40', in SE 1/4 sec.27, T.7 N., R.6 E., near right bank on downstream side of pier of bridge on State Highway 99, 2.5 miles south of Dewright, 8 miles northeast of Konawa, and at mile 7.3.

GAGE.--Water-stage recorder. Datum of gage is 800.31 ft above mean sea level, datum of 1929 (State Highway Department bench mark).

HISTORICAL DATA.--Maximum stage known, 21.90 ft June 17, 1937, from floodmarks.

REMARKS.--Base for partial-duration series, 2,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 210
 Total = 210
 Noncontributing = 0
 Contributing = 210
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jun. 17	a 21.90	-	1960	Apr. 14	13.86	4,160	1962	Apr. 22	11.68	2,000
1960	Oct. 2	14.3	4,880		May 19	15.38	7,900				
	Oct. 4	15.27	7,150		Jul. 24	13.90	4,160	1963	Apr. 27	14.37	4,990
	Nov. 4	14.00	4,300	1961	May 30	13.68	4,480		Apr. 26	9.27	1,230
	Dec. 27	12.60	2,660		May 5	13.92	4,990				
	Jan. 12	13.17	3,240		Aug. 16	12.60	2,660	1967	Apr. 12	12.94	2,980
					Sep. 13	12.58	2,660				

a Annual peak only.

ARKANSAS RIVER BASIN

07231000 LITTLE RIVER NEAR SASAKWA, OKLA.

LOCATION.--Lat 34°59'02", long 96°33'01", in NE 1/4 sec.22, T.6 N., R.7 E., Seminole County, near left abutment on downstream side of county road bridge, 2.8 miles northwest of Sasakwa, 8.7 miles downstream from Salt Creek, and at mile 24.1.

GAGE.--Water-stage recorder. Datum of gage is 749.21 ft above mean sea level (levels by Corps of Engineers). Prior to Apr. 11, 1946, nonrecording gage at same site and datum.

HISTORICAL DATA.--Corps of Engineers reports indicate that at site 5 miles downstream the flood of June 6, 1932, was 2.3 ft higher than that in May 1929, and that major floods occurred in May 1898, May 1908, and October 1923.

REMARKS.--Flow regulated by Lake Thunderbird since March 1965. Log-Pearson calculations based on all annual peaks shown for period 1939-64 and represent natural flow conditions prior to regulation. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 865
Noncontributing = 0
Contributing = 865
Channel slope (ft/mi) = 3.66
Annual precip. (in) = 36.3
Bankful stage (ft) = 21

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,000
Q₅ = 26,200
Q₁₀ = 35,300
Q₂₅ = 47,500
Q₅₀ = 57,000
Q₁₀₀ = 66,600

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.123
Standard deviation = 0.344
Skew = -0.394

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Jun.	31.2	33,000	1950	Jul. 23	25.07	11,000	1959	Jun. 27	18.34	6,110
					Jul. 26	20.64	5,480		Sep. 26	19.17	6,810
1943	May 11	30.8	27,100		Sep. 16	23.01	7,650	1960	Oct. 4	26.70	18,600
1944	May 28	25.54	11,700	1951	May 20	19.40	4,770		Nov. 5	17.64	5,620
1945	Mar. 4	23.00	6,510	1952	Apr. 23	22.88	8,150		Jan. 12	17.29	5,430
	Mar. 16	27.00	16,000						Apr. 15	17.04	5,250
	Mar. 20	25.70	12,300	1953	Jul. 21	26.41	15,400		May 1	17.27	5,430
	Apr. 15	32.50	39,000						May 8	16.67	5,070
	Jun. 13	25.6	12,000	1954	Oct. 24	24.31	10,200		May 19	25.08	13,500
	Jun. 18	22.9	6,260		Oct. 27	20.35	6,090		Jul. 26	16.50	5,430
	Jun. 23	23.3	6,900		May 2	25.20	12,200	1961	Mar. 30	16.74	6,000
	Jul. 11	23.2	6,730		May 13	18.55	5,010		May 5	15.90	5,440
1946	Oct. 1	27.50	16,000	1955	May 21	24.29	10,200	1962	Apr. 23	11.70	3,120
	Mar. 28	23.55	7,460					1963	Apr. 27	17.38	7,250
	Jun. 1	23.30	7,120	1956	Oct. 7	13.51	2,630	1964	May 11	16.56	6,610
	Jul. 1	22.37	5,990					1965	Nov. 19	16.48	6,530
1947	Dec. 13	23.56	7,460	1957	Apr. 3	19.87	6,270	1966	Aug. 31	8.66	1,860
	Apr. 16	25.39	11,500		Apr. 22	21.59	7,320	1967	Apr. 13	20.52	10,100
	Apr. 26	21.62	5,080		May 18	29.80	26,500	1968	May 14	25.89	15,800
	May 17	25.67	12,300		May 22	22.90	8,360	1969	May 17	14.27	3,940
	May 21	24.36	9,040		May 27	28.71	22,400				
	Jun. 2	26.60	14,800		Jun. 6	23.43	8,870	1970	Apr. 19	17.93	7,680
	Jun. 25	23.93	8,010		Jun. 10	20.38	6,570		Apr. 30	16.22	6,230
1948	Jun. 24	30.63	28,000		Jun. 15	23.10	8,550		Sep. 23	18.40	7,950
	Jul. 4	23.78	7,300		Jun. 17	21.51	7,250	1971	Oct. 9	24.4	15,600
	Jul. 24	23.15	6,600		Jun. 24	23.21	8,650		Oct. 23	23.2	13,800
1949	May 2	21.38	5,160		Jul. 25	18.27	5,380		Oct. 26	19.5	9,250
	May 19	30.80	29,800		Sep. 16	19.62	6,090		Jul. 1	15.05	5,370
	Jun. 12	24.39	9,040		Sep. 22	19.56	6,090				
1950	May 11	33.48	44,600	1958	Jun. 22	18.92	6,390				
	Jul. 11	21.03	5,760		Jun. 25	18.65	6,090				
	Jul. 19	22.79	7,420		Aug. 21	28.24	23,100				
				1959	May 10	22.10	9,240				

a Annual peak only.

ARKANSAS RIVER BASIN

07231280 ARBECA CREEK NEAR ALLEN, OKLA.

LOCATION.--Lat 34°54'10", long 96°23'20", in NE 1/4 SE 1/4 sec.18, T.5 N., R.9 E., Hughes County, at multi-barrel culvert on State Highway 12, 1.7 miles northeast of Allen.

GAGE.--Crest-stage gage. Stage-rainfall recorder since August 14, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2.26
Noncontributing = 0
Contributing = 2.26
Channel slope (ft/mi) = 26.6
Annual precip. (in) = 40.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 640 (800)
Q₅ = 1,490 (2,130)
Q₁₀ = 2,180 (3,630)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.761
Standard deviation = 0.479
Skew = -0.569

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	9.0	1,330	1967	Apr. 12	2.65	140	1969	Apr. 17	5.63	600
1965	May 26	5.14	510	1968	Jun. 25	6.64	800	1970	Oct. 12	7.79	1,040
1966	Apr. 22	2.35	100					1971	Oct. 8	13.86	2,600

07231320 LEADER CREEK NEAR ATWOOD, OKLA.

(Previously published as Leader Creek tributary)

LOCATION.--Lat 34°57'10", long 96°20'40", in NW 1/4 NW 1/4 sec.34, T.6 N., R.9 E., Hughes County, at multi-barrel culvert on State Highway 12, 0.7 mile southwest of Atwood.

GAGE.--Crest-stage gage. Stage-rainfall recorder since June 7, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 0.72
Noncontributing = 0
Contributing = 0.72
Channel slope (ft/mi) = 75.2
Annual precip. (in) = 40.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 442 (552)
Q₅ = 934 (1,330)
Q₁₀ = 1,360 (2,270)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.637
Standard deviation = 0.394
Skew = -0.140

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	13.19	685	1967	Apr. 12	9.13	185	1969	May 16	15.83	1,220
1965	May 26	9.94	265	1968	Jun. 25	12.8	450	1970	Oct. 12	11.38	435
1966	Apr. 22	8.24	105					1971	Oct. 8	16.10	1,470

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OKLA.

LOCATION.--Lat 34°58'32", long 96°14'24", in NE 1/4 SW 1/4 sec.22, T.6 N., R.10 E., Hughes County, near left bank on downstream side of pier of bridge on U.S. Highway 75, 0.5 mile northeast of Calvin, 2.5 miles upstream from Shawnee Creek, 8.5 miles downstream from Little River, and at mile 93.9.

GAGE.--Water-stage recorder and nonrecording gage. Datum of gage is 684.72 ft above mean sea level. Prior to 1935, nonrecording gage at site 0.8 mile upstream at datum 2.00 ft higher. From 1935 to Aug. 12, 1944, nonrecording gage at present site and datum.

REMARKS.--Occasional slight regulation by Conchas Reservoir in New Mexico since December 1939, and by Lake Meredith in Texas since October 1964. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 25,000 cfs. Only annual peaks are shown prior to 1939. Log-Pearson calculations based on all annual peaks except 1906 and 1966.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 27,952
Noncontributing = 4,801
Contributing = 23,151
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 65,600
Q₅ = 107,000
Q₁₀ = 140,000
Q₂₅ = 186,000
Q₅₀ = 224,000
Q₁₀₀ = 265,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.821
Standard deviation = 0.251
Skew = 0.108

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	Oct. 4	20.5	-	1932	Jun. 6	8.5	-	1946	Jan. 5	6.60	29,200
1906	Aug. 7	21.0	a128,000	1933	Aug. 30	10.6	-		May 29	8.36	39,300
1907	Aug. 27	5.8	-	1934	Apr. 5	7.0	-		May 31	7.94	34,900
1908	May 24	17.2	-	1935	Sep. 1	9.0	-	1947	Oct. 11	9.68	49,300
1909	May 24	11.0	-	1936	Jun. 7	8.3	-		Dec. 11	9.10	48,300
1910	Aug. 20	5.8	-	1937	May 31	15.0	-		Apr. 10	7.29	28,500
1911	Jun. 2	7.1	-	1938	May 20	8.8	-		Apr. 15	8.06	36,500
1912	Jun. 18	6.5	-	1939	Jun. 25	7.86	31,700		May 12	10.92	70,300
1913	Jun. 17	7.4	-		Jul. 3	8.8	41,900		May 16	11.50	78,100
1914	May 3	18.0	-	1940	Jul. 2	8.82	28,400		May 20	8.40	46,000
1915	Apr. 21	8.8	-	1941	May 5	17.0	150,000	1948	May 24	6.93	25,000
1916	Jan. 21	11.2	-		May 26	8.18	39,300		Jun. 1	12.30	88,500
1917	Aug. 18	7.8	-		Jun. 2	9.50	47,800		Jun. 23	9.47	57,300
1918	May 11	6.2	-		Jun. 6	11.00	63,100		Mar. 1	6.95	26,500
1919	Sep. 22	8.0	-		Jun. 10	11.44	80,400		Jun. 24	15.20	149,000
1920	Sep. 10	8.7	-		Jun. 13	7.68	32,600		Jul. 23	6.02	28,600
1921	Jun. 9	12.0	-		Jul. 27	10.60	65,600	1949	Feb. 14	6.76	29,800
1922	May 9	7.5	-		Sep. 9	8.66	35,300		May 1	9.00	61,000
1923	Jun. 10	13.0	-		Sep. 25	13.85	101,000		May 18	15.55	146,000
1924	Oct. 14	13.2	-	1942	Oct. 4	11.74	77,400		May 29	6.45	35,900
1925	May 11	8.6	-		Oct. 15	9.17	36,300		Jun. 10	8.04	49,000
1926	Sep. 30	8.5	-		Oct. 24	10.29	54,700	1950	May 11	17.35	174,000
1927	Apr. 13	9.5	-		Oct. 30	13.9	100,000		Jul. 10	6.58	31,600
1928	Oct. 2	8.0	-		Apr. 9	8.40	39,300		Jul. 22	6.88	30,600
1929	Nov. 20	8.0	-		Apr. 20	8.07	44,300		Jul. 24	7.05	32,600
1930	Jun. 16	8.9	-		Apr. 25	8.71	52,400		Jul. 29	6.80	29,600
1931	Oct. 15	12.0	-		Apr. 28	9.89	57,100	1951	May 18	10.55	80,800
					Jun. 11	9.80	51,100		Jun. 12	7.94	47,800
					Sep. 7	8.21	35,200	1952	May 24	6.49	26,300
				1943	May 10	14.8	b130,000	1953	Jul. 20	9.60	60,400
				1944	Jun. 14	7.8	b 33,000	1954	Oct. 23	7.26	35,100
				1945	Mar. 15	11.15	71,000		May 2	8.52	51,600
					Mar. 19	7.76	33,700	1955	May 20	12.60	102,000
					Apr. 16	9.65	56,000		May 24	8.10	43,900
					Jun. 11	9.62	52,500	1956	Oct. 6	8.76	51,600
					Jun. 17	7.98	38,200	1957	Apr. 3	8.25	45,000
					Jun. 21	8.00	38,500		Apr. 21	7.45	31,800
					Jul. 7	6.90	27,200		Apr. 23	8.20	37,300
					Jul. 10	8.96	49,500		May 14	8.02	42,800
					Sep. 27	9.00	45,000		May 18	14.10	134,000
					Sep. 30	12.05	91,000		May 22	10.80	84,200
									May 25	13.05	102,000
									May 28	8.40	48,400

ARKANSAS RIVER BASIN
07231500 CANADIAN RIVER AT CALVIN, OKLA.(Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 31	6.63	30,000	1960	May 6	7.70	39,500	1966	Apr. 27	4.85	6,060
	Jun. 4	6.60	30,000		May 19	11.60	87,100		Apr. 13	10.75	66,000
	Jun. 15	10.50	72,100		Jul. 23	7.45	28,500				
	Sep. 21	7.46	39,000	1961	Mar. 30	7.55	32,600	1968	May 14	8.97	45,700
1958	Jun. 22	7.61	36,200		May 18	7.17	27,200		May 7	8.08	33,800
	Jun. 25	7.55	38,400		Jul. 22	7.12	26,600	1969			
	Aug. 21	12.70	104,000	1962	Jun. 2	7.35	29,600	1970	Oct. 12	9.24	53,100
1959	May 10	10.70	74,400		Jun. 10	7.96	37,800		Apr. 18	7.34	32,600
	Jun. 27	7.17	34,000						Sep. 24	7.81	36,000
	Sep. 25	9.06	50,500	1963	Oct. 28	8.48	44,700	1971	Oct. 8	14.50	130,000
1960	Oct. 3	9.66	59,300		Apr. 27	8.02	32,600		Oct. 23	9.56	58,600
	Jan. 12	6.70	31,800	1964	May 11	8.57	46,100		Jun. 3	7.36	37,000
	Apr. 30	7.70	35,100	1965	Sep. 23	8.32	35,100				

a Result of slope-area measurement of peak discharge

b Estimated on basis of ratings for adjacent years, annual peak only.

Note.--Gage heights shown for period 1904-28 are generally maximum observed and are often considerably lower than peak stage.

07231560 MIDDLE CREEK NEAR CARSON, OKLA.

LOCATION.--Lat 35°11'10", long 96°04'20", in NE 1/4 NE 1/4 sec.7, T.8 N., R.12 E., Hughes County, at multi-barrel culvert on State Highway 84, 1.2 miles northeast of Carson.

GAGE.--Crest-stage gage. Stage-rainfall recorder July 29, 1964, to Aug. 8, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 7.40
Noncontributing = 0
Contributing = 7.40
Channel slope (ft/mi) = 21.7
Annual precip. (in) = 41.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 1,170 (1,670)
Q₅ = 2,850 (4,380)
Q₁₀ = 4,290 (7,100)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.019
Standard deviation = 0.509
Skew = -0.569

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	12.20	1,690	1967	Sep. 16	7.60	278	1969	May 12	10.36	966
1965	May 26	10.40	980	1968	May 13	18.2	5,460	1970	Oct. 12	13.75	2,440
1966	Apr. 25	6.70	143					1971	Sep. 6	12.14	1,660

ARKANSAS RIVER BASIN

07231950 PINE CREEK NEAR HIGGINS, OKLA.

LOCATION.--Lat 34°47'40", long 95°20'50", in NE 1/4 NE 1/4 sec.30, T.4 N., R.19 E., Latimer County, at bridge on State Highway 63, 5.4 miles east of Higgins.

GAGE.--Crest-stage gage. Stage-rainfall recorder June 20, 1964, to Dec. 3, 1969.

REMARKS.--Only annual peaks are shown

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 9.99
Noncontributing = 0
Contributing = 9.99
Channel slope (ft/mi) = 62.4
Annual precip. (in) = 45.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,000 (6,250)
Q₅ = 7,470 (10,700)
Q₁₀ = 9,220 (15,400)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.700
Standard deviation = 0.206
Skew = 0.032

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 15	12.35	5,770	1967	Sep. 16	13.40	7,800	1969	Nov. 26	10.50	3,180
1965	May 26	13.80	8,600	1968	Mar. 31	10.20	2,820	1970	Apr. 17	11.32	4,210
1966	Apr. 23	13.80	8,600					1971	Oct. 23	10.50	3,180

ARKANSAS RIVER BASIN

07232000 GAINES CREEK NEAR KREBS, OKLA.

LOCATION.--Lat 34°59', long 95°37', in SW1/4NE1/4 sec.21, T.6 N., R.16 E., on downstream side of right pier of abandoned bridge on county road, three-quarters of a mile upstream from Nutter Creek and 6-1/2 miles northeast of Krebs.

GAGE.--Water-stage recorder. Datum of gage is 551.22 ft above mean sea level (levels by Corps of Engineers). Prior to Dec. 5, 1945, wire-weight gage at same site and datum. Auxiliary water-stage recorder 1-1/2 miles upstream from base gage at same datum. Prior to Apr. 9, 1948, auxiliary wire-weight gage at same site and datum as present auxiliary gage.

HISTORICAL DATA.--In 1942, local residents reported that an outstanding flood occurred in 1909 and a flood almost as high occurred in 1915. The flood in 1938 was reported to be greatest since at least 1912. The flood of Apr. 25, 1942, was reported as outstanding.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 588
Noncontributing = 0
Contributing = 588
Channel slope (ft/mi) = 4.98
Annual precip. (in) = 43.7
Bankful stage (ft) = 26

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 12,200
Q₅ = 23,900
Q₁₀ = 36,000
Q₂₅ = 58,000
Q₅₀ = 80,800
Q₁₀₀ = 111,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 4.123
Standard deviation = 0.325
Skew = 0.717

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb. 18	31.9	70,000	1948	Jan. 2	18.44	5,550	1955	Mar. 22	26.8	10,800
1943	Dec. 28	28.85	18,700		Feb. 28	24.20	9,140	1956	May 25	14.76	3,570
	May 11	31.7	62,000	1949	Feb. 16	22.27	7,250	1957	Apr. 5	28.49	16,800
1944	Mar. 1	22.9	7,900		May 3	18.78	5,180		Apr. 27	28.72	17,400
	Mar. 21	19.5	6,310		Jun. 16	22.45	7,450		May 19	24.40	8,950
	May 4	24.8	9,100	1950	Jan. 15	23.87	7,950		May 27	27.96	14,500
	Jun. 7	19.3	5,780		Feb. 14	24.24	8,400		Jun. 4	26.07	9,900
1945	Feb. 22	29.6	24,300		May 13	23.75	7,300		Sep. 24	23.05	8,350
	Mar. 4	26.4	11,300		Jul. 7	24.48	9,500	1958	Nov. 9	24.3	10,100
	Mar. 20	29.0	20,300		Jul. 25	23.34	7,850		Mar. 25	20.96	6,930
	Apr. 1	26.7	10,700		Jul. 31	24.76	9,350		May 4	25.94	12,200
	Apr. 15	24.9	8,390		Sep. 17	30.62	25,200	1959	Mar. 7	23.55	9,670
	May 17	27.2	12,500	1951	Feb. 21	24.68	8,720		May 12	26.15	10,900
	Jun. 13	29.1	20,800		Jun. 14	24.76	9,460		Jul. 28	25.70	10,700
	Jun. 19	23.4	7,840	1952	Apr. 14	24.73	10,200	1960	Oct. 5	28.98	18,900
	Jul. 3	19.5	5,690		Apr. 24	23.30	7,100		Dec. 19	21.28	6,160
	Sep. 29	24.7	6,680	1953	Mar. 16	26.0	11,100		May 7	27.35	13,600
1946	Feb. 7	18.82	5,280		Mar. 19	25.84	10,700		May 20	32.93	36,200
	Feb. 15	23.82	8,600		Apr. 7	18.61	5,210		Jul. 25	26.30	11,600
	Feb. 20	23.63	7,960		Apr. 25	26.24	12,200	1961	Apr. 1	20.92	6,010
	Jun. 2	24.72	9,400		Apr. 30	24.98	9,840	1962	Nov. 24	27.74	14,700
1947	Nov. 8	28.62	17,200		May 14	27.46	13,400		Dec. 10	18.57	5,120
	Dec. 12				Jul. 22	22.16	6,960		Apr. 24	23.28	8,190
	13	29.82	21,600		Jul. 26	20.46	6,160	1963	Oct. 29	19.20	5,150
	Apr. 12	23.65	8,540	1954	May 4	23.95	7,720				
	Apr. 30	23.89	8,700								
	May 18	27.64	13,000								
	Jun. 3	24.95	9,600								

Note.--Due to effect of slope, the peak stage and discharge often occur at a different time.

ARKANSAS RIVER BASIN

07232500. BEAVER RIVER NEAR GUYMON, OKLA.
(Headwater of the North Canadian River)
(Formerly published as North Canadian River near Guymon)

LOCATION.--Lat 36°43'24", long 101°29'30", in NW 1/4 SW 1/4 sec.18, T.3 N., R.15 E., Texas
County, near center of span on downstream side of pier of bridge on U.S. Highway 64 at Dry
Sand Draw, 1.2 miles upstream from Goff Creek, 2.5 miles north of Guymon, and at mile 650.7.
Records include flow of Dry Sand Draw.

GAGE.--Water-stage recorder. Datum of gage is 2,970.93 ft above mean sea level (levels by Corps
of Engineers).

REMARKS.--Records 1937-46 furnished by Corps of Engineers and reviewed by Geological Survey. Base
for partial-duration series, 2,400 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,139
Noncontributing = 964
Contributing = 1,175
Channel slope (ft/mi) = 14.8
Annual precip. (in) = 16.1
Bankful stage (ft) = 7

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,930
Q₅ = 22,200
Q₁₀ = 32,600
Q₂₅ = 46,200
Q₅₀ = 56,100
Q₁₀₀ = 65,600

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.876
Standard deviation = 0.549
Skew = -0.825

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jun.	11.4	28,600	1946	Aug. 28	7.15	7,420	1957	Aug. 4	10.30	21,700
1938	May 31	6.33	4,800	1947	Oct. 7	6.10	4,100	1958	Jul. 6	5.90	2,650
	Jun. 17	7.22	7,550		Jun. 25	6.98	6,240		Jul. 16	5.90	2,650
	Jul. 30	6.57	5,640	1948	Jun. 1	8.26	12,100		Aug. 20	8.38	11,300
	Sep. 5	7.58	9,020		Jun. 24	8.70	13,900		Sep. 5	11.12	22,600
1939	Apr. 5	6.72	5,930		Aug. 13	5.61	3,380		Sep. 7	7.68	8,500
	Jun. 23	9.45	17,100		Aug. 27	7.03	7,290	1959	Jul. 14	5.87	2,580
	Jun. 29	5.50	3,580	1949	May 17	5.58	3,380		Aug. 6	8.90	13,400
	Jul. 2	6.30	5,070					1960	Sep. 9	5.10	1,260
	Aug. 20	5.20	2,560	1950	Jul. 19	7.96	11,200	1961	Jul. 8	5.62	1,860
1940	May 18	6.55	5,930		Jul. 21	5.70	3,850	1962	Jul. 26	8.14	10,100
	May 28	6.10	5,070		Aug. 27	7.17	8,400	1963	Jul. 28	5.18	572
	Aug. 7	8.10	11,000		Sep. 11	4.90	2,560	1964	Jun. 15	13.68	55,400
	Sep. 3	7.20	7,550	1951	May 14	5.38	2,950	1965	May 4	7.95	3,980
1941	May 3	9.20	16,100		May 17	7.56	9,970		Jun. 18	10.52	15,000
	Jun. 7	6.10	2,950	1952	Jul. 16	6.95	6,930		Jul. 14	12.28	34,400
	Jul. 2	6.20	4,040					1966	Oct. 18	10.87	17,800
	Jul. 5	7.85	9,400	1953	Jul. 20	4.44	1,240		Jul. 24	9.50	9,300
	Sep. 21	9.50	17,600		Oct. 21	6.31	4,650		Sep. 17	9.02	6,900
	Sep. 23	13.82	44,000	1954	May 19	7.42	6,930	1967	Jul. 4	8.25	4,150
1942	Oct. 21	5.50	4,380		May 25	10.90	25,300		Jul. 12	8.77	5,980
	Apr. 20	8.00	16,700		Jun. 16	5.61	3,380		Jul. 18	7.69	2,620
	Jun. 1	5.30	3,800		Jun. 19	7.88	10,400	1968	Jun. 16	10.32	13,700
	Jun. 8	6.80	10,700		Aug. 8	7.13	7,650		Sep. 7	8.30	4,300
1943	Aug. 6	5.15	1,470	1956	May 25	9.50	17,700	1969	Oct. 16	8.38	4,540
1944	Jul. 20	5.15	1,470		Jun. 20	6.15	4,540		Aug. 25	9.99	11,800
1945	Jul. 7	6.32	4,800		Jul. 6	5.65	3,320	1970	Apr. 17	5.11	264
	Jul. 12	5.95	3,200		Jul. 17	5.43	2,920	1971	Jul. 19	10.25	2,100
	Jul. 14	5.56	2,480		Aug. 19	7.03	7,100				
1946	May 29	8.40	12,300	1957	May 28	5.78	2,950				
	Aug. 15	7.79	9,880		Jun. 23	7.45	7,650				
	Aug. 19	8.60	13,200								

a Annual peak only.

ARKANSAS RIVER BASIN

07232550 SOUTH FORK TRIBUTARY NEAR GUYMON, OKLA.

LOCATION.--Lat 36°40'06", long 101°29'54", in SW 1/4 NE 1/4 sec.1, T.2 N., R.14 E., Texas County, at multiple culvert on Chicago, Rock Island, and Pacific Railroad, 1.8 miles southwest of junction of U.S. Highways 54 and 64 at Guymon.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 13, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 0.26
Noncontributing = 0
Contributing = 0.26
Channel slope (ft/mi) = 15.0
Annual precip. (in) = 19.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 17 (23)
Q₅ = 39 (48)
Q₁₀ = 57 (63)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 1.195
Standard deviation = 0.468
Skew = -0.602

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 14	7.18	42	1967	Jul. 12	6.95	32	1969	Aug. 31	5.98	3
1965	Jul. 14	6.78	25	1968	Jun. 16	7.30	48	1970	Apr. 17	6.10	5
1966	Jul. 24	6.80	25					1971	May 29	6.14	6

07232650 AQUA FRIO CREEK NEAR FELT, OKLA.

LOCATION.--Lat 36°33'23", long 102°47'10", in SW 1/4 NW 1/4 sec.18, T.1 N., R.3 E., Cimarron County, at county road culvert, 1.1 miles south of junction with U.S. Highway 64 at Felt.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 14, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 31.0
Noncontributing = 0
Contributing = 31.0
Channel slope (ft/mi) = 23.0
Annual precip. (in) = 16.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 77
Q₅ = 693
Q₁₀ = 2,100
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.072
Standard deviation = 1.026
Skew = 0.014

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	-	-	-	1967	Sep. 19	10.04	27	1969	Aug. 24	13.00	1,110
1965	Aug. 19	13.85	1,900	1968	Jul. 24	10.40	62	1970	Apr. 17	-	5
1966	Sep. 16	9.9	18					1971	Jul. 1	12.86	1,000

ARKANSAS RIVER BASIN

07233000 COLDWATER CREEK NEAR HARDESTY, OKLA.

LOCATION.--Lat 36°39', long 101°13', in NW1/4NE1/4 sec.15, T.2 N., R.17 E., on downstream side of piling near center of bridge on State Highway 3, 2 miles northwest of Hardesty and 5.7 miles upstream from mouth.

GAGE.--Water-stage recorder. Datum of gage is 2,751.32 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records 1939-46 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,967
Noncontributing = 1,200
Contributing = 767
Channel slope (ft/mi) = 11.4
Annual precip. (in) = 18.5
Bankful stage (ft) = 7

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,660
Q₅ = 8,000
Q₁₀ = 13,100
Q₂₅ = 20,900
Q₅₀ = 27,400
Q₁₀₀ = 34,300

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.357
Standard deviation = 0.638
Skew = -0.642

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Jul. 2	6.70	10,600	1949	May 15	5.15	3,160	1955	May 15	8.45	6,810
					Jul. 10	5.84	6,080		May 19	7.90	5,110
1940	May 6	5.15	3,090						May 26	6.80	2,640
	May 18	7.35	14,500	1950	Jul. 2	4.88	1,960		Jun. 3	5.88	1,610
	May 28	5.22	4,080		Jul. 5	4.27	1,120		Jun. 18	8.80	8,670
	Jun. 10	4.85	2,720		Jul. 18	9.12	10,500		Jul. 14	6.95	3,490
	Aug. 12	4.40	1,160		Jul. 21	5.31	2,680				
	Sep. 24	4.81	2,220		Jul. 31	7.70	5,100	1956	May 2	6.15	1,460
1941	May 22	5.95	6,640		Aug. 27	4.45	1,510				
	Jul. 13	5.20	3,700		Aug. 29	6.15	2,510	1957	Jun. 23	8.65	5,860
					Sep. 5	5.25	2,430		Aug. 5	8.40	5,410
1942	Jun. 8	4.87	2,330		Sep. 11	6.22	4,130				
	Jul. 11	4.20	1,150		Sep. 13	5.80	3,380	1958	Aug. 20	7.88	4,810
					Sep. 26	5.26	1,400				
1943	Jul. 9	4.57	1,550	1951	Oct. 1	5.44	1,480	1959	Jul. 15	6.69	2,530
					May 14	6.84	4,920				
1944	May 11	5.49	3,570		May 16	7.68	7,250	1960	Sep. 25	5.28	652
					Aug. 22	5.34	1,360	1961	Oct. 20	6.97	2,900
1945	Jun. 24	4.13	501	1952	Jul. 17	5.18	837	1962	Jun. 8	6.17	1,390
1946	Jul. 4	6.37	8,720						Jun. 9	6.07	1,280
				1953	Jul. 23	5.15	845		Jul. 11	6.12	1,330
1947	Oct. 5	5.80	5,880	1954	Jun. 15	3.98	95	1963	Jul. 29	5.37	535
	Oct. 7	8.76	18,000								
	Jun. 25	9.07	21,500					1964	Jun. 15	4.08	87
1948	Jun. 27	3.80	440								

ARKANSAS RIVER BASIN

07233500 PALO DURO CREEK NEAR SPEARMAN, TEX.

LOCATION.--Lat 36°12', long 101°19', near center of span on downstream side of bridge on State Highway 282, at abandoned town of Hansford, 6 miles west of Spearman, Hansford County, about 18 miles upstream from Horse Creek, and at mile 50.0.

GAGE.--Recording. Datum of gage is 2,961.63 ft above mean sea level, datum of 1929.

REMARKS.--Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 960
Noncontributing = 520
Contributing = 440
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,850
Q₅ = 7,670
Q₁₀ = 13,500
Q₂₅ = 25,800
Q₅₀ = 39,900
Q₁₀₀ = 60,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.492
Standard deviation = 0.484
Skew = 0.463

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Jun. 4	21	26,100	1954	Jul. 23	12.04	840	1963	Sep. 2	13.88	1,640
1938	Sep. 4	22.5	34,000	1955	Oct. 6	12.82	1,450	1964	Jun. 11	9.57	458
1945	Sep. 28	11.14	790		Apr. 30	16.25	6,660	1965	May 14	16.92	7,600
	Sep. 30	10.02	530		May 18	14.56	3,700		Jun. 3	11.08	620
1946	Sep. 12	13.90	3,430		Jul. 14	14.53	3,700		Jun. 5	12.40	870
1947	Oct. 7	19.87	21,200	1956	Jul. 17	12.10	955		Jun. 11	16.75	7,300
	Jun. 25	12.88	2,090		Jul. 19	12.60	1,290		Jun. 16	11.40	664
1948	Oct. 7	11.20	820		Aug. 20	12.11	785		Jun. 26	19.06	16,100
1949	May 16	12.70	1,980	1957	Apr. 28	12.43	1,180		Aug. 20	12.73	980
	May 19	10.88	730		May 16	11.38	695	1966	Jun. 23	12.98	1,120
1950	Jun. 22	11.25	820		May 25	13.58	1,810		Jul. 29	10.80	583
	Jul. 18	12.98	2,220		Jun. 1	12.12	955		Sep. 17	10.45	537
	Jul. 21	10.62	655		Jul. 25	11.01	616	1967	Jun. 16	14.97	3,280
	Jul. 29	11.30	1,110		Jul. 31	12.14	982		Jul. 5	13.29	1,320
	Aug. 1	13.50	3,580	1958	Aug. 4	11.10	632		Jul. 12	14.70	2,880
	Sep. 11	12.45	1,580		Jul. 3	10.00	616		Aug. 10	14.00	2,010
1951	May 14	13.03	1,770		Jul. 7	11.40	860	1968	Jul. 6	8.30	518
	May 17	15.32	4,930		Jul. 23	13.01	1,540		Jul. 13	10.04	765
1952	Apr. 20	14.12	3,060		Aug. 1	12.51	1,210		Aug. 18	13.40	1,300
	Aug. 7	10.58	578	1959	Jul. 10	9.99	549		Aug. 29	16.59	1,930
1953	Jun. 4	13.12	1,750		Jul. 16	12.75	1,410	1969	Oct. 16	15.20	5,980
	Jul. 12	12.15	1,060	1960	Jun. 10	11.38	720		Aug. 26	10.28	750
	Jul. 19	16.93	8,550		Sep. 25	13.78	2,650		Sep. 18	14.98	1,500
	Jul. 23	11.66	844	1961	Oct. 19	14.55	2,460		Sep. 23	10.21	796
1954	Jun. 8	11.91	985		Jul. 11	11.45	616	1970	Jun. 15	13.93	2,040
	Jun. 14	15.92	6,000		Jul. 13	12.48	820		Aug. 20	11.07	616
				1962	Jul. 25	10.59	526	1971	Jun. 9	16.60	6,720
				1963	May 31	13.14	1,100		Jul. 27	14.78	2,990
					Jul. 13	12.02	695		Aug. 11	10.44	570

ARKANSAS RIVER BASIN

07233850 SHARP CREEK TRIBUTARY NEAR TURPIN, OKLA.

LOCATION.--Lat 36°51'50", long 100°54'45", in SE 1/4 SE 1/4 sec.29, T.5 N., R.20 E., Beaver County, at culvert on U.S. Highway 64, 2.1 miles west of Turpin.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 1
 Noncontributing = 0
 Contributing = 1
 Channel slope (ft/mi) = 12.0
 Annual precip. (in) = 17.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 26 (40)
 Q₅ = 46 (64)
 Q₁₀ = 62 (78)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 1.460
 Standard deviation = 0.270
 Skew = 0.021

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	-	-	0	1967	Jun. 27	11.29	20	1969	Jun. 10	12.70	72
1965	Jul. 4	11.88	41	1968	Jun. 16	11.74	36	1970	Aug. 22	11.84	30
1966	Sep. 17	11.86	40					1971	Aug. 8	11.70	13

ARKANSAS RIVER BASIN

07234000 BEAVER RIVER AT BEAVER, OKLA.
(Headwater of the North Canadian River)
(Formerly published as North Canadian River at Beaver)

LOCATION.--Lat 36°49'20", long 100°31'05", in SW 1/4 sec.7, T.4 N., R.24 E., Beaver County, near right bank on downstream side of pier of bridge on U.S. Highway 270 at Beaver, 1.5 miles downstream from Home Creek, 5 miles upstream from Clear Creek, and at mile 576.0.

GAGE.--Water-stage recorder. Datum of gage is 2,368.16 ft above mean sea level (level set by Corps of Engineers). Mar. 29, 1904, to Dec. 31, 1905, nonrecording gage in same vicinity at different datum. Mar. 1, 1938, to Sept. 30, 1946, water-stage recorder at present site at datum 3.0 ft higher.

REMARKS.--Records 1937-46 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 4,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 7,955
Noncontributing = 4,270
Contributing = 3,685
Channel slope (ft/mi) = 12.6
Annual precip. (in) = 19.0
Bankful stage (ft) = 9.0

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 8,950
Q₅ = 18,900
Q₁₀ = 28,100
Q₂₅ = 43,400
Q₅₀ = 57,700
Q₁₀₀ = 74,800

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.960
Standard deviation = 0.378
Skew = 0.124

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Jul. 9	(a)	-	1947	Jun. 26	8.90	18,300	1957	Jul. 1	7.15	5,110
1923	-	b12.3	-	1948	Jun. 2	6.72	6,180	1958	Aug. 5	7.9	8,470
1938	May 31	4.72	6,920	1949	Jun. 27	6.32	4,630	1959	Aug. 21	9.31	12,800
	Jun. 9	4.19	5,160		Jun. 4	8.11	13,200		Sep. 6	7.98	9,600
	Jun. 18	3.97	4,580		Jun. 9	8.54	16,100		Sep. 10	6.93	5,860
	Sep. 5	7.25	17,400		Jun. 13	7.20	7,920	1959	May 4	7.30	5,490
1939	Apr. 5	5.80	11,300		Jun. 24	7.33	9,090	1960	Jul. 4	7.20	4,180
	May 5	4.95	8,060	1950	Oct. 10	7.18	8,240		Sep. 24	7.33	5,200
	May 25	4.70	7,000		Jul. 5	8.54	7,800	1961	Oct. 21	7.00	4,180
	Jun. 24	6.62	14,700		Jul. 12	7.92	5,250		Jul. 22	7.35	4,900
	Jun. 27	3.96	4,650		Jul. 19	9.75	12,800	1962	May 31	7.65	5,520
	Jun. 29	4.90	7,880		Jul. 21	8.53	7,000		Jun. 9	7.45	4,900
	Jul. 2	6.95	16,300		Jul. 25	9.92	13,700	1963	Jun. 1	6.59	3,670
1940	May 18	6.00	11,100		Jul. 29	8.52	7,200	1964	Jun. 17	8.38	8,050
	May 28	5.00	6,350		Aug. 1	9.32	10,200	1965	May 15	9.60	15,600
	Jun. 5	4.85	5,610		Aug. 29	8.50	6,800		Jun. 12	9.60	15,000
	Jun. 10	5.45	8,050		Sep. 27	7.66	4,350		Jun. 19	7.41	6,400
1941	May 3	7.00	17,000	1951	May 14	10.60	22,100		Jun. 28	9.22	13,400
	May 23	5.05	6,330		May 17	11.57	32,200	1966	Oct. 19	6.90	3,320
	Jul. 5	6.93	16,000	1952	Jul. 19	5.49	1,180	1967	Jul. 3	10.15	17,800
	Sep. 18	6.05	10,000	1953	Jul. 23	9.12	11,800		Aug. 9	7.30	4,450
	Sep. 24	10.65	38,200		Aug. 18	8.04	8,800	1968	Jun. 1	7.92	5,200
1942	Oct. 22	6.14	14,500	1954	Jul. 23	7.01	4,100		Jun. 9	11.17	26,700
	Apr. 21	7.60	20,200	1955	May 2	7.01	4,100		Aug. 28	7.20	4,180
	Jun. 1	5.57	8,840		May 16	10.25	19,900	1969	Oct. 18	8.33	8,180
	Jun. 9	6.42	12,200		May 20	8.74	11,200		Jun. 1	7.16	4,070
1943	Oct. 19	4.26	3,060		May 26	9.70	17,200		Jun. 11	8.56	10,100
1944	Apr. 10	5.63	8,240		Jun. 8	7.08	6,710	1970	Jun. 16	7.07	3,840
1945	Jun. 3	5.10	5,350		Jun. 17	10.94	28,100	1971	Jun. 10	6.75	3,090
	Jun. 26	5.20	5,710		Jun. 19	9.95	20,800				
	Jul. 6	5.60	7,500	1956	May 26	7.04	5,700				
1946	Aug. 27	4.50	4,400	1957	Apr. 17	8.03	8,810				
1947	Oct. 8	14.15	70,000		May 16	7.75	7,960				
					Jun. 24	7.35	6,650				

^a Gage destroyed.

^b Present datum, from floodmark, furnished by Corps of Engineers.

ARKANSAS RIVER BASIN

07234050 NORTH FORK CLEAR CREEK TRIBUTARY NEAR BALKO, OKLA.

LOCATION.--Lat 36°37'01", long 100°39'50", in SW 1/4 SW 1/4 sec.23, T.2 N., R.22 E., Beaver County, at multi-barrel culvert on State Highway 3, 1.5 miles southeast of Balko.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 12, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4.00
Noncontributing = 0
Contributing = 4.00
Channel slope (ft/mi) = 27.0
Annual precip. (in) = 20.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 94 (157)
Q₅ = 564 (829)
Q₁₀ = 1,210 (1,610)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 1.831
Standard deviation = 1.075
Skew = -0.804

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sep. 10	11.82	145	1967	Aug. 9	11.52	93	1969	Jun. 10	12.50	340
1965	Aug. 22	14.52	1,800	1968	Aug. 28	12.10	210	1970	Jun. 14	11.47	86
1966	Sep. 2	9.75	1					1971	Sep. 18	10.09	3

07234100 CLEAR CREEK NEAR ELMWOOD, OKLA.

LOCATION.--Lat 36°38'42", long 100°30'07", in SW 1/4 SW 1/4 sec.8, T.2 N., R.24 E., Beaver County, on downstream side of right pile bent of county road bridge, 1,000 ft downstream from small irrigation dam, 2.8 miles northeast of Elmwood, and at mile 16.9.

GAGE.--Water-stage recorder. Altitude of gage is 2,550 ft (from topographic map).

REMARKS.--Small diversions for irrigation above station. Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 170
Noncontributing = 0
Contributing = 170
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Sep. 2	9.66	3,260	1968	Jun. 9	10.08	3,700	1969	Jun. 10	11.04	5,880
					Jun. 16	13.15	12,500		Sep. 18	6.20	920
1967	Jul. 3	11.78	5,890		Aug. 29	12.23	7,190				
	Aug. 9	10.72	4,460					1970	Aug. 22	9.71	3,950
	Aug. 16	7.32	1,300	1969	Oct. 16	13.97	20,000				
1968	Jun. 1	6.56	816					1971	Feb. 27	3.04	10

ARKANSAS RIVER BASIN

07234290 CLEAR CREEK TRIBUTARY NEAR CATESBY, OKLA.

LOCATION.--Lat 36°29'30", long 99°57'20", in SE 1/4 SW 1/4 sec.2, T.23 N., R.26 W., Ellis County, on downstream side of county road bridge, 0.1 mile east of Catesby.

GAGE.--Crest-stage gage. Stage-rainfall recorder since July 16, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 9.18
 Noncontributing = 0
 Contributing = 9.18
 Channel slope (ft/mi) = 37.7
 Annual precip. (in) = 22.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Jun. 7	7.64	1,140	1968	Jun. 9	7.98	1,480	1970	Sep. 7	4.1	38
1967	Aug. 9	3.60	18	1969	Oct. 16	5.39	234	1971	Aug. 6	2.48	25

ARKANSAS RIVER BASIN

07234500 BEAVER RIVER NEAR FORT SUPPLY, OKLA.
(Head of North Canadian River)
(Formerly published as "North Canadian River near Supply" and
"North Canadian River near Fort Supply")

LOCATION.--Lat 36°35'30", long 99°35'30", in NE1/4NE1/4 sec.6, T.24 N., R.22 W., near right bank on downstream side of pier of bridge on State Highway 34, 1-1/2 miles northwest of Fort Supply, 8.1 miles upstream from Wolf Creek, and at mile 495.8.

GAGE.--Nonrecording prior to Feb. 12, 1938; recording thereafter. Prior to June 6, 1951, at datum 6.0 ft higher. Datum of present gage is 1,969.63 ft above mean sea level, datum of 1929.

REMARKS.--Only annual peaks are shown since 1950. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 2,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 9,615
Noncontributing = 4,547
Contributing = 5,068
Channel slope (ft/mi) = 10.4
Annual precip. (in) = 20.0
Bankful stage (ft) = 13

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 9,590
Q₅ = 19,400
Q₁₀ = 27,900
Q₂₅ = 40,900
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.977
Standard deviation = 0.367
Skew = -0.069

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jun. 10	8.3	10,900	1942	Apr. 22	7.80	8,960	1949	Jun. 14	7.20	7,930
1938	May 6	6.40	4,280		Apr. 24	6.22	3,900		Jun. 24	5.35	3,060
	May 23	6.30	3,960		Jun. 10	7.80	7,280		Jul. 10	5.30	2,960
	Jun. 1	6.45	4,570	1943	Oct. 20	5.91	2,510		Jul. 12	5.62	4,000
	Jun. 20	5.70	2,610					1950	Oct. 10	4.08	3,820
	Sep. 7	8.18	10,400	1944	Apr. 11	7.26	6,390		May 24	3.61	2,750
1939	Apr. 7	7.10	6,090		Apr. 30	6.14	3,240		Jul. 6	4.84	6,350
	May 6	6.00	2,830	1945	Jun. 4	6.25	2,850		Jul. 28	5.15	12,700
	Jun. 25	7.75	8,740		Jun. 27	6.45	3,340		Aug. 2	6.27	24,600
	Jun. 28	6.36	3,740		Jul. 7	6.34	4,260		Aug. 30	3.60	5,330
	Jun. 30	6.77	4,940		Sep. 28	5.95	2,590		Sep. 6	3.12	3,930
	Jul. 3	7.85	8,940						Sep. 12	3.59	5,330
1940	May 19	6.77	6,850	1946	Aug. 30	6.20	2,100		Sep. 27	3.00	3,520
	May 31	6.31	4,820	1947	Oct. 9	11.83	50,000	1951	May 17	7.77	-
	Jun. 6	6.62	4,180		May 16	6.95	8,100	1953	Jul. 25	10.14	-
	Jun. 11	7.01	5,610		May 20	6.40	3,500	1954	Jun. 17	7.73	-
	Aug. 8	7.67	9,300		Jun. 27	7.04	7,400	1955	Jun. 18	12.03	-
1941	May 4	7.10	6,030	1948	Jun. 28	7.82	8,680	1956	May 27	10.03	-
	May 23	8.50	17,300	1949	May 17	7.91	11,100	1957	Jun. 23	12.12	-
	Jun. 9	6.50	4,630		May 19	7.08	6,800	1958	Aug. 22	10.05	-
	Jul. 7	7.60	8,940		May 23	6.05	2,680				
	Sep. 25	7.95	13,900		Jun. 5	7.19	5,620				
1942	Oct. 23	8.75	17,400		Jun. 9	7.33	6,120				

ARKANSAS RIVER BASIN

07235000 WOLF CREEK AT LIPSCOMB, TEX.

LOCATION.--Lat 36°14'16", long 100°16'28", Lipscomb County, near center of stream on downstream side of bridge on State Highway 305, 0.3 mile north of Lipscomb, 0.7 mile downstream from Little Sandy Creek, 2 miles upstream from Plum Creek, and at mile 61.2.

GAGE.--Water-stage recorder. Datum of gage is 2,371.29 ft above mean sea level. Prior to Feb. 25, 1938, nonrecording gage, Feb. 25, 1938, to Sept. 30, 1942, water-stage recorder and nonrecording gage at present site at datum 5.77 ft higher. All gage heights are adjusted to present datum.

HISTORICAL DATA.--Maximum stage since 1890, 15.5 ft June 23, 1957, present site and datum, from floodmarks. Flood in May 1955 reached a stage of 12.1 ft, present site and datum, from information by State Highway Department.

REMARKS.--Small diversions upstream for irrigation and recreation. Only annual peaks prior to 1967. Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 697
Noncontributing = 222
Contributing = 475
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,260
Q₅ = 11,200
Q₁₀ = 15,600
Q₂₅ = 21,000
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.662
Standard deviation = 0.453
Skew = -0.781

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sep. 4	10.29	9,000	1962	Jun. 7	6.68	521	1967	Jul. 4	9.68	6,210
					Sep. 20	6.84	656		Aug. 9	8.05	2,620
1939	Jun. 23	10.50	12,100	1963	May 31	10.50	8,790	1968	Jul. 5	6.10	550
1940	Sep. 2	9.72	6,300		Sep. 3	9.10	4,590		Aug. 18	8.75	3,900
1941	Jun. 9	10.27	11,000	1964	Jun. 15	6.84	808	1969	Oct. 9	10.00	7,110
1942	Oct. 21	11.57	20,000	1965	May 14	7.15	1,120		Oct. 16	9.80	6,510
					Jun. 11	9.07	4,470		Aug. 25	6.30	670
1943	Sep. 4	9.83	-		Jun. 26	9.11	3,410	1970	Jun. 15	7.07	1,310
					Aug. 22	9.22	4,910		Sep. 22	10.27	7,860
1944	Aug. 16	9.77	-	1966	Jul. 24	6.94	1,180	1971	Jun. 9	7.30	1,560
1955	May	12.1	-								
1957	Jun. 23	15.5	-								

ARKANSAS RIVER BASIN

07235500 WOLF CREEK NEAR SHATTUCK, OKLA.

LOCATION.--Lat 36°17'10", long 99°54'45", in NE1/4NE1/4 sec.19, T.21 N., R.25 W., at The Atchison, Topeka and Santa Fe Railway Co. bridge, 2 miles northwest of Shattuck, 2-1/2 miles upstream from Rock Creek, 3 miles downstream from Ivanhoe Creek, and at mile 38.2.

GAGE.--Water-stage recorder. Datum of gage is 2,189.22 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--Flood in October 1923 was reported by railway section foreman as highest known.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 1,800 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,183
Noncontributing = 222
Contributing = 961
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 6

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 9,410
Q₅ = 16,600
Q₁₀ = 21,100
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 3.932
Standard deviation = 0.335
Skew = -0.750

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	May 1	4.11	2,570	1940	Aug. 8	8.42	16,600	1943	Oct. 15	4.47	3,820
	May 23	4.63	3,840		Sep. 3	4.05	2,460		Sep. 4	4.15	2,070
	May 31	4.23	2,880								
	Jun. 7	4.07	2,500	1941	May 11	4.30	3,320	1944	Apr. 10	4.59	2,840
	Jun. 9	3.89	2,100		May 23	7.20	12,100		Jul. 25	6.60	8,800
	Jun. 15	4.74	4,100		Jun. 9	7.70	14,600		Aug. 17	4.88	3,900
	Sep. 4	5.55	6,480		Jul. 6	3.40	2,940		Sep. 19	4.94	4,060
					Aug. 21	4.20	2,810				
1939	Mar. 25	4.12	2,620	1942	Oct. 22	8.87	24,000	1945	Oct. 2	6.18	8,290
	Apr. 5	6.10	8,020		Oct. 26	3.80	2,690		Jun. 12	4.72	3,960
	Jun. 23	6.30	8,580		Apr. 23	4.00	2,340		Sep. 28	7.15	11,400
	Jul. 2	4.60	3,840		Jun. 9	5.35	5,920	1946	Jul. 1	4.00	1,970
	Aug. 8	4.55	3,710		Aug. 12	5.70	6,900		Sep. 2	3.95	1,850
1940	Jun. 10	6.96	10,700		Aug. 15	4.17	3,160				

07235700 LITTLE WOLF CREEK TRIBUTARY NEAR GAGE, OKLA.

LOCATION.--Lat 36°14'26", long 99°46'30", in SW 1/4 NW 1/4 sec.4, T.20 N., R.24 W., Ellis County, at multi-barrel culvert on State Highway 46, 5.5 miles south of Gage.

GAGE.--Crest-stage gage. Stage-rainfall recorder Oct. 12, 1965.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 17.6
Noncontributing = 0
Contributing = 17.6
Channel slope (ft/mi) = 23.0
Annual precip. (in) = 23.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 343 (572)
Q₅ = 1,410 (2,350)
Q₁₀ = 2,740 (4,570)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.475
Standard deviation = 0.788
Skew = -0.466

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 17	4.36	185	1967	May 5	5.10	700	1969	May 13	6.80	5,200
1965	Sep. 20	2.38	10	1968	Jun. 9	3.60	125	1970	Sep. 21	4.40	460
1966	Jun. 7	5.30	900					1971	Jul. 1	3.80	180

ARKANSAS RIVER BASIN

07236000 WOLF CREEK NEAR FARGO, OKLA.

LOCATION.--Lat 36°23'57", long 99°37'22", in SE 1/4 NE 1/4 sec.11, T.22 N., R.23 W., Ellis County, near right bank on downstream side of pier of county road bridge, 800 ft downstream from Boggy Creek, 1.2 miles downstream from Sixteen Mile Creek, 1.5 miles north of Fargo, and at mile 18.7.

GAGE.--Water-stage recorder. Datum of gage is 2,044.35 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1962, at same site at datum 10.00 ft higher.

HISTORICAL DATA.--Maximum stage known since at least 1913, that of June 23, 1957, from information by local residents.

REMARKS.--Records 1943-50 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,624
Noncontributing = 238
Contributing = 1,386
Channel slope (ft/mi) = 8.96
Annual precip. (in) = 22.0
Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,320
Q₅ = 10,600
Q₁₀ = 17,200
Q₂₅ = 28,700
Q₅₀ = 40,100
Q₁₀₀ = 54,400

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.640
Standard deviation = 0.462
Skew = 0.059

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Oct. 15	-	4,500	1950	Jul. 29	3.82	2,630	1957	Jul. 1	4.60	8,600
	May 18	4.59	3,300		Aug. 2	6.65	9,750		Jul. 24	2.32	2,220
1944	Mar. 15	3.96	2,050		Aug. 29	3.95	3,470		Sep. 14	3.25	3,580
	Apr. 10	4.38	3,150		Sep. 5	3.70	3,570	1958	Jun. 19	2.70	2,000
	Apr. 22	6.17	6,950	1951	May 16	8.19	23,500		Aug. 1	4.10	6,400
	Apr. 29	4.65	3,410		Jun. 15	4.26	5,160	1959	Jun. 12	2.47	2,220
	Jul. 25	6.93	8,900		Jun. 20	3.50	3,220		Jul. 13	3.27	3,410
	Sep. 19	4.05	2,200		Jun. 25	3.67	3,620	1960	Jul. 23	2.94	2,500
1945	Oct. 2	7.65	10,800	1952	May 24	3.86	2,910		Aug. 18	3.22	3,260
	Sep. 28	5.70	6,030	1953	May 16	3.32	2,170	1961	May 4	3.48	4,100
1946	Jul. 1	3.20	1,150		Jun. 7	3.86	3,660		Jun. 4	3.53	4,280
1947	Apr. 10	4.22	2,350		Jul. 24	3.67	3,100	1962	Sep. 20	3.01	2,680
	May 16	7.18	9,530	1954	Oct. 15	6.00	8,950	1963	Jun. 1	14.18	5,000
	May 20	4.40	2,850		May 25	3.34	2,450		Sep. 3	12.75	2,100
	Jun. 20	4.13	2,230	1955	May 19	4.88	5,930	1964	Jun. 16	11.84	790
1948	Apr. 22	5.10	4,400		Jun. 9	4.32	4,560	1965	Jun. 12	13.53	4,280
	Jun. 28	4.52	3,120		Jun. 17	4.96	6,540		Jun. 27	13.50	4,100
1949	May 7	4.30	2,260		Jun. 19	3.85	3,300		Aug. 23	13.24	3,320
	May 16	7.00	8,880		Jun. 28	4.64	5,590	1966	Jun. 8	16.80	9,320
	May 19	6.65	8,070		Jul. 15	3.44	2,380	1967	Jul. 55	12.92	1,710
	May 23	5.70	5,750		Sep. 28	3.57	2,640	1968	Aug. 28	12.73	1,850
	Jun. 4	6.27	7,280	1956	Aug. 19	3.58	3,100	1969	Oct. 17	13.61	2,820
	Jun. 9	5.19	4,530	1957	Mar. 31	3.98	4,280		May 14	13.43	2,460
	Jun. 13	4.20	2,340		Apr. 21	5.50	9,610	1970	Sep. 23	12.94	1,710
	Jun. 24	5.05	4,290		Apr. 23	3.15	2,400	1971	Jun. 12	10.97	271
1950	May 8	6.38	6,250		May 3	3.72	3,080				
	May 20	5.15	4,170		May 10	3.73	3,540				
	Jun. 12	4.20	2,050		May 16	6.25	11,300				
	Jul. 6	5.85	6,120		May 24	4.70	6,680				
	Jul. 18	7.06	9,420		Jun. 18	5.91	10,100				
	Jul. 22	6.54	8,450		Jun. 23	10.0	81,600				
	Jul. 27	5.40	5,870								

ARKANSAS RIVER BASIN

07236050 WOLF CREEK TRIBUTARY NEAR TANGIER, OKLA.

LOCATION.--Lat 36°24'42", long 99°32'40", in NE 1/4 SW 1/4 sec.3, T.22 N., R.22 W., Woodward County, at multi-barrel culvert on State Highway 15, 0.7 mile southwest of Tangier.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 6.23
 Total = 6.23
 Noncontributing = 0
 Contributing = 6.23
 Channel slope (ft/mi) = 26.9
 Annual precip. (in) = 23.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	-	< 1.56	< 10	1967	-	< 1.56	< 10	1969	May 25	4.28	270
1965	-	< 1.56	< 10	1968	-	< 1.56	< 10	1970	-	< 1.56	< 10
1966	-	< 1.56	< 10					1971	-	< 1.56	< 10

ARKANSAS RIVER BASIN

07237000 WOLF CREEK NEAR FORT SUPPLY, OKLA.
(Formerly published as "near Supply, Okla.")

LOCATION.--Lat 36°34'00", long 99°33'05", in SE 1/4 SE 1/4 sec.9, T.24 N., R.22 W., Woodward County, near left bank on downstream side of pier of bridge on U.S. Highway 270, 1 mile southeast of Fort Supply, 1.6 miles downstream from Fort Supply Dam, and at mile 3.9.

GAGE.--Water-stage recorder. Datum of gage is 1,958.38 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Feb. 10, 1938, staff gage and Feb. 10, 1938, to Sept. 30, 1944, water-stage recorder, at same site at datum 10.0 ft higher. Oct. 1, 1944, to Sept. 30, 1950, water-stage recorder at same site at datum 7.0 ft higher and Oct. 1, 1950, to Sept. 30, 1962, at same site at datum 4.0 ft higher.

HISTORICAL DATA.--A stage of 19.6 ft, present datum, was reached prior to October 1937, from information by State Highway Department.

REMARKS.--Flow completely regulated since May 1942 by Fort Supply Lake. Records 1938-50 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,000 cfs. Only annual peaks are shown subsequent to 1941.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,739
Noncontributing = 241
Contributing = 1,498
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Oct. 13	3.35	3,210	1946	Oct. 8	4.47	1,230	1959	Jun. 13	2.63	201
	Apr. 27	4.64	5,340								
	May 19	4.15	4,110	1947	May 23	5.44	3,290	1960	Aug. 19	4.06	770
	May 23	4.10	4,110								
	Jun. 15	4.09	3,850	1948	Jul. 1	3.79	1,500	1961	May 6	4.18	860
	Sep. 4	4.20	4,250								
				1949	May 25	4.44	2,230	1962	Jun. 2	2.59	178
1939	Mar. 25	4.35	5,400								
	Apr. 5	5.20	10,700	1950	Aug. 23	3.22	1,410	1963	Jun. 3	9.09	1,680
	Jun. 24	5.60	14,200								
	Jul. 2	4.22	4,700	1951	May 28	5.90	-	1964	Jun. 17	6.16	138
					Jun. 13, 16	-	1,230	1965	Jun. 30	8.50	840
1940	Jun. 11	4.65	6,510								
	Aug. 6	4.15	3,320	1952	Apr. 24	4.92	583	1966	Jun. 8	8.78	1,200
	Aug. 8	5.80	10,400								
1941	May 24	4.62	3,980	1953	Jul. 26	5.35	798	1967	Jul. 10	8.47	989
	Jun. 10	4.75	6,050								
1942	Oct. 24	4.38	6,350	1954	Oct. 25	5.99	1,470	1968	Sep. 2	6.92	269
1943	Oct. 15	1.59	477								
1944	Apr. 24	3.11	3,620	1955	Jun. 23	6.63	2,240	1969	Oct. 21	8.24	669
1945	Oct. 4	5.42	3,200	1956	Feb. 20	3.25	49	1970	Apr. 3	6.31	182
				1957	May 19	7.71	5,020	1971	Jun. 20	6.10	156
				1958	Aug. 2	5.81	2,080				

ARKANSAS RIVER BASIN

07237500 NORTH CANADIAN RIVER AT WOODWARD, OKLA.

LOCATION.--Lat 36°26'18", long 99°16'40", in SE 1/4 SE 1/4 sec.25, T.23 N., R.20 W., Woodward County, near right bank on downstream side of pier of bridge on State Highway 15, 200 ft downstream from the Atchison, Topeka and Santa Fe Railway Co. bridge, 6 miles east of Woodward, 7.2 miles upstream from Indian Creek, 27.5 miles downstream from Wolf Creek, and at mile 460.2.

GAGE.--Nonrecording prior to Oct. 26, 1943; recording thereafter. Prior to July 13, 1951, at site 7.8 miles upstream. Oct. 1, 1938, to July 12, 1951, at datum 37.01 ft higher. Prior to Oct. 1, 1938, datum unknown but is approximately same as for 1938-51. Datum of present gage is 1,830.43 ft above mean sea level, datum of 1929.

REMARKS.--Some regulation since May 1942 by Fort Supply Lake on Wolf Creek (Capacity, 106,100 acre-ft). Records 1938-46 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,500 cfs. Only annual peaks (furnished by U.S. Weather Bureau) are shown prior to 1939 and are generally maximum observed. Prior to 1931, no records were collected during winter period November to February.

BASIN CHARACTERISTICSDrainage Area (sq mi)

Total = 11,589
Noncontributing = 4,812
Contributing = 6,777
Channel slope (ft/mi) = 9.48
Annual precip. (in) = 20.3
Bankful stage (ft) = 12

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,250
Q₅ = 12,400
Q₁₀ = 19,600
Q₂₅ = 32,200
Q₅₀ = 44,500
Q₁₀₀ = 59,700

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 3.727
Standard deviation = 0.438
Skew = 0.097

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Sep. 8	7.9	-	1945	Oct. 5	4.22	4,180	1955	Jun. 18	9.01	11,200
1921	Oct. 22	9.4	-		Jun. 27	4.31	4,020		Jun. 21	9.08	11,200
1922	Mar. 15	7.6	-						Jun. 28	7.58	4,540
1923	Jun. 10	9.9	-	1946	Sep. 28	4.10	3,170	1956	May 27	6.10	1,650
1924	Oct. 12	11.0	-								
1925	Jun. 14	4.0	-	1947	Oct. 10	9.80	42,000	1957	May 16	8.55	6,820
					May 16	5.76	5,630		May 20	7.75	4,340
1926	Sep. 6	4.0	-		May 20	5.09	5,210		May 25	7.57	4,450
1927	Aug. 4	5.1	-		May 23	4.63	4,280		Jun. 20	7.15	3,740
1928	Jun. 16	4.0	-		Jun. 27	5.48	6,930		Jun. 22	7.58	4,700
1929	Nov. 17	4.0	-						Jun. 24	10.50	14,000
1930	Jun. 7	4.6	-	1948	Jun. 28	5.55	8,410		Jul. 2	8.70	7,880
1931	Oct. 13	4.0	-	1949	May 17	5.98	9,790	1958	Jun. 22	7.36	3,680
1932	Jun. 17	6.8	-		May 19	4.90	6,270		Aug. 22	8.00	5,510
1933	May 7	7.0	-		May 25	4.25	3,770	1959	Jul. 19	6.01	760
1934	Jun. 17	5.0	-		May 28	4.24	4,070	1960	Jun. 8	7.53	2,730
1935	May 18	10.4	-		Jun. 5	5.60	7,900				
					Jun. 10	5.40	7,250	1961	Oct. 22	6.87	2,880
1936	Jun. 6	7.8	-		Jun. 14	5.60	7,900	1962	Jun. 3	6.81	2,130
1937	Jun. 16	6.8	-		Jun. 25	4.48	5,190	1963	Jun. 3	7.46	3,420
1938	Sep. 7	5.3	11,400		Jul. 12	4.98	6,550	1964	Jun. 19	8.10	5,300
								1965	May 17	9.73	4,650
1939	Apr. 6	4.78	9,320	1950	Jul. 6	4.67	5,320		Jun. 15	10.18	5,590
	Jun. 25	5.40	10,500		Jul. 13	4.73	5,190		Jun. 30	9.70	5,010
	Jun. 28	3.94	4,970		Jul. 21	6.25	9,790	1966	Oct. 20	8.23	2,680
	Jun. 30	4.40	5,950		Jul. 23	6.50	10,500	1967	Aug. 11	9.27	3,440
	Jul. 3	5.40	10,500		Jul. 25	4.60	4,800	1968	Jun. 3	9.23	3,910
1940	May 19	4.10	4,960		Jul. 28	6.68	10,900		Jun. 12	10.39	5,970
	Jun. 7	4.00	4,600		Jul. 30	5.44	7,610		Jun. 17	9.55	4,390
	Jun. 11	5.10	8,940		Aug. 3	7.06	13,900	1969	Oct. 19	10.14	5,510
	Aug. 9	5.44	10,300		Aug. 30	5.02	6,410		Jun. 13	10.10	5,850
1941	May 4	4.52	7,780		Sep. 6	4.38	4,930	1970	Jun. 17	6.82	1,360
	May 24	6.40	18,000		Sep. 12	4.77	5,850	1971	Jun. 12	7.02	1,520
	Jun. 9	4.80	8,240		Sep. 15	4.43	5,060				
	Jul. 7	5.40	12,200		Sep. 28	4.38	4,930				
	Sep. 25	5.20	8,240	1951	May 18	8.70	35,000				
1942	Oct. 23	7.70	31,000		May 23	4.08	4,630				
	Apr. 22	5.40	8,800		Jun. 12	4.55	5,320				
	Apr. 24	4.40	6,000		Jun. 17	4.00	3,940				
	Jun. 10	5.15	8,250	1952	Jun. 25	4.58	5,710				
1943	Oct. 3	4.6	6,000		Apr. 25	5.46	912				
	Oct. 20	4.00	3,780	1953	Jul. 24	8.10	4,940				
1944	Apr. 11	4.82	6,600		Aug. 19	7.73	4,200				
	Apr. 22	4.54	6,030	1954	Oct. 27	6.15	1,410				
	Apr. 25	4.53	5,000	1955	May 18	8.41	6,400				
	Apr. 30	4.24	4,260		May 20	9.46	12,400				
	Jul. 26	4.70	5,530		May 28	8.31	6,600				

ARKANSAS RIVER BASIN

07237750 COTTONWOOD CREEK NEAR VICI, OKLA.

LOCATION.--Lat 36°08'45", long 99°12'00", in SE 1/4 SW 1/4 sec.2, T.19 N., R.19 W., Dewey County, at bridge on U.S. Highway 60, 5.4 miles east of Vici.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 12, 1965.

HISTORICAL DATA.--The 1927 flood was approximately 4 ft higher than the peak of April 18, 1970 from information by local resident.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 11.5
Noncontributing = 0
Contributing = 11.5
Channel slope (ft/mi) = 48.3
Annual precip. (in) = 24.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 251 (359)
Q₅ = 596 (851)
Q₁₀ = 934 (1,330)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 2.399
Standard deviation = 0.447
Skew = -0.021

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 14	5.32	145	1967	May 5	5.47	90	1969	May 4	7.15	420
1965	Jun. 24	8.35	950	1968	May 6	6.23	200	1970	Apr. 18	8.25	900
1966	Oct. 18	5.05	55					1971	Jun. 11	6.70	300

07237800 BENT CREEK NEAR SEILING, OKLA.

LOCATION.--Lat 36°11'26", long 99°00'36", in NW 1/4 SE 1/4 sec.21, T.20 N., R.17 W., Woodward County, on downstream side of right bank pier of bridge on U.S. Highways 183 and 270, 0.2 mile downstream from Camp Creek, 6 miles northwest of Seiling, 6.5 miles downstream from Kizer Creek, and at mile 2.0.

GAGE.--Crest-stage gage. Datum of gage is 1,710.60 ft above mean sea level (State Highway Department bench mark). Oct. 1, 1966, to Sept. 30, 1970, water-stage recorder.

HISTORICAL DATA.--A stage of about 22 ft has occurred twice in recent years, from information by State Highway Departments.

REMARKS.--Only annual peaks are shown since 1970. Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 139
Noncontributing = 0
Contributing = 139
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Apr. 19	11.97	1,070	1968	May 11	14.2	1,700	1970	Apr. 18	18.32	4,810
	May 5	14.91	1,970								
	Jun. 7	14.35	1,760	1969	Apr. 26	8.95	442	1971	Jun. 11	14.81	1,930

ARKANSAS RIVER BASIN

07238000 NORTH CANADIAN RIVER NEAR SEILING, OKLA.

LOCATION.--Lat 36°11'06", long 98°55'15", in NW 1/4 sec.28, T.20 N., R.16 W., Major County, near center of span on downstream side of pier of bridge on U.S. Highway 60, 2 miles upstream from Seiling Creek, 2.2 miles north of Seiling, 2.8 miles downstream from Deep Creek, and at mile 422.6.

GAGE.--Water-stage recorder. Datum of gage is 1,675.42 ft above mean sea level (levels by Corps of Engineers). July 1, 1946, to Aug. 17, 1964, at site 60 ft downstream and prior to Oct. 1, 1954, at datum 5.00 ft higher.

REMARKS.--Some regulation by Fort Supply Lake on Wolf Creek 70.6 miles upstream. Records 1946-50 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 12,261
Noncontributing = 4,847
Contributing = 7,414
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 11

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,230
Q₅ = 9,310
Q₁₀ = 14,800
Q₂₅ = 25,500
Q₅₀ = 37,000
Q₁₀₀ = 52,500

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.665
Standard deviation = 0.381
Skew = 0.623

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Oct. 13	11.4	-	1951	May 19	10.61	33,000	1958	Aug. 4	10.16	4,800
1947	Oct. 11	11.00	29,300		May 22	5.81	5,480		Aug. 23	10.06	4,540
	May 16	5.95	7,000		Jun. 12	5.61	4,680				
	May 21	5.78	6,550		Jun. 17	5.21	3,980	1959	Sep. 24	10.27	5,070
	May 24	5.15	4,670		Jun. 25	5.82	5,390				
	Jun. 27	5.78	5,450	1952	Apr. 19	3.35	1,260	1960	Jun. 8	9.08	2,440
1948	Jun. 29	5.63	5,180					1961	Oct. 22	9.26	2,840
	Aug. 9	7.06	9,550	1953	Jul. 25	6.02	3,840				
	Aug. 14	5.84	5,680		Aug. 19	5.79	3,780	1962	Sep. 17	9.90	4,170
1949				1954	Apr. 30	5.56	3,720	1963	Jun. 3	9.28	2,920
	May 7	5.39	4,530					1964	Jun. 19	9.17	2,670
	May 19	8.71	14,800	1955	May 20	12.10	8,510				
	May 29	5.45	4,640		May 26	9.95	4,060	1965	Jun. 16	11.82	4,430
	Jun. 4	6.38	6,760		May 28	11.02	6,490		Jul. 1	11.45	4,330
	Jun. 8	6.03	7,130		Jun. 21	11.80	8,770		Sep. 20	11.38	4,330
	Jun. 10	5.71	6,210		Jun. 24	9.73	3,770				
	Jun. 15	5.64	6,200		Jun. 29	10.28	5,370	1966	Oct. 21	9.87	2,700
	Jun. 25	5.31	4,320	1956	May 28	7.80	1,000	1967	Aug. 12	10.28	2,430
1950	Jul. 12	5.63	6,580								
	Jun. 10	4.75	4,110	1957	May 4	10.06	4,050	1968	Jun. 13	12.01	4,580
	Jul. 7	5.19	4,850		May 17	11.10	7,010		Jun. 18	10.98	3,760
	Jul. 14	5.35	5,180		May 20	10.24	5,210				
	Jul. 21	6.63	8,140		May 25	10.51	6,240	1969	Oct. 21	11.85	4,030
	Jul. 30	7.25	9,290		Jun. 22	10.15	5,070		Jun. 14	11.86	3,590
	Aug. 4	7.78	8,600		Jun. 25	12.48	13,100				
	Aug. 30	6.54	6,530		Jul. 2	10.97	8,510	1970	Apr. 18	11.98	3,680
	Sep. 7	5.56	4,850					1971	Jun. 12	8.66	1,520
	Sep. 13	5.71	5,840	1958	Jun. 22	9.64	3,600				
	Sep. 15	5.40	5,180		Jun. 25	9.63	3,600				
	Sep. 28	5.67	5,290								

a High-water mark obtained from the Corps of Engineers.

ARKANSAS RIVER BASIN

07239000 NORTH CANADIAN RIVER AT CANTON, OKLA.

LOCATION.--Lat 36°04'45", long 98°35'25", in NE 1/4 SW 1/4 sec.33, T.19 N., R.13 W., Blaine County, on right bank 2,700 ft downstream from Canton Dam, 1.5 miles northwest of Canton, 4.8 miles upstream from Minnehaha Creek, and at mile 393.8.

GAGE.--Nonrecording prior to Oct. 1, 1937, at railway bridge 300 ft upstream from State Highway 58; recording Oct. 1, 1937, to Jan. 6, 1955, at State Highway 28, 2-1/2 miles downstream. Prior to Oct. 1, 1950, all gage heights adjusted to datum 1.91 ft lower than present datum. Oct. 1, 1950, to Jan. 6, 1955, datum of gage is 6.91 ft lower. Datum of present gage is 1,562.50 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Flow partly regulated by Fort Supply Lake on Wolf Creek during May 1942 to April 1948 and complete regulation thereafter by Canton Lake (capacity, 390,800 acre-ft). Records 1937-50 furnished by Corps of Engineers and reviewed by Geological Survey. Gage-height records for period 1914-37 furnished by U.S. Weather Bureau are generally annual observed peaks. Prior to 1931, no data were collected in winter period November to February. Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1938 and subsequent to 1947. Flood of Oct. 13, 1923, as routed through Canton Reservoir by Corps of Engineers, had a peak inflow of 85,000 cfs and a peak outflow of 41,000 cfs. Flood-frequency data are based on graphically fitted curve for period 1948-71 and routed outflow peak of 1923 flood. These data represent conditions since closure of Canton Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 12,484
 Noncontributing = 4,883
 Contributing = 7,601
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 12

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 1,350
 Q₅ = 2,150
 Q₁₀ = 3,300
 Q₂₅ = 7,000
 Q₅₀ = 12,700
 Q₁₀₀ = 24,500

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1914	May 6	10.0	-	1939	Nov. 3	6.52	2,270	1945	Oct. 6	7.56	2,350
1915	Jun. 7	12.8	-		Apr. 7	9.10	6,550		Jun. 28	7.16	2,940
					Jun. 26	9.78	7,860		Sep. 28	9.02	4,550
1916	Jun. 7	13.0	-		Jul. 1	8.06	4,770				
1917	Aug. 18	9.0	-		Jul. 4	9.53	7,290	1946	Jun. 29	7.23	1,620
1918	May 31	12.5	-								
1919	May 27	8.0	-	1940	May 20	7.36	3,610	1947	Oct. 12	12.83	24,800
1920	Sep. 9	9.6	-		Jun. 1	6.40	2,130		Apr. 13	9.62	3,980
					Jun. 7	6.76	2,620		May 17	10.20	5,350
1921	Oct. 24	12.3	-		Jun. 12	9.00	5,300		May 21	9.63	4,450
1922	Mar. 16	9.1	-		Aug. 10	9.04	5,300		May 24	9.12	3,880
1923	Jun. 10	13.6	-						Jun. 28	9.73	4,570
1924	Oct. 13	16.8	-	1941	May 5	8.92	6,910				
1925	Jun. 13	7.4	-		May 21	8.47	3,650	1948	Aug. 15	7.86	2,020
					May 25	11.05	9,980	1949	Jun. 11	9.86	4,020
1926	Sep. 12	5.6	-		Jun. 4	7.40	2,500	1950	Aug. 15	a8.55	3,230
1927	Aug. 5	10.6	-		Jun. 7	7.17	2,720		24-27		
1928	May 17	6.6	-		Jun. 10	10.10	7,200				
1929	Nov. 18	7.0	-		Jun. 23	7.07	2,610	1951	Jun. 15	13.44	3,820
1930	May 7	8.6	-		Jul. 8	9.25	5,420	1952	Feb. 28	7.88	1,060
					Aug. 27	8.27	4,050	1953	Sep. 13	9.42	1,660
1931	Oct. 14	6.0	-		Sep. 26	9.45	5,780	1954	Mar. 19	9.32	1,500
1932	Jun. 28	9.3	-					1955	Jun. 30	10.62	2,360
1933	May 8	9.4	-	1942	Oct. 6	6.65	2,140				
1934	Apr. 4	11.5	-		Oct. 15	7.28	2,830	1956	Jul. 10	9.84	1,590
1935	May 20	13.2	-		Oct. 25	12.51	21,900	1957	Jul. 1	10.79	2,420
					Apr. 23	9.35	5,780	1958	Jul. 1	8.82	1,450
1936	Jun. 7	11.5	-		Apr. 25	8.98	5,260	1959	Sep. 29	8.98	1,730
1937	Jun. 17	11.2	-		Jun. 11	9.35	5,780	1960	Oct. 2	7.80	1,200
					Sep. 26	7.03	2,500				
1938	Apr. 28	7.43	3,690					1961	Jun. 14	7.19	870
	May 7	7.42	3,610	1945	Oct. 3	9.20	6,500	1962	Jun. 13	8.47	1,370
	May 19	10.25	8,750		Oct. 21	7.45	3,740	1963	May 25	7.36	1,040
	May 24	8.13	4,770		May 19	7.03	2,410	1964	Jun. 26	8.58	1,160
	Jun. 2	7.36	3,530		Jun. 8	7.45	2,920	1965	Jun. 7	9.06	1,120
	Jun. 16	6.35	2,060								
	Jun. 20	7.20	3,290	1944	Apr. 12	8.54	3,820	1966	Jul. 6	8.82	1,040
	Sep. 8	8.78	6,010		Apr. 23	9.63	5,850	1967	Sep. 18	9.45	1,260
	Sep. 13	6.82	2,690		Apr. 26	8.78	4,550	1968	Jun. 15	8.87	1,110
					Apr. 29	7.74	2,940	1969	Jun. 26	b9.94	1,400
					May 1	7.89	3,120	1970	Feb. 25	c8.66	1,020
					Jul. 28	7.75	3,390	1971	Apr. 17	8.44	1,070

- a Occurred Aug. 18, 1950.
 b Occurred Oct. 26, 1968.
 c Occurred May 21, 22, 1970.

ARKANSAS RIVER BASIN

07239050 NORTH CANADIAN RIVER TRIBUTARY NEAR EAGLE CITY, OKLA.

LOCATION.--Lat 35°55'30", long 98°35'00", in SE 1/4 NE 1/4 sec.28, T.17 N., R.13 W., Blaine County, at culvert on State Highway 58, 0.5 mile south of Eagle City.

GAGE.--Crest-stage gage. Stage-rainfall recorder since June 20, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 0.52
 Noncontributing = 0
 Contributing = 0.52
 Channel slope (ft/mi) = 112
 Annual precip. (in) = 26.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 103 (147)
 Q₅ = 257 (367)
 Q₁₀ = 436 (623)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.047
 Standard deviation = 0.448
 Skew = 0.480

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	1.85	51	1967	Jun. 11	6.76	501	1969	May 7	2.70	112
1965	Aug. 22	6.43	461	1968	Sep. 4	2.80	120	1970	Sep. 15	2.70	112
1966	Aug. 9	1.50	30					1971	Jun. 3	1.76	45

ARKANSAS RIVER BASIN

07239500 NORTH CANADIAN RIVER NEAR EL RENO, OKLA.

LOCATION.--Lat 35°33'44", long 97°57'32", on east line of sec.32, T.13 N., R.7 W., Canadian County, near left bank on downstream side of pier of bridge of U.S. Highway 81, 2 miles north of courthouse in El Reno, 2.2 miles downstream from Target Creek, and at mile 307.4.

GAGE.--Water-stage recorder. Datum of gage is 1,299.02 ft above mean sea level (U.S. Weather Bureau bench mark). October 1902 to April 1908, nonrecording gage at site about 50 ft downstream at different datum.

HISTORICAL DATA.--Flood of Oct. 15, 1923, reached an elevation of 1,326.3 ft above mean sea level at railroad bridge 1 mile above station, from U.S. Weather Bureau reports. A peak inflow of 135,000 cfs at Lake Overholser (25 miles downstream), is based on cross-sectional studies and is used by the Oklahoma City Water Department. Corps of Engineers routing studies indicate Canton Lake would reduce the 1923 flood at El Reno to 31,500 cfs.

REMARKS.--Some regulation by Fort Supply Lake on Wolf Creek since May 1942 and major regulation by Canton Lake since April 1948 (capacity, 390,800 acre-ft), 87 miles upstream. Gage heights for 1934-37 furnished by U.S. Weather Bureau. Base for partial-duration series, 3,100 cfs. Only annual peaks are shown prior to 1938. Flood-frequency data are based on graphically fitted curve for period 1948-71 and routed peak of 1923 flood. These data represent regulated flow conditions since closure of Canton Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 13,042
 Total
 Noncontributing = 4,899
 Contributing = 8,143
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 15

LOG-PEARSON TYPE III
 FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 2,800
 Q₅ = 5,500
 Q₁₀ = 8,000
 Q₂₅ = 13,000
 Q₅₀ = 18,500
 Q₁₀₀ = 26,000

LOG-PEARSON TYPE III
 STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 28	10.5	4,400	1942	Apr. 25	10.61	5,940	1952	May 23	8.64	2,250
					Apr. 27	9.80	4,660				
1904	Jul. 15	10.4	4,320		Jun. 7	8.90	3,300	1953	Sep. 13	8.96	1,120
					Jun. 12	9.49	4,200				
1905	Jun. 1	6.0	980	1943	May 10	8.88	3,160	1954	May 25	9.95	2,200
1906	Aug. 12	10.0	3,600		May 19	10.00	4,430	1955	May 27	11.32	2,970
1907	Jun. 9	10.0	3,640	1944	Apr. 10	13.18	9,540	1956	Oct. 4	12.82	5,240
					Apr. 24	9.09	3,110				
1924	Oct. 15	(a)	-		Apr. 27	9.08	3,220	1957	Apr. 24	10.28	2,540
					Jun. 13	10.70	4,820				
1934	Apr. 6	11.5	-	1945	Apr. 11	9.05	3,140	1958	Jun. 22	10.68	3,090
1935	May 21	16.8	-		Apr. 16	9.48	3,500	1959	Sep. 25	9.70	2,470
1936	Jun. 10	12.9	-		May 12	9.40	3,380	1960	Oct. 4	13.47	6,840
1937	Jun. 19	11.8	-		Jul. 10	9.38	3,380				
				1946	Jun. 29	9.41	3,300	1961	Oct. 18	10.90	4,040
1938	May 8	9.10	3,390						Oct. 28	10.78	3,910
	May 21	11.10	7,950	1947	Oct. 15	11.99	5,800		Sep. 13	13.33	6,020
	May 25	10.00	5,290		Apr. 15	9.74	3,390	1962	Jun. 9	10.68	3,000
	Sep. 9	9.80	3,590		May 12	10.37	3,940				
					May 16	11.57	5,440	1963	Jun. 23	8.48	1,290
1939	Apr. 9	10.40	4,340		May 22	10.02	3,720				
	Jun. 28	10.07	4,620		May 26	10.08	3,610	1964	May 11	10.20	3,000
	Jul. 2	9.98	4,520		Jun. 29	9.34	2,500				
	Jul. 6	10.13	4,800	1948	Jun. 24	16.14	12,800	1965	Sep. 21	18.20	12,500
1940	Jun. 13	9.32	3,080								
				1949	May 19	12.23	6,320	1966	Jul. 21	7.82	850
1941	May 6	9.54	3,190		May 21	11.76	5,680				
	May 23	9.67	3,300		May 29	10.56	4,050	1967	Jun. 12	9.94	1,760
	May 28	11.56	5,830		Jun. 13	10.68	4,050				
	Jun. 6	9.35	3,080					1968	Feb. 1	9.65	2,080
	Jun. 13	11.60	6,130	1950	Aug. 1	10.99	4,280				
	Jul. 9	9.64	3,760		Aug. 16	10.19	3,620	1969	May 5	11.21	2,580
	Sep. 27	9.72	3,760		Sep. 5	10.23	3,620				
					Sep. 17	9.76	3,290	1970	May 26	b8.71	868
1942	Oct. 28	15.98	15,000	1951	Jun. 11	10.77	4,280	1971	Sep. 24	7.85	938
	Apr. 19	12.82	8,360		Jun. 15	10.58	4,280				

a See "Historical Data" paragraph above.

b Occurred Jan. 24, 1970; backwater from ice.

ARKANSAS RIVER BASIN

07241000 NORTH CANADIAN RIVER BELOW LAKE OVERHOLSER, NEAR OKLAHOMA CITY, OKLA.

LOCATION.--Lat 35°28'46", long 97°39'47", in southeast corner of SW 1/4 sec.30, T.12 N., R.4 W., Oklahoma County, on left bank 200 ft upstream from bridge on State Highway 4, 0.5 mile downstream from Lake Overholser, 2.4 miles upstream from Mustang Creek, 9.1 miles southwest of State Capitol in Oklahoma City, and at mile 281.0.

GAGE.--Water-stage recorder. Datum of gage is 1,194.66 ft above mean sea level. Prior to Oct. 1, 1961, at datum 10.00 ft higher and through Mar. 24, 1971 at site 200 ft downstream.

HISTORICAL DATA.--Maximum stage known, 30.9 ft., former datum, in October 1923 (from information by State Highway Department). A peak inflow to Lake Overholser of 135,000 cfs is based on cross-sectional studies and is used by Oklahoma City Water Department. Corps of Engineers routing studies indicate Canton Lake would reduce the 1923 peak at Oklahoma City to 33,700 cfs. Peak stages prior to 1963 obtained from State Highway Commission.

REMARKS.--Some regulation by Canton Lake and by Lake Overholser. Diversions above station into Lake Hefner Canal. Only annual peaks are shown. Flood-frequency data based on graphically fitted frequency curve of all annual peaks and routed peak of 1923 flood. These data represent regulated flow conditions since closure of Canton Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 13,222
 Noncontributing = 4,899
 Contributing = 8,323
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 30

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,720
 Q₅ = 4,750
 Q₁₀ = 8,100
 Q₂₅ = 14,200
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Oct.	20.7	-	1957	Jun. 24	10.00	3,120	1964	Nov. 22	11.33	191
1923	Jun.	26.0	-	1958	Jun. 21	11.10	4,810	1965	Sep. 23	24.62	6,800
1924	Oct.	30.9	(a)	1959	Sep. 25	10.17	4,240	1966	Oct. 26	14.59	735
1953	Apr. 5	4.47	165	1960	Oct. 5	14.43	8,020	1967	Aug. 28	14.72	606
1954	May 2	3.81	78	1961	Sep. 14	11.62	5,440	1968	Jun. 20	17.81	1,220
1955	Jul. 6	8.15	1,860	1962	Jun. 10	20.96	5,000	1970	Sep. 22	19.72	1,600
1956	Oct. 5	12.44	5,790	1963	Jun. 24	14.46	970	1971	Oct. 6	17.76	1,040

a See "Historical Data" paragraph above.

ARKANSAS RIVER BASIN

07241500 NORTH CANADIAN RIVER NEAR OKLAHOMA CITY, OKLA.

LOCATION.--Lat 35°29'40", long 97°25'40", on north line of sec.29, T.12 N., R.2 W., near right bank on downstream side of pier of bridge on U.S. Highway 62, 4.5 miles east of State Capitol in Oklahoma City, 5 miles upstream from Crutcho Creek, and at mile 261.2.

GAGE.--Water-stage recorder. Datum of gage is 1,136.79 ft above mean sea level, datum of 1929. Nov. 11, 1938, to June 26, 1939, nonrecording gage at site 1,250 ft downstream at datum 3.34 ft higher. June 27, 1939, to Feb. 8, 1940, nonrecording gage and Feb. 9, 1940, to Sept. 30, 1953 water-stage recorder, at present site at datum 4.0 ft higher.

HISTORICAL DATA.--Maximum stage know, 25.0 ft, present datum, Oct. 16, 1923, from information by State Highway Commission and Oklahoma City Water Department. Corps of Engineers routing studies indicate Canton Lake would reduce the 1923 peak discharge at Oklahoma City to 33,700 cfs.

REMARKS.--Some regulation by Fort Supply Lake for the period May 1942 to April 1948 and thereafter by Canton Lake and by Lake Overholser for entire period. Diversions above station into Lake Hefner Canal. Base for partial-duration series, 4,400 cfs. Flood-frequency data based on graphically fitted curve for period 1948-60 and routed peak of 1923 flood. These data represent regulated flow conditions since closure of Canton Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 13,354
Total
Noncontributing = 4,899
Contributing = 8,455
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 15

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 7,100
Q₅ = 10,100
Q₁₀ = 12,900
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Jun. 3	--	a100,000	1944	Jun. 13	10.96	8,730	1949	May 29	9.82	6,320
1939	Jun. 29	11.47	7,600	1945	Apr. 12	9.20	5,600		Jun. 10	9.56	6,130
1940	Jul. 2	9.80	5,240		Apr. 16	10.67	8,200		Jun. 21	9.04	4,870
1941	May 5	11.77	8,240		Jun. 11	10.88	8,500	1950	Aug. 16	8.23	4,190
	May 29	10.31	5,420		Jul. 10	9.17	5,580				
	Jun. 6	11.79	8,780		Sep. 30	10.0	7,000	1951	May 18	11.35	7,880
	Jun. 15	10.78	6,080	1946	Jun. 29	7.39	3,330		May 21	9.83	5,660
1942	Oct. 15	9.81	5,100						May 27	9.41	5,420
	Oct. 30	14.74	16,700	1947	Apr. 13	9.84	6,130		Jun. 11	11.88	8,700
	Apr. 19	10.72	6,550		Apr. 15	9.53	5,450		Jun. 19	9.06	5,060
	Apr. 26	10.11	5,820		May 16	10.74	8,010	1952	May 23	8.20	4,700
1943	May 10	8.55	4,420		May 19	10.30	6,910				
	May 20	10.07	6,090		Jun. 1	8.84	4,610	1953	Apr. 5	9.54	6,410
1944	Mar. 15	8.13	4,430	1948	Mar. 26	9.00	5,300				
	Apr. 11	9.13	4,620		Jun. 22	12.01	9,060	1960	Oct. 4	10.41	10,200
					Jun. 24	12.06	9,120		Apr. 28	8.20	5,460
				1949	May 23	8.47	4,870		Jul. 23	8.77	6,710

a Data determined at Spencer, 5 miles downstream, furnished by Oklahoma City Water Department.

ARKANSAS RIVER BASIN

07241880 SAND CREEK NEAR CROMWELL, OKLA.

LOCATION.--Lat 35°20'56", long 96°29'40", in SE 1/4 SE 1/4 sec.7, T.10 N., R.8 E., Seminole County, at bridge on State Highway 99A, 2.2 miles west of Cromwell.

GAGE.--Crest-stage gage. Stage-rainfall recorder July 14, 1964, to Aug. 14, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 9.48
 Noncontributing = 0
 Contributing = 9.48
 Channel slope (ft/mi) = 30.6
 Annual precip. (in) = 39.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,520 (2,170)
 Q₅ = 1,920 (2,950)
 Q₁₀ = 2,100 (3,500)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.149
 Standard deviation = 0.160
 Skew = -1.219

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	11.43	1,100	1967	Apr. 12	12.95	1,560	1969	May 16	13.45	1,730
1965	Nov. 17	9.77	670	1968	May 13	14.05	1,940	1970	Apr. 30	14.48	2,110
1966	Jul. 24	12.79	1,520					1971	Jul. 1	11.92	1,260

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OKLA.

LOCATION.--Lat 35°15'53", long 96°12'25", in center of SW 1/4 sec.12, T.9 N., R.10 E., Hughes County, near left bank on downstream side of pier of bridge on U.S. Highway 75, 2.3 miles upstream from Wewoka Creek, 2.5 miles northeast of Wetumka, and at mile 84.4.

GAGE.--Water-stage recorder. Datum of gage is 683.28 ft above mean sea level. Prior to Jan. 19, 1939, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in October 1923 reached a stage of 26.9 ft and flood of April 1927 reached a stage of 26.5 ft, from floodmarks from information by Corps of Engineers.

REMARKS.--Some regulation by Lake Overholser (capacity, 17,100 acre-ft) at mile 281.5 and since April 1948 by Canton Lake (capacity, 390,800 acre-ft) at mile 394.3. Base for partial-duration series, 5,000 cfs. Log-Pearson calculations based on all annual peaks since 1948 and represent regulated flow conditions since closure of Canton Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 14,290
 Noncontributing = 4,899
 Contributing = 9,391
 Channel slope (ft/mi) = ***
 Annual precip. (in) = 21.5
 Bankful stage (ft) = 14

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 11,400
 Q₅ = 19,500
 Q₁₀ = 26,400
 Q₂₅ = 37,400
 Q₅₀ = 47,400
 Q₁₀₀ = 59,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.076
 Standard deviation = 0.262
 Skew = 0.451

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Oct.	26.9	-	1946	Jun. 30	11.12	6,790	1957	May 25	15.00	39,400
									Jun. 4	11.00	10,900
1927	Apr.	26.5	-	1947	Dec. 12	11.77	8,770		Jun. 10	11.35	14,100
					Apr. 16	11.50	7,850		Jun. 15	10.74	12,300
1938	Feb. 17	-	11,000		Apr. 25	10.91	5,650		Jun. 19	10.96	13,500
	Mar. 29	15.64	7,440		Apr. 28	11.43	6,590		Jun. 24	10.33	9,690
	Apr. 22	12.52	5,050		May 12	11.30	6,790				
	May 23	13.14	5,470		May 17	13.23	9,550	1958	Jun. 25	10.75	11,800
1939	Jun. 29	12.62	5,950		May 21	12.76	8,650		Aug. 22	10.80	13,500
					Jun. 1	12.14	7,770				
1940	Sep. 5	9.47	3,820		Jun. 24	11.75	6,480	1959	May 11	9.82	8,300
					Jun. 26	11.72	6,270		Jun. 27	9.00	5,010
1941	Apr. 19	13.20	7,900						Jul. 27	9.60	7,350
	Jun. 2	11.77	6,260	1948	Mar. 26	11.35	5,660				
	Jun. 8	13.94	8,340		May 6	12.63	8,210	1960	Oct. 5	11.28	16,400
	Jun. 12	19.18	16,600		May 25	11.30	5,460		Nov. 4	10.22	10,300
	Sep. 10	11.88	6,360		Jun. 24	20.99	30,000		Dec. 17	9.14	5,720
					Jul. 8	12.99	11,000		Dec. 27	9.20	5,900
1942	Oct. 5	15.25	8,730	1949	Feb. 24	10.40	5,780		Jan. 12	9.00	5,240
	Oct. 16	15.49	9,020		May 1	11.45	7,280		Apr. 14	9.49	7,050
	Oct. 26	11.37	5,790		May 18	17.60	32,200		Apr. 29	9.95	9,050
	Oct. 31	24.4	25,000		May 24	10.40	7,450		May 6	10.49	13,000
	Nov. 4	18.75	19,800		Jun. 3	11.10	8,950		May 21	9.81	10,000
	Apr. 10	15.58	10,200		Jun. 11	11.55	9,950		Jul. 23	9.3	8,000
	Apr. 22	15.17	12,200		Jun. 24	10.06	5,700	1961	May 22	8.7	5,700
	Apr. 25	15.85	10,300						Jul. 8	9.80	10,000
	Jun. 11	11.87	7,290	1950	Apr. 3	9.83	6,460		Jul. 23	9.74	9,800
	Jun. 13	11.03	6,150		May 11	16.49	36,000		Sep. 13	9.0	6,800
	Jun. 22	11.79	6,770		Jul. 10	11.10	8,050				
1943	Oct. 30	11.00	5,670		Jul. 22	11.50	10,800	1962	Apr. 23	8.7	5,700
	May 10	23.72	28,300		Aug. 28	10.29	5,670				
	May 17	10.53	6,120		Sep. 1	10.10	5,370	1963	Apr. 27	8.86	6,760
	May 20	11.35	7,090		Sep. 16	13.07	23,500		Jul. 11	8.4	5,370
					Sep. 25	10.35	5,820				
1944	Mar. 16	10.31	6,120	1951	May 24	9.30	5,230	1964	Apr. 5	9.50	8,790
					Jun. 15	10.81	9,210		May 11	11.33	15,500
1945	Mar. 3	12.34	7,980					1965	Nov. 19	9.23	8,620
	Mar. 12	10.98	6,650	1952	Apr. 23	10.10	8,000				
	Mar. 15	13.51	9,300					1966	Jul. 25	9.06	3,910
	Mar. 20	14.93	10,400	1953	Apr. 24	10.60	11,300				
	Apr. 15	26.40	66,000					1967	Apr. 13	11.1	12,800
	May 12	12.36	10,100	1954	May 2	11.20	16,900		Apr. 17	9.68	6,250
	Jun. 12	11.98	8,840					1968	Mar. 20	9.37	5,320
	Jun. 17	13.02	11,500	1955	May 20	11.94	14,500		Apr. 20	9.27	5,320
1946	Oct. 1	14.23	13,900	1956	Oct. 6	9.53	4,970		May 14	11.26	11,600
	Mar. 28	9.43	5,210						May 25	9.64	8,100
	Apr. 23	10.25	6,370	1957	Apr. 3	11.02	10,900				
	Apr. 30	9.47	5,630		Apr. 23	10.25	8,710	1969	Jan. 30	9.75	8,800
	May 8	10.00	6,070		May 13	10.54	12,300		Feb. 22	8.75	5,400
	May 24	14.10	15,200		May 19	11.88	18,400		May 17	9.38	6,980
	May 31	12.28	10,000		May 23	11.25	12,900				

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OKLA. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1970	Oct. 12	10.28	9,350	1970	Sep. 24	10.08	7,850	1971	Oct. 24	9.38	6,520
	Apr. 19	9.76	7,350						Oct. 27	9.73	6,650
	May 1	10.94	10,700	1971	Oct. 10	10.28	9,350		Jun. 15	9.41	6,620

07242100 WEWOKA CREEK NEAR WETUMKA, OKLA.

LOCATION.--Lat 35°11'40", long 96°14'40", on west line of sec.3, T.8 N., R.10 E., on downstream side of second pier from right bank of bridge on U.S. Highway 75, 0.2 mile downstream from Grief Creek, 1.8 miles upstream from Little Grief Creek, 2.5 miles south of Wetumka, and at mile 8.4.

GAGE.--Water-stage recorder. Datum of gage is 690.12 ft above mean sea level, datum of 1929 (State Highway Department bench mark). Oct. 1, 1959, to Apr. 30, 1961 water-stage recorder at site 3.0 miles downstream at datum 11.25 ft lower.

HISTORICAL DATA.--Flood in May 1945 may have reached a stage of 35 ft at site 3.0 miles downstream.

REMARKS.--Flow regulated by numerous flood-detention reservoirs. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 396
 Noncontributing = 0
 Contributing = 396
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Oct. 5	19.37	9,460	1960	May 19	21.28	11,300	1962	Apr. 23	19.47	6,550
	Nov. 4	16.06	6,970								
	Dec. 18	14.45	5,780	1961	Mar. 31	13.93	5,020	1963	Apr. 27	16.99	4,850
	Dec. 27	13.96	5,500		May 5	18.49	5,850				
	Jan. 13	16.73	7,390					1967	Apr. 13	22.30	8,840

07242160 ALABAMA CREEK NEAR WELEETKA, OKLA.

LOCATION.--Lat 35°21'40", long 96°08'55", in NW 1/4 NE 1/4 sec.9, T.10 N., R.11 E., Okfuskee County, at county road multi-barrel culvert, 2.0 miles north of Weleetka.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 14, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 16.5
 Noncontributing = 0
 Contributing = 16.5
 Channel slope (ft/mi) = 26.8
 Annual precip. (in) = 40.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Aug. 27	7.74	435	1967	Apr. 12	15.37	4,100	1970	Oct. 12	12.85	3,000
1966	Jul. 24	10.51	1,610	1968	May 13	11.60	2,160	1971	Sep. 5	11.00	1,850
				1969	May 16	9.75	1,270				

ARKANSAS RIVER BASIN

07242180 STIDHAM CREEK NEAR DUSTIN, OKLA.
(Previously published as Stidham Creek tributary)

LOCATION.--Lat 35°17'16", long 96°03'05", in NW 1/4 NW 1/4 sec.3, T.9 N., R.12 E., Hughes County, at multi-barrel culvert on State Highway 84, 1.1 miles north of Dustin.

GAGE.--Crest-stage gage. Stage-rainfall recorder Oct. 25, 1964, to Aug. 14, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2.56
Noncontributing = 0
Contributing = 2.56
Channel slope (ft/mi) = 26.2
Annual precip. (in) = 41.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 330 (471)
Q₅ = 503 (774)
Q₁₀ = 631 (1,050)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.522
Standard deviation = 0.215
Skew = 0.106

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 4	9.11	404	1967	Aug. 4	7.35	210	1969	Jun. 18	7.20	194
1965	May 26	7.10	183	1968	May 13	10.95	622	1970	Oct. 12	10.13	524
1966	Aug. 21	7.50	227					1971	Sep. 5	10.34	550

07242500 BELLCOW CREEK AT CHANDLER, OKLA.

LOCATION.--Lat 35°42', long 96°53', in SW1/4 sec.9, T.14 N., R.4 E., on right bank half a mile upstream from bridge on U.S. Highway 66, half a mile west of courthouse in Chandler, and 1.4 miles downstream from Belcalf Creek.

GAGE.--Recording. Datum of gage is 824.26 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--Peak discharge of May 16, 1943, based on contracted-opening measurement at site 3/4 mile downstream.

REMARKS.--Base for partial-duration series, 1,200 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 46
Noncontributing = 0
Contributing = 46
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 12

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 16	-	2,600	1950	Jun. 10	8.46	1,700	1952	May 23	11.80	2,910
					Jul. 10	9.04	1,860		Jul. 17	10.16	2,300
1948	Jun. 24	15.20	-		Jul. 20	8.34	1,670				
					Aug. 1	6.97	1,240	1953	Apr. 5	7.00	1,260
1949	Jan. 23	6.9	1,210	1951	May 1	7.80	1,450		Jul. 23	7.14	1,270
	May 18	7.52	1,390		Jun. 8	8.34	1,620	1954	May 1	8.53	1,700
	May 19	11.00	2,540		Jun. 10	8.54	1,680				
	May 21	7.0	1,240		Jun. 19	10.84	2,530	1955	May 19	9.80	2,110
	May 24	9.0	1,860		Sep. 6	7.69	1,420				

ARKANSAS RIVER BASIN

07243000 DRY CREEK NEAR KENDRICK, OKLA.

LOCATION.--Lat 35°46'55", long 96°51'20", in NW 1/4 NW 1/4 sec.14, T.15 N., R.4 E., Lincoln County, near left bank on downstream side of county road bridge, 1 mile downstream from Beaver Creek and 4.5 miles west of Kendrick.

GAGE.--Water-stage recorder. Altitude of gage is 825 ft (from topographic map).

REMARKS.--Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 69
 Noncontributing = 0
 Contributing = 69
 Channel slope (ft/mi) = 11.9
 Annual precip. (in) = 34.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 3,480
 Q₅ = 4,640
 Q₁₀ = 5,180
 Q₂₅ = 5,670
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 3.507
 Standard deviation = 0.189
 Skew = -1.134

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 14	10.18	2,330	1960	Apr. 13	10.42	2,680	1966	May 21	9.17	2,190
	May 26	10.00	2,230		Apr. 29	9.03	2,110		Jun. 7	9.13	2,150
1957	May 11	10.68	2,580	1961	May 21	8.98	2,110		Jul. 23	11.46	3,180
	May 21	12.34	3,620		Jun. 14	13.32	4,640		Aug. 19	8.86	2,060
	May 22	10.11	2,280		Jul. 7	9.02	2,110	1967	Apr. 13	9.14	2,170
	May 25	13.13	4,410						Apr. 19	8.93	2,080
	Jun. 10	12.54	3,800	1962	Apr. 10	10.65	2,770		May 6	9.52	2,320
	Jun. 12	11.96	3,380		May 28	10.00	2,510				
	Sep. 15	11.85	3,240		Jun. 1	13.32	4,640	1968	Feb. 1	8.28	1,830
1958	Jun. 20	10.35	2,430		Jun. 9	13.38	4,760	1969	Mar. 23	8.97	2,100
	Jun. 25	13.63	5,020		Sep. 15	12.73	4,010	1970	Sep. 22	12.48	3,820
1959	May 9	13.07	4,410	1963	Apr. 26	6.25	1,100	1971	Oct. 8	10.85	2,830
	Jul. 27	13.00	4,300	1964	May 11	12.88	4,200		Jun. 3	9.55	2,180
	Sep. 25	12.53	3,840	1965	Apr. 14	9.27	2,230		Jul. 23	10.67	2,740
1960	Oct. 4	12.68	4,010		Jun. 21	9.68	2,390				
					Sep. 21	13.15	4,520				

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OKLA.

LOCATION.--Lat 35°40'15", long 96°04'08", on line between secs. 19 and 20, T.14 N., R.12 E., Oklahoma County, near left bank on downstream side of pier of county road bridge, 3 miles upstream from Adams Creek, 4 miles south of Beggs, 8 miles downstream from Flat Rock (Check-board) Creek, and at mile 85.0.

GAGE.--Water-stage recorder. Datum of gage is 632.55 ft above mean sea level. Prior to Aug. 29, 1939, nonrecording gage at site 450 ft downstream at same datum. Aug. 29, 1939, to June 22, 1953, nonrecording gage at present site and datum.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 2,018
Noncontributing = 0
Contributing = 2,018
Channel slope (ft/mi) = 2.60
Annual precip. (in) = 35.5
Bankful stage (ft) = 16

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,530
Q₅ = 20,000
Q₁₀ = 32,800
Q₂₅ = 57,800
Q₅₀ = 85,200
Q₁₀₀ = 122,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.967
Standard deviation = 0.415
Skew = 0.526

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Jul. 8	12.50	2,280	1947	May 18	25.90	17,700	1960	Oct. 9	24.89	15,800
					Jun. 3	16.00	3,120		Nov. 6	18.84	4,720
1940	Apr. 30	14.82	3,060		Jul. 2	17.20	3,500		Dec. 19	14.82	3,040
	Sep. 5	20.94	4,870						Dec. 27	15.02	3,110
1941	Dec. 2	20.13	4,890	1948	May 17	19.24	4,300		Feb. 6	16.12	3,500
	Apr. 22	23.88	18,500		Jun. 24	33.35	53,400		Apr. 16	20.47	6,960
	May 10	21.85	10,500		Jul. 12	22.90	10,400		May 7	23.42	13,200
	Jun. 11	29.78	31,000						May 22	19.07	5,020
	Sep. 11	18.40	3,950	1949	Feb. 16	18.12	3,960		May 26	19.84	5,930
					May 3	19.34	4,590				
1942	Oct. 6	23.50	11,800		May 24	27.80	23,200	1961	May 7	15.81	3,390
	Oct. 17	22.90	10,400		Jun. 4	22.62	9,680		Jul. 15	14.82	3,040
	Nov. 3	28.79	27,100		Jun. 12	25.20	15,800		Jul. 27	16.63	3,690
	Nov. 25	15.98	3,120								
	Apr. 13	24.18	13,400	1950	Apr. 5	15.71	3,190	1962	Jun. 11	21.08	7,930
	Apr. 23	27.75	23,400		May 12	26.85	20,200		Jul. 12	19.1	5,020
	Jun. 15	23.71	12,200		Jul. 13	16.65	3,520		Sep. 17	15.87	3,430
	Jun. 26	26.25	18,600		Jul. 20	23.65	12,000				
	Aug. 19	22.18	8,760		Sep. 16	20.80	6,050	1963	Apr. 27	14.86	3,130
1943	Oct. 31	19.33	4,270	1951	Feb. 21	16.00	3,300	1964	Apr. 6	21.03	7,130
	Mar. 28	17.00	3,430		Mar. 11	15.40	3,080		May 13	18.42	5,010
	May 11	34.55	66,800		Jun. 17	20.35	5,780				
	May 20	28.05	24,000	1952	Mar. 12	14.90	3,010	1965	Nov. 26	17.10	4,680
	Jun. 2	18.0	3,770		Apr. 24	18.60	5,090		Apr. 15	15.19	3,770
					May 30	19.60	6,200		May 11	14.22	3,330
1944	Mar. 22	18.61	3,990	1953	Apr. 26	19.00	4,710	1966	May 18	11.27	2,280
	Apr. 10	17.40	3,570					1967	Apr. 25	20.10	6,550
	May 5	16.62	3,310	1954	May 4	18.88	4,660		May 6	14.95	3,680
	May 11	19.90	4,600		May 26	14.74	3,010				
	May 30	17.90	3,740	1955	May 25	23.18	11,100	1968	Feb. 2	14.97	3,380
1945	Mar. 8	17.01	3,430						Mar. 21	15.22	3,460
	Mar. 20	25.63	17,700	1956	Oct. 5	12.82	2,400		Apr. 22	20.22	6,250
	Apr. 15	34.11	60,900						May 16	17.62	4,540
	Jun. 14	17.88	4,030	1957	Apr. 3	15.86	3,430		May 27	18.23	4,860
	Jun. 18	22.09	8,530		Apr. 27	21.50	7,290	1969	Feb. 1	16.28	3,930
	Jul. 3	19.97	5,070		May 20	22.74	9,910		Feb. 22	15.12	3,420
1946	Oct. 5	24.50	13,400		May 26	29.75	30,300		Mar. 26	17.43	4,440
	Jan. 11	15.79	3,060		Jun. 6	22.52	10,500				
	Apr. 4	15.93	3,180		Jun. 16	26.17	20,300	1970	May 2	19.31	5,540
	May 5	17.60	3,700		Jun. 29	20.35	6,810		May 30	15.72	3,670
	May 14	16.40	3,340						Jun. 1	14.67	3,590
	May 29	20.36	5,600	1958	Jun. 23	19.53	5,390		Sep. 24	13.90	3,340
	Jun. 30	15.50	3,030		Jun. 27	25.22	16,600				
1947	Dec. 14	17.95	3,770	1959	Jun. 2	17.84	4,020	1971	Oct. 10	13.83	3,000
	Apr. 19	23.30	11,300		Jul. 23	17.36	3,830		Oct. 24	15.86	3,740
	Apr. 30	22.40	9,220		Jul. 28	23.33	12,100		Sep. 6	19.42	5,620

ARKANSAS RIVER BASIN

07243550 ADAMS CREEK NEAR BEGGS, OKLA.

LOCATION.--Lat 35°44'55", long 96°02'15", in NE 1/4 SE 1/4 sec.28, T.15 N., R.12 E., Okmulgee County, at county road bridge, 2.0 miles northeast of Beggs.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 17, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 5.90
 Noncontributing = 0
 Contributing = 5.90
 Channel slope (ft/mi) = 32.2
 Annual precip. (in) = 38.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Apr. 7	10.29	1,100	1967	Apr. 13	10.51	1,210	1970	Apr. 29	13.55	3,350
1966	Jun. 6	5.30	22	1968	Feb. 1	7.15	210	1971	Sep. 5	12.77	2,640
				1969	Jan. 29	8.40	470				

ARKANSAS RIVER BASIN

07244000 DEEP FORK NEAR DEWAR, OKLA.

LOCATION.--Lat 35°28'50", long 95°52'50", in SE1/4 sec.25, T.12 N., R.13 E., at left bank on downstream side of pier of bridge on U. S. Highway 266, 3.2 miles upstream from Wolf Creek, 3-1/2 miles east of Dewar, and at mile 43.9.

GAGE.--Nonrecording prior to Feb. 14, 1939, and since Sept. 30, 1950; recording for remainder of period. Datum of gage is 578.32 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--Crest stage for 1908 obtained from floodmark by Corps of Engineers. Crest for 1935 obtained from floodmark on bridge in 1939, identified by local resident who said 1923 flood was "higher."

REMARKS.--Records 1948-50 furnished by Corps of Engineers and reviewed by Geological Survey. Maximum observed stages since 1950 from U.S. Weather Bureau records. Base for partial-duration series, 3,200 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,307
Noncontributing = 0
Contributing = 2,307
Channel slope (ft/mi) = 1.89
Annual precip. (in) = 35.6
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,500
Q₅ = 33,100
Q₁₀ = 50,700
Q₂₅ = 79,700
Q₅₀ = 107,000
Q₁₀₀ = 138,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.159
Standard deviation = 0.428
Skew = -0.041

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Oct.	29.0	85,000	1943	Mar. 27	18.53	4,440	1947	Jul. 4	16.14	3,430
1935	Jun.	24.48	29,000		May 12	26.21	44,800				
					May 22	23.29	20,600	1948	Mar. 2	15.90	3,340
1938	Feb.	-	20,000	1944	Mar. 20	18.98	5,580		Mar. 23	15.77	3,300
	Mar. 29	19.76	6,360		Apr. 12	16.12	3,660		Mar. 26	18.45	4,640
	Apr. 4	21.43	10,100		May 6	15.49	3,410		May 19	17.52	4,110
	Apr. 22	15.74	3,580		May 12	18.81	5,290		Jun. 24	25.16	39,500
	May 23	19.21	5,700		May 29	17.10	4,110		Jul. 15	20.72	8,760
	Jun. 12	17.40	4,370					1949	Feb. 15	18.61	4,720
1939	Jul. 9	11.69	2,220	1945	Mar. 3	19.12	5,390		Feb. 25	16.20	3,360
					Mar. 21	21.96	15,800		May 9	19.18	5,560
1940	Sep. 6	18.45	4,140		Apr. 16	26.67	57,400		May 25	23.12	21,700
					Jun. 12	20.1	7,910		Jun. 4	21.25	11,000
1941	Dec. 6	17.72	4,190		Jun. 22	21.47	13,700		Jun. 12	22.63	18,600
	Apr. 24	21.87	12,300		Jul. 2	18.90	5,250				
	May 15	19.64	5,700	1946	Oct. 7	21.51	12,300	1950	Apr. 3	18.71	4,960
	Jun. 13	23.9	23,300		Jan. 12	17.05	3,650		May 11	23.18	23,000
	Sep. 18	17.26	3,420		Feb. 19	17.65	3,970		Jul. 23	22.22	15,800
					Apr. 24	16.94	3,690		Sep. 17	20.46	8,160
1942	Oct. 10	21.05	8,750		May 1	19.59	6,070	1951	Feb. 21	19.3	5,710
	Oct. 16	21.88	12,200		May 16	18.71	4,860		Mar. 12	18.7	4,960
	Oct. 30	24.17	24,400		May 24	19.86	6,760		Jun. 22	18.7	4,960
	Nov. 5	24.24	24,400		Jun. 1	19.24	5,390				
	Apr. 15	21.56	12,400		Jul. 1	17.29	3,650	1952	Apr. 23	19.6	6,160
	Apr. 25	24.32	27,400						Jun. 2	17.7	4,050
	Jun. 18	20.82	9,410	1947	Nov. 7	16.82	3,680	1953	Mar. 25	19.06	5,440
	Jun. 28	22.02	14,800		Dec. 12	20.00	7,020				
	Aug. 23	19.83	6,310		Apr. 22	20.67	9,500	1954	May 3	21.06	7,120
1943	Nov. 8	18.73	4,440		May 3	20.11	7,600				
	Dec. 27	17.79	3,850		May 20	21.84	14,700	1955	May 21	19.98	6,900
					Jun. 2	18.74	4,860		May 29	20.17	7,360

ARKANSAS RIVER BASIN

07244790 BROOKEN CREEK NEAR ENTERPRISE, OKLA.

LOCATION.--Lat 35°14'50", long.95°22'50", in SE 1/4 SE 1/4 sec.15, T.9 N., R.18 E., Haskell County, at county road multi-barrel culvert, 1.5 miles north of Enterprise.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 14, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 5.66
 Noncontributing = 0
 Contributing = 5.66
 Channel slope (ft/mi) = 40.5
 Annual precip. (in) = 42.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q_2 = 2,250 (3,210)
 Q_5 = 3,960 (6,090)
 Q_{10} = 5,070 (8,450)
 Q_{25} = ***
 Q_{50} = ***
 Q_{100} = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 3.312
 Standard deviation = 0.333
 Skew = -0.722

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 11	11.70	3,080	1967	Jul. 5	8.24	1,100	1969	Apr. 27	7.72	840
1965	May 26	7.30	630	1968	May 13	16.32	4,200	1970	Apr. 23	14.12	3,100
1966	Apr. 23	12.68	3,670					1971	Oct. 26	12.71	3,690

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OKLA.

LOCATION.--Lat 35°15'45", long 95°14'19", in SE 1/4 SE 1/4 sec.12, T.9 N., R.19 E., Haskell County, near right bank on downstream side of pier of bridge on State Highway 2, 0.8 mile north of Whitefield, 5.5 miles upstream from Taleka (Snake) Creek, 8.2 miles downstream from Eufaula Dam, and at mile 18.8.

GAGE.--Water-stage recorder. Datum of gage is 478.16 ft above mean sea level. Prior to Jan. 11, 1939, non-recording gage and Jan. 11, 1939, to Dec. 10, 1941, June 12, 1947, to Sept. 30, 1948, water-stage recorder, all at site 2.1 miles downstream at datum 2.80 ft lower. Dec. 11, 1941, to June 11, 1947, water-stage recorder at present site and datum.

HISTORICAL DATA.--Maximum stage known since 1898, that of May 10, 1943, from information by local resident. Local residents reported that flood in May 1898 was about the same as that in October 1941 (discharge smaller since channel capacity has increased over the period of years). Corps of Engineers reported that significant floods occurred in May 1914 and October 1923.

REMARKS.--Except for 54 sq mi intervening area, flow completely regulated since February 1964 by Eufaula Lake. Records for 1938-39 and since 1960 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 35,000 cfs. Only annual peaks are shown since 1964.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 47,576
Noncontributing = 9,700
Contributing = 37,876
Channel slope (ft/mi) = ***
Annual precip. (in) = 24.1
Bankful stage (ft) = 16

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Jul. 3	13.0	58,800	1947	Apr. 11	13.60	47,100	1957	Apr. 24	15.58	100,000
1940	Aug. 18	12.3	31,400		Apr. 16	13.4	45,600		May 18	18.25	176,000
					Apr. 29	13.80	48,600		May 23	16.40	159,000
1941	Jan. 1	14.41	53,500		May 13	16.93	118,000		May 26	16.80	159,000
	Apr. 19	15.45	63,900		May 17	18.07	144,000		Jun. 2	14.74	89,500
	May 6	17.75	94,600		Jun. 1	16.93	118,000		Jun. 11	12.63	45,400
	May 26	13.04	40,800	1948	Feb. 27	10.55	42,000		Jun. 15	15.72	119,000
	Jun. 2	13.20	36,300		Mar. 1	10.97	46,800		Sep. 22	12.00	37,100
	Jun. 7	15.70	74,200		Jun. 25	17.7	260,000	1958	Jun. 22	13.17	50,400
	Jun. 11	16.90	85,400		Jul. 12	11.47	42,700		Jun. 26	14.30	77,400
	Jul. 28	14.0	49,000	1949	Feb. 15	13.44	54,100		Aug. 21	15.55	103,000
	Sep. 26	15.0	62,300		May 2	14.86	78,700	1959	May 10	14.86	85,200
1942	Oct. 5	16.74	84,500		May 19	18.70	210,000		Jul. 27	14.81	83,000
	Oct. 16	15.75	66,000		Jun. 14	14.41	73,900		Sep. 26	13.64	60,000
	Oct. 25	15.70	65,000	1950	Feb. 13	12.60	42,700	1960	Oct. 4	16.40	159,000
	Oct. 31	21.4	220,000		May 7	11.92	42,700		Nov. 5	12.8	45,000
	Apr. 9	17.49	89,000		May 11	20.00	256,000		Dec. 18	12.73	46,600
	Apr. 25	21.10	137,000		Jul. 11	12.42	48,200		Jan. 13	13.0	49,800
	Jun. 11	14.88	45,500		Jul. 18	12.00	41,000		May 7	13.32	60,000
	Jun. 24	15.47	57,600		Jul. 23	14.35	81,100		May 19	17.86	180,000
1943	Dec. 27	14.8	48,500		Jul. 26	14.88	91,000	1961	Mar. 31	13.00	59,000
	May 10	25.5	281,000		Jul. 29	15.37	102,000		May 5	12.93	63,000
1944	May 28	13.08	35,800		Aug. 3	13.34	43,600		Jul. 15	12.77	55,200
	Jun. 14	13.07	35,600		Sep. 16	18.73	159,000	1962	Nov. 23	12.02	38,900
1945	Mar. 3	15.15	70,600	1951	Feb. 20	13.15	54,100		Apr. 23	13.32	56,700
	Mar. 15	17.22	107,000		May 19	14.47	73,900		Jun. 11	12.50	44,600
	Mar. 19	15.66	90,000		Jun. 12	13.97	64,800	1963	Apr. 28	12.34	39,900
	Mar. 30	14.36	47,500		Jun. 15	12.50	44,500	1964	Sep. 4	9.30	7,440
	Apr. 16	21.80	255,000	1952	Apr. 23	14.42	60,400	1965	Aug. 27	11.40	15,600
	May 13,14	12.25	35,000	1953	Mar. 31	14.10	66,100	1966	Jun. 7	11.57	14,400
	Jun. 12	15.50	90,400		Apr. 24	14.01	57,800	1967	Nov. 25	10.73	14,100
	Jul. 11	13.11	46,100		May 13	12.11	35,900	1968	May 19	14.00	65,200
1946	Oct. 1	16.08	102,000		Jul. 21	13.40	48,700	1969	May 20	12.47	32,600
	Feb. 18	12.38	45,000	1954	May 2	18.71	165,000	1970	May 6	12.72	16,100
	May 3	13.25	46,400		May 13	12.48	35,900	1971	Oct. 28	12.92	—
	May 23	14.26	75,000	1955	May 21	15.22	97,500		Nov. 1	12.30	38,000
	Jun. 1	13.46	60,000		May 24	13.07	48,700				
	Jul. 1	12.22	35,500	1956	Oct. 6	12.50	41,000				
1947	Oct. 11	12.07	38,700	1957	Apr. 3	15.76	94,700				
	Nov. 6	12.85	45,600								
	Dec. 10	17.1	151,000								

a Occurred Apr. 30, 1966.

b Occurred Aug. 30, 1970.

ARKANSAS RIVER BASIN

07245090 VIAN CREEK NEAR VIAN, OKLA.

LOCATION.--Lat 35°32'30", long 94°58'05", in NE 1/4 SW 1/4 sec.3, T.12 N., R.22 E., Sequoyah County on downstream side of bridge on State Highway 82, 2.9 miles north of Vian.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 15, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 19.6
 Noncontributing = 0
 Contributing = 19.6
 Channel slope (ft/mi) = 36.5
 Annual precip. (in) = 42.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Apr. 20	13.16	7,320	1968	May 13	10.80	3,660	1970	Oct. 12	10.70	3,540
1967	May 6	9.09	1,980	1969	Dec. 27	8.45	1,500	1971	Oct. 26	10.20	3,000

ARKANSAS RIVER BASIN

07245500 SALLISAW CREEK NEAR SALLISAW, OKLA.

LOCATION.--Lat 35°27'52", long 94°51'43", in SW 1/4 sec.34, T.12 N., R.23 E., Sequoyah County, downstream side of right pier of abandoned county road bridge, 300 ft upstream from U.S. Highway 64, 400 ft downstream from water-supply dam of city of Sallisaw, 3.5 miles west of Sallisaw, 5 miles upstream from Little Sallisaw Creek, and at mile 9.0.

GAGE.--Water-stage recorder. Datum of gage is 474.78 ft above mean sea level. Prior to Aug. 20, 1953, and as supplementary gage since Feb. 21, 1958, water-stage recorder at site 400 ft upstream at datum 15.22 ft higher. Aug. 20, 1953, to Apr. 9, 1963, water-stage recorder at present site at datum 2.00 ft higher.

HISTORICAL DATA.--Flood in October 1941 reported by local resident in 1943 as "highest flood in recent years," referenced to high-water mark for flood of Dec. 27, 1942.

REMARKS.--Small diversion at low-water dam for municipal water supply of city of Sallisaw. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 4,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 182
Noncontributing = 0
Contributing = 182
Channel slope (ft/mi) = 15.2
Annual precip. (in) = 43.5
Bankful stage (ft) = 16

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 9,350
Q₅ = 21,500
Q₁₀ = 34,700
Q₂₅ = 59,900
Q₅₀ = 86,900
Q₁₀₀ = 123,000

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.004
Standard deviation = 0.405
Skew = 0.493

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Oct.	a15.4	b28,400	1948	Apr. 10	3.00	4,240	1958	Mar. 8	8.07	4,060
1943	Nov. 5	4.08	7,740	1948	Jun. 24	4.45	8,820	1958	May 2	10.46	6,940
	Dec. 27	6.65	18,900		Aug. 8	3.71	6,300		May 9	10.94	7,800
	Apr. 11	3.80	6,690		Aug. 15	3.45	5,360		Jun. 25	11.46	8,090
	May 10	8.63	38,000		Jan. 24	3.56	5,660		Jul. 7	11.39	7,870
	May 27	3.07	4,430	1949	Jan. 27	3.10	4,370		Jul. 13	10.80	6,790
1944	Mar. 19	4.07	7,340		Feb. 14	3.50	5,510	1959	Mar. 5	11.00	7,110
	May 2	4.21	7,870		May 1	5.29	12,400		May 11	13.00	13,000
1945	Feb. 21	4.74	10,000		Jun. 3	3.52	5,660	1960	May 6	12.27	10,200
	Feb. 26	4.34	8,430		Jun. 13	4.46	8,820		Jul. 25	10.28	6,080
	Mar. 2	4.68	9,820	1950	Jan. 13	3.75	6,300	1961	May 5	14.86	23,400
	Mar. 15	3.73	6,300		Feb. 12	4.05	7,340		Jul. 15	12.68	11,700
	Mar. 19	6.76	20,100		May 10	8.30	35,000	1962	Nov. 22	6.55	2,390
	Mar. 25	4.51	9,010	1951	Feb. 20	4.55	8,820		Apr. 27	8.25	2,430
	Apr. 15	11.25	110,000		Jun. 9	5.77	14,900	1963	May 11	13.22	7,880
	May 16	3.59	5,820	1952	Apr. 12	3.32	4,920		Apr. 15	8.51	2,960
	Jun. 10	7.96	58,000		May 3	3.43	5,630	1966	Feb. 9	11.92	6,180
1946	Jul. 1	-	10,000	1953	Mar. 17	3.85	6,980		Apr. 24	12.00	6,580
	Feb. 13	4.72	9,820		May 12	4.06	7,690	1967	May 6	8.52	2,960
	Apr. 23	3.10	4,370	1954	May 2	15.50	30,000		Mar. 20	9.94	4,770
	May 23	5.76	14,900		Feb. 19	11.56	9,620	1968	May 14	10.10	4,970
1947	Jun. 30	5.40	12,900	1955	Mar. 20	11.59	9,620		Dec. 27	9.05	4,110
	Nov. 6	4.75	10,000		Apr. 29	6.83	3,420	1969	Oct. 13	10.25	5,050
	Nov. 10	4.50	9,010	1957	Apr. 3	16.50	38,400		Oct. 26	13.83	10,400
	Nov. 25	3.25	4,780		Apr. 23	8.28	4,860	1970			
	Dec. 10	5.85	14,900		May 25	12.00	10,800				
	Dec. 12	5.45	12,900		Jun. 2	10.42	7,170	1971			
	May 17	3.63	5,980		Jun. 10	9.40	5,900				
	Jun. 1	3.71	6,140		Jun. 13	13.50	17,000				
	Jun. 11	4.73	10,000								
	Jun. 21	3.78	6,470								
1948	Mar. 26	3.11	4,500								

a At present site and at datum used 1954-62.

b Annual peak only.

ARKANSAS RIVER BASIN

07246000 SANS BOIS CREEK NEAR KEOTA, OKLA.

LOCATION.--Lat 35°16', long 94°58', in NW1/4 sec.15, T.9 N., R.22 E., at bridge on State Highway 10, 2-1/2 miles west of Keota and 13 miles upstream from mouth.

GAGE.--Nonrecording. Datum of gage is 437.27 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records 1938-40 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 1,800 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 346
 Noncontributing = 0
 Contributing = 346
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q_2 = ***
 Q_5 = ***
 Q_{10} = ***
 Q_{25} = ***
 Q_{50} = ***
 Q_{100} = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb. 18	a26.1	30,000	1941	Jan. 3	19.4	6,300	1942	Nov. 1	22.2	10,100
					Feb. 4	13.8	1,830		Jan. 31	14.7	2,030
1939	Feb. 20	14.8	1,840		Feb. 21	17.6	3,290		Feb. 17	14.5	2,120
	Mar. 5	14.8	1,840		Apr. 17	16.1	2,800		Apr. 9	19.5	7,150
	Apr. 7	17.1	2,920		Apr. 21	16.7	2,310		Apr. 25	25.2	26,300
	Apr. 18	17.55	3,450		May 1	14.4	1,970		Jun. 26	15.7	2,260
1940	Apr. 13	17.90	3,660	1942	Oct. 17	17.5	3,050		Jul. 12	15.6	2,280
	Jun. 11	16.7	2,740					1943	May 11	a27.9	-

a Annual peak only.

ARKANSAS RIVER BASIN

07246500 ARKANSAS RIVER NEAR SALLISAW, OKLA.

LOCATION.--Lat 35°20'58", long 94°46'16", in SE 1/4 SW 1/4 sec.9, T.10 N., R.24 E., LeFlore County, at downstream right abutment of bridge on U.S. Highway 59, 0.4 mile downstream from Robert S. Kerr Lock and Dam, 7.5 miles south of Sallisaw, and at mile 394.9.

GAGE.--Water-stage recorder. Datum of gage is 413.42 ft above mean sea level.

REMARKS.--Natural flow of stream affected by several upstream storage reservoirs and power development, and regulated by Robert S. Kerr Lock and Dam since September 1970. Flow diverted through locks and boat channel Dec. 1, 1970. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 100,000 cfs. Only annual peak stages are shown prior to 1948.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 147,757
Noncontributing = 22,241
Contributing = 125,516
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 23

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Apr.	34.5	-	1951	Jul. 6	25.63	253,000	1960	Nov. 5	18.13	126,000
					Jul. 19	25.84	245,000		Apr. 16	16.00	101,000
1940	Sep. 6	20.0	-		Sep. 17	18.73	118,000		May 7	19.75	177,000
									May 21	23.10	218,000
1941	Apr. 21	29.05	-	1952	Mar. 13	17.03	104,000		Jul. 25	16.50	112,000
					Apr. 23	18.82	129,000	1961	Mar. 31	16.83	106,000
1942	Nov. 2	34.70	-						May 5	20.90	181,000
1943	May 11	37.90	-	1953	Apr. 25	17.26	112,000		May 10	25.55	303,000
									Jul. 16	20.15	143,000
1944	May 3	24.33	-	1954	May 3	23.70	202,000		Jul. 25	17.57	100,000
									Sep. 16	22.86	211,000
1945	Apr. 16	35.96	-	1955	May 22	17.30	108,000	1962	Oct. 13	18.10	126,000
					May 30	17.46	102,000		Nov. 5	20.23	159,000
1946	Oct. 2	27.37	-	1956	Oct. 7	19.70	139,000		Nov. 25	17.00	110,000
									Jun. 11	20.88	137,000
1947	Dec. 12	23.80	-	1957	Apr. 4	19.85	134,000	1963	Oct. 4	14.85	60,200
					Apr. 27	23.98	191,000				
1948	Jun. 25	29.70	361,000		May 3	22.08	146,000	1964	Jun. 16	17.60	93,400
	Jul. 20	20.72	144,000		May 15	18.57	110,000				
	Aug. 16	20.26	138,000		May 20	29.75	334,000	1965	Apr. 9	19.32	110,000
1949	Jan. 28	17.65	132,000		May 23	31.15	367,000				
	Feb. 16	21.86	199,000		May 27	34.80	544,000	1966	Apr. 24	13.00	52,800
	May 2	18.83	139,000		Jun. 3	28.83	300,000				
	May 21	28.18	363,000		Jun. 16	28.04	264,000	1967	Jul. 8	16.37	77,000
	Jun. 12	21.77	160,000	1958	Mar. 27	18.40	130,000				
1950	May 12	31.04	442,000		Jun. 26	20.28	161,000	1968	Mar. 26	17.66	99,700
	Jul. 23	24.40	212,000		Jul. 9	16.76	106,000				
	Aug. 3	23.75	203,000		Jul. 14	20.00	156,000	1969	Mar. 26	18.34	108,000
	Sep. 17	22.00	176,000	1959	May 11	17.78	122,000				
1951	Feb. 21	19.50	146,000		Jul. 27	20.30	161,000	1970	May 1	18.07	110,000
	May 22	21.30	180,000		Sep. 27	17.13	116,000				
	Jun. 12	18.96	124,000	1960	Oct. 6	30.42	404,000	1971	Oct. 27	17.62	109,000

a Affected by backwater from construction.

ARKANSAS RIVER BASIN

07246600 CACHE CREEK NEAR COWLINGTON, OKLA.

LOCATION.--Lat 35°17'10", long 94°45'35", in NW 1/4 NW 1/4 sec.3, T.9 N., R.24 E., LeFlore County, at bridge on U.S. Highway 59, 2.3 miles southeast of Cowlington.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 20.6
Noncontributing = 0
Contributing = 20.6
Channel slope (ft/mi) = 14.0
Annual precip. (in) = 43.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 1,510 (2,160)
Q₅ = 2,060 (3,170)
Q₁₀ = 2,490 (4,150)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.197
Standard deviation = 0.150
Skew = 0.764

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 5	14.62	3,070	1967	Apr. 13	9.91	1,100	1969	Dec. 28	11.19	1,540
1965	May 26	9.60	1,000	1968	May 13	11.95	1,830	1970	Apr. 30	11.02	1,480
1966	Apr. 23	11.00	1,480					1971	Oct. 26	11.89	1,810

07246610 PECAN CREEK NEAR SPIRO, OKLA.

LOCATION.--Lat 35°14'40", long 94°44'35", in NE 1/4 NE 1/4 sec.22, T.9 N., R.24 E., LeFlore County, at multi-barrel culvert on U.S. Highway 59, 4.2 miles west of junction with U.S. Highway 271 west of Spiro.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 15, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 0.90
Noncontributing = 0
Contributing = 0.90
Channel slope (ft/mi) = 42.0
Annual precip. (in) = 43.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	May 26	8.80	238	1967	Apr. 13	9.20	282	1970	Apr. 26	7.77	113
1966	May 11	8.90	249	1968	May 13	11.82	602	1971	Oct. 26	8.62	214
				1969	Dec. 27	8.44	193				

ARKANSAS RIVER BASIN

07246630 BIG BLACK FOX CREEK NEAR LONG, OKLA.

LOCATION.--Lat 35°31'15", long 94°37'10", in NE 1/4 NE 1/4 sec.14, T.12 N., R.25 E., Sequoyah County, at county road bridge, 2.3 miles northwest of Long.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 15, 1967.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 5.32
 Noncontributing = 0
 Contributing = 5.32
 Channel slope (ft/mi) = 68.5
 Annual precip. (in) = 44.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 1,460 (2,090)
 Q₅ = 2,480 (3,820)
 Q₁₀ = 3,030 (5,050)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 3.099
 Standard deviation = 0.348
 Skew = -1.138

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 4	9.32	1,850	1967	May 6	6.27	330	1969	May 17	8.30	1,210
1965	May 2	6.47	400	1968	Apr. 19	9.40	1,940	1970	Oct. 12	10.25	2,500
1966	Feb. 9	9.11	1,740					1971	Oct. 26	10.25	2,500

ARKANSAS RIVER BASIN

07247000 POTEAU RIVER AT CAUTHRON, ARK.

LOCATION.--Lat 34°55'08", long 94°17'55", in NW 1/4 SW 1/4 sec.16, T.3 N., R.31 W., Scott County, on right bank at downstream side of highway bridge at Cauthron, 2.9 miles downstream from Cross Creek, 7.8 miles downstream from Jones Creek, and at mile 109.0.

GAGE.--Water-stage recorder. Datum of gage is 569.53 ft above mean sea level. Prior to May 2, 1939, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in June 1935 reached a stage of 27.4 ft, from information by local resident.

REMARKS.--As of September 1970, flow from 55.6 sq mi above this station is partly controlled by nine floodwater-detention reservoirs with a total combined capacity of 24,876 acre-ft below the flood spillway crests, of which 22,064 acre-ft is flood-detention capacity, 2,100 acre-ft is water-supply storage, and 712 acre-ft is sediment-storage capacity. Log-Pearson calculations based on all annual peaks for period 1939-70. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 200
Noncontributing = 0
Contributing = 200
Channel slope (ft/mi) = 9.20
Annual precip. (in) = 45.0
Bankful stage (ft) = 19

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 11,600
Q₅ = 19,900
Q₁₀ = 25,900
Q₂₅ = 33,700
Q₅₀ = 39,700
Q₁₀₀ = 45,800

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.049
Standard deviation = 0.293
Skew = -0.320

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun.	27.4	-	1949	Jan. 24	23.34	31,000	1958	May 2	18.91	11,200
1939	Feb. 19	15.1	5,640		Feb. 14	17.68	8,520	1959	Mar. 26	12.44	4,130
	Feb. 25	17.0	7,460		Mar. 26	14.20	5,120				
	Mar. 5	14.6	5,240		May 1	16.29	6,840	1960	May 20	23.76	32,200
	Apr. 6	17.8	8,470	1950	Jan. 4	17.08	7,710	1961	Dec. 11	16.42	7,430
	Apr. 16	22.5	24,400		Jan. 13	19.81	13,200		May 6	17.59	8,930
1940	Apr. 29	10.71	2,810		Feb. 1	17.92	8,840		Jul. 15	16.34	7,320
					Feb. 12	22.78	27,800	1962	Nov. 22	17.60	8,930
1941	Dec. 16	10.57	2,760		Apr. 4	11.85	3,580		Dec. 9	14.20	5,460
					May 8	18.28	9,500		Feb. 23	13.64	5,010
1942	Oct. 4	17.34	7,820		May 12	14.98	5,690	1963	Mar. 19	11.76	3,750
	Oct. 31	18.87	10,500		Jul. 23	14.55	5,400		Mar. 9	17.20	8,380
	Apr. 8	16.70	7,130		Aug. 2	15.60	6,180		Nov. 19	16.32	6,340
	May 20	14.54	5,160		Sep. 16	14.42	5,260		Feb. 9	20.23	14,400
				1951	Feb. 15	15.08	5,770		Mar. 29	17.01	7,200
1943	May 11	21.74	19,000		Feb. 20	14.59	5,400		Sep. 22	18.00	8,600
	May 20	19.43	11,800	1952	Nov. 1	15.13	5,770	1964	Feb. 10	20.42	15,200
1944	Feb. 17	15.23	5,720		Jan. 2	16.16	6,740		Apr. 24	17.54	7,900
	Feb. 28	17.09	7,580		Mar. 10	15.88	6,450	1965	Apr. 17	16.70	6,820
	Mar. 16	14.33	5,010		Apr. 12	18.86	10,700		May 6	16.85	7,000
	May 2	16.96	7,460		Apr. 22	18.69	10,900	1966	Oct. 30	18.93	10,300
1945	Feb. 21	21.03	16,600	1953	Nov. 25	20.44	15,600		Dec. 14	16.48	6,560
	Feb. 27	19.07	10,800		Mar. 18	20.28	15,200		Jan. 29	15.00	5,200
	Mar. 3	16.14	6,640		Apr. 24	17.23	7,830		Mar. 21	20.63	16,400
	Mar. 6	14.13	5,050		Apr. 29	18.90	10,700		Apr. 4	19.21	10,900
	Mar. 12	17.34	7,950		May 13	20.46	16,000		May 14	21.75	22,000
	Mar. 19	17.78	8,590	1954	May 2	19.86	13,600	1967	Nov. 27	17.27	7,580
	Mar. 29	22.11	22,000		Mar. 21	17.22	7,830		Dec. 22	17.22	7,510
	May 15	22.39	23,800	1955	Feb. 18	16.52	6,790		Dec. 28	20.00	13,600
	Jun. 11	18.56	9,850		Jan. 22	14.57	5,220		Jan. 30	19.99	13,600
					Apr. 4	18.37	9,680		Apr. 27	15.87	5,880
1946	Jan. 9	16.37	6,940		Apr. 25	16.28	6,840		Jul. 26	23.24	29,400
	Feb. 13	18.30	9,350	1956	Apr. 27	18.15	9,320	1968	Apr. 19	17.54	7,960
	May 23	17.44	8,070		May 23	18.73	10,300		Apr. 23	12.55	3,740
	May 31	17.67	8,450		Jun. 5	16.20	6,740				
1947	Nov. 26	15.58	6,180		Aug. 12	18.38	9,320				
	Dec. 10	21.18	17,400	1957	Nov. 18	18.63	10,100				
1948	Dec. 7	14.90	5,610		Mar. 7	15.85	6,820				
	Jan. 1	21.08	17,000								
	Feb. 26	14.52	5,330								
	Mar. 2	14.44	5,260								

ARKANSAS RIVER BASIN

07247500 FOURCHE MALINE NEAR RED OAK, OKLA.

LOCATION.--Lat 34°54'44", long 95°09'20", in NW 1/4 NW 1/4 sec.13, T.5 N., R.20 E., Latimer County, on downstream side of left abutment of county road bridge, 0.1 mile downstream from Little Fourche Maline, 5 miles southwest of Red Oak, and at mile 41.2.

GAGE.--Water-stage recorder. Datum of gage is 540.80 ft above mean sea level. Prior to Apr. 25, 1939, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in June 1935 reached a stage of 25.4 ft, from floodmarks.

REMARKS.--Some regulation by several flood-retarding structures. Records since 1959 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 3,100 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 122
Noncontributing = 0
Contributing = 122
Channel slope (ft/mi) = 3.91
Annual precip. (in) = 43.9
Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 5,970
Q₅ = 12,200
Q₁₀ = 18,000
Q₂₅ = 27,600
Q₅₀ = 36,600
Q₁₀₀ = 47,400

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
Mean = 3.787
Standard deviation = 0.360
Skew = 0.192

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun.	25.4	-	1948	Feb. 27	16.32	3,200	1958	May 2	18.19	8,200
1939	Apr. 16	16.60	3,630	1949	Feb. 14	16.38	3,330	1959	Mar. 5	17.28	5,700
1940	Apr. 11	17.47	5,850		Jun. 14	16.15	3,090		May 11	18.58	8,950
1941	Apr. 16	16.53	3,470	1950	Jan. 13	16.87	4,210	1960	May 6	19.86	14,000
1942	Oct. 31	17.94	7,130		Feb. 13	16.72	3,810		May 19	24.79	41,500
	Apr. 8	17.72	6,470		May 11	17.49	5,720		Jul. 24	19.89	14,000
	Apr. 25	22.34	26,300		Jul. 22	17.30	5,190				
	Jul. 11	17.64	6,150		Jul. 29	20.72	16,400	1961	Mar. 26	14.90	2,280
					Sep. 16	20.60	16,100				
1943	Dec. 27	21.34	21,600	1951	Feb. 18	17.60	5,990	1962	Nov. 22	18.50	8,710
	Apr. 12	17.24	4,990		Jun. 11	17.00	4,440		Apr. 23	17.96	7,170
	May 10	21.14	20,900	1952	Apr. 12	17.36	5,450	1963	Apr. 28	13.33	1,820
1944	Feb. 28	17.80	6,790	1953	Mar. 14	18.17	7,730	1964	Apr. 5	16.70	3,810
	May 2	17.54	5,850		Mar. 18	18.46	8,970		Aug. 15	17.72	6,320
1945	Feb. 21	21.01	17,600		Apr. 24	19.47	12,800	1965	May 27	17.68	6,320
	Mar. 3	17.60	5,990		Apr. 29	17.25	5,450				
	Mar. 19	19.17	11,000		May 12	17.96	8,030	1966	Feb. 9	17.86	7,240
	Mar. 30	17.99	7,130		Jul. 25	16.79	4,680		Apr. 24	18.27	8,530
	Apr. 14	17.22	4,930	1954	May 2	11.89	1,460	1967	Jul. 5	12.50	1,580
	May 15	20.40	15,300								
	Jun. 11	18.14	7,430	1955	Mar. 21	17.28	5,190	1968	Mar. 20	17.64	6,370
1946	Feb. 13	17.32	5,190						May 14	17.63	6,370
	May 31	16.86	4,210	1956	Feb. 17	12.55	1,490	1969	Dec. 28	17.15	5,350
1947	Nov. 6	17.68	6,270						Mar. 24	16.28	3,490
	Dec. 10	19.34	11,300	1957	Apr. 3	18.86	13,400				
	Apr. 11	17.70	6,270		Apr. 23	16.68	3,870	1970	Apr. 17	15.65	2,890
	Apr. 29	17.04	4,440		Apr. 26	19.02	14,300				
	May 17	17.13	4,680		May 26	17.76	7,520	1971	Oct. 9	16.95	4,780

ARKANSAS RIVER BASIN

07248500 POTEAU RIVER NEAR WISTER, OKLA.

LOCATION.--Lat 34°56'15", long 94°42'54", in NW 1/4 NW 1/4 sec.6, T.5 N., R.25 E., Leflore County, on left bank of outflow channel 700 ft downstream from Wister Dam, 2.2 miles southeast of Wister, 2.6 miles upstream from Caston Creek, and at mile 60.8.

GAGE.--Nonrecording prior to Jan. 1, 1939, at site 0.1 mile downstream at datum 13.11 ft lower; recording thereafter, Jan. 1, 1939, to Sept. 30, 1947, and Oct. 1, 1947 to June 28, 1953, at sites 1.6 and 1.1 miles, respectively, downstream at datum 12.41 ft lower. Datum of present gage is 445.43 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--Flood in June 1935 reached a stage of 43.0 ft at site and datum used in 1938 (estimated as 38.5 ft at site and datum used during 1939-47, on basis of fall determined for flood in 1943). According to project report for Wister Reservoir, other major floods occurred in August and October 1915, April 1927, May 1930, May 1935, and February 1938.

REMARKS.--Flow completely regulated by Wister Lake since October 1949 (capacity, 429,600 acre-ft). Records 1938-39 and since 1959 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 7,000 cfs. Only annual peaks are shown subsequent to 1940. Log-Pearson calculations based on period 1939-49 and represent natural flow conditions prior to closure of Wister Lake.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 993
Noncontributing = 0
Contributing = 993
Channel slope (ft/mi) = 3.72
Annual precip. (in) = 46.0
Bankful stage (ft) = 18

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = 27,800
Q₅ = 55,700
Q₁₀ = 79,600
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = 4.439
Standard deviation = 0.363
Skew = -0.070

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Jun.	43.0	-	1945	May 16	37.16	78,600	1953	May 5	22.89	9,220
1939	Feb. 21	22.88	10,200		Jun. 12	35.90	49,400		May 13	8.73	6,740
	Feb. 26	25.37	13,000		Jun. 18	23.66	10,900		Apr. 7	8.43	6,360
	Apr. 7	25.90	13,700		Sep. 29	26.64	14,000		Feb. 23	8.10	6,060
	Apr. 17	37.1	77,800	1946	Jan. 6	19.91	7,440		May 27	14.41	11,300
1940	Apr. 12	19.70	7,670		Jan. 10	27.51	14,800		May 23	8.76	7,140
1941	Jan. 2	21.58	8,760		Feb. 14	30.00	18,400		May 14	7.90	5,910
	Feb. 21	19.89	7,740		Apr. 25	27.15	14,400		Jul. 31	9.10	7,650
	Apr. 16	18.98	7,200		May 1	19.08	6,880		May 31 ^a	8.50	6,890
	Apr. 18	21.28	8,580		May 4	23.31	10,200		Nov. 29 ^b	10.74	6,440
1942	Oct. 5	20.79	8,770		May 18	21.78	8,880		Mar. 20	6.20	3,760
	Nov. 2	27.69	15,400		May 26	30.20	18,800		Apr. 10	7.62	5,730
	Apr. 9	31.03	21,800	1947	Jun. 1	32.24	26,800		Nov. 25	7.58	5,730
	Apr. 26	29.82	18,700		Nov. 7	27.90	15,300		May 14	8.55	6,750
1943	Dec. 28	30.64	20,600		Nov. 9	28.72	16,400		May 12	8.42	6,640
	May 11	37.05	77,000		Nov. 27	21.40	8,560		Dec. 30	8.68	7,410
	May 22	26.08	13,400		Dec. 12	34.66	46,400		Jan. 7	8.05	6,440
1944	Feb. 29	28.75	17,000		Apr. 11	26.29	13,800		May 19	7.98	6,440
	Mar. 20	25.20	12,400		Apr. 30	23.56	11,500		Apr. 28	7.42	5,550
	May 3	31.06	22,100		May 14	25.10	12,700				
	Jun. 14	20.94	8,840		May 18	22.46	10,700				
1945	Feb. 18	20.40	8,490	1948	Dec. 8	23.34	10,300				
	Feb. 22	34.31	42,800		Jan. 2	32.71	24,500				
	Feb. 28	32.66	30,100		Feb. 27	29.50	17,500				
	Mar. 14	22.67	10,100		Mar. 2	26.03	12,200				
	Mar. 20	33.08	32,900		May 12	25.12	11,300				
	Mar. 25	20.18	8,360	1949	Jan. 27	29.89	14,600				
	Mar. 31	34.23	41,900	1950	Jan. 12	23.33	8,420				
	Apr. 13	21.10	8,980	1951	Feb. 27	20.11	7,090				
	May 13	20.47	8,560	1952	Apr. 27	24.03	9,720				

^a Occurred May 18, 1961.

^b Occurred Nov. 22, 1961, affected backwater from Caston Creek.

ARKANSAS RIVER BASIN

07249000 POTEAU RIVER AT POTEAU, OKLA.

LOCATION.--Lat 35°03'35", long 94°36'10", in SE1/4SW1/4 sec.19, T.7 N., R.26 E., at St. Louis-San Francisco Railway Co. bridge, 1 mile northeast of Poteau, 2 miles upstream from Nail Creek, and at mile 39.6.

GAGE.--Nonrecording prior to May 20, 1939, at site 100 ft upstream; recording thereafter. Datum of gage is 409.4 ft above mean sea level (Corps of Engineers bench mark).

HISTORICAL DATA.--Major floods are reported to have occurred in May 1898, June 1904, and May 1908.

REMARKS.--Base for partial-duration series, 6,500 cfs. Only annual peaks are shown prior to 1938. Log-Pearson calculations represent natural flow conditions prior to closure of Wister Lake in 1949.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,240
Noncontributing = 0
Contributing = 1,240
Channel slope (ft/mi) = 3.6
Annual precip. (in) = 48.0
Bankful stage (ft) = 20

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 35,600
Q₅ = 63,500
Q₁₀ = 82,800
Q₂₅ = 107,000
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.521
Standard deviation = 0.329
Skew = -0.554

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Sep.	29.0	21,000	1938	Apr. 17	24.2	8,560	1943	May 16	23.22	7,420
									May 22	26.76	11,500
1926	Sep.	32.5	40,000	1939	Feb. 21	24.70	9,060	1944	Feb. 19	24.29	8,140
					Feb. 27	26.80	12,400		Mar. 1	28.27	15,400
1927	Apr. 15	34.0	51,000		Apr. 8	26.69	12,100		Mar. 21	26.68	10,900
					Apr. 17	36.20	68,200		May 4	29.51	20,300
1929	May 20	29.0	21,000	1940	Apr. 12	22.40	7,540		Jun. 14	23.86	7,900
1930	May 12	31.8	37,000					1945	Feb. 19	22.51	7,150
1932	Feb. 18	31.0	32,000	1941	Jan. 3	24.87	9,260		Feb. 22	32.89	39,200
					Feb. 4	19.91	6,550		Mar. 1	31.02	27,300
1935	Jun. 18	39.0	100,000		Feb. 21	23.28	8,250		Mar. 14	25.13	9,500
					Apr. 19	24.75	9,160		Mar. 20	31.55	30,700
1938	Nov. 12	24.0	8,370	1942	Oct. 6	22.31	7,750		Mar. 25	23.95	9,000
	Dec. 19	25.0	9,370		Nov. 3	27.77	11,800		Mar. 31	32.38	35,800
	Jan. 25	31.8	37,000		Feb. 1	20.16	6,700		Apr. 14	25.67	7,780
	Feb. 19	36.3	73,000		Apr. 10	29.63	22,700		May 16	36.42	66,300
	May 30	28.0	16,500		Apr. 27	28.56	18,500		Jun. 12	35.10	55,900
	Apr. 1	24.1	8,460						Jun. 19	25.89	9,680
	Apr. 9	24.8	9,160	1943	Dec. 29	29.03	20,900		Sep. 30	27.84	13,800
					May 11	37.00	58,100				

ARKANSAS RIVER BASIN

07249400 JAMES FORK NEAR HACKETT, ARK.

LOCATION.--Lat 35°09'45", long 94°24'25", in NW 1/4 NW 1/4 sec.34, T.6 N., R.32 W., Sebastian County, near left bank on downstream side of bridge on State Highway 45, 1.7 miles south of Hackett, 2 miles downstream from Elder Branch, 2 miles upstream from small tributary, and 3.6 miles upstream from Arkansas-Oklahoma State line.

GAGE.--Water-stage recorder. Datum of gage is 459.71 ft above mean sea level.

REMARKS.--Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 147
 Noncontributing = 0
 Contributing = 147
 Channel slope (ft/mi) = 14.8
 Annual precip. (in) = 43.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q₂ = 6,050
 Q₅ = 12,000
 Q₁₀ = 17,200
 Q₂₅ = 25,200
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 3.782
 Standard deviation = 0.354
 Skew = 0.028

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Mar. 21	14.68	2,180	1965	Nov. 19	19.61	5,360	1968	Dec. 21	17.67	3,670
					Feb. 9	17.74	3,920		Mar. 21	21.00	8,100
1960	Nov. 4	20.98	8,100		Feb. 24	17.87	4,040		Mar. 31	17.50	3,580
	May 6	20.65	6,750		Mar. 29	19.18	5,000		Apr. 4	18.18	3,960
	May 19	21.30	9,700		May 10	16.78	3,480		May 14	23.00	30,000
					May 27	19.78	5,540	1969	Nov. 27	19.50	5,040
1961	Mar. 31	18.12	3,620						Dec. 22	19.96	5,560
	May 6	21.21	9,150	1966	Feb. 9	18.51	3,910		Dec. 28	22.04	15,400
	Jul. 15	21.84	13,600		May 18	17.80	3,430		Jan. 30	20.24	5,920
1962	Nov. 21	20.69	6,900	1967	Apr. 23	17.43	3,540		Feb. 22	19.37	4,910
1963	Nov. 7	13.19	1,780		May 6	16.29	3,020		Apr. 27	16.53	3,110
1964	Mar. 9	17.66	3,580	1968	Oct. 30	21.66	12,100	1970	Apr. 17	20.80	7,250
	May 11	16.50	3,060		Dec. 14	17.73	3,700	1971	Oct. 24	15.39	2,660

ARKANSAS RIVER BASIN

07250000 LEE CREEK NEAR VAN BUREN, ARK.

LOCATION.--Lat 35°29'40", long 94°26'58", in SE1/4 sec.21, T.12 N., R.27 E., Indian Meridian, Sequoyah County, Okla., on right bank 300 ft west of Arkansas-Oklahoma State line, 3.2 miles downstream from Webbers Creek, 6.8 miles northwest of Van Buren, and at mile 7.8.

GAGE.--Water-stage recorder. Datum of gage is 408.04 ft above mean sea level (Corps of Engineers bench mark). September 1930 to June 1937, nonrecording gage at same site and datum.

REMARKS.--Base for partial-duration series, 13,000 cfs. Only annual peaks are shown prior to 1951.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 427
 Noncontributing = 0
 Contributing = 427
 Channel slope (ft/mi) = 17.4
 Annual precip. (in) = 47.0
 Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
 Q_2 = 24,000
 Q_5 = 44,200
 Q_{10} = 61,700
 Q_{25} = 88,900
 Q_{50} = 113,000
 Q_{100} = 141,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)
 Mean = 4.391
 Standard deviation = 0.307
 Skew = 0.207

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Feb. 8	20.5	27,700	1955	Feb. 20	18.54	22,500	1964	Apr. 5	14.14	13,900
1932	Jan. 16	18.1	23,200		Mar. 20	16.06	17,300		May 11	15.72	18,000
1933	May 14			1956	Apr. 29	14.02	13,000	1965	May 9	11.17	9,440
	15	22.3	32,200	1957	Apr. 3	29.37	73,200	1966	Jan. 1	19.44	26,800
1934	Sep. 2	13.3	13,700		May 17	17.98	21,700		Feb. 9	25.38	49,600
1935	Jun. 17	27.0	57,700		May 23	25.16	48,500		Apr. 24	18.92	25,500
1936	Dec. 6	14.8	15,100		Jun. 2	15.86	16,700	1967	May 6	11.25	9,520
					Jun. 13	20.66	29,800				
1943	May 10	27.0	57,700		Aug. 16	14.04	13,000	1968	Jan. 29	13.49	13,500
1945	Apr. 15	35.0	112,000	1958	May 9	14.34	14,800		Feb. 1	15.20	16,900
1950	May 10	27.2	58,900		Jun. 25	15.22	16,600		Mar. 20	16.81	20,400
1951	Feb. 18	17.76	20,900		Jul. 13	22.32	35,900		Apr. 20	14.13	14,900
	Jul. 2	19.46	25,000	1959	Mar. 5	16.70	20,100		May 13	13.62	13,900
1952	Apr. 12	15.02	15,000		May 11	15.66	18,000	1969	Dec. 27	16.32	19,300
1953	Mar. 14	15.65	16,200	1960	Nov. 4	13.83	14,100		Jan. 30	15.69	18,000
	Mar. 18	17.24	19,500		May 6	30.30	80,600		Mar. 24	15.38	17,400
	May 12	16.57	18,300		May 18	14.16	14,900	1970	Oct. 13	17.70	22,400
1954	May 2	15.34	15,600	1961	May 5	21.38	32,700		Apr. 25	17.21	21,300
					Jul. 15	14.60	15,700		May 1	15.49	17,500
				1962	Nov. 22	12.33	11,300	1971	Oct. 24	15.01	16,500
									Oct. 27	20.57	30,000
				1963	Apr. 27	7.89	5,200		Jan. 14	13.20	13,000

ARKANSAS RIVER BASIN

07250550 ARKANSAS RIVER AT DAM NO. 13, NEAR VAN BUREN, ARK
(Formerly published as "07250500 Arkansas River at Van Buren)

LOCATION.--Lat 35°20'56", long 94°17'54", in sec.28, T.8 N., R.31 W., Sebastian County, in Dam No. 13 control house on right bank, and at mile 308.9.

GAGE.--Water-stage and gage position recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1934, nonrecording gage, and Oct. 1, 1934, to Dec. 20, 1969, recording gage at site 7.9 miles upstream at datum 372.36 ft higher.

HISTORICAL DATA.--Maximum stage since at least 1833, that of Apr. 16, 1945, and maximum discharge since at least 1833, that of May 12, 1943. Flood in June 1833 reached a stage of 38 ft on Fort Smith gage, from records collected by U.S. Weather Bureau. Flood of Apr. 16, 1927, reached a stage of 35.0 ft, former site and datum, from information by local resident.

REMARKS.--Flow regulated by many locks, dams, and reservoirs upstream. Only annual peaks are shown prior to 1934 and since 1959. Base for partial-duration series, 110,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 150,547
Noncontributing = 22,241
Contributing = 128,306
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = f22

LOG-PEARSON TYPE III FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Apr. 16	35.0	-	1942	Apr. 30	31.00	328,000	1951	Feb. 21	21.19	164,000
1928	Oct. 5	25.2	243,000		Jun. 26	26.20	218,000		May 22 ^a	22.08	164,000
1929	May 16	29.0	315,000	1943	Dec. 29	a23.30	188,000		Jun. 13	20.72	138,000
1930	May 10	22.6	164,000		May 12	b38.00	850,000		Jun. 28	20.98	140,000
1931	Dec. 6	15.5	82,500		May 23	b36.80	752,000		Jul. 6	26.76	250,000
1932	Jan. 24	22.15	184,000		Jun. 8	22.80	144,000		Jul. 19	26.92	238,000
1933	May 17	27.88	278,000	1944	Mar. 21	22.50	152,000		Sep. 17	19.56	117,000
1934	Apr. 9	17.90	116,000		Apr. 13	24.63	182,000	1952	Apr. 24	20.70	145,000
1935	Nov. 24	18.60	111,000		May 3	a26.84	238,000	1953	Apr. 26 ^b	19.28	133,000
	Mar. 14	25.10	206,000		Jun. 15	20.32	127,000	1954	May 3	23.84	205,000
	Mar. 26	23.78	179,000	1945	Dec. 9	19.37	124,000	1955	May 31	18.91	101,000
	May 6	22.41	165,000		Feb. 24	19.28	111,000	1956	Oct. 7	19.63	128,000
	May 22	25.48	215,000		Mar. 4	b23.88	177,000	1957	Apr. 5	21.78	150,000
	Jun. 9	a29.47	269,000		Mar. 21	b29.78	304,000		Apr. 28	25.32	197,000
	Jun. 19	b34.1	418,000		Apr. 2	23.70	156,000		May 28	35.97	510,000
1936	Dec. 8	20.10	118,000		Apr. 17	c38.10	650,000	1958	Mar. 28	20.17	132,000
	Sep. 30	21.17	143,000		May 17	21.86	146,000		May 10	18.93	117,000
1937	Oct. 10	20.10	126,000		Jun. 11	b26.70	229,000		Jun. 26	21.90	171,000
	Jan. 17	21.9	154,000		Jul. 4	20.40	130,000		Jul. 15	22.20	160,000
	Feb. 2	21.1	143,000	1946	Oct. 2	29.42	287,000	1959	Jul. 28	22.50	158,000
	Jun. 2	18.9	122,000		Jan. 12	20.45	139,000	1960	Oct. 7	32.55	418,000
	Jun. 14	21.9	148,000		Feb. 20	20.13	128,000	1961	May 11	28.17	284,000
	Jun. 19	21.0	134,000		May 24	21.63	148,000	1962	Nov. 6	21.92	158,000
1938	Feb. 19	32.71	375,000		Jun. 2	19.62	118,000	1963	Oct. 4	15.11	63,700
	Mar. 30	a25.40	195,000	1947	Nov. 10	19.68	119,000	1964	Jun. 17	19.53	84,700
	May 25	25.12	200,000		Dec. 13	27.80	262,000	1965	Apr. 9	21.57	121,000
1939	May 16	16.68	77,400		Apr. 17	26.36	238,000	1966	Feb. 10 ^d	18.32	72,500
1940	Sep. 6	20.45	127,000		Apr. 30	25.80	205,000	1967	Jul. 9	19.54	77,400
1941	Apr. 22	30.58	311,000		May 18	26.72	224,000	1968	Mar. 21	23.13	134,000
	Jun. 13	27.52	244,000		Jun. 3	23.53	155,000	1969	Mar. 26 ^e	21.16	101,000
	Sep. 11	a19.64	115,000	1948	Jun. 25			1970	May 2	388.57	152,000
1942	Oct. 7	a25.93	209,000		26	b30.61	330,000	1971	Oct. 27	389.07	136,000
	Oct. 18	a26.32	204,000		Jul. 20	22.12	152,000				
	Oct. 28	26.56	203,000		Aug. 17	21.9	149,000				
	Nov. 2	a35.70	485,000	1949	Jan. 27						
	Apr. 12	27.78	268,000		28	b22.02	157,000				
					Feb. 16	b24.90	205,000				
					May 2	b21.40	152,000				
					May 22	b29.03	323,000				
					Jun. 15	23.04	173,000				
				1950	May 13	b30.90	402,000				
					Jul. 24	25.30	226,000				
					Jul. 30	23.20	173,000				
					Aug. 4	24.50	204,000				
					Sep. 17	22.80	185,000				

a Occurred on following day.

b Occurred at different time than peak discharge.

c Occurred Apr. 16, 1945.

d Occurred April 24, 1966.

e Occurred July 4, 1969.

f At former site and datum.

RED RIVER BASIN

07299570 RED RIVER NEAR QUANAH, TEX.

LOCATION.--Lat 34°24'47", long 99°44'03", Hardeman County, on right bank at downstream side of bridge on State Highway 283, 8 miles north of Quanah, 30 miles upstream from Salt Fork Red River, and at mile 1,030.

GAGE.--Water-stage recorder. Datum of gage is 1,412.97 ft above mean sea level.

HISTORICAL DATA.--Maximum stage since at least 1891 occurred in 1896 and was about 2 ft higher than flood of June 1, 1957 (second highest), which reached a stage of 21.2 ft, from information by local resident.

REMARKS.--Several small diversions above station for irrigation. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 8,321
 Noncontributing = 4,769
 Contributing = 3,552
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 20,300 (29,000)
 Q₅ = 36,400 (52,000)
 Q₁₀ = 49,100 (70,100)
 Q₂₅ = 67,200 (96,000)
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.303
 Standard deviation = 0.306
 Skew = -0.147

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Jun. 1	21.2	-	1963	Jun. 18	9.05	8,850	1968	Jun. 1	12.40	24,800
									Jun. 10	11.48	17,400
1960	Jun. 7	16.00	64,000	1964	Jun. 15	9.5	12,000		Jul. 15	11.50	26,600
	Jun. 12	12.40	31,600		Sep. 16	8.74	6,680		Aug. 29	13.79	44,300
	Jul. 9	9.80	10,500	1965	Apr. 15	8.62	5,420	1969	May 7	9.06	8,920
1961	Oct. 12	9.28	7,950		Jun. 12	10.10	16,200		Jun. 19	9.68	9,600
	Oct. 18	12.04	30,300		Jun. 26	12.65	32,600		Aug. 26	10.92	19,200
	Jul. 10	9.78	10,500		Jun. 28	11.13	21,300		Sep. 10	9.10	5,380
	Jul. 16	10.15	13,200		Sep. 19	10.50	19,000		Sep. 24	9.09	5,240
1962	Jun. 10	9.42	7,210	1966	Oct. 18	-	15,500	1970	Apr. 19	8.82	7,280
	Jun. 19	11.59	24,800		Jun. 25	10.74	20,600	1971	Jun. 13	11.22	21,800
	Jul. 25	8.94	8,080		Aug. 24	11.45	25,800		Aug. 9	9.90	11,200
	Aug. 2	8.98	8,360		Sep. 1	10.74	20,600		Aug. 14	9.93	11,600
1963	May 30	8.96	8,220	1967	Jul. 20	9.38	7,360		Sep. 18	11.18	21,600
	Jun. 3	9.03	8,710						Sep. 25	10.83	18,800

07299705 BITTER CREEK NEAR HOLLIS, OKLA.

LOCATION.--Lat 34°42'40", long 99°57'30", in NE 1/4 NW 1/4 sec.29, T.3 N., R.26 W., Harmon County, at county road bridge, 3.1 miles northwest of Hollis.

GAGE.--Crest-stage gage. Stage-rainfall recorder May 7, 1964, to Oct. 8, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 11.3
 Noncontributing = 0
 Contributing = 11.3
 Channel slope (ft/mi) = 20.0
 Annual precip. (in) = 21.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 143 (204)
 Q₅ = 437 (583)
 Q₁₀ = 709 (886)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.205
 Standard deviation = 0.559
 Skew = -0.571

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 12	3.80	58	1967	Jul. 3	3.50	19	1969	Aug. 26	6.25	282
1965	Jun. 25	5.90	250	1968	Jun. 1	8.3	830	1970	-	-	0
1966	Sep. 27	6.90	420					1971	Jun. 10	4.88	100

RED RIVER BASIN

07299720 MULE CREEK NEAR ELDORADO, OKLA.

LOCATION.--Lat 34°27'00", long 99°32'10", in NE 1/4 NE 1/4 sec.30, T.1 S., R.22 W., Jackson County, at county road bridge, 6.8 miles southeast of Eldorado.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 31, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3.84
Noncontributing = 0
Contributing = 3.84
Channel slope (ft/mi) = 27.6
Annual precip. (in) = 23.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 281 (401)
Q₅ = 1,050 (1,400)
Q₁₀ = 1,700 (2,120)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.444
Standard deviation = 0.736
Skew = -1.108

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sep. 15	4.78	12	1967	May 5	5.82	92	1960	Sep. 22	7.4	800
1965	Sep. 20	8.20	1,740	1968	Jun. 1	6.77	390	1970	-	-	0
1966	Jun. 9	6.37	225					1971	Sep. 18	7.57	950

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TEX.

LOCATION.--Lat 34°57'27", long 100°13'14", Collingsworth County, near center of stream on downstream side of bridge on U.S. Highway 83, 4 miles downstream from Fort Worth and Denver (Burlington) Railway Co. bridge, 4.5 miles south of Lutie, and 7.2 miles north of Wellington.

GAGE.--Water-stage recorder. Datum of gage is 1,941.41 ft above mean sea level.

REMARKS.--Flow partly regulated since August 1967 by Greenbelt Reservoir. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,222
Noncontributing = 209
Contributing = 1,013
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,200
Q₅ = 41,900
Q₁₀ = 72,300
Q₂₅ = 128,000
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.139
Standard deviation = 0.570
Skew = -0.148

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	-	17.5	-	1958	May 13	12.50	51,700	1964	Jun. 14	7.52	7,050
					Jul. 6	6.15	7,080		Sep. 23	7.60	7,550
1953	Jul. 19	13.90	63,400	1959	May 22	7.05	7,400	1965	Jun. 4	10.00	22,500
1954	May 11	7.01	6,080		May 26	8.10	10,800				
	May 24	7.65	8,640		Jul. 6	6.85	5,560	1966	Aug. 24	5.73	864
	Jun. 10	16.00	95,900	1960	Jun. 9	8.80	16,300	1967	Apr. 12	6.70	3,650
1955	May 19	9.25	23,000								
	Jun. 2	7.62	12,800	1961	Oct. 12	7.67	8,640	1968	Jun. 8	7.20	5,700
	Jun. 8	6.37	6,870		Oct. 15	7.22	6,810		Jul. 15	8.10	10,200
	Jun. 19	9.30	23,700		Oct. 18	6.78	5,060		Aug. 14	7.33	6,280
					Jun. 3	9.10	16,300		Aug. 17	7.45	6,820
1956	May 27	8.50	18,400		Jul. 15	7.12	6,440		Aug. 28	11.40	34,500
1957	Oct. 15	6.30	6,660	1962	Apr. 26	9.00	11,700	1969	Apr. 25	6.89	4,360
	Apr. 28	8.86	21,000		Jun. 15	6.76	5,230				
	May 16	19.00	146,000		Aug. 1	8.22	11,200	1970	Apr. 18	7.00	4,800
	May 24	7.01	10,800								
	Aug. 4	6.00	5,460	1963	Sep. 16	7.78	7,550	1971	Jun. 9	6.27	2,210
	Aug. 29	6.05	6,260								

RED RIVER BASIN

07300150 SALT FORK RED RIVER TRIBUTARY NEAR VINSON, OKLA.

LOCATION.--Lat 34°54'10", long 98°58'50", in NW 1/4 NE 1/4 sec.19, T.5 N., R.26 W., Harmon County, at bridge on State Highway 9, 6.9 miles west of Vinson.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 8, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 7.49
 Noncontributing = 0
 Contributing = 7.49
 Channel slope (ft/mi) = 30.0
 Annual precip. (in) = 22.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 414 (591)
 Q₅ = 1,110 (1,540)
 Q₁₀ = 1,670 (2,230)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.530
 Standard deviation = 0.602
 Skew = -0.874

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 12	6.99	180	1967	Jul. 3	9.72	820	1969	Jul. 22	5.40	36
1965	Mar. 5	10.64	1,180	1968	Jun. 1	10.13	970	1970	Apr. 18	5.75	56
1966	Sep. 18	8.71	510					1971	Jun. 10	10.20	1,000

RED RIVER BASIN

07300500 SALT FORK RED RIVER AT MANGUM, OKLA.

LOCATION.--Lat 34°51'32", long 99°30'28", in SW 1/4 SE 1/4 sec.34, T.5 N., R.22 W., Greer County, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mile south of Mangum, 13 miles downstream from Fish Creek, and at mile 35.5.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft above mean sea level (levels by Bureau of Reclamation). Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

HISTORICAL DATA.--Local residents indicate that flood in 1938 is maximum known.

REMARKS.--Base for partial-duration series, 6,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,566
Noncontributing = 209
Contributing = 1,357
Channel slope (ft/mi) = 13.8
Annual precip. (in) = 21.0
Bankful stage (ft) = 9

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 14,000
Q₅ = 27,000
Q₁₀ = 38,300
Q₂₅ = 56,100
Q₅₀ = 72,000
Q₁₀₀ = 90,400

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.153
Standard deviation = 0.333
Skew = 0.120

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	May 19	9.74	10,400	1949	Feb. 6	9.51	6,320	1959	May 8	8.82	6,500
	Jun. 10	9.20	6,900		May 13	9.65	6,540		May 22	8.90	7,200
	Jun. 16	14.7	60,000		May 18	10.56	11,900		May 26	10.06	12,300
1939	Jun. 21	10.44	15,400	1950	Sep. 11	9.31	5,690		Jul. 1	8.94	7,200
1940	Jul. 12	8.71	6,850	1951	May 17	10.79	13,200	1960	Jun. 9	10.62	11,900
					Jul. 2	10.32	12,100	1961	Oct. 12	10.22	10,300
1941	Apr. 28	11.18	23,300	1952	Apr. 21	8.62	3,030		Oct. 18	10.40	11,200
	May 3	9.70	11,400						Jun. 3	11.30	17,200
	May 20	10.50	17,400	1953	Jun. 5	10.13	9,100	1962	Apr. 27	10.93	14,400
	May 24	9.32	7,610		Jul. 19	13.75	44,800		Aug. 1	10.50	11,200
	Jun. 6	10.54	17,800						Sep. 20	10.08	8,820
	Jun. 8	12.20	32,500	1954	May 12	8.95	7,180	1963	Sep. 16	10.00	8,270
	Jun. 29	9.80	11,400		May 24	9.19	8,240	1964	Jun. 14	10.11	8,820
	Sep. 17	9.31	8,790		Jun. 10	13.30	38,100	1965	Jun. 4	12.38	27,500
1942	Oct. 4	8.86	5,700	1955	May 11	9.02	7,390		Jun. 5	9.70	6,770
	Oct. 23	9.47	8,370		May 16	9.08	7,180		Sep. 19	11.35	17,600
1943	Oct. 15	10.45	15,800		May 19	10.77	16,600	1966	Oct. 18	10.17	10,200
	Oct. 17	8.92	6,000		Jun. 3	9.21	7,600	1967	Jul. 4	9.40	6,600
1944	Jun. 1	9.92	9,240		Jun. 8	9.75	10,300	1968	May 7	9.76	8,300
	Jun. 13	10.95	16,900		Jun. 19	10.61	15,400		May 9	9.63	7,450
1945	Jun. 5	8.77	6,160		Sep. 18	8.81	6,190		Jun. 1	10.84	14,400
1946	Apr. 29	9.68	10,500	1956	Oct. 4	10.20	13,100		Jun. 8	9.49	6,960
					May 2	11.34	19,800		Jul. 15	11.45	18,600
1947	May 12	11.35	21,400		May 27	12.20	35,900		Aug. 28	11.52	19,200
	May 15	9.00	9,200		Jul. 17	10.10	19,100	1969	May 4	9.56	7,300
	May 20	8.96	8,660	1957	Apr. 20	8.95	6,380	1970	Apr. 19	9.86	8,800
	May 22	9.26	7,240		Apr. 28	10.30	11,500	1971	Jun. 11	9.16	3,080
	Jun. 12	9.1	6,420		May 8	9.30	7,390				
	Jun. 22	8.9	8,080		May 16	14.55	72,000				
	Jun. 25	8.9	8,080		May 25	8.90	10,200				
	Jul. 18	9.70	8,660	1958	May 13	12.18	32,500				
1948	Jun. 21	11.77	21,500		May 17	8.23	6,100				

RED RIVER BASIN

07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TEX.

LOCATION.--Lat 34°15'51", long 100°14'29", Wheeler County, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 miles north of Shamrock, 16 miles upstream from Oklahoma-Texas State line, and 23 miles downstream from McClellan Creek.

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft above mean sea level.

HISTORICAL DATA.--Maximum stage since at least 1915, 16.1 ft in May 1957, from information by State Highway Department and local residents.

REMARKS.--Small diversions from McClellan Creek upstream from gage. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 1,082
 Noncontributing = 379
 Contributing = 703
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 6,510 (9,300)
 Q₅ = 9,440 (14,500)
 Q₁₀ = 11,500 (18,800)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.804
 Standard deviation = 0.201
 Skew = -0.260

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May	16.1	-	1966	Aug. 24	4.82	4,140	1968	Jul. 2	5.34	8,570
					Sep. 17	4.83	4,190				
1964	Jun. 14	5.60	9,200					1969	Oct. 9	4.55	3,200
				1967	Apr. 12	4.80	4,020		May 17	4.75	3,960
1965	Jun. 2	5.60	9,200		Jun. 7	5.80	11,200		Aug. 25	4.74	3,860
	Jun. 5	4.63	3,100		Jul. 3	5.21	7,190				
	Jun. 15	4.86	3,360					1970	Apr. 18	5.10	5,950
				1968	Jun. 10	4.89	5,080				
1966	Oct. 17	4.60	3,150					1971	May 31	4.58	3,360

07301410 SWEETWATER CREEK NEAR KELTON, TEX.

LOCATION.--Lat 35°28'23", long 100°07'14", Wheeler County, near center of stream on downstream side of bridge on Farm Road 592, 5 miles north of Kelton, 8 miles upstream from Texas-Oklahoma State line, and 8.5 miles northeast of Wheeler.

GAGE.--Water-stage recorder. Altitude of gage is 2,230 ft (from topographic map).

HISTORICAL DATA.--Maximum stage since at least 1882, about 20 ft May 16, 1957.

REMARKS.--Diversions above station for ranch use. Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 287
 Noncontributing = 20
 Contributing = 267
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 776 (1,110)
 Q₅ = 1,240 (1,910)
 Q₁₀ = 1,610 (2,680)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.906
 Standard deviation = 0.230
 Skew = 0.406

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Apr. 27	13.53	695	1964	Jun. 14	13.44	665	1967	Jul. 4	13.94	850
	Jun. 6	13.17	578								
	Jun. 9	12.87	540	1965	Jun. 4	13.86	790	1968	Jun. 10	12.10	370
	Jun. 11	13.10	635		Sep. 21	13.52	680				
	Jun. 18	13.81	770					1969	Oct. 9	14.32	1,590
	Sep. 20	12.92	515	1966	Oct. 18	12.42	410		Aug. 25	13.37	975
1963	Jun. 3	13.10	565	1967	Jun. 29	13.05	552	1970	Apr. 18	14.95	2,110
	Aug. 14	13.89	810								
	Aug. 19	14.15	910					1971	Jun. 11	12.80	730

RED RIVER BASIN

07301455 TURKEY CREEK NEAR ERICK, OKLA.

LOCATION.--Lat 35°12'05", long 99°47'55", in NW 1/4 NW 1/4 sec.1, T.8 N., R.25 W., Beckham County, at county road multi-barrel culvert, 3.8 miles southeast of Erick.

GAGE.--Crest-stage gage. Stage-rainfall recorder Apr. 27, 1964, to Oct. 8, 1969.

REMARKS.--Only annual peaks are shown. Log-Pearson calculations based on all annual peaks shown except for 1970 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 19.8
 Total = 0
 Noncontributing = 19.8
 Contributing = 17.7
 Channel slope (ft/mi) = 24.0
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 847 (1,210)
 Q₅ = 1,670 (2,570)
 Q₁₀ = 2,310 (3,850)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 2.901
 Standard deviation = 0.377
 Skew = -0.432

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 13	7.15	2,520	1967	Apr. 12	4.20	800	1969	May 24	3.50	510
1965	Jun. 25	3.48	500	1968	Apr. 3	5.45	1,430	1970	May 29	-	25
1966	Oct. 18	5.50	1,460					1971	Jun. 8	2.53	189

07301480 SHORT CREEK NEAR SAYRE, OKLA.

LOCATION.--Lat 35°18'20", long 99°39'15", in SW 1/4 SE 1/4 sec.29, T.10 N., R.23 W., Beckham County, at county road multi-barrel culvert, 0.9 mile northwest of Sayre.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 8, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 9.12
 Total = 0
 Noncontributing = 9.12
 Contributing = 31.1
 Channel slope (ft/mi) = 24.0
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 437 (624)
 Q₅ = 878 (1,350)
 Q₁₀ = 1,320 (2,200)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 2.672
 Standard deviation = 0.338
 Skew = 0.565

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	15.45	830	1967	Apr. 11	14.08	580	1969	Oct. 9	18.33	1,900
1965	Jun. 25	13.31	380	1968	Apr. 3	14.20	620	1970	May 29	12.47	185
1966	Oct. 18	12.49	200					1971	Jun. 8	12.95	300

RED RIVER BASIN

07301495 INDIAN CREEK NEAR CARTER, OKLA.

LOCATION.--Lat 35°17'30", long 99°30'35", in NW 1/4 NE 1/4 sec.3, T.9 N., R.22 W., Beckham County, at bridge on State Highway 152, 5.0 miles north of Carter.

GAGE.--Crest-stage gage and stage-rainfall recorder.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 24.9
 Noncontributing = 0
 Contributing = 24.9
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sep. 20	8.70	780	1967	Jun. 25	5.78	290	1970	May 29	9.12	860
1966	Aug. 23	9.40	920	1968	Apr. 2	9.86	1,000	1971	Jun. 10	9.60	955
				1969	Oct. 9	14.50	2,350				

07301500 NORTH FORK RED RIVER NEAR CARTER, OKLA.

LOCATION.--Lat 35°10'05", long 99°30'25", in NW 1/4 SE 1/4 sec.15, T.8 N., R.22 W., Beckham County, near left bank on downstream side of pier of bridge on State Highway 34, 3 miles south of Carter, 10.8 miles downstream from Timber Creek, and at mile 110.5.

GAGE.--Water-stage recorder. Datum of gage is 1,673.71 ft above mean sea level.

REMARKS.--Base for partial-duration series, 3,200 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 2,337
 Noncontributing = 399
 Contributing = 1,938
 Channel slope (ft/mi) = 12.5
 Annual precip. (in) = 24.1
 Bankful stage (ft) = 11

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 6,940
 Q₅ = 13,900
 Q₁₀ = 20,400
 Q₂₅ = 31,200
 Q₅₀ = 41,500
 Q₁₀₀ = 54,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.858
 Standard deviation = 0.345
 Skew = 0.287

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Jun. 21	8.63	6,360	1951	Jun. 6	9.26	11,400	1959	Sep. 25	7.16	3,220
	Aug. 15	7.49	4,040	1952	Apr. 22	6.62	2,010	1960	Jul. 13	7.60	3,380
1946	May 31	6.54	1,580	1953	Jul. 20	8.20	4,190		Jul. 22	9.28	7,800
1947	Oct. 7	8.50	6,120	1954	Oct. 23	9.01	5,550	1961	Oct. 12	9.06	7,050
	May 12	10.37	15,000		Apr. 30	10.51	9,070		Oct. 18	8.50	5,610
	May 15	7.01	4,080		May 11	8.71	5,360		May 17	8.55	5,610
	May 20	9.75	12,800		May 24	11.24	12,700		Jun. 3	10.07	10,700
	Jun. 7	8.03	7,010	1955	May 16	8.75	5,170		Jun. 7	10.15	11,200
	Jun. 20	7.24	4,920		May 19	9.59	6,910	1962	Apr. 27	10.72	12,400
	Jun. 25	7.53	5,680		Jun. 5	7.86	3,390		Jun. 9	8.69	6,020
1948	Mar. 1	7.21	4,800		Jun. 9	8.09	3,840		Jun. 15	7.67	3,480
	May 25	8.11	6,070		Jun. 18	8.42	4,410		Jun. 19	7.53	3,280
	Jun. 21	8.33	7,010	1956	Oct. 4	10.14	9,450		Aug. 1	7.80	3,800
1949	Nov. 2	6.96	3,400		May 1	9.00	6,510		Sep. 20	8.65	5,880
	Feb. 6	8.10	6,330		May 28	9.82	8,080	1963	Jun. 3	7.02	2,220
	May 7	9.30	10,400	1957	Apr. 19	10.39	10,600	1964	Jun. 14	8.59	6,000
	May 17	7.45	5,050		Apr. 23	9.80	9,470	1965	Jun. 5	7.81	3,780
	May 27	7.81	6,070		Apr. 26	8.03	4,360		Jun. 26	7.67	3,450
	Jun. 3	7.07	4,800		May 4	9.68	9,110	1966	Oct. 18	8.67	6,600
1950	May 13	8.55	7,010		May 11	8.86	6,240	1967	Apr. 13	7.37	2,980
	May 18	10.34	16,400		May 17	11.95	25,300	1968	Jun. 11	7.70	3,560
	Jun. 2	6.84	3,290	1958	May 13	8.10	5,360	1969	Oct. 9	9.87	7,830
	Jun. 11	7.35	4,440		Jun. 21	8.63	6,660	1970	Apr. 19	8.23	4,790
	Jul. 5	8.50	8,580		Jun. 24	7.64	5,240	1971	Jun. 11	8.26	4,860
	Jul. 20	8.35	7,430		Jul. 5	7.58	3,920				
	Aug. 1	7.60	4,920		Jul. 22	7.86	3,500				
	Aug. 17	8.67	8,000	1959	May 26	13.42	53,400				
1951	May 18	9.45	18,300		Jun. 23	8.58	6,100				
	May 21	8.96	9,930		Jul. 1	7.65	3,930				
	Jun. 2	8.70	9,490								

RED RIVER BASIN

07302000 NORTH FORK RED RIVER NEAR GRANITE, OKLA.
(Published as "Red River (North Fork) near Granite" 1903-4, and as
"North Fork Red River at Lugert Dam" 1930-32)

LOCATION.--Lat 34°58', long 99°20', on south line of sec.20, T.6 N., R.20 W., near center of span on downstream side of pier of bridge on State Highway 9, 2-1/2 miles east of Granite, 6.4 miles upstream from Lugert Dam, and at mile 80.0.

GAGE.--Nonrecording prior to 1938; recording thereafter. July 1903 to March 1908 at site 50 ft downstream at datum 4.90 ft lower. Apr. 19, 1930, to Dec. 31, 1932, at old Lugert Dam, 6.5 miles downstream at datum 1,504.31 ft above mean sea level, unadjusted. Datum of last used gage was 1,534.85 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--In 1931, the Corps of Engineers reported that the maximum flood known occurred in 1903. A stage of 16 ft shown on bridge plans (last used site and datum) may have occurred at that time.

REMARKS.--Base for partial-duration series, 3,200 cfs. Only annual peaks are shown prior to 1938.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,494
Noncontributing = 399
Contributing = 2,095
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 8

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 10,300
Q₅ = 16,900
Q₁₀ = 21,500
Q₂₅ = 27,300
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.995
Standard deviation = 0.273
Skew = -0.370

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	May 3	8.5	9,500	1938	May 19	7.11	9,770	1941	Jun. 23	4.95	4,300
1905	May 27	12.0	18,800		Jun. 16	4.22	3,790		Jun. 30	4.68	3,820
1906	Nov. 24	10.0	9,000	1939	May 8	6.75	8,960		Aug. 27	7.08	8,550
1907	Jun. 21	11.0	10,000		Jun. 19	4.68	4,490	1942	Oct. 24	8.12	12,200
					Jun. 22	6.84	9,080		Apr. 19	5.84	5,050
1928	May 16	14.5	14,300		Jul. 2	4.45	3,990		Apr. 24	6.70	7,090
1930	May 7	13.70	10,400	1940	Jul. 2	4.50	4,090		Apr. 27	9.55	23,900
1931	Oct. 13	12.10	4,390	1941	May 1	5.51	6,180		Jun. 9	7.08	8,230
1932	Jun. 26	11.5	2,680		May 4	6.52	7,180		Jun. 22	8.38	14,200
					May 21	8.72	16,400	1943	Oct. 15	6.51	6,290
1935	May 18	9.8	28,000		May 24	8.30	13,500		Oct. 17	7.52	7,080
1938	Apr. 27	5.00	5,120		May 27	4.52	4,160	1944	Jun. 1	7.37	5,220
					Jun. 2	4.46	4,050		Jun. 13	8.6	10,400
					Jun. 6	4.74	4,200		Jul. 25	6.91	3,920
					Jun. 9	8.21	12,800		Jul. 30	7.07	4,410
									Sep. 28	6.52	3,260

RED RIVER BASIN

07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OKLA.
(Published as "at Lugert Dam" 1930-32)

LOCATION.--Lat 34°53'26", long 99°18'22", in SW 1/4 sec.22, T.15 N., R.20 W., Greer County, on right bank 3,500 ft downstream from Altus Dam, 1.9 miles upstream from Elm Fork of North Fork, 2 miles west of Lugert, and at mile 72.8.

GAGE.--Water-stage recorder. Datum of gage is 1,471.81 ft above mean sea level. Mar. 19, 1930, to Dec. 21, 1932, nonrecording gage at former Lugert Dam, 0.7 mile upstream at datum 1,504.31 ft above mean sea level, unadjusted.

HISTORICAL DATA.--Flood of May 16, 1928, reached a stage of 14.5 ft, site and datum then in use (discharge, 14,300 cfs).

REMARKS.--Some regulation at low flow by Lugert Lake prior to December 1943 (capacity, 13,500 acre-ft) and completely regulated thereafter by Lake Altus. Diversions at Lake Altus bypass most of streamflow. Only annual peaks are shown.

BASIN CHARACTERISTICSDrainage Area (sq mi)

Total = 2,515
Noncontributing = 399
Contributing = 2,116
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 18

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	May 16	14.5	14,300	1954	-	-	no flow	1962	Jun. 9	9.00	3,230
1930	May 7	13.70	10,400	1955	-	-	no flow	1964	-	-	no flow
1931	Oct. 13	12.10	4,390	1956	-	-	no flow	1965	-	-	no flow
1932	Jun. 26	11.5	2,680	1957	-	-	no flow	1966	-	-	no flow
1951	May 18	12.70	16,100	1958	-	-	no flow	1967	-	-	no flow
1952	Apr. 21	1.95	24	1959	May 29	8.22	2,050	1968	-	-	no flow
1953	Jun. 5	3.16	(a)	1960	Jul. 22	8.20	2,160	1969	May 14	8.65	2,740
				1961	Jun. 8	11.34	6,710	1970	-	-	no flow
								1971	-	-	no flow

a Negligible flow.

RED RIVER BASIN

07303400 ELM FORK OF NORTH FORK RED RIVER NEAR CARL, OKLA.

LOCATION.--Lat 35°00'42", long 99°54'12", in SW 1/4 NW 1/4 sec.12, T.6 N., R.26 W., Harmon County, near left bank on downstream side of pier of bridge on State Highway 30, 4 miles northeast of Carl, and at mile 54.0.

GAGE.--Water-stage recorder. Datum of gage is 1,714.95 ft above mean sea level (State Highway Department bench mark).

REMARKS.--Base for partial-duration series, 2,000 cfs. Log-Pearson calculations based on all annual peaks shown except 1970 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 416
 Noncontributing = 0
 Contributing = 416
 Channel slope (ft/mi) = 15.2
 Annual precip. (in) = 23.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,500 (7,860)
 Q₅ = 9,840 (14,500)
 Q₁₀ = 13,400 (20,600)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.743
 Standard deviation = 0.298
 Skew = 0.058

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Aug. 24	5.74	4,230	1964	May 10	5.60	2,800	1967	Sep. 20	6.17	3,790
					Jun. 13	7.93	7,460				
1961	Oct. 11	5.85	4,550					1968	Apr. 2	5.88	3,260
	Oct. 17	5.39	3,200						May 13	5.19	2,190
	Jun. 3	5.32	3,020	1965	Apr. 14	6.00	3,480		Jun. 8	5.38	2,440
					Jun. 4	9.40	11,400		Jul. 15	8.84	9,780
1962	Apr. 27	11.45	17,900		Jun. 5	6.87	5,100		Sep. 21	6.12	3,700
	Jun. 15	7.61	6,740		Sep. 20	5.23	2,270				
	Jul. 24	5.25	2,270	1966	Oct. 17	7.03	5,510	1969	Oct. 9	5.15	2,130
	Aug. 1	7.11	5,620		Aug. 31	6.62	4,600		May 14	5.07	2,020
	Sep. 20	6.54	4,400								
1963	May 30	5.12	2,060	1967	Apr. 12	6.27	3,970	1970	May 30	3.27	325
					May 5	6.08	3,620				
					Jul. 4	7.71	7,000	1971	Jun. 9	5.78	3,090

07303450 DEER CREEK NEAR PLAINVIEW, OKLA.

LOCATION.--Lat 35°02'50", long 99°46'10", in NW 1/4 SE 1/4 sec.31, T.7 N., R.24 W., Greer County, at county road bridge, 3.8 miles southwest of Plainview.

GAGE.--Crest-stage gage. Stage-rainfall recorder May 6, 1964, to Oct. 8, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 27.8
 Noncontributing = 0
 Contributing = 27.8
 Channel slope (ft/mi) = 34.0
 Annual precip. (in) = 23.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 721 (1,030)
 Q₅ = 1,450 (2,070)
 Q₁₀ = 2,030 (2,900)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 2.838
 Standard deviation = 0.377
 Skew = -0.319

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Jun. 13	6.80	435	1967	Jul. 5	10.50	1,740	1969	May 25	11.50	2,200
1965	Jun. 13	8.85	1,060	1968	May 13	6.50	365	1970	Aug. 22	5.38	158
1966	Oct. 18	8.40	890					1971	Jun. 9	7.32	560

RED RIVER BASIN

07303500 ELM FORK OF NORTH FORK RED RIVER NEAR MANGUM, OKLA.

LOCATION.--Lat 34°55'36", long 99°30'00", on east line sec.10, T.5 N., R.22 W., Greer County, at bridge on U.S. Highway 283, 3 miles north of Mangum, 5 miles downstream from Haystack Creek, and at mile 17.8.

GAGE.--Water-stage recorder. Datum of gage is 1,520.77 ft above mean sea level (Bureau of Reclamation bench mark). Apr. 12, 1905, to Mar. 31, 1908, nonrecording gage at unknown datum. Mar. 16, 1930, to Sept. 30, 1931, nonrecording gage at datum 5.78 ft higher. Water-stage recorder Jan. 4, 1938, to Sept. 30, 1947, and April 1965 to Sept. 30, 1967, at datum 10.00 ft higher.

HISTORICAL DATA.--Flood in spring of 1921 reached a stage of 26.4 ft, present datum, from information by State Highway Department.

REMARKS.--Base for partial-duration series, 2,400 cfs. Only annual peaks are shown prior to 1930.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 838
Noncontributing = 0
Contributing = 838
Channel slope (ft/mi) = 14.1
Annual precip. (in) = 23.8
Bankful stage (ft) = 21

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,130
Q₅ = 17,600
Q₁₀ = 25,300
Q₂₅ = 36,100
Q₅₀ = 44,600
Q₁₀₀ = 53,400

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 3.875
Standard deviation = 0.434
Skew = -0.487

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 27	15.0	23,000	1941	May 2	8.10	8,000	1947	Apr. 15	6.27	2,840
1906	Sep. 17	8.0	6,200		May 21	11.17	21,200		May 12	13.52	30,600
1907	Jun. 9	10.2	10,900		May 24	8.54	9,250		May 15	8.02	5,470
1908	Oct. 3	a13.0	17,500		Jun. 6	7.36	4,920		May 20	8.96	6,710
1921	-	b26.4	-		Jun. 9	11.05	20,400		May 24	6.32	2,780
1930	May 6	9.7	2,860		Jun. 16	6.42	3,600		Jun. 5	6.40	3,000
	Jun. 10	9.2	2,550		Jun. 23	6.54	3,760		Jun. 20	6.08	3,000
1931	Oct. 14	9.0	2,440		Jun. 29	8.04	6,530		Jun. 25	5.66	2,460
1938	May 16	6.44	4,180		Aug. 27	7.01	7,700	1965	Jun. 4	11.66	10,500
	May 19	7.38	6,860		Sep. 18	6.38	3,400		Jun. 25	6.32	2,700
	Jun. 10	8.07	10,400	1942	Oct. 22	7.80	5,860		Sep. 19	10.14	7,670
	Jun. 16	9.15	18,600		Apr. 24	6.97	4,380	1966	Oct. 18	13.30	13,600
	Jun. 25	6.59	4,470		Apr. 27	11.18	27,800		Sep. 1	7.08	3,660
1939	Jan. 8	7.76	8,580		May 11	6.17	3,950	1967	Apr. 13	8.72	5,640
	Mar. 27	5.37	2,500		Jun. 23	6.11	2,900		May 6	8.11	4,840
	May 26	9.00	17,200	1943	Oct. 15	7.66	5,050		Jul. 4	11.42	10,000
	Jun. 21	8.53	13,800		Oct. 18	6.61	3,380		Jul. 9	6.43	3,090
1940	Sep. 23	4.93	1,690	1944	Mar. 15	5.77	2,430				
1941	Apr. 16	5.98	3,410		Jun. 1	5.73	2,470	1969	Oct. 9	18.07	4,330
	Apr. 19	5.28	2,440		Jun. 13	7.00	3,760		May 5	19.03	5,490
	Apr. 29	7.77	8,580		Jul. 13	8.12	6,200		May 13	18.70	5,090
				1945	Jun. 16	8.70	7,580	1970	May 29	13.59	830
					Jul. 10	6.77	3,300	1971	Jun. 9	15.99	2,340
				1946	May 31	6.07	2,670				
				1947	Oct. 6	7.58	4,610				

a Maximum observed; may have been exceeded in May or June 1908.

b At present datum, from information by State Highway Commission.

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OKLA.

LOCATION.--Lat 34°54'51", long 99°06'49", in NE 1/4 NE 1/4 sec.17, T.5 N., R.18 W., Kiowa County, near right bank on downstream side of pier of county road bridge, 7 miles downstream from Little Creek, 7.5 miles south of Hobart, and at mile 10.9.

GAGE.--Nonrecording 1904-8, June 6, 1951, to Oct. 23, 1952, and May 7, 1953, to Apr. 28, 1954; recording during remainder of period. Prior to Apr. 13, 1905, at site 3 miles southwest of Hobart at unknown datum. Apr. 13, 1905, to Mar. 31, 1908, at present site at datum 1,430.56 ft above mean sea level, unadjusted. Datum of present gage is 1,429.4 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--Flood in May 1949 reached a stage of 28.63 ft, from floodmark.

REMARKS.--Base for partial-duration series, 2,200 cfs. Only annual peaks shown prior to 1950.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 549
Noncontributing = 0
Contributing = 549
Channel slope (ft/mi) = 9.56
Annual precip. (in) = 23.9
Bankful stage (ft) = 27

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,890
Q₅ = 7,360
Q₁₀ = 10,800
Q₂₅ = 17,100
Q₅₀ = 23,400
Q₁₀₀ = 31,700

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.628
Standard deviation = 0.305
Skew = 0.761

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	May 28	25.0	3,500	1956	Oct. 4	30.75	22,400	1962	Nov. 3	28.28	6,000
					Jul. 17	19.54	2,300		Jun. 10	24.95	4,050
1906	Jul. 11	16.0	1,310						Jun. 13	22.75	3,400
				1957	Apr. 24	23.55	3,790		Jun. 16	20.92	2,860
1907	Jun. 9	28.9	-		May 3	20.50	2,800				
					May 5	25.78	4,570	1963	Jun. 7	20.46	2,920
1949	May	28.63	8,400		May 10	22.53	3,100				
					May 18	21.90	2,860	1964	Oct. 24	20.03	2,610
1950	Jul. 17	19.00	2,200		May 25	20.08	2,420				
	Jul. 22	21.15	3,320					1965	Sep. 20	28.6	7,550
				1958	Jun. 21	18.50	2,220				
1951	May 18	27.89	6,090					1966	Oct. 18	28.6	7,550
	May 21	18.89	2,650	1959	May 9	20.92	2,860				
	May 23	23.87	3,860		May 26	19.78	2,580	1967	Apr. 13	20.00	2,420
	Jun. 7	20.5	2,990		Jul. 1	18.92	2,310				
	Jun. 10	21.11	3,180		Jul. 28	27.19	4,720	1968	Jun. 2	22.17	3,110
					Sep. 26	23.60	3,630				
1952	Apr. 22	17.5	2,040					1969	Oct. 9	28.83	8,270
				1960	Oct. 4	23.60	3,630		May 4	29.89	12,400
1953	Jun. 6	25.2	4,050						Aug. 26	20.45	2,580
				1961	Oct. 18	23.54	3,600				
1954	Oct. 23	19.64	2,240		Oct. 26	19.25	2,390	1970	Sep. 23	17.26	1,780
					Jun. 8	20.80	2,830				
1955	May 19	23.30	3,270		Sep. 24	19.84	2,560	1971	Sep. 4	30.17	17,400
				1962	Oct. 10	21.81	2,950				

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OKLA.
(Published as "near Snyder" April to June 1905)

LOCATION.--Lat 34°38'04", long 99°05'47", in NW 1/4 NE 1/4 sec.21, T.2 N., R.18 W., Tillman County, near left bank on downstream side of pier of bridge on U.S. Highway 62, 2.5 miles east of Headrick, 12.9 miles upstream from Otter Creek, and at mile 33.0.

GAGE.--Water-stage recorder. Datum of gage is 1,294.83 ft above mean sea level (Bureau of Reclamation bench mark). Prior to July 18, 1905, nonrecording gage at site 0.2 mile downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navajo damsite 10.4 miles upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at present site at datum 5.0 ft higher.

REMARKS.--Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.5 miles above station. Diversions for irrigation of about 48,000 acres above station; some return flow may re-enter at Stinking Creek, 16 miles below station. Base for partial-duration series, 5,000 cfs. Only annual peaks shown prior to 1938 and since 1960.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 4,244
Noncontributing = 399
Contributing = 3,845
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 12

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)
Q₂ = 13,600
Q₅ = 25,800
Q₁₀ = 35,500
Q₂₅ = 49,400
Q₅₀ = 60,800
Q₁₀₀ = 73,100

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.121
Standard deviation = 0.341
Skew = -0.211

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
--	--	16.1	85,000	1944	Mar. 16	5.79	5,190	1956	Oct. 5	11.50	30,700
					Jun. 14	7.44	13,600		May 3	8.25	13,700
1905	May 27	8.0	29,000						May 28	10.10	24,500
1906	Nov. 24	7.0	12,500	1945	Mar. 11	5.61	5,250		Jul. 18	6.00	6,110
1907	Jun. 9	10.1	30,000		Apr. 11	6.41	8,010				
					Apr. 14	6.50	8,400	1957	Apr. 23	8.93	18,300
1935	May 18	14.8	60,000		Jun. 16	6.97	10,500		May 4	9.36	20,100
					Jul. 11	5.62	5,250		May 10	8.51	13,500
1938	May 4	6.22	5,810	1946	Jun. 2	5.17	3,830		May 12	9.05	17,700
	May 20	7.09	9,800						May 19	8.04	12,000
	Jun. 10	6.70	8,900	1947	May 13	9.85	21,700		May 26	7.16	7,600
	Jun. 16	7.54	12,500		May 16	7.98	12,200		Jul. 24	6.76	6,000
	Jun. 26	6.09	6,230		May 21	7.83	13,000	1958	Jun. 22	6.61	5,910
1939	Jan. 9	7.19	11,400		May 26	6.75	7,760				
	May 26	7.01	9,800		Jun. 1	8.08	13,000	1959	May 9	6.60	5,300
	Jun. 22	7.70	13,400		Jun. 26	6.20	6,040		May 22	6.98	7,100
1940	Apr. 29	4.57	1,580	1948	Jun. 22	7.24	8,980		May 27	8.11	12,200
1941	May 5	8.52	16,100	1949	May 19	9.55	20,600		Jul. 2	8.29	13,400
	May 21	9.60	21,200		May 28	6.47	5,340		Sep. 26	7.02	6,150
	May 23	8.16	15,200		Jun. 4	6.86	6,480	1960	Oct. 4	7.75	10,100
	May 24	8.82	17,500	1950	Jul. 21	7.61	12,600		Feb. 5	6.91	6,330
	Jun. 7	8.34	13,400		Jul. 26	6.51	6,940		Jul. 24	6.93	5,920
	Jun. 10	10.85	27,400		Aug. 3	6.68	7,100	1961	Oct. 19	9.90	23,500
	Jun. 16	5.89	6,200	1951	May 19	9.96	24,900	1962	Jun. 10	8.10	12,200
	Jun. 24	5.68	7,200		May 23	7.63	12,300	1963	May 31	6.51	5,850
	Jun. 30	5.90	5,650		May 25	6.27	7,160	1964	Jun. 15	5.67	3,660
	Aug. 28	6.15	6,600		Jun. 7	9.36	19,300	1965	Sep. 20	10.38	20,600
1942	Oct. 23	8.95	18,900		Jun. 12	6.42	6,690		Oct. 19	10.43	20,600
	Apr. 25	7.33	10,200		Jun. 19	6.06	5,370	1966	Oct. 19	10.43	20,600
	Apr. 28	8.33	15,700	1952	Apr. 23	5.71	4,560	1967	Apr. 14	5.96	6,540
	Apr. 30	6.38	6,400		Jun. 6	9.08	17,900	1968	Jun. 2	7.57	10,200
	May 12	6.01	5,320	1953	Jul. 20	8.46	11,700				
	Jun. 10	6.54	7,410					1969	May 5	14.85	17,900
	Jun. 23	8.50	15,200	1954	Oct. 23	7.88	10,100	1970	Sep. 23	9.81	3,020
	Sep. 19	5.91	5,560		May 12	6.42	5,080	1971	Sep. 6	13.71	13,200
1943	Oct. 15	7.26	9,740		May 25	9.40	17,300				
	Oct. 18	7.41	10,600	1955	May 17	6.88	7,510				
					May 20	7.96	11,400				

a At present site and at datum used 1938-68, from information by State Highway Commission and Corps of Engineers. The stage of 16.1 occurred sometime prior to 1927.

b Estimated from logarithmic extension of rating curve.

RED RIVER BASIN

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OKLA.

LOCATION.--Lat 34°44'04", long 98°59'14", in NE 1/4 sec.16, T.3 N., R.17 W., Kiowa County, at intake tower at Snyder Dam on West Otter Creek, 0.8 mile upstream from small tributary, 3 miles northwest of Mountain Park, and at mile 26.0.

GAGE.--Water-stage recorder and broad-crested masonry spillway. Datum of gage is 1,360.99 ft above mean sea level. April 1903 to March 1908, nonrecording gage at site 1.8 miles downstream at different datum.

REMARKS.--Records of discharge are outflow from reservoir, determined from stage-discharge relation for uncontrolled spillway. Reservoir is formed by earth dam, having a rock masonry broadcrested weir as a spillway. Crest elevation at lowest point is 11.9 ft gage datum (capacity, 1,355 acre-ft). Log-Pearson calculations based on all annual peaks shown except 1967 and 1970 which were considered outliers. Base for partial-duration series, 1,400 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 132
Noncontributing = 0
Contributing = 132
Channel slope (ft/mi) = 9.30
Annual precip. (in) = 23.0
Bankful stage (ft) = 14

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,870
Q₅ = 5,500
Q₁₀ = 7,640
Q₂₅ = 10,700
Q₅₀ = 13,300
Q₁₀₀ = 16,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.447
Standard deviation = 0.346
Skew = -0.177

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Apr. 11	22.0	3,200	1957	Apr. 21	14.27	1,780	1962	Jun. 8	14.85	2,640
					Apr. 23	14.34	1,920				
1904	Jun. 10	11.0	1,140		May 4	15.05	2,960	1963	May 5	13.50	930
					May 13	14.62	2,260				
1905	May 27	21.0	3,400		May 18	15.73	4,240	1964	Sep. 27	13.10	570
					May 25	14.28	1,850				
1906	Apr. 4	18.5	2,830		Jun. 2	14.34	1,920	1965	Nov. 19	14.20	1,720
					Jul. 24	16.26	5,310		Sep. 20	14.43	2,050
1907	Jun. 9	22.8	5,000	1958	Jun. 21	13.29	741	1966	Oct. 18	17.24	7,540
									Dec. 24	15.56	3,840
1952	May 17	14.24	1,940	1959	May 22	16.41	5,640	1967	-	-	no flow
	May 23	14.35	2,140		May 26	16.85	6,580				
1953	Jun. 6	19.50	14,200		Jul. 1	15.10	3,040	1968	Jun. 1	14.17	1,680
					Jul. 23	14.17	1,680		Jul. 15	15.29	3,360
1954	Oct. 23	14.83	2,640		Sep. 25	15.16	3,120	1969	May 7	13.78	1,220
	May 1	14.19	1,710	1960	Oct. 3	14.14	1,640				
	May 11	14.13	1,630		Dec. 17	14.20	1,680	1970	May 15	12.12	41
	May 24	14.29	1,850					1971	Sep. 5	14.42	1,800
1955	May 19	15.83	4,440	1961	Oct. 18	15.11	3,040		Sep. 18	14.77	2,570
	Jun. 19	13.98	1,450		Jun. 4	17.06	7,300				
1956	Oct. 4	15.74	4,240								

RED RIVER BASIN

07306500 WEST OTTER CREEK AT MOUNTAIN PARK, OKLA.
(Previously published as "Otter Creek at Mountain Park, Okla.")

LOCATION.--Lat 34°42', long 98°59', in NW1/4NW1/4 sec.34, T.3 N., R.17 W., at county highway bridge 500 ft upstream from Horse Creek, 1-1/2 miles west of Mountain Park, 3.0 miles downstream from Snyder Lake, and at mile 23.0.

GAGE.--Nonrecording prior to Oct. 19, 1946; recording thereafter. Datum of gage is 1,329.90 ft above mean sea level, datum of 1929.

REMARKS.--Base for partial-duration series, 1,400 cfs. Some regulation by Snyder Lake (capacity, 1,355 acre-ft).

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 164
Noncontributing = 0
Contributing = 164
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = 15

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	May 23	14.32	1,440	1948	Dec. 4	14.82	1,620	1950	Jul. 18	17.74	4,700
	May 28	16.08	2,380		Jun. 23	17.39	3,910		Aug. 2	17.09	3,430
1947	Apr. 15	16.04	2,300	1949	May 18	14.77	1,620	1951	May 18	17.65	4,450
	May 12	17.30	3,730		Jun. 3	18.30	4,800		May 20	16.90	3,180
	May 16	17.89	5,110		Jun. 10	17.59	4,330		Jun. 7	16.30	2,550
	Jun. 1	17.20	3,570						Jul. 2	15.21	1,800

07308500 RED RIVER NEAR BURKBURNETT, TEX.

LOCATION.--Lat 34°06'30", long 98°32'00", Wichita County, on downstream side of bridge on U.S. Highways 277 and 281, 2 miles northeast of Burkburnett, and at mile 933.

GAGE.--Water-stage recorder. Altitude of gage is 956 ft (from topographic map).

HISTORICAL DATA.--Flood of June 3, 1957, reached a stage of 13.54 ft (from floodmarks). According to local residents, higher stages occurred in 1891 and June 1941.

REMARKS.--Many small diversions for irrigation above station. Base for partial-duration series, 9,000 cfs. Log-Pearson calculations based on all annual peaks except 1970 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 20,570
Noncontributing = 5,936
Contributing = 14,634
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 30,200 (43,100)
Q₅ = 48,100 (68,700)
Q₁₀ = 60,000 (85,700)
Q₂₅ = 74,700 (107,000)
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.461
Standard deviation = 0.258
Skew = -0.422

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Jun. 3	13.54	-	1963	Jun. 1	9.90	28,400	1968	May 11	8.66	12,200
					Jun. 4	8.72	12,400		Jun. 2	10.50	33,000
1960	Jun. 10	10.52	38,600						Jun. 16	8.41	12,200
	Jun. 13	7.46	9,500	1964	Jun. 16	8.58	10,100		Jul. 17	9.16	17,400
	Jul. 10	7.61	11,000						Aug. 31	9.90	20,800
1961	Oct. 14	8.75	16,400	1965	Jun. 13	8.51	11,400	1969	May 7	9.48	16,200
	Oct. 19	11.88	53,500		Jun. 16	8.31	9,530		May 15	9.08	12,400
	Oct. 24	9.06	14,200		Jun. 28	9.13	16,200		Jun. 20	9.02	9,890
	Jun. 7	9.40	19,800		Sep. 21	12.15	58,000		Aug. 28	8.99	12,900
	Jul. 16	8.75	13,800	1966	Oct. 19	11.46	62,800		Sep. 22	10.05	27,000
	Jul. 22	8.83	14,600		Aug. 25	9.05	16,400				
1962	Jun. 10	9.45	24,600		Sep. 2	8.60	12,600	1970	Apr. 20	7.94	3,900
	Jun. 17	8.73	14,600		Sep. 18	8.42	11,000		Jun. 15	8.73	12,500
	Jun. 20	9.43	20,300	1967	Apr. 13	9.39	19,800		Sep. 6	8.85	12,700
									Sep. 20	8.81	12,300

RED RIVER BASIN

07309480 CANYON CREEK NEAR MEDICINE PARK, OKLA.

LOCATION.--Lat 34°49'55", long 98°32'10", in NW 1/4 SE 1/4 sec.11, T.4 N., R.13 W., Comanche County, at multi-barrel culvert on State Highway 58, 7.3 miles northwest of Medicine Park.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 28, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 3.35
 Noncontributing = 0
 Contributing = 3.35
 Channel slope (ft/mi) = 59.1
 Annual precip. (in) = 29.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 3	9.89	2,060	1967	Jul. 3	10.29	2,200	1970	Mar. 6	6.2	125
1966	Mar. 27	5.6	18	1968	Jul. 1	6.7	400	1971	Sep. 24	8.10	1,230
				1969	Jun. 13	6.72	410				

RED RIVER BASIN

07311000 EAST CACHE CREEK NEAR WALTERS, OKLA.

LOCATION.--Lat 34°21'44", long 98°16'56", on south line of SE 1/4 SE 1/4 sec.19, T.2 S., R.10 W., Cotton County, at right bank on downstream side of bridge on State Highway 53, 1.8 miles east of Walters, 12.2 miles upstream from West Cache Creek, and at mile 19.7.

GAGE.--Water-stage recorder. Datum of gage is 938.2 ft above mean sea level (State Highway Department bench mark). Prior to Jan. 8, 1939, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in 1906 reached a stage about the same as on May 18, 1951, and on May 17, 1947 (gage height, 29.62 ft), from information by local residents.

REMARKS.--Flow partly regulated by Lake Lawtonka (capacity, 42,300 acre-ft prior to late 1953, and 63,000 acre-ft thereafter) on Medicine Creek, by Lake Thomas (capacity, 8,300 acre-ft) on Little Medicine Creek, and since March 1961 by Lake Ellsworth (capacity, 94,500 acre-ft) on East Cache Creek. Log-Pearson calculations are based on all annual peaks shown except 1939 which was considered an outlier. Base for partial-duration series, 1,600 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 675
 Noncontributing = 0
 Contributing = 675
 Channel slope (ft/mi) = 6.75
 Annual precip. (in) = 30.0
 Bankful stage (ft) = 15

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = 7,290
 Q₅ = 12,900
 Q₁₀ = 17,400
 Q₂₅ = 24,000
 Q₅₀ = 29,400
 Q₁₀₀ = 35,400

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.862
 Standard deviation = 0.296
 Skew = -0.004

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	-	29.6	-	1946	Jul. 1	20.99	2,620	1955	May 20	28.38	14,200
									May 27	22.71	2,740
1939	Aug. 9	8.90	657	1947	Dec. 12	21.44	2,740		Jun. 10	25.21	3,880
					Apr. 16	26.09	5,840		Sep. 27	26.33	5,050
1940	Jul. 3	17.42	2,020		May 14	26.14	5,550	1956	Oct. 6	27.79	10,200
	Jul. 23	18.41	2,240		May 17	29.62	25,600				
1941	Nov. 27	19.16	2,690		May 24	25.16	4,580	1957	Apr. 24	24.75	3,610
	Feb. 2	16.43	1,990		Jun. 3	26.64	6,420		Apr. 26	23.90	3,130
	May 1	15.18	1,730	1948	Dec. 6	24.96	4,420		May 1	18.30	1,690
	May 6	25.60	4,860		Feb. 27	16.54	1,600		May 4	27.53	8,820
	May 24	20.51	3,040		Mar. 2	20.17	2,420		May 10	21.58	2,440
	Jun. 3	17.42	2,230		Mar. 16	17.25	1,750		May 19	26.51	5,350
	Jun. 8	28.18	11,300		Mar. 23	24.75	4,280		May 23	20.56	2,110
	Jun. 11	24.57	3,990		Apr. 26	25.03	4,420		May 26	28.80	15,000
	Jun. 17	24.40	3,890		Jun. 25	19.5	2,250		Jun. 1	25.62	3,970
1942	Oct. 2	26.28	5,570	1949	Feb. 9	22.96	3,320		Jun. 5	25.23	3,610
	Oct. 16	18.03	2,000		May 2	17.38	1,740		Jun. 19	19.26	1,750
	Oct. 31	25.97	5,200		May 20	21.47	2,770		Sep. 23	23.86	3,020
	Apr. 9	24.94	4,150		May 31	25.42	4,760	1958	May 4	24.24	3,120
	Apr. 25	20.45	2,480		Jun. 5	25.03	4,420				
	Jun. 24	25.32	4,500		Jun. 11	17.85	1,870	1959	May 11	20.97	2,000
	Aug. 27	22.66	3,230	1950	May 12	27.56	6,420		May 28	26.72	4,540
	Sep. 21	21.66	2,940		Jun. 4	24.34	3,280		Jul. 3	25.65	3,560
1943	Apr. 12	16.60	1,840		Jun. 22	24.18	3,240		Sep. 27	23.48	2,630
	May 11	27.34	8,750		Jul. 19	20.22	2,050	1960	Oct. 5	28.00	10,100
	May 18	25.69	5,100	1951	May 18	29.72	28,200		Nov. 5	24.64	3,120
	May 21	27.02	7,100		May 26	17.47	1,610		Dec. 19	25.72	3,630
	May 28	28.06	11,100		Jun. 8	25.71	4,340		Feb. 5	19.21	1,650
	Jun. 5	16.50	1,640		Jun. 10	21.43	2,390	1961	Oct. 19	27.79	7,700
1944	Apr. 12	25.76	5,240		Jun. 12	27.23	7,150		Jun. 6	25.19	3,320
1945	Oct. 4	23.60	3,580		Jun. 20	26.76	5,790		Jun. 9	25.85	3,690
	Mar. 4	23.15	3,400		Jul. 3	25.66	4,290		Sep. 14	23.64	2,660
	Mar. 12	27.45	9,500	1952	May 18	28.07	11,800	1962	May 28	23.40	3,340
	Mar. 16	17.83	2,000		May 24	19.36	1,920		Jun. 3	27.12	6,900
	Mar. 20	17.97	2,040		Jun. 2	22.44	2,650		Jun. 9	28.50	13,000
	May 31	22.52	3,130						Jun. 19	17.90	1,730
	Apr. 12	19.32	2,240	1953	Mar. 15	20.79	2,230		Jun. 29	21.12	2,630
	Apr. 14	23.23	3,400		Mar. 31	23.81	3,090	1963	Oct. 29	22.26	3,000
	Apr. 17	26.62	6,420		Jun. 7	26.52	5,350		Dec. 4	17.60	1,670
	Jun. 13	22.87	3,280		Jul. 21	20.94	2,250		Mar. 31	23.36	3,480
	Jul. 15	23.40	3,490	1954	Oct. 24	27.00	6,400		Apr. 28	24.10	3,860
	Sep. 28	26.39	6,010		Oct. 27	23.80	3,090				
	Sep. 30	27.45	9,500		Nov. 20	26.62	5,500	1970	Sep. 24	20.08	1,920
1946	Oct. 5	19.16	2,090		Dec. 4	25.80	4,440				
	Feb. 19	19.84	2,300		May 2	22.11	2,620	1971	Jun. 1	19.37	1,790
	May 30	24.26	3,950		May 13	27.80	10,200		Aug. 16	25.49	3,300
	Jun. 2	26.87	7,100								

RED RIVER BASIN

07311200 BLUE BEAVER CREEK NEAR CACHE, OKLA.
(Hydrologic bench-mark station)

LOCATION.--Lat 34°37'24", long 98°33'48", in NE 1/4 NE 1/4 sec.28, T.2 N., R.13 W., Comanche County, on downstream side of right bank pier of bridge on U.S. Highway 62, 3,000 ft upstream from St. Louis-San Francisco Railway Co. bridge, 4 miles east of Cache, and at mile 12.0.

GAGE.--Water-stage recorder. Datum of gage is 1,215.26 ft above mean sea level.

REMARKS.--Minor regulation by Lake Rush, Lake Jed Johnson, and Lake Ketch, combined surface-area 132 acres. Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 24.6
Noncontributing = 0
Contributing = 24.6
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 6	9.54	860	1967	Jul. 3	8.56	451	1969	May 6	12.17	3,050
	Apr. 3	10.78	1,740								
	Apr. 5	9.19	710	1968	May 31	12.15	3,030	1970	Apr. 16	8.92	588
					Jun. 15	9.28	750				
1966	Apr. 25	7.09	103					1971	Sep. 24	8.59	461

07311410 RED CREEK NEAR SNYDER, OKLA.

LOCATION.--Lat 34°40'58", long 98°51'40", in SE 1/4 SE 1/4 sec.34, T.3 N., R.16 W., Kiowa County, at multi-barrel culvert on State Highway 54, 5.4 miles northeast of Snyder.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 7, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 6.12
Noncontributing = 0
Contributing = 6.12
Channel slope (ft/mi) = 36.0
Annual precip. (in) = 28.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	6.13	300	1967	Jul. 3	3.50	35	1970	May 15	2.96	17
1966	Jun. 26	5.25	200	1968	Jul. 1	8.90	800	1971	Sep. 5	5.50	180
				1969	Jun. 13	5.27	160				

RED RIVER BASIN

07311420 DEADMAN CREEK TRIBUTARY AT MANITOU, OKLA.

LOCATION.--Lat 34°30'17", long 98°59'01", in NW 1/4 NE 1/4 sec.4, T.1 S., R.17 W., Tillman County, at multi-barrel culvert on U.S. Highway 183, at south edge of Manitou.

GAGE.--Crest-stage gage. Stage-rainfall recorder May 8, 1964, to Oct. 7, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.57
 Noncontributing = 0
 Contributing = 2.57
 Channel slope (ft/mi) = 46.7
 Annual precip. (in) = 25.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	5.06	176	1967	Apr. 12	5.75	370	1970	Sep. 22	4.92	145
1966	Oct. 18	7.00	960	1968	Jul. 13	7.05	980	1971	Aug. 29	5.73	365
				1969	Sep. 21	6.80	840				

RED RIVER BASIN

07311500 DEEP RED RUN NEAR RANDLETT, OKLA.

LOCATION.--Lat 34°13'15", long 98°27'10", in SW 1/4 SW 1/4 sec.10, T.4 S., R.12 W., Cotton County, near right bank on downstream side of pier of bridge on U.S. Highway 277, 2.8 miles north of Randlett, and at mile 4.8.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 924.49 ft above mean sea level (State Highway Department bench mark). Prior to Nov. 10, 1949, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in 1908 reached a stage somewhat exceeding 27 ft, from information by local residents.

REMARKS.--Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 617
Noncontributing = 0
Contributing = 617
Channel slope (ft/mi) = 8.51
Annual precip. (in) = 27.0
Bankful stage (ft) = 20

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 5,790
Q₅ = 13,800
Q₁₀ = 22,000
Q₂₅ = 36,500
Q₅₀ = 50,900
Q₁₀₀ = 69,000

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 3.772
Standard deviation = 0.439
Skew = 0.138

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	May 11	24.18	9,400	1957	Apr. 23	22.01	3,170	1963	Apr. 29	18.00	1,710
	May 27	21.40	2,710		Apr. 26	22.69	4,870		May 8	14.56	1,160
	Jun. 4	20.84	2,360		May 1	22.00	3,470		Nov. 5	20.67	2,500
	Jun. 23	21.02	2,450		May 4	23.71	7,870		Nov. 20	21.34	2,760
1951	May 18	27.10	20,300		May 11	21.00	2,620	1965			
	Jun. 6	21.87	3,470		May 20	23.74	8,050		Oct. 21	19.60	2,160
					May 27	22.91	5,380		Aug. 30	23.11	6,280
1952	May 18	24.92	12,800		Jun. 2	22.13	3,730	1966			
	May 30	19.74	2,040		Jun. 20	20.20	2,400		Apr. 14	18.36	1,800
1953	Apr. 1	15.91	1,290	1958	May 4	20.23	2,330	1967			
					Jul. 8	20.00	2,270		Jun. 1	23.70	6,070
1954	Oct. 24	23.63	7,030	1959	Apr. 20	21.18	2,710	1968	Jul. 4	21.39	2,800
	Oct. 26	22.58	4,870		May 11	20.60	2,470				
	May 13	23.98	7,590		May 25	19.76	2,210	1969	May 7	21.35	2,810
	May 27	19.23	2,080		Jun. 24	21.3	2,760		Sep. 22	27.51	48,700
1955	May 20	23.99	8,190	1960	Oct. 5	24.28	10,300	1970	Mar. 8	20.47	2,420
	Sep. 26	23.00	5,680	1961	Oct. 19	26.06	18,900	1971	Aug. 15	24.62	12,500
1956	Oct. 6	24.44	10,800		Sep. 15	22.19	3,830		Sep. 26	21.51	2,880
				1962	Jun. 11	22.94	5,660				

07312850 NINE MILE BEAVER CREEK NEAR ELGIN, OKLA.

LOCATION.--Lat 34°46'40", long 98°15'25", in SE 1/4 NW 1/4 sec.33, T.4 N., R.10 W., Comanche County, at multi-barrel culvert on State Highway 17, 2.0 miles east of Elgin.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 28, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 6.29
Noncontributing = 0
Contributing = 6.29
Channel slope (ft/mi) = 42.2
Annual precip. (in) = 31.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 476 (680)
Q₅ = 1,520 (2,340)
Q₁₀ = 2,440 (4,070)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 2.560
Standard deviation = 0.731
Skew = -0.978

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	10.33	2,000	1967	Apr. 12	3.88	230	1969	Jun. 14	6.23	680
1965	May 28	5.42	490	1968	May 31	8.38	1,290	1970	Sep. 22	1.28	17
1966	Oct. 18	2.07	60					1971	May 31	9.05	1,500

RED RIVER BASIN

07312950 LITTLE BEAVER CREEK NEAR MARLOW, OKLA.

LOCATION.--Lat 34°40'55", long 98°00'30", in SW 1/4 SE 1/4 sec.35, T.3 N., R.8 W., Grady County, at county road bridge, 3.6 miles northwest of Marlow.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 17, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 35.4
Noncontributing = 0
Contributing = 35.4
Channel slope (ft/mi) = 23.8
Annual precip. (in) = 32.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,000 (1,430)
Q₅ = 2,530 (3,890)
Q₁₀ = 4,210 (7,020)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.021
Standard deviation = 0.462
Skew = 0.265

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sep. 22	3.98	870	1967	Apr. 12	2.64	265	1969	May 16	4.71	1,300
1965	Nov. 18	3.73	720	1968	May 31	8.40	6,400	1970	May 29	6.00	2,400
1966	Oct. 18	2.70	285					1971	Aug. 15	5.00	1,550

07313000 LITTLE BEAVER CREEK NEAR DUNCAN, OKLA.

LOCATION.--Lat 34°30', long 98°07', in NE1/4 sec.11, T.1 S., R.9 W., on downstream side of right pier of bridge on county road, 0.8 mile downstream from Stage Stand Creek, 8.2 miles west of Duncan, and at mile 11.9.

GAGE.--Water-stage recorder. Datum of gage is 1,001.39 ft above mean sea level, unadjusted (Corps of Engineer bench mark). Prior to Oct. 1, 1954, at datum 2.00 ft higher.

REMARKS.--Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 158
Noncontributing = 0
Contributing = 158
Channel slope (ft/mi) = 12.1
Annual precip. (in) = 31.5
Bankful stage (ft) = 12

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 11,500
Q₅ = 29,900
Q₁₀ = 47,100
Q₂₅ = 73,900
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.022
Standard deviation = 0.530
Skew = -0.422

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	May 18	13.19	1,880	1953	May 16	14.58	2,080	1957	Jun. 18	16.00	2,050
					Jun. 6	16.20	10,200				
1950	May 11	16.03	12,200	1954	Oct. 23	17.13	31,800	1958	May 3	17.43	3,500
	May 26	15.81	8,900		Oct. 25	15.90	5,560		Sep. 25	15.37	1,930
	Jun. 3	14.59	2,080		Nov. 19	14.39	2,330		Oct. 3	17.77	4,790
	Jun. 11	15.49	3,460		May 2	17.14	32,000		May 20	18.68	20,500
	Jul. 4	15.83	4,890	1955	May 19	19.46	39,800	1961	Aug. 19	15.66	2,050
	Sep. 13	15.36	3,090								
1951	May 1	15.13	2,500	1956	Jun. 3	16.03	2,120	1962	May 27	17.53	3,700
	May 17	16.87	25,200						Jun. 2	18.75	22,200
	May 20	15.97	5,990	1957	Apr. 21	17.01	2,720		Jun. 9	19.42	38,500
	Jun. 6	15.84	4,950		Apr. 23	17.30	3,180		Jun. 11	17.08	2,840
	Jun. 11	16.49	16,000		May 4	17.28	3,180		Jun. 13	16.90	2,640
	Jun. 18	15.05	2,370		May 13	16.40	2,380				
	Jul. 2	15.57	3,710		May 18	19.16	32,500	1963	Oct. 28	18.54	17,200
1952	Oct. 27	15.67	3,650		May 25	19.74	47,500		Nov. 7	16.55	2,480
	May 17	16.40	15,000		May 30	16.58	2,480		Mar. 31	17.53	3,800
	May 23	15.05	2,370						Apr. 27	16.48	2,430
	Jun. 1	15.67	4,000								

RED RIVER BASIN

07313500 BEAVER CREEK NEAR WAURIKA, OKLA.

LOCATION.--Lat 34°13'00", long 98°02'57", on north line of NW 1/4 NW 1/4 sec.16, T.4 S., R.8 W., Jefferson County, on left bank on downstream side of bridge on State Highway 5, 4.5 miles northwest of Waurika, 6.2 miles upstream from Cow Creek, and at mile 25.8.

GAGE.--Water-stage recorder. Datum of gage is 874.17 ft above mean sea level (State Highway Department bench mark). Prior to Apr. 5, 1966, at datum 5.00 ft higher.

HISTORICAL DATA.--Flood of May 18, 1951, reached a stage of 22.7 ft (datum used prior to 1966) from floodmark (discharge, 65,300 cfs by contracted-opening measurement of peak flow). A similar stage was reached prior to 1889, from information by local resident.

REMARKS.--Base for partial-duration series, 2,000 cfs. Only annual peaks shown prior to 1954.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 563
Noncontributing = 0
Contributing = 563
Channel slope (ft/mi) = 4.79
Annual precip. (in) = 31.0
Bankful stage (ft) = 22

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,490
Q₅ = 12,500
Q₁₀ = 23,300
Q₂₅ = 48,800
Q₅₀ = 82,000
Q₁₀₀ = 134,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.718
Standard deviation = 0.486
Skew = 0.821

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 18	22.7	65,300	1957	May 26	21.82	22,500	1963	Mar. 31	18.55	3,140
1953	Jun. 8	19.70	4,820		Jun. 1	19.63	4,820	1964	May 11	12.73	1,350
1954	Oct. 24	21.34	13,900	1958	May 5	17.92	2,560	1965	Nov. 19	14.32	1,610
	Oct. 27	19.54	4,320	1959	May 10	13.98	1,530	1966	Aug. 22	20.81	1,880
	May 3	20.99	10,200	1960	Oct. 5	19.38	4,250	1967	Apr. 12	22.24	2,110
	May 12	20.46	7,800		Dec. 18	17.69	2,440		Jul. 4	24.90	5,550
1955	May 20	22.42	32,200		May 21	18.50	3,360	1968	Jun. 2	25.24	6,520
	Jun. 10	17.96	2,540	1961	Jun. 9	15.83	1,880	1969	May 8	24.91	5,580
1956	Jul. 4	20.14	6,870	1962	Jun. 3	19.25	3,980	1970	Sep. 24	23.02	2,640
1957	Apr. 23	19.46	4,350		Jun. 10	21.57	21,800	1971	Aug. 16	23.20	2,260
	Apr. 26	19.10	3,750		Jun. 19	17.79	2,560				
	May 4	20.30	7,000	1963	Oct. 30	16.92	2,120				
	May 18	21.16	14,600								

RED RIVER BASIN

07313600 COW CREEK AT WAURIKA, OKLA.

LOCATION.--Lat 34°10'55", long 98°00'05", in SE 1/4 NE 1/4 sec.26, T.4 S., R.8 W., Jefferson County, on downstream side of left bank pier of Chicago, Rock Island and Pacific Railway Co. bridge, near north edge of Waurika, and at mile 1.7.

GAGE.--Crest-stage. Datum of gage is 858.60 ft above mean sea level. Prior to September 1970 water-stage recorder at same location and auxilliary water-stage recorder 0.4 mile downstream at same datum.

HISTORICAL DATA.--Flood of May 19, 1955, reached a stage of 26.1 ft, from floodmark (discharge, 29,500 cfs, based on contracted-opening measurement of peak flow).

REMARKS.--Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 193
Noncontributing = 0
Contributing = 193
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	May 19	26.1	29,500	1968	Jun. 2	21.08	2,920	1970	Sep. 23	21.50	3,650
1966	Aug. 30	16.83	a 1,170	1969	Nov. 27	20.21	2,390	1971	Aug. 15	12.46	528
					Apr. 18	18.99	1,660				
1967	Apr. 12	21.30	3,430		May 7	22.52	4,650				

a Maximum for period March to September 1966.

RED RIVER BASIN

07315500 RED RIVER NEAR TERRAL, OKLA.

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, near left bank on downstream side of pier of bridge on U.S. Highway 81, 0.5 mile downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 1.2 miles south of Terral, 3.6 miles downstream from Little Wichita River, and at mile 872.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above mean sea level. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

HISTORICAL DATA.--Maximum stage since at least 1891, that of June 8, 1941. Flood of May 19, 1935, reached a stage of 27.2 ft; floods in 1891 and May 1, 1908, are reported to have reached about the same stage.

REMARKS.--Some regulation by Lake Kemp on Wichita River (capacity, 461,800 acre-ft), Lake Kickapoo on North Fork Little Wichita River (capacity, 106,000 acre-ft), Lake Arrowhead on Little Wichita River (capacity, 262,100 acre-ft), Lake Altus on North Fork Red River (capacity, 142,900 acre-ft), Lake Lawtonka on Medicine Creek (capacity, 63,000 acre-ft), Lake Thomas on Little Medicine Creek (capacity, 8,300 acre-ft), and Lake Ellsworth on East Cache Creek (capacity, 94,500 acre-ft). Principal diversions are from Wichita River for irrigation of about 20,000 acres in the vicinity of Wichita Falls, Tex., and from North Fork Red River for irrigation of about 48,000 acres in vicinity of Altus, Okla. Many small diversions for irrigation above station. Base for partial-duration series, 21,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 28,723
Noncontributing = 5,936
Contributing = 22,787
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 45,100
Q₅ = 80,900
Q₁₀ = 110,000
Q₂₅ = 152,000
Q₅₀ = 187,000
Q₁₀₀ = 225,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.653
Standard deviation = 0.302
Skew = -0.014

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	
1935	May 19	27.2	-	1945	Sep. 27	16.86	34,400	1957	Apr. 30	19.39	62,500	
1938	May 5	16.95	29,600	1946	Oct. 1	19.62	66,200	1957	May 6	19.42	72,500	
	May 24	17.85	43,700		1947	Apr. 17	16.25		29,100	May 10	18.12	52,800
	Jun. 10	17.65	40,900	May 13		18.82	60,800					
	Jun. 18	17.48	39,500	May 20		21.00	87,800					
	Jun. 27	16.60	28,400	May 23		18.11	46,200					
1939	Jun. 23	18.14	43,000			May 27	20.06		71,900			
					May 31	16.73	27,100					
1940	Jul. 2	16.62	22,400	1948	Jun. 25	16.27	18,000	1958	May 4	15.27	16,700	
	Aug. 19	16.63	21,800						Jun. 4	22.72	110,000	
1941	May 2	18.35	43,500	1949	May 21	18.00	33,700	1959	May 24	17.14	34,200	
	May 5	25.57	134,000						Jun. 24	17.22	35,200	
	May 13	19.27	37,800	1950	May 12	18.82	53,800	1960	Oct. 6	17.75	47,000	
	May 23	20.70	74,600		Jul. 24	16.90	21,700		Dec. 19	16.24	25,200	
	May 25	19.82	62,500		Jul. 26	17.58	28,400		Jun. 10	16.61	32,200	
	Jun. 3	19.40	54,700		Aug. 2	17.36	26,200	1961	Oct. 20	20.42	72,900	
	Jun. 8	28.12	197,000		Sep. 14	17.65	22,400					
	1942	Jun. 11	22.97	119,000	1951	May 19	26.68	164,000	1962	Jun. 11	18.62	45,800
		Jun. 16	21.50	73,200		Jun. 3	15.83	21,200		Jun. 21	16.40	29,200
		Oct. 3	20.26	76,000		Jun. 7	19.47	44,600	1963	Jun. 2	16.35	31,200
Jun. 13						16.71	25,500					
Oct. 6		18.15	43,500	Jun. 21		16.21	24,700	1964	Sep. 24	14.31	11,400	
Oct. 24		18.35	47,900	Jul. 4		16.60	27,100					
Oct. 31		21.45	91,000	1952	May 19	17.00	30,300	1965	Jun. 29	16.20	21,600	
Nov. 2		18.05	50,100						Sep. 23	19.95	35,400	
1943		Apr. 9	18.90	54,900	1953	Aug. 20	14.87	13,000	1966	Oct. 21	20.72	52,000
		Apr. 21	17.63	32,700						Aug. 26	16.50	28,200
	Apr. 26	18.70	46,800	1954	Oct. 25	19.55	57,300	1967	Apr. 13	17.46	38,700	
	Apr. 30	18.80	47,900		May 14	21.42	85,800					
	Sep. 21	17.00	30,300		May 26	18.40	36,800	1968	Jun. 4	19.61	41,000	
	1944	Oct. 17	16.78	39,300		1955	May 21					22.44
							Jun. 22	19.51	42,800			
		Oct. 19	16.50	32,700	Sep. 26	16.62	24,000	1969	May 8	18.68	43,200	
		May 12	17.38	41,300	1956	Oct. 7	23.30					111,000
		May 20	16.34	28,700				May 29	18.43	49,400	May 29	
May 29	17.58	43,500	1957	Apr. 22	17.73	41,400	1971	Aug. 16	18.43	30,000		
Jun. 6	16.58	31,100		Apr. 27	18.26	45,800		Sep. 27	17.43	22,800		
1944	Jun. 16	17.20	38,700									
1945	Apr. 17	16.60	28,200									
	Jul. 12	16.42	26,100									

RED RIVER BASIN

07315680 COTTONWOOD CREEK TRIBUTARY NEAR LOCO, OKLA.

LOCATION.--Lat 34°18'40", long 97°34'00", in SE 1/4 NE 1/4 sec.12, T.3 S., R.4 W., Stephens County, at multi-barrel culvert on State Highway 53, 6.6 miles southeast of Loco.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 17, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1.74
Noncontributing = 0
Contributing = 1.74
Channel slope (ft/mi) = 50.6
Annual precip. (in) = 34.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 505 (594)
Q₅ = 1,200 (1,600)
Q₁₀ = 1,860 (2,860)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.692
Standard deviation = 0.457
Skew = -0.149

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 26	6.50	110	1967	Apr. 12	8.68	250	1969	Apr. 16	9.30	740
1965	Jun. 22	14.45	2,100	1968	May 31	9.63	800	1970	Sep. 22	12.11	1,420
1966	Aug. 21	6.73	150					1971	Oct. 8	8.18	470

07315700 MUD CREEK NEAR COURTNEY, OKLA.

LOCATION.--Lat 34°00'20", long 97°34'00", in NW 1/4 SE 1/4 sec.25, T.6 S., R.4 W., Jefferson County, on downstream side of bridge on State Highway 89, 4 miles downstream from North Mud Creek, 6 miles northwest of Courtney, and at mile 11.5.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 730.00 ft above mean sea level (State Highway Department bench mark). Prior to Oct. 1, 1968, auxiliary water-stage recorder 2 miles downstream from base gage.

REMARKS.--Base for partial-duration series, 1,300 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 572
Noncontributing = 0
Contributing = 572
Channel slope (ft/mi) = 6.50
Annual precip. (in) = 33.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,120 (3,670)
Q₅ = 5,920 (6,730)
Q₁₀ = 8,320 (9,240)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.498
Standard deviation = 0.327
Skew = 0.079

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1961	Dec. 11	22.67	1,400	1965	Nov. 21	25.62	4,100	1968	May 18	24.95	3,120
	Mar. 31	24.48	2,570		May 20	23.19	1,530		Jun. 3	26.46	5,590
	Jun. 15	23.23	1,500		Jun. 17	23.86	1,970				
1962	Jun. 3	22.35	1,330	1966	Apr. 24	22.59	1,400	1969	Nov. 30	25.24	3,160
					Apr. 29	22.57	1,390		Feb. 23	23.43	1,560
1963	Nov. 27	23.13	1,500						Mar. 26	24.24	2,060
	Dec. 21	22.52	1,350	1967	Oct. 3	22.74	1,430		Apr. 28	22.43	1,350
					Apr. 13	29.32	10,900		May 7	27.11	5,520
1964	Aug. 28	25.45	3,810		Apr. 23	23.02	1,460	1970	Apr. 20	22.44	1,340
	Sep. 25	22.83	1,530		Jun. 1	24.28	2,160		May 1	25.00	2,950
	Sep. 29	23.44	1,920						Sep. 23	27.58	6,460
				1968	Mar. 21	22.31	1,350				
					May 14	25.39	3,760	1971	Oct. 24	21.69	1,240

RED RIVER BASIN

07315880 DEMIJOHN CREEK NEAR WILSON, OKLA.

LOCATION.--Lat 34°08'10", long 97°25'20", in SW 1/4 NW 1/4 sec.9, T.5 S., R.2 W., Carter County, at multi-barrel culvert on State Highway 76, 1.7 miles south of Wilson.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 5.74
Noncontributing = 0
Contributing = 5.74
Channel slope (ft/mi) = 43.4
Annual precip. (in) = 35.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,900 (2,110)
Q₅ = 2,170 (2,410)
Q₁₀ = 2,290 (2,540)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.269
Standard deviation = 0.078
Skew = -0.768

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 26	9.43	1,860	1967	Apr. 12	10.20	2,300	1969	May 6	9.22	1,460
1965	Jun. 20	9.47	1,880	1968	May 11	10.08	2,100	1970	May 30	9.12	1,390
1966	Apr. 23	9.90	2,160					1971	Oct. 26	9.82	1,920

07315900 WALNUT BAYOU NEAR BURNEYVILLE, OKLA.

LOCATION.--Lat 33°56'30", long 97°18'20", in NW 1/4 NE 1/4 sec.21, T.7 S., R.1 W., Love County, near right bank on downstream side of bridge on State Highway 32, 0.8 mile downstream from Simon Creek, 2.5 miles northwest of Burneyville, and at mile 6.5.

GAGE.--Water-stage recorder. Datum of gage is 690.00 ft above mean sea level (State Highway Department bench mark).

HISTORICAL DATA.--Flood in June 1957 reached a stage of 20.65 ft, from information by local resident.

REMARKS.--Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 314
Noncontributing = 0
Contributing = 314
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Jun.	20.65	-	1962	Jun. 3	14.01	1,090	1970	Mar. 17	14.44	1,200
					Jun. 20	15.37	1,890		Apr. 19	14.24	1,120
1961	Oct. 26	14.70	1,450						Apr. 26	15.37	2,180
	Dec. 11	14.22	1,170	1963	Nov. 27	15.53	2,050		May 1	15.72	3,160
	Mar. 31	15.48	1,970						Sep. 24	15.93	3,860
				1969	Feb. 22	15.17	1,620				
1962	Nov. 22	15.52	2,010		Mar. 24	14.73	1,320	1971	Oct. 27	15.71	3,130
	Dec. 9	14.73	1,480		Apr. 28	14.70	1,300				
					May 6	15.74	2,480				

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TEX.

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, Okla., near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mile downstream from Gulf, Colorado and Santa Fe Railway bridge, 5 miles downstream from Fish Creek, 7 miles north of Gainesville, and at mile 791.5

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above mean sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Information on peaks during short periods of no record in 1936-37 obtained from inspection of records for downstream stations. Flow slightly regulated by several upstream reservoirs on tributaries. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 24,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 30,782
Noncontributing = 5,936
Contributing = 24,846
Channel slope (ft/mi) = 8.04
Annual precip. (in) = 24.5
Bankful stage (ft) = 25

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 49,100
Q₅ = 83,700
Q₁₀ = 109,000
Q₂₅ = 142,000
Q₅₀ = 168,000
Q₁₀₀ = 194,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.678
Standard deviation = 0.287
Skew = -0.271

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Dec. 5	-	(a)	1943	May 12	13.80	47,200	1954	May 27	15.67	41,800
	May 9	-	(a)		May 21	12.00	32,000				
	May 30	12.38	32,600		May 30	13.37	43,100	1955	May 22	21.08	96,900
	Jun. 8	11.60	26,300		Jun. 7	12.30	33,100		Jun. 22	16.90	49,900
	Sep. 19	12.74	36,200	1944	Jun. 16	12.43	34,000	1956	Oct. 8	21.70	106,000
	Sep. 21	13.40	42,500						May 30	15.12	36,000
	Sep. 28	15.95	67,900	1945	Mar. 15	14.40	52,000	1957	Apr. 23	15.76	43,600
1937	Jun. 1	11.4	24,500		Mar. 19	12.65	40,000		Apr. 27	17.83	62,800
	Jun. 10	14.9	54,400		Apr. 2	12.05	28,000		May 1	18.57	68,500
	Aug. 24	-	(a)		Apr. 17	13.10	31,700		May 7	18.96	69,500
1938	Oct. 14	-	(a)		Jul. 12	12.89	24,000		May 11	16.66	48,100
	Feb. 17	15.67	65,400		Sep. 28	13.00	35,000		May 14	18.06	60,900
	Mar. 30	14.20	50,400	1946	Oct. 2	17.75	83,500		May 20	b22.80	100,000
	May 6	11.80	29,000		May 31	12.60	28,200		May 28	b21.95	75,000
	May 22	12.00	30,800						Jun. 5	b25.14	102,000
	May 24	15.82	67,600	1947	Oct. 10	11.75	24,000	1958	May 5	14.36	21,600
	Jun. 11	13.8	46,400		Dec. 12	12.71	33,800	1959	May 25	15.28	33,000
	Jun. 18	12.70	35,300		Apr. 16	12.65	33,000		Jun. 25	16.00	37,000
	Jun. 28	11.70	26,300		May 15	14.25	41,800	1960	Oct. 7	17.95	59,300
1939	Jun. 24	13.07	38,900		May 20	17.90	71,000		Dec. 18	14.77	31,100
					May 26	15.48	52,300		Jun. 11	16.00	34,000
1940	May 30	12.31	27,600	1948	Jun. 26	13.80	24,400	1961	Oct. 22	20.92	67,800
	Jul. 3	13.23	37,500	1949	May 22	14.44	44,000	1962	Jun. 12	18.60	49,500
	Aug. 16	11.95	24,300		Jun. 12	13.90	32,000		Jun. 21	16.39	31,500
	Aug. 20	11.98	24,300	1950	May 13	15.73	51,200	1963	Jun. 3	15.60	27,000
1941	Feb. 3	12.19	28,400		Jul. 24	13.54	25,700	1964	Sep. 26	14.12	12,300
	Apr. 18	12.58	28,000		Jul. 27	14.36	35,300	1965	Sep. 24	18.99	35,300
	May 3	13.59	40,800		Aug. 3	14.80	39,900	1966	Oct. 22	20.23	46,000
	May 6	20.43	116,000		Aug. 24	13.94	27,700		Apr. 28	18.93	39,400
	May 13	13.27	36,600		Aug. 28	14.98	46,000	1967	Apr. 14	18.60	39,400
	May 24	16.20	68,400		Sep. 13	15.14	46,000	1968	May 14	16.22	25,100
	Jun. 3	14.53	51,000	1951	May 21	26.53	146,000		Jun. 5	19.56	48,900
	Jun. 9	24.15	168,000		Jun. 4	15.74	39,100	1969	May 10	19.75	52,500
	Jun. 17	16.61	73,000		Jun. 8	17.50	55,300		Sep. 24	17.40	32,600
	Jun. 28	13.06	35,600		Jun. 14	15.63	38,300	1970	Sep. 25	15.34	17,300
	Jul. 3	12.28	28,500		Jun. 22	13.86	24,700	1971	Aug. 18	16.64	19,000
1942	Oct. 4	22.32	156,000		Jul. 4	15.11	34,000				
	Oct. 25	13.66	44,000	1952	May 20	13.00	32,300				
	Nov. 1	20.36	136,000	1953	Aug. 22	11.00	9,820				
	Apr. 9	16.11	87,700	1954	Oct. 26	16.20	50,800				
	Apr. 21	13.35	47,000		May 15	19.32	74,200				
	Apr. 24	15.65	72,000								
	May 1	14.21	53,000								
	Sep. 22	11.26	31,000								
1943	Oct. 20	11.96	35,500								

^a A peak higher than the base probably occurred this date.

^b Affected by backwater from Lake Texoma.

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TEX.

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, Okla., near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mile downstream from Gulf, Colorado and Santa Fe Railway bridge, 5 miles downstream from Fish Creek, 7 miles north of Gainesville, and at mile 791.5

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above mean sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Information on peaks during short periods of no record in 1936-37 obtained from inspection of records for downstream stations. Flow slightly regulated by several upstream reservoirs on tributaries. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 24,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 30,782
Noncontributing = 5,936
Contributing = 24,846
Channel slope (ft/mi) = 8.04
Annual precip. (in) = 24.5
Bankful stage (ft) = 25

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 49,100
Q₅ = 83,700
Q₁₀ = 109,000
Q₂₅ = 142,000
Q₅₀ = 168,000
Q₁₀₀ = 194,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.678
Standard deviation = 0.287
Skew = -0.271

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Dec. 5	-	(a)	1943	May 12	13.80	47,200	1954	May 27	15.67	41,800
	May 9	-	(a)		May 21	12.00	32,000				
	May 30	12.38	32,600		May 30	13.37	43,100	1955	May 22	21.08	96,900
	Jun. 8	11.60	26,300		Jun. 7	12.30	33,100		Jun. 22	16.90	49,900
	Sep. 19	12.74	36,200	1944	Jun. 16	12.43	34,000	1956	Oct. 8	21.70	106,000
	Sep. 21	13.40	42,500						May 30	15.12	36,000
	Sep. 28	15.95	67,900	1945	Mar. 15	14.40	52,000	1957	Apr. 23	15.76	43,600
1937	Jun. 1	11.4	24,500		Mar. 19	12.65	40,000		Apr. 27	17.83	62,800
	Jun. 10	14.9	54,400		Apr. 2	12.05	28,000		May 1	18.57	68,500
	Aug. 24	-	(a)		Apr. 17	13.10	31,700		May 7	18.96	69,500
1938	Oct. 14	-	(a)		Jul. 12	12.89	24,000		May 11	16.66	48,100
	Feb. 17	15.67	65,400		Sep. 28	13.00	35,000		May 14	18.06	60,900
	Mar. 30	14.20	50,400	1946	Oct. 2	17.75	83,500		May 20	b22.80	100,000
	May 6	11.80	29,000		May 31	12.60	28,200		May 28	b21.95	75,000
	May 22	12.00	30,800						Jun. 5	b25.14	102,000
	May 24	15.82	67,600	1947	Oct. 10	11.75	24,000	1958	May 5	14.36	21,600
	Jun. 11	13.8	46,400		Dec. 12	12.71	33,800	1959	May 25	15.28	33,000
	Jun. 18	12.70	35,300		Apr. 16	12.65	33,000		Jun. 25	16.00	37,000
	Jun. 28	11.70	26,300		May 15	14.25	41,800	1960	Oct. 7	17.95	59,300
1939	Jun. 24	13.07	38,900		May 20	17.90	71,000		Dec. 18	14.77	31,100
					May 26	15.48	52,300		Jun. 11	16.00	34,000
1940	May 30	12.31	27,600	1948	Jun. 26	13.80	24,400	1961	Oct. 22	20.92	67,800
	Jul. 3	13.23	37,500					1962	Jun. 12	18.60	49,500
	Aug. 16	11.95	24,300	1949	May 22	14.44	44,000		Jun. 21	16.39	31,500
	Aug. 20	11.98	24,300		Jun. 12	13.90	32,000	1963	Jun. 3	15.60	27,000
1941	Feb. 3	12.19	28,400	1950	May 13	15.73	51,200	1964	Sep. 26	14.12	12,300
	Apr. 18	12.58	28,000		Jul. 24	13.54	25,700	1965	Sep. 24	18.99	35,300
	May 3	13.59	40,800		Jul. 27	14.36	35,300	1966	Oct. 22	20.23	46,000
	May 6	20.43	116,000		Aug. 3	14.80	39,900		Apr. 28	18.93	39,400
	May 13	13.27	36,600		Aug. 24	13.94	27,700	1967	Apr. 14	18.60	39,400
	May 24	16.20	68,400		Aug. 28	14.98	46,000	1968	May 14	16.22	25,100
	Jun. 3	14.53	51,000		Sep. 13	15.14	46,000		Jun. 5	19.56	48,900
	Jun. 9	24.15	168,000	1951	May 21	26.53	146,000	1969	May 10	19.75	52,500
	Jun. 17	16.61	73,000		Jun. 4	15.74	39,100		Sep. 24	17.40	32,600
	Jun. 28	13.06	35,600		Jun. 8	17.50	55,300	1970	Sep. 25	15.34	17,300
	Jul. 3	12.28	28,500		Jun. 14	15.63	38,300	1971	Aug. 18	16.64	19,000
1942	Oct. 4	22.32	156,000		Jun. 22	13.86	24,700				
	Oct. 25	13.66	44,000		Jul. 4	15.11	34,000				
	Nov. 1	20.36	136,000	1952	May 20	13.00	32,300				
	Apr. 9	16.11	87,700	1953	Aug. 22	11.00	9,820				
	Apr. 21	13.35	47,000	1954	Oct. 26	16.20	50,800				
	Apr. 24	15.65	72,000		May 15	19.32	74,200				
	May 1	14.21	53,000								
	Sep. 22	11.26	31,000								
1943	Oct. 20	11.96	35,500								

^a A peak higher than the base probably occurred this date.

^b Affected by backwater from Lake Texoma.

RED RIVER BASIN

07316130 WILSON CREEK TRIBUTARY NEAR McMILLAN, OKLA.

LOCATION.--Lat 34°06'00", long 96°58'35", in NW 1/4 NE 1/4 sec.27, T.5 S., R.3 E., Carter County, at county road culvert, 2.5 miles northwest of McMillan.

GAGE.--Crest-stage gage. Stage-rainfall recorder June 3, 1964, to Aug. 12, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.97
Noncontributing = 0
Contributing = 2.97
Channel slope (ft/mi) = 47.5
Annual precip. (in) = 37.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	May 26	3.89	475	1967	May 20	6.16	925	1970	Jun. 11	4.82	654
1966	Apr. 23	3.41	387	1968	May 12	6.93	1,090	1971	Oct. 26	6.30	956
				1969	May 6	3.90	477				

07316140 BRIER CREEK NEAR POWELL, OKLA.

LOCATION.--Lat 33°59'54", long 96°49'35", in NW 1/4 NW 1/4 sec.31, T.6 S., R.5 E., Marshall County, at bridge on State Highway 32, 3.6 miles northeast of Powell.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 12, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 12.0
Noncontributing = 0
Contributing = 12.0
Channel slope (ft/mi) = 13.6
Annual precip (in) = 38.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	10.18	1,800	1967	Apr. 20	13.49	4,150	1970	Dec. 29	8.48	1,000
1966	Feb. 9	10.90	2,340	1968	May 17	14.79	5,260	1971	Aug. 14	13.80	4,390
				1969	Apr. 27	14.09	4,630				

RED RIVER BASIN

07316500 WASHITA RIVER NEAR CHEYENNE, OKLA.

LOCATION--Lat 35°37'35", long 99°40'05", in SE 1/4 sec.5, T.13 N., R.23 W., Roger Mills County, near left bank on downstream side of pier of bridge on U.S. Highway 283, 0.5 mile downstream from Sergeant Major Creek, 1 mile north of Cheyenne, 5.2 miles upstream from Dead Indian Creek, and at mile 543.9.

GAGE--Water-stage recorder. Datum of gage is 1,905.98 ft above mean sea level (levels by Corps of Engineers). May 1, 1938, to Nov. 16, 1946, and Oct. 1, 1947, to Jan. 11, 1948, nonrecording gage at same site and datum.

HISTORICAL DATA--Flood of Apr. 3, 1934, reached a stage of 1.0 ft lower than that in 1954 at site on upstream side of highway fill.

REMARKS--Some regulation by numerous flood-retarding structures. Records 1938-46 computed by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series 1,100 cfs. Only annual peaks shown prior to 1939.

BASIN CHARACTERISTICSDrainage Area (sq mi)

Total = 794
Noncontributing = 0
Contributing = 794
Channel slope (ft/mi) = 10.9
Annual precip. (in) = 24.0
Bankful stage (ft) = 7

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 4,010
Q₅ = 11,900
Q₁₀ = 21,000
Q₂₅ = 38,500
Q₅₀ = 56,400
Q₁₀₀ = 79,700

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.601
Standard deviation = 0.564
Skew = -0.027

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 3	16.9	52,000	1946	May 10	7.00	2,500	1956	Jul. 10	6.60	3,890
					May 28	6.60	1,890				
1938	May 18	10.2	14,600		Jul. 1	9.16	8,900	1957	Apr. 3	5.33	2,160
					Aug. 20	6.45	2,500		Apr. 18	4.80	1,640
1939	Apr. 5	5.08	1,340						Apr. 22	4.57	1,280
	Jan. 8	6.62	3,070	1947	Oct. 8	8.80	c7,100		Apr. 26	5.03	1,800
	May 7	6.50	2,940						May 3	4.52	1,230
	May 12	5.84	2,090	1948	Jun. 28	7.58	3,580		May 17	6.77	4,210
	Jun. 21	6.06	2,090		Jul. 30	6.94	2,340		May 24	6.35	3,500
1940	Aug. 29	5.50	1,080		Aug. 15	9.21	8,900				
1941	Apr. 19	7.00	2,840	1949	Nov. 1	6.32	1,750	1958	Oct. 13	5.00	1,750
	Apr. 30	7.00	3,200		Mar. 30	8.25	5,150		Jun. 21	4.78	1,530
	May 4	5.40	1,170		Apr. 27	7.86	4,380	1959	May 26	7.41	6,420
	May 20	7.60	3,400		May 6	9.80	8,900		Aug. 7	7.21	6,040
	May 23	13.5	40,000		May 20	8.72	3,780		Sep. 3	4.98	2,500
	May 27	4.76	1,280		May 28	7.25	2,160				
	Jun. 9	10.00	13,300		Jun. 4	10.60	11,900	1960	Aug. 18	4.28	1,510
	Jun. 22	8.90	7,550	1950	May 18	8.71	6,500	1961	Oct. 11	8.45	7,310
	Jul. 26	5.93	1,240		Jul. 5	9.10	8,450				
1942	Oct. 23	10.11	14,000		Jul. 12	7.87	4,120	1962	Sep. 16	5.95	2,930
	Apr. 23	7.50	3,400		Aug. 1	7.05	2,430				
	Jun. 8	7.90	4,250	1951	May 18	9.16	5,040	1963	Jun. 3	3.83	574
	Jun. 22	7.00	2,500		Jun. 2	7.72	2,900	1964	Jun. 14	3.01	159
	Jun. 29	6.80	2,190		Jun. 7	9.29	4,700	1965	Jun. 4	4.98	1,400
1943	Oct. 14	6.45	1,590		Jun. 10	7.53	2,470	1966	Oct. 18	4.91	1,800
	Oct. 17	6.8	2,190		Jun. 15	7.37	2,230	1967	Apr. 12	5.95	2,990
	Oct. 20	6.1	1,180	1952	Jun. 1	5.30	465	1968	May 31	7.15	4,470
	Jun. 16	6.36	1,520					1969	Oct. 9	6.27	2,280
1944	May 27	6.25	1,240	1953	Jun. 6	8.25	3,550	1970	Apr. 18	4.64	734
	Jun. 13	6.20	1,180	1954	Apr. 29	15.24	69,800	1971	Jun. 10	7.63	4,710
	Jul. 30	5.92	1,120		May 1	5.60	3,580				
1945	Oct. 1	7.58	4,000		May 17	5.25	2,660				
	Apr. 14	6.37	1,740		May 24	5.21	1,980				
	Jun. 11	7.51	4,000		May 30	7.57	5,630				
	Aug. 15	8.99	9,900	1955	Jun. 5	6.87	4,370				
	Sep. 28	5.72	1,120		Jun. 8	6.22	3,280				
					Jun. 17	7.72	5,830				

a At right bank upstream from highway fill where flood in 1954 reached a stage of 18.0 ft.

b Estimated from subsequent year's rating to indicate approximate magnitude.

c Maximum recorded during year; flow may have been somewhat higher in May 1947.

RED RIVER BASIN

07317500 SANDSTONE CREEK SUBWATERSHED NO. 16A (SANDSTONE CREEK) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°28'10", long 99°40'10", in SW 1/4 SE 1/4 sec.31, T.12 N., R.23 W., Roger Mills County, near center of upstream side of dam on Sandstone Creek, 5.2 miles east of Grimes and 10 miles south of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 2,069.14 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 8.78
 Noncontributing = 3.62
 Contributing = 5.16
 Channel slope (ft/mi) = 57.6
 Annual precip. (in) = 24.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 479
 Q₅ = 1,170
 Q₁₀ = 1,900
 Q₂₅ = 3,220
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 2.692
 Standard deviation = 0.453
 Skew = 0.150

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 23	-	196	1959	May 26	-	2,710	1966	Oct. 17	-	87
1953	Jun. 6	-	856	1960	Jul. 22	-	459	1967	Apr. 12	-	116
1954	May 23	-	2,110	1961	Jun. 4	-	843	1968	Oct. 6	-	189
1955	Jun. 17	-	782	1962	Jul. 31	-	469	1969	Oct. 8	-	396
1956	May 26	-	186	1963	-	-	***	1970	Apr. 18	-	152
1957	Apr. 26	-	552	1964	Jun. 15	-	2,250	1971	Jun. 10	-	2,140
1958	Jun. 21	-	465	1965	Sep. 20	-	390				

RED RIVER BASIN

07318000 SANDSTONE CREEK SUBWATERSHED NO. 16 (SANDSTONE CREEK) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°28'50", long 99°36'40", in SE 1/4 SE 1/4 sec.27, T.12 N., R.23 W., Roger Mills County, near center of upstream side of dam on Sandstone Creek, 2.2 miles northeast of Berlin and 9 miles southeast of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,925.96 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 20.25
Noncontributing = 4.0
Contributing = 16.25
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Jun. 6	-	3,860	1959	May 26	-	5,210	1966	Oct. 18	-	328
1954	May 23	-	18,900	1960	Jul. 22	-	2,160	1967	Apr. 12	-	1,130
1955	-	-	***	1961	Jun. 4	-	3,860	1968	May 10	-	990
1956	May 26	-	1,320	1962	Apr. 26	-	2,600	1969	Oct. 8	-	1,860
1957	-	-	***	1963	Jun. 23	-	1,680	1970	Apr. 18	-	987
1958	-	-	***	1964	Jun. 15	-	1,470	1971	Jun. 10	-	1,450
				1965	Jun. 24	-	1,530				

07318500 SANDSTONE CREEK SUBWATERSHED NO. 14 (SANDSTONE CREEK TRIBUTARY) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°28'40", long 99°36'10", in SW 1/4 NE 1/4 sec.35, T.12 N., R.23 W., Roger Mills County, near center of upstream side of dam on unnamed tributary to Sandstone Creek, 2.5 miles northeast of Berlin and 11 miles southeast of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,896.32 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1.02
Noncontributing = 0
Contributing = 1.02
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	-	-	***	1959	May 26	-	590	1966	Oct. 17	-	46
1954	May 23	-	1,090	1960	Jul. 22	-	150	1967	-	-	***
1955	Jun. 15	-	922	1961	Jun. 4	-	404	1968	-	-	***
1956	-	-	***	1962	Sep. 20	-	138	1969	Oct. 8	-	173
1957	Apr. 18	-	1,160	1963	-	-	***	1970	-	-	***
1958	-	-	***	1964	-	-	***	1971	Jun. 10	-	138
				1965	Jun. 24	-	306				

RED RIVER BASIN

07319000 SANDSTONE CREEK SUBWATERSHED NO. 17 (CURRANT CREEK) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°30'30", long 99°36'40", in NE 1/4 NE 1/4 sec.22, T.12 N., R.23 W., Roger Mills County, near center of upstream side of dam on Currant Creek, 4 miles northeast of Berlin and 7.5 miles southeast of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,888.17 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 10.13
 Noncontributing = 0
 Contributing = 10.13
 Channel slope (ft/mi) = 53.2
 Annual precip. (in) = 24.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,120
 Q₅ = 2,680
 Q₁₀ = 3,820
 Q₂₅ = 5,210
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.966
 Standard deviation = 0.542
 Skew = -0.953

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Jun. 6	-	1,440	1959	-	-	***	1966	Oct. 18	-	148
1954	Apr. 29	-	6,030	1960	Jul. 22	-	1,250	1967	Apr. 13	-	45
1955	Jun. 17	-	4,940	1961	Oct. 11	-	748	1968	Aug. 16	-	123
1956	Jul. 10	-	641	1962	Apr. 26	-	919	1969	Oct. 9	-	969
1957	Apr. 18	-	2,300	1963	Jun. 23	-	620	1970	Apr. 18	-	1,080
1958	Jul. 5	-	2,800	1964	Apr. 16	-	1,860	1971	Jun. 10	-	1,710
				1965	Sep. 20	-	944				

07319500 SANDSTONE CREEK NEAR BERLIN, OKLA.

LOCATION.--Lat 35°30'26", long 99°33'27", on west line of NW 1/4 NW 1/4 sec.20, T.12 N., R.22 W., Beckham County, on left bank 50 ft downstream from county road bridge, 5.5 miles northeast of Berlin.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,861.44 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Flow from 38.7 sq mi regulated by 11 flood-retarding structures (combined original capacity, 12,780 acre-ft). Some diversions for irrigation above station. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 44.9
 Noncontributing = 4.0
 Contributing = 40.9
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 717
 Q₅ = 1,620
 Q₁₀ = 2,540
 Q₂₅ = 4,150
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.870
 Standard deviation = 0.410
 Skew = 0.214

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Jun. 6	6.04	491	1959	May 26	15.17	2,730	1966	Oct. 18	3.41	131
1954	Apr. 30	16.17	5,710	1960	Jul. 22	7.02	720	1967	Jun. 1	4.81	341
1955	Jul. 4	8.87	1,080	1961	Jun. 4	6.73	602	1968	May 11	4.57	302
1956	Jul. 10	4.68	316	1962	Apr. 26	8.85	1,070	1969	Oct. 9	6.56	640
1957	Apr. 18	14.96	2,650	1963	Jun. 23	10.4	1,410	1970	Apr. 18	3.67	168
1958	Jul. 5	7.55	828	1964	May 6	6.57	648	1971	Jun. 10	9.74	1,260
				1965	Jun. 24	7.27	774				

RED RIVER BASIN

07320000 SANDSTONE CREEK SUBWATERSHED NO. 10A (SANDSTONE CREEK TRIBUTARY) NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°28'00", long 99°33'20", in SW 1/4 SW 1/4 sec.32, T.12 N., R.22 W., Beckham County, near center of upstream side of dam on unnamed tributary to Sandstone Creek, 4 miles northeast of Berlin and 8 miles northwest of Elk City.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,921.13 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS --Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS.**Drainage Area (sq mi)**

Total = 2.87
 Noncontributing = 0
 Contributing = 2.87
 Channel slope (ft/mi) = 53.2
 Annual precip. (in) = 24.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III**FLOOD-FREQUENCY DATA (CFS)**

Q₂ = 754
 Q₅ = 1,380
 Q₁₀ = 1,710
 Q₂₅ = 2,020
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III**STATISTICS (LOG UNITS)**

Mean = 2.785
 Standard deviation = 0.426
 Skew = -1.348

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Oct. 5	-	446	1959	May 26	-	1,670	1965	Jun. 24	-	324
1953	-	-	***	1960	Jul. 22	-	1,340	1966	Oct. 17	-	48
1954	May 23	-	806	1961	Jun. 4	-	1,080	1967	Apr. 11	-	1,220
1955	Jun. 17	-	1,480	1962	Jul. 31	-	576	1968	Aug. 16	-	1,700
1956	May 27	-	659	1963	Aug. 13	-	113	1969	Oct. 9	-	530
1957	Apr. 18	-	1,380	1964	May 5	-	135	1970	Apr. 16	-	743
1958	Jul. 20	-	813					1971	Jun. 10	-	767

07320500 SANDSTONE CREEK SUBWATERSHED NO. 6 (EAST BRANCH SANDSTONE CREEK) NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°29'10", long 99°30'10", in NW 1/4 SW 1/4 sec.26, T.12 N., R.22 W., Beckham County, near center of upstream side of dam on East Branch Sandstone Creek, 7.5 miles northeast of Berlin, and 8 miles northwest of Elk City.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,874.32 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS**Drainage Area (sq mi)**

Total = 6.46
 Noncontributing = 0
 Contributing = 6.46
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III**FLOOD-FREQUENCY DATA (CFS)**

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III**STATISTICS (LOG UNITS)**

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	-	-	***	1959	May 25	-	1,800	1966	-	-	***
1954	May 23	-	460	1960	-	-	***	1967	-	-	***
1955	-	-	***	1961	Jun. 4	-	1,270	1968	Aug. 16	-	1,250
1956	Jul. 10	-	689	1962	Jun. 9	-	a453	1969	Oct. 8	-	537
1957	May 3	-	1,870	1963	Aug. 13	-	189	1970	May 29	-	1,610
1958	Jun. 20	-	392	1964	May 10	-	145	1971	Jul. 2	-	508
				1965	-	-	***				

a Maximum determined.

RED RIVER BASIN

07321000 SANDSTONE CREEK SUBWATERSHED NO. 5 (EAST BRANCH SANDSTONE CREEK TRIBUTARY)
NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°29'30", long 99°29'20", in SE 1/4 NE 1/4 sec.26, T.12 N., R.22 W., Beckham County, near center of upstream side of dam on unnamed tributary of East Branch Sandstone Creek, 7 miles northwest of Elk City and 8.5 miles northeast of Berlin.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,893.15 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3.89
Noncontributing = 0
Contributing = 3.89
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Jul. 10	-	611	1959	May 26	-	1,510	1966	Oct. 17	-	578
1954	May 23	-	1,090	1960	-	-	***	1967	Apr. 11	-	212
1955	Jul. 4	-	317	1961	Jun. 4	-	1,180	1968	Aug. 16	-	2,850
1956	-	-	***	1962	Jul. 31	-	1,490	1969	Oct. 8	-	857
1957	Apr. 18	-	1,490	1963	Aug. 13	-	189	1970	May 28	-	1,550
1958	Jun. 19	-	448	1964	-	-	***	1971	Jun. 9	-	2,350
				1965	Jun. 4	-	1,370				

07321500 SANDSTONE CREEK SUBWATERSHED NO. 3 (EAST BRANCH SANDSTONE CREEK TRIBUTARY)
NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°30'40", long 99°30'40", on south line of SW 1/4 SE 1/4 sec.15, T.12 N., R.22 W., Roger Mills County, near center of upstream side of dam on unnamed tributary to East Branch Sandstone Creek, 7.5 miles northeast of Berlin and 9 miles northwest of Elk City.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,828.43 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 0.62
Noncontributing = 0
Contributing = 0.62
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	-	-	***	1959	May 25	-	620	1966	Oct. 18	-	17
1954	-	-	***	1960	-	-	***	1967	-	-	***
1955	Sep. 22	-	323	1961	Jun. 4	-	380	1968	Aug. 16	-	318
1956	Oct. 2	-	353	1962	Jul. 31	-	690	1969	Oct. 8	-	138
1957	Apr. 18	-	1,780	1963	Jun. 23	-	712	1970	-	-	***
1958	-	-	***	1964	-	-	***	1971	Jun. 9	-	905
				1965	Jun. 24	-	138				

RED RIVER BASIN

07322000 SANDSTONE CREEK SUBWATERSHED NO. 9 (EAST BRANCH SANDSTONE CREEK TRIBUTARY)
NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°29'40", long 99°32'00", in NW 1/4 SW 1/4 sec.28, T.12 N., R.22 W., Beckham County,
near center of upstream side of dam on unnamed tributary of East Branch Sandstone Creek, 7.5
miles northeast of Berlin and 9 miles northwest of Elk City.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,864.85 ft above mean
sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed
from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface
during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 3.50
Total = 3.50
Noncontributing = 0.37
Contributing = 3.13
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Oct. 5	-	547	1959	May 25	-	1,910	1965	-	-	***
1953	Jun. 6	-	460	1960	Jul. 22	-	858	1966	Oct. 17	-	65
1954	Apr. 30	-	1,440	1961	Jun. 4	-	755	1967	-	-	***
1955	Jun. 8	-	711	1962	May 20	-	a314	1968	Aug. 16	-	1,160
1956	Jul. 10	-	711	1963	Aug. 13	-	241	1969	Oct. 8	-	421
1957	Oct. 14	-	1,770	1964	Jun. 14	-	a415	1970	May 29	-	1,430
1958	-	-	***					1971	Jun. 8	-	2,420

a Maximum determined.

RED RIVER BASIN

07322500 EAST BRANCH SANDSTONE CREEK NEAR ELK CITY, OKLA.

LOCATION.--Lat 35°31'20", long 99°31'48", on south line sec.9, T.12 N., R.22 W., Roger Mills County, near left bank on downstream side of pier of county road bridge, 7.5 miles north-east of Berlin and 10 miles northwest of Elk City.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,832.06 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Flow from 18.2 sq mi regulated by 7 flood-retarding structures (combined original capacity, 5,760 acre-ft). Some diversion for irrigation above station. Only annual peaks are shown. Log-Pearson calculations based on all annual peaks except for 1952 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 23.0
Noncontributing = 0
Contributing = 23.0
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 489
Q₅ = 788
Q₁₀ = 1,000
Q₂₅ = 1,290
Q₅₀ = 1,520
Q₁₀₀ = 1,750

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.684
Standard deviation = 0.251
Skew = -0.133

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 16	6.34	167	1958	Jun. 19	10.64	523	1965	Sep. 19	11.40	659
1952	Apr. 21	4.70	37	1959	May 25	13.67	1,130	1966	Oct. 17	8.49	235
1953	Aug. 16	7.82	320	1960	Jul. 22	12.83	928	1967	Apr. 11	9.12	311
1954	Apr. 29	10.52	690	1961	Jun. 4	11.00	590	1968	Aug. 16	14.30	1,050
1955	May 11	8.14	354	1962	Aug. 1	13.49	1,080	1969	Oct. 9	11.67	550
1956	Jul. 10	11.40	556	1963	Jun. 23	10.16	460	1970	May 29	9.77	217
1957	Apr. 18	12.39	848	1964	May 6	8.75	265	1971	Jun. 9	11.77	300

07323000 SANDSTONE CREEK NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°33'10", long 99°31'50", on south line of SE 1/4 SW 1/4 sec.34, T.13 N., R.22 W., Roger Mills County, near left bank on downstream side of pier on county road bridge, 4.5 miles upstream from Wildcat Creek, 9.1 miles southeast of Cheyenne, and at mile 6.0.

GAGE.--Water-stage recorder. Datum of gage is 1,795.62 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Flow from 65.6 sq mi regulated by 22 flood-retarding structures (combined original capacity, about 21,100 acre-ft). Some diversions for irrigation above station. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 87.1
Noncontributing = 4.0
Contributing = 83.1
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,399
Q₅ = 2,710
Q₁₀ = 3,730
Q₂₅ = 5,100
Q₅₀ = 6,160
Q₁₀₀ = 7,240

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.114
Standard deviation = 0.373
Skew = -0.444

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 16	6.90	1,190	1958	Jun. 19	8.73	1,160	1965	Sep. 19	9.70	1,460
1952	Apr. 20	4.29	388	1959	May 26	16.42	4,720	1966	Oct. 18	6.22	477
1953	Jun. 6	6.40	1,020	1960	Jul. 22	9.78	1,150	1967	Apr. 12	6.22	463
1954	Apr. 30	13.64	6,360	1961	Jun. 4	10.55	1,570	1968	Aug. 16	14.62	2,900
1955	Jul. 4	8.65	2,240	1962	Aug. 1	11.10	2,010	1969	Oct. 9	10.17	1,170
1956	Jul. 10	8.15	1,410	1963	Jun. 23	11.45	2,150	1970	May 29	4.75	160
1957	Apr. 18	14.20	3,530	1964	May 6	8.24	960	1971	Jun. 10	11.42	1,040

RED RIVER BASIN

07323500 SANDSTONE CREEK SUBWATERSHED NO. 22 (SANDSTONE CREEK TRIBUTARY) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°33'40", long 99°33'00", in SW 1/4 NW 1/4 sec.33, T.13 N., R.22 W., Roger Mills County, near center of upstream side of dam on unnamed tributary to Sandstone Creek, 4 miles southwest of Herring and 8 miles southeast of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,810.94 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2.25

Noncontributing = 0

Contributing = 2.25

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***Q₅ = ***Q₁₀ = ***Q₂₅ = ***Q₅₀ = ***Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	-	-	***	1959	May 26	-	1,710	1966	Oct. 7	-	51
1954	Apr. 29	-	3,300	1960	-	-	***	1967	-	-	***
1955	-	-	***	1961	-	-	***	1968	-	-	***
1956	-	-	***	1962	Jun. 7	-	a203	1969	-	-	***
1957	-	-	***	1963	-	-	***	1970	-	-	***
1958	-	-	***	1964	-	-	***	1971	Jun. 10	-	1,500
				1965	Jun. 24	-	1,320				

a Maximum determined.

07324000 SANDSTONE CREEK SUBWATERSHED NO. 1 (WILDCAT CREEK) NEAR CHEYENNE, OKLA.

LOCATION.--Lat 35°34'00", long 99°30'10", on east line of NE 1/4 NE 1/4 sec.35, T.13 N., R.22 W., Roger Mills County, near center of upstream side of dam on Wildcat Creek, 3 miles southeast of Herring and 9.5 miles southeast of Cheyenne.

GAGE.--Water-stage recorder and recording rain gage. Datum of gage is 1,777.20 ft above mean sea level (U.S. Soil Conservation Service bench mark).

REMARKS.--Annual peak discharges are inflow peaks (average for 5-minute intervals) as computed from outflow and change in reservoir contents, adjusted for rainfall on reservoir surface during time of peak inflow.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 5.33

Noncontributing = 0

Contributing = 5.33

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***Q₅ = ***Q₁₀ = ***Q₂₅ = ***Q₅₀ = ***Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 20	-	207	1959	May 26	-	2,020	1965	Jun. 4	-	1,600
1953	Jun. 6	-	2,870	1960	Sep. 23	-	828	1966	Oct. 17	-	146
1954	-	-	***	1961	Jun. 4	-	1,590	1967	Jun. 1	-	566
1955	-	-	***	1962	Sep. 20	-	2,520	1968	May 31	-	3,280
1956	-	-	***	1963	Jun. 23	-	3,630	1969	Oct. 8	-	370
1957	Apr. 18	-	4,280	1964	May 5	-	450	1970	Apr. 18	-	489
1958	-	-	***					1971	Jul. 23	-	880

RED RIVER BASIN

07324400 WASHITA RIVER NEAR FOSS, OKLA.

LOCATION.--Lat 35°32'20", long 99°10'10", in SW 1/4 SW 1/4 sec.1, T.12 N., R.19 W., Custer County, on left bank on downstream side of pile bent of county road bridge, 0.4 mile downstream from Oak Creek, 0.9 mile downstream from Foss Dam, 2.5 miles west of Stafford, 6 miles north of Foss, and at mile 473.5.

GAGE.--Water-stage recorder. Altitude of gage is 1,560 ft (from preliminary survey by Topographic Division).

HISTORICAL DATA.--Flood in May 1959 reached a stage of 23.4 ft, from floodmark.

REMARKS.--Except for 55 sq mi intervening area, flow completely regulated since 1961 by Foss Reservoir. Only annual peaks are shown. Log-Pearson calculations based on all annual peaks for period 1961-71, which represent regulated flow conditions.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,551

Noncontributing = 0

Contributing = 1,551

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 663 (1,020)Q₅ = 1,240 (1,910)Q₁₀ = 1,760 (2,710)Q₂₅ = ***Q₅₀ = ***Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.837

Standard deviation = 0.312

Skew = 0.253

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 27	a9.96	1,500	1962	Jun. 9	11.28	1,800	1967	Jun. 25	11.3	770
1957	Apr. 19	20.40	14,000	1963	Mar. 30	6.46	184	1968	Aug. 15	15.15	1,340
1958	Jun. 20	b16.90	3,660	1964	May 10	9.79	552	1969	Aug. 26	19.74	3,010
1959	May	23.4	***	1965	Sep. 21	9.05	463	1970	Aug. 22	14.63	813
1961	Jul. 11	c11.0	725	1966	Oct. 18	11.06	740	1971	Jun. 11	11.60	330

a Maximum for period March to September 1956.

b Maximum for period February to September 1958.

c Maximum for period July to September 1961.

RED RIVER BASIN

07324500 BARNITZ CREEK NEAR ARAPAHO, OKLA.

LOCATION.--Lat 35°34'50", long 99°02'35", in NE1/4NE1/4 sec.30, T.13 N., R.17 W., on right bank on downstream side of bridge on county road, 0.5 mile downstream from confluence of East and West Barnitz Creeks, 4.5 miles west of Arapaho, and at mile 6.0.

GAGE.--Water-stage recorder. Datum of gage is 1,529.12 ft above mean sea level, unadjusted (Bureau of Reclamation bench mark).

HISTORICAL DATA.--Local residents indicated during 1951 field survey that similar stages had occurred in previous years and that maximum known occurred in April 1934.

REMARKS.--Runoff affected by continuing developments in basin by Soil Conservation Service, most of which were completed by about 1954. Log-Pearson calculations based on all annual peaks shown for period 1954-63, which represents flow conditions as affected by SCS basin developments. Base for partial-duration series, 1,000 cfs.

BASIN CHARACTERISTICSDrainage Area (sq mi)

Total = 243
Noncontributing = 0
Contributing = 243
Channel slope (ft/mi) = 8.6
Annual precip. (in) = 25.0
Bankful stage (ft) = 20

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,340
Q₅ = 1,880
Q₁₀ = 2,360
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.159
Standard deviation = 0.159
Skew = 1.284

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)			
1946	Jun. 30	17.77	1,420	1950	Aug. 1	19.47	2,240	1957	May 1	16.07	1,160			
1947	Oct. 7	16.58	1,240	1951	May 16	20.67	7,700	1958	Jun. 20	17.58	1,290			
	Oct. 10	18.99	1,610											
	Apr. 8	20.8	6,000	1952	Apr. 22	9.38	168	1959	May 4	16.78	1,350			
	May 12	17.94	1,760											
May 16	18.08	1,850	1953	Aug. 18	10.86	252	May 26		19.80	3,250				
1948	May 10	17.90	1,600	1954	Apr. 30	18.32	1,880		1960	Oct. 2	18.69	1,820		
								May 17					16.19	1,190
1949	Nov. 1	19.65	2,360					May 24	16.10	1,290	1961	Sep. 23	16.26	1,110
	Feb. 8	15.4	1,240	1955	Jun. 8	15.49	1,020	1962	Sep. 16	16.53	1,150			
	May 19	17.88	1,860									Jun. 15	15.38	1,000
	May 21	18.81	2,120											
1950	Jul. 20	18.29	1,810	1956	Oct. 4	15.56	1,050							

RED RIVER BASIN

07325000 WASHITA RIVER NEAR CLINTON, OKLA.

LOCATION.--Lat 35°31'52", long 98°57'57", in SW 1/4 NE 1/4 sec.11, T.12 N., R.17 W., Custer County, within channel on downstream side of pier of bridge on U.S. Highway 183, 0.5 mile north of Clinton, 0.8 mile upstream from Beaver Creek, 4.8 miles downstream from Barnitz Creek, and at mile 447.4.

GAGE.--Nonrecording prior to Feb. 7, 1939, and Mar. 26, 1940, to Mar. 18, 1941; recording during remainder of period. Mar. 26 to May 13, 1940, at site 75 ft upstream at present datum. May 14, 1940, to Mar. 18, 1941, at railway bridge 1 mile downstream at datum 4.55 ft lower. Datum of present gage is 1,467.60 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--Flood of Apr. 3-4, 1934, reached a stage of 33.9 ft, from floodmarks.

REMARKS.--Probably some reduction in peak discharges in recent years from Soil Conservation Service detention reservoirs on several tributaries, most of which were completed by about 1961. Flow regulated since February 1961 by Foss Reservoir 27 miles upstream. Log-Pearson calculations are based on all annual peaks shown for period 1961-71, which represents regulated flow conditions. Base for partial-duration series, 3,400 cfs. Only annual peaks are shown since 1961.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,977
Noncontributing = 0
Contributing = 1,977
Channel slope (ft/mi) = 6.68
Annual precip. (in) = 24.0
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,890 (2,910)
Q₅ = 3,500 (5,380)
Q₁₀ = 4,960 (7,630)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.297
Standard deviation = 0.303
Skew = 0.401

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 3, 4	a33.9	-	1945	Apr. 15	16.09	3,700	1957	Apr. 20	19.88	4,440
1935	May or Jun.	a28	25,000	1946	Jul. 2	15.61	3,430		Apr. 23	20.63	4,900
1936	Apr. 27	20.88	3,900	1947	Apr. 8	21.70	9,060		May 4	17.82	3,400
	May 1	23.23	8,750		May 12	21.24	8,110		May 12	18.49	3,700
	Jun. 5	28.5	26,900		May 16	19.32	5,930		May 25	17.98	3,480
1937	May 30	20.5	3,650		May 20	16.32	4,180	1958	Jun. 20	20.68	4,100
1938	May 19	24.90	13,900		Jun. 5	15.64	3,800		May 30	19.84	4,380
1939	May 9	17.82	3,430	1948	Aug. 16	16.08	3,960	1959	May 5	18.92	3,810
1940	Apr. 11	25.5	15,000						May 26	27.84	22,200
	Jul. 2	20.05	6,520	1949	Nov. 1	21.41	8,110		Jul. 27	19.21	4,500
1941	Apr. 19	16.65	3,810		Feb. 6	17.19	4,670	1960	Oct. 2	21.61	6,140
	May 4	21.84	9,320		May 21	18.34	6,300	1961	Jun. 5	17.33	3,600
	May 21	22.36	11,000		Jun. 5	14.86	3,450	1962	Sep. 17	24.3	7,760
	May 25	21.24	8,000		Jun. 26	15.95	4,010				
	Jun. 10	22.86	12,500	1950	Jul. 21	18.36	5,060	1963	Mar. 30	13.58	1,910
1942	Oct. 25	22.13	10,100		Aug. 2	17.88	4,670	1964	Aug. 18	11.44	1,230
	Apr. 17	17.79	4,590	1951	May 16	31.09	66,800	1965	Jun. 22	18.03	3,450
	Apr. 25	15.81	3,500		May 20	18.48	5,230	1966	Oct. 18	16.12	2,080
	Apr. 27	21.34	8,200		May 22	15.49	3,740	1967	Jun. 25	10.6	1,000
	Jun. 23	16.87	4,140		Jun. 14	15.44	3,720	1968	Aug. 15	16.57	2,500
1943	May 27	16.19	3,860	1952	Apr. 22	10.51	1,260	1969	Aug. 27	17.43	2,280
1944	Jun. 13	18.18	4,930	1953	Jun. 8	14.06	2,470	1970	Aug. 22	11.61	934
	Jun. 24	16.06	3,700	1954	May 1	23.99	13,100	1971	Jun. 11	10.30	732
1945	Apr. 10	22.19	10,400		May 24	21.29	5,960				
				1955	Jun. 8	20.93	6,270				
				1956	Oct. 4	23.21	7,550				

a Annual peak only, from floodmarks pointed out by local residents.

RED RIVER BASIN

07325500 WASHITA RIVER AT CARNEGIE, OKLA.

LOCATION.--Lat 35°07'02", long 98°33'49", in NW 1/4 NW 1/4 sec.3, T.7 N., R.13 W., Caddo County, on downstream side of right pier of bridge on State Highway 9, 1,300 ft upstream from Running Creek, 2.7 miles east of Carnegie, and at mile 353.9. Records include flow of Running Creek.

GAGE.--Water-stage recorder. Datum of gage is 1,249.23 ft above mean sea level. Prior to October 1942, water-stage recorder at site 8 miles upstream at datum 24.57 ft higher.

HISTORICAL DATA.--Flood of May 23, 1903, reached a stage of about 29 ft at former site and datum, from information by local residents of two independent sites. Data for 1913-36 obtained in 1942 from chiseled marks of all major floods occurring since 1912 at South-western Light and Power Co. plant at Carnegie; tabulated stages contain 0.5-foot allowance for slope in reach.

REMARKS.--Some regulation by Foss Reservoir since February 1961, and by numerous flood-retarding structures. Log-Pearson calculations based on all annual peaks for period 1961-71, which represent regulated flow conditions. Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1938.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 3,129
Noncontributing = 0
Contributing = 3,129
Channel slope (ft/mi) = 4.63
Annual precip. (in) = 24.0
Bankful stage (ft) = 18

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q_2 = 4,370 (6,720)
 Q_5 = 8,330 (12,800)
 Q_{10} = 12,000 (18,500)
 Q_{25} = ***
 Q_{50} = ***
 Q_{100} = ***

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 3.660
Standard deviation = 0.319
Skew = 0.359

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 23	29.	-	1945	Sep. 29	15.67	3,100	1957	Apr. 24	21.41	12,600
									May 3	21.40	11,600
1913	Oct. 27	12.20	8,700	1946	Jun. 26	16.10	3,310		May 11	15.57	3,810
					Jul. 1	17.77	4,460		May 13	16.20	4,100
1921	Apr. 5	13.96	12,000						May 20	15.61	3,810
				1947	Apr. 11	15.89	3,200		May 25	15.80	3,950
1923	Jun. 10	12.89	10,000		Apr. 16	16.27	3,410		Jun. 4	18.68	6,200
					May 14	21.49	9,200				
1924	Oct. 14	13.78	11,600		May 17	22.20	10,600	1958	Jun. 23	14.20	3,580
					May 23	16.24	4,000				
1934	Apr. 5	16.39	18,500		Jun. 3	17.97	4,440	1959	May 10	14.20	3,560
									May 29	20.64	9,300
1935	May 19	16.28	18,000	1948	Jun. 25	14.22	2,660		Jul. 29	21.00	10,700
									Sep. 27	15.85	4,300
1936	Jun. 6	17.16	21,500	1949	Feb. 10	15.39	3,330				
					May 18	26.21	50,000	1960	Oct. 5	21.25	11,000
1938	May 23	11.14	7,080		May 26	16.36	4,040		Dec. 19	17.66	5,340
					May 29	15.06	3,350		Feb. 6	15.11	3,950
1939	Jun. 22	7.69	2,950		Jun. 4	22.31	14,900				
					Jun. 10	17.00	4,320	1961	Oct. 20	16.56	4,730
1940	Apr. 14	8.50	3,790						Oct. 27	13.34	3,110
	Jul. 4	9.01	4,250	1950	Jul. 18	17.63	4,920		Jun. 9	12.78	3,030
					Jul. 21	18.45	5,590		Sep. 13	18.83	5,740
1941	May 5	12.51	9,030		Jul. 25	17.61	5,000				
	May 23	11.94	8,330		Aug. 3	19.89	6,870	1962	Oct. 12	13.31	3,110
	May 28	8.69	4,660						Nov. 4	18.35	5,730
	Jun. 6	12.29	9,050	1951	May 18	25.50	40,900		Jun. 11	19.52	6,300
	Jun. 10	9.83	5,960		Jun. 13	15.94	4,150		Sep. 20	15.60	4,200
	Jun. 13	11.67	8,320		Jun. 16	14.11	3,100				
1942	Oct. 23	13.16	10,300	1952	May 25	14.60	3,120	1963	Jun. 24	11.79	2,510
	Oct. 27	11.98	8,700								
	Apr. 11	7.60	3,500	1953	Jul. 19	20.29	8,550	1964	Aug. 19	12.38	2,750
	Apr. 20	9.39	5,480								
	Apr. 26	10.72	7,080	1954	Oct. 23	14.02	3,550	1965	Nov. 7	18.10	5,500
	Apr. 29	11.53	8,080		May 2	14.04	3,300		Sep. 22	23.47	17,400
	Jun. 24	8.99	5,000		May 27	19.28	6,720	1966	Oct. 19	20.88	10,100
1943	May 18	18.93	5,770	1956	May 10	12.21	3,020	1967	Apr. 13	12.34	2,820
	May 28	19.12	6,690		May 12	12.83	3,250				
					May 21	15.00	4,160	1968	Jun. 3	14.74	3,770
1944	Apr. 11	19.54	6,670		Jun. 8	16.67	4,880		Jul. 1	13.45	3,280
	Jun. 14	22.74	14,000		Sep. 23	13.32	3,380		Jul. 15	16.81	4,850
	Jun. 26	17.05	4,570								
1945	Apr. 13	19.01	6,670	1956	Oct. 5	24.04	23,900	1969	May 6	20.18	8,260
	Apr. 16	21.00	9,810		May 28	12.78	3,120		May 14	16.15	4,590
	Jun. 12	14.43	3,040	1957	Apr. 3	17.60	4,330	1970	May 31	8.62	1,570
	Jun. 16	14.76	3,080								
	Jul. 27	16.93	3,830					1971	Jul. 2	10.74	2,310

RED RIVER BASIN

07326000 COBB CREEK NEAR FORT COBB, OKLA.

LOCATION.--Lat 35°08'37", long 98°26'33", in NE 1/4 NE 1/4 sec.27, T.8 N., R.12 W., Caddo County, on left bank 10 ft upstream from county road bridge, 0.3 mile upstream from Punjo Creek, 1.2 miles downstream from Fort Cobb Dam, 3.0 miles north of Fort Cobb, and at mile 5.8.

GAGE.--Water-stage recorder. Datum of gage is 1,259.49 ft above mean sea level (Bureau of Reclamation bench mark). Oct. 1, 1939, to Aug. 29, 1940, nonrecording gage and Aug. 30, 1940, to Sept. 30, 1969, water-stage recorder at site 0.8 mile downstream at datum 6.92 ft lower.

HISTORICAL DATA.--Flood of June 15, 1937, reached a stage of 19.3 ft (site and datum used in 1939), from information by local resident.

REMARKS.--Flow regulated since March 1959 by Fort Cobb Reservoir. Log-Pearson calculations based on all annual peaks prior to 1959, and represent unregulated flow conditions. Base for partial-duration series, 1,500 cfs. Only annual peaks are shown since 1959.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 313
 Noncontributing = 0
 Contributing = 313
 Channel slope (ft/mi) = 8.03
 Annual precip. (in) = 27.0
 Bankful stage (ft) = b14

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,690
 Q₅ = 8,170
 Q₁₀ = 13,300
 Q₂₅ = 23,900
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.620
 Standard deviation = 0.378
 Skew = 0.851

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jun. 15	19.3	-	1949	Feb. 8	13.75	1,620	1958	Jun. 20	14.48	1,760
					May 17	18.72	35,000				
1940	Jul. 2	15.81	3,290		May 20	14.95	2,300	1959	May 26	6.90	358
					May 26	14.68	2,090				
1941	Apr. 18	14.97	1,820		Jun. 3	14.72	2,090	1960	Oct. 4	4.00	93
	Jun. 7	14.79	1,640	1950	Jul. 20	14.92	1,940	1961	Sep. 13	6.62	370
1942	Oct. 23	15.42	2,610		Jul. 25	14.33	1,720	1962	Jun. 13	10.00	740
					Aug. 1	14.46	1,820				
1943	May 18	14.50	1,440	1951	May 18	13.93	1,640	1963	Jun. 26	a8.67	538
1944	Apr. 19	16.62	8,500		May 20	15.92	4,540	1964	May 14	7.24	356
	Jun. 13	17.22	12,700		Jun. 12	14.95	2,300				
	Jun. 24	14.95	1,760	1952	May 24	15.98	4,900	1965	Sep. 29	13.14	1,260
1945	Apr. 11	14.60	1,860					1966	Oct. 1	12.95	1,230
	Apr. 15	15.21	2,560	1953	Apr. 5	13.73	1,520				
	Jun. 11	17.58	16,000		Jul. 19	16.10	5,400	1967	Apr. 22	6.71	328
	Jul. 14	15.71	3,160					1968	Jul. 4	12.91	1,230
	Sep. 29	14.30	1,550	1954	May 24	14.30	1,620	1969	Jan. 16	11.85	1,100
1946	Jul. 1	16.05	4,700	1955	May 19	16.97	7,950				
					Jun. 19	16.03	2,950	1970	Aug. 1	4.80	113
1947	May 16	16.06	4,760		Aug. 10	15.57	2,330				
	Jul. 1	14.17	1,640	1956	Oct. 5	15.99	3,350	1971	Sep. 7	5.12	125
1948	Jun. 23	16.71	6,110	1957	Apr. 21	14.08	1,550				

a Occurred June 27, 1963.

b At site and datum used prior to 1970.

RED RIVER BASIN

07326500 WASHITA RIVER AT ANADARKO, OKLA.

LOCATION.--Lat 35°05'06", long 98°14'35", in NW 1/4 sec.15, T.7 N., R.10 W, Caddo County, at left bank 35 ft upstream from bridge on U.S. Highway 281 at north edge of Anadarko, 8.1 miles upstream from Sugar Creek, and about mile 305.2.

GAGE.--Water-stage recorder. Datum of gage is 1,150.00 ft above mean sea level. Oct. 26, 1902, to June 30, 1908, nonrecording gage at former bridge 125 ft downstream at datum estimated to be 2.8 ft higher. Jan. 10, 1936, to Mar. 7, 1938, nonrecording gage on upstream side of bridge on U.S. Highway 281 at datum 1.88 ft higher.

HISTORICAL DATA.--Flood in May 1949, reached an elevation of 1,176.7 ft, from floodmark, at right bank on downstream side of bridge on U.S. Highway 281.

REMARKS.--Some regulation by low-water dams upstream and since March 1959, by Fort Cobb Reservoir, since February 1961, by Foss Reservoir, and by numerous flood-retarding structures. Records of discharge furnished by Agricultural Research Service. Log-Pearson calculations based on all annual peaks for period 1964-71, and represent regulated flow conditions. Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1964.

<u>BASIN CHARACTERISTICS</u>		<u>LOG-PEARSON TYPE III</u>	<u>LOG-PEARSON TYPE III</u>
<u>Drainage Area (sq mi)</u>		<u>FLOOD-FREQUENCY DATA (CFS)</u>	<u>STATISTICS (LOG UNITS)</u>
Total	= 3,656	Q ₂ = 3,490 (5,370)	Mean = 3.556
Noncontributing	= 0	Q ₅ = 6,510 (10,000)	Standard deviation = 0.312
Contributing	= 3,656	Q ₁₀ = 9,180 (14,100)	Skew = 0.256
Channel slope (ft/mi)	= ***	Q ₂₅ = ***	
Annual precip. (in)	= ***	Q ₅₀ = ***	
Bankful stage (ft)	= 21	Q ₁₀₀ = ***	

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	May 25	26.8	29,000	1936	Jun. 8	21.69	10,800	1967	Apr. 4	12.91	2,470
1904	Jul. 14	14.7	3,240	1937	Jun. 19	17.55	4,660	1968	Jun. 3	14.84	3,430
1905	May 31	18.9	6,480	1964	Aug. 20	12.80	2,820		Jul. 4	14.37	3,160
1906	Sep. 18	13.0	3,150						Jul. 16	15.65	3,840
1907	Jun. 14	20.7	11,600	1965	Nov. 8	17.17	5,040	1969	May 10	18.61	5,650
1908	Oct. 9	22.9	28,100		Nov. 20	13.48	3,340	1970	May 31	9.69	1,470
					Sep. 23	24.20	11,000				
				1966	Oct. 22	21.80	7,190	1971	Sep. 26	11.17	1,590

RED RIVER BASIN

07327000 SUGAR CREEK NEAR GRACEMONT, OKLA.

LOCATION.--Lat 35°10'30", long 98°15'20", in NW 1/4 NE 1/4 sec.16, T.8 N., R.10 W., Caddo County, on downstream side of county road bridge, 1.0 mile south of Gracemont, 2.1 miles downstream from Yellow Creek, 1.1 miles upstream from bridge on U.S. Highway 281, and at mile 9.9.

GAGE.--Water-stage recorder. Datum of gage is 1,190.00 ft above mean sea level. Prior to Oct. 1, 1959, at site 1.1 miles downstream at datum 3.72 ft higher. Oct. 1, 1959, to Dec. 31, 1966, at datum 20 ft higher and Jan. 1, 1967, to Mar. 31, 1968, at datum 10 ft higher, at site 1.1 miles upstream.

HISTORICAL DATA.--Flood of May 17, 1949, reached a stage of 10.8 ft (at site and datum used prior to Oct. 1, 1959), from floodmarks (discharge, 32,000 cfs, on basis of slope-area measurement of peak flow).

REMARKS.--Some regulation by flood-retarding structures and some small diversions for irrigation above station. Records furnished by Agricultural Research Service. Log-Pearson calculations based on all annual peaks except 1949, which is considered an outlier. Base for partial-duration series, 900 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 208
Noncontributing = 0
Contributing = 208
Channel slope (ft/mi) = 11.4
Annual precip. (in) = 28.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,310
Q₅ = 2,780
Q₁₀ = 4,460
Q₂₅ = 7,870
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.171
Standard deviation = 0.357
Skew = 0.953

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	May 17	10.8	32,000	1961	Oct. 18	7.37	930	1966	Aug. 11	7.45	790
					Jun. 26	7.55	990				
1956	Oct. 4	8.2	905		Sep. 13	8.46	1,160	1967	Apr. 12	16.96	5,430
1957	Jun. 2	7.52	620	1962	Jun. 9	8.00	1,260	1968	Jun. 15	11.66	2,400
1958	Jun. 21	8.22	867		Sep. 3	8.08	1,160				
1959	May 26	8.54	1,060	1963	Jun. 23	8.59	910	1969	May 4	14.41	4,640
	Sep. 25	8.45	1,020						May 5	12.82	4,260
				1964	May 10	8.75	990		May 6	8.38	1,490
1960	Oct. 4	7.41	1,260						Jun. 14	8.62	1,620
	Jun. 6	6.70	1,200	1965	May 4	8.90	1,140	1970	May 29	8.54	2,990
					Sep. 21	10.77	8,500		May 31	7.31	534

07327490 LITTLE WASHITA RIVER NEAR NINNEKAH, OKLA.

LOCATION.--Lat 34°56'41", long 97°57'08", in SE 1/4 SE 1/4 sec.32, T.6 N., R.7 W., Grady County, at left bank on downstream side of bridge on U.S. Highway 81, 1.0 mile upstream from Rock Creek, 1.5 miles west of Ninneka, 5.5 miles south of Chickasha, and at mile 8.4.

GAGE.--Water-stage recorder. Datum of gage is 1,065.94 ft above mean sea level.

REMARKS.--Small diversions above station for irrigation. Records of discharge furnished by Agricultural Research Service. Log-Pearson calculations based on all annual peaks for combined records of 07327500 and 07327490. Base for partial-duration series, 1,500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 208
Noncontributing = 0
Contributing = 208
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,090
Q₅ = 7,590
Q₁₀ = 13,100
Q₂₅ = 25,000
Q₅₀ = 39,200
Q₁₀₀ = 60,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.545
Standard deviation = 0.429
Skew = 0.782

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	20.65	7,560	1967	Apr. 10	13.77	1,710	1969	May 6	19.39	5,050
1965	Nov. 17	12.99	1,930						Jun. 14	18.20	3,960
	Aug. 28	15.86	2,610	1968	May 31	19.14	5,280	1970	Apr. 30	13.55	1,460
1966	Mar. 12	11.77	811								
				1969	May 5	14.03	1,580	1971	Jun. 1	14.94	1,680

RED RIVER BASIN

07327500 LITTLE WASHITA RIVER AT NINNEKAH, OKLA.

LOCATION.--Lat 34°57'24", long 97°55'34", at center of north line of sec.34, T.6 N., R.7 W., at center of span on downstream side of pier of Chicago, Rock Island and Pacific Railroad Co. bridge, 0.5 mile north of Ninneka, 1.2 miles downstream from Rock Creek, and at mile 6.2.

GAGE.--Water-stage recorder. Datum of gage is 1,058.52 ft above mean sea level, datum of 1929.

HISTORICAL DATA.--According to local residents, a notable flood occurred in April 1927.

REMARKS.--Small diversions above station for irrigation. Base for partial-duration series, 1,500 cfs. Log-Pearson calculations based on combined records of 07327490 and 07327500.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 227

Noncontributing = 0

Contributing = 227

Channel slope (ft/mi) = 6.8

Annual precip. (in) = 31.5

Bankful stage (ft) = 17

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 3,090Q₅ = 7,590Q₁₀ = 13,100Q₂₅ = 25,000Q₅₀ = 39,200Q₁₀₀ = 60,100

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.545

Standard deviation = 0.429

Skew = 0.782

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	May 16	-	36,000	1955	May 19	17.09	4,860	1958	Jul. 21	7.18	910
					Sep. 22	13.73	3,100				
1952	Apr. 19	12.80	2,000					1959	May 26	14.51	7,050
	May 18	16.62	3,670	1956	Oct. 3	14.23	3,480		Sep. 25	11.19	3,920
	Jun. 1	17.15	3,950		Oct. 4	13.82	3,260				
1953	Mar. 14	11.80	1,590		May 26	11.72	2,200	1960	Oct. 1	16.20	9,140
	Sep. 3	11.79	1,590	1957	Apr. 21	10.84	1,840		Nov. 3	9.51	2,690
1954	Oct. 23	12.57	1,910		Apr. 23	11.73	2,120	1961	Jul. 21	7.82	1,720
	Oct. 25	14.34	2,640		May 2	11.64	2,070				
	Dec. 3	12.82	2,000		May 13	10.72	1,660	1962	Jun. 1	10.17	3,840
	May 2	13.95	2,510		May 17	18.80	7,410		Jun. 8	7.58	1,950
	May 10	14.49	2,730		May 22	10.40	1,800		Sep. 15	7.48	1,890
					May 24	22.20	25,200		Sep. 20	9.75	3,680
					May 30	12.43	3,230				
					Sep. 21	16.04	5,560	1963	Jun. 23	6.86	1,540

^a Annual peak only. Contracted-opening measurement of peak discharge at State Highway 19, 4-1/2 miles downstream.

RED RIVER BASIN

07328000 WASHITA RIVER NEAR TABLER, OKLA.

LOCATION.--Lat 34°58', long 97°51', in SW1/4SW1/4 sec.21, T.6 N., R.6 W., on downstream side of left pier of abandoned county highway bridge, 1 mile downstream from Little Washita River, 5 miles south of Tabler, and at mile 243.0.

GAGE.--Nonrecording prior to June 6, 1940; recording thereafter. Datum of gage is 1,022.38 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Base for partial-duration series, 4,000 cfs. Flood records are not representative of current conditions because of regulation since about 1960 from upstream reservoirs and flood detention structures.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 4,706
 Noncontributing = 0
 Contributing = 4,706
 Channel slope (ft/mi) = 4.32
 Annual precip. (in) = 25.5
 Bankful stage (ft) = 21

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	-	a28.7	b36,200	1943	May 31	16.64	4,270	1948	Mar. 1	20.5	6,680
1927	Apr. 7	a29.9	b53,600		Jun. 4	23.28	9,020		Jun. 22	22.16	7,950
1940	Jul. 5	13.54	3,380	1944	Apr. 14	17.68	4,610	1949	May 1	18.78	5,640
1941	Apr. 18	16.31	4,410		Jun. 12	18.40	5,050		May 20	29.72	50,000
	May 2	16.94	4,510		Jun. 18	17.39	4,710		May 29	22.06	8,130
	May 5	20.75	6,460	1945	Oct. 3	19.18	5,400		Jun. 3	23.65	11,100
	May 23	22.05	7,330		Mar. 11	23.19	9,090		Jun. 7	23.27	10,200
	May 29	18.50	5,160		Apr. 16	25.19	13,300		Jun. 10	20.17	7,100
	Jun. 7	26.02	15,800		Apr. 20	22.70	8,940	1950	May 10	20.94	8,300
	Jun. 10	24.31	10,900		Jun. 8	21.37	7,170		Jul. 20	23.35	12,300
	Jun. 15	21.58	6,960		Jun. 12	24.77	12,300		Jul. 25	20.87	8,300
1942	Oct. 2	19.60	5,690		Jul. 10	22.58	8,640		Aug. 6	14.78	4,570
	Oct. 7	15.96	4,010		Sep. 29	24.20	10,900	1951	May 18	27.14	24,800
	Oct. 30	24.06	10,600	1946	May 29	19.89	5,650		May 20	26.72	22,800
	Apr. 8	20.94	6,430		May 31	19.30	5,350		Jun. 9	16.54	5,340
	Apr. 19	22.18	7,480		Jun. 30	24.60	10,400		Jun. 12	21.64	9,180
	Apr. 25	21.30	6,650	1947	Apr. 10	16.93	4,200	1952	May 18	14.51	4,560
	May 3	17.59	4,460		Apr. 13	20.32	5,850		Jun. 1	15.15	4,900
	Aug. 26	18.93	5,350		Apr. 15	19.09	5,250				
	Sep. 19	16.49	4,690		May 12	21.30	6,230	1955	-	a28.8	37,300
1943	May 10	24.13	10,600		May 16	29.08	38,000	1957	May	a29.6	48,300
	May 19	22.34	7,840		May 21	24.06	10,400				
					Jun. 1	24.05	10,100				

a Annual peak only.

b Approximate discharge.

RED RIVER BASIN

07328030 BIG DRY CREEK NEAR ALEX, OKLA.

LOCATION.--Lat 34°56'44", long 97°50'18", in NE 1/4 SW 1/4 sec.33, T.6 N., R.6 W., Grady County, upstream from box culvert on State Highway 19, 4.5 miles northwest of Alex.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown. Records furnished by Agricultural Research Service. Flow regulated by flood-detention structures. All gage heights adjusted to present datum.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 7.57
 Noncontributing = 0
 Contributing = 7.57
 Channel slope (ft/mi) = 24.5
 Annual precip. (in) = 32.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Jun. 9	2.28	281	1965	May 26	3.34	124	1969	Sep. 21	7.27	1,520
1963	Apr. 26	2.92	658	1966	Jun. 16	4.52	348	1970	Sep. 22	5.53	706
1964	May 9	8.50	2,450	1967	Apr. 12	3.08	92	1971	Sep. 24	3.60	176
				1968	Jul. 1	4.90	451				

07328040 LITTLE DRY CREEK NEAR ALEX, OKLA.

LOCATION.--Lat 34°57'06", long 97°50'48", in SW 1/4 NW 1/4 sec.33, T.6 N., R.6 W., Grady County, upstream from box culvert on State Highway 19, 5 miles northwest of Alex.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown. Records furnished by Agricultural Research Service. Flow regulated by flood-detention structures.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 0.88
 Noncontributing = 0
 Contributing = 0.88
 Channel slope (ft/mi) = 82.0
 Annual precip. (in) = 32.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1962	Apr. 27	1.80	180	1965	Aug. 7	1.71	30	1969	Sep. 21	2.75	184
1963	Jun. 23	2.26	231	1966	Jul. 24	2.20	86	1970	Sep. 22	3.00	230
1964	May 10	2.63	160	1967	Apr. 12	2.67	123	1971	Aug. 14	2.24	91
				1968	Jul. 1	3.29	280				

RED RIVER BASIN

07328070 WINTER CREEK NEAR ALEX, OKLA.

LOCATION.--Lat 34°59'35", long 97°45'40", in NE 1/4 sec.18, T.6 N., R.5 W., Grady County, at left bank 1,000 ft downstream from county road bridge, 0.7 mile downstream from East Winter Creek, 3.2 miles upstream from mouth, and 5.5 miles north of Alex.

GAGE.--Water-stage recorder and broad crest V-notch weir. Datum of gage is 1,048.20 ft above mean sea level.

REMARKS.--Flow regulated by 16 flood-retarding structures (combined capacity, 1,050 acre-ft). Minor diversions for irrigation above station. Records furnished by Agricultural Research Service. Base for partial-duration series, 500 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 33
 Noncontributing = 0
 Contributing = 33
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 10	8.62	-	1965	Sep. 21	4.86	631	1969	May 6	6.62	2,030
									Jun. 14	5.35	915
1965	Nov. 17	7.28	2,360	1966	Aug. 21	3.53	170		Jul. 21	4.82	611
	Nov. 19	6.16	1,240					1970	Sep. 22	6.81	2,420
	Apr. 14	5.21	544	1967	Apr. 12	5.91	1,330				
	Aug. 8	6.36	1,480					1971	Oct. 8	5.08	729
	Aug. 28	6.00	951	1968	May 7	4.59	504		Jun. 3	4.73	538
	Sep. 17	5.25	851		Jul. 1	6.21	1,610				
	Sep. 19	5.10	761								

07328100 WASHITA RIVER AT ALEX, OKLA.

LOCATION.--Lat 34°55'35", long 97°46'30", in NW 1/4 sec.7, T.5 N., R.5 W., Grady County, near left bank on downstream side of county road bridge, 1.0 mile north of Alex, 3.8 miles downstream from Winter Creek, and at mile 226.5.

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft above mean sea level.

REMARKS.--Some regulation by Fort Cobb Reservoir, by Foss Reservoir, and by numerous flood-retarding structures. Records furnished by Agricultural Research Service. Base for partial-duration series, 3,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 4,787
 Noncontributing = 0
 Contributing = 4,787
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 9	12.06	4,300	1966	Sep. 14	10.75	3,350	1969	May 7	17.83	9,350
	Nov. 17	10.75	3,370						Jun. 14	13.25	6,450
	Nov. 19	10.63	3,200	1967	Apr. 12	15.52	7,440	1970	Apr. 30	11.40	4,130
	Aug. 8	10.55	3,630						May 29	13.15	5,620
	Aug. 28	11.03	3,800	1968	Jun. 1	10.95	3,520		Sep. 23	12.92	5,490
	Sep. 27	14.03	5,830		Jun. 5	10.84	3,240				
					Jul. 17	10.48	3,130	1971	Jun. 3	10.27	3,100
1966	Oct. 23	13.35	4,980								

RED RIVER BASIN

07328500 WASHITA RIVER NEAR PAULS VALLEY, OKLA.

LOCATION.--Lat 34°45'17", long 97°15'04", in SE 1/4 sec.1, T.3 N., R.1 W., Garvin County, on downstream side of right pier of bridge on U.S. Highway 77, 2 miles northwest of Pauls Valley, 6 miles downstream from Owl Creek, 7 miles upstream from Washington Creek, and at mile 146.5.

GAGE.--Water-stage recorder. Datum of gage is 854.61 ft above mean sea level. Mar. 29, 1938, to Jan. 25, 1939, nonrecording gage and Jan. 26, 1939, to Oct. 6, 1948, water-stage recorder at site 0.7 mile upstream at datum 1.53 ft higher.

HISTORICAL DATA.--According to local residents in 1938, the flood in 1908 was maximum known and in 1941, it was reported as similar to flood of June 10, 1941. In 1938, local residents reported that a notable flood occurred in 1923.

REMARKS.--Some diversion for irrigation above station. Some regulation since March 1959, by Fort Cobb Reservoir, since February 1961, by Foss Reservoir, and by numerous flood-retarding structures. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi) =
Total = 5,330
Noncontributing = 0
Contributing = 5,330
Channel slope (ft/mi) = 2.14
Annual precip. (in) = 25.7
Bankful stage (ft) = 24

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 12,100
Q₅ = 18,400
Q₁₀ = 22,700
Q₂₅ = 28,200
Q₅₀ = 32,300
Q₁₀₀ = 36,400

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.075
Standard deviation = 0.224
Skew = -0.224

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb. 16	-	10,000	1947	Jun. 2	26.25	12,500	1957	May 22	16.10	10,800
	Mar. 29	23.90	7,800		Jun. 24	25.41	12,100		May 26	24.64	29,300
	May 7	22.41	6,570		Jul. 3	17.67	5,540		May 30	21.18	21,500
	May 23	24.92	8,880						Jun. 4	16.35	11,600
1939	Jun. 30	16.93	4,260	1948	Mar. 3	16.23	5,600		Jun. 15	17.08	13,200
					May 26	16.15	5,040		Jun. 23	13.84	7,360
1940	Jul. 4	23.42	7,150		Jun. 21	17.02	5,600		Sep. 21	19.10	18,600
					Jun. 25	24.00	12,100				
1941	May 10	19.13	5,120	1949	May 1	21.62	10,400	1958	Jun. 21	13.75	8,890
	May 25	19.81	5,430		May 22	28.42	21,700	1959	May 11	12.88	6,270
	Jun. 2	22.3	6,610		May 30	17.48	7,200		May 27	14.90	9,490
	Jun. 10	30.60	22,000		Jun. 9	18.78	9,180		Sep. 25	18.12	15,900
	Sep. 9	20.50	5,550								
1942	Oct. 5	23.35	7,070	1950	May 11	29.88	30,000	1960	Oct. 3	19.53	18,000
	Oct. 15	21.7	6,150		May 26	15.64	8,600		Nov. 4	12.98	6,550
	Oct. 31	29.15	16,200		Jun. 12	12.10	5,390		May 6	12.42	5,710
	Apr. 9	25.34	9,000		Jul. 22	15.74	9,200		May 20	17.34	16,500
	Apr. 20	24.70	7,840		Jul. 26	18.11	11,400		Aug. 21	12.05	5,190
	Apr. 25	24.50	7,700		Sep. 14	11.84	5,600				
1943	Oct. 30	18.94	5,180	1951	May 1	16.60	11,700	1961	Mar. 30	13.14	7,000
	May 11	27.75	14,000		May 23	23.00	20,100		Jul. 22	14.24	9,010
	May 18	25.33	9,890		May 27	13.80	6,480		Sep. 13	12.80	7,000
	May 20	23.47	7,850		Jun. 11	17.24	11,100	1962	Jun. 2	14.50	9,330
	Jun. 6	23.63	7,990		Jun. 14	15.27	8,410		Jun. 6	12.90	6,550
1944	Jun. 9	21.18	8,010	1952	May 18	18.29	15,100		Jun. 9	16.10	11,700
	Jun. 14	20.26	7,280		May 28	13.41	8,120		Sep. 21	13.82	7,750
1945	Mar. 3	18.53	5,430	1953	Jul. 23	10.14	3,830	1963	Oct. 28	16.50	12,200
	Mar. 15	23.56	8,170						Apr. 27	13.52	7,300
	Mar. 19	19.59	5,990	1954	Oct. 23	19.15	17,400	1964	Apr. 5	12.46	5,700
	Apr. 20	23.20	8,100		Oct. 26	15.39	10,700		May 10	15.37	10,300
	Jun. 8	21.70	7,680		May 2	15.60	11,000	1965	Nov. 17	13.50	5,980
	Jun. 15	26.23	9,770		May 12	14.25	9,200		Nov. 19	13.20	5,850
	Jun. 17	24.21	8,380	1955	May 21	17.65	14,500		Sep. 28	13.25	5,460
	Jun. 22	19.21	5,430		Jun. 16	12.30	5,860	1966	Oct. 24	12.75	4,980
	Jul. 10	23.28	8,600		Jun. 19	12.80	6,530	1967	Apr. 14	14.00	7,300
1946	Oct. 1	29.70	18,600		Sep. 26	12.98	6,950				
	May 23	22.06	7,750	1956	Oct. 5	16.71	13,000	1968	May 14	17.99	13,600
	May 31	26.19	9,860						Jun. 1	19.48	14,500
	Jun. 30	23.1	8,600	1957	Apr. 21	16.90	12,900		Jun. 7	14.10	6,660
1947	Dec. 11	21.92	8,590		Apr. 23	17.00	12,400	1969	May 7	16.21	10,300
	Apr. 15	23.80	10,400		Apr. 26	15.22	9,760		May 17	13.27	5,780
	Apr. 25	20.99	7,870		May 1	12.18	5,260	1970	Sep. 23	18.19	12,200
	May 12	21.02	7,870		May 3	13.59	7,360				
	May 19	28.04	15,200		May 9	14.95	9,760	1971	Oct. 8	14.45	7,430
	May 25	27.52	14,500		May 13	17.16	13,600				
	May 29	17.67	5,220		May 18	27.34	35,800				

RED RIVER BASIN

07329000 RUSH CREEK AT PURDY, OKLA.

LOCATION.--Lat 34°42', long 97°35', in center of NE1/4 sec.26, T.3 N., R.4 W., on right bank 20 ft downstream from low-water bridge on State Highway 76, three-quarters of a mile south of Purdy, 8-1/2 miles south of Lindsay, and at mile 26.1.

GAGE.--Nonrecording prior to Aug. 23, 1943, and May 11, 1950, to Sept. 18, 1952; recording during remainder of record. Prior to Oct. 1, 1942, at datum 5.00 ft higher. Datum of last used gage was 989.7 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--According to local residents, the flood of May 10, 1950, was the highest known since flood in 1908, which exceeded it by 1 or 2 ft.

REMARKS.--Records 1939-50 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 5,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 145
 Noncontributing = 0
 Contributing = 145
 Channel slope (ft/mi) = 10.5
 Annual precip. (in) = 33.5
 Bankful stage (ft) = 23

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 10,100
 Q₅ = 16,100
 Q₁₀ = 20,900
 Q₂₅ = 27,900
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.013
 Standard deviation = 0.235
 Skew = 0.274

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Jul. 3	15.95	10,400	1945	Mar. 11	18.00	8,700	1950	May 26	18.20	14,300
					Jun. 8	19.43	9,820		Aug. 24	16.10	11,400
1941	Apr. 29	12.47	7,200		Jun. 12	15.40	6,750		Sep. 13	19.70	16,400
	Jun. 1	15.60	9,990		Jul. 27	16.20	7,350				
	Jun. 6	21.00	15,200		Sep. 28	17.50	9,750	1951	May 1	19.90	18,400
	Jun. 9	16.80	11,400						May 18	18.89	17,000
	Jun. 15	13.60	8,480	1946	May 23	15.60	6,900		Jun. 9	12.0	7,600
					May 31	14.60	6,150		Jun. 11	10.9	6,160
1942	Oct. 2	13.10	8,440		Jun. 29	14.30	6,500		Jul. 2	11.1	6,020
	Oct. 4	13.80	4,950					1952	May 17	14.1	11,200
	Oct. 30	15.30	10,300	1947	Dec. 11	11.92	6,400		May 28	11.5	7,860
	Apr. 8	-	10,000		Apr. 24	11.85	5,040	1953	Mar. 30	9.54	5,320
	Jun. 22	13.40	8,750	1948	Jun. 24	15.25	6,600		Jul. 20	10.10	6,110
1943	May 10	26.10	15,300	1949	May 1	11.60	3,950	1954	Oct. 22	20.19	a20,000
	May 16	18.50	9,100	1950	May 10	27.00	30,000				
1944	Jun. 9	17.40	8,250								

a Annual peak only.

RED RIVER BASIN

07329500 RUSH CREEK NEAR MAYSVILLE, OKLA.

LOCATION.--Lat 34°44'36", long 97°24'18", in SW 1/4 SW 1/4 sec.10, T.3 N., R.2 W., Garvin County, near right bank on downstream side of pier of bridge on State Highway 74, 2.8 miles downstream from Panther Creek, 5.3 miles south of Maysville, and at mile 14.2.

GAGE.--Water-stage recorder. Datum of gage is 903.04 ft above mean sea level (State Highway Department bench mark).

REMARKS.--Base for partial-duration series, 6,000 cfs. Flow regulated by numerous flood-detention structures.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 206
Noncontributing = 0
Contributing = 206
Channel slope (ft/mi) = 9.01
Annual precip. (in) = 34.0
Bankful stage (ft) = 20

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 1	15.40	12,400	1957	May 30	13.02	9,600	1964	May 10	11.86	7,450
	May 10	14.70	11,200		Jun. 15	17.30	16,800		Nov. 17	11.30	6,620
	May 12	12.65	7,820	1958	May 3	9.75	5,060	1966	Apr. 26	7.03	2,100
1955	Apr. 26	13.45	9,040	1959	Sep. 25	16.40	14,500	1967	May 30	6.61	1,690
	May 19	16.12	13,700	1960	May 20	17.50	16,800	1968	May 13	13.54	9,850
	Jun. 16	12.65	8,420	1961	May 17	8.39	4,090	1968	May 31	13.22	9,370
1956	Oct. 5	7.78	2,790	1962	Jun. 9	14.40	11,200	1969	May 6	9.69	4,670
1957	Apr. 21	14.30	11,000	1963	Oct. 28	13.3	9,490	1970	Sep. 23	15.28	12,600
	Apr. 23	12.90	8,800					1971	Oct. 8	8.31	3,290
	May 13	13.81	10,200								
	May 18	23.62	38,500								
	May 22	10.70	6,620								
	May 25	18.73	18,700								

07329870 HONEY CREEK NEAR DAVIS, OKLA.

LOCATION.--Lat 34°26'50", long 97°07'40", in NW 1/4 NE 1/4 sec.30, T.1 S., R.2 E., Murray County, at bridge on State Highway 77D, 4.0 miles south of Davis.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Oct. 27, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 18.7
Noncontributing = 0
Contributing = 18.7
Channel slope (ft/mi) = 49.8
Annual precip. (in) = 37.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,210 (2,460)
Q₅ = 4,560 (6,080)
Q₁₀ = 6,480 (10,800)
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.321
Standard deviation = 0.395
Skew = -0.337

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	May 9	6.58	580	1967	Apr. 12	8.55	2,500	1969	Apr. 17	12.45	3,500
1965	Nov. 18	6.71	690	1968	May 13	17.76	3,000	1970	Sep. 22	13.20	4,600
1966	Sep. 30	7.29	1,100					1971	Oct. 8	14.8	7,000

RED RIVER BASIN

07329900 ROCK CREEK AT DOUGHERTY, OKLA.

LOCATION.--Lat 34°23'50", long 97°02'10", in NW1/4 SW1/4 sec.7, T.2 S., R.3 E., on downstream side of bridge on State Highway 7-C, 1 mile east of Dougherty and at mile 1.0.

GAGE.--Water-stage recorder. Datum of gage is 743.87 ft above mean sea level, datum of 1929. Prior to May 15, 1956, wire-weight gage at same site and datum.

REMARKS.--Base for partial-duration series, 1,500 cfs. Flow regulated by numerous flood-detention structures, and since 1966 by Lake Arbuckle.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 138
 Noncontributing = 0
 Contributing = 138
 Channel slope (ft/mi) = 20.9
 Annual precip. (in) = 37.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 25	5.60	2,260	1958	Jan. 19	4.93	1,680	1962	Oct. 10	7.25	4,290
1957	Feb. 5	5.43	2,060		Mar. 29	7.75	6,030		Nov. 22	5.00	1,510
	Apr. 1	8.15	6,990		May 3	5.40	2,360		Jun. 1	5.45	2,150
	Apr. 21	8.55	8,010	1959	May 10	4.57	1,350		Jun. 10	8.95	9,100
	Apr. 23	8.95	8,820						Jun. 19	5.05	1,740
	May 1	6.52	3,520	1960	Oct. 4	9.58	7,750	1963	Oct. 28	6.10	2,920
	May 4	5.24	2,130		Nov. 3	4.87	1,600		Nov. 26	5.75	2,480
	May 13	9.78	11,400		Jan. 12	8.79	8,550		Dec. 20	6.36	3,280
	May 17	13.76	25,600		Feb. 4	4.80	1,550		Mar. 31	4.75	1,540
	May 22	8.85	8,550		Mar. 25	5.19	1,910		Apr. 28	7.40	5,160
	May 25	8.38	7,490		Apr. 30	5.34	2,050	1964	May 10	8.09	6,740
	May 30	7.00	4,380		May 6	10.90	15,200				
	Jun. 2	6.28	3,210		May 20	6.28	3,210	1965	Nov. 18	6.58	3,080
	Jun. 4	5.34	2,050	1961	Dec. 7	5.58	2,050				
	Jun. 15	5.77	2,480		Dec. 10	5.55	2,050	1966	Aug. 11	2.41	210
	Sep. 15	6.68	3,850		Mar. 30	6.39	3,140				
	Sep. 21	12.53	20,800		Sep. 28	6.48	3,280	1967	Apr. 12	3.88	810
1958	Nov. 7	5.77	2,480								

RED RIVER BASIN

07330500 CADD0 CREEK NEAR ARDMORE, OKLA.

LOCATION--Lat 34°15', long 97°06', on west line of NW1/4 sec.4, T.4 S., R.2 E., at middle of downstream handrail of county highway bridge, 5 miles north of Ardmore and 10 miles upstream from mouth.

GAGE--Nonrecording. Datum of gage is 709.48 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 2,500 cfs. Log-Pearson calculations based on all annual peaks shown except 1939 which was considered an outlier.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 298
 Noncontributing = 0
 Contributing = 298
 Channel slope (ft/mi) = 8.39
 Annual precip. (in) = 36.2
 Bankful stage (ft) = 19

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 9,140
 Q₅ = 16,700
 Q₁₀ = 20,800
 Q₂₅ = 24,800
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.877
 Standard deviation = 0.411
 Skew = -1.259

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Mar. 12	23.0	4,730	1942	May 18	21.80	3,490	1946	Aug. 19	21.30	3,160
	Apr. 21	23.6	5,850		Jun. 22	20.5	2,730		Aug. 26	23.80	6,440
	Aug. 22	-	7,000		Jun. 30	21.10	2,920		Aug. 29	22.00	3,630
1938	Feb. 16	27.94	18,800	1943	Oct. 30	21.50	3,280	1947	Dec. 11	26.00	11,900
	Mar. 29	24.00	6,880		Nov. 8	24.70	8,460		Apr. 15	23.42	5,620
1939	Jun. 12	11.79	710		Apr. 11	19.95	2,560		May 17	23.60	6,020
1940	May 9	22.10	3,490		Apr. 17	24.50	7,980		May 20	23.50	5,820
	May 18	22.50	3,970		May 10	27.6	17,500		May 25	24.55	8,230
	May 22	25.16	9,700		May 28	23.20	6,240		Jun. 23	21.00	2,980
	May 28	21.50	2,970	1944	Feb. 28	21.50	3,280	1948	May 10	20.03	2,560
	Jun. 10	25.10	9,440						Jul. 12	20.31	2,650
	Aug. 17	22.70	4,250	1945	Feb. 21	19.80	2,510	1949	Mar. 21	21.60	3,350
1941	Nov. 26	22.2	3,930		Apr. 2	20.00	2,560		May 23	20.45	2,680
	Apr. 15	20.2	2,670		Apr. 15	23.80	6,440		May 27	23.90	6,660
	Apr. 30	22.0	3,750		Jun. 12	23.50	5,820		Jun. 13	26.00	11,900
	May 21	20.2	2,620		Jun. 17	22.50	4,130	1950	Oct. 24	21.45	3,220
	Jun. 10	19.9	2,550		Mar. 15	28.60	22,300		Feb. 13	21.28	3,160
	Jun. 15	21.7	3,450		Mar. 19	25.55	10,600		Apr. 29	23.83	6,440
1942	Oct. 5	26.90	14,800		Apr. 24	24.60	8,230		May 2	22.00	3,630
	Oct. 31	25.60	10,800		Jul. 10	25.53	10,600		May 11	20.42	2,630
	Apr. 8	24.90	8,940		Aug. 7	24.20	7,320		Jul. 23	20.00	2,560
	Apr. 20	26.20	12,500		Sep. 27	25.25	9,830		Aug. 2	21.55	3,350
	Apr. 25	24.20	7,320	1946	Oct. 1	25.50	10,500		Aug. 23	23.82	6,440
					Jan. 5	25.90	11,600		Sep. 13	19.83	2,510
					Feb. 18	23.70	6,230				

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DURWOOD, OKLA.

LOCATION.--Lat 34°14'03", long 96°58'32", in NW 1/4 SW 1/4 sec.3, T.4 S., R.3 E., Carter County, near left bank on downstream side of pier of bridge on U.S. Highway 177, 1.3 miles downstream from Caddo Creek, 4 miles north of Durwood, and at mile 63.4.

GAGE.--Water-stage recorder. Datum of gage is 650.57 ft above mean sea level (levels by Corps of Engineers). Prior to Feb. 16, 1939, nonrecording gage at same site and datum. Dec. 15, 1950, to Feb. 19, 1952, nonrecording gage at site 500 ft upstream at same datum.

HISTORICAL DATA.--Data for 1927 obtained from local residents in 1928, and for 1908 in 1938.

REMARKS.--Some regulation since March 1959 by Fort Cobb Reservoir, since February 1961 by Foss Reservoir, and by numerous flood-retarding structures. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 10,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 7,202
Noncontributing = 0
Contributing = 7,202
Channel slope (ft/mi) = 2.52
Annual precip. (in) = 30.1
Bankful stage (ft) = 27

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 24,500
Q₅ = 44,900
Q₁₀ = 61,500
Q₂₅ = 86,200
Q₅₀ = 107,000
Q₁₀₀ = 130,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.389
Standard deviation = 0.312
Skew = -0.042

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May	42	a71,000	1941	Jun. 13	31.56	21,000	1948	Feb. 26	22.99	17,500
					Sep. 10	24.38	13,100		Jun. 25	24.25	19,100
1927	Apr.	38	a43,500						Jun. 28	17.75	11,500
				1942	Oct. 6	38.27	38,800				
1929	May 12	26.24	15,300		Oct. 16	21.58	10,600	1949	Mar. 21	16.14	10,400
	May 16	23.16	12,500		Oct. 31	44.37	85,000		May 2	23.90	20,400
	Jun. 1	26.3	15,400		Apr. 9	38.25	44,900		May 24	24.40	21,100
					Apr. 21	35.41	32,500		May 27	23.01	19,200
1930	May 11	22.90	12,200		Apr. 25	34.68	30,200		Jun. 13	26.18	23,800
	May 16	27.94	16,900		May 4	22.52	11,000				
	May 23	22.06	11,500		Jun. 10	23.30	13,000	1950	May 12	42.57	80,100
					Jun. 23	30.38	18,800		May 27	16.24	10,600
1931	Mar. 20	23.32	11,700						Jul. 23	17.55	12,600
				1943	Oct. 31	23.08	12,200		Jul. 26	18.14	13,200
1932	Oct. 23	21.02	10,600		Nov. 8	26.23	15,200		Aug. 24	17.66	13,900
	Nov. 24	28.20	17,300		Apr. 12	26.18	15,700		Sep. 15	16.26	12,600
	Jan. 6	27.58	16,700		Apr. 17	23.30	12,800				
	Jan. 17	20.4	10,100		May 11	44.35	91,300	1951	May 2	16.40	11,700
	Jan. 23	21.26	10,800		May 19	24.54	13,900		May 21	24.41	25,900
	Jun. 28	21.02	10,600		May 28	25.65	15,100		May 28	16.30	11,600
	Jul. 7	27.05	16,100		Jun. 6	20.33	10,400		Jun. 7	19.00	14,700
									Jun. 12	27.08	28,700
1933	Dec. 24	26.53	15,700	1944	Jun. 15	21.20	11,800				
	Mar. 6	25.68	14,800					1952	May 18	22.16	18,500
	May 16	32.03	23,300	1945	Mar. 3	21.10	11,700		May 29	16.17	11,800
	May 25	33.92	27,600		Mar. 12	23.20	13,400				
	Aug. 3	22.10	11,500		Mar. 16	38.51	50,500	1953	Apr. 24	16.93	11,800
					Mar. 20	34.38	32,500		May 12	20.10	17,800
1934	Mar. 2	17.61	8,020		Apr. 16	25.31	15,400		Jul. 20	21.20	20,000
					Apr. 24	31.63	25,000				
1935	May 6	28.89	19,000		Jun. 10	32.19	25,900	1954	Oct. 24	26.26	30,300
	May 19	37.22	36,400		Jun. 13	33.58	29,300		Oct. 26	23.17	23,800
	Jun. 16	25.40	14,600		Jun. 18	31.37	23,400		May 1	18.57	15,300
					Jul. 11	31.65	25,900		May 3	24.11	26,200
1936	Dec. 7	24.95	14,200		Aug. 8	21.61	11,100		May 13	26.28	31,500
	May 9	31.97	24,500		Sep. 28	31.34	26,100		Jun. 8	16.93	12,500
	Sep. 28	27.02	16,400								
				1946	Oct. 1	41.54	64,800	1955	May 20	23.34	26,200
1937	Apr. 21	20.4	10,200		Jan. 5	33.30	29,800		Jun. 17	15.70	11,200
	Aug. 22	22.5	11,800		Feb. 19	26.54	18,300		Sep. 27	25.39	31,100
					Jun. 1	29.74	22,800				
1938	Feb. 17	41.20	68,000		Jun. 30	19.98	12,500	1956	Oct. 6	17.20	13,500
	Mar. 30	30.95	21,600								
	May 9	25.33	13,700	1947	Dec. 12	34.12	31,800	1957	Apr. 3	21.00	19,100
	May 25	28.21	17,000		Apr. 10	17.60	10,700		Apr. 21	25.37	30,300
					Apr. 16	31.22	27,400		Apr. 24	26.08	32,100
1939	Jul. 1	10.04	3,870		Apr. 25	19.45	12,700		Apr. 26	26.11	29,300
					May 13	23.85	17,500		May 1	19.65	18,600
1940	May 22	22.85	11,700		May 17	26.85	21,000		May 4	19.45	17,400
	May 28	22.08	11,200		May 21	32.23	29,300		May 14	24.54	26,800
	Jul. 3	23.63	12,300		May 25	35.22	35,800		May 19	42.50	98,000
					Jun. 2	19.77	12,700		May 23	23.00	28,500
1941	Apr. 16	21.33	10,900		Jun. 24	29.01	23,400		May 26	27.32	41,000

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DURWOOD, OKLA. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 31	24.30	33,300	1961	Dec. 8	16.38	12,000	1966	Aug. 22	14.42	5,400
	Jun. 15	21.36	22,200		Dec. 11	15.58	10,300				
	Sep. 22	24.10	25,300		Mar. 31	19.34	18,800	1967	Apr. 12	27.28	28,200
1958	May 3	15.88	11,900	1962	Nov. 22	16.48	10,100		May 31	17.17	10,500
	Jun. 22	14.94	10,500		Jun. 2	20.61	18,800	1968	May 14	25.61	24,900
					Jun. 10	21.43	20,000		Jun. 2	28.36	34,100
1959	Sep. 26	19.20	17,700		Jun. 19	18.91	14,400	1969	Apr. 17	23.12	22,700
1960	Oct. 4	25.49	34,000	1963	Oct. 29	20.81	16,100		May 7	24.47	25,700
	Nov. 4	15.77	10,700		Mar. 31	18.65	11,600	1970	May 1	16.47	10,300
	Jan. 12	18.31	16,300	1964	May 11	21.46	17,400		Sep. 24	24.14	23,100
	May 6	21.38	24,000	1965	Nov. 19	23.75	23,000	1971	Oct. 9	33.14	43,600
	May 20	22.85	27,700						Oct. 23	17.86	10,800
1961	Oct. 19	15.78	10,700								

a Annual peak only.

07331410 BUZZARD CREEK NEAR REAGAN, OKLA.
(Previously published as Big Sand Creek)

LOCATION.--Lat 34°19'50", long 96°39'28", in NE 1/4 NE 1/4 sec.3, T.3 S., R.6 E., Johnson County, at bridge on State Highway 99, 4.0 miles southeast of Reagan.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Nov. 11, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 4.30
 Noncontributing = 0
 Contributing = 4.30
 Channel slope (ft/mi) = 44.8
 Annual precip. (in) = 38.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	7.23	330	1967	Apr. 12	8.95	700	1970	Oct. 12	7.52	390
1966	Feb. 9	6.82	260	1968	May 13	10.25	1,040	1971	Oct. 8	9.15	750
				1969	May 7	6.90	270				

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM, NEAR DENISON, TEX.
(Formerly published as "near Denison, Tex.", and "near Colbert, Tex".)

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, on right bank 1,800 ft downstream from Denison Dam powerhouse, 0.4 mile upstream from Shawnee Creek (spillway flow return), 4.5 miles north of Denison, and at mile 725.5.

GAGE.--Water-stage recorder. Datum of gage is 500.00 ft above mean sea level. Non-recording gage prior to Sept. 25, 1934. Prior to July 29, 1942, gage was located at various sites 1.9 to 2.5 miles downstream, and at various datums. July 29, 1942, to Sept. 30, 1961, at site 2.5 miles downstream and at datum 2.64 ft lower. All gage heights prior to July 29, 1942, adjusted to site and datum used 1942-61. Gage heights since Oct. 1, 1961, at present site and datum.

HISTORICAL DATA.--Flood of May 26, 1908, reached a stage of 45.5 ft at site and datum used 1942-61, from records of U.S. Weather Bureau.

REMARKS.--Flow completely regulated since October 1943 by Lake Texoma. Gage-height records prior to 1924 collected by U.S. Weather Bureau. Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 38,000 cfs. Only annual peaks shown prior to 1924 and since 1942. Log-Pearson calculations based on period 1943-71.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 39,720
Noncontributing = 5,936
Contributing = 33,784
Channel slope (ft/mi) = ***
Annual precip. (in) = ***
Bankful stage (ft) = ***

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = 26,600
Q₅ = 49,200
Q₁₀ = 66,400
Q₂₅ = 90,000
Q₅₀ = 109,000
Q₁₀₀ = 128,000

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.407
Standard deviation = 0.334
Skew = -0.316

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Aug. 11	26.4	-	1931	Oct. 16	22.3	66,900	1942	Oct. 5	30.0	162,000
1907	May 27	25.1	-		Dec. 7	20.2	46,500		Oct. 25	21.6	59,000
1908	May 26	45.5	-						Nov. 1	28.3	149,000
1909	Jun. 27	21.1	-	1932	Jan. 7	19.5	38,600		Apr. 9	25.2	106,000
					Feb. 16	23.3	81,500		Apr. 25	32.0	183,000
1912	Jun. 20	21.8	-		Jun. 29	21.0	52,500		May 1	22.0	66,200
1914	Dec. 5	25.4	-		Jul. 9	19.8	40,800		May 6	19.9	44,300
1915	Jun. 9	35.5	-								
				1933	Dec. 26	19.8	38,600	1943	May 15	21.34	60,000
1916	Oct. 19	29.8	-		May 16	20.8	49,500	1944	Jun. 22	12.33	5,640
1918	Apr. 15	23.6	-		May 25	25.2	106,000	1945	May 3	22.12	47,700
1919	Oct. 29	26.1	-								
1920	Oct. 11	25.4	-	1934	Mar. 1	18.6	27,300	1946	Oct. 8	21.44	40,600
	May 18	25.4	-					1947	May 29	24.00	69,200
				1935	May 4	20.5	44,500	1948	Jul. 12	18.57	34,500
1921	Oct. 25	23.8	-		May 12	20.2	39,500	1949	Jun. 14	18.35	32,800
1922	May 11	27.7	-		May 19	28.6	154,000	1950	Aug. 10	20.04	40,100
1923	Jun. 12	21.8	-		May 21	31.8	201,000				
					May 29	22.7	71,500	1951	May 26	21.02	48,300
1924	Oct. 17	29.1	158,000		Jun. 2	21.9	61,600	1952	Apr. 28	11.60	10,400
	Oct. 28	22.0	62,000		Jun. 15	24.6	97,400	1953	Aug. 10	11.33	9,650
	Nov. 15	20.3	42,200		Jun. 18	22.3	67,100	1954	May 16	18.92	37,700
	Apr. 26	20.7	48,800					1955	Jun. 23	19.45	42,300
	Apr. 29	20.3	44,400	1936	Dec. 6	20.7	46,500				
1925	Sep. 16	27.1	133,000		May 9	21.4	61,600	1956	Oct. 8	19.56	41,400
					Sep. 22	20.5	41,500	1957	Jun. 5	26.26	102,000
1926	Aug. 17	19.8	39,700		Sep. 28	23.4	86,600	1958	May 9	18.31	44,100
				1937	Jun. 11	21.6	57,200	1959	Jul. 23	9.84	10,500
1927	Oct. 6	26.2	122,000					1960	Oct. 13	18.68	48,600
	Oct. 12	24.0	91,800	1938	Feb. 18	27.3	138,000				
	Apr. 11	21.3	53,700		Mar. 29	23.8	93,800	1961	Oct. 21	16.20	33,800
	Apr. 14	23.5	80,200		May 25	20.4	60,000	1962	Jun. 12	a17.74	43,200
	Apr. 18	24.7	99,600		Jun. 11	19.4	47,000	1963	Dec. 2	8.98	11,200
	Apr. 21	20.5	47,800					1964	Jul. 8	8.82	10,700
	Jul. 14	24.3	94,400	1939	Jun. 24	19.5	39,100	1965	Sep. 3	b9.35	10,400
1928	May 19	25.3	107,000								
	Jun. 18	20.2	45,400	1940	Jul. 4	20.4	44,400	1966	Jul. 6	c9.51	10,900
	Jun. 21	20.0	42,000	1941	Apr. 18	20.5	45,100	1967	Aug. 24	9.30	11,100
1929	May 14	24.7	99,600		May 3	19.9	40,600	1968	May 25	16.70	38,100
	Sep. 12	21.3	57,300		May 7	26.4	117,000	1969	May 10	15.81	34,100
					May 24	22.3	67,000	1970	Sep. 1	d9.24	11,300
1930	May 9	19.8	45,700		Jun. 4	21.2	59,000				
	May 18	20.0	46,400		Jun. 10	31.8	182,000	1971	Jan. 5	9.50	12,700
	Jun. 18	19.7	39,800		Jun. 17	24.3	94,600				

- a Occurred June 15, 1962.
b Occurred Sept. 16, 1965.
c Occurred June 14, 1966.
d Occurred June 8, 1970.

RED RIVER BASIN

07332070 ROCK CREEK NEAR ACHILLE, OKLA.

LOCATION.--Lat 33°48'35", long 96°22'38", in SW 1/4 SW 1/4 sec.33, T.8 S., R.9 E., Bryan County, at county road culvert, 2.0 miles south of Achille.

GAGE.--Crest-stage gage. Stage-rainfall recorder June 4, 1964, to Aug. 12, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 0.72
Noncontributing = 0
Contributing = 0.72
Channel slope (ft/mi) = 35.6
Annual precip. (in) = 40.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Jun. 17	4.71	322	1967	Apr. 21	10.15	1,090	1970	Apr. 25	4.30	293
1966	Apr. 23	9.32	748	1968	May 12	4.04	275	1971	Feb. 21	2.76	176
				1969	May 6	6.31	445				

07332400 BLUE CREEK AT MILBURN, OKLA.
(Headwater of Blue River)

LOCATION.--Lat 34°15'04", long 96°33'05", in SW 1/4 SW 1/4 sec.35, T.3 S., R.7 E., Johnston County, on downstream side of left bank pier of bridge on State Highway 48A, 0.5 mile north of Milburn, and at mile 84.9.

GAGE.--Water-stage recorder. Altitude of gage is 650 ft (from topographic map).

HISTORICAL DATA.--Flood of Oct. 8, 1971, was highest since flood of 1927 which was about the same, information from local residents.

REMARKS.--Base for partial-duration series, 2,200 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 203
Noncontributing = 0
Contributing = 203
Channel slope (ft/mi) = 12.8
Annual precip. (in) = 38.5
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
Q₅ = ***
Q₁₀ = ***
Q₂₅ = ***
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
Standard deviation = ***
Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Feb. 9	16.34	2,610	1968	May 13	26.24	12,400	1969	May 17	23.47	6,860
					May 17	18.61	3,610				
1967	Apr. 12	25.96	11,500		Jun. 1	16.76	2,840	1970	Oct. 12	24.31	7,960
	Jun. 26	26.47	13,100						Apr. 25	18.18	3,280
1968	Mar. 20	19.44	3,990	1969	Feb. 21	16.63	2,660		Jun. 12	22.91	6,210
	Mar. 31	17.68	3,210		Apr. 27	19.74	4,030				
					May 7	21.80	5,240	1971	Oct. 8	27.87	35,100
									Oct. 26	16.03	2,510

RED RIVER BASIN

07332500 BLUE RIVER NEAR BLUE, OKLA.

LOCATION.--Lat 33°59'49", long 96°14'27", on line between secs. 27 and 34, T.6 S., R.10 E., Bryan County, near left bank on downstream side of pier of bridge on U.S. Highway 70, 1 mile west of Blue, 7 miles east of Durant, 7.7 miles upstream from Caddo Creek, and at mile 38.8.

GAGE.--Water-stage recorder. Datum of gage is 503.36 ft above mean sea level. Prior to Mar. 13, 1945, nonrecording gage and Mar. 13, 1945, to Feb. 2, 1960, water-stage recorder at site 1.2 miles downstream at datum 5.00 ft lower.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 4,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 476
 Noncontributing = 0
 Contributing = 476
 Channel slope (ft/mi) = 5.99
 Annual precip. (in) = 38.8
 Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,730
 Q₅ = 16,300
 Q₁₀ = 22,200
 Q₂₅ = 30,500
 Q₅₀ = 37,200
 Q₁₀₀ = 44,300

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.928
 Standard deviation = 0.533
 Skew = -0.228

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Jan. 15	22.00	3,370	1945	Jul. 8	24.49	5,330	1960	Oct. 14	22.83	4,210
1938	Jan. 24	23.30	4,470	1946	Feb. 14	24.04	4,780	1961	Mar. 31	20.00	4,230
	Feb. 17	31.81	34,400		Feb. 19	27.40	9,530	1962	Nov. 23	22.53	5,540
	Mar. 30	25.60	6,940		Jun. 1	24.28	5,100		Jun. 2	25.75	8,100
1939	Apr. 16	21.50	3,320	1947	Nov. 4	23.42	4,420	1963	Oct. 11	20.76	4,410
1940	Apr. 7	24.82	5,940		Nov. 6	29.32	16,000		Nov. 27	28.47	12,000
	May 23	26.82	9,000		Dec. 12	29.96	19,200	1964	Jun. 17	23.08	5,770
	Jun. 18	25.10	6,290		May 22	23.17	4,480		Sep. 27	20.26	4,180
	Jul. 23	24.30	5,390	1948	May 26	25.74	6,650	1965	Nov. 19	23.26	6,100
1941	Apr. 16	22.87	4,480		Jul. 12	24.40	5,250		Feb. 9	20.72	4,510
	Apr. 23	23.97	5,170	1949	May 18	24.20	5,000	1966	Feb. 10	29.21	13,500
1942	Oct. 4	25.30	6,430	1950	Feb. 13	25.45	5,750		Apr. 24	24.83	7,360
	Oct. 26	24.50	5,570		May 2	27.42	8,770		May 1	22.94	5,600
	Oct. 31	22.33	4,150		May 12	24.30	4,750	1967	Apr. 14	25.7	8,340
	Apr. 9	27.20	10,100		Jul. 28	23.48	4,150		Apr. 22	24.35	6,800
	Apr. 25	31.69	33,600	1951	Jun. 13	24.92	5,270		Jun. 28	25.47	8,100
	Jun. 11	24.40	5,480						Sep. 6	22.17	4,950
1943	Nov. 9	26.00	7,500	1952	Apr. 23	27.33	8,530	1968	Jan. 29	21.09	4,500
	Apr. 18	24.80	5,850	1953	Apr. 24	25.00	5,360		Mar. 12	20.77	4,350
	May 11	28.73	15,300		Jul. 20	27.07	8,090		Mar. 21	25.58	8,120
	May 29	28.00	12,500		Jul. 25	24.06	4,590		Apr. 1	21.70	4,840
	Jun. 6	26.40	8,260	1954	May 2	25.45	6,000		Apr. 20	24.08	6,420
1944	Feb. 25	22.36	4,200		May 12	26.32	7,260		May 15	25.61	8,120
	Feb. 28	27.25	10,100	1955	May 21	23.73	4,350		May 17	32.00	20,400
	Mar. 20	22.52	4,250	1956	Apr. 30	12.19	978	1969	Nov. 27	20.71	4,300
	May 2	22.78	4,420						Jan. 30	23.57	6,030
	May 27	27.20	10,100	1957	Apr. 4	24.25	5,100		Feb. 22	24.48	6,800
1945	Feb. 21	28.70	15,300		Apr. 20	24.25	5,100		Mar. 24	23.79	6,180
	Feb. 28	25.00	6,060		Apr. 24	25.92	6,980		Apr. 28	26.64	9,580
	Mar. 3	23.06	4,600		Apr. 27	29.21	13,700		May 7	27.30	10,700
	Mar. 12	25.40	6,250		May 25	29.43	14,300		May 19	26.84	9,900
	Mar. 16	27.08	9,300		Jun. 2	28.10	11,000	1970	Oct. 14	22.90	5,560
	Mar. 19	29.59	17,300		Sep. 22	31.14	19,900		May 1	21.73	4,900
	Mar. 31	27.94	11,300	1958	Nov. 6	25.08	5,980		Jun. 13	21.07	4,780
	Apr. 3	25.30	6,130		Nov. 8	26.56	8,070	1971	Oct. 10	29.45	14,700
	Apr. 14	27.83	11,000		May 2	31.70	26,000		Oct. 27	23.15	5,880
	Apr. 16	26.73	8,440						Sep. 26	22.02	5,140
	May 16	22.67	4,200	1959	Jul. 27	20.20	3,100				
	Jun. 13	26.30	7,660								
	Jun. 17	31.35	28,900								

RED RIVER BASIN

07333000 NORTH BOGGY CREEK NEAR STRINGTOWN, OKLA.

LOCATION.--Lat 34°31'08", long 96°03'38", in NE1/4 NE1/4 sec.32, T.1 N., R.12 E., near right bank on downstream side of bridge on State Highway 43, 2.2 miles upstream from unnamed tributary, 2.8 miles upstream from Mill Creek, and 3.6 miles north of Stringtown.

GAGE.--Water-stage recorder. Datum of gage is 553.65 ft above mean sea level, datum of 1929.

REMARKS.--Base for partial-duration series, 1,600 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 136
 Noncontributing = 0
 Contributing = 136
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 18	12.29	1,760	1957	May 18	16.48	4,380	1958	Mar. 9	12.66	2,120
	Jun. 1	13.42	2,160		May 25	17.23	6,040		Mar. 23	14.85	2,690
					Jun. 1	15.83	3,200		Apr. 20	13.82	2,400
1957	Feb. 5	15.02	2,610		Jun. 4	14.95	2,750		May 3	15.61	2,900
	Mar. 5	12.19	1,730		Jun. 16	12.86	2,170		Jun. 26	11.32	1,750
	Apr. 3	17.87	7,600		Sep. 15	11.72	1,860		Jul. 5	14.55	2,630
	Apr. 21	14.96	2,750		Sep. 22	17.75	7,360		Sep. 17	10.73	1,600
	Apr. 23	16.07	3,500								
	Apr. 26	17.76	7,360	1958	Nov. 8	16.90	5,040	1959	Mar. 5	15.74	3,280
	May 1	15.50	2,960		Dec. 25	12.66	2,120		Mar. 26	9.95	1,610
	May 14	10.79	1,620						May 11	11.05	1,860

07333330 CHICKASAW CREEK TRIBUTARY NEAR STRINGTOWN, OKLA.

LOCATION.--Lat 34°29'34", long 95°56'39", in SW 1/4 SE 1/4 sec.4, T.1 S., R.13 E., Atoka County, at multi-barrel culvert on State Highway 43, 6.3 miles northeast of Stringtown.

GAGE.--Crest-stage gage. Stage-rainfall recorder Aug. 13, 1969, to Aug. 11, 1971.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 3.19
 Noncontributing = 0
 Contributing = 3.19
 Channel slope (ft/mi) = 108
 Annual precip. (in) = 42.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	9.88	620	1967	Apr. 12	11.24	1,640	1970	Jun. 11	11.34	1,740
1966	Apr. 23	14.43	3,540	1968	May 13	12.52	2,510	1971	Apr. 20	16.80	4,930
				1969	May 7	10.25	830				

RED RIVER BASIN

07333500 CHICKASAW CREEK NEAR STRINGTOWN, OKLA.

LOCATION.--Lat 34°27'41", long 96°01'36", in NE 1/4 NE 1/4 sec.22, T.1 S., R.12 E., on upstream side of right abutment of country road bridge, 1.5 miles east of Stringtown, 2.2 miles upstream from Little Chickasaw Creek, 3.6 miles downstream from Breadtown Creek and at mile 5.0.

GAGE.--Crest-stage gage. Datum of gage is 540.26 ft above mean sea level, datum of 1929. Oct. 1, 1955, to Sept. 10, 1958, wire-weight gage and crest-stage gage, and Sept. 10, 1958, to Sept. 30, 1968, water-stage recorder at same site and datum.

REMARKS.--Base for partial-duration series, 2,000 cfs. Only annual peaks are shown since 1969. Log-Pearson calculations based on all annual peaks shown except 1956 and 1961 which were considered outliers.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 32.7
Noncontributing = 0
Contributing = 32.7
Channel slope (ft/mi) = 10.8
Annual precip. (in) = 42.0
Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 8,740
Q₅ = 11,800
Q₁₀ = 13,800
Q₂₅ = 16,500
Q₅₀ = ***
Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.946
Standard deviation = 0.150
Skew = 0.168

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 24	10.12	1,620	1960	Oct. 13	13.38	3,360	1966	Apr. 23	18.97	9,450
1957	Feb. 5	12.98	3,120		May 6	16.14	5,610		Apr. 30	15.14	4,620
	Apr. 3	13.77	3,570		May 20	16.53	6,060	1967	Apr. 10	16.49	6,040
	Apr. 23	13.76	3,640		Jul. 23	11.50	2,270		Apr. 12	19.32	10,100
	Apr. 26	20.18	12,300	1961	Dec. 10	10.47	1,770		May 6	18.86	9,260
	Apr. 30	14.27	3,990						Sep. 6	17.33	7,030
	May 24	15.9	5,400	1962	Nov. 22	18.78	9,160	1968	Jan. 27	11.40	2,220
	Jun. 2	15.88	5,400		Jun. 19	12.19	2,640		Mar. 11	12.01	2,530
	Sep. 21	16.01	5,300						Mar. 20	16.79	6,380
1958	Nov. 7	12.81	3,000	1963	Oct. 14	21.54	18,800		Mar. 31	14.48	4,120
	Mar. 23	11.80	2,420		Oct. 28	11.27	2,170		Apr. 19	15.72	5,220
	May 2	12.58	2,880		Nov. 26	16.34	5,830		May 14	18.00	7,900
	May 9	15.20	4,720		Mar. 18	11.10	2,070		May 17	14.10	3,850
									Jun. 1	15.24	4,760
1959	Mar. 5	16.07	5,100	1964	Apr. 3	18.93	9,330	1969	Apr. 27	17.60	7,380
	Jul. 16	14.88	4,460		May 10	12.72	2,940		Jun. 12	19.18	9,860
	Jul. 22	11.38	2,220		Sep. 21	11.56	2,320	1970			
	Jul. 23	13.07	3,180		Sep. 27	15.55	5,100				
	Jul. 25	18.80	9,530	1965	Nov. 19	16.11	5,610	1971	Apr. 20	19.50	10,500
1960					Feb. 9	13.42	3,360				
	Oct. 4	15.08	4,630		May 26	14.50	4,140				
				1966	Feb. 9	16.18	5,720				

RED RIVER BASIN

07333800 MCGEE CREEK NEAR STRINGTOWN, OKLA.

LOCATION.--Lat 34°26'33", long 95°52'10", in NE1/4 sec.30, T.1 S., R.14 E., on right bank 10.6 miles east of Stringtown, 17.5 miles upstream from Potapo Creek, and at mile 22.7.

GAGE.--Crest-stage gage. Datum of gage is 623.18 ft above mean sea level, datum of 1929. Water-stage recorder Apr. 1, 1956, to Sept. 30, 1968.

REMARKS.--Base for partial-duration series, 3,000 cfs. Only annual peaks shown since 1969.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 86.6
 Noncontributing = 0
 Contributing = 6.6
 Channel slope (ft/mi) = 8.33
 Annual precip. (in) = 43.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q_2 = 7,070
 Q_5 = 9,080
 Q_{10} = 9,750
 Q_{25} = 10,200
 Q_{50} = ***
 Q_{100} = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.791
 Standard deviation = 0.209
 Skew = -1.786

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	May 25	6.18	1,620	1959	Jul. 27	13.28	6,770	1966	Feb. 9	15.60	8,800
1957	Feb. 5	8.97	3,220	1960	Oct. 4	10.59	4,620	1967	Apr. 24	15.27	8,600
	Apr. 3	12.38	6,020		Oct. 13	8.97	3,500		Apr. 10	10.92	4,840
	Apr. 21	8.99	3,500		May 6	9.71	3,990		Apr. 12	15.85	9,250
	Apr. 26	16.79	10,200		May 19	14.99	8,400		May 6	14.24	7,640
	Apr. 28	11.00	4,900						Sep. 6	12.04	5,810
	May 17	10.45	4,480	1961	Mar. 31	8.09	2,870	1968	Jan. 28	9.08	3,560
	May 25	11.93	5,620	1962	Nov. 22	14.33	7,700		Mar. 11	9.03	3,520
	Jun. 4	9.58	3,920						Mar. 21	13.38	6,840
	Sep. 22	12.44	6,020	1963	Oct. 14	13.65	7,040		Mar. 31	11.15	5,020
1958	Nov. 7	12.38	6,020		Nov. 27	9.00	3,500		May 14	12.50	6,100
	Mar. 23	8.63	3,200	1964	Apr. 4	10.45	4,480	1969	May 17	10.73	4,710
	May 2	11.61	5,380		May 10	8.80	3,360		Jun. 1	8.63	3,240
1959					Sep. 27	8.90	3,430	1970			
	Mar. 5	11.98	5,700	1965	Nov. 19	10.05	4,200		Jun. 12	13.50	6,950
	May 11	9.49	3,850		Feb. 9	8.80	3,360	1971			
	Jul. 16	14.89	8,300		May 27	10.38	4,480		Apr. 20	14.30	7,700
	Jul. 22	11.58	5,380								

RED RIVER BASIN

07334000 MUDDY BOGGY CREEK NEAR FARRIS, OKLA.

LOCATION.--Lat 34°16'17", long 95°54'43", in NE 1/4 NW 1/4 sec.26, T.3 S., R.13 E., Atoka County, on downstream side of left bank pier of main span of bridge on State Highway 3, 1.3 miles downstream from McGee Creek, 2.8 miles northwest of Farris, and at mile 57.7.

GAGE.--Water-stage recorder. Datum of gage is 444.58 ft above mean sea level. Prior to Mar. 13, 1945, nonrecording gage, and Mar. 13, 1945, to Sept. 30, 1961, water-stage recorder at same site at datum 2.00 ft higher.

REMARKS.--Slight regulation since June 1959 by Atoka Reservoir (capacity, 125,000 acre-ft) on North Boggy Creek. Pipeline diversions to Oklahoma City since November 1963 (normal capacity, 60 mgd). Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 10,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,087
Noncontributing = 0
Contributing = 1,087
Channel slope (ft/mi) = 3.73
Annual precip. (in) = 41.0
Bankful stage (ft) = 38

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 19,800
Q₅ = 30,100
Q₁₀ = 37,400
Q₂₅ = 46,900
Q₅₀ = 54,200
Q₁₀₀ = 61,700

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.294
Standard deviation = 0.219
Skew = -0.078

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Jan. 24	30.60	12,300	1948	Jul. 12	27.90	9,710	1960	May 20	38.43	21,900
	Feb. 17	43.10	52,500								
	Mar. 29	35.70	17,800	1949	May 1	35.91	19,200	1961	Dec. 11	27.32	9,250
	May 23	28.00	10,000								
1939	Apr. 16	32.64	14,200	1950	Jan. 14	30.34	11,000	1962	Nov. 23	38.68	18,500
					Feb. 13	31.63	12,300				
1940	Apr. 7	36.6	19,600		May 1	30.17	10,900	1963	Oct. 14	30.15	12,800
	May 22	32.6	14,200		May 15	35.04	17,400		Nov. 27	33.30	12,300
	May 28	29.37	11,200		Jul. 30	31.35	12,100		Apr. 27	30.60	10,700
1941	Apr. 16	36.3	18,400		Aug. 2	31.20	11,900				
					Sep. 16	37.81	23,400	1964	Apr. 3	30.52	12,000
1942	Oct. 31	34.40	15,700	1951	Jun. 7	31.22	12,600	1965	Nov. 19	29.45	10,800
	Apr. 9	37.60	21,000		Jun. 12	41.78	38,800				
	Apr. 25	42.19	41,200	1952	Apr. 13	32.17	13,000	1966	Feb. 9	42.35	25,100
	Jun. 10	38.19	22,300		Apr. 23	29.80	11,400		Apr. 24	40.73	22,100
	Jul. 12	31.00	11,400						May 1	32.62	12,600
1943	Dec. 27	33.15	14,900	1953	Mar. 18	29.74	11,300	1967	Apr. 13	39.67	21,400
	May 13	40.00	28,800		Apr. 24	36.30	18,500		Apr. 21	27.55	10,700
1944	Feb. 28	33.40	15,100		Apr. 29	35.08	16,400		May 6	33.35	14,500
	Mar. 20	31.50	13,200		May 13	34.39	15,500		Sep. 6	36.20	17,200
	May 2	34.50	16,200		Jul. 21	40.37	27,000	1968	Jan. 30	32.60	12,600
1945	Feb. 21	39.20	26,200	1954	May 10	36.86	19,600		Mar. 12	31.06	11,500
	Feb. 27	31.25	12,000						Mar. 20	39.58	19,700
	Mar. 3	31.40	12,200	1955	Mar. 22	30.88	12,200		Mar. 31	38.45	18,700
	Mar. 19	38.48	24,100		Sep. 23	29.45	10,300		Apr. 20	28.74	10,200
	Mar. 30	34.41	16,200		Sep. 26	31.67	11,800		May 14	34.00	13,800
	Apr. 18	36.33	19,400	1956	May 25	19.26	5,240		May 17	37.96	17,500
	May 15	33.99	15,600					1969	Nov. 27	30.02	10,600
	Jun. 12	35.50	18,000	1957	Apr. 3	37.06	19,200		Dec. 28	30.33	10,800
	Jun. 17	44.94	61,900		Apr. 26	40.40	26,600		Jan. 30	32.20	12,000
	Aug. 17	34.56	16,500		May 25	40.09	25,900		Feb. 22	35.04	14,100
	Sep. 27	34.07	15,700		Jun. 4	36.88	18,800		Mar. 23	32.12	12,000
1946	Feb. 13	33.56	14,500		Sep. 22	41.00	28,200		Apr. 28	38.74	17,700
	Feb. 19	34.92	16,600	1958	Nov. 8	36.60	18,300		May 7	36.64	16,100
	Jun. 1	29.21	10,200		May 2	39.79	25,100		May 18	38.92	18,900
1947	Nov. 6	38.35	23,900	1959	Mar. 5	29.46	10,800	1970	Oct. 14	35.43	14,300
	Dec. 12	39.57	29,500		Jul. 27	35.10	16,000		Apr. 26	33.10	12,600
	Apr. 11	30.25	11,600	1960	Oct. 4	36.26	17,800		Jun. 12	40.77	22,900
	May 20	33.39	15,800		May 6	29.62	10,900	1971	Oct. 11	41.77	22,800
									Oct. 26	32.15	12,500
									Apr. 20	42.50	27,600

a Occurred on following day.

RED RIVER BASIN

07335000 CLEAR BOGGY CREEK NEAR CANEY, OKLA.

LOCATION.--Lat 34°15'09", long 96°12'19", in NW 1/4 SE 1/4 sec.36, T.3 S., R.10 E., Atoka County, on downstream side of left pier of bridge on old U.S. Highways 69 and 75, 0.5 mile downstream from Caney Creek, 1.5 miles north of Caney, and at mile 24.1.

GAGE.--Water-stage recorder. Datum of gage is 485.05 ft above mean sea level. Prior to Mar. 13, 1945, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in February 1938 reached a stage of 26.9 ft, from information by local resident.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 7,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 720
 Noncontributing = 0
 Contributing = 720
 Channel slope (ft/mi) = 6.26
 Annual precip. (in) = 39.2
 Bankful stage (ft) = 19

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 12,700
 Q₅ = 24,100
 Q₁₀ = 34,300
 Q₂₅ = 50,800
 Q₅₀ = 65,900
 Q₁₀₀ = 83,800

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.118
 Standard deviation = 0.320
 Skew = 0.265

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb.	26.9	54,600	1949	May 3	24.00	16,600	1960	May 22	23.43	14,000
1942	Apr. 2	26.8	52,800	1950	May 2	23.29	10,600	1961	Mar. 31	21.34	5,440
1943	May 11	26.30	46,000		May 13	23.75	14,600	1962	Nov. 24	22.30	7,830
1944	Feb. 28	23.10	7,370		Jul. 13	22.92	8,600	1963	Nov. 26	22.90	10,600
	Mar. 19	23.60	9,870	1951	Jun. 12	23.63	12,800	1964	Sep. 27	20.54	4,490
	May 2	23.50	9,170	1952	Apr. 22	23.21	10,000	1965	Nov. 19	22.21	7,480
	May 29	23.36	8,570					1966	Feb. 9	22.98	11,200
1945	Feb. 21	25.00	28,600	1953	Apr. 24	22.62	7,700		May 1	22.64	9,280
	Mar. 4	23.00	9,000		Jul. 21	22.68	8,050	1967	Apr. 13	23.35	13,300
	Mar. 12	22.70	7,620	1954	May 3	23.30	11,000		Jun. 27	22.90	10,600
	Mar. 16	24.87	27,300		May 13	23.05	9,570		Sep. 6	22.20	7,480
	Mar. 20	24.52	22,500	1955	Mar. 22	21.93	6,220	1968	Mar. 20	22.94	9,880
	Mar. 30	23.61	12,800						Mar. 31	22.43	7,780
	Apr. 16	25.12	29,800	1956	Feb. 18	15.86	2,540		May 17	23.82	15,300
	May 15	23.04	9,000					1969	Apr. 27	23.31	12,000
	Jun. 12	23.39	11,300	1957	Apr. 4	22.50	8,580		May 7	23.07	10,600
	Jun. 18	25.20	31,100		Apr. 23	23.40	15,700		May 18	23.17	11,100
	Sep. 28	23.63	12,800		Apr. 26	23.78	18,600	1970	Oct. 14	23.50	13,200
1946	Feb. 20	23.76	14,700		May 2	22.13	7,330		Jun. 13	23.28	11,900
1947	Nov. 6	24.14	18,000		May 20	22.35	8,000	1971	Oct. 9	24.25	19,500
	Dec. 11	26.77	52,800		May 25	24.02	19,000				
	Apr. 5	22.52	7,300		Jun. 4	23.25	12,700				
					Sep. 23	24.54	21,700				
1948	Feb. 29	23.00	9,000	1958	Nov. 7	22.69	8,420				
	May 25	24.28	20,200		May 2	23.14	10,200				
	Jun. 26	23.60	12,800	1959	Jun. 30	21.02	4,800				

RED RIVER BASIN

07335310 ROCK CREEK NEAR BOSWELL, OKLA.

LOCATION.--Lat 33°57'57", long 95°52'02", in NE 1/4 NE 1/4 sec.7, T.7 S., R.14 E., Choctaw County, at culvert on State Highway 109, 4.2 miles south of Boswell.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Aug. 12, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 0.94
 Noncontributing = 0
 Contributing = 0.94
 Channel slope (ft/mi) = 22.6
 Annual precip. (in) = 42.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sep. 21	3.72	135	1967	Apr. 20	5.12	305	1970	Apr. 18	4.05	115
1966	Apr. 23	5.60	340	1968	May 13	7.56	550	1971	Jul. 23	2.35	65
				1969	May 5	5.02	250				

07335320 BOKCHITO CREEK NEAR SOPER, OKLA.

LOCATION.--Lat 34°02'20", long 95°40'10", in NE 1/4 NW 1/4 sec.18, T.6 S., R.16 E., Choctaw County, at bridge on U.S. Highway 70, 1.9 miles east of Soper.

GAGE.--Crest-stage gage. Stage-rainfall recorder June 6, 1964, to Sept. 16, 1964, and since May 4, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 16.6
 Noncontributing = 0
 Contributing = 16.6
 Channel slope (ft/mi) = 18.6
 Annual precip. (in) = 44.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Nov. 18	5.16	1,590	1967	May 31	5.66	1,990	1970	Apr. 25	5.30	1,700
1966	Apr. 23	7.7	3,900	1968	May 13	8.10	4,300	1971	Feb. 21	3.46	590
				1969	Mar. 23	7.8	4,000				

RED RIVER BASIN

07335500 RED RIVER AT ARTHUR CITY, TEX.

LOCATION.--Lat 33°52'32", long 95°30'08", in NW 1/4 sec.11, T.8 S., R.17 E., Choctaw County, Okla., near right bank on downstream side of pier of bridge on U.S. Highway 271 at Arthur City, 10.6 miles downstream from Muddy Boggy River, 26.0 miles upstream from Kiamichi River, and at mile 633.1.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft above mean sea level. Prior to 1935, nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records since 1936 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 50,000 cfs. Only annual peaks are shown 1891-1905, 1912-35, and since 1960. Flow regulated since October 1943 by Lake Texoma, 92.8 miles upstream. Log-Pearson calculations based on all annual peaks shown since 1943, and represent regulated flow conditions.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 44,531

Noncontributing = 5,936

Contributing = 38,595

Channel slope (ft/mi) = ***

Annual precip. (in) = ***

Bankful stage (ft) = 26

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 59,400Q₅ = 85,300Q₁₀ = 103,000Q₂₅ = 126,000Q₅₀ = 144,000Q₁₀₀ = 163,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.775

Standard deviation = 0.186

Skew = 0.032

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1891	Jun. 10	30.0	-	1917	Jun. 2	16.0	-	1941	May 4	18.16	57,000
1892	May 19	34.8	-	1918	Apr. 16	22.0	-		May 8	24.27	108,000
1893	Mar. 9	15.5	-	1919	Oct. 30	22.0	-		May 15	17.26	50,200
1894	Mar. 21	22.2	-	1920	May 19	24.2	-		May 25	19.56	67,800
1895	Jul. 13	25.0	-	1912	Oct. 27	21.7	-	1942	Jun. 5	18.56	64,600
1897	May 14	21.9	-	1922	May 12	26.2	-		Jun. 12	31.27	183,000
1893	May 8	21.1	-	1923	Sep. 23	20.0	-		Oct. 7	28.00	148,000
1900	Nov. 25	28.6	-	1924	Oct. 18	28.2	-		Oct. 27	19.13	61,000
1901	Apr. 20	25.6	-	1925	Sep. 18	25.0	-		Nov. 3	27.65	141,000
1902	Jun. 1	27.3	-	1926	Aug. 18	25.0	-		Apr. 10	27.85	142,000
1903	Jul. 5	28.8	-	1927	Apr. 16	27.0	-	1943	Apr. 21	24.12	115,000
1904	Jun. 13	24.0	-	1928	May 21	24.7	-		Apr. 26	31.55	199,000
1905	May 31	25.1	-	1929	May 15	26.7	-		May 7	19.57	53,900
1906	May 4	26.1	93,800	1930	May 19	21.7	-		Jun. 11	18.90	58,000
	Aug. 13	23.0	67,200	1931	Oct. 17	18.8	-	1943	May 15	22.40	94,400
1907	May 29	23.2	68,800	1932	Feb. 18	25.0	-		May 18	21.20	81,200
	Jun. 2	21.0	53,300	1933	May 27	25.0	-		May 31	19.56	63,000
	Jul. 12	20.8	52,000	1934	Mar. 3	18.5	-	1944	May 3	15.93	34,700
1908	Apr. 12	22.0	60,000	1935	Jun. 17	31.7	-	1945	Feb. 22	21.25	80,000
	May 14	21.0	53,300	1936	Sep. 29	22.8	95,200		Feb. 28	19.68	66,000
	May 28	43.2	400,000	1937	Jun. 12	20.6	71,800		Mar. 18	20.00	65,500
	Jun. 7	32.1	170,000	1938	Jan. 24	19.2	58,100		Mar. 31	19.17	62,800
	Jun. 20	28.6	121,000		Feb. 19	34.3	222,000		Apr. 21	19.60	61,700
1909	Dec. 2	20.0	47,000		Mar. 30	25.9	148,000	1946	Jun. 13	21.92	91,000
1910	Dec. 3	18.0	35,600		May 26	18.8	54,500		Jun. 18	21.60	88,000
1911	Jul. 24	16.5	28,200	1939	Apr. 17	19.6	58,100		Jul. 11	18.60	51,100
1912	Apr. 2	21.0	-	1940	Apr. 7	17.82	51,000	1947	Oct. 6	18.86	59,800
1913	Jul. 5	16.7	-		May 24	18.35	55,200		Oct. 9	19.70	68,000
1914	Dec. 7	26.7	-	1941	Apr. 19	19.13	63,800		Feb. 19	17.89	57,500
1915	Jun. 10	33.7	-		Apr. 24	22.92	95,200		Feb. 23	17.82	56,500
1916	Oct. 20	29.8	-					1948	Nov. 7	23.60	104,000
									Dec. 12	21.67	86,700
									Jun. 4	20.16	68,500
								1949	Feb. 26	18.02	57,700
									May 12	20.46	75,000
									Jul. 13	19.42	64,500
								1950	Jan. 25	17.34	55,900
									Jan. 14	17.55	50,000
									Feb. 13	20.02	69,400
									May 3	18.26	55,200
									Jul. 27	18.40	52,800
								1951	Jun. 8	19.70	60,600
									Jun. 12	19.50	58,500
									Jun. 17	21.01	74,500

RED RIVER BASIN
07335500 RED RIVER AT ARTHUR CITY, TEX. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 23	21.74	93,400	1957	Jun. 6	28.35	136,000	1964	Sep. 29	16.15	28,200
1953	Apr. 30	18.54	53,800		Sep. 23	18.73	52,800	1965	Feb. 10	17.65	46,600
1954	May 17	18.80	57,000	1958	Nov. 6	19.45	55,200	1966	May 1	24.90	95,300
1955	Jun. 24	17.30	42,200		May 3	26.35	120,000	1967	Apr. 22	19.00	49,800
1956	Oct. 9	17.12	40,400	1959	Jul. 27	16.46	34,700	1968	May 18	21.93	80,400
1957	Apr. 28	23.70	99,200	1960	Oct. 14	19.20	56,800	1969	May 8	22.30	77,000
	May 5	22.62	76,400	1961	Mar. 31	16.10	35,700	1970	Apr. 27	18.38	45,700
	May 14	22.30	79,200	1962	Jun. 12	18.68	52,000	1971	Oct. 15	16.08	28,100
	May 23	23.30	88,700	1963	Nov. 27	17.50	45,200				
	May 27	25.00	105,000								

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OKLA.

LOCATION.--Lat 34°38'18", long 94°36'45", in SW 1/4 SE 1/4 sec.18, T.2 N., R.26 E., LeFlore County, in Ouachita National Forest, on downstream side of right bank pier of bridge on State Highway 63, 0.2 mile upstream from Rattlesnake Creek, 1.1 miles upstream from Big Branch, 2.1 miles east of Big Cedar, and at mile 157.6.

GAGE.--Water-stage recorder. Datum of gage is 886.97 ft above mean sea level (State Highway Department bench mark).

REMARKS.--Base for partial-duration series, 2,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 40.1

Noncontributing = 0

Contributing = 40.1

Channel slope (ft/mi) = 56.9

Annual precip. (in) = 52.0

Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***

Q₅ = ***

Q₁₀ = ***

Q₂₅ = ***

Q₅₀ = ***

Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***

Standard deviation = ***

Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1966	Feb. 9	14.10	9,210	1968	Dec. 14	11.84	4,870	1969	Jun. 1	10.37	3,020
	Apr. 23	10.73	3,410		Mar. 20	12.50	5,950		Jun. 24	13.08	6,990
1967	Apr. 13	9.23	2,030		Apr. 3	15.10	11,900		Jul. 27	10.09	2,740
	Apr. 23	9.25	2,040		May 13	12.84	6,560				
	May 6	9.19	2,000	1969	Nov. 27	12.50	5,950	1970	Nov. 18	11.34	4,150
	Jul. 5	11.81	4,830		Dec. 27	12.07	5,240		Dec. 29	9.83	2,480
1968	Oct. 30	16.16	16,300		Jan. 29	12.98	6,810	1971	Oct. 27	15.56	13,700
									Apr. 23	13.15	7,120

RED RIVER BASIN

07335760 KIAMICHI RIVER TRIBUTARY NEAR ALBION, OKLA.

LOCATION.--Lat 34°37'26", long 95°02'26", in NW 1/4 SE 1/4 sec.24, T.2 N., R.21 E., Pushmataha County, at county road multi-barrel culvert, 3.8 miles southeast of Albion.

GAGE.--Crest-stage gage. Stage-rainfall recorder June 9, 1964, to Dec. 3, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 1.50
 Noncontributing = 0
 Contributing = 1.50
 Channel slope (ft/mi) = 378
 Annual precip. (in) = 50.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III**FLOOD-FREQUENCY DATA (CFS)**

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III**STATISTICS (LOG UNITS)**

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Mar. 29	5.2	900	1967	May 5	2.45	83	1970	Feb. 23	3.48	271
1966	Apr. 23	2.35	73	1968	May 13	3.19	202	1971	Apr. 22	2.48	86
				1969	Feb. 21	3.35	240				

07336000 TENMILE CREEK NEAR MILLER, OKLA.

LOCATION.--Lat 34°17'55", long 95°44'40", in NW 1/4 sec.16, T.3 S., R.15 E., Pushmataha County, near center of span on downstream side of pier on county road bridge, 1.2 miles south of Miller, 4.7 miles upstream from Rock Creek, and at mile 11.6.

GAGE.--Crest-stage gage. Datum of gage is 475.89 ft above mean sea level. Oct. 1, 1955, to Sept. 30, 1970, water-stage recorder at same site and datum.

REMARKS.--Base for partial-duration series, 1,800 cfs. Only annual peaks are shown since 1971.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 68
 Noncontributing = 0
 Contributing = 68
 Channel slope (ft/mi) = 15.4
 Annual precip. (in) = 44.1
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III**FLOOD-FREQUENCY DATA (CFS)**

Q₂ = 3,540
 Q₅ = 4,620
 Q₁₀ = 5,260
 Q₂₅ = 6,010
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III**STATISTICS (LOG UNITS)**

Mean = 3.542
 Standard deviation = 0.144
 Skew = -0.294

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Apr. 29	12.79	1,620	1961	Oct. 5	13.87	2,040	1967	Apr. 21	15.31	2,440
					Dec. 11	13.87	2,040		May 6	16.97	3,020
1957	Apr. 3	16.93	2,990		Feb. 18	13.37	1,900		Jun. 26	13.56	1,950
	Apr. 26	17.76	3,400		May 6	14.42	2,180				
	May 13	16.40	2,790		Jul. 15	13.16	1,850	1968	Jan. 28	15.96	2,640
	May 17	15.33	2,440		Jul. 23	15.62	2,530		Mar. 11	13.70	1,970
	May 25	19.03	4,150						Mar. 20	17.63	3,320
	Jun. 2	17.09	3,070	1962	Nov. 22	17.78	3,400		Mar. 31	17.49	3,240
	Jun. 4	17.40	3,070		Mar. 31	13.52	1,930		Apr. 19	14.44	2,190
	Sep. 22	19.90	4,950		Jun. 2	13.07	1,830		May 13	17.63	3,320
1958	Nov. 7	15.71	2,560						May 17	15.42	2,490
	Nov. 18	16.16	2,720	1963	Oct. 14	19.84	4,850	1969	Nov. 27	15.23	2,430
	Dec. 25	13.65	1,960		Nov. 26	16.32	2,760		Dec. 22	14.25	2,140
	May 2	20.60	5,930		Apr. 26	15.35	2,460		Jan. 30	14.51	2,210
					Apr. 28	15.08	2,380		Feb. 21	16.80	2,940
1959	Jul. 16	14.12	1,880	1964	Apr. 4	18.21	3,350		Mar. 23	15.75	2,580
	Jul. 26	16.88	2,660						Apr. 27	16.82	2,950
1960	Oct. 4	14.98	2,440	1965	Nov. 19	16.44	2,790		May 7	16.75	2,920
	Oct. 14	14.10	2,090		Feb. 9	13.54	1,930		May 18	18.42	3,740
	Dec. 16	14.98	2,340	1966	Feb. 9	20.68	5,900	1970	Apr. 30	13.39	1,890
	May 20	17.85	3,400		Apr. 24	20.24	5,340		Jun. 12	18.55	3,830
	Jul. 24	15.02	2,340	1967	Apr. 11	13.51	1,930	1971	Oct. 23	17.52	3,260
					Apr. 13	17.15	3,100				

RED RIVER BASIN

07336500 KIAMICHI RIVER NEAR BELZONI, OKLA.

LOCATION.--Lat 34°12'02", long 95°29'03", in SE 1/4 sec.14, T.4 S., R.17 E., Pushmataha County, near left bank on downstream side of pier of bridge on State Highway 7, 1.8 miles north-west of Belzoni, 6.5 miles downstream from Cedar Creek, 10 miles upstream from Possum Creek, and at mile 47.7.

GAGE.--Water-stage recorder. Datum of gage is 389.91 ft above mean sea level. Prior to Aug. 14, 1940, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in October 1915 reached a stage of 44.2 ft, from information by local residents.

REMARKS.--Records 1932-35, and since 1937, furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 18,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,423
Noncontributing = 0
Contributing = 1,423
Channel slope (ft/mi) = 3.08
Annual precip. (in) = 46.5
Bankful stage (ft) = 28

LOG-PEARSON TYPE IIIFLOOD-FREQUENCY DATA (CFS)

Q₂ = 34,100
Q₅ = 48,900
Q₁₀ = 58,700
Q₂₅ = 71,200
Q₅₀ = 80,500
Q₁₀₀ = 80,800

LOG-PEARSON TYPE IIISTATISTICS (LOG UNITS)

Mean = 4.529
Standard deviation = 0.189
Skew = -0.105

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1916	Oct.	44.2	72,000	1939	Apr. 18	36.53	35,500	1950	Sep. 17	40.02	47,000
1926	Jan. 17	26.7	18,000	1940	Apr. 7	24.10	14,700	1951	Feb. 20	36.52	35,400
	May 7	29.9	22,200						Jun. 12	40.05	49,400
1927	Jan. 25	32.60	25,900	1941	Apr. 16	32.55	26,000		Jul. 3	28.05	20,600
	Apr. 15	39.60	43,800		Apr. 18	32.31	25,400	1952	Apr. 12	31.80	25,600
	Apr. 20	35.76	31,500		Apr. 23	29.32	21,400		Apr. 23	33.20	27,800
	Apr. 23	32.70	26,000	1942	Apr. 8	37.13	35,800	1953	Mar. 19	27.12	20,000
1928	Dec. 14	41.24	51,600		Apr. 25	39.75	45,200		Apr. 6	26.08	18,700
	Apr. 6	40.3	46,900	1943	Dec. 27	37.02	35,500		Apr. 24	36.52	37,200
	Apr. 23	36.7	33,600		May 11	41.60	55,300		Apr. 29	35.08	33,600
	Jun. 15	35.31	30,500						May 13	30.58	24,800
1929	Dec. 17	27.16	18,700	1944	Feb. 28	33.40	27,300		Jul. 21	35.92	35,600
	Jan. 25	32.30	25,400		May 2	36.40	31,000	1954	May 10	26.06	18,700
	May 14	36.65	32,700		May 29	29.20	21,300	1955	Feb. 20	28.68	22,100
	May 18	29.40	21,500		Jun. 6	32.45	25,700		Mar. 22	30.70	25,000
	May 27	33.04	26,500	1945	Feb. 21	40.40	47,900		Sep. 23	27.48	20,500
1930	May 4	33.16	25,800		Feb. 27	36.70	32,600		Sep. 26	32.22	27,600
	May 23	29.40	21,500		Mar. 21	34.55	29,200	1956	Feb. 18	20.00	12,000
1931	Feb. 9	25.6	16,700		Mar. 30	33.48	27,300	1957	Feb. 7	26.10	18,700
1932	Jan.	-	(b)		May 18	37.65	36,200		Apr. 4	31.41	26,200
	Feb. 17	41.0	50,400		Jun. 12	41.72	54,600		Apr. 26	36.86	38,400
	Jul. 2	36.	34,500		Jun. 17	43.90	70,600		May 1	30.33	24,400
1953	Dec. 24	34.37	31,400	1946	Sep. 29	32.39	25,600		May 14	26.08	18,700
	Mar. 6	27.00	19,600		Feb. 13	34.45	27,800		May 26	37.60	40,500
1934	Apr. 5	35.00	32,500		Feb. 19	27.60	19,200		Jun. 4	36.74	37,800
	May 5	25.8	18,000		Apr. 24	32.00	24,100		Sep. 22	38.23	42,300
1935	Jan. 21	26.9	18,200	1947	Jun. 1	31.37	23,300	1958	Nov. 8	26.46	19,200
	Mar. 12	29.80	21,300		Nov. 4	35.32	29,700		Nov. 18	30.82	25,200
	Mar. 23	30.00	21,500		Nov. 6	38.83	40,600		May 3	40.78	55,200
	Apr. 29	27.0	18,300		Nov. 10	30.52	22,000	1959	Jul. 27	27.84	21,300
	May 5	41.40	52,800	1948	Dec. 12	40.33	46,900	1960	Oct. 5	25.35	18,300
	May 16	33.0	25,800		Apr. 30	34.00	27,100		Dec. 16	29.25	23,300
	Jun. 18	42.2	57,800		Feb. 28	28.33	18,900		May 22	41.60	61,600
1936	Dec. 7	36.81	36,700		May 12	28.44	19,100		Jul. 24	26.44	19,500
	Sep. 28	36.70	36,300	1949	May 17	32.77	25,200	1961	Dec. 11	27.77	21,300
1937	Jan. 9	31.53	23,900		Jan. 25	42.93	67,200		Mar. 31	25.79	18,800
1938	Jan. 24	35.60	31,100		Feb. 15	30.00	21,600		May 6	37.39	39,900
	Feb. 18	44.00	71,400	1950	May 1	40.68	51,200	1962	Nov. 23	33.37	30,100
	Mar. 29	31.40	24,200		Jun. 15	26.29	18,200		Apr. 24	28.70	22,600
	Mar. 31	32.60	25,900		Jan. 13	32.70	26,400	1963	Oct. 14	28.27	23,200
					Feb. 12	38.17	38,800				
					Jul. 7	29.84	22,200				
					Jul. 31	30.50	23,200				
					Aug. 3	29.22	21,500				

RED RIVER BASIN

07336500 KIAMICHI RIVER NEAR BELZONI, OKLA. (Cont.)

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Sep. 29	27.36	20,800	1968	Jan. 30	30.37	25,600	1969	Mar. 24	30.59	24,700
1965	Nov. 19	28.96	23,400		Mar. 13	26.48	19,600		Apr. 28	29.15	22,100
					Mar. 21	36.70	41,200		May 8	31.10	25,400
1966	Feb. 11	35.43	34,400		Apr. 2	34.54	33,600		May 17	31.70	27,100
	Apr. 25	31.00	26,000		May 13	37.97	46,700				
	May 1	26.35	19,500	1969	Nov. 28	31.68	26,600	1970	Apr. 26	30.86	25,600
1967	Apr. 13	31.97	27,900		Dec. 22	27.64	20,700		May 1	25.23	18,900
	May 6	30.74	26,200		Jan. 30	26.80	19,100		Jun. 12	28.92	25,300
	Sep. 18	26.49	19,600		Feb. 22	33.91	32,300	1971	Oct. 27	28.00	21,200

a Annual peak only.

b No record; maximum may have been slightly higher than that of Feb. 17.

c Occurred on following day.

07336520 FRAZIER CREEK NEAR OLETA, OKLA.

LOCATION.--Lat 34°11'50", long 95°21'00", in NW 1/4 NE 1/4 sec.19, T.4 S., R.19 E., Pushmataha County, at bridge on State Highway 3, 0.5 mile west of Oleta.

GAGE.--Crest-stage gage and stage-rainfall recorder.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 19.4
 Noncontributing = 0
 Contributing = 19.4
 Channel slope (ft/mi) = 57.6
 Annual precip. (in) = 47.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,660
 Q₅ = 2,500
 Q₁₀ = 3,220
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.247
 Standard deviation = 0.194
 Skew = 0.864

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Aug. 28	15.45	4,200	1967	May 6	12.00	2,040	1969	May 7	12.40	2,240
1965	Nov. 18	10.00	1,260	1968	Mar. 20	11.55	1,840	1970	Apr. 25	11.4	1,780
1966	Apr. 24	9.50	1,110					1971	Apr. 23	9.55	1,120

RED RIVER BASIN

07336710 ROCK CREEK NEAR SAWYER, OKLA.

LOCATION.--Lat 34°01'05", long 95°21'30", in NW 1/4 SW 1/4 sec.19, T.6 S., R.19 E., Choctaw County, at county road bridge, 0.5 mile east of Sawyer.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 3.39
 Total
 Noncontributing = 0
 Contributing = 3.39
 Channel slope (ft/mi) = 34.4
 Annual precip. (in) = 45.5
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 23	5.9	995	1967	May 20	4.64	430	1969	Feb. 1	5.45	790
1965	Feb. 9	4.94	560	1968	May 17	5.6	860	1970	Apr. 25	5.00	590
1966	Apr. 30	5.18	670					1971	Jul. 22	4.62	419

07336780 PERRY CREEK NEAR IDABEL, OKLA.

LOCATION.--Lat 33°53'44", long 94°53'15", in NE 1/4 NW 1/4 sec.3, T.8 S., R.23 E., McCurtain County, at multi-barrel culvert on State Highway 37, 3.5 miles west of Idabel.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Dec. 15, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 7.53
 Total
 Noncontributing = 0
 Contributing = 7.53
 Channel slope (ft/mi) = 31.6
 Annual precip. (in) = 47.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 2,070
 Q₅ = 3,030
 Q₁₀ = 3,540
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 3.281
 Standard deviation = 0.233
 Skew = -0.875

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 22	11.2	4,400	1967	Apr. 13	8.91	1,540	1969	Jan. 30	9.75	2,250
1965	Jan. 9	9.31	2,120	1968	Oct. 30	9.90	2,400	1970	Apr. 25	9.60	2,100
1966	Feb. 25	9.50	2,000					1971	Mar. 12	6.90	640

RED RIVER BASIN

07336785 BOKCHITO CREEK NEAR GARVIN, OKLA.

LOCATION.--Lat 33°53'44", long 94°54'23", in NE 1/4 NW 1/4 sec.4, T.8 S., R.23 E., McCurtain County, at multi-barrel culvert on State Highway 37, 4.5 miles southeast of Garvin.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Dec. 4, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 2.96
 Noncontributing = 0
 Contributing = 2.96
 Channel slope (ft/mi) = 26.3
 Annual precip. (in) = 47.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Feb. 9	6.29	725	1967	Apr. 13	6.37	765	1970	Apr. 25	6.30	730
1966	Apr. 25	5.73	395	1968	May 17	6.36	760	1971	Jan. 3	4.55	230
				1969	Jan. 30	6.69	925				

07336820 RED RIVER NEAR DE KALB, TEX.

LOCATION.--Lat 33°41'15", long 94°41'39", Bowie (Tex.)-McCurtain (Okla.) County line, near left bank at downstream side of bridge on U.S. Highway 259, 4.8 miles upstream from North Mill Creek, 13 miles north of De Kalb, and at mile 556.9.

GAGE.--Water-stage recorder. Datum of gage is 302.92 ft above mean sea level.

HISTORICAL DATA.--Maximum stage since 1957, 32.2 ft in June 1957. Greatest flood since 1936 occurred in February 1938, stage unknown.

REMARKS.--Flow partly regulated by Lake Texoma, approximately 169 miles upstream. Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 47,348
 Noncontributing = 5,936
 Contributing = 41,412
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III
FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Jun.	32.2	-	1969	May 9	27.38	112,000	1970	Apr. 28	23.70	71,000
1968	May 19	29.00	108,000					1971	Oct. 30	18.93	31,200

RED RIVER BASIN

07337000 RED RIVER AT INDEX, ARK.

LOCATION.--Lat 33°33'07", long 94°02'28", in NW 1/4 SW 1/4 sec.7, T.14 S., R.28 W., Miller County, near right bank on downstream side of bridge on U.S. Highway 71 at Index, 2.2 miles south of Ogden, 20.6 miles upstream from Little River, and at mile 485.3.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft above mean sea level. Prior to Dec. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--Some regulation by Lake Texoma, 241 miles upstream since 1943. Prior to 1951, records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 70,000 cfs. Only annual peaks are shown prior to 1937 and since 1960. Log-Pearson calculations based on all annual peaks for the period 1943-70, and represent regulated flow conditions.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 48,030
 Noncontributing = 5,936
 Contributing = 42,094
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 25

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 83,300
 Q₅ = 115,000
 Q₁₀ = 134,000
 Q₂₅ = 158,000
 Q₅₀ = 175,000
 Q₁₀₀ = 192,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.914
 Standard deviation = 0.170
 Skew = -0.223

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	Apr. 19	24.5	-	1939	Apr. 19	21.2	70,600	1952	Apr. 25	24.50	112,000
1919	Oct. 31	22.0	-	1940	May 26	19.7	70,100	1953	May 2	22.48	91,700
1920	May 21	27.6	-	1941	Apr. 20	b20.29	74,000	1954	May 17	20.50	76,400
1921	Jun. 27	23.5	-		Apr. 26	24.27	108,000	1954	May 13	20.50	76,200
1922	May 15	26.3	-		May 10	23.36	94,100	1955	Mar. 23	17.88	56,500
1923	Sep. 24	23.3	-		Jun. 16	27.83	145,000	1956	Feb. 20	d15.94	41,800
1924	Dec. 18	27.0	-	1942	Oct. 9	24.55	106,000	1957	Apr. 30	26.92	128,000
1925	May 1	20.5	-		Nov. 5	b25.90	128,000	1957	May 16	24.03	86,000
1926	Aug. 21	23.5	-		Apr. 14	28.33	145,000	1957	May 29	26.75	132,000
1927	Apr. 23	30.8	-		Apr. 23	25.33	107,000	1957	Jun. 8	28.56	154,000
1928	May 23	25.0	-		May 1	29.85	178,000	1958	May 6	25.32	145,000
1929	May 21	27.2	-	1943	May 16	b24.35	112,000	1959	Jul. 29	17.00	48,400
1930	May 21	27.2	-	1944	May 4	21.88	87,800	1960	Oct. 16	18.43	61,000
1931	Dec. 9	20.2	-	1945	Feb. 24	23.25	105,000	1961	Dec. 13	17.69	68,400
1932	Feb. 21	27.4	-		Mar. 2	24.17	120,000	1962	Nov. 26	e16.43	53,800
1933	May 29	24.7	-		May 20	22.63	110,000	1963	Nov. 29	b16.53	55,500
1934	Mar. 4	20.5	-		Apr. 1	28.05	152,000	1964	Apr. 27	15.18	37,400
1935	May 25	31.1	-		Jun. 14	23.90	101,000	1965	Feb. 12	19.25	69,000
1936	Dec. 9	a22.1	-		Jun. 22	c24.37	120,000	1966	May 3	23.96	110,000
1937	Oct. 1	24.00	88,100	1946	Oct. 11	20.80	76,400	1967	Jun. 3	f18.14	53,600
1938	Jan. 26	25.95	114,000	1947	Nov. 9	23.74	110,000	1968	May 19	b23.56	125,000
	Feb. 23	34.25	297,000		Dec. 15	23.47	108,000	1969	May 10	21.39	101,000
	Apr. 2	27.55	139,000		May 2	20.40	76,500	1970	Apr. 28	18.48	64,100
					Jun. 4	20.50	74,700	1971	Oct. 30	12.99	27,800
				1948	May 13	21.40	84,000				
				1949	Jan. 29	24.56	112,000				
				1950	Jan. 16	20.98	78,800				
					Feb. 3	20.52	71,200				
					Feb. 15	23.48	108,000				
					May 4	22.78	87,000				
					Jul. 29	20.00	75,400				
					Sep. 18	21.23	74,000				
				1951	Jun. 18	23.64	102,000				

a Maximum crest stage. Maximum stage occurred Sept. 30 on rise that crested Oct. 1, 1936.

b Occurred on following day.

c Occurred on preceding day.

d Occurred Oct. 14, 1955.

e Occurred June 14, 1962.

f Occurred April 24, 1967.

RED RIVER BASIN

07337220 BIG BRANCH NEAR RINGOLD, OKLA.

LOCATION.--Lat 34°10'27", long 95°04'33", in NW 1/4 SW 1/4 sec.26, T.4 S., R.21 E., McCurtain County, at multiple culvert on State Highway 3, 5.8 miles southeast of Ringold.

GAGE.--Crest-stage gage. Prior to Dec. 15, 1966 at datum 10.00 ft higher and from Sept. 16, 1966 to May 1, 1968 at datum 7.00 ft higher.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1.99
 Noncontributing = 0
 Contributing = 1.99
 Channel slope (ft/mi) = 84.8
 Annual precip. (in) = 48.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 320
 Q₅ = 618
 Q₁₀ = 935
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 2.554
 Standard deviation = 0.311
 Skew = 0.967

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 23	4.54	560	1967	May 6	9.83	180	1969	Jan. 29	9.16	325
1965	Feb. 9	4.08	460	1968	May 17	14.17	1,460	1970	Aug. 21	8.67	271
1966	Feb. 9	2.34	150					1971	Oct. 26	8.86	305

RED RIVER BASIN

07337500 LITTLE RIVER NEAR WRIGHT CITY, OKLA.

LOCATION.--Lat 34°04'10", long 95°02'47", in NE 1/4 NW 1/4 sec.6, T.6 S., R.22 E., McCurtain County, on left bank on downstream side of bridge on State Highway 98, 1.8 miles upstream from White Oak Creek, 2 miles west of Wright City, 4.7 miles downstream from Pine Creek Lake, and at mile 140.6.

GAGE.--Water-stage recorder. Datum of gage is 346.76 ft above mean sea level. Oct. 12, 1929, to Sept. 30, 1931, nonrecording gage at railroad bridge 1 mile downstream at datum 4.15 ft higher. Dec. 6, 1944, to July 30, 1951, nonrecording gage at present site and datum.

REMARKS.--Except for 10 sq mi intervening area, flow completely regulated since June 1969 by Pine Creek Lake 4.7 miles upstream. Records 1944-50 and since 1962 furnished by Corps of Engineers and reviewed by Geological Survey. Due to effect of slope the peak discharge frequently occurs at different time than peak stage. Base for partial-duration series, 9,000 cfs. Only annual peaks are shown since 1969. Log-Pearson calculations based on all annual peaks prior to 1969, and represent unregulated flow conditions.

BASIN CHARACTERISTICS

Drainage Area (sq mi) = 645
 Total Noncontributing = 0
 Contributing = 645
 Channel slope (ft/mi) = 7.50
 Annual precip. (in) = 51.0
 Bankful stage (ft) = 32

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 30,500
 Q₅ = 49,700
 Q₁₀ = 64,100
 Q₂₅ = 83,900
 Q₅₀ = 99,700
 Q₁₀₀ = 116,000

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.482
 Standard deviation = 0.254
 Skew = -0.042

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	Dec. 16	32.66	30,000	1950	Jan. 13	39.70	32,700	1957	May 13	36.56	23,100
	May 4	27.84	23,400		Feb. 1	36.21	20,800		May 26	38.24	27,300
	May 7	30.80	27,300		Feb. 12	44.04	61,100		Jun. 4	35.68	20,800
	May 11	31.52	28,300		Apr. 29	26.50	11,100		Sep. 22	39.92	35,200
	May 16	25.00	18,700		May 1	35.89	20,200				
	May 19	20.50	12,400		Jul. 5	29.80	11,700	1958	Nov. 8	24.99	9,070
	May 23	29.60	25,500		Jul. 30	38.30	26,900		Nov. 18	37.86	25,500
1931	Feb. 9	22.86	15,700		Aug. 2	38.83	28,700		Mar. 7	25.93	9,300
	Feb. 13	24.5	18,000		Sep. 16	45.77	75,400		May 2	41.63	44,600
				1951	Feb. 15	31.60	13,700	1959	Jul. 27	26.01	8,840
1945	Feb. 21	41.30	40,700		Feb. 18	35.00	18,600				
	Feb. 27	41.30	40,700		Feb. 20	33.38	16,100	1960	Dec. 16	36.43	22,200
	Mar. 3	31.0	13,000		Apr. 21	29.30	11,100		May 20	44.71	69,100
	Mar. 18	38.0	25,900		Jun. 10	34.80	18,300		Jul. 24	35.20	21,800
	Mar. 25	29.0	10,800		Jun. 12	41.51	43,200				
	Mar. 29	43.65	54,800		Jun. 14	28.00	9,860	1961	Dec. 11	35.08	19,000
	May 16	41.80	43,500		Jul. 1	40.50	37,000		Mar. 31	31.38	14,500
	Jun. 12	43.21	52,100						May 6	45.60	78,200
	Jun. 17	39.00	29,500	1952	Nov. 1	32.50	14,800				
	Sep. 29	29.00	10,800		Mar. 11	27.83	10,400	1962	Nov. 22	38.10	26,600
					Apr. 12	38.00	25,800		Apr. 24	30.10	13,100
1946	Jan. 9	30.27	12,200		Apr. 22	39.62	32,300	1963	Mar. 19	31.11	14,500
	Feb. 13	39.00	29,500								
	Apr. 24	37.73	24,900	1953	Mar. 18	34.57	18,000	1964	Mar. 9	28.99	11,800
	May 16	28.00	9,860		Apr. 6	36.90	22,500		Apr. 24	31.51	16,000
	May 25	39.90	53,300		Apr. 24	37.74	26,900				
					Apr. 29	39.26	30,900	1965	Nov. 19	29.38	13,200
1947	Nov. 4	34.20	17,300		May 12	37.84	25,500		Feb. 9	35.15	19,900
	Nov. 6	37.00	22,900		Jul. 20	43.30	55,800		Mar. 29	26.76	12,700
	Nov. 10	34.00	17,000						May 11	27.41	10,700
	Dec. 12	42.40	47,000	1954	Jan. 20	30.97	13,500		Sep. 22	30.48	16,800
	Apr. 28	38.30	26,900		May 29	35.7	21,400				
	May 13	40.00	33,800					1966	Feb. 10	37.24	24,000
	May 17	27.00	9,060						Apr. 26	31.94	14,400
				1955	Oct. 1	35.00	18,000		May 1	32.04	14,400
1948	Dec. 8	31.70	13,800		Oct. 12	29.08	13,700				
	Jan. 1	37.50	24,300		Oct. 22	25.45	10,500				
	Feb. 27	27.00	9,060		Oct. 24	28.54	12,100	1967	Apr. 14	30.6	12,800
	May 12	39.70	32,400		Mar. 21	34.25	17,800		May 6	37.78	26,700
					Sep. 23	32.13	17,100				
					Sep. 25	25.72	10,300	1968	Mar. 20	27.28	9,760
1949	Jan. 25	45.04	69,000						May 14	29.02	11,000
	Feb. 14	31.94	14,100	1956	Feb. 18	32.62	15,200		May 17	32.66	16,400
	Mar. 27	32.70	15,100								
	Apr. 10	27.17	9,220	1957	Feb. 6	27.66	10,300	1969	Jan. 30	28.94	6,500
	May 1	44.67	67,000		Apr. 4	37.90	26,200				
	Jun. 15	29.00	10,800		Apr. 23	36.92	23,100	1970	Mar. 27	20.23	5,600
					Apr. 26	35.34	19,800				
1950	Oct. 25	27.98	9,860		May 1	27.53	10,200	1971	Oct. 28	20.87	4,980
	Jan. 3	36.25	20,800								

RED RIVER BASIN

07337900 GLOVER CREEK NEAR GLOVER, OKLA.

LOCATION.--Lat 34°05'51", long 94°54'07", in NW 1/4 NE 1/4 sec.28, T.5 S., R.23 E., McCurtain County, near right bank on downstream side of pier of bridge on State Highways 3 and 7, 2 miles north of Glover, 11 miles northwest of Broken Bow, and at mile 9.2.

GAGE.--Water-stage recorder. Datum of gage is 378.70 ft above mean sea level.

HISTORICAL DATA.--Flood in May 1961 reached a stage of 28.84 ft, from floodmark. Flood in 1908 was higher than that in May 1961, from information by local residents.

REMARKS.--Records furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 8,000 cfs.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 315
 Noncontributing = 0
 Contributing = 315
 Channel slope (ft/mi) = 14.3
 Annual precip. (in) = 54.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 22,100
 Q₅ = 30,000 (32,600)
 Q₁₀ = 33,700 (39,600)
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.311
 Standard deviation = 0.195
 Skew = -1.067

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1961	May	28.84	88,200	1966	Feb. 9	16.82	16,000	1968	May 13	20.72	30,700
1962	Nov. 22	19.30	23,000		Apr. 26	13.27	10,200		Nov. 27	14.90	15,100
	Dec. 9	11.70	8,130		May 1	13.94	11,100		Dec. 22	14.64	14,400
1963	Apr. 28	11.82	7,920	1967	Apr. 13	14.01	11,600		Dec. 28	12.50	10,200
1964	Mar. 9	15.37	13,500		May 6	19.70	23,800		Jan. 30	21.40	33,100
	Apr. 24	14.02	11,200		May 31	13.13	10,000		Feb. 22	16.52	18,800
	Aug. 28	12.00	8,200	1968	Oct. 30	17.88	19,600		Mar. 23	13.95	13,100
	Sep. 27	12.86	9,550		Dec. 14	13.33	10,400		May 7	15.85	17,100
1965	Nov. 19	14.53	12,000		Jan. 29	17.40	18,500		Jun. 23	16.70	19,300
	Feb. 9	20.95	26,400		Mar. 11	12.49	9,030	1970	Mar. 3	14.22	13,600
	May 10	17.18	16,800		Mar. 20	19.43	26,700		Apr. 26	15.80	17,100
	Sep. 22	15.90	14,300		Apr. 3	13.90	12,700	1971	Oct. 27	20.46	30,000
					Apr. 22	12.92	10,700		Apr. 23	12.22	9,710

a Annual peak only.

07337920 FIFTEEN CREEK NEAR GLOVER, OKLA.

LOCATION.--Lat 34°06'33", long 94°55'42", in SW 1/4 NW 1/4 sec.20, T.5 S., R.23 E., McCurtain County, at culvert on State Highways 3 and 7, 2.7 miles northwest of Glover.

GAGE.--Crest-stage gage.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1.23
 Noncontributing = 0
 Contributing = 1.23
 Channel slope (ft/mi) = 70.0
 Annual precip. (in) = 48.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1967	Apr. 13	5.60	207	1969	Jan. 29	6.88	362	1970	Mar. 17	5.50	200
1968	May 17	9.70	885					1971	Feb. 11	4.0	26

RED RIVER BASIN

07338000 LITTLE RIVER NEAR IDABEL, OKLA.

LOCATION.--Lat 33°56', long 94°49', in NE1/4 sec.19, T.7 S., R.24 E., on downstream side of former bridge on U.S. Highway 70, 3 miles north of Idabel, 7.8 miles upstream from Lukfata Creek, 16.5 miles downstream from Glover Creek, and at mile 111.4.

GAGE.--Nonrecording. Datum of gage is 318.52 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records 1932-33, 1937-46 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series 10,000 cfs. Log-Pearson calculations based on combined records of 07338000 and 07338500 (see 07338500).

BASIN CHARACTERISTICS

Drainage Area (sq mi)
 Total = 1,173
 Noncontributing = 0
 Contributing = 1,173
 Channel slope (ft/mi) = ***
 Annual precip. (in) = ***
 Bankful stage (ft) = 30

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	Dec. 17	32.70	24,600	1935	Jun. 22	34.10	33,800	1941	Jun. 12	29.60	14,100
	May 8	32.28	22,600								
	May 12	32.80	25,200	1936	Dec. 8	33.14	27,000	1942	Nov. 2	29.10	13,200
	May 19	29.80	14,400						Apr. 10	34.00	32,800
	May 25	29.30	13,600	1937	Jan. 10	28.40	12,400	1943	Dec. 29	31.20	17,800
1931	Feb. 15	26.90	10,600		Jan. 16	27.70	11,600		Apr. 19	28.38	12,300
1932	Jan. 24	35.20	42,800		Apr. 22	29.5	13,900		May 12	32.96	26,300
	Feb. 17	34.0	33,000		Aug. 24	28.6	12,600				
	Jul. 1	31.96	21,100	1938	Dec. 19	26.70	10,600	1944	Feb. 10	26.25	10,200
1933	Dec. 26	32.8	25,200		Jan. 25	35.80	48,200		Mar. 1	32.00	20,500
	Jan. 23	27.5	11,400		Feb. 18	39.3	86,000		May 3	34.34	35,500
	Mar. 7	27.8	11,700		Mar. 30	33.80	31,600	1945	Nov. 9	27.90	11,800
	Apr. 22	28.0	11,900		Apr. 9	27.96	11,900		Feb. 22	35.16	41,000
	May 17	27.4	11,300		Apr. 17	29.30	13,600		Feb. 28	34.20	35,200
1934	Apr. 6	33.8	31,600	1939	Feb. 21	28.63	12,600		Mar. 20	34.30	36,200
1935	Nov. 22	29.4	13,700		Feb. 27	31.40	18,700		Mar. 26	28.70	12,700
	Jan. 22	32.26	22,600		Mar. 30	26.0	10,000		Mar. 30	37.60	71,000
	Mar. 6	30.26	15,300		Apr. 7	28.93	13,000		May 17	34.20	35,200
	Mar. 13	31.28	18,300		Apr. 17	33.4	44,600		Jun. 13	35.56	43,200
	Mar. 23	28.0	11,900						Jun. 19	31.34	18,300
	Apr. 27	29.7	14,200	1940	May 19	30.20	15,100		Sep. 30	28.70	12,700
	May 6	36.46	55,000		May 25	31.71	19,900	1946	Jan. 10	30.86	15,900
	May 17	33.90	32,300	1941	Dec. 13	27.60	11,500		Feb. 7	26.11	10,100
	Jun. 18	36.0	50,000		Dec. 17	27.10	11,000		Feb. 15	32.42	20,500
					Apr. 20	29.50	13,900		Apr. 26	32.30	20,400
					Apr. 25	29.90	14,500		May 18	28.28	12,200
									May 26	32.77	25,700

RED RIVER BASIN

07338500 LITTLE RIVER BELOW LUKFATA CREEK, NEAR IDABEL, OKLA.

LOCATION.--Lat 33°56'28", long 94°45'30", in SE 1/4 SE 1/4 sec.14, T.7 S., R.24 E., McCurtain County, on left bank at downstream side of bridge on U.S. Highway 70 just downstream from Lukfata Creek, 5 miles northeast of Idabel, and at mile 103.4.

GAGE.--Water-stage recorder. Datum of gage is 312.08 ft above mean sea level. Oct. 1, 1946, to Oct. 26, 1950, nonrecording gage at same site and datum.

HISTORICAL DATA.--Flood in February 1938 reached a stage of 39.7 ft, from information by local residents (discharge, 86,000 cfs).

REMARKS.--Records 1946-50 and since 1962 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 10,000 cfs. Log-Pearson calculations based on all annual peaks for combined records of 07338000 and 07338500.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 1,226
 Noncontributing = 0
 Contributing = 1,226
 Channel slope (ft/mi) = 5.13
 Annual precip. (in) = 52.0
 Bankful stage (ft) = 27

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q_2 = 27,600
 Q_5 = 46,200
 Q_{10} = 60,500
 Q_{25} = 80,500
 Q_{50} = 96,700
 Q_{100} = 114,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.439
 Standard deviation = 0.269
 Skew = -0.034

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Feb.	a39.7	86,000	1953	Apr. 26	28.88	13,700	1964	Mar. 11	27.42	12,400
					Apr. 30	34.00	33,200		Apr. 26	29.87	15,800
1947	Nov. 8	31.10	18,500		May 14	32.88	26,400	1965	Nov. 21	25.37	10,700
	Dec. 13	36.35	56,100		Jul. 22	34.07	34,000		Feb. 11	32.70	26,000
	Apr. 30	32.80	25,100	1954	May 31	25.27	10,100		May 12	25.72	11,100
	May 15	32.60	24,100	1955	Oct. 2	28.53	13,200	1966	Feb. 12	28.74	14,500
1948	Dec. 9	26.85	11,000		Mar. 23	29.55	14,900		Apr. 28	30.90	18,300
	Jan. 3	32.80	25,100	1956	Feb. 20	27.98	12,600		May 2	31.10	18,800
	Feb. 28	27.85	11,800	1957	Feb. 8	25.23	10,600	1967	Apr. 15	26.48	12,200
	May 13	32.60	24,100		Apr. 6	29.89	16,400		May 8	29.38	15,400
1949	Jan. 26	39.22	82,000		Apr. 26	33.34	29,100		Jun. 2	25.33	11,200
	Feb. 16	26.17	11,500		May 15	29.57	15,800	1968	Nov. 1	24.08	10,200
	Mar. 28	27.56	12,000		May 27	32.97	27,500		Feb. 1	28.63	14,400
	May 3	35.00	40,500		Jun. 6	30.53	17,800		Mar. 14	26.03	11,800
	Jun. 16	27.50	12,000		Sep. 24	29.56	15,800		Mar. 22	30.70	17,700
1950	Jan. 5	31.60	20,000	1958	Nov. 20	28.17	13,600		Apr. 3	b30.82	18,100
	Jan. 15	34.01	33,200		Mar. 10	26.58	11,800		Apr. 24	24.53	10,600
	Feb. 3	32.12	22,200		May 4	35.01	40,700		May 17	32.95	27,900
	Feb. 13	37.00	61,900	1959	Jul. 28	23.62	8,940		May 27	24.40	10,500
	May 3	32.82	25,900	1960	Dec. 18	31.00	18,200	1969	Nov. 29	25.04	11,000
	May 17	26.27	10,900		May 21	b36.65	57,900		Dec. 23	b24.34	10,500
	Aug. 1	30.98	18,000	1961	Dec. 13	29.60	14,900		Jan. 31	32.64	23,600
	Sep. 17	37.30	66,100		Apr. 1	27.42	11,900		Feb. 23	28.20	14,000
1951	Feb. 20	30.56	17,000		May 7	36.30	53,800		Mar. 25	25.16	11,100
	Jun. 14	33.51	30,000	1962	Nov. 25	30.00	15,700		May 9	26.49	12,200
	Jul. 3	34.08	34,000		Jan. 28	25.54	10,300	1970	Mar. 4	24.95	10,900
1952	Nov. 3	26.09	10,800	1963	Apr. 30	23.47	9,380		Apr. 27	25.24	11,200
	Apr. 14	32.46	24,200					1971	Oct. 29	24.07	10,440
	Apr. 23	35.04	40,800								
1953	Mar. 20	27.74	12,200								
	Apr. 8	30.12	15,900								

a Annual peak only.

b Occurred on following day.

RED RIVER BASIN

07338520 YANUBBEE CREEK NEAR BROKEN BOW, OKLA.

LOCATION.--Lat 34°03'35", long 94°44'22", in NW 1/4 SW 1/4 sec.6, T.6 S., R.25 E., McCurtain County, at bridge on U.S. Highway 259, 2.3 miles north of Broken Bow.

GAGE.--Crest-stage gage. Stage-rainfall recorder since Jan. 31, 1969.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 9.10
 Noncontributing = 0
 Contributing = 9.10
 Channel slope (ft/mi) = 66.0
 Annual precip. (in) = 52.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 1,410
 Q₅ = 2,400
 Q₁₀ = 3,120
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 3.136
 Standard deviation = 0.287
 Skew = -0.285

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1964	Apr. 23	12.3	2,500	1967	May 31	11.97	2,000	1969	Jan. 30	13.49	2,800
1965	Feb. 9	9.90	1,080	1968	May 17	12.38	2,550	1970	Aug. 20	9.38	893
1966	Apr. 25	8.78	680					1971	Mar. 12	8.20	525

07338780 MOUNTAIN FORK TRIBUTARY NEAR SMITHVILLE, OKLA.

LOCATION.--Lat 34°29'48", long 94°40'06", in NW 1/4 SE 1/4 sec.3, T.1 S., R.25 E., McCurtain County, at multi-barrel culvert on U.S. Highway 259, 2.5 miles northwest of Smithville.

GAGE.--Crest-stage gage. Stage-rainfall recorder since June 16, 1966.

REMARKS.--Only annual peaks are shown.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 0.85
 Noncontributing = 0
 Contributing = 0.85
 Channel slope (ft/mi) = 103
 Annual precip. (in) = 54.0
 Bankful stage (ft) = ***

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = ***
 Q₅ = ***
 Q₁₀ = ***
 Q₂₅ = ***
 Q₅₀ = ***
 Q₁₀₀ = ***

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = ***
 Standard deviation = ***
 Skew = ***

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1965	Sep. 22	4.53	215	1967	May 19	3.32	82	1970	Nov. 12	5.80	370
1966	Feb. 9	3.30	80	1968	Oct. 30	3.84	136	1971	Oct. 26	4.62	226
				1969	May 6	3.25	75				

RED RIVER BASIN

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OKLA.

LOCATION.--Lat 34°02'30", long 94°37'15", in SE 1/4 SE 1/4 sec.7, T.6 S., R.26 E., McCurtain County, near center of span on downstream side of pier of bridge on U.S. Highway 70, 2 miles west of Eagletown, 10.7 miles downstream from Broken Bow Dam, and at mile 8.9.

GAGE.--Nonrecording prior to Aug. 3, 1940, and Jan. 31 to July 22, 1950; recording during remainder of period. During 1924-25 at site 300 ft downstream at datum 0.70 ft lower. Oct. 9, 1929, to Jan. 30, 1950, at site 300 ft downstream at same datum. Datum of present gage is 333.87 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

HISTORICAL DATA.--Flood of Aug. 18-19, 1915, reached a stage of 26.4 ft, from information by local residents (discharge, 92,500 cfs).

REMARKS.--Except for 33 sq mi intervening area, flow completely regulated since October 1968 by Broken Bow Lake. Records 1932-35, 1937-50, and since 1962 furnished by Corps of Engineers and reviewed by Geological Survey. Base for partial-duration series, 22,000 cfs. Only annual peaks are shown since 1968. Log-Pearson calculations based on all annual peaks prior to 1969.

BASIN CHARACTERISTICS

Drainage Area (sq mi)
Total = 787
Noncontributing = 0
Contributing = 787
Channel slope (ft/mi) = 6.63
Annual precip. (in) = 54.0
Bankful stage (ft) = 18

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 41,300
Q₅ = 68,200
Q₁₀ = 85,900
Q₂₅ = 107,000
Q₅₀ = 122,000
Q₁₀₀ = 137,000

LOG-PEARSON TYPE III

STATISTICS (LOG UNITS)

Mean = 4.590
Standard deviation = 0.285
Skew = -0.548

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	Aug. 18	26.4	92,500	1943	Dec. 27	15.98	28,400	1953	Apr. 6	15.29	26,900
1925	Jun. 13	22.0	67,500	1944	Feb. 28	14.10	22,100		Apr. 29	20.24	51,500
1930	May 7	15.5	27,200		May 2	18.33	40,500		May 11	16.76	32,800
	May 11	21.0	56,000	1945	Feb. 21	21.30	58,000		May 13	18.36	40,600
1931	Jul. 26	12.75	18,200		Feb. 27	19.55	47,600		Jul. 20	17.00	33,700
1932	Feb. 17	22.50	65,800		Mar. 19	20.20	51,200	1954	Jul. 25	15.10	26,200
	Jul. 8	14.18	22,400		Mar. 29	25.80	88,500		May 3	17.07	34,100
1933	Dec. 24	17.49	36,100		May 15	20.32	51,800	1955	Oct. 1	14.89	24,100
	Dec. 30	17.1	34,200		Jun. 12	18.07	39,200		Mar. 21	14.08	22,800
	Jan. 22	14.52	23,400		Sep. 29	16.93	33,200	1956	Feb. 18	14.38	23,800
	May 15	15.0	25,200	1946	Oct. 1	15.13	25,600	1957	Apr. 25	17.50	36,000
1934	Apr. 5	14.0	21,700		Jan. 9	17.97	38,700		May 3	18.52	41,300
1935	Nov. 20	16.04	29,200		Feb. 14	17.77	37,700	1958	Nov. 15	14.73	24,100
	Jan. 20	17.04	33,700		May 25	23.30	71,100		Nov. 17	17.34	34,100
	Mar. 22	15.5	27,100		May 31	16.60	31,800	1960	Dec. 11	14.83	25,100
	May 5	22.68	67,100	1947	Dec. 12	20.50	53,000		May 20	26.73	101,000
	May 16	18.74	42,500		May 13	20.00	50,000		Jul. 24	17.49	36,000
	Jun. 16	21.5	59,300		Aug. 28	25.7	87,800	1961	Dec. 7	14.11	22,800
1936	Dec. 7	17.54	36,100	1948	Dec. 7	17.62	36,600		Dec. 11	18.04	38,500
1937	Jan. 10	14.1	22,000		Jan. 1	21.73	60,600		May 6	21.12	57,600
	Aug. 23	15.0	25,200		May 12	16.34	30,500	1962	Nov. 23	17.52	36,000
1938	Jan. 24	25.4	85,700	1949	Jan. 24	24.77	81,400	1963	Apr. 29	10.74	13,100
	Feb. 18	23.50	72,500		May 1	21.85	61,200	1964	Mar. 9	17.50	35,900
	Mar. 29	17.05	33,700		Jun. 14	18.66	42,500		Aug. 29	16.00	29,000
	Apr. 16	15.47	27,100	1950	Jan. 3	17.27	35,200	1965	Feb. 11	8.73	9,760
1939	Feb. 20	14.22	22,400		Jan. 13	20.62	56,700	1966	Apr. 26	9.28	12,200
	Feb. 25	15.48	27,100		Feb. 1	18.92	46,000	1967	May 7	8.12	8,560
	Apr. 6	16.86	33,200		Feb. 12	25.66	91,500	1968	May 17	13.48	21,400
	Apr. 17	23.0	69,100		May 2	14.60	23,700	1969	Jan. 30	10.86	13,400
1940	May 18	17.93	38,200		May 7	14.60	23,700	1970	Aug. 31	7.81	7,880
	Jul. 1	14.42	23,000		Aug. 2	14.50	23,700	1971	Nov. 24	7.78	7,770
	Aug. 17	16.23	29,100		Sep. 16	20.59	48,800				
1941	Jun. 11	11.40	14,500	1951	Feb. 16	15.34	26,400				
1942	Oct. 31	19.90	49,400	1952	Nov. 1	15.32	27,800				
	Apr. 8	17.60	34,900		Apr. 12	19.23	45,400				
					Apr. 22	21.08	57,400				
				1953	Nov. 26	15.13	25,500				
					Mar. 18	14.20	23,100				

RED RIVER BASIN

07340000 LITTLE RIVER NEAR HORATIO, ARK.

LOCATION.--Lat 33°55'10", long 94°23'15", in NE1/4 sec.10, T.10 S., R.32 W., Sevier County, near left bank on downstream side of bridge on State Highway 41, 0.9 mile downstream from Rolling Fork, 2 miles southwest of Horatio, 28.5 miles upstream from Cossatot River, and at mile 72.0.

GAGE.--Water-stage recorder. Datum of gage is 272.89 ft above mean sea level, datum of 1929. Prior to Feb. 5, 1935, nonrecording gage and Feb. 5, 1935, to Sept. 13, 1961, water-stage recorder, at site 50 ft upstream at same datum.

HISTORICAL DATA.--Flood in August 1915, reached a stage of 38.0 ft (discharge, 124,000 cfs).

REMARKS.--Some regulation since Oct. 3, 1968, by Broken Bow Lake, 31.4 miles upstream and since June 1, 1969, by Pine Creek Lake 73.3 miles upstream. Base for partial-duration series, 25,000 cfs. Log-Pearson calculations based on all annual peaks prior to 1969.

BASIN CHARACTERISTICS

Drainage Area (sq mi)

Total = 2,674
Noncontributing = 0
Contributing = 2,674
Channel slope (ft/mi) = 4.20
Annual precip. (in) = 52.0
Bankful stage (ft) = 26

LOG-PEARSON TYPE III

FLOOD-FREQUENCY DATA (CFS)

Q₂ = 46,300
Q₅ = 72,000
Q₁₀ = 91,100
Q₂₅ = 118,000
Q₅₀ = 139,000
Q₁₀₀ = 162,000

LOG-PEARSON TYPE III
STATISTICS (LOG UNITS)

Mean = 4.670
Standard deviation = 0.224
Skew = 0.106

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	Aug.	38.0	a124,000	1945	Mar. 30	37.70	120,000	1956	Feb. 19	27.84	28,500
					May 17	30.80	41,700				
1930	May 20	36.0	a97,700		Jun. 15	30.90	42,500	1957	Mar. 19	27.46	27,600
1931	Jul. 27	24.84	20,700	1946	Oct. 2	29.30	32,500		Apr. 5	29.86	37,800
1932	Jan. 6	31.5	48,400		Jan. 10	31.29	45,700		Apr. 28	33.13	68,300
	Jan. 18	28.6	31,000		Feb. 7	29.16	32,000		May 15	28.35	30,500
	Jan. 24	31.84	50,800		Feb. 15	29.67	34,500		May 27	30.92	44,500
	Feb. 18	31.3	46,800		May 26	31.74	49,300		Jun. 6	28.50	30,900
1933	Jan. 1	27.2	24,800	1947	Nov. 8	28.25	28,000	1958	Mar. 9	26.48	25,200
1934	Apr. 9	27.36	25,100		Dec. 14	31.82	50,200		May 3,		
1935	Jan. 21	31.2	46,000		May 1	29.98	36,200		4	32.72	63,600
	May 6	34.80	82,100		May 14	32.00	52,000	1959	Nov. 18	30.48	41,600
	May 21	29.14	33,300		May 18	30.87	42,500	1960	Dec. 18	29.34	34,800
	Jun. 19	33.56	68,200	1948	Aug. 29	32.99	61,900		May 22	31.99	55,500
1936	Dec. 8	28.85	31,800		Dec. 9	28.99	31,100	1961	Dec. 12	30.76	43,700
1937	Jan. 11	28.15	26,700		Jan. 2	32.29	54,900		Apr. 1	27.35	27,400
1938	Jan. 25	36.93	110,000		Mar. 3	28.86	30,700		May 9	31.08	46,200
	Feb. 19	36.65	106,000	1949	May 13	29.36	33,000	1962	Nov. 24	27.93	28,800
	Apr. 1	30.48	41,100		Jan. 27	35.58	97,900		Jan. 28	27.46	27,600
	Apr. 17	29.10	33,300		May 2	30.50	39,500	1963	Apr. 30	21.50	16,800
1939	Feb. 26	28.05	31,500		Jun. 15	30.47	39,500	1964	Mar. 11	29.07	33,600
	Apr. 7	29.00	36,400	1950	Jan. 5	29.25	32,000		Apr. 25	30.72	43,000
	Apr. 18	32.12	56,500		Jan. 14	32.66	59,700	1965	Feb. 13	28.54	34,100
1940	May 19	28.50	28,200		Feb. 2	31.42	46,600	1966	Apr. 27	29.82	34,800
	Jul. 2	30.62	37,500		Feb. 13	34.06	82,500	1967	May 7	b26.18	28,100
1941	Apr. 24	26.90	23,900		May 3	31.78	50,200		Jun. 1	25.73	26,600
1942	Nov. 1	b27.58	25,400		Jul. 31	28.65	29,500	1968	Feb. 1	27.22	26,000
	Apr. 9	31.77	50,800	1951	Sep. 17	32.80	60,800		Mar. 22	27.58	26,900
1943	Dec. 28	26.45	24,700	1952	Feb. 21	29.48	33,500		Apr. 5	28.66	30,000
1944	Mar. 1	c28.16	29,200		Jun. 16	29.40	33,000		May 14	33.22	69,900
	May 3	32.64	57,900		Jul. 4	31.47	47,500		May 18	32.78	64,100
1945	Feb. 22	32.78	59,900	1953	Apr. 13	31.84	53,300	1969	Jan. 30	32.33	59,600
	Feb. 28	32.65	57,900		Apr. 23	34.26	83,900	1970	Mar. 4	25.99	27,900
	Mar. 21	31.15	44,900		Nov. 26	27.46	26,400		Apr. 27	24.97	25,400
					Apr. 7	28.12	29,500	1971	Oct. 30	16.16	10,300
					Apr. 30	32.02	55,700				
					May 12	32.32	59,000				
					Jul. 24	28.73	31,800				
				1954	May 4	28.16	29,800				
				1955	Mar. 22	30.10	37,200				

a Annual peak only.

b Occurred on following day.

c Occurred at different time than peak discharge.

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APPENDIX B

Reprint of U.S. Water Resources Council Bulletin No. 15

WATER RESOURCES COUNCIL

HYDROLOGY COMMITTEE

A UNIFORM TECHNIQUE FOR DETERMINING FLOOD FLOW FREQUENCIES

DECEMBER 1967

BULLETIN NO. 15



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FOREWORD

Within the federalism that is a distinguishing characteristic of the governmental structure of the United States, the responsibility for managing the water and related land resources of the Nation's river basins is shared among Federal, State, and local governments, and private enterprise.

In response to the practical problems that confront them, Federal agencies are continually developing technical methods to improve the performance of their assigned responsibilities. Where agencies have different but related assignments, methodological differences in making the same types of technical determinations tend to develop. The determination of flood flow frequency is one of the technical methods that has experienced separate agency evolution over the years, and consequent differences in technique.

With the growing need for improved flood plain management, desirability of a basic, uniform method of establishing flood frequencies for general use throughout the Nation is manifest. A consistent approach to estimation of the average annual value of flood losses--a major analytical component in determination of the best measure, or best combination of measures, in flood plain management--is dependent upon equable analysis of flood frequencies whether determined by Federal, State, local government or private engineers.

With this need in mind, the uniform technique for determining flood flow frequencies set forth in this bulletin was adopted by the Council's Hydrology Committee. It is hoped that this base method will commend itself for use by State, local government and private engineers, and that it will be looked upon as a desirable first step in the development through further study, research, and experience of a more precise and complete technique. The Water Resources Council has adopted the uniform technique set forth in the bulletin

for use in all Federal planning involving water and related land resources. It has done this, however, with the understanding that efforts directed toward finding methodological improvements will be continued and adopted when deemed appropriate.

All who are interested in improving determinations of flood flow frequencies are encouraged to submit comments, criticisms, and proposals to the Water Resources Council for consideration by its Hydrology Committee.

A handwritten signature in black ink, reading "Stewart L. Udall". The signature is fluid and cursive, with the first name "Stewart" being more prominent and the last name "Udall" following in a similar style.

Stewart L. Udall

Chairman, Water Resources Council

December 1967

TOWARD A UNIFORM TECHNIQUE
FOR DETERMINING FLOOD FLOW FREQUENCIES

In a letter of September 10, 1966, the Executive Director informed the Hydrology Committee that the Council had assigned it responsibility for developing a uniform technique for the determination of flood flow frequencies. The Hydrology Committee of the Council consists of technical staff members of the Federal departments represented in the Council and of the Tennessee Valley Authority. The Committee devotes its efforts to technical matters in hydrology and has published many hydrologic bulletins that are nationally used..

The Council's assignment was made in conformance with Recommendation 2 of the report by the Task Force on Federal Flood Control Policy, "A Unified National Program for Managing Flood Losses."^{1/} Recommendation 2 called for the establishment of a panel to examine methods of frequency analysis and to provide a set of techniques based on the best known hydrological and statistical procedures.

In a letter of October 20, 1967, the Chairman of the Hydrology Committee submitted the Committee's report to the Council. The letter and report contained (i) a resume of the Committee's activities in this field, (ii) recommendations regarding a technique of flood flow frequency analysis for gaged areas, (iii) an outline of the recommended base method of analysis, (iv) appropriate tables of constants for use with the base method, and (v) a discussion of further and immediate problems requiring the Committee's attention in this field. The Committee's letter and report were based on the report of the Work Group on Flood Flow Frequency Analysis, an ad hoc work group established by the Committee. Two professional statisticians were employed as technical advisors to the group. The group's main findings were that of six methods tested, three fitted the data well and showed no bias. The recommended base method is one of these three.

In its meeting of October 25, 1967, the Water Resources Council accepted the Committee's report and recommendations and agreed that they should be published.

^{1/} House Document No. 465, 89th Congress, 2nd Session.

Recommendations

The recommendations of the Hydrology Committee are:

"1. The Hydrology Committee agreed that the state of the art with respect to flood flow frequency methods, as with most other hydrologic techniques, has not advanced to the point where complete standardization is feasible or appropriate. For that reason, the Committee recommends that a base method be adopted with provisions for using other methods where adequate justification is presented.

"2. On the basis of current use by Federal agencies, availability of detailed instructions and computer programs, and flexibility in application, the log-Pearson Type III distribution (with the log-normal as a special case) is recommended for adoption as a base method for flow frequencies. In those cases where information exists which indicates some other type of distribution or technique should be employed, such use should be acceptable provided appropriate justification is given. A concise summary of the log-Pearson Type III method is presented in Bulletin No. 13, April 1966, "Methods of Flow Frequency Analysis," prepared under the auspices of the Subcommittee on Hydrology, Inter-Agency Committee on Water Resources.^{1/}

"3. In view of the importance of flood flow frequency estimates in the expanding field of water resources development and related programs for managing flood losses, continuing efforts by the Hydrology Committee are needed to encourage and coordinate efforts of the member agencies in improving existing techniques and procedures in this field. In this connection, the Committee will establish appropriate ad hoc work groups when required for specific tasks; major emphasis, however, will be directed toward bringing such matters to the attention of the full Committee. Some immediate problems requiring attention are outlined in Attachment 4."^{2/}

^{1/} Now the Hydrology Committee, Water Resources Council.

^{2/} The material in Attachment 4 is given later in this pamphlet under the title "Additional Considerations in Flood Flow Frequency Analysis."

THE BASE METHOD

The Pearson Type III method, as originally presented by H. A. Foster (Ref. 1) in 1924, is described in Bulletin 13 (Ref. 2) in Foster's own words. As used by Foster, the method required the use of the natural data in computations of the mean, standard deviation, and skew coefficient of the distribution. The current practice, and the recommendation of the Committee, is first to transform the natural data to their logarithms and then to compute the statistical parameters. Because of this transformation the method is now called the log-Pearson Type III method.

Outline of the Method

The following symbols are used in the outline submitted by the Work Group on Flood Flow Frequency Analysis, which based its work on the presentation in Bulletin 13:

- Y = arithmetic magnitude of an annual flood event
- X = logarithmic magnitude of Y
- N = number of events in the record being used
- M = mean of the X's
- x = $X - M$
- S = standard deviation of the X's
- g = skew coefficient
- K = Pearson Type III coordinates expressed in number of standard deviations from the mean for various recurrence intervals or percent chance
- Q = computed flood flow for a selected recurrence interval or percent chance

The events considered here are flood flows in the annual series. (Definitions of hydrological and statistical terms used here are found in the Glossary of Bulletin 13). In the work, the physical units used for Y (such as cfs) are also those for Q.

The outline of work is as follows:

1. Transform the list of N annual flood magnitudes Y_1, Y_2, \dots, Y_N to a list of corresponding logarithmic magnitudes X_1, X_2, \dots, X_N .
2. Compute the mean of the logarithms:

$$M = \frac{\sum X}{N}$$

3. Compute the standard deviation of the logarithms:

$$\begin{aligned} S &= \sqrt{\frac{\sum x^2}{N-1}} \\ &= \sqrt{\frac{\sum X^2 - (\sum X)^2 / N}{N-1}} \end{aligned}$$

4. Compute the coefficient of skewness:

$$\begin{aligned} g &= \frac{N \sum x^3}{(N-1)(N-2)S^3} \\ &= \frac{N^2 \sum X^3 - 3N \sum X \sum X^2 + 2(\sum X)^3}{N(N-1)(N-2)S^3} \end{aligned}$$

5. Compute the logarithms of discharges at selected recurrence intervals or percent chance:

$$\log Q = M + K S$$

Take K from Table 1 or Table 2 for the computed value of g and the selected recurrence interval or percent chance. Log Q is the logarithm of a flood discharge having the same recurrence interval or percent chance.

6. Find the antilog of log Q to get the flood discharge $Q_{\frac{1}{}}$

Tables of K Values

Tables 1 and 2 were made from larger and more complete tables prepared by H. Leon Harter (Mathematical Statistician, Wright-Patterson Air Force Base) and the U.S. Soil Conservation Service. Copies of those tables are available, free of charge, from the Central Technical Unit, Soil Conservation Service, 269 Federal Center Building, Hyattsville, Md. 20782.

Computer Program Sources

Federal agencies such as the Bureau of Reclamation, Corps of Engineers, Geological Survey, Soil Conservation Service, Tennessee Valley Authority, and others, have prepared computer programs for the log-Pearson Type III method. These programs are in various computer languages and for various types of computers. Inquiries regarding these programs should be addressed to those agencies.

References

- (1) "Theoretical Frequency Curves," by H. A. Foster: American Society of Civil Engineers, Transactions, v. 87, p. 142-203: 1924.
- (2) "Methods of Flow Frequency Analysis," by the Subcommittee on Hydrology, Inter-Agency Committee on Water Resources: Notes on Hydrologic Activities, Bulletin 13, April 1966. For sale by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price 35 cents.

1/ The frequency line can be shown by plotting each Q versus its respective percent chance on lognormal probability paper and drawing a continuous line through the plotted points.

Table 1 -- K values for positive skew coefficients

		Recurrence Interval in Years										
B-12	Skew Coefficient (g)	1.0101	1.0526	1.1111	1.2500	2	5	10	25	50	100	200
		Percent Chance										
		99	95	90	80	50	20	10	4	2	1	0.5
	3.0	-0.667	-0.665	-0.660	-0.636	-0.396	0.420	1.180	2.278	3.152	4.051	4.970
	2.9	-0.690	-0.688	-0.681	-0.651	-0.390	0.440	1.195	2.277	3.134	4.013	4.909
	2.8	-0.714	-0.711	-0.702	-0.666	-0.384	0.460	1.210	2.275	3.114	3.973	4.847
	2.7	-0.740	-0.736	-0.724	-0.681	-0.376	0.479	1.224	2.272	3.093	3.932	4.783
	2.6	-0.769	-0.762	-0.747	-0.696	-0.368	0.499	1.238	2.267	3.071	3.889	4.718
	2.5	-0.799	-0.790	-0.771	-0.711	-0.360	0.518	1.250	2.262	3.048	3.845	4.652
	2.4	-0.832	-0.819	-0.795	-0.725	-0.351	0.537	1.262	2.256	3.023	3.800	4.584
	2.3	-0.867	-0.850	-0.819	-0.739	-0.341	0.555	1.274	2.248	2.997	3.753	4.515
	2.2	-0.905	-0.882	-0.844	-0.752	-0.330	0.574	1.284	2.240	2.970	3.705	4.444
	2.1	-0.946	-0.914	-0.869	-0.765	-0.319	0.592	1.294	2.230	2.942	3.656	4.372
	2.0	-0.990	-0.949	-0.895	-0.777	-0.307	0.609	1.302	2.219	2.912	3.605	4.298
	1.9	-1.037	-0.984	-0.920	-0.788	-0.294	0.627	1.310	2.207	2.881	3.553	4.223
	1.8	-1.087	-1.020	-0.945	-0.799	-0.282	0.643	1.318	2.193	2.848	3.499	4.147
	1.7	-1.140	-1.056	-0.970	-0.808	-0.268	0.660	1.324	2.179	2.815	3.444	4.069
	1.6	-1.197	-1.093	-0.994	-0.817	-0.254	0.675	1.329	2.163	2.780	3.388	3.990
	1.5	-1.256	-1.131	-1.018	-0.825	-0.240	0.690	1.333	2.146	2.743	3.330	3.910
	1.4	-1.318	-1.168	-1.041	-0.832	-0.225	0.705	1.337	2.128	2.706	3.271	3.828
	1.3	-1.383	-1.206	-1.064	-0.838	-0.210	0.719	1.339	2.108	2.666	3.211	3.745
	1.2	-1.449	-1.243	-1.086	-0.844	-0.195	0.732	1.340	2.087	2.626	3.149	3.661
	1.1	-1.518	-1.280	-1.107	-0.848	-0.180	0.745	1.341	2.066	2.585	3.087	3.575
	1.0	-1.588	-1.317	-1.128	-0.852	-0.164	0.758	1.340	2.043	2.542	3.022	3.489
	.9	-1.660	-1.353	-1.147	-0.854	-0.148	0.769	1.339	2.018	2.498	2.957	3.401
	.8	-1.733	-1.388	-1.166	-0.856	-0.132	0.780	1.336	1.993	2.453	2.891	3.312
	.7	-1.806	-1.423	-1.183	-0.857	-0.116	0.790	1.333	1.967	2.407	2.824	3.223
	.6	-1.880	-1.458	-1.200	-0.857	-0.099	0.800	1.328	1.939	2.359	2.755	3.132
	.5	-1.955	-1.491	-1.216	-0.856	-0.083	0.808	1.323	1.910	2.311	2.686	3.041
	.4	-2.029	-1.524	-1.231	-0.855	-0.066	0.816	1.317	1.880	2.261	2.615	2.949
	.3	-2.104	-1.555	-1.245	-0.853	-0.050	0.824	1.309	1.849	2.211	2.544	2.856
	.2	-2.178	-1.586	-1.258	-0.850	-0.033	0.830	1.301	1.818	2.159	2.472	2.763
	.1	-2.252	-1.616	-1.270	-0.846	-0.017	0.836	1.292	1.785	2.107	2.400	2.670
	0	-2.326	-1.645	-1.282	-0.842	0	0.842	1.282	1.751	2.054	2.326	2.576

Table 2.--K values for negative skew coefficients

		Recurrence Interval in Years										
Skew Coefficient (g)		1.0101	1.0526	1.1111	1.2500	2	5	10	25	50	100	200
		Percent Chance										
		99	95	90	80	50	20	10	4	2	1	0.5
B-15	0	-2.326	-1.645	-1.282	-0.842	0	0.842	1.282	1.751	2.054	2.326	2.576
	- .1	-2.400	-1.673	-1.292	-0.836	0.017	0.846	1.270	1.716	2.000	2.252	2.482
	- .2	-2.472	-1.700	-1.301	-0.830	0.033	0.850	1.258	1.680	1.945	2.178	2.388
	- .3	-2.544	-1.726	-1.309	-0.824	0.050	0.853	1.245	1.643	1.890	2.104	2.294
	- .4	-2.615	-1.750	-1.317	-0.816	0.066	0.855	1.231	1.606	1.834	2.029	2.201
	- .5	-2.686	-1.774	-1.323	-0.808	0.083	0.856	1.216	1.567	1.777	1.955	2.108
	- .6	-2.755	-1.797	-1.328	-0.800	0.099	0.857	1.200	1.528	1.720	1.880	2.016
	- .7	-2.824	-1.819	-1.333	-0.790	0.116	0.857	1.183	1.488	1.663	1.806	1.926
	- .8	-2.891	-1.839	-1.336	-0.780	0.132	0.856	1.166	1.448	1.606	1.733	1.837
	- .9	-2.957	-1.858	-1.339	-0.769	0.148	0.854	1.147	1.407	1.549	1.660	1.749
	-1.0	-3.022	-1.877	-1.340	-0.758	0.164	0.852	1.128	1.366	1.492	1.588	1.664
	-1.1	-3.087	-1.894	-1.341	-0.745	0.180	0.848	1.107	1.324	1.435	1.518	1.581
	-1.2	-3.149	-1.910	-1.340	-0.732	0.195	0.844	1.086	1.282	1.379	1.449	1.501
	-1.3	-3.211	-1.925	-1.339	-0.719	0.210	0.838	1.064	1.240	1.324	1.383	1.424
	-1.4	-3.271	-1.938	-1.337	-0.705	0.225	0.832	1.041	1.198	1.270	1.318	1.351
	-1.5	-3.330	-1.951	-1.333	-0.690	0.240	0.825	1.018	1.157	1.217	1.256	1.282
	-1.6	-3.388	-1.962	-1.329	-0.675	0.254	0.817	0.994	1.116	1.166	1.197	1.216
	-1.7	-3.444	-1.972	-1.324	-0.660	0.268	0.808	0.970	1.075	1.116	1.140	1.155
	-1.8	-3.499	-1.981	-1.318	-0.643	0.282	0.799	0.945	1.035	1.069	1.087	1.097
	-1.9	-3.553	-1.989	-1.310	-0.627	0.294	0.788	0.920	0.996	1.023	1.037	1.044
	-2.0	-3.605	-1.996	-1.302	-0.609	0.307	0.777	0.895	0.959	0.980	0.990	0.995
	-2.1	-3.656	-2.001	-1.294	-0.592	0.319	0.765	0.869	0.923	0.939	0.946	0.949
	-2.2	-3.705	-2.006	-1.284	-0.574	0.330	0.752	0.844	0.888	0.900	0.905	0.907
	-2.3	-3.753	-2.009	-1.274	-0.555	0.341	0.739	0.819	0.855	0.864	0.867	0.869
	-2.4	-3.800	-2.011	-1.262	-0.537	0.351	0.725	0.795	0.823	0.830	0.832	0.833
	-2.5	-3.845	-2.012	-1.250	-0.518	0.360	0.711	0.771	0.793	0.798	0.799	0.800
	-2.6	-3.889	-2.013	-1.238	-0.499	0.368	0.696	0.747	0.764	0.768	0.769	0.769
	-2.7	-3.932	-2.012	-1.224	-0.479	0.376	0.681	0.724	0.738	0.740	0.740	0.741
	-2.8	-3.973	-2.010	-1.210	-0.460	0.384	0.666	0.702	0.712	0.714	0.714	0.714
	-2.9	-4.013	-2.007	-1.195	-0.440	0.390	0.651	0.681	0.683	0.689	0.690	0.690
	-3.0	-4.051	-2.003	-1.180	-0.420	0.396	0.636	0.660	0.666	0.666	0.667	0.667

ADDITIONAL CONSIDERATIONS IN FLOW-FREQUENCY ANALYSIS

There are important considerations in flow-frequency analysis beyond the type of distribution that may be used to fit the data. Some of these considerations are discussed below.

A short record of flood flows may contain large sampling errors because of chance geographical or temporal variations in rainfall during the period of record. Therefore a short record may be a poor indicator of the basic long-time distribution of floods at the site.

Flood flow frequencies often need to be determined for sites where there are no streamflow data. It is possible to examine the individual flood records within the region as a unit and to develop generalized relationships that apply anywhere in the region including ungaged sites. This approach often overcomes many of the uncertainties due to sampling error at individual sites. Several methods of regionalization have been developed to date; a study of such methods, and recommendations for their use, should be part of the continuing program of the Committee.

Another problem is the treatment of a record that contains one or more events of rare frequency--the so-called outlier problem. By using historical information at the site or at nearby sites it is often possible to assign a realistic recurrence interval to each outlier. This information is incorporated into the set of data to define the overall distribution. An alternative is to compute the frequency distribution omitting the rare events, plot the frequency line, and then to adjust the line to conform to the historical information. Where no historical information is available, an obviously very rare event may be excluded from the computations. The specific treatment that is used to handle outliers should become a matter of record.

Where streamflow data are lacking at the site or where a regional analysis is not justified, the use of hydrologic methods, such as rainfall-runoff relationships and unit hydrograph studies, may be the only feasible approach.

In the flood series for some streams in arid regions, it is not unusual for one or more of the flood values to be zero. This poses a difficulty when using a logarithmic transformation because the logarithm of zero is minus infinity. One way around the difficulty is to add a small constant to all the items of data. A second is to determine the frequency relation from only non-zero items and afterwards to adjust the relation to the full period of record. This

method does not retain the zeros. A third method is to consider a two-step or conditional probability. If Z is the percentage of zero items, the frequency relation is based on the nonzero items, and defines the probability in $100 - Z$ percent of all years; Z percent of future years are considered as having expected values of zero. Or, for any one year, the expected probability of a zero flood is $Z/100$, and the expected probability of any other size of flood, given that the flood is not zero, is that furnished by the developed frequency relation. This may be thought of as a separation into two frequency relations, both solvable, which are then recombined.

The skew coefficient has greater variability between samples than the mean and standard deviation, and it is therefore a less reliable estimator of a population statistic for a particular site. Use of a regionalized skew coefficient to replace that coefficient computed from the station data has been recommended at times. The standard error of estimate of a sample skew coefficient S_g , taken from a normal population having zero skew, is given by

$$S_g = \sqrt{\frac{6N(N - 1)}{(N - 2)(N + 1)(N + 3)}}$$

where N is the number of years of record. For a selected confidence level, this can be used to test whether or not a skew coefficient computed at a site is significantly different from zero. If a regional average skew coefficient is considered appropriate, the average of the S_g 's, divided by \sqrt{n} , where n is the equivalent number of independent stations, should be used to test whether the regional value is significantly different from zero.

In the use of the log-normal and log-Pearson Type III distributions, an adjustment for length of record, referred to as "expected probability," has been applied to the probabilities. On the basis of comparative studies, it appears that the average fit of the log-Pearson is slightly improved by the use of this adjustment. However, the adjustment has been developed theoretically only for a normal (and log-normal) distribution, and its use for a log-Pearson Type III distribution is arbitrary. Simulation (Monte Carlo) techniques could be used to develop similar correction factors for the log-Pearson Type III distribution.

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WORK GROUP ON FLOOD FLOW FREQUENCY ANALYSIS

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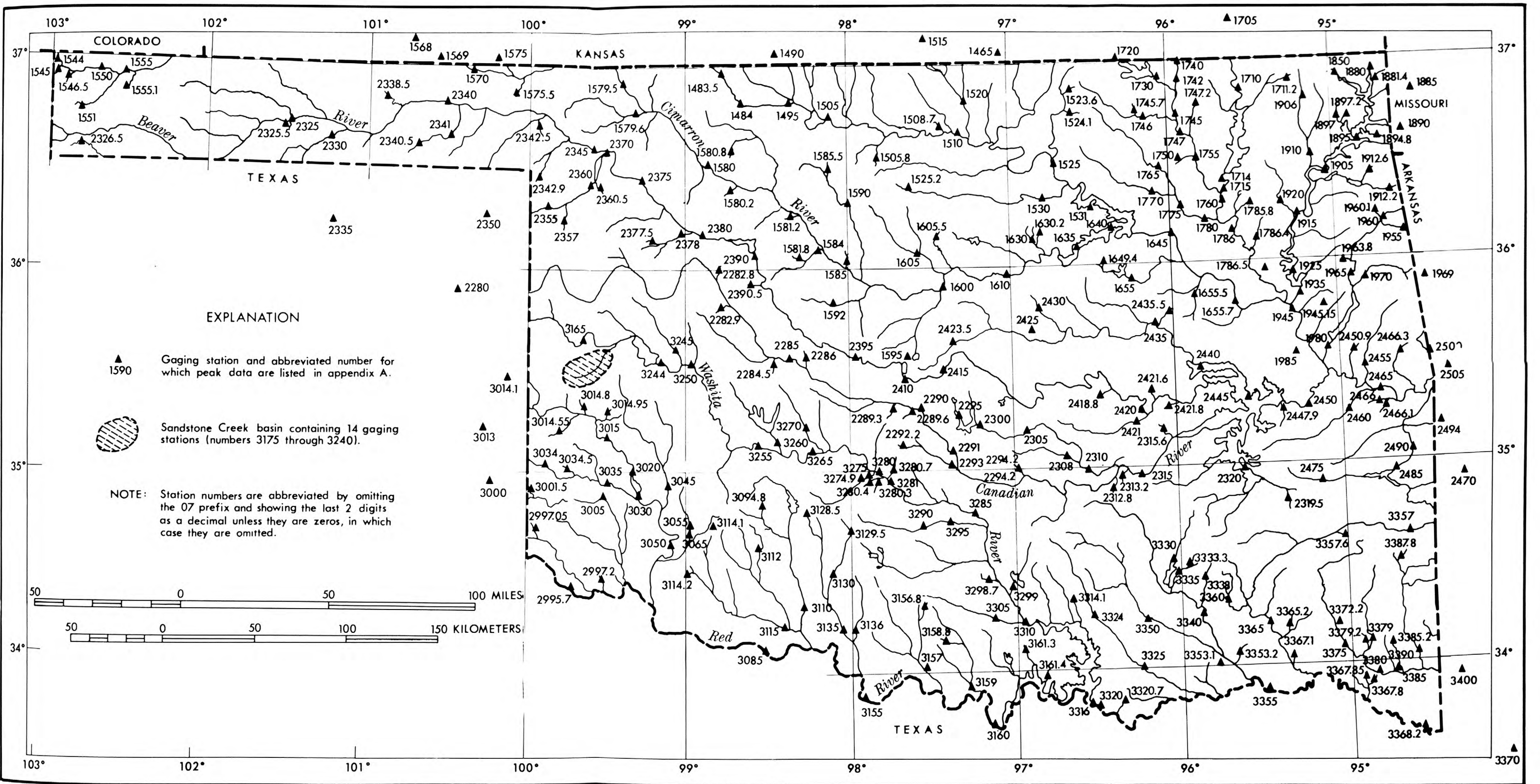


Figure 1. — Locations of gaging stations for which peak data are listed in appendix A.