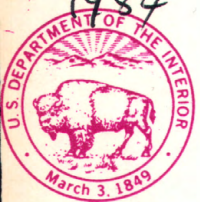
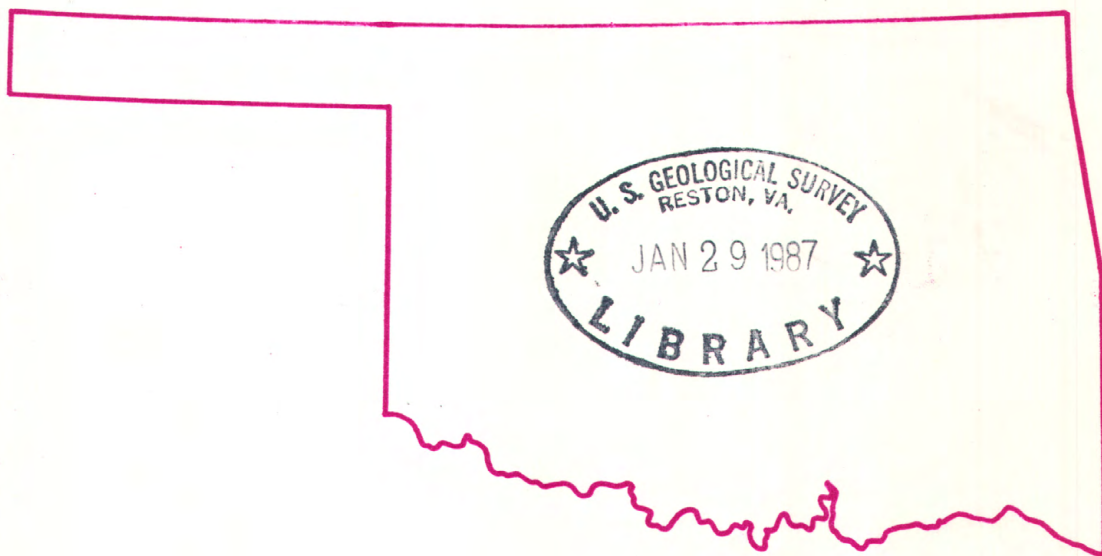


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Water Resources Data Oklahoma Water Year 1984



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-84-1
Prepared in cooperation with the State of Oklahoma
and with other agencies

CALENDAR FOR WATER YEAR 1984

1983

OCTOBER

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Water Resources Data Oklahoma

Water Year 1984

by L.D. Hawth, J.K. Kurklin, and D.M. Walters



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-84-1
Prepared in cooperation with the State of Oklahoma
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR
DONALD PAUL HODEL, Secretary

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PREFACE

This volume of the annual hydrologic data report of Oklahoma is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface-water data-collection network in each state, Puerto Rico, and the Trust Territories. These records of streamflow and water quality provide the hydrologic information needed by state, local, and federal agencies, and the private sector for developing and managing our Nation's land and water resources.

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines.

Report preparation was under the direct supervision of Joanne K. Kurklin, Hydrologic Records Unit Chief. The data were collected, computed, and processed by the following personnel:

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This report was prepared in cooperation with the State of Oklahoma and with other agencies under the general supervision of Leland D. Hauth, Hydrologic Records Section Chief, and James H. Irwin, District Chief, Oklahoma.

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WATER RESOURCES DATA - OKLAHOMA, 1984

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Oklahoma each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Oklahoma."

This report includes records on surface water in the State. Specifically, it contains: (1) Discharge records for 122 streamflow-gaging stations, for 3 partial-record or miscellaneous streamflow stations, and for 39 crest-stage, partial-record streamflow stations; (2) stage and content records for 28 lakes and reservoirs; and (3) water-quality records for 36 streamflow-gaging stations, 3 lakes and for 4 ungaged streamsites.

This series of annual reports for Oklahoma began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantity and quality of surface water.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Oklahoma were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface Water Supply of the United States, Parts 7A and 7B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Distribution Branch, Text Products Section, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report OK-84-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on back of title page or by telephone (405) 231-4256.

COOPERATION

The U.S. Geological Survey and organizations of the State of Oklahoma have had cooperative agreements for the systematic collection of streamflow records since 1935, and for water quality records since 1941. Organizations that assisted in collecting the data through cooperative agreement with the Survey are:

Oklahoma Water Resources Board, Gerald E. Borelli, Chairman
and James R. Barnett, Executive Director.
Oklahoma Department of Transportation, Richard A. Ward, Chief Engineer.
Oklahoma Geological Survey, Charles J. Mankin, Director.
Oklahoma State Department of Health, Environmental Health Services, Mark S. Coleman,
Deputy Commissioner.
Oklahoma City Water Department, Earl Potts, Director of Water Services.

The following Federal agencies assisted in the data collection program by providing funds or services:

Corps of Engineers, U.S. Army
Bureau of Reclamation, U.S. Department of Interior
Bureau of Land Management, U.S. Department of Interior

Assistance in the form of funds or services was rendered by the city of Oklahoma City and the following organizations through the Oklahoma Water Resources Board: Grand River Dam Authority; Central Oklahoma Master Conservancy District; Fort Cobb Reservoir Master Conservancy District; Lugert-Altus Irrigation District; Foss Reservoir Master Conservancy District; Mountain Park Master Conservancy District; Oklahoma Gas and Electric Company; the cities of Ada, Altus, Claremore, Lawton, Sapulpa, and Tulsa.

Organizations that supplied data are acknowledged in the station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

During the 1984 water year, record or near record peak runoff was recorded during two separate storms. The storm of October 17-23, 1983, produced as much as 17 inches of rain as a result of Hurricane Tico and exceeded the 100-year, 24-hour storm frequency in central and southwest Oklahoma (Hershfield, 1961). The storm of May 17, 1984, produced as much as 14 inches of rain in isolated areas over the city of Tulsa which also exceeded the 100-year storm frequency. Total damages from these two storms exceeded \$190 million with a total of 19 deaths (U.S. Corp of Engineers, 1985).

Resulting flood magnitudes exceeded 100-year recurrence intervals at many stream-gaging stations. Indirect determinations of peak discharges were made after these floods at sites where gaging-station data were not available. These supplemental data collected during 1984, as well as other historical flood discharges, are from Hauth (1985), Buckner and Kurklin (1984), Corley and Huntzinger (1979), Bingham and others (1974), Thomas and Corley (1973), and U.S. Geological Survey (1954).

The ratio of relative flood magnitude to respective drainage areas from all gaging stations and supplemental-data sites were related to drainage areas as shown in figure 1. A curve was drawn enclosing the upper limit of all flood peak data. Data points plotting near the limiting curve are considered to be outstanding floods. Flood discharges for 1984 at many sites plot near the limiting curve and therefore reflect the magnitude of 1984 runoff.

Selected stream hydrographs (fig. 2) of daily flows in 1984 from the southwest, northwest, and east-central parts of the State reflect the high October runoff. Stream runoff was greater than the median discharge during the first one-half of the year and generally less than the median discharge during the last one-half (fig. 2). Median discharges shown in figure 2 are presented for those periods of record reflecting current flow-regulated conditions within each basin.

Chemical Quality of Streamflow

The quality of Oklahoma's surface water had no significant trend in the 1984 water year. Concentrations of dissolved solids were steady to slightly higher across the State in 1984 than they were in 1983, with the largest increases occurring in the North Canadian River and Cimarron River basins.

Nutrient and trace-metal concentrations were relatively constant, as compared to the previous year. The exception to this was the Kiamichi River basin in southeastern Oklahoma, where nutrient concentrations were more than twice those of the previous year.

Sediment concentrations were less in the northwest and central areas of the State than those in 1983. The Washita River and Red River basins in the southwest and southern parts of the State had increases in sediment concentration as compared to the previous year, whereas concentrations in the eastern one-third of the State were constant.

REFERENCES CITED

- Bingham, R.F., Bergman, D.L., and Thomas, W.O., Jr., 1974, Flood of October 1973 in Enid and vicinity, north-central Oklahoma: U.S. Geological Survey Water-Resources Investigations 27-74, scale 1:250,000, 1:126,720, 2 sheets.
- Buckner, H.D., and Kurklin, J.K., 1984, Floods in south-central Oklahoma and north-central Texas: U.S. Geological Survey Open-File Report 84-065, p.
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- U.S. Geological Survey, 1954, Floods of May 1951 in western Oklahoma and northwestern Texas: U.S. Geological Survey Water-Supply Paper 1227-B, p. 135-199.
- U.S. Corps of Engineers, 1985, Flood of May 27, 1984 in Tulsa, Oklahoma metropolitan area: USCE southwest division Tulsa district documentation report; 125 p.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

EXPLANATION OF THE RECORDS

The surface-water and water-quality records published in this report are for the 1984 water year that began October 1, 1983, and ended September 30, 1984. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The locations of the stations where the data were collected are shown in figures 3-5. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations where only miscellaneous measurements are made.

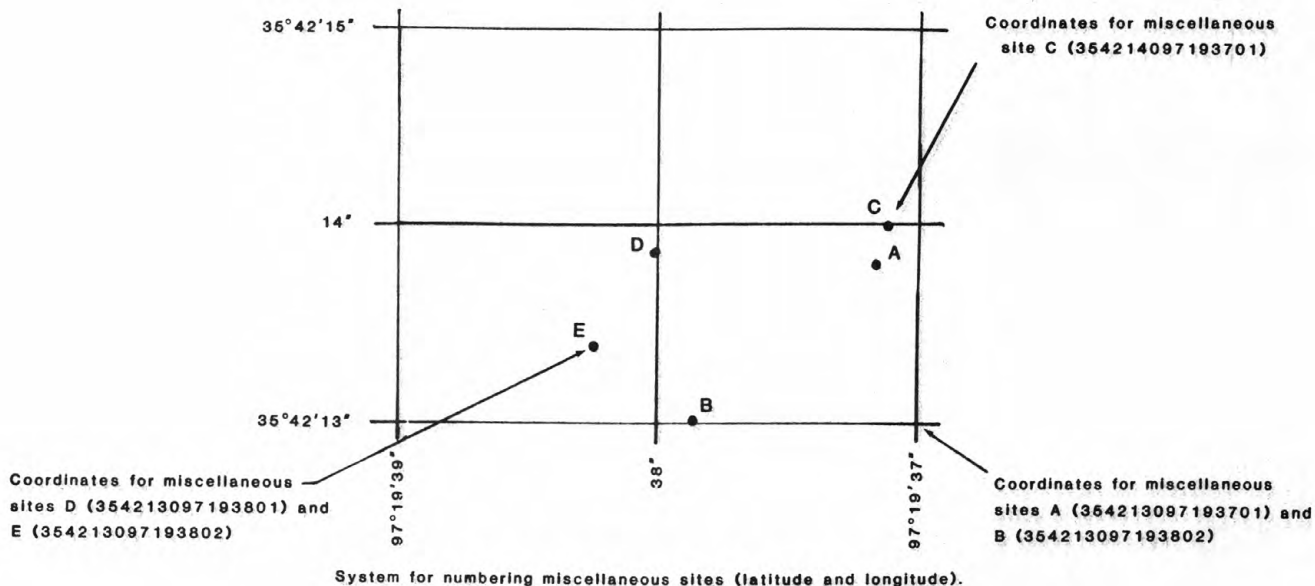
Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 07152500, which appears just to the left of the station name, includes the two-digit Part number "07" plus the six-digit downstream-order number "152500." The Part number designates the major river basin; for example, part "07" is the Lower Mississippi River basin.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure below.)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharge may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Location of all complete-record, crest-stage partial-record, and low-flow partial-record stations for which data are given in this report are shown in figures 3-4.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. It is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information.

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge,

that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--This paragraph is used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FI"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversions, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements and others collected for some special reason are called measurements at miscellaneous sites.

Accuracy of the Records

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

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

Records of discharge, not published by the Geological Survey, are collected in Oklahoma at several sites by the U.S. Army Corps of Engineers. The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of these sites as well as an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Oklahoma District office. Also, most of the daily mean discharges are in computer-readable form.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 4.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed on p. 17 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey District Office whose address is given on the back of the title page of this report.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the computed value or the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colo. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, and water temperature then follow in sequence.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organisms may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

DEFINITIONS OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C \pm 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C \pm 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35 °C \pm 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area of volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105 °C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloro-platinate ion. Color is expressed in units of the platinum-cobalt scale.

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

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

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream.

Cubic foot per second (ft³/s)¹ is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic feet per second per square mile [(ft³/s)/mi²]¹ is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 μ m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

¹Until appropriate changes can be made to the WATSTORE and Prime computer systems, the unit abbreviations "CFS" and "CFSM" will appear in some computer-generated table headings and summaries.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part of all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter ($\mu\text{g/L}$, $\mu\text{g/l}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/L , mg/l) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentrations of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

The particle-size distribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen release (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/m².time)] for periphyton and macrophytes and [mg C/(m³.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O/(m².time)] for periphyton and macrophytes and [mg O/m³.time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

Surface area of a lake is that area outlined on the latest U.S. Geological Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimeted. All areas shown are those for the stage when the planimeted map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<u>Hexagenia</u>
Species.....	<u>hexagenia limbata</u>

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1984, is called the "1984 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehle, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

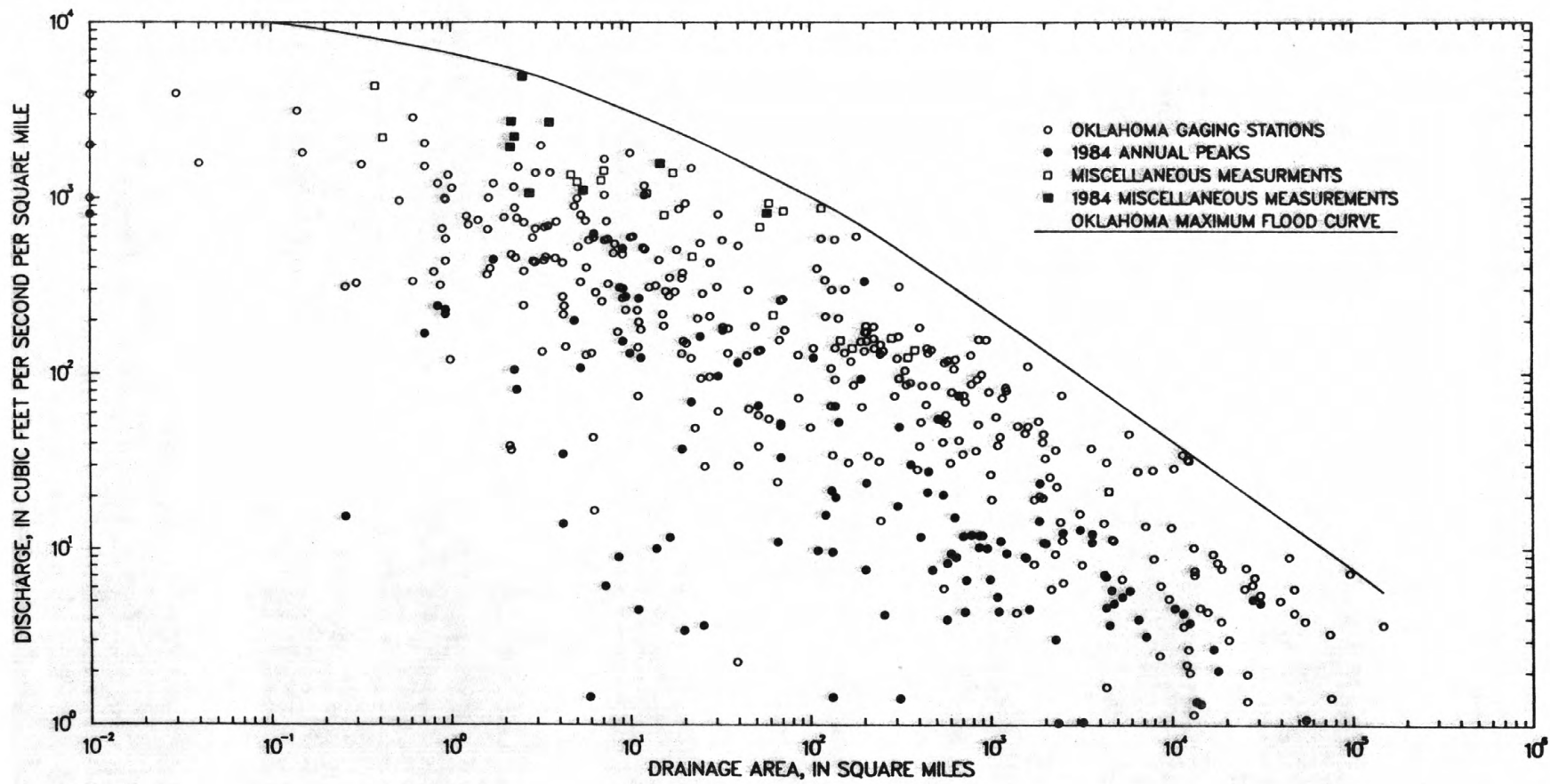


Figure 1.-- Ratio of flood magnitude to respective drainage areas.

DISCHARGE IN CUBIC FEET PER SECOND

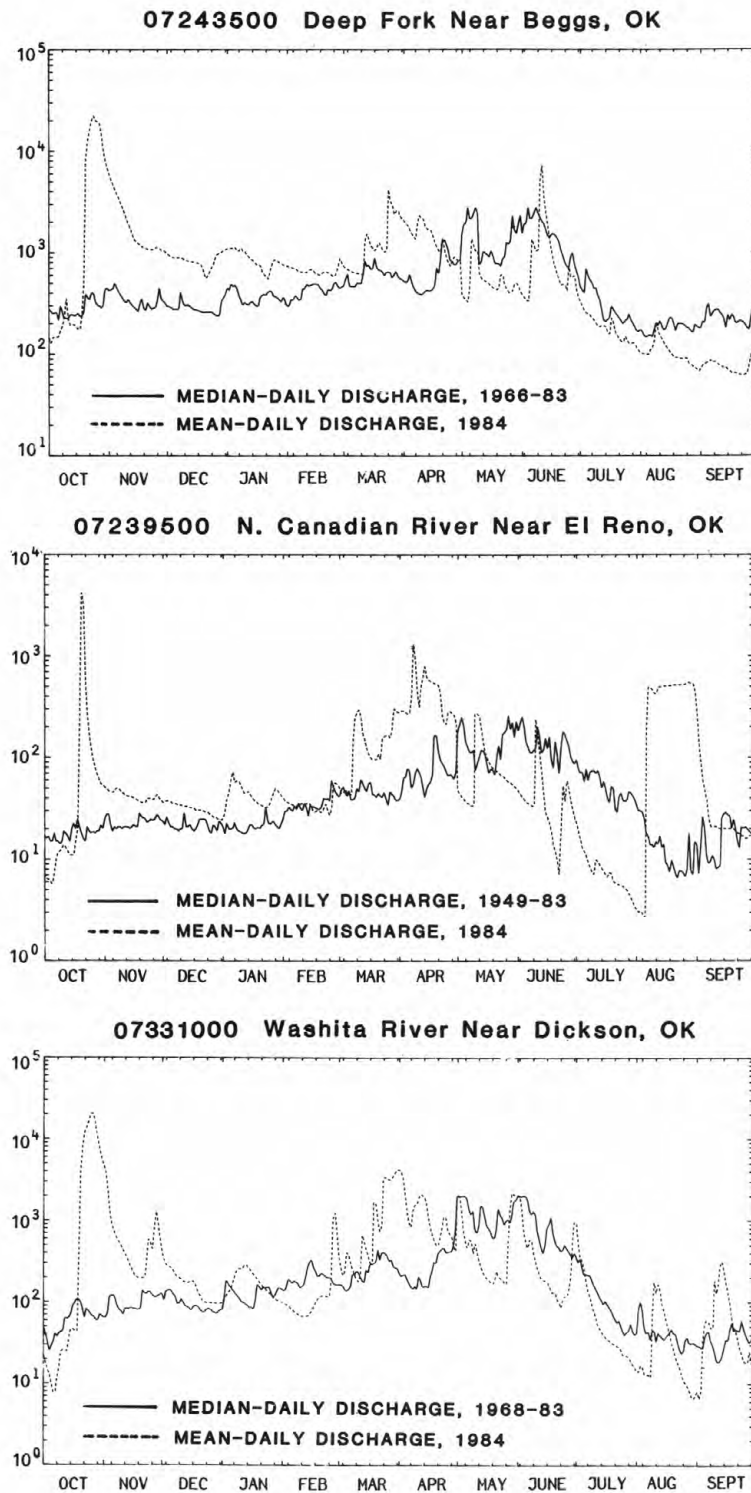


Figure 2.-- Selected hydrographs of daily flows.

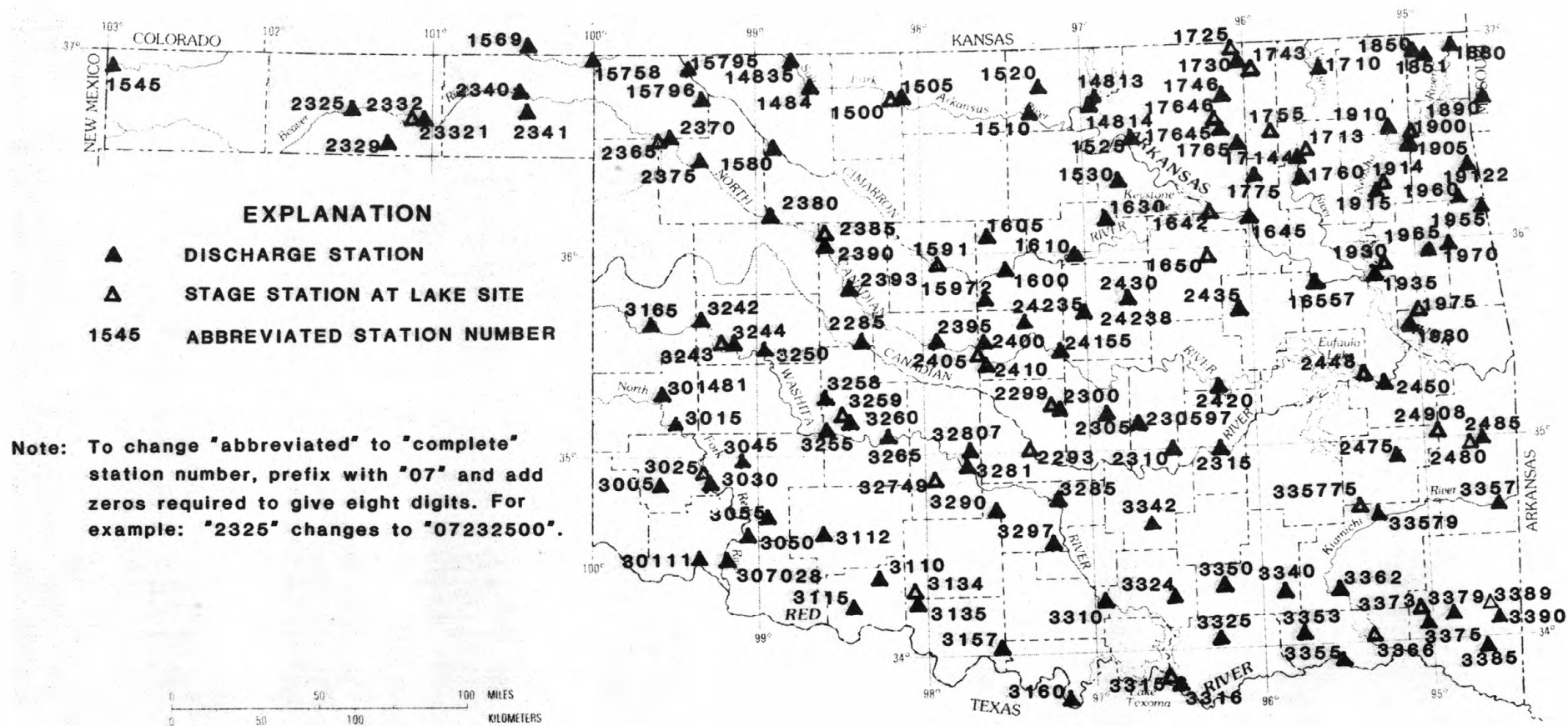


Figure 3.--Location of continuous-record, surface-water stations, water year 1984.

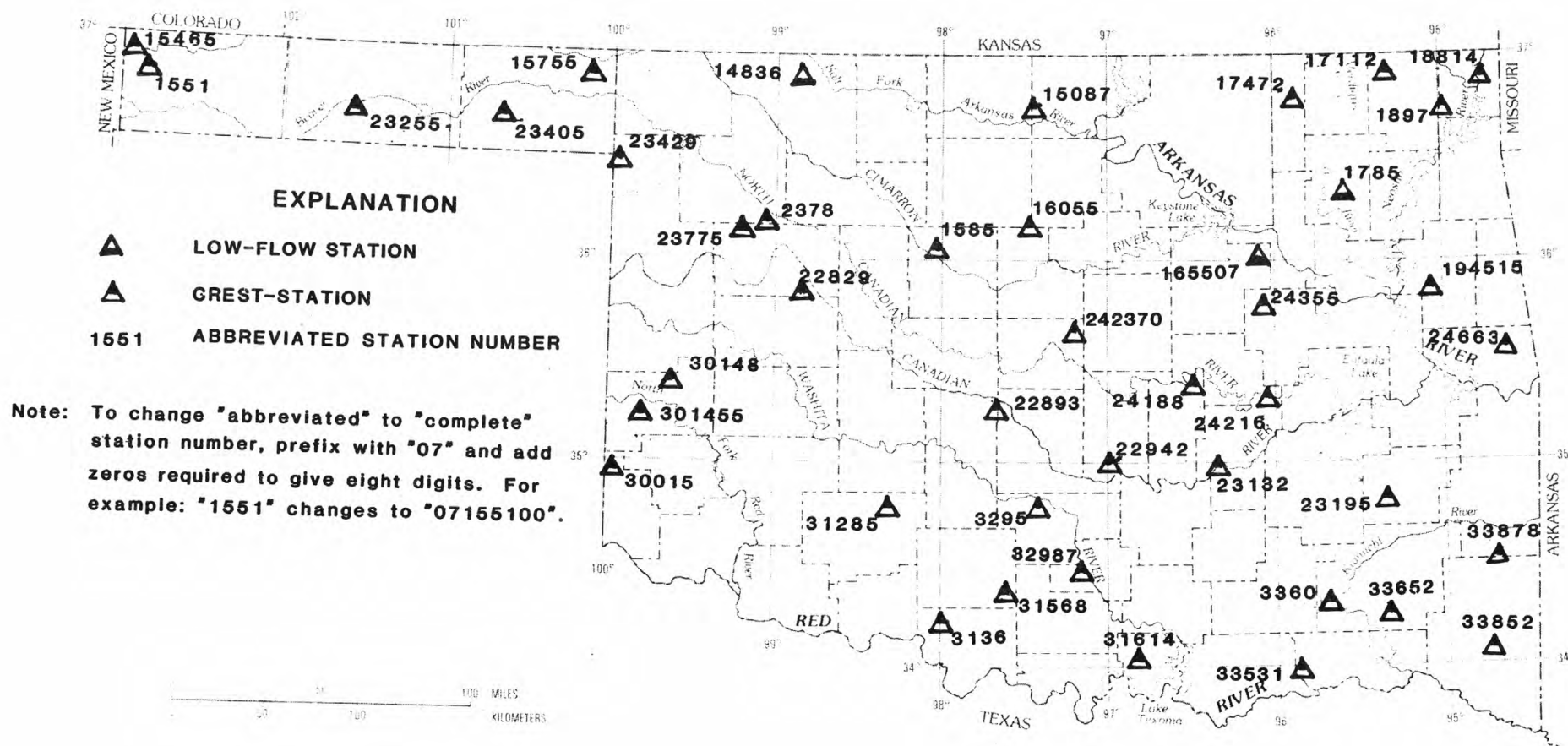


Figure 4.--Location of partial-record stations, water 1984.

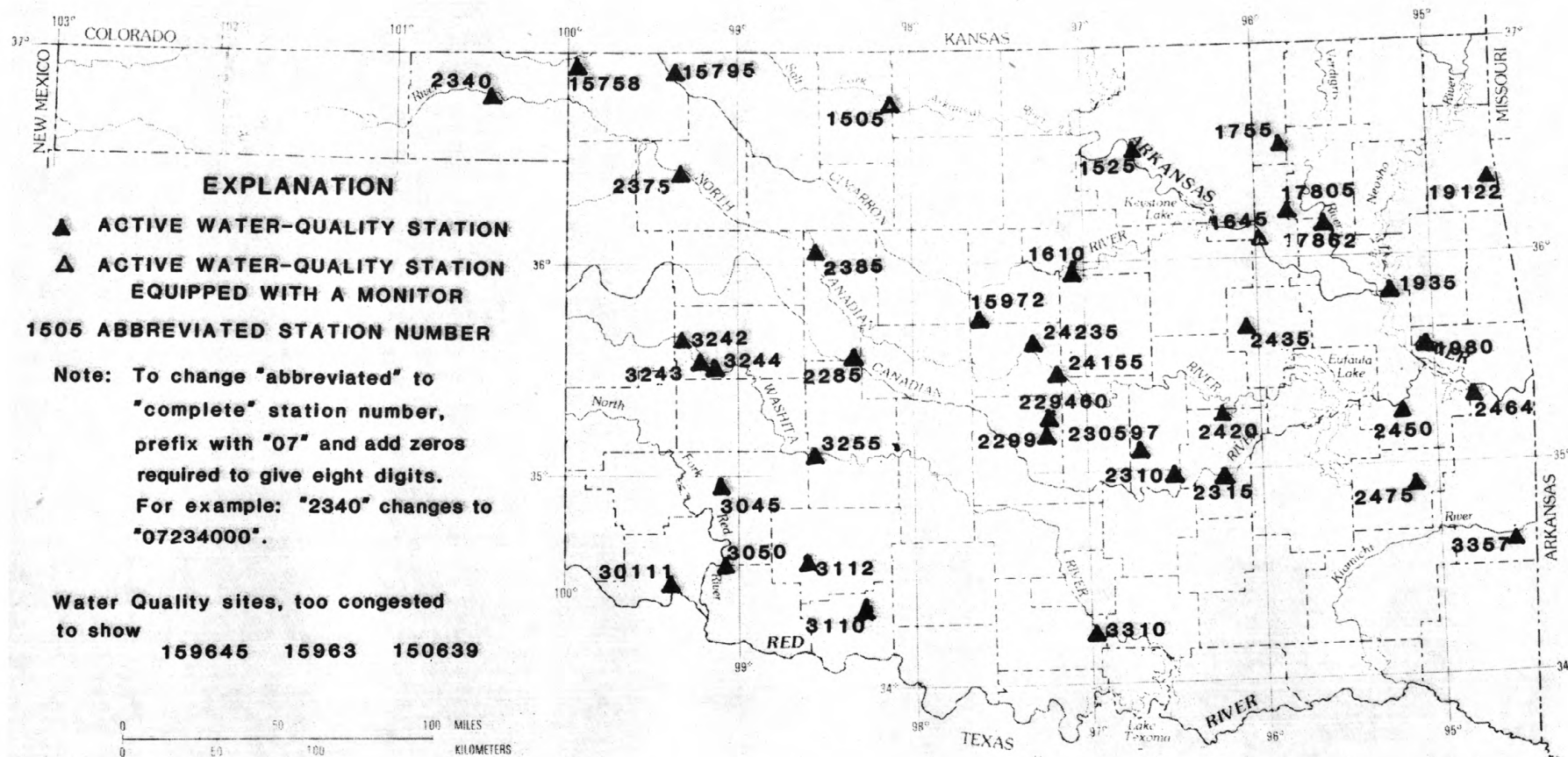


Figure 5.--Location of water-quality stations, water year 1984.

07148130 KAW LAKE NEAR PONCA CITY, OK

LOCATION.--Lat 36°41'58", long 96°55'18", in NW 1/4 SW 1/4 sec.30, T.26 N., R.4 E., Osage County, Hydrologic Unit 11060001, 1,700 ft (518 m) east of centerline of spillway on dam on Arkansas River, about 8 mi (13 km) east of Ponca City, and at mile 653.7 (1,051.8 km).

DRAINAGE AREA.--46,530 mi² (120,513 km²), of which 7,607 mi² (19,702 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to July 8, 1976 nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by a rolled, earthfill dam. Spillway is concrete, gravity ogee-weir type controlled by 8, 50 ft (15.2 m) taintor gates. Outlet works consist of two sluice gates. Regulated storage began April 22, 1976; conservation pool first filled July 6, 1976. Capacity, 1,348,000 acre-ft (1.66 km³), at elevation 1,044.5 ft (318.36 m), top of flood control pool, 428,600 acre-ft (528 hm³), at elevation 1,010.0 ft (307.85 m), top of conservation pool, and 250,700 acre-ft (309 hm³), at elevation 997.5 ft (304.04 m), crest of controlled spillway. Dead storage 85,100 acre-ft (105 hm³) below elevation 978.0 ft (298.09 m). Figures given herein represent total contents. Reservoir is designed for flood control, water-quality control, recreation, fish and wildlife, and water supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 799,200 acre-ft (985 hm³) June 6, 1982, elevation, 1,027.27 ft (313.112 m), minimum since conservation pool first filled, 223,100 acre-ft (275 hm³) March 25, 1977, elevation, 995.06 ft (303.294 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 790,700 acre-ft (975 hm³) Mar. 29, elevation, 1,026.95 ft (313.014 m); minimum, 386,500 acre-ft (477 hm³) Feb. 26, elevation, 1,007.43 ft (307.065 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,007	379,700	1,020	624,000
1,012	463,700	1,025	741,200
1,016	539,800	1,030	873,000

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	401400	423400	442600	447100	449100	391400	738800	484600	437300	434700	402700	401200
2	400200	423700	444500	447300	449500	391200	720400	491900	437100	432600	402500	401200
3	402200	424100	446800	447700	449500	391600	698200	497300	436400	432400	402500	400900
4	402500	423600	448400	448200	449300	393800	675400	506700	435500	433600	402800	400100
5	402500	423600	450500	448700	448900	395200	654000	510200	435300	433600	402800	400100
6	402800	423600	449800	448700	448000	398100	631600	510500	433400	434000	402700	399100
7	403200	423600	450400	448200	445200	398600	612700	508200	431700	432900	403000	398300
8	404000	423100	449800	448000	440500	398100	610500	504000	434300	432400	403700	399200
9	404100	425100	449500	449500	435900	397300	635000	498600	443800	431400	403500	398900
10	404100	423900	448700	448700	430700	396200	660400	495100	492300	430700	404600	398900
11	406400	423700	448200	448600	426200	395200	665900	491700	513600	430000	404800	398400
12	405800	423600	447500	447700	421400	395700	665600	487200	515800	428900	405000	398100
13	406100	423100	446600	446600	416700	397000	666600	481800	514800	426800	404800	397600
14	405300	423700	446400	445700	411600	397000	654400	475800	511900	423200	404600	397800
15	406900	424100	446300	444000	407200	399700	634300	496000	507800	420400	404000	396300
16	407400	424700	446100	443300	402800	401500	612200	521200	502400	417500	403700	395500
17	410200	425700	447000	443800	398900	407700	589400	525700	498300	414700	403500	395700
18	411300	426100	446600	443000	396300	421500	566500	513400	494000	411100	403800	395800
19	413800	427100	445000	443100	393600	465000	544100	502200	488400	407700	401900	396600
20	421700	428100	444500	443300	390300	516500	523000	489100	483300	405600	402000	397500
21	427800	428600	445000	443800	388900	546300	503600	479600	477200	404300	401900	397300
22	427600	430000	444900	444500	388400	562000	490200	471000	471200	402800	401000	397600
23	426800	431700	445400	445000	388500	602600	479600	458200	465200	402700	400900	397800
24	426400	432600	445200	445600	387800	674900	475800	450000	460700	402800	400900	398800
25	423400	433600	445200	446400	387300	739700	471000	445400	458400	402700	401200	397900
26	421900	434300	445700	447100	391400	777900	472900	438600	454300	403200	401000	396600
27	420700	435900	446300	447000	393300	782200	470700	434000	449100	403500	401500	397300
28	421400	437400	445400	447000	392800	789400	470100	434100	443800	403200	401400	396600
29	422200	439800	446600	448000	392000	784500	473200	437800	439800	403200	401500	396600
30	422700	440900	446800	448400	---	768600	479600	437800	437600	402800	402000	396200
31	423100	---	447000	448600	---	754000	---	436700	---	403000	401700	---
MAX	427800	440900	450500	449500	449500	789400	738800	525700	515800	434700	405000	401200
MIN	400200	423100	442600	443000	387300	391200	470100	434000	431700	402700	400900	395500
(+)	1009.67	1010.71	1011.06	1011.15	1007.78	1025.51	1012.87	1010.47	1010.52	1008.46	1008.38	1008.04
(++)	+21,700	+17,800	+6,100	+1,600	-56,600	+362,000	-274,400	-42,900	+900	-34,600	-1,300	-5,500

CAL YR 1983 MAX 751900 MIN 388400 (++) -5,000
WTR YR 1984 MAX 789400 MIN 387300 (++) -5,200

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

ARKANSAS RIVER BASIN

07148140 ARKANSAS RIVER NEAR PONCA CITY, OK

LOCATION.--Lat 36°41'55", long 96°55'40", in SW 1/4 SE 1/4 sec.25, T.26 N., R.3 E., Kay County, Hydrologic Unit 11060001, at spillway of Kaw Dam, about 8 mi (13 km) east of Ponca City, and at mile 653.7 (1,051.8 km).

DRAINAGE AREA.--46,530 mi² (120,513 km²), of which 7,607 mi² (19,702 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1976 to current year.

GAGE.--Gate position recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records poor.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s (637 m³/s) Mar. 30, 1984; no flow May 13, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,500 ft³/s (637 m³/s) Mar. 30; minimum daily, 140 ft³/s (3.96 m³/s) Nov. 16 to Dec 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	600	140	250	893	1600	18800	6090	2420	3000	318	169
2	170	600	140	250	893	1230	18800	6200	2100	2910	318	169
3	170	600	140	250	1010	1000	21200	7080	2100	1850	208	169
4	170	600	140	250	1130	1000	21600	8200	2100	1100	150	169
5	170	600	341	250	1130	1000	20400	8200	2100	1100	150	169
6	170	600	600	746	1130	1630	19800	8200	2100	1100	150	169
7	170	600	600	1100	2360	2050	19200	8200	2100	1100	150	169
8	170	600	842	1100	3600	2050	19000	8200	1480	1100	150	169
9	170	600	1150	1100	3600	1720	19500	8200	1000	1100	150	169
10	170	600	1150	1100	3600	1500	20500	6960	1000	1100	150	169
11	170	600	1150	1100	3600	1500	21000	6000	2000	1100	150	169
12	170	600	1150	1100	3600	1500	21000	6000	4330	1100	150	169
13	170	600	1150	1100	3600	896	21000	6000	5000	1830	228	169
14	170	600	823	1100	3600	813	21000	6000	5000	2200	300	169
15	170	341	500	1100	3600	1070	20500	6000	5000	2200	300	169
16	170	140	500	894	3600	1070	19500	8830	5000	2200	300	169
17	170	140	500	550	2660	1070	19000	11100	5000	2200	300	169
18	170	140	500	550	2200	1070	18500	12000	5000	2200	300	169
19	170	140	500	387	2200	2410	18000	12000	4590	2200	300	169
20	170	140	354	280	2200	6840	18000	12000	4600	1800	300	169
21	800	140	250	280	1410	12200	17800	11300	4850	1100	300	169
22	1900	140	250	280	800	14000	17200	9110	5000	1100	300	169
23	1900	140	250	280	800	14200	15300	10700	5000	613	300	169
24	1900	140	250	280	800	15300	9670	7270	5000	318	263	169
25	1900	140	250	280	800	16400	8000	5300	5000	318	169	169
26	1700	140	250	613	800	16500	7120	5300	5000	318	169	169
27	1120	140	250	893	800	18200	6000	5300	5000	318	169	169
28	538	140	250	893	1280	16900	6000	5300	5000	318	169	169
29	300	140	250	893	1600	21400	6000	4020	3790	318	169	169
30	300	140	250	893	---	22500	6000	3250	3000	318	169	169
31	456	---	250	893	---	20200	---	3030	---	318	169	---
TOTAL	16214	10841	15120	21035	59296	220819	495390	231340	110660	39847	6868	5070
MEAN	523	361	488	679	2045	7123	16510	7463	3689	1285	222	169
MAX	1900	600	1150	1100	3600	22500	21600	12000	5000	3000	318	169
MIN	170	140	140	250	800	813	6000	3030	1000	318	150	169
AC-FT	32160	21500	29990	41720	117600	438000	982600	458900	219500	79040	13620	10060
CAL YR 1983 TOTAL		1084138		MEAN	2970	MAX	20000	MIN	140	AC-FT	2150000	
WTR YR 1984 TOTAL		1232500		MEAN	3367	MAX	22500	MIN	140	AC-FT	2445000	

07148350 SALT FORK ARKANSAS RIVER NEAR WINCHESTER, OK

LOCATION.--Lat 36°57'45", long 98°46'55", in NE 1/4 SE 1/4 sec.26, T.29 N., R.15 W., Woods County, Hydrologic Unit 11060002, near left bank on downstream side of pier of county road bridge, 1 mi (2 km) northeast of Winchester, 2.5 mi (4.0 km) upstream from Greenwood Creek, 4.9 mi (7.9 km) downstream from Yellowstone Creek, 5 mi (8 km) downstream from State line, 19 mi (31 km) northwest of Alva, and at mile 156.2 (251 km).

DRAINAGE AREA.--856 mi² (2,220 km²).

PERIOD OF RECORD.--October 1959 to current year. Monthly discharge only for some periods, published in WSP 1731.

REVISED RECORDS.--WSP 1731: Drainage area. WSP 1921: 1960.

GAGE.--Water-stage recorder. Datum of gage is 1,410.05 ft (429.783 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--25 years, 85.1 ft³/s (2.410 m³/s), 61,650 acre-ft/yr (76.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Aug. 19, 1961, gage height, 13.95 ft (4.252 m), from rating curve extended above 17,400 ft³/s (493 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1957 reached a stage of 15.4 ft (4.69 m), from information by county engineer, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 588 ft³/s (16.7 m³/s) Mar. 18, gage height 6.42 ft (1.957 m), no peak above base 5,000 ft³/s (142 m³/s); minimum daily discharge, .04 ft³/s (.001 m³/s) Sept. 7, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	18	35	21	62	41	194	149	23	6.7	.52	.12
2	2.9	24	36	23	55	39	272	115	20	5.6	.44	.18
3	1.7	23	43	25	51	35	239	106	21	4.6	.43	.18
4	1.3	16	41	29	50	39	165	96	41	3.9	.70	.17
5	.90	15	44	27	49	38	152	102	39	3.4	.42	.14
6	1.8	29	41	60	46	37	143	129	26	3.2	.39	.10
7	5.3	48	41	105	49	35	158	131	18	2.9	.56	.04
8	8.7	47	41	101	49	31	389	104	23	1.7	.70	.10
9	7.1	41	39	90	59	30	268	87	66	1.2	.58	.18
10	6.4	32	39	72	61	29	201	76	16	1.1	1.1	.15
11	14	29	40	65	62	27	182	67	11	1.4	.55	.04
12	15	26	41	59	58	33	166	64	8.0	2.5	.30	.05
13	9.2	27	42	35	53	35	135	66	7.0	1.6	.30	.08
14	6.8	27	40	45	48	34	109	74	28	.93	.30	.19
15	5.0	25	34	40	44	31	93	100	172	1.2	.27	.28
16	4.8	22	15	33	38	45	84	95	90	1.5	.27	.27
17	5.5	21	11	39	34	98	78	77	42	1.1	.25	.50
18	7.0	24	9.0	20	42	228	77	64	31	.91	.22	.35
19	8.7	24	7.9	10	44	212	80	72	27	.77	.21	.29
20	41	23	7.6	18	45	140	111	64	32	.74	.37	.23
21	86	24	6.6	13	44	155	129	57	34	.71	.24	.20
22	58	22	6.1	19	45	100	112	55	28	.68	.24	.22
23	44	20	7.0	30	42	135	96	53	19	.71	.21	.18
24	33	21	7.5	35	40	304	87	47	17	.66	.18	.11
25	24	23	6.5	50	41	317	84	42	13	.71	12	.12
26	23	30	15	35	53	211	80	38	19	.69	29	.35
27	25	49	19	62	47	166	73	36	17	.65	.91	.62
28	21	44	13	109	42	192	70	34	13	.58	.29	.37
29	17	37	11	114	39	139	121	32	10	.56	.22	.41
30	15	43	7.0	78	---	120	174	30	7.9	.51	.22	.36
31	14	---	14	70	---	147	---	26	---	.54	.15	---
TOTAL	518.60	854	760.2	1532	1392	3223	4322	2288	918.9	53.95	52.54	6.58
MEAN	16.7	28.5	24.5	49.4	48.0	104	144	73.8	30.6	1.74	1.69	.22
MAX	86	49	44	114	62	317	389	149	172	6.7	.29	.62
MIN	.90	15	6.1	10	34	27	70	26	7.0	.51	.15	.04
AC-FT	1030	1690	1510	3040	2760	6390	8570	4540	1820	107	104	13
CAL YR 1983	TOTAL	30104.58		MEAN	82.5	MAX	3830	MIN	.26	AC-FT	59710	
WTR YR 1984	TOTAL	15921.77		MEAN	43.5	MAX	389	MIN	.04	AC-FT	31580	

07148400 SALT FORK ARKANSAS RIVER NEAR ALVA, OK

LOCATION.--Lat 36°48'45", long 98°38'50", in SW 1/4 SW 1/4 sec.18, T.27 N., R.13 W., Woods County, Hydrologic Unit 11060002, at bridge on U.S. Highway 281, 1.0 mi (1.6 km) northeast of Alva, 19 mi (31 km) upstream from Medicine Lodge River, and at mile 126.0 (202.7 km).

DRAINAGE AREA.--1,009 mi² (2,613 km²).

PERIOD OF RECORD.--April 1904 to December 1905 (gage heights only), October 1937 to September 1951, monthly discharge only for some periods, published in WSP 1311, October 1979 to current year. Occasional low flow measurements water years 1952-54, 1977-79.

GAGE.--Water stage recorder. Datum of gage is 1,292.04 ft (393.814 m) National Geodetic Vertical Datum of 1929. April 1904 to December 1905, chain gage at site 0.8 mi (1.3 km) upstream at different datum, and February 1938 to September 1951, water stage recorder at present site and at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--19 years (water years 1938-51, 1980-84), 143 ft³/s (4.050 m³/s), 103,600 acre-ft/yr (128 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Oct. 23, 1941, from rating curve extended above 13,000 ft³/s (368 m³/s). Maximum gage height, 15.04 ft (4.584 m) Oct. 30, 1979; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 746 ft³/s (21.1 m³/s) Aug. 26, gage height 6.86 ft (2.091 m), no peak above base of 8,000 ft³/s (227 m³/s); minimum daily discharge, .43 ft³/s (.012 m³/s) Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	42	43	12	67	43	273	183	37	16	.80	4.2
2	8.4	41	44	15	64	44	296	164	34	15	.83	3.9
3	6.1	43	50	17	60	46	389	145	38	14	1.0	3.8
4	5.1	43	51	24	57	45	270	132	57	13	.89	4.0
5	4.8	35	50	32	53	46	221	135	56	12	3.3	5.2
6	11	40	48	58	50	47	209	150	46	11	2.2	4.3
7	9.4	53	44	73	49	46	232	158	36	9.0	1.9	1.6
8	12	57	43	89	48	46	439	147	47	7.3	1.0	2.7
9	16	53	41	78	55	46	382	123	135	6.0	.82	2.2
10	15	51	42	62	57	44	260	110	71	5.4	.89	2.7
11	18	42	44	51	56	42	234	109	39	4.7	.94	2.6
12	23	43	42	45	52	40	216	104	29	4.3	1.2	2.1
13	22	41	40	28	49	45	195	98	26	3.7	.82	1.4
14	20	40	41	21	48	47	179	99	27	4.0	.70	1.4
15	16	35	38	17	49	46	163	113	169	4.4	.59	1.2
16	13	34	29	15	47	50	154	121	149	3.5	.55	1.3
17	23	34	25	13	44	104	146	112	90	3.0	.47	1.7
18	29	35	20	11	44	112	144	100	64	2.8	.45	1.5
19	25	35	7.8	10	45	410	140	92	51	3.0	.45	1.4
20	39	33	4.6	11	48	199	139	102	41	2.3	.54	1.5
21	225	33	4.3	13	49	248	201	87	36	2.3	.52	1.5
22	89	34	4.2	17	47	182	161	82	36	1.7	.48	1.5
23	59	32	4.3	16	46	168	146	76	32	1.6	.50	1.5
24	65	33	4.7	30	42	340	138	66	28	1.6	.43	1.4
25	58	34	7.0	42	42	412	134	57	25	1.7	.47	1.3
26	38	42	6.8	57	48	285	126	55	30	1.7	288	1.5
27	37	48	7.0	64	50	244	115	53	29	1.4	40	2.2
28	35	40	9.2	81	43	267	99	50	27	1.1	15	1.7
29	43	34	8.2	103	44	246	142	48	24	1.1	11	2.5
30	46	40	7.8	79	---	210	305	45	20	.99	8.1	3.1
31	44	---	9.6	70	---	214	---	42	---	.82	5.1	---
TOTAL	1059.6	1200	820.5	1254	1453	4364	6248	3158	1529	160.41	389.94	68.9
MEAN	34.2	40.0	26.5	40.5	50.1	141	208	102	51.0	5.17	12.6	2.30
MAX	225	57	51	103	67	412	439	183	169	16	288	5.2
MIN	4.8	32	4.2	10	42	40	99	42	20	.82	.43	1.2
AC-FT	2100	2380	1630	2490	2880	8660	12390	6260	3030	318	773	137
CAL YR 1983	TOTAL	34377.42		MEAN	94.2	MAX	2510	MIN	.92	AC-FT	68190	
WTR YR 1984	TOTAL	21705.35		MEAN	59.3	MAX	439	MIN	.43	AC-FT	43050	

07150000 GREAT SALT PLAINS LAKE NEAR JET, OK

LOCATION.--Lat 36°44'40", long 98°08'08", in NW 1/4 SE 1/4 sec.11, T.26 N., R.9 W., Alfalfa County, Hydrologic Unit 11060004, at right end of Great Salt Plains Dam on Salt Fork Arkansas River, 4.5 mi (7.2 km) upstream from Wagon Creek, 5.5 mi (8.8 km) northeast of Jet, and at mile 103.3 (166.2 km).

DRAINAGE AREA.--3,200 mi² (8,288 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

PERIOD OF RECORD.--July 1941 to current year. Prior to October 1970, published as Great Salt Plains Reservoir near Jet.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. Outlet works consist of 310 ft (94.5 m) uncontrolled concrete spillway containing a series of three weirs to form a cascade. Storage began in June 1941; conservation pool was first filled Oct. 21, 1941. Capacity, 257,700 acre-ft (318 hm³) at elevation 1,138.5 ft (347.01 m), crest of upper weir, and 31,420 acre-ft (38.7 hm³) at elevation 1,125.0 ft (342.90 m), crest of intermediate weir and conservation pool. Reservoir is used for flood control and as a wildlife refuge. Figures given herein represent total contents. Revised capacity table, based on survey in 1971, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 189,400 acre-ft (234 hm³) July 2, 1951, elevation, 1,134.38 ft (345.759 m); minimum, 17,180 acre-ft (21.2 hm³) Sept. 6, 1973, elevation, 1,123.16 ft (342.339 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 56,470 acre-ft (69.6 hm³) Apr. 11, 12, elevation 1,127.45 ft (343.647 m); minimum, 18,650 acre-ft (23.0 hm³) Sept. 26, elevation 1,123.37 ft (342.403 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,123	16,080	1,126	40,070
1,124	23,280	1,127	51,180
1,125	31,420	1,128	62,940

RESERVOIR STORAGE, (AC-FT) WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31950	34020	33830	32810	34020	33180	48140	38380	34390	34390	28570	24010
2	32030	34020	33830	32810	34110	33180	47410	39220	33930	34110	28410	23770
3	31600	34110	34110	32810	34110	33180	47830	39860	33830	33930	28250	23520
4	31340	33550	34110	32810	34110	33280	46780	39860	33830	33650	28000	23440
5	31250	33550	34390	32810	34110	33280	46040	39860	33740	33460	27920	23360
6	31160	33830	34480	33000	34110	33280	44790	39860	33740	33180	27840	23520
7	31420	34020	34390	33090	33930	33280	44580	39770	33930	32900	27680	23520
8	31510	33930	34300	33460	33830	33180	48560	39860	33460	32720	27680	23210
9	31680	33410	34110	33830	33930	33090	52940	39400	33460	32630	27680	22920
10	32030	34580	34110	34020	34020	33090	55650	39220	33650	32440	27590	22780
11	32210	33930	34110	34260	34300	33000	56470	38750	34300	32160	27590	22700
12	32810	33650	34110	33930	34390	33000	56240	38190	35130	31880	27430	22490
13	32530	33740	34110	33930	34200	33090	54830	37730	35690	31700	27270	22340
14	32810	33830	34110	33930	33830	33280	53180	37640	35970	31700	27020	20830
15	32440	34020	34200	33930	34390	33550	50970	37730	36340	31510	26860	20260
16	31790	34020	34020	33740	34300	33280	49080	37640	36800	31260	26780	20260
17	32630	33930	33460	33550	33280	33650	47090	37450	37270	31090	26700	20260
18	32630	33830	33460	33460	34760	34020	45100	37270	37540	31010	26620	20040
19	32900	34020	33460	33460	34110	35690	43530	37080	37730	31010	26210	20400
20	33830	33930	33460	33280	33550	36990	41850	36520	37730	30850	26050	20400
21	35220	33740	33460	33280	33370	38380	41640	36340	37730	30690	25800	20400
22	35410	33740	33460	33180	33180	39960	41640	35870	37730	30520	25480	20180
23	35410	34020	33370	33180	33000	45420	40910	35500	37170	30360	25230	20180
24	35320	34110	33370	33180	33000	48870	40330	35690	36710	30120	25150	20110
25	35220	34110	33280	33180	32630	51890	39770	35220	36430	30040	24990	19180
26	35220	34760	33180	33180	31880	54360	39490	34670	36250	29870	24990	18890
27	35130	35690	33180	33180	32530	54470	39120	34670	35970	29550	24910	19180
28	34850	35320	33180	33280	33000	54470	38190	34580	35600	29300	24830	19100
29	34480	34200	33090	33460	33090	52710	39220	34580	35130	29140	24660	19460
30	34390	33830	33000	33740	---	50450	38570	34580	34670	28900	24260	19250
31	34110	---	33000	33930	---	49290	---	34580	---	28730	24180	---
MAX	35410	35690	34480	34260	34760	54470	56470	39860	37730	34390	28570	24010
MIN	31160	33550	33000	32810	31880	33000	38190	34580	33460	28730	24180	18890
(+)	1125.29	1125.26	1125.17	1125.27	1125.18	1126.82	1125.77	1125.34	1125.35	1124.67	1124.11	1123.44
(++)	+2320	-280	-830	+930	-840	+16200	-10720	-3990	+90	-5940	-4550	-4930
CAL YR 1983	MAX	62450	MIN	24260	(++)	-550						
WTR YR 1984	MAX	56470	MIN	18890	(++)	-12540						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-FEET

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK

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, Hydrologic Unit 11060004, near center of span on downstream side of county road bridge, 0.6 mi (0.97 km) downstream from Great Salt Plains Dam, 4 mi (6.4 km) upstream from Wagon Creek, 6 mi (9.7 km) northeast of Jet, and at mile 102.7 (165.2 km).

DRAINAGE AREA.--3,202 mi² (8,293 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,092.20 ft (332.903 m), National Geodetic Vertical Datum of 1929 (levels by U.S Army Corps of Engineers). Prior to Mar. 17, 1938, nonrecording gage at site 2.5 mi (4.0 km) upstream at datum 13.46 ft (4.103 m) higher. Mar. 17, 1938, to Apr. 26, 1953, water-stage recorder at site 200 ft (61.0 m) upstream, datum 5.00 ft (1.524 m) higher prior to Oct. 1, 1950.

REMARKS.--Records good. Flow regulated since June 1941 by Great Salt Plains Lake (station 07150000).

AVERAGE DISCHARGE.--(Since regulation by Great Salt Plains Dam) 43 years (water years 1942-84), 373 ft³/s (10.56 m³/s), 270,200 acre-ft/yr (333 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 25,900 ft³/s (733 m³/s) May 19, 1938, gage height, 13.80 ft (4.206 m), present datum; no flow at times in 1939-41, 1944, 1955-56.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,330 ft³/s (94.3 m³/s) Apr. 10, gage height, 6.69 ft (2.039 m); minimum daily discharge, 2.3 ft³/s (0.065 m³/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	154	153	128	281	226	1900	704	212	183	6.9	3.5
2	44	165	153	107	284	225	1850	872	157	173	7.0	4.5
3	63	178	198	101	289	208	1960	956	162	171	7.0	5.4
4	11	123	191	98	294	228	1770	921	173	155	6.9	4.8
5	11	128	219	100	258	225	1680	878	170	106	6.7	4.4
6	12	152	216	93	248	219	1520	903	197	104	6.1	2.4
7	11	176	189	117	232	224	1520	906	220	74	7.7	2.3
8	13	153	177	152	219	194	2180	891	91	108	6.4	3.1
9	14	310	171	189	269	183	2830	762	191	75	6.4	3.1
10	50	184	174	212	270	183	3120	797	260	59	6.2	3.8
11	60	129	207	215	316	162	3140	684	691	37	5.7	3.2
12	76	113	163	220	305	221	2950	610	889	18	5.5	3.3
13	64	149	180	210	259	214	2560	607	831	15	6.1	3.0
14	61	155	213	202	222	227	2280	605	800	34	6.2	3.5
15	53	169	192	197	289	262	1960	620	879	11	6.2	4.3
16	23	144	148	188	277	183	1720	599	989	9.7	5.8	3.2
17	63	139	127	184	133	305	1490	579	1060	13	5.1	7.0
18	55	145	111	187	395	312	1260	543	1010	9.9	4.8	11
19	80	184	100	173	191	876	1130	522	925	10	5.8	11
20	125	150	93	166	162	1000	906	456	811	7.4	6.1	11
21	285	132	92	161	170	1230	1110	432	723	7.2	5.7	10
22	283	152	98	151	161	1320	1070	378	626	7.0	6.4	11
23	274	194	111	150	150	1700	928	350	433	7.2	6.2	11
24	259	190	122	152	170	2290	829	388	430	7.3	6.1	10
25	262	158	141	159	123	2590	795	300	372	7.1	6.1	11
26	255	197	152	169	65	2910	823	237	401	7.2	5.6	11
27	240	320	153	179	265	2740	830	266	361	7.6	4.8	9.9
28	230	313	152	198	280	2720	648	251	315	7.3	4.9	11
29	181	138	147	222	235	2410	819	262	245	7.1	4.6	10
30	188	137	138	250	---	2140	705	244	218	6.9	4.8	10
31	166	---	125	270	---	2030	---	243	---	6.7	3.9	---
TOTAL	3546	5131	4806	5300	6812	29957	48283	17766	14842	1451.6	183.7	202.7
MEAN	114	171	155	171	235	966	1609	573	495	46.8	5.93	6.76
MAX	285	320	219	270	395	2910	3140	956	1060	183	7.7	11
MIN	11	113	92	93	65	162	648	237	91	6.7	3.9	2.3
AC-FT	7030	10180	9530	10510	13510	59420	95770	35240	29440	2880	364	402
CAL YR 1983 TOTAL	163614.9			MEAN	448	MAX	4260	MIN	5.9	AC-FT	324500	
WTR YR 1984 TOTAL	138281.0			MEAN	378	MAX	3140	MIN	2.3	AC-FT	274300	

ARKANSAS RIVER BASIN

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07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to September 1959, October 1961 to September 1963, July 1968 to current year.

WATER TEMPERATURE: October 1954 to September 1959, October 1961 to September 1963, July 1968 to current year.

CHLORIDES: October 1955 to September 1959.

INTRUMENTATION.--Water quality monitor since July 1968.

REMARKS.--In addition to water quality monitor, samples were collected by a local observer on a daily basis.

Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 57,000 microsiemens Jan. 28, 1977; minimum daily, 1,280 microsiemens Nov. 4, 1980.

WATER TEMPERATURE: Maximum daily, 36.0°C, Aug. 11, 1980; minimum daily, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 15,700 microsiemens Sept. 14; minimum 1,520 microsiemens June 12.

WATER TEMPERATURE: Maximum daily, 32.0°C July 21, Aug. 3, 10-11; minimum 0.0°C many days during Dec.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
NOV 30...	1500	740	80020	158	8200	8.4	3.0	13.5	107
FEB 15...	1315	722	80020	340	4520	8.2	12.0	11.4	113
MAY 23...	1430	738	80020	355	4680	8.0	24.5	8.9	112
AUG 24...	1700	732	80020	6.3	10400	8.7	27.0	15.0	203

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)
NOV 30...	630	490	160	55	1500	84	27	7.4	136
FEB 15...	510	350	130	46	920	79	18	5.1	164
MAY 23...	620	460	150	59	750	72	14	6.3	163
AUG 24...	850	720	200	86	2300	85	35	12	131

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8760	9940	8630	8830	6780	6900	3940	4040	4360	6300	9040	12300
2	8850	9770	8450	8840	5900	6940	3760	4300	4460	6550	9050	11800
3	9830	9660	8340	8850	5790	6840	4040	4470	4760	6540	8910	11700
4	9890	9620	7920	8870	5150	6720	4060	4220	4790	6070	9170	11700
5	9550	9450	8280	8690	5450	6680	3840	4240	4750	5970	9330	11600
6	9510	9300	8420	8660	5430	6620	3930	4240	4490	5920	9410	13600
7	9520	9360	7730	8640	5330	6410	3910	4260	5220	5960	8240	14200
8	9850	9350	7880	8560	5420	6400	3680	3750	5560	6090	8780	13500
9	9160	9220	8020	8200	5490	6500	3500	3460	5100	6050	9020	14400
10	9090	9090	7270	8330	5440	6290	3490	3470	5040	6000	8970	14400
11	9050	9490	8060	7200	5380	6210	3460	3400	1980	6850	8950	14400
12	9000	9480	5330	7160	4010	6210	2950	3630	1520	6720	10200	14400
13	9460	9500	---	7180	3880	6160	2940	3620	2320	6690	10200	15200
14	9430	9500	4940	7160	5310	6130	3370	3830	2760	6660	10200	15700
15	8970	9420	6840	7130	5180	6170	3380	3970	3620	6440	10200	15600
16	9220	9400	7150	7140	5870	6170	3300	4590	2260	7220	10500	15500
17	9440	9450	7740	7100	5890	6230	2950	4150	2360	7460	10500	14600
18	9610	9360	8060	7170	5800	6240	3320	3690	---	7540	11500	13300
19	---	9320	8070	7150	5890	5780	3310	3700	4080	7780	11500	13400
20	9340	9290	8360	7200	5950	5750	3400	3780	4160	8150	11000	13400
21	9560	8820	8330	7230	5550	4340	3400	4210	4230	8560	11400	13600
22	9950	8650	8430	7240	5510	5030	3310	4210	3680	8680	11400	13500
23	9980	8880	8330	7340	5500	5900	3190	4340	3890	8740	11200	13500
24	10100	7440	8340	7310	5520	5990	3650	4360	4050	8820	11200	13700
25	9910	7120	8370	7290	6100	5440	3380	4300	4570	8600	10200	14800
26	9710	7900	8450	7250	6130	4060	3370	4350	4360	8570	11300	13800
27	9350	7860	8710	7200	6120	3980	3570	4400	4370	9130	11200	13800
28	9340	10400	8720	7060	6550	3880	3700	4550	4480	8900	11200	14100
29	9640	8100	8830	7030	6840	4260	4140	4920	4670	9060	11700	14000
30	9670	8660	8950	6740	---	3660	4190	4520	5870	8760	11800	13600
31	---	---	8700	6730	---	3650	---	4250	---	9130	12300	---
MEAN	9470	9090	7990	7630	5630	5730	3550	4100	4060	7420	10300	13800
WTR YR 1984		MEAN	7400	MAX	15700	MIN	1520					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	17.5	3.0	2.0	7.0	8.5	9.0	15.5	22.0	26.0	29.5	30.0
2	24.0	17.0	4.0	3.0	6.5	8.0	11.0	15.5	22.5	27.0	29.0	29.5
3	24.0	20.0	3.0	---	6.0	9.0	10.0	16.0	22.0	29.0	32.0	26.0
4	23.0	19.0	4.0	5.5	7.0	7.0	9.5	17.5	23.5	---	28.5	26.0
5	21.0	---	8.0	4.0	4.0	7.5	13.5	19.5	25.0	---	30.5	25.0
6	20.0	---	3.0	4.5	5.0	9.0	12.5	19.0	24.0	---	30.0	21.0
7	19.0	16.0	4.0	7.0	5.0	8.0	12.0	17.0	24.0	---	28.0	22.0
8	19.0	16.0	4.0	7.0	6.0	8.5	11.5	18.5	25.5	---	28.0	29.0
9	21.0	13.0	4.5	4.5	8.0	9.0	11.5	19.0	26.5	---	31.5	26.0
10	18.5	10.0	4.0	5.0	9.0	8.0	13.0	20.0	26.0	---	32.0	26.0
11	17.5	10.5	5.0	4.5	10.0	9.0	5.0	22.0	25.5	---	32.0	27.0
12	18.0	10.5	4.5	3.5	9.5	8.5	15.0	24.0	27.0	---	30.0	27.0
13	14.5	10.0	---	3.5	10.0	11.0	15.5	25.0	28.0	---	29.5	26.0
14	20.0	11.0	2.5	3.0	10.5	11.5	13.5	22.0	27.0	---	29.5	23.0
15	18.5	10.0	2.0	4.0	11.0	14.0	14.0	23.0	28.0	---	29.0	19.5
16	17.5	11.0	3.5	4.5	11.0	11.0	14.0	24.0	27.0	---	29.0	20.0
17	18.0	10.5	3.0	2.0	11.0	10.5	13.0	24.0	26.0	29.0	29.0	19.0
18	19.0	11.0	.0	3.0	9.0	8.5	15.5	24.0	---	31.0	29.5	23.0
19	---	11.0	.5	2.0	8.0	6.5	16.0	25.0	27.0	30.0	29.0	23.0
20	14.0	10.5	.0	3.0	7.0	7.0	16.0	24.0	28.0	29.5	29.0	23.5
21	15.0	12.0	.0	3.5	8.0	9.0	16.0	23.5	28.5	32.0	29.0	24.0
22	15.0	12.0	.0	4.0	9.0	8.5	11.0	24.0	28.5	29.0	27.5	26.0
23	14.0	10.0	.0	4.0	8.5	7.5	11.0	23.5	27.0	30.5	28.0	25.5
24	15.0	10.0	.5	4.0	8.5	7.5	15.0	25.0	28.0	29.0	26.5	28.0
25	17.5	10.0	.0	---	8.0	9.0	20.5	23.0	28.0	30.0	28.0	19.0
26	16.0	10.0	1.0	5.0	6.5	9.5	21.0	22.0	30.0	30.5	29.0	16.0
27	17.0	10.0	.0	6.0	6.0	8.5	20.0	22.0	29.5	30.0	29.0	14.0
28	17.0	6.0	.0	6.5	5.5	8.0	17.5	19.5	30.0	30.0	30.0	13.0
29	17.5	3.5	.0	6.0	5.5	8.0	17.0	19.5	29.0	29.0	30.0	18.0
30	17.0	3.5	.0	7.5	---	8.0	17.0	21.0	26.0	30.0	30.0	18.0
31	---	---	1.5	7.0	---	8.5	---	21.5	---	29.0	30.0	---
MEAN	18.5	11.5	2.0	4.5	8.0	9.0	14.0	21.5	26.5	29.5	29.5	23.0
WTR YR 1984		MEAN	16.0	MAX	32.0	MIN	.0					

07151000 SALT FORK ARKANSAS RIVER AT TONKAWA, OK

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, Hydrologic Unit 11060004, near right bank on downstream side of pier of bridge on U.S. Highway 77 in Tonkawa, 4 mi (6 km) downstream from Thompson Creek, 7.8 mi (12.6 km) upstream from Chikaskia River, and at mile 33.8 (54.4 km).

DRAINAGE AREA.--4,528 mi² (11,728 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1903 to October 1905 (gage heights only), October 1935 to current year. Monthly discharge only for some periods, published as Arkansas River (Salt Fork) near Tonkawa 1903-4 and as "near Tonkawa" 1905.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.22 ft (283.531 m) U.S. Army Corps of Engineers datum. 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 (30.5 m) upstream at same datum.

REMARKS.--Records good. Some regulation since June 1941 by Great Salt Plains Lake, 69.5 mi (111.8 km) upstream (station 07150000).

AVERAGE DISCHARGE.--(Since regulation by Great Salt Plains Dam) 43 years (water years 1942-84) 737 ft³/s (20.87 m³/s), 534,000 acre-ft/yr (658 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,300 ft³/s (2,760 m³/s) Oct. 11, 1973, gage height, 28.98 ft (8.833 m); no flow Aug. 31 to Oct. 12, Oct. 14-16, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1923, reached a stage of 26.8 ft (8.17 m), from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 11,000 ft³/s (312 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 24	1800	*16,700 473	*19.25 5.867	Apr. 9	2030	12,200 346	17.18 5.236

Minimum daily discharge, 28 ft³/s (0.79 m³/s) Sept. 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	277	275	180	304	442	7120	1500	407	340	72	44
2	84	264	240	190	313	378	6030	1220	386	310	72	41
3	78	247	237	200	316	348	3860	1170	371	283	72	41
4	77	238	237	190	316	431	3410	1260	346	259	72	41
5	85	238	252	200	313	670	2750	1290	322	249	73	44
6	85	229	279	210	319	568	2380	1270	319	247	84	44
7	81	214	279	230	311	385	2370	1430	323	252	72	40
8	102	218	282	284	300	338	8030	1650	314	208	77	38
9	112	233	264	306	297	323	12000	1410	318	183	80	37
10	93	236	248	296	297	297	10900	1220	338	169	82	37
11	103	293	239	297	314	286	8990	1080	649	167	79	35
12	230	275	235	270	320	286	6520	1040	695	154	78	33
13	226	235	240	250	334	286	5450	941	758	146	70	33
14	195	203	235	240	340	317	4440	872	869	129	67	29
15	150	209	226	230	316	331	3490	835	846	116	65	28
16	120	211	245	220	283	315	2920	970	859	111	62	28
17	933	221	248	210	299	413	2530	930	913	120	61	29
18	2600	218	211	200	321	800	2240	876	997	114	58	34
19	837	208	190	190	249	4850	1960	818	1050	106	55	37
20	1020	204	180	200	336	4780	1780	981	1020	100	54	38
21	5200	214	170	220	286	3950	2020	829	923	93	54	38
22	3090	220	160	240	248	4240	2500	674	819	89	55	38
23	1240	287	150	260	233	5820	2180	627	723	86	61	40
24	772	393	160	280	228	14800	1730	584	641	83	55	41
25	579	371	170	300	222	14500	1480	546	512	81	52	36
26	435	298	180	310	230	9990	1360	548	498	81	52	35
27	385	274	190	321	342	6240	1440	507	466	79	49	38
28	357	327	200	331	613	5850	1520	449	451	78	47	41
29	327	425	190	364	555	7070	1720	437	433	74	45	43
30	316	384	160	297	---	4930	1280	428	390	72	42	45
31	284	---	170	291	---	4410	---	422	---	72	43	---
TOTAL	20287	7864	6742	7807	9155	98644	116400	28814	17956	4651	1960	1126
MEAN	654	262	217	252	316	3182	3880	929	599	150	63.2	37.5
MAX	5200	425	282	364	613	14800	12000	1650	1050	340	84	45
MIN	77	203	150	180	222	286	1280	422	314	72	42	28
AC-FT	40240	15600	13370	15490	18160	195700	230900	57150	35620	9230	3890	2230
CAL YR 1983 TOTAL		358414		MEAN	982	MAX	12100	MIN	54	AC-FT	710900	
WTR YR 1984 TOTAL		321406		MEAN	878	MAX	14800	MIN	29	AC-FT	637500	

07152000 CHIKASKIA RIVER NEAR BLACKWELL, OK

LOCATION.--Lat 36°48'41", long 97°16'41", in NE 1/4 NW 1/4 sec.23, T.27 N., R.1 W., Kay County, Hydrologic Unit 11060005, near left bank on downstream side of State Highway 11 bridge at northeast edge of Blackwell, 0.2 mi (0.3 km) downstream from Bitter Creek, and at mile 28.2 (45.4 km).

DRAINAGE AREA.--1,859 mi² (4,815 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 967.41 ft (29.487 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). See WSP 1921 for history of changes prior to April, 1952.

REMARKS.--Records fair. Some regulation at low flow by Lake Blackwell, capacity 3,600 acre-ft (4.44 hm³) 12.6 mi (20.3 km) above station. Small diversion made from reservoir for municipal supply of city of Blackwell.

AVERAGE DISCHARGE.--49 years 488 ft³/s (13.82 m³/s) 353,600 acre-ft/yr (436 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 85,000 ft³/s (2,410 m³/s) June 22, 1942, gage height, 33.3 ft (10.15 m), from floodmark, present site and datum; no flow at times in 1954, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1923, reached a stage of about 34 ft (10.4 m), present site and datum, from information by local residents, discharge 100,000 ft³/s (2,830 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (227 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 19	2000	11,700 331	26.49 8.074	Apr. 9	0700	17,100 484	28.83 8.787
Mar. 24	1700	*27,100 767	*31.70 9.662	June 10	2100	13,900 394	27.54 8.394

Minimum daily discharge, 7.8 ft³/s (0.22 m³/s) Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	135	211	150	262	228	3020	1540	271	173	31	19
2	62	136	195	160	237	203	2210	1040	253	160	30	20
3	58	133	202	170	208	193	1820	839	240	155	29	18
4	56	136	217	180	195	494	1920	854	234	144	30	16
5	53	133	226	200	187	646	1190	742	201	130	26	15
6	51	136	224	220	173	490	933	708	209	143	27	15
7	61	151	202	242	164	345	1120	760	216	140	47	12
8	85	151	206	304	165	272	8700	692	205	129	50	8.4
9	80	169	184	361	176	238	14000	599	3260	163	43	8.1
10	76	169	183	260	186	224	4660	532	11900	116	48	8.9
11	101	161	181	240	203	208	6390	496	5940	108	47	8.2
12	101	157	183	220	219	222	4510	462	1160	106	43	8.1
13	95	165	173	200	205	237	3690	435	693	114	32	7.9
14	84	159	176	180	188	256	1610	441	510	120	30	7.8
15	75	159	162	170	178	254	1170	442	428	109	28	8.0
16	69	157	144	160	169	238	1010	401	387	103	27	8.2
17	357	154	142	150	160	1040	908	377	406	105	26	8.2
18	764	144	140	140	167	3550	832	373	364	105	23	9.0
19	258	149	140	130	160	9240	789	374	315	100	22	18
20	346	145	138	134	157	6990	731	512	276	89	21	25
21	1830	143	130	140	158	5140	1520	846	251	80	20	34
22	803	159	125	150	155	6740	1410	708	240	72	29	34
23	432	434	120	160	154	8190	981	439	229	58	30	32
24	345	341	110	166	150	23700	787	379	221	16	26	30
25	273	211	120	175	147	16900	686	347	384	40	24	28
26	194	179	130	182	167	4520	650	305	312	36	24	23
27	183	226	140	194	245	2920	897	287	241	42	24	22
28	149	291	150	212	298	4400	1450	283	216	38	20	30
29	141	289	140	237	257	5420	929	324	198	38	18	32
30	140	268	130	265	---	1910	702	341	179	37	18	36
31	132	---	140	269	---	1700	---	291	---	34	27	---
TOTAL	7521	5540	5064	6121	5490	107108	71225	17169	29939	3003	920	549.8
MEAN	243	185	163	197	189	3455	2374	554	998	96.9	29.7	18.3
MAX	1830	434	226	361	298	23700	14000	1540	11900	173	50	36
MIN	51	133	110	130	147	193	650	283	179	16	18	7.8
AC-FT	14920	10990	10040	12140	10890	212400	141300	34050	59380	5960	1820	1090
CAL YR 1983	TOTAL	260165		MEAN	713	MAX	15500	MIN	24	AC-FT	516000	
WTR YR 1984	TOTAL	259649.8		MEAN	709	MAX	23700	MIN	7.8	AC-FT	515000	

07152500 ARKANSAS RIVER AT RALSTON, OK

LOCATION.--Lat 36°30'09", long 96°43'22", in NW 1/4 sec.1, T.23 N., R.5 E., Osage County, Hydrologic Unit 11060006, near left bank on downstream side of pier of bridge on State Highway 18 at Ralston, 2 mi (3.2 km) downstream from Salt Creek, 2 mi (3.2 km) upstream from Grayhorse Creek, and at mile 594.0 (955.7 km).

DRAINAGE AREA.--54,465 mi² (141,064 km²), of which 7,615 mi² (19,723 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1311.

Gage-height records collected in this vicinity since 1922 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 776.70 ft (236.738 m), National Geodetic Vertical Datum of 1929.

Oct. 1, 1925, to Nov. 13, 1935, nonrecording gage at site of former highway bridge 1,200 ft (366 m) downstream at same datum. Nov. 14, 1935 to Feb. 23, 1939, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since April 1976 by Kaw Lake (station 07148130) 59.7 mi (96.1 km) upstream; some regulation by Great Salt Plains Lake (station 07150000) since 1941.

AVERAGE DISCHARGE.--(Prior to regulation by Kaw Dam) 50 years (water years 1926-75), 4,826 ft³/s (136.7 m³/s), 3,496,000 acre-ft/yr (4.31 km³/yr); (since regulation by Kaw Dam) 8 years (water years 1977-84), 4,229 ft³/s (121.7 m³/s), 3,114,600 acre-ft/yr (3.84 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 211,000 ft³/s (5,980 m³/s) Oct. 13, 1973, gage height, 22.98 ft (7.004 m); minimum 14 ft³/s (0.40 m³/s) Oct. 12, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 11, 1923, reached a stage of 23.8 ft (7.25 m), referred to outside gage on basis of stages observed in 1923 and 1944 at site 1,200 ft (366 m) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58,900 ft³/s (1670 m³/s) Mar. 26, gage height, 13.78 ft (4.200 m), minimum daily discharge, 159 ft³/s (4.50 m³/s) Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	1080	729	800	1780	3010	31800	10400	4820	3860	515	300
2	500	1120	773	860	1770	3040	32200	9360	4320	3590	514	280
3	471	1140	709	900	1780	2960	28800	10200	3560	3380	510	278
4	406	1090	664	1100	1800	3100	27500	9710	3340	2980	490	247
5	395	1050	739	1300	1910	2740	27000	10600	3340	2080	478	235
6	388	1030	628	1500	1970	2660	25400	10600	3160	1900	456	225
7	399	1020	739	1700	1980	3140	24400	10600	3140	1780	438	217
8	405	1000	990	1910	2010	3630	28500	10600	3030	1700	485	211
9	378	977	1040	2250	3300	3470	37800	10800	2790	1640	483	218
10	385	973	1170	2000	4020	3260	48600	10700	2340	1540	452	219
11	470	941	1160	1700	4120	2880	48000	9610	6070	1480	434	215
12	484	931	1150	1500	4090	2850	41000	8490	12200	1450	420	209
13	435	936	1160	1400	4110	3010	34900	8320	8950	1380	411	205
14	481	948	1160	1300	4070	2880	31800	8050	6920	1430	404	202
15	535	917	1110	1300	4080	2290	27900	10900	6650	1910	396	188
16	482	869	892	1300	4050	2300	25700	11800	6450	1950	390	168
17	467	807	841	1250	3990	3270	24200	10400	6280	1950	388	159
18	572	653	800	1100	3870	3540	23000	13100	6360	1910	380	190
19	1430	634	760	1000	3350	5690	22200	13900	6550	1890	370	176
20	2820	586	740	940	3210	15200	21500	14300	6430	1870	370	170
21	7430	553	720	900	3080	23700	22100	14400	6410	1840	367	164
22	8440	527	700	950	2990	24300	21300	13300	6550	1300	360	162
23	8350	564	690	1000	2270	36000	21800	11500	6430	1150	352	169
24	4190	653	680	1100	2020	49700	18500	11900	6260	1080	350	187
25	3260	657	670	1400	1920	52500	13200	9350	6120	762	340	189
26	2830	798	660	2090	1980	57600	11300	7480	6100	659	330	186
27	2460	855	700	2450	2870	42300	10200	7750	6150	605	320	197
28	1990	885	720	2430	2940	36000	8990	7440	6230	567	316	203
29	1620	826	760	1750	2620	35800	9400	6310	6250	543	310	190
30	1310	688	700	1840	---	39400	9860	5140	5290	531	305	179
31	1150	---	740	1810	---	34500	---	5010	---	528	333	---
TOTAL	55499	25708	25694	44830	83950	506720	758850	312020	168490	51235	12467	6138
MEAN	1790	857	829	1446	2895	16350	25300	10070	5616	1653	402	205
MAX	8440	1140	1170	2450	4120	57600	48600	14400	12200	3860	515	300
MIN	378	527	628	800	1770	2290	8990	5010	2340	528	305	159
AC-FT	110100	50990	50960	88920	166500	1005000	1505000	618900	334200	101600	24730	12170
CAL YR 1983	TOTAL	2058027		MEAN	5638	MAX	47800	MIN	378	AC-FT	4082000	
WTR YR 1984	TOTAL	2051601		MEAN	5605	MAX	57600	MIN	159	AC-FT	4069000	

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-63, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1950 to September 1963, July 1968 to current year.

WATER TEMPERATURE: January 1950 to September 1963, July 1968 to current year.

INSTRUMENTATION.--Water quality monitor July 1968 to September 1980.

REMARKS.--Samples were collected by a local observer on a daily basis. Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,510 microsiemens Sept. 14, 1955; minimum daily, 157 microsiemens Nov. 21, 1979.

WATER TEMPERATURE: Maximum daily, 37.0°C, July 28, 1956; minimum, -0.5°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,030 microsiemens Nov. 22; minimum daily, 408 microsiemens June 12.

WATER TEMPERATURE: Maximum, 34.0°C July 6; minimum 0.0°C on several days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
04...	1300	740	80020	406	1800	8.1	22.0	55	8.4	100	98
DEC											
07...	1300	740	80020	728	2350	8.1	5.0	6.9	12.7	103	570
FEB											
02...	1400	740	80020	1780	2200	7.9	7.0	6.9	11.4	97	46
MAR											
13...	1345	--	1028	3080	--	--	10.0	--	--	--	--
26...	1900	730	1028	56900	880	7.9	9.0	--	10.6	96	--
APR											
17...	1600	740	80020	24500	840	7.7	13.0	65	9.9	97	68
JUN											
05...	1600	730	80020	3350	1300	8.4	26.0	26	11.0	142	38
AUG											
28...	1100	740	80020	314	1700	7.9	26.0	6.7	7.6	97	28

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
OCT											
04...	790	290	140	78	24	310	69	8	6.0	154	2.4
DEC											
07...	56	350	150	94	27	350	68	8	4.4	192	2.9
FEB											
02...	83	370	150	100	28	280	62	7	4.8	215	5.2
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	42	180	55	50	13	83	49	3	4.8	124	4.8
JUN											
05...	45	260	120	69	20	150	56	4	4.5	133	1.0
AUG											
28...	58	280	97	72	24	230	64	6	5.6	182	4.4

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 04...	<10	4	1	<1	910	<6	16	151	166	75
DEC 07...	--	--	--	--	--	--	--	18	35	80
FEB 02...	2	4	1	<1	1100	7	10	36	173	63
MAR 13...	--	--	--	--	--	--	--	116	965	54
MAR 26...	--	--	--	--	--	--	--	608	93400	85
APR 17...	<10	3	<1	<1	490	<6	33	206	13600	66
JUN 05...	<10	2	<1	<1	770	<6	23	164	1480	26
AUG 28...	--	--	--	--	--	--	--	22	19	57

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1760	2630	2750	---	---	1470	676	929	1070	1170	1540	1650
2	1800	2730	2540	2320	2010	1410	630	797	1130	1180	1530	---
3	1930	2500	2630	2340	2050	1390	633	1020	1190	1160	---	---
4	1980	2400	2310	2350	2170	718	613	890	1240	---	---	1670
5	2040	2330	1820	2100	2180	1200	598	872	1250	1330	---	1690
6	2150	2320	2250	2060	2160	1620	---	926	1230	1380	---	1700
7	1920	2300	2350	2070	2170	1630	509	951	1100	1420	---	1730
8	1910	2300	1970	2080	2180	1280	500	996	1110	1480	---	1740
9	2060	2280	2000	1920	1450	1250	504	1020	1170	1590	---	---
10	2000	2160	2080	2110	1400	1370	458	982	1290	1520	---	1710
11	2180	2190	2020	1940	1410	1530	456	1050	1720	---	---	1690
12	2150	2220	1900	1840	1400	1520	488	---	408	1380	---	1690
13	1900	2370	1980	1850	1440	1460	496	1080	793	1300	---	1710
14	1670	2590	1950	2120	1420	1400	508	---	766	1360	---	1700
15	1710	2740	1840	---	1450	1580	517	428	1010	1130	---	1710
16	1520	2560	1810	2020	1480	1730	577	861	901	1120	---	1700
17	1630	2340	2290	2020	1470	1100	613	863	876	---	---	1710
18	1300	2610	---	1970	1540	---	616	831	958	1050	---	---
19	547	---	2160	1960	1440	548	626	801	1040	1040	---	1720
20	506	2870	2300	---	1490	1090	592	---	1120	1040	---	1690
21	526	2950	---	---	1550	849	548	828	980	1030	---	1670
22	533	3030	---	---	1500	1050	579	839	988	1120	---	1700
23	678	2840	---	2640	1750	1080	618	843	1100	1170	1510	1700
24	842	2670	---	2450	1930	460	594	853	1120	1140	1520	1710
25	1190	2610	---	2730	1840	898	716	949	1120	---	1510	1720
26	1300	2960	---	2720	---	825	832	972	1080	1420	---	1760
27	1380	2470	2540	2430	1160	956	864	915	1100	1460	1560	1780
28	1640	---	---	2450	719	876	---	940	968	1460	1600	1760
29	1950	1950	---	2150	1370	807	1050	1000	979	---	1670	1760
30	2350	2450	---	2250	---	753	1040	1100	---	1570	1690	1780
31	---	---	---	2130	---	709	---	1080	---	1550	1680	---
MEAN	1570	2510	2170	2190	1630	1150	623	915	1060	1290	1580	1710
WTR YR 1984		MEAN	1530	MAX	3030		MIN	408				

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.5	18.0	4.0	---	---	6.0	7.0	15.0	20.0	28.0	29.5	25.0
2	20.5	18.5	6.0	1.0	8.0	8.0	8.0	16.0	22.0	29.0	25.5	---
3	21.0	20.0	6.5	1.5	7.0	10.0	9.0	16.0	22.0	31.0	---	---
4	24.0	19.0	4.5	2.0	7.0	9.0	7.0	15.0	21.0	---	---	20.0
5	24.0	16.0	5.5	3.0	4.0	9.5	7.0	17.0	22.0	32.0	---	22.0
6	19.0	15.0	3.0	3.0	2.0	8.0	---	14.0	22.0	34.0	---	22.0
7	17.0	14.5	7.0	1.5	4.0	9.0	10.0	16.0	23.0	30.0	---	19.0
8	17.0	14.5	4.0	1.5	6.0	9.5	10.0	15.0	28.0	32.0	---	21.0
9	19.5	13.0	3.5	3.0	7.5	6.5	9.0	15.0	26.0	31.5	---	---
10	18.0	7.0	6.0	1.5	7.0	6.5	10.0	20.0	26.5	30.0	---	25.0
11	13.5	7.5	6.5	1.0	10.0	7.5	10.0	22.0	26.0	---	---	25.0
12	12.0	8.0	3.0	.0	9.5	8.5	11.0	---	26.5	30.0	---	24.0
13	14.0	10.0	4.0	1.0	8.0	7.5	11.0	25.0	23.5	33.0	---	24.0
14	15.0	11.0	4.0	1.0	7.5	10.0	10.0	---	28.0	32.0	---	24.0
15	18.0	9.5	1.0	---	10.0	16.0	10.0	20.0	30.0	32.0	---	18.0
16	19.0	11.0	1.5	1.5	9.0	11.5	11.0	23.0	28.5	28.0	---	22.0
17	18.0	10.5	2.0	1.5	7.0	10.0	11.0	23.0	28.0	---	---	18.0
18	19.0	12.0	---	.0	9.5	---	12.0	23.0	29.0	30.5	---	---
19	17.5	---	1.0	---	6.0	6.0	13.0	21.0	29.0	30.0	---	19.0
20	15.0	11.0	1.5	---	5.5	9.0	13.0	---	29.5	30.0	---	19.0
21	14.0	10.0	---	---	7.0	6.0	13.0	23.0	29.0	30.0	---	18.0
22	14.0	15.0	---	---	7.0	8.0	12.0	21.0	30.0	32.0	---	19.0
23	14.5	9.0	---	.0	9.0	8.0	10.0	19.0	28.0	32.0	30.0	19.0
24	14.0	7.0	---	1.0	9.5	9.0	13.0	20.0	29.0	31.0	25.0	20.0
25	8.5	8.0	---	1.0	8.5	8.0	15.0	25.0	30.0	---	24.0	18.0
26	15.5	10.5	---	1.5	---	9.0	18.0	22.0	29.0	32.0	---	16.0
27	15.0	7.5	.0	1.0	6.5	9.0	20.0	20.0	30.0	30.0	25.0	14.0
28	16.0	---	---	3.0	5.0	8.0	---	18.0	31.0	30.0	24.0	13.0
29	16.5	4.5	---	6.0	6.0	7.0	16.0	21.0	30.0	---	26.0	11.0
30	17.0	5.0	---	4.5	---	7.0	13.0	23.0	---	30.0	25.0	12.0
31	---	---	---	4.5	---	8.0	---	18.0	---	25.0	25.0	---
MEAN	17.0	11.5	3.5	2.0	7.0	8.5	11.5	19.5	27.0	30.5	26.0	19.5
WTR YR 1984		MEAN	15.0	MAX	34.0		MIN	.0				

07153000 BLACK BEAR CREEK AT PAWNEE, OK

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, Hydrologic Unit 11060006, on downstream side of left pier of bridge on State Highway 18 in north Pawnee, 300 ft (91.4 m) downstream from Skedee Creek, and at mile 23.4 (37.7 km).

DRAINAGE AREA.--576 mi² (1,492 km²).

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 802.73 ft (244.672 m), National Geodetic Vertical Datum of 1929 (levels by U.S Army 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 (152 m) downstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--40 years, 169 ft³/s (4.786 m³/s), 122,400 acre-ft/yr (151 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 30,200 ft³/s (855 m³/s) Oct. 3, 1959, gage height, 31.43 ft (9.580 m); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1943, reached a stage of 28.19 ft (8.592 m), from floodmark, discharge 17,800 ft³/s (504 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 21	0400	4,110 116	11.42 3.481	Mar. 23	2400	*4,770 135	*12.44 3.792

No flow at times during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	12	12	3.7	14	116	2280	209	23	25	1.6	.00
2	2.0	8.1	9.7	3.8	13	77	1220	123	18	16	1.5	.00
3	1.9	6.2	9.0	4.1	11	55	738	100	15	11	1.4	.00
4	1.8	5.4	7.7	4.7	9.7	51	505	77	13	7.8	7.9	.01
5	1.7	5.0	7.3	5.7	9.5	48	354	72	12	6.0	6.3	.00
6	1.8	4.7	7.5	7.0	8.7	30	269	66	12	5.3	2.0	.00
7	1.9	4.4	7.6	8.8	7.6	23	250	77	12	4.6	1.1	.00
8	2.0	4.5	8.6	13	9.1	17	1310	75	11	4.1	227	.00
9	2.0	5.1	8.4	15	14	14	1880	69	11	4.0	45	.00
10	3.8	4.7	6.7	14	13	12	1520	55	141	33	25	.00
11	8.9	4.2	3.9	15	12	11	2430	46	96	14	11	.00
12	2.6	4.3	4.2	20	13	45	983	44	44	8.5	4.7	.00
13	2.4	4.1	4.3	14	15	40	591	38	23	5.7	2.9	.00
14	9.1	3.7	3.9	11	12	22	420	34	15	4.6	2.1	.00
15	5.6	3.6	3.9	10	11	17	307	31	10	3.9	1.5	.00
16	3.4	3.6	3.9	7.7	9.5	15	240	29	8.1	3.8	1.2	.00
17	2.8	3.6	3.9	7.0	8.6	44	191	27	6.5	3.7	.96	.00
18	124	3.6	4.2	6.4	9.3	53	156	25	5.8	3.7	.87	.00
19	83	39	4.3	5.7	7.4	238	132	25	5.8	3.6	.78	.00
20	821	18	4.1	5.6	6.9	366	293	32	5.8	3.4	.69	.00
21	3640	4.7	3.9	5.3	6.9	218	874	66	5.6	3.3	.56	.00
22	1740	3.7	3.8	5.3	7.1	140	390	52	7.3	3.2	.92	.00
23	534	29	3.7	5.7	7.7	2320	251	35	8.5	3.1	.59	.00
24	297	37	3.4	6.4	7.1	4310	155	27	6.5	3.0	.14	.00
25	179	48	3.0	7.8	7.7	3450	115	24	5.6	2.8	.07	.00
26	116	19	3.1	9.3	34	1570	100	23	6.6	2.7	.05	.00
27	73	20	3.5	11	466	939	103	203	134	2.4	.04	.00
28	48	16	3.8	14	393	1630	94	286	45	2.2	.06	.00
29	33	14	3.6	16	196	2010	82	89	74	2.1	.02	.00
30	23	11	3.3	16	---	927	111	43	66	1.9	.00	.00
31	16	---	3.4	14	---	1210	---	30	---	1.8	.00	---
TOTAL	7783.3	350.2	163.6	293.0	1339.8	20018	18344	2132	847.1	200.2	347.95	.01
MEAN	251	11.7	5.28	9.45	46.2	646	611	68.8	28.2	6.46	11.2	.00
MAX	3640	48	12	20	466	4310	2430	286	141	33	227	.01
MIN	1.7	3.6	3.0	3.7	6.9	11	82	23	5.6	1.8	.00	.00
AC-FT	15440	695	325	581	2660	39710	36390	4230	1680	397	690	.02
CAL YR 1983	TOTAL	68090.9		MEAN	187	MAX	4480	MIN	1.7	AC-FT	135100	
WTR YR 1984	TOTAL	51819.16		MEAN	142	MAX	4310	MIN	.00	AC-FT	102800	

LOCATION.--Lat 36°55'36", long 102°57'31", in SE 1/4 sec. 4, T.5 N., R.1 E., Cimarron County, Hydrologic Unit 11040001, near right bank on downstream side of pier of county road bridge, 1.5 mi (2.4 km) upstream from North Carrizo Creek, 1.7 mi (2.7 km) northeast of Kenton, 2.2 mi (3.5 km) downstream from Carrizozo Creek, and at mile 594.0 (955.7 km).

REVISED RECORDS.--WSP 1711: 1956 (M).

REMARKS.--Records fair below 100 ft³/s (2.83 m³/s) and poor above. Extensive diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft³/s (1,230 m³/s) Oct., 17, 1965, gage height, 22.32 ft (6.803 m); present datum, from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
July 5	2145	*4.870 138	*13.34 4.066	Aug. 23	0445	2.400 68.0	11.35 3.459

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.4	2.6	1.3	2.0	3.0	1.6	3.0	.05	1.0
2	.00	.00	.00	1.2	2.1	1.6	2.4	2.7	1.0	3.2	6.9	3.1
3	.00	.00	.00	1.7	1.7	1.8	1.7	3.0	1.0	2.7	3.2	2.6
4	.00	.00	.00	2.0	1.7	1.9	1.4	2.2	33	2.4	.50	1.6
5	.00	.00	.00	2.2	1.6	1.7	1.2	5.5	2.2	349	.05	.44
6	.00	.00	.00	5.2	1.6	1.3	1.2	5.7	.75	230	.00	.05
7	.00	.00	.00	7.2	1.5	1.2	1.0	2.9	.38	19	.00	.00
8	.00	.00	.00	5.4	1.7	1.1	1.1	2.7	.22	3.5	.00	.00
9	.00	.00	.00	4.9	1.4	1.1	.54	2.8	.10	1.0	.23	.00
10	.00	.00	.00	4.2	1.2	1.1	48	2.5	.10	.25	.19	.00
11	.00	.00	.00	4.8	1.1	1.0	18	1.4	.16	2.3	.09	.00
12	.00	.00	.03	5.2	1.0	.81	48	1.5	.27	.39	.02	.00
13	.00	.00	.12	4.3	.96	.59	64	1.3	7.8	.10	.00	.00
14	.00	.00	.16	2.3	1.1	.57	28	2.0	1.3	.00	.00	.00
15	.00	.00	.17	1.6	.90	.44	14	.90	.59	.02	94	.00
16	.00	.00	.15	1.1	.85	.23	3.3	.76	23	66	32	.00
17	.00	.00	.22	.23	.99	.32	2.8	3.1	9.1	11	5.3	.00
18	.00	.00	.16	.16	2.1	.78	1.3	7.6	2.8	2.5	.68	.00
19	.00	.00	.15	.17	1.4	2.6	.90	6.7	2.5	.80	.07	.00
20	.00	.00	.17	.20	1.5	2.6	.83	11	1.8	.18	21	.00
21	.00	.00	.14	.24	1.4	.91	1.2	2.4	1.2	.03	12	.00
22	.00	.00	.12	.34	1.3	.35	1.8	1.9	.40	.00	.59	.00
23	.00	.00	.12	.54	1.1	1.2	2.0	2.0	.73	.00	845	.00
24	.00	.00	.11	.56	1.1	2.6	1.2	2.5	.28	.00	107	.00
25	.00	.00	.10	1.1	1.1	2.2	.54	1.2	54	.00	21	.00
26	.00	.00	.17	1.9	1.1	2.0	.38	2.0	13	.00	11	.00
27	.00	.00	.19	2.7	1.4	2.3	.39	2.0	3.8	.00	7.7	.00
28	.00	.00	.17	3.4	1.1	2.4	.39	1.8	2.8	.00	5.7	.00
29	.00	.00	.18	3.6	1.2	1.6	2.6	1.6	2.1	.00	4.2	.00
30	.00	.00	.20	3.2	---	1.4	3.7	2.0	1.6	.00	3.0	.00
31	.00	---	.43	2.8	---	2.2	---	4.6	---	.00	1.9	---
TOTAL	.00	.00	3.26	75.84	39.80	43.20	255.87	90.26	169.58	697.37	1183.37	8.79
MEAN	.00	.00	.11	2.45	1.37	1.39	8.53	2.91	5.65	22.5	38.2	.29
MAX	.00	.00	.43	7.2	2.6	2.6	64	11	54	349	845	3.1
MIN	.00	.00	.00	.16	.85	.23	.38	.76	.10	.00	.00	.00
AC-FT	.00	.00	6.5	150	79	86	508	179	336	1380	2350	17
CAL YR 1983	TOTAL	2703.12		MEAN	7.41	MAX	228	MIN	.00	AC-FT	5360	
WTR YR 1984	TOTAL	2567.34		MEAN	7.01	MAX	845	MIN	.00	AC-FT	5090	

ARKANSAS RIVER BASIN

07156900 CIMARRON RIVER NEAR FORGAN, OK

LOCATION.--Lat 37°00'45", long 100°29'30", in SE 1/4 SE 1/4 sec.8, T.35 S., R.24 E., Mead County, Kans., Hydrologic Unit 11040006, near center of span on downstream side of pier of bridge on Kansas State Highway 23, 0.8 mi (1.3 km) north of Oklahoma-Kansas State Line, 7.8 mi (12.5 km) north of Forgan, and at mile 375.7 (604.5 km).

DRAINAGE AREA.--8,536 mi² (22,108 km²), of which 4,316 mi² (11,178 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,326.05 ft (708.980 m) (National Geodetic Vertical Datum of 1929).

REMARKS.--Records good. Extensive diversion for irrigation above station.

AVERAGE DISCHARGE.--19 years, 74.0 ft³/s (2.096 m³/s), 53,610 acre-ft/yr (66.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s (600 m³/s) Oct. 20, 1965, gage height, 8.10 ft (2.469 m); minimum daily, 15 ft³/s (0.42 m³/s) July 27, Aug. 17, 1983, Dec. 24, 25, 1983 and Jan. 19, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 464 ft³/s (13.1 m³/s) Aug. 7, gage height, 3.84 ft (1.170 m), no peak above base of 3,000 ft³/s (85.0 m³/s); minimum daily discharge, 15 ft³/s (0.42 m³/s) Dec. 24, 25, Jan. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	42	41	36	53	49	61	63	34	27	25	24
2	29	42	43	43	55	48	88	66	34	26	25	27
3	30	42	52	58	52	47	74	78	34	26	25	28
4	32	41	56	60	50	50	52	69	33	42	22	26
5	32	42	62	64	47	51	49	80	29	35	20	25
6	32	43	57	72	46	51	53	91	28	31	19	24
7	34	42	50	66	44	53	53	71	29	27	71	24
8	36	43	46	59	43	54	52	63	30	23	112	25
9	36	45	51	51	44	57	47	56	31	23	37	24
10	37	43	46	44	43	58	58	55	33	25	33	24
11	42	42	43	54	46	56	59	53	33	26	30	26
12	43	43	38	50	45	57	56	51	30	25	28	24
13	43	42	43	48	49	53	52	52	29	24	27	23
14	40	44	44	44	52	50	55	65	34	23	26	25
15	38	43	45	33	59	53	55	53	33	22	26	26
16	38	43	46	24	57	52	56	48	30	29	23	26
17	39	43	45	20	54	55	52	42	29	27	23	25
18	39	43	37	17	55	57	47	39	33	25	25	25
19	41	44	26	15	53	64	48	52	31	28	24	25
20	46	38	22	17	52	61	51	47	30	22	22	25
21	59	37	18	19	50	60	65	41	30	19	25	26
22	43	40	16	24	45	54	65	39	29	19	25	28
23	39	40	16	22	41	69	58	36	31	20	24	27
24	38	37	15	25	41	63	54	35	27	21	25	27
25	37	34	15	29	44	66	50	34	26	22	25	30
26	35	35	17	27	53	62	48	32	42	24	25	32
27	34	35	21	31	55	59	46	33	35	22	24	36
28	35	32	25	33	45	60	48	35	37	23	26	37
29	38	28	23	37	45	57	86	32	37	24	27	38
30	40	26	28	50	---	55	79	33	29	23	28	36
31	41	---	32	53	---	63	---	33	---	24	26	---
TOTAL	1176	1194	1119	1225	1418	1744	1717	1577	950	777	923	818
MEAN	37.9	39.8	36.1	39.5	48.9	56.3	57.2	50.9	31.7	25.1	29.8	27.3
MAX	59	45	62	72	59	69	88	91	42	42	112	38
MIN	29	26	15	15	41	47	46	32	26	19	19	23
AC-FT	2330	2370	2220	2430	2810	3460	3410	3130	1880	1540	1830	1620
CAL YR 1983	TOTAL	14688	MEAN	40.2	MAX	207	MIN	15	AC-FT	29130		
WTR YR 1984	TOTAL	14638	MEAN	40.0	MAX	112	MIN	15	AC-FT	29030		

ARKANSAS RIVER

41

07157580 CIMARRON RIVER NEAR ENGLEWOOD, KS

LOCATION.--Lat 36°58'38", long 99°58'32", in SE 1/4 sec.23, T.9 N., R.26 W., Harper County, Ok, Hydrologic Unit 11040008, on the downstream side of bridge on U.S. Highway 283, 4 mi (6.4 km) south of Englewood, Kansas, 10.5 mi (16.9 km) north of junction of U.S. Highways 283 and 64, and at mile 341.6 (549.6 km).

DRAINAGE AREA.--10,096 mi² (26,149 km²), of which 4,813 mi² (12,466 km²) is probably noncontributing.

PERIOD OF RECORD.--March 11, 1982 to current year.

GAGL.--Water-stage recorder. Datum of gage is 1,965.62 ft (599.121 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft³/s (44.2) June 10, 1983, gage height, 7.11 ft (2.167 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 634 ft³ (18.0 m³) June 26, gage height, 6.71 ft (2.045 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	33	58	11	51	82	119	129	.00	89	.02	.00
2	.07	31	58	12	53	75	222	89	.00	82	.00	.00
3	.06	29	56	13	46	72	180	89	.07	72	.00	.00
4	.06	31	58	20	36	67	168	107	17	110	.00	.00
5	.06	32	62	25	33	65	140	119	7.9	93	.00	.00
6	3.2	44	60	35	40	69	66	172	1.4	52	.00	.00
7	8.7	38	58	90	59	69	54	123	.27	31	.96	.00
8	14	36	55	148	66	54	40	78	.00	19	54	.00
9	26	34	57	110	64	55	29	53	.00	3.8	80	.00
10	19	31	58	35	69	69	39	40	.00	.81	55	.00
11	34	37	49	30	71	61	80	16	.00	.55	37	.00
12	18	48	40	27	68	61	68	19	.00	.54	14	.00
13	15	62	40	22	71	66	48	36	.56	.39	.35	.00
14	17	56	44	18	72	63	30	90	16	.14	.00	.00
15	12	46	46	15	66	58	33	95	25	.00	.00	.00
16	14	51	40	11	59	40	11	62	12	8.0	.00	.00
17	21	77	30	9.0	56	27	2.9	56	9.0	16	.00	.00
18	26	83	25	8.0	67	22	1.7	46	17	.37	.00	.00
19	44	44	20	6.5	55	5.5	1.4	35	22	.08	.00	.00
20	83	48	13	5.0	51	1.0	14	38	44	.00	.00	.00
21	112	46	8.5	4.5	66	.11	55	26	42	.03	.00	.00
22	74	53	7.0	6.0	66	.01	79	18	29	.00	.00	.00
23	42	51	6.5	8.0	53	29	63	.80	27	.00	.00	.00
24	38	68	6.0	30	55	100	53	.35	7.8	.00	.00	.00
25	36	83	5.6	76	58	120	47	.27	5.1	.00	.00	.00
26	32	74	6.0	240	70	127	25	.35	303	.00	.00	.00
27	31	48	6.6	211	76	117	6.1	.26	103	.00	.00	.00
28	29	46	7.3	164	93	74	2.6	.00	74	53	.00	.00
29	28	56	8.0	150	78	53	65	.00	86	95	.00	.00
30	29	58	9.0	113	---	28	165	.00	95	7.2	.00	.00
31	32	---	10	61	---	70	---	.01	---	.23	.00	---
TOTAL	838.22	1474	1007.5	1714.0	1768	1799.62	1907.7	1538.04	944.10	734.14	241.33	.00
MEAN	27.0	49.1	32.5	55.3	61.0	58.1	63.6	49.6	31.5	23.7	7.78	.00
MAX	112	83	62	240	93	127	222	172	303	110	80	.00
MIN	.06	29	5.6	4.5	33	.01	1.4	.00	.00	.00	.00	.00
CAL YR 1983	TOTAL	18158.75		MEAN	49.7	MAX	981	MIN	.00			
WTR YR 1984	TOTAL	13966.65		MEAN	38.2	MAX	303	MIN	.00			

ARKANSAS RIVER BASIN

07157580 CIMARRON RIVER NEAR ENGLEWOOD, KS--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year February, 1982 to current year.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
NOV											
08...	1630	700	80020	36	3770	8.4	19.0	31	8.3	99	420
DEC											
08...	1600	705	80020	55	--	8.3	7.0	65	9.4	84	450
FEB											
03...	1300	707	80020	52	3450	8.1	3.5	70	13.5	111	450
MAR											
09...	1600	708	80020	52	3590	8.7	15.0	30	15.0	162	420
APR											
13...	1240	707	80020	49	3910	8.5	17.0	5.3	8.8	100	440
MAY											
14...	1400	713	80020	101	3100	8.5	20.5	8.3	8.4	101	390
14...	1600	712	80020	108	3040	8.4	23.5	16	8.0	102	360
14...	1800	711	80020	120	2990	8.5	25.0	10	8.0	105	370
14...	2145	710	80020	116	3070	8.5	22.5	13	7.5	94	370
JUL											
17...	1400	710	80020	20	4350	8.7	31.0	--	7.5	110	370

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV											
08...	260	96	44	610	76	13	6.8	166	1.3	180	1000
DEC											
08...	250	110	43	590	74	12	5.1	205	2.0	200	1000
FEB											
03...	240	110	42	620	75	13	5.4	212	3.2	210	980
MAR											
09...	230	97	42	630	76	14	6.4	189	.7	210	970
APR											
13...	230	100	45	630	76	14	5.6	202	1.2	230	1000
MAY											
14...	240	90	39	450	71	10	6.4	148	.9	93	750
14...	210	82	37	460	73	11	6.8	150	1.1	190	770
14...	220	86	38	470	73	11	7.3	153	.9	200	780
14...	210	84	38	480	74	11	7.1	155	.9	200	790
JUL											
17...	--	73	45	760	81	18	8.1	--	--	200	1100

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV											
08...	--	--	2100	2.9	204	--	--	--	--	--	--
DEC											
08...	--	--	2100	2.9	312	--	--	--	--	--	--
FEB											
03...	--	--	2130	2.9	299	--	--	--	--	--	--
MAR											
09...	--	--	2030	2.8	285	--	--	--	--	--	--
APR											
13...	--	--	2190	3.0	290	--	--	--	--	--	--
MAY											
14...	--	--	1680	2.3	458	--	--	--	--	--	--
14...	--	--	1700	2.3	496	--	--	--	--	--	--
14...	--	--	1730	2.4	561	--	--	--	--	--	--
14...	--	--	1710	2.3	536	--	--	--	--	--	--
JUL											
17...	--	4.4	2420	3.3	131	<.10	.020	.090	1	200	<10

ARKANSAS RIVER BASIN

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07157580 CIMARRON RIVER NEAR ENGLEWOOD, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	SEDIMENT, CHARGE, SUSPENDED (MG/L)	SEDIMENT, DIS- CHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 08...	--	--	--	--	--	--	--	--	--	--	--
DEC 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 03...	--	--	--	--	--	--	--	--	236	33	56
MAR 09...	--	--	--	--	--	--	--	--	354	50	18
APR 13...	--	--	--	--	--	--	--	--	49	6.5	22
MAY 14...	--	--	--	--	--	--	--	--	55	15	72
14...	--	--	--	--	--	--	--	--	94	27	64
14...	--	--	--	--	--	--	--	--	82	27	51
14...	--	--	--	--	--	--	--	--	98	31	35
JUL 17...	<10	10	<10	<100	<10	.2	2	<10	101	5.5	36

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK

LOCATION.--Lat 36°51'07", long 99°18'54", in SE 1/4 NE 1/4 sec.2, T.27 N., R.20 W., Harper County, Hydrologic Unit 11050001, near left bank on downstream side of pier of U.S. Highway 64, 0.5 mi (0.8 km) downstream from Keno Creek, 17.0 mi (27.4 km) northeast of Buffalo, and at mile 289.1 (465.2 km).

DRAINAGE AREA.--12,004 mi² (31,090 km²), of which 4,813 mi² (12,466 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,599.67 ft (487.579 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1979, at site 6.9 mi (11.1 km) upstream at an altitude of 1,650 ft (502.9 m).

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years, 140 ft³/s (3,965 m³/s), 101,400 acre-ft/yr (125 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 26,400 ft³/s (748 m³/s) Sept. 26, 1973, gage height, 5.57 ft (1.698 m) datum then in use; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 592 ft³/s (16.8 m³/s) Apr. 3, gage height, 5.71 ft (1.740 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	8.6	40	12	134	56	125	305	17	13	.00	.00
2	1.2	9.0	69	13	103	61	218	290	13	7.2	.00	.00
3	1.1	10	114	14	84	58	448	223	15	5.6	.00	.00
4	1.1	9.7	109	16	82	58	372	176	27	6.8	.00	.00
5	1.0	10	110	19	76	63	267	199	20	4.4	.00	.00
6	29	52	127	26	70	61	209	235	24	7.4	.00	.00
7	21	37	95	49	71	60	160	330	16	7.3	.00	.00
8	4.7	32	86	150	74	57	184	309	7.1	3.8	.00	.00
9	3.2	53	89	187	85	53	140	240	4.9	1.3	.00	.00
10	2.5	32	84	190	83	55	124	196	3.6	.45	.00	.00
11	9.3	28	79	140	83	53	124	155	3.8	.69	.00	.00
12	5.0	29	71	76	76	60	133	117	2.9	.21	.00	.00
13	2.8	25	75	28	70	59	125	96	2.2	.10	.00	.00
14	2.2	26	71	19	65	61	105	229	8.7	.04	.00	.00
15	1.4	26	59	14	68	64	85	299	9.6	.04	.00	.00
16	1.7	27	56	16	63	75	78	287	6.6	.15	.00	.00
17	2.1	29	51	11	58	71	70	240	20	.05	.00	.00
18	2.4	31	36	10	95	85	57	182	9.5	.01	.00	.00
19	4.0	34	16	9.5	68	73	48	179	7.1	.00	.00	.00
20	57	31	10	9.8	74	72	46	144	20	.00	.00	.00
21	109	34	9.2	11	70	56	87	125	34	.00	.00	.00
22	24	37	9.0	19	66	45	103	115	27	.00	.00	.00
23	15	45	8.8	29	65	78	101	101	20	.00	.00	.00
24	35	39	8.6	38	58	103	111	87	9.1	.00	.00	.00
25	24	40	8.9	47	58	84	89	67	5.9	.00	.00	.00
26	13	45	9.9	58	63	145	72	49	27	.00	.00	.00
27	11	65	9.8	76	57	162	53	44	88	.00	.00	.00
28	9.0	47	9.3	98	56	170	42	39	142	.00	.00	.00
29	8.7	44	9.2	160	59	134	94	35	75	.00	.00	.00
30	8.1	54	10	207	---	98	175	29	34	.00	.00	.00
31	8.6	---	11	206	---	132	---	25	---	.00	.00	---
TOTAL	419.4	989.3	1550.7	1958.3	2134	2462	4045	5147	700.0	58.54	.00	.00
MEAN	13.5	33.0	50.0	63.2	73.6	79.4	135	166	23.3	1.89	.00	.00
MAX	109	65	127	207	134	170	448	330	142	13	.00	.00
MIN	1.0	8.6	8.6	9.5	56	45	42	25	2.2	.00	.00	.00
AC-FT	832	1960	3080	3880	4230	4880	8020	10210	1390	116	.00	.00
CAL YR 1983	TOTAL	42159.44		MEAN	116	MAX	2770	MIN	.00	AC-FT	83620	
WTR YR 1984	TOTAL	19464.24		MEAN	53.2	MAX	448	MIN	.00	AC-FT	38610	

07157950 CIMARRON RIVER NEAR BUFFALO, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on U.S. Highway 64.

PERIOD OF RECORD.--Water years 1953, 1961-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to January 1982.

WATER TEMPERATURE: July 1968 to January 1982.

INSTRUMENTATION.--Water quality monitor from March 1969 to September 1979.

REMARKS.--Samples were collected quarterly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 109,000 microsiemens July 20, 21, 1980; minimum daily, 1,020 microsiemens July 2, 1975.

WATER TEMPERATURE: Maximum daily, 38.0°C Aug. 14, 1974; minimum daily, -0.5°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 16...	1100	720	80020	27	13400	8.3	5.0	.50	11.7	102	41
FEB 29...	1130	723	80020	67	6710	8.4	.5	14	13.9	104	<20
APR 11...	1200	707	80020	120	13200	8.4	16.5	22	9.0	104	54

DATE	100 ML	STREP- TOCOCCI FECAL, KF AGAR PER (COLS. CAC03)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
NOV 16...	130	770	580	190	70	2600	88	42	7.0	186	1.8	
FEB 29...	48	570	360	140	53	1100	81	21	5.8	212	1.6	
APR 11...	75	760	540	170	81	2600	88	42	8.0	224	1.7	

DATE	AS S04)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
NOV 16...	480	4300	.80	17	7850	7800	10.7	572	<.10	.060	
FEB 29...	320	2000	.80	17	3660	3800	5.0	662	<.10	.050	
APR 11...	460	4500	.80	18	7950	8000	10.8	2580	.16	.070	

DATE	AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV 16...	.08	.60	.010	.03	<.010	.030	.09	20	1	200	
FEB 29...	.06	.40	.020	.06	<.010	.020	.06	10	1	<100	
APR 11...	.09	.50	.050	.15	.020	.030	.09	20	2	200	

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV 16...	<10	1	<1	1	1	100	2	70	50	.1
FEB 29...	<10	1	<1	1	2	20	<1	60	30	<.1
APR 11...	10	<1	<1	<1	1	110	1	70	30	.2
DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	3	2	2	<1	2800	45	20	7	.51	72
FEB 29...	7	2	2	<1	2200	22	20	39	7.1	78
APR 11...	6	1	1	<1	2800	71	20	54	17	82

07157960 BUFFALO CREEK NEAR LOVEDALE, OK

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, Hydrologic Unit 11050001, near center of channel on downstream side of pier of bridge on State Highway 34, 1.2 mi (1.9 km) east of Lovedale, 1.3 mi (2.1 km) upstream from Sleeping Bear Creek, and at mile 7.6 (12.2 km).

DRAINAGE AREA.--408 mi² (1,057 km²).

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,602.56 ft (488.460 m) Oklahoma State Highway Department datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--18 years, 9.64 ft³/s (0.273 m³/s), 6,980 acre-ft/yr (8.61 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 15,800 ft³/s (447 m³/s) Aug. 9, 1967, gage height, 14.80 ft (4.511 m), from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of slope-area determination of peak flow; maximum gage height, 16.17 ft (4.929 m) May 10, 1979; no flow each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14 ft³/s (0.40 m³/s) Apr. 2-4, gage height, 5.23 ft (1.594 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.69	1.7	1.2	3.1	1.9	9.9	5.2	.86	1.6	.00	.00
2	.00	.68	1.6	1.7	2.9	2.0	13	5.6	.78	1.0	.00	.00
3	.00	.65	2.0	1.5	2.7	2.0	13	5.4	.88	.66	.00	.00
4	.00	.65	2.1	1.4	2.5	2.1	13	4.7	1.1	.49	.00	.00
5	.00	.69	2.1	1.2	2.3	2.1	10	5.9	1.1	.35	.00	.00
6	.00	1.3	1.9	1.3	2.2	2.0	8.6	7.2	.85	.19	.00	.00
7	.00	1.9	1.8	1.4	2.2	1.9	7.5	9.1	.67	.08	.00	.00
8	.00	2.0	1.7	1.7	2.2	1.8	10	8.2	.56	.00	.00	.00
9	.00	1.8	1.6	2.6	2.6	1.7	9.3	6.6	.62	.00	.00	.00
10	.00	1.5	1.6	2.3	2.6	1.6	8.5	5.4	.54	.00	.00	.00
11	.00	1.4	1.5	2.1	2.5	1.7	7.7	4.4	.54	.00	.00	.00
12	.00	1.3	1.5	2.0	2.2	2.3	6.6	4.0	.44	.00	.00	.00
13	.00	1.3	1.5	1.6	2.1	2.7	5.5	3.2	.34	.00	.00	.00
14	.00	1.2	1.5	1.5	2.2	3.1	4.8	6.7	.33	.00	.00	.00
15	.00	1.1	1.3	1.5	2.1	2.9	4.5	9.6	.33	.00	.00	.00
16	.00	1.1	1.3	1.5	2.0	3.1	4.2	9.9	.25	.00	.00	.00
17	.00	1.1	1.3	1.5	2.1	4.7	3.9	9.0	.15	.00	.00	.00
18	.00	1.1	1.1	1.4	2.4	5.3	3.7	7.0	.12	.00	.00	.00
19	.00	1.1	1.0	1.4	2.4	5.6	3.7	6.0	.13	.00	.00	.00
20	.05	1.1	.86	1.4	2.3	4.9	3.6	5.1	.16	.00	.00	.00
21	1.9	1.1	.93	1.5	2.4	4.5	3.9	4.4	.15	.00	.00	.00
22	2.5	1.1	1.1	1.5	2.3	4.0	4.3	3.9	.07	.00	.00	.00
23	1.8	1.3	1.7	1.5	2.1	5.4	4.8	3.2	.01	.00	.00	.00
24	1.3	1.3	1.9	1.6	2.1	9.3	5.1	2.6	.00	.00	.00	.00
25	1.0	1.3	1.8	1.8	2.0	9.7	4.8	2.1	.00	.00	.00	.00
26	.82	1.4	1.6	2.2	1.9	8.7	3.7	1.8	.12	.00	.00	.00
27	.76	1.5	1.5	2.2	2.1	8.4	3.0	1.7	1.1	.00	.00	.00
28	.71	1.6	1.4	3.0	2.0	11	2.6	1.4	7.2	.00	.00	.00
29	.64	1.8	1.2	3.1	2.0	9.5	3.4	1.3	3.1	.00	.00	.00
30	.65	1.7	.91	3.1	---	7.5	4.7	1.2	2.4	.00	.00	.00
31	.65	---	1.0	3.0	---	8.7	---	1.1	---	.00	.00	---
TOTAL	12.78	37.76	46.00	56.7	66.5	142.1	191.3	152.9	24.90	4.37	.00	.00
MEAN	.41	1.26	1.48	1.83	2.29	4.58	6.38	4.93	.83	.14	.00	.00
MAX	2.5	2.0	2.1	3.1	3.1	11	13	9.9	7.2	1.6	.00	.00
MIN	.00	.65	.86	1.2	1.9	1.6	2.6	1.1	.00	.00	.00	.00
AC-FT	25	75	91	112	132	282	379	303	49	8.7	.00	.00
CAL YR 1983	TOTAL	1878.49		MEAN	5.15	MAX	41	MIN	.00	AC-FT	3730	
WTR YR 1984	TOTAL	735.31		MEAN	2.01	MAX	13	MIN	.00	AC-FT	1460	

ARKANSAS RIVER BASIN

07158000 CIMARRON RIVER NEAR WAYNOKA, OK

LOCATION.--Lat 36°31'02", long 98°52'45", in NW 1/4 NE 1/4 sec.35, T.24 N., R.16 W., Woods County, Hydrologic Unit 11050001, near left bank on downstream side of bridge on U.S. State Highway 281, 4 mi (6 km) south of Waynoka, and at mile 247.0 (397/4 km).

DRAINAGE AREA.--13,334 mi² (34,535 km²), of which 4,830 mi² (12,510 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1903 to December 1905 (gage heights and discharge measurements only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 1,367.35 ft (416.768 m) National Geodetic Vertical Datum of 1929. September 1903 to December 1905, nonrecording gage at the Atchison, Topeka and Santa Fe Railway Co. bridge 5 mi (8 km) upstream at different datum. 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 (15.2 m) downstream at present datum.

REMARKS.--Records fair. Extensive diversions for irrigation above station.

AVERAGE DISCHARGE.--47 years, (water years 1938-84), 323 ft³/s (9.147 m³/s), 234,000 acre-ft/yr (289 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 94,500 ft³/s (2,680 m³/s) May 16, 1957, gage height, 15.10 ft (4.602 m), from rating curve extended above 45,000 ft³/s (1,270 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 14 ft (4.3 m) occurred probably in 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 949 ft³/s (26.9 m³/s) Apr. 8, gage height, 6.40 ft (1.951 m), no peak above base of 10,000 ft³/s (283 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	15	50	19	206	83	389	184	63	55	.00	.00
2	.00	14	55	31	167	89	347	221	58	37	.00	.00
3	.00	14	65	51	135	88	477	239	60	22	.00	.00
4	.00	14	110	70	117	89	437	229	87	10	.00	.00
5	.00	14	117	81	103	85	394	227	127	3.4	.00	.00
6	.56	29	104	87	97	82	318	289	74	2.3	.00	.00
7	5.0	119	104	99	92	86	355	289	55	16	9.5	.00
8	6.9	86	112	108	92	80	808	305	48	9.7	1.6	.00
9	7.6	50	96	177	101	75	398	291	47	2.3	.17	.00
10	6.5	38	94	207	112	73	211	259	47	1.5	.00	.00
11	6.2	38	93	203	106	73	188	240	75	.90	.00	.00
12	4.5	30	89	177	101	82	182	217	80	.55	.00	.00
13	3.7	27	83	95	91	85	165	196	43	.12	.00	.00
14	2.3	27	79	64	88	86	153	206	30	.00	.00	.00
15	.67	23	76	51	87	80	142	347	41	.00	.00	.00
16	.48	22	69	44	79	87	128	299	73	.00	.00	.00
17	12	23	66	29	76	176	116	297	43	.00	.00	.00
18	17	25	16	22	81	242	109	279	25	.00	.00	.00
19	9.1	26	13	20	98	379	103	247	23	.00	.00	.00
20	33	27	12	21	94	203	100	225	40	.00	.00	.00
21	273	26	11	24	86	146	102	207	34	.00	.00	.00
22	195	25	10	33	94	123	107	188	26	.00	.00	.00
23	52	30	9.8	46	87	197	108	169	33	.00	.00	.00
24	28	33	10	65	81	438	104	156	27	.00	.00	.00
25	20	35	11	95	81	327	101	135	33	.00	.00	.00
26	23	39	12	108	85	233	101	121	58	.00	36	.00
27	21	54	11	107	94	236	92	110	79	.00	4.7	.00
28	17	89	10	126	95	380	86	99	58	.00	1.0	.00
29	18	62	10	146	76	295	102	90	72	.00	.01	.00
30	17	38	11	206	---	231	227	83	80	.00	.00	.00
31	15	---	14	220	---	265	---	74	---	.00	.00	---
TOTAL	794.51	1092	1622.8	2832	2902	5194	6650	6518	1639	160.77	52.98	.00
MEAN	25.6	36.4	52.3	91.4	100	168	222	210	54.6	5.19	1.71	.00
MAX	273	119	117	220	206	438	808	347	127	55	36	.00
MIN	.00	14	9.8	19	76	73	86	74	23	.00	.00	.00
AC-FT	1580	2170	3220	5620	5760	10300	13190	12930	3250	319	105	.00
CAL YR 1983	TOTAL	79850.71		MEAN	219	MAX	5890	MIN	.00	AC-FT	158400	
WTR YR 1984	TOTAL	29458.06		MEAN	80.5	MAX	808	MIN	.00	AC-FT	58430	

ARKANSAS RIVER BASIN

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0715/100 CIMARRON RIVER NEAR DOVER, OK

LOCATION.--Lat 35°57'06", long 97°54'51", in SW 1/4 NE 1/4 sec.14, T.17 N., R.7 W., Kingfisher County, Hydrologic Unit 11050002, near right bank on downstream bridge on U.S. Highway 81, 1.0 mi (1.6 km) downstream from Turkey Creek, 2.0 mi (3.2 km) south of Dover, 2.5 mi (4.0 km) upstream from Kingfisher Creek, and at mile 160.6 (258.4 km).

DRAINAGE AREA.--15,713 mi² (40,697 km²), of which 4,926 mi² (12,758 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 999.19 ft (304.553 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--11 years, 745 ft³/s (21.10 m³/s), 539,800 acre-ft/yr (666 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,900 ft³/s (1,950 m³/s) May 17, 1982, gage height, 22.87 ft (6.971 m) from high-water mark; minimum daily, 4.3 ft³/s (0.12 m³/s) Sept. 23, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,200 ft³/s (289 m³/s) Apr. 8, gage height, 16.70 ft (5.090 m), no peak above base of 12,000 ft³/s (340 m³/s); minimum daily discharge, 8.2 ft³/s (0.23 m³/s) Sept. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	188	230	250	124	152	1970	801	203	179	32	17
2	86	182	227	316	160	124	1510	969	187	150	32	16
3	82	175	220	363	175	97	1240	904	181	145	31	15
4	80	163	218	380	165	94	955	705	177	139	30	16
5	77	153	218	430	138	83	865	744	169	125	36	16
6	89	149	222	460	117	77	596	736	160	111	74	14
7	150	151	226	433	106	78	597	784	154	101	74	14
8	185	155	236	308	102	78	6380	914	176	89	36	14
9	131	160	238	277	116	60	8460	810	252	82	43	12
10	117	174	238	296	139	60	5470	689	751	70	49	12
11	109	208	234	272	128	61	2120	652	281	63	38	12
12	104	189	226	271	111	63	1330	615	196	61	41	12
13	104	177	218	331	108	70	1060	547	171	63	32	12
14	102	171	215	301	101	70	958	508	200	61	28	9.3
15	94	163	208	296	90	65	878	471	222	53	25	9.4
16	86	153	201	278	82	64	814	548	197	50	22	10
17	160	148	200	164	77	66	784	580	166	53	21	11
18	536	150	152	73	72	80	776	615	154	53	19	12
19	344	146	115	73	69	311	776	547	154	51	18	13
20	1990	143	84	80	68	534	784	560	176	48	19	13
21	7710	140	81	90	65	533	997	608	190	46	19	14
22	2770	143	81	105	65	417	1330	505	160	44	18	15
23	1430	157	81	130	65	2940	1120	455	137	41	19	14
24	1040	182	82	170	62	6290	860	407	133	40	19	14
25	581	184	105	200	59	4420	776	354	122	40	19	10
26	401	180	140	180	74	3000	715	331	167	40	18	9.9
27	307	240	130	200	231	1530	827	299	263	43	17	15
28	258	293	120	187	305	1480	809	279	260	41	24	19
29	224	249	120	140	245	1810	810	260	225	38	22	21
30	208	243	140	124	---	1350	705	245	237	36	20	23
31	196	---	180	119	---	1140	---	226	---	33	19	---
TOTAL	19841	5309	5386	7297	3419	27197	47272	17668	6221	2189	914	414.6
MEAN	640	177	174	235	118	877	1576	570	207	70.6	29.5	13.8
MAX	7710	293	238	460	305	6290	8460	969	751	179	74	23
MIN	77	140	81	73	59	60	596	226	122	33	17	9.3
AC-FT	39350	10530	10680	14470	6780	53950	93760	35040	12340	4340	1810	822
CAL YR 1983	TOTAL	300642		MEAN	824	MAX	22000	MIN	30	AC-FT	596300	
WTR YR 1984	TOTAL	143127.6		MEAN	391	MAX	8460	MIN	9.3	AC-FT	283900	

07159630 DEER CREEK ABOVE DEER CREEK ADVANCED WASTE WATER TREATMENT FACILITY NEAR EDMOND, OK

WATER-QUALITY RECORDS

LOCATION.--Lat 35°40'09", long 97°36'09", in SW 1/4 SW 1/4 sec.23, T.14 N., R.4 W., Oklahoma County, Hydrologic Unit 1105002, 0.4 mi (0.6 km) west of Bethany Sewage Disposal plant, 7.0 mi (11.2 km) west of Edmond and at mile 12.3 (19.8 km).

DRAINAGE AREA.--77.9 mi² (201.8 km²).

PERIOD OF RECORD.--Water year September 1983 to current year.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
SEP 21...	1200	740	80020	2.8	1300	8.1	15.0	6.7	69	22	K820
DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	
SEP 21...	K810	500	250	120	48	130	36	3	4.8	252	
DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	
SEP 21...	3.9	340	130	18	973	940	1.3	7.4	58	.27	
DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS TOTAL (MG/L AS PO4)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	
SEP 21...	.030	.30	.090	.71	.80	1.1	4.9	.130	.40	.2	
DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	
SEP 21...	3.5	3.6	1	<.1	<.10	<.010	<.1	<.010	<.010	<.010	
DATE	DI-ELDRIN, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	
SEP 21...	<.010	<.010	<.010	<.010	<.010	<.010	<.01	<.01	<.1	<1	

07159630 DEER CREEK ABOVE DEER CREEK ADVANCED WASTE WATER TREATMENT FACILITY NEAR EDMOND, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO ₂)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)
NOV 09...	12	200	110	19	742	720	1.0	52	79	.57	.030
FEB 01...	3.9	--	--	--	1020	--	1.4	30	7	.49	.010
APR 18...	7.6	260	140	16	921	880	1.3	62	50	.39	.010
MAY 23...	8.8	350	160	25	1090	1000	1.5	25	57	.57	.030
JUL 25...	4.1	--	--	--	1020	--	1.4	5.7	41	--	.010
SEP 19...	7.3	410	120	17	1040	1100	1.4	1.8	59	--	<.010

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO ₃)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO ₄)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO ₄)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV 09...	.60	.040	1.1	1.1	1.7	7.5	.160	.49	--	--	1
FEB 01...	.50	.050	.35	.40	.90	4.0	.030	.09	--	--	--
APR 18...	.40	.100	.50	.60	1.0	4.4	.090	.28	--	--	<1
MAY 23...	.60	.090	.51	.60	1.2	5.3	.160	.49	.030	.09	<1
JUL 25...	<.10	.060	.44	.50	--	--	.100	--	.060	.18	--
SEP 19...	<.10	.090	.41	.50	--	--	.150	--	--	--	<1

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
NOV 09...	6	<.1	5.5	4.9	6	<.1	--	<.010	--	--	--
FEB 01...	--	--	3.5	3.8	--	--	--	--	--	--	--
APR 18...	5	.3	4.1	3.8	<1	--	--	--	--	--	--
MAY 23...	6	.6	4.1	3.6	<1	<.1	<.10	<.010	<.1	<.010	<.010
JUL 25...	--	--	6.0	3.8	--	--	--	--	--	--	--
SEP 19...	<1	.6	4.0	4.1	<1	<.1	<.10	<.010	<.1	<.010	<.010

DATE	DDT, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 09...	--	--	--	--	--	--	<.010	--	--	--	--
FEB 01...	--	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.01	<.01	<.1	<1
JUL 25...	--	--	--	--	--	--	--	--	--	--	--
SEP 19...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.01	<.01	<.1	<1

07159639 BLUFF CREEK ABOVE BETHANY/WARR ACRES SEWAGE TREATMENT PLANT NEAR EDMOND, OK

LOCATION.--Lat 35°40'02", long 97°35'45", SE 1/4 SW 1/4 sec.26, T.14 N., R.4 W., Oklahoma County, Hydrologic Unit 11050002, 0.7 mi (1.1 km) west of NW 178 and Portland, 6.5 mi (10.4 km) west of Edmond and at mile 2.0 (3.2 km).

DRAINAGE AREA.--39.1 mi² (101.3 km²) of which 6.4 mi² (16.6 km²) probably is noncontributing.

PERIOD OF RECORD.--Water year August 1983 to current year.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	
NOV 09...	0945	740	80020	14	945	7.1	14.0	7.2	72	2.0	K5500	
FEB 01...	1030	740	80020	6.9	1180	8.0	4.0	11.8	93	3.0	K170	
APR 18...	0900	740	80020	9.8	1180	8.0	14.0	10.8	108	5.0	5100	
MAY 23...	1025	750	80020	3.2	1150	7.7	21.0	7.0	80	4.0	>8000	
JUL 25...	0835	740	80020	1.2	1070	7.9	23.5	5.9	72	--	K130	
SEP 19...	1015	750	80020	.85	1090	8.0	19.0	9.4	103	--	640	
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)
NOV 09...	K1500	--	330	97	72	37	81	34	2	3.6	236	
FEB 01...	K27	K54	--	--	--	--	--	--	--	--	280	
APR 18...	400	200	430	140	92	48	110	36	2	3.2	287	
MAY 23...	K10000	K1500	410	110	87	48	110	36	2	3.5	303	
JUL 25...	K60	K35	--	--	--	--	--	--	--	--	218	
SEP 19...	150	400	330	110	67	40	100	39	2	5.0	224	
DATE		CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
NOV 09...	36	150	98	13	605	600	.82	23	25	.58	.020	
FEB 01...	5.4	--	--	--	741	--	1.0	14	11	.38	.020	
APR 18...	5.5	200	130	7.2	772	760	1.0	20	17	.19	.010	
MAY 23...	12	210	130	13	797	780	1.1	6.9	16	.27	.030	
JUL 25...	5.3	--	--	--	690	--	.94	2.2	13	--	.010	
SEP 19...	4.3	170	130	9.1	672	660	.91	1.5	18	.19	.010	

07159639 BLUFF CREEK ABOVE BETHANY/WARR ACRES SEWAGE TREATMENT PLANT NEAR EDMOND, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV 09...	.60	.050	2.1	2.1	2.7	12	.150	.46	--	--	<1
FEB 01...	.40	.100	.40	.50	.90	4.0	.050	.15	--	--	--
APR 18...	.20	.140	.46	.60	.80	3.5	.070	.21	--	--	<1
MAY 23...	.30	.030	.67	.70	1.0	4.4	.120	.37	.030	.09	<1
JUL 25...	<.10	.060	.54	.60	--	--	.110	--	.120	.37	--
SEP 19...	.20	.070	.63	.70	.90	4.0	.140	--	--	--	1

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
NOV 09...	3	<.1	5.3	5.0	3	<.1	--	<.010	--	--	--
FEB 01...	--	--	4.3	4.4	--	--	--	--	--	--	--
APR 18...	3	.3	5.2	5.4	3	--	--	--	--	--	--
MAY 23...	8	.5	4.9	5.1	<1	<.1	<.10	<.010	<.1	<.010	<.010
JUL 25...	--	--	5.0	4.7	--	--	--	--	--	--	--
SEP 19...	<1	6.0	4.4	4.4	<1	<.1	<.10	<.010	<.1	<.010	<.010

DATE	DDT, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 09...	--	--	--	--	--	--	<.010	--	--	--	--
FEB 01...	--	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.01	<.01	<.1	<1
JUL 25...	--	--	--	--	--	--	--	--	--	--	--
SEP 19...	<.010	<.010	<.010	<.010	<.010	<.010	<.010	<.01	<.01	<.1	<1

07159645 DEER CREEK BELOW DEER CREEK ADVANCED WASTE WATER TREATMENT FACILITY NEAR EDMOND, OK

WATER-QUALITY RECORDS

LOCATION.--Lat 35°40'55", long 97°35'27", in NW 1/4 NE 1/4 sec.23, T.14 N., R.4 W., Oklahoma County, Hydrologic Unit 1105002, 0.25 mi (0.4 km) west of N.W. 206 and Portland, 6.5 mi (10.4 km) west of Edmond and at mile 9.7 (15.6 km).

DRAINAGE AREA.--124 mi² (321 km²).

PERIOD OF RECORD.--Water year July 1983 to current year.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
NOV 09...	1345	740	80020	68	1150	7.7	14.5	7.8	79	--	K10
FEB 02...	1200	740	80020	38	1500	8.1	11.0	9.8	92	6.0	100
APR 18...	1245	730	80020	45	1300	7.9	16.0	10.3	109	2.0	250
MAY 23...	1340	750	80020	17	1380	7.7	22.0	7.3	85	16	>320
JUL 25...	1410	740	80020	16	1380	8.0	26.0	7.8	100	--	<20
SEP 19...	1340	750	80020	14	1470	8.0	24.0	7.7	93	--	K1

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOC CI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)
NOV 09...	<80	--	410	150	98	40	110	36	2	5.7	259
FEB 02...	>20	K4	--	--	--	--	--	--	--	--	294
APR 18...	K38	K53	460	170	110	45	110	34	2	3.5	295
MAY 23...	>240	>400	490	200	120	46	140	38	3	4.8	285
JUL 25...	<20	<20	--	--	--	--	--	--	--	--	213
SEP 19...	K1	K1	370	150	110	22	170	49	4	12	214

DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)
NOV 09...	10	200	130	17	774	760	1.1	142	45	3.2	.130
FEB 02...	4.5	--	--	--	936	--	1.3	96	14	6.1	.440
APR 18...	7.2	240	150	14	891	850	1.2	108	91	1.5	.030
MAY 23...	11	280	150	20	204	940	.28	9.4	135	2.2	.150
JUL 25...	4.1	--	--	--	903	--	1.2	39	15	12	.010
SEP 19...	4.1	210	210	12	930	870	1.3	35	27	8.8	2.20

ARKANSAS RIVER BASIN

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07159645 DEER CREEK BELOW DEER CREEK ADVANCED WASTE WATER TREATMENT FACILITY NEAR EDMOND, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV 09...	3.3	.210	1.7	1.9	5.2	23	1.70	5.2	--	--	<1
FEB 02...	6.5	1.20	1.8	3.0	9.5	42	1.50	4.6	--	--	--
APR 18...	1.5	.120	.68	.80	2.3	10	.630	1.9	--	--	<1
MAY 23...	2.3	.580	1.9	2.5	4.8	21	1.80	5.5	1.60	4.9	<1
JUL 25...	12	.050	1.2	1.2	13	58	3.50	--	2.70	8.3	--
SEP 19...	11	1.20	.90	2.1	13	58	1.70	--	--	--	1

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)
NOV 09...	4	.1	7.4	6.3	--	<.1	--	<.010	--	--	--
FEB 02...	--	--	7.6	6.5	--	--	--	--	--	--	--
APR 18...	4	.2	4.7	4.7	3	--	--	--	--	--	--
MAY 23...	8	.4	5.0	4.8	<1	<.1	<.10	<.010	<.1	<.010	<.010
JUL 25...	--	--	7.2	6.8	--	--	--	--	--	--	--
SEP 19...	9	.7	6.7	6.1	<1	<.1	<.10	<.010	<.1	<.010	<.010

DATE	DDT, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 09...	--	--	--	--	--	--	.030	--	--	--	--
FEB 02...	--	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<.010	<.010	<.010	<.010	<.010	<.010	.010	<.01	<.01	<.1	<1
JUL 25...	--	--	--	--	--	--	--	--	--	--	--
SEP 19...	<.010	<.010	<.010	<.010	<.010	<.010	.040	<.01	<.01	<.1	<1

07159720 COTTONWOOD CREEK NEAR NAVINA, OK

LOCATION.--Lat 35°46'36", long 97°32'45", SW 1/4 NW 1/4 sec. 17, T.15 N., R.4 W., Logan County, Hydrologic Unit 11050002 on downstream right bank, 0.5 mi (0.8 km) downstream from Deer Creek, 1.7 mi (2.7 km) southeast of Navina, 10.7 mi (17.2 km) southwest of Guthrie, and at mile 25.0 (40.2 km).

DRAINAGE AREA.--247 mi² (640 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1980, March 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 962.10 ft (293.248 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Low flow sustained by part of sewage effluent from Oklahoma City.

AVERAGE DISCHARGE.--5 years (water years 1978-80, 1983-84), 90.1 ft³/s (2.552 m³/s), 65,280 acre-ft/yr (80.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft³/s (906 m³/s) Oct. 20, 1983, gage height, 23.94 ft (7.297 m); minimum daily, 8.0 ft³/s (0.23 m³/s) Oct. 14, 15, 1977.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 32,000 ft³/s (906 m³/s) at 2000 Oct. 20, gage height, 23.94 ft (7.297 m), no other peaks above base of 2,000 ft³/s (56.6 m³/s); minimum daily discharge, 11 ft³/s (0.31 m³/s) Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	451	65	57	45	54	107	77	45	72	17	24
2	18	315	63	57	47	51	98	70	43	53	18	21
3	18	264	64	65	48	45	97	77	38	50	18	56
4	18	193	72	72	47	48	83	126	37	50	18	30
5	19	169	70	74	45	49	76	81	34	43	23	20
6	18	151	66	74	46	45	70	82	35	38	27	19
7	31	153	60	66	49	43	80	78	32	39	20	19
8	113	159	59	66	52	43	773	69	32	33	18	21
9	36	138	59	59	52	42	494	61	35	27	19	20
10	29	129	61	61	61	42	248	58	60	25	21	19
11	26	119	64	60	54	42	183	54	67	24	19	17
12	26	108	63	56	58	46	148	50	44	25	18	12
13	23	99	62	50	49	53	121	49	38	31	18	11
14	21	99	57	48	44	51	115	48	35	24	18	13
15	23	98	55	49	43	49	105	45	31	22	17	15
16	24	90	54	47	44	47	95	42	29	21	16	15
17	23	88	52	50	41	42	92	39	30	22	15	15
18	62	91	50	46	40	41	87	38	29	22	16	15
19	320	104	47	74	50	44	82	39	65	21	16	14
20	9930	97	61	53	44	48	81	52	73	20	16	15
21	4940	75	56	52	41	46	95	53	134	20	16	16
22	1380	66	51	56	43	41	84	50	53	20	16	16
23	702	150	52	56	46	141	73	44	38	19	15	17
24	637	171	53	57	50	526	69	37	135	20	15	17
25	592	97	53	59	43	205	66	41	71	19	14	15
26	566	84	52	57	43	131	75	39	210	19	15	15
27	546	91	55	55	70	101	66	37	347	20	15	15
28	528	96	59	54	102	162	71	43	183	22	46	16
29	511	79	61	52	65	184	67	47	179	20	20	16
30	499	67	63	51	---	114	88	46	118	19	40	18
31	488	---	65	47	---	100	---	45	---	19	50	---
TOTAL	22184	4091	1824	1780	1462	2676	3989	1717	2300	879	630	552
MEAN	716	136	58.8	57.4	50.4	86.3	133	55.4	76.7	28.4	20.3	18.4
MAX	9930	451	72	74	102	526	773	126	347	72	50	56
MIN	17	66	47	46	40	41	66	37	29	19	14	11
AC-FT	44000	8110	3620	3530	2900	5310	7910	3410	4560	1740	1250	1090
CAL YR 1983 TOTAL		56444		MEAN	155	MAX	9930	MIN	16	AC-FT	112000	
WTR YR 1984 TOTAL		44084		MEAN	120	MAX	9930	MIN	11	AC-FT	87440	

07159720 COTTONWOOD CREEK NEAR NAUINA, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to November 1980.

WATER TEMPERATURE: October 1977 to November 1980.

REMARKS.--Samples collected monthly. Specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
19...	1100	740	80020	259	580	7.7	18.0	7.3	80	8.8	--	--
19...	1535	--	1028	262	--	--	--	--	--	--	--	--
19...	2010	--	1028	343	--	--	--	--	--	--	--	--
20...	0026	--	1028	632	--	--	--	--	--	--	--	--
20...	0945	--	1028	2770	--	--	--	--	--	--	--	--
23...	1235	--	1028	731	--	--	--	--	--	--	--	--
DEC												
16...	1000	750	80020	54	1350	7.4	2.0	12.2	90	5.8	K130	K13
JAN												
24...	1245	740	80020	53	1700	7.8	3.0	11.9	92	2.1	63	K2
APR												
11...	1038	730	80020	184	1050	7.7	13.5	8.8	88	3.8	620	480
25...	1315	740	80020	68	1350	8.1	18.5	7.4	82	--	610	K64
MAY												
30...	1345	750	80020	48	1290	7.4	18.0	6.6	71	5.4	K18500	270
JUL												
27...	0925	740	80020	21	1350	7.8	25.5	5.2	66	--	1300	360
AUG												
22...	1030	740	80020	16	1480	7.9	27.0	4.3	56	4.2	550	490
SEP												
18...	0955	750	80020	16	1500	7.6	18.5	6.7	73	6.4	K1700	K100

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT												
19...	--	180	72	45	16	51	38	2	4.4	107	4.1	99
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	52	480	170	120	44	120	35	2	4.9	315	24	240
JAN												
24...	K4	470	170	120	42	120	35	2	5.8	306	9.4	260
APR												
11...	680	350	110	83	34	87	35	2	5.1	239	9.2	190
25...	180	470	140	110	47	130	37	3	4.7	331	5.1	250
MAY												
30...	K1200	410	140	100	40	120	38	3	6.1	270	21	220
JUL												
27...	800	370	150	95	33	160	47	4	9.9	224	6.9	230
AUG												
22...	--	360	130	96	28	160	48	4	13	221	5.4	210
SEP												
18...	K1100	360	140	100	26	170	50	4	13	219	11	210

ARKANSAS RIVER BASIN

07159720 COTTONWOOD CREEK NEAR NAVINA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
OCT												
19...	58	8.3	356	350	.48	249	610	1.1	.100	1.2	.070	4.9
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	140	17	--	880	1.2	128	30	3.7	.130	3.8	.200	.60
JAN												
24...	150	14	1060	900	1.4	153	12	4.5	.200	4.7	1.10	.90
APR												
11...	93	13	662	650	.90	329	195	--	--	--	--	--
25...	140	14	944	890	1.3	173	56	1.9	.190	2.1	.060	.94
MAY												
30...	140	16	868	800	1.2	113	92	4.4	.300	4.7	.110	.19
JUL												
27...	180	13	806	860	1.1	46	127	9.4	.070	9.5	.090	1.3
AUG												
22...	200	12	894	850	1.2	39	80	8.1	.470	8.6	.420	1.4
SEP												
18...	200	12	921	860	1.3	39	112	9.8	.190	10	.220	1.3
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT												
19...	5.0	6.2	27	.700	2.1	.260	94	1	63	1	4	.4
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
16...	.80	4.6	20	1.00	3.1	1.10	130	<1	23	<1	130	.1
JAN												
24...	2.0	6.7	30	1.60	4.9	1.50	--	--	--	--	--	--
APR												
11...	--	--	--	--	--	--	130	<1	74	2	63	.4
25...	1.0	3.1	14	.970	3.0	.750	130	<1	8	2	150	4.7
MAY												
30...	.30	5.0	22	1.40	--	1.30	--	--	--	--	--	--
JUL												
27...	1.4	11	48	2.90	--	2.30	110	3	13	<1	29	.2
AUG												
22...	1.8	10	46	3.60	--	3.30	88	2	31	3	31	<.1
SEP												
18...	1.5	12	51	3.80	--	3.40	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

ARKANSAS RIVER BASIN

07159720 COTTONWOOD CREEK NEAR NAVINA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	METH- OXY- CHLOR DISSOLV (UG/L)	METHYL PARA- THION, DIS- SOLVED (UG/L)	METHYL- TRI- THION DISSOLV (UG/L)	MIREX, DIS- SOLVED (UG/L)	PARA- THION, DIS- SOLVED (UG/L)	PER- THANE DISSOLV (UG/L)	TOX- APHENE, DIS- SOLVED (UG/L)	TRI- THION DISSOLV (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
19...	<.01	--	--	<.01	--	<.10	<1.0	--	--	--	--
19...	--	--	--	--	--	--	--	--	623	441	97
19...	--	--	--	--	--	--	--	--	2050	1900	87
20...	--	--	--	--	--	--	--	--	5740	9790	85
20...	--	--	--	--	--	--	--	--	4490	33600	76
23...	--	--	--	--	--	--	--	--	809	1600	92
DEC											
16...	<.01	<.01	<.01	<.01	<.01	<.10	<1.0	<.01	14	2.0	54
JAN											
24...	--	--	--	--	--	--	--	--	18	2.6	40
APR											
11...	<.01	.01	<.01	<.01	.03	<.10	<1.0	<.01	251	125	96
25...	<.01	<.01	<.01	<.01	<.01	<.10	<1.0	<.01	52	9.5	91
MAY											
30...	--	--	--	--	--	--	--	--	123	16	95
JUL											
27...	<.01	<.01	<.01	<.01	<.01	<.10	<1.0	<.01	119	6.7	94
AUG											
22...	<.01	<.01	<.01	<.01	<.01	<.10	<1.0	<.01	84	3.6	91
SEP											
18...	--	--	--	--	--	--	--	--	116	4.9	96

07160000 CIMARRON RIVER NEAR GUTHRIE, OK

LOCATION.--Lat 35°55'07", long 97°25'34", near center of east line of sec.29, T.17 N., R.2 W, Logan County, Hydrologic Unit 11050002, on downstream side of second pier from left bank of State Highway 77 bridge, 1.6 mi (2.4 km) downstream from Cottonwood Creek, 2.5 mi (4.0 km) north of Guthrie, 6.1 mi (9.8 km) upstream from Skeleton Creek, and at mile 122.4 (196.9 km).

DRAINAGE AREA.--16,892 mi² (43,750 km²), of which 4,926 mi² (12,758 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937-76, October 1983 to current year. Monthly discharge only for some periods, published in WSP's 1311 and 1731.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 896.50 ft (273.253 m) above mean sea level (U.S Army Corps of Engineers' bench mark). Prior to Mar. 19, 1939, nonrecording gage at railway bridge 1,200 ft (365 m) upstream at datum 4.00 ft (1.21 m) higher. From Mar. 19, 1939 to Sept. 30, 1976, recording gage 125 ft (38.1 m) upstream from railway bridge at datum 4.00 ft (1.21 m) higher. From Sept. 14, 1967 to Sept. 30, 1976, supplementary water-stage recorder at present site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--46 years (water years 1938-76, 1984), 889 ft³/s (25.18 m³/s), 644,100 acre-ft/yr (794 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 158,000 ft³/s (4,475 m³/s) May 17, 1957, gage height, 18.58 ft (5.663 m) site and datum then in use; minimum 0.1 ft³/s (0.003 m³/s) Nov. 2, 1939.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 16,000 ft³/s (453 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 21	0430	*45,700 1290	*13.06 3.981	Apr. 9	1100	19,600 555	10.08 3.072

Minimum daily discharge 34 ft³/s (0.96 m³/s) Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	1200	540	425	360	512	2470	741	260	400	76	58
2	240	1000	520	554	350	350	2970	761	250	330	74	59
3	240	900	480	554	340	250	2520	856	230	280	73	62
4	240	800	450	527	340	190	2160	848	220	250	73	55
5	240	710	430	491	340	140	1890	789	210	230	90	54
6	270	670	425	535	335	130	1720	774	200	210	180	54
7	400	690	420	818	335	120	1510	779	200	190	150	46
8	580	710	415	782	330	110	5360	778	210	180	90	46
9	767	730	410	620	345	115	17900	831	300	165	120	46
10	750	760	406	532	385	120	11300	773	400	160	140	46
11	687	940	399	473	370	93	6110	710	767	150	110	46
12	639	860	396	441	350	90	3420	684	618	150	120	46
13	596	800	392	421	330	94	2500	675	446	150	100	44
14	569	770	387	420	320	99	2010	620	300	150	88	38
15	544	740	383	420	300	102	1770	600	260	130	80	34
16	528	700	350	1160	275	101	1590	580	240	120	74	36
17	552	680	320	1690	245	96	1470	580	260	125	70	40
18	603	690	290	1100	230	96	1380	620	280	125	74	45
19	943	680	250	780	220	110	1310	660	300	122	74	48
20	10200	650	230	540	220	450	1260	530	240	115	74	50
21	35700	640	220	480	220	946	1230	615	210	110	70	52
22	17400	640	220	470	220	995	1360	560	200	105	72	55
23	5190	670	220	465	220	1860	1600	534	200	96	72	54
24	3790	700	220	460	220	13200	1320	503	350	95	68	50
25	3000	730	230	460	250	9030	904	458	612	94	66	37
26	2500	740	255	460	400	5170	753	415	601	97	90	37
27	2000	800	240	450	505	3370	736	390	1190	100	82	53
28	1600	840	220	447	440	2330	785	350	1610	95	76	70
29	1580	640	220	435	532	3430	794	325	1010	90	70	80
30	1520	580	240	390	---	2850	771	300	688	83	64	90
31	1300	---	350	375	---	2220	---	275	---	78	60	---
TOTAL	95428	22660	10528	18175	9327	48769	82873	18914	12862	4775	2720	1531
MEAN	3078	755	340	586	322	1573	2762	610	429	154	87.7	51.0
MAX	35700	1200	540	1690	532	13200	17900	856	1610	400	180	90
MIN	240	580	220	375	220	90	736	275	200	78	60	34

WTR YR 1984 TOTAL 328562 MEAN 898 MAX 35700 MIN 34

07160500 SKELETON CREEK NEAR LOVELL, OK

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, Hydrologic Unit 11050002, near right bank on downstream side of pier of bridge on State Highway 74, 2 mi (3 km) upstream from Otter Creek, 2.8 mi (4.5 km) east of Lovell, and at mile 14.6 (23.5 km).

DRAINAGE AREA.--410 mi² (1,062 km²).

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 909.76 ft (277.295 m) Oklahoma State Highway Department datum. Prior to Dec. 5, 1949, nonrecording gage at site 60 ft (18.3 m) downstream at datum 4.70 ft (1.433 m) higher. Prior to Oct. 1, 1979, gage at present site and datum 5.00 ft (1.524 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--35 years, 117 ft³/s (3.313 m³/s), 84,770 acre-ft/yr (105 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,200 ft³/s (2,130 m³/s) May 16, 1957, gage height, 34.58 ft (10.540 m), no flow at times in 1953-54, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 4,820 ft³/s (137 m³/s) at 1700 Mar. 24, gage height, 25.51 ft (7.775 m), no other peak above base of 2,300 ft³/s (65.1 m³/s); minimum daily discharge, 1.3 ft³/s (0.037 m³/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	9.5	33	9.2	31	12	580	87	27	9.0	5.0	3.6
2	1.3	9.5	25	12	19	6.9	450	80	23	8.5	4.8	3.6
3	1.6	9.5	22	16	18	5.9	440	74	22	8.0	4.7	3.5
4	1.6	9.3	18	20	17	5.1	420	72	21	7.2	4.7	3.5
5	1.5	9.3	18	37	16	4.3	420	72	20	6.6	4.6	3.5
6	1.7	10	18	41	16	3.6	420	72	19	6.4	4.6	3.5
7	3.2	12	15	39	17	3.4	420	130	19	6.2	5.2	3.5
8	16	13	12	29	54	3.1	500	183	18	6.3	15	3.5
9	11	13	14	28	35	2.7	1100	171	18	16	59	3.5
10	6.1	11	10	30	29	2.7	650	166	19	12	29	3.4
11	3.2	9.2	11	35	25	2.9	263	122	20	9.0	11	3.4
12	2.7	8.8	11	20	24	3.0	200	110	44	7.0	7.0	3.4
13	21	8.7	10	16	50	3.7	190	55	86	6.0	5.7	3.4
14	5.8	8.5	10	15	23	4.4	180	45	70	6.0	5.4	3.4
15	2.9	8.5	11	13	20	4.3	175	40	40	5.8	5.2	3.4
16	2.9	8.5	10	11	18	3.2	170	38	30	5.8	4.9	3.4
17	3.3	8.4	9.0	9.2	17	2.7	170	37	25	5.8	4.6	3.4
18	263	8.4	8.0	8.3	20	31	170	36	25	5.8	4.3	3.4
19	134	8.4	7.6	7.9	17	592	170	42	30	5.8	4.0	3.4
20	1160	8.3	7.6	6.4	16	556	170	52	22	5.7	4.0	3.4
21	2040	9.0	9.1	6.0	15	211	500	110	19	5.7	4.0	3.3
22	1210	15	9.7	5.4	14	132	418	48	19	5.6	6.0	3.3
23	210	42	9.1	5.3	13	967	164	43	18	5.6	4.5	3.3
24	84	35	8.8	7.0	13	3520	117	39	17	5.5	4.0	3.3
25	43	25	8.3	43	15	2500	109	40	16	5.5	3.8	3.3
26	25	20	7.4	75	34	2100	96	35	110	5.4	3.7	3.3
27	17	44	8.8	105	300	1600	97	38	116	5.3	3.7	3.3
28	15	27	9.2	117	200	2890	164	42	52	5.3	3.6	3.3
29	12	25	9.7	103	55	2000	110	35	17	5.2	3.6	3.3
30	9.4	20	9.7	88	---	2800	95	34	9.9	5.1	3.6	3.3
31	9.4	---	7.4	50	---	1200	---	32	---	5.0	3.6	---
TOTAL	5319.2	453.8	377.4	1007.7	1141	21172.9	9128	2180	991.9	208.1	236.8	102.1
MEAN	172	15.1	12.2	32.5	39.3	683	304	70.3	33.1	6.71	7.64	3.40
MAX	2040	44	33	117	300	3520	1100	183	116	16	59	3.6
MIN	1.3	8.3	7.4	5.3	13	2.7	95	32	9.9	5.0	3.6	3.3
AC-FT	10550	900	749	2000	2260	42000	18110	4320	1970	413	470	203
CAL YR 1983	TOTAL	61675.4		MEAN	169	MAX	9830	MIN	1.3	AC-FT	122300	
WTR YR 1984	TOTAL	42318.9		MEAN	116	MAX	3520	MIN	1.3	AC-FT	83940	

07161000 CIMARRON RIVER AT PERKINS, OK

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, Hydrologic Unit 11050003, near right bank at downstream side of bridge on U.S. Highway 177, 1.0 mi (1.6 km) south of Perkins, 1.5 mi (2.4 km) upstream from Dugout Creek, 4.0 mi (6.4 km) downstream from Wildhorse Creek, and at mile 87.3 (140.5 km).

DRAINAGE AREA.--17,852 mi² (46,237 km²) of which 4,962 mi² (12,758 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1927 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 814.88 ft (248.375 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to June 26, 1940, and Jan. 9 to Apr. 7, 1957, nonrecording gage at same site and datum 5.00 ft (1.524 m) higher. Prior to Oct. 1, 1977, at same site and datum 5.00 ft (1.524 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--45 years, 1,188 ft³/s (33.64 m³/s), 860,700 acre-ft/yr (1.06 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 149,000 ft³/s (4,220 m³/s) May 17, 1957, gage height, 19.53 ft (5.953 m) datum then in use; minimum, 0.8 ft³/s (0.023 m³/s) Dec. 8, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4, 5, 1926, reached a stage of 17.0 ft (5.18 m) from floodmarks, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 16,000 ft³/s (453 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 21	1400	*36,500 1,030	*17.94 5.468	Apr. 9	1500	17,000 481	14.37 4.380
Mar. 25	0100	16,300 462	14.19 4.325				

Minimum daily discharge, 38 ft³/s (1.08 m³/s) Sept. 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	1560	759	738	631	1140	5780	1580	490	722	100	87
2	142	1470	702	748	604	938	7070	1420	458	575	97	102
3	135	1300	681	782	593	756	4910	1420	395	458	95	91
4	135	1150	681	844	615	706	4050	1520	381	387	95	80
5	118	1040	668	933	656	642	3350	1520	352	330	93	78
6	123	877	657	1040	635	595	3030	1400	339	310	91	84
7	158	915	658	1130	620	512	2710	1410	335	288	89	69
8	193	879	638	1170	585	567	4560	1500	327	274	116	59
9	246	917	619	927	574	542	15300	1470	311	253	128	57
10	300	825	634	779	581	548	12800	1440	327	241	137	56
11	246	775	626	693	616	553	9830	1280	323	238	137	48
12	205	799	606	686	688	564	6470	1120	819	237	132	50
13	181	817	606	652	666	561	4390	1070	822	224	142	47
14	172	790	615	620	629	561	3660	1010	551	199	121	43
15	175	742	602	600	589	572	3110	941	447	169	104	38
16	169	724	589	560	565	565	2790	874	386	161	97	38
17	166	704	577	520	545	569	2510	812	367	164	89	40
18	181	682	540	500	526	576	2330	765	340	158	82	45
19	264	714	518	450	524	620	2210	823	377	153	80	44
20	4850	669	485	560	498	1360	2120	1180	304	142	77	43
21	30300	671	470	660	499	1600	2140	1000	314	132	71	44
22	18100	660	450	819	502	1570	2130	989	336	130	71	43
23	9270	680	470	897	492	3450	2320	974	343	128	73	44
24	5830	704	495	899	469	12300	2080	828	369	118	69	40
25	4790	898	520	975	470	14500	1840	733	374	116	67	41
26	3610	853	560	1050	490	9600	1530	670	926	114	62	44
27	2890	758	620	861	532	6790	1440	644	909	112	67	48
28	2440	692	660	827	894	5350	1480	623	1380	109	80	57
29	2120	792	700	759	1080	5940	1720	592	1310	107	77	59
30	1860	877	715	739	---	6950	1570	549	899	107	84	56
31	1690	---	734	673	---	4890	---	532	---	107	107	---
TOTAL	91207	25934	18855	24091	17368	86387	121230	32689	15611	6963	2930	1675
MEAN	2942	864	608	777	599	2787	4041	1054	520	225	94.5	55.8
MAX	30300	1560	759	1170	1080	14500	15300	1580	1380	722	142	102
MIN	118	660	450	450	469	512	1440	532	304	107	62	38
AC-FT	180900	51440	37400	47780	34450	171300	240500	64840	30960	13810	5810	3320
CAL YR 1983	TOTAL	679253	MEAN	1861	MAX	40900	MIN	85	AC-FT	1347000		
WTR YR 1984	TOTAL	444940	MEAN	1216	MAX	30300	MIN	38	AC-FT	882500		

07161000 CIMARRON RIVER AT PERKINS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1953-63, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1952 to September 1963, June 1965 to Jan. 1982.

WATER TEMPERATURE: October 1962 to September, 1963, June 1965 to Jan. 1982.

INSTRUMENTATION.--Water-quality monitor from April 1969 to September 1980.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 32,400 microsiemens March 18, 1957; minimum, 353 microsiemens April 30, 1970.

WATER TEMPERATURE: Maximum, 39.0°C June 18, 1974; minimum daily, 0.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 03...	1200	740	80020	134	5400	8.3	24.0	29	10.1	126	48
DEC 06...	1300	750	80020	651	9800	8.2	4.0	11	12.0	97	K730
FEB 03...	1100	740	80020	584	13000	8.2	6.0	10	11.6	101	68
APR 18...	1200	740	80020	2330	7200	8.1	15.0	60	10.1	106	280
JUN 18...	1500	740	1028	342	7390	8.2	28.5	9.9	8.0	109	K550
AUG 27...	1400	740	80020	68	4700	8.2	31.0	7.7	9.2	130	24

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)
OCT 03...	120	500	370	120	47	1200	84	24	6.5	127
DEC 06...	140	650	380	160	61	1600	84	28	5.7	270
FEB 03...	130	760	500	180	74	2200	86	36	5.6	257
APR 18...	81	760	490	190	68	1100	76	18	6.9	272
JUN 18...	50	630	420	150	62	1400	83	25	7.8	215
AUG 27...	58	460	270	100	51	1100	84	23	7.6	192

DATE	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, DIS- SOLVED (MG/L AS N)
OCT 03...	1.2	390	1800	.30	6.6	3450	3600	4.7	1250	<.10
DEC 06...	3.3	400	2800	.40	12	5170	5200	7.0	9090	1.2
FEB 03...	3.1	520	3900	.40	6.7	6980	7000	9.5	11000	.79
APR 18...	4.2	500	1800	.40	13	3970	3800	5.4	24000	.80
JUN 18...	2.6	560	2100	.50	9.4	4280	4400	5.8	3950	.18
AUG 27...	2.3	320	1700	.50	7.5	3330	3400	4.5	611	--

ARKANSAS RIVER BASIN

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07161000 CIMARRON RIVER AT PERKINS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT										
03...	.070	.09	.50	.250	.77	<.010	.030	.09	3	100
DEC										
06...	.180	.23	1.2	.260	.80	.240	.230	.71	--	--
FEB										
03...	.130	.17	.70	.230	.71	.200	.200	.61	<1	100
APR										
18...	.040	.05	.90	.210	.64	.100	.080	.25	3	<100
JUN										
18...	.130	.17	1.3	.330	--	.250	.220	.67	4	200
AUG										
27...	--	--	--	--	--	--	--	--	--	--

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT										
03...	<10	3	<1	1	3	70	<1	30	30	.1
DEC										
06...	--	--	--	--	--	--	--	--	--	--
FEB										
03...	<10	<1	7	2	2	50	<1	40	60	.4
APR										
18...	<10	<1	2	<1	3	70	<1	40	20	<.1
JUN										
18...	<10	11	<1	<1	5	80	2	40	20	.2
AUG										
27...	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
03...	5	5	1	<1	1600	24	20	79	29	83
DEC										
06...	--	--	--	--	--	--	--	32	56	68
FEB										
03...	3	1	2	<1	2200	52	20	43	68	46
APR										
18...	3	<1	2	<1	1600	43	30	182	1100	87
JUN										
18...	5	2	<2	<1	1900	40	20	36	33	90
AUG										
27...	--	--	--	--	--	--	--	33	6.1	39

07163000 COUNCIL CREEK NEAR STILLWATER, OK

LOCATION.--Lat 36°06'58", long 96°52'03", in NW 1/4 NE 1/4 sec.22, T.19 N., R.4 E., Payne County, Hydrologic Unit 11050003, on right bank downstream side of bridge on State Highway 51, 10.0 mi (16.1 km) east of Stillwater, and at mile 10.0 (16.1 km). Prior to Nov. 9, 1982, gage 200 ft (61.8 m) upstream.

DRAINAGE AREA.--31 mi² (80.3 km²).

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 828.28 ft (252.490 m) National Geodetic Vertical Datum of 1929. Prior to May 4, 1934, nonrecording gage at same site and datum. Prior to Nov. 9, 1982, gage 200 ft (61.8 m) upstream at 10.00 ft (3.048 m) higher datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--50 years, 10.9 ft³/s (0.309 m³/s), 4.78 in/yr (121 mm/yr), 7,900 acre-ft/yr (9.74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 25,000 ft³/s (708 m³/s) Oct. 2, 1959, gage height, 18.9 ft (5.76 m), from floodmarks, from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of slope-area measurements at gage heights 13.4 ft (4.08 m) and 17.5 ft (5.33 m); no flow at times in each year except 1975.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 27, 1912, reached a stage of 16.6 ft (5.06 m) at gage, based on floodmarks set by local resident at site 900 ft (274 m) downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 20	2100	*3,020 85.5	*18.04 5.499	Apr. 20	2345	1,730 48.7	14.62 4.456
Mar. 23	1015	1,920 54.4	15.22 4.639				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.5	.55	.28	1.1	1.3	51	5.2	2.3	.38	.00	.00
2	.00	1.3	.50	.40	1.1	1.2	23	5.2	1.8	.22	.00	.00
3	.00	1.2	.63	.50	.92	1.3	18	5.2	1.8	.16	.00	.00
4	.00	1.2	.69	.90	.89	3.1	9.1	4.8	1.9	.13	.00	.00
5	.00	1.1	.59	1.8	.84	3.3	7.1	5.0	1.7	.11	.00	.00
6	.00	1.1	.46	1.1	.67	2.0	6.4	5.7	1.4	.11	.00	.00
7	.00	1.3	.43	.60	.75	1.6	34	24	1.3	.10	.00	.00
8	.00	1.2	.40	.50	.86	1.4	139	8.1	1.1	.09	.00	.00
9	.00	1.6	.40	.45	1.2	1.3	23	5.0	1.0	.09	.00	.00
10	.00	1.7	.40	.40	1.3	1.2	257	4.3	6.9	.06	.03	.00
11	.00	1.5	.40	.43	1.2	1.2	59	3.8	2.9	.18	.08	.00
12	.00	1.3	.43	.40	1.1	4.7	16	3.5	1.2	.13	.02	.00
13	.00	1.2	.45	.38	1.0	2.7	9.3	3.1	.73	.06	.00	.00
14	.00	1.2	.50	.33	1.0	1.6	7.2	3.0	.61	.05	.00	.00
15	.00	1.2	.50	.30	1.1	1.2	6.0	3.0	.56	.04	.00	.00
16	.00	1.2	.50	.25	.82	.83	5.6	2.9	.45	.02	.00	.00
17	.00	1.2	.50	.20	.80	1.1	5.2	2.7	.40	.01	.00	.00
18	.00	1.2	.47	.15	1.0	11	4.6	2.5	.37	.02	.00	.00
19	.00	1.1	.40	.18	.93	36	4.3	3.0	.35	.00	.00	.00
20	743	1.0	.40	.22	.83	5.6	258	3.3	4.6	.00	.00	.00
21	81	.95	.40	.40	.89	2.9	226	2.9	1.2	.00	.00	.00
22	5.8	2.7	.29	.60	1.1	2.0	21	2.5	.50	.00	.00	.00
23	2.4	4.7	.25	.80	1.0	886	13	2.1	.29	.00	.00	.00
24	1.3	1.9	.19	1.2	1.0	202	10	2.1	.23	.00	.00	.00
25	1.1	1.1	.15	1.7	1.1	30	8.6	2.0	.22	.00	.00	.00
26	1.3	.81	.13	2.3	1.1	15	7.4	2.8	4.6	.00	.00	.00
27	1.4	1.7	.15	1.9	1.8	10	49	71	1.8	.00	.00	.00
28	1.3	1.5	.17	1.6	1.6	209	9.8	43	.80	.00	.00	.00
29	1.6	.81	.20	1.5	1.2	33	6.8	6.5	18	.00	.00	.00
30	1.6	.60	.17	1.4	---	12	5.8	3.8	1.6	.00	.00	.00
31	1.6	---	.20	1.2	---	333	---	2.9	---	.00	.00	---
TOTAL	843.40	42.07	11.90	24.37	30.20	1818.53	1300.2	244.9	62.61	1.96	.13	.00
MEAN	27.2	1.40	.38	.79	1.04	58.7	43.3	7.90	2.09	.06	.00	.00
MAX	743	4.7	.69	2.3	1.8	886	258	71	18	.38	.08	.00
MIN	.00	.60	.13	.15	.67	.83	4.3	2.0	.22	.00	.00	.00
AC-FT	1670	83	24	48	60	3610	2580	486	124	3.9	.3	.00
CAL YR 1983	TOTAL	3495.76		MEAN	9.58	MAX	743	MIN	.00	AC-FT	6930	
WTR YR 1984	TOTAL	4380.27		MEAN	12.0	MAX	886	MIN	.00	AC-FT	8690	

07164200 KEYSTONE LAKE NEAR SAND SPRINGS, OK

LOCATION.--Lat 36°09'05", long 96°15'05", in SW 1/4 SE 1/4 sec.4, T.19 N., R.10 E., Tulsa County, Hydrologic Unit 11110101, in stair tower of intake structure near left end of Keystone Dam on Arkansas River, 8.5 mi (13.7 km) west of Sand Springs, and at mile 538.8 (866.9 km).

DRAINAGE AREA.--74,506 mi² (192,971 km²), of which 12,541 mi² (32,481 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1964 to current year. Prior to October 1970, published as Keystone Reservoir near Sand Springs.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1964, nonrecording gage nearby at same datum.

REMARKS.--Reservoir is formed by rolled-fill earth dam. Spillway is concrete ogee-type weir controlled by 18, 40 ft (12.2 m) tainter gates. Outlet works consist of nine sluices. Regulated storage began Sept. 11, 1964; power pool was first filled Nov. 20, 1964. Capacity, 1,738,000 acre-ft (2.14 km³), at elevation 754.0 ft (229.82 m), top of flood control pool, 557,600 acre-ft (688 hm³), at elevation 723.0 ft (220.37 m) top of power pool, 260,900 acre-ft (322 hm³) at elevation 706.0 ft (215.19 m), minimum power pool. Figures given herein represent total contents. Reservoir is designed for flood control, power development, and conservation. Revised capacity table, based on survey in 1977, used since Oct. 1, 1983.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,886,000 acre-ft (2.33 hm³) Nov. 6, 1974, elevation, 754.86 ft (230.081 m); minimum since power pool was first filled, 297,800 acre-ft (367 hm³) Jan. 19, 1965, elevation, 705.07 ft (214.905 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 872,600 acre-ft (1.080 hm³) Mar. 26, elevation 733.98 ft (223.717 m); minimum, 403,200 acre-ft (497 hm³) Sept. 28, elevation, 715.45 ft (218.069 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

715	395,300	725	606,700
718	450,200	729	716,200
721	512,000	734	873,300

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543400	651400	563500	521100	556700	556700	805200	675600	658700	641700	558100	477200
2	544100	644400	564200	521600	553600	560000	798300	672200	656600	636400	555000	477000
3	545000	631300	568800	523200	549200	566400	793900	669500	656600	630800	552200	460000
4	544500	619000	571200	524100	553400	575100	781100	665300	650900	635300	552900	460400
5	543600	609200	567600	524500	556900	569000	768400	663900	650900	625300	553800	458600
6	542000	601400	560700	523400	550600	561600	755800	663200	651700	619500	550600	453200
7	539500	588100	557600	527000	545200	554500	747400	664500	646300	616400	542900	446000
8	538300	579200	553600	531500	542000	545000	747700	663100	644900	613300	533300	447600
9	538100	573600	552700	538100	532600	536500	769300	661700	642000	604100	530400	448500
10	534900	562800	556400	536300	525200	543600	819000	659600	644100	596600	526500	440500
11	536700	556200	560900	530800	531300	548500	848000	657400	646500	590100	527200	431600
12	536000	559500	560000	533100	539900	551700	845700	658200	659600	583200	527900	446600
13	535100	563100	560200	534400	542200	552700	834500	669700	668400	578500	523200	443500
14	533300	558300	560900	538300	542400	551500	819600	666700	667000	576800	518500	442200
15	535300	551000	560000	541800	541300	551700	800500	659300	672800	580500	509200	441600
16	537400	550800	555000	539500	542700	550600	771800	662300	671400	579500	500700	441600
17	537200	553100	557100	540100	542000	556000	750100	650900	675900	578500	491800	439900
18	535300	551700	548500	538800	543800	569000	734200	640600	673300	578500	493000	438200
19	535800	557100	542700	538100	543400	573100	717400	634500	669200	576500	493500	435400
20	565900	558300	536700	535800	541800	570700	700800	628700	664800	577300	491600	432700
21	648400	557800	529400	535800	539900	581400	705100	624800	662300	577500	490100	413800
22	704000	560900	523600	538500	539700	601600	690200	620100	659300	581700	488400	411500
23	712400	556700	523800	538100	539000	667800	674700	613800	657900	576800	487800	411900
24	718200	554300	521600	539200	534200	762800	667500	619500	657100	572200	487600	407600
25	712700	547800	517400	540400	532800	841700	663400	626600	653800	566600	485100	407900
26	703400	553400	516200	544500	540600	872600	666400	633500	649200	562300	485500	405500
27	691100	558800	517100	545900	542200	854900	670600	667000	644700	562100	484900	404900
28	677200	560000	517600	550800	545700	826700	669700	684600	642000	563100	485700	403500
29	673300	562800	517400	557600	549900	807800	675800	681700	639800	564000	483200	403700
30	669500	562800	517400	557100	---	803700	674200	675600	640400	562300	479700	403700
31	656800	---	519100	559300	---	808700	---	665600	---	560700	477000	---
MAX	718200	651400	571200	559300	556900	872600	848000	684600	675900	641700	558100	477200
MIN	533300	547800	516200	521100	525200	536500	663400	613800	639800	560700	477000	403500
(+)	726.90	723.22	721.32	723.07	722.67	732.03	727.53	727.22	726.29	723.13	719.35	715.48
(++)	+55,800	-94,000	-43,700	+40,200	-9,400	+258,800	-134,500	-8,600	-25,200	-79,700	-83,700	-73,300

CAL YR 1983 MAX 889500 MIN 516200 (++) -80,900
WTR YR 1984 MAX 872600 MIN 403500 (++) -197,300

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07164500 ARKANSAS RIVER AT TULSA, OK

LOCATION.--Lat 36°08'37", long 96°00'13", in NW 1/4 sec.11, T.19 N., R.12 E., Tulsa County, Hydrologic Unit 11110101, near left bank on downstream side of pier of 11th Street bridge on U.S. Highway 66 in Tulsa, 10.1 mi (16.3 km) upstream from Polecat Creek, 15.1 mi (24.3 km) downstream from Keystone Dam, and at mile 523.7 (842.6 km).

DRAINAGE AREA.--74,615 mi² (193,253 km²), of which 12,541 mi² (32,481 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1904 are published in reports of the National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 615.23 ft (187.522 m) U.S. Army Corps of Engineers datum. Prior to Feb. 2, 1939, nonrecording gage and Feb. 2, 1939, to Sept. 30, 1952, water-stage recorder at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records fair. Except for 109 mi² (282 km²) intervening area, flow completely regulated by Keystone Lake (station 07164200) since September 1964. Prior to September 1964, minor regulation by John Martin Lake in Colorado and by Great Salt Plains Lake (station 07150000).

COOPERATION.--Gage height record and 7 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Keystone Lake) 39 years (water years 1926-64), 6,554 ft³/s (185.6 m³/s), 4,745,000 acre-ft/yr (5.85 km³/yr); (since regulation by Keystone Lake) 20 years (water years 1965-84), 7,034 ft³/s (199.2 m³/s), 5,096,000 acre-ft/yr (6.28 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft³/s (6,970 m³/s) Oct. 5, 1959, gage height, 22.00 ft (6.706 m); minimum, 27 ft³/s (0.76 m³/s) Oct. 12, 13, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1904, 22.8 ft (6.949 m), June 13, 1923, present datum, from reports of National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67,900 ft³/s (1,922 m³/s) Mar. 27, gage height, 11.16 ft (3.402 m); minimum daily discharge 95 ft³/s (2.69 m³/s) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1660	6220	939	240	1780	878	46900	9660	11000	9840	2290	1740
2	260	8550	1070	158	4640	518	46700	12000	8300	11400	2660	574
3	121	8880	986	600	3980	1480	44100	12100	4750	10800	2570	11200
4	1670	10400	205	2890	603	1120	40000	12100	7740	8050	1970	1260
5	436	9710	1530	3950	198	3960	40000	12200	5700	9370	557	631
6	1370	7830	4120	5340	3830	6380	38500	12300	3090	8110	1130	2350
7	2410	8990	3120	2450	4010	7090	35400	12600	7890	7080	6660	3930
8	1900	8890	2400	252	4400	7610	35600	12400	4810	4300	6660	2700
9	1500	7290	2660	128	7140	8060	35500	12400	6770	7230	6600	664
10	1170	6650	1800	2880	7560	2420	39700	12500	3240	7840	4920	2620
11	2390	5100	225	3940	1660	333	56400	12500	2510	8160	2590	5420
12	293	2780	631	2060	1070	1690	57500	9420	5280	7190	654	4110
13	577	195	1690	915	1850	3160	54700	3830	8160	6520	1240	2450
14	576	2360	2170	622	3030	3100	49300	9090	13100	4360	3550	1660
15	499	5150	1670	167	7470	3420	48600	12400	7320	1420	4870	1140
16	152	3020	2920	1030	3830	3920	47500	12400	10800	974	6380	489
17	95	1140	2220	1700	3870	1560	43500	14600	7140	4610	6190	414
18	1280	939	4040	1710	2560	559	37100	17900	9360	3460	3460	1210
19	4140	1040	3700	2030	3340	7730	36400	17900	10900	3800	605	1750
20	8310	170	3110	816	5240	7370	35300	17900	11000	3220	634	1900
21	6080	256	3710	2030	3640	11600	35400	17800	11000	3530	1730	1630
22	12800	1220	2380	1680	3340	11900	35100	17700	11000	1210	1560	1150
23	26400	1330	2250	1000	3040	14400	33600	16900	9630	3450	1400	825
24	14800	3430	1850	791	3500	24600	29000	12000	8540	4670	518	948
25	14200	3870	3950	377	1610	29500	20900	8470	10900	5160	1640	2070
26	14100	2340	3810	642	1370	51000	12000	11800	12600	4060	1590	506
27	14200	306	1800	683	1110	67500	9550	23400	13300	2680	656	1640
28	14100	193	905	382	1210	66600	10100	6880	12800	1400	1270	1270
29	11400	705	1030	146	748	60100	10100	10800	12800	565	658	958
30	3310	367	1300	683	---	50500	9510	13900	10900	521	1600	422
31	10500	---	1150	1650	---	46900	---	11400	---	1860	2740	---
TOTAL	172699	119321	65341	43942	91629	506958	1073960	399250	262330	156840	81552	59631
MEAN	5571	3977	2108	1417	3160	16350	35800	12880	8744	5059	2631	1988
MAX	26400	10400	4120	5340	7560	67500	57500	23400	13300	11400	6660	11200
MIN	95	170	205	128	198	333	9510	3830	2510	521	518	414
AC-FT	342500	236700	129600	87160	181700	1006000	2130000	791900	520300	311100	161800	118300
CAL YR 1983	TOTAL	3056407	MEAN	8374	MAX	46500	MIN	95	AC-FT	6062000		
WTR YR 1984	TOTAL	3033453	MEAN	8288	MAX	67500	MIN	95	AC-FT	6017000		

07164500 ARKANSAS RIVER AT TULSA, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1977 to current year.

WATER TEMPERATURE: March 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1977.

REMARKS.--In addition to water-quality monitor, samples were collected by a local observer on a daily basis.

Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum 7,820 microsiemens Feb. 16, 1978; minimum daily 518 microsiemens July 27, 1977.

WATER TEMPERATURE: Maximum daily 32.0°C July 3-6, 14, 1978; minimum daily 0.0°C on several days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
		HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV 08...	1400	743	80020	E1500	1270	7.8	16.5	18	9.3	98	240	390
JAN 31...	1510	748	80020	E2680	4090	8.2	6.0	3.5	14.9	124	K3	130
MAR 21...	1225	744	1028	E11900	2140	8.3	8.5	7.3	11.0	97	77	210
MAY 09...	1240	749	80020	E12500	1500	7.9	17.0	21	9.1	96	--	44
JUL 31...	1320	745	80020	E1270	1620	8.0	27.5	2.8	9.3	121	470	K2500
SEP 18...	1215	751	80020	E1210	1390	8.1	22.0	5.0	9.0	105	48	170
NOV 08...	180	72	50	14	160	65	5	5.1	111	3.4	83	250
JAN 31...	380	200	96	33	640	78	15	5.0	174	2.1	200	1000
MAR 21...	290	130	78	24	310	69	8	5.0	164	1.6	140	480
MAY 09...	240	100	63	19	220	66	6	4.8	134	3.3	130	340
JUL 31...	230	94	61	20	250	69	7	5.5	141	2.7	120	350
SEP 18...	230	120	59	19	180	63	5	5.3	102	1.6	110	300
NOV 08...	.30	4.2	642	630	.87	.84	.080	.10	1.4	.100	.31	.090
JAN 31...	.30	6.8	2400	2100	3.3	.99	.070	.09	.50	.110	.34	.100
MAR 21...	.40	4.1	1150	1100	1.6	.47	.140	.18	.70	.080	.25	.070
MAY 09...	.20	7.4	872	870	1.2	.86	.110	.14	.80	.130	.40	.100
JUL 31...	.30	3.2	944	890	1.3	.10	.080	.10	1.5	.170	--	.110
SEP 18...	.40	2.1	801	740	1.1	.17	.030	.04	.40	.080	--	.050

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 08...	.060	.18	70	2	110	<.5	<1	<1	<3	2	22	<1
JAN 31...	.090	.28	--	--	--	--	--	--	--	--	--	--
MAR 21...	.150	.46	20	2	200	<10	<1	1	<1	4	40	6
MAY 09...	.080	.25	40	1	130	1.3	2	1	<3	3	19	3
JUL 31...	.100	.31	--	--	--	--	--	--	--	--	--	--
SEP 18...	.020	.06	20	2	130	<1.0	<1	1	<3	5	4	2

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 08...	21	4	<.1	<10	4	1	<1	540	<6	5	25	89
JAN 31...	--	--	--	--	--	--	--	--	--	--	9	72
MAR 21...	20	<10	<.1	2	2	<1	<1	920	13	20	44	48
MAY 09...	26	6	<.1	<10	2	<1	<1	630	<6	6	33	84
JUL 31...	--	--	--	--	--	--	--	--	--	--	8	72
SEP 18...	20	4	<.1	<10	4	<1	<1	720	<6	6	12	71

07164500 ARKANSAS RIVER AT TULSA, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1360	1810	---	4100	1890	---	1150	---	---	1560	---
2	---	1210	1800	---	3650	1930	1260	1180	---	1500	1580	1360
3	2080	1290	---	---	3610	---	1060	---	1670	1500	1590	1400
4	2010	---	---	3020	---	---	1030	1330	1670	---	---	1360
5	1940	---	---	3300	---	2400	1010	1320	1640	1550	---	1360
6	1820	---	2210	---	3320	2710	1040	---	1670	1650	1680	1370
7	1870	1280	---	---	3260	2770	---	---	1590	---	1670	1340
8	---	1210	2240	---	3240	2760	---	1560	1390	---	---	---
9	---	1250	3040	1160	2820	2740	1020	1560	1310	1650	1490	---
10	1810	1200	---	2930	2660	---	990	1640	1380	1300	1340	1120
11	1720	---	---	2660	---	---	996	1620	1390	1300	---	1350
12	1680	---	1760	3280	---	2350	1040	---	1280	1300	---	1360
13	1690	---	1780	1590	3240	2900	1170	1670	1310	1240	1550	1310
14	1470	1250	2270	---	3520	2820	---	1660	---	---	1460	1310
15	---	1380	2030	---	3500	2760	---	1680	---	---	1470	1340
16	---	1210	2190	3250	3450	2650	1070	1670	1390	1320	1480	1420
17	1460	1360	2080	2590	3320	---	1130	1720	1400	1330	1500	1430
18	1570	1510	---	---	---	---	1230	1720	1400	1380	---	1300
19	1600	---	---	3080	---	2220	1090	---	1390	1390	---	1300
20	---	---	3150	3110	2460	2020	1240	---	1270	1390	1570	1410
21	1300	1630	---	---	2540	1980	---	1860	1280	---	1560	1400
22	1310	---	---	---	2510	2120	1090	1850	1390	---	1560	1390
23	1710	---	---	3330	2460	1710	1090	1840	1380	1410	1560	1410
24	1860	---	---	3370	2440	---	---	1840	1470	1430	1660	1400
25	1640	---	---	3340	---	---	---	2030	1480	1420	---	1580
26	1650	---	---	2030	---	1640	---	---	1440	1370	1510	1360
27	1560	---	1560	---	1760	1230	---	---	1420	1390	---	---
28	1360	---	2380	---	1820	1220	---	1580	1340	---	1510	1350
29	---	1560	2790	---	1810	1150	1150	1600	1340	1510	1540	---
30	---	1800	2800	2960	---	1160	1140	1940	---	1510	1440	---
31	---	---	---	3820	---	---	---	1930	---	1550	1430	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.0	8.0	---	8.5	9.0	---	17.5	---	---	28.0	---
2	---	19.5	9.0	---	7.5	10.0	10.0	16.5	---	29.0	28.0	28.0
3	---	20.0	---	---	7.0	---	9.5	---	24.0	30.0	28.5	27.0
4	---	20.0	---	3.0	---	---	9.0	16.5	25.0	---	---	27.0
5	---	---	---	3.0	---	---	10.0	16.0	24.0	30.0	---	27.0
6	---	---	9.0	---	4.5	---	10.5	---	24.0	30.0	29.0	26.5
7	---	18.0	9.0	---	6.0	---	---	---	26.0	---	28.0	25.0
8	---	17.0	9.0	---	7.0	---	---	18.0	26.0	---	---	---
9	23.0	12.0	10.0	7.0	7.0	---	10.5	19.0	26.0	29.0	28.0	---
10	19.0	13.0	---	4.0	6.5	---	11.0	20.0	25.0	29.5	29.0	29.0
11	17.0	---	---	3.0	---	---	12.5	20.5	25.0	30.0	---	29.0
12	17.5	---	8.0	2.0	---	---	12.5	---	25.5	29.5	---	28.5
13	19.0	---	7.0	2.0	9.0	---	13.0	20.0	24.0	30.0	31.0	29.0
14	---	13.0	5.5	---	10.0	---	---	19.5	---	---	30.0	29.0
15	---	14.0	6.0	---	10.0	15.5	---	20.0	---	---	30.0	21.5
16	20.0	14.0	7.0	2.0	10.0	10.0	13.0	21.0	25.0	28.5	29.5	21.0
17	18.0	15.0	.0	2.5	9.0	---	14.0	21.0	25.0	29.0	30.5	20.0
18	20.0	17.0	---	---	---	---	14.0	21.5	26.0	29.0	---	21.0
19	---	---	---	1.0	---	---	14.5	---	26.5	29.0	---	24.0
20	17.5	---	2.0	1.0	8.0	11.0	16.0	---	27.0	29.5	29.0	26.0
21	18.0	15.5	2.0	---	8.0	11.5	---	22.0	26.5	---	29.5	28.0
22	17.0	---	---	---	9.0	11.5	14.0	22.0	27.0	---	29.5	24.0
23	19.5	---	---	3.0	10.0	9.0	15.0	23.0	26.0	29.0	29.0	27.0
24	19.0	---	---	3.0	11.0	---	---	23.5	26.0	29.0	28.5	26.0
25	19.0	---	---	5.0	---	---	---	24.0	27.0	30.0	---	20.0
26	19.5	---	---	5.5	---	10.5	---	---	27.5	30.0	29.0	19.0
27	20.0	---	1.0	---	6.0	8.0	---	---	28.0	29.0	25.5	17.0
28	---	---	1.0	---	6.0	8.0	---	22.0	28.0	---	30.5	---
29	---	8.5	1.0	---	8.0	9.5	16.0	21.5	28.0	28.0	31.0	---
30	---	8.0	2.0	8.0	---	10.0	17.0	22.5	---	26.0	31.0	---
31	---	---	---	7.5	---	---	---	23.0	---	28.0	31.0	---

07165000 HEYBURN LAKE NEAR HEYBURN, OK

LOCATION.--Lat 35°56'52", long 96°17'55", in SE 1/4 sec.13, T.17 N., R.9 E., Creek County, Hydrologic Unit 11110101, at intake structure at right abutment of Heyburn Dam on Polecat Creek, 2.5 mi (4.0 km) northwest of Heyburn, 3.5 mi (5.5 km) upstream from bridge on U.S. Highway 66, 11.0 mi (17.7 km) southwest of Sapulpa, and at mile 48.6 (28.2 km).

DRAINAGE AREA.--123 mi² (318.6 km²).

PERIOD OF RECORD.--October 1950 to current year. Prior to October 1970, published as Heyburn Reservoir near Heyburn.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth dam. Outlet works consist of an 8.25 ft (2.515 m) diameter concrete conduit extending from an uncontrolled concrete drop inlet at the upstream side of dam at a concrete stilling basin near downstream toe of dam and three, 36 in. (0.91 m) gated lowflow pipes which drain into the conduit below the drop inlet. Spillway is 200 ft (61.0 m) channel in a natural saddle about 1,000 ft (304.8 m) west of right abutment. Storage began Sept. 29, 1950; conservation pool was first filled Mar. 10, 1951. Capacity, 144,800 acre-ft (179 hm³), at elevation 802.0 ft (244.45 m) maximum pool, 55,030 acre-ft (67.9 hm³), at elevation 784.0 ft (238.96 m), spillway crest and top of flood control pool, and 6,620 acre-ft (8.2 hm³) at elevation 761.5 (232.11 m), conservation pool. Dead storage, 226 acre-ft (3,280 m³) below elevation 740.0 ft (225.55 m), invert of lowflow sluices. Reservoir was designed for flood control and conservation. Figures given herein represent total contents. Revised capacity table, based on survey in 1971, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,210 acre-ft (39.7 hm³), Nov. 4, 1974, elevation, 776.85 ft (236.784 m); minimum since conservation pool was first filled, 4,070 acre-ft (5.02 hm³) May 8, 9, 1981, elevation 757.95 ft (231.023 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,740 acre-ft (21.9 hm³), Oct. 21, elevation, 769.95 ft (234.681 m); minimum, 5,300 acre-ft (6.53 hm³) Oct. 16, elevation 759.19 ft (231.401 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

757	3,510	769	15,940
760	5,420	772	21,090
763	8,130	775	27,550
766	11,690		

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5450	7300	7410	7180	7220	7430	8330	7520	7420	7340	6550	6690
2	5440	7310	7390	7180	7220	7410	8200	8260	7390	7300	6500	6760
3	5440	7280	7390	7180	7220	7390	8090	8200	7340	7260	6480	6740
4	5430	7300	7360	7140	7210	7360	7910	8050	7320	7240	6460	6720
5	5410	7230	7350	7200	7180	7340	7890	7880	7300	7210	6430	6700
6	5400	7220	7310	7190	7180	7310	7890	7790	7290	7180	6410	6660
7	5390	7200	7290	7190	7170	7290	7890	8570	7260	7150	6390	6620
8	5380	7190	7270	7190	7180	7270	8270	8280	7260	7130	6580	6620
9	5380	7200	7260	7210	7200	7260	8150	8040	7240	7100	7140	6610
10	5370	7150	7260	7210	7210	7260	8660	7860	7230	7070	7170	6600
11	5380	7140	7240	7210	7220	7260	8580	7720	7220	7060	7140	6570
12	5370	7130	7230	7230	7220	7340	8260	7620	7210	7040	7130	6540
13	5350	7120	7240	7230	7210	7330	8030	7570	7190	7010	7100	6520
14	5330	7110	7240	7220	7200	7370	7860	7500	7180	6980	7090	6480
15	5320	7190	7230	7220	7200	7370	7770	7450	7160	6970	7070	6560
16	5300	7100	7220	7210	7180	7390	7690	7420	7130	6960	7040	6430
17	5310	7100	7210	7230	7180	7430	7620	7390	7100	6930	7010	6420
18	5380	7090	7190	7220	7190	8250	7570	7350	7100	6900	6990	6390
19	5480	7100	7190	7220	7180	8350	7520	7350	7080	6880	6970	6380
20	16390	7100	7190	7210	7180	8100	7570	7350	7060	6850	6950	6360
21	15880	7090	7180	7190	7170	7900	7810	7340	7060	6820	6920	6330
22	12860	7210	7180	7190	7170	7900	7740	7330	7040	6800	6920	6320
23	10350	7270	7180	7190	7170	10590	7660	7300	7010	6780	6890	6300
24	9050	7260	7180	7200	7160	10380	7610	7290	6990	6780	6870	6300
25	8890	7250	7180	7200	7180	9310	7550	7270	6970	6750	6840	6270
26	8020	7270	7180	7220	7320	8750	7550	7350	6980	6680	6820	6250
27	7770	7620	7180	7230	7520	8710	7550	7420	6980	6670	6820	6230
28	7630	7580	7180	7230	7500	9760	7520	7430	7080	6620	6800	6230
29	7520	7500	7180	7240	7470	9110	7550	7430	7410	6600	6780	6220
30	7440	7420	7180	7230	---	8570	7570	7430	7390	6580	6770	6200
31	7390	---	7180	7220	---	8480	---	7430	---	6570	6730	---
MAX	16390	7620	7410	7240	7520	10590	8660	8570	7420	7340	7170	6760
MIN	5300	7090	7180	7140	7160	7260	7520	7270	6970	6570	6390	6200
(+)	761.82	761.86	761.59	761.63	761.91	762.97	762.02	761.87	761.82	760.88	761.07	760.41
(++)	+2,350	+30	-240	+40	+250	+1,010	-910	-140	-40	-820	+160	-530
CAL YR 1983	MAX	16390	MIN	5040	(++)	+60						
WTR YR 1984	MAX	16390	MIN	5300	(++)	+1,160						

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

07165570 ARKANSAS RIVER NEAR HASKELL, OK

LOCATION.--Lat 35°49'23", long 95°38'39", in NE 1/4 sec.31, T.16 N., R.16 E., Muskogee County, Hydrologic Unit 11110101, near right bank on downstream side of bridge on State Highway 104, 2 mi (3.2 km) east of Haskell, 23.5 mi (37.8 km) upstream from Verdigris River, and at mile 483.7 (778.3 km).

DRAINAGE AREA.--75,473 mi² (195,475 km²), of which 12,541 mi² (32,481 km²) probably is noncontributing.

PERIOD OF RECORD.--June 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 530.00 ft (161.544 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Keystone Lake (station 07164200) 55.1 mi (88.7 km) upstream.

COOPERATION.--Gage-height record and 12 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--12 years, 8,767 ft³/s (248.3 m³/s), 6,352,000 acre-ft/yr (7.83 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 108,000 ft³/s (3,060 m³/s) Nov. 6, 1974, gage height, 17.30 ft (5.273 m); minimum daily, 193 ft³/s (5.47 m³/s) Feb. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67,300 ft³/s (1,910 m³/s) Mar. 27, gage height, 14.37 ft (4.380 m); minimum daily discharge, 396 ft³/s (11.2 m³/s) Aug. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	10800	1040	3150	2320	2180	49200	12700	10700	5640	735	957
2	919	7570	1590	2730	2080	1870	48500	13800	10500	5120	894	868
3	703	9100	1590	2090	4260	1350	49000	15800	8110	5940	1050	457
4	581	10000	1790	2020	4080	2270	43600	15400	5510	5350	1110	4870
5	1120	10900	970	2700	2560	2300	41300	15100	7650	3810	1130	1450
6	706	9610	1100	2940	1260	3950	40500	15100	5980	4280	566	605
7	966	8600	3760	3400	2150	8000	37800	16300	4670	3960	447	815
8	1460	9770	3390	4020	4170	8530	37800	17500	7620	3460	1530	1800
9	1670	9280	2880	1770	4440	9160	36600	15900	5440	2450	3320	2530
10	1290	8090	2920	1190	6040	9530	36300	15500	5640	3850	3270	1040
11	754	7030	2450	1830	6770	5160	47500	15600	3480	4140	2090	833
12	1910	5490	1060	5650	3500	2390	54500	15100	2610	4190	1370	2760
13	798	3590	772	4810	2280	2930	53000	12200	3230	3780	585	2420
14	752	1430	2070	2300	1970	5340	47600	6970	6090	3220	517	1510
15	850	1760	2550	1920	2540	5170	45700	12800	8710	2270	1350	1270
16	864	4130	2270	1440	5250	5030	44900	15200	4310	1370	2050	872
17	570	3050	2910	986	3450	5450	44100	15300	7040	947	2830	640
18	627	1950	2830	2210	3690	4550	38400	18300	4370	1900	2840	509
19	1050	1600	3150	2760	3180	6170	36300	19600	6900	1770	1940	627
20	11300	1910	4820	3180	3710	12600	35900	19600	7650	1820	611	831
21	20200	1040	4490	3270	4520	10500	36500	19400	7720	1730	424	1040
22	12900	718	3600	3100	3760	14000	36000	19300	7560	1570	624	1090
23	20700	1900	4610	2630	3630	14400	35600	19300	7560	1090	712	981
24	21900	2330	5900	2400	3170	28900	34500	17600	6420	1240	709	712
25	14700	3130	4860	2720	3580	30600	28100	12800	5730	2200	459	597
26	14200	3590	4920	2470	3030	39400	20500	10900	6970	2430	508	1210
27	13900	3400	6740	1930	4670	62400	15400	33100	7590	2040	749	679
28	13800	2480	5800	1620	4270	63800	13700	18900	7820	1630	460	800
29	13700	1320	4050	1800	2890	62400	13800	10200	7810	897	521	1010
30	9960	1340	3370	1110	---	52500	13100	10900	7270	615	396	808
31	6050	---	3210	804	---	49400	---	13100	---	499	517	---
TOTAL	192040	146908	97452	76950	103220	532230	1115700	489270	198660	85208	36314	36591
MEAN	6195	4897	3144	2482	3559	17170	37190	15780	6622	2749	1171	1220
MAX	21900	10900	6740	5650	6770	63800	54500	33100	10700	5940	3320	4870
MIN	570	718	772	804	1260	1350	13100	6970	2610	499	396	457
AC-FT	380900	291400	193300	152600	204700	1056000	2213000	970500	394000	169000	72030	72580
CAL YR 1983	TOTAL	3328053	MEAN	9118	MAX	44400	MIN	313	AC-FT	6601000		
WTR YR 1984	TOTAL	3110543	MEAN	8499	MAX	63800	MIN	396	AC-FT	6170000		

07171000 VERDIGRIS RIVER NEAR LENAPAH, OK

LOCATION.--Lat 36°51'05", long 95°35'06", at center of sec.3, T.27 N., R.16 E., Nowata County, Hydrologic Unit 11070103, on right bank on downstream side of county road bridge, 2.8 mi (4.5 km) east of Lenapah, 4.5 mi (7.2 km) upstream from Cedar Creek, and at mile 144.6 (232.7 km).

DRAINAGE AREA.--3,639 mi² (942.5 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 977: 1942 (M). WSP 1117: drainage area.

GAGE.--Water-stage recorder. Datum of gage is 644.89 ft (196.562 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation, by dams in Kansas, since April 1949.

COOPERATION.--Gage-height record and 9 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation) 11 years (water years 1939-49), 2,599 ft³/s (73.60 m³/s), 1,833,000 acre-ft/yr (2.32 km³/yr); (since regulation) 18 years (water years 1967-84), 2,456 ft³/s (69.55 m³/s), 1,779,000 acre-ft/yr (2.19 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft³/s (3,880 m³/s) May 20, 1943, gage height, 40.44 ft (12.326 m), from floodmarks; no flow at times in 1939-40, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,900 ft³/s (1,130 m³/s) May 29, gage height, 34.59 ft (10.543 m); minimum daily discharge, 6.9 ft³/s (.20 m³/s) Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	122	800	190	740	4140	13800	6240	7970	1220	37	31
2	52	116	1000	200	700	3750	12200	5020	8120	539	34	23
3	50	109	1600	210	660	2500	13100	4360	7890	356	133	26
4	57	102	2200	230	640	14500	11100	5020	7580	323	220	31
5	52	95	1780	250	620	7810	9820	4960	7500	318	219	30
6	43	89	1380	240	600	4490	8690	6220	7290	304	221	28
7	38	97	1160	260	700	5230	8260	7230	6400	294	224	25
8	32	101	1280	270	900	5700	14500	7160	5200	296	229	24
9	27	97	1190	290	1080	3670	17100	6760	7800	278	221	27
10	25	94	1050	320	1650	2320	14900	4480	15900	192	212	39
11	31	92	924	350	1740	1540	8310	1740	22100	140	198	83
12	37	88	560	370	2020	1290	10900	1310	21300	119	192	69
13	46	86	427	390	2100	2570	13100	1110	11200	108	203	51
14	43	89	410	370	1830	3060	10000	944	10200	99	171	39
15	36	90	386	350	1240	2700	9620	1740	10000	87	100	28
16	34	89	352	340	1030	2420	10000	3090	9670	82	52	20
17	52	87	327	330	939	7290	9760	2080	9530	83	30	17
18	300	89	300	320	774	9980	9500	2260	9390	85	19	19
19	327	92	259	310	708	23600	9300	2200	9270	102	12	23
20	2350	175	250	300	457	21100	9200	2130	9250	93	8.6	26
21	23200	233	230	290	345	15000	12000	1940	10100	76	6.9	27
22	13100	232	220	300	322	8710	15000	2050	10000	69	10	27
23	2590	1410	210	310	314	11200	12000	2310	9180	67	8.7	28
24	1570	1040	200	320	300	19300	8760	2760	6660	62	22	33
25	855	1020	210	330	287	19400	8550	2150	4930	55	70	48
26	376	1020	220	350	338	15400	8080	1310	2630	49	65	52
27	266	1700	210	370	6360	12400	8180	9000	1980	52	57	54
28	210	2750	200	420	8230	14000	5470	34400	2640	47	56	53
29	176	1440	220	520	5060	14200	3810	39400	3110	46	50	54
30	151	700	210	650	---	12100	9600	27700	2450	46	45	58
31	133	---	200	800	---	12500	---	6560	---	42	37	---
TOTAL	46310	13544	19965	10550	42684	283870	314610	205634	257240	5729	3163.2	1093
MEAN	1494	451	644	340	1472	9157	10490	6633	8575	185	102	36.4
MAX	23200	2750	2200	800	8230	23600	17100	39400	22100	1220	229	83
MIN	25	86	200	190	287	1290	3810	944	1980	42	6.9	17
AC-FT	91860	26860	39600	20930	84660	563100	624000	407900	510200	11360	6270	2170
CAL YR 1983	TOTAL	1024868.6		MEAN	2808	MAX	27400	MIN	8.3	AC-FT	2033000	
WTR YR 1984	TOTAL	1204392.2		MEAN	3291	MAX	39400	MIN	6.9	AC-FT	2389000	

07171300 OOLOGAH LAKE NEAR OOLOGAH, OK

LOCATION.--Lat 36°25'19", long 95°40'43", in NE 1/4 NW 1/4 sec.2, T.22 N., R.15 E., Rogers County, Hydrologic Unit 11070103, in gage tower 1,000 ft (304.8 m) from left end of dam on Verdigris River, 2.0 mi (3.2 km) southeast of Oologah, and at mile 90.3 (145.3 km).

DRAINAGE AREA.--4,339 mi² (11,238 km²).

PERIOD OF RECORD.--May 1963 to current year. Prior to October 1970, published as Oologah Reservoir near Oologah.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. Spillway is concrete ogee-type weir controlled by 7 taintor gates. Storage began May 15, 1963, conservation pool was first filled Apr. 4, 1964. Capacity 1,519,000 acre-ft (1.87 km³) at elevation 661.0 ft (201.47 m), top of flood control pool, 553,400 acre-ft (682 hm³) at elevation 638.0 ft (194.46 m), conservation pool. Dead storage 9,260 acre-ft (11.4 hm³) below elevation 592.0 ft (180.44 m). Figures given herein represent total contents. Reservoir is used for flood control and conservation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,426,000 acre-ft (1.76 km³) Apr. 26, 1973, elevation, 659.33 ft (200.964 m); minimum since conservation pool first filled 33,750 acre-ft (41.6 hm³) Aug. 28, Oct. 27, 1969, elevation, 602.87 ft (183.755 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 793,900 acre-ft (979 hm³) Apr. 3, elevation, 645.31 ft (196.690 m); minimum, 493,900 acre-ft (609 hm³) Sept. 30, elevation, 635.91 ft (193.825 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

636	496,290	644	750,470
638	553,420	646	819,420
641	645,970	649	935,900

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	503700	558000	565100	552300	558600	562000	792000	712600	677300	595500	529300	509700
2	499200	556600	566600	552300	557700	563300	793500	710200	676900	581700	528700	511700
3	503100	555700	565700	552300	556900	563900	793200	702900	659000	572500	527500	510000
4	504300	555700	568200	550500	555400	610200	785800	698300	651800	568200	526000	508600
5	502800	554000	570600	552000	554300	617500	771700	698300	649200	561200	525200	508000
6	502500	552800	564500	552600	552300	603700	758100	698300	646000	558900	524100	504000
7	502200	552600	563600	553100	552300	595800	744900	697300	637800	555700	524400	501400
8	503400	552000	557700	554000	551700	583500	747000	693200	639400	553400	523800	508900
9	502000	554300	557400	558000	553400	577400	757400	688400	641100	552800	524100	509700
10	500300	552600	556000	558900	554900	570000	764000	680200	647900	550500	525200	507400
11	504800	552600	555400	555700	556300	562000	759900	668100	667200	553700	525000	507100
12	502200	551100	554000	554000	557400	559200	757400	647600	683100	551700	524700	506600
13	501100	550800	553700	554000	559200	557400	758100	627400	682500	550500	524100	506600
14	497400	551400	554900	554000	558900	555400	752900	610200	675600	548000	523200	512300
15	499500	550600	554900	553400	559500	560900	744600	608900	671400	548500	522400	505700
16	499200	549400	554000	553700	559700	557700	736200	611700	667200	547700	521500	503400
17	501400	549700	558000	553700	559200	571200	728900	610800	663200	546800	520400	503700
18	500900	545400	556300	553400	558600	593900	721300	606500	661600	544500	519500	502200
19	504500	551400	554900	553400	558300	647600	712600	604000	662300	543400	519500	501100
20	531600	548200	552600	553700	555700	676300	708800	601900	660600	542500	517500	500600
21	579800	548200	552600	554300	554600	687400	720600	597000	661000	541100	517500	498700
22	607400	553400	552000	554900	552600	679900	733400	593900	661000	540500	517200	499500
23	608000	555700	552300	555100	554900	675300	734800	589300	662300	539000	516600	498400
24	606500	556900	552300	555700	552300	702500	726100	581400	659300	538500	514900	497100
25	599400	555400	552300	556000	553400	731400	717500	581700	651200	537600	513700	500600
26	592700	558900	552300	556900	565400	750100	716400	575500	643400	537600	512000	496600
27	584100	563600	552300	556900	570000	762300	724400	590500	643400	537300	513700	498700
28	578900	571900	552300	557400	572800	774300	721600	648600	631000	535000	513500	496600
29	574000	571200	552300	558300	565400	780600	716400	694200	621200	533600	512300	494700
30	568800	570600	552300	558900	---	782100	715000	726100	609200	532100	512600	493900
31	562700	---	552300	559500	---	788000	---	692600	---	531000	511200	---
MAX	608000	571900	570600	559500	572800	788000	793500	726100	683100	595500	529300	512300
MIN	497400	545400	552000	550500	551700	555400	708800	575500	609200	531000	511200	493900
(+)	638.32	638.58	637.96	638.21	638.41	645.15	643.08	642.43	639.84	637.22	636.53	635.91
(++)	+57,900	+7,900	-18,300	+7,200	+5,900	+222,600	-73,000	-22,400	-83,400	-78,200	-19,800	-17,300
CAL YR 1983	MAX	767500	MIN	497400	(++)	-48,700						
WTR YR 1984	MAX	793500	MIN	493900	(++)	-10,900						

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

07171400 VERDIGRIS RIVER NEAR OOLOGAH, OK

LOCATION.--Lat 36°25'17", long 95°41'01", in NW 1/4 sec.2, T.22 N., R.15 E., Rogers County Hydrologic Unit 11070105, on right bank 0.2 mi (0.3 km) downstream from Oologah Dam, 1.2 mi (1.9 km) upstream from Fourmile Creek, 2 mi (3.2 km) southeast of Oologah, and at mile 90.0 (144.8 km).

DRAINAGE AREA.--4,339 mi² (11,238 km²).

PERIOD OF RECORD.--June 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 552.00 ft (168.250 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation by several dams in Kansas prior to May 1963 and completely regulated thereafter by Oologah Lake (station 07171300).

COOPERATION.--Gage height record and 5 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Since regulation by Oologah Lake) 20 years (water years 1965-84), 2,692 ft³/s (76.24 m³/s), 1,950,000 acre ft/yr (2.40 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) May 16, 1973, gage height, 38.05 ft (11.598 m); no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1943 reached a stage of 65.2 ft (19.87 m), from floodmarks. Flood of May 9, 1961, reached a stage of 52.8 ft (16.09 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,100 ft³/s (569 m³/s) May 31, gage height, 29.38 ft (8.955 m); minimum daily discharge, 29 ft³/s (.82 m³/s) Jan. 22-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	2960	2220	49	360	5930	12600	8490	16900	8050	245	89
2	61	2050	1550	48	808	3220	12700	8470	10500	7030	245	88
3	62	386	1090	48	1370	3240	14800	8470	10500	4550	241	88
4	62	363	1090	53	1370	3240	17100	7540	8590	3290	241	88
5	63	361	2080	55	1360	6610	16900	5600	6230	3270	241	87
6	63	358	3070	55	928	10600	16900	5600	6220	1830	241	87
7	63	356	3060	54	584	10500	16900	6780	6210	925	245	87
8	62	75	3060	55	583	10500	17100	8480	6210	913	205	87
9	61	66	2220	55	579	7600	14700	8460	6190	600	121	86
10	61	67	1600	1370	1020	5400	11900	8450	6200	291	118	86
11	62	67	1600	2250	1340	5380	14100	9160	6690	282	121	86
12	61	66	877	1270	1340	5450	14100	12000	10700	271	124	85
13	62	65	430	536	1340	4190	14100	11900	10700	262	121	85
14	63	65	432	531	1340	3090	14200	10800	10700	255	109	84
15	65	65	432	530	1340	3080	14100	4460	10200	246	109	84
16	65	65	432	528	1340	3080	14100	1900	8780	239	104	84
17	65	65	430	523	1330	3130	14100	2510	8770	237	101	83
18	65	66	429	524	1340	3130	14000	3750	8740	241	98	83
19	65	67	429	252	1330	3130	14000	3760	8060	241	93	83
20	65	67	368	32	1330	6430	13900	3750	8030	241	95	82
21	182	67	325	30	963	12500	14000	3740	8020	241	93	82
22	2280	67	322	29	655	14100	14300	3740	8010	241	92	82
23	2230	71	245	29	651	13900	14200	3740	7990	241	92	81
24	2260	71	190	29	532	11100	13900	3720	7970	241	91	81
25	3970	71	183	29	425	7900	11600	3720	7940	241	91	81
26	3980	70	181	235	425	7880	8500	3720	4650	241	91	80
27	3970	70	178	368	1330	10200	8510	1840	3780	238	90	80
28	3840	893	175	360	5760	13100	8520	3850	8180	241	90	80
29	2990	2320	174	360	8680	12800	8510	11600	8130	241	90	80
30	2980	2200	110	360	---	12700	8490	15500	8100	241	89	79
31	2970	---	50	360	---	12600	---	20000	---	241	89	---
TOTAL	32909	13600	29032	11007	41753	235710	402830	215500	247890	35912	4216	2518
MEAN	1062	453	937	355	1440	7604	13430	6952	8263	1158	136	83.9
MAX	3980	2960	3070	2250	8680	14100	17100	20000	16900	8050	245	89
MIN	61	65	50	29	360	3080	8490	1840	3780	237	89	79
AC-FT	65280	26980	57580	21830	82820	467500	799000	427400	491700	71230	8360	4990
CAL YR 1983	TOTAL	1175998.5		MEAN	3222	MAX	20100	MIN	2.9	AC-FT	2333000	
WTR YR 1984	TOTAL	1272877		MEAN	3478	MAX	20000	MIN	29	AC-FT	2525000	

07172500 HULAH LAKE NEAR HULAH, OK

LOCATION.--Lat 36°55'44", long 96°05'18", in SE 1/4 sec.2, T.28 N., R.11 E., Osage County, Hydrologic Unit 11070106, in stair tower at right end of Hulah Dam on Caney River, 0.5 mi (0.8 km) downstream from Hickory Creek, 2.0 mi (3.2 km) west of Hulah, 15.7 mi (25.3 km) upstream from Little Caney River, and at mile 96.2 (154.8 km).

DRAINAGE AREA.--732 mi² (1,896 km²).

PERIOD OF RECORD.--April 1950 to current year. Prior to October 1970, published as Hulah Reservoir near Hulah.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Feb. 15, 1951, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earth dam. Spillway is 472 ft (143.9 m) concrete ogee-type weir controlled by 10 taintor gates. Outlet works consist of nine rectangular sluices, two 24 in. (0.61 m) gated pipes, and one 10 in. (254 mm) water-supply pipe. Closure for diversion made Feb. 6, 1950; regulated storage began Oct. 25, 1950; conservation pool was first filled Sept. 24, 1951. Capacity, 292,600 acre-ft (361 hm³) at elevation 765.0 ft (233.17 m), top of taintor gates, 65,600 acre-ft (80.9 hm³) at elevation 740.0 ft (225.55 m), crest of spillway, and 34,660 acre-ft (42.7 hm³) at elevation 733.0 ft (223.42 m) conservation pool. Dead storage, 506 acre-ft (0.62 hm³) below elevation 706.0 ft (215.19 m) invert of sluices. Figures given herein represent total contents. Reservoir is used for flood control, conservation, and municipal water supply. Revised capacity table, based on survey in 1973, used since Oct. 1, 1977.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 293,400 acre-ft (362 hm³) June 23, 1957, elevation, 764.87 ft (233.132 m); minimum since conservation pool was first filled, 11,250 acre-ft (13.9 hm³) Mar. 20, 1957, elevation, 723.22 ft (220.437 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 98,930 acre-ft (122 hm³) Mar. 29, elevation 746.15 ft (227.427 m), minimum, 23,580 acre-ft (29.1 hm³) Oct. 14-16, elevation 730.73 ft (222.727 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

727	13,750	743	78,170
732	27,660	749	120,500
737	47,070	756	184,200

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24480	30550	31300	32560	31580	36010	90160	34490	36900	31400	28370	26180
2	24300	30550	31440	32560	31510	35360	89490	34040	35710	31400	28260	26440
3	24270	30550	31980	32450	31400	36590	87380	33520	34450	31330	28160	26210
4	24170	30580	32560	32450	31330	42390	81810	32780	33150	31300	28090	26110
5	24110	30480	32930	32450	31190	42470	74820	32380	31800	31220	27990	26010
6	24050	30440	32340	32490	31050	40620	67540	32200	31260	31150	27930	25850
7	24020	30410	31840	32560	30970	38560	63180	32380	31330	31050	27860	25630
8	23950	30370	31300	32600	31050	36130	71980	32020	31440	30940	27990	26670
9	23920	30940	31150	32750	31190	34720	70270	31370	32750	30830	27860	26470
10	23860	30480	31370	32670	31150	33970	67760	30550	37220	30760	27830	26310
11	23950	30410	31550	32600	31190	33000	65040	30410	38560	30650	27690	26210
12	23860	30410	31620	32600	31080	34340	64030	30720	38120	30580	27590	26080
13	23830	30410	31760	32420	30970	34420	60700	30940	37610	30480	27490	26010
14	23580	30440	31910	32230	30870	33410	56540	31120	36790	30340	27360	25950
15	23580	30410	31940	32230	30900	32450	52240	34380	35780	30270	27260	25760
16	23580	30410	31980	32160	30900	33260	47690	36630	34570	30230	27160	25690
17	24050	30370	32160	32090	30870	40490	43610	36090	33300	30090	27090	25690
18	24080	30760	32230	31980	31010	50250	40170	35250	31940	29980	27030	25600
19	24480	30760	32270	31660	30940	63450	37290	34600	31150	29880	26860	25500
20	44460	30690	32380	31660	30940	66940	38040	34300	31220	29710	26760	25470
21	47550	30690	32420	31510	30900	64770	42470	33710	31300	29600	27190	25240
22	45970	31080	32420	31410	30900	61110	43020	32890	31330	29530	26990	25310
23	44250	31120	32490	31330	30940	76180	42220	32020	31510	29390	26900	25280
24	42350	31260	32530	31220	30870	89630	40330	31510	31550	29290	26730	25120
25	40290	31260	32560	31190	30830	91990	38080	31660	31510	29190	26700	24990
26	38480	31480	32560	31260	34910	92330	35740	31940	31480	29120	26600	24930
27	36210	32090	32640	31330	37880	91990	34830	34600	31480	28980	26630	24990
28	34270	32340	32600	31440	37880	98150	34300	37840	31440	28840	26600	24890
29	32560	32090	32600	31550	37060	98080	34570	39120	31480	28710	26500	24860
30	31050	31510	32600	31550	---	93970	34680	38880	31400	28600	26440	24770
31	30510	---	32560	31620	---	92600	---	37920	---	28500	26340	---
MAX	47550	32340	32930	32750	37880	98150	90160	39120	38560	31400	28370	26670
MIN	23580	30370	31150	31190	30830	32450	34300	30410	31150	28500	26340	24770
(+)	732.83	733.11	733.41	733.14	734.59	745.24	733.97	734.81	733.08	732.25	731.60	731.11
(++)	+5,930	+1,000	+1,090	-980	+5,440	+55,540	-57,920	+3,240	-6,520	-2,900	-2,160	-1,570
CAL YR 1983	MAX	85680	MIN	23580	(++)	+3,790						
WTR YR 1984	MAX	98150	MIN	23580	(++)	+190						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-Feet

07173000 CANEY RIVER NEAR HULAH, OK

LOCATION.--Lat 36°55'34", long 96°05'01", in NE 1/4 NE 1/4 sec.11, T.28 N., R.11 E., Osage County, Hydrologic Unit 11070106, on left bank 1,200 ft (365.8 m) downstream from Hulah Dam, 2.1 mi (3.4 km) upstream from Opossum Creek, 2.5 mi (4.0 km) west of Hulah, and at mile 95.9 (154.3 km).

DRAINAGE AREA.--733 mi² (1,898 km²).

PERIOD OF RECORD.--October 1937 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 699.00 ft (213.055 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 18, 1939, nonrecording gage. Feb. 18, 1939, to Sept. 30, 1948, waterstage recorder at county road bridge, 0.2 mi (0.3 km) upstream at datum 14.04 ft (4.279 m) lower. Oct. 1, 1948, to Sept. 30, 1972, at site 0.6 mi (1.0 km) downstream at datum 17.04 ft (5.194 m) lower.

REMARKS.--Records fair. Flow completely regulated since February 1950 by Hulah Lake (station 07172500). About 5 to 9 ft³/s (0.14 to 0.25 m³/s) is diverted above station by city of Bartlesville for municipal water supply.

COOPERATION.--Gage-height record and 9 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Hulah Dam) 13 years (water years 1938-50), 413 ft³/s (11.70 m³/s), 299,200 acre-ft/yr (369 hm³/yr); (since regulation by Hulah Dam) 34 years (water years 1951-84), 331 ft³/s 9.38 m³/s, 239,800 acre-ft/yr (296 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s (1,440 m³/s) Apr. 10, 1944, gage height, 39.45 ft (12.024 m), at former site and datum; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 40.2 ft (12.25 m) occurred at former site and datum, date unknown, from floodmark, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,810 ft³/s (136 m³/s) Apr. 5, gage height, 7.47 ft (2.277 m). Minimum daily discharge, 0.94 ft³/s (0.027 m³/s) on Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	2.3	143	54	58	965	4320	703	800	3.1	2.4	13
2	15	2.2	3.1	54	79	656	2820	702	793	3.1	1.4	13
3	15	2.2	4.8	43	77	525	2850	700	788	3.1	1.4	13
4	14	2.1	3.8	38	77	544	4110	698	790	3.2	1.4	7.9
5	5.2	2.0	176	38	77	1020	4460	697	787	3.2	1.4	4.3
6	7.4	2.0	367	38	61	1450	4700	698	390	3.9	1.4	4.3
7	8.1	2.0	373	38	31	1450	4040	699	46	3.2	1.4	3.2
8	8.1	1.9	370	38	22	1430	1670	700	45	3.1	12	16
9	8.3	1.6	158	56	3.6	932	2820	698	43	2.9	12	14
10	8.3	1.1	8.6	84	43	670	3610	700	43	2.9	5.1	6.0
11	8.3	.97	8.1	82	77	685	3180	358	291	2.9	1.2	4.6
12	8.1	.97	8.2	85	77	691	3150	90	810	2.8	1.1	2.8
13	8.1	1.0	7.6	82	76	866	3130	89	804	2.8	2.3	4.2
14	8.2	.97	3.1	82	52	994	3110	89	799	2.5	3.3	4.6
15	8.4	2.9	3.8	82	30	999	3080	90	798	2.4	1.5	2.0
16	14	3.3	6.4	82	17	494	3040	571	774	3.3	1.5	2.3
17	14	2.2	5.9	85	10	198	2710	1100	765	2.4	1.5	2.7
18	8.8	2.5	5.7	82	11	229	2320	952	748	2.3	1.5	2.9
19	8.8	6.9	4.6	82	13	94	1950	795	426	2.3	1.5	2.9
20	55	2.0	8.2	82	14	1120	1110	790	9.5	2.4	1.2	2.9
21	451	2.0	13	80	14	2770	814	790	15	2.5	2.0	2.9
22	1190	6.3	13	80	14	3100	790	779	14	2.6	5.2	3.1
23	1200	14	13	80	14	2640	1110	773	14	2.6	.94	3.1
24	1200	14	13	80	9.3	1730	1520	501	14	2.7	1.0	3.3
25	1190	14	13	49	5.4	1740	1510	145	17	2.8	1.2	3.4
26	1190	15	13	16	19	1750	1500	15	14	2.8	1.3	3.4
27	1020	16	13	23	468	1730	1070	21	6.3	2.8	1.8	3.3
28	836	12	12	13	962	1720	704	16	5.0	2.8	1.4	3.1
29	759	206	25	13	963	2270	704	206	8.9	2.8	1.4	3.2
30	752	363	51	13	---	3260	699	683	3.7	2.8	1.5	3.2
31	322	---	54	16	---	4330	---	804	---	2.8	7.6	---
TOTAL	10356.1	705.41	1901.9	1770	3374.3	43052	72601	16652	10861.4	87.8	81.84	158.6
MEAN	334	23.5	61.4	57.1	116	1389	2420	537	362	2.83	2.64	5.29
MAX	1200	363	373	85	963	4330	4700	1100	810	3.9	12	16
MIN	5.2	.97	3.1	13	3.6	94	699	15	3.7	2.3	.94	2.0
AC-FT	20540	1400	3770	3510	6690	85390	144000	33030	21540	174	162	315
CAL YR 1983	TOTAL	147878.61		MEAN	405	MAX	3810	MIN	.97	AC-FT	293300	
WTR YR 1984	TOTAL	161602.35		MEAN	442	MAX	4700	MIN	.94	AC-FT	320500	

07174300 COPAN LAKE NEAR COPAN, OK

LOCATION.--Lat 36°53'13", long 95°57'10", in NW 1/4, NW 1/4 sec.29, T.28 N., R.13 E., Washington County, Hydrologic Unit 11070106, 600 ft (183 m) northwest of project office, 1.5 mi (2.4 km) southwest of Copan and at mile 7.4 (11.9 km).

DRAINAGE AREA.--505 mi² (1,308 km²).

PERIOD OF RECORD.--April 1983 to current year.

GAGF.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. Spillway is concrete ogee-type weir controlled by 4 taintor gates. A 36 in (0.9 m) diameter low-flow pipe and a 12 in (0.3 m) diameter future water supply pipe extend through the spillway. Storage began Apr. 1, 1983, conservation pool was first filled Apr. 23, 1983. Capacity 227,700 acre-feet (281 hm³) at elevation 732.0 ft (223.11 m), top of flood control pool; 43,400 acre-ft (53.5 hm³) at elevation, 710.0 ft (216 m), top of conservation pool. Dead storage 600 acre-ft (0.74 hm³) below elevation 687.5 ft (209.55 m). Figures given herein represent total contents. Reservoir is used for flood control, water conservation and future water supply.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,300 acre-ft (105 hm³) Mar. 29, 1984, elevation, 717.16 ft (218.590 m) minimum since conservation pool first filled, 30,830 acre-ft (38.0 hm³) Oct. 14, 1983, elevation, 707.17 ft (215.545 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 85,300 acre-ft (105 hm³) Mar. 29, elevation, 717.16 ft (218.590 m); minimum contents, 30,830 acre-ft (38.0 hm³) Oct. 14, elevation, 707.17 ft (215.545 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

707	30,160	713	59,230
709	38,690	715	71,170
711	48,390	718	91,140

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31400	39420	39060	38920	38920	41430	82850	49480	67110	43540	40300	37960
2	31280	39150	39150	38920	38740	40720	81850	46860	64770	43350	40260	38140
3	31320	39100	39520	39010	38690	41950	81380	44770	61820	43300	40160	38050
4	31480	38830	39750	39060	38640	50100	79650	43830	58950	43350	40070	38010
5	31360	38690	39750	39150	38510	51680	77550	43540	55700	43250	39840	37870
6	31320	38460	39750	39150	38510	49950	74970	43540	52590	43010	39840	37650
7	31240	38420	39470	39190	38550	47730	74200	43880	49950	42910	39700	37240
8	31240	38370	39470	39190	38690	44870	80310	43980	49320	42820	39750	38010
9	31200	38460	39330	39190	38830	43400	83530	43830	48910	42720	39610	37960
10	31080	38140	39330	39280	38920	42960	84280	43400	48600	42580	39610	37870
11	31360	38100	39150	39330	39060	42530	83390	43640	48140	42480	39560	37740
12	31200	38050	39010	39380	39060	43200	81510	43640	46660	42380	39420	37740
13	31160	38050	38920	39380	39150	43400	78140	43830	44870	42290	39280	37780
14	30960	38010	38780	39380	39150	41910	73690	43690	43830	42140	39240	37650
15	31000	37960	38830	39240	39150	40400	69000	46310	43300	42050	39100	37330
16	31080	37920	38740	39330	39150	40400	65010	48800	43400	41910	39060	37160
17	32550	37960	38870	39330	39150	45060	61820	47830	43350	41810	39010	37110
18	33220	38050	38780	39380	39010	51900	58610	46960	43490	41760	38920	37200
19	33640	38100	38690	39380	39100	61880	56190	46760	43400	41570	38690	37070
20	39010	38100	38740	39380	39060	67480	56030	46360	43300	41570	38510	37110
21	51420	38100	38690	39420	39060	67780	60610	45860	43300	41530	38600	36800
22	56250	38330	38780	39420	39060	65900	61650	45310	43690	41530	38550	36800
23	56080	38230	38690	39420	39060	66210	61820	44670	43830	41380	38460	36710
24	55310	38370	38690	39470	39010	73370	68720	44130	43830	41240	38420	36670
25	53130	38420	38690	39470	39010	77810	58210	44370	43790	41670	38330	36580
26	51000	38640	38690	39380	40070	79120	56030	44320	43740	41150	38230	36450
27	48700	39010	38690	39240	42770	79850	54210	50630	43790	40960	38330	35660
28	46560	39330	38690	39190	43880	84480	51260	61130	43790	40910	38140	36400
29	44470	39470	38740	39150	42860	85160	52380	67170	43790	40680	38230	36310
30	41950	39240	38780	39010	---	83390	52060	69190	43690	40580	38190	36220
31	40160	---	38870	38920	---	83190	---	68640	---	40540	38140	---
MAX	56250	39470	39750	39470	43880	85160	84280	69190	67110	43540	40300	38140
MIN	30960	37920	38690	38920	38510	40400	51260	43400	43300	40540	38140	35660
(+)	709.32	709.12	709.04	709.05	709.89	716.85	711.70	714.59	710.06	709.40	708.88	708.45
(++)	+8,680	-920	-370	+50	+3,940	+40,330	-31,130	+16,580	-24,950	-3,150	-2,400	-1,920

WTR YR 1984 44550 MAX 85160 MIN 30960 (++) 4,740

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07174600 SAND CREEK AT OKESA, OK

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, Hydrologic Unit 11070106, on downstream side of left abutment of county road bridge, 0.5 mi (0.8 km) northeast of Oksa, 9 mi (14 km) southwest of Bartlesville, and at mile 17.2 (27.7 km).

DRAINAGE AREA.--139 mi² (360 km²).

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 689.20 ft (210.068 m) National Geodetic Vertical Datum of 1929. Prior to May 25, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good.

COOPERATION.--Gage-height record and 7 discharge measurements and 2 observations of no flow furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--25 years, 68.7 ft³/s (1.946 m³/s), 49,770 acre-ft/yr (61.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft³/s (416 m³/s) Sept. 13, 1961, gage height, 27.7 ft (8.44 m), from floodmarks; no flow at times in each year except 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 20	2200	*9,120 258	*19.05 5.806	Mar. 24	1215	3,700 105	12.09 3.685
Mar. 18	2400	3,630 103	12.12 3.694	Apr. 21	0215	5,460 155	14.74 4.493
Mar. 23	2300	6,440 182	15.88 4.840				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	6.5	26	5.7	11	89	702	91	23	20	.00	.00
2	.00	6.0	23	6.0	11	71	308	69	18	13	.00	.00
3	.00	4.9	28	6.2	10	179	324	60	17	8.4	.00	.00
4	.00	5.2	61	6.5	9.6	1260	194	54	14	5.8	.00	.00
5	.00	4.9	69	7.0	8.5	278	143	50	13	4.4	.00	.00
6	.00	4.9	47	9.0	8.2	125	122	55	12	3.2	.00	.00
7	.00	5.4	34	11	7.5	91	129	155	12	2.5	.00	.00
8	.00	5.7	28	13	6.8	68	893	108	10	1.9	.00	.45
9	.00	4.9	23	15	7.1	58	377	71	9.6	1.6	.00	82
10	.00	4.5	21	19	8.5	47	207	54	10	1.1	.00	21
11	.00	4.5	19	17	9.6	43	232	44	11	.72	.00	9.2
12	.00	4.2	17	15	9.6	193	356	38	11	.72	.00	4.5
13	.00	4.5	16	13	12	297	208	33	11	.50	.00	2.9
14	.00	4.2	16	11	14	141	124	29	8.9	.40	.00	1.6
15	.00	4.2	14	9.3	13	101	96	546	8.3	.35	.00	.72
16	.00	4.0	14	8.5	12	228	91	310	7.6	.30	.00	.50
17	.10	4.0	14	7.4	11	734	86	92	6.4	.20	.00	.45
18	.25	4.0	13	7.1	9.6	1270	72	68	6.2	.15	.00	.30
19	.45	3.8	12	6.8	7.8	892	62	51	6.2	.10	.00	.20
20	2900	4.5	11	6.5	7.1	434	464	48	6.5	.05	.00	.27
21	1510	5.7	9.9	5.7	7.1	244	2170	48	6.5	.00	.00	.18
22	178	30	8.6	5.7	6.8	166	288	46	5.8	.00	.00	.23
23	81	51	8.2	5.7	6.5	2640	163	39	5.0	.00	.00	.23
24	46	30	7.7	5.7	5.7	2220	119	33	9.0	.00	.00	.10
25	30	26	6.9	6.5	5.7	430	94	28	8.4	.00	.00	.00
26	21	19	6.5	7.1	70	257	78	23	8.8	.00	.00	.00
27	16	38	6.4	8.5	437	197	72	28	7.7	.00	.00	.00
28	14	43	6.1	9.6	258	2020	62	69	5.8	.00	.00	.00
29	12	38	6.1	10	155	694	219	51	132	.00	.00	.00
30	10	30	5.7	11	---	262	144	38	46	.00	.00	.00
31	8.2	---	5.7	11	---	711	---	30	---	.00	.00	---
TOTAL	4827.00	405.5	583.8	286.5	1145.7	16440	8599	2459	456.7	65.39	.00	124.83
MEAN	156	13.5	18.8	9.24	39.5	530	287	79.3	15.2	2.11	.00	4.16
MAX	2900	51	69	19	437	2640	2170	546	132	20	.00	82
MIN	.00	3.8	5.7	5.7	5.7	43	62	23	5.0	.00	.00	.00
AC-FT	9570	804	1160	568	2270	32610	17060	4880	906	130	.00	248
CAL YR 1983	TOTAL	31129.29		MEAN	85.3	MAX	3560	MIN	.00	AC-FT	61740	
WTR YR 1984	TOTAL	35393.42		MEAN	96.7	MAX	2900	MIN	.00	AC-FT	70200	

07175500 CANEY RIVER NEAR RAMONA, OK

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, Hydrologic Unit 11070106, near left bank on downstream side of pier of county road bridge, 1 mi (1.6 km) upstream from Buck Creek, 2.2 mi (3.5 km) downstream from Double Creek, 4.5 mi (7.2 km) southeast of Ramona, and at mile 32.0 (51.5 km).

DRAINAGE AREA.--1,955 mi² (5,063 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1935 to February 1939 (published as "near Collinsville"), September 1945 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1939.

GAGE.--Water-stage recorder. Datum of gage is 586.43 ft (178.744 m) National Geodetic Vertical Datum of 1929. Dec. 4, 1935, to Feb. 28, 1939, nonrecording gage at site 16.2 mi (26.1 km) downstream at datum 21.41 ft (6.526 m) lower. Sept. 1, 1945, to Feb. 15, 1946, nonrecording gage at present site and datum.

REMARKS.--Records fair. Some regulation since February 1950 by Hulah Lake (station 07172500).

COOPERATION.--Gage-height record and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--42 years, 950 ft³/s (26.90 m³/s), 688,700 acre-ft/yr (849 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft³/s (1,090 m³/s) Oct. 3, 1945, gage height, 30.12 ft (9.181 m); no flow Aug. 9 to Sept. 15, 1936, Sept. 11 to Nov. 3, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,500 ft³/s (212 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)		
Oct. 22	0500	9,560	271	25.81	7.867				
Mar. 5	0200	8,100	229	22.60	6.888				
Mar. 19	2200	9,970	282	26.85	8.184				
Mar. 25	1600	*10,500	297	*28.24	8.607				
Mar. 29	1100	9,040	256	24.65	7.513				
				Apr. 2	0200	8,990	255	24.55	7.483
				Apr. 8	2400	8,980	254	24.53	7.477
				Apr. 13	1600	7,760	220	21.86	6.663
				Apr. 22	0300	10,100	286	27.10	8.260

Minimum daily discharge, 13 ft³/s (0.37 m³/s) Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	1690	564	46	159	2980	8430	3000	2390	145	16	46
2	26	470	520	56	156	2780	8870	2830	2720	76	16	38
3	25	368	279	70	180	2100	8030	2730	2720	54	16	47
4	41	186	344	100	192	5610	6360	2420	2680	43	16	47
5	60	141	424	130	162	6800	6600	1740	2620	38	16	38
6	55	134	321	131	137	3230	6860	1250	2590	35	16	32
7	38	131	563	130	126	3780	7110	1340	2320	32	17	25
8	31	126	586	123	115	3710	8490	1510	1500	28	16	21
9	28	101	555	163	90	3560	8390	1310	959	26	16	31
10	33	63	477	377	94	2720	5820	1160	779	25	18	208
11	38	55	232	250	87	1250	6300	1040	778	25	48	174
12	57	45	160	200	85	1390	6920	725	973	25	50	93
13	70	45	149	160	130	2670	7680	320	1890	23	50	66
14	43	40	149	130	131	2510	7470	280	1970	22	50	55
15	32	39	149	110	130	2750	7110	678	1580	22	47	36
16	28	38	123	90	117	2600	6870	2390	978	22	40	13
17	31	37	82	80	92	4190	6540	1700	745	21	46	19
18	36	38	70	75	82	4980	5670	2520	738	20	50	30
19	60	42	65	70	66	9480	4760	2120	749	21	50	60
20	756	46	58	67	57	8840	4320	1440	583	19	50	33
21	7560	49	54	64	55	4360	8500	1360	242	19	50	31
22	8630	61	52	62	55	5110	9640	1310	85	19	47	31
23	3930	173	50	130	56	6410	5020	1260	81	18	38	31
24	2550	252	48	147	54	9720	2740	1150	122	18	46	28
25	2410	178	46	150	53	10400	3180	875	79	20	37	32
26	2660	138	45	156	92	9530	3450	369	64	20	36	36
27	2640	416	44	183	1220	6410	4220	277	64	19	37	37
28	2560	769	44	189	2540	6850	3320	855	60	17	36	41
29	2400	410	43	185	3050	8790	2850	638	57	23	36	41
30	2200	287	42	180	---	6570	4500	362	112	23	36	40
31	2160	---	41	164	---	5960	---	1300	---	17	40	---
TOTAL	41214	6568	6379	4168	9563	158040	186020	42259	33228	935	1083	1460
MEAN	1329	219	206	134	330	5098	6201	1363	1108	30.2	34.9	48.7
MAX	8630	1690	586	377	3050	10400	9640	3000	2720	145	50	208
MIN	25	37	41	46	53	1250	2740	277	57	17	16	13
AC-FT	81750	13030	12650	8270	18970	313500	369000	83820	65910	1850	2150	2900
CAL YR 1983	TOTAL	539346		MEAN	1478	MAX	10800	MIN	20	AC-FT	1070000	
WTR YR 1984	TOTAL	490917		MEAN	1341	MAX	10400	MIN	13	AC-FT	973700	

ARKANSAS RIVER BASIN

07175500 CANEY RIVER NEAR RAMONA, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952-53, 1955-62, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to April 1982.

WATER TEMPERATURE: October 1966 to April 1982.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,880 microsiemens Feb. 5, 1967; minimum daily, 114 microsiemens Oct. 20, 1973.

WATER TEMPERATURE: Maximum daily 38.0°C July 18, 19, 1980; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
OCT										
13...	1410	746	80020	E65	703	8.0	19.0	12.0	133	220
NOV										
02...	1200	750	80020	E423	349	7.2	18.0	9.2	99	110
JAN										
19...	1445	756	80020	E70	780	7.7	.5	14.0	98	220
FEB										
22...	1200	742	80020	E55	655	8.4	8.5	11.0	97	200
MAR										
26...	1145	730	80020	E9680	313	7.2	10.0	9.7	90	90
APR										
17...	1315	744	80020	E6550	315	7.4	13.0	9.9	96	120
MAY										
08...	1330	753	80020	E1530	438	7.5	17.0	8.5	89	160
JUN										
11...	1230	747	80020	E750	393	7.1	24.5	6.1	75	130
JUL										
10...	1230	743	80020	E25	610	7.3	31.0	6.7	93	210
AUG										
27...	1200	745	80020	E37	848	7.5	25.5	7.6	95	250
SEP										
11...	1235	743	80020	E168	773	8.0	27.5	11.3	147	220

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT										
13...	66	69	11	52	34	2	4.0	153	2.9	27
NOV										
02...	14	36	5.8	17	24	.7	3.3	100	12	16
JAN										
19...	68	69	12	52	33	2	2.9	155	6.0	35
FEB										
22...	55	62	10	47	34	2	2.8	142	1.1	34
MAR										
26...	16	28	4.8	14	25	.7	2.6	74	9.0	22
APR										
17...	19	39	5.9	15	21	.6	2.2	103	7.9	22
MAY										
08...	27	50	8.1	23	24	.8	2.2	132	8.1	26
JUN										
11...	31	40	6.2	26	30	1	2.8	95	15	19
JUL										
10...	46	65	12	43	30	1	2.8	167	16	21
AUG										
27...	67	81	12	70	37	2	4.8	186	11	27
SEP										
11...	57	68	11	68	40	2	5.2	159	3.1	31

ARKANSAS RIVER BASIN

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07175500 CANEY RIVER NEAR RAMONA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT										
13...	100	3.3	366	360	.50	--	--	<.020	--	.69
NOV										
02...	30	3.9	179	170	.24	--	--	<.020	--	.44
JAN										
19...	110	5.7	403	380	.55	.63	2.8	.020	.07	.65
FEB										
22...	92	2.7	355	340	.48	--	--	--	--	--
MAR										
26...	24	7.6	165	150	.22	.41	--	.010	.03	.42
APR										
17...	23	7.6	187	180	.25	.48	--	.010	.03	.49
MAY										
08...	43	7.1	254	240	.35	--	--	<.010	--	.50
JUN										
11...	48	5.2	238	200	.32	--	--	<.010	--	.50
JUL										
10...	80	.7	364	330	.50	--	--	<.010	--	<.10
AUG										
27...	160	1.9	492	470	.67	--	--	<.010	--	<.10
SEP										
11...	140	4.2	469	430	.64	.85	--	.070	.23	.92

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)
OCT										
13...	.070	.09	.020	.06	1	110	<.5	<1	10	<3
NOV										
02...	.120	.15	.040	.12	1	70	<.5	<1	<10	<3
JAN										
19...	.320	.41	.170	.52	1	110	<.5	<1	<10	<3
FEB										
22...	.040	.05	.450	1.4	<1	75	<.5	<1	<10	<3
MAR										
26...	.220	.28	.080	.25	<1	52	<.5	<1	<10	<3
APR										
17...	.090	.12	.040	.12	<1	56	1.0	<1	<10	<3
MAY										
08...	<.010	--	.050	.15	<1	79	.9	<1	<10	<3
JUN										
11...	.040	.05	.070	.21	<1	77	<1.0	<1	<10	<3
JUL										
10...	.020	.03	.020	.06	<1	110	<1.0	<1	<10	<3
AUG										
27...	.020	.03	.030	.09	3	130	<1.0	<1	10	<3
SEP										
11...	<.010	--	.540	1.7	5	110	<1.0	<1	<10	<3

ARKANSAS RIVER BASIN

07175500 CANEY RIVER NEAR RAMONA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 13...	<10	4	<10	28	16	<.1	<10	580	<6	3
NOV 02...	<10	63	<10	12	9	<.1	<10	290	<6	4
JAN 19...	<10	14	<10	12	83	<.1	<10	690	<6	20
FEB 22...	<10	4	<10	10	10	<.1	<10	610	<6	6
MAR 26...	<10	200	<10	5	12	<.1	<10	220	<6	12
APR 17...	<10	85	<10	6	11	<.1	<10	290	<6	13
MAY 08...	<10	41	<10	12	14	<.1	<10	400	<6	5
JUN 11...	<10	52	<10	7	5	30	<10	380	<6	7
JUL 10...	10	7	10	12	9	<.1	<10	530	<6	17
AUG 27...	<10	5	<10	19	17	<.1	<10	640	<6	12
SEP 11...	<10	4	<10	26	10	<.1	<10	590	<6	13

07176000 VERDIGRIS RIVER NEAR CLAREMORE, OK

LOCATION.--Lat 36°18'26", long 95°41'52", SE 1/4 SW 1/4 sec.10, T.21 N., R.15 E., Rogers County, Hydrologic Unit 11070105, on left bank on downstream side of bridge on State Highway 20, 2.3 mi (3.7 km) downstream from Caney River, 4.5 mi (7.2 km) west of Claremore, 12.4 mi (20.0 km) upstream from Bird Creek, and at mile 76.0 (122.3 km).

DRAINAGE AREA.--6,534 mi² (16,923 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 538.62 ft (164.171 m), National Geodetic Vertical Datum of 1929. Prior to Feb. 24, 1939, and May 17 to Aug. 24, 1967, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated since May 1963 to Oologah Lake 14.3 mi (23.0 km) upstream (station 07171300); some regulation by dams in Kansas since 1949 and by Hulah Lake since 1950 (station 07172500).

COOPERATION.--Gage-height record and 4 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Oologah Lake) 27 years (water years 1936-62), 3,723 ft³/s (105.4 m³/s), 2,695,000 acre-ft/yr (3.32 km³/yr); (since regulation by Oologah Lake) 20 years (water years 1965-84), 3,836 ft³/s (108.6 m³/s), 2,779,000 acre-ft/yr (3.43 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 182,000 ft³/s (5,150 m³/s) May 21, 1943, gage height, 55.05 ft (16.779 m); no flow at times in 1936, 1939-40, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,000 ft³/s (736 m³/s) Apr. 9, gage height, 23.56 ft (7.181 m); minimum daily discharge, 84 ft³/s (2.38 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	4920	2700	164	1190	9440	20500	11600	20900	8500	269	134
2	86	2680	2530	164	1690	6070	21700	10700	13700	6500	269	137
3	84	896	1670	171	1630	5900	23100	10700	13600	5000	271	134
4	103	732	1490	214	1660	9350	24300	9650	11900	3260	278	131
5	90	571	2350	252	1680	12800	23400	7620	9430	3310	277	131
6	94	514	3880	263	1360	14900	23600	7600	9380	2260	278	141
7	90	430	3850	269	786	13800	23700	8360	9320	821	277	150
8	92	209	4080	269	786	14000	25000	9750	8880	814	271	160
9	90	205	3350	269	784	11600	24800	9610	8310	583	157	200
10	94	190	2260	1570	1100	8790	19500	9440	7990	312	159	163
11	96	161	2150	2900	1610	7540	20600	10200	8670	264	146	314
12	100	145	1450	2050	1610	7290	21000	12500	12300	260	144	277
13	104	141	655	838	1540	7200	21700	12100	13100	264	154	213
14	110	134	645	801	1580	6010	21900	10500	13100	251	157	182
15	114	129	645	786	1580	6010	21600	8330	12000	246	157	161
16	118	128	643	763	1580	5940	21300	5150	10500	251	156	154
17	119	129	613	740	1560	6670	21000	5040	10500	255	148	147
18	115	130	569	740	1540	8500	20500	6640	10500	251	147	143
19	112	141	558	629	1500	12600	19700	6810	8000	251	143	140
20	3710	134	527	264	1490	15100	19100	6240	8000	251	140	137
21	9320	133	447	215	1220	18300	20100	5990	8000	251	140	137
22	10300	150	440	203	770	18300	23400	5930	8000	251	140	137
23	8550	261	350	195	764	19800	22600	5880	8000	251	139	137
24	5690	383	330	199	700	22100	17300	5810	8000	251	137	138
25	6430	401	320	211	536	19200	14300	5770	8000	253	137	144
26	6450	303	320	316	618	19400	11200	5320	6100	255	140	139
27	6550	602	322	696	2200	19500	11700	3610	2000	255	148	148
28	6060	1980	317	732	7350	21200	11700	4800	8300	255	149	150
29	5490	3170	300	710	11200	21900	10900	13500	8500	255	146	144
30	5360	2720	220	666	---	21300	11300	17000	8500	265	137	143
31	5320	---	180	688	---	19100	---	22300	---	269	136	---
TOTAL	81131	22822	40161	18947	53614	409610	592500	274450	293480	36715	5547	4766
MEAN	2617	761	1296	611	1849	13210	19750	8853	9783	1184	179	159
MAX	10300	4920	4080	2900	11200	22100	25000	22300	20900	8500	278	314
MIN	84	128	180	164	536	5900	10900	3610	2000	246	136	131
AC-FT	160900	45270	79660	37580	106300	812500	1175000	544400	582100	72820	11000	9450
CAL YR 1983	TOTAL	1800268	MEAN	4932	MAX	30100	MIN	46	AC-FT	3571000		
WTR YR 1984	TOTAL	1833743	MEAN	5010	MAX	25000	MIN	84	AC-FT	3637000		

07176460 BIRCH LAKE NEAR BARNSDALL, OK

LOCATION.--Lat 36°32'05", long 96°09'45", in NW 1/4 NE 1/4 sec.30, T.24 N., R.11 E., Osage County, Hydrologic Unit 11070107, 450 ft (137 m) north of dam on Birch Creek, 1.5 mi (2.4 km) south of Barnsdall and at mile 0.8 (1.3 km).

DRAINAGE AREA.--66.0 mi² (170.9 km²).

PERIOD OF RECORD.--March 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to May 31, 1977 nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam with uncontrolled concrete spillway. Storage began Mar. 18, 1977; conservation pool was first filled Mar. 23, 1978. The outlet work is a gated intake structure. Capacity, 58,180 acre-ft (71.7 hm³) at elevation 774.0 ft (235.92 m), crest of uncontrolled spillway and 19,180 acre-ft (23.7 hm³) at elevation 750.5 ft (228.75 m), top of conservation pool. Dead storage, 3,360 acre-ft (4.14 hm³) below elevation 730.0 ft (222.50 m). Figures given herein represent total contents. Reservoir is used for flood control, water supply, water quality, recreation, and fish and wildlife.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 26,860 acre-ft (33.1 hm³) May 16, 1984, elevation, 756.70 ft (230.642 m); minimum since conservation pool was first filled, 13,080 acre-ft (16.1 hm³) Oct. 26-29, 1977, elevation, 744.68 ft (226.868 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,860 acre-ft (33.1 hm³) May 16, elevation, 756.70 ft (230.642 m), minimum, 16,300 acre-ft (20.1 hm³) Oct. 17, elevation, 747.88 ft (227.954 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

749	17,510	752	20,920
750	18,620	754	23,350
751	19,750	755	24,620

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16440	19410	19400	18920	19070	19470	22640	20160	19750	19160	18370	17970
2	16410	19410	19310	18920	19080	19400	22160	19950	19550	19160	18330	17980
3	16380	19400	19290	18920	19080	19420	21630	19680	19330	19140	18300	17950
4	16410	19360	19250	18920	19080	20120	21040	19510	19240	19100	18290	17960
5	16390	19350	19210	18920	19060	20070	20450	19500	19200	19070	18260	17930
6	16410	19340	19150	18920	19070	19780	20010	19500	19210	19040	18250	17900
7	16410	19320	19120	18920	19060	19440	19850	19500	19200	19030	18220	17830
8	16390	19290	19120	18920	19070	19240	20370	19510	19190	19010	18270	17950
9	16380	19280	19070	18980	19110	19190	20180	19500	19180	19000	18380	17950
10	16370	19240	19070	18970	19100	19190	19930	19490	19240	18950	18370	17930
11	16460	19230	19040	18980	19150	19180	19640	19490	19240	18900	18470	17900
12	16440	19190	19030	19000	19150	19780	19370	19470	19240	18890	18470	17890
13	16420	19190	19030	19000	19110	19850	19240	19470	19240	18860	18460	17870
14	16390	19190	19030	19000	19110	19710	19210	19470	19200	18830	18440	17800
15	16360	19180	19020	19000	18980	19570	19200	26790	19190	18820	18410	17760
16	16320	19180	19010	19000	18670	19450	19210	26410	19160	18810	18380	17750
17	16300	19160	19010	19000	19060	20650	19200	25520	19140	18770	18370	17720
18	16340	19170	18980	19010	18850	22550	19210	24570	19120	18750	18360	17710
19	16340	19200	18980	19010	18500	23020	19210	23680	19120	18730	18280	17690
20	19500	19170	18980	19010	18910	22570	19810	22840	19100	18710	18280	17670
21	20070	19160	18980	19010	19150	21990	20760	21920	19100	18660	18250	17650
22	20100	19440	18970	19010	18870	21370	20840	21000	19090	18640	18240	17650
23	20120	19530	18940	19010	18890	23240	20800	20090	19080	18630	18190	17640
24	20070	19550	18930	19010	18870	23570	20520	19560	19040	18580	18180	17630
25	19890	19570	18930	19010	18860	23100	20280	19410	19030	18560	18150	17590
26	19720	19600	18930	19040	19150	22590	19970	19370	19030	18530	18130	17540
27	19530	19730	18930	19040	19680	22160	19810	21340	19010	18490	18100	17550
28	19440	19750	18930	19040	19720	23690	19660	21470	19070	18470	18090	17550
29	19430	19710	18930	19090	19600	23340	20290	21390	19200	18450	18070	17530
30	19420	19570	18930	19070	---	22800	20250	20760	19190	18430	18040	17510
31	19410	---	18930	19070	---	22990	---	20140	---	18390	18030	---
MAX	20120	19750	19400	19090	19720	23690	22640	26790	19750	19160	18470	17980
MIN	16300	19160	18930	18920	18500	19180	19200	19370	19010	18390	18030	17510
(+)	750.70	750.84	750.28	750.40	750.87	753.71	751.43	751.33	750.51	749.80	749.47	749.00
(++)	+2,950	+160	-640	+140	+530	+3,390	-2,740	-110	-950	-800	-360	-520
CAL YR 1983	MAX	24530	MIN	16300	(++)	-2,550						
WTR YR 1984	MAX	26790	MIN	16300	(++)	+1,050						

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07176465 BIRCH CREEK BELOW BIRCH LAKE NEAR BARNSDALL, OK

LOCATION.--Lat 36°32'08", long 96°09'38", NW 1/4 NE 1/4 sec.30, T.24 N., R.11 E., Osage County, Hydrologic Unit 11070107, 300 ft (91 m) downstream from Birch Dam, 1.5 mi (2.4 km) south of Barnsdall, and at mile 0.7 (1.1 km).

DRAINAGE AREA.--66.0 mi² (179.9 km²).

PERIOD OF RECORD.--February 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 690.00 ft (210.312 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow completely regulated since March 1977 by Birch Lake (station 07176460).

COOPERATION.--Gage-height record and 7 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--7 years, 29.6 ft³/s (0.838 m³/s), 21,450 acre-ft/yr (26.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 728 ft³/s (20.6 m³/s) Oct. 21, 1983, gage height, 9.55 ft (2.911 m); no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 728 ft³/s (20.6 m³/s) Oct. 21, gage height, 9.55 (2.911 m); no flow Nov. 11-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	3.2	86	275	2.2	94	360	72	202	.90	1.0	1.0
2	4.7	3.5	59	233	2.2	46	360	126	109	.90	1.0	1.0
3	4.7	3.8	32	100	2.2	5.0	355	172	107	.90	1.0	1.0
4	3.5	4.1	31	2.0	2.2	5.0	352	112	44	.90	1.0	1.0
5	2.7	4.1	31	2.0	2.5	97	352	13	7.6	.90	.90	1.0
6	2.7	4.1	31	2.2	3.0	197	270	13	4.4	.90	.90	1.0
7	2.7	4.1	18	2.2	3.0	196	210	9.3	.89	.90	.90	1.0
8	3.0	4.1	7.3	2.2	3.0	116	210	3.0	.70	.90	.90	1.4
9	3.2	3.7	7.6	2.2	2.7	17	210	3.0	.70	.95	1.0	1.3
10	3.2	2.3	7.6	2.2	2.7	3.7	210	3.8	.70	1.0	1.1	1.3
11	3.8	.00	7.6	2.2	2.7	3.8	210	4.1	.70	1.0	1.1	1.4
12	4.1	.00	7.6	2.0	2.5	4.0	210	4.7	.70	1.0	1.0	1.5
13	3.5	.00	4.7	2.2	3.0	60	99	4.7	.70	1.0	1.0	1.5
14	3.2	.00	1.6	2.2	3.0	110	13	4.7	.70	1.0	1.0	1.6
15	3.5	.00	1.8	2.2	3.0	109	13	16	.70	1.0	1.0	1.5
16	4.1	.00	1.8	2.2	3.0	61	14	287	.70	1.0	1.0	1.6
17	1.6	1.7	2.0	2.2	3.2	28	7.6	569	.70	1.0	1.0	1.6
18	3.2	3.1	2.0	2.2	2.7	28	2.0	560	.70	1.0	1.0	1.6
19	3.8	3.8	2.0	2.2	3.5	170	2.0	555	.70	1.0	1.0	1.6
20	65	3.8	2.0	2.2	3.5	362	2.2	546	.70	1.0	1.0	2.0
21	163	3.8	2.0	2.0	2.7	366	2.0	543	.70	1.0	1.0	2.9
22	3.2	4.4	2.2	1.8	2.0	366	1.8	532	.70	1.0	1.0	1.7
23	3.2	4.4	324	1.8	2.0	363	65	524	.70	1.0	1.1	2.8
24	45	4.4	374	2.0	2.0	363	170	279	.70	1.0	1.1	1.7
25	106	4.4	377	2.0	2.0	363	168	69	.70	1.0	1.1	1.8
26	84	4.4	380	2.0	2.0	360	168	8.9	.70	1.0	1.1	1.8
27	101	4.1	360	2.0	2.0	360	114	10	.70	1.0	1.3	1.8
28	45	3.8	323	2.0	49	360	69	9.8	.87	1.0	1.3	1.8
29	3.0	48	318	1.6	90	360	72	133	1.3	1.0	1.3	1.9
30	3.0	87	290	2.0	---	360	72	331	.90	1.0	1.1	2.1
31	3.0	---	278	2.2	---	360	---	330	---	1.0	1.1	---
TOTAL	690.3	218.10	3371.8	666.2	209.5	5693.5	4363.6	5848.0	491.96	30.15	32.30	47.2
MEAN	22.3	7.27	109	21.5	7.22	184	145	189	16.4	.97	1.04	1.57
MAX	163	87	380	275	90	366	360	569	202	1.0	1.3	2.9
MIN	1.6	.00	1.6	1.6	2.0	3.7	1.8	3.0	.70	.90	.90	1.0
AC-FT	1370	433	6690	1320	416	11290	8660	11600	976	60	64	94
CAL YR 1983	TOTAL	18288.34		MEAN	50.1	MAX	600	MIN	.00	AC-FT	36270	
WTR YR 1984	TOTAL	21662.61		MEAN	59.2	MAX	569	MIN	.00	AC-FT	42970	

07176500 BIRD CREEK NEAR AVANT, OK

LOCATION.--Lat 36°29'12", long 96°03'50", in NW 1/4 sec.7, T.23 N., R.12 E., Osage County, Hydrologic Unit 11070107, 150 ft (45.7 m) upstream from county road bridge at Avant, 1.5 mi (2.4 km) upstream from Candy Creek, and at mile 54.2 (87.2 km).

DRAINAGE AREA.--364 mi² (943 km²).

PERIOD OF RECORD.--August 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 651.28 ft (198.510 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Small diversions above station for municipal water supply of cities of Pawhuska and Barnsdall.

COOPERATION.--Gage-height record and 7 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--39 years, 196 ft³/s (5.551 m³/s), 142,000 acre-ft/yr (175 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 32,400 ft³/s (918 m³/s), Oct. 2, 1959, gage height, 31.40 ft (9.571 m); maximum gage height, 32.03 ft (9.763 m) Mar. 11, 1974; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 21	0400	9,950 282	13.78 4.200	Apr. 21	0800	7,610 216	10.01 3.051
Mar. 19	0100	8,260 234	10.96 3.341	May 15	0800	7,150 202	9.35 2.850
Mar. 24	0100	*11,100 314	*15.83 4.825				

Minimum daily discharge, 0.05 ft³/s (.001 m³/s) Aug. 8, 1984.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	21	142	7.4	18	281	2400	327	372	58	.82	6.7
2	8.1	30	125	7.4	17	227	1110	297	181	29	.71	5.6
3	8.1	34	73	8.1	15	165	1010	360	171	21	.54	6.2
4	9.2	33	100	8.8	15	2140	771	335	152	18	.46	5.3
5	12	28	115	9.0	12	791	627	181	63	16	.33	5.6
6	8.4	29	98	9.2	11	535	524	182	59	14	.26	6.4
7	8.6	29	78	9.4	10	422	436	227	49	14	.15	5.2
8	7.5	31	47	9.6	10	342	1800	212	45	13	.05	14
9	7.3	36	35	9.6	13	159	1230	182	45	13	.21	63
10	6.7	38	31	9.6	15	108	640	164	66	13	.71	24
11	10	36	29	9.8	21	92	576	159	54	14	122	12
12	14	29	26	9.8	28	533	660	117	48	13	83	7.4
13	12	40	28	10	29	646	646	105	48	13	23	7.5
14	9.6	41	21	10	29	415	285	149	46	12	10	8.4
15	8.8	33	15	10	26	326	213	3120	41	10	7.8	8.1
16	8.8	27	15	9.8	25	290	198	1540	39	9.3	7.4	7.2
17	26	23	14	9.8	22	1640	196	880	38	6.6	6.9	5.4
18	8.4	20	12	10	22	2410	161	735	40	4.5	7.4	4.5
19	16	24	13	10	21	4230	147	680	55	3.4	7.7	3.6
20	1950	36	12	10	19	1420	889	858	46	2.9	8.1	3.1
21	5170	39	10	9.6	16	857	4260	765	46	2.5	8.1	2.8
22	479	57	9.6	9.6	16	664	778	680	35	2.3	9.2	2.9
23	218	221	8.1	9.6	16	3220	435	640	23	2.2	11	3.8
24	137	102	6.7	9.6	15	7610	450	501	51	2.3	9.2	4.5
25	196	62	6.7	12	13	2050	391	176	74	2.0	8.6	4.6
26	166	44	6.7	18	75	1130	366	87	31	2.2	9.2	4.3
27	155	105	7.4	22	1590	895	403	1090	19	2.2	12	5.4
28	143	163	7.4	23	625	4030	259	372	28	1.9	15	6.4
29	43	145	7.4	21	383	2500	1300	223	766	1.5	15	6.7
30	19	163	6.7	21	---	1150	592	462	215	1.1	15	7.4
31	15	---	7.4	20	---	1780	---	445	---	1.0	11	---
TOTAL	8888.6	1719	1113.1	362.7	3127	43058	23753	16251	2946	318.9	410.84	258.0
MEAN	287	57.3	35.9	11.7	108	1389	792	524	98.2	10.3	13.3	8.60
MAX	5170	221	142	23	1590	7610	4260	3120	766	58	122	63
MIN	6.7	20	6.7	7.4	10	92	147	87	19	1.0	.05	2.8
AC-FT	17630	3410	2210	719	6200	85410	47110	32230	5840	633	815	512
CAL YR 1983	TOTAL	101719.9		MEAN	279	MAX	8980	MIN	3.2	AC-FT	201800	
WTR YR 1984	TOTAL	102206.14		MEAN	279	MAX	7610	MIN	.05	AC-FT	202700	

07177500 BIRD CREEK NEAR SPERRY, OK

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, Hydrologic Unit 11070107, on downstream side of right pier of county road bridge, 1.5 mi (2.4 km) upstream from Delaware Creek, 2.4 mi (3.9 km) downstream from Hominy Creek, 2.5 mi (4.0 km) southeast of Sperry, and at mile 25.0 (40.2 km).

DRAINAGE AREA.--905 mi² (2,344 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1921: 1943.

GAGE.--Water-stage recorder. Datum of gage is 579.43 ft (176.610 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

COOPERATION.--Gage-height record and 8 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--46 years, 484 ft³/s (13.71 m³/s), 350,600 acre-ft/yr (432 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s (2,550 m³/s) Oct. 3, 1959, gage height, 32.60 ft (9.936 m), from rating curve extended above 49,000 ft³/s (1,390 m³/s); no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1943, reached a stage of 31.68 ft (9.656 m), discharge 72,200 ft³/s (2,040 m³/s). Flood in 1915 reached a stage similar to flood of Oct. 31, 1941, 30.14 ft (9.187 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft³/s (309 m³/s) Mar. 24, gage height, 23.16 ft. (7.059 m), no peaks above base of 11,000 ft³/s (312 m³/s); minimum daily discharge, 3.5 ft³/s (0.10 m³/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	56	200	33	67	527	4950	1100	1320	240	5.8	11
2	14	47	167	35	63	388	3250	527	571	73	5.7	9.5
3	15	39	149	37	59	294	2520	478	383	57	5.2	8.5
4	23	35	135	39	52	3670	1980	465	336	46	4.7	7.7
5	16	31	156	40	48	2840	1660	384	285	40	4.6	6.7
6	14	33	163	39	46	1090	1460	289	188	37	4.1	5.8
7	25	30	140	38	44	715	1260	291	164	34	4.1	5.8
8	20	29	113	40	43	544	2060	323	138	31	3.6	4.1
9	16	27	85	45	43	375	2590	276	125	30	5.9	8.0
10	14	26	72	50	45	239	1580	237	127	27	4.0	4.4
11	19	26	64	50	46	210	1350	199	136	26	5.0	2.2
12	23	27	61	51	49	416	1250	169	127	25	11.4	1.3
13	22	42	58	49	56	1620	1270	137	110	25	5.0	9.0
14	21	85	58	48	58	1160	731	168	102	24	3.0	6.5
15	20	68	55	49	59	739	489	3090	92	24	2.2	5.2
16	19	38	49	50	58	548	399	4110	88	23	1.9	5.2
17	24	47	44	49	56	1420	378	1800	81	23	1.8	5.2
18	35	60	40	48	51	2640	352	1110	78	20	1.6	5.2
19	38	101	38	50	47	8660	297	910	74	16	1.5	5.2
20	3290	73	38	54	45	5420	375	941	80	13	1.4	5.2
21	9400	43	38	55	43	2730	3910	1010	82	11	1.3	5.0
22	6220	41	41	51	41	1860	4380	875	88	10	1.2	4.6
23	2670	265	34	49	40	2170	1610	807	67	9.9	1.2	4.6
24	1940	393	33	49	38	9490	792	742	52	9.0	1.2	4.6
25	1170	179	30	50	38	8920	660	444	79	8.7	1.1	3.8
26	289	112	31	58	55	3790	555	268	86	8.5	1.1	3.5
27	195	274	30	67	1390	2720	776	6660	56	7.2	1.7	6.2
28	178	373	29	71	2030	5080	627	7840	47	6.5	1.7	7.2
29	144	333	28	76	927	6700	542	3430	343	6.5	1.7	7.2
30	86	241	30	76	---	3480	2520	2570	1400	6.5	1.5	7.2
31	64	---	31	72	---	3050	---	2030	---	6.1	1.3	---
TOTAL	26038	3174	2240	1568	5637	83505	46573	43680	6905	923.9	581.7	355.6
MEAN	840	106	72.3	50.6	194	2694	1552	1409	230	29.8	18.8	11.9
MAX	9400	393	200	76	2030	9490	4950	7840	1400	240	114	80
MIN	14	26	28	33	38	210	297	137	47	6.1	3.6	3.5
AC-FT	51650	6300	4440	3110	11180	165600	92380	86640	13700	1830	1150	705
CAL YR 1983	TOTAL	225332	MEAN	617	MAX	11200	MIN	12	AC-FT	446900		
WTR YR 1984	TOTAL	221181.2	MEAN	604	MAX	9490	MIN	3.5	AC-FT	438700		

ARKANSAS RIVER BASIN

07178050 BIRD CREEK NEAR CATOOSA, OK

LOCATION.--Lat 36°14'21", long 95°50'52", in NW 1/4 SW 1/4 sec.5, T.20 N., R.14 E., Tulsa County, Hydrologic Unit 11070107, at bridge on U.S. Highway 75, approximately 5.5 mi (8.8 km) northwest of Catoosa.

DRAINAGE AREA.--1,080 mi² (2,797 km²).

PERIOD OF RECORD.--Water years 1965 to current year.

REMARKS.--Samples were collected on a monthly basis and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT												
13...	1555	746	80020	600	7.0	19.0	21	7.7	85	140	30	43
NOV												
02...	1400	750	80020	540	7.0	20.0	50	9.0	101	150	37	44
JAN												
19...	1600	756	80020	815	7.7	4.0	9.0	12.5	96	210	54	60
FEB												
22...	1400	742	80020	868	7.4	12.0	--	9.4	90	210	39	62
MAR												
26...	1415	730	80020	270	7.4	11.0	300	9.8	93	83	18	25
APR												
17...	1530	742	80020	520	7.6	16.0	31	8.7	91	170	44	48
MAY												
08...	1520	751	80020	554	7.3	19.0	40	7.8	86	160	48	47
JUN												
11...	1500	746	80020	605	7.2	26.5	31	8.0	102	180	53	51
JUL												
10...	1500	744	80020	610	7.1	29.5	10	6.9	93	180	43	52
AUG												
27...	1430	745	80020	633	7.0	27.0	9.0	7.0	90	160	60	49
SEP												
11...	1450	743	80020	530	7.0	27.5	32	7.2	94	140	29	43

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT											
13...	7.9	46	40	2	7.1	110	21	49	61	316	.43
NOV											
02...	8.6	39	35	1	9.5	109	21	55	51	303	.41
JAN											
19...	14	66	40	2	5.8	154	5.9	62	110	422	.57
FEB											
22...	13	72	42	2	5.5	170	13	67	120	464	.63
MAR											
26...	5.1	16	29	.8	2.6	66	5.1	26	25	164	.22
APR											
17...	11	37	32	1	2.9	121	5.9	43	63	297	.40
MAY											
08...	11	43	36	2	3.4	115	11	40	78	322	.44
JUN											
11...	12	50	37	2	4.8	124	15	57	73	377	.51
JUL											
10...	11	55	39	2	6.5	132	20	56	71	357	.49
AUG											
27...	8.2	57	43	2	8.2	96	19	49	65	331	.45
SEP											
11...	7.0	53	45	2	5.3	107	21	57	62	312	.42

07178620 VERDIGRIS RIVER NEAR INOLA, OK
(National stream-quality accounting network station)

LOCATION.--Lat 36°09'43", long 95°37'07", in NW 1/4 NW 1/4 sec.4, T.9 N., R.16 E., Rogers County, Hydrologic Unit 11070105, at bridge on State Highway 33, 6.0 mi (9.6 km) west of Inola, and at navigation channel mile 36.6 (58.9 km).

DRAINAGE AREA.--7,911 mi² (20,489 km²).

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1971 to September 1976.

WATER TEMPERATURE: December 1971 to September 1976.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV 09...	1145	747	80020	414	7.4	16.0	24	7.2	75	43	--	150
JAN 30...	1245	758	80020	790	7.6	2.5	12	12.6	93	K10	>1000	210
MAR 21...	1510	744	80020	337	7.5	9.0	180	10.8	96	K2500	K4400	120
MAY 10...	1110	744	1028	370	7.6	18.0	40	9.2	100	--	370	150
JUL 31...	1400	746	80020	421	8.9	30.5	24	9.7	133	K1200	660	150
SEP 19...	1240	751	80020	597	8.1	26.0	10	9.7	122	120	200	150
DATE	HARD- NESS, DIS- CAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 09...	39	47	8.5	19	21	.7	3.5	114	8.8	39	28	.30
JAN 30...	63	61	13	43	31	1	3.9	143	6.9	75	70	.30
MAR 21...	30	35	7.0	16	23	.7	2.6	87	5.3	38	26	.20
MAY 10...	37	46	8.1	16	19	.6	2.4	112	5.4	38	24	.20
JUL 31...	42	47	8.7	24	25	.9	4.1	111	.3	46	28	.30
SEP 19...	35	47	8.0	34	32	1	5.0	116	1.8	52	48	.50
DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
NOV 09...	3.0	218	220	.30	.60	.140	.18	.40	.210	.64	.160	.130
JAN 30...	4.4	368	360	.50	.75	2.00	2.6	2.8	.810	2.5	.720	.700
MAR 21...	4.8	188	180	.26	<.10	.130	.17	1.2	.190	.58	.020	<.010
MAY 10...	7.4	222	210	.30	.77	.040	.05	1.2	.130	.40	.060	.040
JUL 31...	6.8	250	230	.34	.66	.070	.09	1.1	.580	--	.470	.400
SEP 19...	4.6	301	270	.41	2.1	.030	.04	1.0	1.10	--	1.00	.880

ARKANSAS RIVER BASIN

07178620 VERDIGRIS RIVER NEAR INOLA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
NOV 09...	.40	1	79	<.5	<1	<1	<3	5	18	<1	11
JAN 30...	2.1	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	<1	56	<.5	<1	<1	<3	6	120	<1	5
MAY 10...	.12	<1	68	1.3	<1	<1	<3	6	74	4	10
JUL 31...	1.2	--	--	--	--	--	--	--	--	--	--
SEP 19...	2.7	3	70	2.0	<1	<1	<3	5	5	3	15

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 09...	4	<.1	<10	4	1	<1	380	<6	4	45	89
JAN 30...	--	--	--	--	--	--	--	--	--	26	97
MAR 21...	36	<.1	<10	1	<1	<1	290	<6	10	458	95
MAY 10...	32	<.1	<10	3	<1	<1	360	<6	10	96	95
JUL 31...	--	--	--	--	--	--	--	--	--	110	66
SEP 19...	1	<.1	<10	3	<1	<1	340	<6	4	20	75

07185000 NEOSHO RIVER NEAR COMMERCE, OK

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, Hydrologic Unit 11070206, on downstream side of left pier of county road bridge, 1.3 mi (2.1 km) upstream from Mud Creek, 2.2 mi (3.5 km) downstream from Four Mile Creek, 4.5 mi (7.2 km) west of Commerce, and at mile 153.4 (246.8 km).

DRAINAGE AREA.--5,876 mi² (15,219 km²).

PERIOD OF RECORD.--June 1939 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 748.97 ft (228.286 m) U.S. Army Corps of Engineers datum.

REMARKS.--Records fair. Flow regulated to some extent since 1963 by John Redmond Reservoir in Kansas, 190 mi (360 km) upstream.

AVERAGE DISCHARGE.--45 years, 3,492 ft³/s (98.89 m³/s), 2,530,000 acre-ft/yr (3.12 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 267,000 ft³/s (7,560 m³/s) July 15, 1951, computed by flood-routing methods from hydrograph defined at Miami, mile 144.2 (232.0 km), by several discharge measurements, gage-height record, and by comparison with computed inflow into Lake O' The Cherokees; maximum gage height, 34.03 ft (10.327 m) July 16, 1951, from floodmark; no flow at times in 1953-54, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20,000 ft³/s (566 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 22	0800	23,500 666	15.98 4.871	Apr. 23	0200	28,100 796	17.86 5.444
Mar. 21	0300	*33,900 960	*19.00 5.791	May 28	0900	25,500 722	16.95 5.166
Mar. 25	0900	22,000 623	15.25 4.648	June 12	0800	23,200 657	15.83 4.825
Apr. 10	0400	28,100 796	17.87 5.447				

Minimum daily discharge 17 ft³/s (0.48 m³/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	88	2150	250	610	6970	14200	16000	1550	3630	370	55
2	32	81	3140	260	700	5250	13400	12000	2290	2890	281	50
3	30	75	3800	270	1000	4590	16200	8610	2240	2640	223	56
4	34	2260	6690	280	1680	16300	16500	12400	2160	2460	187	45
5	40	1400	5580	300	1820	9400	15500	16800	2130	1700	178	34
6	35	662	3850	320	1350	5690	14700	14600	2250	1140	167	31
7	33	450	2750	340	630	3870	13400	10900	2100	763	168	26
8	30	303	1740	360	363	3700	19400	10500	2030	670	161	20
9	30	220	1270	400	277	3420	26300	10100	6580	632	144	17
10	26	171	980	1500	356	3010	27800	10300	17500	609	159	31
11	28	140	777	1400	1530	2410	26700	10300	22800	592	117	57
12	42	118	1040	1200	1750	1780	22600	9820	22300	574	108	46
13	36	106	929	1000	2180	2480	17000	8190	7490	552	117	41
14	28	110	806	750	2290	3620	17700	4270	5690	538	114	36
15	23	174	750	600	1550	2980	13200	3410	8370	525	86	31
16	20	180	680	480	1230	2350	8880	3660	8430	504	75	24
17	23	143	620	390	1080	7230	7980	3740	7660	427	61	19
18	61	118	560	340	926	13200	8320	3400	7000	337	49	18
19	319	182	510	310	718	27200	10000	2100	7320	330	39	18
20	1410	162	460	290	616	32100	11100	1530	6710	311	34	19
21	12800	315	420	280	587	33200	19600	1290	3980	271	30	20
22	22300	249	390	270	550	29900	26600	1050	2780	2390	37	21
23	9030	2860	360	280	518	21300	27000	1030	1930	3670	59	22
24	2380	3160	330	300	486	20600	17100	1420	1510	3500	62	22
25	970	1780	320	320	489	21600	7960	1870	4050	3380	60	23
26	538	952	300	340	930	19300	10500	1850	2910	3210	53	25
27	343	4090	280	370	10300	16000	11400	10500	1730	2200	58	29
28	238	8560	260	410	16600	14900	12100	24500	3570	1500	85	32
29	178	5680	255	460	12700	15400	11700	11000	4200	1000	83	31
30	136	3790	250	510	---	13600	11700	3100	3960	714	74	28
31	108	---	245	560	---	13100	---	1840	---	505	62	---
TOTAL	51336	38579	42492	15140	65816	376450	476540	232080	175220	44164	3501	927
MEAN	1656	1286	1371	488	2270	12140	15880	7486	5841	1425	113	30.9
MAX	22300	8560	6690	1500	16600	33200	27800	24500	22800	3670	370	57
MIN	20	75	245	250	277	1780	7960	1030	1510	271	30	17
AC-FT	101800	76520	84280	30030	130500	746700	945200	460300	347500	87600	6940	1840
CAL YR 1983	TOTAL	1661640		MEAN	4552	MAX	39400	MIN	20	AC-FT	3296000	
WTR YR 1984	TOTAL	1522245		MEAN	4159	MAX	33200	MIN	17	AC-FT	3019000	

ARKANSAS RIVER BASIN

07185095 TAR CREEK AT 22ND STREET BRIDGE AT MIAMI, OK

LOCATION.--Lat 36°54'00", long 94°52'05", in NW 1/4 NE 1/4 sec.19, T.28 N., R.23 E., Ottawa County, Hydrologic Unit 11070206, near downstream left abutment of 22nd Street bridge in Miami, 0.5 mi (0.8 km) east of intersection of Main and 22nd Street.

DRAINAGE AREA.--44.7 mi² (115.8 km²).

PERIOD OF RECORD.--January 11, 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 762.23 ft (232.328 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,440 ft³/s (97.4 m³/s) Mar. 4, gage height, 12.91 ft (3.935 m); minimum daily discharge, .07 ft³/s (0.002 m³/s) Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	17	34	150	9.7	16	.59	.20	.45
2				---	14	25	125	9.2	13	.43	.30	.76
3				---	14	63	194	9.0	10	.49	.31	3.3
4				---	13	2610	72	8.2	9.0	.65	.33	1.7
5				---	12	224	43	8.0	7.3	.64	1.5	.95
6				---	11	80	33	9.0	7.3	.64	1.2	.67
7				---	9.8	50	68	9.4	6.7	.52	.30	.64
8				---	9.5	35	287	7.6	6.0	.53	.28	.49
9				---	10	29	183	6.6	4.6	.42	1.0	2.4
10				---	12	25	81	6.0	11	.34	2.5	2.1
11				54	12	22	55	5.1	7.6	.29	.28	1.4
12				28	15	41	162	4.7	5.2	.31	.16	1.7
13				21	13	49	85	4.2	3.5	.31	.13	.32
14				17	11	37	42	3.8	2.9	.30	.10	.32
15				15	10	30	34	12	2.3	.26	.07	.48
16				14	9.2	27	29	13	2.3	.28	.08	.59
17				13	8.9	250	25	8.0	1.8	.41	.14	.53
18				12	12	323	22	6.2	1.3	.48	.20	.78
19				12	13	1090	20	5.6	3.4	.45	.21	.70
20				12	13	144	27	5.8	1.5	.38	.14	.65
21				11	11	64	346	4.7	.95	.38	.21	.59
22				11	10	40	106	3.9	3.3	.34	.40	.69
23				11	9.6	60	48	3.3	1.7	.29	.49	1.2
24				11	8.4	227	30	2.6	1.6	.38	.45	.92
25				13	7.7	91	24	2.2	1.1	.44	.37	.30
26				17	57	81	20	1.7	1.1	.31	.45	.25
27				29	288	98	17	913	1.2	.27	.54	.38
28				29	164	282	14	287	.77	.22	.72	.52
29				24	53	169	13	65	.75	.26	.56	.38
30				21	---	60	12	35	.75	.30	.37	.40
31				19	---	124	---	25	---	.25	.40	---
TOTAL				---	848.1	6484	2367	1494.5	135.92	12.16	14.39	26.56
MEAN				---	29.2	209	78.9	48.2	4.53	.39	.46	.89
MAX				---	288	2610	346	913	16	.65	2.5	3.3
MIN				---	7.7	22	12	1.7	.75	.22	.07	.25

ARKANSAS RIVER BASIN

95

07185100 TAR CREEK AT MIAMI, OK

LOCATION.--Lat 36°52'56", long 94°51'43", in SE 1/4 SE 1/4 sec.30, T.28 N., R.23 E., Ottawa County, Hydrologic Unit 11070206, near right downstream abutment of Central Street bridge in Miami, 0.6 mi (1.0 km) northwest of intersection of I-44 and State Highway 10.

DRAINAGE AREA.--52 mi² (134.7 km²).

PERIOD OF RECORD.--October 1980 to January 10, 1984 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 740.00 ft (225.55 m) National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers' bench mark). Prior to Oct. 1, 1982 datum of gage was 3.85 ft (1.17 m) higher.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,030 ft³/s (85.8 m³/s) Jan. 30, 1982, gage height 14.76 ft (4.499 m) (current datum), maximum gage height, 18.64 ft (5.681 m) April 25, 1983 (backwater from Neosho River); minimum daily discharge, 0.12 ft³/s (0.003 m³/s) Oct. 14, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) Jan. 30, gage height 12.87 ft (3.923 m); minimum daily discharge, 0.70 ft³/s (0.020 m³/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	13	70	3.6								
2	.70	17	58	3.4								
3	.78	16	70	3.3								
4	3.1	215	62	3.1								
5	1.5	79	52	2.9								
6	.86	52	42	2.8								
7	.85	39	34	2.7								
8	.75	31	28	2.6								
9	.72	32	24	2.5								
10	.88	33	20	70								
11	33	27	25	---								
12	18	25	20	---								
13	5.0	23	18	---								
14	2.8	22	15	---								
15	2.1	21	13	---								
16	1.7	18	15	---								
17	13	19	13	---								
18	7.9	21	11	---								
19	28	186	12	---								
20	606	177	10	---								
21	736	81	9.0	---								
22	166	130	8.0	---								
23	69	763	7.0	---								
24	45	230	6.4	---								
25	31	119	5.8	---								
26	25	97	5.4	---								
27	21	583	5.0	---								
28	18	406	4.7	---								
29	15	128	4.3	---								
30	15	84	4.0	---								
31	14	---	3.7	---								
TOTAL	1883.34	3687	675.3	---								
MEAN	60.8	123	21.8	---								
MAX	736	763	70	---								
MIN	.70	13	3.7	---								
AC-FT	3740	7310	1340	---								
CAL YR 1983	TOTAL	22886.65	MEAN	62.7	MAX	1250	MIN	.54	AC-FT	45400		

07188000 SPRING RIVER NEAR QUAPAW, OK

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, Hydrologic Unit 11070207, near center of span on downstream side of pier of county road bridge, 0.1 mi (0.2 km) upstream from Rock Creek, 3.0 mi (4.8 km) southeast of Quapaw, and at mile 13.9 (22.4 km). Records include flow of Rock Creek.

DRAINAGE AREA.--2,510 mi² (6,501 km²), includes that of Rock Creek.

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 746.25 ft (227.457 m) National Geodetic Vertical Datum of 1929. Nonrecording gage on right bank at same datum used May 20 to Nov. 16, 1943.

REMARKS.--Records good. Occasional releases from flood gates at old Riverton Hydroelectric plant, 15 mi (24 km) above station.

AVERAGE DISCHARGE.--45 years, 1,932 ft³/s (54.71 m³/s), 10.45 in/yr (265 m/yr), 1,400,000 acre-ft/yr (1.73 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190,000 ft³/s (5,380 m³/s) May 19, 1943, gage height, 43.4 ft (13.23 m), from floodmark, from rating curve extended above 54,000 ft³/s (1,530 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 5.8 ft³/s (0.16 m³/s) July 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 18,000 ft³/s (510 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 21	0900	27,800 787	18.94 5.773	Mar. 19	1400	*31,300 886	*19.97 6.087
Mar. 4	0800	26,200 742	18.43 5.617	Apr. 22	0100	20,000 566	16.40 4.999

Minimum daily discharge, 184 ft³/s (5.2 m³/s) Oct. 3-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	281	754	2880	870	1340	5500	5610	2570	1250	485	312	230		
2	192	765	2470	850	1230	5390	5400	2420	1050	480	311	234		
3	184	769	2450	830	1180	5870	9960	2320	1070	463	306	233		
4	184	818	5720	807	1140	21700	9560	2370	1020	455	312	240		
5	189	4940	5990	915	1080	23300	6620	2350	962	469	310	243		
6	243	7170	4190	1470	1030	14600	5010	2210	931	462	319	244		
7	260	5330	2510	2150	972	8140	4440	2270	928	455	314	239		
8	256	2100	2260	2300	913	5180	12000	2350	903	465	294	238		
9	249	966	1860	2810	907	4040	15700	2290	861	1260	325	379		
10	246	1050	1870	7100	1060	3610	10800	2030	2380	1060	631	414		
11	378	1060	3970	5490	1550	3300	6860	1880	2690	646	362	454		
12	871	1110	5580	3660	1430	3200	7400	1500	1780	539	330	357		
13	195	1080	4520	2300	1260	3330	8080	1500	928	484	306	312		
14	206	982	2930	1980	1120	3230	5620	1490	967	458	297	245		
15	266	885	2150	1790	1020	2950	4250	1490	862	441	288	235		
16	268	825	2010	1650	956	2970	3860	1470	796	442	277	218		
17	406	763	1680	1540	915	10400	3390	1370	758	462	273	215		
18	3090	740	1480	1470	909	15100	3110	1310	746	442	267	219		
19	2050	1520	1360	1380	955	29100	2990	1260	766	422	266	218		
20	9130	2310	1300	1300	957	28700	3750	1250	907	411	252	219		
21	26800	2710	1250	1220	909	19800	15400	1260	1510	405	245	219		
22	22500	1980	1200	1170	850	8290	19600	1240	1810	392	259	210		
23	11600	8530	1160	1100	794	5320	13100	1210	1180	383	266	218		
24	7100	9350	1120	1070	752	6650	7020	1160	961	377	261	221		
25	2670	6060	1080	1050	729	6730	4780	1120	913	375	248	213		
26	1650	3590	1040	1160	979	5730	4060	1080	812	373	241	211		
27	1560	6290	1000	1580	7150	5860	3430	1520	726	256	244	217		
28	1340	11900	980	1690	9400	7580	3240	2070	667	290	255	234		
29	1190	7100	950	1660	6880	9860	2810	1780	475	330	259	239		
30	1080	4600	920	1600	---	7820	2680	1460	407	325	254	234		
31	1000	---	900	1490	---	5820	---	1390	---	319	242	---		
TOTAL	97634	98047	70780	57452	50367	289070	210530	52990	32016	14626	9126	7602		
MEAN	3149	3268	2283	1853	1737	9325	7018	1709	1067	472	294	253		
MAX	26800	11900	5990	7100	9400	29100	19600	2570	2690	1260	631	454		
MIN	184	740	900	807	729	2950	2680	1080	407	256	241	210		
CFSM	1.25	1.30	.91	.74	.69	3.72	2.80	.68	.43	.19	.12	.10		
IN.	1.45	1.45	1.05	.85	.75	4.28	3.12	.79	.47	.22	.14	.11		
AC-FT	193700	194500	140400	114000	99900	573400	417600	105100	63500	29010	18100	15080		
CAL YR 1983	TOTAL	1040499	MEAN	2851	MAX	30900	MIN	184	CFSM	1.14	IN.	15.42	AC-FT	2064000
WTR YR 1984	TOTAL	990240	MEAN	2706	MAX	29100	MIN	184	CFSM	1.08	IN.	14.68	AC-FT	1964000

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, Hydrologic Unit 11070208, on downstream side of second pier from right bank of bridge on State Highway 43, 0.8 mi (1.3 km) downstream from Blackfoot Branch, 2.8 mi (4.5 km) upstream from Buffalo Creek, 3.0 mi (4.8 km) southeast of Tiff City, and at mile 15.8 (25.4 km).

DRAINAGE AREA.--872 mi² (2,258 km²).

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 927: 1940. WSP 1117: Drainage area.

GAGE.--Water stage recorder. Datum of gage is 750.61 ft (228.786 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Sept. 6, 1960 to Aug. 25, 1961, at site 100 ft (30.5 m) downstream.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--45 years, 767 ft³/s (21.72 m³/s), 11.94 in/yr (303 mm/yr), 555,700 acre-ft/yr (685 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft³/s (3,880 m³/s) Apr 19, 1941, gage height, 28.4 ft (8.66 m), from floodmark, from rating curve extended above 60,000 ft³/s (1,700 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 5.1 ft³/s (0.14 m³/s), Sept. 5, 6, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 5	0230	9,030 256	11.21 3.417	Mar. 19	2400	*10,500 297	*12.14 3.700

Minimum daily discharge, 46 ft³/s (1.30 m³/s) Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	125	145	547	182	210	1140	2660	855	966	169	101	65		
2	129	144	474	179	209	1080	2390	793	819	160	101	61		
3	122	140	432	177	206	1140	3950	770	717	155	103	63		
4	129	148	405	174	206	2760	4350	716	638	152	104	65		
5	129	190	393	170	201	6750	3240	681	580	149	104	65		
6	123	226	384	168	197	3610	2540	663	547	148	118	64		
7	115	225	370	184	193	2500	2080	646	507	144	125	60		
8	106	208	352	204	190	1870	2100	850	469	147	112	58		
9	95	196	332	223	190	1500	4110	802	439	182	109	67		
10	81	190	315	254	190	1270	4570	754	412	177	113	70		
11	77	190	301	287	190	1100	3470	694	390	161	108	74		
12	88	189	289	312	190	963	2790	640	364	158	106	71		
13	90	181	275	321	190	894	2360	604	340	154	98	65		
14	91	176	266	311	190	813	1990	566	321	149	99	60		
15	86	169	256	292	183	750	1780	558	305	141	97	57		
16	81	163	245	275	182	716	1590	560	289	138	90	55		
17	86	155	233	260	183	821	1420	533	272	135	84	50		
18	98	150	222	249	181	1220	1280	505	261	131	81	48		
19	140	194	214	242	178	7780	1160	495	254	127	77	47		
20	276	329	208	236	178	7260	1100	473	264	125	73	46		
21	396	353	203	232	176	3850	1740	517	259	125	69	47		
22	379	322	200	229	173	2660	3160	490	265	125	73	49		
23	329	318	199	226	171	2020	2430	460	253	121	78	54		
24	279	314	198	221	171	1950	1930	430	239	116	77	64		
25	242	337	197	218	167	2060	1630	408	224	113	76	74		
26	213	352	195	218	198	1930	1420	401	210	114	72	87		
27	202	414	192	218	709	1770	1260	550	204	113	71	131		
28	185	589	190	218	1640	2950	1120	2010	196	113	77	144		
29	171	768	189	217	1340	7610	1010	2000	187	113	81	144		
30	161	661	188	214	---	4760	929	1450	179	112	73	128		
31	152	---	186	213	---	3280	---	1180	---	107	69	---		
TOTAL	4976	8136	8650	7124	8582	80777	67559	23054	11370	4274	2819	2133		
MEAN	161	271	279	230	296	2606	2252	744	379	138	90.9	71.1		
MAX	396	768	547	321	1640	7780	4570	2010	966	182	125	144		
MIN	77	140	186	168	167	716	929	401	179	107	69	46		
CFSM	.18	.31	.32	.26	.34	2.99	2.58	.85	.43	.16	.10	.08		
IN.	.21	.35	.37	.30	.37	3.45	2.88	.98	.49	.18	.12	.09		
AC-FT	9870	16140	17160	14130	17020	160200	134000	45730	22550	8480	5590	4230		
CAL YR 1983	TOTAL	248849	MEAN	682	MAX	27300	MIN	51	CFSM	.78	IN.	10.62	AC-FT	493600
WTR YR 1984	TOTAL	229454	MEAN	627	MAX	7780	MIN	46	CFSM	.72	IN.	9.79	AC-FT	455100

07190000 LAKE O' THE CHEROKEES AT LANGLEY, OK

LOCATION.--Lat 36°25'17", long 95°02'19", in SW 1/4 sec.14, T.23 N., R.21 E., Mayes County, Hydrologic Unit 11070209, on upstream side of pier at intake structure near right end of Pensacola Dam on Neosho River at Langley, 9.9 mi (15.9 km) upstream from Big Cabin Creek, and at mile 77.0 (123.9 km).

DRAINAGE AREA.--10,296 mi² (26,672 km²).

PERIOD OF RECORD.--March 1940 to current year. Prior to October 1940, published as Grand Lake at Langley.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.10 ft (0.335 m), U.S. Army Corps of Engineers datum. Prior to Nov. 14, 1941, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by multiple-arch concrete dam, with top of taintor-type spillway gates at gage height 755.0 ft (230.12 m). Storage began Mar. 21, 1940; power-pool was first filled Apr. 19, 1941. Capacity between gage heights 682.0 ft (207.67 m), sill of powerhouse penstock, and 745.0 ft (227.06 m), maximum power pool is 1,492,000 acre-ft (1.84 km³). Capacity between gage heights 745.0 ft (227.06 m), and 755.0 ft (230.12 m) is 525,000 acre-ft (647 hm³) and is reserved for flood control. Dead storage below gage height 682.0 ft (207.67 m) is 180,200 acre-ft (222 hm³). Figures given herein represent total contents. Reservoir is utilized for power development and flood control.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,213,000 acre-ft (2.73 km³), May 25, 1957, gage height, 755.27 ft (230.206 m), minimum since power-pool was first filled, 642,900 acre-ft (793 hm³) Sept. 28, 1954, gage height, 713.41 ft (217.447 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,884,000 acre-ft (2.32 km³), Mar. 22, gage height, 749.35 ft (226.402 m); minimum, 1,329,000 acre-ft (1.64 km³) Oct. 14, 16, gage height, 736.92 ft (224.613 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

737	1,332,000	744	1,626,000
739	1,411,000	747	1,767,000
741	1,494,000	751	1,970,000

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1333000	1574000	1624000	1462000	1539000	1637000	1843000	1716000	1677000	1658000	1638000	1566000
2	1332000	1574000	1614000	1462000	1541000	1640000	1836000	1712000	1662000	1657000	1638000	1569000
3	1332000	1572000	1604000	1462000	1542000	1644000	1836000	1697000	1647000	1655000	1637000	1569000
4	1335000	1574000	1607000	1464000	1546000	1729000	1833000	1690000	1638000	1660000	1633000	1568000
5	1335000	1577000	1608000	1465000	1548000	1781000	1819000	1693000	1637000	1662000	1634000	1566000
6	1334000	1584000	1604000	1468000	1549000	1791000	1802000	1693000	1637000	1658000	1626000	1560000
7	1334000	1589000	1593000	1472000	1548000	1783000	1785000	1688000	1632000	1658000	1617000	1557000
8	1334000	1582000	1580000	1473000	1550000	1759000	1793000	1684000	1627000	1653000	1613000	1557000
9	1334000	1571000	1568000	1485000	1550000	1737000	1818000	1685000	1619000	1648000	1616000	1556000
10	1334000	1574000	1566000	1502000	1550000	1723000	1822000	1687000	1633000	1644000	1618000	1550000
11	1339000	1574000	1569000	1517000	1553000	1715000	1815000	1689000	1658000	1647000	1617000	1547000
12	1336000	1571000	1571000	1523000	1559000	1707000	1807000	1690000	1681000	1646000	1615000	1542000
13	1335000	1572000	1572000	1528000	1561000	1697000	1794000	1689000	1680000	1641000	1612000	1538000
14	1331000	1572000	1566000	1528000	1563000	1687000	1790000	1680000	1669000	1634000	1610000	1540000
15	1330000	1571000	1566000	1530000	1563000	1683000	1776000	1673000	1664000	1632000	1608000	1534000
16	1330000	1569000	1566000	1530000	1559000	1676000	1759000	1663000	1658000	1634000	1606000	1533000
17	1332000	1567000	1569000	1529000	1559000	1691000	1750000	1652000	1650000	1634000	1602000	1530000
18	1336000	1565000	1561000	1525000	1556000	1743000	1739000	1644000	1655000	1633000	1598000	1529000
19	1344000	1570000	1550000	1525000	1556000	1819000	1731000	1640000	1661000	1632000	1598000	1529000
20	1375000	1574000	1542000	1525000	1555000	1863000	1738000	1638000	1660000	1631000	1595000	1529000
21	1455000	1574000	1532000	1525000	1554000	1883000	1764000	1639000	1660000	1623000	1591000	1528000
22	1542000	1581000	1524000	1516000	1551000	1878000	1791000	1642000	1658000	1622000	1592000	1529000
23	1580000	1590000	1515000	1518000	1550000	1843000	1802000	1643000	1655000	1623000	1590000	1530000
24	1567000	1600000	1496000	1520000	1547000	1825000	1786000	1639000	1651000	1627000	1588000	1521000
25	1583000	1600000	1488000	1522000	1547000	1833000	1759000	1643000	1650000	1632000	1587000	1524000
26	1578000	1594000	1463000	1524000	1556000	1834000	1749000	1646000	1650000	1639000	1582000	1521000
27	1579000	1599000	1462000	1525000	1569000	1834000	1745000	1669000	1651000	1640000	1585000	1522000
28	1576000	1627000	1475000	1528000	1604000	1844000	1738000	1709000	1655000	1641000	1576000	1520000
29	1576000	1638000	1467000	1530000	1629000	1859000	1727000	1721000	1655000	1641000	1569000	1518000
30	1576000	1636000	1460000	1534000	---	1861000	1720000	1710000	1659000	1637000	1569000	1516000
31	1575000	---	1461000	1537000	---	1851000	---	1693000	---	1637000	1568000	---
MAX	1567000	1638000	1624000	1537000	1629000	1883000	1843000	1721000	1681000	1662000	1638000	1569000
MIN	1330000	1565000	1460000	1462000	1539000	1637000	1720000	1638000	1619000	1622000	1568000	1516000
(+)	742.86	744.21	740.21	742.00	744.07	746.69	746.02	745.44	744.71	744.23	742.70	741.50
(++)	+241,000	+61,000	-175,000	+76,000	+92,000	+222,000	-131,000	-27,000	-34,000	-22,000	-69,000	-52,000

CAL YR 1983 MAX 1957000 MIN 1330000 (++) -135,000
WTR YR 1984 MAX 1883000 MIN 1330000 (++) +162,000

(+) GAGE HEIGHT, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07190500 NEOSHO RIVER NEAR LANGLEY, OK

LOCATION.--Lat 36°26'15", long 95°02'44", in SE 1/4 sec.27, T.23 N., R.21 E., Mayes County, Hydrologic Unit 11070209, in concrete stilling well on left bank, 0.5 mi (0.8 km) upstream from bridge on State Highway 82, 1.5 mi (2.4 km) south of Langley, 3.6 mi (5.8 km) downstream from Pensacola Dam, 6.3 mi (10.1 km) upstream from Big Cabin Creek, and at mile 73.4 (118.1 km).

DRAINAGE AREA.--10,335 mi² (26,768 km²).

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 607.65 ft (185.212 m), U.S. Army Corps of Engineers datum. Prior to Feb. 16, 1940, nonrecording gage at site 0.1 mi (0.2 km) upstream at same datum. Feb. 10, 1954, to Sept. 30, 1963, water-stage recorder at site 0.5 mi (0.8 km) downstream at same datum. Auxiliary water-stage recorders at sites 2.0 and 3.0 mi (3.2 and 4.8 km) upstream at same datum.

REMARKS.--Records fair. Low flow values of 25 ft³/s (0.71 m³/s) consist of estimated base flow (since July 1964). Flow regulated since 1940 by Lake O' The Cherokees (station 07190000).

AVERAGE DISCHARGE.--45 years, 6,875 ft³/s (194.7 m³/s), 4,981,000 acre-ft/yr (6.14 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300,000 ft³/s (8,500 m³/s) May 20, 1943, gage height, 45.5 ft (13.87 m), from floodmarks, from computation of outflow from Lake O' The Cherokees; minimum daily, 9 ft³/s (0.25 m³/s), Mar. 25, 1940 (caused by closure of Pensacola Dam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47,600 ft³/s (1,350 m³/s) Mar. 22, gage height, 22.00 ft (6.706 m); minimum daily discharge, 25 ft³/s (0.71 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	567	1600	11500	872	1520	12300	26000	20000	12500	3770	38	430
2	199	968	11700	1220	1710	12200	25800	19900	12400	3460	599	27
3	462	1310	11800	1060	1970	12300	28300	19400	12000	4060	48	25
4	292	3750	11800	947	1020	12500	32200	18800	9270	572	2380	232
5	26	4570	11700	1480	2090	16300	31400	18800	3640	1830	89	1220
6	369	4510	11800	1170	3100	21600	30500	18900	4240	5010	4090	970
7	107	3620	11800	1230	1860	21500	29300	17400	3720	1310	4720	1160
8	231	5230	11600	2520	761	20700	29400	15400	7260	2890	2530	1310
9	361	6130	10800	1540	2440	19800	34600	13200	11300	3500	26	805
10	26	1260	4470	1180	1490	13900	41100	12400	11800	2400	139	3850
11	454	1380	4020	2350	1260	12500	40300	12400	12300	1880	441	1210
12	801	936	5790	2500	905	12400	39000	12500	12400	1450	566	2780
13	618	111	7200	1840	2620	12400	33000	12500	12400	2770	1060	2120
14	1170	474	8160	3800	2660	12400	27000	11400	12400	3620	966	1550
15	496	689	4500	2310	3800	12400	26500	12000	12400	2600	967	240
16	326	1430	3240	4840	3890	12400	22500	11700	12400	131	1010	25
17	602	575	2800	5200	2930	12400	18100	11200	12300	1270	1700	1350
18	117	434	7090	3140	2910	12500	17800	9990	8120	660	1570	26
19	765	685	8560	4970	1900	25000	18200	6410	6160	442	1060	46
20	587	1350	6090	4760	3270	43800	18200	6400	7360	729	874	318
21	3250	1640	6780	3790	3000	46700	25600	3250	8090	4100	1260	26
22	3610	1530	7230	1870	2870	47000	37800	2890	5640	3120	1190	25
23	6750	7920	6460	1500	2580	45100	39000	2930	5430	3740	952	25
24	8470	9380	10200	1350	2850	32600	38600	2840	4660	946	249	3960
25	6660	9500	6670	1480	1880	25800	27600	3200	5390	1340	296	45
26	5240	9940	5190	1390	2730	26500	20900	1920	2880	436	1750	62
27	1760	9960	2980	3710	9790	26700	20900	8920	2660	1820	33	443
28	3860	10200	5480	2210	12300	26800	20800	12600	4030	709	3940	310
29	1830	11800	6410	1810	12300	26500	20300	12600	3430	552	3300	951
30	1270	11900	5250	2010	---	26600	20100	12600	2780	2700	1010	785
31	1680	---	1720	1940	---	26100	---	12600	---	39	50	---
TOTAL	52956	124782	230790	71989	94406	687700	840800	357050	241360	63856	38903	26326
MEAN	1708	4159	7445	2322	3255	22180	28030	11520	8045	2060	1255	878
MAX	8470	11900	11800	5200	12300	47000	41100	20000	12500	5010	4720	3960
MIN	26	111	1720	872	761	12200	17800	1920	2660	39	26	25
AC-FT	105000	247500	457800	142800	187300	1364000	1668000	708200	478700	126700	77160	52220
CAL YR 1983	TOTAL	3307612		MEAN	9062	MAX	64100	MIN	26	AC-FT	6561000	
WTR YR 1984	TOTAL	2830918		MEAN	7735	MAX	47000	MIN	25	AC-FT	5615000	

07191000 BIG CABIN CREEK NEAR BIG CABIN, OK

LOCATION.--Lat 36°34'06", long 95°09'07", in NE 1/4 NE 1/4 sec.15, T.24 N., R.20 E., Craig County, Hydrologic Unit 11070209, near downstream side of right bank end of county road bridge, 4.9 mi (7.9 km) northeast of Big Cabin, 0.9 mi (1.5 km) downstream from White Oak Creek, 6.8 mi (10.9 km) upstream from Mustang Creek, and at mile 13.0 (20.9 km).

DRAINAGE AREA.--450 mi² (1,165 km²).

PERIOD OF RECORD.--October 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft (189.586 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1972, water-stage recorder at site 4.5 mi (7.2 km) downstream at same datum and present site used as supplemental gage.

REMARKS.--Records good. Low flow sustained by sewage from city of Vinita.

AVERAGE DISCHARGE.--37 years, 310 ft³/s (8.779 m³/s), 9.03 in/yr (229 mm/yr), 224,600 acre-ft/yr (277 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Oct. 3, 1959, gage height, 34.55 ft (10.531 m), at former site; maximum gage height, 44.58 ft (13.588 m) Nov. 4, 1974; minimum, 0.10 ft³/s (0.003 m³/s) at times in 1954, 1956 and 1963.

EXTREMES FOR OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1943, reached a stage of 34.96 ft (10.656 m) at former site, discharge, 63,000 ft³/s (1,780 m³/s), by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 5	0330	*9,550 270	*31.53 9.610	Mar. 19	1145	9,450 268	31.43 9.580

Minimum daily discharge, 0.63 ft³/s (0.18 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	16	217	17	111	319	2200	120	132	3.9	1.6	1.0
2	.66	14	159	21	95	237	1000	91	98	3.2	1.5	1.0
3	.63	13	148	27	91	184	1900	81	78	2.8	1.5	1.3
4	.72	13	357	45	86	6080	736	74	65	2.7	1.5	1.3
5	1.0	11	318	127	75	5820	445	69	57	2.6	64	1.3
6	1.3	16	191	257	64	630	331	68	53	4.0	45	1.1
7	1.2	19	134	222	55	397	313	73	53	4.6	17	1.0
8	1.1	16	106	156	49	287	2770	69	53	4.6	7.5	.94
9	1.1	13	93	367	47	217	1510	57	46	3.7	4.6	1.1
10	1.1	14	84	2770	55	176	757	49	52	3.3	4.0	1.1
11	1.5	12	82	507	80	151	558	43	48	2.7	6.2	1.0
12	7.5	9.9	102	290	89	274	1110	36	69	2.5	12	.97
13	2.2	9.5	108	150	92	791	870	31	56	2.5	5.6	.90
14	1.0	9.2	99	100	78	391	362	26	43	2.4	3.0	.90
15	.85	11	100	84	64	268	256	75	33	2.0	1.8	.81
16	.81	13	89	70	56	438	217	130	25	1.5	1.4	.80
17	1.2	15	71	62	51	2490	176	103	21	1.5	1.1	.80
18	4.4	12	58	55	55	1880	146	66	19	1.4	1.0	.78
19	4.9	29	45	50	86	8500	126	48	248	1.2	.97	.78
20	1910	105	40	47	88	2390	127	37	172	1.4	.93	.80
21	5210	63	34	45	68	685	2590	31	70	1.5	.88	.80
22	929	44	26	43	57	428	863	27	37	1.1	1.0	.80
23	272	2160	20	48	52	417	364	21	19	.95	1.2	.80
24	146	951	15	60	47	3260	243	17	19	.93	1.2	.80
25	93	320	13	82	42	1160	175	15	16	.93	1.1	.80
26	67	175	12	127	301	716	133	12	9.8	1.1	1.0	.80
27	51	3540	12	337	3310	880	259	1040	7.4	2.0	1.0	.81
28	39	3010	12	332	1410	5530	121	6290	6.1	1.8	1.2	.89
29	30	596	12	261	518	2530	103	1970	4.9	2.0	1.2	.93
30	22	317	13	216	---	715	166	322	4.5	2.0	1.1	.88
31	17	---	15	148	---	907	---	192	---	1.8	1.1	---
TOTAL	8819.83	11546.6	2785	7123	7272	49148	20927	11283	1614.7	70.61	194.18	27.99
MEAN	285	385	89.8	230	251	1585	698	364	53.8	2.28	6.26	.93
MAX	5210	3540	357	2770	3310	8500	2770	6290	248	4.6	64	1.3
MIN	.63	9.2	12	17	42	151	103	12	4.5	.93	.88	.78
CFSM	.63	.86	.20	.51	.56	3.52	1.55	.81	.12	.01	.01	.00
IN.	.73	.95	.23	.59	.60	4.06	1.73	.93	.13	.01	.02	.00
AC-FT	17490	22900	5520	14130	14420	97490	41510	22380	3200	140	385	56

CAL YR 1983	TOTAL	163207.30	MEAN	447	MAX	11200	MIN	.45	CFSM	.99	IN.	13.49	AC-FT	323700
WTR YR 1984	TOTAL	120811.91	MEAN	330	MAX	8500	MTN	.63	CFSM	.73	IN.	9.99	AC-FT	239600

07191220 SPAVINAW CREEK NEAR SYCAMORE, OK

LOCATION.--Lat 36°20'07", long 94°38'24", in NE 1/4 NW 1/4 sec.4, T.21 N., R.25 E., Delaware County, Hydrologic Unit 11070209, on right bank 1.8 mi (2.9 km) upstream from Cherokee Creek, 4.8 mi (7.7 km) northeast of Row, 6.5 mi (10.5 km) southeast of Sycamore, and at mile 35.0 (56.3 km).

DRAINAGE AREA.--133 mi² (344 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WSP 2121: 1965 (M).

GAGE.--Water-stage recorder. Altitude of gage is 875 ft (266.7 m), from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--23 years, 101 ft³/s (2.860 m³/s), 10.31 in/yr (262 mm/yr), 73,170 acre-ft/yr (90.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,800 ft³/s (1,130 m³/s), July 27, 1975, gage height, 22.07 ft (6.727 m); minimum, 1.2 ft³/s (34.0 m³/s) Aug. 9, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, a flood of approximately the same magnitude as the July 27, 1975 flood occurred in the early 1880's.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,280 ft³/s (36.2 m³/s) Mar. 28, gage height, 7.51 ft (2.289 m), no peak above base of 2,500 ft³/s (70.8 m³/s); minimum, 10.0 ft³/s (0.28 m³/s) Oct. 1-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	11	20	41	24	27	133	354	116	161	51	21	17		
2	11	19	44	24	26	126	333	113	135	49	20	17		
3	10	19	46	24	26	128	510	111	117	47	20	17		
4	10	19	45	24	26	256	453	110	104	46	20	16		
5	10	20	44	24	25	417	373	125	96	44	20	16		
6	11	21	42	25	26	344	316	150	91	43	20	15		
7	12	24	41	26	24	274	273	200	87	41	20	15		
8	12	27	41	27	24	214	300	180	82	39	21	15		
9	12	29	40	29	24	173	507	160	79	38	22	15		
10	12	29	39	31	24	145	473	145	75	37	25	16		
11	12	29	38	32	24	126	398	135	72	37	30	15		
12	13	29	37	32	24	116	350	125	69	35	32	15		
13	14	28	35	33	23	107	303	120	67	34	32	15		
14	14	28	34	34	23	101	266	115	65	33	30	15		
15	14	27	33	34	23	95	239	200	63	32	28	15		
16	15	26	32	34	22	91	216	173	62	32	26	15		
17	15	25	32	33	22	91	196	148	60	30	25	15		
18	15	24	30	32	23	127	180	135	59	29	23	15		
19	15	24	29	32	23	630	167	124	58	28	22	14		
20	17	24	29	31	23	608	166	117	58	27	21	14		
21	18	23	28	30	22	427	201	112	98	27	20	14		
22	24	24	27	29	21	335	208	107	84	26	20	14		
23	28	26	27	29	21	307	201	102	78	25	19	14		
24	29	27	26	28	21	317	181	97	72	23	18	15		
25	30	29	26	28	21	346	167	93	69	22	18	16		
26	29	30	26	27	23	315	154	91	65	21	18	17		
27	28	32	25	26	31	277	144	174	62	21	18	18		
28	26	34	24	27	43	715	134	539	58	21	18	22		
29	24	36	24	27	135	905	128	347	56	21	18	26		
30	22	39	24	27	---	573	122	257	53	21	17	29		
31	21	---	24	27	---	431	---	203	---	21	18	---		
TOTAL	534	791	1033	890	820	9250	8013	4924	2355	1001	680	492		
MEAN	17.2	26.4	33.3	28.7	28.3	298	267	159	78.5	32.3	21.9	16.4		
MAX	30	39	46	34	135	905	510	539	161	51	32	29		
MIN	10	19	24	24	21	91	122	91	53	21	17	14		
CFSM	.13	.20	.25	.22	.21	2.24	2.01	1.20	.59	.24	.16	.12		
IN.	.15	.22	.29	.25	.23	2.59	2.24	1.38	.66	.28	.19	.14		
AC-FT	1060	1570	2050	1770	1630	18350	15890	9770	4670	1990	1350	976		
CAL YR 1983	TOTAL	27310.4	MEAN	74.8	MAX	1130	MIN	8.8	CFSM	.56	IN.	7.64	AC-FT	54170
WTR YR 1984	TOTAL	30783	MEAN	84.1	MAX	905	MIN	10	CFSM	.63	IN.	8.61	AC-FT	61060

ARKANSAS RIVER BASIN

07191220 SPAVINAW CREEK NEAR SYCAMORE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1977, January 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT 06...	1210	742	80020	11	340	7.1	19.5	7.8	87	2.4	<10
NOV 16...	1520	746	80020	26	341	7.0	17.0	8.8	93	2.7	20
DEC 14...	1525	729	80020	36	320	7.7	13.0	9.1	90	2.8	13
JAN 24...	1650	737	80020	28	312	7.6	11.0	13.1	123	2.7	<10
FEB 15...	1711	732	80020	22	332	7.7	11.0	11.0	104	2.8	<10
MAR 29...	1210	738	80020	920	212	7.2	11.0	10.3	96	3.6	13
APR 18...	1435	736	80020	179	277	7.6	13.5	11.1	110	3.3	<10
MAY 16...	1337	744	80020	166	248	7.0	15.5	9.5	98	2.5	<10
JUN 13...	1430	740	80020	67	260	7.2	17.5	8.5	92	--	10
JUL 25...	1120	741	80020	21	310	7.3	19.5	7.7	86	--	<10
AUG 29...	1215	735	80020	19	303	7.1	20.0	8.6	98	--	30
SEP 26...	1525	745	80020	17	314	7.1	18.5	9.8	107	--	20

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
OCT 06...	--	--	56	--	7.0	--	--	2.6	133	20
NOV 16...	140	6	53	1.8	7.2	10	.3	2.5	134	26
DEC 14...	130	6	50	1.8	6.7	10	.3	2.1	127	4.9
JAN 24...	130	11	50	1.7	6.7	10	.3	2.0	121	5.9
FEB 15...	140	14	53	1.9	7.5	10	.3	2.1	126	4.9
MAR 29...	88	14	33	1.3	3.8	8	.2	1.9	74	9.0
APR 18...	100	11	38	1.3	4.4	9	.2	1.7	89	4.3
MAY 16...	110	10	43	1.4	4.7	8	.2	1.8	103	20
JUN 13...	120	17	47	1.5	5.2	8	.2	2.0	107	13
JUL 25...	130	8	50	1.8	6.4	9	.3	2.4	125	12
AUG 29...	140	6	52	1.8	6.6	9	.3	2.4	132	20
SEP 26...	140	10	53	1.9	7.2	10	.3	2.5	130	20

ARKANSAS RIVER BASIN

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07191220 SPAVINAW CREEK NEAR SYCAMORE, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 06...	5.7	14	<.10	--	--	--	--	1.8	.60	.030
NOV 16...	6.1	14	<.10	10	170	.24	12	2.1	.60	.040
DEC 14...	6.7	12	<.10	8.8	160	.22	16	2.5	.30	.040
JAN 24...	6.5	13	<.10	7.2	160	.22	12	2.5	.20	.030
FEB 15...	6.7	13	<.10	7.4	170	.23	9.9	2.5	.30	.030
MAR 29...	9.5	6.5	<.10	8.0	110	.15	269	3.3	.30	.040
APR 18...	8.3	7.9	<.10	7.5	120	.17	59	3.0	.30	.030
MAY 16...	8.0	8.0	.10	8.4	140	.19	61	2.3	.20	.030
JUN 13...	7.0	8.5	<.10	9.2	140	.20	26	2.1	.60	.020
JUL 25...	5.7	11	<.10	10	160	.22	9.2	1.6	.50	.030
AUG 29...	5.4	10	<.10	11	170	.23	8.6	1.8	.20	.040
SEP 26...	6.1	12	<.10	11	170	.23	7.6	1.9	.60	.040

ARKANSAS RIVER BASIN

07191400 LAKE HUDSON NEAR LOCUST GROVE, OK

LOCATION.--Lat 36°13'54", long 95°11'36", in SE 4 NW 4 sec.9, T.20 N., R. 20 E., Mayes County, Hydrologic Unit 11070209, at left side of Robert S. Kerr dam on Neosho River, 2.0 mi (3.2 km) northwest of Locust Grove, 3.5 mi (5.6 km) downstream from Salina Creek, and at mile 47.3 (76.1 km).

DRAINAGE AREA.--11,534 mi² (29,873 km²).

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Remote-controlled indicator and non-recording gage. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam and concrete spillway controlled by seventeen 22-foot (6.706 m) taintor gates. Storage began Nov. 12, 1963; power pool first filled June 12, 1964. Capacity, 444,500 acre-ft (548 hm³) at elevation 636.0 ft (193.85 m), top of taintor gages, 200,300 acre-ft (247 hm³) at elevation 619.0 ft (188.67 m) power pool, and 48,630 acre-ft (60.0 hm³) at elevation 599.0 ft (182.58 m), top of spillway crest. Figures given herein represent total contents. Reservoir was designed for flood control and power development.

COOPERATION.--Records furnished by Grand River Dam Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 436,300 acre-ft (538 hm³) Nov. 9, 1974, elevation, 635.56 ft (193.719 m); minimum since power pool first filled, 183,100 acre-ft (226 hm³) Dec. 24, 1967, elevation, 617.38 ft (188.177 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 284,700 acre-ft (351 hm³) Mar. 30, elevation, 625.96 ft (190.793 m); minimum, 195,900 acre-ft (242 hm³) Dec. 14, elevation, 618.60 ft (188.549 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	619.46	205,400	-
Oct. 31.....	619.50	205,800	+400
Nov. 30.....	619.14	201,800	-4,000
Dec. 31.....	619.60	206,900	+5,100
CAL YR 83.....	-	-	-12,400
Jan. 31.....	619.61	207,000	+100
Feb. 29.....	619.26	203,100	-3,900
Mar. 31.....	625.54	279,100	+76,000
Apr. 30.....	619.67	207,700	+71,400
May 31.....	619.36	204,200	-3,500
June 30.....	619.58	206,700	+2,500
July 31.....	619.30	203,600	-3,100
Aug. 31.....	619.26	203,100	-500
Sept. 30.....	619.32	203,800	+700
WTR YR 84.....	-	-	-1,600

07191500 NEOSHO RIVER NEAR CHOUTEAU, OK

LOCATION.--Lat 36°13'45", long 95°10'59", in SE 1/4 NW 1/4 sec.9, T.20 N., R.20 E., Mayes County, Hydrologic Unit 11070209, on left bank, 300 ft (91.4 m) downstream from Robert S. Kerr Dam, 2.2 mi (3.5 km) northwest of Locust Grove, 10 mi (16.1 km) northeast of Chouteau, and at mile 47.2 (75.9 km).

DRAINAGE AREA.--11,534 mi² (29,873 km²).

PERIOD OF RECORD.--October 1937 to September 1950, October 1963 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 554.00 ft (168.859 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 3, 1941, nonrecording gage at bridge on State Highway 33, 8.2 mi (13.2 km) downstream, at datum 17.63 ft (5.374 m) lower. Apr. 3, 1941 to Sept. 30, 1950; Oct. 1963 to Apr. 6, 1964, at site 2.5 mi (4.0 km) downstream at datum 2.17 ft (0.661 m) lower. Supplemental water-stage recorder Oct. 4, 1963, to July 10, 1973, at site 8.2 mi (13.2 km) downstream.

REMARKS.--Records fair. Flow regulated since 1940 by Lake O' The Cherokees (station 07190000), and completely regulated since 1963 by Lake Hudson (station 07191400).

AVERAGE DISCHARGE.--(Since regulation by Lake Hudson), 21 years (water years 1964-84), 7,667 ft³/s (217.1 m³/s), 5,555,000 acre-ft/yr (6.85 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400,000 ft³/s (11,328 m³/s) May 20, 1943, gage height, 45.00 ft (13.716 m), site and datum then in use, from rating curve extended above 140,000 ft³/s (3,965 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 12 ft³/s (0.32 m³/s) Nov. 13, 1963, (caused by closure of Robert S. Kerr Dam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 49,600 ft³/s (1,400 m³/s) Mar. 23, gage height, 20.35 ft (6.203 m); minimum daily discharge, 120 ft³/s (3.40 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	1840	11800	1890	1660	12400	35000	22900	12300	2260	207	264
2	127	2290	11400	1640	2800	9890	35100	18200	12900	4110	200	209
3	128	1380	11700	2020	2850	11800	34100	17300	11000	3830	862	285
4	630	4930	11800	2010	2660	20700	34700	18200	7550	223	207	188
5	1390	4070	14200	1220	2280	23200	35500	19600	6830	3180	201	803
6	174	4110	11600	1140	2400	20300	35700	18700	4400	4240	1940	576
7	132	4420	13400	2930	312	18300	36500	21600	3790	220	7450	624
8	171	8090	10300	3870	3950	24700	37100	12900	7430	4200	261	1140
9	367	5750	10600	1600	1410	23300	36700	15200	12100	1230	1080	1500
10	132	2520	5590	4910	2770	18900	37800	10600	10400	2110	1090	1510
11	134	2650	2300	4650	208	10100	37700	10700	10400	1020	1720	1410
12	3000	3060	8140	1370	3510	17400	40500	12900	11700	1930	199	1800
13	144	324	8850	3960	2960	12500	39200	10600	11700	3300	213	3800
14	756	1890	9360	2780	1200	12400	32200	12400	11800	4740	1600	1710
15	120	2870	965	2770	5620	11800	28700	11200	10700	2030	2340	194
16	599	2870	2040	2650	2630	14500	28500	15100	12200	428	984	186
17	496	1430	894	6090	3990	14700	26300	11000	10700	262	1140	1330
18	1730	483	7810	5240	3370	14900	24700	6980	10800	199	1990	489
19	809	894	8740	2750	3170	28100	24400	7900	5380	199	292	207
20	4970	142	6470	3440	2380	31000	24200	4600	4600	645	2540	186
21	9980	412	9180	3080	3620	37100	26300	7060	8940	5020	1570	603
22	5910	2230	3080	949	3200	43700	27200	318	6350	3310	3080	192
23	6250	12600	4010	2620	3660	47200	33400	3010	4200	1710	971	179
24	6750	10100	6090	1840	2280	39100	41100	5800	5090	599	237	3540
25	6620	11300	4040	1600	1740	31500	33400	923	2970	923	218	202
26	7740	11800	2670	3280	3620	33000	28200	496	2890	2260	2110	677
27	801	13600	2910	4280	14700	31300	26200	16000	5050	1250	248	771
28	4180	13600	5750	1250	14100	27400	23200	19100	4570	1260	3100	293
29	1810	14400	3390	2590	12400	30600	18900	15400	1940	240	3040	350
30	885	13100	3260	2070	---	34000	26100	13600	2660	4090	398	179
31	1590	---	2190	1990	---	35200	---	13600	---	226	1510	---
TOTAL	68651	159155	214529	84479	111450	740990	948600	373887	233340	61244	42998	25397
MEAN	2215	5305	6920	2725	3843	23900	31620	12060	7778	1976	1387	847
MAX	9980	14400	14200	6090	14700	47200	41100	22900	12900	5020	7450	3800
MIN	120	142	894	949	208	9890	18900	318	1940	199	199	179
AC-FT	136200	315700	425500	167600	221100	1470000	1882000	741600	462800	121500	85290	50370
CAL YR 1983	TOTAL	3617720		MEAN	9912	MAX	78800	MIN	109	AC-FT	7176000	
WTR YR 1984	TOTAL	3064720		MEAN	8374	MAX	47200	MIN	120	AC-FT	6079000	

07193000 FORT GIBSON LAKE NEAR FORT GIBSON, OK

LOCATION.--Lat 35°52'16", long 95°13'43", in NW 1/4 NW 1/4 sec.18, T.16 N., R.20 E., Cherokee County, Hydrologic Unit 11070209, in control tower near left end of Fort Gibson Dam on Neosho River, 4.0 mi (6.4 km) north of Fort Gibson, and at mile 7.7 (12.4 km).

DRAINAGE AREA.--12,492 mi² (32,354 km²).

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1970, published as Fort Gibson Reservoir near Fort Gibson.

REVISED RECORDS.--WSP 1731: 1950 (M).

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Jan. 13, 1950, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-gravity and earth-fill dam. Spillway is concrete ogee-type weir controlled by 30, 40 ft (12.2 m) taintor gates; outlet works consists of 10, 5'8" x 7.0' sluice gates. Regulated storage began Sept. 5, 1949; power pool was first maintained in 1953. Capacity, 1,284,000 acre-ft (1,583 hm³) at elevation 582.0 ft (177.39 m), flood control pool, 365,200 acre-ft (450 hm³) at elevation 554.0 ft (166.86 m) (maximum power pool), and 311,300 acre-ft (384 hm³) at elevation 551.0 ft (167.94 m) (minimum power pool). Figures given herein represent total contents. Reservoir was designed for flood control and power development.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,278,000 acre-ft (1.58 km³) May 12, 1961, elevation, 581.88 ft (177.357 m); minimum since first use of power pool, 303,800 acre-ft (375 hm³) May 26, 1955, elevation, 550.56 ft (167.811 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 632,900 acre-ft (780 hm³) Mar. 31, elevation, 565.38 ft (172.328 m); minimum, 339,300 acre-ft (418 hm³) Oct. 3, elevation 552.60 ft (168.432 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

552	328,500	561	516,600
558	447,000	566	650,900

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340400	364300	384500	368000	366200	390100	622900	403300	401500	349700	352500	366000
2	339800	364200	379100	368200	364100	384900	619900	402500	396500	351400	351400	366500
3	340400	363700	377200	365600	360800	379300	614500	400100	385100	352700	351000	366200
4	341800	370700	374300	363900	364100	403700	601900	398900	377900	351200	350300	366000
5	344000	374300	378500	357600	362000	416800	586200	400500	382500	351900	350300	365600
6	344700	379900	374500	357200	355700	408600	571700	402100	377200	355700	349200	362900
7	344300	379100	377200	355100	347400	398500	561300	412400	368200	356800	359900	361000
8	344700	382100	375800	361800	349400	398900	561300	401100	366900	361800	356100	364200
9	344700	385100	374300	358900	346900	411500	563300	399300	370900	359500	357600	366500
10	344500	372000	365200	362700	348100	409400	568300	390100	370500	353400	358600	361800
11	346900	366300	364800	368800	347400	398900	558400	383900	370100	347900	360400	360300
12	350500	366300	367300	362000	352300	403700	552900	384300	370900	344200	359700	355300
13	349900	364400	370100	362400	354800	397500	557100	379500	377600	348700	358000	358200
14	350100	355300	378100	362000	353800	389500	554500	380700	378500	355700	358200	361800
15	350500	355700	368000	364200	358000	381500	543100	376600	378900	359500	360800	361400
16	351200	358200	358900	364800	358400	381500	532600	383100	379300	355100	362200	361000
17	351900	358900	351900	369000	358700	388100	516600	381500	379500	350600	362700	362500
18	354400	357000	356300	370300	364400	398900	495000	370000	379300	346900	365600	362500
19	362400	361800	363300	372600	368600	431700	472800	365000	368600	343300	367100	361800
20	363900	361200	360300	371500	367100	443000	460200	353200	363100	342200	369400	360300
21	379900	357400	368000	368200	368800	454500	466400	351000	365600	350600	369400	359500
22	388900	355700	370100	369000	368000	477200	464800	344000	363100	356300	377800	359900
23	388700	369600	367100	370300	369600	500800	463900	347400	362400	355700	374500	360100
24	382900	370900	368200	373800	366500	525600	479100	356300	364800	353000	373200	364600
25	379300	371800	362000	369200	366900	534100	474500	355700	359700	350300	370000	367100
26	378500	376400	368600	370900	374500	537600	453600	353200	350100	351400	372400	365400
27	363300	388500	361400	372800	397500	547000	434500	388500	350500	353000	371100	362700
28	365000	395500	363900	372400	397700	576800	418000	418000	352300	353400	373200	361400
29	364300	395500	363900	374100	395100	607500	399300	420400	351000	353800	375100	360600
30	364300	391100	363100	372800	---	629400	399700	416600	350500	358900	368400	360600
31	363700	---	366300	372000	---	630600	---	409000	---	355700	367100	---
MAX	388900	395500	384500	374100	397700	630600	622900	420400	401500	361800	377800	367100
MIN	339800	355300	351900	355100	346900	379300	399300	344000	350100	342200	349200	355300
(+)	553.92	555.33	554.06	554.36	555.53	565.30	555.76	556.22	553.22	553.50	554.10	553.76
(++)	+23,100	+27,400	-24,800	+5,700	+23,100	+235,500	-230,900	+9,300	-58,500	+5,200	+11,400	-6,500
CAL YR 1983	MAX	619300	MIN	334600	(++)	-43,300						
WTR YR 1984	MAX	630600	MIN	339800	(++)	+20,000						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE OF CONTENTS, IN ACRES-FOOT

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK

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, Hydrologic Unit 11070209, on left bank 1.1 mi (1.8 km) downstream from Fort Gibson Dam, 3.5 mi (5.6 km) north of Fort Gibson, and at mile 6.6 (10.6 km).

DRAINAGE AREA.--12,495 mi² (32,362 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1970, published as Neosho River below Fort Gibson Reservoir near Fort Gibson.

GAGE.--Water-stage recorder. Datum of gage is 483.75 ft (147.447 m), National Geodetic Vertical Datum of 1929. May 11, 1950, to Aug. 20, 1951, nonrecording gage and Aug. 21, 1951, to June 11, 1952, water-stage recorder, at site 4.4 mi (7.1 km) downstream at datum 8.00 ft (2.428 m) lower and used as auxiliary gage since June 10, 1971.

REMARKS.--Records fair. Flow completely regulated by Fort Gibson Lake (station 07193000).

COOPERATION.--Gage-height record and 5 discharge measurements furnished by U.S. Army Corps of Engineers, records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--34 years, 7,681 ft³/s (217.5 m³/s), 5,565,000 acre-ft/yr (6.86 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 223,000 ft³/s (6,320 m³/s) May 26, 1957, gage height, 37.60 ft (11.460 m), minimum, 12 ft³/s (0.34 m³/s) Oct. 10, 1957, Aug. 23, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1943 reached a stage of 43.0 ft (13.11 m), from highwater profile by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 47,500 ft³/s (1,350 m³/s) Mar. 24, maximum gage height, 18.25 ft (5.563 m) Apr. 12; minimum daily discharge, 15 ft³/s (0.42 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	2180	15700	970	4850	15500	40600	23300	17000	2430	1360	784
2	15	2460	15000	1300	3760	15400	40700	20100	16900	2810	699	253
3	39	1480	13700	3500	4490	15100	40600	20000	16800	2640	595	15
4	15	1690	13700	2700	870	14800	43100	20100	12100	1300	660	15
5	15	1620	13700	4700	3490	21900	46400	20100	5110	2430	571	507
6	15	1500	13600	1400	5400	26900	45700	20100	7440	2110	1810	1270
7	15	4120	12900	3820	4860	25400	45100	20100	7920	800	2220	1240
8	15	5810	11600	779	2710	26600	45200	20200	8050	1000	3250	653
9	15	5960	11600	3750	3430	23100	40400	17700	11300	2390	942	477
10	15	8450	11000	1960	1860	17700	39400	15700	11100	3320	581	3130
11	489	5270	3100	2130	1050	17600	46300	14300	11300	4110	550	2040
12	75	2620	6300	5290	753	17700	46600	13300	11500	3380	644	4120
13	92	2740	7800	3530	1490	17700	41700	13500	8670	476	923	2080
14	34	5360	6100	3350	1700	17600	35800	13600	11500	472	906	15
15	19	2220	6300	1610	3460	17500	35400	13400	11400	711	628	15
16	35	1200	6300	2530	3590	16400	35100	13400	11600	2520	497	15
17	777	1200	4300	3980	3050	14800	35600	13400	11600	2210	606	357
18	401	1170	5500	3980	1800	15000	35200	12600	11600	1940	15	15
19	1730	51	6600	5170	1040	23100	36000	11100	11000	1530	15	699
20	6060	21	7000	4730	3100	31600	34300	10600	7730	786	627	844
21	1460	2310	6400	5190	3130	37700	31100	8800	7700	357	1140	745
22	1830	3520	4800	572	3330	38300	27100	4520	7930	364	1240	15
23	6280	6670	8200	1960	3520	43100	33400	15	4520	1600	15	15
24	9630	10500	8100	24	3490	37800	41100	1090	3590	1840	554	716
25	8390	11000	8100	3880	1950	31700	33400	2520	5210	1770	1540	15
26	8490	11500	100	2300	3840	36300	39300	1690	7860	1550	15	679
27	8450	11700	6600	3100	8570	32300	38500	411	5230	15	1130	2290
28	3290	14400	4600	1780	17700	21700	33700	9610	3040	443	1630	1040
29	1670	16300	5300	1520	15800	22400	30300	16900	3040	15	1400	438
30	1050	16300	5800	2420	---	27400	27800	16900	2590	1290	4170	15
31	1010	---	682	2410	---	37000	---	16800	---	1530	1480	---
TOTAL	61436	161322	250482	86335	118083	757100	1144900	405856	272330	50139	32413	24512
MEAN	1982	5377	8080	2785	4072	24420	38160	13090	9078	1617	1046	817
MAX	9630	16300	15700	5290	17700	43100	46600	23300	17000	4110	4170	4120
MIN	15	21	100	24	753	14800	27100	15	2590	15	15	15
AC-FT	121900	320000	496800	171200	234200	1502000	2271000	805000	540200	99450	64290	48620
CAL YR 1983	TOTAL	3913894		MEAN	10720	MAX	65400	MIN	15	AC-FT	7763000	
WTR YR 1984	TOTAL	3364908		MEAN	9194	MAX	46600	MIN	15	AC-FT	6674000	

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1951 to September 1963, October 1973 to Jan. 1982.

WATER TEMPERATURE: October 1951 to September 1963, October 1973 to Jan. 1982.

REMARKS: Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 496 microsiemens Sept. 7, 1975; minimum daily 188 microsiemens Oct. 18, 1974.

WATER TEMPERATURE: Maximum daily, 31.5°C July 31, Aug. 1, 1955; minimum daily, 0.0°C Jan. 23-25, 1962.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, IN CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 16...	1045	755	80020	1200	314	7.7	14.5	3.7	10.0	99	--
JAN 24...	1245	750	1028	24	320	7.4	3.0	3.3	15.1	114	25
MAR 28...	1325	740	80020	21700	313	7.4	9.0	17	11.1	99	68
MAY 15...	1400	753	1028	13400	297	7.3	19.5	16	8.1	89	K11
JUL 24...	1400	750	80020	1840	270	7.4	28.0	1.8	5.0	65	24
SEP 26...	1100	758	80020	679	315	7.7	20.5	4.4	9.2	103	53

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV 16...	--	130	28	28	39	6.7	9.3	14	.4	3.4
JAN 24...	81	120	25	25	39	6.4	8.4	12	.3	3.5
MAR 28...	600	130	36	36	40	6.2	9.0	13	.4	3.5
MAY 15...	52	110	27	27	36	5.2	6.9	12	.3	2.6
JUL 24...	K1200	120	31	31	38	5.9	7.6	12	.3	2.9
SEP 26...	47	120	30	30	37	6.1	8.7	13	.4	3.3

DATE	ALKA- LITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS C02)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 16...	97	3.7	36	11	.20	1.4	175	170	.24	.19
JAN 24...	99	7.6	37	9.2	.20	5.2	174	170	.24	.49
MAR 28...	90	6.9	46	9.8	.20	6.5	184	180	.25	1.2
MAY 15...	85	8.2	34	7.3	.10	6.5	163	150	.22	1.1
JUL 24...	88	6.8	31	7.4	.10	4.1	152	150	.21	<.10
SEP 26...	88	3.4	31	9.4	.20	4.1	163	150	.22	.29

ARKANSAS RIVER BASIN

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07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 16...	.140	.18	1.0	.060	.18	.030	.030	.09	10	1
JAN 24...	.070	.09	.20	.030	.09	.010	.020	.06	--	--
MAR 28...	.140	.18	.80	.070	.21	.050	.030	.09	50	<1
MAY 15...	.020	.03	.50	.080	.25	.040	.010	.03	40	<1
JUL 24...	.030	.04	.50	.040	--	.010	<.010	--	--	--
SEP 26...	.030	.04	.30	.070	--	.050	.060	.18	10	<1
DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 16...	70	<.5	<1	<1	<3	<1	<3	<1	19	2
JAN 24...	--	--	--	--	--	--	--	--	--	--
MAR 28...	65	<.5	<1	<1	<3	4	44	1	9	3
MAY 15...	59	.6	<1	<1	<3	4	27	6	10	2
JUL 24...	--	--	--	--	--	--	--	--	--	--
SEP 26...	69	<1.0	<1	<1	<3	2	3	1	8	2
DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	<.1	<10	19	1	<1	220	<6	<3	8	61
JAN 24...	--	--	--	--	--	--	--	--	34	16
MAR 28...	<.1	<10	3	<1	<1	180	<6	35	17	89
MAY 15...	<.1	<10	6	<1	<1	160	<6	46	21	96
JUL 24...	--	--	--	--	--	--	--	--	8	70
SEP 26...	<.1	<10	4	<1	<1	200	<6	9	8	63

07195500 ILLINOIS RIVER NEAR WATTS, OK

LOCATION.--Lat 36°07'48", long 94°34'12", in NE 1/4 sec.18, T.19 N., R.26 E., Adair County, Hydrologic Unit 11110103, near right bank on downstream side of pier of bridge on U.S. Highway 59, 1.5 mi (2.4 km) north of Watts, 4.5 mi (7.2 km) downstream from Cincinnati Creek, and at mile 106.2 (170.9 km).

DRAINAGE AREA.--635 mi² (1,645 km²).

PERIOD OF RECORD.--August 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 893.78 ft (272.424 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulations at low flow by Lake Francis Dam, 0.8 mile (1.29 km) above station. Since July 2, 1957, small diversion above station for municipal water supply for city of Siloam Springs, Ark.

AVERAGE DISCHARGE.--29 years, 553 ft³/s (15.66 m³/s), 11.83 in/yr (300 mm/yr), 400,600 acre-ft/yr (494 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 68,000 ft³/s (1,930 m³/s) July 25, 1960, gage height, 25.96 ft (7.913 m), from rating curve extended above 51,000 ft³/s (1,440 m³/s); minimum, 8.6 ft³/s (0.24 m³/s) Oct. 26, 1955, Sept. 19, Oct. 14, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,700 ft³/s (275 m³/s) at 1845 Mar. 19, gage height, 13.73 ft (4.185 m), no other peak above base of 6,500 ft³/s (184 m³/s); minimum daily discharge, 32 ft³/s (0.91 m³/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	66	121	218	144	129	596	1440	428	510	162	77	97		
2	66	120	213	140	128	561	1300	413	445	156	92	90		
3	68	119	227	138	127	562	2580	496	403	151	126	87		
4	73	119	256	135	127	866	1840	624	371	148	122	87		
5	78	120	281	134	126	2240	1410	511	345	145	110	89		
6	87	120	270	135	126	1290	1160	479	339	147	99	91		
7	98	121	252	140	126	936	1020	1280	342	147	89	103		
8	98	121	227	143	126	749	1840	2750	315	151	89	100		
9	94	123	207	142	126	640	4900	1170	300	153	274	94		
10	89	122	202	140	126	555	2520	877	279	145	359	95		
11	90	121	191	140	126	499	1790	726	266	137	243	92		
12	93	121	188	140	126	459	1460	639	256	133	198	91		
13	96	119	186	140	141	447	1250	580	248	129	162	88		
14	108	119	186	138	173	436	1040	536	241	126	140	85		
15	102	120	185	135	204	401	923	522	233	124	121	82		
16	92	119	183	130	197	373	842	606	228	120	114	82		
17	91	119	180	129	185	390	770	569	223	119	108	80		
18	108	119	175	128	181	1120	701	505	208	118	104	79		
19	161	120	170	128	163	6750	649	470	214	80	106	79		
20	193	119	168	127	154	3610	614	496	218	32	110	79		
21	237	122	166	126	146	1920	836	565	258	37	108	85		
22	203	125	165	126	141	1370	1150	579	268	41	105	90		
23	170	132	162	126	139	1130	851	504	244	39	105	112		
24	156	405	161	126	135	3000	742	458	225	44	104	122		
25	149	366	160	126	137	2170	676	414	204	51	99	135		
26	142	273	159	127	139	1540	614	393	194	158	92	195		
27	135	247	158	127	421	1240	569	615	186	125	88	238		
28	129	247	155	128	860	2640	515	1850	183	101	93	192		
29	125	249	152	128	683	4090	492	1130	176	53	98	160		
30	123	235	150	129	---	2140	452	751	170	64	111	137		
31	122	---	147	129	---	1570	---	601	---	73	101	---		
TOTAL	3642	4803	5900	4124	5718	46290	36946	22537	8092	3409	3947	3236		
MEAN	117	160	190	133	197	1493	1232	727	270	110	127	108		
MAX	237	405	281	144	860	6750	4900	2750	510	162	359	238		
MIN	66	119	147	126	126	373	452	393	170	32	77	79		
CFSM	.18	.25	.30	.21	.31	2.35	1.94	1.14	.43	.17	.20	.17		
IN.	.21	.28	.35	.24	.33	2.71	2.16	1.32	.47	.20	.23	.19		
AC-FT	7220	9530	11700	8180	11340	91820	73280	44700	16050	6760	7830	6420		
CAL YR 1983	TOTAL	128625	MEAN	352	MAX	2550	MIN	66	CFSM	.55	IN.	7.54	AC-FT	255100
WTR YR 1984	TOTAL	148644	MEAN	406	MAX	6750	MIN	32	CFSM	.64	IN.	8.71	AC-FT	294800

ARKANSAS RIVER BASIN

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07196000 FLINT CREEK NEAR KANSAS, OK

LOCATION.--Lat 36°11'54", long 94°42'30", in SW 1/4 sec.24, T.20 N., R.24 E., Delaware County, Hydrologic Unit 11110103, at bridge on State Highway 33, 6.0 mi (9.7 km) southeast of Kansas, 6.0 mi (9.7 km) downstream from Sager Creek, and at mile 2.8 (4.5 km).

DRAINAGE AREA.--110 mi² (285 km²).

PERIOD OF RECORD.--August 1955 to September 1976, April 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 854.59 ft (260.479 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversion above station for irrigation.

AVERAGE DISCHARGE.--26 years, (water years 1956-76, 80-84), 108 ft³/s (3.056 m³/s) 13.33 in/yr (339 mm/yr), 78,250 acre-ft/yr (96.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,400 ft³/s (1,260 m³/s) June 8, 1974, gage height, 19.42 ft (5.919 m); minimum daily, 0.6 ft³/s (0.017 m³/s) Oct. 11-13, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,080 ft³/s (30.6 m³/s) Mar. 19, gage height, 7.95 ft (2.423 m), no peaks above base of 2,500 ft³/s (70.8 m³/s); minimum daily discharge, 12 ft³/s (0.34 m³/s) Oct. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	13	18	40	26	18	114	251	77	103	33	18	15	
2	12	18	40	26	18	100	460	76	88	31	20	15	
3	12	18	39	26	18	90	388	77	80	31	21	15	
4	28	18	39	28	18	170	289	73	74	30	21	15	
5	27	18	38	29	18	235	237	74	68	28	20	15	
6	21	17	37	25	18	190	220	75	66	28	20	15	
7	21	17	37	24	18	157	474	108	61	26	20	15	
8	19	17	37	24	18	131	390	105	57	26	21	15	
9	17	16	36	25	19	110	301	96	52	24	39	22	
10	16	17	34	27	19	93	264	90	48	24	39	22	
11	18	18	33	27	20	82	229	89	46	25	33	19	
12	23	18	31	26	20	80	202	79	43	24	26	18	
13	23	18	31	24	18	76	182	77	41	24	22	17	
14	20	18	31	23	19	71	166	76	40	23	20	17	
15	19	18	31	22	20	67	151	80	38	21	18	17	
16	18	18	30	21	20	64	140	76	37	21	18	16	
17	19	18	29	22	20	82	134	73	36	22	17	16	
18	21	18	28	22	19	137	132	70	36	23	16	17	
19	24	19	26	21	18	751	130	66	42	22	15	17	
20	51	21	26	21	17	439	127	69	51	22	15	17	
21	51	21	25	20	17	300	142	76	72	21	15	17	
22	40	21	24	19	17	241	128	72	67	21	16	18	
23	33	22	23	19	17	211	120	65	55	21	18	18	
24	29	24	21	20	17	324	113	60	46	21	17	18	
25	25	23	20	20	18	277	106	57	41	21	16	42	
26	23	22	23	20	33	244	101	57	39	22	16	92	
27	21	33	26	20	113	217	96	112	39	24	16	69	
28	21	47	27	20	136	522	88	304	37	25	17	55	
29	21	48	27	19	129	599	86	189	36	22	17	42	
30	20	44	26	18	---	379	80	147	34	20	16	37	
31	18	---	26	18	---	299	---	125	---	19	15	---	
TOTAL	724	663	941	702	870	6852	5927	2870	1573	745	618	743	
MEAN	23.4	22.1	30.4	22.6	30.0	221	198	92.6	52.4	24.0	19.9	24.8	
MAX	51	48	40	29	136	751	474	304	103	33	39	92	
MIN	12	16	20	18	17	64	80	57	34	19	15	15	
CFSM	.21	.20	.28	.21	.27	2.01	1.80	.84	.48	.22	.18	.23	
IN.	.24	.22	.32	.24	.29	2.32	2.00	.97	.53	.25	.21	.25	
AC-FT	1440	1320	1870	1390	1730	13590	11760	5690	3120	1480	1230	1470	
CAL YR 1983	TOTAL	17871	MEAN	49.0	MAX	403	MIN	11	CFSM	.45	IN.	6.04	AC-
WTR YR 1984	TOTAL	23228	MEAN	63.5	MAX	751	MIN	12	CFSM	.58	IN.	7.86	AC-

LOCATION.--Lat 35°55'17", long 94°55'15", in SE 1/4 sec.26, T.17 N., R.22 E., Cherokee County, Hydrologic Unit 11110103, near center of span on downstream side of pier of bridge, 0.2 mi (0.3 km) downstream from U.S. Highway 62, 2.2 mi (3.5 km) northeast of Tahlequah, 6.5 mi (10.5 km) upstream from Baron Fork, and at mile 55.8 (89.9 km).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s (4,250 m³/s) May 10, 1950, gage height, 27.94 ft (98.516 m), from rating curve extended above 77,000 ft³/s (2,180 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft³/s (0.003 m³/s) Oct. 10-14, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,710 ft³/s (275 m³/s) at 2100 Mar. 20, gage height, 11.91 ft (3.630 m), no other peak above base of 9,000 ft³/s (255 m³/s); minimum daily discharge 71 ft³/s (2.01 m³/s) July 26.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	197	418	222	179	1300	2620	783	1110	228	99	118
2	96	194	408	214	181	1110	2300	739	953	220	107	116
3	93	191	382	206	181	960	2330	1060	817	211	116	114
4	95	186	368	198	179	1070	3580	923	715	204	119	111
5	108	184	372	195	175	1630	3040	1040	642	198	255	107
6	121	182	392	195	174	2950	2380	973	596	191	324	104
7	123	182	400	194	173	2180	1960	978	545	187	198	103
8	124	180	388	194	172	1650	1800	1720	512	186	182	103
9	128	188	368	196	174	1100	2520	2910	484	181	232	124
10	130	188	346	200	174	940	6250	1780	445	177	213	126
11	134	188	325	203	176	850	4690	1400	409	174	352	122
12	142	185	308	206	176	810	3250	1200	378	170	374	118
13	139	183	296	207	174	780	2600	1060	356	163	321	114
14	138	181	291	205	173	769	2100	933	337	155	276	113
15	134	179	285	204	182	763	1750	867	320	148	236	115
16	135	176	280	202	204	758	1550	780	306	144	206	102
17	146	176	275	198	229	809	1450	787	293	142	180	95
18	154	174	268	195	236	972	1250	763	284	138	163	91
19	159	185	263	193	229	2430	1150	693	276	133	151	90
20	202	190	259	193	222	7910	1080	641	274	130	144	88
21	286	186	254	193	212	5830	1070	626	305	119	139	87
22	332	184	250	196	203	3170	1200	685	325	95	140	93
23	357	200	246	194	197	2310	1540	719	353	81	139	96
24	326	202	242	190	191	2110	1310	660	341	75	134	99
25	289	255	240	184	199	3830	1190	591	315	72	130	168
26	264	440	238	183	220	3230	1090	541	293	71	128	261
27	245	478	236	182	345	2420	1010	540	273	74	127	267
28	232	464	234	183	611	2120	926	947	260	112	123	279
29	222	445	232	183	1350	4050	926	2140	249	132	118	268
30	212	434	229	182	---	5580	863	1700	238	127	114	234
31	204	---	226	181	---	3430	---	1310	---	109	115	---
TOTAL	5567	6977	9319	6071	7291	69821	60775	32489	13004	4547	5655	4026
MEAN	180	233	301	196	251	2252	2026	1048	433	147	182	134
MAX	357	478	418	222	1350	7910	6250	2910	1110	228	374	279
MIN	93	174	226	181	172	758	863	540	238	71	99	87
CFSM	.19	.24	.31	.20	.26	2.35	2.11	1.09	.45	.15	.19	.14
IN.	.22	.27	.36	.24	.28	2.71	2.36	1.26	.50	.18	.22	.16
AC-FT	11040	13840										

ARKANSAS RIVER BASIN

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07197000 BARON FORK AT ELDON, OK

LOCATION.--Lat 35°55'16", long 94°50'18", in SE 1/4 sec.27, T.17 N., R.23 E., Cherokee County, Hydrologic Unit 11110103, on downstream side of second pier from left bank of bridge on State Highway 51, 0.4 mi (0.6 km) southeast of Eldon, 6.0 mi (9.7 km) downstream from Tyner Creek, and at mile 8.8 (14.2 km).

DRAINAGE AREA.--307 mi² (795 km²).

PERIOD OF RECORD.--October 1948 to current year. Prior to October 1970 published as Barren Fork at Eldon.

GAGE.--Water-stage recorder. Datum of gage is 701.14 ft (213.707 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 14, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--36 years, 280 ft³/s (7.930 m³/s), 12.38 in/yr (314 mm), 202,900 acre-ft/yr (250 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,600 ft³/s (1,060 m³/s) Apr. 3, 1957, gage height, 20.33 ft (6.197 m), maximum gage height, 22.73 ft (6.928 m), Apr. 20, 1976; minimum, 1.7 ft³/s (0.048 m³/s) Oct. 25, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1945, reached a stage of 23.8 ft (7.25 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,430 ft³/s (154 m³/s), at 0900 Mar. 21, gage height, 11.30 ft (3.444 m), no peak above base of 6,000 ft³/s (170 m³/s); minimum daily discharge, 7.8 ft³/s (0.22 m³/s), Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	9.0	25	118	39	40	366	732	235	325	39	18	21		
2	8.7	25	103	37	39	321	666	226	284	36	19	20		
3	8.3	23	100	37	39	297	1080	272	251	32	24	19		
4	7.9	23	99	37	38	272	863	269	224	30	33	18		
5	7.8	23	111	38	37	401	714	251	201	31	51	16		
6	7.9	22	125	40	37	851	608	255	192	29	49	15		
7	8.4	22	123	43	36	583	537	892	197	29	37	14		
8	8.5	22	113	47	36	448	903	1650	189	31	63	14		
9	8.8	25	101	49	36	365	2580	772	169	31	103	20		
10	8.6	27	94	50	36	309	1490	574	151	29	367	20		
11	9.4	28	87	50	36	265	1120	469	137	29	343	20		
12	20	28	82	50	39	231	813	402	125	27	234	19		
13	14	28	76	50	145	213	696	353	113	27	179	18		
14	11	28	75	50	140	205	602	318	102	25	141	16		
15	10	28	77	50	117	207	531	293	94	25	112	16		
16	9.5	27	79	50	98	191	478	263	89	23	94	15		
17	19	26	78	48	89	192	430	239	81	25	81	15		
18	21	26	74	47	82	272	390	218	74	23	70	14		
19	36	27	69	45	73	393	360	200	72	23	62	14		
20	54	30	67	43	67	1740	337	198	68	21	57	14		
21	50	39	63	42	64	3400	391	197	66	21	53	14		
22	45	44	59	40	59	1600	489	189	64	19	52	15		
23	42	65	56	39	55	1170	407	182	62	19	52	16		
24	38	300	53	37	53	771	363	170	57	18	49	18		
25	35	215	50	36	50	695	335	155	52	17	44	28		
26	32	153	48	35	49	1610	314	205	50	16	38	70		
27	30	130	46	36	93	1240	302	735	49	18	35	66		
28	29	120	45	37	559	1010	280	1320	46	19	33	57		
29	28	126	42	38	456	960	264	752	44	19	31	50		
30	28	135	41	39	---	1310	250	496	42	19	27	46		
31	26	---	39	39	---	894	---	388	---	17	24	---		
TOTAL	670.8	1840	2393	1318	2698	22782	19325	13138	3670	767	2575	718		
MEAN	21.6	61.3	77.2	42.5	93.0	735	644	424	122	24.7	83.1	23.9		
MAX	54	300	125	50	559	3400	2580	1650	325	39	367	70		
MIN	7.8	22	39	35	36	191	250	155	42	16	18	14		
CFSM	.07	.20	.25	.14	.30	2.39	2.10	1.38	.40	.08	.27	.08		
IN.	.08	.22	.29	.16	.33	2.76	2.34	1.59	.44	.09	.31	.09		
AC-FT	1330	3650	4750	2610	5350	45190	38330	26060	7280	1520	5110	1420		
CAL YR 1983	TOTAL	67045.2	MEAN	184	MAX	2810	MIN	7.3	CFSM	.60	IN.	8.12	AC-FT	133000
WTR YR 1984	TOTAL	71894.8	MEAN	196	MAX	3400	MIN	7.8	CFSM	.64	IN.	8.71	AC-FT	142600

07197500 TENKILLER FERRY LAKE NEAR GORE, OK

LOCATION.--Lat 35°35'43", long 95°02'57", in SE 1/4 SW 1/4 sec.14, T.13 N., R.21 E., Sequoyah County, Hydrologic Unit 11110103, at gage tower on right bank, 0.6 mi (1.0 km) upstream from Tenkiller Ferry Dam on Illinois River, 6.0 mi (9.7 km) northeast of Gore, and at mile 12.8 (20.6 km).

DRAINAGE AREA.--1,610 mi² (4,170 km²).

PERIOD OF RECORD.--July 1952 to current year. Prior to October 1970, published as Tenkiller Ferry Reservoir near Gore.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1953, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Spillway consists of 590 ft (179.8 m) concrete modified ogee-type weir in right abutment controlled by 10 taintor gates. Outlet works consist of a 19 ft (5.8 m) diameter tunnel in right abutment controlled by two vertical lift gates. A similar tunnel conducts water to two hydroelectric turbines. Closure was made for diversion in July 1950 and regulated storage began in July 1952; conservation pool was first filled Apr. 9, 1953. Capacity, 1,231,000 acre-ft (1,520 hm³) at elevation 667.0 ft (203.30 m), flood-control pool, 791,900 acre-ft (976 hm³) at elevation, 642.0 ft (195.68 m), spillway crest, 628,700 acre-ft at elevation 630.0 ft (192.02 m), maximum power pool, and 283,100 acre-ft (349 hm³) at elevation 594.5 ft (181.20 m), conservation and minimum power pool. Figures given herein represent total contents. Reservoir is used for flood control and for power development.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,218,000 acre-ft (1.50 km³) June 5, 1957, elevation, 666.36 ft (203.107 m); minimum since conservation pool was first filled, 305,700 acre-ft (377 hm³) Oct. 21, 1954, elevation, 597.50 ft (182.118 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 769,600 acre-ft (949 hm³) Apr. 10, elevation, 640.48 ft (195.218 m); minimum, 537,600 acre-ft (662 hm³) Oct. 15, elevation, 622.34 ft (189.689 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

622	533,900	635	693,400
627	591,800	639	748,600
631	641,000	643	806,600

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543400	543600	557800	570800	579200	605700	744800	680000	685900	652400	612300	574400
2	543200	543800	559100	571200	579600	608800	746900	677700	686600	651200	610200	574700
3	541100	544000	560200	571400	579900	611500	747900	675700	686800	649300	607900	574400
4	539700	544400	560800	572100	580000	616600	751100	674100	684800	649400	607300	574300
5	539600	544400	561700	572300	580200	621300	752800	675300	682000	649400	608800	572600
6	539500	544500	562400	571100	580500	628700	752900	675800	679900	648200	606700	570200
7	539400	544700	563400	571400	580000	634500	751900	680400	677000	648300	605100	568400
8	539400	544800	564100	571600	580300	638800	755600	683800	674400	648300	604100	568400
9	539300	545800	564900	572700	580800	642300	762200	688600	673500	645700	605300	569000
10	538500	545800	565700	572600	581200	645600	769600	690400	672800	642200	604800	566500
11	538600	545900	566500	572900	581700	648500	767500	691200	671400	641300	605500	564700
12	538400	545900	567000	573300	582300	648300	762500	691000	670200	638800	606300	561900
13	538200	546000	567900	573800	582800	648700	756900	690100	669200	636400	605000	560700
14	538000	546400	568400	574100	583100	648900	751900	688900	667900	636300	602500	559700
15	537800	546400	569100	574500	583600	649900	746400	687100	666500	636200	600300	559100
16	537900	546500	567900	575000	584200	650700	740000	685400	665600	634200	597700	558600
17	538300	546500	568500	575000	584600	654400	733200	682900	665600	632800	595100	557800
18	538800	546800	569200	575100	585200	661300	726100	680800	664300	631900	594100	556300
19	538800	547700	569000	575500	585900	670500	718300	680700	662700	630200	594600	555700
20	539300	547900	569300	575700	586400	682500	711100	680700	661700	628700	592000	555200
21	539900	548100	570000	575800	586700	691600	703000	677900	660300	627500	590900	554400
22	540400	549500	570200	576300	587200	694300	695600	675500	658800	627200	590000	554700
23	540900	549800	570600	576700	587500	695000	690800	673000	659100	625000	589300	554700
24	541400	550300	570700	577100	587900	695800	687900	669600	659500	623300	588000	553800
25	541700	550800	570000	577400	588100	699300	686800	666800	658000	621100	586700	555200
26	542100	552300	568400	577800	597300	701900	685500	667200	656900	619000	586600	555300
27	542400	553700	569100	578100	596000	705100	684400	677000	655400	618400	584500	555300
28	542500	555000	569700	578400	598800	710800	683300	681700	653800	617000	582400	555400
29	542900	556100	569900	578800	602300	720800	684100	684000	652400	616900	580300	555500
30	543100	557100	570100	578900	---	733200	681900	685100	652300	615700	577700	555500
31	543300	---	570500	579300	---	739300	---	687100	---	614200	574700	---
MAX	543400	557100	570700	579300	602300	739300	769600	691200	686800	652400	612300	574700
MIN	537800	543600	557800	570800	579200	605700	681900	666800	652300	614200	574700	553800
(+)	622.84	624.03	625.18	625.94	627.85	638.33	634.12	634.52	631.86	628.82	625.54	623.89
(++)	-400	+13,800	+13,400	+8,800	+23,000	+137,000	-57,400	+5,200	-34,800	-38,100	-39,500	-19,200
CAL YR 1983	MAX	703600	MIN	537800	(++)	-124,300						
WTR YR 1984	MAX	769600	MIN	537800	(++)	+11,800						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-Feet

07198000 ILLINOIS RIVER NEAR GORE, OK

LOCATION.--Lat 35°34'23", long 95°04'07", in NE 1/4 SW 1/4 sec.27, T.13 N., R.21 E., Sequoyah County, Hydrologic Unit 11110104, on right bank 4.5 mi (7.2 km) downstream from Tenkiller Ferry Dam, 4.5 mi (7.2 km) northeast of Gore, and at mile 8.5 (13.7 km).

DRAINAGE AREA.--1,626 mi² (4,211 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1924 to April 1926, April 1939 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 473.00 ft (144.170 m) National Geodetic Vertical Datum of 1929. See WSP 1921 for history of changes prior to Feb. 19, 1952.

REMARKS.--Records good. Except for 16 mi² (41 km²) intervening area, flow completely regulated since July 1952 by Tenkiller Ferry Lake (station 07197500).

COOPERATION.--Gage-height record and 13 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--46 years (water years 1924-25, 1939-84), 1,460 ft³/s (41.35 m³/s), 1,058,000 acre-ft/yr (1.30 km³/yr) adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s (5,100 m³/s) May 11, 1950, gage height, 29.6 ft (9.02 m), from floodmark, present site and datum, from rating curve extended above 42,000 ft³/s (1,190 m³/s) by velocity-area studies; minimum, 2.0 ft³/s (0.057 m³/s) Sept. 16, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,380 ft³/s (209 m³/s) Apr. 13, gage height, 9.53 ft (2.905 m); minimum daily discharge, 48 ft³/s (1.36 m³/s) Jan. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	51	57	52	212	76	1210	2220	2170	110	952	174
2	98	55	56	52	82	72	3080	2360	1020	782	1060	113
3	864	54	57	54	144	69	3860	2500	985	882	1370	120
4	789	56	60	54	92	134	3860	2190	2110	126	310	447
5	108	53	55	64	55	111	3840	1020	2240	111	120	435
6	97	54	57	961	90	80	3740	1200	2260	701	1380	1160
7	94	54	56	65	348	76	3840	2270	2160	119	1060	845
8	89	53	58	53	92	69	4050	2400	2230	112	1340	126
9	88	52	58	53	57	64	3950	2240	1060	1480	995	112
10	404	54	57	118	52	63	5040	2180	1050	1910	864	1330
11	403	54	57	53	56	61	7290	2130	1270	612	295	998
12	92	53	55	52	54	1710	7240	2190	1080	1380	110	1490
13	95	55	56	48	63	1160	6790	2170	1080	1380	1280	813
14	96	55	55	53	60	1110	5870	2190	1080	129	1660	702
15	93	55	55	51	58	1090	5850	2190	1080	108	1510	122
16	53	59	853	54	56	903	5840	2110	851	1180	1610	105
17	438	53	65	306	54	114	5830	2410	284	831	1550	427
18	534	57	56	63	57	721	5800	2230	1020	487	632	615
19	633	56	337	56	54	3160	5800	1040	1090	865	255	387
20	91	56	66	53	55	3980	5840	1030	1030	826	1310	331
21	74	55	56	89	52	3990	5860	2330	1030	476	608	380
22	54	59	55	51	57	3980	5860	2280	1100	129	751	112
23	55	56	53	51	81	4030	4980	2260	180	1150	425	103
24	50	57	53	51	57	4190	3720	2490	111	914	685	407
25	55	59	481	53	53	4150	2230	2370	1030	1290	690	139
26	51	56	979	52	104	4090	2430	806	1060	1170	120	103
27	50	63	65	54	258	3040	2520	611	1020	346	1150	283
28	99	64	53	53	144	1790	1940	891	1050	664	1210	152
29	54	64	52	53	93	1220	1300	2160	1040	174	1250	108
30	58	57	53	52	---	1440	2470	2160	191	650	1430	193
31	67	---	53	53	---	2220	---	990	---	738	1660	---
TOTAL	5925	1679	4179	2927	2690	48963	131930	59618	34962	21832	29642	12832
MEAN	191	56.0	135	94.4	92.8	1579	4398	1923	1165	704	956	428
MAX	864	64	979	961	348	4190	7290	2500	2260	1910	1660	1490
MIN	50	51	52	48	52	61	1210	611	111	108	110	103
AC-FT	11750	3330	8290	5810	5340	97120	261700	118300	69350	43300	58790	25450
CAL YR 1983	TOTAL	370416	MEAN	1015	MAX	4960	MIN	29	AC-FT	734700		
WTR YR 1984	TOTAL	357179	MEAN	976	MAX	7290	MIN	48	AC-FT	708500		

ARKANSAS RIVER BASIN

07198000 ILLINOIS RIVER NEAR GORE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1952, 1954 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to September 1948, October 1953 to September 1963.

WATER TEMPERATURE: October 1947 to September 1948, October 1953 to September 1963.

REMARKS.--Monthly samples were collected and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT 19...	1105	750	80020	24	--	6.8	17.0	.50	5.4	57	100	15
NOV 17...	1700	740	80020	44	--	7.2	15.0	2.0	7.4	76	96	3
JAN 26...	1055	750	80020	21	284	7.5	5.0	1.2	12.0	96	96	14
FEB 16...	1020	750	80020	22	275	7.1	7.5	1.5	5.3	45	91	15
MAR 27...	1125	740	80020	4060	204	7.5	9.0	1.8	11.0	98	96	13
APR 18...	1140	750	80020	5800	201	7.3	10.5	1.8	10.1	92	91	10
MAY 09...	1225	760	80020	3850	211	7.5	11.0	.90	9.5	86	88	6
JUN 13...	1200	760	80020	1790	218	7.1	13.0	.70	5.8	55	90	14
JUL 25...	1110	760	80020	745	282	6.7	17.5	2.0	5.8	61	100	22
AUG 22...	1025	760	80020	33	303	6.7	17.0	1.7	4.2	44	110	19
SEP 27...	1145	760	80020	25	--	6.7	14.0	3.9	4.2	41	110	16

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 19...	36	2.4	15	24	.7	2.5	85	26	9.8	28	163	.22
NOV 17...	35	2.1	9.9	18	.5	2.6	93	11	9.6	16	138	.19
JAN 26...	34	2.7	17	27	.8	2.5	82	5.0	10	37	170	.23
FEB 16...	32	2.6	17	28	.8	2.3	76	12	11	31	165	.22
MAR 27...	35	2.1	5.2	10	.2	2.6	83	5.1	10	7.4	129	.18
APR 18...	33	2.0	4.8	10	.2	2.3	81	7.9	11	7.1	122	.17
MAY 09...	32	1.9	4.9	10	.2	2.7	82	5.0	10	7.7	106	.14
JUN 13...	33	1.8	4.8	10	.2	2.4	76	12	12	7.6	116	.16
JUL 25...	37	2.6	13	21	.6	2.6	81	31	10	23	153	.21
AUG 22...	39	2.6	15	23	.7	2.5	89	34	10	27	154	.21
SEP 27...	40	2.7	15	22	.6	2.7	95	37	10	27	160	.22

07228500 CANADIAN RIVER AT BRIDGEPORT, OK

LOCATION.--Lat 35°32'37", long 98°19'03", SE 1/4 NW 1/4 sec.1, T.12 N., R.11 W., Caddo County, Hydrologic Unit 11090202, on downstream side of pier near center of bridge on U.S. Highway 281, 3.3 mi (5.3 km) east of Bridgeport, 1.6 mi (2.6 km) downstream from Lumpmouth Creek, and at mile 263.3 (423.6 km).

DRAINAGE AREA.--25,276 mi² (65,465 km²), of which 4,801 mi² (12,435 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to September 1964; October 1969 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,360.00 ft (414.528 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1947, at site 3.8 mi (6.1 km) upstream at datum 24.25 ft (7.391 m) higher. Oct. 1, 1947 to Sept. 30, 1948, nonrecording gage and Oct. 1, 1948 to September 1964, Oct. 1, 1969 to Dec. 17, 1980 at site 4.0 mi (6.4 km) upstream and at datum 24.25 ft (7.391 m) higher.

REMARKS.--Records poor. Occasional slight regulation by Conchas Reservoir in New Mexico, and by Lake Meredith in Texas since 1964.

AVERAGE DISCHARGE.--35 years (water years 1945-64, 1970-84), 372 ft³/s (10.54 m³/s), 269,500 acre-ft/yr (332 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 150,000 ft³/s (4,250 m³/s) June 23, 1948, gage height, 14.60 ft (4.450 m), from floodmarks, from rating curve extended above 50,000 ft³/s (1,420 m³/s), no flow at times in 1946, 1951-56, 1964, 1970, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 19.4 ft (5.91 m), a higher stage probably occurred during flood in October 1904.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8,000 ft³/s (226 m³/s) Oct. 20. No other peaks above base of 6,000 ft³/s (170 m³/s); no flow Aug. 19 - Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	100	147	283	378	436	850	113	43	34	1.3	.00
2	9.4	100	146	281	374	436	800	120	39	24	1.2	.00
3	9.7	100	147	281	374	440	766	124	34	18	1.1	.00
4	9.7	103	156	289	374	442	793	140	31	16	1.1	.00
5	9.7	100	156	299	374	445	740	156	25	13	1.0	.00
6	32	105	152	299	374	440	695	149	21	12	5.1	.00
7	90	108	145	299	374	432	653	145	20	11	4.3	.00
8	24	150	151	299	385	432	1650	138	18	9.7	3.7	.00
9	22	135	141	299	375	432	909	126	17	8.8	3.7	.00
10	18	130	143	299	366	432	730	120	50	8.0	3.9	.00
11	17	126	141	317	362	432	600	115	36	7.4	3.7	.00
12	17	126	141	325	360	432	562	113	34	6.6	3.7	.00
13	16	128	143	330	358	432	406	103	30	6.0	3.7	.00
14	17	126	143	332	362	432	339	94	28	5.4	3.7	.00
15	18	120	139	350	354	432	296	88	26	5.1	3.0	.00
16	19	120	139	350	354	436	261	82	25	4.5	2.9	.00
17	20	117	139	352	354	436	236	75	22	4.0	2.0	.00
18	21	117	140	395	354	468	206	70	19	3.6	1.2	.00
19	57	118	140	395	354	468	194	65	18	3.3	.00	1.1
20	8000	120	140	398	354	458	187	62	16	3.1	.00	1.5
21	2500	126	141	400	354	455	185	56	14	2.9	.00	1.5
22	354	135	140	401	360	454	185	54	34	2.8	.00	1.2
23	205	137	141	401	394	1050	182	53	32	2.6	.00	1.0
24	167	152	142	401	386	900	180	52	40	2.5	.00	1.0
25	147	153	143	406	400	760	165	44	52	2.4	.00	1.6
26	126	155	143	401	419	671	149	41	62	2.3	.00	3.0
27	120	156	190	401	419	671	160	67	50	2.1	.00	5.6
28	115	152	280	401	436	671	140	57	54	1.8	.00	5.6
29	108	152	282	400	436	641	125	52	48	1.6	.00	5.6
30	103	147	282	400	---	612	111	50	40	1.5	.00	5.6
31	100	---	281	458	---	641	---	48	---	1.4	.00	---
TOTAL	12481.0	3814	5054	10942	10918	16319	13455	2772	978	227.4	50.30	34.30
MEAN	403	127	163	353	376	526	449	89.4	32.6	7.34	1.62	1.14
MAX	8000	156	282	458	436	1050	1650	156	62	34	5.1	5.6
MIN	9.4	100	139	281	354	432	111	41	14	1.4	.00	.00
AC-FT	24760	7570	10020	21700	21660	32370	26690	5500	1940	451	100	68
CAL YR 1983	TOTAL	166616.9		MEAN	456	MAX	14300	MIN	7.0	AC-FT	330500	
WTR YR 1984	TOTAL	77045.00		MEAN	211	MAX	8000	MIN	.00	AC-FT	152800	

ARKANSAS RIVER BASIN

07228500 CANADIAN RIVER AT BRIDGEPORT, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-61, 1964, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to September 1960, October 1969 to April 1982.

WATER TEMPERATURE: October 1948 to September 1960, October 1969 to April 1982.

REMARKS: Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,830 microsiemens June 11, 1975; minimum daily, 223 microsiemens Aug. 16, 1973.

WATER TEMPERATURE: Maximum daily, 40.0°C July 9, 22, 1973; minimum, 0.0°C many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1983

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)
DEC 08...	1400	730	80020	151	1480	7.9	7.0	14.8	128	640	510	190
JAN 31...	1030	730	80020	458	2320	7.8	1.5	--	--	650	440	180
APR 19...	1400	710	80020	194	2440	8.4	16.5	9.0	100	680	470	170
JUN 08...	1330	710	80020	18	1260	7.6	28.0	7.0	97	640	510	180
DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
DEC 08...	39	55	16	1	3.0	125	3.0	530	55	15	--	970
JAN 31...	48	180	37	3	4.9	213	6.5	410	280	16	1320	1200
APR 19...	61	230	42	4	7.2	212	1.6	570	350	14	1630	1500
JUN 08...	46	58	16	1	3.9	129	6.3	540	44	12	1060	960
DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)
DEC 08...	1.3	395	.95	.050	.050	1.1	1.0	.300	.300	.110	.130	4
JAN 31...	1.8	1630	.62	.030	.020	.60	.64	.340	.240	.120	.080	4
APR 19...	2.2	854	--	.010	.010	<.10	<.10	.040	.090	.060	.030	3
JUN 08...	1.4	52	--	<.010	<.010	<.10	<.10	.030	.150	.050	.010	7

07228500 CANADIAN RIVER AT BRIDGEPORT, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1983

[illegible]

ARKANSAS RIVER BASIN

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07229300 WALNUT CREEK AT PURCELL, OK

LOCATION.--Lat 34°59'56", long 97°22'00", NW 1/4 NW 1/4 sec.13, T.6 N., R.2 W., McClain County, Hydrologic Unit 11090202, on downstream side of right bank pier of bridge on U.S. Highway 77, at south edge of Purcell, and at mile 1.0 (1.6 km).

DRAINAGE AREA.--202 mi² (523 km²).

PERIOD OF RECORD.--Water years 1951-55, 1958-65 (occasional low-flow measurements). October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,017.57 ft (310.155 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--19 years, 52.0 ft³/s (1.47 m³/s), 37,670 acre-ft/yr (46.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,700 ft³/s (1,920 m³/s) Oct. 20, 1983, gage height, 21.40 ft (6.523 m), from rating curve extended above 20,000 ft (566 m³/s) on basis of multiple contracted opening measurement at peak; no flow at times in 1966-67, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67,700 ft³/s (1,920 m³/s) Oct. 20 at 0915, gage height, 21.40 ft (6.523 m) no other peak above base of 3,000 ft³/s (85 m³/s); no flow at times during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	131	36	27	27	39	34	66	18	23	1.2	2.0
2	7.8	120	38	26	25	35	23	58	17	20	1.0	3.5
3	9.4	111	48	27	23	32	19	60	18	10	.70	10
4	11	102	49	26	21	130	17	50	18	7.0	.30	4.5
5	9.6	96	41	25	21	90	16	47	20	5.6	26	3.0
6	10	94	36	25	20	80	15	42	487	3.5	121	2.4
7	19	102	35	24	18	72	14	38	56	2.4	26	2.1
8	27	85	35	25	17	66	16	41	33	1.8	20	1.8
9	18	77	34	24	100	62	32	36	23	1.3	13	1.6
10	14	65	34	28	64	56	29	30	739	1.9	6.2	1.4
11	17	62	34	26	47	50	24	24	24	1.6	2.8	1.3
12	23	62	33	25	45	290	22	21	6.3	1.3	1.2	1.2
13	15	61	35	25	36	130	20	20	3.2	1.1	1.0	1.1
14	13	103	36	24	30	80	20	17	2.8	1.0	.80	1.0
15	12	55	33	25	26	54	19	15	2.4	.79	.68	1.0
16	11	51	32	24	25	48	18	14	2.0	.50	.40	.96
17	21	51	31	26	23	40	18	13	1.7	.38	.30	.92
18	99	51	30	24	120	42	19	10	1.5	.30	.00	.78
19	3770	70	29	23	76	51	18	8.6	1.2	.00	.00	.63
20	31400	54	28	26	60	47	17	100	1.3	.00	.00	.40
21	4420	49	30	30	48	41	18	40	2.3	.00	.00	.30
22	865	55	28	40	41	38	17	21	1.7	.00	.00	.00
23	647	103	27	50	38	372	15	14	1.4	.00	.00	.00
24	435	60	25	56	33	396	14	10	38	7.0	.00	26
25	328	47	24	63	31	92	13	9.0	7.3	3.0	.00	32
26	264	44	24	57	180	86	15	6.6	72	1.5	.00	27
27	226	73	25	52	240	68	14	39	84	11	2.0	10
28	196	48	36	48	99	52	12	170	36	4.5	1.4	8.9
29	174	40	30	40	50	42	16	29	30	2.8	.65	6.0
30	157	39	29	32	---	49	90	22	26	2.2	13	5.0
31	145	---	28	29	---	43	---	20	---	1.6	5.0	---
TOTAL	43371.7	2161	1013	1002	1584	2773	634	1091.2	1774.1	117.07	244.63	156.79
MEAN	1399	72.0	32.7	32.3	54.6	89.5	21.1	35.2	59.1	3.78	7.89	5.23
MAX	31400	131	49	63	240	396	90	170	739	23	121	32
MIN	7.8	39	24	23	17	32	12	6.6	1.2	.00	.00	.00
AC-FT	86030	4290	2010	1990	3140	5500	1260	2160	3520	232	485	311
CAL YR 1983	TOTAL	64687.1		MEAN	177	MAX	31400	MIN	6.0	AC-FT	128300	
WTR YR 1984	TOTAL	55922.49		MEAN	153	MAX	31400	MIN	.00	AC-FT	110900	

07229460 LITTLE RIVER ABOVE LAKE THUNDERBIRD NEAR NORMAN, OK

LOCATION.--Lat 35°16'34", long 97°20'23", in SE 1/4 SE 1/4 sec.6, T.9 N., R.1 W., Cleveland County, Hydrologic Unit 11090203, 0.2 mi (0.3 km) west of Franklin, 0.6 mi (1.0 km) downstream from Elm Creek, 7.0 mi (11.3 km) northeast of Norman, and at mile 105.9 (170.4 km).

DRAINAGE AREA.--82.6 mi² (213.9 km²).

PERIOD OF RECORD.--Water year 1984.

REMARKS.--Samples were collected periodically and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
FEB 15...	1200	730	80020	4.2	898	7.6	12.0	7.5	10.0	97	3.0	>800
MAR 22...	0930	720	80020	4.5	886	8.2	10.0	60	9.7	91	2.0	1300
MAY 28...	1030	740	80020	230	220	7.8	19.0	120	6.9	77	8.0	>8000
DATE		COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCHI, FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
FEB 15...	92	340	394	19	579	.79	6.6	11	.48	.020	.50	
MAR 22...	220	210	333	4.0	525	.71	6.4	99	.66	.040	.70	
MAY 28...	>6000	>10000	71	2.2	154	.21	96	1740	--	<.010	.40	

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P04)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS P04)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
FEB 15...	.070	.43	.50	1.0	4.4	.050	.15	.020	.06	5.7	5.6
MAR 22...	.110	.89	1.0	1.7	7.5	.090	.28	.050	.15	8.0	6.8
MAY 28...	.050	2.5	2.5	2.9	13	.700	--	.020	.06	22	16

ARKANSAS RIVER BASIN

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07229900 LAKE THUNDERBIRD NEAR NORMAN, OK

LOCATION.--Lat 35°13'15", long 97°13'05", in NW 4 SE 4 sec.29, T.9 N., R.1 E., Cleveland County, Hydrologic Unit 11090203, near center of dam on Little River, just downstream from Hog Creek, 13 mi (20.9 km) east of Norman, and at mile 96.4 (111.1km).

DRAINAGE AREA.--256 mi² (663 km²).

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Nonrecording gage at outlet structure and at pump house. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. Regulated storage began Mar. 1, 1965; minimum conservation pool first filled September 1965. Capacity, 196,200 acre-ft (242 hm³) at elevation 1,049.4 ft (319.86 m), crest of drop inlet; 119,600 acre-ft (147 hm³) at elevation 1,039.0 ft (316.687 m), top of conservation pool; 13,640 acre-ft (16.8 hm³) at elevation 1,010.0 ft (307.848 m), minimum conservation pool. Dead storage, 1,200 acre-ft (1.48 hm³) below elevation 997.0 ft (303.886 m), sill of gated outlet. Figures given herein represent total contents. Reservoir is used for flood control, irrigation (inactive), and municipal water supplies diverted to Del City, Midwest City, and Norman.

COOPERATION.--Elevations and data on diversions furnished by Central Oklahoma Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 178,900 acre-ft (220 hm³) Oct. 22, 1983, elevation, 1,047.36 ft (319.235 m); minimum since conservation pool first reached, 15,370 acre-ft (19.0 hm³) Nov. 30, 1965, elevation, 1,011.0 ft (308.153 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 178,900 acre-ft (220 hm³) Oct. 22, elevation, 1,047.36 ft (319.235 m); minimum, 108,100 acre-ft (133 hm³) Sept. 30, elevation, 1,037.04 ft (316.090 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1037.46	110,500	-	-
Oct. 31.....	1045.34	162,900	+52,400	1,231
Nov. 30.....	1039.08	120,100	-42,800	1,162
Dec. 31.....	1039.09	120,100	0	912
CAL YR 83.....	-	-	+6,300	13,308
Jan. 31.....	1039.22	120,900	+800	1,047
Feb. 29.....	1039.32	121,500	+600	923
Mar. 31.....	1039.90	125,100	+3,600	1,071
Apr. 30.....	1039.02	119,700	-5,400	1,079
May 31.....	1039.39	122,000	+2,300	1,220
June 30.....	1039.41	122,100	+100	1,426
July 31.....	1038.42	116,100	-6,000	1,832
Aug. 31.....	1037.82	112,600	-3,500	1,809
Sept. 30.....	1037.04	108,100	-4,500	1,632
WTR YR 84.....	-	-	-2,400	15,344

*Elevation at 0800 on the following day.

351307097132401 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 1

LOCATION.--Lat 35°13'07", Long 97°13'24".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
14...	1145	730	1028	1.00	121000	310	7.7	6.5	11.2	95
14...	1146	730	1028	5.00	121000	305	--	6.5	11.5	98
14...	1147	730	1028	10.0	121000	308	--	6.5	11.6	99
14...	1148	730	1028	15.0	121000	310	--	6.0	11.6	97
14...	1149	730	1028	20.0	121000	315	7.5	6.0	11.5	97
14...	1150	730	1028	25.0	121000	315	--	6.0	11.5	97
14...	1151	730	1028	30.0	121000	315	--	6.0	11.6	97
14...	1152	730	1028	35.0	121000	318	--	6.0	11.6	97
14...	1153	730	1028	37.0	121000	318	8.2	6.0	11.6	97
MAR										
21...	1500	730	1028	1.00	121000	290	8.2	11.5	12.0	115
21...	1501	730	1028	5.00	121000	296	--	11.0	11.9	113
21...	1502	730	1028	10.0	121000	299	--	11.0	12.0	114
21...	1503	730	1028	15.0	121000	299	8.1	11.0	12.0	114
21...	1504	730	1028	20.0	121000	301	--	10.5	11.9	111
21...	1505	730	1028	25.0	121000	300	--	10.5	11.9	111
21...	1506	730	1028	30.0	121000	300	--	10.0	11.8	109
21...	1507	730	1028	35.0	121000	304	8.0	10.0	11.7	108
MAY										
31...	1217	730	1028	1.00	122000	406	--	23.0	--	--
31...	1218	730	1028	5.00	122000	406	--	23.0	--	--
31...	1219	730	1028	10.0	122000	406	--	23.0	--	--
31...	1220	730	1028	15.0	122000	406	--	22.5	--	--
31...	1221	730	1028	20.0	122000	405	--	22.5	--	--
31...	1222	730	1028	25.0	122000	407	--	22.5	--	--
31...	1223	730	1028	30.0	122000	407	--	22.5	--	--
31...	1224	730	1028	35.0	122000	408	--	22.5	--	--

ARKANSAS RIVER BASIN

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351320097131801 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 2

LOCATION.--Lat 35°13'20", long 97°13'18".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Samples were collected in a Kemmerer sampler. Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB											
14...	1119	730	80020	1.00	121000	302	8.1	6.5	11	11.5	98
14...	1120	730	1028	5.00	121000	310	--	6.5	--	11.6	99
14...	1121	730	1028	10.0	121000	311	--	6.5	--	11.5	98
14...	1122	730	1028	15.0	121000	313	--	6.0	--	11.5	97
14...	1123	730	80020	20.0	121000	313	7.7	6.0	--	11.6	97
14...	1124	730	1028	25.0	121000	314	--	6.0	--	11.6	97
14...	1125	730	1028	30.0	121000	316	--	6.0	--	11.6	97
14...	1126	730	1028	35.0	121000	318	--	6.0	--	11.6	97
14...	1127	730	80020	38.0	121000	319	7.5	6.0	--	11.5	97
MAR											
21...	1430	730	80020	1.00	121000	294	8.0	11.0	13	11.9	113
21...	1431	730	1028	5.00	121000	296	--	11.0	--	12.0	114
21...	1432	730	1028	10.0	121000	298	--	11.0	--	12.0	114
21...	1433	730	1028	15.0	121000	299	--	10.5	--	11.9	111
21...	1434	730	80020	20.0	121000	300	7.9	10.5	16	11.8	111
21...	1435	730	1028	25.0	121000	301	--	10.5	--	11.9	111
21...	1436	730	1028	30.0	121000	302	--	10.0	--	11.9	110
21...	1437	730	1028	35.0	121000	303	--	10.0	--	11.8	109
21...	1438	730	1028	40.0	121000	305	--	10.0	--	11.7	108
21...	1439	730	80020	41.0	121000	305	7.9	10.0	70	11.7	108
MAY											
31...	1145	730	80020	1.00	122000	405	--	23.0	9.9	--	--
31...	1146	730	1028	5.00	122000	406	--	23.0	--	--	--
31...	1147	730	1028	10.0	122000	405	--	23.0	--	--	--
31...	1148	730	1028	15.0	122000	406	--	23.0	--	--	--
31...	1149	730	80020	20.0	122000	406	--	23.0	16	--	--
31...	1150	730	1028	25.0	122000	405	--	22.5	--	--	--
31...	1151	730	1028	30.0	122000	406	--	22.5	--	--	--
31...	1152	730	1028	35.0	122000	408	--	22.5	--	--	--
31...	1153	730	80020	39.0	122000	409	--	22.5	32	--	--

351320097131801 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 2--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
FEB											
14...	.4	K43	K1	K12	140	0	28	17	13	16	.5
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	140	1	28	18	13	16	.5
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	140	3	28	18	13	16	.5
MAR											
21...	.1	K10	K8	<20	150	2	30	18	14	16	.5
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	140	0	28	17	13	16	.5
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	150	0	29	18	13	16	.5
MAY											
31...	.0	26	K6	K9	160	14	33	20	15	16	.5
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	160	10	33	19	15	17	.5
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	160	14	33	20	15	16	.5

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
FEB											
14...	3.8	142	2.2	11	17	205	.28	<2	.29	.010	.30
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	3.7	143	5.5	11	17	205	.28	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	3.7	141	8.6	12	23	210	.29	--	--	--	--
MAR											
21...	4.3	147	2.8	10	18	186	.25	4	--	.010	<.10
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	4.0	145	3.5	11	19	190	.26	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	3.8	147	3.6	10	18	188	.26	--	--	--	--
MAY											
31...	3.6	151	--	11	21	205	.28	8	.09	.010	.10
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	3.6	151	--	11	21	198	.27	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	3.6	151	--	11	21	204	.28	--	--	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

ARKANSAS RIVER BASIN

351333097131201 LAKE THUNDERBIRD DAMSITE CROSS SECTION NO. 3

LOCATION.--Lat 35°13'33", long 97°13'12".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
14...	1103	730	1028	1.00	121000	301	7.9	7.0	11.2	96
14...	1104	730	1028	5.00	121000	305	--	7.0	11.5	99
14...	1105	730	1028	10.0	121000	306	--	7.0	11.7	101
14...	1106	730	1028	15.0	121000	310	7.8	6.5	11.7	99
14...	1107	730	1028	20.0	121000	312	--	6.5	11.3	96
14...	1108	730	1028	25.0	121000	316	--	6.0	11.3	95
14...	1109	730	1028	30.0	121000	316	--	6.0	11.4	96
14...	1110	730	1028	32.0	121000	316	7.8	6.0	11.4	96
MAR										
21...	1415	730	1028	1.00	121000	295	8.0	12.0	12.0	116
21...	1416	730	1028	5.00	121000	299	--	11.0	11.7	111
21...	1417	730	1028	10.0	121000	296	--	10.0	11.7	108
21...	1418	730	1028	15.0	121000	297	7.8	10.0	11.7	108
21...	1419	730	1028	20.0	121000	299	--	10.0	11.8	109
21...	1420	730	1028	25.0	121000	300	--	10.0	11.7	108
21...	1421	730	1028	30.0	121000	301	--	10.0	11.7	108
21...	1422	730	1028	33.0	121000	302	7.8	9.5	11.6	106
MAY										
31...	1130	730	1028	1.00	122000	406	--	23.0	--	--
31...	1131	730	1028	5.00	122000	406	--	23.0	--	--
31...	1132	730	1028	10.0	122000	406	--	23.0	--	--
31...	1133	730	1028	15.0	122000	406	--	23.0	--	--
31...	1134	730	1028	20.0	122000	407	--	23.0	--	--
31...	1135	730	1028	25.0	122000	407	--	23.0	--	--
31...	1136	730	1028	30.0	122000	407	--	22.5	--	--
31...	1137	730	1028	35.0	122000	408	--	22.5	--	--

ARKANSAS RIVER BASIN

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351317097145101 LAKE THUNDERBIRD LITTLE RIVER CROSS SECTION

LOCATION.--Lat 35°13'17", long 97°14'51".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
14...	1012	730	1028	1.00	121000	309	7.8	7.5	11.4	99
14...	1013	730	1028	5.00	121000	308	--	7.5	11.6	101
14...	1014	730	1028	10.0	121000	306	--	6.5	11.4	97
14...	1015	730	1028	15.0	121000	308	--	6.5	11.3	96
14...	1016	730	1028	20.0	121000	311	--	6.0	11.3	95
14...	1017	730	1028	25.0	121000	313	7.5	6.0	11.3	95
14...	1018	730	1028	30.0	121000	316	--	6.0	11.3	95
14...	1019	730	1028	35.0	121000	318	--	6.0	11.2	94
14...	1020	730	1028	40.0	121000	321	7.6	6.0	11.2	94
MAR										
21...	1330	730	1028	1.00	121000	293	8.0	11.0	10.9	103
21...	1331	730	1028	5.00	121000	293	--	10.5	11.3	106
21...	1332	730	1028	10.0	121000	294	--	10.0	11.2	104
21...	1333	730	1028	15.0	121000	298	7.8	10.0	11.3	105
21...	1334	730	1028	20.0	121000	302	--	10.0	11.4	106
21...	1335	730	1028	25.0	121000	303	--	10.0	11.4	106
21...	1336	730	1028	30.0	121000	303	--	10.0	11.4	106
21...	1337	730	1028	34.0	121000	304	7.7	10.0	11.4	106
MAY										
31...	1040	730	1028	1.00	122000	413	--	23.0	--	--
31...	1041	730	1028	5.00	122000	410	--	23.0	--	--
31...	1042	730	1028	10.0	122000	410	--	23.0	--	--
31...	1043	730	1028	15.0	122000	410	--	23.0	--	--
31...	1044	730	1028	20.0	122000	410	--	23.0	--	--
31...	1045	730	1028	25.0	122000	410	--	23.0	--	--
31...	1046	730	1028	30.0	122000	410	--	22.5	--	--
31...	1047	730	1028	35.0	122000	413	--	22.0	--	--
31...	1048	730	1028	40.0	122000	418	--	22.0	--	--
31...	1049	730	1028	45.0	122000	421	--	21.5	--	--
31...	1050	730	1028	47.0	122000	415	--	21.0	--	--

ARKANSAS RIVER BASIN

351255097151001 LAKE THUNDERBIRD CLEAR CREEK CROSS SECTION

LOCATION.--Lat 35°12'55", long 97°15'10".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
14...	0950	730	1028	1.00	121000	306	8.1	8.0	11.5	101
14...	0951	730	1028	5.00	121000	307	--	8.0	11.6	102
14...	0952	730	1028	10.0	121000	310	--	7.5	11.3	98
14...	0953	730	1028	15.0	121000	311	7.9	6.5	11.2	95
14...	0954	730	1028	20.0	121000	312	--	6.5	11.1	94
14...	0955	730	1028	25.0	121000	313	--	6.5	11.1	94
14...	0956	730	1028	29.0	121000	316	7.9	6.5	10.9	93
MAR										
21...	1315	730	1028	1.00	121000	310	7.7	11.0	11.6	110
21...	1316	730	1028	5.00	121000	303	--	11.0	11.5	109
21...	1317	730	1028	10.0	121000	309	--	10.5	11.4	107
21...	1318	730	1028	15.0	121000	305	7.8	10.0	11.3	105
21...	1319	730	1028	20.0	121000	307	--	10.0	11.3	105
21...	1320	730	1028	25.0	121000	308	--	10.0	11.3	105
21...	1321	730	1028	29.0	121000	308	7.7	10.0	11.1	103
MAY										
31...	1020	730	1028	1.00	122000	413	--	23.0	--	--
31...	1021	730	1028	5.00	122000	414	--	23.0	--	--
31...	1022	730	1028	10.0	122000	414	--	23.0	--	--
31...	1023	730	1028	15.0	122000	415	--	23.0	--	--
31...	1024	730	1028	20.0	122000	414	--	23.0	--	--
31...	1025	730	1028	25.0	122000	415	--	23.0	--	--
31...	1026	730	1028	30.0	122000	419	--	22.5	--	--

LOCATION.--Lat 35°13'18", long 97°15'59".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Samples were collected in a Kemmerer Sampler. Specific conductance, pH, water temperature, and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SAM-PLING DEPTH (FEET)	RESER-VOIR STORAGE (AC-FT)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)
FEB												
14...	0918	730	80020	1.00	121000	309	7.7	6.5	11	11.6	99	.7
14...	0919	730	1028	5.00	121000	309	--	6.5	--	11.4	97	--
14...	0920	730	1028	10.0	121000	310	--	6.5	--	11.8	100	--
14...	0921	730	1028	15.0	121000	311	7.5	6.5	--	11.8	100	--
14...	0922	730	1028	20.0	121000	312	--	6.0	--	11.8	99	--
14...	0923	730	1028	25.0	121000	314	--	6.0	--	11.7	98	--
14...	0924	730	1028	30.0	121000	315	--	6.0	--	11.7	98	--
14...	0925	730	1028	34.0	121000	317	7.6	6.0	--	11.5	97	--
MAR												
21...	1240	730	80020	1.00	121000	300	8.0	11.0	14	11.3	107	.4
21...	1241	730	1028	5.00	121000	299	--	10.5	--	11.1	104	--
21...	1242	730	1028	10.0	121000	295	--	10.5	--	11.5	108	--
21...	1243	730	1028	15.0	121000	300	8.0	10.0	--	11.4	106	--
21...	1244	730	1028	20.0	121000	299	--	10.0	--	11.4	106	--
21...	1245	730	1028	25.0	121000	302	--	10.0	--	11.4	106	--
21...	1246	730	1028	30.0	121000	302	--	10.0	--	11.4	106	--
21...	1247	730	1028	33.0	121000	302	8.1	10.0	--	11.3	105	--
MAY												
31...	0955	730	80020	1.00	122000	411	--	23.5	8.0	--	--	.0
31...	0956	730	1028	5.00	122000	410	--	23.5	--	--	--	--
31...	0957	730	1028	10.0	122000	411	--	23.5	--	--	--	--
31...	0958	730	1028	15.0	122000	411	--	23.5	--	--	--	--
31...	0959	730	1028	20.0	122000	412	--	23.5	--	--	--	--
31...	1000	730	1028	25.0	122000	413	--	23.0	--	--	--	--
31...	1001	730	1028	26.0	122000	414	--	23.0	--	--	--	--

[illegible]

ARKANSAS RIVER BASIN

351442097140201 LAKE THUNDERBIRD HOG CREEK CROSS SECTION

LOCATION.--Lat 35°14'42", long 97°14'02".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
14...	1036	730	1028	1.00	121000	319	7.8	7.5	11.4	99
14...	1037	730	1028	5.00	121000	318	--	7.0	11.6	100
14...	1038	730	1028	10.0	121000	315	--	7.0	11.4	98
14...	1039	730	1028	15.0	121000	316	7.6	6.5	11.4	97
14...	1040	730	1028	20.0	121000	318	--	6.5	11.1	94
14...	1041	730	1028	25.0	121000	319	--	6.0	11.1	93
14...	1042	730	1028	29.0	121000	319	7.6	6.0	11.0	92
MAR										
21...	1355	730	1028	1.00	121000	292	8.0	11.5	11.6	111
21...	1356	730	1028	5.00	121000	298	--	11.0	11.6	110
21...	1357	730	1028	10.0	121000	301	--	10.0	11.2	104
21...	1358	730	1028	15.0	121000	298	7.8	10.0	11.4	106
21...	1359	730	1028	20.0	121000	301	--	10.0	11.4	106
21...	1400	730	1028	25.0	121000	301	--	10.0	11.5	106
21...	1401	730	1028	30.0	121000	302	--	10.0	11.5	106
21...	1402	730	1028	32.0	121000	302	7.8	10.0	11.3	105
MAY										
31...	1115	730	1028	1.00	122000	404	--	23.0	--	--
31...	1116	730	1028	5.00	122000	403	--	23.0	--	--
31...	1117	730	1028	10.0	122000	404	--	23.0	--	--
31...	1118	730	1028	15.0	122000	404	--	23.0	--	--
31...	1119	730	1028	20.0	122000	404	--	23.0	--	--
31...	1120	730	1028	25.0	122000	403	--	23.0	--	--
31...	1121	730	1028	30.0	122000	365	--	22.5	--	--

07230000 LITTLE RIVER BELOW LAKE THUNDERBIRD NEAR NORMAN, OK

LOCATION.--Lat 35°13'18", long 97°12'49", in NE 1/4 SE 1/4 sec.29, T.9 N., R.1 E., Cleveland County, Hydrologic Unit, 11090203, at right bank of outlet channel, 170 ft (51.8 m) upstream from State Highway 9, 1,200 ft (365.8 m) downstream from Lake Thunderbird, 1.0 mi (1.6 km) upstream from Prairie Creek, 13.0 mi (20.9 km) east of Norman, and at mile 96.2 (154.8 km).

DRAINAGE AREA.--257 mi² (666 km²).

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1964, published as Little River below Hog Creek near Norman.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 965.62 ft (294.321 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1956, nonrecording gage 800 ft (243.8 m) downstream at same datum. Nov. 28, 1956 to Oct. 14, 1964, water-stage recorder at site 800 ft (243.8 m) downstream at same datum. Oct. 15, 1964, to Sept. 1, 1965, nonrecording gage at site 170 ft (51.8 m) downstream at same datum.

REMARKS.--Records fair. Flow regulated by Lake Thunderbird since March 1965 (station 07229900). In prior years, occasional small diversions above station for irrigation.

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 12 years (water years 1952-64), 58.9 ft³/s (1.668 m³/s), 42,640 acre-ft/yr (52.6 hm³/yr); (after regulation by Lake Thunderbird) 19 years, (water years 1966-84), 22.3 ft³/s (0.632 m³/s), 16,160 acre-ft/yr (19.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,600 ft³/s (980 m³/s) May 25, 1957, gage height, 28.85 ft (8.793 m), from high-water mark, at site then in use, from rating curve extended above 15,000 ft³/s (425 m³/s); no flow at times in 1954-56, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) Oct. 26, gage height, 8.62 ft (2.627 m); minimum daily discharge, 0.51 ft³/s (0.014 m³/s) Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	1040	.55	.54	.57	120	334	.67	.57	.61	.61	.63
2	.58	880	.54	.53	.55	194	334	.66	.57	.62	.64	.68
3	.60	730	.60	.54	.53	194	344	.63	.59	.61	.63	.62
4	.58	730	.56	.54	.53	194	392	.65	.66	.61	.66	.62
5	.63	730	.57	.53	.51	194	390	.64	1.3	.60	.62	.62
6	.72	731	.59	.54	.53	194	271	.64	1.2	.61	.64	.62
7	.62	730	.61	.54	.53	194	188	.63	.61	.61	.63	.60
8	.61	730	.61	.53	.58	75	186	.61	.61	.61	.65	.66
9	.57	730	.58	.58	.58	.65	188	.61	.97	.61	.68	.62
10	.65	730	.60	.54	.54	.64	190	.61	.89	.61	.68	.59
11	.57	730	.62	.53	.57	.70	190	.61	131	.60	.64	.58
12	.54	730	.59	.56	.53	.74	190	.61	212	.60	.65	.57
13	.53	730	.57	.54	.53	.61	190	.61	212	.56	.63	.57
14	.53	730	.61	.53	.55	.61	190	.64	211	.60	.61	.54
15	.53	730	.61	.60	.53	.61	190	.63	208	.60	.65	.53
16	.55	730	.56	.55	.53	.63	86	.61	208	.61	.65	.53
17	.77	730	.54	.59	.53	.63	.74	.62	208	.61	.65	.56
18	1.5	730	.61	.61	.59	.70	.69	.60	90	.53	.66	.60
19	2.0	730	.56	.57	.54	.54	.69	.82	.65	.61	.65	.55
20	2.4	730	.60	.59	.60	.62	.77	.69	.63	.66	.65	.53
21	1.1	730	.61	.55	.61	.62	.72	.61	.61	.67	.60	.55
22	152	540	.55	.56	.58	.62	.65	.61	.61	.66	.79	.56
23	390	370	.53	.60	.57	1.6	.71	.60	.62	.69	.64	.53
24	520	365	.54	.56	.56	.70	.78	.61	.60	.67	.61	.53
25	590	365	.53	.58	.58	94	.77	.60	.61	.62	.61	.80
26	900	367	.56	.58	.64	208	.74	.62	.94	.53	.64	.60
27	1040	365	.60	.56	.60	208	.69	.79	.58	.59	.64	.59
28	1040	365	.57	.58	.52	208	.69	.63	.60	.61	.63	.53
29	1040	250	.54	.58	.56	287	.74	.58	.66	.61	.64	.60
30	1040	.60	.53	.58	---	334	.69	.59	.61	.62	.75	.56
31	1040	---	.54	.56	---	334	---	.58	---	.61	.64	---
TOTAL	7769.18	18778.60	17.78	17.37	16.17	3043.22	3863.07	19.61	1495.69	18.96	20.07	17.67
MEAN	251	626	.57	.56	.56	98.2	129	.63	49.9	.61	.65	.59
MAX	1040	1040	.62	.61	.64	334	392	.82	212	.69	.79	.80
MIN	.53	.60	.53	.53	.51	.54	.65	.58	.57	.53	.60	.53
AC-FT	15410	37250	35	34	32	6040	7660	39	2970	38	40	35
CAL YR 1983	TOTAL	46273.52	MEAN	127	MAX	1040	MIN	.53	AC-FT	91780		
WTR YR 1984	TOTAL	35077.39	MEAN	95.8	MAX	1040	MIN	.51	AC-FT	69580		

07230500 LITTLE RIVER NEAR TECUMSEH, OK

LOCATION.--Lat 35°10'25", long 96°55'55", near northwest corner sec.18, T.8 N., R.4 E., Pottawatomie County, Hydrologic Unit 11090203, on downstream side of center pier of bridge on U.S. Highway 177, 1.5 mi (2.4 km) downstream from Dance Creek, 5.0 mi (8.0 km) south of Tecumseh, and at mile 77.2 (124.2 km).

DRAINAGE AREA.--456 mi² (1,181 km²).

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 898.52 ft (273.869 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair. Flow regulated or diverted since 1965 by Lake Thunderbird, 19.2 mi (30.9 km) upstream (station 07229900).

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 21 years (water years 1944-64), 149 ft³/s (4.22 m³/s), 107,900 acre-ft/yr (133.0 hm³/yr); (since regulation by Lake Thunderbird) 19 years (water years 1966-84), 82.4 ft³/s (2.33 m³/s), 59,700 acre-ft/yr (73.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,400 ft³/s (918 m³/s) May 25, 1957, gage height, 18.84 ft (5.742 m), maximum gage height, 19.68 ft (5.998 m), May 18, 1949; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1932 reached a stage of 25.58 ft (7.797 m), from flood mark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 12,700 ft³/s (360 m³/s) Oct. 20, gage height, 19.24 ft (5.864 m); minimum daily discharge .63 ft³/s (.018 m³/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	1050	32	17	22	39	397	18	10	9.5	2.0	1.5
2	.63	1060	30	19	22	160	390	18	9.1	9.8	1.6	1.2
3	.68	686	34	21	21	159	388	19	8.6	10	1.6	2.1
4	6.3	700	37	24	20	182	480	17	7.8	10	1.5	2.4
5	1.8	714	31	29	19	167	447	15	8.0	9.8	1.5	2.5
6	1.4	726	27	32	18	157	393	17	467	8.8	2.2	2.3
7	8.8	754	25	31	18	153	212	16	65	7.4	2.1	1.2
8	6.8	724	24	26	19	129	432	14	25	6.8	1.6	1.0
9	4.9	741	23	22	38	23	266	13	20	6.6	2.5	5.0
10	2.6	718	23	20	32	19	231	12	309	6.4	2.2	15
11	7.4	709	26	18	25	19	214	11	85	6.2	1.9	10
12	6.6	712	24	17	24	170	197	11	192	6.0	1.7	5.0
13	2.8	715	26	17	21	71	189	9.9	184	5.8	1.5	3.0
14	2.0	727	29	16	19	35	185	13	181	5.4	1.4	2.5
15	1.5	717	26	17	19	28	183	11	181	5.0	1.3	2.0
16	1.2	711	24	15	16	23	167	9.7	181	4.6	1.1	1.8
17	3.3	711	22	14	17	23	45	9.1	178	4.2	1.1	1.4
18	33	701	22	14	22	24	31	8.8	156	4.0	1.0	1.6
19	1790	722	19	13	24	32	26	12	25	3.8	.98	1.6
20	6850	684	17	14	19	23	26	15	12	3.6	.93	1.6
21	7550	671	16	15	18	20	35	13	9.8	3.0	.92	1.6
22	2260	611	18	16	19	18	25	11	8.8	3.0	.81	1.6
23	1210	424	17	17	17	1050	22	10	7.8	2.8	2.7	1.7
24	973	357	16	19	17	538	20	8.7	24	2.5	3.0	1.7
25	861	344	15	19	16	166	19	8.8	10	2.1	1.6	31
26	806	341	16	19	32	281	19	9.1	186	1.9	1.2	20
27	1170	363	15	16	55	254	18	12	48	2.4	1.0	5.5
28	1080	338	14	15	40	319	16	80	19	2.8	.91	3.9
29	1080	321	13	24	24	272	19	24	15	1.9	.96	3.4
30	1060	74	14	24	---	404	24	12	15	1.7	.91	3.1
31	1050	---	16	21	---	398	---	12	---	2.1	1.5	---
TOTAL	27832.34	18826	691	601	673	5356	5116	470.1	2647.9	159.9	47.22	138.2
MEAN	898	628	22.3	19.4	23.2	173	171	15.2	88.3	5.16	1.52	4.61
MAX	7550	1060	37	32	55	1050	480	80	467	10	3.0	31
MIN	.63	74	13	13	16	18	16	8.7	7.8	1.7	.81	1.0
AC-FT	55210	37340	1370	1190	1330	10620	10150	932	5250	317	94	274
CAL YR 1983	TOTAL	83870.05		MEAN	230	MAX	7550	MIN	.00	AC-FT	166400	
WTR YR 1984	TOTAL	62558.66		MEAN	171	MAX	7550	MIN	.63	AC-FT	124100	

ARKANSAS RIVER BASIN

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07230597 LITTLE RIVER NEAR BOWLEGS, OK

LOCATION.--Lat 35°06'19", long 96°40'06", in NW 1/4 SE 1/4 sec.3, T.7 N., R.6 E., Seminole County, Hydrologic Unit 11090203, on the right downstream abutment of state highways 3 and 99, 6.7 miles (10.8 km) south of Seminole and at river mile 57.8.

DRAINAGE AREA.--550 mi² (885 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1983 to current year.

GAGE.--Water-stage recorder and a crest stage gage. Datum of gage is 826.20 ft (251.826 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Flow regulated by Lake Thunderbird 38.8 miles (62.4 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s (320 km³/s) Oct. 22, 1983, gage height, 24.84 ft (7.571 m). No flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,300 ft³/s (320 km³/s) Oct. 22, gage height, 24.84 ft (7.571 m). No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1140	43	15	18	85	370	39	25	19	.00	.00
2	.00	1150	34	17	19	89	378	38	22	12	.00	.00
3	.00	976	29	18	22	161	384	38	19	12	.00	.00
4	.00	864	29	20	22	204	393	36	18	13	.00	.00
5	.00	857	28	23	22	211	473	33	22	12	.00	.00
6	.00	862	23	28	23	194	517	30	863	12	.00	.00
7	.00	857	21	35	19	178	500	27	259	10	.00	.00
8	.00	831	20	45	20	176	473	24	82	7.0	.00	.00
9	.00	804	20	35	34	175	453	22	50	5.6	.00	30
10	.10	785	21	29	30	175	424	21	251	3.8	5.7	21
11	.10	770	21	25	32	172	315	19	152	2.5	3.0	5.5
12	.20	757	20	29	30	442	250	16	153	2.3	.00	2.0
13	.20	747	20	30	27	218	250	14	198	1.9	.00	.50
14	.20	734	20	24	34	130	234	14	190	1.6	.00	.00
15	.30	727	20	22	26	110	230	14	186	1.4	.00	.00
16	1.0	703	19	16	26	101	215	14	182	2.1	.00	.00
17	4.2	695	17	16	21	90	114	14	178	2.8	.00	.00
18	41	720	18	17	22	158	66	15	176	2.1	.00	.00
19	1240	729	20	20	22	189	51	25	96	1.9	.00	.00
20	2840	727	18	20	22	84	54	27	27	.90	.00	.00
21	4200	734	17	19	21	61	52	27	19	.70	.00	.00
22	9720	737	19	22	19	57	52	18	17	.20	.00	.00
23	4840	556	21	25	20	564	48	18	15	.05	.00	.00
24	1940	420	21	31	22	1600	42	16	16	.00	.00	.00
25	1210	387	20	35	20	459	39	13	38	.00	.00	.50
26	948	414	19	34	34	300	37	48	116	.00	.00	42
27	1120	514	18	39	99	292	36	67	130	.00	.00	17
28	1140	331	16	24	95	315	36	37	47	.00	.00	6.9
29	1150	250	15	21	92	285	41	28	26	.00	.00	4.4
30	1140	144	15	19	---	328	41	26	26	.00	.00	3.3
31	1140	---	15	18	---	361	---	27	---	.00	.00	---
TOTAL	32675.30	20922	657	771	913	7964	6568	805	3599	126.85	8.70	133.10
MEAN	1054	697	21.2	24.9	31.5	257	219	26.0	120	4.09	.28	4.44
MAX	9720	1150	43	45	99	1600	517	67	863	19	5.7	42
MIN	.00	144	15	15	18	57	36	13	15	.00	.00	.00
WTR YR 1984	TOTAL	75142.95		MEAN	205	MAX	9720	MIN	.00			

ARKANSAS RIVER BASIN

07230597 LITTLE RIVER NEAR BOWLEGS, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1959, 1963, February 1983 to current year.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
OCT											
20...	1900	730	80020	2770	147	7.6	17.5	330	6.7	73	49
20...	2045	730	80020	2850	145	7.2	19.5	310	6.5	74	48
21...	1230	730	80020	3780	123	7.1	18.0	390	6.2	68	44
22...	1400	740	80020	11000	111	7.1	16.5	330	6.7	71	44
23...	1100	740	80020	4950	156	7.0	15.5	180	6.7	69	58
24...	1300	740	80020	1800	262	7.2	16.0	240	7.2	75	100
NOV											
21...	1430	760	80020	735	370	7.6	14.0	140	11.1	108	130
JAN											
04...	1430	740	80020	20	1540	7.3	2.5	4.0	--	--	410
FEB											
16...	1230	735	80020	26	1410	8.7	8.5	4.5	10.0	89	440
MAR											
22...	1000	733	80020	55	1360	8.2	12.0	50	9.5	92	370
APR											
19...	1030	733	80020	51	1350	8.1	16.0	26	8.6	91	340
MAY											
30...	1530	736	80020	25	1060	8.0	24.0	140	8.3	103	220
JUN											
26...	1330	720	80020	127	648	7.6	27.0	180	6.4	85	200
26...	1425	720	80020	320	729	7.0	26.0	550	6.5	85	210
27...	1145	720	80020	153	437	7.5	28.0	550	6.4	87	120
28...	1045	722	1028	44	486	7.3	28.0	550	6.4	87	150
JUL											
19...	1000	738	80020	1.9	3410	7.0	30.0	1.2	8.3	115	630
DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT											
20...	3	12	4.7	10	29	.6	2.6	46	2.2	11	17
20...	2	12	4.4	9.6	29	.6	2.5	46	5.6	11	15
21...	0	11	4.1	7.0	24	.5	2.7	47	7.2	9.6	8.0
22...	0	11	3.9	5.2	19	.4	2.7	44	6.8	9.6	6.0
23...	0	14	5.5	8.4	23	.5	2.8	57	11	12	12
24...	9	22	11	17	26	.8	3.4	91	11	10	28
NOV											
21...	2	26	16	18	22	.7	4.0	129	6.3	10	28
JAN											
04...	110	86	48	160	46	4	2.0	299	29	41	300
FEB											
16...	130	88	54	170	45	4	2.5	314	1.2	42	310
MAR											
22...	98	80	41	140	45	3	3.4	271	3.3	29	280
APR											
19...	77	73	39	120	43	3	3.8	266	4.1	30	250
MAY											
30...	50	46	25	73	42	2	3.5	168	3.2	22	150
JUN											
26...	59	39	24	70	43	2	3.0	137	6.7	18	140
26...	84	43	24	120	55	4	4.2	122	24	22	240
27...	23	28	13	42	42	2	3.3	101	6.2	18	68
28...	21	35	16	45	38	2	3.8	132	13	21	76
JUL											
19...	460	100	93	490	63	9	5.0	170	33	30	970

ARKANSAS RIVER BASIN

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07230597 LITTLE RIVER NEAR BOWLEGS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	FLUO- RIDL, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUI AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
OCT										
20...	.20	4.2	97	90	.13	725	.20	2.0	2.2	9.7
20...	.20	4.8	90	87	.12	693	.20	2.0	2.2	9.7
21...	.20	5.3	80	76	.11	816	.10	2.0	2.1	9.3
22...	.20	4.6	76	70	.10	2260	.10	1.5	1.6	7.1
23...	.20	5.1	99	94	.13	1320	<.10	2.5	--	--
24...	.20	5.0	160	150	.22	778	.10	2.5	2.6	12
NOV										
21...	.20	4.2	187	180	.25	371	.30	1.1	1.4	6.2
JAN										
04...	.30	12	854	830	1.2	46	<.10	.40	--	--
FEB										
16...	.40	10	860	870	1.2	60	<.10	.30	--	--
MAR										
22...	.30	9.0	784	750	1.1	116	<.10	--	--	--
APR										
19...	.40	6.6	678	680	.92	94	<.10	.60	--	--
MAY										
30...	.40	8.2	476	430	.65	32	<.10	2.0	--	--
JUN										
26...	.30	5.2	429	380	.58	147	.30	3.0	3.3	15
26...	.30	4.9	690	530	.94	596	.20	8.5	8.7	39
27...	.40	5.5	264	240	.36	109	.40	6.5	6.9	31
28...	.40	6.6	293	280	.40	35	.20	4.0	4.2	19
JUL										
19...	.30	7.8	--	1800	2.4	9.0	.10	.60	.70	3.1

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
20...	.450	1.4	140	120	14	11	1.8	1990	14900	88
20...	.450	1.4	50	240	23	14	2.1	2220	17100	86
21...	.400	1.2	50	330	11	29	1.1	2140	21800	87
22...	.350	1.1	50	170	19	10	1.0	1470	43700	70
23...	.250	.77	50	130	24	16	1.0	840	11200	85
24...	.300	.92	70	92	61	28	1.5	1320	6420	71
NOV										
21...	.110	.34	80	47	6	7	<.1	745	1480	44
JAN										
04...	<.010	--	230	13	<1	260	.1	35	1.9	48
FEB										
16...	.010	.03	230	11	<1	61	<.1	30	2.1	76
MAR										
22...	.040	.12	150	9	12	52	.4	79	12	96
APR										
19...	.030	.09	160	5	<1	41	.2	44	6.1	96
MAY										
30...	.250	--	140	20	6	9	.3	475	32	99
JUN										
26...	.100	--	120	4	16	2	.9	690	237	99
26...	.500	--	120	74	60	9	1.1	7100	6130	90
27...	.250	--	100	120	47	8	.7	4200	1740	96
28...	.250	--	130	46	13	2	.3	875	104	97
JUL										
19...	.020	--	270	30	8	40	.9	11	.05	48

07231000 LITTLE RIVER NEAR SASAKWA, OK

LOCATION.--Lat 34°59'02", long 96°33'01", NE 1/4 sec.22, T.6 N., R.7 E., Seminole County, Hydrologic Unit 11090203, near left abutment on downstream side of county road bridge, 2.8 mi (4.5 km) northwest of Sasakwa, 8.7 mi (14.0 km) downstream from Salt Creek, and at mile 24.1 (38.8 km).

DRAINAGE AREA.--865 mi² (2,240 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 744.34 ft (226.875 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 11, 1946, nonrecording gage at same site and datum. Prior to Oct. 1, 1979, gage at same site and datum 4.87 ft (1.484 m) higher.

REMARKS.--Records good. Flow regulated by Lake Thunderbird 72.3 mi (116.3 m) upstream since March 1965 (station 07229900).

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 23 years (water years 1943-65), 398 ft³/s (11.27 m³/s), 288,400 acre-ft/yr (356 hm³/yr); (since regulation by Lake Thunderbird) 19 years (water years 1966-84), 244 ft³/s (6.910 m³/s), 176,800 acre-ft/yr (218 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,600 ft³/s (1,260 m³/s) May 11, 1950, gage height, 33.48 ft (10.205 m); no flow at times most years after 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,880 ft³/s (251 m³/s) Oct. 23, gage height, 25.26 ft (7.699 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	1320	163	19	39	87	480	55	40	61	.15	.00
2	.11	1290	89	22	35	66	472	57	30	48	.14	.00
3	.10	1230	73	26	35	133	484	52	26	35	.14	.00
4	.09	1000	70	31	36	331	463	51	21	25	.13	.00
5	.07	946	70	48	35	302	546	47	19	23	.12	.00
6	.07	911	66	99	30	232	543	44	848	20	.11	.00
7	.33	903	59	111	30	204	515	43	1160	18	.06	.00
8	.42	881	54	91	28	193	813	41	388	15	.03	.00
9	.24	864	51	82	33	180	698	35	201	11	.22	25
10	2.6	858	49	79	37	102	456	31	212	6.7	.26	1.6
11	8.3	837	47	49	60	58	519	28	425	5.0	.17	16
12	5.3	822	45	41	51	790	418	25	202	4.1	.11	11
13	3.4	808	48	36	42	784	348	23	190	3.4	.05	4.4
14	4.0	800	51	29	38	383	298	21	200	3.1	.02	2.2
15	4.5	792	54	26	34	254	274	19	184	2.5	.00	1.0
16	2.5	786	52	22	30	186	259	21	175	2.6	.26	.46
17	2.6	779	47	21	28	199	250	18	167	2.5	.18	.19
18	9.8	780	41	23	31	338	154	17	161	2.0	.11	.09
19	859	800	26	20	30	1010	103	16	155	1.6	.07	.02
20	3240	819	23	21	32	360	91	20	89	1.6	.09	.00
21	3330	790	21	24	36	225	141	23	32	1.5	.04	.00
22	4260	782	19	28	30	167	157	27	19	1.4	.00	.00
23	8110	800	17	32	28	289	105	22	13	1.2	.00	.00
24	6730	549	16	37	27	2170	85	17	11	1.4	.00	.00
25	2860	450	17	44	27	1550	75	13	14	.89	.00	2.1
26	1490	429	19	50	71	742	68	191	256	.67	.00	3.0
27	1280	510	20	58	217	661	67	472	539	.55	.00	9.0
28	1420	531	20	61	211	585	66	298	254	.44	.00	35
29	1390	444	18	57	134	555	56	156	140	.33	.00	20
30	1360	401	17	48	---	453	54	121	89	.25	.01	7.1
31	1340	---	18	44	---	491	---	61	---	.19	.00	---
TOTAL	37713.66	23912	1380	1379	1495	14080	9058	2065	6260	299.92	2.47	138.16
MEAN	1217	797	44.5	44.5	51.6	454	302	66.6	209	9.67	.08	4.61
MAX	8110	1320	163	111	217	2170	813	472	1160	61	.26	35
MIN	.07	401	16	19	27	58	54	13	11	.19	.00	.00
AC-FT	74810	47430	2740	2740	2970	27930	17970	4100	12420	595	4.9	274
CAL YR 1983	TOTAL	154328.03		MEAN	423	MAX	8110	MIN	.07	AC-FT	306100	
WTR YR 1984	TOTAL	97783.21		MEAN	267	MAX	8110	MIN	.00	AC-FT	194000	

07231000 LITTLE RIVER NEAR SASAKWA, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1955 to April 1982.

WATER TEMPERATURE: October 1955 to April 1982.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 138,000 microsiemens Oct. 31, 1956; minimum daily, 118 microsiemens Sept. 11, 1977.

WATER TEMPERATURE: Maximum daily, 38.5°C July 13, 1978; minimum, 0.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)
		CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 03...	1430	730	80020	31	2040	7.9	26.5	8.1	106	300	160
NOV 17...	1430	760	80020	776	375	7.6	14.0	11.4	111	140	8
JAN 05...	1000	744	80020	46	2300	7.8	2.0	--	--	600	--
MAR 21...	1400	734	80020	216	1250	8.2	12.0	9.6	93	300	100
APR 18...	1400	735	80020	132	1410	8.2	17.0	8.6	93	330	100
MAY 31...	1350	739	80020	56	1220	7.1	22.5	8.2	98	250	--
JUL 18...	1420	739	80020	2.0	2040	7.6	31.5	9.5	134	390	200
OCT 03...	64	33	300	68	8	5.4	139	3.4	15	560	.9
NOV 17...	27	17	21	24	.8	3.9	130	6.3	11	32	4.3
JAN 05...	130	66	300	52	5	3.3	--	--	47	600	12
MAR 21...	68	31	140	--	4	--	194	2.4	25	290	7.4
APR 18...	70	37	140	48	3	3.7	225	2.7	21	280	5.2
MAY 31...	50	30	140	--	4	--	--	--	--	--	--
JUL 18...	77	48	250	58	6	4.7	193	9.4	80	970	7.9
OCT 03...	1140	1100	1.6	95	<1	390	<.5	<1	<10	<3	
NOV 17...	221	190	.30	463	1	230	<.5	1	<10	<3	
JAN 05...	1430	--	1.9	178	1	650	<.5	<1	10	<3	
MAR 21...	--	--	--	--	<1	250	<.5	<1	<10	<3	
APR 18...	706	690	.96	252	<1	360	.5	<1	<10	<3	
MAY 31...	--	--	--	--	<1	270	<1.0	1	<10	<3	
JUL 18...	1960	1600	2.7	11	<1	450	1.0	<1	<10	<3	

ARKANSAS RIVER BASIN

07231000 LITTLE RIVER NEAR SASAKWA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
03...	<10	9	<10	32	18	.2	<10	1300	<6	8
NOV										
17...	<10	66	<10	20	2	<.1	<10	240	<6	3
JAN										
05...	<10	13	<10	40	430	.2	<10	1400	<6	10
MAR										
21...	<10	19	<10	12	12	.1	<10	740	<6	13
APR										
18...	<10	6	<10	15	27	<.1	<10	760	<6	12
MAY										
31...	10	12	<10	16	30	.1	<10	640	<6	12
JUL										
18...	<10	9	10	15	110	<.1	<10	1000	<6	18

07231500 CANADIAN RIVER AT CALVIN, OK

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, Hydrologic Unit 11090202, near left bank on downstream side of pier of bridge on old U.S. Highway 75, 0.5 mi (0.8 km) north-east of Calvin, 2.4 mi (3.9 km) upstream from Shawnee Creek, 8.5 mi (13.7 km) downstream from Little River, and at mile 93.9 (151.1 km).

DRAINAGE AREA.--27,952 mi² (72,396 km²), of which 4,801 mi² (12,435 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1905 to December 1908 (gage heights and discharge measurements only except for period July 1905 to December 1906), October 1938 to September 1942, July 1944 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1904 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1391: 1941.

GAGE.--Water-stage recorder and nonrecording gage. Datum of gage is 682.72 ft (208.093 m), National Geodetic Vertical Datum of 1929. January 1905 to December 1908, nonrecording gage at site 0.8 mi (1.3 km) upstream at datum 4.00 ft (1.219 m) higher. Oct. 1, 1938, to Aug. 12, 1944, nonrecording gage at present site and datum. Aug. 13, 1944, to July 31, 1977, water-stage recorder at present site and datum 2.00 ft (0.611 m) higher.

REMARKS.--Records fair. Occasional slight regulation by dams in New Mexico and Texas.

AVERAGE DISCHARGE.--45 years (water years 1906, 1939-42, 1945-84), 1,508 ft³/s (42.71 m³/s), 1,093,000 acre-ft/yr (1.35 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 174,000 ft³/s (4,930 m³/s) May 11, 1950, gage height, 17.35 ft (5.288 m), maximum gage height, 21.00 ft (6.401 m), Aug. 7, 1906, from floodmark, site and datum then in use; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 144,000 ft³/s (4,080 m³/s) Oct. 21 at 1530, gage height, 15.29 ft (4.660 m), no other peak above base of 25,000 ft³/s (708 m³/s). Minimum daily flow 2.5 ft³/s (0.071 m³/s) Sept. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	2240	986	87	421	642	1770	460	281	437	20	3.7
2	22	2200	624	110	344	542	1660	444	209	391	22	4.6
3	19	2130	502	161	323	576	1700	407	188	259	19	13
4	18	1880	432	380	368	1910	1620	401	133	168	17	10
5	18	1580	405	650	486	1240	1740	426	101	147	16	10
6	19	1550	417	729	472	1050	1790	449	102	122	16	7.6
7	22	1570	440	687	399	816	1660	444	2490	94	13	6.2
8	23	1580	379	1190	317	822	3540	429	1140	95	14	4.6
9	24	1620	329	1130	347	723	5860	432	554	97	15	84
10	24	1670	311	997	325	629	5220	389	397	64	67	40
11	56	1680	314	714	394	478	4230	323	3210	47	58	14
12	116	1660	306	551	622	2390	3310	299	2230	43	39	15
13	80	1600	304	478	538	3690	2560	339	881	40	25	16
14	69	1600	324	442	454	2110	1990	331	605	40	19	12
15	62	1580	321	391	401	1370	1680	305	426	36	13	8.2
16	52	1560	327	309	351	938	1430	239	314	33	11	7.0
17	92	1610	372	246	313	796	1190	219	264	39	10	5.4
18	55	1680	351	270	330	981	1000	203	205	40	9.8	3.4
19	2640	1990	124	307	380	3210	760	195	166	41	8.8	4.0
20	25100	1980	124	350	378	1760	692	226	138	33	8.2	3.4
21	87600	1910	124	400	392	852	1560	236	69	29	7.6	2.9
22	42500	1880	121	481	359	628	1120	328	45	24	7.3	2.5
23	13000	2170	114	506	319	670	911	409	39	20	18	2.5
24	11600	1840	110	568	300	7660	711	259	38	26	14	2.9
25	6030	1380	102	545	297	5800	605	202	795	35	9.2	3.2
26	3530	1500	97	485	501	3760	546	321	615	23	8.5	14
27	2490	2040	90	670	1130	2930	579	1140	2710	20	8.2	34
28	2450	1840	86	802	1120	2520	541	1500	1780	17	7.0	30
29	2420	1500	90	579	886	2330	539	2260	1350	19	5.6	42
30	2330	1290	79	536	---	2060	468	824	607	20	4.6	23
31	2260	---	80	477	---	1770	---	483	---	20	4.2	---
TOTAL	204746	52310	8785	16228	13267	57653	52982	14922	22082	2519	515.0	429.1
MEAN	6605	1744	283	523	457	1860	1766	481	736	81.3	16.6	14.3
MAX	87600	2240	986	1190	1130	7660	5860	2260	3210	437	67	84
MIN	18	1290	79	87	297	478	468	195	38	17	4.2	2.5
AC-FT	406100	103800	17430	32190	26320	114400	105100	29600	43800	5000	1020	851
CAL YR 1983	TOTAL	660464.3		MEAN	1809	MAX	87600	MIN	7.3	AC-FT	1310000	
WTR YR 1984	TOTAL	446438.1		MEAN	1220	MAX	87600	MIN	2.5	AC-FT	885500	

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-53, 1960-61, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1965 to Jan. 1982.

WATER TEMPERATURE: July 1965 to Jan. 1982.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,400 microsiemens Nov. 17, 1966; minimum daily, 205 microsiemens Nov. 1, 1972.

WATER TEMPERATURE: Maximum daily, 34.0°C July 7, 1975; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
21...	1500	740	1028	142000	290	7.5	17.0	--	6.5	69	--
NOV											
15...	1600	750	80020	1590	--	7.7	15.0	180	9.8	99	130
JAN											
25...	1030	750	80020	600	1520	8.4	1.0	11	13.8	99	52
MAR											
20...	1130	740	80020	1560	970	7.8	9.0	600	10.4	93	K7800
MAY											
01...	1300	750	80020	474	1720	8.1	21.0	24	9.4	108	36
JUL											
24...	1100	750	80020	26	1700	8.0	27.5	14	8.2	106	110
SEP											
20...	1525	750	80020	3.4	1920	8.3	31.0	37	10.7	147	39

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)
OCT										
21...	--	--	--	--	--	--	--	--	--	--
NOV										
15...	390	260	69	59	26	54	31	2	4.1	186
JAN										
25...	89	560	200	140	51	130	33	2	4.2	363
MAR										
20...	K13000	270	97	65	27	99	43	3	5.4	178
MAY										
01...	20	460	250	96	54	190	47	4	5.0	211
JUL										
24...	200	330	140	64	42	220	58	5	5.6	198
SEP										
20...	77	320	120	65	39	250	62	6	6.7	201

DATE	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT										
21...	--	--	--	--	--	--	--	--	--	--
NOV										
15...	7.2	65	75	.30	6.8	416	400	.57	1790	.33
JAN										
25...	2.8	220	190	.50	14	747	970	1.0	1210	1.0
MAR										
20...	5.4	100	160	.40	7.1	576	570	.78	2430	19
MAY										
01...	3.2	280	290	.60	5.8	1110	1000	1.5	1420	<.10
JUL										
24...	3.8	78	390	.40	11	960	930	1.3	68	<.10

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 21...	--	--	--	--	--	--	--	--	--	--
NOV 15...	.060	.08	1.5	.180	.55	.060	.060	.18	30	1
JAN 25...	.960	1.2	1.6	.420	1.3	.380	.380	1.2	--	--
MAR 20...	.100	.13	1.2	.460	1.4	.060	.040	.12	80	1
MAY 01...	.070	.09	1.5	.280	.86	.040	.030	.09	20	2
JUL 24...	.020	.03	.50	.100	--	.100	.050	.15	--	--
SEP 20...	.030	.04	1.6	.130	--	.010	.040	.12	<10	3

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 21...	--	--	--	--	--	--	--	--	--	--
NOV 15...	300	<.5	<1	<1	<3	4	26	2	17	8
JAN 25...	--	--	--	--	--	--	--	--	--	--
MAR 20...	230	<.5	<1	2	<3	3	65	2	17	14
MAY 01...	340	<.5	<1	<1	<3	3	9	2	47	6
JUL 24...	--	--	--	--	--	--	--	--	--	--
SEP 20...	420	<.0	1	<1	<3	3	6	3	27	6

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	--	--	--	--	--	--	--	5530	2120000	65
NOV 15...	.1	<10	3	<1	<1	580	<6	286	1230	94
JAN 25...	--	--	--	--	--	--	--	173	280	20
MAR 20...	<.1	<10	<1	<1	<1	660	<6	1680	7080	83
MAY 01...	.3	<10	2	<1	<1	1	7	69	88	67
JUL 24...	--	--	--	--	--	--	--	41	2.9	48
SEP 20...	.2	<10	6	<1	<1	1100	<6	81	.74	97

ARKANSAS RIVER BASIN

07232500 BEAVER RIVER NEAR GUYMON, OK
(Headwater of the North Canadian River)

LOCATION.--Lat 36°43'24", long 101°29'30", NW 1/4 SW 1/4 sec.18, T.3 N., R.15 E., Texas County, Hydrologic Unit 11100101, near center of span on downstream side of pier of bridge on U.S. Highway 64 at Dry Sand Draw, 1.2 mi (1.9 km) upstream from Goff Creek, 2.5 mi (4.0 km) north of Guymon, and at mile 650.7 (1,047.0 km).

DRAINAGE AREA.--2,139 mi² (5,540 km²), which includes that of Dry Sand Draw and of which 964 mi² (2,497 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1970, published as North Canadian River near Guymon.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,970.69 ft (905.466 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair.

AVERAGE DISCHARGE.--47 years, 22.4 ft³/s (0.634 m³/s), 16,230 acre-ft/yr (20.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,400 ft³/s (1,570 m³/s) June 15, 1964, gage height, 13.68 ft (4.170 m); maximum gage height, 13.82 ft (4.212 m), Sept 23, 1941, from floodmark; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 23 ft³/s (0.651 m³/s) May 14, gage height, 4.62 ft (1.408 m), no peaks above base of 2,400 ft³/s (68.0 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	3.9	3.6	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	12	2.8	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	9.4	2.6	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	7.2	2.1	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	5.0	4.7	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	3.8	8.4	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	3.0	5.9	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	2.3	4.4	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	2.0	3.1	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	4.0	2.6	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	12	1.9	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	4.6	1.6	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	2.5	4.6	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	1.4	8.6	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	1.0	4.9	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.67	3.7	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.49	2.5	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.24	2.4	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.11	2.6	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.51	1.9	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.04	1.2	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.12	.47	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.14	.16	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	1.9	.00	.39	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	2.2	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	4.2	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	3.6	3.6	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	2.6	6.0	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	3.6	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	23.30	86.02	77.12	.00	.00	.00	.00
MEAN	.00	.00	.00	.00	.00	.75	2.87	2.49	.00	.00	.00	.00
MAX	.00	.00	.00	.00	.00	4.2	12	8.6	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	46	171	153	.00	.00	.00	.00
CAL YR 1983	TOTAL	498.32		MEAN	1.37	MAX	9.3	MIN	.00	AC-FT	988	
WTR YR 1984	TOTAL	186.44		MEAN	.51	MAX	12	MIN	.00	AC-FT	370	

07232900 COLDWATER CREEK NR GUYMON, OK

LOCATION.--Lat 36°34'19", long 101°22'52", NW 1/4 NW 1/4 sec.7, T.1 N., R.16 E., Texas County, Hydrologic Unit 11100103, near left bank on downstream side of pier of bridge on county road, 0.3 mi (0.5 km) downstream from Frisco Creek, 4.0 mi (1.6 km) east and 7.5 mi (4.8 km) south of Guymon, and at mile 18.0 (2.9 km).

DRAINAGE AREA.--1,903 mi (4,929 km), of which 1,178 mi (3,051 km) is probably noncontributing.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage 2,870.83 ft (875.029 m); National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,800 ft³/s (164 m³/s) June 20, 1982, gage height, 14.34 ft (4.371 m); no flow each year.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 300 ft³/s and maximum of year, (*).

Water year	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
1981	Aug. 7, 1981		* 94	2.66	*9.64	2.938
1982	May 13, 1982	0630	2,480	70.2	12.75	3.886
	Jun. 20, 1982	2100	*5,800	164	*14.34	4.371

1983 No flow during entire year.

1984 No flow during entire year.

No flow most times during 1981 and 1982.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.2	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.6	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.6	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.60	44.07	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	1.42	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.6	21	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
WTR YR 1981	TOTAL	53.67		MEAN	.15	MAX	21	MIN	.00			

ARKANSAS RIVER BASIN

07232900 COLDWATER CREEK NR GUYMON, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.75	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	74	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	531	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	1290	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	65	7.5	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	1.6	16	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	774	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	174	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	26	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	44	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	10	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	9.3	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	7.5	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	7.0	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	1.2	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	1961.60	1092.50	.00	.75	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	63.3	36.4	.00	.02	.00
MAX	.00	.00	.00	.00	.00	.00	.00	1290	774	.00	.75	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1981	TOTAL	53.67		MEAN	.15	MAX	21	MIN	.00			
WTR YR 1982	TOTAL	3054.85		MEAN	8.37	MAX	1290	MIN	.00			

ARKANSAS RIVER BASIN

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07232900 COLDWATER CREEK NR GUYMON, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1982	TOTAL	3054.85		MEAN	8.37	MAX	1290	MIN	.00			
WTR YR 1983	TOTAL	.00		MEAN	.00	MAX	.00	MIN	.00			

ARKANSAS RIVER BASIN

07232900 COLDWATER CREEK NR GUYMON, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1983	TOTAL	.00	MEAN	.00	MAX	.00	MIN	.00				
WTR YR 1984	TOTAL	.00	MEAN	.00	MAX	.00	MIN	.00				

07233200 OPTIMA LAKE NEAR HARDESTY, OK

LOCATION.--Lat 36°39'23", long 101°08'13", in NE 1/4 NE 1/4 sec., T.2 N., R.18 E., Texas County, Hydrologic Unit 11100102, in control tower for dam on Beaver River, 4.5 mi (7.2 km) northeast of Hardesty, and at mile 623.2 (1,002.7 km).

DRAINAGE AREA.--5,029 mi² (13,025 km²), of which 1,788 mi² (4,631 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earth dam having a concrete gate tower with a 12'0" x 16'5" oblong conduit. Discharges are controlled by two drum-hoist operated tractor-type service gates and a 36 in. low-flow control pipe. Closure for storage was made Oct. 2, 1978. Capacity, 618,500 acre-ft (763 hm³) at elevation 2,814.2 ft (857.77 m), maximum pool; 382,500 acre-ft (472 hm³) at elevation 2,796.0 ft (852.22 m), uncontrolled spillway crest; 229,500 acre-ft (283 hm³) at elevation 2,779.0 ft (847.04 m), top of flood-control pool; 129,000 acre-ft (159 hm³) at elevation 2,763.5 ft (842.32 m), top of conservation pool. Figures given herein represent total contents. Reservoir is used for flood control, sediment control, and water supply. Capacity table based on original survey.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,610 acre-ft (9.38 hm³) May 30 to June 2, 1980, elevation, 2,722.90 ft (829.940 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,150 acre-ft (3.88 hm³) Apr. 2-13, elevation, 2,718.05 ft (828.462 m); minimum, 1,450 acre-ft (1.788 hm³) Sept. 28-30, elevation, 2,715.05 ft (827.547 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

2,715	1,430	2,718	3,110
2,716	1,890	2,719	3,870
2,717	2,450		

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3110	2970	2900	2970	2900	2900	3000	3040	2770	2450	2020	1690
2	3110	2970	2970	2970	2900	2900	3150	3000	2770	2420	1990	1690
3	3110	2970	2970	2970	2900	2900	3150	3000	2770	2420	1990	1690
4	3110	2970	2970	2970	2900	2900	3150	3000	2740	2420	1990	1690
5	3110	2970	2970	2970	2900	2900	3150	3040	2740	2390	1990	1670
6	3040	2970	2970	2970	2900	2900	3150	3040	2740	2360	1990	1620
7	3040	2970	2970	2970	2900	2900	3150	3040	2740	2360	1990	1620
8	3040	2970	2970	2900	2900	2900	3150	3040	2700	2330	1970	1600
9	3040	2970	2970	2900	2900	2900	3150	3000	2670	2330	1970	1600
10	3040	2970	2970	2900	2900	2900	3150	3000	2640	2330	1970	1580
11	3040	2970	2970	2900	2900	2900	3150	2970	2640	2330	1970	1580
12	3040	2970	2970	2900	2900	2900	3150	2940	2610	2330	1970	1580
13	3040	2970	2970	2900	2900	2900	3150	3080	2610	2270	1940	1560
14	3040	2970	2970	2900	2900	2900	3110	3080	2570	2270	1940	1560
15	2970	2970	2970	2900	2900	2900	3110	3080	2570	2300	1920	1560
16	2970	2970	2970	2900	2900	2900	3110	3040	2570	2300	1890	1540
17	2970	2970	2970	2900	2900	2900	3080	3040	2570	2270	1890	1540
18	2970	2970	2970	2900	2900	2900	3080	3000	2540	2270	1860	1540
19	2970	2970	2970	2900	2900	2900	3080	3000	2540	2270	1860	1540
20	2970	2970	2970	2900	2900	2900	3040	2970	2540	2240	1840	1540
21	2970	2970	2970	2900	2900	2900	3040	2970	2540	2210	1840	1510
22	2970	2970	2970	2900	2900	2900	3000	2940	2510	2160	1840	1510
23	2970	2970	2970	2900	2900	2940	3000	2940	2510	2130	1820	1490
24	2970	2970	2970	2900	2900	2940	3000	2940	2510	2130	1820	1470
25	2970	2970	2970	2900	2900	2940	2970	2900	2510	2100	1820	1470
26	2970	2970	2970	2900	2900	2940	2970	2900	2510	2100	1790	1470
27	2970	2970	2970	2900	2900	2940	2970	2900	2510	2100	1790	1470
28	2970	2970	2970	2900	2900	2940	3000	2870	2510	2080	1770	1450
29	2970	2970	2970	2900	2900	2940	3040	2870	2450	2080	1740	1450
30	2970	2900	2970	2900	---	2940	3040	2870	2450	2080	1720	1450
31	2970	---	2970	2900	---	2970	---	2800	---	2050	1720	---
MAX	3110	2970	2970	2970	2900	2970	3150	3080	2770	2450	2020	1690
MIN	2970	2900	2900	2900	2900	2900	2970	2800	2450	2050	1720	1450
(+)	2717.80	2717.70	2717.80	2717.70	2717.70	2717.80	2717.90	2717.55	2717.00	2716.30	2715.65	2715.05
(++)	-140	-70	+70	-70	0	+70	+70	-240	-350	-400	-330	-270
CAL YR 1983	MAX	4910	MIN	2900	(++)	-1,320						
WTR YR 1984	MAX	3150	MIN	1450	(++)	-1,740						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-Feet

ARKANSAS RIVER BASIN

07233210 BEAVER RIVER NEAR HARDESTY, OK
(Headwater of the North Canadian River)

LOCATION.--Lat 36°39'23", long 101°08'06", in SE 1/4 NE 1/4 sec.8, T.2 N., R.18 E., Texas County, Hydrologic Unit 11100102, on left bank of outlet channel, 500 ft (152 m) downstream from Optima Dam, 5 mi (8 km) northeast of Hardesty, and at mile 623.1 (1,002.6 km).

DRAINAGE AREA.--5,029 mi² (13,025 km²), of which 1,788 mi² (4,631 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage 2,690.00 ft (819.912 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Flow completely regulated by Optima Lake (07233200) since Oct. 1978.

AVERAGE DISCHARGE.--(Since regulation by Optima Lake) 6 years (water years 1979-84) 0.110 ft³/s (0.003 m³/s), 79.7 acre-ft/yr (0.098 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 685 ft³/s (19.4 m³/s) June 8, 1978, gage height, 10.42 ft (3.176 m); no flow at times in 1978, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.7 ft³/s (.048 m³/s) Apr. 2, gage height, 8.26 ft (2.518 m); minimum daily discharge, 0.01 ft³/s (<0.001 m³/s) Jan. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.10	.07	.03	.05	.05	.10	.04	.08	.09	.09	.05
2	.10	.10	.07	.03	.05	.05	.29	.04	.08	.10	.08	.08
3	.10	.09	.09	.03	.04	.06	.08	.05	.06	.09	.09	.07
4	.09	.09	.08	.04	.04	.06	.08	.05	.07	.18	.09	.04
5	.10	.09	.06	.04	.04	.06	.08	.10	.06	.18	.10	.04
6	.11	.10	.06	.06	.04	.06	.10	.05	.04	.10	.08	.04
7	.29	.09	.06	.04	.04	.05	.07	.04	.05	.08	.10	.04
8	.25	.09	.06	.05	.04	.04	.08	.05	.05	.06	.13	.03
9	.18	.10	.07	.06	.05	.05	.10	.05	.06	.05	.12	.03
10	.10	.10	.07	.05	.04	.07	.14	.04	.07	.08	.09	.04
11	.10	.09	.06	.04	.04	.07	.10	.04	.18	.21	.08	.04
12	.10	.10	.06	.04	.04	.07	.07	.04	.10	.21	.07	.05
13	.09	.10	.05	.03	.04	.08	.07	.06	.07	.18	.07	.04
14	.09	.09	.05	.04	.06	.08	.08	.18	.09	.10	.06	.04
15	.09	.10	.06	.06	.09	.06	.07	.08	.10	.09	.06	.04
16	.08	.10	.05	.06	.07	.06	.07	.06	.10	.25	.06	.04
17	.08	.10	.04	.06	.06	.18	.08	.06	.09	.21	.06	.04
18	.08	.10	.04	.04	.05	.14	.08	.08	.09	.18	.07	.05
19	.08	.14	.02	.01	.04	.10	.07	.18	.08	.14	.06	.05
20	.10	.10	.04	.04	.05	.09	.06	.10	.10	.14	.06	.04
21	.10	.10	.04	.03	.04	.09	.04	.10	.14	.14	.04	.04
22	.08	.08	.04	.03	.04	.10	.07	.10	.20	.08	.05	.06
23	.10	.08	.03	.03	.04	.10	.06	.10	.25	.08	.07	.05
24	.10	.07	.03	.05	.05	.18	.08	.08	.20	.08	.07	.04
25	.09	.08	.04	.05	.05	.14	.06	.10	.25	.10	.07	.04
26	.09	.06	.04	.06	.08	.10	.04	.09	.34	.10	.07	.04
27	.09	.09	.04	.04	.08	.18	.03	.08	.18	.08	.05	.05
28	.09	.10	.04	.04	.04	.14	.06	.09	.14	.10	.05	.05
29	.10	.08	.06	.05	.05	.10	.18	.09	.14	.09	.05	.06
30	.09	.08	.06	.05	---	.10	.08	.08	.10	.10	.05	.06
31	.10	---	.02	.04	---	.18	---	.09	---	.08	.05	---
TOTAL	3.33	2.79	1.60	1.32	1.44	2.89	2.57	2.39	3.56	3.75	2.24	1.38
MEAN	.11	.09	.05	.04	.05	.09	.09	.08	.12	.12	.07	.05
MAX	.29	.14	.09	.06	.09	.18	.29	.18	.34	.25	.13	.08
MIN	.08	.06	.02	.01	.04	.04	.03	.04	.04	.05	.04	.03
AC-FT	6.6	5.5	3.2	2.6	2.9	5.7	5.1	4.7	7.1	7.4	4.4	2.7
CAL YR 1983 TOTAL	33.27		MEAN	.09	MAX	2.1	MIN	.02	AC-FT	66		
WTR YR 1984 TOTAL	29.26		MEAN	.08	MAX	.34	MIN	.01	AC-FT	58		

CAL YR 1983	TOTAL	9716.33	MEAN	26.6	MAX	3700	MIN	.00	AC-FT	19270
WTR YR 1984	TOTAL	824.30	MEAN	2.25	MAX	30	MIN	.00	AC-FT	1630

ARKANSAS RIVER BASIN

07234000 BEAVER RIVER AT BEAVER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952, 1958-59, 1962-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to Jan. 1982.

WATER TEMPERATURE: October 1967 to Jan. 1982.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD:

SPECIFIC CONDUCTANCE: Maximum daily, 6,720 microsiemens April 6, 1981; minimum daily, 286 microsiemens July 31, 1971.

WATER TEMPERATURE: Maximum daily, 38.0°C July 18, 1978; minimum -1.0°C on Dec. 22, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

		BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)
DATE	TIME											
DEC 13...	1400	694	80020	.10	6200	8.2	9.0	1.6	12.0	117	K3	K24
FEB 28...	1200	708	80020	.43	5980	8.3	1.0	4.5	11.8	91	K4	100
APR 10...	1200	693	80020	15	5950	8.5	9.0	3.0	10.6	103	1300	140

ARKANSAS RIVER BASIN

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07234000 BEAVER RIVER AT BEAVER, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 13...	120	<.1	6	1	1	<1	4400	16	10	--	--
FEB 28...	140	.2	4	5	<1	<1	4400	14	20	--	--
APR 10...	70	.1	4	2	<1	<1	3500	31	<10	11	74

ARKANSAS RIVER BASIN

07234100 CLEAR CREEK NEAR ELMWOOD, OK

LOCATION.--Lat 36°38'42", long 100°30'07", SW 1/4 SW 1/4 sec.8, T.2 N., R.24 E., Beaver County, Hydrologic Unit 11100201, on downstream side of right pile bent of county road bridge, 1,000 ft (304.8 m) downstream from small irrigation dam, 2.8 mi (4.5 km) northeast of Elmwood, and at mile 16.9 (27.2 km).

DRAINAGE AREA.--170 mi² (440 km²).

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WSP 2121: 1966.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 2,541.26 ft (774.576 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Poor. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--19 years, 6.61 ft³/s (0.187 m³/s), 4,790 acre-ft/yr (5.91 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) Oct. 16, 1969, gage height, 13.97 ft (4.258 m), from floodmark, from rating curve extended above 12,500 ft³/s (343 m³/s) on basis of slope-area measurement at gage height 13.15 ft (4.008 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily estimated discharge, 4.6 ft³/s (.130 m³/s) Apr. 2, no peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge .60 ft³/s (.017 m³/s) Sept. 11-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.5	1.7	2.0	1.9	2.0	2.5	3.0	2.5	1.7	1.5	.75
2	1.2	1.5	1.6	1.8	1.7	2.0	4.6	2.6	2.5	1.7	1.5	.75
3	1.2	1.4	1.9	1.9	1.7	2.0	3.0	2.9	2.5	1.7	1.5	.75
4	1.1	1.4	1.9	2.0	1.8	1.9	2.7	2.5	2.5	1.7	1.5	.75
5	1.1	1.4	1.8	2.0	1.7	1.8	2.5	2.9	2.5	1.7	1.5	.75
6	1.2	1.6	1.8	1.9	1.6	1.8	2.1	3.0	3.4	1.5	1.4	.70
7	1.2	1.6	1.8	1.8	1.6	1.8	2.2	2.5	3.1	1.3	1.4	.70
8	1.3	1.6	1.7	1.8	1.5	1.8	2.5	2.3	2.4	1.3	1.4	.70
9	1.2	1.7	1.6	1.8	1.6	1.8	2.3	2.0	2.4	1.1	1.4	.65
10	1.0	1.7	1.5	1.7	1.6	1.8	2.7	2.2	2.4	1.3	1.3	.65
11	1.0	1.8	1.5	1.7	1.5	1.8	2.7	2.3	2.4	1.2	1.2	.60
12	1.1	1.7	1.5	1.7	1.6	1.9	2.5	2.0	2.4	1.2	1.2	.60
13	1.0	1.7	1.5	1.8	1.7	1.9	2.6	2.2	2.4	1.2	1.1	.60
14	1.0	1.6	1.5	1.8	1.7	1.9	2.2	2.3	2.4	1.2	1.1	.60
15	1.1	1.6	1.6	1.8	1.6	1.8	2.0	2.2	2.4	1.2	1.1	.60
16	1.1	1.6	1.6	1.7	1.9	2.0	1.8	2.1	2.4	1.2	1.0	.65
17	1.1	1.6	1.7	1.6	1.8	1.8	1.8	1.7	2.1	1.1	1.0	.65
18	1.2	1.7	1.6	1.5	2.3	1.6	1.8	1.7	2.0	1.1	1.0	.70
19	1.2	1.7	1.5	1.2	2.3	1.4	1.9	2.1	1.9	1.1	1.0	.70
20	1.4	1.7	1.5	1.4	2.2	1.3	1.8	2.2	1.9	1.1	.95	.70
21	1.3	1.6	1.4	1.3	2.1	1.3	1.7	2.4	1.9	1.1	.95	.70
22	1.3	1.6	1.4	1.6	1.9	1.2	1.7	2.2	1.9	1.1	.90	.70
23	1.4	1.6	1.3	1.9	1.9	1.6	1.8	2.4	1.9	1.1	.90	.80
24	1.5	1.6	1.7	2.1	1.8	1.7	1.7	2.1	1.6	1.1	.90	.80
25	1.5	1.6	1.6	2.1	1.7	1.7	1.6	1.9	1.4	1.1	.90	.80
26	1.5	1.6	1.9	2.3	1.6	1.6	1.6	2.1	2.9	1.0	.85	.75
27	1.4	1.7	1.9	2.1	2.0	2.3	1.6	2.6	2.3	1.0	.85	.80
28	1.5	1.7	2.2	2.2	2.0	2.6	1.7	2.6	1.9	1.0	.85	.80
29	1.6	1.7	2.4	2.2	2.0	2.6	3.0	2.6	1.7	1.5	.85	.80
30	1.5	1.7	2.3	2.0	---	2.4	3.2	2.5	1.7	1.5	.85	.80
31	1.5	---	2.1	1.8	---	2.3	---	2.5	---	1.5	.85	---
TOTAL	39.0	48.5	53.0	56.5	52.3	57.4	67.8	72.6	67.7	39.6	34.70	21.30
MEAN	1.26	1.62	1.71	1.82	1.80	1.85	2.26	2.34	2.26	1.28	1.12	.71
MAX	1.6	1.8	2.4	2.3	2.3	2.6	4.6	3.0	3.4	1.7	1.5	.80
MIN	1.0	1.4	1.3	1.2	1.5	1.2	1.6	1.7	1.4	1.0	.85	.60
AC-FT	77	96	105	112	104	114	134	144	134	79	69	42
CAL YR 1983	TOTAL	780.81		MEAN	2.14	MAX	54	MIN	.90	AC-FT	1550	
WTR YR 1984	TOTAL	610.40		MEAN	1.67	MAX	4.6	MIN	.60	AC-FT	1210	

07236500 FORT SUPPLY LAKE NEAR FORT SUPPLY, OK

LOCATION.--Lat 36°33'14", long 99°34'16", in NE 1/4 SE 1/4 sec.17, T.24 N., R.22 W., Woodward County, Hydrologic Unit 11100203, in control tower at left end of Fort Supply Dam on Wolf Creek, 2.0 mi (3.2 km) southeast of Fort Supply and at mile 5.5 (8.8 km).

DRAINAGE AREA.--1,735 mi² (4,494 km²), of which 241 mi² (624 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1942 to current year. Prior to October 1970, published as Fort Supply Reservoir near Fort Supply.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth dam. Outlet works consist of a 540 ft (164.6 m) uncontrolled gravity-type concrete weir, one 36-in. (914 mm) diameter gated by-pass, and one 18 ft (5.49 m) oval-shaped conduit controlled by three vertical-lift sluice gates. Regulated storage began May 4, 1942; conservation pool first filled in June 1942. Capacity, 100,700 acre-ft (124 hm³) at elevation 2,028.0 ft (618.134 m), crest of spillway, 13,890 acre-ft (17.1 hm³) at elevation 2,004.0 ft (610.819 m), conservation pool, designated in 1965. No storage below elevation 1,987.0 ft (605.638 m). Figures given herein represent total contents. Reservoir is used for flood control and conservation. Revised capacity table, based on survey in 1969, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 99,500 acre-ft (123 hm³) June 25, 1957, elevation, 2,026.97 ft (617.820 m); no contents at times November 1942 to January 1943.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,060 acre-ft (18.6 hm³) Jan. 5, elevation, 2,004.61 ft (611.005 m); minimum, 11,060 acre-ft (13.6 hm³) Sept. 28-30, elevation 2,002.39 ft (610.328 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

2,001	8,930	2,004	13,890
2,002	10,430	2,005	15,830
2,003	12,080		

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12340	12820	13970	14940	14100	14650	14160	13850	13870	14280	13490	12370
2	12330	12810	13850	14960	14080	14350	14080	13840	13850	14340	13460	12220
3	12260	12840	13980	15000	14100	14080	13870	13890	13990	14220	13420	12220
4	12240	12880	14000	15040	14100	13930	13950	13910	14120	14360	13350	12170
5	12240	12910	14020	15060	14100	13800	14050	14010	14080	14380	13330	12120
6	12220	13090	14120	15040	14100	13830	14240	14010	14050	14380	13330	12060
7	12220	13220	14140	15000	14290	13890	14240	13990	13970	14380	13350	12000
8	12220	13110	14150	14890	14360	13970	14320	14030	14030	14340	13380	11850
9	12260	13170	14230	14940	14400	13890	14430	14050	13910	14280	13350	11850
10	12380	13200	14270	14920	14460	13980	14490	14060	13970	14200	13330	11850
11	12200	13240	14330	14870	14460	14020	14550	14010	14050	14200	13310	11780
12	12220	13240	14360	14830	14460	14040	14590	14030	14010	14200	13270	11720
13	12240	13260	14400	14750	14560	14100	14530	14030	13910	14180	13260	11630
14	12330	13280	14440	14670	14690	14270	14280	14260	13990	14120	13200	11520
15	12190	13310	14480	14630	14590	14200	14060	14340	13990	14060	13170	11520
16	12170	13390	14540	14560	14630	14360	13910	14340	13970	14050	13110	11520
17	12260	13370	14480	14560	14770	14430	13910	14340	13930	14050	13060	11450
18	12290	13420	14560	14460	14630	14410	13870	14340	13870	14010	12990	11440
19	12330	13420	14590	14360	14630	14490	13870	14280	13890	13950	12950	11420
20	12330	13460	14610	14310	14630	14530	13850	14280	13950	13890	12930	11390
21	12490	13520	14650	14250	14850	14630	13840	14320	13910	13850	12820	11370
22	12540	13480	14650	14150	14890	14650	13780	14240	13890	13800	12800	11300
23	12570	13550	14690	14100	14870	14820	13780	14260	13800	13730	12770	11300
24	12640	13610	14710	14060	14900	14940	13760	14340	13800	13690	12730	11140
25	12640	13740	14750	14020	14940	15030	13760	14180	13780	13650	12700	11070
26	12680	13610	14770	13980	14790	15000	13710	14180	14140	13600	12620	11070
27	12730	13650	14810	13980	14870	14860	13650	14010	14140	13560	12590	11090
28	12720	13720	14850	13950	14960	14700	13620	13950	14160	13650	12550	11060
29	12720	13700	14850	13910	14770	14570	13690	13950	14180	13620	12480	11060
30	12750	13780	14900	13930	---	14390	13800	14030	14240	13600	12440	11060
31	12790	---	14900	13950	---	14300	---	14010	---	13530	12390	---
MAX	12790	13780	14900	15060	14960	15030	14590	14340	14240	14380	13490	12370
MIN	12170	12810	13850	13910	14080	13800	13620	13840	13780	13530	12390	11060
(+)	2003.40	2003.94	2004.53	2004.03	2004.56	2004.21	2003.95	2004.06	2004.18	2003.80	2003.17	2002.38
(++)	+450	+990	+1,120	-950	+820	-470	-500	+210	+230	-710	-1,140	-1,330

CAL YR 1983 MAX 16090 MIN 12120 (++) +1,120
WTR YR 1984 MAX 15060 MIN 11060 (++) -1,280

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-Feet

07237000 WOLF CREEK NEAR FORT SUPPLY, OK

LOCATION.--Lat 36°34'00", long 99°33'05", SE 1/4 SE 1/4 sec.9, T.24 N., R.22 W., Woodward County, Hydrologic Unit 11100203, near left bank on downstream side of pier of bridge on U.S. Highway 270, 1.0 mi (1.6 km) southeast of Fort Supply, 1.6 mi (2.6 km) downstream from Fort Supply Dam, and at mile 3.9 (6.3 km).

DRAINAGE AREA.--1,739 mi² (4,504 km²), of which 241 mi² (624 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Prior to October 1, 1941, published as "Near Supply".

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,958.38 ft (596.914 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). See WSP 1921 for history of changes prior to Sept. 30, 1962.

REMARKS.--Records good. Flow completely regulated since May 1942 by Fort Supply Lake (station 07236500).

AVERAGE DISCHARGE.--(Prior to regulation by Fort Supply Dam) 5 years, (water years 1938-42), 104 ft³/s (2.95 m³/s), 73,350 acre-ft/yr (92.9 hm³/yr); (since regulation by Fort Supply Dam) 42 years (water years 1943-84), 55.2 ft³/s (1.563 m³/s), 39,990 acre-ft/yr (49.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 24, 1939, gage height, 15.60 ft (4.775 m), present datum, from rating curve extended above 8,000 ft³/s (227 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 19.6 ft (5.97 m), present datum, was reached prior to October 1937, from information by State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 128 ft³/s (3.62 m³/s) Apr. 2, gage height, 5.76 ft (1.756 m); minimum daily discharge, .61 ft³/s (0.017 m³/s) Sept. 7, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	.95	1.2	1.1	12	124	125	25	1.1	.95	.78	.65
2	.85	.96	1.2	1.1	8.8	125	124	24	1.3	.94	.76	.68
3	.73	.97	1.4	1.2	8.6	125	94	24	1.4	.93	.76	.71
4	.67	1.5	1.3	1.1	8.8	125	41	24	1.5	1.0	.73	.71
5	.73	.82	1.2	23	8.8	73	13	24	1.2	1.0	.67	.68
6	.73	1.2	1.1	54	8.6	15	16	24	1.2	.99	.67	.65
7	.73	1.1	1.2	54	8.5	14	16	23	1.0	1.0	.77	.61
8	.79	1.1	1.2	53	8.4	13	16	23	1.0	.88	.94	.62
9	.67	1.1	1.2	53	8.3	13	15	23	1.0	.82	.94	.61
10	.79	1.1	1.2	53	8.2	13	15	23	1.1	.82	.91	.63
11	.73	1.1	1.2	53	8.2	13	15	22	1.2	.89	.88	.64
12	.93	1.0	1.2	53	8.2	12	15	22	.96	.84	.80	.67
13	.87	1.0	1.1	53	8.3	12	60	22	.95	.85	.72	.66
14	.87	1.1	1.2	54	8.3	12	123	26	.98	.88	.72	.71
15	.83	1.1	1.2	54	8.3	12	124	22	1.0	.84	.70	.75
16	.87	1.0	1.2	54	8.3	13	95	22	.94	.86	.74	.79
17	.99	1.1	1.2	55	8.5	12	53	22	.87	.83	.67	.70
18	.92	1.2	1.2	55	8.6	12	52	22	.85	.71	.73	.72
19	.98	1.2	1.1	56	9.6	12	48	22	.89	.81	.77	.66
20	1.3	1.1	1.3	56	12	12	45	22	.98	.76	.77	.69
21	1.2	1.1	1.2	56	12	13	45	22	.98	.80	.72	.72
22	1.1	1.1	1.0	57	12	13	44	22	.93	.84	.71	.70
23	.94	1.3	.90	56	12	14	44	22	.85	.78	.71	.69
24	.91	1.3	1.0	56	12	13	44	22	.96	.73	.72	.68
25	.89	1.2	1.1	56	12	13	45	22	.91	.78	.71	.71
26	.87	1.2	1.2	56	12	50	44	22	1.7	.74	.72	.70
27	.84	1.2	1.2	56	12	125	35	22	1.1	.70	.67	.73
28	.87	1.2	1.3	56	62	125	26	23	.98	.90	.68	.72
29	.93	1.2	1.2	56	124	125	26	15	.95	.87	.69	.70
30	.96	1.2	1.2	36	---	125	25	1.9	.93	.77	.67	.70
31	.94	---	1.2	9.1	---	125	---	1.3	---	.81	.67	---
TOTAL	27.29	33.70	36.60	1387.6	447.3	1503	1483	656.2	31.71	26.32	23.10	20.59
MEAN	.88	1.12	1.18	44.8	15.4	48.5	49.4	21.2	1.06	.85	.75	.69
MAX	1.3	1.5	1.4	57	124	125	125	26	1.7	1.0	.94	.79
MIN	.67	.82	.90	1.1	8.2	12	13	1.3	.85	.70	.67	.61
AC-FT	54	67	73	2750	887	2980	2940	1300	63	52	46	41
CAL YR 1983	TOTAL	8947.21	MEAN	24.5	MAX	205	MIN	.66	AC-FT	17750		
WTR YR 1984	TOTAL	5676.41	MEAN	15.5	MAX	125	MIN	.61	AC-FT	11260		

07237500 NORTH CANADAIN RIVER AT WOODWARD, OK

LOCATION.--Lat 36°26'18", long 99°16'40", SE 1/4 SE 1/4 sec.25, T.23 N., R.20 W., Woodward County, Hydrologic Unit 11100301, near right bank on downstream side of pier of bridge on State Highway 15, 200 ft (61.0 m) downstream from The Atchison, Topeka and Santa Fe Railway Co. bridge, 6.0 mi (9.7 km) east of Woodward, 7.2 mi (11.6 km) upstream from Indian Creek, 27.5 mi (44.2 km) downstream from Wolf Creek, and at mile 460.2 (740.5 km).

DRAINAGE AREA.--11,589 mi² (30,016 km²), of which 4,812 mi² (12,463 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1903 to September 1905 (gage heights only), October 1905 to June 1906, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as Canadian River (North fork) near Woodward 1903-06. Gage-height records collected in this vicinity since 1919 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1731: 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,830.43 ft (557.915 m) National Geodetic Vertical Datum of 1929. Prior to July 1906, nonrecording gage at railway bridge 200 ft (61.0 m) upstream at different datum. Oct. 1, 1938, to Oct. 26, 1943, nonrecording gage and Oct. 27, 1943, to July 12, 1951, water-stage recorder, at site 7.8 mi (12.6 km) upstream at datum 37.01 ft (11.281 m) higher than present datum.

REMARKS.--Records good. Some regulation since May 1942 by Fort Supply Lake on Wolf Creek 33 mi (53 km) upstream (station 07236500).

AVERAGE DISCHARGE.--46 years, (water years 1939-84), 180 ft³/s (5.098 m³/s), 130,400 acre-ft/yr (161 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft³/s (1,190 m³/s) Oct. 10, 1946, gage height, 9.80 ft (2.987 m), site and datum then in use; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 12, 1923, reached a stage of 11.0 ft (3.35 m), site and datum then in use; from reports of National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 213 ft³/s (6.03 m³/s) June 26, gage height, 4.24 ft (1.292 m), maximum gage height 6.26 ft (1.298 m) Apr. 2; no flow Sept. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	8.5	11	7.3	57	118	154	69	35	25	2.1	.95
2	3.8	7.5	12	11	56	131	176	68	32	24	2.0	1.4
3	3.8	6.7	18	12	47	134	171	68	33	22	2.2	1.4
4	3.5	6.3	13	14	43	134	139	66	37	20	2.2	.96
5	3.5	7.8	12	16	41	135	107	69	32	19	2.1	.44
6	5.3	18	11	20	40	103	87	72	30	18	2.2	.29
7	6.5	16	12	43	39	65	94	70	26	16	5.1	.26
8	6.5	14	10	62	38	56	97	71	23	13	10	.24
9	6.5	13	9.2	65	39	52	85	73	20	12	6.4	.30
10	6.1	14	10	66	39	50	87	73	16	11	5.3	.28
11	5.7	14	10	69	38	47	82	71	25	13	4.5	.17
12	5.3	14	10	68	36	47	77	69	19	12	4.0	.02
13	4.9	13	12	66	35	46	73	68	16	11	3.3	.00
14	4.5	13	15	64	34	44	94	92	16	9.2	3.0	.00
15	4.1	11	15	76	34	41	149	84	20	8.6	3.0	.13
16	4.1	11	10	74	33	40	156	76	16	9.2	2.9	.67
17	5.3	15	8.2	70	34	49	135	73	15	8.7	2.5	1.1
18	5.2	16	8.6	52	36	54	105	72	14	7.6	2.0	.56
19	7.4	9.6	8.2	37	36	51	97	71	15	6.6	1.7	.88
20	27	9.5	5.6	41	35	47	92	72	15	5.9	1.8	.19
21	26	10	4.3	43	36	44	90	68	14	5.5	1.5	.76
22	14	8.7	4.2	45	38	42	88	67	12	4.8	1.4	1.0
23	12	8.5	4.3	47	37	53	87	64	12	4.5	1.4	.96
24	10	8.8	4.2	50	38	64	85	62	11	4.2	1.5	.59
25	9.7	8.6	4.5	56	40	57	84	60	9.9	3.9	1.7	.54
26	11	8.6	4.9	80	42	56	82	57	88	3.3	1.6	1.2
27	13	11	5.2	90	48	70	78	55	46	3.0	1.2	3.1
28	13	9.7	5.2	95	44	146	74	53	41	2.8	1.0	3.3
29	9.2	8.7	4.9	88	59	142	85	50	31	3.0	.53	3.4
30	8.9	8.9	4.8	82	---	143	73	48	26	3.8	.40	3.5
31	9.7	---	4.9	76	---	156	---	41	---	2.6	.70	---
TOTAL	259.6	329.4	272.2	1685.3	1172	2417	3083	2072	745.9	313.2	81.23	28.59
MEAN	8.37	11.0	8.78	54.4	40.4	78.0	103	66.8	24.9	10.1	2.62	.95
MAX	27	18	18	95	59	156	176	92	88	25	10	3.5
MIN	3.5	6.3	4.2	7.3	33	40	73	41	9.9	2.6	.40	.00
AC-FT	515	653	540	3340	2320	4790	6120	4110	1480	621	161	57
CAL YR 1983	TOTAL	27405.9	MEAN	75.1	MAX	1060	MIN	2.4	AC-FT	54360		
WTR YR 1984	TOTAL	12459.42	MEAN	34.0	MAX	176	MIN	.00	AC-FT	24710		

ARKANSAS RIVER BASIN

07237500 NORTH CANADIAN RIVER AT WOODWARD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1958-59, 1961-63, 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to Jan. 1982.

WATER TEMPERATURE: October 1974 to Jan. 1982.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD:

SPECIFIC CONDUCTANCE: Maximum daily, 3,760 microsiemens Nov. 27, 1975; minimum daily, 348 microsiemens Aug. 22, 1977.

WATER TEMPERATURE: Maximum daily, 38.0°C June 21, 1981; minimum daily 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)
NOV 16...	1530	710	80020	9.5	3200	8.4	13.0	.90	13.7	141	K110	K83
DEC 14...	1200	706	80020	16	2200	7.9	3.5	3.0	12.0	98	K24000	6500
FEB 29...	1530	713	80020	67	1880	8.4	9.0	3.4	13.5	126	K20	K75
APR 12...	1130	711	80020	75	2030	8.2	14.5	14	10.2	108	1200	100
JUN 07...	1500	701	80020	26	2460	8.5	30.0	7.5	9.7	141	450	620
AUG 29...	1200	711	80020	.50	2920	8.6	27.5	6.2	15.5	213	--	--
DATE	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS C02)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV 16...	870	640	240	66	370	48	6	5.6	237	1.8	670	510
DEC 14...	560	310	150	45	220	46	4	8.4	249	6.0	430	280
FEB 29...	510	290	140	39	190	44	4	4.8	225	1.7	300	280
APR 12...	530	310	140	44	220	47	4	5.5	226	2.7	300	370
JUN 07...	690	500	180	59	300	48	5	5.4	195	1.2	500	430
AUG 29...	830	620	240	56	370	49	6	7.9	216	1.0	710	510
DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P04)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
NOV 16...	.70	26	2170	2000	3.0	56	1.7	1.20	2.9	.480	1.5	.380
DEC 14...	.60	31	1360	1300	1.8	59	1.8	4.40	9.0	3.10	9.5	2.80
FEB 29...	.70	17	1130	1100	1.5	204	.28	.790	1.7	.690	2.1	.620
APR 12...	.90	22	1270	1200	1.7	257	.67	.450	1.3	.490	1.5	.360
JUN 07...	.80	17	1600	1600	2.2	112	<.10	.010	1.0	.170	--	.090
AUG 29...	.70	40	2070	2100	2.8	2.8	.37	.250	2.1	.900	--	.660

ARKANSAS RIVER BASIN

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07237500 NORTH CANADIAN RIVER AT WOODWARD, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
NOV 16...	.270	20	2	200	<10	<1	1	<1	1	70	<1	60
DEC 14...	2.50	20	3	300	<10	<1	2	<1	4	90	<1	40
FEB 29...	.600	--	--	--	--	--	--	--	--	--	--	--
APR 12...	.410	<10	2	100	<10	<1	<1	<1	1	50	<1	60
JUN 07...	.080	--	--	--	--	--	--	--	--	--	--	--
AUG 29...	.570	30	3	200	<10	<1	<1	<1	1	50	<1	40

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	80	<.1	<1	1	<1	<1	2000	8	20	6	74
DEC 14...	60	<.1	3	4	1	<1	1400	8	20	25	54
FEB 29...	--	--	--	--	--	--	--	--	--	13	68
APR 12...	40	<.1	4	2	<1	<1	1400	8	10	39	89
JUN 07...	--	--	--	--	--	--	--	--	--	34	73
AUG 29...	160	<.1	4	<1	<1	<1	1700	11	10	16	70

ARKANSAS RIVER BASIN

07238000 NORTH CANADIAN RIVER NEAR SEILING, OK

LOCATION.--Lat 36°11'06", long 98°55'15", in NW 1/4 sec.28, T.20 N., R.16 W., Major County, Hydrologic Unit 11100301, near center of span on downstream side of pier of bridge on U.S. Highway 60, 2.0 mi (3.2 km) upstream from Seiling Creek, 2.2 mi (3.5 km) north of Seiling, 2.8 mi (4.5 km) downstream from Deep Creek, and at mile 422.6 (680.0 km).

DRAINAGE AREA.--12,261 mi² (31,756 km²), of which 4,847 mi (12,554 km²) is probably noncontributing.

PERIOD OF RECORD.--July 1946 to current year.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1731: 1951 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,675.53 ft (510.702 m) National Geodetic Vertical Datum of 1929. July 1, 1946, to Aug. 17, 1964, at site 60 ft (18.3 m) downstream and prior to Oct. 1, 1954, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records good except for winter period which was poor. Some regulation by Fort Supply Lake on Wolf Creek 70.6 mi (113.6 km) upstream. (Station 07236500).

AVERAGE DISCHARGE.--38 years, 201 ft³/s (5.692 m³/s), 145,600 acre-ft/yr (180 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) May 19, 1951, gage height, 15.61 ft (4.758 m), present datum; maximum gage height, 16.00 ft (4.877 m) Oct. 11, 1946, present datum; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s (56.6 m³/s) June 11, gage height 10.20 ft (3.109 m), no peak above base of 3,500 ft³/s (99.1 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	29	39	27	106	87	222	152	67	53	2.8	.00
2	7.0	30	40	32	93	131	241	135	63	48	2.6	.00
3	6.9	29	45	37	90	144	274	131	60	44	2.3	.00
4	7.3	28	46	42	85	148	258	126	61	40	2.3	.00
5	6.7	28	50	47	80	148	203	123	60	37	2.3	.00
6	8.3	31	45	54	77	150	170	124	55	35	1.9	.00
7	11	37	45	107	77	124	262	125	51	32	1.3	.00
8	12	42	44	99	76	92	551	120	46	26	1.7	.00
9	12	42	44	95	77	84	295	120	43	22	2.2	.00
10	12	38	43	94	77	81	211	118	45	19	3.9	.00
11	11	38	43	93	78	79	185	115	1170	18	4.3	.00
12	11	37	43	95	75	81	169	111	303	20	2.7	.00
13	10	37	44	91	73	81	153	106	146	19	1.8	.01
14	9.8	36	44	85	71	80	140	112	112	16	1.3	.06
15	9.9	35	45	82	70	77	148	136	94	12	.87	.10
16	9.3	35	44	77	69	76	199	131	81	13	.65	.11
17	28	34	44	72	67	82	206	113	67	13	.41	.11
18	30	35	36	62	70	105	191	105	62	12	.29	.16
19	23	37	32	54	69	142	162	106	64	9.7	.30	.15
20	37	35	28	52	70	127	169	131	57	8.6	.25	.14
21	86	34	21	54	69	107	162	110	58	7.5	.24	.13
22	81	33	20	60	69	96	148	99	52	6.6	.23	.14
23	53	35	20	73	70	110	144	96	44	6.0	.24	.10
24	43	34	21	106	70	147	143	93	41	5.4	.06	.02
25	37	36	23	129	70	159	138	89	38	5.5	.02	.10
26	35	38	25	151	79	145	132	83	55	5.8	.00	.11
27	33	39	28	159	84	128	124	82	136	5.1	.01	.27
28	33	36	28	145	86	145	120	80	100	4.6	.00	.19
29	33	41	26	129	84	218	125	78	75	4.1	.12	.16
30	31	40	22	116	---	205	168	76	64	3.7	1.1	.15
31	29	---	23	112	---	206	---	73	---	3.1	.04	---
TOTAL	763.9	1059	1101	2631	2231	3785	5813	3399	3370	554.7	38.23	2.21
MEAN	24.6	35.3	35.5	84.9	76.9	122	194	110	112	17.9	1.23	.07
MAX	86	42	50	159	106	218	551	152	1170	53	4.3	.27
MIN	6.7	28	20	27	67	76	120	73	38	3.1	.00	.00
AC-FT	1520	2100	2180	5220	4430	7510	11530	6740	6680	1100	76	4.4
CAL YR 1983	TOTAL	42215.74	MEAN	116	MAX	1070	MIN	.00	AC-FT	83730		
WTR YR 1984	TOTAL	24748.04	MEAN	67.6	MAX	1170	MIN	.00	AC-FT	49090		

07238500 CANTON LAKE NEAR CANTON, OK

LOCATION.--Lat 36°05'03", long 98°36'05", in SE 1/4 NE 1/4 sec.32, T.19 N., R.13 W., Blaine County, Hydrologic Unit 11100301, near right end of Canton Dam on North Canadian River, 2.0 mi (3.2 km) northwest of Canton, and at mile 394.3 (634.4 km).

DRAINAGE AREA.--12,463 mi² (32,331 km²), of which 4,883 mi² (12,647 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1970, published as Canton Reservoir near Canton.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth dam. The outlet works consists of a concrete gravity, chute-type weir spillway controlled by 16 taintor gates with net length of 640 ft (195.1 m), three sluice gates and two, 24 in. (610 mm) valved pipes. Regulated storage began Apr. 15, 1948; conservation pool was first filled July 4, 1948. Capacity, 377,100 acre-ft (465 hm³) at elevation 1,638.0 ft (499.26 m) (flood-control pool), 109,700 acre-ft (135 hm³) at elevation 1,615.2 ft (492.31 m). (Normal water-supply pool, designated in 1965), 93,180 acre-ft (115 hm³) at elevation 1,613.0 ft (492 m) (crest of spillway), and 14,140 acre-ft (17.4 hm³) at elevation 1,596.5 ft (486.61 m) (conservation pool). Figures given herein represent total contents. Reservoir was designed for flood control, irrigation, and conservation, but owing to a lack of facilities, it is not being used for irrigation at this time. Revised capacity table, based on survey in 1980, used since Oct. 1, 1981.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 258,600 acre-ft (319 hm³) May 25, 1951, elevation, 1,628.05 ft (496.230 m); minimum since conservation pool was first filled, 867 acre-ft (1.07 hm³) May 5, 1955, elevation, 1,585.66 ft (483.309 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 119,100 acre-ft (147 hm³) April 9, elevation, 1616.36 ft (492.667 m); minimum, 59,490 acre-ft (73.4 hm³) Sept. 30, elevation, 1,607.74 ft (490.039 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,607	55,450	1,615	108,200
1,611	79,350	1,617	124,400
1,613	93,180	1,619	142,000

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101500	103700	104400	104900	108900	112400	115800	112100	112100	113900	107600	63580
2	101300	103800	104400	105000	109400	112500	116500	112300	112200	113700	107300	63640
3	101500	103900	104700	105000	109400	112900	116800	112100	112300	113600	105700	63520
4	101500	104000	104600	105000	109400	113300	116100	112100	112100	113500	103700	63230
5	101200	103900	104900	105000	109600	113200	115800	112000	111800	113400	102000	63060
6	101700	104200	104700	105100	109500	112800	115200	111700	111400	113300	100500	62530
7	102200	104200	104700	105200	109600	112500	117200	111700	112000	112900	99280	62130
8	102300	104000	104700	105400	109700	111700	118500	111400	111300	112500	97960	62360
9	102200	105100	104700	105700	110200	111000	119100	111000	111400	112300	96120	62190
10	102100	104500	104700	105700	110300	110900	118900	110600	111700	112100	96120	61900
11	102400	104200	105000	106000	110400	110800	118200	110600	111700	112100	95240	61780
12	101900	104100	104900	106300	110600	110800	116900	110800	112500	111900	92820	61660
13	101700	104100	104900	106300	110700	110900	116400	111000	112900	111700	91200	61490
14	101300	104200	105100	106300	110700	110000	115600	111400	113600	111400	86820	61780
15	101300	104200	105100	106400	110900	111100	114900	111400	113700	111400	86120	61140
16	101300	104100	104600	106500	111100	111700	114400	111500	113700	111400	85160	60910
17	101500	104000	104900	106600	110900	111700	113700	111700	113700	111200	83410	60740
18	101500	104000	105100	106900	111400	112900	113300	111700	113700	111000	81780	60740
19	101500	104200	104800	106900	111400	112100	112500	112500	113800	110800	80020	60580
20	102400	104000	104800	106900	111200	113100	112600	112500	113700	110400	78370	60580
21	103600	104000	104800	107000	111300	113300	113200	112500	113700	110200	77080	60360
22	103600	104200	104700	107000	111300	113700	112900	112900	113700	110100	75390	60360
23	103600	104400	104700	107000	111400	115300	112900	112800	113600	109800	73570	60250
24	103600	104200	104700	107200	111400	115200	112700	112700	113300	109600	71930	59870
25	103700	103900	104700	107300	111400	115300	111700	112900	113300	109600	70400	60090
26	103600	104400	104700	107500	112500	115700	112300	112800	114000	109400	68740	59820
27	103500	104500	104700	107600	112700	116600	112100	112900	114100	109100	67080	59930
28	103500	104700	104800	108000	112600	116100	112000	112900	114100	108800	65780	59820
29	103600	104400	104900	108400	112400	115700	112400	112700	114100	108400	64680	59600
30	103600	104500	104900	108700	---	115700	112100	112500	114100	108000	64160	59490
31	103500	---	104900	108700	---	116100	---	112100	---	107800	63930	---
MAX	103700	105100	105100	108700	112700	116600	119100	112900	114100	113900	107600	63640
MIN	101200	103700	104400	104900	108900	110000	111700	110600	111300	107800	63930	59490
(+)	1614.39	1614.52	1614.57	1615.07	1615.53	1616.00	1615.50	1615.49	1615.75	1614.98	1608.52	1607.74
(++)	+1,700	+1,000	+400	+3,800	+3,700	+3,700	-4,000	0	+2,000	-6,300	-43,870	-4,400
CAL YR 1983	MAX	120700	MIN	101200	(++)	+2,100						
WTR YR 1984	MAX	119100	MIN	59490	(++)	-42,310						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-FEET

LOCATION.--Lat 36°05'44", long 98°35'47".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB									
07...	1250	730	1028	25.0	110000	1480	7.9	4.5	85
07...	1255	730	1028	20.0	110000	1470	8.1	4.5	86
07...	1256	730	1028	15.0	110000	1470	8.0	4.5	86
07...	1257	730	1028	10.0	110000	1470	8.1	4.5	86
07...	1258	730	1028	5.00	110000	1470	8.1	4.5	87
07...	1259	730	1028	1.00	110000	1480	8.0	4.5	88

LOCATION.--Lat 36°05'58", long 98°35'15".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Samples were collected in a Kemmerer sampler. Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

		BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)		
DATE	TIME									
FEB										
07...	1310	730	80020	28.0	110000	1440	7.7	4.5		
07...	1313	730	1028	20.0	110000	1460	7.9	4.5		
07...	1314	730	80020	15.0	110000	1480	8.0	4.5		
07...	1316	730	1028	10.0	110000	1480	8.1	4.5		
07...	1319	730	1028	5.00	110000	1460	8.2	4.5		
07...	1320	730	80020	1.00	110000	1470	8.1	4.5		
DATE	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	
FEB										
07...	3.6	9.2	75	420	250	100	42	170	46	
07...	--	9.6	78	--	--	--	--	--	--	
07...	--	10.1	82	420	240	100	42	170	46	
07...	--	10.2	83	--	--	--	--	--	--	
07...	--	10.3	84	--	--	--	--	--	--	
07...	--	10.3	83	450	270	110	42	180	46	
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)		
FEB										
07...	4	8.0	170	6.6	300	260	955	1.3		
07...	--	--	--	--	--	--	--	--		
07...	4	8.8	179	3.4	300	260	975	1.3		

360612098344001 CANTON LAKE CROSS SECTION NO. 1 SITE NO. 3

LOCATION.--Lat 36°06'12", long 98°34'40".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SAM-PLING DEPTH (FEET)	RESER-VOIR STORAGE (AC-FT)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB										
07...	1345	730	1028	30.0	110000	1440	8.9	4.5	9.5	77
07...	1346	730	1028	25.0	110000	1450	8.1	4.5	9.1	74
07...	1348	730	1028	20.0	110000	1470	7.9	4.5	9.8	79
07...	1349	730	1028	15.0	110000	1460	8.0	4.5	9.7	79
07...	1355	730	1028	10.0	110000	1440	8.1	4.5	10.2	83
07...	1357	730	1028	5.00	110000	1470	8.2	4.5	10.2	83
07...	1359	730	1028	1.00	110000	1470	8.1	4.5	10.2	83

360744098364101 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 1

LOCATION.--Lat 36°07'44", long 98°36'41".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SAM-PLING DEPTH (FEET)	RESER-VOIR STORAGE (AC-FT)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB									
07...	1420	730	1028	10.0	110000	1460	5.5	10.0	83
07...	1422	730	1028	5.00	110000	1480	5.0	10.4	85
07...	1424	730	1028	1.00	110000	1480	5.0	10.8	89

360808098362101 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 2

LOCATION.--Lat 36°08'08", long 98°36'21".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	SAM-PLING DEPTH (FEET)	RESER-VOIR STORAGE (AC-FT)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
FEB										
07...	1448	730	1028	11.0	110000	1470	8.8	5.0	10.3	85
07...	1449	730	1028	5.00	110000	1480	8.4	5.0	10.5	86
07...	1450	730	1028	1.00	110000	1470	8.4	5.0	10.8	89

360828098360501 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 3

LOCATION.--Lat 36°08'28", long 98°36'05".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.-- Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
07...	1500	730	1028	11.0	110000	1440	8.3	4.5	8.1	66
07...	1501	730	1028	5.00	110000	1440	8.5	4.5	8.7	71
07...	1502	730	1028	1.00	110000	1460	8.5	4.0	8.7	70

360809098391601 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 1

LOCATION.--Lat 36°08'09", long 98°39'16".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
07...	1515	730	1028	5.00	110000	1330	8.4	4.0	9.0	72
07...	1516	730	1028	1.00	110000	1360	8.3	4.0	9.0	72

360828098390701 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 2

LOCATION.--Lat 36°08'28", long 98°39'07".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
07...	1530	730	1028	5.00	110000	1350	8.4	4.0	10.2	82
07...	1531	730	1028	1.00	110000	1360	8.3	4.0	10.1	81

ARKANSAS RIVER BASIN

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360844098390000 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 3

LOCATION.--Lat 36°08'44", long 98°39'00".

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
07...	1545	730	1028	6.00	110000	1350	8.1	4.0	10.0	80
07...	1546	730	1028	1.00	110000	1360	8.0	4.0	9.9	79

07239000 NORTH CANADIAN RIVER AT CANTON, OK

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, Hydrologic Unit 11100301, on right bank 2,700 ft (823.0 m) downstream from Canton Dam, 1.5 mi (2.4 km) northwest of Canton, 4.8 mi (7.7 km) upstream from Minnehaha Creek, and at mile 393.8 (633.6 km).

DRAINAGE AREA.--12,484 mi² (32,334 km²), of which 4,883 mi² (12,647 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1914 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,562.50 ft (476.250 m), U.S. Army Corps of Engineers datum. Oct. 1, 1937, to Jan. 5, 1955, water-stage recorder at site 2.5 mi (4.0 km) downstream at datum 1.91 ft (0.582 m) lower prior to Oct. 1, 1950, and at datum 6.91 ft (2.106 m) lower thereafter.

REMARKS.--Records poor. Flow partly regulated by Fort Supply Lake (station 07236500) for period May 1942 to April 1948 and completely regulated thereafter by Canton Lake (station 07238500).

AVERAGE DISCHARGE.--(Prior to regulation by Canton Dam) 11 years (water years 1938-48), 256 ft³/s (7,250 m³/s), 185,500 acre-ft/yr (229 hm³/yr); (since regulation by Canton Dam) 36 years (water years 1949-84), 158 ft³/s (4,475 m³/s), 114,500 acre-ft/yr (141 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Oct. 12, 1946, gage height, 12.83 ft (3.911 m), site and datum then in use; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 13, 1923, reached a stage of 16.8 ft (5.121 m), at site 300 ft (91.4 m) upstream from former site at datum 1.91 ft (0.582 m) lower than present datum, from reports of National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft³/s (28.9 m³/s) Aug. 4; gage height, 8.69 ft (2.65 m); minimum daily discharge, 3.9 ft³/s (.110 m³/s) Jan. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	8.3	6.1	5.2	4.6	4.7	235	165	8.8	9.9	7.4	11
2	10	8.6	6.1	5.0	4.6	5.5	235	164	9.1	8.8	7.9	10
3	9.0	8.3	6.2	4.8	4.7	6.2	237	164	9.9	9.2	365	10
4	10	8.4	6.2	5.3	4.7	6.9	301	213	10	9.8	866	9.9
5	11	8.6	6.1	5.2	4.9	172	411	296	10	10	984	9.6
6	10	8.6	6.6	4.8	4.8	384	378	299	11	11	899	9.6
7	11	8.6	6.7	4.5	4.6	446	218	303	10	11	817	9.2
8	11	8.8	6.6	4.6	4.5	529	14	299	10	10	727	8.8
9	11	8.6	6.4	4.6	4.1	341	207	293	10	9.4	836	8.2
10	9.8	8.7	6.3	4.5	4.0	186	459	236	9.6	8.5	915	7.6
11	11	8.3	6.2	4.9	4.0	181	718	66	10	8.8	863	6.9
12	11	7.5	6.1	5.1	4.1	96	808	8.2	9.9	10	839	6.4
13	11	7.4	6.3	5.0	4.5	5.1	582	8.0	9.8	10	830	6.3
14	11	7.4	6.1	4.5	4.7	4.7	579	7.7	10	10	824	6.3
15	11	7.2	6.1	4.3	4.8	4.7	571	8.0	11	9.7	849	6.3
16	9.3	7.1	5.9	4.1	4.8	5.1	559	8.0	11	9.0	865	6.3
17	9.0	7.2	6.1	4.1	4.8	5.1	549	8.0	11	8.0	859	6.3
18	8.9	7.2	6.1	4.2	4.7	7.5	540	8.0	11	8.7	854	6.3
19	9.3	7.4	5.6	4.4	4.5	6.0	532	7.9	11	8.0	850	6.3
20	11	7.2	6.0	4.5	4.2	5.9	320	8.8	12	8.2	845	6.3
21	9.5	7.4	5.5	4.6	4.3	5.7	143	8.8	12	8.2	839	6.3
22	9.0	7.4	6.3	4.5	4.4	5.9	141	9.0	12	8.4	833	6.3
23	9.1	7.3	5.8	4.6	4.5	11	208	9.3	12	8.8	828	6.3
24	9.1	7.1	5.2	4.5	4.7	8.1	274	9.6	10	8.7	822	6.3
25	8.7	6.9	6.7	4.5	5.1	8.0	261	9.4	11	8.8	817	6.3
26	8.4	6.9	6.5	4.4	5.3	103	260	9.2	13	8.5	812	6.3
27	8.1	6.9	6.0	4.4	5.5	233	217	9.0	13	7.6	806	6.3
28	8.1	6.4	5.2	4.2	6.0	238	158	9.0	13	7.6	805	6.3
29	8.3	6.2	4.8	3.9	6.0	232	159	8.8	12	8.0	628	6.3
30	8.2	6.2	4.9	4.2	---	230	164	8.8	12	8.6	300	6.3
31	8.0	---	4.8	4.5	---	234	---	8.8	---	8.3	41	---
TOTAL	300.8	228.1	185.5	141.9	136.4	3711.1	10438	2670.3	325.1	279.5	22433.3	220.6
MEAN	9.70	7.60	5.98	4.58	4.70	120	348	86.1	10.8	9.02	724	7.35
MAX	11	8.8	6.7	5.3	6.0	529	808	303	13	11	984	11
MIN	8.0	6.2	4.8	3.9	4.0	4.7	14	7.7	8.8	7.6	7.4	6.3
AC-FT	597	452	368	281	271	7360	20700	5300	645	554	44500	438
CAL YR. 1983	TOTAL	40977.2		MEAN	112	MAX	920	MIN	4.4	AC-FT	81280	
WTR YR 1984	TOTAL	41070.6		MEAN	112	MAX	984	MIN	3.9	AC-FT	81460	

ARKANSAS RIVER BASIN

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07239300 NORTH CANADIAN RIVER BELOW WEAVERS CREEK NEAR WATONGA, OK

LOCATION.--Lat 35°48'43", long 98°25'14", NE 1/4, NE 1/4, sec.1, T.15 N., R.12 W., Blaine County, Hydrologic Unit 11100301, on downstream pier on U.S. Highway 281 bridge, 2 mi (3.2 km) south of intersection of U.S. Highway 281 and State Highway 33 and at mile 361.2 (581.2 km).

DRAINAGE AREA.--12,736 mi² (20,492 km²), of which 4,899 mi² (7,882 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,453.60 ft (447.629 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 940 ft³/s (26.6 m³/s) Apr. 13, gage height, 11.95 ft (3.642 m); minimum daily discharge, 9.2 ft³/s (.26 m³/s) Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	20	18	10	22	34	248	171	24	17	9.2	91
2	9.3	20	17	11	22	36	251	169	24	16	9.7	60
3	12	21	16	11	22	23	244	169	25	16	9.5	48
4	11	21	16	12	20	22	241	167	23	14	168	41
5	11	21	16	12	19	19	322	215	23	14	616	35
6	12	24	20	13	18	90	378	302	23	14	780	31
7	16	26	20	14	18	304	710	312	22	14	776	27
8	17	23	19	15	20	353	507	312	22	13	703	26
9	14	23	20	16	26	407	293	306	21	13	624	25
10	14	23	19	17	25	250	458	302	21	12	708	21
11	14	22	19	15	23	157	458	253	23	12	791	19
12	14	23	19	14	21	153	693	118	22	12	739	17
13	14	23	21	13	21	110	820	65	20	12	707	16
14	14	22	22	13	19	48	574	57	21	12	694	14
15	14	21	22	12	19	38	560	52	21	12	688	14
16	14	20	18	12	19	35	557	48	21	12	719	13
17	14	20	17	11	19	34	552	44	19	16	746	13
18	16	25	16	11	20	38	546	43	18	14	743	13
19	19	25	15	10	19	60	536	41	19	12	745	13
20	77	23	14	10	18	43	533	39	20	12	739	13
21	60	23	13	9.8	19	33	355	37	19	11	730	12
22	36	23	12	9.6	18	29	197	36	18	10	734	12
23	26	22	12	10	18	111	167	35	21	11	730	11
24	23	21	11	12	17	245	239	32	24	11	719	11
25	22	20	11	14	17	80	289	30	17	11	715	10
26	21	19	11	17	23	51	276	29	27	12	716	10
27	20	19	11	19	30	83	278	30	23	12	700	11
28	20	19	11	22	25	241	221	29	21	11	710	13
29	20	18	10	28	21	237	173	26	18	9.9	688	14
30	20	18	10	25	---	226	173	26	17	9.4	505	13
31	20	---	10	22	---	246	---	24	---	9.3	236	---
TOTAL	623.6	648	486	440.4	598	3836	11849	3519	637	386.6	18897.4	667
MEAN	20.1	21.6	15.7	14.2	20.6	124	395	114	21.2	12.5	610	22.2
MAX	77	26	22	28	30	407	820	312	27	17	791	91
MIN	9.3	18	10	9.6	17	19	167	24	17	9.3	9.2	10
WTR YR 1984	TOTAL	42588.0		MEAN	116	MAX	820	MIN	9.2			

07239500 NORTH CANADIAN RIVER NEAR EL RENO, OK

LOCATION.--Lat 35°33'44", long 97°57'32", on east line of sec.32, T.13 N., R.7 W., Canadian County, Hydrologic Unit 11100301, near left bank on downstream side of pier of bridge on old U.S. Highway 81, 2.0 mi (3.2 km) north of courthouse in El Reno, 2.2 mi (3.5 km) downstream from Target Creek, and at mile 307.4 (494.6 km).

DRAINAGE AREA.--13,042 mi² (33,779 km²) of which 4,899 mi² (12,688 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1902 to April 1908, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at site 1.0 mi (1.6 km) upstream March 1914 to March 1934 and at present site thereafter are contained in reports of National Weather Service. Published as Canadian River (North Fork) near El Reno 1902-4.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,299.02 ft (395.941 m) National Geodetic Vertical Datum of 1929. October 1902 to April 1908, nonrecording gage at site about 50 ft (15.2 m) downstream at different datum.

REMARKS.--Records fair. Some regulation by Fort Supply Lake (station 07236500) for period May 1942 to April 1948 and by Canton Lake (station 07238500) thereafter.

AVERAGE DISCHARGE.--(Prior to regulation by Canton Lake) 16 years (water years 1903-07, 1938-48), 264 ft³/s (7.476 m³/s), 191,300 acre-ft/yr (236 hm³/yr); (since regulation by Canton Lake) 36 years (water years 1949-84), 192 ft³/s (5.437 m³/s), 139,100 acre-ft/yr (172 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Oct. 28, 1941, gage height, 15.98 ft (4.871 m); maximum gage height, 18.20 ft (5.547 m) Sept. 21, 1965; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1923, reached an elevation of 1,326.3 ft (404.256 m) above mean sea level at railroad bridge 1.0 mi (1.6 km) above station, from reports of National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,870 ft³/s (16.6 m³/s) Oct. 20, gage height, 13.93 ft (4.246 m); minimum daily discharge, 2.7 ft³/s (0.076 m³/s) on Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	51	36	25	40	51	279	202	47	23	3.2	260
2	6.5	49	37	30	38	44	291	200	44	19	3.0	134
3	6.4	47	38	40	36	45	287	220	41	16	3.1	86
4	6.1	46	37	45	36	50	277	244	39	13	2.9	58
5	5.7	45	37	60	35	44	269	214	37	12	2.7	47
6	7.2	47	35	73	34	44	274	201	35	11	200	38
7	10	51	35	57	34	43	383	250	35	9.4	500	26
8	12	49	35	59	33	146	1320	271	33	8.4	486	21
9	12	48	34	59	35	250	929	278	34	7.5	463	21
10	13	45	34	54	35	280	452	276	239	7.0	419	21
11	14	44	34	49	36	300	308	268	160	10	427	21
12	13	42	33	44	35	250	487	258	112	9.5	495	20
13	12	42	33	45	35	170	613	193	73	8.8	500	20
14	11	41	33	47	36	150	810	141	45	8.2	504	20
15	11	41	32	43	35	122	614	110	29	7.6	506	20
16	11	40	32	40	31	108	578	98	26	7.1	507	20
17	15	39	32	38	29	99	564	89	23	6.7	509	20
18	20	38	30	37	30	95	554	82	19	7.5	510	20
19	247	37	30	35	30	98	535	78	14	7.3	515	20
20	4200	36	31	34	29	94	525	76	12	6.0	520	20
21	3120	36	30	34	29	108	516	73	10	5.9	520	19
22	572	36	30	33	32	97	434	70	7.1	5.7	520	18
23	259	40	29	32	35	154	257	67	20	5.6	520	18
24	167	40	29	33	30	163	220	66	54	5.5	520	17
25	121	39	28	35	27	165	211	63	37	5.4	520	17
26	94	38	27	40	32	167	282	60	60	5.1	527	16
27	79	41	26	45	56	156	283	57	48	5.0	549	16
28	68	44	26	50	57	186	274	57	38	4.6	544	17
29	61	40	25	48	53	303	262	54	31	4.2	539	17
30	55	38	25	45	---	296	219	52	26	3.8	531	18
31	53	---	24	43	---	274	---	50	---	3.4	433	---
TOTAL	9289.1	1270	977	1352	1033	4552	13307	4418	1428.1	259.2	12798.9	1086
MEAN	300	42.3	31.5	43.6	35.6	147	444	143	47.6	8.36	413	36.2
MAX	4200	51	38	73	57	303	1320	278	239	23	549	260
MIN	5.7	36	24	25	27	43	211	50	7.1	3.4	2.7	16
AC-FT	18420	2520	1940	2680	2050	9030	26390	8760	2830	514	25390	2150
CAL YR 1983	TOTAL	71350.1		MEAN	195	MAX	4200	MIN	5.7	AC-FT	141500	
WTR YR 1984	TOTAL	51770.3		MEAN	141	MAX	4200	MIN	2.7	AC-FT	102700	

ARKANSAS RIVER BASIN

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07240000 LAKE HEFNER CANAL NEAR OKLAHOMA CITY, OK

LOCATION.--Lat 35°33'11", long 98°57'11", in SW 1/4 SW 1/4 sec.34, T.13 N., R.4 W., Oklahoma County, Hydrologic Unit 11050002, attached to left wing wall just downstream from outlet of inverted siphon, 2,600 ft (792.5 m) upstream from Lake Hefner, 3.0 mi (4.8 km) northeast of Bethany, and 7.6 mi (12.2 km) northwest of the State Capitol in Oklahoma City.

PERIOD OF RECORD.--March 1944 to current year.

REVISED RECORDS.--WDR OK-80-1: 1968-80 (Datum).

GAGE.--Water stage recorder and concrete control. Datum of gage is 1,196.06 ft (364.559 m) National Geodetic Vertical Datum of 1929 (revised). Prior to Apr. 8, 1947, nonrecording gage at site 2.7 mi (4.3 km) upstream at different datum. Apr. 8, 1947, to Apr. 30, 1950, water-stage recorder at site 3.0 mi (4.8 km) upstream at different datum. May 1, 1950 to May 19, 1954, Apr. 26, 1957 to Feb. 19, 1968 at present site and datum 4.90 ft (1.494 m) higher. May 20, 1954 to Apr. 25, 1957, water-stage recorder and concrete control at site 2,500 ft (762.0 m) downstream at datum 2.10 ft (0.640 m) higher than present datum.

REMARKS.--Records good. Use of canal began in March 1944. Canal diverts water from North Canadian River just upstream from Lake Overholser (station 07240500) and delivers water to Lake Hefner, capacity, 80,600 acre-ft (99.4 hm³), for municipal water supply of Oklahoma City. Subsequent to April 1950, small ground-water seepage, when head gates are closed, included in records.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,500 ft³/s (42.5 m³/s) May 28, 1955; no flow at times in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.34	.21	.00	.00	.00	.73	.33	.00	29	.00	.00
2	.00	.32	.36	.00	.00	.00	.88	.37	.00	19	.00	.04
3	.00	.35	.48	.00	.00	.00	.59	2.7	.00	.22	.00	.03
4	.00	.33	.39	.00	.00	.00	.43	.47	.00	.00	.53	.00
5	.00	.21	.31	.00	.00	.00	.55	.23	.00	.00	.41	.00
6	.00	.31	.24	.00	.00	.00	.52	.25	.00	.00	.18	.00
7	.00	.26	.29	.00	.00	.00	3.4	.16	.00	.00	19	.00
8	.00	.06	.29	.00	.00	.00	556	.04	.00	.00	330	.00
9	.00	.03	.28	.00	.00	.00	1040	.00	.00	.00	359	.00
10	.00	.01	.34	.00	.00	.00	636	.00	534	.00	398	.00
11	.00	.00	.32	.00	.00	.00	315	.00	792	.00	249	.00
12	.00	.00	.29	.00	.00	.00	21	.00	288	.00	249	.00
13	.00	.00	.35	.00	.00	.00	1.9	.00	116	.00	251	.00
14	.00	.00	.37	.00	.00	.00	1.2	.00	39	.00	250	.00
15	.00	.00	.29	.00	.00	.00	1.1	.00	38	.00	261	.00
16	.00	.00	.30	.00	.00	.00	.99	.00	36	.00	366	.00
17	.00	.00	.30	.00	.00	.00	.83	.00	35	.00	284	.00
18	.00	.00	.21	.00	.00	.00	.72	.00	36	.00	462	6.2
19	3.6	.00	.06	.00	.00	.00	.68	.00	37	.00	441	11
20	829	.00	.00	.00	.00	.00	.76	.00	37	.00	435	6.2
21	782	.00	.00	.00	.00	.00	.65	.00	36	.00	437	.07
22	54	.00	.00	.00	.00	.00	.45	.00	36	.00	438	.01
23	12	.87	.00	.00	.00	162	.44	.00	35	.00	435	.00
24	67	.30	.00	.00	.00	693	.46	.00	36	.00	349	.00
25	64	.15	.00	.00	.00	477	.46	.00	34	.00	215	.00
26	67	.23	.00	.00	.00	228	.46	.00	111	.00	202	.00
27	32	.39	.00	.00	.00	55	.46	.00	154	.00	106	.00
28	.78	.16	.00	.00	.00	56	.22	.00	30	.00	14	.00
29	.62	.04	.00	.00	.00	41	.82	.00	30	.00	.29	.00
30	.53	.21	.00	.00	---	1.1	.24	.00	29	.00	1.1	.00
31	.43	---	.00	.00	---	.89	---	.00	---	.00	.08	---
TOTAL	1912.96	4.57	5.68	.00	.00	1713.99	2587.94	4.55	2519.00	48.22	6552.59	23.55
MEAN	61.7	.15	.18	.00	.00	55.3	86.3	.15	84.0	1.56	211	.78
MAX	829	.87	.48	.00	.00	693	1040	2.7	792	29	462	11
MIN	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00
AC-FT	3790	9.1	11	.00	.00	3400	5130	9.0	5000	96	13000	47
CAL YR 1983	TOTAL	17948.43		MEAN	49.2	MAX	1030	MIN	.00	AC-FT	35600	
WTR YR 1984	TOTAL	15373.05		MEAN	42.0	MAX	1040	MIN	.00	AC-FT	30490	

ARKANSAS RIVER BASIN

07240500 LAKE OVERHOLSER NEAR OKLAHOMA CITY, OK

LOCATION.--Lat 35°29'11", long 97°39'58", on north line of SW 4 sec.30, T.12 N., R.4 W., Oklahoma County, Hydrologic Unit 11100301, at control tower at left end of dam on North Canadian river, 2.9 mi (4.7 km) upstream from Mustang Creek, 9.0 mi (14.5 km) west of State Capitol in Oklahoma City, and at mile 281.5 (452.9 km).

DRAINAGE AREA.--13,221 mi² (34,242 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Nonrecording gage. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Oklahoma City Water Department). Prior to Oct. 1, 1955, at same site at datum, 1,065.77 ft (324.847 m) elevation. Oct. 1, 1955, to Sept. 30, 1962, water-stage recorder at same site and present datum.

REMARKS.--Reservoir is formed by Ambursen-type dam flanked by long earth-fill sections. Outlet facilities are twenty-three taintor gates and one uncontrolled spillway. Storage began in 1917. Dam was partly washed out in 1923 and rebuilt in 1924. Capacity, 17,100 acre-ft (21.1 hm³) below elevation 1,242.27 ft (378.644 m), top of spillway gates. Dead storage, 1,400 acre-ft (1.73 hm³) below elevation 1,229.77 ft (374.834 m), sill of outlet works. Figures given herein represent total contents. Water diverted for municipal water supply by Oklahoma City. Revised capacity table used since Oct. 1, 1950.

COOPERATION.--Elevations and capacity table furnished by Oklahoma City Water Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 20,900 acre-ft (25.8 hm³) June 14, 1944, elevation, 1,242.67 ft (378.766 m); from capacity table then in use; minimum observed, 1,870 acre-ft (2.31 hm³) May 14, 1955, elevation, 1,230.62 ft (375.093 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,550 acre-ft (20.4 hm³) Oct. 23, elevation, 1,241.90 ft (378.531 m); minimum, 9,350 acre-ft (11.5 hm³) Mar. 9, elevation, 1,237.15 ft (377.083 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1239.45	12,800	-
Oct. 31.....	1241.60	16,090	+3,290
Nov. 30.....	1240.30	14,160	-1,930
Dec. 31.....	1239.75	13,260	- 900
CAL YR 83.....	-	-	+ 230
Jan. 31.....	1238.20	10,910	-2,350
Feb. 29.....	1237.40	9,710	-1,200
Mar. 31.....	1239.20	12,420	+2,710
Apr. 30.....	1240.10	13,800	+1,380
May 31.....	1241.20	15,480	+1,680
June 30.....	1241.05	13,720	-1,760
July 31.....	1239.00	12,120	-1,600
Aug. 31.....	1241.50	15,940	+3,820
Sept. 30.....	1239.90	13,490	-2,450
WTR YR 84.....	-	-	+ 230

07241000 NORTH CANADIAN RIVER BELOW LAKE OVERHOLSER, NEAR OKLAHOMA CITY, OK

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, Hydrologic Unit 11100301, on left bank 200 ft (61.0 m) upstream from bridge on State Highway 4, 0.5 mi (0.8 km) downstream from Lake Overholser, 2.4 mi (3.9 km) upstream from Mustang Creek, 9.1 mi (14.6 km) southwest of State Capitol in Oklahoma City, and at mile 281.0 (452.1 km).

DRAINAGE AREA.--13,222 mi² (34,245 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1952 to September 1968, October 1969 to September 1972, October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,194.66 ft (364.132 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1961, at datum 10.00 ft (3.048 m) higher and through Mar. 24, 1971, at site 200 ft (61.0 m) downstream.

REMARKS.--Records poor. Some regulation by Canton Lake (station 07238500) and Lake Overholser (station 07240500). Diversions above station into Lake Overholser and Lake Hefner Canal (station 07240000).

AVERAGE DISCHARGE.--30 years, 102 ft³/s (2.888 m³/s), 73,900 acre-ft/yr (91.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) Nov. 3, 1974, gage height, 29.18 ft (8.894 m); no flow at times in 1952-57.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 40.9 ft (12.47 m), present datum, was reached in October 1923 from information by Oklahoma State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,600 ft³/s (272 m³/s) Oct. 21, gage height, 28.17 ft (8.586 m) from high-water mark; minimum daily discharge, 2.4 ft³/s (0.068 m³/s) July 31 to Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	238	68	76	42	62	274	153	18	6.0	2.4	492
2	5.4	266	84	73	42	60	274	153	18	24	2.4	245
3	5.4	170	107	48	40	59	275	158	17	36	2.4	231
4	5.5	158	93	28	40	62	273	154	17	29	2.5	133
5	5.4	165	58	33	40	62	236	154	15	13	2.8	128
6	5.4	211	21	33	37	61	229	153	10	4.9	47	128
7	5.2	196	60	32	35	60	263	155	5.0	4.8	179	87
8	5.1	152	92	51	40	59	205	154	5.0	4.6	13	79
9	5.1	192	90	65	57	125	78	103	21	4.3	12	68
10	5.1	128	90	51	56	234	74	100	42	4.3	12	63
11	5.3	109	89	51	56	289	73	93	24	4.1	12	61
12	4.8	109	68	51	55	258	298	85	20	4.0	11	40
13	4.8	107	46	51	43	116	426	84	15	3.9	11	26
14	4.8	106	47	51	37	68	452	84	12	3.9	11	28
15	4.8	105	47	51	37	65	506	84	10	3.8	11	24
16	4.6	110	77	51	36	93	493	84	8.8	3.8	11	23
17	4.8	129	86	51	35	141	410	84	7.0	3.7	11	23
18	56	112	85	51	36	136	415	84	6.0	4.0	11	20
19	67	103	85	51	35	133	427	84	5.8	4.0	11	19
20	413	99	86	51	39	131	428	85	5.5	3.9	11	29
21	1800	95	86	51	45	127	421	89	5.3	3.9	11	34
22	1600	86	86	51	45	121	395	88	5.2	3.9	12	34
23	504	96	86	51	44	189	313	63	5.2	3.7	11	34
24	409	135	86	49	42	69	222	48	5.1	3.5	11	19
25	568	101	86	45	42	64	127	18	5.0	3.4	11	16
26	436	83	86	47	42	64	126	18	5.0	3.2	22	6.6
27	437	83	86	50	42	64	155	18	5.0	2.8	291	3.2
28	374	86	86	49	54	75	154	25	5.0	2.6	679	3.2
29	314	80	86	50	62	105	159	18	4.8	2.6	585	3.2
30	304	71	86	46	---	245	154	18	4.9	2.5	617	3.1
31	243	---	86	42	---	275	---	18	---	2.4	549	---
TOTAL	7612.0	3881	2425	1531	1256	3672	8335	2709	332.6	204.5	3185.5	2103.3
MEAN	246	129	78.2	49.4	43.3	118	278	87.4	11.1	6.60	103	70.1
MAX	1800	266	107	76	62	289	506	158	42	36	679	492
MIN	4.6	71	21	28	35	59	73	18	4.8	2.4	2.4	3.1
AC-FT	15100	7700	4810	3040	2490	7280	16530	5370	660	406	6320	4170
CAL YR 1983	TOTAL	55602.9		MEAN	152	MAX	1800	MIN	3.4	AC-FT	110300	
WTR YR 1984	TOTAL	37246.9		MEAN	102	MAX	1800	MIN	2.4	AC-FT	73880	

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK

LOCATION.--Lat 35°30'08", long 97°10'52", in SW 1/4 NE 1/4 sec.22, T.12 N., R.1 E., Oklahoma County, Hydrologic Unit 11100302, on upstream left end of bridge on access road to O.G. & E. power plant, 1.8 mi (2.9 km) northwest of Harrah, 4.6 mi (7.4 km) downstream from Choctaw Creek, and at mile 229.2 (368.8 km).

DRAINAGE AREA.--13,501 mi² (34,968 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,055.69 ft (321.774 m) National Geodetic Vertical Datum of 1929. Prior to June 19, 1981, gage 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records fair. Some regulation by Canton Lake (station 07238500) and by Lake Overholser (station 07240500), where diversions are made into Lake Hefner Canal (station 07240000). Low flow sustained in part by sewage effluent from Oklahoma City.

AVERAGE DISCHARGE.--16 years, 300 ft³/s (8.496 m³/s), 217,400 acre-ft/yr (268 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s (521 m³/s) Oct. 21, 1983, gage height, 18.94 ft (5.773 m); minimum, 23 ft³/s (0.65 m³/s) Aug. 8, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,400 ft³/s (521 m³/s) Oct. 21, gage height, 18.94 ft (5.773 m); minimum daily discharge, 100 ft³/s (2.83 m³/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	755	254	213	201	194	432	344	181	187	114	662
2	100	680	243	213	205	193	405	329	174	162	115	590
3	106	797	247	237	208	193	439	349	172	153	110	530
4	121	643	359	256	203	206	380	449	167	161	104	369
5	159	585	280	267	200	324	366	354	177	161	118	283
6	128	582	253	265	198	204	347	332	172	158	298	247
7	190	704	217	232	200	195	355	316	190	134	289	234
8	307	637	201	235	199	192	971	317	159	131	210	213
9	198	535	230	247	237	183	944	319	146	121	209	196
10	147	566	247	266	287	184	402	255	513	115	139	186
11	131	552	235	260	226	240	319	240	485	115	126	178
12	146	496	228	237	212	368	280	231	214	121	123	170
13	150	466	230	224	209	476	340	184	180	159	115	165
14	133	453	200	211	206	228	562	171	164	126	112	146
15	126	455	204	212	193	199	563	169	157	125	108	131
16	119	444	199	209	192	195	655	152	150	123	105	126
17	125	434	197	208	191	193	667	147	149	122	106	118
18	250	458	216	218	190	200	567	148	146	114	104	115
19	914	473	171	222	206	241	560	150	154	112	103	107
20	7090	452	222	220	196	209	597	165	200	109	106	107
21	12800	417	222	220	190	201	609	166	147	108	113	106
22	9630	375	220	220	112	199	591	169	144	106	101	114
23	7630	518	220	222	143	1820	559	190	132	104	102	123
24	5300	506	218	230	141	3200	489	194	134	103	102	122
25	1980	334	218	208	132	704	431	174	139	108	109	125
26	1420	305	216	177	150	401	343	175	256	112	109	114
27	1040	310	218	177	225	325	331	202	672	111	111	114
28	1010	347	216	191	262	398	393	525	229	120	440	113
29	957	279	215	183	192	408	343	328	391	113	745	110
30	853	265	215	183	---	288	358	210	485	109	724	107
31	808	---	213	183	---	364	---	199	---	115	826	---
TOTAL	54173	14823	7024	6846	5706	12925	14598	7653	6779	3918	6296	6021
MEAN	1748	494	227	221	197	417	487	247	226	126	203	201
MAX	12800	797	359	267	287	3200	971	525	672	187	826	662
MIN	100	265	171	177	112	183	280	147	132	103	101	106
AC-FT	107500	29400	13930	13580	11320	25640	28960	15180	13450	7770	12490	11940
CAL YR 1983	TOTAL	196283		MEAN	538	MAX	12800	MIN	92	AC-FT	389300	
WTR YR 1984	TOTAL	146762		MEAN	401	MAX	12800	MIN	100	AC-FT	291100	

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURE: October 1968 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples at or near the 5th, 15th, and 25th for each month. Additional samples were collected biweekly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,700 microsiemens Sept. 25, 1980; minimum daily, 262 microsiemens June 9, 1974.

WATER TEMPERATURE: Maximum daily, 36.0°C July 11, 1982; minimum 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,660 microsiemens Sept. 22; minimum daily, 169 microsiemens Oct. 19.

WATER TEMPERATURE: Maximum daily, 37.0°C June 20, 21; minimum daily, 1.0°C Jan. 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
05...	1800	--	80020	148	1360	6.8	24.5	--	--	--	--	--
14...	0915	730	80020	138	1150	7.5	15.0	6.2	64	7.2	--	--
15...	1630	--	80020	127	1420	7.2	22.0	--	--	--	--	--
25...	2100	--	80020	1740	587	7.3	16.0	--	--	--	--	--
NOV												
05...	1615	--	80020	547	1380	7.4	19.0	--	--	--	--	--
15...	1700	--	80020	454	1550	7.2	14.0	--	--	--	--	--
16...	1400	740	80020	450	1600	7.7	13.0	8.0	79	5.5	38000	2100
29...	1800	--	80020	355	1300	7.1	8.0	--	--	--	--	--
DEC												
05...	1700	--	80020	324	1400	7.7	8.0	--	--	--	--	--
14...	1115	730	80020	205	1600	7.8	7.0	9.5	82	4.8	--	--
15...	1720	--	80020	199	947	7.9	7.5	--	--	--	--	--
20...	1930	--	80020	231	1250	7.6	2.0	--	--	--	--	--
JAN												
04...	1215	740	80020	263	1500	7.6	7.0	--	--	28	62000	K850
05...	1630	--	80020	303	1600	7.1	10.0	--	--	--	--	--
15...	2100	--	80020	214	1550	7.3	3.5	--	--	--	--	--
23...	1130	740	80020	228	1700	7.6	3.0	10.2	79	18	--	--
25...	1800	--	80020	209	1870	7.0	6.0	--	--	--	--	--
FEB												
03...	1115	740	80020	208	1550	8.3	8.0	9.4	82	27	K7300	260
05...	1715	--	80020	202	1670	7.7	9.0	--	--	--	--	--
15...	1800	--	80020	192	1450	7.1	14.5	--	--	--	--	--
24...	1120	740	80020	188	1550	7.4	11.0	9.4	88	5.0	--	--
25...	1730	--	80020	406	1550	7.0	15.0	--	--	--	--	--
MAR												
05...	1645	--	80020	300	902	6.9	13.5	--	--	--	--	--
14...	1200	740	80020	244	1200	7.7	14.0	8.3	83	20	5700	K110
15...	1800	--	80020	197	1450	7.0	20.0	--	--	--	--	--
25...	1700	--	80020	530	789	7.0	13.0	--	--	--	--	--
26...	1130	730	80020	406	1060	7.7	13.0	7.4	74	22	--	--
APR												
05...	2010	--	80020	352	1590	7.3	13.5	--	--	--	--	--
12...	1200	740	80020	290	1650	7.9	17.5	6.6	71	11	K359000	K8200
15...	1830	--	80020	651	1440	7.3	15.0	--	--	--	--	--
25...	1710	--	80020	441	1680	7.5	22.0	--	--	--	--	--
30...	1215	740	80020	385	1650	7.8	16.5	7.0	74	--	--	--
MAY												
05...	1925	--	80020	352	1660	7.0	19.5	--	--	--	--	--

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
MAY												
09...	1130	740	80020	338	1650	7.6	18.0	7.0	77	29	45500	230
15...	1830	--	80020	120	1780	7.0	27.0	--	--	--	--	--
25...	1700	--	80020	138	1630	7.1	28.5	--	--	--	--	--
31...	1445	740	1028	212	1350	7.8	23.5	5.3	65	26	35500	470
JUN												
06...	1800	--	80020	140	1520	6.8	28.0	--	--	--	--	--
14...	1200	740	1028	145	1330	7.4	28.5	8.7	116	52	--	--
15...	1700	--	80020	124	1440	6.8	31.0	--	--	--	--	--
25...	1715	--	80020	114	1600	6.6	31.5	--	--	--	--	--
28...	1055	740	1028	228	725	7.6	27.0	4.1	53	>75	62500	27000
JUL												
05...	1900	--	80020	183	1500	7.1	31.0	--	--	--	--	--
15...	1800	--	80020	133	1830	7.0	33.0	--	--	--	--	--
20...	0759	740	80020	112	1950	7.3	25.0	3.7	46	--	9200	400
25...	1930	--	80020	116	1990	7.4	34.0	--	--	--	--	--
26...	1400	740	80020	104	1800	7.7	32.0	5.6	80	--	--	--
AUG												
05...	1900	--	80020	120	1820	6.8	30.0	--	--	--	--	--
15...	1730	--	80020	110	1920	6.9	32.0	--	--	--	--	--
21...	1215	740	80020	109	2040	7.7	30.5	6.3	87	11	--	--
25...	2000	--	80020	110	1670	6.9	32.0	--	--	--	--	--
29...	1215	740	80020	761	1600	7.8	28.5	3.5	47	32	36500	K6500
SEP												
05...	1800	--	80020	271	1750	7.8	29.0	--	--	--	--	--
15...	1830	--	80020	124	2210	7.1	23.0	--	--	--	--	--
21...	0745	740	80020	109	2600	7.6	20.5	4.5	52	13	--	--
26...	1900	--	80020	112	1890	7.0	19.0	--	--	--	--	--

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)
OCT												
05...	--	260	110	--	--	68	21	170	58	5	12	147
14...	--	--	--	7.7	48	--	--	--	--	--	--	--
15...	--	270	97	--	--	74	21	180	58	5	13	175
25...	--	180	41	--	--	52	11	49	37	2	5.6	134
NOV												
05...	--	380	120	--	--	100	31	150	46	3	7.3	262
15...	--	420	150	--	--	110	36	170	46	4	8.2	278
16...	K200	--	--	5.5	34	--	--	--	--	--	--	--
29...	--	350	110	--	--	90	30	140	46	3	7.3	237
DEC												
05...	--	380	130	--	--	97	33	150	46	3	7.3	250
14...	--	--	--	--	37	--	--	--	--	--	--	--
15...	--	250	78	--	--	70	18	98	46	3	4.5	171
20...	--	320	110	--	--	82	28	130	46	3	6.0	211
JAN												
04...	580	--	--	3.1	63	--	--	--	--	--	--	--
05...	--	340	110	--	--	89	29	160	50	4	7.4	230
15...	--	360	140	--	--	95	31	180	51	4	8.1	228
23...	--	--	--	11	57	--	--	--	--	--	--	--
25...	--	380	96	--	--	99	32	230	56	5	9.8	283
FEB												
03...	K55	--	--	12	56	--	--	--	--	--	--	--
05...	--	390	140	--	--	100	33	190	51	4	9.1	248
15...	--	350	110	--	--	87	32	160	49	4	8.4	239
24...	--	360	79	8.6	62	90	33	180	51	4	9.3	282
25...	--	360	120	--	--	93	31	170	50	4	8.6	240
MAR												
05...	--	210	71	--	--	56	18	91	47	3	5.6	143
14...	K90	--	--	5.2	49	--	--	--	--	--	--	--
15...	--	350	130	--	--	88	31	150	48	4	9.0	214
25...	--	230	71	--	--	63	18	72	40	2	5.9	161
26...	--	--	--	5.5	55	--	--	--	--	--	--	--
APR												
05...	--	400	180	--	--	99	37	170	47	4	8.1	225
12...	790	--	--	8.7	38	--	--	--	--	--	--	--
15...	--	390	190	--	--	96	36	150	45	3	8.0	195
25...	--	440	210	--	--	110	39	180	47	4	8.2	224
30...	--	--	--	4.3	64	--	--	--	--	--	--	--
MAY												
05...	--	400	180	--	--	100	37	190	50	4	9.6	224
09...	K180	--	--	5.6	55	--	--	--	--	--	--	--
15...	--	390	160	--	--	100	34	210	53	5	10	234
25...	--	390	160	--	--	98	36	190	50	4	10	231
31...	K140	--	--	--	55	--	--	--	--	--	--	--
JUN												
06...	--	340	140	--	--	85	32	180	52	4	10	208
14...	--	--	--	--	67	--	--	--	--	--	--	--
15...	--	290	120	--	--	73	26	180	57	5	9.2	171
25...	--	300	150	--	--	73	29	210	59	5	9.8	153
28...	2000	--	--	--	69	--	--	--	--	--	--	--
JUL												
05...	--	310	120	--	--	78	27	190	56	5	10	184
15...	--	320	140	--	--	81	28	250	62	6	13	177
20...	660	--	--	--	41	--	--	--	--	--	--	--
25...	--	350	180	--	--	90	30	280	63	7	13	170
26...	--	--	--	--	40	--	--	--	--	--	--	--
AUG												
05...	--	300	150	--	--	79	26	260	64	7	14	154
15...	--	300	150	--	--	78	26	270	65	7	14	155
21...	--	--	--	--	30	--	--	--	--	--	--	--
25...	--	280	120	--	--	72	24	220	62	6	13	155
29...	940	--	--	--	80	--	--	--	--	--	--	--
SEP												
05...	--	380	240	--	--	91	37	210	54	5	10	139
15...	--	370	200	--	--	96	31	300	63	7	12	170
21...	--	--	--	--	60	--	--	--	--	--	--	--
26...	--	330	160	--	--	83	31	240	60	6	11	179

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO ₂)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO ₂)
OCT											
05...	45	110	270	780	1.1	312	--	--	--	--	--
14...	--	--	--	690	.94	257	32	96	3.2	.520	1.7
15...	21	120	270	826	1.1	283	--	--	--	--	--
25...	13	57	64	349	.47	1640	--	--	--	--	--
NOV											
05...	20	130	220	824	1.1	1220	--	--	--	--	--
15...	34	160	250	937	1.3	1150	--	--	--	--	--
16...	--	--	--	922	1.3	1120	35	164	2.2	.220	.72
29...	36	120	200	769	1.0	737	--	--	--	--	--
DEC											
05...	9.6	170	210	841	1.1	736	--	--	--	--	--
14...	--	--	--	946	1.3	524	206	110	--	--	--
15...	4.2	85	140	557	.76	299	--	--	--	--	--
20...	10	140	190	741	1.0	462	--	--	--	--	--
JAN											
04...	--	--	--	808	1.1	574	44	76	1.6	.250	.82
05...	35	130	240	948	1.3	776	--	--	--	--	--
15...	22	150	270	921	1.3	532	--	--	--	--	--
23...	--	--	--	987	1.3	608	21	163	.74	.070	.23
25...	55	140	350	1050	1.4	593	--	--	--	--	--
FEB											
03...	--	--	--	924	1.3	519	20	156	.54	.150	.49
05...	9.6	160	290	983	1.3	536	--	--	--	--	--
15...	37	160	220	839	1.1	435	--	--	--	--	--
24...	22	160	240	901	1.2	457	19	134	1.3	.280	.92
25...	46	160	250	909	1.2	996	--	--	--	--	--
MAR											
05...	35	100	130	535	.73	433	--	--	--	--	--
14...	--	--	--	797	1.1	525	80	115	.49	.130	.43
15...	41	180	220	828	1.1	440	--	--	--	--	--
25...	31	80	110	483	.66	691	--	--	--	--	--
26...	--	--	--	--	--	--	175	1100	1.0	.160	.53
APR											
05...	22	220	260	970	1.3	922	--	--	--	--	--
12...	--	--	--	911	1.2	713	55	147	.57	.160	.53
15...	19	240	220	881	1.2	1550	--	--	--	--	--
25...	14	250	260	1010	1.4	1200	--	--	--	--	--
30...	--	--	--	995	1.4	1030	132	140	.60	.180	.59
MAY											
05...	43	190	280	998	1.4	948	--	--	--	--	--
09...	--	--	--	1020	1.4	931	121	155	.78	.320	1.1
15...	45	130	330	1010	1.4	327	--	--	--	--	--
25...	36	180	270	966	1.3	360	--	--	--	--	--
31...	--	--	--	821	1.1	470	72	89	.95	.350	1.2
JUN											
06...	64	130	260	882	1.2	333	--	--	--	--	--
14...	--	--	--	768	1.0	301	39	117	.63	.470	1.5
15...	52	110	270	795	1.1	266	--	--	--	--	--
25...	74	130	320	931	1.3	287	--	--	--	--	--
28...	--	--	--	396	.54	244	232	72	.70	.080	.26
JUL											
05...	28	140	270	860	1.2	425	--	--	--	--	--
15...	34	130	390	1070	1.5	384	--	--	--	--	--
20...	--	--	--	1110	1.5	336	21	146	.57	.930	3.1
25...	13	140	440	1160	1.6	363	--	--	--	--	--
26...	--	--	--	1090	1.5	306	33	147	.60	1.40	4.6
AUG											
05...	47	130	380	1050	1.4	340	--	--	--	--	--
15...	38	120	430	1100	1.5	327	--	--	--	--	--
21...	--	--	--	1140	1.6	336	17	165	--	--	--
25...	38	140	310	954	1.3	283	--	--	--	--	--
29...	--	--	--	943	1.3	1940	200	121	.14	.210	.69
SEP											
05...	4.3	250	310	1060	1.4	776	--	--	--	--	--
15...	26	160	460	1240	1.7	415	--	--	--	--	--
21...	--	--	--	1490	2.0	439	39	94	.50	1.30	4.3
26...	35	--	--	1080	1.5	327	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	1260	1490	---	1680	1490	1260	1580	1590	932	1820	1650
2	1420	1350	1550	1580	1660	1500	1440	1630	1660	1360	1940	1680
3	1360	1240	1520	1520	1630	1520	1480	1680	1630	1540	1930	1330
4	1350	1350	1390	1380	1720	1510	1580	1310	1650	---	1890	1520
5	1360	1380	1400	1430	1670	902	1590	1660	1630	1500	1820	1750
6	1170	1440	1500	1600	1600	1230	1570	1650	1520	1570	---	1920
7	1320	1520	1470	1640	1540	1390	1570	1640	1620	1590	615	1960
8	743	1260	1730	1680	1610	1430	952	1750	1450	1650	1550	1920
9	1130	1360	2100	1570	1620	1500	926	---	1550	---	1500	1960
10	1310	1500	1620	1550	1270	1550	1130	1800	673	1800	1820	2070
11	1360	1260	1570	1080	1390	1480	1390	1900	719	1820	1470	2020
12	1270	1330	1550	1570	1480	1530	1640	1670	1110	1830	1540	2050
13	1250	1440	---	1540	1490	1250	1890	1570	1250	1300	1710	2170
14	1420	1520	865	1480	1520	1340	1220	1740	1390	1640	1790	2060
15	1500	1550	947	1550	1450	1450	1440	1780	1440	1830	1920	2210
16	1430	1540	1120	1590	1560	1490	1520	1730	1440	---	1950	2320
17	1380	1550	866	1600	1550	1680	1540	1890	1450	1650	1880	2460
18	472	1600	918	---	1520	1930	1530	---	1480	1700	1870	2170
19	169	1530	950	1590	1630	1800	1550	1650	1470	---	1830	2240
20	256	1560	1250	1620	1430	1460	1560	1740	1080	2110	1980	2230
21	266	1530	---	1630	1470	1590	1570	1610	1080	2020	---	2330
22	365	1530	---	1640	1560	1620	1560	2220	1420	2040	1970	2660
23	373	---	---	1540	1620	847	1570	1660	1410	2010	1940	2340
24	587	---	---	1630	1530	442	1580	---	1390	2000	2570	2270
25	---	---	---	1870	1550	789	1680	1630	1600	1990	1670	---
26	889	---	---	1660	1560	1110	1700	1620	950	1970	2050	1890
27	924	---	---	1630	1540	1560	1760	1550	890	---	2150	1970
28	972	---	---	1640	1070	1600	1470	1180	886	---	1450	1920
29	1100	1300	---	1630	1280	1060	1660	895	706	---	---	2020
30	---	1400	---	1690	---	1230	1720	1370	679	1910	1720	2250
31	---	---	---	1670	---	1400	---	1500	---	2100	1440	---
MEAN	1020	1430	1360	1580	1520	1380	1500	1630	1290	1740	1780	2050
WTR YR 1984	MEAN	1530	MAX	2660	MIN	169						

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	18.0	8.0	---	11.5	13.5	12.0	21.0	23.0	27.5	33.0	31.0
2	26.0	21.0	10.5	5.0	10.5	16.5	15.0	19.5	23.5	28.0	33.0	27.0
3	27.0	18.0	9.0	6.5	10.0	15.5	14.0	20.0	28.0	28.5	33.0	27.0
4	26.0	19.0	10.5	8.0	9.0	14.5	13.0	20.0	25.0	---	34.0	28.0
5	24.5	19.0	8.0	10.0	9.0	13.5	13.5	19.5	25.0	31.0	30.0	29.0
6	19.0	17.0	8.0	10.0	7.0	12.0	17.0	20.0	28.0	33.0	---	28.0
7	19.0	17.5	8.5	10.5	10.0	12.0	16.0	19.5	28.0	31.0	32.0	33.0
8	20.0	17.0	10.5	10.5	12.0	11.0	15.0	21.0	29.0	33.0	28.0	26.0
9	24.0	14.5	9.0	8.0	12.0	11.0	16.0	---	29.0	---	28.0	31.0
10	21.0	12.0	10.5	6.5	13.5	13.0	15.5	23.0	26.0	33.0	25.0	31.0
11	18.5	13.0	10.0	5.0	14.0	11.0	19.0	25.0	27.0	---	30.0	31.0
12	20.0	13.0	9.0	1.0	13.0	10.0	19.0	27.0	29.0	33.0	32.0	29.0
13	21.0	14.0	---	4.0	13.0	13.5	19.0	28.0	---	33.0	32.0	30.0
14	22.0	14.0	8.0	3.5	14.0	18.0	16.0	28.0	---	33.0	32.0	29.5
15	23.0	14.0	7.5	3.5	14.5	20.0	15.0	27.0	31.0	33.0	32.0	23.0
16	22.5	14.0	7.0	3.0	13.0	14.0	15.0	26.0	33.0	---	32.0	23.5
17	20.5	15.0	7.0	2.5	15.0	20.0	18.0	26.0	31.0	30.0	33.0	23.0
18	18.0	16.5	2.5	---	13.0	15.0	18.0	---	29.0	31.0	32.5	27.0
19	19.5	14.0	1.5	2.0	12.0	9.0	19.0	25.0	31.0	---	33.5	26.0
20	15.0	15.5	2.0	2.0	14.0	13.0	20.0	23.0	37.0	---	33.5	25.5
21	17.0	15.0	---	2.5	12.0	16.0	18.0	20.0	37.0	---	---	24.0
22	18.0	14.5	---	2.0	14.0	15.0	16.0	---	31.0	---	29.0	27.0
23	19.0	---	---	2.0	13.0	11.0	18.0	27.0	31.0	---	28.0	27.5
24	16.0	---	---	5.5	13.0	9.0	22.0	---	31.0	---	29.0	27.5
25	---	---	---	6.0	15.0	13.0	22.0	28.5	31.5	34.0	32.0	---
26	18.0	---	---	9.0	10.0	16.0	24.0	20.0	29.0	35.5	30.0	19.0
27	18.0	---	---	8.0	7.0	12.0	23.0	28.0	28.0	---	27.0	16.0
28	17.0	---	---	9.0	7.0	11.0	19.0	22.0	29.5	---	29.0	16.0
29	16.0	8.0	---	11.0	11.5	12.0	20.0	24.0	30.0	---	---	16.0
30	---	5.5	---	9.0	---	13.0	19.5	22.5	27.5	---	32.0	16.0
31	---	---	---	10.5	---	12.0	---	23.0	---	---	32.0	---

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK

LOCATION.--Lat 35°15'47", long 96°12'25", in center of SW 1/4 sec.12, T.9 N., R.10 E., Hughes County, Hydrologic Unit 11100302, on right downstream abutment of bridge on U.S. Highway 75, 2.3 mi (3.7 km) upstream from Wewoka Creek, 2.5 mi (4.0 km) northeast of Wetumka, and at mile 84.4 (135.8 km).

DRAINAGE AREA.--14,290 mi² (37,011 km²) of which 4,899 mi² (12,688 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 977: 1942. WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 683.28 ft (208.264 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1939, nonrecording gage at same site and datum.

REMARKS.--Records poor. Some regulation by Lake Overholser (station 07240500) and other dams upstream.

AVERAGE DISCHARGE.--47 years, 658 ft³/s (18.63 m³/s), 476,700 acre-ft/yr (588 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,000 ft³/s (1,870 m³/s) Apr. 15, 1945, gage height, 26.40 ft (8.047 m); no flow Aug. 27 to Oct. 11, 1954, Aug. 25 to Oct. 22, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1923 reached a stage of 26.9 ft (8.20 m), from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,900 ft³/s (535 m³/s) Oct. 21, gage height, 14.15 ft (4.313 m) from high-water mark; minimum daily discharge, 87 ft³/s (2.46 m³/s) Aug. 25, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	772	548	500	325	448	875	659	898	634	156	382
2	120	674	553	600	308	469	782	664	634	457	158	393
3	117	629	473	620	318	436	915	654	543	654	137	478
4	113	590	448	649	301	409	836	644	490	482	144	517
5	112	571	428	669	308	478	772	599	469	360	149	495
6	112	600	428	767	291	503	772	604	955	325	146	465
7	112	566	424	705	291	448	777	654	2120	298	144	401
8	117	512	428	499	285	440	875	809	1170	275	139	325
9	125	432	428	428	308	512	1020	619	684	261	158	420
10	132	585	409	440	314	405	1100	553	503	261	251	525
11	141	649	389	405	325	401	1460	525	428	251	478	401
12	211	614	378	382	360	751	1920	534	416	238	318	285
13	193	604	389	389	424	1300	1030	525	471	229	335	238
14	166	694	401	386	420	968	804	473	659	203	232	211
15	151	644	401	382	360	751	689	453	416	190	197	209
16	142	624	393	356	349	820	639	436	420	209	166	206
17	144	590	382	360	335	710	820	378	371	229	168	180
18	191	590	353	325	325	624	875	363	342	214	146	175
19	489	609	331	300	318	1130	950	360	338	195	130	166
20	8830	590	300	270	308	1160	1100	353	338	195	121	161
21	18200	557	260	280	308	639	1120	378	328	190	110	156
22	17400	580	270	290	291	585	998	412	304	182	108	149
23	14700	715	250	300	311	609	1050	371	311	182	114	135
24	11800	864	240	350	321	1810	998	335	353	175	89	128
25	13800	674	230	390	318	2300	939	335	298	166	87	125
26	13800	659	240	508	409	2820	939	567	363	161	102	180
27	10000	998	260	424	1350	2420	968	9450	508	139	119	173
28	6940	1330	300	378	968	1480	875	6910	512	132	89	161
29	4530	580	320	371	715	1320	741	3240	1160	146	87	156
30	1260	543	300	363	---	950	639	1680	1340	146	94	146
31	933	---	450	345	---	881	---	1130	---	149	139	---
TOTAL	125204	19639	11404	13431	11564	28977	28278	35667	18142	7928	5011	8142
MEAN	4039	655	368	433	399	935	943	1151	605	256	162	271
MAX	18200	1330	553	767	1350	2820	1920	9450	2120	654	478	525
MIN	112	432	230	270	285	401	639	335	298	132	87	125
AC-FT	248300	38950	22620	26640	22940	57480	56090	70750	35980	15730	9940	16150
CAL YR 1983	TOTAL	380902		MEAN	1044	MAX	18200	MIN	103	AC-FT	755500	
WTR YR 1984	TOTAL	313387		MEAN	856	MAX	18200	MIN	87	AC-FT	621600	

ARKANSAS RIVER BASIN

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07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952, 1954 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1953 to current year.

WATER TEMPERATURE: October 1953 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Samples were collected bimonthly, and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 37,100 microsiemens Dec. 31, 1954; minimum daily, 98 microsiemens April 30, 1977.

WATER TEMPERATURE: Maximum daily, 39.0°C July 5, 1971; minimum 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,230 microsiemens Sept. 30; minimum daily, 182 microsiemens Oct. 21.

WATER TEMPERATURE: Maximum daily, 28.5°C on several days in June and July; minimum daily, 0°C on several days in Dec. and Jan.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
20...	1230	740	1028	12300	140	7.6	20.0	--	6.6	75	--
NOV											
16...	1300	750	80020	610	--	7.7	11.0	50	10.4	96	33
JAN											
24...	1250	740	80020	350	1480	7.9	.0	17	13.3	94	37
FEB											
23...	1350	--	80020	314	1210	8.8	12.0	--	--	--	--
MAR											
19...	1605	740	80020	1180	910	7.9	10.5	120	11.1	103	K2800
APR											
30...	1500	750	80020	624	1450	8.4	20.0	130	13.8	155	K38
JUL											
23...	1505	750	80020	168	1420	8.6	34.0	18	8.8	127	120
SEP											
19...	1343	750	80020	170	--	9.4	26.0	19	13.0	163	K7

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
OCT											
20...	--	--	--	--	--	--	--	--	--	--	--
NOV											
16...	92	400	100	110	31	140	43	3	6.8	302	12
JAN											
24...	83	410	110	110	32	160	46	4	6.3	298	7.2
FEB											
23...	--	360	89	94	30	150	47	4	6.2	270	.8
MAR											
19...	K7500	240	94	63	21	93	45	3	5.0	151	3.7
APR											
30...	K51	400	150	100	36	160	46	4	7.4	249	1.9
JUL											
23...	K1300	260	110	58	27	200	62	6	8.8	149	.7
SEP											
19...	190	330	230	71	37	250	61	6	12	104	.0

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 20...	--	--	--	--	--	--	--	--	--	--	--
NOV 16...	96	210	.60	18	818	800	1.1	1350	--	2.0	.190
JAN 24...	110	260	.70	16	994	880	1.4	939	--	1.2	3.20
FEB 23...	110	230	--	--	781	--	1.1	662	.20	2.5	.190
MAR 19...	110	140	.50	9.0	545	530	.74	1740	--	1.2	.080
APR 30...	180	240	.70	7.2	874	880	1.2	1470	--	--	--
JUL 23...	100	310	.80	.6	882	800	1.2	400	--	<.10	.040
SEP 19...	220	390	.90	20	1090	1100	1.5	500	--	<.10	.020

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 20...	--	--	--	--	--	--	--	--	--	--
NOV 16...	.24	1.8	1.20	3.7	1.00	.040	.12	<10	6	360
JAN 24...	4.1	4.2	1.40	4.3	1.30	1.10	3.4	--	--	--
FEB 23...	.24	1.8	1.50	4.6	1.20	--	--	--	--	--
MAR 19...	.10	2.4	.890	2.7	.420	.380	1.2	40	2	190
APR 30...	--	--	--	--	--	--	--	20	4	250
JUL 23...	.05	2.4	.640	--	.320	.290	.89	--	--	--
SEP 19...	.03	3.5	.520	--	.110	.080	.25	10	5	100

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT 20...	--	--	--	--	--	--	--	--	--	--
NOV 16...	<.5	2	1	<3	2	7	1	49	11	.2
JAN 24...	--	--	--	--	--	--	--	--	--	--
FEB 23...	--	--	--	--	--	--	--	--	--	--
MAR 19...	<.5	<1	<1	<3	4	46	<1	21	23	<.1
APR 30...	<.5	1	<1	<3	9	8	3	39	2	.3
JUL 23...	--	--	--	--	--	--	--	--	--	--
SEP 19...	<1.0	<1	--	<3	4	10	<1	38	2	--

ARKANSAS RIVER BASIN

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07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 20...	--	--	--	--	--	--	--	3750	125000	60
NOV 16...	10	9	<1	<1	1100	9	17	174	287	72
JAN 24...	--	--	--	--	--	--	--	54	51	84
FEB 23...	--	--	--	--	--	--	--	--	--	--
MAR 19...	<10	3	<1	<1	690	<6	36	937	2990	62
APR 30...	<10	4	<1	<1	1100	10	21	255	430	83
JUL 23...	--	--	--	--	--	--	--	49	22	84
SEP 19...	<10	5	--	<1	720	11	15	64	29	78

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	831	984	---	1540	1170	952	1490	564	846	1700	1700
2	1410	916	1190	---	1510	1210	1130	1500	986	734	1560	1920
3	1420	960	1280	---	1510	1300	932	1520	686	662	1540	1560
4	1390	1030	1320	1350	1500	1340	952	1400	775	1050	1590	1780
5	---	1100	1160	1290	1520	1220	1300	1500	944	735	1570	1380
6	1400	1150	1260	1280	1550	907	1230	1470	1020	718	1640	1740
7	1280	1230	1310	1270	1540	1080	1260	1320	345	854	1460	1870
8	1270	1270	1360	1250	1560	1210	1290	1520	638	1120	1540	1800
9	1310	1250	1410	1260	1500	1200	1080	1610	630	1230	1540	1410
10	1280	1270	1480	1270	1510	1330	1290	1490	650	1550	1500	1040
11	1300	1300	1260	1420	1520	1240	1150	1540	992	1520	2150	1040
12	1160	1350	1310	1430	1520	860	1080	1550	1200	1340	831	1230
13	1370	1360	1370	1450	1460	535	696	1480	1140	1320	789	1740
14	930	1230	1340	1440	1520	877	757	1510	1180	1360	895	1810
15	1030	1300	1480	1490	1530	906	966	1570	1230	1350	1530	1840
16	1050	1350	1590	1500	1670	1050	1060	1530	766	1370	1510	1870
17	576	1360	1450	1490	1340	1160	1220	1510	826	1350	1380	1890
18	1110	1240	1430	1510	1320	1080	1560	1530	993	1420	1440	1880
19	215	1320	1470	---	1370	990	1210	1390	1070	1420	1370	1900
20	193	1380	---	---	1370	669	1380	1280	1100	1640	1430	1880
21	182	1420	---	---	1410	824	1410	1390	1140	1360	1490	1920
22	194	1400	---	---	1360	1040	1380	1350	1210	1370	1540	1770
23	222	1430	---	---	1350	1170	1440	1440	1300	1430	1650	1880
24	291	1160	---	---	1420	802	1420	1430	1290	1460	1640	1960
25	314	1050	---	1460	1410	772	1370	1350	1230	1450	1700	1950
26	335	1290	---	1470	1400	587	1470	---	1260	1460	1710	1780
27	367	1260	---	1420	1010	474	1440	468	1140	1470	1590	1760
28	436	1070	---	1420	716	462	1480	342	507	1560	1600	1870
29	524	900	---	1460	1150	518	1450	320	916	1640	1630	1780
30	685	863	---	1450	---	646	1490	384	620	1650	1660	2230
31	---	---	---	1440	---	782	---	595	---	1630	1630	---
MEAN	852	1200	1340	1400	1420	949	1230	1290	945	1290	1510	1740
WTR YR 1984	MEAN	1260		MAX	2230	MIN	182					

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.5	18.0	5.0	---	5.0	5.0	11.0	16.0	20.5	26.0	24.0	26.0
2	20.5	19.0	7.0	---	8.0	8.0	11.0	19.5	21.5	25.5	24.0	26.0
3	22.0	19.0	8.0	---	5.0	9.0	12.0	18.0	24.0	28.0	23.5	25.0
4	23.5	19.0	7.0	1.5	7.0	12.0	11.5	17.0	23.5	28.0	25.5	22.5
5	---	18.0	8.5	1.0	6.0	8.0	9.5	20.0	23.5	27.0	25.5	23.0
6	19.0	17.0	5.5	1.5	1.0	7.0	11.0	18.0	23.0	27.0	22.0	23.5
7	18.0	16.0	5.0	1.0	3.0	8.0	11.0	18.0	23.0	28.0	27.0	23.0
8	18.0	15.0	6.0	2.0	5.5	9.0	14.0	17.0	25.0	28.0	22.0	23.0
9	19.0	15.5	7.5	5.0	9.0	8.0	9.5	17.0	24.5	28.0	25.0	23.0
10	25.0	10.5	8.0	3.0	7.5	9.0	12.0	19.5	24.0	28.0	25.5	24.0
11	15.5	9.5	8.5	1.0	12.0	6.0	14.0	20.0	25.0	28.0	27.0	25.0
12	13.0	9.5	6.0	1.0	11.0	9.0	16.0	22.0	25.0	28.5	25.5	25.0
13	15.0	10.0	7.0	1.0	10.0	8.0	15.0	24.0	26.0	28.0	26.0	25.0
14	16.0	12.0	4.0	.0	9.0	11.0	16.0	25.0	27.0	28.5	25.0	25.5
15	19.0	11.5	4.0	.5	12.0	15.0	10.0	24.0	28.0	28.5	25.0	21.0
16	20.0	10.0	3.5	.5	10.0	14.5	15.0	22.0	28.0	28.0	26.0	24.0
17	20.0	11.0	3.0	.0	9.0	12.5	13.0	22.0	28.0	27.0	25.5	18.0
18	20.0	14.0	1.5	.0	12.0	14.0	15.0	22.0	28.0	25.0	26.0	20.0
19	20.0	15.0	.0	---	8.0	9.0	15.0	24.0	27.5	25.0	26.5	20.0
20	19.5	12.0	---	---	7.0	6.0	17.5	25.0	28.0	24.0	27.0	20.5
21	18.0	20.0	---	---	6.0	9.0	17.0	22.0	28.5	25.5	26.0	20.5
22	16.0	15.5	---	---	17.0	11.0	15.0	24.0	28.0	26.0	28.0	21.0
23	15.0	14.0	---	---	9.0	13.0	13.0	22.0	28.5	26.0	27.0	23.0
24	16.0	9.0	---	---	8.0	10.0	15.0	23.0	28.0	25.5	23.0	25.0
25	15.0	9.0	---	.0	8.0	10.0	18.0	23.0	26.0	26.5	24.0	25.0
26	16.0	12.0	---	.0	9.0	11.5	20.0	---	28.0	27.0	24.5	15.0
27	15.0	10.0	---	4.0	7.0	12.0	20.0	24.0	26.5	24.0	25.0	15.0
28	16.5	7.0	---	3.0	4.0	11.0	20.0	20.0	25.5	26.0	26.0	14.5
29	17.0	5.0	---	5.0	4.0	10.0	20.0	18.0	23.0	26.0	27.0	14.0
30	17.0	6.5	---	6.0	---	9.5	15.0	18.5	26.0	25.5	25.5	14.0
31	---	---	---	5.0	---	11.0	---	20.0	---	23.5	26.0	---
MEAN	18.0	13.0	5.5	2.0	8.0	10.0	14.5	21.0	25.5	26.5	25.5	21.5
WTR YR 1984	MEAN	16.5		MAX	28.5		MIN	.0				

07242350 DEEP FORK NEAR ARCADIA, OK

LOCATION.--Lat 35°38'58", long 97°21'12", on east line of NE 1/4 sec.36, T.14 N., R.2 W., Oklahoma County, Hydrologic Unit 11100303, on left bank at upstream side of county road bridge, 1.9 mi (3.1 km) southwest of Arcadia, 2.0 mi (3.2 km) upstream from Coffee Creek, and at mile 213.1 (342.9 km).

DRAINAGE AREA.--105 mi² (272 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

REVISED RECORDS.--WDR OK-77-1: 1975 (M) (gage height only), WDR OK-84-1: 1983 (m).

GAGE.--Water-stage recorder. Datum of gage is 941.65 ft (287.015 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1974, at site 0.3 mi (0.5 km) downstream at same datum. May 2, 1978, to May 14, 1979, the gage was temporarily moved 1.3 mi (2.1 km) downstream to county road bridge, at a 5.00 ft (1.524 m) lower datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--15 years, 66.6 ft³/s (1.886 m³/s), 48,250 acre-ft/yr (59.5 hm³/yr).

* EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s (405 m³/s) Nov. 2, 1974, gage height, 26.9 ft (8.20 m) from floodmark; minimum daily, 2.2 ft³/s (.062 m³/s) Sept. 25, 26, 1984 (revised).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,000 ft³/s (368 m³/s) at 1645 Oct. 20, gage height, 22.27 ft (6.788 m), no other peak base 2,000 ft³/s (56.6 m³/s); minimum daily discharge, 2.2 ft³/s (.062 m³/s) Sept. 25, 26.

REVISIONS.--The discharge for Sept. 21-30, 1983 have been revised. The minimum daily for period of record is no longer in the 1983 water year. Minimum daily for 1983 is 6.1 ft³/s (.173 m³/s) July 29, 30.

Revisions of daily discharges for 1983 water year are listed below:

Sept. 21	14	Sept. 24	7.5	Sept. 27	7.3	Sept. 29	7.5
22	9.4	25	7.1	28	7.1	30	18

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	18	16	15	16	12	28	15	10	17	7.4	5.1
2	6.6	19	21	20	16	12	26	14	11	15	7.0	5.5
3	6.2	19	25	23	16	11	30	52	9.1	14	6.6	23
4	14	21	21	26	16	10	25	24	8.2	13	6.2	5.7
5	10	21	17	30	16	11	22	17	8.2	12	33	4.2
6	7.2	21	17	22	15	15	22	16	8.8	12	18	3.6
7	52	27	17	20	16	13	22	15	8.7	12	7.8	3.2
8	22	22	16	20	16	12	254	16	6.4	12	5.8	3.0
9	10	22	16	20	25	12	33	14	8.3	12	5.5	3.0
10	8.9	23	16	22	19	11	22	13	32	11	5.1	2.6
11	7.6	20	15	19	18	12	18	13	12	11	4.9	2.4
12	11	18	15	19	16	22	16	13	9.3	24	4.5	2.5
13	7.7	16	14	18	15	18	15	12	8.1	16	4.3	2.3
14	6.3	15	17	18	15	14	14	12	7.9	12	4.1	2.3
15	5.9	15	16	19	14	13	14	12	7.4	11	4.0	2.3
16	5.5	14	15	18	14	13	14	12	7.2	10	3.9	2.3
17	6.7	14	14	17	13	13	13	12	7.3	12	3.8	2.4
18	63	14	14	16	13	15	14	12	9.1	14	3.8	2.7
19	489	17	13	15	12	20	14	12	99	12	3.9	2.9
20	10100	16	13	14	12	16	14	18	13	11	3.5	2.9
21	1300	16	12	16	11	16	36	13	7.9	9.9	3.5	2.8
22	37	16	11	18	11	16	17	12	7.4	9.4	3.6	2.8
23	23	44	11	20	10	1060	15	12	7.5	8.0	8.6	2.5
24	25	17	10	24	9.5	218	14	11	11	7.0	6.1	2.4
25	23	17	9.0	22	9.0	34	15	11	12	8.0	5.1	2.2
26	21	20	10	19	15	32	14	12	231	9.6	4.4	2.2
27	19	24	10	18	14	30	24	14	42	10	4.2	2.4
28	18	19	9.0	18	13	82	18	52	20	10	101	2.8
29	18	17	8.0	18	13	37	15	14	189	10	9.8	3.0
30	17	17	8.0	17	---	30	17	11	33	9.4	38	2.9
31	18	---	10	16	---	28	---	9.9	---	8.4	11	---
TOTAL	12367.1	579	436.0	597	418.5	1858	815	495.9	851.8	362.7	338.4	109.9
MEAN	399	19.3	14.1	19.3	14.4	59.9	27.2	16.0	28.4	11.7	10.9	3.66
MAX	10100	44	25	30	25	1060	254	52	231	24	101	23
MIN	5.5	14	8.0	14	9.0	10	13	9.9	6.4	7.0	3.5	2.2
AC-FT	24530	1150	865	1180	830	3690	1620	984	1690	719	671	218
CAL YR 1983	TOTAL	30162.8		MEAN	82.6	MAX	10100	MIN	5.5	AC-FT	59830	
WTR YR 1984	TOTAL	19229.3		MEAN	52.5	MAX	10100	MIN	2.2	AC-FT	38140	

ARKANSAS RIVER BASIN

07242350 DEEP FORK NEAR ARCADIA, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to January 1980.

WATER TEMPERATURE: October 1969 to January 1980.

REMARKS.--A sample was collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV											
08...	1345	730	80020	22	640	7.9	15.5	9.2	97	30	26
21...	1315	730	80020	16	945	8.1	14.0	12.4	126	20	41
JAN											
05...	1200	740	80020	30	950	7.9	2.0	13.9	104	24	29
26...	1445	740	80020	19	1090	8.2	3.0	13.9	107	34	37
MAR											
15...	1200	740	80020	14	715	8.4	20.5	13.0	149	28	35
APR											
05...	1215	740	1028	22	820	8.2	11.0	11.4	107	25	39
MAY											
10...	1305	730	80020	13	925	8.4	22.0	12.1	145	21	45
JUN											
13...	1320	740	1028	8.2	760	7.9	31.0	12.2	170	33	36
JUL											
18...	1500	740	80020	14	545	8.1	31.0	8.6	120	38	27
AUG											
14...	1245	740	80020	4.1	830	8.8	32.0	--	--	40	36
SEP											
17...	1257	750	80020	2.2	820	8.2	24.5	11.7	143	40	39
DATE		CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MERCURY DIS- SOLVED (UG/L AS HG)	SEDI- MENT, DIS- SOLVED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV											
08...	63	.50	.070	.150	90	<100	.1	--	--	--	
21...	70	.40	.040	.190	90	<100	.1	94	4.1	29	
JAN											
05...	140	.55	.720	.150	60	<100	.1	60	4.9	70	
26...	200	.90	1.60	.130	30	<100	<.1	30	1.5	74	
MAR											
15...	66	.28	.050	.120	60	<100	.3	52	2.0	42	
APR											
05...	63	.87	.080	.140	60	<100	.4	68	4.0	94	
MAY											
10...	77	.16	.020	.100	40	<100	.5	40	1.4	83	
JUN											
13...	56	.10	.010	.180	<10	<100	.3	66	1.5	96	
JUL											
18...	10	.13	.030	.070	90	<100	.3	145	5.5	98	
AUG											
14...	69	<.10	<.010	.140	30	<100	.6	51	.56	92	
SEP											
17...	67	<.10	.030	.090	30	<100	.4	20	.12	77	

ARKANSAS RIVER BASIN

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07242380 DEEP FORK NEAR WARWICK, OK

LOCATION.--Lat 35°40'05", long 90°00'33", NE 1/4 NW 1/4 sec. 20, T.14 N., R.3 E., Lincoln County, Hydrologic Unit 11100303, on left downstream abutment on Highway U.S. 66, .5 mi (.31 km) southwest of Warwick, and at mi 189.3 (117.7 km).

DRAINAGE AREA.--532 mi² (205.4 km²).

PERIOD OF RECORD.--October 1, 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 823.053 ft (250.867 m). National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 28,700 ft³/s (813 m³/s) Oct. 21 from high-water mark, gage height, 22.05 ft (6.721 m); minimum daily discharge, 4.2 ft³/s (.119 m³/s) Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	132	69	52	57	60	148	122	60	91	7.6	49
2	6.6	128	69	64	57	55	163	164	56	64	8.8	32
3	5.0	116	69	74	57	52	175	184	40	51	7.4	91
4	26	105	101	90	57	51	124	245	35	42	7.1	76
5	12	100	80	120	54	61	115	153	33	39	6.3	32
6	7.0	91	68	152	49	60	113	142	42	33	123	19
7	110	119	67	107	48	48	180	132	39	28	73	9.3
8	60	102	66	89	48	43	1000	95	30	31	48	33
9	29	91	64	83	58	40	400	81	26	29	23	470
10	15	91	62	82	106	40	289	68	150	25	20	54
11	12	86	60	87	73	40	252	60	116	23	18	23
12	19	71	60	77	72	52	230	56	59	30	16	9.6
13	17	69	58	74	64	102	190	52	47	66	16	5.6
14	12	69	70	73	54	70	165	47	44	43	15	5.6
15	10	67	67	67	54	55	150	45	42	29	14	4.7
16	8.5	61	58	72	50	45	140	42	39	27	13	4.7
17	25	57	52	75	45	43	131	39	38	26	13	4.7
18	100	57	54	76	45	130	115	36	44	27	14	5.1
19	1030	70	64	144	55	183	114	34	292	30	13	6.5
20	15000	61	66	122	52	138	573	110	149	22	12	8.0
21	18200	60	54	115	47	59	430	68	99	15	11	8.6
22	2090	59	47	104	47	53	220	58	67	11	12	9.0
23	978	157	45	104	46	1400	159	48	52	8.6	40	9.0
24	754	141	44	109	45	530	153	44	49	7.2	17	7.7
25	567	92	45	130	44	320	138	43	56	8.7	9.0	5.6
26	454	79	47	126	40	200	132	42	996	9.7	6.4	4.4
27	360	103	52	90	78	340	186	62	343	11	25	4.2
28	310	107	47	75	136	550	153	160	141	15	140	4.5
29	250	80	56	71	80	284	151	130	245	14	131	5.9
30	210	73	52	65	---	175	132	56	235	14	56	9.0
31	180	---	54	59	---	153	---	54	---	9.9	176	---
TOTAL	40869.1	2694	1867	2828	1718	5432	6621	2672	3664	880.1	1091.6	1010.7
MEAN	1318	89.8	60.2	91.2	59.2	175	221	86.2	122	28.4	35.2	33.7
MAX	18200	157	101	152	136	1400	1000	245	996	91	176	470
MIN	5.0	57	44	52	40	40	113	34	26	7.2	6.3	4.2

WTR YR 1984 TOTAL 71347.5 MEAN 195 MAX 18200 MIN 4.2

07243000 DRY CREEK NEAR KENDRICK, OK

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, Hydrologic Unit 11100303, near left bank on downstream side of county road bridge, 1.0 mi (1.6 km) downstream from Beaver Creek and 4.5 mi (7.2 km) west of Kendrick.

DRAINAGE AREA.--69.0 mi² (178.7 km²).

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 820 ft (249.9 m), from topographic map. Prior to Oct. 1, 1981, gage at same site and datum 5.00 ft (1.52 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--29 years, 21.0 ft³/s (.595 m³/s), 15,210 acre-ft/yr (18.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Nov. 2, 1974, gage height, 24.20 ft (7.376 m) present datum; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 20	Unk	*3500 99.1	*17.72 5.401	Apr. 20	2215	3090 87.5	16.70 5.090
Mar. 23	1900	2650 75.0	15.80 4.816				

No flow at times.

*From high-water mark

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.0	2.1	2.2	3.2	3.9	26	17	6.5	1.8	.00	.00
2	.00	2.1	2.3	2.3	3.3	3.7	24	19	6.0	1.7	.00	1.3
3	.00	2.0	3.3	3.5	3.2	3.7	20	18	6.1	1.6	.00	.68
4	.00	2.1	2.8	7.0	3.1	3.9	15	16	5.8	1.5	.00	.00
5	.00	2.1	2.4	6.0	2.9	3.4	14	16	5.6	1.5	.00	.00
6	.00	2.5	2.2	5.3	2.9	3.3	14	17	5.5	1.4	.00	.00
7	.30	2.5	2.3	4.7	3.3	3.6	58	73	5.1	1.3	.00	.00
8	.10	2.2	2.4	5.1	3.3	3.3	216	20	4.8	1.1	.00	.00
9	.00	2.4	2.3	5.0	4.8	3.3	48	15	4.6	.87	.00	4.4
10	.00	2.3	2.4	4.5	3.9	3.4	223	13	5.3	.75	1.2	.03
11	.00	2.3	2.4	4.4	3.9	3.5	93	12	4.9	.73	.08	.00
12	.10	2.4	2.3	4.3	3.5	5.8	35	11	4.3	1.5	.00	.00
13	.00	2.5	2.6	4.2	3.3	4.7	25	10	4.0	.87	.00	.00
14	.00	2.6	2.6	4.0	3.3	4.1	21	9.3	3.8	.72	.00	.00
15	.00	2.4	2.3	4.1	3.3	4.0	19	9.0	3.6	.43	.00	.00
16	.00	2.5	2.3	3.9	3.1	3.5	18	8.6	3.4	.50	.00	.00
17	.00	2.6	2.1	3.7	3.2	4.4	17	8.1	3.2	.79	.00	.00
18	10	2.8	2.0	3.5	3.8	58	17	7.8	3.1	.47	.00	.00
19	50	3.4	2.1	3.0	3.3	52	16	9.3	3.2	.29	.00	.00
20	1700	2.8	2.0	3.3	3.2	8.9	403	22	3.1	.17	.00	.00
21	190	2.6	1.9	3.7	3.3	6.1	285	9.9	3.1	.07	.00	.00
22	18	6.0	1.8	4.5	3.4	5.2	48	8.4	2.7	.01	.21	.00
23	6.7	7.0	2.0	5.0	3.4	1060	32	7.7	2.5	.01	.00	.00
24	3.8	2.8	1.9	6.0	3.3	285	27	7.1	2.6	.00	.00	.00
25	2.9	2.2	1.8	6.0	3.4	50	24	7.0	2.4	.00	.00	.00
26	2.5	2.2	1.9	6.6	5.2	32	22	9.9	50	.00	.00	.00
27	2.6	2.6	2.1	5.5	6.9	27	23	57	3.9	.13	.00	.00
28	2.2	2.2	2.0	4.5	4.6	228	18	26	3.0	.08	.00	.00
29	2.1	2.2	1.9	4.0	3.7	53	28	9.8	8.7	.00	.00	.00
30	2.1	2.1	1.8	3.1	---	26	18	8.0	2.4	.00	.00	.00
31	2.0	---	2.0	3.0	---	30	---	7.3	---	.00	.00	---
TOTAL	1995.40	80.4	68.3	135.9	105.0	1986.7	1847	489.2	173.2	20.29	1.49	6.41
MEAN	64.4	2.68	2.20	4.38	3.62	64.1	61.6	15.8	5.77	.65	.05	.21
MAX	1700	7.0	3.3	7.0	6.9	1060	403	73	50	1.8	1.2	4.4
MIN	.00	2.0	1.8	2.2	2.9	3.3	14	7.0	2.4	.00	.00	.00
AC-FT	3960	159	135	270	208	3940	3660	970	344	40	3.0	13
CAL YR 1983	TOTAL	9080.28		MEAN	24.9	MAX	1700	MIN	.00	AC-FT	18010	
WTR YR 1984	TOTAL	6909.29		MEAN	18.9	MAX	1700	MIN	.00	AC-FT	13700	

07243500 DELP FORK NEAR BEGGS, OK

LOCATION.--Lat 35°40'31", long 96°03'55", NW 1/4 SW 1/4 sec.20, T.14 N., R.12 E., Okmulgee County, Hydrologic Unit 11100303, on right bank 1,000 ft (305 m) downstream from county road bridge, 2.8 mi (4.5 km) upstream from Adams Creek, 4.0 mi (6.4 km) south of Beggs, 8.2 mi (13.2 km) downstream from Flat Rock (Checkerboard) Creek, and at mile 84.8 (136.4 km).

DRAINAGE AREA.--2,018 mi² (5,277 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1938 to current year.

REVISED RECORDS.--WSP 957: 1941. WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 632.552 ft (192.802 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1939, nonrecording gage at site 550 ft (167.6 m) upstream at same datum. Aug. 29, 1939, to June 22, 1953, nonrecording gage at site 1,000 ft (304 m) upstream and same datum. June 23, 1953, to July 15, 1981, recording gage at site 1,000 ft (304 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--46 years, 794 ft³/s (22.49 m³/s), 575,300 acre-ft/yr (709 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft³/s (1,890 m³/s) May 11, 1943, gage height, 34.55 ft (10.531 m); no flow at times in 1939, 1954, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 25	2300	*21,800 617	*27.85 8.489	Apr. 1	0600	4,320 122	17.20 5.243
Mar. 24	1100	3,510 99.4	15.13 4.612				

Minimum daily discharge 6.4 ft³/s (0.18 m³/s) Aug. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	4710	415	98	99	364	4270	594	2060	959	14	8.0
2	18	3820	326	110	96	262	3950	641	2050	535	14	6.5
3	15	2340	286	120	93	210	3320	500	1370	352	17	8.1
4	13	1280	272	130	90	240	2080	444	740	323	16	35
5	10	905	268	140	85	415	1250	406	546	261	13	56
6	7.7	747	258	160	80	378	941	367	460	181	13	61
7	7.8	649	237	196	77	295	816	368	592	137	13	57
8	12	581	212	233	74	251	1330	725	573	119	12	48
9	16	529	203	254	70	211	1580	658	398	94	64	48
10	25	478	196	260	68	193	1540	540	314	77	179	188
11	26	431	186	249	67	178	1900	410	260	66	128	128
12	25	393	178	276	66	215	2120	323	217	51	171	171
13	25	343	173	293	67	677	2040	272	191	48	139	288
14	36	302	171	270	68	543	1970	235	186	43	95	318
15	47	263	174	252	73	436	1670	212	186	40	78	239
16	47	233	182	235	78	371	1090	196	177	37	61	173
17	44	212	181	218	88	296	821	186	159	35	49	130
18	43	197	167	203	98	310	672	177	139	34	40	94
19	297	200	140	190	110	1690	575	166	128	32	31	62
20	4000	200	125	175	115	1600	504	182	134	31	26	48
21	8380	197	115	165	120	970	490	245	109	30	21	44
22	12200	196	100	152	122	728	616	206	101	29	18	34
23	13700	295	99	145	120	865	803	197	85	28	16	27
24	16100	588	98	137	117	3390	1150	190	110	26	13	23
25	19700	538	98	130	116	3420	1080	174	121	22	11	19
26	21200	435	98	122	183	3310	759	169	115	22	9.9	18
27	17600	815	97	115	1060	3110	685	538	139	22	9.2	18
28	12700	1300	97	110	1250	3260	630	1350	198	21	8.2	25
29	9210	888	96	106	579	3560	496	2220	499	19	7.0	19
30	6990	591	96	104	---	3910	422	2080	956	17	6.4	15
31	5610	---	97	102	---	4220	---	2020	---	16	7.2	---
TOTAL	148126.5	24656	5441	5450	5329	39878	41570	16991	13313	3707	1299.9	2408.6
MEAN	4778	822	176	176	184	1286	1386	548	444	120	41.9	80.3
MAX	21200	4710	415	293	1250	4220	4270	2220	2060	959	179	318
MIN	7.7	196	96	98	66	178	422	166	85	16	6.4	6.5
AC-FT	293800	48910	10790	10810	10570	79100	82450	33700	26410	7350	2580	4780
CAL YR 1983	TOTAL	447120.2		MEAN	1225	MAX	21200	MIN	5.1	AC-FT	886900	
WTR YR 1984	TOTAL	308170.0		MEAN	842	MAX	21200	MIN	6.4	AC-FT	611300	

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1951 to current year.

WATER TEMPERATURE: November 1951 to current year.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,500 microsiemens Jan. 12, 1955; minimum daily, 74 microsiemens Oct. 21, 1983.

WATER TEMPERATURE: Maximum daily, 38.5°C Aug. 8, 1970; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,440 microsiemens May 15; minimum daily, 74 microsiemens Oct. 21.

WATER TEMPERATURE: Maximum daily, 35.0°C on Aug. 3; minimum daily, 7.0°C Jan. 16-22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV												
15...	1600	748	80020	258	783	7.6	11.0	50	9.8	91	84	>1000
JAN												
06...	1500	747	1028	164	1560	7.7	1.0	--	13.0	94	--	--
MAR												
27...	1345	730	80020	3020	378	7.1	12.5	370	11.2	110	3800	K19000
APR												
23...	1600	739	1028	843	830	7.9	17.0	--	9.1	97	--	--
MAY												
23...	1500	751	1028	199	1050	7.8	24.5	--	7.9	97	--	--
30...	1500	750	1028	2070	300	7.3	20.0	--	8.5	95	--	--
JUL												
23...	1345	746	80020	28	1000	8.0	30.5	20	8.4	115	K15	330
AUG												
21...	1400	742	1028	20	726	7.3	30.5	--	6.7	92	--	--
SEP												
17...	1500	750	80020	127	330	7.4	23.0	35	6.8	81	440	770

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV												
15...	230	42	50	26	60	36	2	3.6	191	9.3	33	100
JAN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
27...	110	23	24	11	30	37	1	3.5	83	13	22	52
APR												
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
23...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
23...	310	77	63	36	96	40	2	3.9	230	4.4	35	170
AUG												
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
17...	100	9	23	11	24	33	1	4.1	94	7.2	14	40

07243500 DEEP FORK NEAR BEGGS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
NOV 15...	.20	9.8	409	400	.56	285	.23	.080	1.0	.140	.43	.030
JAN 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	.20	7.9	217	200	.30	1770	.31	.120	1.6	.360	1.1	.030
APR 23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 30...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 23...	.50	7.6	570	550	.78	43	<.10	.020	.90	.080	--	.030
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 17...	.30	6.2	197	180	.27	68	.52	.030	2.0	.360	--	.060

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	* CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
NOV 15...	.020	30	1	170	<.5	<1	1	<3	1	28	1	21
JAN 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	.030	210	<1	95	<.5	<1	<1	<3	12	370	2	5
APR 23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 30...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 23...	.020	20	1	220	<1.0	<1	<1	<3	5	11	<1	10
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 17...	.040	70	<1	100	<1.0	<1	1	<3	10	46	2	7

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 15...	150	<.1	<10	3	<1	<1	470	<6	10	95	96
JAN 06...	--	--	--	--	--	--	--	--	--	70	23
MAR 27...	29	.1	<10	3	<1	<1	210	<6	12	779	96
APR 23...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	--	--	--	--	--	--	--	--	--	161	97
MAY 30...	--	--	--	--	--	--	--	--	--	968	94
JUL 23...	20	<.1	<10	5	<1	<1	690	<6	5	54	88
AUG 21...	--	--	--	--	--	--	--	--	--	108	96
SEP 17...	3	<.1	<10	1	<1	<1	230	<6	7	570	100

ARKANSAS RIVER BASIN

072-3500 DEEP FORK NEAR BEGGS, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	432	686	971	1060	766	442	766	347	579	1290	820
2	1030	433	699	971	1040	764	436	774	350	574	1280	823
3	1020	428	702	977	1040	706	437	875	347	577	1300	828
4	1040	430	701	967	1050	500	462	885	349	579	1290	878
5	1030	429	702	976	1070	496	473	873	350	575	1290	879
6	1040	439	686	972	1060	482	367	871	547	578	1290	873
7	983	438	693	984	1050	498	524	928	546	576	1290	871
8	968	434	1050	972	1080	495	523	926	611	575	1280	962
9	976	431	1060	968	1060	497	526	911	612	577	1270	964
10	---	718	1050	971	1240	493	524	928	626	649	1270	954
11	374	722	1040	967	1250	481	512	925	618	645	972	952
12	873	713	1060	976	1200	483	570	923	614	650	965	384
13	863	723	1050	966	1200	485	572	935	889	643	966	382
14	874	1070	1070	976	1250	824	570	1410	896	646	963	383
15	84	1080	1060	966	1220	827	573	1440	840	646	964	385
16	94	1060	---	1140	1190	843	815	1430	895	900	970	368
17	873	1050	---	1130	700	845	808	1420	897	905	724	365
18	871	1080	---	1120	705	838	828	1420	877	903	727	364
19	84	1000	---	1120	711	827	815	1430	868	904	727	351
20	84	990	---	1110	713	287	815	1430	866	901	728	383
21	74	990	---	1130	708	286	848	1420	876	1080	729	381
22	83	985	---	1120	702	286	860	1430	872	1080	587	382
23	83	945	---	1130	762	288	864	1210	874	1070	577	380
24	82	946	---	1120	765	---	861	1220	698	1080	578	551
25	81	941	---	1130	761	372	867	1230	572	1080	579	552
26	78	968	---	1120	750	366	776	1280	1040	1300	582	550
27	---	580	---	1140	760	365	775	1270	1040	1290	809	548
28	448	575	---	1120	756	368	773	1280	1050	1300	810	437
29	440	576	---	1130	761	369	772	1260	1050	1300	823	435
30	447	696	---	1130	---	365	774	1270	1040	1290	812	437
31	---	---	---	1120	---	432	---	364	---	1300	810	---
MEAN	572	743	887	1050	952	531	659	1120	735	863	944	594
WTR YR 1984	MEAN	804	MAX	1440	MIN	74						

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	21.0	15.0	8.0	8.0	14.0	12.0	17.0	21.0	27.0	33.0	33.0
2	20.0	21.0	15.0	8.0	8.0	14.0	12.0	17.0	21.0	27.0	33.0	33.0
3	20.0	21.0	14.0	8.0	9.0	14.0	12.0	17.0	21.0	28.0	35.0	33.0
4	20.0	21.0	14.0	8.0	9.0	12.0	12.0	17.0	29.0	27.0	33.0	32.0
5	20.0	21.0	14.0	8.0	9.0	12.0	12.0	17.0	23.0	27.0	33.0	32.0
6	20.0	21.0	14.0	8.0	9.0	12.0	12.0	17.0	21.0	27.0	33.0	31.0
7	20.0	21.0	14.0	8.0	10.0	12.0	12.0	19.0	21.0	27.0	33.0	31.0
8	20.0	21.0	14.0	8.0	10.0	12.0	12.0	19.0	21.0	27.0	33.0	31.0
9	20.0	21.0	13.0	8.0	10.0	12.0	12.0	19.0	21.0	27.0	33.0	31.0
10	---	21.0	13.0	8.0	11.0	12.0	12.0	19.0	21.0	30.0	33.0	31.0
11	19.0	---	13.0	8.0	11.0	12.0	12.0	19.0	21.0	30.0	33.0	31.0
12	19.0	---	12.0	8.0	12.0	12.0	12.0	19.0	21.0	30.0	33.0	31.0
13	19.0	---	12.0	8.0	13.0	12.0	12.0	19.0	23.0	30.0	33.0	31.0
14	19.0	19.0	12.0	8.0	12.0	12.0	12.0	19.0	23.0	30.0	33.0	31.0
15	19.0	19.0	11.0	8.0	12.0	12.0	12.0	19.0	23.0	31.0	33.0	31.0
16	20.0	19.0	---	7.0	12.0	12.0	15.0	19.0	23.0	31.0	33.0	30.0
17	20.0	19.0	---	7.0	14.0	12.0	15.0	19.0	23.0	31.0	33.0	30.0
18	20.0	19.0	---	7.0	14.0	12.0	15.0	19.0	23.0	31.0	33.0	30.0
19	19.0	20.0	---	7.0	14.0	12.0	15.0	19.0	23.0	31.0	33.0	30.0
20	19.0	20.0	---	7.0	14.0	13.0	15.0	19.0	26.0	31.0	33.0	30.0
21	19.0	20.0	---	7.0	14.0	12.0	15.0	19.0	26.0	31.0	33.0	30.0
22	19.0	20.0	---	7.0	14.0	12.0	16.0	19.0	26.0	31.0	33.0	30.0
23	19.0	18.0	---	8.0	14.0	12.0	16.0	19.0	26.0	32.0	33.0	30.0
24	18.0	17.0	---	8.0	14.0	---	16.0	19.0	27.0	32.0	33.0	30.0
25	18.0	17.0	---	8.0	14.0	11.0	16.0	21.0	27.0	32.0	33.0	30.0
26	18.0	17.0	---	8.0	14.0	11.0	17.0	21.0	27.0	32.0	33.0	30.0
27	---	15.0	---	5.0	12.0	10.0	17.0	21.0	27.0	32.0	33.0	30.0
28	21.0	14.0	---	9.0	12.0	10.0	17.0	21.0	27.0	33.0	34.0	26.0
29	21.0	14.0	---	9.0	12.0	10.0	17.0	21.0	27.0	33.0	34.0	24.0
30	21.0	16.0	---	9.0	---	10.0	17.0	21.0	27.0	33.0	34.0	21.0
31	---	---	---	9.0	---	11.0	---	21.0	---	33.0	34.0	---
MEAN	19.5	19.0	13.5	8.0	12.0	12.0	14.0	19.0	24.0	30.0	33.0	30.0
WTR YR 1984	MEAN	20.0	MAX	35.0	MIN	7.0						

07244800 EUFAULA LAKE NEAR BROOKEN, OK

LOCATION.--Lat 35°18'25", long 95°21'45", in SW 1/4 sec.25, T.10 N., R.18 E., McIntosh County, Hydrologic Unit 11090204, in intake structure near left end of dam on Canadian River, 4.0 mi (6.4 km) northeast of Brooken, and at mile 27.0 (43.4 km).

DRAINAGE AREA.--47,522 mi² (123,082 km²), of which 9,700 mi² (25,123 km²) is probably noncontributing.

PERIOD OF RECORD.--February 1964 to current year. Prior to October 1970, published as Eufaula Reservoir near Brooken.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earthen dam having a gated, concrete, ogee-type spillway weir controlled by eleven, 40 ft (12.2 m) taintor gates. Closure for diversion was made Feb. 1, 1963, and regulated storage began Feb. 10, 1964; minimum power pool was first filled June 17, 1964. Capacity, 3,825,000 acre-ft (4.72 km³) at elevation 597.0 ft (181.966 m), top of flood control pool; 2,315,000 acre-ft (2.85 km³) at elevation 585.0 ft (178.308 m), top of power pool, and 851,600 acre-ft (1.05 km³) at elevation 565.0 ft (172.212 m), bottom of power pool. Dead storage is negligible. Figures given herein represent total contents. Reservoir is used for flood control, sediment control, power development, and other water uses. Revised capacity table, based on survey 1977, used since Oct. 1, 1983.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,791,000 acre-ft (4.67 km³) Apr. 25, 1973, elevation, 596.95 ft (181.950 m); minimum since power pool first filled, 1,182,000 acre-ft (1.46 km³) Nov. 4, 1964, elevation, 570.23 ft (173.806 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,655,000 acre-ft (3.27 km³) Apr. 10, elevation, 588.07 ft (179.244 m); minimum, 1,753,000 acre-ft (2.16 km³) Oct. 15, elevation, 579.04 ft (176.491 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

579	1,750,000	589	2,764,000
583	2,111,000	593	3,263,000
587	2,533,000	595	3,537,000

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1775000	2458000	1920000	1873000	1935000	2088000	2566000	2438000	2468000	2374000	2167000	1974000
2	1774000	2423000	1917000	1875000	1939000	2094000	2576000	2446000	2462000	2368000	2164000	1971000
3	1768000	2391000	1922000	1876000	1941000	2103000	2600000	2446000	2462000	2355000	2158000	1970000
4	1763000	2366000	1914000	1879000	1943000	2120000	2599000	2440000	2462000	2355000	2156000	1969000
5	1762000	2344000	1920000	1880000	1941000	2127000	2598000	2438000	2462000	2345000	2153000	1967000
6	1761000	2322000	1911000	1884000	1946000	2134000	2592000	2444000	2467000	2340000	2148000	1961000
7	1761000	2299000	1910000	1885000	1943000	2142000	2592000	2450000	2469000	2334000	2138000	1953000
8	1762000	2293000	1905000	1886000	1944000	2142000	2624000	2439000	2470000	2328000	2123000	1947000
9	1762000	2267000	1903000	1895000	1949000	2144000	2641000	2430000	2468000	2319000	2132000	1947000
10	1759000	2228000	1907000	1894000	1950000	2149000	2648000	2424000	2468000	2292000	2126000	1940000
11	1769000	2200000	1911000	1896000	1955000	2148000	2642000	2423000	2468000	2283000	2124000	1937000
12	1762000	2175000	1905000	1906000	1956000	2187000	2630000	2423000	2467000	2275000	2122000	1914000
13	1756000	2150000	1911000	1903000	1959000	2218000	2619000	2425000	2462000	2270000	2114000	1909000
14	1754000	2129000	1911000	1908000	1959000	2237000	2617000	2422000	2455000	2263000	2107000	1903000
15	1754000	2101000	1907000	1911000	1966000	2248000	2611000	2411000	2453000	2258000	2100000	1903000
16	1755000	2077000	1901000	1912000	1967000	2254000	2596000	2407000	2445000	2250000	2091000	1899000
17	1766000	2063000	1901000	1914000	1963000	2271000	2574000	2402000	2439000	2252000	2083000	1898000
18	1769000	2050000	1898000	1913000	1974000	2305000	2550000	2396000	2432000	2249000	2078000	1896000
19	1775000	2046000	1892000	1913000	1972000	2362000	2527000	2397000	2421000	2239000	2068000	1894000
20	1797000	2022000	1886000	1913000	1972000	2379000	2513000	2399000	2413000	2227000	2061000	1892000
21	1905000	2008000	1891000	1911000	1974000	2379000	2519000	2397000	2408000	2222000	2053000	1888000
22	2079000	1998000	1880000	1913000	1975000	2366000	2509000	2387000	2399000	2219000	2047000	1889000
23	2155000	1994000	1876000	1915000	1979000	2400000	2484000	2383000	2391000	2213000	2038000	1889000
24	2220000	1972000	1876000	1916000	1976000	2450000	2465000	2380000	2389000	2204000	2034000	1885000
25	2267000	1946000	1868000	1917000	1975000	2490000	2460000	2377000	2384000	2193000	2028000	1892000
26	2320000	1939000	1868000	1921000	2001000	2513000	2444000	2387000	2381000	2186000	2023000	1894000
27	2368000	1960000	1871000	1924000	2048000	2533000	2444000	2430000	2379000	2185000	2020000	1895000
28	2413000	1947000	1871000	1927000	2068000	2546000	2438000	2466000	2377000	2183000	2010000	1894000
29	2450000	1933000	1869000	1931000	2079000	2552000	2459000	2471000	2374000	2180000	2000000	1894000
30	2477000	1929000	1871000	1932000	---	2552000	2444000	2472000	2373000	2178000	1989000	1893000
31	2482000	---	1871000	1933000	---	2562000	---	2471000	---	2173000	1982000	---
MAX	2482000	2458000	1922000	1933000	2079000	2562000	2648000	2472000	2470000	2374000	2167000	1974000
MIN	1754000	1929000	1868000	1873000	1935000	2088000	2438000	2377000	2373000	2173000	1982000	1885000
(+)	586.55	581.06	580.41	581.11	582.67	587.26	586.20	586.45	585.55	583.63	581.64	580.63
(++)	+706,000	-553,000	-58,000	+62,000	+146,000	+483,000	-118,000	+27,000	-98,000	-200,000	-191,000	-89,000

CAL YR 1983 MAX 2857000 MIN 1754000 (++) -311,000
WTR YR 1984 MAX 2648000 MIN 1754000 (++) +114,000

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK

LOCATION.--Lat 35°15'50", long 95°14'21", in SE 1/4 SE 1/4 sec.12, T.9 N., R.19 E., Haskell County, Hydrologic Unit 11090204, on left downstream bank at end of bridge on State Highway 2, 0.8 mi (1.3 km) north of Whitefield, 5.5 mi (8.8 km) upstream from Taleka (Snake) Creek, 8.2 mi (13.2 km) downstream from Eufaula Dam, and at mile 18.8 (30.2 km).

DRAINAGE AREA.--47,576 mi² (123,222 km²), of which 9,700 mi² (25,123 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1177: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 473.16 ft (144.219 m), National Geodetic Vertical Datum of 1929. Prior to Jan. 11, 1939, nonrecording gage and Jan. 11, 1939, to Dec. 10, 1941, June 12, 1947, to Sept. 30, 1948, water-stage recorder, all at site 2.1 mi (3.4 km) downstream at datum 2.20 ft (0.671 m) higher. Dec. 11, 1941, to June 1, 1947, and Oct. 1, 1948, to Sept. 30, 1978, water-stage recorder at site 400 ft (122 m) upstream and at datum 5.00 ft (1.524 m) higher. Oct. 1, 1978 to July 26, 1983, water-stage recorder at site 400 ft (122 m) upstream at same datum.

REMARKS.--Records good. Prior to February 1964, occasional slight regulation by Conchas Lake in New Mexico and, except for 54 mi² (140 km²) of intervening area, completely regulated thereafter by Eufaula Lake (station 07244800).

COOPERATION.--Gage-height record and 11 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Eufaula Dam) 25 years (water years 1939-63), 6,005 ft³/s (170.1 m³/s), 4,347,000 acre-ft/yr (5.36 km³/yr); (since regulation by Eufaula Dam) 17 years (water years 1968-84), 5,009 ft³/s (141.9 m³/s), 3,629,000 acre-ft/yr (4.47 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 281,000 ft³/s (7,960 m³/s) May 10, 1943, gage height, 25.5 ft (7.77 m) datum then in use; minimum daily, 0.4 ft³/s (0.011 m³/s) Oct. 8, 1956.

EXTREMES FOR OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1898, that of May 10, 1943, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,700 ft³/s (841 m³/s) Nov. 2, gage height, 14.22 ft (4.334 m); minimum daily discharge, 38 ft³/s (1.08 m³/s) Feb. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	26700	7320	79	167	129	3870	7880	7240	1600	2030	2910
2	94	29400	7790	68	70	178	9830	4530	4550	4270	646	589
3	2570	28000	2940	62	67	576	7640	6250	3720	3800	1990	54
4	2910	22400	3290	157	60	438	6240	6610	3420	2700	1450	697
5	604	15700	2590	61	63	333	4990	4800	3690	3890	839	1190
6	127	15600	3470	56	115	171	6360	3930	3950	4400	3150	2870
7	98	15600	3080	331	524	116	9540	7340	3440	4070	3870	4370
8	85	15700	2740	1030	79	101	10300	7050	4130	805	5550	2390
9	79	15900	2280	101	185	932	6350	7480	3150	4810	4430	627
10	895	15800	939	2340	164	225	7340	5140	2220	10300	3540	4030
11	2120	15800	260	749	60	106	14800	3010	3730	6090	1800	4760
12	631	15800	1850	109	87	513	14700	1540	3820	5080	914	6710
13	1010	16100	1550	89	63	254	14500	786	4690	4310	3590	4920
14	255	16000	1520	79	55	141	8660	3400	5520	2670	3850	1700
15	75	16000	1830	77	50	99	7430	3780	4600	1320	3770	611
16	61	15600	3950	73	53	2040	10300	3720	3770	4840	4140	113
17	1550	9900	2150	677	545	1120	14300	3800	3940	5060	3790	498
18	3320	10700	1270	584	160	219	14600	4260	4700	2240	2870	367
19	4270	11000	4750	185	59	6570	14600	1550	6030	4250	1290	149
20	1820	11600	2030	766	53	6280	14700	1240	5480	4390	5060	1220
21	247	11000	1040	2240	50	6540	14900	3430	3000	3050	4120	1070
22	98	11000	3280	344	43	7320	14800	3690	4860	1590	3930	455
23	79	10700	1910	165	38	7370	14800	3700	1840	3540	3320	80
24	67	15900	3380	710	473	2380	14800	3890	1280	3580	3050	1140
25	2770	15800	3420	93	139	277	7320	4180	3010	4580	2590	610
26	6040	14500	342	73	420	5250	9620	2500	4320	4990	636	420
27	7100	2090	1200	69	762	5780	8930	1580	4580	1090	2670	209
28	7730	7140	1060	66	343	5220	6980	1410	3040	824	4370	76
29	6640	12400	776	60	185	5990	4210	6300	4140	695	4190	69
30	7020	7130	702	63	---	5630	8000	7420	2680	691	4140	65
31	10900	---	96	754	---	6160	---	7040	---	887	5740	---
TOTAL	71497	446960	74805	12310	5132	78458	305410	133236	118540	106412	97325	44969
MEAN	2306	14900	2413	397	177	2531	10180	4298	3951	3433	3140	1499
MAX	10900	29400	7790	2340	762	7370	14900	7880	7240	10300	5740	6710
MIN	61	2090	96	56	38	99	3870	786	1280	691	636	54
AC-FT	141800	886500	148400	24420	10180	155600	605800	264300	235100	211100	193000	89200
CAL YR 1983	TOTAL	2419399	MEAN	6628	MAX	40100	MIN	30	AC-FT	4799000		
WTR YR 1984	TOTAL	1495054	MEAN	4085	MAX	29400	MIN	38	AC-FT	2965000		

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1944-64, 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1944 to February 1945, September 1946 to September 1964, October 1966 to current year.

WATER TEMPERATURE.--September 1944 to February 1945, September 1946 to September 1964, October 1966 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Additional samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 22,900 microsiemens Nov. 11, 1956; minimum daily, 36 microsiemens May 19, 1980.

WATER TEMPERATURE: Maximum daily, 39.0°C, July 16, 1981; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 590 microsiemens Jan. 16; minimum daily, 102 microsiemens Mar. 6.

WATER TEMPERATURE: Maximum daily, 28.0°C Aug. 30; minimum daily, 0°C Dec. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT 18...	1430	750	80020	2360	--	7.5	20.0	6.2	7.1	79	200
DEC 20...	1025	760	80020	638	430	8.4	4.0	14	7.6	58	K2
FEB 14...	1420	740	80020	53	460	8.5	15.0	8.4	12.0	123	K11
APR 17...	1320	750	80020	14300	475	8.0	13.5	7.4	10.3	101	K17
JUN 11...	1405	760	80020	160	541	7.8	26.5	5.2	8.2	103	92
AUG 20...	1500	750	80020	3060	535	7.7	26.5	2.0	5.4	68	63

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)
OCT 18...	240	150	51	38	13	42	37	2	3.7	98	6.0
DEC 20...	K4	120	30	33	10	35	37	1	3.7	94	.7
FEB 14...	K16	140	25	39	11	34	33	1	3.5	118	.7
APR 17...	K9	140	35	36	12	41	38	2	4.0	105	2.0
JUN 11...	K18	160	53	42	13	46	38	2	3.7	106	3.2
AUG 20...	120	170	46	44	14	45	36	2	3.8	122	4.7

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT 18...	46	64	.20	4.1	265	270	.36	1690	.14	.050
DEC 20...	37	56	.30	4.5	251	240	.34	432	.35	<.010
FEB 14...	36	49	.20	2.6	254	250	.35	36	<.10	.030
APR 17...	42	62	.30	4.1	265	270	.36	10200	.38	.100
JUN 11...	45	65	.30	3.5	287	280	.39	124	.30	.040
AUG 20...	47	67	.20	4.8	303	300	.41	2500	.13	.080

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 18...	.06	.90	.060	.18	.030	.030	.09	10	1	110
DEC 20...	--	.60	.040	.12	.040	.060	.18	--	--	--
FEB 14...	.04	.50	.020	.06	.010	<.010	--	30	<1	150
APR 17...	.13	.50	.070	.21	.050	.040	.12	10	<1	120
JUN 11...	.05	.60	.070	--	.050	.030	.09	--	--	--
AUG 20...	.10	.70	.090	--	.040	.030	.09	10	1	130

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT 18...	<.5	2	<1	<3	4	9	<1	11	10	.1
DEC 20...	--	--	--	--	--	--	--	--	--	--
FEB 14...	<.5	<1	<1	<3	5	30	5	14	54	.2
APR 17...	1.0	1	2	<3	3	3	1	10	3	.1
JUN 11...	--	--	--	--	--	--	--	--	--	--
AUG 20...	1.0	<1	<1	<3	3	6	2	11	51	.3

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 18...	<10	3	<1	<1	350	<6	19	19	121	74
DEC 20...	--	--	--	--	--	--	--	21	36	84
FEB 14...	<10	<1	<1	<1	320	<6	4	11	1.6	94
APR 17...	<10	4	<1	<1	340	<6	17	21	811	50
JUN 11...	--	--	--	--	--	--	--	9	3.9	85
AUG 20...	<10	1	<1	<1	390	<6	15	17	140	35

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	508	203	561	551	103	456	503	503	523	517	529
2	526	507	210	550	486	104	473	495	505	522	516	384
3	516	502	---	580	482	104	455	494	503	521	518	531
4	492	508	457	552	493	109	463	492	507	516	297	528
5	512	507	206	563	489	103	466	489	500	523	526	528
6	513	506	455	552	495	102	473	479	509	521	526	527
7	532	508	458	540	492	312	475	493	499	525	525	528
8	531	498	462	556	490	109	468	492	501	516	526	528
9	494	499	---	571	494	105	462	492	508	519	526	530
10	487	496	467	557	490	106	460	496	510	518	526	535
11	490	492	469	434	492	104	455	494	510	521	527	528
12	517	499	456	566	492	106	460	497	510	519	528	533
13	521	498	470	447	493	104	495	496	509	516	527	531
14	528	492	455	570	494	108	498	498	507	519	526	535
15	525	494	456	565	492	253	501	496	510	537	437	532
16	473	495	452	590	490	359	488	490	509	537	327	530
17	460	491	470	462	522	290	486	485	515	536	393	530
18	472	493	469	470	474	462	484	488	517	538	529	515
19	484	493	468	455	477	450	486	492	515	536	528	530
20	504	494	473	476	475	463	378	502	514	537	443	531
21	515	492	472	472	474	456	363	505	517	444	528	180
22	531	474	476	474	475	455	473	510	516	392	399	115
23	530	480	439	472	478	455	473	503	515	402	438	118
24	534	463	438	473	145	456	474	515	512	372	420	565
25	497	464	439	463	142	463	474	516	506	183	421	573
26	496	208	440	461	138	455	474	512	508	522	531	578
27	487	197	453	465	145	467	477	510	505	521	533	572
28	507	196	517	454	195	457	471	520	520	522	530	556
29	509	203	522	458	177	432	476	513	521	518	529	560
30	513	213	503	465	---	431	476	503	519	515	529	568
31	---	---	513	466	---	431	---	502	---	512	531	---
MEAN	507	446	440	508	422	288	467	499	510	497	489	494
WTR YR 1984	MEAN	464		MAX	590		MIN	102				

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	22.0	12.0	6.0	6.0	8.0	10.0	15.0	19.0	24.0	23.0	27.0
2	21.0	19.0	14.0	4.0	10.0	14.0	7.0	16.0	21.0	23.0	24.0	23.0
3	25.0	20.0	---	7.0	6.0	10.0	11.0	15.0	20.0	19.0	23.0	22.0
4	24.0	19.0	13.0	8.0	7.0	6.0	11.0	16.0	22.0	20.0	22.0	26.0
5	21.0	20.0	12.0	1.0	4.0	5.0	9.0	17.0	21.0	23.0	26.0	23.0
6	24.0	18.0	10.0	10.0	6.0	7.0	11.0	14.0	20.0	24.0	24.0	22.0
7	25.0	14.0	14.0	8.0	9.0	12.0	12.0	14.0	22.0	22.0	23.0	24.0
8	23.0	14.0	16.0	12.0	5.0	4.0	13.0	17.0	19.0	22.0	22.0	23.0
9	25.0	16.0	---	7.0	10.0	7.0	14.0	16.0	22.0	21.0	23.0	22.0
10	21.0	15.0	11.0	6.0	11.0	10.0	12.0	17.0	20.0	23.0	24.0	21.0
11	18.0	16.0	10.0	5.0	9.0	8.0	13.0	16.0	20.0	24.0	23.0	21.0
12	20.0	14.0	10.0	4.0	12.0	6.0	14.0	17.0	22.0	24.0	26.0	23.0
13	18.0	15.0	9.0	6.0	12.0	11.0	14.0	16.0	23.0	23.0	23.0	24.0
14	24.0	14.0	9.0	7.0	14.0	14.0	12.0	16.0	25.0	27.0	23.0	25.0
15	23.0	16.0	11.0	4.0	11.0	15.0	11.0	17.0	24.0	26.0	25.0	23.0
16	16.0	17.0	12.0	2.0	10.0	9.0	13.0	16.0	22.0	24.0	24.0	20.0
17	18.0	18.0	4.0	3.0	8.0	11.0	14.0	16.0	24.0	23.0	23.0	18.0
18	20.0	15.0	4.0	2.0	10.0	5.0	15.0	17.0	22.0	23.0	26.0	19.0
19	24.0	13.0	3.0	4.0	11.0	8.0	13.0	16.0	23.0	25.0	27.0	16.0
20	22.0	15.0	5.0	6.0	15.0	9.0	14.0	16.0	22.0	26.0	23.0	15.0
21	24.0	20.0	3.0	5.0	13.0	11.0	12.0	20.0	21.0	25.0	24.0	20.0
22	14.0	17.0	3.0	7.0	13.0	7.0	13.0	21.0	24.0	24.0	23.0	19.0
23	18.0	15.0	2.0	8.0	14.0	6.0	14.0	19.0	22.0	23.0	24.0	18.0
24	15.0	14.0	6.0	6.0	13.0	5.0	16.0	19.0	19.0	24.0	25.0	19.0
25	18.0	16.0	4.0	9.0	11.0	12.0	15.0	21.0	23.0	23.0	24.0	16.0
26	19.0	14.0	4.0	9.0	10.0	14.0	14.0	18.0	22.0	23.0	26.0	16.0
27	19.0	12.0	2.0	10.0	8.0	11.0	15.0	19.0	21.0	26.0	22.0	15.0
28	20.0	10.0	4.0	7.0	7.0	6.0	13.0	16.0	23.0	25.0	24.0	14.0
29	17.0	13.0	.0	10.0	9.0	7.0	15.0	17.0	22.0	26.0	27.0	14.0
30	20.0	15.0	4.0	6.0	---	10.0	16.0	18.0	23.0	25.0	28.0	16.0
31	---	---	3.0	12.0	---	8.0	---	18.0	---	25.0	26.0	---
MEAN	20.5	16.0	7.5	6.5	10.0	9.0	13.0	17.0	22.0	23.5	24.0	20.0
WTR YR 1984	MEAN	16.0		MAX	28.0		MIN	.0				

ARKANSAS RIVER BASIN

07246400 ROBERT S. KERR LOCK AND DAM (ARKANSAS RIVER) NEAR SALLISAW, OK

LOCATION.--Lat 35°20'57", long 94°46'43", in SW 1/4 SW 1/4, sec. 9, T.10 N., R.24 E., LeFlore County, Hydrologic Unit 11110104, from lock wall at dam, 0.5 mi (0.8 km) upstream from gage on bridge on U.S. Highway 59, 3.5 mi (5.6 km) downstream from Sans Bois Creek, 7.5 mi (12.1 km) south of Sallisaw, and at mile 395.4 (636.2 km).

DRAINAGE AREA.--147,756 mi² (382,688 km²) of which 22,241 mi² (57,604 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1970 to current year.

REVISED RECORDS.--WDR OK-77-1: Drainage area.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SPE- CIFIC CON- DUC- TANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT												
19...	1350	750	80020	690	7.6	19.0	7.6	83	150	46	25	43
NOV												
17...	1200	750	80020	--	7.6	12.0	9.0	85	160	51	22	41
DEC												
20...	1410	750	80020	--	7.5	2.5	7.1	53	71	12	28	21
JAN												
26...	1425	750	80020	750	8.7	4.0	14.3	111	170	50	--	48
FEB												
16...	1325	750	80020	825	8.8	8.0	7.6	65	150	59	33	41
MAR												
27...	1320	740	80020	620	7.4	11.0	10.9	102	140	43	31	41
APR												
18...	1440	750	80020	570	7.5	15.0	10.5	106	130	43	25	40
MAY												
09...	1450	760	80020	513	--	21.0	10.3	116	130	38	28	40
JUN												
13...	1440	760	80020	609	8.0	26.0	6.6	82	150	50	27	46
JUL												
25...	1345	760	80020	699	7.8	29.0	5.6	73	170	57	20	47
AUG												
22...	1245	760	80020	748	7.8	28.0	4.4	57	170	56	<10	49
SEP												
27...	1430	760	80020	759	7.8	20.0	4.2	46	180	62	40	50

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT											
19...	11	73	50	3	3.7	107	5.2	59	110	381	.52
NOV											
17...	13	83	53	3	4.3	105	5.1	61	130	405	.55
DEC											
20...	4.5	19	36	1	1.9	59	3.6	47	50	310	.42
JAN											
26...	11	91	54	3	3.9	115	.4	57	140	422	.57
FEB											
16...	12	120	63	4	3.8	93	.3	62	180	450	.61
MAR											
27...	8.5	61	48	2	3.7	95	7.3	52	98	335	.46
APR											
18...	7.9	56	47	2	3.3	90	5.5	45	83	313	.43
MAY											
09...	7.8	45	42	2	3.6	94	--	45	66	273	.37
JUN											
13...	9.3	57	44	2	3.3	103	2.0	47	85	341	.46
JUL											
25...	12	75	49	3	3.8	110	3.4	58	120	410	.56
AUG											
22...	12	84	51	3	3.9	116	3.5	61	130	408	.55
SEP											
27...	13	91	52	3	4.4	117	3.6	61	140	430	.58

07247500 FOURCHE MALINE NEAR RED OAK, OK

LOCATION.--Lat 34°54'45", long 95°09'20", in NW 1/4 NW 1/4 sec.13, T.5 N., R.20 E., Latimer County, Hydrologic Unit 11110105, on downstream side of left abutment of county road bridge, 0.1 mi (0.2 km) downstream from Little Fourche Maline, 5.0 mi (8.0 km) southwest of Red Oak, and at mile 41.2 (66.3 km).

DRAINAGE AREA.--122 mi² (316 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1631: 1940.

GAGE.--Water-stage recorder. Datum of gage is 540.80 ft (164.836 m), National Geodetic Vertical Datum of 1929. Prior to April 25, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by several flood-retarding structures.

AVERAGE DISCHARGE.--46 years, 125 ft³/s (3.540 m³/s), 13.91 in/yr (353 mm/yr), 90,560 acre-ft/yr (112 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 41,500 ft³/s (1,175 m³/s) May 19, 1960, gage height, 24.79 ft (7.556 m), from floodmarks, from rating curve extended above 25,000 ft³/s (709 m³/s); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1935 reached a stage of 25.4 ft (7.742 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft³/s (54.4 m³/s) Mar. 19, gage height, 12.96 ft (3.950 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow Oct. 1-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.29	29	3.8	12	220	146	48	97	6.8	2.8	.35
2	.00	.25	27	3.8	11	156	322	665	71	6.1	2.6	.29
3	.00	.22	29	3.8	9.7	126	591	1230	58	4.7	2.1	.20
4	.00	.21	33	3.9	8.5	146	357	669	50	3.8	1.8	.11
5	.00	.19	33	4.0	7.0	189	209	429	44	4.1	2.2	.05
6	.00	.25	27	3.7	6.0	148	148	283	54	5.4	2.1	.04
7	.00	.15	22	3.4	5.8	116	116	168	99	4.4	1.4	19
8	.00	.09	17	3.0	6.6	97	377	125	63	3.5	2.2	19
9	.00	.95	14	3.3	7.5	83	443	90	44	2.6	39	41
10	.00	.80	45	6.8	7.9	76	261	68	34	2.3	51	33
11	.01	.70	87	8.6	69	71	195	55	29	1.8	50	18
12	.01	.65	38	10	161	491	146	47	25	8.2	29	12
13	.01	.60	27	12	107	571	111	40	22	7.0	20	8.6
14	.01	.50	22	12	71	281	88	35	19	5.2	14	6.5
15	.01	.40	17	11	46	205	76	32	17	5.7	11	5.1
16	.01	.28	13	9.6	33	539	67	28	15	4.9	9.0	3.2
17	.05	.22	11	8.7	33	1050	61	23	14	4.1	17	2.3
18	.07	.21	9.7	8.2	31	776	54	18	12	3.2	21	2.0
19	.60	1.7	8.6	7.2	28	1680	48	15	10	2.3	18	1.6
20	.80	11	7.7	6.6	27	958	44	13	8.9	2.1	15	1.2
21	5.0	4.9	7.1	6.2	24	620	1210	13	7.8	1.8	12	.86
22	3.0	4.5	6.5	5.8	19	451	767	12	6.6	1.4	9.3	1.9
23	2.6	12	5.8	11	17	437	515	11	6.0	1.4	6.8	3.2
24	2.3	36	5.4	15	15	1220	358	9.0	5.1	2.3	4.7	7.3
25	2.0	33	5.3	16	13	759	171	7.2	4.4	1.9	3.3	7.3
26	1.8	23	5.1	21	201	492	98	109	4.5	1.1	2.7	18
27	.90	26	4.6	21	980	280	81	452	6.2	1.9	1.9	62
28	.80	51	4.8	19	682	415	67	1160	5.6	4.4	1.2	40
29	.50	47	4.2	17	419	430	60	733	5.6	2.9	.75	26
30	.40	34	3.8	15	---	274	54	502	7.0	2.7	.64	18
31	.38	---	3.7	13	---	190	---	225	---	3.0	.47	---
TOTAL	21.26	291.06	573.3	293.4	3058.0	13547	7241	7314.2	844.7	113.0	354.96	358.10
MEAN	.69	9.70	18.5	9.46	105	437	241	236	28.2	3.65	11.5	11.9
MAX	5.0	51	87	21	980	1680	1210	1230	99	8.2	51	62
MIN	.00	.09	3.7	3.0	5.8	71	44	7.2	4.4	1.1	.47	.04
AC-FT	42	577	1140	582	6070	26870	14360	14510	1680	224	704	710
CAL YR 1983	TOTAL	34834.91		MEAN	95.4	MAX	1460	MIN	.00	AC-FT	69100	
WTR YR 1984	TOTAL	34009.96		MEAN	92.9	MAX	1680	MIN	.00	AC-FT	67460	

07247500 FOURCHE MALINE NEAR RED OAK, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952, 1954, 1956-60, 1963, 1978 to current year.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV 16...	1400	750	80020	.27	258	6.8	8.5	3.7	32	79	16	9.5
FEB 02...	1200	750	80020	11	140	6.2	5.5	12.0	97	38	8.2	4.3
MAR 08...	1100	760	80020	96	77	6.0	8.0	11.5	97	21	4.3	2.6
APR 19...	1500	740	80020	49	98	5.9	16.0	9.5	99	27	5.6	3.1
MAY 24...	1400	750	80020	9.0	146	6.0	23.0	6.3	75	47	11	4.7
JUL 20...	1200	--	1028	1.9	--	--	--	--	--	--	--	--
SEP 20...	1500	750	80020	1.1	149	6.4	18.0	--	--	44	9.8	4.7

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)
NOV 16...	23	37	1	4.1	21	15	.20	6.7	164	.22	.12	440
FEB 02...	15	45	1	1.8	23	12	<.10	5.2	89	.12	2.6	450
MAR 08...	6.6	38	.6	1.3	18	5.7	<.10	6.7	60	.08	16	60
APR 19...	8.7	40	.8	1.3	18	5.5	<.10	7.0	83	.11	11	1300
MAY 24...	13	36	.9	1.9	25	7.1	<.10	6.1	98	.13	2.4	1500
JUL 20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	14	38	.9	4.6	19	8.3	.20	4.1	100	.14	.30	920

DATE	ALUM- INUM, SUS- PENDE RECOV. (UG/L AS AL)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV 16...	350	90	1	0	1	<100	74	<10	<.5	50	<1
FEB 02...	340	110	<1	--	1	<100	33	<10	<.5	30	<1
MAR 08...	0	60	<1	--	<1	<100	25	<10	<.5	20	<1
APR 19...	1200	90	<1	--	<1	<100	46	<10	.5	20	1
MAY 24...	1500	40	<1	--	<1	<100	59	<10	<1.0	30	<1
JUL 20...	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	--	50	1	--	<1	<100	53	20	<1.0	50	1

ARKANSAS RIVER BASIN

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07247500 FOURCHE MALINE NEAR RED OAK, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 16...	--	<1	110	100	10	6	--	<1	2500	2300	250
FEB 02...	--	<1	20	10	10	4	3	1	1200	840	360
MAR 08...	--	<1	<10	--	<10	3	--	<1	1800	1700	140
APR 19...	0	1	<10	--	<10	6	3	3	2600	2300	300
MAY 24...	--	<1	10	--	<10	6	5	1	2500	2400	120
JUL 20...	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	--	<1	<10	--	<10	6	--	2	2800	--	250

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)
NOV 16...	3	--	<1	1200	470	730	.3	.2	.1	65	61
FEB 02...	4	2	2	40	5	35	.3	.1	.2	4	0
MAR 08...	8	--	<1	100	40	62	.6	.2	.4	54	--
APR 19...	5	--	<1	150	40	110	.2	.0	.7	15	10
MAY 24...	4	--	<1	300	60	240	.6	.1	.5	17	13
JUL 20...	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	4	--	2	550	--	470	.7	--	.3	14	--

DATE	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	4	<1	<1	<1	<1	20	0	26	--	--	--
FEB 02...	7	<1	<1	<1	<1	110	100	6	10	.30	86
MAR 08...	<1	<1	<1	<1	<1	20	0	28	21	5.4	94
APR 19...	5	<1	<1	<1	<1	40	0	33	33	4.4	92
MAY 24...	4	<1	<1	<1	<1	50	30	20	37	.90	94
JUL 20...	--	--	--	--	--	--	--	--	50	.26	76
SEP 20...	2	<1	<1	<1	<1	30	--	13	35	.10	86

07248000 WISTER LAKE NEAR WISTER, OK

LOCATION.--Lat 34°56'10", long 94°43'10", in SE 1/4 NE 1/4 sec.1, T.5 N., R.24 E., LeFlore County, Hydrologic Unit 11110105, in control tower near right end of Wister Dam on Poteau River, 2.0 mi (3.2 km) south of Wister, 2.7 mi (4.3 km) upstream from Caston Creek, and at mile 60.9 (98.0 km).

DRAINAGE AREA.--993 mi² (2,572 km²).

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1970, published as Wister Reservoir near Wister.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earthen dam with outlets of an uncontrolled, concrete, chute-type spillway and six 7.0 ft (2.13 m) x 12.0 ft (3.66 m) vertical liftgates. Regulated storage began Oct. 4, 1949, conservation pool was first filled Dec. 19, 1949. Capacity, 429,600 acre-ft (530 hm³) at elevation 502.5 ft (153.16 m) crest of spillway and 29,950 acre-ft (36.9 hm³) at elevation 471.6 ft (143.74 m) conservation pool. Figures given herein represent total contents. Reservoir is used for flood control and recreation. Revised capacity table used since Oct. 1, 1973.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 507,400 acre-ft (626 hm³) May 27, 1957, elevation, 505.73 ft (154.147 m); minimum since conservation pool was first filled, 4,020 acre-ft (5.0 hm³) Oct. 16, 1961, elevation, 456.97 ft (139.284 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 158,100 acre-ft (195 hm³) May 6, elevation, 487.44 ft (161.089 m); minimum, 40,100 acre-ft (49.4 hm³) Jan. 30, elevation, 474.42 ft (144.603 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

471	24,720	483	106,500
475	43,240	487	152,400
479	69,990	489	179,100

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56500	55360	59480	40690	40790	59690	78380	40580	99130	63090	62360	60500
2	56370	55360	58710	40690	41110	55160	76430	68410	90740	62870	62140	59900
3	56300	55360	60120	41220	41170	51040	77530	127200	82280	62650	62070	59620
4	56090	55160	62140	41330	41170	50970	77530	152800	76260	62360	61990	59410
5	56030	55160	61120	41330	41010	57390	76010	156900	72800	62290	62070	59270
6	55890	55020	58430	41330	40900	55830	73700	157800	69990	62140	61990	59060
7	55830	55020	55560	41380	40790	51040	71020	155100	69120	62070	61920	58710
8	55760	54960	52420	41380	40630	47530	70380	149200	68180	61920	62140	58570
9	55620	55290	50110	42090	40850	45780	70940	139400	67400	61850	62580	59270
10	55560	55020	48600	42800	40950	44810	70620	128300	66630	61630	62730	59200
11	56030	54960	49140	43300	41380	43630	68960	116600	65720	61480	63090	59130
12	55890	54890	48060	43460	57390	54040	66940	104200	64340	61410	63090	58990
13	55620	54890	44870	43130	67560	61480	63910	91490	64440	61120	63090	58920
14	55490	54890	43240	42580	65790	61480	61120	78210	64440	60980	63020	58780
15	55360	54760	42300	42090	61190	60050	57730	67710	64440	60910	62950	58640
16	55360	54690	41490	41440	55420	65190	54430	61480	64440	60910	62800	58500
17	55560	54690	41270	41110	51910	72800	51100	60120	64360	62870	62650	58360
18	55490	54690	40530	41110	50910	77610	47590	60550	64360	62870	62430	58220
19	55830	55560	40370	41010	49440	90180	44190	61560	64290	62870	62140	58150
20	56030	55360	40470	41010	47650	93100	42690	63390	64140	62800	62070	57940
21	56160	55490	40740	40900	45730	89240	43190	64590	64140	62650	61920	58010
22	56030	56840	40820	40850	43740	80790	45320	65870	64060	62510	61850	58570
23	55960	61120	40900	40950	42250	77360	46190	65410	64060	63090	61630	58570
24	55890	62210	40950	41270	41540	85940	44700	63540	63760	62950	61410	58710
25	55830	62800	40950	41600	40850	87670	43240	61700	63610	62870	61190	59620
26	55830	62800	40950	41920	44420	85850	42030	74680	63760	62800	61120	60330
27	55690	63540	40950	41920	63470	82280	41490	88410	63690	63020	60910	62650
28	55620	62870	40950	41170	68730	82010	41060	113000	63540	62870	60830	63690
29	55560	61560	40790	40420	65950	85040	40530	117100	63390	62800	60550	64290
30	55490	60760	40790	40210	---	84770	40310	114100	63170	62650	60470	64440
31	55420	---	40790	40530	---	82190	---	107000	---	62430	60260	---
MAX	56500	63540	62140	43460	68730	93100	78380	157800	99130	63090	63090	64440
MIN	55360	54690	40370	40210	40630	43630	40310	40580	63170	60910	60260	57940
(+)	477.01	477.78	474.55	474.50	478.48	480.46	474.46	483.05	478.11	478.01	477.71	478.28
(++)	-1,150	+5,340	-19,970	-260	+25,420	+16,240	-41,880	+66,690	-43,830	-740	-2,170	+4,180
CAL YR 1983	MAX	205100	MIN	26620	(++)	-42,200						
WTR YR 1984	MAX	157800	MIN	40210	(++)	+5,730						

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07248500 POTEAU RIVER NEAR WISTER, OK

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, Hydrologic Unit 11110105, on left bank of outflow channel 700 ft (213.4 m) downstream from Wister Dam, 2.2 mi (3.5 km) southeast of Wister, 2.6 mi (4.2 km) upstream from Caston Creek, and at mile 60.8 (97.8 km).

DRAINAGE AREA.--993 mi² (2,572 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1938 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to May 21, 1951, records below about 500 ft³/s (14.2 m³/s) include flow from Caston Creek, drainage area, 70 mi² (181 km²).

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1939, 1943 (M), 1945 (M).

GAGE.--Water-stage recorder. Datum of gage is 445.43 ft (135.767 m), National Geodetic Vertical Datum of 1929. See WSP 1921 for history of changes prior to June 28, 1953.

REMARKS.--Records good. Flow completely regulated by Wister Lake since October 1949 (station 07248000).

COOPERATION.--Gage height record and 9 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Wister Dam) 11 years (water years 1939-49), 1,325 ft³/s (37.52 m³/s), 960,000 acre-ft/yr (1.18 km³/yr), (since regulation by Wister Dam) 35 years (water years 1950-84), 1,050 ft³/s (29.74 m³/s), 760,700 acre-ft/yr (938 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 78,600 ft³/s (2,230 m³/s) May 16, 1945, gage height, 37.16 ft (11.326 m), site and datum then in use; no flow at times in 1938-39, 1943, 1947, 1953-54, 1961, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1935 reached a stage of 43.0 ft (13.11 m) at site 0.1 mi (0.2 km) upstream at datum 13.11 ft (3.996 m) lower, estimated as 38.5 ft (11.73 m) at site 1.6 mi (2.6 km) downstream at datum 12.41 ft (3.783 m) lower, on basis of fall determined for flood in 1943, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,650 ft³/s (188 m³/s) May 11, gage height, 7.80 ft (2.377 m); minimum daily discharge, .81 ft³/s (0.023 m³/s) May 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	7.1	793	76	72	5010	3230	161	4200	29	25	25
2	9.2	6.5	793	76	72	3960	2820	103	4120	29	23	26
3	8.5	6.3	793	76	137	3170	2210	48	4040	29	23	22
4	8.4	6.3	795	76	185	3130	2210	1850	3110	28	21	23
5	8.8	6.3	1350	76	185	3170	2200	3500	1960	27	21	19
6	9.4	6.3	1780	76	181	3850	2190	3510	1420	27	21	20
7	9.8	6.3	1770	76	151	4220	2170	4300	697	27	21	19
8	10	6.3	1750	76	130	3260	2160	5990	503	27	21	18
9	9.5	6.5	1460	76	130	1910	2160	6480	504	27	20	18
10	9.3	6.7	1180	394	130	1440	2160	6540	497	27	21	18
11	9.3	6.7	1180	627	130	1440	2160	6520	490	26	22	18
12	9.3	6.7	2020	627	131	1440	2150	6490	496	26	23	19
13	8.9	6.7	2530	627	1040	2470	2140	6320	215	26	25	20
14	7.9	6.7	1550	627	3330	3490	2130	6380	31	26	26	23
15	7.9	6.7	952	627	3890	3090	2100	5450	31	26	26	23
16	7.6	6.7	762	627	3830	1400	2080	3430	31	26	27	23
17	7.7	6.5	529	396	3260	2590	2050	877	31	26	27	23
18	7.9	6.3	529	251	1450	3300	2020	38	31	27	27	22
19	7.9	6.3	291	225	1440	936	2000	22	30	27	28	22
20	8.3	6.3	86	191	1420	3380	1200	6.2	30	27	28	22
21	7.9	6.0	84	190	1410	5020	465	1.8	30	25	28	21
22	7.9	6.3	84	188	1400	6040	466	.81	30	24	28	21
23	7.9	6.6	80	188	1110	5480	950	457	30	23	28	21
24	7.9	6.3	77	188	683	4340	1560	1040	29	23	27	20
25	7.6	112	76	204	537	4380	1280	1030	29	23	28	20
26	7.5	209	77	237	534	4300	943	1030	29	22	27	21
27	7.5	210	78	357	923	4250	627	736	29	23	25	19
28	7.5	456	78	621	3080	3880	421	567	29	23	24	19
29	7.5	819	78	622	4650	3260	417	1630	29	24	23	19
30	7.1	807	77	337	---	3260	326	3280	29	24	22	19
31	7.1	---	76	74	---	3250	---	4260	---	24	23	---
TOTAL	258.9	2768.4	23758	9109	35621	104116	50995	82047.81	22760	798	759	623
MEAN	8.35	92.3	766	294	1228	3359	1700	2647	759	25.7	24.5	20.8
MAX	10	819	2530	627	4650	6040	3230	6540	4200	29	28	26
MIN	7.1	6.0	76	74	72	936	326	.81	29	22	20	18
AC-FT	514	5490	47120	18070	70650	206500	101100	162700	45140	1580	1510	1240
CAL YR 1983	TOTAL	366617.8		MEAN	1004	MAX	6680	MIN	6.0	AC-FT	727200	
WTR YR 1984	TOTAL	333614.11		MEAN	912	MAX	6540	MIN	.81	AC-FT	661700	

ARKANSAS RIVER BASIN

07249080 BRAZIL CREEK NEAR WALLS, OK

LOCATION.--Lat 35°01'21", long 94°56'39", in SW 1/4 NW 1/4 sec.1, T.6 N., R.22 E., Latimer County, Hydrologic Unit 11110105, at county road bridge, 2.2 mi (3.5 km) southwest of Walls, and at mile 32.2 (51.8 km).

DRAINAGE AREA.--69.1 mi² (179 km²).

PERIOD OF RECORD.--October 1978 to September 1981, February 1984 to current year.

REVISED RECORDS.--WDR OK-84-1: Datum.

GAGE.--Water-stage recorder. Datum of gage is 508.01 ft (154.841 m) (Revised), National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,610 ft³/s (102 m³/s) May 27, 1979, gage height, 17.70 ft (5.395 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 19	HWM	*2,540 71.9	*15.22 4.639	May 2	2130	1,840 52.1	13.73 4.185
Mar. 24	HWM	1,720 48.7	13.44 4.097	May 28	0915	1,970 55.8	14.03 4.276

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	119	102	19	25	.97	.03	.00
2					---	96	353	746	19	.70	.02	.00
3					---	82	558	1210	14	.55	.05	1.8
4					---	340	217	411	11	.50	1.4	.90
5					---	310	187	161	9.2	.45	1.3	.45
6					---	162	135	97	12	.41	1.4	.27
7					---	149	124	88	10	.38	1.0	.18
8					---	59	608	86	9.7	.36	.81	.15
9					---	53	328	54	7.5	.34	2.1	4.6
10					---	64	152	39	5.6	.32	1.0	1.2
11					---	74	110	30	5.9	.31	.74	.82
12					---	696	81	24	6.6	1.4	.52	.52
13					---	370	63	19	4.7	.87	.40	.36
14					---	178	55	16	3.7	.64	.28	.26
15					---	126	45	13	2.9	.47	.22	.70
16					---	351	40	12	2.6	.37	.17	.40
17					---	315	37	11	2.1	.37	.12	.22
18					---	377	31	8.8	1.8	.18	.10	.15
19					---	1540	25	8.0	1.4	6.1	.05	.11
20					---	517	24	9.3	1.2	2.9	.00	.00
21					---	178	691	8.9	.97	1.8	.00	.00
22					---	117	181	7.2	.86	1.6	.00	1.4
23					---	308	88	7.6	.80	1.3	.00	4.0
24					---	1110	59	6.1	.75	1.1	.00	1.1
25					---	280	46	5.0	.70	.10	.00	37
26					---	143	37	185	.64	.01	.00	30
27					---	110	31	313	2.2	.02	.00	13
28					---	390	24	1020	.98	.03	.00	7.8
29					---	139	364	22	146	.80	.02	6.0
30					---	164	22	59	1.3	.03	.00	3.8
31					---	124	---	37	---	.02	.00	---
TOTAL					---	9266	4476	4856.9	165.90	79.07	11.71	117.19
MEAN					---	299	149	157	5.53	2.55	.38	3.91
MAX					---	1540	691	1210	25	37	2.1	37
MIN					---	53	22	5.0	.64	.01	.00	.00
AC-FT					---	18380	8880	9630	329	157	23	232

07300500 SALT FORK RED RIVER AT MANGUM, OK

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, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi (0.8 km) south of Mangum, 13.0 mi (20.9 km) downstream from Fish Creek, and at mile 35.5 (57.1 km).

DRAINAGE AREA.--1,566 mi² (4,056 km²) of which 209 mi² (541 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft (454.417 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Apr. 11, 1905, to June 30, 1906, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum. Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--47 years, (water years 1938-84), 84.4 ft³/s (2.390 m³/s), 61,100 acre-ft/yr (75.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 ft³/s (2,040 m³/s) May 16, 1957, gage height, 14.55 ft (4.435 m); maximum gage height 14.7 ft (4.48 m) June 16, 1938; no flow at times in each year except 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,000 ft³/s (396 m³/s) Oct. 20, gage height, 11.17 ft (3.405 m), no other peaks above base of 6,000 ft³/s (170 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	32	21	18	27	27	41	9.4	.24	18	.00	.00
2	.00	32	24	23	23	28	65	10	.12	6.6	.00	.00
3	.00	30	27	21	21	28	65	12	.44	5.0	.00	.00
4	.00	29	28	19	20	28	78	11	.76	3.5	.00	.00
5	.00	29	29	40	20	27	58	9.6	.22	2.2	.00	.00
6	.00	36	27	50	18	27	44	8.4	.10	1.5	.00	.00
7	.00	43	25	60	18	26	137	6.7	.01	.92	.00	.00
8	.00	39	25	72	22	24	132	5.3	.00	.10	.00	.00
9	.00	33	25	60	40	22	83	4.7	.00	.00	.00	.00
10	.00	28	25	45	44	20	105	3.9	.10	.00	.00	.00
11	.00	26	24	42	43	18	67	3.2	801	.00	.02	.00
12	.00	24	23	40	39	20	46	2.9	284	.00	.00	.00
13	.00	23	23	30	37	21	38	2.6	92	.00	.00	.00
14	.00	23	21	30	34	22	33	2.3	65	.00	.00	.00
15	.00	24	21	30	30	21	29	2.3	136	.00	.00	.00
16	.00	22	19	50	26	20	26	2.2	41	.00	.00	.00
17	.00	22	18	40	26	20	23	2.1	22	.00	.00	.00
18	606	22	17	30	34	21	22	2.2	20	.00	.00	.00
19	2380	22	16	23	35	19	22	2.6	44	.00	.00	.00
20	3530	22	16	23	37	17	21	2.3	27	.00	.00	.00
21	622	22	15	25	35	16	20	2.1	132	.00	.00	.00
22	199	21	15	20	33	171	17	1.9	32	.00	.00	.00
23	135	28	15	19	30	242	16	1.7	17	.00	.00	.00
24	89	32	15	18	27	34	14	1.5	11	.00	.00	.00
25	57	34	15	25	27	32	13	1.2	13	.00	26	.00
26	50	33	14	65	25	26	11	1.0	11	.00	.57	.00
27	44	29	14	65	31	29	8.7	1.8	10	.00	.00	.00
28	40	50	14	52	31	40	7.5	1.6	32	.00	.00	.00
29	36	22	13	49	29	37	7.9	1.6	29	.00	.00	.00
30	34	20	13	36	---	36	11	1.2	40	.00	.00	.00
31	34	---	15	29	---	39	---	.72	---	.00	.00	---
TOTAL	7856.00	852	612	1149	862	1158	1261.1	122.02	1860.99	37.82	26.59	.00
MEAN	253	28.4	19.7	37.1	29.7	37.4	42.0	3.94	62.0	1.22	.86	.00
MAX	3530	50	29	72	44	242	137	12	801	18	26	.00
MIN	.00	20	13	18	18	16	7.5	.72	.00	.00	.00	.00
AC-FT	15580	1690	1210	2280	1710	2300	2500	242	3690	75	53	.00
CAL YR 1983	TOTAL	22132.98		MEAN	60.6	MAX	3530	MIN	.00	AC-FT	43900	
WTR YR 1984	TOTAL	15797.52		MEAN	43.2	MAX	3530	MIN	.00	AC-FT	31330	

07301110 SALT FORK RED RIVER NEAR ELMER, OK

LOCATION.--Lat 34°28'44", long 99°22'55", in NW 1/4 NE 1/4 sec.15, T.1 S., R.21 W., Jackson County, Hydrologic Unit 11120202, on right bank at bridge on State Highway 5, 1.7 mi (2.7 km) west of Elmer, and at mile 3.5 (5.6 km).

DRAINAGE AREA.--1,878 mi² (4,864 km²), of which 209 mi² (541 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1, 1979, to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,258.55 ft (383.606 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--5 years, 153 ft³/s (4.333 m³/s), 110,800 acre-ft/yr (137 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,900 ft³/s (1,272 m³/s) October 20, 1983, gage height, 15.35 ft (4.679 m) from high-water mark; minimum daily discharge, 0.08 ft³/s (0.002 m³/s) Sept. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,900 ft³/s (1,272 m³/s) Oct. 20, gage height, 15.35 ft (4.679 m) from high-water mark; no other peak above base of 6,000 ft³/s (170 mm); minimum daily discharge, 1.8 ft³/s (.051 m³/s) Sept. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	190	74	112	91	44	48	14	2.8	18	16	34
2	7.6	171	81	153	86	43	49	21	4.9	23	15	28
3	10	153	81	137	79	41	51	16	9.0	14	15	27
4	9.4	150	81	113	64	36	61	15	8.8	10	20	35
5	7.3	143	81	94	55	35	81	14	9.6	8.4	21	26
6	7.0	164	84	131	51	35	79	13	23	6.9	27	26
7	8.3	194	79	201	49	35	68	9.0	25	6.1	35	26
8	18	171	84	183	48	34	190	8.3	13	6.2	36	18
9	16	153	81	160	64	34	285	8.3	9.3	6.8	24	17
10	12	110	84	134	91	31	256	8.0	19	7.4	16	18
11	11	110	84	124	88	31	217	7.0	380	8.8	21	14
12	8.0	99	84	107	79	34	179	6.5	2770	17	22	9.4
13	6.5	91	81	94	76	34	153	5.6	814	12	26	6.5
14	6.1	88	79	84	72	32	59	5.4	319	8.7	23	5.4
15	5.8	84	74	79	66	30	39	6.1	183	6.8	19	4.6
16	6.8	81	74	70	55	27	44	7.0	150	13	19	3.6
17	30	74	74	62	51	22	35	6.5	134	7.6	19	2.2
18	34	74	64	53	51	25	32	6.1	104	8.9	24	2.1
19	2780	76	62	50	55	31	27	6.3	416	11	23	2.0
20	21100	74	60	54	55	30	28	6.1	469	15	36	2.0
21	10700	76	58	50	55	28	27	5.6	120	18	28	2.0
22	5300	72	57	52	55	30	24	4.8	128	14	24	2.0
23	2190	74	56	56	53	209	19	4.3	102	13	31	2.5
24	1170	96	54	64	49	300	18	4.6	55	16	34	3.0
25	853	86	53	81	49	140	18	4.0	38	16	30	2.2
26	616	81	51	102	49	122	16	3.6	27	8.8	851	1.8
27	455	72	50	113	55	76	12	3.6	22	15	67	1.8
28	394	72	49	122	55	66	13	3.5	19	9.6	32	2.2
29	300	70	47	119	46	57	14	3.2	15	26	18	2.8
30	252	70	60	110	---	48	14	3.2	16	25	21	3.1
31	205	---	85	96	---	41	---	3.1	---	20	36	---
TOTAL	46527.2	3219	2166	3160	1792	1781	2156	232.7	6405.4	397.0	1629	330.2
MEAN	1501	107	69.9	102	61.8	57.5	71.9	7.51	214	12.8	52.5	11.0
MAX	21100	194	85	201	91	300	285	21	2770	26	851	35
MIN	5.8	70	47	50	46	22	12	3.1	2.8	6.1	15	1.8
CAL YR 1983	TOTAL	76930.6		MEAN	211	MAX	21100	MIN	4.3			
WTR YR 1984	TOTAL	69795.5		MEAN	191	MAX	21100	MIN	1.8			

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to Jan. 1982.

WATER TEMPERATURE: October 1978 to Jan. 1982.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,530 microsiemens July 18, 1981; minimum daily, 300 microsiemens May 15, 1980.

WATER TEMPERATURE: Maximum daily, 39.5°C June 18, 1981; minimum daily, 0.0°C on several days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV											
15...	0720	730	80020	87	4490	7.8	10.5	3.3	10.2	97	150
DEC											
07...	0710	720	80020	73	4310	7.6	4.5	4.3	10.2	85	57
FEB											
29...	0730	730	80020	46	4170	7.6	3.0	5.1	12.0	95	47
MAY											
24...	0700	720	80020	5.0	5510	7.5	23.0	7.8	6.2	78	680
JUL											
11...	0800	720	80020	7.8	5440	7.7	25.0	6.2	8.8	115	500
AUG											
22...	0845	730	80020	19	3460	7.6	26.5	16	5.4	71	470

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
NOV											
15...	210	2100	1900	540	180	420	--	4	--	230	7.0
DEC											
07...	88	1900	1600	480	160	390	31	4	5.9	211	10
FEB											
29...	360	1300	1100	330	110	370	39	5	6.1	186	9.0
MAY											
24...	440	2100	2000	510	210	520	35	5	8.3	114	7.0
JUL											
11...	97	1600	1500	350	180	530	42	6	8.7	98	3.8
AUG											
22...	190	1000	920	250	100	360	43	5	8.0	118	5.7

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
NOV										
15...	1400	750	.50	15	3590	--	4.9	843	1.4	.250
DEC										
07...	1500	670	.50	10	3580	3300	4.9	706	1.2	.200
FEB										
29...	1300	590	.50	8.9	3420	2800	4.7	425	.89	.210
MAY										
24...	1800	980	.50	<1.0	4450	--	6.1	60	<.10	.010
JUL										
11...	1400	1000	.60	<1.0	3920	--	5.3	83	<.10	.070
AUG										
22...	890	600	.60	5.8	--	2300	3.1	117	.28	.220

RED RIVER BASIN

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV 15...	.32	1.5	.080	.25	.040	<.010	--	20	2	200
DEC 07...	.26	.60	.060	.18	.020	.020	.06	--	--	--
FEB 29...	.27	.90	.100	.31	.050	.040	.12	20	1	<100
MAY 24...	.01	1.2	.040	--	.040	.020	.06	20	<1	<100
JUL 11...	.09	1.5	.110	--	<.010	<.010	--	--	2	<100
AUG 22...	.28	1.3	.110	--	.020	.010	.03	20	2	--

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV 15...	<10	1	<1	1	4	100	2	100	230	--
DEC 07...	--	--	--	--	--	--	--	--	--	--
FEB 29...	<10	--	8	--	--	60	--	90	190	.3
MAY 24...	<10	<1	<1	<1	2	60	<1	140	300	<.1
JUL 11...	--	12	1	<1	5	--	<1	100	--	.4
AUG 22...	<10	5	1	3	6	10	2	60	50	.6

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 15...	4	<1	--	1	4800	13	20	49	12	73
DEC 07...	--	--	--	--	--	--	--	88	17	54
FEB 29...	3	--	6	--	4700	14	20	7	.87	86
MAY 24...	6	2	2	<1	9700	24	10	--	--	--
JUL 11...	6	3	--	<1	--	30	--	10	.21	73
AUG 22...	7	6	3	<2	3200	13	10	--	--	--

RED RIVER BASIN

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07301481 NORTH FORK RED RIVER NEAR SAYRE, OK

LOCATION.--Lat 35°17'05", long 99°37'18", in SE 1/4 NW 1/4 sec.3, T.9 N., R.23 W., Beckham County, Hydrologic Unit 11120302, on left bank at end of downstream bridge of Interstate 40, 1.2 mi (1.9 km) upstream from Deep Fork Creek 1.8 mi (2.9 km) southeast of Sayre, and at mile 124.7 (200.6 km).

DRAINAGE AREA.--2,159 mi² (5,592 km²) of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,775.98 ft (541.319 m) Oklahoma State Highway Department datum. Supplementary nonrecording gage 1.0 mi (1.6 km) upstream on State Highway 283 (read by observer).

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years, 55.2 ft³/s (1.56 m³/s), 39,990 acre-ft/yr (49.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) May 28, 1978, gage height, 9.00 ft (2.743 m); no flow in several years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge 800 ft³/s (22.7 m³/s) June 11. No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	8.5	13	12	34	30	99	35	1.7	15	.00	.00
2	.00	8.5	14	13	32	32	96	38	1.5	8.0	.00	.00
3	.00	8.5	15	14	31	34	95	40	1.2	6.0	.00	.00
4	.00	9.0	16	14	29	35	121	44	.70	4.0	.00	.00
5	.00	10	16	14	28	37	120	42	.50	3.1	.00	.00
6	.00	12	16	14	28	35	100	41	.30	2.0	.00	.00
7	.00	15	16	14	28	33	110	41	.20	1.2	.00	.00
8	.00	14	16	14	31	32	130	36	.18	.80	.00	.00
9	.00	14	17	13	34	31	120	32	.18	.50	.00	.00
10	.00	13	17	13	36	31	115	28	.16	.30	.00	.00
11	.00	12	18	12	36	31	100	25	800	.17	.00	.00
12	.00	12	18	11	33	34	90	23	500	.00	.00	.00
13	.00	12	17	11	32	35	80	21	180	.00	.00	.00
14	.00	11	17	10	31	40	70	17	160	.00	.00	.00
15	.00	10	17	10	30	45	60	15	50	.00	.00	.00
16	.00	9.1	16	10	29	45	56	13	30	.00	.00	.00
17	.00	8.5	15	10	29	43	54	10	15	.00	.00	.00
18	1.5	8.2	16	9.0	30	41	50	9.0	16	.00	.00	.00
19	1.0	8.6	17	10	32	42	47	8.0	22	.00	.00	.00
20	9.0	9.0	16	10	35	43	45	7.0	28	.00	.00	.00
21	450	10	15	11	39	45	44	6.1	25	.00	.00	.00
22	200	11	14	11	37	46	43	5.1	23	.00	.00	.00
23	80	12	14	12	35	50	44	4.1	22	.00	.00	.00
24	35	14	14	14	34	56	40	4.1	24	.00	.00	.00
25	30	14	14	20	34	80	39	3.9	30	.00	.00	.00
26	18	14	14	22	34	92	36	4.2	27	.00	.00	.00
27	15	14	15	25	32	90	33	4.5	23	.00	.00	.00
28	13	15	15	30	30	90	32	3.7	25	.00	.00	.00
29	11	13	15	35	31	90	33	3.5	30	.00	.00	.00
30	10	13	16	36	---	95	35	2.7	25	.00	.00	.00
31	9.0	---	16	36	---	98	---	2.6	---	.00	.00	---
TOTAL	882.50	342.9	485	490.0	934	1561	2137	569.5	2061.62	41.07	.00	.00
MEAN	28.5	11.4	15.6	15.8	32.2	50.4	71.2	18.4	68.7	1.32	.00	.00
MAX	450	15	18	36	39	98	130	44	800	15	.00	.00
MIN	.00	8.2	13	9.0	28	30	32	2.6	.16	.00	.00	.00
AC-FT	1750	680	962	972	1850	3100	4240	1130	4090	81	.00	.00
CAL YR 1983	TOTAL	23765.50		MEAN	65.1	MAX	450	MIN	.00	AC-FT	47140	
WTR YR 1984	TOTAL	9504.59		MEAN	26.0	MAX	800	MIN	.00	AC-FT	18850	

07301500 NORTH FORK RED RIVER NEAR CARTER, OK

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, Hydrologic Unit 11120302, near left bank on downstream side of pier of bridge on State Highway 34, 3.0 mi (4.8 km) south of Carter, 10.8 mi (17.4 km) downstream from Timber Creek, and at mile 110.5 (177.8 km).

DRAINAGE AREA.--2,337 mi² (6,053 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1944 to September 1962. Annual maximum and occasional low-flow measurements, water years 1963-64. August 1964 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,673.71 ft (510.147 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--38 years, (1944-62, 1964-84) 116 ft³/s (3.285 m³/s), 84,040 acre-ft/yr (104 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,400 ft³/s (1,510 m³/s) May 26, 1959, maximum gage height, 14.98 ft (4.566 m) May 17, 1977; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 2,410 ft³/s (683 m³/s), June 11, gage height, 6.45 ft (1.966 m), no peak above base of 3,200 ft³/s (90.6 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	19	16	17	57	49	118	49	4.9	41	.00	.00
2	.00	19	18	20	52	54	137	56	3.4	17	.00	.00
3	.00	18	21	23	46	57	214	56	2.8	6.5	.00	.00
4	.00	17	23	30	43	60	229	52	2.9	2.7	.00	.00
5	.00	16	23	40	40	58	178	50	2.4	1.6	.00	.00
6	.00	21	20	70	37	57	138	49	1.8	.88	.00	.00
7	.00	25	20	90	35	56	179	46	1.3	.34	.00	.00
8	.00	22	21	80	39	54	249	40	.77	.06	.00	.00
9	.00	19	22	76	53	51	280	36	.52	.00	.00	.00
10	.00	15	22	64	51	49	221	33	.40	.00	.00	.00
11	.00	15	22	54	52	49	180	30	933	.00	.00	.00
12	.00	15	21	47	52	55	145	26	333	.00	.00	.00
13	.00	15	22	40	51	56	126	26	218	.00	.00	.00
14	.00	15	22	32	48	57	104	22	147	.00	.00	.00
15	.00	15	21	27	44	61	86	20	135	.00	.00	.00
16	.00	14	20	22	40	59	74	18	69	.00	.00	.00
17	.00	15	19	19	37	58	67	17	43	.00	.00	.00
18	.00	15	18	17	44	62	65	16	38	.00	.00	.00
19	45	15	17	15	60	60	63	18	48	.00	.00	.00
20	1470	14	16	18	72	56	61	19	45	.00	.00	.00
21	581	15	15	17	67	55	60	17	47	.00	.00	.00
22	134	15	14	20	60	57	58	15	33	.00	.00	.00
23	70	19	13	27	56	144	59	14	25	.00	.00	.00
24	46	19	12	35	51	151	56	12	70	.00	.00	.00
25	34	19	11	45	49	120	54	8.8	31	.00	.00	.00
26	29	18	12	60	55	112	49	7.1	29	.00	.00	.00
27	25	19	13	70	55	106	44	7.5	56	.00	.00	.00
28	22	21	14	105	52	111	43	8.4	47	.00	.00	.00
29	21	16	15	97	49	109	46	5.5	28	.00	.00	.00
30	19	16	12	79	---	135	49	4.5	84	.00	.00	.00
31	19	---	14	68	---	127	---	5.5	---	.00	.00	---
TOTAL	2515.00	516	549	1424	1447	2345	3432	784.3	2480.19	70.08	.00	.00
MEAN	81.1	17.2	17.7	45.9	49.9	75.6	114	25.3	82.7	2.26	.00	.00
MAX	1470	25	23	105	72	151	280	56	933	41	.00	.00
MIN	.00	14	11	15	35	49	43	4.5	.40	.00	.00	.00
AC-FT	4990	1020	1090	2820	2870	4650	6810	1560	4920	139	.00	.00
CAL YR 1983	TOTAL	24400.81		MEAN	66.9	MAX	1470	MIN	.00	AC-FT	48400	
WTR YR 1984	TOTAL	15562.57		MEAN	42.5	MAX	1470	MIN	.00	AC-FT	30870	

07302500 LAKE ALTUS AT LUGERT, OK

LOCATION.--Lat 34°53'15", long 99°17'47", in SW 1/4 SE 1/4 sec.22, T.5 N., R.20 W., Kiowa County, Hydrologic Unit 1120303, on upstream face of Altus Dam on North Fork Red River, 1.0 mi (1.6 km) west of Lugert, 2.6 mi (4.2 km) upstream from Elm Fork of North Fork, and at mile 73.5 (118.3 km).

DRAINAGE AREA.--2,515 mi² (6,514 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--December 1943 to September 1950 (monthly records only), October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to Nov. 19, 1948, nonrecording or float gage at same site and datum.

REMARKS.--Reservoir is formed by concrete and coursed masonry dam. Storage began in December 1943. Capacity, 134,600 acre-ft (166 hm³) at elevation 1,559.0 ft (475.18 m) crest of uncontrolled spillway and 72,500 acre-ft (89.4 hm³) at elevation 1,547.0 ft (471.53 m) crest of controlled spillway. Dead storage, 1,660 acre-ft (2.05 hm³) below elevation 1,517.5 ft (462.53 m) sill of headgate at irrigation canal. Figures given herein represent total contents. Reservoir is used for flood control, municipal water supply for city of Altus, and irrigation of about 48,000 acres (194 km²). Revised capacity table used since Jan. 1, 1969. From 1927 to 1943, a dam to form reservoir for municipal water supply was at same site. Elevation of crest was 1,514.31 ft (461.56 m).

COOPERATION.--Data on diversions furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 170,600 ft³/s (210 hm³) May 19, 1951, elevation 1,562.10 ft (476.128 m); minimum after initial storage, 4,690 acre-ft (5.78 hm³) Aug. 25, 1944, elevation, 1,520.2 ft (463.357 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents 69,460 acre-ft (85.6 hm³) May 6, elevation 1,546.24 ft (471.294 m); minimum 11,180 acre-ft (13.8 hm³) Sept. 30, elevation, 1,525.76 ft (465.000 m).

Capacity table (elevation, in feet, and contents, in acre-feet):

1525	10,750	1540	46,560
1529	18,160	1548	76,680
1534	29,420	1559	134,500

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38320	56020	56590	57010	59240	61530	64730	68910	66640	58870	40850	16040
2	38320	56090	56660	57010	59460	61650	65250	69350	66040	58840	40070	15460
3	38440	56160	56690	57010	59530	61760	65730	69230	65170	58690	39280	14940
4	38380	56230	56690	57010	59600	61830	65510	69270	63870	58840	38380	14180
5	38350	56270	56940	57200	59640	61830	65730	69350	63000	58620	37560	13410
6	38170	56450	56690	57270	59530	61870	65730	69390	62250	58180	36720	12640
7	38500	56300	56800	57450	59530	61870	66690	69350	61570	57640	35850	12010
8	38520	56300	56830	57670	60000	61980	67210	69310	60630	57050	35070	11830
9	38440	56410	56830	57670	60080	62060	67430	69270	60630	56480	34330	11810
10	38230	56370	56910	57670	60150	62020	67910	69150	59640	55950	33580	11790
11	38440	56340	56910	57490	60330	62130	68170	69190	60860	55490	33150	11740
12	38260	56340	56980	57850	60370	62210	68120	69150	60780	54900	32800	11710
13	38060	56410	56980	57890	60440	62360	68430	69190	60970	54330	32370	11640
14	37910	56450	56980	57930	60370	62210	68550	69070	60710	53660	31790	11570
15	38000	56410	57020	57960	60970	62470	68590	68910	60440	53140	31030	11550
16	38700	56340	56940	58000	60630	62620	68630	68950	60220	52630	30310	11540
17	38550	56410	57380	58020	60520	62590	68750	69030	59970	51880	29440	11500
18	38670	56520	57020	58130	60890	63000	68830	68990	59710	51060	28570	11450
19	42520	56370	56980	58130	60970	62770	68790	68990	59570	50080	27660	11400
20	52420	56370	57010	58130	60970	62890	68990	68990	59420	49280	26680	11350
21	54720	56340	56980	58130	61080	62930	69110	68870	59240	48300	25850	11330
22	55110	56590	56940	58130	60930	62960	68990	69150	59060	47540	24830	11330
23	55460	56520	56940	58130	61190	63490	68950	68790	59170	46790	23840	11330
24	55920	56590	56940	58170	61230	63490	69070	68750	58980	46090	22980	11330
25	55640	56370	56940	58440	61230	63720	69030	68790	58870	45420	22340	11330
26	55740	56620	56940	58550	61650	63980	69070	68710	59090	44820	18670	11280
27	55740	56760	56940	58660	61800	64340	69070	69150	58950	44160	20190	11250
28	55810	56550	56940	58770	61460	64170	69070	68750	58980	43530	19360	11230
29	55920	56730	56940	58950	61310	64300	69070	68670	58950	42950	18330	11200
30	55950	56550	56940	59130	---	64860	68870	68380	58950	42220	17470	11180
31	56020	---	57010	59240	---	64690	---	67600	---	41550	16730	---
MAX	56020	56760	57380	59240	61800	64860	69110	69390	66640	58870	40850	16040
MIN	37910	56020	56590	57010	59240	61530	64730	67600	58870	41550	16730	11180
(+)	1542.79	1542.94	1543.07	1543.68	1544.24	1545.12	1546.09	1545.79	1543.60	1538.39	1528.29	1525.26
(++)	+17,610	+530	+460	+2,230	+2,070	+3,380	+4,180	-1,270	-8,650	-17,400	-24,820	-5,550
(+++)	0	0	0	0	0	0	0	479	10,628	15,183	24,348	4,449
CAL YR 1983	MAX	112300	MIN	37910	(++)	-16,450	(+++)	61,445				
WTR YR 1984	MAX	69390	MIN	11180	(++)	-27,230	(+++)	55,087				

(+) ELEVATION, IN FEET, AT END OF MONTH
 (++) CHANGE IN CONTENTS, IN ACRE-Feet
 (+++) DIVERSIONS, IN ACRE FEET

07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OK

LOCATION.--Lat 34°53'26", long 99°18'22", in SW 1/4 sec.22, T.5 N., R.20 W., Greer County, Hydrologic Unit 11120303, on right bank at State Highway 44A bridge, 3,500 ft (1,067 m) downstream from Altus Dam, 1.9 mi (3.1 km) upstream from Elm Fork of North Fork, 2.0 mi (3.2 km) west of Lugert, and at mile 72.8 (117.1 km).

DRAINAGE AREA.--2,515 mi² (6,514 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1930 to December 1932 (published as "at Lugert Dam"), December 1943 to September 1950 (published as spill from Lake Altus), October 1950 to September 1962, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,471.81 ft (448.608 m) National Geodetic Vertical Datum of 1929. Mar. 19, 1930, to Dec. 21, 1932, nonrecording gage at former Lugert Dam, 0.7 mi (1.1 km) upstream at datum 1,504.31 ft (458.514 m) National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records poor. Some regulation at low flow by Lugert Lake prior to December 1943, capacity 13,500 acre-ft (16.6 hm³) and completely regulated thereafter by Lake Altus (station 07302500). Diversions at Lake Altus by-pass most of streamflow. Seepage from Altus Dam not included for period February 1953 to September 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s (456 m³/s) May 18, 1951, gage height, 12.70 ft (3.87 m), maximum gage height, 16.37 ft (4.99 m) May 21, 1977 (backwater from Elm Fork of the North Fork Red River); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 16, 1928, reached a stage of 14.5 ft (4.42 m), site and datum in use 1930-32, discharge, 14,300 ft³/s (405 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19.0 ft³/s (0.54 m³/s) Oct. 19, gage height, 5.83 ft (1.777 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.94	.25	.46	.25	.00	.14	.00	.00	.00	.00	.00
2	.00	1.2	.30	.47	.11	.03	.11	.00	.00	.00	.00	.00
3	.00	1.1	.38	.51	.02	.12	.11	.00	.00	.00	.00	.00
4	.00	1.1	.36	.51	.00	.25	.07	.00	.00	.00	.00	.00
5	.00	.89	.35	.51	.00	.23	.07	.00	.00	.00	.00	.00
6	.00	1.1	.30	.51	.00	.23	.07	.00	.00	.00	.00	.00
7	.00	1.2	.17	.49	.00	.22	.23	.00	.00	.00	.00	.00
8	.00	1.1	.07	.46	.02	.26	.53	.00	.00	.00	.00	.00
9	.00	.85	.08	.51	.13	.27	.56	.00	.00	.00	.00	.00
10	.00	.65	.12	.51	.22	.33	.48	.00	.00	.00	.00	.00
11	.00	.75	.16	.50	.26	.45	.46	.00	.00	.00	.00	.00
12	.00	.64	.23	.50	.34	.59	.41	.00	.00	.00	.00	.00
13	.00	.55	.18	.50	.28	.71	.25	.00	.00	.00	.00	.00
14	.00	.40	.12	.47	.06	.79	.03	.00	.00	.00	.00	.00
15	.00	.32	.19	.48	.01	.66	.00	.00	.00	.00	.00	.00
16	.00	.32	.23	.51	.00	.41	.00	.00	.00	.00	.00	.00
17	.00	.28	.25	.55	.00	.43	.00	.00	.00	.00	.00	.00
18	.00	.15	.26	.55	.00	.56	.00	.00	.00	.00	.00	.00
19	4.2	.17	.25	.55	.00	.57	.00	.00	.00	.00	.00	.00
20	6.0	.19	.30	.55	.00	.31	.00	.00	.00	.00	.00	.00
21	1.8	.22	.32	.55	.01	.27	.00	.00	.00	.00	.00	.00
22	1.4	.22	.32	.55	.03	.09	.00	.00	.00	.00	.00	.00
23	1.2	.37	.32	.59	.01	.12	.00	.00	.00	.00	.00	.00
24	1.1	.43	.32	.66	.00	.11	.00	.00	.00	.00	.00	.00
25	1.1	.47	.32	.66	.00	.14	.00	.00	.00	.00	.00	.00
26	.84	.54	.33	.68	.00	.04	.00	.00	.00	.00	.00	.00
27	.83	.56	.38	.67	.00	.11	.00	.00	.00	.00	.00	.00
28	.72	.52	.42	.66	.00	.18	.00	.00	.00	.00	.00	.00
29	.61	.40	.42	.64	.00	.08	.00	.00	.00	.00	.00	.00
30	.59	.26	.44	.43	---	.01	.00	.00	.00	.00	.00	.00
31	.70	---	.42	.32	---	.05	---	.00	---	.00	.00	---
TOTAL	21.09	17.89	8.56	16.51	1.75	8.62	3.52	.00	.00	.00	.00	.00
MEAN	.68	.60	.28	.53	.06	.28	.12	.00	.00	.00	.00	.00
MAX	6.0	1.2	.44	.68	.34	.79	.56	.00	.00	.00	.00	.00
MIN	.00	.15	.07	.32	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	42	35	17	33	3.5	17	7.0	.00	.00	.00	.00	.00
CAL YR 1983 TOTAL	177.63			MEAN	.49	MAX	62	MIN	.00	AC-FT	352	
WTR YR 1984 TOTAL	77.94			MEAN	.21	MAX	6.0	MIN	.00	AC-FT	155	

07304500 ELK CREEK NEAR HOBART, OK

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, Hydrologic Unit 11120303, near right bank on downstream side of pier of county road bridge, 7.0 mi (11.3 km) downstream from Little Elk Creek, 7.5 mi (12 km) south of Hobart, and at mile 10.9 (17.5 km).

DRAINAGE AREA.--549 mi² (1,422 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1904 to March 1908, October 1949 to current year.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905.

GAGE.--Water-stage recorder. Datum of gage is 1,429.4 ft (435.68 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to Apr. 28, 1954.

REMARKS.--Records good. Part of high flows are diverted into West Otter Creek above station.

AVERAGE DISCHARGE.--38 years, (water years 1905-07, 1950-84), 74.0 ft³/s (2.094 m³/s), 53,610 acre-ft/yr (66.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) Oct. 20, 1983, gage height, 30.94 ft (9.431 m), from rating curve extended above 7,530 ft³/s (213 m³/s) on basis of field estimate of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,000 ft³/s (850 m³/s) Oct. 20, gage height, 30.94 ft (9.431 m), minimum daily discharge, 1.3 ft³/s (.037 m³/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	83	41	33	27	26	25	17	11	21	10	2.6
2	2.5	74	35	35	24	24	28	28	9.8	19	5.0	2.0
3	2.9	68	31	34	36	22	29	21	9.5	17	3.4	1.7
4	3.1	63	33	33	27	21	26	18	8.9	15	3.0	1.5
5	6.7	67	33	33	22	22	34	17	9.0	14	2.8	1.8
6	6.8	56	32	33	28	25	34	16	9.1	14	2.7	1.6
7	22	53	37	34	27	22	62	15	8.9	10	2.5	1.6
8	20	54	30	33	23	20	107	14	8.5	8.6	2.4	1.5
9	17	56	28	31	26	19	160	14	8.5	7.8	2.4	1.5
10	14	73	30	30	28	21	102	14	8.2	7.1	2.3	9.5
11	13	47	32	28	31	19	61	14	107	6.6	8.1	11
12	11	36	29	25	35	20	50	13	120	6.3	6.7	9.6
13	9.1	33	32	25	28	20	45	13	160	6.0	4.2	5.2
14	7.8	35	33	24	25	21	42	13	56	5.3	3.4	3.3
15	7.0	33	30	22	23	21	37	12	34	4.4	2.8	2.5
16	6.5	37	28	26	22	20	38	11	23	3.8	2.6	2.0
17	30	32	26	24	26	21	35	13	20	3.3	2.4	1.8
18	109	32	24	23	26	22	33	12	35	2.9	2.3	1.7
19	1590	31	33	34	40	21	32	12	26	2.8	2.1	1.6
20	21100	33	33	28	34	26	31	12	21	2.7	2.0	1.5
21	7800	34	24	26	42	27	30	10	19	2.5	1.8	1.6
22	1290	29	24	28	29	27	29	11	17	2.4	1.7	1.5
23	865	30	25	28	25	24	28	12	17	2.3	1.6	1.5
24	550	37	25	30	27	37	28	10	46	2.2	1.6	1.5
25	400	33	25	30	28	148	26	9.9	109	2.1	195	1.4
26	300	30	27	30	25	56	24	9.6	74	2.0	94	1.3
27	264	32	29	31	55	35	22	9.2	33	1.9	9.5	1.5
28	201	38	30	32	43	31	20	8.9	102	1.8	5.2	1.7
29	140	36	29	30	26	37	17	12	57	1.8	3.8	1.7
30	116	33	30	27	---	32	17	11	23	2.8	3.1	1.8
31	102	---	32	31	---	29	---	11	---	3.6	3.1	---
TOTAL	35008.8	1328	930	911	858	916	1252	413.6	1190.4	203.0	393.5	81.0
MEAN	1129	44.3	30.0	29.4	29.6	29.5	41.7	13.3	39.7	6.55	12.7	2.70
MAX	21100	83	41	35	55	148	160	28	160	21	195	11
MIN	2.4	29	24	22	22	19	17	8.9	8.2	1.8	1.6	1.3
AC-FT	69440	2630	1840	1810	1700	1820	2480	820	2360	403	781	161
CAL YR 1983	TOTAL	52705.2	MEAN	144	MAX	21100	MIN	2.0	AC-FT	104500		
WTR YR 1984	TOTAL	43485.3	MEAN	119	MAX	21100	MIN	1.3	AC-FT	86250		

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1954-63, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1949 to September 1951, October 1958 to September 1963, November 1969 to current year.

WATER TEMPERATURE: October 1949 to September 1951, October 1958 to September 1963, November 1969 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Additional samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,100 microsiemens Nov. 27, 1958; minimum daily, 108 microsiemens Oct. 19, 1983.

WATER TEMPERATURE: Maximum daily, 35.0°C July 8, 1951; minimum daily, -0.5°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum daily, 27.0°C on Sept. 12; minimum daily, 0°C on several days during the winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRESSURE (MM OF HG)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CaCO3)	HARD-NESS, NONCAR-BONATE (MG/L CaCO3)
NOV 14...	1545	710	80020	36	2220	7.8	12.0	10.0	100	1000	660
DEC 08...	0900	720	80020	30	2220	7.5	4.5	12.4	102	950	600
JAN 19...	0955	730	80020	36	2160	7.9	1.0	13.8	102	1200	810
MAR 01...	1400	720	80020	27	2230	8.2	10.5	12.8	122	880	530
APR 06...	0845	720	80020	34	2180	8.3	12.5	11.2	112	930	620
MAY 24...	1520	710	80020	11	2290	8.2	27.5	15.8	217	1000	760
JUL 12...	0940	720	80020	6.1	1810	7.9	27.0	5.6	75	670	420
AUG 23...	1215	720	1028	1.6	1880	8.1	29.5	6.8	95	--	--

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2360	1700	2130	2540	2120	1770	1990	1830	2350	898	1890	857
2	2430	1800	2120	2460	2020	1950	2130	1850	2430	904	2250	910
3	2380	1880	1970	2360	2070	2080	2070	1960	2300	1090	2190	944
4	2360	1990	2090	2300	2130	2170	2050	1980	2260	1270	2030	1010
5	2340	1990	2180	2260	1920	2150	2020	1970	2140	1370	2180	1060
6	2470	2130	2170	2160	2050	2190	2020	1920	2150	1430	2580	1110
7	1550	2040	2240	2050	2140	2230	1910	1820	2130	1460	2770	1170
8	2050	2060	2260	2020	2170	2220	812	1900	2160	1530	2620	1210
9	2850	2100	2270	2010	2210	2210	1530	2000	2170	1590	2730	1250
10	2310	2200	2230	2090	2260	2230	1430	2200	2170	1700	2670	1280
11	2460	1830	2200	2120	2320	2200	1300	2100	1790	1710	2370	1470
12	1840	1730	2250	2150	2400	2140	1230	2180	796	1700	2110	2820
13	1660	1980	2270	2160	2400	2200	1410	2130	940	1760	1950	2140
14	1670	2090	2280	2180	2390	2350	1490	2060	682	1780	1850	1970
15	1680	2160	2380	2210	2440	2330	1600	2080	746	1840	1990	1850
16	1270	2350	2090	2220	2400	2430	1650	2140	804	1860	2220	1610
17	1320	2380	2190	2280	2380	2440	1660	2260	954	1840	2310	1440
18	334	2410	2230	2320	2380	2480	1630	2350	1070	1880	2360	1380
19	108	2390	2300	2400	2220	2400	1620	2380	624	1920	2390	1340
20	174	2300	2330	2390	2230	2440	1610	2360	742	1910	2310	1310
21	383	2370	2310	2390	2050	2480	1640	2230	1320	1940	2070	1300
22	571	2260	2400	2380	2150	2460	1600	2210	1460	1980	1860	1300
23	688	2210	2440	2350	2120	2330	1650	2170	1570	2000	1840	1310
24	750	2320	2470	2300	2070	2330	1640	2180	1070	2010	1800	1330
25	812	2350	2680	2380	2030	2240	1680	2200	980	1930	1750	1360
26	833	2330	2620	2230	1900	1090	1730	2270	465	1900	423	1370
27	1060	2390	2580	2190	1950	1150	1770	2230	664	1890	498	1370
28	1220	2430	2560	2160	2020	1350	1780	2310	730	1880	561	1400
29	1480	2390	2590	2160	1380	1610	1800	2360	725	1900	653	1420
30	1580	2350	2640	2150	---	1850	1840	2260	821	1890	727	1420
31	---	---	2580	2150	---	1910	---	2200	---	1890	788	---
MEAN	1500	2160	2320	2240	2150	2110	1680	2130	1370	1700	1890	1390
WTR YR 1984		MEAN	1890	MAX	2850	MIN	108					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	16.5	3.0	.5	4.0	5.0	9.5	14.5	19.0	24.0	23.5	24.5
2	18.5	17.0	5.0	1.0	6.5	7.5	11.0	17.0	21.0	24.0	23.5	24.5
3	20.5	17.5	6.0	1.0	5.5	9.5	11.0	16.0	21.5	24.5	24.0	21.0
4	19.0	17.0	5.0	1.0	6.5	9.0	9.0	16.5	21.5	24.0	25.0	19.0
5	16.0	16.0	5.0	1.0	5.5	6.5	10.0	18.0	22.0	24.5	25.5	19.5
6	18.0	16.0	4.5	2.0	3.5	6.0	11.5	18.5	21.0	26.0	25.0	20.0
7	17.0	16.0	4.0	2.5	5.0	7.0	15.0	18.0	24.0	26.0	25.0	19.5
8	17.5	15.5	4.0	1.5	6.0	7.0	12.0	15.0	25.0	25.5	25.5	21.0
9	17.0	13.0	4.0	3.5	7.5	5.5	14.0	15.0	24.0	25.0	25.0	21.5
10	18.0	9.5	5.5	1.5	6.5	6.0	14.5	16.0	23.0	24.5	24.0	23.0
11	14.5	8.5	5.0	1.0	10.5	8.5	15.0	18.0	23.0	24.0	24.0	24.0
12	14.0	8.5	5.0	1.0	7.5	8.5	15.0	20.5	22.5	25.0	23.5	27.0
13	12.5	9.0	6.0	.5	8.0	9.0	14.0	21.0	22.0	25.0	24.0	23.5
14	15.0	10.5	6.0	.0	8.5	13.0	14.0	22.0	23.5	25.5	24.0	24.0
15	17.0	9.0	4.0	.0	10.0	16.0	13.0	22.0	23.0	24.5	24.5	18.5
16	18.0	9.0	2.5	.0	8.0	12.5	12.0	20.5	24.0	26.0	24.0	17.5
17	18.0	9.0	3.0	.0	8.0	10.0	12.5	20.5	24.0	25.5	24.0	17.0
18	18.0	10.0	.0	.0	9.0	14.0	13.5	20.0	24.0	24.5	24.0	18.0
19	14.5	11.0	.0	.0	7.0	9.0	13.0	20.5	22.0	24.0	25.0	18.0
20	12.5	8.5	.0	.0	7.0	8.5	15.5	20.0	24.0	24.0	25.5	18.0
21	12.5	9.5	.0	.0	6.0	9.0	14.0	19.5	24.5	24.5	26.0	18.5
22	13.5	12.0	.5	.0	6.0	11.0	11.0	22.0	25.0	25.0	26.0	21.0
23	14.0	9.0	.0	1.5	7.5	11.0	11.5	21.5	25.0	24.5	25.0	21.0
24	14.0	8.0	.5	.5	7.5	8.5	14.0	21.5	24.5	24.5	24.0	22.0
25	13.0	7.5	.0	.5	8.0	10.0	16.5	23.0	24.0	24.0	24.5	20.0
26	13.5	10.0	.5	1.0	11.5	10.5	18.5	20.0	24.5	24.5	23.5	13.0
27	14.5	5.0	.5	2.5	5.0	11.5	15.0	21.0	24.5	25.0	24.0	13.0
28	15.5	2.5	.0	4.0	4.0	9.0	14.5	20.5	25.0	24.5	25.5	12.5
29	15.5	3.5	.0	5.0	5.0	8.5	17.5	18.0	24.5	24.5	26.0	10.5
30	16.0	3.0	.0	5.0	---	9.5	13.0	14.0	24.0	24.0	25.5	10.0
31	---	---	.0	4.0	---	9.0	---	18.0	---	23.0	25.0	---
MEAN	16.0	10.5	2.5	1.5	7.0	9.0	13.5	19.0	23.5	24.5	24.5	19.5
WTR YR 1984		MEAN	14.0	MAX	27.0	MIN	.0					

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK

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, Hydrologic Unit 11120303, near left bank on downstream side of pier of bridge on old U.S. Highway 62, 2.5 mi (4.0 km) east of Headrick, 12.9 mi (20.8 km) upstream from Otter Creek, and at mile 33.0 (53.1 km).

DRAINAGE AREA.--4,244 mi² (10,992 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1905 to March 1908, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to July 1905, published as "near Snyder".

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905-07.

GAGE.--Water-stage recorder. Datum of gage is 1,294.83 ft (394.664 m) National Geodetic Vertical Datum of 1929. Prior to July 18, 1905, nonrecording gage at site 0.2 mi (0.3 km) downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navajo dam site 10.4 mi (16.7 km) upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at present site at datum 5.0 ft (1.52 m) higher.

REMARKS.--Records fair. Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.5 mi (63.6 km) above station (station 07302500). Diversions for irrigation of about 48,000 acres (194 km²) above station; some return flow may re-enter at Stinking Creek, 16 mi (26 km) below station.

AVERAGE DISCHARGE.--(Prior to regulation by Lake Altus) 8 years (1906-07, 1938-43), 455 ft³/s (12.89 m³/s), 329,600 acre-ft/yr (406 hm³/yr); (since regulation by Lake Altus) 40 years (water years 1945-84), 260 ft³/s (7.358 m³/s), 188,400 acre-ft/yr (232 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) May 28, 1977, gage height, 17.26 ft (5.261 m) present datum; maximum gage height, 17.27 ft (5.264 m), October 21, 1983; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 21.1 ft (6.43 m) present datum occurred sometime prior to 1927, from information by Oklahoma State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,200 ft³/s (855 m³/s) Oct. 21, gage height, 17.27 ft (5.264 m); no flow Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	310	104	56	79	74	106	64	29	59	7.1	7.6
2	.11	283	101	64	77	68	99	65	29	47	6.8	7.5
3	.99	264	108	80	72	66	92	67	29	42	7.6	7.8
4	.45	246	100	98	69	61	96	70	28	38	8.3	6.7
5	.26	229	95	142	75	58	100	63	28	38	7.1	6.5
6	.33	231	95	124	66	57	102	63	28	32	6.3	6.4
7	1.6	223	95	110	66	61	100	61	25	29	6.1	5.9
8	2.9	208	95	103	74	57	199	60	23	25	6.0	5.6
9	7.7	198	92	98	79	55	475	57	22	23	6.1	5.3
10	6.4	185	90	92	78	55	375	53	46	21	6.3	4.9
11	7.3	190	87	91	77	57	265	51	33	20	6.9	5.0
12	6.4	176	88	87	79	63	192	51	257	77	10	5.3
13	7.4	164	85	83	81	59	158	48	239	35	11	5.4
14	6.9	156	86	80	76	59	138	47	304	21	12	5.7
15	5.6	150	83	81	69	56	128	45	176	16	13	7.3
16	4.9	145	87	79	64	53	117	44	120	15	8.3	6.8
17	7.6	141	83	77	65	55	113	43	122	17	6.7	6.5
18	12	136	70	72	71	55	107	42	104	16	6.3	6.2
19	576	130	64	68	73	54	102	41	103	13	6.1	5.8
20	13600	128	60	64	72	55	100	40	124	12	6.0	5.6
21	23700	123	60	66	86	56	93	39	84	11	5.9	5.6
22	8490	124	59	70	85	68	87	38	87	10	6.0	5.6
23	1290	127	57	74	78	305	87	37	65	9.4	8.3	5.7
24	749	119	57	78	69	473	85	35	58	8.9	6.1	5.9
25	622	118	58	80	66	286	83	33	69	8.9	6.5	5.8
26	586	117	60	82	69	246	79	31	79	8.7	7.2	5.6
27	569	111	60	82	66	176	73	31	153	8.3	91	5.6
28	515	109	62	81	65	140	69	30	89	8.3	36	5.6
29	442	109	60	83	86	116	68	30	85	8.6	20	5.8
30	378	105	55	80	---	114	65	32	102	7.7	13	6.1
31	337	---	53	79	---	111	---	31	---	7.3	10	---
TOTAL	51932.84	5055	2409	2604	2132	3269	3953	1442	2740	693.1	364.0	181.1
MEAN	1675	169	77.7	84.0	73.5	105	132	46.5	91.3	22.4	11.7	6.04
MAX	23700	310	108	142	86	473	475	70	304	77	91	7.8
MIN	.00	105	53	56	64	53	65	30	22	7.3	5.9	4.9
AC-FT	103000	10030	4780	5170	4230	6480	7840	2860	5430	1370	722	359
CAL YR 1983	TOTAL	84885.81		MEAN	233	MAX	23700	MIN	.00	AC-FT	168400	
WTR YR 1984	TOTAL	76775.04		MEAN	210	MAX	23700	MIN	.00	AC-FT	152300	

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-52, 1954-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1959 to September 1963, July 1968 to current year.

WATER TEMPERATURE: November 1959 to September 1963, July 1968 to current year.

INSTRUMENTATION.--Water-quality monitor from August 1959 to September 1981.

REMARKS.--Samples were collected by a local observer on a daily basis. Additional samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 23,300 microsiemens June 8, 1974; minimum daily, 302 microsiemens Oct. 20, 1983.

WATER TEMPERATURE: Maximum daily, 38.0°C July 19, 1969, Aug. 4, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,600 microsiemens June 23; minimum daily, 302 microsiemens Oct. 20.

WATER TEMPERATURE: Maximum daily, 35.0°C July 7; minimum daily, 0.0°C on several days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 16...	0815	730	80020	145	6850	8.1	9.5	3.1	11.4	107	K8
MAR 01...	0900	720	80020	72	7000	7.9	5.5	2.7	11.3	97	K6
MAY 23...	1500	730	1028	39	8370	8.3	29.0	17	9.1	127	420
AUG 21...	1520	720	80020	5.9	7850	8.3	34.0	16	4.2	65	110

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
NOV 16...	41	1000	770	260	87	1200	72	17	7.5	240	3.7
MAR 01...	K20	1300	1000	270	140	1100	66	14	7.9	241	5.9
MAY 23...	260	1100	930	240	110	1400	74	19	9.0	127	1.2
AUG 21...	110	970	850	230	95	1300	74	19	13	119	1.1

RED RIVER BASIN

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07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
NOV 16...	790	1900	.40	10	4580	4400	6.2	1790	.97	.120
MAR 01...	810	1900	.40	3.2	4470	4400	6.1	869	.36	.210
MAY 23...	930	2300	.40	3.0	5340	5100	7.3	562	<.10	.050
AUG 21...	880	2100	.40	3.8	4760	4700	6.5	76	<.10	.360

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV 16...	.15	1.0	.060	.18	.060	<.010	--	<10	2	200
MAR 01...	.27	.50	.120	.37	.100	.090	.28	10	2	<100
MAY 23...	.06	1.6	.090	--	.010	.020	.06	30	1	200
AUG 21...	.46	1.2	.100	--	.150	.120	.37	30	3	200

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV 16...	<10	1	<1	1	4	70	6	60	40	.8
MAR 01...	<10	--	7	--	--	50	--	60	70	.2
MAY 23...	<10	1	3	<1	2	80	<1	60	50	<.1
AUG 21...	<10	7	<1	1	6	20	2	70	60	.7

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	4	1	3	<1	2800	39	10	35	14	33
MAR 01...	3	--	3	--	2800	38	20	5	.97	66
MAY 23...	9	1	<1	<1	3600	38	30	47	4.9	96
AUG 21...	5	4	<1	<2	2800	33	20	42	.67	70

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1220	5590	7900	962	9490	7060	8040	7950	9100	5400	8590	4330
2	1160	5610	7860	1000	9420	7140	7980	8090	9400	7850	8510	5010
3	1440	5930	7800	6950	9080	7910	7970	8170	8620	8450	8440	5710
4	1410	6110	7440	6840	8900	8320	8700	8150	8460	7650	8420	6180
5	1300	6250	7590	6520	8920	8690	9180	7900	8400	8230	8460	6200
6	1270	6310	7820	6450	8450	8890	9920	7980	8250	9230	8660	6600
7	1530	6370	7920	6860	7870	8860	10400	8260	8500	10500	8740	6800
8	1540	6400	8050	7690	8190	8820	9260	8660	8720	10600	8680	6880
9	5690	6710	8280	8670	8120	8720	7350	9130	9150	10700	7810	6950
10	5550	7110	8040	9420	7580	8900	3920	9380	8050	10800	7530	7100
11	5420	6870	8300	9740	8340	9110	3590	9360	6660	10600	7420	7200
12	5590	7150	8310	9840	8460	8870	3880	9520	6820	9030	7300	7190
13	5650	6910	8320	9880	8530	8740	4770	9720	6030	4470	7330	7650
14	5460	7220	8040	9270	9270	8720	5020	9600	5100	4940	7670	7620
15	5360	7180	8230	---	8960	8640	5770	9570	7960	7300	8750	7880
16	5060	7120	3680	4140	9420	8880	6300	9410	7560	8120	8700	8110
17	4750	7150	3750	4030	9350	8850	6730	9080	6160	8380	8520	7630
18	3650	7200	4670	4030	8760	8820	7010	8840	8030	7700	8190	8050
19	450	7250	4470	4190	8660	9110	6950	8700	10100	8360	7780	6860
20	302	7330	4600	4230	8660	9010	6950	8710	5330	8470	7500	6840
21	669	7340	4590	8090	8940	9010	7040	8460	3400	8690	7530	6590
22	1090	7430	4260	8150	8060	9460	7210	8350	6210	8840	7500	6400
23	2090	7240	4430	8070	9820	2320	7360	8400	11600	9100	7400	6300
24	3200	7190	4350	7910	9420	8230	7500	8440	10000	9180	7460	6200
25	3730	7410	1890	7420	9570	3530	7470	8450	6860	8950	7340	6270
26	4060	7600	5440	7640	9150	3490	7660	8710	6530	9010	7060	6440
27	4300	7420	5160	7760	8900	3460	7760	8450	7040	8710	4600	6470
28	4840	7680	4720	8020	8600	4070	7800	8150	6650	8760	1840	6360
29	5320	8040	7930	8500	8820	5220	7920	8400	4600	8900	2260	6200
30	5550	8090	7840	9460	---	6470	8060	8380	5260	8820	3100	6150
31	---	---	1210	9550	---	7690	---	8240	---	8650	3690	---
MEAN	3290	6970	6220	7040	8820	7580	7180	8660	7490	8530	7190	6670
WTR YR 1984		MEAN	7140	MAX	11600		MIN	302				

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	18.0	1.0	.0	5.0	4.0	9.0	15.0	22.0	26.0	24.0	26.0
2	23.0	17.0	2.0	.0	6.0	6.0	13.0	17.0	21.0	26.0	26.0	26.0
3	21.0	21.0	3.0	1.0	5.0	7.0	10.0	19.0	23.0	27.0	35.0	26.0
4	18.0	15.0	1.0	2.0	6.0	7.0	9.0	18.0	22.0	25.0	27.0	27.0
5	14.0	16.0	2.0	3.0	7.0	7.0	9.0	20.0	22.0	27.0	27.0	27.0
6	13.0	16.0	3.0	3.0	6.0	6.0	10.0	19.0	21.0	32.0	28.0	28.0
7	17.0	16.0	3.0	1.0	7.0	7.0	11.0	17.0	22.0	35.0	30.0	29.0
8	16.0	15.0	4.0	5.0	9.0	7.0	12.0	14.0	23.0	26.0	28.0	24.0
9	16.0	15.0	5.0	6.0	7.0	6.0	11.0	25.0	22.0	25.0	25.0	26.0
10	16.0	12.0	4.0	5.0	7.0	7.0	16.0	18.0	24.0	26.0	27.0	30.0
11	15.0	14.0	10.5	4.0	8.0	9.0	15.0	18.0	24.0	26.0	25.0	29.0
12	15.0	12.0	8.0	4.0	8.0	8.0	13.0	21.0	24.0	26.0	25.0	28.0
13	15.0	10.0	4.0	2.0	8.0	8.0	13.0	22.0	29.0	35.0	30.0	24.0
14	18.0	12.0	5.0	.0	8.0	10.0	13.0	20.0	28.0	28.0	28.0	25.0
15	18.0	12.0	3.0	---	8.0	11.0	12.0	22.0	27.0	26.0	29.0	14.0
16	18.0	8.0	2.0	3.0	8.0	9.0	12.0	20.0	25.0	26.0	30.0	21.0
17	18.0	10.0	1.0	.0	8.0	10.0	12.0	21.0	25.0	32.0	28.0	24.0
18	18.0	11.0	.0	.0	7.0	11.0	12.0	22.0	25.0	25.0	30.0	21.0
19	15.0	12.0	.0	.0	6.0	4.0	15.0	21.0	26.0	30.0	27.0	28.0
20	13.0	8.0	.0	.0	6.0	12.0	14.0	22.0	26.0	27.0	32.0	21.0
21	16.0	10.0	2.0	.0	5.0	10.0	14.0	22.0	25.0	26.0	32.0	21.0
22	12.0	10.0	2.0	.0	5.0	11.0	12.0	22.0	28.0	26.0	27.0	20.0
23	14.0	8.0	.0	1.0	5.0	7.0	13.0	22.0	28.0	32.0	30.0	26.0
24	15.0	7.0	2.0	.0	5.0	10.0	16.0	22.0	24.0	27.0	30.0	23.0
25	15.0	8.0	.0	.0	6.0	10.0	18.0	23.0	26.0	28.0	30.0	21.0
26	14.0	10.0	2.0	1.0	7.0	11.0	18.0	21.0	26.0	28.0	27.0	18.0
27	16.0	4.0	.0	7.0	4.0	12.0	15.0	23.0	27.0	28.0	28.0	15.0
28	20.0	1.0	.0	6.0	4.0	10.0	15.0	21.0	27.0	30.0	28.0	15.0
29	16.0	1.0	.0	7.0	3.0	8.0	17.0	21.0	26.0	29.0	---	12.0
30	17.0	2.0	1.0	3.0	---	10.0	12.0	19.0	25.0	32.0	31.0	11.0
31	---	---	.0	---	---	10.0	---	20.0	---	25.0	30.0	---
MEAN	16.5	11.0	2.5	2.0	6.5	8.5	13.0	20.0	25.0	28.0	28.5	23.0
WTR YR 1984		MEAN	15.5	MAX	35.0		MIN	.0				

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OK

LOCATION.--Lat 34°44'02", long 98°59'10", in SE 1/4 NE 1/4 sec.16, T.3 N., R.17 W., Kiowa County, Hydrologic Unit 11120303, near east end of Snyder Dam, 0.8 mi (1.3 km) upstream from small tributary, 3 mi (5 km) northwest of Mountain Park, and at mile 26.0 (41.8 km).

DRAINAGE AREA.--132 mi² (342 km²).

PERIOD OF RECORD.--April 1903 to March 1908, October 1951 to September 1971, July 1972 to current year. Published as Otter Creek near Mountain Park 1903-8 and as Otter Creek at Snyder Lake, near Mountain Park 1951-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1731: 1960 (M). WSP 1920: 1959-60. WDR OK-78-2: 1977.

GAGE.--Water-stage recorder and broad-crested masonry spillway. Datum of gage is 1,361.06 ft (414.851 m), National Geodetic Vertical Datum of 1929. April 1903 to March 1908, nonrecording gage at site 1.8 mi (2.9 km) downstream at different datum. October 1951 to September 1971 at intake tower at same site and datum. July 1972 to August 1976, 700 ft (213.4 m) downstream at datum 1,344.00 ft (409.651 m).

REMARKS.--Records poor. The city of Snyder diverted about 130 acre-ft (160,000 m³) annually prior to October 1958 and none thereafter. Flow completely regulated since June 1975 by Tom Steed Reservoir.

AVERAGE DISCHARGE.--(Prior to regulation by Tom Steed Reservoir) 27 years (water years 1904-7, 1911, 1973-75) 23.0 ft³/s (0.651 m³/s), 16,660 acre-ft/yr (20.5 hm³/yr); (since regulation by Tom Steed Reservoir) 9 years (water years 1976-84) 4.34 ft³/s (0.123 m³/s) 3,140 acre-ft/yr (3.87 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 6, 1953, gage height, 19.50 ft (5.944 m), from floodmarks, from rating curve extended above 1,600 ft³/s (45.3 m³/s) on basis of contracted-opening and flow-over-dam measurements of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 190 ft³/s (5.38 m³/s) Oct. 31, gage height, 12.74 ft (3.883 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	178	.01	.50	.00	.00	1.1	.00	2.3	1.1	2.2	2.2
2	.00	180	.16	.69	.00	.00	2.2	.00	1.4	1.1	2.2	3.0
3	.00	180	.04	.21	.00	.00	1.1	.00	2.3	.94	2.2	1.9
4	.00	178	.26	.20	.00	.00	.00	.00	3.5	1.4	2.2	2.5
5	.00	179	.12	.47	.00	.00	.20	.00	2.2	2.2	2.7	3.5
6	.00	180	.00	.50	.00	.00	.75	.00	2.2	2.2	3.5	6.2
7	.00	180	.25	.50	.00	.00	1.7	.00	2.2	2.2	3.5	4.8
8	.00	179	.32	.44	.00	.00	.56	.00	3.5	2.2	2.3	5.0
9	.00	168	.10	.01	.00	.00	.65	.00	2.2	2.2	2.0	3.9
10	.00	168	.28	.11	.00	.00	.94	.00	7.1	1.6	1.1	3.5
11	.00	172	.11	.16	.00	.00	.75	.00	2.2	2.7	1.1	3.5
12	.00	172	.30	.03	.00	.20	.00	.00	2.2	2.2	1.1	3.5
13	.00	173	.09	.19	.00	.20	.16	.00	2.2	1.1	1.1	4.3
14	.00	173	.06	.23	.00	1.1	.00	.00	2.2	1.1	1.1	3.2
15	.00	172	.07	.31	.00	.50	.00	.00	3.5	1.1	1.1	.12
16	.00	173	.31	.20	.00	.50	.00	.00	3.5	.62	1.1	2.2
17	.00	175	.45	.41	.00	.10	.27	.00	2.2	.70	1.1	2.3
18	.00	75	.00	.20	.00	.50	.51	.00	2.8	1.1	1.1	2.2
19	7.2	.81	.00	.10	.00	.00	.44	.30	2.2	.78	1.1	2.7
20	18	.60	1.1	.00	.00	.00	.78	2.5	3.5	.80	1.1	4.4
21	.00	1.7	15	.00	.00	.00	.50	2.0	3.5	.70	1.6	3.5
22	.00	1.6	15	.00	.00	.20	.30	1.5	3.4	.50	1.1	4.3
23	.00	.07	2.6	.00	.00	13	.20	1.1	1.6	.58	1.1	4.9
24	23	1.3	.51	.00	.00	3.5	.10	2.2	.63	.77	1.1	4.4
25	37	2.2	.50	.00	.00	7.1	.05	1.7	1.1	.75	3.7	1.4
26	38	2.4	.50	.00	.00	3.5	.00	.31	2.0	1.1	1.7	.57
27	31	.00	1.1	.00	.00	.50	.00	1.0	1.7	1.1	1.1	2.9
28	62	.01	.98	.00	.00	.00	.00	.07	.85	1.1	.86	.87
29	98	.96	.50	.00	.00	.00	.00	.31	1.1	1.1	1.1	.98
30	98	.00	.50	.00	---	.00	.00	.86	1.1	1.1	1.1	2.8
31	145	---	.50	.00	---	.20	---	1.4	---	1.6	1.4	---
TOTAL	557.20	3066.65	41.72	5.46	.00	31.10	13.26	15.25	72.38	39.74	50.76	91.54
MEAN	18.0	102	1.35	.18	.00	1.00	.44	.49	2.41	1.28	1.64	3.05
MAX	145	180	15	.69	.00	13	2.2	2.5	7.1	2.7	3.7	6.2
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.63	.50	.86	.12
AC-FT	1110	6080	83	11	.00	62	26	30	144	79	101	182
CAL YR 1983	TOTAL	3886.03	MEAN	10.6	MAX	180	MIN	.00	AC-FT	7710		
WTR YR 1984	TOTAL	3985.06	MEAN	10.9	MAX	180	MIN	.00	AC-FT	7900		

07307028 NORTH FORK RED RIVER NEAR TIPTON, OK

LOCATION.--Lat 34°30'25", long 99°12'28", in NW 1/4 NE 1/4 sec.5. T.1 S, R.19 W., Tillman County, Hydrologic Unit 11120303, near left bank on downstream side of bridge pier on State Highway 5, 3.8 mi (6.1 km) west of intersection of State Highways 5 and 5C in Tipton, 4.8 mi (7.7 km) downstream from Otter Creek, and at mile 15.3 (24.6 km).

DRAINAGE AREA.--4,691 mi² (12,150 km²) of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--June 28, 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,234.45 ft (376.260 m); National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated since December 1943 by storage and diversion at Lake Altus 54.2 mi (87.2 km) upstream (station 07302500). Diversions for irrigation of about 48,000 acres (194 km²) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Oct. 20, 1983, gage height, 18.80 ft (5.730 m); minimum daily discharge, 4.7 ft³/s (0.13 m³/s) Sept. 23, 1983.

EXTREMES FOR CURRENT PERIOD.--June 28 to Sept. 30, 1983: Maximum discharge, 1,430 ft³/s (40.5 m³/s) June 29, gage height, 10.50 ft (3.200 m); minimum daily discharge, 4.7 ft³/s (0.13 m³/s) Sept. 23.

Water year 1984: Maximum discharge, 27,000 ft³/s (765 m³/s) Oct. 20, gage height, 18.80 ft (5.730 m); minimum daily discharge, 5.2 ft³/s (0.15 m³/s) Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	332	64	28
2									---	183	60	24
3									---	142	47	21
4									---	117	36	26
5									---	111	30	24
6									---	117	24	29
7									---	98	25	40
8									---	86	55	55
9									---	78	45	61
10									---	72	34	48
11									---	70	37	44
12									---	69	40	62
13									---	79	45	44
14									---	91	44	41
15									---	95	61	19
16									---	98	57	10
17									---	96	47	9.7
18									---	88	35	12
19									---	82	37	14
20									---	68	43	7.0
21									---	62	31	5.8
22									---	56	21	5.6
23									---	56	25	4.7
24									---	48	34	5.4
25									---	40	49	5.5
26									---	35	55	5.3
27									---	39	51	5.2
28									388	47	49	5.3
29									1250	57	45	5.3
30									570	64	40	6.4
31									---	66	34	---
TOTAL									---	2742	1300	673.2
MEAN									---	88.5	41.9	22.4
MAX									---	332	64	62
MIN									---	35	21	4.7

RED RIVER BASIN

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07307028 NORTH FORK RED RIVER NEAR TIPTON, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	713	214	99	127	122	128	83	43	106	25	33
2	6.5	712	211	135	123	114	128	81	42	82	24	37
3	13	679	212	142	121	109	122	79	46	73	24	33
4	7.0	653	207	170	116	102	113	77	49	65	26	28
5	5.8	621	198	194	114	98	116	76	53	58	29	24
6	5.6	625	192	201	116	99	119	75	78	55	29	24
7	15	619	191	169	113	99	123	74	65	50	25	17
8	8.2	585	189	157	114	98	148	73	58	45	26	15
9	6.6	562	186	151	139	96	265	72	53	43	30	14
10	6.1	541	183	146	126	95	337	71	49	42	32	13
11	5.6	527	179	145	124	97	279	70	134	39	44	13
12	5.2	519	177	142	121	106	206	69	169	72	46	12
13	5.5	500	176	140	123	103	162	67	267	85	31	11
14	6.9	485	172	136	124	102	142	66	310	60	27	10
15	7.8	471	169	135	118	98	130	64	262	44	26	9.5
16	7.6	462	169	135	113	94	122	63	170	39	24	9.0
17	24	450	167	130	112	95	116	62	133	46	24	8.8
18	39	445	147	105	124	97	114	60	148	59	23	8.4
19	2540	410	129	96	120	94	109	58	160	51	22	8.0
20	19900	320	127	95	115	94	107	57	161	47	21	7.7
21	23100	284	124	99	121	95	105	56	131	45	20	7.4
22	15200	272	121	120	129	94	101	56	106	39	18	7.3
23	4680	284	118	133	125	447	98	55	99	40	17	7.3
24	2300	263	116	137	119	499	97	54	90	37	20	7.1
25	1690	254	113	136	113	477	96	50	84	38	26	6.8
26	1410	248	109	132	106	276	92	48	92	37	30	6.8
27	1220	244	107	133	110	234	90	49	126	28	320	6.6
28	1020	232	105	133	105	191	89	45	146	25	131	6.5
29	876	225	104	132	111	157	92	43	103	28	73	6.4
30	818	218	102	130	---	144	86	44	111	25	54	6.1
31	750	---	100	126	---	135	---	45	---	25	42	---
TOTAL	75685.1	13423	4814	4234	3442	4761	4032	1942	3538	1528	1309	403.7
MEAN	2441	447	155	137	119	154	134	62.6	118	49.3	42.2	13.5
MAX	23100	713	214	201	139	499	337	83	310	106	320	37
MIN	5.2	218	100	95	105	94	86	43	42	25	17	6.1
WTR YR 1984	TOTAL	119111.8		MEAN	325	MAX	23100	MIN	5.2			

07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on left bank at downstream side of bridge on U.S. Highways 277 and 281, 2.5 mi (4.0 km) northeast of Burkburnett, and at mile 933 (1,501 km).

DRAINAGE AREA.--20,570 mi² (53,276 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--July 1924 to August 1925 (monthly discharge only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft (290.343 m) above National Geodetic Vertical Datum of 1929. July 11, 1924 to Aug. 31, 1925, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Dec. 16, 1959 to Jan. 11, 1960, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1961-84), 864 ft³/s (24.5 m³/s), 626,000 acre-ft/yr (772 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 166,000 ft³/s (4,701 m³/s) Oct. 21, 1983, gage height, 16.90 ft (5.151 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft (4.127 m), from levels to floodmarks. According to local residents, higher stages occurred in 1891 and June 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 166,000 ft³/s (4,701 m³/s) Oct. 21 at 2100 hours, gage height, 16.90 ft (5.151 m), no other peak above base of 9,000 ft³/s (255 m³/s); minimum, 0.45 ft³/s (0.013 m³/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1920	718	350	377	215	372	148	72	207	43	300
2	1.8	2010	741	400	374	207	366	197	77	161	37	205
3	1.9	2010	747	450	345	232	347	182	87	199	33	138
4	1.8	1950	763	500	304	223	291	158	80	232	34	97
5	1.9	1850	690	600	263	199	302	147	79	177	36	81
6	6.8	2050	688	700	251	191	293	153	81	124	25	64
7	2130	2290	673	803	299	177	342	126	72	100	23	46
8	2070	2470	658	583	327	145	401	111	64	84	39	30
9	672	2110	610	618	397	145	394	99	70	73	38	21
10	309	1650	612	470	410	153	436	102	75	57	46	17
11	218	1590	593	444	437	207	793	103	74	49	106	13
12	130	1450	510	401	465	296	1070	111	57	52	215	11
13	82	1260	494	396	451	286	760	116	1630	60	214	8.7
14	61	1140	464	339	385	250	516	123	1980	78	163	7.2
15	51	1170	418	333	372	215	383	106	1570	70	603	5.3
16	42	1070	425	303	316	184	302	98	1320	47	404	5.2
17	59	1100	430	298	316	184	272	97	1720	70	276	4.1
18	84	1100	400	225	316	204	246	104	1420	60	207	3.3
19	4260	999	300	200	277	232	236	171	1170	68	138	2.4
20	41800	960	250	150	306	161	231	156	968	52	100	1.9
21	93900	924	250	150	296	123	215	131	1030	47	78	1.6
22	121000	642	225	200	296	105	186	123	2370	45	63	1.5
23	57600	919	200	250	286	253	184	147	1570	45	70	1.1
24	16900	976	180	350	259	476	185	174	1940	49	78	.81
25	8290	1190	150	400	259	909	175	125	1590	54	87	58
26	5800	1170	200	440	397	1260	165	92	919	52	100	69
27	4370	1100	250	396	465	1140	147	89	465	39	111	46
28	3320	786	225	401	286	835	132	83	277	79	1620	27
29	2840	694	200	359	215	849	161	73	215	67	1370	15
30	2320	700	225	353	---	598	138	78	241	54	873	8.9
31	2050	---	275	403	---	440	---	78	---	51	478	---
TOTAL	370373.8	41250	13564	12265	9747	11094	10041	3801	23283	2602	7708	1290.01
MEAN	11950	1375	438	396	336	358	335	123	776	83.9	249	43.0
MAX	121000	2470	763	803	465	1260	1070	197	2370	232	1620	300
MIN	1.6	642	150	150	215	105	132	73	57	39	23	.81
AC-FT	734600	81820	26900	24330	19330	22000	19920	7540	46180	5160	15290	2560
CAL YR 1983	TOTAL	531218.00	MEAN	1455	MAX	121000	MIN	1.6	AC-FT	1054000		
WTR YR 1984	TOTAL	507018.81	MEAN	1385	MAX	121000	MIN	.81	AC-FT	1006000		

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, Hydrologic Unit 11130202, at right bank on downstream side of bridge on State Highway 53, 1.8 mi (2.9 km) east of Walters, 12.2 mi (19.6 km) upstream from West Cache Creek, and at mile 19.7 (31.7 km).

WATER-DISCHARGE RECORDS

REMARKS.--Records good. Flow partly regulated by Lake Lawtonka, capacity 42,300 acre-ft (52.2 hm³) on Medicine Creek prior to late 1953, and 63,000 acre-ft (77.7 hm³) thereafter, by Lake Thomas, capacity, 8,300 acre-ft (10.2 hm³) on Little Medicine Creek, and since March 1961 by Lake Ellsworth, capacity, 94,500 acre-ft (117 hm³) on East Cache Creek. Low flow sustained by sewage from cities of Lawton and Walters.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,900 ft³/s (1,440 m³/s) Oct. 21, gage height, 30.66 ft (9.345 m); minimum daily discharge, 13 ft³/s (.37 m³/s) Oct. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	534	79	59	42	106	372	78	45	35	31	28
2	21	519	77	61	44	97	332	77	44	33	30	27
3	25	531	95	67	78	91	322	73	41	31	31	26
4	30	1030	78	69	82	78	306	75	38	30	32	19
5	34	805	77	68	82	76	307	76	38	31	33	16
6	20	243	76	71	75	76	302	74	43	29	36	15
7	13	193	72	68	73	88	293	70	99	30	35	16
8	92	177	81	61	83	90	314	65	64	37	33	18
9	234	368	72	60	78	85	524	64	47	39	33	17
10	66	199	66	59	102	79	580	69	221	38	35	17
11	40	184	66	56	97	79	700	56	89	37	36	16
12	30	129	69	56	83	83	690	51	95	38	36	16
13	22	107	68	56	78	142	628	49	64	55	29	17
14	19	96	67	54	77	123	209	50	51	47	25	16
15	20	94	69	54	76	104	124	50	48	40	21	17
16	25	93	72	54	76	97	125	49	48	38	19	17
17	32	94	69	53	76	92	114	49	46	36	29	15
18	54	95	63	51	86	86	108	57	44	26	22	16
19	664	88	61	45	119	85	100	60	69	25	17	17
20	21100	86	60	41	112	108	93	61	123	25	16	14
21	34600	83	58	42	87	90	88	63	78	23	18	18
22	10900	92	56	43	83	89	81	63	58	21	17	28
23	6230	84	53	47	85	889	81	62	44	17	15	29
24	4120	93	52	50	82	2460	84	61	37	19	16	29
25	1940	97	51	52	82	1630	77	60	39	20	27	49
26	1030	92	52	54	94	950	78	59	42	22	28	51
27	774	77	55	56	92	834	81	58	47	23	30	52
28	833	76	59	55	147	946	79	57	61	23	29	29
29	712	84	56	52	169	1230	79	58	40	22	26	28
30	613	84	54	46	---	889	76	49	40	19	32	28
31	572	---	56	43	---	592	---	48	---	21	28	---
TOTAL	84882	6527	2039	1703	2540	12464	7347	1891	1843	930	845	701
MEAN	2738	218	65.8	54.9	87.6	402	245	61.0	61.4	30.0	27.3	23.4
MAX	34600	1030	95	71	169	2460	700	78	221	55	36	52
MIN	13	76	51	41	42	76	76	48	37	17	15	14
AC-FT	168400	12950	4040	3380	5040	24720	14570	3750	3660	1840	1680	1390
CAL YR 1983	TOTAL	116541.5		MEAN	319	MAX	34600	MIN	8.5	AC-FT	231200	
WTR YR 1984	TOTAL	123712		MEAN	338	MAX	34600	MIN	13	AC-FT	245400	

RED RIVER BASIN

07311000 EAST CACHE CREEK NEAR WALTERS, OK

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1948, 1951-55, 1958-63, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1951 to September 1953, October 1969 to March 1977.

WATER TEMPERATURE: October 1951 to September 1953, October 1969 to March 1977.

REMARKS.--Samples were collected periodically and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)
NOV 30...	1230	730	80020	83	914	7.1	6.5	3.5
JAN 17...	1500	730	80020	54	--	8.0	1.0	6.5
MAY 10...	1415	720	80020	66	795	7.5	19.0	19
JUL 10...	1000	720	80020	38	755	7.4	27.0	85
SEP 20...	1100	720	80020	15	669	7.3	21.0	34

DATE	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
NOV 30...	8.3	71	310	54	97	17	75	34	2
JAN 17...	12.4	92	240	12	82	8.0	36	25	1
MAY 10...	7.3	84	270	19	80	16	66	35	2
JUL 10...	5.2	69	220	27	66	13	72	41	2
SEP 20...	6.1	73	200	8	61	12	54	36	2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS C02)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)
NOV 30...	6.0	259	40	95	80	567	.77	127
JAN 17...	2.2	226	4.4	42	38	352	.48	51
MAY 10...	5.3	247	15	88	66	503	.68	90
JUL 10...	7.1	192	15	72	67	455	.62	47
SEP 20...	9.0	194	19	57	52	394	.54	16

RED RIVER BASIN

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07311200 BLUE BEAVER CREEK NEAR CACHE, OK
(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, Hydrologic Unit 11130203, on downstream side of right bank pier on old U.S. Highway 62, 3,000 ft (914.4 m) upstream from St. Louis-San Francisco Railway Co. bridge, 4.0 mi (6.4 km) east of Cache, and at mile 12.0 (19.3 km).

DRAINAGE AREA.--24.6 mi² (63.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,215.26 ft (370.411 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Minor regulation by Lake Rush, Lake Jed Johnson, and Lake Ketch, combined surface-area 132 acres (534,000 m²).

AVERAGE DISCHARGE.--20 years, 9.85 ft³/s (0.279 m³/s), 7,140 acre-ft/yr (8.80 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s (385 m³/s) Aug. 28, 1977, gage height, 18.02 ft (5.492 m) from floodmarks, from rating curve extended above 250 ft³/s (7.08 m³/s) on basis of contracted opening; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1907, that of Aug. 28, 1977, according to local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,010 ft³/s (114 m³/s) 0715 Oct. 20, gage height, 14.29 ft (4.356 m), no other peak above base of 500 ft³/s (14.2 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	15	5.2	1.8	.94	1.0	20	1.1	.23	.00	.00	.00
2	.00	13	6.1	1.8	.90	1.0	18	1.2	.18	.00	.00	.00
3	.00	12	5.8	1.8	.85	1.0	17	1.1	.16	.00	.00	.00
4	.00	11	4.9	1.5	.85	.96	15	.95	.13	.00	.00	.00
5	.00	10	4.3	2.0	.83	.94	10	.92	.14	.00	.00	.00
6	.00	11	4.0	2.1	.83	.94	6.3	.87	.14	.00	.00	.00
7	.00	13	3.8	2.0	.86	.93	6.8	.81	.08	.00	.00	.00
8	.97	13	3.8	1.6	.92	.85	30	.79	.05	.00	.00	.00
9	.00	11	3.4	1.3	1.0	.85	31	.71	.03	.00	.00	.00
10	.00	13	3.3	1.7	.94	.85	22	.68	.03	.00	.00	.00
11	.00	10	3.0	1.6	.93	.92	17	.58	.03	.00	.00	.00
12	.00	7.9	2.8	1.5	.85	1.3	14	.55	.02	.00	.00	.00
13	.00	6.3	3.0	1.5	.92	1.0	9.9	.64	.01	.00	.00	.00
14	.00	5.9	2.9	1.5	.95	1.4	7.4	.62	.00	.00	.00	.00
15	.00	5.9	2.9	1.4	.87	1.6	6.5	.65	.00	.00	.00	.00
16	.00	5.0	2.6	1.4	.76	1.6	4.9	.66	.00	.00	.00	.00
17	.00	4.8	2.5	1.3	.86	1.6	3.8	.71	.00	.00	.00	.00
18	3.1	4.5	2.3	1.3	1.1	1.6	3.2	.73	.02	.00	.00	.00
19	822	3.9	2.3	1.3	.86	1.6	2.7	.80	.09	.00	.00	.00
20	2600	3.7	2.2	1.3	.85	1.4	2.6	.74	.03	.00	.00	.00
21	353	3.6	2.2	1.4	.85	1.3	2.4	.62	.02	.00	.00	.00
22	131	3.9	2.1	1.4	.85	3.1	2.2	.52	.00	.00	.00	.00
23	86	6.8	2.1	1.4	.85	36	2.0	.60	.00	.00	.00	.00
24	62	5.6	2.1	1.3	.85	70	2.0	.59	.00	.00	.00	.00
25	49	5.4	2.0	1.2	.85	44	1.7	.47	.00	.00	.00	.00
26	40	5.2	2.0	1.1	.89	32	1.7	.42	.04	.00	.00	.00
27	34	4.8	2.0	.98	1.1	31	1.4	.41	.02	.00	.00	.00
28	28	4.1	2.0	.94	1.0	77	1.3	.33	.00	.00	.00	.00
29	24	4.4	1.9	.94	1.0	44	1.5	.30	.00	.00	.00	.00
30	21	4.6	1.9	.89	---	30	1.2	.30	.00	.00	.00	.00
31	18	---	1.8	.85	---	25	---	.28	---	.00	.00	---
TOTAL	4272.07	228.3	93.2	44.10	26.11	416.74	265.5	20.65	1.45	.00	.00	.00
MEAN	138	7.61	3.01	1.42	.90	13.4	8.85	.67	.05	.00	.00	.00
MAX	2600	15	6.1	2.1	1.1	77	31	1.2	.23	.00	.00	.00
MIN	.00	3.6	1.8	.85	.76	.85	1.2	.28	.00	.00	.00	.00
AC-FT	8470	453	185	87	52	827	527	41	2.9	.00	.00	.00
CAL YR 1983	TOTAL	7058.23		MEAN	19.3	MAX	2600	MIN	.00	AC-FT	14000	
WTR YR 1984	TOTAL	5368.12		MEAN	14.7	MAX	2600	MIN	.00	AC-FT	10650	

07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

REMARKS.--Samples were collected quarterly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 09...	1340	730	80020	11	171	7.1	16.0	7.0	9.8	104	K740	170
DEC 05...	1345	720	80020	4.2	174	6.5	9.0	2.0	11.8	108	50	44
FEB 28...	0700	740	80020	1.0	--	7.0	5.0	5.0	12.2	98	140	110
MAY 22...	1400	720	80020	.64	--	7.2	25.0	6.2	7.8	100	530	55

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 09...	56	0	16	3.9	9.7	27	.6	1.4	59	9.1	17	5.6
DEC 05...	63	0	18	4.3	11	27	.6	1.2	62	38	17	7.5
FEB 28...	74	0	20	5.9	15	30	.8	1.3	78	15	21	9.5
MAY 22...	71	0	20	5.1	14	29	.8	1.5	75	9.2	22	9.1

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)
NOV 09...	.30	16	105	110	.14	3.1	.57	.140	.18	.40	.010	.03
DEC 05...	.30	14	124	110	.17	1.4	.26	.060	.08	.40	--	--
FEB 28...	.40	13	136	130	.19	.37	<.10	.060	.08	.20	.010	.03
MAY 22...	.40	15	123	130	.17	.21	<.10	.030	.04	.40	.020	--

[illegible]

RED RIVER BASIN

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07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 09...	<1	11	21	<.1	<10	6	<1	<1	70	<6	15
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	--	--	--	--	--	--	--	--	--	--
MAY 22...	--	--	--	--	--	--	--	--	--	--	--
DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)	SEDI- MENT, DIS- SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 09...	<3.7	<.4	2.9	.6	2.4	.5	.08	.07	18	.53	69
DEC 05...	--	--	--	--	--	--	--	--	4	.05	2
FEB 28...	--	--	--	--	--	--	--	--	2	.00	52
MAY 22...	--	--	--	--	--	--	--	--	13	.02	90

07311500 DEEP RED RUN NEAR RANDLETT, OK

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, Hydrologic Unit 11130203, near right bank on downstream side of pier of bridge on U.S. Highway 277, 2.8 mi (4.5 km) north of Randlett, and at mile 4.8 (7.7 km).

DRAINAGE AREA.--617 mi² (1,598 km²).

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1631: 1956. WSP 1920: 1951.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 924.49 ft (281.785 m) Oklahoma State Highway Department datum. Prior to Nov. 10, 1949, nonrecording gage at same site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--35 years, 117 ft³/s (3.313 m³/s), 84,770 acre-ft/yr (105 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,300 ft³/s (2,050 m³/s) Oct. 20, 1983, gage height, 28.89 ft (8.806 m), from rating curve extended above 13,000 ft³/s (368 m³/s) on basis of contracted-opening measurement at 27.51 ft (8.385 m) in 1969, no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage somewhat exceeding 27 ft (8.2 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72,300 ft³/s (2,050 m³/s) at 2100 Oct. 20, gage height, 28.89 ft (8.806 m); no other peak above base of 2,000 ft³/s (56.6 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	230	9.6	3.7	1.3	14	71	3.4	3.8	2.0	.00	.00
2	.00	150	9.2	4.0	1.3	7.8	54	3.2	3.4	1.7	.00	.00
3	.00	109	8.9	4.2	1.2	6.8	44	3.0	3.1	1.3	.00	.00
4	.00	89	8.9	4.3	1.2	6.6	34	2.9	2.8	1.0	.00	.00
5	.00	73	11	4.5	1.1	6.3	24	2.8	2.7	.62	.00	.00
6	.00	58	9.9	5.1	1.1	6.3	20	2.7	5.0	.36	.00	.00
7	.11	51	8.9	6.1	1.1	6.6	19	2.7	6.0	.24	.00	.00
8	223	50	8.6	6.1	170	7.3	18	2.6	7.5	.16	.00	.00
9	224	49	8.3	6.1	130	9.0	23	2.6	5.0	.12	.00	.00
10	87	41	8.1	6.0	95	9.2	20	2.5	9.6	.00	.00	.00
11	67	36	7.4	6.0	70	8.9	17	2.5	14	.00	.00	.00
12	45	34	7.4	5.6	53	10	14	2.5	11	.00	.00	.00
13	36	28	7.4	4.8	39	9.0	12	2.4	8.0	.00	.00	.00
14	34	23	7.0	4.4	29	11	11	2.4	5.8	.00	.00	.00
15	24	17	6.4	4.0	21	13	9.6	2.4	4.4	.00	.00	.00
16	21	13	6.5	3.6	16	12	8.8	2.4	3.3	.00	.00	.00
17	74	12	6.1	3.4	12	11	7.8	2.4	3.0	.00	.00	.00
18	310	11	5.9	3.0	140	12	7.3	2.3	2.8	.00	.00	.00
19	962	9.9	5.8	2.8	121	9.6	6.7	2.3	2.6	.00	.00	.00
20	46300	9.8	5.4	2.7	102	9.3	6.4	2.3	2.5	.00	.00	.00
21	36100	10	5.1	2.5	86	9.3	5.9	2.3	2.5	.00	.00	.00
22	8520	9.6	5.8	2.3	71	9.3	5.5	2.2	2.4	.00	.00	.00
23	4050	9.1	6.0	2.1	60	31	5.2	2.2	2.3	.00	.00	.00
24	2290	8.9	6.2	2.0	51	168	4.9	2.2	4.7	.00	.00	.00
25	1190	9.4	5.3	1.9	43	140	4.6	2.2	4.4	.00	.00	.00
26	806	11	4.1	1.8	36	94	4.4	2.2	3.8	.00	.00	1.8
27	691	12	3.9	1.7	30	54	4.2	8.1	3.4	.00	217	.19
28	581	11	3.9	1.6	27	37	4.0	6.9	3.1	.00	55	.00
29	413	10	3.8	1.5	13	55	3.8	5.7	2.7	.00	13	.00
30	341	11	3.7	1.5	---	90	3.6	5.0	2.3	.00	3.2	.00
31	292	---	3.7	1.4	---	93	---	4.4	---	.00	.85	---
TOTAL	03681.11	1195.7	208.2	110.7	1423.3	966.3	473.7	95.7	137.9	7.50	289.05	1.99
MEAN	3345	39.9	6.72	3.57	49.1	31.2	15.8	3.09	4.60	.24	9.32	.07
MAX	46300	230	11	6.1	170	168	71	8.1	14	2.0	217	1.8
MIN	.00	8.9	3.7	1.4	1.1	6.3	3.6	2.2	2.3	.00	.00	.00
AC-FT	205700	2370	413	220	2820	1920	940	190	274	15	573	3.9
CAL YR 1983	TOTAL	135278.08		MEAN	371	MAX	46300	MIN	.00	AC-FT	268300	
WTR YR 1984	TOTAL	108591.15		MEAN	297	MAX	46300	MIN	.00	AC-FT	215400	

07313400 WAURIKA LAKE NEAR WAURIKA, OK

LOCATION.--Lat 34°13'57", long 98°02'51", in SW 1/4 SW 1/4 sec.4, T.4 S., R.8 W., Jefferson County, Hydrologic Unit 11130208, 3,050 ft (930 m) east of outlet works on Beaver Creek, 5.5 mi (8.8 km) north of Waurika and at mile 27.0 (43.4 km).

DRAINAGE AREA.--562 mi² (1,456 km²).

PERIOD OF RECORD.--August 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1977, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earth dam with a concrete outlet structure and emergency spillway. Storage began Aug. 1, 1977. Capacity 469,300 acre-ft (579 hm³) at elevation 970.0 ft (295.66 m), crest of uncontrolled spillway and 203,100 acre-ft (250 hm³) at elevation 951.4 ft (289.99 m), top of conservation pool. Dead storage, 3,400 acre-ft (4.19 hm³) below elevation 910.0 ft (277.3 m). Reservoir is used for flood control, irrigation, water supply, water quality, fish and wildlife, and recreation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 331,900 acre-ft (409 hm³) Oct. 23, 1983, elevation, 961.72 ft (293.132 m); minimum since first major filling, 59,170 acre-ft (73.0 hm³) Dec. 4-5, 1978, elevation, 931.56 ft (283.939 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 331,900 acre-ft (409 hm³) Oct. 23, elevation, 961.72 ft (293.132 m); minimum, 179,400 acre-ft (221 hm³) Sept. 30, elevation, 949.06 ft (289.273 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

949	178,800	956	255,300
951	198,900	959	293,800
953	220,400	962	335,900

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183800	299100	203000	203600	205200	202400	202800	204000	200800	198200	190000	185100
2	183900	295500	203400	203700	205400	202400	203200	205100	201000	197900	189600	185200
3	183500	291300	203300	203700	205400	202400	205000	204500	200400	197400	189500	184900
4	183600	287500	203400	203900	205400	203600	203200	204700	200100	197500	189200	184600
5	183200	283000	204500	204000	205400	202700	203200	204600	200200	197200	189400	184200
6	182400	279600	203400	204000	205300	202600	202800	204700	200500	196800	189000	183600
7	183300	275500	203900	204100	205200	202600	204100	205000	200500	196600	189500	183500
8	184000	271900	203400	204000	205600	202500	204400	204000	200200	196300	190100	182700
9	185400	269400	203700	207200	205700	202200	204100	203800	200200	195700	190000	182900
10	185200	263700	203900	204400	205800	202500	204600	203300	201500	195500	190100	182400
11	185300	259300	203700	203900	206000	202500	205700	203500	201400	195300	190000	183200
12	184200	255300	203400	204500	205900	203400	204700	203400	201100	195000	189800	182000
13	184000	250900	203900	204600	205900	203400	204800	203300	201300	194700	189700	181900
14	183700	247500	204000	204500	205400	203400	204700	203300	201200	194500	189100	183500
15	183900	243100	203900	204400	206300	204500	204700	202800	200800	194200	189100	183000
16	184100	239400	203900	204400	206000	204600	204500	202600	200600	194000	188900	181400
17	185000	237200	203700	205900	208300	204100	204500	202600	200200	193700	188700	180800
18	185500	235700	204600	204600	206600	206100	204800	202200	201200	193500	188500	180600
19	189600	232800	203700	204500	206500	204600	204100	203300	200000	193200	188400	180500
20	266000	228600	203400	204500	206400	204100	204500	203000	200200	192900	188100	180300
21	321300	225700	204900	204600	206500	204000	205100	202700	200100	192600	187500	180400
22	330900	223000	203500	204600	206600	204100	204300	202800	199800	192300	187600	180400
23	331600	218000	204300	204600	205600	206900	204100	202600	200400	192400	187200	180200
24	330200	214600	203600	204800	204900	209000	203600	202400	199600	192200	186900	180100
25	326500	211000	203400	204800	203700	209400	203300	202800	199300	192100	186500	181200
26	322500	208800	203200	205100	208300	209700	205000	202500	199000	191900	186500	180300
27	317600	207900	203600	205100	205100	210400	203900	202000	199200	191800	186400	180900
28	314400	203900	203800	205200	203000	208000	203700	202700	198900	191200	186100	180800
29	310600	202800	203700	206400	202400	205600	204000	202500	198800	191100	185700	180100
30	306600	203100	203700	205200	---	204600	203500	201700	198400	190700	186000	179400
31	302600	---	203600	205200	---	204100	---	201000	---	190200	185400	---
MAX	331600	299100	204900	207200	208300	210400	205700	205100	201500	198200	190100	185200
MIN	182400	202800	203000	203600	202400	202200	202800	201000	198400	190200	185400	179400
(+)	959.65	951.40	951.45	951.61	951.34	951.50	951.44	951.20	950.95	950.16	949.68	949.06
(++)	+118,700	-99,500	+500	+1,600	-2,800	+1,700	-600	-2,500	-2,600	-8,200	-4,800	-6,100

CAL YR 1983 MAX 331600 MIN 182400 (++) +13,900
WTR YR 1984 MAX 331600 MIN 179400 (++) -4,500

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

07313500 BEAVER CREEK NEAR WAURIKA, OK

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, Hydrologic Unit 11130208, on left bank on downstream side of bridge on State Highway 5, 4.5 mi (7.2 km) northwest of Waurika, 6.2 mi (10.0 km) upstream from Cow Creek, and at mile 25.8 (45.1 km).

DRAINAGE AREA.--563 mi² (1,458 km²).

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--WSP 1731: 1954 (M).

GAGE.--Water-stage recorder. Datum of gage is 874.17 ft (266.447 m) Oklahoma State Highway Department datum. Prior to Apr. 5, 1966, water-stage recorder at same site at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records poor. Flow regulated by Waurika Lake (07313400) 1.2 mi (1.9 km) upstream beginning August 1977.

AVERAGE DISCHARGE.--(Prior to regulation by Waurika Lake) 23 years, (water years 1954-76) 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); (Since regulation by Waurika Lake) 7 years, (water years 1978-84) 57.5 ft³/s (1.628 m³/s), 41,700 acre-ft/yr (51.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s (912 m³/s) May 20, 1955, gage height, 27.42 ft (8.358 m), present datum; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1951, reached a stage of 27.7 ft (8.44 m), present datum, from floodmark, discharge 65,300 ft³/s (1,850 m³/s) by contracted-opening measurement of peak flow. A similar stage was reached prior to 1889, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,990 ft³/s (56.4 m³/s) Oct. 27, 28; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1970	.87	.25	.00	.00	350	.00	.00	.00	.00	.00
2	.00	1970	.68	.25	.00	.00	350	.00	.00	.00	.00	.00
3	.00	1960	.87	.25	.00	.00	164	.00	.00	.00	.00	.00
4	.00	1960	1.1	.25	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	1960	1.0	.20	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	1950	.81	.15	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	1950	.68	.15	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	1940	.74	.10	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	1940	.81	.10	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	1940	.74	.30	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	1930	.68	.30	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	1920	.68	.20	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	1920	.68	.15	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	1910	.68	.15	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	1910	.68	.15	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	1900	.68	.25	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	1650	.68	.40	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	880	.62	.25	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	1220	1.0	.25	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	1630	.81	.20	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	1870	.68	.15	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	1980	.56	.20	142	.00	.00	.00	.00	.00	.00	.00
23	.00	1940	.62	.40	284	.00	.00	.00	.00	.00	.00	.00
24	507	1660	.56	.30	281	.00	.00	.00	.00	.00	.00	.00
25	1170	1580	.50	.25	277	.00	.00	.00	.00	.00	.00	.00
26	1870	1240	.50	.20	278	.00	.00	.00	.00	.00	.00	.00
27	1990	1160	.50	.10	282	293	.00	.00	.00	.00	.00	.00
28	1990	933	.45	.10	283	820	.00	.00	.00	.00	.00	.00
29	1980	410	.35	.05	169	980	.00	.00	.00	.00	.00	.00
30	1980	1.6	.25	.05	---	864	.00	.00	.00	.00	.00	.00
31	1970	---	.20	.00	---	490	---	.00	---	.00	.00	---
TOTAL	13457.00	49184.6	20.66	6.10	1996.00	3447.00	864.00	.00	.00	.00	.00	.00
MEAN	434	1639	.67	.20	68.8	111	28.8	.00	.00	.00	.00	.00
MAX	1990	1980	1.1	.40	284	980	350	.00	.00	.00	.00	.00
MIN	.00	1.6	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	26690	97560	41	12	3960	6840	1710	.00	.00	.00	.00	.00
CAL YR 1983	TOTAL	75839.64		MEAN	208	MAX	1990	MIN	.00	AC-FT	150400	
WTR YR 1984	TOTAL	68975.36		MEAN	188	MAX	1990	MIN	.00	AC-FT	136800	

07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi (0.8 km) downstream from Chicago, Rock Island, and Railroad Co. bridge, 1.2 mi (1.9 km) south of Terral, 3.6 mi (5.8 km) downstream from Little Wichita River, and at mile 872 (1,403 km).

DRAINAGE AREA.--28,723 mi² (74,392 km², of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft (234.790 m) above National Geodetic Vertical Datum of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Many small diversions for irrigation, oil field, and municipal uses upstream from station.

AVERAGE DISCHARGE.--46 years (water years 1939-84), 2,127 ft³/s (60.2 m³/s), 1,541,000 acre-ft/yr (1.9 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft³/s (5,947 m³/s) Oct. 22, 1983, gage height, 33.60 ft (10.241 m); minimum, 43 ft³/s (1.22 m³/s) Mar. 15, 1939. Maximum stage since at least 1891, that of Oct. 22, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft (8.29 m), although floods in 1891 and on May 1, 1908, are reported to have reached about the same stage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 210,000 ft³/s (5,947 m³/s) Oct. 22 at 2000 hours, gage height, 33.60 ft (10.241 m), no other peak above base of 21,000 ft³/s (594 m³/s); minimum, 90 ft³/s (2.55 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	5460	1060	550	633	937	2180	402	321	352	206	427
2	95	5100	981	600	627	693	1860	458	324	324	196	354
3	100	4870	949	650	595	602	1490	637	318	334	195	292
4	126	4720	947	750	587	544	1170	745	288	308	186	248
5	108	4940	929	837	572	503	1110	571	299	307	191	223
6	96	5260	871	1010	577	547	1090	509	406	334	203	207
7	288	4910	858	1320	585	608	1070	475	379	284	206	192
8	3750	4840	851	1270	572	616	1040	417	450	242	206	187
9	6270	4880	821	1040	602	603	1190	401	543	224	205	184
10	3560	4880	788	917	590	628	1280	387	483	221	213	171
11	1860	4960	777	892	644	666	1390	370	406	224	227	159
12	865	4810	572	852	607	810	1480	369	726	231	357	150
13	527	4760	713	791	611	884	1630	369	674	226	804	141
14	404	4600	697	747	603	962	1680	356	473	239	848	142
15	327	4610	730	715	595	954	1510	341	1660	257	665	132
16	296	4530	765	690	600	905	1030	327	1340	259	442	126
17	226	4350	749	665	586	820	803	314	1030	246	395	124
18	267	3640	727	599	605	781	736	305	884	232	351	136
19	469	3240	559	500	580	735	679	334	989	263	275	129
20	12700	3500	500	500	603	712	636	355	869	226	230	130
21	48600	3640	450	540	606	693	608	355	727	214	204	136
22	180000	3630	400	560	609	679	572	398	736	205	182	134
23	175000	3620	400	587	646	668	547	393	687	204	171	126
24	95100	3440	450	619	882	697	527	387	969	198	160	119
25	36600	3220	400	744	870	2890	497	379	767	201	157	146
26	20000	3070	350	797	883	3390	485	395	757	210	159	172
27	14900	2630	400	762	871	3020	451	357	627	214	151	177
28	12600	2390	450	708	1180	3140	411	356	488	218	148	207
29	10700	2010	500	661	1210	2960	400	339	399	213	170	265
30	7570	1470	450	628	---	3240	404	325	371	208	411	278
31	6050	---	500	615	---	2800	---	334	---	218	526	---
TOTAL	639554	121980	20594	23116	19731	38687	29956	12460	19390	7636	9040	5614
MEAN	20630	4066	664	746	680	1248	999	402	646	246	292	187
MAX	180000	5460	1060	1320	1210	3390	2180	745	1660	352	848	427
MIN	95	1470	350	500	572	503	400	305	288	198	148	119
AC-FT	1269000	241900	40850	45850	39140	76740	59420	24710	38460	15150	17930	11140
CAL YR 1983	TOTAL	1036773	MEAN	2840	MAX	180000	MIN	95	AC-FT	2056000		
WTR YR 1984	TOTAL	947758	MEAN	2590	MAX	180000	MIN	95	AC-FT	1880000		

07315700 MUD CREEK NEAR COURTNEY, OK

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, Hydrologic Unit, 11130201, on downstream side of bridge on State Highway 89, 4.0 mi (6.4 km) downstream from North Mud Creek, 6.0 mi (9.7 km) northwest of Courtney, and at mile 11.5 (18.5 km).

DRAINAGE AREA.--572 mi² (1,481 km²).

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR OK-78-2: Maximum gage height.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 727.72 ft (221.809 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1968, auxiliary water-stage recorder 2.0 mi (3.2 km) downstream from base gage.

REMARKS.--Records good.

AVERAGE DISCHARGE.--24 years, 124 ft³/s (3.51 m³/s), 89,840 acre-ft/yr (111 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s (946 m³/s) May 1, 1974, gage height, 31.37 ft (9.562 m); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1957, reached a stage of 30.6 ft (9.33 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,260 ft³/s (64.0 m³/s) June 10 at 1930, gage height 24.07 ft (7.337 m); no other peaks above base of 1,300 ft³/s (36.8 m³/s); no flows at times during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.3	5.4	1.9	3.6	26	14	9.5	3.5	2.0	.14	.00
2	.00	8.3	4.7	2.0	3.5	15	11	70	3.6	1.7	.14	.00
3	.00	8.8	4.1	2.1	3.4	11	10	75	3.2	1.7	.04	.00
4	.55	7.1	3.7	2.1	3.2	9.2	9.2	16	2.9	2.2	.00	.00
5	.26	6.9	3.3	2.3	3.1	8.0	9.2	12	4.5	2.5	.00	.00
6	.17	9.9	3.0	2.3	2.8	7.1	11	9.7	156	2.1	.00	.00
7	.99	7.5	2.9	2.2	2.8	6.5	9.8	8.4	146	2.0	.00	.00
8	11	6.2	3.0	2.5	2.8	5.6	8.8	6.7	44	1.8	.00	.00
9	107	5.1	3.1	5.2	3.1	5.5	109	5.7	25	1.6	.00	.00
10	67	5.0	3.3	7.4	3.0	5.2	169	5.1	1360	1.3	.00	.00
11	37	5.6	3.5	7.0	3.0	5.5	60	5.1	1860	1.3	.00	.00
12	12	5.2	3.6	6.5	3.0	89	28	4.8	389	3.1	.00	.00
13	7.2	4.5	3.5	5.6	3.0	314	19	4.6	63	3.6	.00	.00
14	4.2	4.4	3.2	5.2	3.1	163	15	4.5	23	2.3	.00	.00
15	3.6	4.0	3.1	4.6	3.8	77	13	4.4	9.3	2.6	.00	.00
16	3.4	3.6	3.2	4.1	4.3	32	11	7.2	5.4	4.5	.00	.00
17	5.1	3.7	3.0	3.7	3.9	18	9.5	9.1	3.5	3.8	.00	.00
18	2.5	4.4	2.8	3.4	3.9	14	8.8	9.7	2.3	2.9	.00	.00
19	9.7	5.0	2.5	3.1	3.3	11	8.6	12	1.6	2.4	.00	.00
20	21	4.1	2.2	3.0	3.0	9.1	9.2	30	1.3	1.8	.00	.00
21	525	3.6	2.3	2.9	3.6	8.7	18	81	1.2	1.2	.00	.00
22	779	5.0	2.1	2.8	12	8.1	9.1	64	1.0	.85	.00	.00
23	944	6.4	2.3	2.7	9.1	16	8.4	24	.95	.65	.00	.00
24	397	5.2	2.1	2.6	6.5	84	7.7	12	.85	.55	.00	.00
25	80	4.6	1.8	2.4	5.1	122	7.1	7.4	.73	.38	.00	.00
26	40	12	1.9	2.4	4.4	108	8.0	5.3	.78	.40	.00	.00
27	26	22	2.0	2.5	4.2	41	8.2	4.8	1.6	.48	.00	.00
28	19	11	2.2	2.4	15	41	8.7	4.8	1.9	.44	.00	.00
29	15	9.1	2.3	2.6	60	65	8.5	5.4	1.9	.38	.00	.00
30	13	7.0	2.1	3.0	---	24	8.3	6.0	2.5	.23	.00	.00
31	11	---	1.8	3.3	---	18	---	4.4	---	.16	.00	---
TOTAL	3141.67	204.5	90.0	105.8	185.5	1367.5	635.1	528.6	4120.51	52.92	.32	.00
MEAN	101	6.82	2.90	3.41	6.40	44.1	21.2	17.1	137	1.71	.01	.00
MAX	944	22	5.4	7.4	60	314	169	81	1860	4.5	.14	.00
MIN	.00	3.6	1.8	1.9	2.8	5.2	7.1	4.4	.73	.16	.00	.00
AC-FT	6230	406	179	210	368	2710	1260	1050	8170	105	.6	.00
CAL YR 1983	TOTAL	47883.36		MEAN	131	MAX	6160	MIN	.00	AC-FT	94980	
WTR YR 1984	TOTAL	10432.42		MEAN	28.5	MAX	1860	MIN	.00	AC-FT	20690	

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, Okla., Hydrologic Unit 11130201, near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mi (0.3 km) downstream from Gulf, Colorado and Santa Fe Railway Co. bridge, 5.0 mi (8.0 km) downstream from Fish Creek, 4.5 mi (7.2 km) southwest of Thackerville, Okla., 7.0 mi (11.0 km) north of Gainesville, and at mile 791.5 (1,273.5 km).

DRAINAGE AREA.--30,782 mi² (79,725 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft (191.387 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow slightly regulated by Lake Kemp, in Texas, since 1943 by Lake Altus (station 07302500), since 1946 by Lake Kickapoo, and since 1967 by Lake Arrowhead and Moss Lake, also in Texas.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--48 years, 2,808 ft³/s (79.52 m³/s), 1,974,000 acre-ft/yr (2.43 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 168,000 ft³/s (4,758 m³/s) June 9, 1941, gage height, 24.15 ft (7.361 m); maximum gage height, 37.14 ft (11.320 m) Oct. 24, 1983; minimum discharge, 48 ft³/s (1.36 m³/s) Jan. 27, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 151,000 ft³/s (4,280 m³/s) at 1915 Oct. 24, gage height, 37.14 ft (11.320 m) May 24, no other peak above base of 24,000 ft³/s (680 m³/s); minimum daily, 75 ft³/s (2.12 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	9220	2610	1260	1010	1170	3400	751	450	733	254	130
2	117	8010	2220	1300	971	1430	3040	857	430	631	257	288
3	113	7440	1930	1330	966	1270	2520	1560	420	579	251	433
4	105	7120	1780	1340	964	1050	2170	1210	400	566	261	380
5	93	6790	1720	1210	944	919	1860	1080	595	562	253	320
6	75	6730	1670	1250	920	837	1580	1040	586	549	240	250
7	121	7140	1650	1280	921	803	1480	929	589	484	246	230
8	199	6850	1610	1340	921	788	1430	817	801	472	232	220
9	1450	6290	1570	1530	941	810	1350	781	722	473	267	200
10	3820	6090	1550	1720	950	816	1320	748	1670	458	270	190
11	3050	6080	1510	1590	960	829	1470	726	6510	435	354	180
12	2240	6070	1450	1470	950	1080	1580	660	4810	388	316	170
13	1560	5870	1450	1460	933	1510	1540	640	2500	379	330	160
14	1050	5600	1340	1410	931	1660	1580	600	1330	391	308	150
15	760	5380	1340	1360	889	1670	1680	560	1200	323	423	170
16	581	5200	1390	1320	866	1370	1790	540	979	326	722	160
17	458	5090	1410	1290	866	1230	1700	500	1210	335	727	150
18	395	4970	1400	1250	866	1160	1380	450	1630	361	673	160
19	401	4660	1380	1200	893	1180	1150	420	1330	345	523	150
20	411	3980	1330	1150	887	1090	1070	450	1200	363	425	160
21	4230	3800	1320	1110	869	997	986	500	1170	353	349	150
22	16600	3910	1300	1080	863	953	973	540	1170	349	294	140
23	53300	4000	1270	1020	863	930	927	600	995	318	242	150
24	135000	4040	1260	1080	858	932	891	560	1000	323	251	140
25	140000	3970	1250	1100	839	1140	877	540	952	309	288	170
26	98800	3790	1270	1110	1070	1000	891	520	1120	297	243	190
27	41300	3650	1300	1150	1150	2560	797	560	1130	339	209	210
28	22800	3480	1350	1230	1120	3820	796	520	942	278	180	240
29	18600	3160	1300	1250	1100	3540	786	500	889	249	152	300
30	15500	2960	1280	1200	---	3520	790	480	779	249	169	310
31	11500	---	1240	1100	---	3330	---	470	---	245	138	---
TOTAL	574754	161340	46450	39490	27281	45394	43804	21109	39509	12462	9847	6251
MEAN	18540	5378	1498	1274	941	1464	1460	681	1317	402	318	208
MAX	140000	9220	2610	1720	1150	3820	3400	1560	6510	733	727	433
MIN	75	2960	1240	1020	839	788	786	420	400	245	138	130
AC-FT	1140000	320000	92130	78330	54110	90040	86890	41870	78370	24720	19530	12400

CAL YR 1983	TOTAL	1213558	MEAN	3325	MAX	140000	MIN	75	AC-FT	2407000
WTR YR 1984	TOTAL	1027691	MEAN	2808	MAX	140000	MIN	75	AC-FT	2038000

07316500 WASHITA RIVER NEAR CHEYENNE, OK

LOCATION.--Lat 35°37'35", long 99°40'05", in SE 1/4 sec.5, T.13 N., R.23 W., Roger Mills County, Hydrologic Unit 11130301, on left bank on downstream side of bridge on U.S. Highway 283, 0.5 mi (0.8 km) downstream from Sergeant Major Creek, 1.0 mi (1.6 km) north of Cheyenne, 5.2 mi (8.4 km) upstream from Dead Indian Creek, and at mile 543.9 (875.1 km).

DRAINAGE AREA.--794 mi² (2,056 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,900.98 ft (579.419 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army 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. Jan. 12, 1948, to Feb. 3, 1977, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair. Some regulation by numerous flood-retarding structures.

AVERAGE DISCHARGE.--47 years, 28.7 ft³/s (0.813 m³/s), 20,790 acre-ft/yr (25.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft³/s (1,980 m³/s) Apr. 29, 1954, gage height, 15.24 ft (4.645 m); from rating curve extended above 27,000 ft³/s (765 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3, 1934, reached a stage of 1.0 ft (0.30 m) lower than that in 1954 at site on upstream side of highway fill.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 119 ft³/s (3.37 m³/s) Apr. 7, gage height, 6.95 ft (2.118 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.0	4.2	7.7	20	16	28	26	5.8	1.0	.00	.00
2	.00	2.0	4.8	8.5	19	14	37	24	4.7	1.1	.00	.00
3	.00	2.1	5.6	8.3	18	15	41	29	4.9	1.0	.00	.00
4	.00	2.0	6.3	14	17	14	37	30	4.5	.44	.00	.00
5	.00	2.0	5.7	14	16	14	33	31	4.5	.00	4.9	.00
6	.00	4.0	4.9	15	16	15	30	28	4.2	.00	1.4	.00
7	.00	4.5	5.9	17	17	15	61	26	3.6	.00	.18	.00
8	.00	4.2	5.6	17	16	14	59	23	2.1	.00	1.1	.00
9	.00	3.0	5.8	19	17	14	47	23	1.9	.00	.00	.00
10	.00	2.6	5.8	17	17	15	43	23	2.0	.00	.00	.00
11	.00	2.8	5.8	15	17	16	37	25	13	.00	.00	.00
12	.00	2.8	5.4	16	16	16	34	25	2.7	.00	.00	.00
13	.00	3.1	5.7	14	16	17	33	21	2.7	.00	.00	.00
14	.00	3.3	5.4	13	16	18	30	19	2.7	.00	.00	.00
15	.00	2.8	5.3	13	16	19	28	18	2.5	.00	.00	.00
16	.00	3.1	4.7	12	16	18	27	17	1.8	.00	.00	.00
17	.00	3.8	4.0	11	16	18	26	18	1.2	.00	.00	.00
18	.01	3.3	3.5	10	21	20	25	17	1.4	.00	.00	.00
19	1.1	2.8	3.3	10	18	20	24	17	1.6	.00	.00	.00
20	9.2	3.1	3.3	11	17	20	25	17	2.3	.00	.00	.00
21	9.4	3.0	3.5	12	17	19	30	16	2.0	.00	.00	.00
22	7.1	2.8	4.2	14	17	19	25	14	1.8	.00	.00	.00
23	5.0	3.6	3.8	16	19	28	23	10	.89	.00	.00	.00
24	3.3	3.7	3.5	17	16	30	23	9.8	.89	.00	.01	.00
25	2.5	4.3	3.4	20	16	27	23	8.8	.89	.00	.00	.00
26	2.3	4.3	3.4	22	16	26	22	7.4	1.4	.00	.01	.00
27	2.2	4.2	3.4	25	17	26	20	8.2	1.4	.00	.00	.00
28	2.0	3.3	3.5	26	15	31	20	7.4	1.3	.56	.00	.00
29	1.9	4.4	4.4	24	15	30	27	7.2	.44	.16	.00	.00
30	2.0	5.0	5.1	21	---	28	34	6.9	1.0	.00	.00	.00
31	2.1	---	7.0	20	---	27	---	6.7	---	.00	.00	---
TOTAL	50.11	97.9	146.2	479.5	490	619	952	559.4	82.11	4.26	7.60	.00
MEAN	1.62	3.26	4.72	15.5	16.9	20.0	31.7	18.0	2.74	.14	.25	.00
MAX	9.4	5.0	7.0	26	21	31	61	31	13	1.1	4.9	.00
MIN	.00	2.0	3.3	7.7	15	14	20	6.7	.44	.00	.00	.00
AC-FT	99	194	290	951	972	1230	1890	1110	163	8.4	15	.00
CAL YR 1983	TOTAL	7491.91		MEAN	20.5	MAX	266	MIN	.00	AC-FT	14860	
WTR YR 1984	TOTAL	3488.08		MEAN	9.53	MAX	61	MIN	.00	AC-FT	6920	

RED RIVER BASIN

237

07324200 WASHITA RIVER NEAR HAMMON, OK

LOCATION.--Lat 35°39'23", long 99°18'21", on west line of sec.26, T.14 N., R.20 W., Custer County, Hydrologic Unit 11130301, on right bank near county road bridge, 2.2 mi (3.5 km) downstream from Quartermaster Creek, 4.7 mi (7.6 km) northeast of Hammon, and at mile 494.5 (795.7 km).

DRAINAGE AREA.--1,387 mi² (3,592 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,643.22 ft (500.853 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Some regulation by numerous flood-retarding structures.

AVERAGE DISCHARGE.--15 years, 33.8 ft³/s (0.957 m³/s), 24,560 acre-ft/yr (30.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft³/s (170 m³/s) May 17, 1982, gage height, 23.44 ft (7.145 m), from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of slope-area measurement; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 822 ft³/s (23.3 m³/s) June 11, gage height, 14.29 ft (HWM) (4.356 m), no peak above 1,500 ft³/s (42.5 m³/s); minimum daily discharge, .12 ft³/s (.003 m³/s) Aug. 29-30, Sept. 3-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	8.5	12	11	28	25	49	64	18	13	3.5	.38
2	3.3	8.0	12	12	27	25	53	58	17	11	2.9	.23
3	3.2	8.8	12	14	27	25	57	57	17	11	2.8	.12
4	2.9	9.2	12	15	26	26	64	57	16	9.7	2.7	.12
5	2.7	10	12	17	24	25	64	51	16	8.9	2.0	.12
6	2.6	14	12	20	24	24	60	47	15	9.1	1.9	.12
7	2.7	12	12	24	24	24	66	46	14	8.4	1.6	.12
8	2.7	10	11	22	23	24	149	46	13	7.8	.98	.12
9	2.8	9.4	11	23	24	23	129	39	13	7.2	1.0	.16
10	2.8	8.0	11	26	26	23	98	37	14	7.0	1.8	.20
11	2.9	8.2	11	23	26	23	83	36	431	6.9	1.9	.20
12	2.9	8.8	12	22	25	24	76	33	407	7.1	1.8	.20
13	2.9	8.8	13	21	24	25	68	31	79	7.3	1.5	.18
14	2.9	9.1	15	20	23	25	63	30	51	7.2	1.3	.21
15	2.8	9.2	15	19	23	25	59	29	34	7.3	1.3	.27
16	3.0	9.1	14	17	23	23	57	28	25	7.2	1.3	.27
17	3.5	8.9	13	15	23	23	56	28	22	6.9	1.2	.27
18	8.0	8.8	12	13	24	26	54	27	19	7.6	.89	.36
19	25	9.0	11	11	28	29	53	27	19	6.3	.53	.47
20	15	9.0	10	12	28	28	52	26	19	6.3	.36	.47
21	11	9.7	9.0	15	27	28	58	26	21	5.7	.37	.47
22	10	9.6	9.4	20	26	28	68	24	16	5.1	.39	.47
23	9.5	10	9.0	25	26	60	59	24	15	4.8	.27	.47
24	8.2	9.5	10	30	26	93	56	22	14	4.6	1.2	.47
25	7.0	9.4	11	35	25	61	52	22	13	4.5	.60	.47
26	6.5	10	12	40	26	54	48	20	14	4.2	.32	.47
27	6.0	11	11	44	25	51	46	20	14	3.9	.27	.47
28	6.2	12	10	40	25	52	43	22	38	3.8	.14	.63
29	7.0	12	9.0	33	24	52	42	24	22	3.9	.12	.83
30	8.5	13	8.4	32	---	51	45	22	15	4.0	.12	.88
31	9.0	---	9.5	29	---	51	---	19	---	4.0	.88	---
TOTAL	186.9	293.0	351.3	700	730	1076	1927	1042	1441	211.7	37.94	10.22
MEAN	6.03	9.77	11.3	22.6	25.2	34.7	64.2	33.6	48.0	6.83	1.22	.34
MAX	25	14	15	44	28	93	149	64	431	13	3.5	.88
MIN	2.6	8.0	8.4	11	23	23	42	19	13	3.8	.12	.12
AC-FT	371	581	697	1390	1450	2130	3820	2070	2860	420	75	20
CAL YR 1983	TOTAL	17396.3		MEAN	47.7	MAX	450	MIN	2.6	AC-FT	34510	
WTR YR 1984	TOTAL	8007.06		MEAN	21.9	MAX	431	MIN	.12	AC-FT	15880	

07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to September 1979.

WATER TEMPERATURE: October 1969 to September 1979.

REMARKS.--Samples were collected by a local observer on a weekly basis. A partial analysis was made bimonthly on one of these samples. Additional samples were collected semiannually and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)
OCT 10...	1620	--	80020	2.8	2480	7.6	22.0	--	--	--	--
DEC 14...	1500	720	80020	15	2570	6.9	4.5	13.2	109	1400	1200
JAN 11...	1600	--	80020	23	1930	7.8	3.0	--	--	--	--
MAR 21...	1630	--	80020	29	2060	7.7	15.0	--	--	--	--
APR 11...	1515	--	80020	81	1750	7.9	20.0	--	--	--	--
MAY 03...	1300	720	80020	56	1960	7.5	17.0	8.5	94	980	740
JUL 08...	1430	--	80020	8.0	2150	7.6	30.0	--	--	--	--
AUG 02...	0730	--	80020	2.8	2340	7.7	29.0	--	--	--	--
DATE		CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS C02)	SULFATE DIS-SOLVED (MG/L AS S04)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 10...	--	--	--	--	--	--	--	180	8.7	1300	--
DEC 14...	300	160	97	13	1	4.2	257	63	1200	.50	--
JAN 11...	--	--	--	--	--	--	--	--	920	--	--
MAR 21...	--	--	--	--	--	--	--	--	990	--	--
APR 11...	--	--	--	--	--	--	--	--	640	--	--
MAY 03...	210	110	100	18	1	5.6	242	15	890	.50	--
JUL 08...	--	--	--	--	--	--	--	--	990	--	--
AUG 02...	--	--	--	--	--	--	--	--	1200	--	--
DATE		SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT 10...	--	--	2250	--	3.1	17	--	--	--	--	--
DEC 14...	18	--	2290	2000	3.1	93	.81	.010	.82	<100	1
JAN 11...	--	--	1440	--	2.0	89	--	--	--	--	--
MAR 21...	--	--	1820	--	2.5	141	--	--	--	--	--
APR 11...	--	--	1440	--	2.0	316	--	--	--	--	--
MAY 03...	7.0	--	1640	1500	2.2	246	.47	.010	.48	<100	2
JUL 08...	--	--	1760	--	2.4	38	--	--	--	--	--
AUG 02...	--	--	2120	--	2.9	16	--	--	--	--	--

RED RIVER BASIN

07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

[illegible]

RED RIVER BASIN

241

07324300 FOSS RESERVOIR NEAR FOSS, OK

LOCATION.--Lat 35°32'18", long 99°10'40", in S 1/2 sec.2, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130301,

near right end of dam on Washita River, 0.5 mi (0.8 km) upstream from Oak Creek, 3.5 mi (5.6 km) west of Stafford, 6.0 mi (9.7 km) north of Foss, and at mile 474.4 (763.3 km).

DRAINAGE AREA.--1,496 mi² (3,875 km²).

PERIOD OF RECORD.--February 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to October, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of four 6.0 ft x 7.5 ft high pressure gates and one uncontrolled spillway. Storage began Feb. 13, 1961. Capacity, 436,500 acre-ft (538 hm³) at elevation 1,668.6 ft (508.59 m) crest of drop inlet and 256,100 acre-ft (316 hm³) at elevation 1,652.0 ft (503.530 m) conservation pool. Dead storage, 12,420 acre-ft (15.3 hm³) below elevation 1,597.2 ft (486.83 m) sill of gated outlet. Figures given herein represent total contents. Reservoir is designed for flood control, municipal water supply (inactive), and irrigation release. Revised capacity table used after Sept. 30, 1964. Water-quality samples were collected at 3 profile sites in the Reservoir.

COOPERATION.--Elevations and data on diversions furnished by Foss Reservoir Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 195,800 acre-ft (241 hm³) June 29, 1977, elevation, 1,644.53 ft (501.253 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 156,700 acre-ft (193 hm³) June 22, elevation, 1,638.72 ft (499.482 m); minimum, 142,800 acre-ft (176 hm³) Sept. 30, elevation 1,636.40 ft (498.775 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1637.50	149,300	-	-
Oct. 31.....	1637.70	150,500	+1,200	119
Nov. 30.....	1637.60	149,900	-600	115
Dec. 31.....	1637.40	148,700	-1,200	135
CAL YR 83.....	-	-	-8,500	1,922
Jan. 31.....	1637.60	149,900	+1,200	137
Feb. 29.....	1637.80	151,100	+1,200	103
Mar. 31.....	1638.30	154,200	+3,100	134
Apr. 30.....	1638.60	156,000	+1,800	140
May 31.....	1638.50	155,400	-600	199
June 30.....	1638.70	156,600	+1,200	202
July 31.....	1637.90	151,700	-4,900	244
Aug. 31.....	1637.10	146,900	-4,800	240
Sept. 30.....	1636.40	142,800	-4,100	200
WTR YR 84.....	-	-	-6,500	1,968

* Elevation at 0800 on the following day.

RED RIVER BASIN

353325099111000 FOSS RESERVOIR AT SITE NO. 1 NEAR FOSS, OK

LOCATION.--Lat 35°33'25", long 99°11'10", in SW 1/4 sec.35, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 600 ft (183 m) from left edge of water on a bearing of 250° from concrete structure at north end of dam.

PERIOD OF RECORD.--Water year 1980 to current year.

REMARKS.--Samples were collected in a Kemmerer sampler near bottom, mid-depth, and surface. Specific conductance, water temperature, pH, and dissolved oxygen were determined in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)
FEB								
10...	0905	730	1028	27.0	151000	1560	8.2	4.5
10...	0910	730	1028	20.0	151000	1560	8.1	4.5
10...	0911	730	1028	15.0	151000	1560	8.2	4.5
10...	0920	730	1028	10.0	151000	1560	8.2	4.5
10...	0930	730	1028	5.00	151000	1560	8.1	4.5
10...	0931	730	1028	1.00	151000	1560	8.2	4.5
JUN								
14...	1030	720	1028	55.0	156000	1740	8.1	22.5
14...	1032	720	80020	50.0	156000	1760	8.1	23.0
14...	1034	720	1028	45.0	156000	1730	8.1	23.0
14...	1036	720	1028	40.0	156000	1730	8.1	23.0
14...	1038	720	1028	35.0	156000	1720	8.1	23.0
14...	1040	720	1028	30.0	156000	1720	8.2	23.0
14...	1042	720	80020	25.0	156000	1720	8.2	23.0
14...	1044	720	1028	20.0	156000	1720	7.8	23.0
14...	1046	720	1028	15.0	156000	1720	7.8	23.5
14...	1048	720	1028	10.0	156000	1720	7.8	23.5
14...	1050	720	1028	5.00	156000	1720	7.8	23.5
14...	1052	720	80020	1.00	156000	1720	7.7	23.5

DATE	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM
FEB									
10...	--	12.5	101	--	--	--	--	--	--
10...	--	12.9	105	--	--	--	--	--	--
10...	--	12.3	100	--	--	--	--	--	--
10...	--	12.1	98	--	--	--	--	--	--
10...	--	12.2	99	--	--	--	--	--	--
10...	--	12.1	98	--	--	--	--	--	--
JUN									
14...	--	7.9	97	--	--	--	--	--	--
14...	1.3	8.0	99	850	720	160	110	81	17
14...	--	8.2	102	--	--	--	--	--	--
14...	--	8.2	102	--	--	--	--	--	--
14...	--	8.3	103	--	--	--	--	--	--
14...	--	8.3	103	--	--	--	--	--	--
14...	3.5	8.4	104	850	710	160	110	86	18
14...	--	8.4	104	--	--	--	--	--	--
14...	--	8.5	107	--	--	--	--	--	--
14...	--	8.8	110	--	--	--	--	--	--
14...	--	9.0	113	--	--	--	--	--	--
14...	6.2	8.6	108	850	700	160	110	86	18

RED RIVER BASIN

243

353325099111000 FOSS RESERVOIR AT SITE NO. 1 NEAR FOSS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS- SOLVED (MG/L AS C02)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
FEB								
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
JUN								
14...	--	--	--	--	--	--	--	--
14...	1	10	137	2.1	800	52	1420	1.9
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	1	9.7	147	1.8	800	48	1410	1.9
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	1	9.2	152	2.3	790	48	1420	1.9

RED RIVER BASIN

353405099132500 FOSS RESERVOIR AT SITE NO. 2 NEAR FOSS OK

LOCATION.--Lat 35°34'05", long 99°13'25", in SE 1/4 sec.28, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 900 ft (274 m) from left edge of water on a bearing 155° from campgrounds on north shore.

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Samples were collected in a Kemmerer sampler. Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)
FEB								
10...	1010	730	80020	55.0	151000	1570	8.1	4.0
10...	1015	730	1028	50.0	151000	1570	8.1	4.0
10...	1020	730	1028	45.0	151000	1570	8.2	4.0
10...	1022	730	1028	40.0	151000	1570	8.2	4.0
10...	1024	730	1028	35.0	151000	1560	8.4	4.0
10...	1030	730	80020	30.0	151000	1560	8.1	4.0
10...	1031	730	1028	25.0	151000	1560	8.2	4.0
10...	1034	730	1028	20.0	151000	1560	8.2	4.0
10...	1036	730	1028	15.0	151000	1560	8.1	4.0
10...	1040	730	1028	10.0	151000	1560	8.1	4.0
10...	1045	730	80020	5.00	151000	1560	8.1	4.0
10...	1050	730	1028	1.00	151000	1560	8.1	4.0
JUN								
14...	1240	720	1028	21.0	156000	1780	7.9	24.0
14...	1244	720	1028	15.0	156000	1710	8.0	24.0
14...	1248	720	1028	10.0	156000	1720	8.0	24.0
14...	1253	720	1028	5.00	156000	1720	8.0	24.5
14...	1259	720	1028	1.00	156000	1720	7.8	24.5

DATE	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DJS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM
FEB									
10...	1.0	11.4	92	810	650	160	100	83	18
10...	--	11.5	92	--	--	--	--	--	--
10...	--	11.9	95	--	--	--	--	--	--
10...	--	12.0	96	--	--	--	--	--	--
10...	--	12.1	97	--	--	--	--	--	--
10...	1.0	12.0	97	810	650	160	100	81	18
10...	--	11.9	95	--	--	--	--	--	--
10...	--	12.1	97	--	--	--	--	--	--
10...	--	12.2	98	--	--	--	--	--	--
10...	--	12.0	96	--	--	--	--	--	--
10...	1.0	12.0	97	810	650	160	100	82	18
10...	--	11.9	95	--	--	--	--	--	--
JUN									
14...	--	8.3	105	--	--	--	--	--	--
14...	--	8.2	104	--	--	--	--	--	--
14...	--	8.3	105	--	--	--	--	--	--
14...	--	8.3	106	--	--	--	--	--	--
14...	--	8.4	107	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

RED RIVER BASIN

353615099135000 FOSS RESERVOIR AT SITE NO. 3 NEAR FOSS, OK

LOCATION.--Lat 35°36'15", long 99°13'50", in SE 1/4 sec.17, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 600 ft (183 m) from left edge of water on a bearing 240° from small tributary on north shore.

PERIOD OF RECORD.--Water years 1980 to current year.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM HG)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SAM- PLING DEPTH (FEET)	RESER- VOIR STORAGE (AC-FT)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB										
10...	1100	730	1028	46.0	151000	1560	8.1	4.0	11.8	94
10...	1101	730	1028	40.0	151000	1560	8.2	4.0	11.8	94
10...	1102	730	1028	35.0	151000	1560	8.2	4.0	11.8	94
10...	1103	730	1028	30.0	151000	1560	8.1	4.0	11.8	94
10...	1104	730	1028	25.0	151000	1560	8.2	4.0	11.7	94
10...	1105	730	1028	20.0	151000	1560	8.1	4.0	11.9	95
10...	1106	730	1028	15.0	151000	1550	8.2	4.0	11.8	94
10...	1107	730	1028	10.0	151000	1560	8.2	4.0	11.9	95
10...	1108	730	1028	5.00	151000	1560	8.2	4.5	11.6	94
10...	1109	730	1028	1.00	151000	1560	8.1	4.5	11.8	95
JUN										
14...	1310	720	1028	21.0	156000	1740	8.1	24.5	7.6	97
14...	1313	720	1028	15.0	156000	1740	8.2	24.5	8.4	107
14...	1317	720	1028	10.0	156000	1720	8.2	25.0	8.3	107
14...	1325	720	1028	5.00	156000	1710	8.3	25.0	8.4	108
14...	1330	720	1028	1.00	156000	1710	8.3	25.5	8.4	109

07324400 WASHITA RIVER NEAR FOSS, OK

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, Hydrologic Unit 11130302, on left bank on downstream side of pile bent of county road bridge, 0.4 mi (0.6 km) downstream from Oak Creek, 0.9 mi (1.4 km) downstream from Foss Dam, 2.5 mi (4.0 km) west of Stafford, 6.0 mi (9.7 km) north of Foss, and at mile 473.5 (761.9 km).

DRAINAGE AREA.--1,551 mi² (4,017 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1956 to April 1957, February to December 1958, July 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,560 ft (475.5 m) from preliminary survey by Topographic Division.

REMARKS.--Records poor. Except for 55 mi² (142.4 km²) intervening area, flow completely regulated since 1961 by Foss Reservoir (station 07324300).

AVERAGE DISCHARGE.--23 years, (water years 1962-84), 24.7 ft³/s (.700 m³/s), 17,900 acre-ft/yr (22.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 14,000 ft³/s (396 m³/s) Apr. 9, 1957, gage height, 20.40 ft (6.218 m), from rating curve extended above 3,600 ft³/s (102 m³/s) on basis of velocity-area study; no flow at times in 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1959 reached a stage of 23.4 ft (7.13 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 221 ft³/s (6.26 m³/s), Oct. 20, gage height, 10.09 ft (3.075 m); minimum daily discharge, 3.9 ft³/s (0.110 m³/s) Aug. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	11	9.4	7.4	6.2	7.0	8.0	6.0	5.4	5.4	3.9	6.4
2	5.5	11	9.4	6.9	6.2	6.8	8.0	6.4	5.2	5.0	3.9	6.5
3	5.7	10	10	7.8	6.2	6.5	8.1	6.2	5.6	4.8	4.2	6.4
4	5.3	10	9.6	9.6	6.2	6.2	8.0	6.1	6.2	5.0	4.4	6.3
5	5.5	10	9.1	8.9	6.4	5.8	7.8	5.4	5.7	5.3	4.7	6.0
6	6.4	10	9.4	8.4	6.0	5.5	7.5	5.6	5.5	5.4	5.1	6.3
7	8.3	10	9.6	8.1	5.8	5.5	7.4	5.5	5.8	4.9	5.5	6.5
8	6.9	9.1	9.1	8.4	6.4	6.0	6.8	5.5	5.6	4.3	5.9	6.9
9	6.9	8.6	8.1	8.4	6.7	6.0	6.2	6.4	5.9	4.9	7.1	6.2
10	6.7	8.6	7.6	7.8	6.7	6.8	6.5	7.4	8.0	4.3	6.9	7.0
11	6.2	8.6	7.8	7.8	6.0	6.8	7.0	5.3	18	8.6	6.9	7.0
12	6.2	8.6	7.4	7.0	5.8	7.0	7.2	5.5	6.0	6.0	6.6	7.0
13	6.4	8.6	7.8	6.5	5.8	7.5	7.4	5.5	17	5.5	8.3	6.8
14	6.2	8.6	8.1	6.4	5.9	8.0	7.4	5.5	6.3	5.9	7.7	6.8
15	6.2	8.1	6.4	6.2	6.0	8.7	7.3	5.3	5.6	5.3	6.9	6.9
16	6.4	8.1	5.5	6.0	6.2	8.8	7.3	6.4	5.7	5.3	6.7	6.9
17	9.4	8.1	5.5	5.6	6.4	8.1	7.0	5.3	5.8	5.3	6.5	6.7
18	8.3	8.1	5.5	5.4	7.1	7.8	6.9	5.5	6.1	5.3	6.0	6.5
19	19	8.1	5.3	5.0	6.9	7.2	6.8	6.0	7.6	5.3	6.4	6.2
20	168	8.4	5.3	5.2	6.8	7.4	6.5	6.0	7.2	5.3	6.4	6.4
21	34	8.6	5.3	5.0	6.6	7.6	6.3	6.9	8.5	5.3	6.3	6.7
22	15	8.6	5.8	5.2	6.9	8.7	6.2	7.4	6.2	5.0	6.4	6.7
23	12	8.4	6.2	5.4	7.1	10	6.0	6.7	5.8	4.8	6.3	6.7
24	12	8.9	5.3	5.5	7.4	11	6.0	6.0	5.4	4.8	6.3	6.9
25	12	9.1	5.5	5.1	7.4	9.2	6.0	5.8	5.0	4.8	6.4	6.9
26	12	9.1	6.2	5.2	7.6	8.0	6.2	6.7	6.1	4.8	6.3	6.4
27	12	9.1	6.9	5.4	7.6	8.0	6.4	6.9	6.0	4.6	5.6	6.0
28	12	8.6	7.4	5.4	7.6	9.0	6.4	10	5.9	4.6	6.4	6.0
29	12	8.9	7.1	6.0	7.6	8.5	6.3	7.1	5.7	4.6	6.6	6.2
30	12	9.1	6.9	6.0	---	7.8	6.0	5.8	5.3	4.3	6.6	6.2
31	12	---	7.4	6.0	---	7.9	---	4.8	---	4.0	6.4	---
TOTAL	462.0	270.0	225.9	203.0	191.5	235.1	206.9	190.9	204.1	158.7	189.6	196.4
MEAN	14.9	9.00	7.29	6.55	6.60	7.58	6.90	6.16	6.80	5.12	6.12	6.55
MAX	168	11	10	9.6	7.6	11	8.1	10	18	8.6	8.3	7.0
MIN	5.3	8.1	5.3	5.0	5.8	5.5	6.0	4.8	5.0	4.0	3.9	6.0
AC-FT	916	536	448	403	380	466	410	379	405	315	376	390

CAL YR 1983	TOTAL	36868.0	MEAN	101	MAX	1300	MIN	4.3	AC-FT	73130
WTR YR 1984	TOTAL	2734.1	MEAN	7.47	MAX	168	MIN	3.9	AC-FT	5420

07324400 WASHITA RIVER NEAR FOSS, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-48, 1950-51, 1956, 1958, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1946 to September 1948, October 1969 to September 1976.

WATER TEMPERATURE: October 1946 to September 1948, October 1969 to September 1976.

REMARKS.--Samples were collected by a local observer on a weekly basis. A partial analysis was made bimonthly on one of these samples. Additional samples were collected semiannually and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)
NOV 21...	0900	--	80020	18	1560	7.8	10.0	--	--	--	--
DEC 15...	1030	730	80020	E5.8	1770	7.2	4.0	13.0	104	860	610
JAN 09...	0900	--	80020	2.1	1580	7.8	6.0	--	--	--	--
MAR 19...	0900	--	80020	7.2	1760	7.3	7.0	--	--	--	--
MAY 03...	1600	722	80020	6.2	1480	7.8	21.0	9.2	110	760	470
MAY 14...	0900	--	80020	1.5	1770	7.6	20.0	--	--	--	--
JUN 18...	0900	--	80020	6.7	2020	7.7	23.0	--	--	--	--
SEP 17...	0900	--	80020	6.7	2060	7.3	20.0	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV 21...	--	--	--	--	--	--	269	8.2	600	39
DEC 15...	180	100	68	15	1	6.6	257	31	650	41
JAN 09...	--	--	--	--	--	--	--	--	720	41
MAR 19...	--	--	--	--	--	--	--	--	730	43
MAY 03...	150	93	62	15	1	4.6	286	8.8	560	37
MAY 14...	--	--	--	--	--	--	--	--	760	47
JUN 18...	--	--	--	--	--	--	--	--	930	55
SEP 17...	--	--	--	--	--	--	--	--	1100	63

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 21...	--	--	1230	--	1.7	59	--	--	--	--
DEC 15...	.40	15	1280	1200	1.7	--	<.010	.29	<100	3
JAN 09...	--	--	1450	--	2.0	8.2	--	--	--	--
MAR 19...	--	--	1430	--	1.9	28	--	--	--	--
MAY 03...	.40	14	1170	1100	1.6	20	<.010	.17	200	4
MAY 14...	--	--	1430	--	1.9	5.8	--	--	--	--
JUN 18...	--	--	1780	--	2.4	32	--	--	--	--
SEP 17...	--	--	1850	--	2.5	33	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible]

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

[illegible]

07325000 WASHITA RIVER NEAR CLINTON, OK

LOCATION.--Lat 34°31'52", long 98°57'57", in SW 1/4 NE 1/4 sec.11, T.12 N., R.17 W., Custer County, Hydrologic Unit 11130302, on downstream side of pier of bridge on U.S. Highway 183, 0.5 mi (0.8 km) north of Clinton, 0.8 mi (1.3 km) upstream from Beaver Creek, 4.8 mi (7.7 km) downstream from Barnitz Creek, and at mile 447.4 (719.9 km).

DRAINAGE AREA.--1,977 mi² (5,120 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1221: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,467.60 ft (447.324 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to Mar. 19, 1941.

REMARKS.--Records fair. Flow regulated since February 1961 by Foss Reservoir (station 07324300) and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--(Prior to regulation by Foss Reservoir) 25 years (water years 1936-60), 146 ft³/s (4.135 m³/s), 105,700 acre-ft/yr (130 hm³/yr); (since regulation by Foss Reservoir) 24 years (water years 1961-84), 64.1 ft³/s (1.815 m³/s), 46,440 acre-ft/yr (57.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft³/s (1,890 m³/s) May 16, 1951, gage height, 31.09 ft (9.476 m), from rating curve extended above 7,900 ft³/s (224 m³/s) by contracted-opening measurement of peak flow; no flow at times in 1952-56, 1964, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3-4, 1934, reached a stage of 33.9 ft (10.33 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 410 ft³/s (11.6 m³/s) Oct. 21, gage height, 9.57 ft (2.917 m); minimum daily discharge, 7.3 ft³/s (.21 m³/s), Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	51	43	26	38	36	61	50	25	19	8.6	11
2	20	52	44	31	38	35	65	47	25	18	8.1	9.9
3	20	52	46	39	37	35	67	50	25	17	7.3	10
4	21	51	46	43	37	36	65	67	24	16	10	10
5	21	50	45	47	38	36	62	56	24	17	12	9.8
6	23	52	43	45	39	36	59	49	24	16	12	9.6
7	66	55	43	44	39	36	79	47	23	15	11	9.1
8	33	55	43	43	40	36	260	45	23	14	10	9.0
9	28	51	43	42	41	36	161	41	22	13	11	9.9
10	27	49	42	42	42	35	111	40	23	13	11	9.7
11	26	49	42	39	42	36	93	39	46	17	12	9.0
12	25	49	42	42	40	36	84	37	58	15	11	9.0
13	25	49	42	41	38	36	75	37	35	15	11	9.1
14	26	48	40	39	37	37	70	35	31	13	9.2	9.5
15	26	47	39	42	37	36	66	34	37	12	11	11
16	26	46	39	41	36	36	63	33	28	11	11	11
17	28	46	40	40	35	37	61	32	21	12	11	11
18	32	47	37	37	36	41	60	31	15	12	9.5	11
19	53	45	35	23	40	43	58	31	18	11	9.4	12
20	256	44	32	24	39	42	58	31	25	11	10	11
21	281	45	28	26	36	41	58	30	23	10	9.2	11
22	118	45	23	29	36	38	57	30	21	10	8.5	11
23	75	45	23	33	36	111	55	29	19	9.9	9.5	12
24	63	46	22	37	35	158	53	29	18	9.7	10	12
25	59	46	23	39	35	94	52	27	21	9.8	11	12
26	57	46	24	39	35	76	50	26	20	10	11	12
27	56	47	24	43	35	69	48	27	20	10	11	14
28	54	46	23	43	35	67	46	28	46	9.8	12	15
29	52	45	22	42	35	67	45	26	30	9.7	10	15
30	52	46	21	41	---	63	46	26	22	9.8	9.9	16
31	52	---	21	39	---	61	---	26	---	9.3	14	---
TOTAL	1721	1445	1080	1181	1087	1582	2188	1136	792	395.0	322.2	331.6
MEAN	55.5	48.2	34.8	38.1	37.5	51.0	72.9	36.6	26.4	12.7	10.4	11.1
MAX	281	55	46	47	42	158	260	67	58	19	14	16
MIN	20	44	21	23	35	35	45	26	15	9.3	7.3	9.0
AC-FT	3410	2870	2140	2340	2160	3140	4340	2250	1570	783	639	658
CAL YR 1983	TOTAL	57466		MEAN	157	MAX	4940	MIN	20	AC-FT	114000	
WTR YR 1984	TOTAL	13260.8		MEAN	36.2	MAX	281	MIN	7.3	AC-FT	26300	

07325500 WASHITA RIVER AT CARNEGIE, OK

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, Hydrologic Unit 11130302, on downstream side of right pier of bridge on State Highway 9, 1,300 ft (396.2 m) upstream from Running Creek, 2.7 mi (4.3 km) east of Carnegie, and at mile 353.9 (569.4 km). Records include flow of Running Creek.

DRAINAGE AREA.--3,129 mi² (8,104 km²), includes that of Running Creek.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year.

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,249.23 ft (380.765 m) National Geodetic Vertical Datum of 1929. Prior to October 1942, water-stage recorder at site 8.0 mi (12.9 km) upstream at datum 24.57 ft (7.489 m) higher.

REMARKS.--Records fair. Some diversion above station for irrigation. October 1942 to May 1949, occasional fluctuation caused by powerplant at Carnegie, 7.5 mi (12.1 km) above station. Some regulation by Foss Reservoir since February 1961 (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--(Prior to regulation by Foss Reservoir) 23 years (water years 1936-60), 314 ft³/s (8.892 m³/s), 277,500 acre-ft/yr (342 hm³/yr); (since regulation by Foss Reservoir) 23 years (water years 1962-84), 246 ft³/s (6.967 m³/s), 178,200 acre-ft/yr (220 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) May 18, 1949, gage height, 26.21 ft (7.989 m), from rating curve extended above 35,500 ft³/s (1,010 m³/s) on basis of contracted-opening measurement of peak flow, maximum gage height 26.70 ft (8.138 m) Oct. 20, 1983; no flow at times in 1956 and 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1903, reached a stage of about 29 ft (8.8 m) at former site and datum, from information by local resident; flood of May 18, 1949, reached a stage of 20.9 ft (6.37 m), from floodmark, at that site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,600 ft³/s (1,150 m³/s) 2200 Oct. 20, gage height 26.70 ft (8.138 m), no other peak above base of 3,000 ft³/s (85.0 m³/s); minimum daily discharge, 7.1 ft³/s (.20 m³/s) Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	1100	190	148	157	136	194	139	80	80	23	19
2	58	980	185	147	155	136	187	142	71	70	24	15
3	58	860	185	159	153	136	184	142	70	65	23	19
4	59	750	180	181	125	136	183	143	70	61	21	20
5	58	660	180	202	104	135	182	141	70	59	23	21
6	64	580	180	214	198	133	178	152	71	55	25	20
7	74	500	180	219	166	130	194	157	73	51	27	16
8	71	450	180	211	163	128	280	146	72	52	27	15
9	102	420	191	204	166	127	637	136	71	50	33	15
10	123	390	184	197	180	125	557	131	84	46	28	14
11	88	370	180	194	190	125	409	126	272	40	26	11
12	78	340	179	184	179	127	310	124	169	41	36	7.9
13	72	320	178	179	172	129	266	117	144	41	36	7.1
14	70	300	176	172	171	132	235	112	133	45	27	8.4
15	69	290	175	168	180	131	213	103	117	33	24	9.1
16	67	270	173	164	164	135	196	97	97	32	21	11
17	77	260	172	164	160	129	186	90	85	27	21	12
18	100	250	169	151	156	126	180	86	86	18	17	13
19	716	240	152	113	155	127	175	85	93	18	17	14
20	15800	230	126	140	155	136	172	86	100	18	18	14
21	22600	220	115	142	155	145	167	84	110	22	17	14
22	6870	210	142	186	155	147	163	85	95	17	15	19
23	4510	205	169	169	151	144	161	86	84	21	11	19
24	2840	200	158	168	146	260	158	87	80	20	12	17
25	2350	200	145	179	145	374	156	83	76	18	11	18
26	2000	200	141	178	143	435	154	80	72	18	10	18
27	1840	190	141	174	140	323	146	77	70	18	10	17
28	1700	190	147	169	138	255	141	80	69	22	11	18
29	1550	190	150	166	137	234	145	79	68	22	18	22
30	1400	190	148	164	---	238	141	80	68	26	30	24
31	1250	---	147	160	---	207	---	86	---	26	23	---
TOTAL	66772	11555	5118	5366	4559	5381	6650	3362	2820	1132	665	467.5
MEAN	2154	385	165	173	157	174	222	108	94.0	36.5	21.5	15.6
MAX	22600	1100	191	219	198	435	637	157	272	80	36	24
MIN	58	190	115	113	104	125	141	77	68	17	10	7.1
AC-FT	132400	22920	10150	10640	9040	10670	13190	6670	5590	2250	1320	927
CAL YR 1983	TOTAL	179334		MEAN	491	MAX	22600	MIN	58	AC-FT	355700	
WTR YR 1984	TOTAL	113847.5		MEAN	311	MAX	22600	MIN	7.1	AC-FT	225800	

07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1953 to September 1976.

WATER TEMPERATURE: October 1953 to September 1976.

REMARKS.--Samples were collected by a local observer on a weekly basis. A partial analysis was made bimonthly on one of these samples. Additional samples were collected semiannually and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CAC03)	HARD-NESS, NONCAR-BONATE (MG/L CAC03)
NOV 15...	1000	--	80020	290	2060	7.8	11.0	--	--	--	--
23...	1130	730	80020	205	2200	7.7	8.5	10.8	97	1100	830
JAN 19...	1400	--	80020	113	2360	7.6	.0	--	--	--	--
FEB 03...	1300	--	80020	149	2360	7.7	8.0	--	--	--	--
APR 13...	1300	--	80020	265	1850	7.8	19.0	--	--	--	--
MAY 18...	1415	734	80020	86	2400	8.2	24.5	11.4	143	1200	980
JUN 28...	1800	--	80020	69	2330	7.5	32.0	--	--	--	--
AUG 30...	1700	--	80020	25	2450	7.5	32.0	--	--	--	--
DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	CARBON DIOXIDE DIS-SOLVED (MG/L AS C02)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV 15...	--	--	--	--	--	--	253	7.7	760	100	--
23...	290	100	120	19	2	4.0	305	12	910	120	.40
JAN 19...	--	--	--	--	--	--	--	--	890	120	--
FEB 03...	--	--	--	--	--	--	--	--	1100	110	--
APR 13...	--	--	--	--	--	--	--	--	820	79	--
MAY 18...	290	110	130	19	2	4.4	199	2.4	1200	130	.30
JUN 28...	--	--	--	--	--	--	--	--	1000	130	--
AUG 30...	--	--	--	--	--	--	--	--	1000	210	--
DATE	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N03)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N02)	NITRO-GEN, NO2+N03 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
NOV 15...	--	1570	--	2.1	1230	--	--	--	--	--	--
23...	22	1910	1800	2.6	1060	2.0	8.9	.030	.10	2.0	<100
JAN 19...	--	2020	--	2.7	616	--	--	--	--	--	--
FEB 03...	--	2150	--	2.9	865	--	--	--	--	--	--
APR 13...	--	1550	--	2.1	1110	--	--	--	--	--	--
MAY 18...	13	2070	2000	2.8	481	--	--	--	--	<.10	<100
JUN 28...	--	1900	--	2.6	354	--	--	--	--	--	--
AUG 30...	--	2090	--	2.8	158	--	--	--	--	--	--

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

[illegible]

07325800 COBB CREEK NEAR EAKLY, OK

LOCATION.--Lat 35°17'26", long 98°35'38", in NW 1/4 NE 1/4 sec.5, T.9 N., R.13 W., Caddo County, Hydrologic Unit 11130302, near left downstream abutment of bridge, on State Highway 152, 0.5 mi (0.8 km) downstream from Fivemile Creek, 2.4 mi (3.9 km) southwest of Eakly, 3.0 mi (4.8 km) upstream from Fort Cobb Reservoir, and at mile 22.9 (36.8 km).

DRAINAGE AREA.--132 mi² (342 km²).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,369.70 ft (417.485 m) National Geodetic Vertical Datum of 1929. Oct. 29, 1980 to Aug. 11, 1982 gage at site 0.5 mi (0.8 km) downstream at same datum.

REMARKS.--Records poor. Some regulation by three small reservoirs having combined surface-area of 262 acres (1.06 km²) and capacity of 3,100 acre-ft (3.82 hm³).

AVERAGE DISCHARGE.--16 years, 20.7 ft³/s (0.586 m³/s), 5,000 acre-ft/yr (18.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 8,680 ft³/s (2,410 m³/s) May 17, 1982, gage height 21.08 ft (6.425 m) from floodmark, no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,860 ft³/s (80.9 m³/s) Oct. 20, gage height, 19.05 ft (5.806 m); minimum daily, 1.5 ft³/s (0.042 m³/s) Sept. 1, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	16	13	14	12	17	13	13	7.3	5.4	2.9	1.5
2	4.2	16	13	16	12	17	13	13	6.8	5.4	2.8	1.8
3	3.8	16	14	17	12	16	13	13	7.0	5.3	2.7	2.3
4	3.5	14	15	17	12	16	13	13	7.2	5.0	2.7	2.4
5	3.4	14	14	16	12	16	13	12	7.3	5.0	2.9	2.1
6	3.4	13	14	16	12	16	13	12	7.0	4.5	2.9	1.8
7	3.4	15	14	15	12	16	22	12	6.8	4.0	2.9	1.8
8	3.3	14	14	15	14	16	29	12	6.3	3.5	2.8	1.9
9	3.3	13	14	15	14	16	16	12	7.9	3.3	3.3	1.8
10	3.3	14	14	15	14	16	15	11	28	3.3	3.6	1.9
11	3.3	12	14	16	13	16	14	9.9	13	3.3	3.6	1.6
12	3.3	12	15	15	13	17	13	9.7	8.9	3.6	3.3	1.5
13	3.3	12	14	14	13	17	13	9.7	7.7	3.8	3.0	1.6
14	3.2	12	15	14	13	17	12	9.4	7.3	3.5	2.9	1.7
15	3.2	12	15	14	13	17	12	9.0	8.7	3.2	2.8	2.0
16	3.2	12	14	14	13	17	12	9.0	7.3	3.3	2.5	2.3
17	3.2	12	14	14	17	17	12	8.8	6.6	3.8	2.4	2.5
18	3.2	12	13	13	16	17	13	8.8	6.6	3.5	2.1	2.6
19	281	12	13	13	16	18	13	11	7.1	3.3	2.1	2.6
20	1810	13	13	13	16	17	13	9.5	7.3	3.0	2.3	2.6
21	254	13	13	13	15	16	13	9.2	7.1	3.0	2.3	2.4
22	74	13	13	13	15	16	13	8.9	6.2	3.0	2.0	2.7
23	42	16	13	13	15	27	13	8.6	6.1	2.9	2.0	2.7
24	28	15	13	13	16	22	13	8.5	6.2	3.0	1.8	2.6
25	23	14	13	13	16	18	13	8.1	5.9	3.0	2.1	2.3
26	20	14	13	13	16	16	13	7.7	6.7	3.1	2.0	2.6
27	19	15	13	13	17	14	13	8.2	6.7	3.3	1.9	2.9
28	18	15	13	13	18	15	12	11	6.5	3.4	1.8	3.0
29	17	15	13	12	18	14	12	8.3	6.1	3.4	2.0	3.0
30	17	13	13	12	---	13	12	8.0	5.7	3.5	1.7	3.6
31	17	---	13	12	---	13	---	7.8	---	3.3	1.6	---
TOTAL	2682.0	409	422	436	415	516	414	312.1	235.3	113.9	77.7	68.1
MEAN	86.5	13.6	13.6	14.1	14.3	16.6	13.8	10.1	7.84	3.67	2.51	2.27
MAX	1810	16	15	17	18	27	29	13	28	5.4	3.6	3.6
MIN	3.2	12	13	12	12	13	12	7.7	5.7	2.9	1.6	1.5
AC-FT	5320	811	837	865	823	1020	821	619	467	226	154	135
CAL YR 1983	TOTAL	8459.9		MEAN	23.2	MAX	1810	MIN	3.2	AC-FT	16780	
WTR YR 1984	TOTAL	6101.1		MEAN	16.7	MAX	1810	MIN	1.5	AC-FT	12100	

RED RIVER BASIN

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07325900 FORT COBB RESERVOIR NEAR FORT COBB, OK

LOCATION.--Lat 35°09'30", long 98°27'40", in SE 1/4 sec.21, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130382, in control house at right center of dam on Cobb Creek, 4.0 mi (6.4 km) northwest of Fort Cobb, and at mile 7.5 (12.1 km).

DRAINAGE AREA.--304 mi² (787 km²).

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to October, 1961, nonrecording gage at same datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of two sets of controlled 5 ft x 5 ft steel gages and an uncontrolled concrete spillway. Storage began Mar. 30, 1959. Conservation pool was first filled in June 1962. Capacity, 143,700 acre-ft (177 hm³) at elevation 1,354.8 ft (412.94 m) crest of drop inlet, 80,010 acre-ft (98.7 hm³) at elevation 1,342.0 ft (409.04 m) conservation pool, and 1,664 acre-ft (2.05 hm³) at elevation 1,300.0 ft (396.24 m) crest of gated outlet. Figures given herein represent total contents. Reservoir is used for flood control, for municipal and industrial water supply, and for irrigation releases. Revised capacity table used since May 1, 1964.

COOPERATION.--Elevations and data on diversions furnished by Fort Cobb Reservoir Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 114,200 acre-ft (141 hm³) June 4, 1982, elevation, 1,349.44 ft (411.309 m); minimum since conservation pool was first filled, 54,650 acre-ft (67.4 hm³) Oct. 19, 1972, elevation 1,335.06 ft (406.926 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 88,860 acre-ft (110 hm³) Oct. 25, elevation, 1,344.09 ft (409.679 m); minimum, 64,790 acre-ft (79.9 hm³) Sept. 28, 30, elevation 1,338.04 ft (407.835 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1340.27	73,120	-	-
Oct. 31.....	1343.30	85,450	+12,330	984
Nov. 30.....	1341.93	79,720	-5,730	721
Dec. 31.....	1341.90	79,600	-120	736
CAL YR 83.....	-	-	+6,520	9,813
Jan. 31.....	1342.03	80,130	+530	848
Feb. 29.....	1342.50	82,070	+1,940	823
Mar. 31.....	1342.02	80,090	-1,980	867
Apr. 30.....	1342.12	80,500	+410	791
May 31.....	1341.71	78,830	-1,670	837
June 30.....	1341.49	77,940	-890	918
July 31.....	1340.51	74,060	-3,880	1,091
Aug. 31.....	1339.28	69,350	-4,710	1,174
Sept. 30.....	1338.04	64,790	-4,560	1,056
WTR YR 84.....	-	-	-8,330	10,846

*Elevation at 0800 on following day.

07326000 COBB CREEK NEAR FORT COBB, OK

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, Hydrologic Unit 11130302, on left bank 10 ft (3.0 m) upstream from county road bridge, 0.3 mi (0.5 km) upstream from Punjo Creek, 1.2 mi (1.9 km) downstream from Fort Cobb Dam, 3.0 mi (4.8 km) north of Fort Cobb, and at mile 5.8 (9.3 km).

DRAINAGE AREA.--313 mi² (811 km²). Area at site used prior to Oct. 1, 1969, 319 mi² (826 km²).

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1960, published as Pond Creek near Fort Cobb.

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.49 ft (382.369 m) U.S. Bureau of Reclamation datum. Oct. 1, 1969 to Sept. 30, 1982 gage at same site and datum 5.00 ft (1.524 m) higher. Oct. 1, 1939, to Aug. 29, 1940, nonrecording gage and Aug. 30, 1940, to Sept. 30, 1969, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 1.92 ft (0.585 m) lower.

REMARKS.--Records poor. Flow regulated since March 1959 by Fort Cobb Reservoir (station 07325900).

AVERAGE DISCHARGE.--(Prior to regulation by Fort Cobb Reservoir) 19 years (water years 1940-58), 50.2 ft³/s (1.42 m³/s) 36,340 acre-ft/yr (44.8 hm³/yr); (since regulation by Fort Cobb Reservoir) 26 years (water years 1959-84), 17.8 ft³/s (0.504 m³/s), 12,900 acre-ft/yr (15.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) May 17, 1949, gage height, 18.72 ft (5.706 m), from floodmark in gage well at former site and datum, from rating curve extended above 4,300 ft³/s (122 m³/s) on basis of contracted-opening measurements at gage heights 16.62 ft (5.066 m), 17.58 ft (5.358 m) and 18.72 ft (5.706 m), at former site and datum; minimum daily, 0.2 ft³/s (0.006 m³/s) Sept. 20, 24-28, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1937, reached a stage of 19.3 ft (5.88 m), site and datum used in 1939, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 396 ft³/s (11.2 m³/s) Nov. 3, gage height 12.13 ft (3.697 m); minimum daily discharge, 1.1 ft³/s (0.031 m³/s) July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	312	2.2	2.2	2.7	32	3.7	4.0	1.9	2.1	2.3	24
2	3.3	311	2.0	2.2	2.6	57	3.4	4.0	1.9	2.1	10	24
3	3.1	347	2.0	2.2	2.7	57	3.4	3.8	2.0	2.1	11	25
4	3.4	375	2.0	2.3	2.9	59	3.3	3.5	1.9	2.1	11	24
5	3.5	374	2.0	2.3	2.9	59	3.2	3.4	2.3	2.1	11	24
6	3.8	374	2.0	2.3	3.0	59	3.1	3.4	3.1	2.1	14	23
7	4.1	372	2.0	2.3	2.6	58	6.7	3.3	3.0	2.1	27	24
8	4.0	317	2.0	2.4	2.7	57	12	3.1	5.7	2.1	26	20
9	3.8	30	2.0	2.4	2.9	57	4.0	3.2	2.3	1.2	26	1.3
10	3.6	6.0	2.0	2.4	2.8	57	3.8	3.3	2.8	1.2	26	1.5
11	3.4	5.0	2.0	2.4	2.9	56	3.7	3.3	2.3	1.3	26	1.5
12	3.4	4.0	2.0	2.6	2.7	57	3.5	3.2	2.2	1.9	26	1.7
13	3.4	3.0	2.0	2.9	2.7	90	3.4	3.0	1.9	1.4	26	1.5
14	3.4	2.5	2.0	3.1	2.7	124	3.6	3.1	1.9	1.3	24	1.3
15	3.4	2.5	2.0	3.1	2.8	124	3.6	3.3	2.0	1.3	24	1.4
16	3.4	2.5	2.0	3.1	3.0	122	3.6	2.6	2.0	2.0	24	1.4
17	4.5	2.5	2.0	3.1	3.0	63	3.6	2.0	2.0	2.4	24	1.4
18	4.4	2.5	2.0	3.0	3.4	5.0	3.6	1.8	2.1	2.2	24	1.4
19	62	2.5	2.0	3.0	3.2	4.2	3.7	2.4	2.5	2.0	24	1.4
20	222	2.5	2.0	3.0	3.4	3.9	3.8	2.8	2.3	2.0	25	1.4
21	26	2.5	2.0	3.3	3.5	3.7	3.7	2.5	2.5	2.1	25	1.4
22	14	2.5	2.0	3.2	3.4	3.9	3.5	1.7	2.1	2.2	24	1.3
23	11	2.5	2.0	3.1	3.1	6.2	3.0	2.0	2.6	1.5	23	1.3
24	11	2.5	2.0	3.1	3.1	3.9	3.2	2.6	2.6	1.6	23	1.4
25	9.7	2.5	2.0	3.3	3.1	3.4	3.4	2.6	2.1	1.3	23	1.2
26	124	2.5	2.0	2.8	3.8	62	3.4	2.6	2.3	1.4	23	1.3
27	281	2.5	2.0	2.7	4.0	127	3.4	2.8	2.2	1.4	23	1.4
28	315	2.5	2.2	2.7	3.4	126	3.4	3.1	2.2	1.3	23	1.6
29	315	2.5	2.2	2.7	3.5	126	4.1	2.7	2.1	1.4	24	1.5
30	313	2.5	2.2	2.7	---	63	3.9	2.1	2.1	1.4	24	1.4
31	313	---	2.2	2.7	---	4.1	---	1.9	---	1.1	24	---
TOTAL	2080.8	2872.5	63.0	84.6	88.5	1730.3	117.7	89.1	70.9	53.7	670.3	219.0
MEAN	67.1	95.7	2.03	2.73	3.05	55.8	3.92	2.87	2.36	1.73	21.6	7.30
MAX	315	375	2.2	3.3	4.0	127	12	4.0	5.7	2.4	27	25
MIN	2.2	2.5	2.0	2.2	2.6	3.4	3.0	1.7	1.9	1.1	2.3	1.2
AC-FT	4130	5700	125	168	176	3430	233	177	141	107	1330	434
CAL YR 1983	TOTAL	7588.1	MEAN	20.8	MAX	375	MIN	1.1	AC-FT	15050		
WTR YR 1984	TOTAL	8140.4	MEAN	22.2	MAX	375	MIN	1.1	AC-FT	16150		

07326500 WASHITA RIVER AT ANADARKO, OK

LOCATION.--Lat 35°05'06", long 98°14'35", in NW 1/4 sec.15, T.7 N., R.10 W., Caddo County, Hydrologic Unit 11130302 at left bank 100 ft (30.48 m) upstream from bridge on U.S. Highway 281 at north edge of Anadarko, 8.1 mi (13.0 km) upstream from Sugar Creek, and at mile 305.2 (491.1 km).

DRAINAGE AREA.--3,656 mi² (9,460 km²).

PERIOD OF RECORD.--October 1902 to September 1908; June 1924 to June 1925, published as "near Anadarko", October 1935 to February 1938; October 1963 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1903, 1907-08, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,150.00 ft (350.520 m) National Geodetic Vertical Datum of 1929. October 26, 1902, to June 30, 1908, nonrecording gage at former bridge 125 ft (38.1 m) downstream at datum estimated to be 2.8 ft (0.85 m) higher. May 25, 1924, to June 30, 1925, nonrecording gage at county road bridge 14 mi (22.5 km) downstream at different datum. Jan. 10, 1936, to Mar. 7, 1938, non-recording gage on upstream side of bridge on U.S. Highway 281 at datum 1.88 ft (0.573 m) higher.

REMARKS.--Records fair. Some regulation by low-water dams upstream and since March 1959, by Fort Cobb Reservoir (station 07325900), since February 1961, by Foss Reservoir (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--27 years (water years 1903-08, 1936-37, 1964-84), 376 ft³/s (10.65 m³/s), 272,400 acre-ft/yr (336 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,700 ft³/s (1,065 m³/s) Oct. 21, 1983, gage height, 25.20 ft (7.681 m) HWM; no flow Aug. 1, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1949, reached an elevation of 1,176.7 ft (358.66 m), from floodmark, at right bank on downstream side of bridge on U.S. Highway 281.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 44,700 ft³/s (1,065 m³/s) Oct. 21, gage height, 25.20 ft (7.681 m) HWM, no other peak above base of 3,000 ft³/s (85.0 m³/s); minimum daily discharge, 29 ft³/s (6.82 m³/s) Sept. 11-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	1930	330	213	214	195	269	260	110	84	47	37
2	73	1820	323	211	207	195	248	252	100	82	45	36
3	73	1740	321	223	203	215	237	244	102	82	45	35
4	73	1730	318	228	200	227	226	229	98	82	44	35
5	73	1650	315	234	198	231	223	214	100	82	43	34
6	75	1520	310	253	204	233	232	202	102	87	43	34
7	78	1390	308	271	204	233	263	195	103	83	42	33
8	85	1280	303	277	211	231	422	195	105	81	42	32
9	88	1130	299	272	196	229	463	192	120	78	42	31
10	89	1050	299	264	199	229	667	181	152	74	43	30
11	130	986	295	254	208	229	629	171	130	75	43	29
12	110	903	291	246	221	234	502	164	274	75	43	29
13	94	820	286	237	218	237	402	161	239	72	44	29
14	88	746	281	233	213	247	349	158	202	69	47	29
15	84	682	277	224	212	289	312	155	177	65	49	30
16	83	623	273	219	208	302	299	148	165	63	47	31
17	90	579	269	213	203	309	277	140	155	62	47	31
18	97	545	263	212	204	306	265	135	145	60	45	32
19	274	515	258	200	204	229	256	130	140	59	45	32
20	5000	487	255	193	202	208	252	125	135	57	44	32
21	37700	464	251	195	204	209	252	125	130	56	44	32
22	13700	443	245	200	206	218	252	124	155	53	43	31
23	7500	423	235	215	204	448	252	122	135	52	42	32
24	5000	402	233	220	199	359	252	120	120	52	41	32
25	3750	385	225	219	195	340	252	118	110	50	41	32
26	2870	377	228	222	192	450	260	112	100	50	41	33
27	2660	370	220	226	193	535	269	108	96	49	40	33
28	2480	361	217	229	198	541	273	110	92	48	40	33
29	2260	350	210	226	198	471	265	108	90	48	40	33
30	2090	341	210	223	---	416	260	108	86	47	40	33
31	2030	---	228	219	---	363	---	104	---	47	38	---
TOTAL	88874	26042	8376	7071	5918	9158	9380	4910	3968	2024	1340	965
MEAN	2867	868	270	228	204	295	313	158	132	65.3	43.2	32.2
MAX	37700	1930	330	277	221	541	667	260	274	87	49	37
MIN	73	341	210	193	192	195	223	104	86	47	38	29
AC-FT	176300	51650	16610	14030	11740	18160	18610	9740	7870	4010	2660	1910
CAL YR 1983	TOTAL	228395	MEAN	626	MAX	37700	MIN	73	AC-FT	453000		
WTR YR 1984	TOTAL	168026	MEAN	459	MAX	37700	MIN	29	AC-FT	333300		

07327490 LITTLE WASHITA RIVER NEAR NINNEKAH, OK

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, Hydrologic Unit 11130302, at left bank on downstream side of bridge on U.S. Highway 81, 1.0 mi (1.6 km) upstream from Rock Creek, 1.5 mi (2.4 km) west of Ninneka, 5.5 mi (8.8 km) south of Chickasha, and at mile 8.4 (13.5 km).

DRAINAGE AREA.--208 mi² (539 km²).

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WDR OK-64(M), OK-65(M), OK-71.

GAGE.--Water-stage recorder. Datum of gage is 1,065.94 ft (324.899 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Small diversions above station for irrigation.

COOPERATION.--Records furnished by Agricultural Research Service.

AVERAGE DISCHARGE.--21 years, 31.5 ft³/s (0.892 m³/s), 22,820 acre-ft/yr (28.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,380 ft³/s (226 m³/s) Oct. 20, 1983, gage height, 25.00 ft (7.620 m); no flow at times in most years.

EXTREMES FOR CURRENT PERIOD.--Water year 1983; maximum discharge 392 ft³/s (11.1 m³/s) June 27, gage height, 11.43 ft (3.484 m), no peak above base of 1,500 ft³/s (42.5 m³/s); minimum daily discharge, 0.60 ft³/s (0.017 m³/s) Sept. 7.

Water Year 1984: Maximum discharge, 9,380 ft³/s (266 m³/s) 0600 Oct. 20, gage height, 25.00 ft (7.620 m), no other peak above base of 1,500 ft³/s (42.5 m³/s); minimum daily discharge 0.30 ft³/s (0.008 m³/s) Sept. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	21	28	219	26	42	24	30	38	4.0	1.3
2	19	16	21	44	105	26	43	23	27	22	3.7	1.1
3	30	16	22	43	61	26	32	22	24	16	3.4	1.0
4	20	17	26	35	55	31	29	20	21	13	3.1	1.0
5	19	17	26	36	56	31	133	20	20	12	4.0	1.0
6	18	18	50	39	59	27	87	18	21	11	3.7	.80
7	18	18	24	36	49	26	59	16	20	10	6.6	.60
8	17	18	23	32	44	24	46	15	17	10	9.7	.80
9	17	18	23	31	47	24	46	15	16	10	7.0	.80
10	16	16	25	30	46	24	38	16	15	10	5.4	.80
11	15	18	33	28	41	22	34	18	26	9.7	4.7	.80
12	15	21	31	26	36	22	31	19	24	9.2	4.0	.80
13	15	20	26	27	33	22	27	20	24	9.2	3.7	1.8
14	13	18	24	27	33	23	26	149	30	8.7	3.4	2.0
15	13	17	24	27	30	24	24	84	27	8.7	3.1	2.0
16	13	16	23	26	29	34	23	16	22	8.7	2.5	2.0
17	13	16	23	27	27	38	24	31	18	8.3	1.8	1.8
18	13	18	23	30	27	31	25	40	16	7.4	1.3	1.6
19	13	19	23	39	29	27	28	30	15	6.2	2.0	1.8
20	13	20	22	41	86	29	29	28	13	5.4	4.0	2.5
21	13	20	22	40	50	31	30	60	12	5.4	2.8	2.5
22	13	20	22	40	49	29	30	41	11	4.7	1.8	2.5
23	13	22	20	40	37	30	30	84	10	4.0	1.8	2.8
24	13	15	31	37	31	33	29	41	10	4.0	1.8	2.5
25	14	22	32	33	31	36	29	30	12	4.3	1.8	2.5
26	14	61	28	33	29	255	28	33	12	4.0	1.6	2.5
27	13	79	43	33	27	135	28	27	216	4.0	1.6	2.5
28	15	55	46	31	25	63	27	37	193	4.0	1.3	2.8
29	17	37	36	31	---	57	27	34	76	3.4	1.3	3.1
30	17	28	30	30	---	52	25	31	44	4.3	1.3	3.1
31	16	---	28	81	---	48	---	31	---	4.3	1.3	---
TOTAL	484	712	851	1081	1391	1306	1109	1073	1022	279.9	99.5	53.10
MEAN	15.6	23.7	27.5	34.9	49.7	42.1	37.0	34.6	34.1	9.03	3.21	1.77
MAX	30	79	50	81	219	255	133	149	216	38	9.7	3.1
MIN	13	15	20	26	25	22	23	15	10	3.4	1.3	.60
AC-FT	960	1410	1690	2140	2760	2590	2200	2130	2030	555	197	105
CAL YR 1982	TOTAL	17956.3		MEAN	49.2	MAX	1120	MIN	7.0	AC-FT	35620	
WTR YR 1983	TOTAL	9461.50		MEAN	25.9	MAX	255	MIN	.60	AC-FT	18770	

RED RIVER BASIN

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07327490 LITTLE WASHITA RIVER NEAR NINNEKAH, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	64	34	15	36	32	45	32	19	8.5	3.3	3.3
2	2.5	56	33	25	37	32	47	33	19	8.1	3.6	7.6
3	2.8	54	59	30	37	33	45	32	18	8.1	3.9	9.5
4	2.8	52	52	35	35	36	39	31	18	8.1	3.9	7.6
5	2.8	46	46	40	34	36	37	31	32	8.1	10	5.2
6	3.1	54	44	42	33	34	37	30	184	7.6	12	2.7
7	5.8	51	44	42	32	32	87	28	45	6.4	7.2	1.5
8	7.8	47	44	42	34	32	173	26	25	5.2	5.6	1.5
9	7.0	45	43	40	55	31	92	22	22	4.9	5.6	1.9
10	5.4	45	44	41	48	31	61	22	20	4.5	6.0	.90
11	5.4	43	45	42	43	34	50	20	18	4.9	6.0	.40
12	5.8	42	41	42	40	88	42	19	16	5.2	6.4	.30
13	5.4	41	42	35	37	63	37	18	14	5.6	5.6	.30
14	5.0	41	44	30	36	51	37	18	11	4.9	4.9	.30
15	5.0	41	40	20	35	45	37	20	9.9	4.5	3.9	.40
16	5.0	40	36	13	35	42	36	18	9.9	4.5	3.3	.50
17	20	40	34	7.6	34	39	32	17	9.5	5.2	2.7	.80
18	24	40	35	6.8	76	38	32	17	11	4.5	2.7	3.0
19	1260	40	25	6.8	58	43	32	17	13	3.9	3.0	1.5
20	7680	40	20	6.8	43	40	32	18	15	3.9	3.3	.80
21	1980	40	17	6.8	40	36	32	20	15	3.9	2.7	.60
22	1220	125	15	9.0	38	34	32	20	13	3.9	3.3	.60
23	953	106	13	20	36	329	31	19	12	3.6	3.0	.40
24	764	78	12	32	34	197	30	18	11	4.2	2.7	.40
25	542	47	10	40	32	92	30	18	11	4.5	2.4	10
26	447	38	10	42	37	56	30	18	11	4.2	1.7	14
27	378	37	8.7	40	49	52	28	18	11	4.9	.90	7.6
28	289	36	8.7	37	40	100	27	20	10	5.2	1.5	7.2
29	152	36	8.7	37	33	58	31	22	9.5	4.2	.60	6.4
30	102	35	8.7	37	---	48	33	19	9.0	3.9	3.6	6.0
31	82	---	8.7	37	---	49	---	19	---	3.6	1.9	---
TOTAL	15967.7	1500	925.5	899.8	1157	1863	1334	680	641.8	162.7	127.20	103.20
MEAN	515	50.0	29.9	29.0	39.9	60.1	44.5	21.9	21.4	5.25	4.10	3.44
MAX	7680	125	59	42	76	329	173	33	184	8.5	12	14
MIN	2.5	35	8.7	6.8	32	31	27	17	9.0	3.6	.60	.30
AC-FT	31670	2980	1840	1780	2290	3700	2650	1350	1270	323	252	205
CAL YR 1983	TOTAL	25807.70		MEAN	70.7	MAX	7680	MIN	.60	AC-FT	51190	
WTR YR 1984	TOTAL	25361.90		MEAN	69.3	MAX	7680	MIN	.30	AC-FT	50310	

07328070 WINTER CREEK NEAR ALEX, OK

LOCATION.--Lat 34°59'35", long 97°45'40", in NE 1/4 sec.18, T.6 N., R.5 W., Grady County, Hydrologic Unit 11130303, at left bank 1,000 ft (304.8 m) downstream from county road bridge, 0.7 mi (1.1 km) downstream from East Winter Creek, 3.2 mi (5.2 km) upstream from mouth, and 5.5 mi (8.9 km) north of Alex.

DRAINAGE AREA.--33 mi² (86 km²).

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and broad crest V-notch weir. Datum of gage is 1,040.00 ft (316.992 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977 at datum 8.20 ft (2.499 m) higher.

REMARKS.--Records poor October to February and fair March to September. Flow regulated by 16 flood-retarding structures, combined capacity, 1,050 acre-ft (1.29 hm³). Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--20 years, 9.23 ft³/s (0.261 m³/s), 6,690 acre-ft/yr (8.25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,080 ft³/s (172 m³/s) May 27, 1978, gage height, 17.35 ft (5.288 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,840 ft³/s (165 m³/s) Oct. 20, gage height, 17.19 ft (5.240 m) from high-water mark, no other peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge, 0.87 ft³/s (0.025 m³/s) Oct. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	18	11	11	8.4	7.0	8.9	10	3.6	2.1	2.1	1.8
2	.87	17	11	11	8.2	6.3	9.1	11	3.6	2.1	2.1	1.9
3	.87	16	12	11	8.2	7.1	7.7	12	3.8	2.2	2.1	2.2
4	2.0	15	13	11	8.2	7.1	7.3	11	3.9	2.3	2.0	2.4
5	.92	15	11	11	8.2	7.5	8.0	11	5.2	2.4	2.0	1.9
6	1.1	19	9.1	11	8.2	7.4	7.0	11	33	2.1	2.0	1.8
7	2.3	17	9.9	11	8.2	6.7	26	10	11	1.8	2.0	1.7
8	2.3	15	9.6	11	15	6.4	34	9.8	7.8	1.7	2.0	1.7
9	2.2	15	9.5	10	25	7.2	25	8.9	5.4	2.3	1.9	1.6
10	1.8	14	11	9.9	18	7.2	20	8.3	8.4	2.3	1.9	1.5
11	2.3	13	10	9.9	13	8.1	19	7.6	5.6	2.4	1.9	1.5
12	2.7	13	10	8.8	10	13	16	7.8	4.1	2.8	1.9	1.4
13	2.1	12	10	8.5	9.5	10	15	7.4	3.2	2.9	1.9	1.4
14	1.9	12	11	8.5	9.2	9.5	14	7.6	2.8	2.4	1.9	1.4
15	1.8	12	9.8	8.9	9.0	8.7	13	7.7	2.5	2.3	1.9	1.4
16	1.6	12	10	9.7	9.0	8.5	13	7.2	2.2	2.7	1.8	1.4
17	3.4	12	11	8.6	8.8	8.4	13	7.3	1.8	3.0	1.8	1.4
18	9.4	12	11	8.8	20	8.6	13	6.6	2.5	2.2	1.8	1.3
19	335	11	11	8.8	13	7.9	12	6.6	16	2.2	1.8	1.3
20	3300	11	11	8.6	9.0	8.0	12	5.6	5.5	2.2	1.8	1.3
21	500	11	11	8.6	8.2	7.7	11	5.5	2.9	2.1	1.8	1.4
22	400	20	11	8.4	7.7	7.9	11	5.4	2.4	2.2	1.8	1.4
23	300	35	11	8.4	7.5	16	13	5.9	2.0	2.7	1.7	1.6
24	200	23	11	8.4	7.3	14	11	5.8	2.5	3.0	1.7	1.7
25	150	15	11	8.4	6.9	12	11	5.0	2.1	3.0	1.7	2.1
26	100	13	11	8.6	6.5	11	11	4.7	4.0	2.8	1.7	2.7
27	60	12	11	8.6	8.1	11	11	6.0	3.3	3.1	1.7	2.1
28	40	12	11	8.4	8.2	13	11	5.8	2.9	2.8	1.7	1.9
29	30	11	11	8.4	7.9	10	11	5.2	2.6	2.4	1.7	1.7
30	20	11	11	8.4	---	9.5	11	4.9	2.4	2.2	1.7	2.0
31	20	---	11	8.4	---	8.4	---	4.3	---	2.1	1.7	---
TOTAL	5495.43	444	332.9	290.0	294.4	281.1	405.0	232.9	159.0	74.8	57.5	50.9
MEAN	177	14.8	10.7	9.35	10.2	9.07	13.5	7.51	5.30	2.41	1.85	1.70
MAX	3300	35	13	11	25	16	34	12	33	3.1	2.1	2.7
MIN	.87	11	9.1	8.4	6.5	6.3	7.0	4.3	1.8	1.7	1.7	1.3
AC-FT	10900	881	660	575	584	558	803	462	315	148	114	101
CAL YR 1983	TOTAL	8497.39		MEAN	23.3	MAX	3300	MIN	.59	AC-FT	16850	
WTR YR 1984	TOTAL	8117.93		MEAN	22.2	MAX	3300	MIN	.87	AC-FT	16100	

07328100 WASHITA RIVER AT ALEX, OK

LOCATION.--Lat 34°55'35", long 97°46'30", in NW 1/4 sec.7, T.5 N., R.5 W., Grady County, Hydrologic Unit 11130303, near left bank on downstream side of county road bridge, 1.0 mi (1.6 km) north of Alex, 3.8 mi (6.1 km) downstream from Winter Creek, and at mile 226.5 (362.4 km).

DRAINAGE AREA.--4,787 mi² (12,398 km²).

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) above mean sea level.

REMARKS.--Records poor. Some regulation by Fort Cobb Reservoir (station 07325900), by Foss Reservoir (07324300), and by numerous flood-retarding structures.

COOPERATION.--Records furnished by Agricultural Research Service prior to January 1978.

AVERAGE DISCHARGE.--20 years, 422 ft³/s (11.95 m³/s), 305,700 acre-ft/yr (377 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft³/s (663 m³/s) Oct. 21, 1983, gage height, 23.78 ft, (7.248 m); no flow Aug. 13-18, 1970, Aug. 30 to Sept. 1, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,400 ft³/s (663 m³/s) Oct. 21, gage height, 23.78 ft (7.248 m) from high-water mark, no other peaks above base of 3,800 ft³/s (108 m³/s); minimum daily discharge, 44 ft³/s (1.25 m³/s) Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	2570	482	560	345	335	555	310	185	156	66	60
2	93	2370	475	590	335	315	518	305	180	147	64	65
3	92	2150	508	640	327	309	482	300	178	146	64	84
4	94	2020	507	620	315	312	414	296	178	140	65	72
5	93	1900	492	570	302	331	386	291	178	140	72	69
6	93	1800	472	522	291	339	365	286	840	138	87	67
7	103	1710	464	527	286	337	413	284	489	128	80	65
8	142	1590	454	493	249	326	1140	277	293	120	73	63
9	157	1500	454	478	326	317	1360	270	224	117	70	63
10	134	1350	454	455	341	314	1040	266	259	113	72	64
11	120	1060	460	443	331	318	1020	266	507	108	74	60
12	119	880	464	435	315	384	989	250	399	108	74	56
13	140	826	431	411	307	399	876	238	318	224	75	54
14	145	782	414	400	310	380	698	234	323	165	73	52
15	124	718	405	393	308	367	567	234	345	111	70	50
16	127	666	393	390	292	356	518	228	293	102	70	47
17	124	555	387	387	280	381	461	224	259	99	73	48
18	130	595	376	358	310	383	441	214	232	94	73	49
19	2230	583	349	278	334	379	414	210	234	94	70	48
20	14700	555	302	327	352	359	402	218	234	88	71	46
21	22500	518	330	305	334	296	396	228	218	84	69	44
22	17900	492	370	349	333	282	374	214	210	81	69	46
23	17600	500	380	376	317	625	368	210	194	80	64	48
24	17300	518	420	400	306	1530	365	201	206	77	62	50
25	13100	529	430	457	297	1040	351	197	185	74	61	52
26	9460	529	450	428	293	739	339	192	185	70	62	78
27	6180	529	450	415	308	698	328	192	190	70	65	61
28	4950	518	460	410	343	826	310	197	187	72	62	54
29	3620	492	460	412	357	862	310	214	170	74	58	48
30	3180	489	480	393	---	710	315	206	162	74	68	48
31	2830	---	520	376	---	615	---	190	---	70	71	---
TOTAL	137677	31294	13493	13598	9144	15164	16515	7442	8055	3364	2147	1711
MEAN	4441	1043	435	439	315	489	551	240	269	109	69.3	57.0
MAX	22500	2570	520	640	357	1530	1360	310	840	224	87	84
MIN	92	489	302	278	249	282	310	190	162	70	58	44
AC-FT	273100	62070	26760	26970	18140	30080	32760	14760	15980	6670	4260	3390
CAL YR 1983	TOTAL	323790		MEAN	887	MAX	22500	MIN	92	AC-FT	642200	
WTR YR 1984	TOTAL	259604		MEAN	709	MAX	22500	MIN	44	AC-FT	514900	

07328500 WASHITA RIVER NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°45'17", long 97°15'04", in SE 1/4 sec.1. T.3 N., R.1 W., Garvin County, Hydrologic Unit 11130303, on downstream side of left pier of bridge on U.S. Highway 77, 2 mi (3 km) northwest of Pauls Valley, 6 mi (10 km) downstream from Owl Creek, 7 mi (11 km) upstream from Washington Creek, and at mile 146.5 (235.7 km).

DRAINAGE AREA.--5,330 mi² (13,805 km²).

PERIOD OF RECORD.--May to December 1899 (gage heights only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as "at Pauls Valley, Indian Territory" in 1899.

GAGE.--Water-stage recorder. Datum of gage is 854.61 ft (260.485 m) National Geodetic Vertical Datum of 1929. During 1899, nonrecording gage at site 9 mi (14 km) downstream at different datum. Mar. 29, 1938, to Jan. 25, 1939, nonrecording gage and Jan. 26, 1939, to Oct. 6, 1948, water-stage recorder at site 0.7 mi (1.1 km) upstream at datum 1.53 ft (0.466 m) higher. Mar. 11, 1975 to Jan. 26, 1981, water-stage recorder at site 200 ft (61.0 km) upstream and at same datum.

REMARKS.--Records poor. Some diversion for irrigation above station. Some regulation since March 1959, by Fort Cobb Reservoir (station 07325900), since February 1961, by Foss Reservoir (station 07234300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--47 years, 689 ft³/s (19.51 m³/s), 499,200 acre-ft/yr (616 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft³/s (1,010 m³/s) May 18, 1957, gage height, 27.34 ft (8.333 m); maximum gage height, 29.88 ft (9.107 m) May 11, 1950; no flow in 1956, 1964, 1966-67, 1970-72.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stream is reported to have receded to no flow in 1882 and in 1897 (from information by local resident).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,400 ft³/s (804 m³/s) at 2315 Oct. 22, gage height, 25.82 ft (7.870 m), no other peaks above base of 5,000 ft³/s (142 m³/s); minimum daily discharge, 45 ft³/s (1.27 m³/s) Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	3350	707	850	519	473	718	385	224	194	76	63
2	74	2930	700	860	512	466	679	388	213	182	75	67
3	78	2630	693	840	506	457	649	391	215	178	74	64
4	76	2360	696	935	497	450	613	394	330	174	72	69
5	78	2150	700	932	480	447	566	385	623	168	70	75
6	76	2040	690	892	466	447	542	379	457	164	79	71
7	81	1900	676	792	453	444	522	376	549	161	94	64
8	98	1780	659	733	450	437	722	364	600	152	97	61
9	92	1630	649	676	444	434	1140	344	450	136	92	58
10	116	1520	636	639	440	428	1160	335	1070	135	93	55
11	166	1400	629	606	444	428	992	330	576	127	90	56
12	148	1250	619	590	450	579	884	324	532	124	88	58
13	137	1120	606	572	457	679	823	316	497	119	85	54
14	119	1040	603	566	470	586	777	308	453	114	82	50
15	105	976	600	556	466	556	707	295	406	196	81	47
16	119	939	593	549	460	522	646	282	378	170	75	47
17	151	912	586	539	450	493	623	272	332	125	74	48
18	172	884	576	522	447	500	593	263	292	113	76	46
19	4050	865	529	493	450	506	542	267	272	108	77	46
20	9670	849	473	437	473	500	516	313	267	104	76	46
21	18800	819	300	403	470	483	506	295	272	101	75	49
22	26500	804	350	470	460	457	497	285	255	99	89	47
23	26200	834	400	529	447	955	476	277	235	93	85	45
24	19800	830	475	559	444	1230	466	267	255	90	74	46
25	21000	826	530	579	437	1280	457	248	246	89	68	56
26	19800	804	669	569	457	1130	437	241	277	86	63	86
27	15500	773	732	549	470	908	428	244	285	84	61	89
28	9990	758	738	532	463	830	418	280	239	82	60	90
29	6250	740	770	526	470	826	406	270	219	80	59	80
30	4840	725	800	532	---	834	391	255	206	79	61	71
31	3950	---	820	529	---	777	---	244	---	79	64	---
TOTAL	188309	40438	19204	19356	13452	19542	18896	9617	11225	3906	2385	1804
MEAN	6074	1348	619	624	464	630	630	310	374	126	76.9	60.1
MAX	26500	3350	820	935	519	1280	1160	394	1070	196	97	90
MIN	73	725	300	403	437	428	391	241	206	79	59	45
AC-FT	373500	80210	38090	38390	26680	38760	37480	19080	22260	7750	4730	3580
CAL YR 1983	TOTAL	440284		MEAN	1206	MAX	26500	MIN	62	AC-FT	873300	
WTR YR 1984	TOTAL	348134		MEAN	951	MAX	26500	MIN	45	AC-FT	690500	

07329000 RUSH CREEK AT PURDY, OK

LOCATION.--Lat 34°41'42", long 97°35'54", in SE 1/4 SE 1/4 sec.27, T.3 N., R.4 W., on left downstream bank near end of bridge on State Highway 76, 0.8 mi (1.3 km) south of Purdy, 8.5 mi (13.7 km) south of Lindsay, and at mile 27.3 (43.9 km).

DRAINAGE AREA.--145 mi² (376 km²).

PERIOD OF RECORD.--October 1939 to December 1953, February 1982 to current year. Prior to May 1940 monthly discharges only, published in WSP 1311.

REVISED RECORD.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1004.12 ft (306.056 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1942, nonrecording gage at site 1.2 mi (1.9 km) downstream at datum 9.42 ft (2.871 m) lower. Oct. 1, 1942 to Aug. 22, 1943 and May 11, 1950 to Sept. 18, 1952 nonrecording gage 1.2 mi (1.9 km) downstream at datum 14.42 ft (4.395 m) lower, Aug. 23, 1943 to May 10, 1950 and Sept. 19, 1952 to Dec. 31, 1953 water-stage recorder at site 1.2 mi (1.9 km) downstream at datum 14.42 ft (4.395 m) lower.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--16 yrs (water years 1940-53, 1983-84), 68.5 ft³/s (1.940 m³/s), 49,630 acre-ft/yr (61.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) May 10, 1950, gage height, 27.00 ft (8.230 m), from floodmarks and from rating extended above 5,000 ft³/s (142 m³/s) on the basis of a slope-area measurement at 27.00 ft (8.230 m). No flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,700 ft³/s (218 m³/s) Oct. 20, gage height, 24.31 ft (7.410 m) from high-water mark; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	239	23	20	19	19	29	16	9.8	5.1	.90	.00
2	1.7	231	22	23	19	19	28	14	13	4.6	1.2	.00
3	3.0	217	22	26	19	17	29	12	9.5	4.4	1.4	.28
4	2.6	199	22	34	20	14	29	8.4	110	5.1	1.2	.47
5	4.9	182	22	29	20	14	31	5.3	102	4.6	1.4	.28
6	6.5	170	22	25	19	12	35	11	94	3.3	1.0	.09
7	6.5	94	21	21	18	9.0	48	13	33	2.1	.77	.00
8	8.7	58	20	19	17	3.8	98	9.5	26	1.3	.47	.00
9	5.4	44	20	18	18	5.3	65	7.5	20	.77	.28	.28
10	3.9	34	20	19	32	13	47	6.7	45	.00	.00	.47
11	5.9	27	19	18	24	17	38	6.2	18	.00	.00	.28
12	6.3	25	19	17	22	40	32	7.0	13	.47	.28	.19
13	4.1	23	17	16	17	23	29	7.5	9.5	2.2	.00	.09
14	3.0	26	17	17	14	23	28	6.7	8.4	1.9	.09	.00
15	2.5	33	23	15	16	22	25	5.3	7.7	2.2	.38	.00
16	1.9	30	21	17	14	20	23	4.9	5.8	2.1	.55	.19
17	1.4	26	19	15	8.0	19	24	4.9	4.4	1.9	.38	.47
18	11	26	17	14	20	19	23	4.6	4.2	2.4	.00	.38
19	964	43	16	13	31	25	23	7.7	4.0	2.6	.00	.19
20	5610	31	15	16	17	26	24	9.5	4.0	2.2	.00	.09
21	3880	26	14	19	14	25	25	5.1	4.4	2.1	.00	.00
22	1310	34	15	20	14	23	23	4.6	4.0	1.8	.00	.00
23	1040	47	16	20	14	64	21	5.1	3.8	1.4	.00	.00
24	915	45	15	21	13	85	20	5.5	4.4	1.4	.00	.00
25	840	37	14	22	9.5	61	19	5.8	5.3	1.8	.00	5.9
26	758	30	15	23	15	46	16	18	11	1.6	.09	.00
27	639	30	16	23	19	35	14	15	8.4	1.8	.00	.00
28	563	30	17	22	17	57	13	8.0	6.5	1.2	.00	.00
29	458	27	18	21	25	44	16	6.0	2.4	1.3	.00	.00
30	386	23	15	20	---	26	21	5.5	2.1	1.0	.09	.00
31	291	---	17	19	---	27	---	7.3	---	.90	.00	---
TOTAL	17735.0	2087	569	622	524.5	853.1	896	253.6	593.6	65.54	10.48	9.65
MEAN	572	69.6	18.4	20.1	18.1	27.5	29.9	8.18	19.8	2.11	.34	.32
MAX	5610	239	23	34	32	85	98	18	110	5.1	1.4	5.9
MIN	1.4	23	14	13	8.0	3.8	13	4.6	2.1	.00	.00	.00
CAL YR 1983	TOTAL	27034.82		MEAN	74.1	MAX	5610	MIN	.65			
WTR YR 1984	TOTAL	24219.47		MEAN	66.2	MAX	5610	MIN	.00			

RED RIVER BASIN

07329700 WILDHORSE CREEK NEAR HOOVER, OK

LOCATION.--Lat 34°32'29", long 97°14'49", on west line of SW 1/4 sec.19, T.1 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on downstream left bank at bridge on State Highway 19A, 1.5 mi (2.4 km) north of Hoover, 1.8 mi (2.9 km) downstream from Sandy Creek, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--604 mi² (1,564 km²).

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1951-69. October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 803.3 ft (244.85 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated by Duncan, Clear Creek, Humphries and Fuqua Lakes, combined surface-area, 3,340 acres (13.5 km²), and capacity, 44,800 acre-ft (55.2 hm³), and numerous flood-retarding structures.

AVERAGE DISCHARGE.--15 years, 178 ft³/s (5.041 m³/s), 129,000 acre-ft/yr (159 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,700 ft³/s (530 m³/s) May 20, 1977, gage height, 24.70 ft (7.529 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,700 ft³/s (161 m³/s) Oct. 20, gage height, 15.76 ft (4.804 m) from high-water mark, no other peak above base of 4,000 ft³/s (113 m³/s); minimum daily discharge, 1.1 ft³/s (.031 m³/s), Sept. 9-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	130	66	69	45	62	162	51	20	17	2.8	1.6
2	11	100	69	64	45	56	152	51	19	16	2.8	3.8
3	9.6	89	66	56	45	52	144	51	17	15	2.8	2.4
4	16	84	66	54	45	52	125	49	17	21	3.9	1.9
5	12	80	66	50	42	52	122	46	49	16	2.8	1.8
6	9.5	75	63	48	40	52	106	46	70	14	4.4	1.6
7	9.0	72	66	51	50	49	117	44	46	12	4.6	1.5
8	350	66	62	48	41	46	738	39	31	11	4.4	1.2
9	140	68	60	47	43	43	363	41	22	9.6	17	1.1
10	94	61	60	88	47	42	248	37	2240	8.4	7.1	1.1
11	84	58	59	80	47	44	192	33	738	7.8	4.8	1.1
12	67	87	57	72	45	165	156	32	327	11	4.6	1.1
13	56	77	52	68	44	198	139	31	189	10	4.9	1.1
14	52	69	58	63	43	122	109	30	128	9.5	4.1	1.1
15	49	64	62	61	40	100	113	28	90	7.0	3.5	1.1
16	45	60	59	58	39	88	103	28	67	5.4	2.9	1.1
17	43	58	58	56	39	82	93	26	53	6.5	2.5	1.2
18	280	52	54	54	63	81	90	26	42	6.5	2.2	1.3
19	200	58	52	53	64	86	82	28	35	5.8	2.1	1.3
20	2700	60	50	52	54	92	81	56	30	5.2	1.9	1.3
21	2500	59	50	50	50	85	79	58	33	4.8	1.9	1.3
22	1300	54	49	47	45	78	70	33	33	4.5	1.8	1.3
23	900	66	47	48	41	923	66	29	32	4.3	2.1	1.3
24	520	85	48	60	40	1280	66	26	31	4.5	2.1	1.3
25	400	66	48	56	39	556	60	24	30	4.2	2.1	2.5
26	340	66	49	50	61	365	57	24	32	4.3	2.0	2.5
27	310	73	48	48	173	271	55	27	34	4.3	1.7	2.3
28	240	79	58	50	121	612	52	40	28	4.3	1.7	2.2
29	200	86	56	47	77	361	51	31	23	4.0	1.6	2.1
30	180	75	52	45	---	230	51	23	19	3.9	2.0	1.7
31	160	---	48	44	---	186	---	22	---	3.5	1.7	---
TOTAL	11289.1	2177	1758	1737	1568	6511	4042	1110	4525	261.3	106.8	48.2
MEAN	364	72.6	56.7	56.0	54.1	210	135	35.8	151	8.43	3.45	1.61
MAX	2700	130	69	88	173	1280	738	58	2240	21	17	3.8
MIN	9.0	52	47	44	39	42	51	22	17	3.5	1.6	1.1
AC-FT	22390	4320	3490	3450	3110	12910	8020	2200	8980	518	212	96
CAL YR 1983	TOTAL	81379.1		MEAN	223	MAX	8780	MIN	9.0	AC-FT	161400	
WTR YR 1984	TOTAL	35133.4		MEAN	96.0	MAX	2700	MIN	1.1	AC-FT	69690	

07331000 WASHITA RIVER NEAR DICKSON, OK

LOCATION.--Lat 34°13'59", long 96°58'38", in SE 1/4 SW 1/4 sec.3, T.4 S., R.3 E., Carter County, Hydrologic Unit 11130303, on right bank 500 ft (152.4 m) upstream from bridge on U.S. Highway 177, 1.2 mi (1.9 km) downstream from Caddo Creek, 3.2 mi (5.1 km) north of Dickson, 12.0 mi (19.3 km) northeast of Ardmore, and at mile 63.5 (102.2 km).

DRAINAGE AREA.--7,202 mi² (18,653 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to Oct. 1, 1979, published as Washita River near Durwood.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1281: 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 650.57 ft (198.294 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 16, 1939, nonrecording gage at site 500 ft (152.4 m) downstream at same datum. Dec. 15, 1950, to Feb. 19, 1952, nonrecording gage at same site and datum. Feb. 20, 1952, to Apr. 23, 1975, water-stage recorder at site 500 ft (152.4 m) downstream at same datum.

REMARKS.--Records good. Some diversions above station for irrigation. Some regulation since March 1959 by Fort Cobb Reservoir (station 07325900), since February 1961 by Foss Reservoir (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--56 years, 1,374 ft³/s (38.91 m³/s), 995,500 acre-ft/yr (1.23 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,000 ft³/s (2,780 m³/s) May 19, 1957, gage height, 42.30 ft (12.893 m), from floodmark; maximum gage height, 44.37 ft (13.524 m) Oct. 31, 1941; no flow Aug. 28, Sept. 14 to Oct. 1, Oct. 7-12, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10,000 ft³/s (283 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 24	1130	*23,000 651	*23.20 7.071	June 10	2245	11,000 312	16.89 5.148

Minimum daily discharge, 62 ft³/s (1.76 m³/s) Sept. 21-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	5860	966	1100	735	727	2070	837	383	327	102	72
2	126	5180	941	1110	720	702	1940	1870	359	292	100	78
3	146	4640	907	1090	709	684	1880	1210	343	268	100	80
4	145	4140	891	1130	700	663	1690	976	325	251	98	83
5	148	3740	890	1140	692	651	1550	856	472	250	99	83
6	147	3420	890	1040	672	637	1450	791	1370	238	110	88
7	172	3040	890	1040	648	626	1360	732	1180	225	115	82
8	188	2750	888	1130	640	629	1960	806	1030	216	136	85
9	232	2440	875	1040	640	618	2350	769	1050	199	208	83
10	357	2130	848	1030	637	609	2190	610	4990	190	166	79
11	222	1900	836	950	633	616	2160	561	7200	184	148	77
12	192	1730	821	905	664	1340	1850	532	3560	191	140	74
13	196	1510	812	871	686	1560	1690	524	2460	189	128	74
14	197	1340	812	837	674	1350	1730	511	1880	188	118	74
15	182	1270	802	810	640	1160	1660	491	1360	162	113	70
16	178	1230	797	762	610	1120	1490	467	1020	154	105	68
17	175	1200	786	752	609	1050	1260	450	818	228	98	65
18	239	1140	775	749	600	1110	1140	437	694	202	95	65
19	490	1110	725	649	628	1280	1050	429	596	161	91	65
20	8530	1100	634	600	646	1180	1000	456	529	151	92	64
21	12600	1080	550	584	645	1080	1410	615	474	141	90	62
22	16400	1050	600	548	638	1010	1070	606	485	132	90	62
23	20000	1080	650	648	616	1040	900	474	476	129	89	62
24	22500	1070	725	750	593	4240	790	441	412	151	92	62
25	19900	1130	780	847	576	3210	736	405	759	136	90	65
26	19600	1130	919	846	615	3000	833	402	561	126	79	79
27	18700	1100	982	820	718	2390	908	417	568	126	79	98
28	14800	1050	988	792	870	2590	863	488	595	129	76	109
29	10300	1040	1020	774	809	2640	834	507	427	125	72	126
30	8040	1020	1050	749	---	2280	830	467	359	114	72	110
31	6790	---	1070	738	---	2180	---	410	---	107	67	---
TOTAL	182035	61620	26120	26831	19263	43972	42644	19547	36735	5682	3258	2344
MEAN	5872	2054	843	866	664	1418	1421	631	1225	183	105	78.1
MAX	22500	5860	1070	1140	870	4240	2350	1870	7200	327	208	126
MIN	126	1020	550	548	576	609	736	402	325	107	67	62
AC-FT	361100	122200	51810	53220	38210	87220	84580	38770	72860	11270	6460	4650
CAL YR 1983	TOTAL	680874	MEAN	1865	MAX	25100	MIN	126	AC-FT	1351000		
WTR YR 1984	TOTAL	470051	MEAN	1284	MAX	22500	MIN	62	AC-FT	932300		

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1944 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1944 to Jan. 1982, Feb. 1984 to current year.

WATER TEMPERATURE: April 1947 to Jan. 1982, Feb. 1984 to current year.

REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,120 microsiemens Nov. 15, 1963; minimum daily, 95 microsiemens Nov. 2, 1951.

WATER TEMPERATURE: Maximum daily, 37.0°C July 18, 1964, July 24, 1981; minimum daily, 0.0°C on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRESSURE (MM OF HG)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, SATURATED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT 26...	1400	750	80020	19800	309	7.4	16.5	2200	8.0	83	3100
JAN 25...	1000	750	80020	822	1650	8.2	-1.0	60	14.9	101	74
FEB 22...	1000	740	80020	658	1590	7.8	8.0	22	12.3	108	55
MAR 26...	1700	730	1028	2780	990	7.6	5.5	--	10.6	88	--
APR 24...	1230	740	80020	782	1290	7.8	19.5	36	11.5	130	110
MAY 30...	1200	--	1028	479	--	--	--	--	--	--	--
JUN 26...	1300	740	80020	550	738	7.4	27.0	170	6.3	82	K780
JUL 24...	1500	--	1028	155	--	--	--	--	--	--	--
AUG 27...	1300	740	80020	79	1340	8.2	30.5	40	6.4	89	110
SEP 26...	1000	--	1028	79	--	--	--	--	--	--	--

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible][illegible]

07331000 WASHITA RIVER NR DICKSON, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	<10	4	<1	<1	280	<6	24	17300	925000	47
JAN 25...	--	--	--	--	--	--	--	254	564	68
FEB 22...	<10	<1	1	<1	2000	<6	23	205	364	37
MAR 26...	--	--	--	--	--	--	--	2010	15100	78
APR 24...	<10	<1	<1	<1	1500	<6	18	208	439	50
MAY 30...	--	--	--	--	--	--	--	413	534	23
JUN 26...	--	--	--	--	--	--	--	430	639	95
JUL 24...	--	--	--	--	--	--	--	74	31	88
AUG 27...	<10	2	<1	<1	1500	7	34	76	16	80
SEP 26...	--	--	--	--	--	--	--	216	46	16

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	1390	1200	1180	1400	1170	1360	1270
2					---	1390	1110	606	1480	1150	1390	1180
3					---	1410	1180	871	1470	---	1370	1210
4					---	1520	1290	1110	1540	1320	1370	1270
5					---	1490	1220	1250	1520	1320	1390	1320
6					---	1530	1060	1300	563	1390	1340	1340
7					---	1500	1130	1360	773	1370	1330	1390
8					---	1480	1080	1220	620	1370	---	1370
9					---	1490	829	1240	1190	1380	1410	1340
10					---	1530	1090	1430	482	1260	1220	1300
11					---	1560	969	1450	334	1270	1060	1290
12					---	986	960	1470	450	1350	810	1280
13					---	1030	1100	1500	512	1180	975	1220
14					---	1110	1170	1480	700	1290	1240	1140
15					---	1090	1250	1500	910	1300	1250	1200
16					---	1130	1240	1540	942	1400	1230	1180
17					---	1220	1430	1540	916	1540	1260	1180
18					---	1240	1290	1540	1140	1580	1220	1200
19					1560	1170	1310	1550	1060	1600	1240	1230
20					1540	1200	1400	1530	1100	1590	1280	1210
21					1520	1260	1010	1520	1340	1260	1290	1190
22					1580	1300	1200	1240	---	1530	1300	1190
23					1570	1210	1240	1330	1450	1210	1320	1200
24					1580	626	1270	1410	1470	1120	1360	1190
25					1580	555	1320	1490	822	1320	1340	1200
26					1550	998	1360	1510	643	1300	1330	1240
27					1520	846	1220	---	766	1290	1340	1280
28					1430	935	1240	1260	907	1330	1330	1220
29					1350	875	1230	1350	958	1280	1240	1250
30					---	960	1230	1380	1140	---	1210	1260
31					---	---	---	1370	---	1360	1270	---

RED RIVER BASIN

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07331000 WASHITA RIVER NR DICKSON, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	9.5	16.0	23.0	28.0	31.0	31.0	34.0
2					---	15.0	16.0	21.0	28.0	33.0	32.0	32.0
3					---	15.0	16.0	23.0	---	---	33.0	31.0
4					---	13.0	13.0	25.0	28.0	30.0	32.0	30.0
5					---	12.0	19.0	25.0	28.0	32.0	33.0	31.0
6					---	12.0	19.0	26.0	31.0	35.0	29.0	30.0
7					---	12.0	18.0	25.0	30.0	33.0	32.0	30.0
8					---	12.0	16.0	23.0	29.0	32.0	---	30.0
9					---	12.0	18.0	26.0	29.0	31.0	26.0	31.0
10					---	14.0	20.0	25.0	27.0	33.0	29.0	32.0
11					---	11.0	19.0	26.0	27.0	33.0	25.0	32.0
12					---	15.0	21.0	27.0	28.0	33.0	32.0	32.0
13					---	15.0	21.0	30.0	30.0	34.0	33.0	32.0
14					---	20.0	19.0	30.0	30.0	34.0	32.0	32.0
15					---	23.0	15.0	30.0	31.0	34.0	33.0	29.0
16					---	17.0	17.0	28.0	31.0	32.0	33.0	27.0
17					---	20.0	21.0	28.0	29.0	32.0	34.0	30.0
18					---	18.0	20.0	26.0	32.0	32.0	34.0	27.0
19					13.0	13.0	21.0	27.0	33.0	33.0	34.0	28.0
20					10.0	15.0	21.0	27.0	33.0	34.0	35.0	28.0
21					13.0	17.0	21.0	27.0	33.0	33.0	35.0	26.0
22					11.0	18.0	20.0	29.0	---	35.0	34.0	27.0
23					---	16.0	20.0	29.0	34.0	35.0	32.0	28.0
24					14.0	7.0	24.0	29.0	32.0	33.0	33.0	29.0
25					14.0	15.0	23.0	29.0	32.0	30.0	33.0	22.0
26					14.0	11.0	25.0	26.0	28.0	29.0	32.0	17.0
27					9.0	17.0	20.0	---	31.0	30.0	35.0	17.0
28					8.0	13.0	20.0	23.0	33.0	28.0	35.0	17.0
29					9.0	16.0	23.0	28.0	32.0	33.0	35.0	18.0
30					---	15.0	21.0	26.0	30.0	---	32.0	20.0
31					---	---	---	27.0	---	31.0	34.0	---

07331500 LAKE TEXOMA NEAR DENISON, TX

LOCATION.--Lat 33°49'05", long 96°34'20", in NE 1/4 sec.33, T.8 S., R.7 E., Bryan County, Okla., Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi (1.9 km) upstream from Shawnee Creek, 1.8 mi (2.9 km) upstream from Sand Creek, 4.0 mi (6.4 km) northwest of Denison, 6.0 mi (9.7 km) southwest of Colbert, and at mile 725.9 (1,168.0 km).

DRAINAGE AREA.--39,719 mi² (102,872 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--July 1942 to current year. Monthend contents only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1944, nonrecording gage at same site and datum. Prior to Oct. 1, 1948, supplementary nonrecording gage in Cumberland pool at the same datum.

REMARKS.--Reservoir is formed by a rolled-fill earth dam. The controlled outlet consists of eight 20-foot diameter conduits and the uncontrolled outlet is a concrete, ogee-type weir spillway. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; power-pool was first filled March 15, 1945. Capacity, based on 1969 survey, 5,312,000 acre-ft (6.55 km³) at elevation 640.0 ft (195.07 m), crest of spillway, 2,643,000 acre-ft (3.26 km³) at elevation 617.0 ft (188.06 m) maximum power pool; 1,031,000 acre-ft (1.27 km³) at elevation 590.0 ft (179.83 m), minimum power pool, in Denison pool. Dead storage, 11,000 acre-ft (13.6 km³) at elevation 610.0 ft (185.93 m) in Cumberland pool. When contents are below 2,105,000 acre-ft (2.60 km³), the reservoir is divided into two pools by protective levees around the Cumberland oilfield on the Washita River arm with bottom outlet channel for the upper pool (known as Cumberland pool) at elevation 610 ft (185.9 m). At higher elevations the two pools are considered as being at a common level, contents being computed from gage in Denison pool. Figures given herein represent total contents of both pools. Reservoir is used principally for flood control and power development. Revised capacity table, based on survey in 1969, used since Oct. 1, 1977.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,991,300 acre-ft (7.39 km³) June 5, 1957, elevation, 643.18 ft (196.04 m). Minimum contents since power pool was first filled, 1,565,100 acre-ft (1.93 km³) Sept. 16, 1964; minimum elevation, 599.96 ft (182.868 m) Mar. 1, 2, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,009,000 acre-ft (3.71 km³) Oct. 27, elevation, 620.91 ft (189.253 m). Minimum, 2,150,000 acre-ft (2.65 km³) Sept. 21, elevation, 610.64 ft (186.123 m).

Capacity table (elevation, in feet, and contents, in acre-ft)

611	2,176,000	622	3,117,000
614	2,399,000	627	3,649,000
617	2,643,000	632	4,240,000

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2263000	2945000	2659000	2590000	2611000	2625000	2588000	2541000	2484000	2462000	2302000	2185000
2	2257000	2909000	2656000	2588000	2616000	2622000	2595000	2550000	2485000	2456000	2299000	2186000
3	2245000	2878000	2661000	2591000	2617000	2628000	2606000	2546000	2485000	2449000	2295000	2183000
4	2238000	2858000	2662000	2591000	2617000	2637000	2599000	2538000	2480000	2447000	2294000	2179000
5	2235000	2843000	2669000	2592000	2620000	2626000	2593000	2537000	2477000	2442000	2293000	2175000
6	2238000	2833000	2665000	2595000	2617000	2614000	2584000	2536000	2477000	2435000	2290000	2170000
7	2243000	2814000	2664000	2600000	2617000	2608000	2581000	2531000	2476000	2432000	2288000	2167000
8	2245000	2798000	2662000	2603000	2618000	2596000	2578000	2521000	2473000	2428000	2285000	2167000
9	2245000	2785000	2663000	2618000	2620000	2586000	2568000	2515000	2477000	2421000	2287000	2166000
10	2251000	2774000	2664000	2605000	2620000	2588000	2570000	2513000	2486000	2414000	2285000	2165000
11	2267000	2758000	2664000	2600000	2626000	2600000	2565000	2512000	2504000	2407000	2287000	2164000
12	2270000	2752000	2656000	2608000	2629000	2610000	2559000	2512000	2517000	2403000	2286000	2164000
13	2273000	2746000	2662000	2609000	2629000	2605000	2558000	2515000	2517000	2396000	2283000	2164000
14	2271000	2745000	2660000	2612000	2622000	2599000	2556000	2510000	2513000	2392000	2287000	2165000
15	2275000	2733000	2659000	2615000	2629000	2593000	2554000	2509000	2507000	2389000	2273000	2160000
16	2275000	2721000	2658000	2617000	2628000	2590000	2550000	2506000	2505000	2381000	2267000	2157000
17	2269000	2714000	2657000	2606000	2609000	2582000	2547000	2505000	2502000	2376000	2263000	2156000
18	2267000	2708000	2656000	2604000	2622000	2587000	2546000	2507000	2499000	2367000	2259000	2154000
19	2272000	2720000	2650000	2599000	2621000	2580000	2539000	2511000	2495000	2359000	2255000	2154000
20	2284000	2711000	2645000	2594000	2620000	2572000	2544000	2517000	2493000	2351000	2248000	2152000
21	2305000	2706000	2640000	2593000	2617000	2565000	2548000	2517000	2488000	2349000	2243000	2150000
22	2350000	2705000	2619000	2599000	2614000	2557000	2548000	2517000	2483000	2348000	2240000	2152000
23	2405000	2698000	2615000	2596000	2619000	2561000	2542000	2515000	2482000	2341000	2237000	2151000
24	2533000	2687000	2602000	2598000	2614000	2555000	2537000	2509000	2481000	2335000	2228000	2150000
25	2790000	2675000	2593000	2597000	2609000	2563000	2535000	2507000	2477000	2330000	2221000	2156000
26	2976000	2681000	2588000	2601000	2642000	2566000	2533000	2502000	2482000	2326000	2219000	2156000
27	3008000	2680000	2594000	2603000	2641000	2584000	2533000	2504000	2478000	2320000	2213000	2155000
28	3001000	2669000	2592000	2608000	2634000	2590000	2531000	2505000	2474000	2318000	2204000	2155000
29	3002000	2662000	2589000	2612000	2631000	2586000	2529000	2497000	2469000	2318000	2197000	2152000
30	2994000	2662000	2587000	2614000	---	2588000	2528000	2493000	2466000	2312000	2194000	2150000
31	2974000	---	2585000	2612000	---	2589000	---	2489000	---	2308000	2190000	---
MAX	3008000	2945000	2669000	2618000	2642000	2637000	2606000	2550000	2517000	2462000	2302000	2186000
MIN	2235000	2662000	2585000	2588000	2609000	2555000	2528000	2489000	2466000	2308000	2190000	2150000
(†)	620.56	617.21	616.33	616.64	616.86	616.38	615.64	615.15	614.86	612.80	611.19	610.63
(††)	-704,000	-312,000	-77,000	+27,000	+19,000	-42,000	-61,000	-39,000	-23,000	-158,000	-118,000	-40,000
CAL YR 1983	MAX	3008000	MIN	2235000	††	+137,000						
WTR YR 1984	MAX	3008000	MIN	2150000	††	-120,000						

(†) ELEVATION, IN FEET, AT END OF MONTH

(††) CHANGE IN CONTENTS, IN ACRE-FEET

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft (548.6 m) downstream from Denison Dam powerhouse, 0.4 mi (0.6 km) upstream from Shawnee Creek (spillway flow return), 4.5 mi (7.2 km) north of Denison, and at mile 725.5 (1,167.3 km).

DRAINAGE AREA.--39,720 mi² (102,875 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing. At site used prior to October 1961, drainage area 39,777 mi² (103,022 km²), of which 5,936 mi² (15,374 km²) was probably noncontributing.

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, Tex.", and October 1934 to September 1961, published as "near Colbert, Okla.". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, and 1931-49 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 807: 1935 (M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934 (M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 500.00 ft (152,400 m) National Geodetic Vertical Datum of 1929. Oct. 9, 1923 to Sept. 24, 1934, nonrecording gage, and July 29, 1942 to Sept. 30, 1961, water-stage recorder at county road bridge 2.5 mi (4.0 km) downstream at datum 6.85 ft (2.088 m) higher prior to Oct. 1, 1931, at datum 7.07 ft (2.155 m) higher Oct. 1, 1931 to Sept. 24, 1934, and at datum 2.64 ft (0.805 m) lower July 29, 1942 to Sept. 30, 1961. Sept. 25, 1934 to July 28, 1942, water-stage recorder at railway bridge 1.9 mi (3.1 km) downstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records good. Flow regulated since October 1943 by Lake Texoma (station 07331500).

COOPERATION.--Gage-height record and 9 discharge measurements furnished by U.S. Army Corps of Engineers; records computed U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Denison Dam) 20 years, 1924-43, 5,684 ft³/s (161 m³/s), 4,118,000 acre-ft/yr (5.08 km³/yr); (since regulation by Denison Dam) 40 years (water years 1945-84), 4,330 ft³/s (122.6 m³/s), 3,137,000 acre-ft/yr (3.87 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 201,000 ft³/s (5,690 m³/s) May 21, 1935, gage height, 31.8 ft (9.69 m) at site and datum then in use; maximum gage height, 32.0 ft (9.75 m) Apr. 25, 1942 (at site and datum used in 1943); minimum daily discharge, 12 ft³/s (0.340 m³/s) Jan. 10, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (13.87 m) at site and datum used July 29, 1942, to Sept. 30, 1961, from record of National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,900 ft³/s (1,240 m³/s) Oct. 26, gage height, 17.04 ft (5.194 m); minimum daily, 59 ft³/s (1.67 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2370	31000	4250	151	1370	5510	3960	3020	2820	2010	1690	902
2	2630	31000	4220	2670	101	3130	5090	4090	116	3230	1720	918
3	5080	29200	4450	1910	1570	101	3790	5400	77	3160	1690	910
4	4660	22200	1890	1280	821	97	2600	6110	2420	3180	114	1240
5	1350	18100	810	1430	96	5590	6310	4120	2920	3160	59	1720
6	127	18100	2050	138	1700	6110	6570	3020	2470	3190	1420	1420
7	90	18100	2610	84	1310	4570	6560	4550	2410	1660	1480	134
8	348	18200	4060	85	2850	6150	4830	4590	126	1650	1600	82
9	81	18000	2330	1360	1650	6110	7100	3670	1250	3210	1480	80
10	72	14300	2670	5900	736	184	5220	1760	1280	3220	1410	82
11	75	10900	2780	2550	147	108	6650	1620	2370	3210	132	87
12	80	11000	2790	1230	96	6120	6630	1190	4680	3230	70	88
13	81	11000	2190	763	1590	6780	5120	101	5430	3190	1580	87
14	503	10800	2820	637	2090	6870	4350	3200	4780	1660	2150	238
15	119	10900	3030	107	2650	7110	3810	120	5010	1330	2200	101
16	1250	11000	2700	1140	2400	5860	4470	2900	2430	3220	2220	87
17	4130	10300	2970	6590	4440	5780	3740	1200	2440	3190	2200	88
18	1320	6670	2440	3760	1280	5840	3740	105	3230	3180	1840	90
19	1600	7750	4560	2880	758	5730	4130	78	3250	3210	2220	88
20	1200	7340	3720	3540	2190	5770	3140	72	2450	2920	2160	97
21	78	7410	5590	1180	2300	5790	1770	94	2980	800	2670	97
22	4890	9770	7480	936	2400	5840	1830	2180	3050	777	1520	95
23	16600	9690	4330	2950	852	5860	3090	2940	1580	3480	1530	89
24	32000	9730	5680	1160	1900	4840	3070	3180	1590	3480	3770	84
25	42500	9690	3010	1250	1470	1290	2600	2930	3060	3050	2730	447
26	43200	7100	3590	986	1110	4180	3770	1790	3190	2510	1240	88
27	43500	7280	595	104	2000	4220	2120	646	3200	2530	1960	78
28	38300	7240	2010	99	2340	4730	2560	1470	3760	114	4000	79
29	30900	6250	1790	93	1640	6400	2580	2510	4250	72	2820	78
30	30900	5240	1490	95	---	6400	2550	4000	2380	2460	2510	77
31	30900	---	2160	3280	---	4730	---	4030	---	1380	1050	---
TOTAL	340934	395260	97065	50338	45857	147800	123750	76686	80999	76663	55235	9751
MEAN	11000	13180	3131	1624	1581	4768	4125	2474	2700	2473	1782	325
MAX	43500	31000	7480	6590	4440	7110	7100	6110	5430	3480	4000	1720
MIN	72	5240	595	84	96	97	1770	72	77	72	59	77
AC-FT	676200	784000	192500	99850	90960	293200	245500	152100	160700	152100	109600	19340
CAL YR 1983	TOTAL	1875830	MEAN	5139	MAX	43500	MIN	51	AC-FT	3721000		
WTR YR 1984	TOTAL	1500338	MEAN	4099	MAX	43500	MIN	59	AC-FT	2976000		

RED RIVER BASIN

07332400 BLUE RIVER AT MILBURN, OK

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, Hydrologic Unit 11140102, on downstream side of left pier of bridge on State Highway 48A, 0.5 mi (0.8 km) north of Milburn, and at mile 84.9 (136.6 km).

DRAINAGE AREA.--203 mi² (526 km²).

PERIOD OF RECORD.--October 1965 to current year. Occasional low-flow measurements made in water years 1956-61. Prior to October 1975 published as Blue Creek near Milburn.

GAGE.--Water-stage recorder. Datum of gage is 649.65 ft (198.013 m), Oklahoma State Highway Department datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--19 years, 136 ft³/s (3.852 m³/s), 9.10 in/yr (231 mm/yr), 98,530 acre-ft/yr (121 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,100 ft³/s (994 m³/s) Oct. 8, 1970, gage height, 27.87 ft (8.495 m); minimum daily, 15 ft³/s (0.42 m³/s) Aug. 22, 24, 25, Sept. 1, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,540 ft³/s (43.6 m³/s) Apr. 20, gage height 12.84 ft (3.914 m), no peak above base of 2,200 ft³/s (62.3 m³/s); minimum daily discharge, 20 ft³/s (0.57 m³/s) Aug. 22 and 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	37	37	67	60	45	65	104	117	51	48	28	21		
2	37	38	74	70	44	62	111	315	52	47	27	23		
3	37	38	81	59	44	58	108	134	52	44	28	24		
4	37	38	65	54	44	57	94	93	52	41	28	23		
5	37	38	62	45	44	55	88	88	50	40	28	22		
6	36	38	57	44	44	55	113	83	48	41	30	22		
7	57	38	54	39	45	53	176	78	47	44	28	21		
8	50	41	44	36	51	53	319	74	47	44	28	22		
9	47	42	52	44	51	52	157	70	48	45	33	24		
10	41	41	52	52	47	52	145	67	53	44	34	24		
11	37	38	50	49	45	82	164	65	52	41	26	24		
12	38	38	50	48	44	861	108	64	52	44	26	23		
13	37	39	50	47	43	248	102	63	51	45	25	24		
14	36	38	49	48	43	141	99	62	49	44	24	24		
15	36	37	50	48	42	93	96	62	49	44	24	23		
16	38	36	48	47	43	157	90	62	49	44	22	23		
17	42	37	48	46	43	116	88	61	48	45	22	24		
18	44	36	49	45	44	107	88	59	45	41	22	23		
19	238	37	49	40	45	505	87	57	43	35	23	22		
20	102	38	50	40	41	180	166	57	44	34	22	22		
21	48	39	45	58	43	130	533	56	44	35	21	23		
22	46	44	45	55	41	120	145	56	44	37	20	27		
23	43	295	45	55	41	113	93	54	45	34	23	27		
24	43	90	45	60	42	111	88	53	47	34	22	23		
25	42	53	45	56	42	104	86	52	47	33	21	27		
26	38	48	45	49	97	100	85	53	48	31	21	29		
27	38	124	45	47	131	109	84	54	50	32	21	24		
28	37	99	45	45	88	210	87	54	51	35	20	23		
29	37	73	45	44	67	127	124	53	47	31	21	22		
30	36	71	45	45	---	102	114	53	48	29	26	21		
31	36	---	50	44	---	102	---	52	---	28	25	---		
TOTAL	1508	1699	1601	1519	1484	4380	3942	2321	1453	1214	769	704		
MEAN	48.6	56.6	51.6	49.0	51.2	141	131	74.9	48.4	39.2	24.8	23.5		
MAX	238	295	81	70	131	861	533	315	53	48	34	29		
MIN	36	36	44	36	41	52	84	52	43	28	20	21		
CFSM	.24	.28	.25	.24	.25	.69	.65	.37	.24	.19	.12	.12		
IN.	.28	.31	.29	.28	.27	.80	.72	.43	.27	.22	.14	.13		
AC-FT	2990	3370	3180	3010	2940	8690	7820	4600	2880	2410	1530	1400		
CAL YR 1983	TOTAL	45905	MEAN	126	MAX	7640	MIN	36	CFSM	.62	IN.	8.41	AC-FT	91050
WTR YR 1984	TOTAL	22594	MEAN	61.7	MAX	861	MIN	20	CFSM	.30	IN.	4.14	AC-FT	44820

LOCATION.--Lat 33°59'49", long 96°14'27", on line between sec.27 and 34, T.6 S., R.10 E., Bryan County, Hydrologic Unit 11140102, near left bank on downstream side of pier of bridge on U.S. Highway 70, 1.0 mi (1.6 km) west of Blue, 7.0 mi (11.3 km) east of Durant, 7.7 mi (12.4 km) upstream from Caddo Creek, and at mile 38.8 (62.1 km).

PERIOD OF RECORD.--June 1936 to current year. Monthly discharge only for some periods, published in WSP 1311, 1731.

GAGE.--Water-stage recorder. Datum of gage is 503.36 ft (153.424 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1945, nonrecording gage and Mar. 13, 1945, to Feb. 2, 1960, water-stage recorder at site 1.2 mi (1.9 km) downstream at datum 5.00 ft (1.524 m) lower.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,200 ft³/s (1,850 m³/s) Oct. 14, 1981, gage height, 44.20 ft (13.472 m), from high water mark; no flow (estimated) Aug. 3, 4, 1936, result of regulation at fish hatchery, and no flow Sept. 19 to Oct. 16, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,600 ft³/s (102 m³/s) May 2, gage height, 18.54 ft (5.651 m); no discharges above base of 4,000 ft³/s (113 m³/s); minimum daily discharge, 11 ft³/s (0.31 m³/s) Aug. 3.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	38	72	50	49	90	133	202	51	41	17	18
2	32	38	69	51	48	73	130	2520	51	37	13	35
3	32	38	79	52	47	68	170	835	50	34	11	54
4	31	40	78	49	47	68	195	291	49	33	12	21
5	31	40	80	52	46	71	133	206	49	45	18	20
6	31	45	68	52	45	68	111	162	50	38	19	21
7	35	50	63	53	44	61	104	139	53	33	24	19
8	60	49	58	50	43	56	107	124	55	29	24	18
9	58	49	56	50	51	53	317	109	48	28	224	19
10	49	46	56	74	54	52	192	97	46	27	227	18
11	40	45	55	105	57	55	243	89	46	25	60	17
12	38	46	54	95	55	1150	304	83	49	34	44	17
13	38	45	53	67	51	1370	181	80	44	29	35	17
14	39	45	52	60	49	338	136	77	41	36	32	16
15	36	45	52	57	47	202	115	73	41	26	29	12
16	35	44	54	55	45	161	104	69	38	24	29	17
17	35	45	55	54	44	138	98	66	35	22	28	17
18	35	44	52	51	41	126	92	64	34	23	26	17
19	41	45	50	48	49	266	86	62	32	27	23	16
20	92	52	46	66	52	539	85	66	32	22	21	15
21	145	53	41	76	51	208	305	80	32	17	21	15
22	77	53	59	59	47	150	673	75	31	20	21	16
23	60	51	51	63	42	172	212	65	28	20	19	17
24	50	173	50	64	44	260	151	60	26	17	19	20
25	45	138	48	60	40	179	126	56	27	14	20	24
26	42	79	46	60	110	142	112	53	36	16	20	26
27	40	82	49	63	227	126	104	53	58	18	19	35
28	40	109	54	56	221	706	98	67	48	20	18	34
29	40	158	53	54	138	468	89	65	54	21	17	28
30	40	92	51	52	---	233	109	61	68	22	15	25
31	39	---	48	50	---	158	---	53	---	22	14	---
TOTAL	1438	1877	1752	1848	1884	7807	5015	6102	1302	820	1119	644
MEAN	46.4	62.6	56.5	59.6	65.0	252	167	197	43.4	26.5	36.1	21.5
MAX	145	173	80	105	227	1370	673	2520	68	45	227	54
MIN	31	38	41	48	40	52	85	53	26	14	11	12
CFSM	.10	.13	.12	.13	.14	.53	.35	.41	.09	.06	.08	.05
IN.	.11	.15	.14	.14	.15	.61	.39	.48	.10	.06	.09	.05
AC-FT	2850	3720	3480	3670	3740	15490	9950	12100	2580	1630	2220	1280
CAL YR 1983	TOTAL	79880		219								
WTR YR 1984	TOTAL	31608	MEAN	86.4	MAX	4200	MIN	30	CFSM	.46	IN.	6.24
			MEAN		MAX	2520	MIN	11	CFSM	.18	IN.	2.47

RED RIVER BASIN

07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK

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, Hydrologic Unit 11140103, on downstream side of left bank pier of main span of bridge on State Highway 3, 1.3 mi (2.1 km) downstream from McGee Creek, 2.8 mi (4.5 km) northwest of Farris, and at mile 57.7 (92.8 km).

DRAINAGE AREA.--1,087 mi² (2,815 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 444.58 ft (135.508 m) National Geodetic Vertical Datum of 1929. 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 (0.610 m) higher.

REMARKS.--Records good. Some regulation since June 1959 by Atoka Reservoir, capacity, 125,000 acre-ft (154 hm³), on North Boggy Creek, drainage area, 176 mi² (456 km²); pipeline diversions to Oklahoma City since November 1963, normal capacity, 60 mgd (2.63 m³/s).

COOPERATION.--Gage-height records and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--47 years, 867 ft³/s (24.55 m³/s), 628,100 acre-ft/yr (774 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,900 ft³/s (1,750 m³/s) June 17, 1945, gage height, 44.94 ft (13.698 m), datum then in use, from rating curve extended above 37,000 ft³/s (1,050 m³/s); no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,790 ft³/s (164 m³/s) Mar. 12, gage height 21.32 ft (6.498 m) from high-water mark; no peak above base of 10,000 ft³/s (283 m³/s); minimum daily discharge, 1.2 ft³/s (.034 m³/s) Aug. 30 to Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.9	192	11	60	581	424	838	70	92	1.7	1.2
2	10	7.6	135	11	56	369	453	808	55	53	1.6	1.2
3	8.8	7.2	158	11	53	268	955	2320	47	28	1.6	1.2
4	7.7	6.7	137	11	49	272	620	1760	40	17	1.6	1.2
5	6.6	6.3	132	11	44	353	441	1400	35	13	1.5	1.2
6	5.7	6.0	138	12	40	252	328	895	34	9.8	1.5	10
7	5.1	6.1	114	12	37	199	252	298	32	8.7	1.5	18
8	4.7	6.2	86	12	36	164	350	138	29	7.2	1.4	12
9	4.3	9.6	67	26	42	126	2360	126	25	5.1	1.3	13
10	3.5	17	57	227	52	684	1780	125	23	4.9	1.3	25
11	3.0	16	45	338	58	3620	665	98	21	4.4	121	279
12	4.2	14	38	325	75	5380	517	66	20	4.4	62	139
13	4.4	12	32	212	89	5180	321	48	20	3.9	26	77
14	4.1	11	30	137	86	4090	264	36	19	3.6	13	47
15	3.9	10	27	105	78	1240	220	27	18	3.0	9.9	30
16	3.4	9.7	24	83	70	598	180	19	16	2.5	6.9	21
17	3.0	10	22	70	64	485	150	16	15	2.4	5.4	16
18	2.8	11	22	57	59	404	130	13	15	4.3	4.5	13
19	3.8	12	22	47	59	1010	116	20	14	7.1	3.6	11
20	122	13	20	42	60	2930	107	56	13	7.0	3.0	10
21	943	13	19	36	59	1680	2960	76	12	6.3	2.5	9.2
22	272	16	18	33	57	526	3420	46	12	5.4	2.2	9.1
23	115	22	17	35	54	990	989	9.2	12	4.5	2.0	9.1
24	62	1120	16	45	56	2810	333	6.4	15	3.6	1.9	9.1
25	36	1270	14	58	55	1770	251	5.4	15	3.0	1.7	8.4
26	23	306	13	71	607	927	181	4.6	26	2.6	1.6	237
27	16	277	13	75	2350	579	133	11	46	2.4	1.5	1550
28	13	275	13	71	2690	3530	98	149	37	2.2	1.5	434
29	11	821	13	71	1320	2470	78	170	56	2.1	1.4	156
30	9.5	378	12	71	---	928	242	94	53	1.7	1.2	100
31	8.6	---	12	67	---	576	---	76	---	1.7	1.2	---
TOTAL	1732.1	4697.3	1658	2393	8415	44991	19318	9754.6	845	316.8	289.0	3248.9
MEAN	55.9	157	53.5	77.2	290	1451	644	315	28.2	10.2	9.32	108
MAX	943	1270	192	338	2690	5380	3420	2320	70	92	121	1550
MIN	2.8	6.0	12	11	36	126	78	4.6	12	1.7	1.2	1.2
AC-FT	3440	9320	3290	4750	16690	89240	38320	19350	1680	628	573	6440
CAL YR 1983	TOTAL 214546.28			MEAN	588	MAX	14600	MIN	.35	AC-FT	425600	
WTR YR 1984	TOTAL 97658.7			MEAN	267	MAX	5380	MIN	1.2	AC-FT	193700	

07334200 BYRD'S MILL SPRING NEAR FITTSTOWN, OK

LOCATION.--Lat 34°35'45", long 96°39'55", in SW 1/4 SW 1/4 sec.34, T.2 N., R.6 E., Pontotoc County, Hydrologic Unit 11140104, upstream from weir outlet of spring, 0.5 mi (0.8 km) upstream from Big Spring Creek, 2.0 mi (3.2 km) west of Fittstown, and 12.0 mi (19.3 km) south of Ada.

PERIOD OF RECORD.--April 1959 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 1,021.17 ft (311.253 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Records do not include diversion of about 6 to 10 ft³/s (0.17 to 0.28 m³/s) by city of Ada for municipal water supply, a part of which is discharged as effluent to Sandy Creek, tributary to Canadian River. Records of zero flow do not include seepage of up to 0.10 ft³/s (0.003 m³/s).

AVERAGE DISCHARGE.--25 years, 7.09 ft³/s (0.201 m³/s), 5,140 acre-ft/yr (6.34 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30 ft³/s (0.85 m³/s) May 30, 1960, gage height, 3.22 ft (0.981 m); no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8.1 ft³/s (0.23 m³/s) Apr. 16, gage height, 2.99 ft (0.911 m); minimum daily discharge, 0.75 ft³/s (0.021 m³/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.2	5.0	1.8	2.4	1.7	4.4	6.6	5.8	3.2	1.8	.97
2	4.6	5.2	5.8	1.9	2.4	1.7	4.5	6.6	5.8	3.1	1.1	2.5
3	4.6	5.2	5.8	2.0	2.4	1.7	4.3	6.2	5.8	2.9	1.1	2.5
4	4.6	5.2	5.8	2.0	2.4	1.8	4.8	6.2	5.8	2.9	1.1	2.0
5	4.6	5.2	5.8	2.0	2.2	1.7	5.7	6.2	5.8	2.8	1.0	2.6
6	5.0	5.2	5.8	1.9	2.2	1.7	5.8	6.2	5.8	2.7	1.0	2.9
7	5.4	5.2	5.8	1.8	2.2	1.7	6.0	6.2	5.8	2.7	1.2	3.0
8	5.8	5.2	5.8	1.7	2.2	1.5	6.2	6.2	5.8	2.7	1.2	1.7
9	5.8	5.2	5.8	1.7	2.2	1.6	6.2	6.2	5.8	2.1	1.5	1.0
10	5.6	4.9	5.8	1.4	2.2	1.7	6.2	6.2	5.5	1.4	1.7	1.8
11	5.5	4.9	5.8	1.5	2.2	1.7	6.2	6.2	5.5	1.7	1.6	2.1
12	5.5	4.9	5.8	1.5	2.2	2.0	6.2	6.2	5.5	1.7	1.5	1.9
13	5.5	4.9	5.8	1.4	2.2	2.2	6.2	6.2	5.5	1.6	2.0	1.1
14	5.5	4.9	5.6	1.4	2.1	2.3	6.4	6.0	4.7	1.1	1.8	1.6
15	5.5	4.6	5.5	1.3	2.0	2.4	6.6	5.6	4.0	.97	1.5	1.6
16	5.5	4.6	5.5	1.3	2.0	2.4	7.0	5.5	4.0	1.7	1.2	1.6
17	5.7	4.6	5.5	1.3	2.0	2.5	7.1	5.5	4.0	2.2	1.2	1.5
18	5.8	4.6	5.5	1.2	1.8	2.6	6.6	5.7	3.7	2.1	1.1	1.5
19	5.8	4.6	5.5	1.2	1.8	2.7	6.6	5.8	3.2	1.6	1.0	1.3
20	5.8	4.6	5.5	1.1	1.8	2.9	6.9	5.8	3.2	1.3	1.3	1.4
21	5.6	4.6	5.5	1.1	1.8	3.0	6.9	5.8	3.1	1.8	2.2	1.5
22	5.5	4.6	5.2	1.1	1.8	3.1	6.9	5.8	3.1	1.7	2.2	1.3
23	5.5	4.6	5.2	1.5	1.8	3.2	6.8	5.8	3.2	1.4	1.8	1.1
24	5.5	4.6	5.2	2.4	1.7	3.5	6.6	5.8	3.3	1.5	1.6	1.3
25	5.5	4.6	5.2	2.4	1.7	3.6	6.6	6.0	3.2	1.7	1.2	1.8
26	5.5	4.6	4.3	2.5	1.8	3.7	6.6	6.2	3.4	1.6	1.2	1.4
27	5.5	4.6	2.4	2.4	1.8	3.7	6.6	6.2	3.4	1.7	1.5	1.2
28	5.5	4.6	1.9	2.4	1.7	3.8	6.6	6.2	3.3	1.7	1.4	1.1
29	5.5	4.6	1.8	2.4	1.7	4.0	6.6	6.2	3.3	1.5	2.3	1.2
30	5.2	4.6	1.8	2.4	---	4.1	6.6	6.2	3.2	1.5	2.2	1.3
31	5.2	---	1.8	2.4	---	4.3	---	6.0	---	1.2	.75	---
TOTAL	166.7	144.9	153.5	54.4	58.7	80.5	186.7	187.5	133.5	59.77	45.25	49.77
MEAN	5.38	4.83	4.95	1.75	2.02	2.60	6.22	6.05	4.45	1.93	1.46	1.66
MAX	5.8	5.2	5.8	2.5	2.4	4.3	7.1	6.6	5.8	3.2	2.3	3.0
MIN	4.6	4.6	1.8	1.1	1.7	1.5	4.3	5.5	3.1	.97	.75	.97
AC-FT	331	287	304	108	116	160	370	372	265	119	90	99
CAL YR 1983	TOTAL	2969.0		MEAN	8.13	MAX	18	MIN	1.8	AC-FT	5890	
WTR YR 1984	TOTAL	1321.19		MEAN	3.61	MAX	7.1	MIN	.75	AC-FT	2620	

07335000 CLEAR BOGGY CREEK NEAR CANEY, OK

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, Hydrologic Unit 11140104, on downstream side of left pier of bridge on old U.S. Highways 69 and 75, 0.5 mi (0.8 km) downstream from Caney Creek, 1.5 mi (2.4 km) north of Caney, and at mile 24.1 (38.8 km).

DRAINAGE AREA.--720 mi² (1,865 km²).

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 485.05 ft (147.843 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1945, nonrecording gage at same site and datum.

REMARKS.--Records fair.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--42 years, 479 ft³/s (13.57 m³/s), 9.03 in/yr (229 mm/yr), 347,000 acre-ft/yr (428 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft³/s (1,510 m³/s) Oct. 14, 1981, gage height, 26.60 ft (8.108 m) maximum gage height 26.77 (8.159 m) Dec. 11, 1946; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26.9 ft (8.20 m) occurred in February 1938, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,140 ft³/s (88.9 m³/s) Mar. 13, gage height, 16.33 ft (4.977 m), no peaks above base of 4,500 ft³/s (127 m³/s); no flow Sept. 22-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	12	17	144	18	43	241	279	289	47	76	2.0	.06		
2	12	16	113	18	42	184	242	693	37	54	2.5	.00		
3	11	14	100	19	41	152	299	635	31	39	2.7	15		
4	9.1	14	91	20	40	141	263	707	28	30	2.0	68		
5	8.3	14	89	21	38	121	210	383	26	26	.81	25		
6	8.3	14	83	19	35	100	174	262	23	19	.63	14		
7	10	16	75	17	33	84	157	205	23	21	.45	6.3		
8	19	19	66	14	31	71	282	167	23	22	.36	3.2		
9	13	20	60	16	32	63	1210	139	21	19	.27	5.4		
10	11	29	53	59	33	56	623	118	22	17	.10	5.0		
11	16	27	45	210	34	51	547	100	22	14	82	58		
12	23	21	40	162	35	1190	436	91	19	14	47	23		
13	19	19	39	111	38	3010	321	92	21	9.9	35	11		
14	17	19	38	96	39	1530	249	81	26	7.6	18	6.1		
15	13	18	35	74	38	880	197	67	19	7.5	12	3.5		
16	13	17	35	63	35	595	160	59	15	6.5	9.1	1.7		
17	11	16	35	52	32	446	138	54	11	6.4	7.2	.99		
18	12	15	34	50	30	369	123	48	11	6.0	5.5	.63		
19	16	18	25	49	30	811	114	47	10	4.7	4.2	.34		
20	276	19	23	47	30	1570	108	43	9.1	4.2	3.5	.19		
21	230	19	26	46	31	745	1400	33	8.5	3.8	2.9	.01		
22	127	23	26	46	35	510	1350	34	7.3	3.1	2.3	.00		
23	89	41	26	47	36	399	616	40	7.4	3.2	2.0	.00		
24	61	567	25	48	36	381	429	39	14	5.1	1.6	.00		
25	43	308	23	49	36	361	300	35	11	3.6	1.2	.00		
26	33	172	21	51	61	301	230	46	13	2.8	1.1	130		
27	27	138	19	53	256	248	192	33	168	2.5	.76	85		
28	23	207	19	54	536	825	169	34	197	2.1	.43	43		
29	21	361	19	51	360	863	191	37	122	1.8	.29	25		
30	20	210	20	48	---	508	378	59	136	1.6	.29	22		
31	18	---	19	46	---	358	---	55	---	1.2	.19	---		
TOTAL	1221.7	2408	1466	1674	2096	17164	11387	4725	1128.3	434.6	248.38	552.42		
MEAN	39.4	80.3	47.3	54.0	72.3	554	380	152	37.6	14.0	8.01	18.4		
MAX	276	567	144	210	536	3010	1400	707	197	76	82	130		
MIN	8.3	14	19	14	30	51	108	33	7.3	1.2	.10	.00		
CFSM	.05	.11	.07	.07	.10	.77	.53	.21	.05	.02	.01	.03		
IN.	.06	.12	.08	.09	.11	.89	.59	.24	.06	.02	.01	.03		
AC-FT	2420	4780	2910	3320	4160	34040	22590	9370	2240	862	493	1100		
CAL YR 1983	TOTAL	132384.3	MEAN	363	MAX	10300	MIN	5.6	CFSM	.50	IN.	6.84	AC-FT	262600
WTR YR 1984	TOTAL	44505.40	MEAN	122	MAX	3010	MIN	.00	CFSM	.17	IN.	2.30	AC-FT	88280

RED RIVER BASIN

279

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK

LOCATION.--Lat 34°01'30", long 95°45'04", in NW 1/4 NE 1/4 sec.20,T.6 S., R.15 E., Choctaw County, Hydrologic Unit 11140103, at bridge on U.S. Highway 70, 3.5 mi (5.6 km) west of Soper, 1.8 mi (2.9 km) east of Unger and at mile 18.6 (29.9 km).

DRAINAGE AREA.--2,273 mi² (5,887 km²), U.S. Army Corps of Engineers.

PERIOD OF RECORD.--August 25, 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 392.72 ft (119.701 m) National Geodetic Vertical Datum of 1929. Auxiliary gage 7.4 mi (11.9 km) downstream.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,300 ft³/s (603 m³/s) May 20, 1983, gage height, 42.79 ft (13.042 m) minimum daily, 1.8 ft³/s (0.051 m³/s) Sept. 8, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,950 ft³/s (197 m³/s) Mar. 15, gage height, 30.09 ft (9.171 m); minimum daily, 1.8 ft³/s (0.051 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	70	800	57	138	2170	1290	541	182	235	10	5.4
2	33	62	522	58	130	1060	1020	3100	182	215	9.7	4.6
3	31	56	429	62	121	690	1390	5200	165	188	9.4	3.0
4	28	50	395	66	115	541	1720	5300	146	126	9.1	2.4
5	24	44	324	71	110	510	1210	4260	131	225	8.6	2.7
6	22	39	254	75	103	567	867	2360	137	91	8.5	3.0
7	28	35	242	77	98	442	675	1110	146	71	9.0	2.7
8	35	37	220	78	92	349	630	759	148	59	9.2	1.8
9	33	34	189	80	100	285	932	547	125	50	9.1	2.8
10	31	36	164	135	113	236	3700	441	113	45	8.9	7.1
11	31	35	148	310	132	215	2910	388	106	41	8.8	58
12	33	41	133	511	140	2920	1590	331	99	44	22	154
13	28	47	119	584	149	5410	1170	282	97	51	112	170
14	28	49	107	474	162	6510	816	252	92	43	108	121
15	28	47	98	334	157	6870	627	233	90	37	85	87
16	29	46	95	253	146	5160	512	209	89	31	63	60
17	29	51	93	214	135	2070	423	187	90	24	48	45
18	29	53	91	184	128	1270	356	172	84	21	38	37
19	31	35	89	145	125	1550	314	164	78	18	31	31
20	35	37	87	130	121	2670	288	167	72	16	225	25
21	69	37	83	127	121	4590	402	243	67	15	16	21
22	943	39	75	125	116	3290	4030	367	62	17	15	33
23	596	113	73	123	111	2590	4950	281	59	20	28	26
24	307	191	65	132	110	4600	2420	185	57	21	29	20
25	250	984	61	148	108	4520	1080	154	54	20	14	30
26	200	1850	57	154	338	2920	743	141	69	18	11	48
27	157	852	55	155	2540	1880	543	131	98	15	9.0	243
28	125	668	55	161	3570	2390	440	136	121	14	7.4	1340
29	100	507	56	161	3550	5020	378	212	225	14	6.0	596
30	90	1020	58	152	---	4540	351	289	264	13	5.1	231
31	80	---	57	145	---	2190	---	220	---	12	5.1	---
TOTAL	3520	7165	5294	5481	13079	80025	37777	28362	3448	1810	977.9	3411.5
MEAN	114	239	171	177	451	2581	1259	915	115	58.4	31.5	114
MAX	943	1850	800	584	3570	6870	4950	5300	264	235	225	1340
MIN	22	34	55	57	92	215	288	131	54	12	5.1	1.8
CAL YR 1983	TOTAL	454792.5		MEAN	1246	MAX	21000	MIN	5.1			
WTR YR 1984	TOTAL	190350.4		MEAN	520	MAX	6870	MIN	1.8			

07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'32", long 95°30'08", in NW 1/4 sec.11, T.8 S., R.17 E., Choctaw County, Okla., Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi (17.1 km) downstream from Muddy Boggy River, 26.0 mi (41.8 km) upstream from Kiamichi River, and at mile 633.1 (1,018.7 km).

DRAINAGE AREA.--44,531 mi² (115,335 km²), of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft (115.845 m) National Geodetic Vertical Datum of 1929. 1905-11, nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft (61.0 m) upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi (149.3 km) above station.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Denison Dam) 13 years, (water years 1906-11, 1937-43) 9,266 ft³/s (262.4 m³/s) 6,713,000 acre-ft/yr (8.28 km³/yr); (since regulation of Denison Dam) 40 years, (water years 1945-84), 7,794 ft³/s (220.7 m³/s), 5,647,000 acre-ft/yr (6.96 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400,000 ft³/s (11,300 m³/s) May 28, 1908, gage height, 43.2 ft (13.17 m) from rating curve extended about 41,000 ft³/s (1,160 m³/s) on basis of records for later years; minimum, 130 ft³/s Dec. 11, 12, 1956, gage height, 4.49 ft (1.369 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42,100 ft³/s (1,190 m³/s) Oct. 27, gage height, 16.28 ft (4.962 m); minimum daily, 140 ft³/s (3.96 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2570	30300	7970	3620	581	7440	8900	4340	2610	4660	802	2910
2	2740	29800	7200	3250	1770	5610	7390	13400	2290	3590	1820	2280
3	2270	29200	6440	2040	2520	6190	7660	24800	2650	2870	1870	1540
4	2330	28300	5960	2970	1310	5650	9520	21400	2020	3130	1880	1250
5	3650	23000	4230	3230	1320	3200	7810	15300	984	4670	1890	1210
6	4010	19400	2810	2360	1380	2320	6000	11200	1360	3970	1690	1210
7	2680	18600	3590	1990	1000	4940	7720	7840	2500	3510	831	1470
8	1530	18600	3880	1670	1310	6610	8060	5850	2530	3430	654	1800
9	735	18500	5040	1080	1840	5940	8150	6230	2510	2750	1720	1710
10	510	18300	5220	955	2430	6360	9310	6030	2640	2090	2390	859
11	518	15100	3770	1260	2910	6590	11900	5250	2030	2600	3260	536
12	384	12200	3710	5520	2830	7880	11300	3880	926	3450	2690	442
13	271	12000	3700	4560	2890	16400	9810	3170	1030	3540	1950	482
14	189	12000	3660	2970	1830	18300	8390	2760	3880	3520	970	554
15	156	11700	3120	2350	1730	16100	7110	2130	4930	3440	815	470
16	140	11700	3710	1710	2920	14200	6150	2780	5050	2760	1900	400
17	252	11400	3920	1440	2950	11600	5520	2350	5080	2020	2300	365
18	284	9390	3740	1230	3260	8700	5790	2410	3360	2530	2380	434
19	1590	9080	3440	5130	4040	8150	5290	2480	2810	3220	2400	329
20	1920	8960	3510	4630	3290	9840	5280	1920	3200	3280	2300	284
21	1610	8920	4680	3950	1830	11100	7770	1680	3380	3310	2210	260
22	2340	10200	4680	3780	2420	10800	10400	2080	2960	3360	2430	285
23	2090	11000	6030	2630	2970	9830	10900	1620	2870	2480	2460	356
24	5090	11100	8270	1960	2890	15300	8160	1990	3250	1280	2620	334
25	24200	12200	6830	2890	2040	15800	6080	3210	2590	1770	1960	286
26	37400	10100	8230	2390	2650	11400	5340	3440	2040	2980	2430	351
27	41200	10100	5290	2010	8560	7500	4710	3360	2670	2960	3230	606
28	40200	9700	4180	1740	11200	11300	5200	2760	3320	2760	2510	1290
29	35300	9700	2720	1290	10600	13600	4330	2040	3570	2620	1710	1840
30	29700	8670	2560	840	---	13900	4060	2120	4080	2100	2980	1010
31	30300	---	3690	667	---	11200	---	3080	---	868	3440	---
TOTAL	278159	449220	145780	78112	89271	303750	224010	172900	85120	91518	64492	27153
MEAN	8973	14970	4703	2520	3078	9798	7467	5577	2837	2952	2080	905
MAX	41200	30300	8270	5520	11200	18300	11900	24800	5080	4670	3440	2910
MIN	140	8670	2560	667	581	2320	4060	1620	926	868	654	260
AC-FT	551700	891000	289200	154900	177100	602500	444300	342900	168800	181500	127900	53860
CAL YR 1983	TOTAL	2887338		MEAN	7911	MAX	41200	MIN	140	AC-FT	5727000	
WTR YR 1984	TOTAL	2009485		MEAN	5490	MAX	41200	MIN	140	AC-FT	3986000	

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK
(Hydrologic bench-mark station)

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, Hydrologic Unit 11140105, in Ouachita National Forest, on downstream side of right bank pier of bridge on State Highway 63, 0.2 mi (0.3 km) upstream from Rattlesnake Creek, 1.1 mi (1.8 km) upstream from Big Branch, 2.1 mi (3.4 km) east of Big Cedar, and at mile 157.6 (253.6 km).

DRAINAGE AREA.--40.1 mi² (103.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 886.97 ft (270.348 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--19 years, 75.3 ft³/s (2.132 m³/s), 25.50 in/yr (648 mm/yr), 54,550 acre-ft/yr (67.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s (609 m³/s) Dec. 10, 1971, gage height, 17.08 ft (5.206 m); from rating curve extended above 9,000 ft³/s (255 m³/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Feb. 12	0400	2,790 79.0	10.15 3.094	May 3	0800	2,020 57.2	9.18 2.798
Mar. 17	0415	*4,660 132	*11.65 3.551				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	21	26	21	143	130	25	69	.41	2.0	.00		
2	.00	.00	41	27	21	118	179	622	52	.33	2.6	.00		
3	.00	.00	177	26	22	99	206	1050	41	.28	3.3	.00		
4	.00	.00	118	22	20	225	151	349	31	.25	2.4	.00		
5	.00	.00	80	16	18	205	121	239	25	.23	2.0	.00		
6	.00	.00	59	14	16	144	100	166	22	.22	2.0	.00		
7	.00	.00	45	12	16	115	87	170	19	.05	1.8	.00		
8	.00	.00	36	8.6	14	95	132	125	15	.00	1.5	.00		
9	.00	.00	30	7.2	19	81	131	102	13	.00	2.8	2.7		
10	.00	.00	150	20	20	78	117	83	10	.00	11	2.7		
11	.00	.00	325	24	59	69	104	68	8.0	.00	5.7	1.7		
12	.00	.00	142	25	1070	360	88	54	6.5	2.5	3.7	1.1		
13	.00	.00	101	26	278	255	74	45	5.3	2.2	2.6	.67		
14	.00	.00	79	25	167	171	64	36	4.4	1.2	2.1	.44		
15	.00	.00	61	24	129	150	56	32	3.6	.73	1.6	.44		
16	.00	.00	48	23	106	268	50	24	3.0	1.2	1.4	.45		
17	.00	.00	39	21	85	1280	43	18	2.5	62	1.3	.39		
18	.00	.00	33	20	81	366	38	15	2.0	33	1.2	.28		
19	.00	.00	30	16	71	439	34	16	1.6	12	.99	.10		
20	.00	.00	27	17	62	247	31	49	2.4	6.4	.83	.00		
21	.00	.00	26	17	57	169	33	68	1.5	4.3	.78	.00		
22	.00	.04	26	16	51	128	26	43	1.2	3.1	.77	102		
23	.00	106	25	23	46	217	24	29	1.0	2.5	.91	81		
24	.00	44	25	31	40	452	20	23	.86	2.6	.66	32		
25	.00	28	25	30	35	231	18	17	.68	2.1	.46	71		
26	.00	20	24	28	303	164	17	208	.69	2.9	.32	233		
27	.00	28	25	27	598	170	16	216	1.0	2.3	.26	171		
28	.00	38	25	27	269	548	13	696	.79	2.1	.22	98		
29	.00	31	25	26	180	405	18	224	.64	3.6	.00	68		
30	.00	26	26	24	---	232	24	135	.59	3.0	.00	48		
31	.00	---	26	23	---	167	---	95	---	2.4	.00	---		
TOTAL	.00	321.04	1920	671.8	3874	7791	2145	5042	345.25	153.90	57.20	914.97		
MEAN	.00	10.7	61.9	21.7	134	251	71.5	163	11.5	4.96	1.85	30.5		
MAX	.00	106	325	31	1070	1280	206	1050	69	62	11	233		
MIN	.00	.00	21	7.2	14	69	13	15	.59	.00	.00	.00		
CFSM	.00	.27	1.54	.54	3.34	6.26	1.78	4.06	.29	.12	.05	.76		
IN.	.00	.30	1.78	.62	3.59	7.23	1.99	4.68	.32	.14	.05	.85		
AC-FT	.00	637	3810	1330	7680	15450	4250	10000	685	305	113	1810		
CAL YR 1983	TOTAL	23276.12	MEAN	63.8	MAX	1500	MIN	.00	CFSM	1.59	IN.	21.59	AC-FT	46170
WTR YR 1984	TOTAL	23236.16	MEAN	63.5	MAX	1280	MIN	.00	CFSM	1.58	IN.	21.56	AC-FT	46090

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

REMARKS.--Samples were collected quarterly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

[illegible][illegible][illegible][illegible]

RED RIVER BASIN

283

07335700 KIAMICHI RIVER NR BIG CEDAR, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)
MAR 07...	--	--	--	--	--	--	--	--	--	--	--	--
APR 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<1	5	8	.4	<10	3	<1	<1	8	<6	29	.7
JUL 19...	--	--	--	--	--	--	--	--	--	--	--	--
DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
MAR 07...	--	--	--	--	--	--	--	--	3	.96	44	
APR 18...	--	--	--	--	--	--	--	--	6	.60	49	
MAY 23...	<.5	.5	1.1	<.6	.9	<.5	.04	.03	8	.63	40	
JUL 19...	--	--	--	--	--	--	--	--	17	.55	39	

07335775 SARDIS LAKE NEAR CLAYTON, OK

LOCATION.--Lat 34°37'45", long 95°21'03", in NE 1/4 SW 1/4 sec.19. T.2 N, R.19 E., Pushmataha County, Hydrologic Unit 11140105, on the northeast end of parking area on top of dam, 2.5 mi (4.0 km) north of Clayton, and at mile 2.8 (4.5 km).

DRAINAGE AREA.--275 mi² (712 km²).

PERIOD OF RECORD.--December 27, 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. The controlled outlet consists of two sluice gates and the uncontrolled outlet is a concrete spillway. Flow was diverted through control structure May 4, 1981; regulated storage began Dec. 27, 1982. Capacity, 792,100 acre-ft (977 hm³) at elevation 624.0 ft (190.20 m), maximum pool; 505,100 acre-ft (623 hm³), at elevation 611.0 ft (186.23 m), spillway crest; 430,600 acre-ft (531 hm³), top of flood pool; 302,400 acre-ft (373 hm³), top of conservation pool. Figures given herein represent total contents. Reservoir is designed for flood control, water supply, water quality control and conservation. Capacity table used since Dec. 27, 1982.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 249,300 acre-ft (307 hm³) Mar. 26, 1984, elevation, 597.10 ft (181.996 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 249,300 acre-ft (307 hm³) Mar. 26, elevation, 597.10 ft (181.996 m); minimum contents 174,300 acre-ft (215 hm³) Oct. 7, Nov. 17, elevation, 590.60 ft (180.015 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

590	168,100	594	211,600
591	178,500	596	235,500
592	189,100	598	260,900

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175200	175400	179300	183200	189200	209400	237700	236700	235900	239200	232000	228400
2	175000	175400	179600	183700	189600	210200	239100	239200	236000	238400	232200	228200
3	174800	175400	180600	183700	189300	209900	239700	241700	236000	238300	232000	227800
4	175200	175400	180200	184200	189300	211700	236700	241900	235600	238100	231800	227500
5	174700	175200	180900	184400	189200	213100	235200	240900	235500	238000	231700	227400
6	174400	174900	180800	184500	188800	213700	235600	239600	236600	238100	231700	227100
7	174400	174800	180400	184500	188700	214400	236200	238400	236500	238000	231400	226900
8	174400	174700	180400	184400	188900	214900	238300	236400	236700	237800	231200	226400
9	174600	175600	180900	185900	189400	214400	239200	235500	236200	237300	231500	228200
10	174700	175300	182900	186200	189300	215100	237100	235500	236500	237000	231600	228300
11	175600	175000	183700	186300	190900	215200	236100	235500	236600	237700	231600	227800
12	175000	174500	183600	186600	191800	221500	237100	235600	236500	238000	231600	227600
13	174500	174700	184100	186600	192500	223800	237600	236000	236700	237800	231600	227500
14	174400	175200	184200	186500	193300	224800	237500	235900	236700	237800	231200	227700
15	174400	174800	184300	186600	194200	227100	237600	235600	236600	237700	231400	227200
16	174400	174500	184300	187000	194000	228700	237800	235400	236500	237000	231100	226800
17	174600	174300	184200	187200	194200	236500	237800	235400	236000	237100	231100	226600
18	174600	174700	184300	187200	195200	240400	237700	235100	236100	237000	231100	226800
19	175300	175700	184100	187000	195000	245400	237700	235100	236000	236700	231000	226400
20	176600	174700	183800	187000	195200	244400	238700	236200	235700	236200	230500	226400
21	176600	175100	183600	187000	195200	241600	240200	236600	235500	236000	230100	226300
22	176500	176900	183600	187200	195200	238000	240100	236600	235500	235600	230000	227200
23	176100	177400	183600	187700	195700	243100	239400	236800	239200	235900	230400	227400
24	175800	177100	183400	188000	195800	247500	237000	236700	239000	235900	230000	227200
25	175900	177100	183100	188500	195300	248900	235200	236700	238400	236000	229600	228600
26	175500	178200	183100	189000	200400	248100	235200	237300	238700	236000	229400	228600
27	175400	178700	183200	189000	207000	245400	236400	238700	239200	232900	229400	228600
28	175400	178900	183700	189000	207800	242900	236400	239700	239200	232800	229400	228600
29	175300	178900	183600	189900	208100	240300	237100	239100	239300	232700	229400	228600
30	175300	179300	183200	189900	---	239100	236500	237200	239300	232400	229200	228200
31	175300	---	183200	189200	---	238200	---	236100	---	232300	228900	---
MAX	176600	179300	184300	189900	208100	248900	240200	241900	239300	239200	232200	228600
MIN	174400	174300	179300	183200	188700	209400	235200	235100	235500	232300	228900	226300
(+)	590.70	591.08	591.45	592.01	593.70	596.22	596.08	596.05	596.31	595.74	595.46	595.40
(++)	-200	+4,000	+3,900	+6,000	+18,900	+30,100	-1,700	-400	+3,200	-7,000	-3,400	-700

CAL YR 1983 MAX 197000 MIN 16100 (++) +167,700
WTR YR 1984 MAX 248900 MIN 174300 (++) +52,800

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

RED RIVER BASIN

285

07335790 KIAMICHI RIVER NEAR CLAYTON, OK

LOCATION.--Lat 34°34'30". long 95°20'26", in NE 1/4 SE 1/4 sec. 7, T.1 N., R.19 E., Pushmataha County, Hydrologic Unit 11140105, on left bank near downstream bridge abutment on U.S. Highway 271 approximately 1 mile southeast of Clayton at mile 101.6.

DRAINAGE AREA.--708 mi² (1833.7 km²).

PERIOD OF RECORD.--November 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 520.00 ft (158.496 m).

REMARKS.--Records good. Some regulation since Dec. 1982 by Sardis Lake on Jack Fork Creek 4.5 mi (7.2 km) upstream (station 07335775).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) June 7, 1981, gage height 20.21 ft (6.160 m); no flow Oct. 3-18, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 8,480 ft³/s (240 m³/s) Mar. 18, gage height 11.32 ft (3.450 m); no flow Oct. 3-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	1.1	199	31	127	1110	1620	112	487	15	5.9	.58
2	.10	1.0	181	30	125	843	1520	501	362	12	15	.36
3	.00	.83	537	28	118	660	2530	6420	280	9.6	15	.47
4	.00	.73	972	27	108	614	3040	5260	221	7.9	7.7	2.0
5	.00	.72	626	26	103	1820	2000	2920	178	7.5	5.9	1.9
6	.00	.72	414	25	96	1140	686	2390	156	6.6	8.7	1.2
7	.00	.78	304	24	87	787	552	1960	136	6.4	13	.77
8	.00	.90	234	23	86	602	824	1860	122	5.5	9.5	.50
9	.00	1.0	194	54	89	481	1600	1240	99	4.9	8.5	6.1
10	.00	1.2	321	442	98	416	2190	521	84	4.2	9.3	8.7
11	.00	1.5	656	492	193	404	1580	410	71	3.7	7.4	6.6
12	.00	1.5	1110	330	2840	2490	634	333	60	3.6	6.0	4.8
13	.00	1.5	579	275	3540	3420	504	280	51	5.2	5.5	3.7
14	.00	1.5	411	229	1360	1650	421	238	45	4.0	5.4	3.1
15	.00	1.4	325	199	905	1130	361	204	39	3.2	4.8	2.8
16	.00	1.2	259	178	676	1450	320	172	34	3.3	4.3	2.8
17	.00	1.0	208	160	536	5140	287	148	29	3.6	3.9	2.2
18	.00	1.0	172	148	453	7010	254	127	24	2.7	3.3	3.0
19	.27	1.7	147	128	405	3870	229	111	21	2.7	2.9	4.1
20	4.3	2.9	128	115	346	3930	237	122	18	2.7	2.6	4.8
21	45	3.1	114	97	292	3580	700	1040	16	41	2.3	4.9
22	11	164	99	93	260	3270	432	737	14	42	2.3	5.2
23	5.4	2110	86	102	240	2970	796	406	16	31	4.4	5.9
24	5.7	844	67	185	207	6790	1570	287	52	36	3.9	5.9
25	6.8	477	62	237	184	3710	1090	218	17	17	3.0	188
26	5.2	263	56	234	761	2860	182	280	25	16	2.1	446
27	3.9	313	51	196	5370	3440	161	3670	30	14	1.5	1270
28	3.3	441	46	175	3440	4150	140	4700	18	14	1.2	612
29	2.7	379	41	165	1610	4920	129	4310	20	11	1.0	336
30	1.6	264	37	158	---	3050	126	1770	20	8.2	.90	218
31	1.1	---	33	140	---	1850	---	1160	---	6.6	.74	---
TOTAL	96.64	5282.28	8669	4746	24655	79557	26715	43907	2745	351.1	167.94	3152.38
MEAN	3.12	176	280	153	850	2566	891	1416	91.5	11.3	5.42	105
MAX	45	2110	1110	492	5370	7010	3040	6420	487	42	15	1270
MIN	.00	.72	33	23	86	404	126	111	14	2.7	.74	.36
AC-FT	192	10480	17190	9410	48900	157800	52990	87090	5440	696	333	6250
CAL YR 1983	TOTAL	189319.76	MEAN	519	MAX	11900	MIN	.00	AC-FT	375500		
WTR YR 1984	TOTAL	200044.34	MEAN	547	MAX	7010	MIN	.00	AC-FT	396800		

07336200 KIAMICHI RIVER NEAR ANTLERS, OK

LOCATION.--Lat 34°14'55", long 95°36'18", in SW 1/4 sec.35, T.3 S., R.16 E., Pushmataha County, Hydrologic Unit 11140105, on right bank, 50 ft (15.240 m) downstream from bridge on U.S. Highway 271 and State Highway 2, 2.0 mi (3.2 km) northeast of Antlers, 7.7 mi (12.4 km) downstream from Tenmile Creek, 5.4 mi (8.7 km) upstream from Cedar Creek and at mile 59.6 (95.9 km).

DRAINAGE AREA.--1,138 mi² (2,947 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 419.82 ft (127.961 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Small diversion above station for municipal water supply of city of Antlers.

COOPERATION.--Gage-height record, 8 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--12 years, 1,405 ft³/s (39.79 m³/s), 16.76 in/yr (426 mm/yr), 1,018,000 acre-ft/yr (1.26 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Mar. 28, 1977, gage height, 38.33 ft (11.683 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,700 ft³/s (360 m³/s) Mar. 24, gage height 17.52 ft (5.340 m), no peak above base of 18,000 ft³/s (510 m³/s); minimum daily discharge, .50 ft³/s (.014 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	4.2	19	384	79	211	1950	2190	244	976	90	18	2.6		
2	3.8	18	395	78	190	1360	1950	2100	487	88	17	2.6		
3	3.4	17	570	77	175	1040	3560	5200	367	64	18	2.6		
4	2.7	17	914	76	159	879	4020	8260	293	47	14	2.5		
5	2.3	17	1080	76	145	1470	3440	4950	240	39	12	1.8		
6	2.5	17	720	75	136	2040	1710	3700	213	33	11	1.1		
7	4.2	17	515	73	124	1240	960	2790	224	26	10	.67		
8	5.3	16	398	73	116	922	1270	2280	202	23	11	.50		
9	5.5	14	322	93	120	738	1950	2020	176	19	11	1.5		
10	5.1	13	274	333	131	610	2640	1050	154	17	11	5.5		
11	4.7	13	490	785	167	538	2720	599	130	16	11	13		
12	5.1	12	930	736	861	3940	1580	472	110	85	12	24		
13	5.1	12	980	522	4420	6650	908	381	95	75	13	31		
14	5.1	11	631	418	2600	3580	719	316	84	85	14	30		
15	5.0	9.9	481	350	1310	2080	590	271	74	60	14	25		
16	4.8	9.8	402	303	911	2600	505	228	65	37	13	20		
17	4.8	9.3	332	271	709	3710	444	193	58	27	13	14		
18	4.8	8.3	277	247	605	8140	395	165	51	22	10	12		
19	5.3	12	236	227	553	7700	349	150	44	18	9.1	10		
20	6.5	13	210	205	503	5750	308	214	38	15	7.7	9.0		
21	20	13	187	183	432	4410	978	1070	34	11	6.8	8.0		
22	83	52	170	167	371	4080	1400	1240	31	9.6	5.3	7.0		
23	100	1110	146	173	325	5240	765	730	26	8.9	5.0	6.0		
24	78	2360	137	200	292	12100	1210	437	23	9.4	4.7	5.0		
25	51	839	121	280	260	8000	1630	294	83	12	3.5	9.8		
26	37	546	109	374	1030	3960	947	229	157	31	2.7	119		
27	29	556	102	340	6720	3880	335	631	120	38	2.3	737		
28	23	843	95	315	7160	6230	264	4500	212	35	1.9	1330		
29	21	742	92	286	3420	6680	235	6060	149	30	1.6	820		
30	20	521	86	255	---	5270	218	2880	97	24	1.5	490		
31	20	---	82	233	---	2930	---	1630	---	21	1.9	---		
TOTAL	572.2	7857.3	11868	7903	34156	119717	40190	55284	5013	1115.9	287.0	3741.17		
MEAN	18.5	262	383	255	1178	3862	1340	1783	167	36.0	9.26	125		
MAX	100	2360	1080	785	7160	12100	4020	8260	976	90	18	1330		
MIN	2.3	8.3	82	73	116	538	218	150	23	8.9	1.5	.50		
CFSM	.02	.23	.34	.22	1.04	3.39	1.18	1.57	.15	.03	.01	.11		
IN.	.02	.26	.39	.26	1.12	3.91	1.31	1.81	.16	.04	.01	.12		
AC-FT	1130	15580	23540	15680	67750	237500	79720	109700	9940	2210	569	7420		
CAL YR 1983	TOTAL	332560.38	MEAN	911	MAX	18100	MIN	.54	CFSM	.80	IN.	10.87	AC-FT	659600
WTR YR 1984	TOTAL	287704.57	MEAN	786	MAX	12100	MIN	.50	CFSM	.69	IN.	9.40	AC-FT	570700

07336600 HUGO LAKE NEAR HUGO, OK

LOCATION.--Lat 34°00'42", long 95°22'49", in NW 1/4 SW 1/4 sec.25, T.6 S., R.18 E., Choctaw County, Hydrologic Unit 11140105, on upstream face of Hugo Dam on Kiamichi River, 700 ft (213 m) to left of spillway, 7.0 mi (11.3 km) east of Hugo, and at mile 17.6 (28.3 km).

DRAINAGE AREA.--1,709 mi² (4,426 km²).

PERIOD OF RECORD.--January 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by rolled earth dam. The outlet works consists of a gate-controlled concrete gravity ogee-type weir with six 40-ft (12.2 m) by 50-ft (15.2 m) gates. Regulated storage began Jan. 18, 1974; conservation pool was first filled Mar. 12, 1974. Total capacity, 1,561,500 acre-ft (1.93 km³) at elevation 452.5 ft (137.92 m), top of dam, 966,700 acre-ft (1.19 km³) at elevation 437.5 ft (133.35 m), top of flood control pool. Dead storage 21,080 acre-ft (26.0 hm³) at elevation 387.5 ft (118.11 m), crest of gated spillway. Figures given herein represent total contents. Reservoir is used for flood control, water supply, recreation and conservation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 577,800 acre-ft (712 hm³) June 17, 1982, elevation, 425.00 ft (129.54 m); minimum since conservation pool was first filled, 88,860 acre-ft (110 hm³) Nov. 15, 1978, elevation, 398.47 ft (121.454 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 217,500 acre-ft (268 hm³) Mar. 26, elevation, 408.61 ft (124.544 m); minimum, 116,800 acre-ft (144 hm³) Sept. 25, elevation, 401.16 ft (122.274 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

401	115,000	415	334,000
407	192,700	420	447,100
410	239,900	425	577,800

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133900	129700	149400	162200	160800	175900	166500	160700	159300	154100	143400	125100
2	133600	129600	152200	162300	159600	170300	159900	168000	159600	153200	142800	125000
3	133000	129400	156200	161900	159200	168000	162000	184100	159500	152800	142400	124300
4	132900	129300	158900	163000	159300	167100	163300	195000	159200	152300	142000	123400
5	132300	128900	162500	163300	159200	164900	162700	194400	159300	154200	141900	123000
6	131900	129300	162600	163500	158900	164100	161500	190500	159700	153600	141000	122200
7	132500	129200	162300	163000	158800	160300	161500	184300	159600	153000	141300	121400
8	132800	128900	161400	162900	158400	158300	161900	174600	159900	152400	139800	121000
9	132500	130400	160800	162500	159500	158800	162300	165700	160300	151600	139400	123000
10	132200	129200	161500	162900	159600	159600	166500	157800	160100	151100	139100	122700
11	133400	128200	162000	162000	161600	161500	167700	156200	160000	151600	138400	122100
12	131900	128300	162200	160300	166500	183100	163700	157400	159700	153400	137800	121800
13	131300	128100	163000	160700	171800	192000	161000	158600	159700	153200	137200	121400
14	130500	128400	162300	161600	170400	188600	160300	158800	159300	153000	136600	121200
15	130400	128000	161200	162200	164300	181600	159600	159100	158700	152600	136100	120500
16	130300	127800	160700	163400	158700	177400	158400	159200	158400	151900	135500	120000
17	131000	127300	159900	164900	156500	174200	158100	159300	158000	151600	134700	119400
18	130500	127100	159900	163000	160100	177600	158500	159300	157400	150700	134300	119000
19	131000	129100	158400	161600	160800	181200	158700	159700	156900	150100	133500	118700
20	131900	128600	158300	160800	161800	174600	159600	161000	156400	149200	132800	118200
21	131900	128400	160300	160600	162500	165800	161200	165800	155900	148700	132300	117700
22	131700	130400	159300	160800	162200	158900	163800	166500	155400	148200	131700	117900
23	131400	132300	160400	161100	161100	169800	166400	161600	154900	147700	131300	117700
24	131400	137600	160400	161600	159600	198700	169100	157800	154500	147100	130500	117000
25	131300	139600	160000	162200	158300	214900	170400	157800	153500	146500	129800	118200
26	131200	141800	160400	163100	166400	211800	171100	158300	154500	146000	129100	117800
27	130800	143400	160800	163500	185200	204200	169900	158900	154300	145900	128300	120000
28	130500	145600	161400	163400	191400	204000	170000	168700	154300	145700	127800	122000
29	130300	147200	161500	163300	185600	200300	168000	173800	154700	145200	127500	123700
30	130200	148900	161800	162700	---	192900	169400	167700	154500	144600	126700	124800
31	129900	---	161900	161600	---	180700	---	160400	---	144100	125900	---
MAX	133900	148900	163000	164900	191400	214900	171100	195000	160300	154200	143400	125100
MIN	129900	127100	149400	160300	156500	158300	158100	156200	153500	144100	125900	117000
(+)	402.31	403.85	404.82	404.80	406.52	406.19	405.37	404.71	404.27	403.46	401.98	401.88
(++)	-1,300	+19,000	+13,000	-300	+24,000	-4,900	-11,300	-9,000	-5,900	-10,400	-18,200	-1,100

CAL YR 1983 MAX 271000 MIN 127100 (++) -44,700
WTR YR 1984 MAX 214900 MIN 117000 (++) -5,100

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

RED RIVER BASIN

07336820 RED RIVER NEAR DE KALB, TX

LOCATION.--Lat 33°41'15", long 94°41'39", Bowie County, Tex.--McCurain County, Okla. State line, Hydrologic Unit 11140106, near left bank at downstream side of bridge on U.S. Highway 259, 4.8 mi (7.7 km) upstream from North Mill Creek, 13 mi (20.9 km) north of De Kalb, and at mile 556.9 (896.1 km).

DRAINAGE AREA.--47,348 mi² (122,631 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 302.92 ft (92.330 m) above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. At times, flood peaks may be affected by storage in Lake Texoma (station 07331500) located approximately 169 mi (272 km) upstream, and low flows may be affected by releases for generation of electric power. Gage-height telemeter located at station.

AVERAGE DISCHARGE.--16 years (water years 1969-84), 11,300 ft³/s (320 m³/s), 8,187,000 acre-ft/yr (10.09 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 189,000 ft³/s (5,352 m³/s) Dec. 11, 1971, gage height, 31.55 ft (9.616 m), from graph based on gage readings; minimum, 213 ft³/s (6.03 m³/s) Nov. 30, 1979, from graph based on gage readings.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft³/s (5,806 m³/s) June 1957, gage height, 32.2 ft (9.81 m) from rating curve extended above 186,500 ft³/s (5,282 m³/s). The greatest flood since 1936 occurred in February 1938, stage unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,800 ft³/s (1,297 m³/s) Mar. 30 at 0900 hours, gage height, 19.34 ft (5.895 m); minimum, daily, 721 ft³/s (20.4 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3690	28000	9340	3470	2140	18500	37900	4520	8820	3610	2330	3160
2	3360	29200	9100	3820	2080	15500	34100	14300	6660	4210	1630	3690
3	3120	30000	8520	4440	1990	12200	26600	33000	3860	4620	1600	3320
4	3250	30000	7510	4200	2920	9970	16900	43900	3340	3610	2190	2460
5	2980	28200	6780	3920	2810	10200	17100	37800	3370	3440	2200	1830
6	2980	23200	6310	3870	1970	8530	17300	28600	2480	5650	2180	1550
7	4200	19800	5470	3640	1930	7000	12800	23600	1770	6630	2140	1450
8	4670	18100	4850	2930	1880	7580	14400	20000	2010	5020	1910	1420
9	3430	17900	4420	2720	1720	9280	14900	17400	2720	4250	1550	1720
10	2300	17600	4590	2660	2000	8210	15500	16000	2760	3920	1390	2110
11	1700	17700	5470	2500	2420	7270	15800	14600	2660	3200	2020	1950
12	1510	17400	5570	2280	6910	10900	21300	10700	2740	2880	2740	1330
13	1370	14000	4980	2540	11000	18500	22600	7080	2080	3860	3480	1010
14	1290	12200	5060	2680	9840	34600	19500	5530	1440	4440	2950	882
15	1160	11900	5110	4960	10900	36900	14500	4720	1690	4420	2150	861
16	1090	11700	4860	4550	9540	33100	11900	3970	4210	4160	1480	870
17	1070	11500	4740	3560	8540	30200	10400	3250	5290	3890	1360	836
18	1120	11400	4770	3140	6580	26800	8460	3760	5530	3150	2030	761
19	1110	11700	4880	2980	4790	23500	7430	3130	5270	2590	2430	721
20	1160	10900	4680	2910	4550	23200	7180	3660	3560	3110	2550	736
21	2420	9100	4340	5650	4850	26800	8900	3370	2980	3570	2570	743
22	2870	8930	3900	5310	3870	29100	11100	2690	3250	3660	2490	757
23	2280	8960	3450	4410	3230	27400	12600	3520	3370	3700	2470	815
24	2610	9100	3160	3920	4260	31300	15400	5790	2910	3800	2630	791
25	2680	10400	3010	3180	4490	35800	13000	4040	2880	2930	2760	770
26	16900	10800	2970	2960	4020	36700	10900	4080	3140	2020	2730	896
27	32100	11600	3000	3400	5790	37000	8270	3990	2560	2530	2250	962
28	36100	11500	2910	3500	10900	45100	6200	4180	2180	3290	2750	897
29	36300	10100	3000	2980	17500	45200	5470	4040	2720	3380	3370	936
30	30900	9670	3100	2600	---	45600	5470	4660	3300	3290	2620	1310
31	26600	---	3260	2320	---	42000	---	8390	---	3000	2060	---
TOTAL	238320	472560	153110	108000	155420	753940	443880	348270	101550	115830	71010	41544
MEAN	7688	15750	4939	3484	5359	24320	14800	11230	3385	3736	2291	1385
MAX	36300	30000	9340	5650	17500	45600	37900	43900	8820	6630	3480	3690
MIN	1070	8930	2910	2280	1720	7000	5470	2690	1440	2020	1360	721
AC-FT	472700	937300	303700	214200	308300	1495000	880400	690800	201400	229700	140800	82400

CAL YR 1983 TOTAL 3761518 MEAN 10310 MAX 45400 MIN 348 AC-FT 7461000
WTR YR 1984 TOTAL 3003434 MEAN 8206 MAX 45600 MIN 721 AC-FT 5957000

07337300 PINE CREEK LAKE NEAR WRIGHT CITY, OK

LOCATION.--Lat 34°06'43", long 95°04'46", in NE 1/4 NW 1/4 sec.23, T.5 S., R.21 E., McCurtain County, Hydrologic Unit 11140107, at left of outlet works of dam on Little River, 4.7 mi (7.6 km) upstream from bridge on State Highway 98, 5.0 mi (8.0 km) northwest of Wright City, and at mile 145.3 (233.8 km).

DRAINAGE AREA.--635 mi² (1,645 km²).

PERIOD OF RECORD.--June 1969 to current year. Prior to October 1970, published as Pine Creek Reservoir near Wright City.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by rolled earth dam; regulated storage began June 1, 1969; conservation pool was first filled Jan. 7, 1970. Total capacity, 1,136,000 acre-ft (1.40 km³) at elevation 509.0 ft (153.14 m), top of dam, 465,800 acre-ft (574 hm³) at elevation 480.0 ft (146.30 m), crest of spillway, 53,800 acre-ft (66.3 hm³) at elevation 438.0 ft (133.50 m) top of conservation pool, 7,140 acre-ft (8.80 hm³) dead storage at elevation 414.0 ft (126.19 m). Figures given herein represent total contents. Reservoir is designed for flood control, municipal and industrial water supply, and recreation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 348,410 acre-ft (430 hm³) Dec. 16, 1971, elevation, 474.57 ft (144.039 m); minimum since conservation pool was first filled, 28,220 acre-ft (34.8 hm³) Oct. 21, 1972, elevation, 429.34 ft (130.863 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 121,500 acre-ft (150 hm³) Mar. 30, elevation, 450.89 ft (137.431 m); minimum, 51,570 acre-ft (63.6 hm³) Dec. 16, elevation, 437.41 ft (133.323 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

436	46,650	445	85,440
439	57,610	448	102,600
442	70,490	462	217,470

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53640	53560	55890	55040	54430	70300	112500	72360	73360	73550	62020	57290
2	53490	53530	56390	55120	54700	66280	109900	80520	73550	73550	61770	57060
3	53340	53450	60110	55230	54730	63240	105800	92040	73640	73550	61680	56940
4	53230	53300	62560	55310	54850	60520	96360	99020	73600	73500	61510	56700
5	53000	53190	63800	55380	54660	58570	87980	103900	73600	73640	61390	56550
6	52780	53080	63630	55460	54620	56980	82020	108300	73640	73210	61260	56310
7	52670	53000	62400	55460	54620	56200	77250	110200	73600	72690	61060	56080
8	52630	52860	60930	55580	54620	55580	73360	106100	73550	72170	60930	55890
9	52520	52820	59380	56120	54850	55810	69340	97530	73500	71650	60810	56470
10	52380	52630	59130	56080	55040	56820	66720	88810	73500	71140	60730	56430
11	52450	52490	60440	56200	56310	58210	66280	82480	73550	71050	60600	56270
12	52230	52340	60030	56470	68660	76510	66460	78600	73550	71190	60440	56160
13	52050	52270	57210	56470	73980	84750	66680	74600	73500	71000	60230	56000
14	51900	52230	54130	56310	75090	84270	67260	72550	73500	70630	60110	55460
15	51720	52080	52120	56040	72550	81140	67750	72640	73450	70170	59990	54810
16	51680	51940	51680	55620	69160	78900	68200	72830	73310	69660	59860	54620
17	52450	51830	52120	55500	66330	79250	68610	73020	73170	69250	59740	54430
18	52630	51750	52450	54510	64270	79400	68840	73120	73020	68750	59580	54320
19	52780	52450	52820	53940	61680	76460	68880	73600	72930	68070	59420	54130
20	53300	52780	53190	53640	59090	70260	69380	74030	72740	67570	59210	53980
21	53680	53080	53680	53900	56430	65450	69750	74940	72550	66990	59050	53790
22	53860	53230	53830	54200	54660	64660	69660	75920	72410	66590	58890	54510
23	53980	54010	54200	54810	54050	70720	69610	75580	72310	65970	58970	54510
24	53980	55270	54240	55420	54050	89580	69610	74600	72270	65710	58810	54470
25	53980	56080	54320	55890	54320	97470	69840	74030	72310	65270	58610	54850
26	53940	56860	54470	55770	58810	99910	70030	73980	72740	64840	58450	55270
27	53830	57410	54580	55460	74990	102200	70210	74850	72980	64450	58290	56000
28	53790	57730	54700	55230	77850	112700	70260	79450	73260	63970	58170	56700
29	53750	57330	54850	55040	74700	119700	70210	81290	73450	63410	57970	57100
30	53710	56700	54850	54390	---	120800	70540	79000	73500	62950	57770	57370
31	53600	---	54890	54280	---	116800	---	75330	---	62310	57610	---
MAX	53980	57730	63800	56470	77850	120800	112500	110200	73640	73640	62020	57370
MIN	51680	51750	51680	53640	54050	55580	66280	72360	72270	62310	57610	53790
(+)	437.96	438.77	438.30	438.14	442.89	450.20	442.01	443.02	442.64	440.15	439.00	438.94
(++)	-260	+3,100	-1,810	-610	+20,420	+42,100	-46,260	+4,790	-1,830	-11,190	-4,700	-240
CAL YR 1983	MAX	156400	MIN	51680	(++)	-29,380						
WTR YR 1984	MAX	120800	MIN	51680	(++)	+3,510						

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-Feet

07337500 LITTLE RIVER NEAR WRIGHT CITY, OK

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, Hydrologic Unit 11140107, on left bank on downstream side of bridge on State Highway 98, 1.8 mi (2.9 km) upstream from White Oak Creek, 2.0 mi (3.2 km) west of Wright City, 4.7 mi (97.6 km) downstream from Pine Creek Lake, and at mile 140.6 (226.2 km).

DRAINAGE AREA.--645 mi² (1,671 km²).

PERIOD OF RECORD.--October 1929 to September 1931, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 346.76 ft (105.692 m) National Geodetic Vertical Datum of 1929. Oct. 12, 1929, to Sept. 30, 1931, nonrecording gage at railroad bridge 1.0 mi (1.6 km) downstream at datum 4.15 ft (1.265 m) higher. Dec. 6, 1944, to July 30, 1951, nonrecording gage at present site and datum.

REMARKS.--Records fair. Except for 10 mi² (25.9 km²) intervening area, flow completely regulated since June 1969 by Pine Creek Lake (station 07337300).

COOPERATION.--Gage-height record and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Pine Creek Lake) 27 years (water years 1930-69), 917 ft³/s (25.97 m³/s), 664,400 acre-ft/yr (819 hm³/yr); (since regulation by Pine Creek Lake) 14 years (water years 1971-84) 853 ft³/s (24.16 m³/s), 618,000 acre-ft/yr (762 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,200 ft³/s (2,210 m³/s) May 6, 1961, gage height, 45.60 ft (13.899 m); maximum gage height, 45.77 ft (13.951 m) Sept. 16, 1950; no flow at times in 1930, 1954, 1956, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 5,790 ft³/s (164 m³/s) Apr. 5, gage height, 20.25 ft (6.172 m); minimum daily discharge 3.0 ft³/s (.085 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	56	546	43	284	3760	3350	16	1510	26	209	6.0
2	20	57	621	47	217	3350	3060	74	299	24	133	6.0
3	21	59	627	47	189	2480	3220	90	179	24	72	6.4
4	22	59	571	48	177	2450	5580	100	152	21	47	5.8
5	19	58	540	48	165	2430	5540	110	143	29	33	4.3
6	17	58	559	48	156	2240	4110	133	142	80	24	4.9
7	19	61	837	48	153	1550	3130	164	136	130	17	3.9
8	25	63	987	47	155	1270	3170	2180	129	153	14	3.0
9	26	66	1030	48	168	814	3110	4880	70	167	23	7.2
10	24	66	1060	160	167	345	2580	4920	41	174	24	10
11	26	61	1300	480	196	162	1710	3850	32	179	21	9.0
12	30	61	1320	515	220	234	997	2190	27	190	21	8.4
13	28	63	2140	531	300	662	819	2150	27	198	19	7.4
14	28	66	2160	534	874	2780	489	1610	26	198	18	14
15	29	69	1820	537	2540	3520	347	250	25	198	17	106
16	30	63	956	540	2520	3580	269	138	24	198	14	83
17	41	59	331	540	2270	3690	216	107	24	198	14	48
18	51	59	283	536	1910	3660	187	87	22	198	14	33
19	54	67	234	534	1800	3870	173	103	22	191	14	22
20	57	67	142	484	1750	5120	169	131	21	185	14	14
21	63	67	102	219	1720	4650	238	105	20	185	11	12
22	61	63	72	134	1560	2020	214	164	19	185	10	26
23	57	67	63	128	1010	1420	184	492	18	198	10	31
24	52	63	47	137	550	1140	159	589	18	198	14	25
25	51	51	36	170	342	460	88	583	19	205	14	27
26	50	47	43	444	300	629	50	340	24	212	11	47
27	51	47	47	515	597	2720	32	214	32	215	11	43
28	51	67	47	526	2200	1780	21	188	30	219	11	33
29	51	368	47	527	3790	416	17	405	29	213	9.0	21
30	53	510	43	518	---	1450	13	1250	27	212	7.5	14
31	57	---	47	471	---	3330	---	1950	---	212	6.5	---
TOTAL	1184	2588	18658	9604	28280	67982	43242	29563	3287	5015	877.0	681.3
MEAN	38.2	86.3	602	310	975	2193	1441	954	110	162	28.3	22.7
MAX	63	510	2160	540	3790	5120	5580	4920	1510	219	209	106
MIN	17	47	36	43	153	162	13	16	18	21	6.5	3.0
AC-FT	2350	5130	37010	19050	56090	134800	85770	58640	6520	9950	1740	1350
CAL YR 1983	TOTAL	218297		MEAN	598	MAX	5580	MIN	17	AC-FT	433000	
WTR YR 1984	TOTAL	210961.3		MEAN	576	MAX	5580	MIN	3.0	AC-FT	418400	

07337900 GLOVER CREEK NEAR GLOVER, OK

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, Hydrologic Unit 11140107, near right bank on downstream side of pier of bridge on State Highways 3 and 7, 2.0 mi (3.2 km) north of Glover, 11.0 mi (17.7 km) northwest of Broken Bow, and at mile 9.2 (14.8 km).

DRAINAGE AREA.--315 mi² (816 km²).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 378.70 ft (115.428 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

COOPERATION.--Gage-height record and 10 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--23 years, 447 ft³/s (12.66 m³/s), 19.27 in/yr (489 mm/yr), 323,900 acre-ft/yr (399 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,600 ft³/s (2,790 m³/s) Dec. 10, 1971, gage height, 29.72 ft (9.059 m); no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1961 reached a stage of 28.84 ft (8.790 m), from floodmark. Flood in 1908 was higher than in May 1961, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (227 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Dec. 11	0600	8,680 246	9.28 2.829	Mar. 24	0700	10,500 297	10.05 3.063
Feb. 12	1000	*15,700 445	*12.48 3.804	May 3	1500	8,520 241	9.07 2.765
Mar. 12	1700	9,560 271	9.71 2.960				

Minimum daily discharge, .25 ft³/s (.007 m³/s) on Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.40	76	319	99	169	574	501	78	139	62	12	1.3		
2	.40	71	611	99	154	457	453	5430	114	51	12	1.2		
3	.40	67	4430	99	146	385	692	6380	94	41	11	1.6		
4	.25	64	1780	99	137	350	570	2860	79	34	9.8	1.5		
5	.35	58	845	99	126	485	482	1750	68	32	8.9	1.2		
6	.70	57	600	99	115	428	410	1280	62	28	8.7	1.0		
7	1.0	56	462	99	107	357	361	797	57	26	8.7	.80		
8	1.2	54	379	98	104	303	417	557	54	23	7.7	.60		
9	1.2	52	325	99	117	268	528	349	51	20	9.3	3.4		
10	1.3	52	589	218	142	240	478	232	47	18	8.8	4.1		
11	1.3	52	4830	385	521	233	448	184	42	19	8.6	3.3		
12	1.8	51	1350	345	10900	4550	412	153	37	33	8.2	2.5		
13	1.6	50	738	300	2850	3480	351	130	34	40	7.6	2.3		
14	1.6	51	554	259	1050	1130	305	115	31	30	7.0	2.2		
15	1.6	50	443	221	611	654	270	102	28	24	6.4	2.7		
16	1.6	49	374	200	469	856	245	93	26	25	6.1	2.4		
17	9.8	48	331	184	386	2520	221	81	24	23	5.5	2.2		
18	3510	47	301	173	329	1740	203	70	22	20	5.0	2.1		
19	905	100	272	156	317	973	186	94	20	16	4.5	1.9		
20	242	404	252	140	276	735	193	156	19	14	4.0	1.7		
21	756	388	235	122	239	572	485	1360	17	12	3.5	1.7		
22	810	274	215	116	218	479	231	520	16	11	3.2	4.0		
23	402	1490	189	130	200	821	148	269	14	12	3.2	7.3		
24	274	1240	168	224	184	6540	116	210	14	12	3.0	9.4		
25	205	605	161	300	168	1950	100	154	15	9.5	2.5	79		
26	166	382	140	295	436	827	89	122	71	9.7	2.2	1190		
27	136	337	128	273	5690	1500	82	101	104	10	2.0	732		
28	116	589	126	254	2390	4340	73	607	138	8.7	2.0	405		
29	102	502	116	228	969	2350	67	767	94	8.3	1.9	220		
30	90	391	110	208	---	990	65	378	72	8.8	1.6	138		
31	82	---	103	187	---	619	---	198	---	11	1.5	---		
TOTAL	7822.50	7707	21476	5808	29520	41706	9182	25577	1603	692.0	186.4	2826.40		
MEAN	252	257	693	187	1018	1345	306	825	53.4	22.3	6.01	94.2		
MAX	3510	1490	4830	385	10900	6540	692	6380	139	62	12	1190		
MIN	.25	47	103	98	104	233	65	70	14	8.3	1.5	.60		
CFSM	.80	.82	2.20	.59	3.23	4.27	.97	2.62	.17	.07	.02	.30		
IN.	.92	.91	2.54	.69	3.49	4.93	1.08	3.02	.19	.08	.02	.33		
AC-FT	15520	15290	42600	11520	58550	82720	18210	50730	3180	1370	370	5610		
CAL YR 1983	TOTAL	131149.32	MEAN	359	MAX	14400	MIN	.00	CFSM	1.14	IN.	15.49	AC-FT	260100
WTR YR 1984	TOTAL	154106.30	MEAN	421	MAX	10900	MIN	.25	CFSM	1.34	IN.	18.20	AC-FT	305700

07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK

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, Hydrologic Unit 11140107, on left bank at downstream side of bridge on U.S. Highway 70 just downstream from Lukfata Creek, 5.0 mi (8.0 km) northeast of Idabel, and at mile 103.4 (166.4 km).

DRAINAGE AREA.--1,226 mi² (3,175 km²).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.08 ft (95.122 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1946 to Oct. 26, 1950, and for stages below 9.0 ft (2.7 m) Oct. 26, 1950, to Oct. 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated since June 1969 by Pine Creek Lake (station 07337300) 41.9 mi (67.4 km) upstream.

COOPERATION.--Gage-height record and 11 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Pine Creek Lake) 22 years, (water years 1947-68), 1,622 ft³/s (45.95 m³/s), 1,174,000 acre-ft/yr (1.45 km³/yr); (since regulation by Pine Creek Lake) 14 years (water years 1971-84), 1,660 ft³/s (47.01 m³/s), 1,203,000 acre-ft/yr (1.48 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s (2,920 m³/s) Dec. 10, 1971, gage height, 39.39 ft (12.006 m); minimum, 0.4 ft³/s (0.011 m³/s) Sept. 15, 16, Sept. 21 to Oct. 1, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1938 reached a stage of 39.7 ft (12.10 m), from information by local resident, discharge, 86,000 ft³/s (2,440 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft³/s (329 m³/s) May. 3, gage height, 28.23 ft (8.605 m); minimum daily discharge, 16 ft³/s (0.45 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	86	1240	138	616	5280	4520	264	2570	181	223	24
2	22	79	1220	132	427	4920	4460	6400	1430	149	225	23
3	22	74	2950	136	403	4240	4370	11300	473	130	136	22
4	23	71	4440	150	380	3490	4940	11100	378	117	65	26
5	22	65	2840	159	369	3430	5930	8710	343	413	46	24
6	21	61	1790	160	341	3510	6020	4480	322	341	43	20
7	21	60	1700	150	323	2820	5060	2090	312	332	44	17
8	23	58	1790	139	310	2050	4420	1860	296	325	44	16
9	26	58	1670	147	313	1530	4440	3780	270	288	56	30
10	28	56	1650	386	361	968	4340	5090	184	270	86	40
11	28	52	3700	814	421	568	3570	5270	128	258	90	43
12	29	52	5230	1170	5020	2310	2270	4340	112	284	67	40
13	28	51	3940	1050	8770	6210	1650	2840	101	341	57	34
14	29	51	3450	959	7370	5710	1140	2530	93	369	50	29
15	31	50	3090	891	4380	5060	781	1500	92	336	45	41
16	29	49	2180	839	3810	5100	709	463	87	304	43	329
17	55	48	1150	800	3490	5590	657	331	79	277	43	138
18	424	48	694	774	2930	6360	616	260	72	271	43	51
19	970	61	628	744	2560	6320	627	264	66	258	44	31
20	470	220	544	720	2430	6070	554	898	64	246	42	27
21	324	567	433	524	2290	6260	2530	939	62	239	41	28
22	1040	515	386	248	2190	5590	2170	1480	59	235	38	55
23	822	573	347	248	1620	3430	1000	1230	56	228	38	62
24	493	1790	288	360	1000	5980	741	1320	55	235	38	107
25	341	1280	219	546	608	7220	562	1200	62	249	39	99
26	251	765	214	776	677	4410	396	883	67	240	39	1440
27	193	591	206	995	3970	5040	334	484	92	237	36	1520
28	146	649	185	951	6230	8120	283	469	205	241	34	914
29	122	1270	172	909	5580	7430	241	1150	308	241	33	588
30	108	1380	161	866	---	4630	208	1700	239	237	29	405
31	100	---	146	818	---	3970	---	2380	---	225	26	---
TOTAL	6265	10730	48653	17699	69189	143616	69539	87005	8677	8097	1883	6223
MEAN	202	358	1569	571	2386	4633	2318	2807	289	261	60.7	207
MAX	1040	1790	5230	1170	8770	8120	6020	11300	2570	413	225	1520
MIN	21	48	146	132	310	568	208	260	55	117	26	16
AC-FT	12430	21280	96500	35110	137200	284900	137900	172600	17210	16060	3730	12340
CAL YR 1983	TOTAL	470076	MEAN	1288	MAX	12100	MIN	21	AC-FT	932400		
WTR YR 1984	TOTAL	477576	MEAN	1305	MAX	11300	MIN	16	AC-FT	947300		

07338900 BROKEN BOW LAKE NEAR BROKEN BOW, OK

LOCATION.--Lat 34°08'35", long 94°41'00", in SW 1/4 sec.3, T.5 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, at intake structure on upstream side of dam on Mountain Fork, 9.0 mi (14.5 km) northeast of Broken Bow, and at mile 20.3 (32.7 km).

DRAINAGE AREA.--754 mi² (1,953 km²).

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1970, published as Broken Bow Reservoir near Broken Bow.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by a rolled earth and gravel structure. Outlet works consists of power-generated turbines and a concrete ogee-type weir controlled by eight 40 ft (12.2 m) by 40 ft (12.2 m) taintor gates. Regulated storage began Oct. 3, 1968; conservation pool was first filled Jan. 30, 1969. Total capacity, 1,368,000 acre-ft (1.69 km³) at elevation 627.5 ft (191.26 m), top of flood pool and spillway gates, 918,100 acre-ft (1.13 km³) at elevation 599.5 ft (182.73 m), top of power pool, and 448,200 acre-ft (553 hm³) at elevation 559.0 ft (170.38 m), bottom of power pool. Figures given herein represent total contents. Reservoir is used for flood control, power development and water supply.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,178,000 acre-ft (1.45 km³) Dec. 17, 1971, elevation, 616.41 ft (187.882 m); minimum since conservation pool was first filled, 672,000 acre-ft (829 hm³) Oct. 21, 1972, elevation 580.48 ft (176.930 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,034,200 acre-ft (1.27 km³) Mar. 30, elevation 607.37 ft (185.126 m); minimum, 713,900 acre-ft (880 hm³) Nov. 18, elevation, 583.99 ft (178.000 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

583	701,900	598	897,000
590	789,300	603	968,600
594	842,100	609	1,059,300

RESERVOIR STORAGE, (AC-FT), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	753900	723500	749800	779800	768700	846100	1029400	903300	917100	894000	857000	819300
2	753500	723500	756200	780200	769000	845400	1027000	925500	917200	892600	855100	819400
3	749800	722600	778300	780500	768600	848100	1025900	959800	917900	891400	853700	818700
4	747400	721700	788800	780200	768800	852700	1022400	973600	917800	891100	853600	818200
5	745600	721500	794100	780300	769500	854800	1019400	984900	916500	891500	853600	816600
6	745300	721400	796700	777600	766500	856400	1015100	992300	916100	890500	851900	813700
7	743900	720400	798900	774600	763400	857800	1010900	989300	916200	890000	849200	808900
8	743900	720400	800400	774800	762500	856100	1008300	978800	915500	890000	847300	808200
9	743900	719500	801800	776100	763400	853600	1007000	967000	915700	886400	846700	810000
10	741800	719400	806900	776400	764400	855000	1004100	954000	915800	882200	845400	808700
11	740600	717500	823600	775300	771000	857800	1001600	941500	914000	881700	845600	806900
12	739400	717200	830000	774300	824300	874600	998900	936300	914500	880400	845600	804800
13	738400	717200	834700	773200	838000	886200	990800	931200	911700	878300	844100	802500
14	737400	716400	836700	771600	843600	891000	978500	927800	907500	878300	843200	800900
15	737300	716400	838600	771200	842300	894800	966100	924200	903300	878300	841400	800900
16	737300	715300	840200	768700	841400	913000	953400	920500	903100	877400	839700	800400
17	738800	714900	840700	767600	838500	936900	940100	916700	902800	876500	837800	799700
18	736800	713900	842200	765800	836300	950600	932900	913300	902600	877500	837100	798200
19	730800	717700	839500	763400	834200	956000	928200	915500	899500	876400	836000	797200
20	729200	719400	837900	761200	833200	956800	924600	921300	899500	874600	834700	795800
21	727400	719900	831400	759400	830700	955300	930500	926600	898600	873000	834000	796300
22	728000	720800	831200	760100	826700	952200	933200	926000	896000	871300	830700	797900
23	728400	732100	823800	759600	823500	954100	927000	922900	896300	869300	830700	805600
24	727400	737400	816100	760700	819700	971500	919400	919500	896100	864700	829500	806100
25	726400	739000	802800	762400	815400	981600	911300	915400	894900	860600	828300	812200
26	725100	740600	788700	764000	820700	984300	905600	916100	896100	858400	827200	820900
27	725100	742800	783900	764400	836600	997400	900200	917800	895300	858300	826200	826400
28	724000	745500	782600	765500	843400	1021700	900500	923600	895300	859800	825400	829100
29	724000	747500	781100	767400	846100	1032900	900900	922500	894400	859800	824200	830700
30	724000	748800	779800	767700	---	1034200	900600	921300	894200	859500	821700	830400
31	723500	---	779800	768400	---	1032500	---	918500	---	858600	819500	---
MAX	753900	748800	842200	780500	846100	1034200	1029400	992300	917900	894000	857000	830700
MIN	723500	713900	749800	759400	762500	845400	900200	903300	894200	858300	819500	795800
(+)	584.77	586.81	589.26	588.37	594.30	607.26	598.26	599.53	597.80	595.22	592.31	593.13
(++)	-30,400	+25,300	+31,000	-11,400	+77,700	+186,400	-131,900	+17,900	-24,300	-35,600	-39,100	+10,900

CAL YR 1983 MAX 1049000 MIN 713900 (++) -162,400
WTR YR 1984 MAX 1034200 MIN 713900 (++) +76,500

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-Feet

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

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, Hydrologic Unit 11140108, near center of span on downstream side of pier of bridge on U.S. Highway 70, 2.0 mi (3.2 km) west of Eagletown, 10.7 mi (17.2 km) downstream from Broken Bow Dam, and at mile 8.9 (14.3 km).

DRAINAGE AREA.--787 mi² (2,040 km²).

PERIOD OF RECORD.--March 1924 to December 1925, October 1929 to current year. Published as Mountain Fork River near Broken Bow 1924-25 and as Mountain Fork River near Eagletown 1929-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1924-26, 1930 (M), 1936-37 (M), 1938, 1939 (M) 1942 (M).

GAGE.--Water-stage recorder. Datum of gage is 333.87 ft (101.763 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to July 23, 1950.

REMARKS.--Records good. Except for 33 mi² (85 km²) intervening area, flow completely regulated since October 1968 by Broken Bow Lake (station 07338900).

COOPERATION.--Gage-height record and 7 discharge measurements furnished by U.S. Army Corps of Engineers; records computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--Prior to regulation by Broken Bow Dam, 40 years (water years 1925, 1930-68), 1,291 ft³/s (36.56 m³/s), 934,600 acre-ft/yr (1.15 km³/yr); since regulation by Broken Bow Dam, 15 years (water years 1970-84), 1,385 ft³/s (39.22 m³/s), 1,003,000 acre-ft/yr (1.24 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s (2,850 m³/s) May 20, 1960, gage height, 26.73 ft (8.147 m); from rating curve extended above 65,000 ft³/s (1,840 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 18-19, 1915, reached a stage of 26.4 ft (8.05 m), from information by local resident, discharge, 92,500 ft³/s (2,620 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,540 ft³/s (270 m³/s) May 2, gage height, 8.26 ft (2.518 m); minimum daily discharge 89 ft³/s (2.52 m³/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	608	185	320	132	158	2330	3770	181	1690	132	746	633
2	133	121	232	114	389	2500	3790	3390	927	137	883	115
3	793	112	998	105	328	1010	3820	2170	155	395	776	111
4	1520	217	353	120	656	229	3780	399	124	456	492	226
5	1000	419	187	123	145	759	3770	229	525	202	121	179
6	571	127	395	1030	880	1560	3770	178	478	438	330	757
7	246	113	380	1720	1970	999	3780	2790	553	430	1080	1850
8	453	249	472	763	1560	1800	3910	7580	172	120	1140	1250
9	127	129	341	209	293	2030	3860	7890	481	709	1060	320
10	230	332	350	847	133	888	3850	7930	129	2110	868	345
11	1040	187	650	1740	369	177	3660	7960	352	1310	457	1170
12	847	677	249	1510	2080	1330	3420	4340	682	990	129	1250
13	320	139	440	1660	1220	1840	4760	3000	836	1380	379	1300
14	314	116	188	1240	589	1610	7340	2660	1650	932	782	1120
15	271	267	554	796	3380	1400	7340	2630	2090	151	956	601
16	119	121	212	1240	2610	2570	7380	2220	1210	135	850	120
17	1900	307	372	1370	2560	627	7890	2200	171	629	843	102
18	2430	135	126	1470	2970	332	5540	2120	351	622	631	322
19	3310	433	1280	1510	3230	1080	2600	783	519	696	315	451
20	1950	144	4430	1290	1960	3630	3220	306	146	1010	380	587
21	1330	121	2020	1560	2100	3850	1730	1180	716	988	928	759
22	977	275	1430	333	2690	3860	275	2470	1120	849	1090	588
23	155	287	2540	676	2750	4270	2940	2880	758	1240	683	509
24	143	472	4300	525	2590	3750	4930	2810	145	1990	123	854
25	494	146	7490	199	2760	603	4800	2650	152	2200	98	590
26	573	349	7570	129	2130	1100	3590	1390	656	1920	89	761
27	555	131	3090	130	2560	4010	3360	186	781	793	384	497
28	250	121	1620	294	1600	1650	1620	232	582	567	762	293
29	264	268	1130	134	1620	433	190	1130	204	433	1040	226
30	123	129	685	133	---	2620	156	1530	480	327	1110	108
31	135	---	490	307	---	3700	---	2180	---	405	1120	---
TOTAL	23181	6829	44894	23409	48280	58547	114841	79594	18835	24696	20645	17994
MEAN	748	228	1448	755	1665	1889	3828	2568	628	797	666	600
MAX	3310	677	7570	1740	3380	4270	7890	7960	2090	2200	1140	1850
MIN	119	112	126	105	133	177	156	178	124	120	89	102
AC-FT	45980	13550	89050	46430	95760	116100	227800	157900	37360	48980	40950	35690
CAL YR 1983	TOTAL	566651	MEAN	1552	MAX	7570	MIN	94	AC-FT	1124000		
WTR YR 1984	TOTAL	481745	MEAN	1316	MAX	7960	MIN	89	AC-FT	955500		

As the number of streams on which stream flow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-station gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relations for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1984

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
ARKANSAS RIVER BASIN							
07150870	Salt Fork Arkansas River tributary near Eddy, Okla.	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 mi (4.8 km) southeast of Eddy.	2.35	1964-84	10-11-83	12.24	191
07154650	Tesquite Creek near Kenton, Okla.	Lat 36°53'52", long 102°54'04", in NE 1/4 SE 1/4 sec.13, T.5N., R.1 E., Cimarron County, at county road bridge 3.9 mi (6.3 km) east of Kenton.	25.4	1964-84	08-07-84	11.72	93
07155100	Cold Springs Creek near Wheelless, Okla.	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 mi (9.7 km) northeast of Wheelless.	11.0	1964-84	05-05-84	10.85	50
07157550	West Fork Creek near Knowles, Okla.	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 mi (6.8 km) east of Knowles.	4.22	1964-84	05-06-84	12.26	59
07158500	Preacher Creek near Dover, Okla.	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 mi (11.4 km) northwest of Dover.	14.5	1952-57† 1964-84	02-27-83	1.63	6.9
07160550	West Beaver Creek near Orlando, Okla.	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 mi (8.0 km) west of Orlando.	13.9	1964-84	10-20-83	2.14	140
07171120	Clear Creek tributary near Hollow, Okla.	Lat 36°52'50", long 95°16'00", in SW 1/4 NW sec.27, T.28 N., R.19 E., Craig County, on downstream side of multi-barrel box culvert on State Highway 10, 1.2 mi (1.9 km) south-east of Hollow.	2.19	1966-75 1980-84	04-22-84	7.63	758
07174720	Hogshooter Creek tributary near Bartlesville, Okla.	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 mi (7.9 km) east of junction with U.S. Highway 75 southeast of Bartlesville.	.94	1965-84	04-20-84	7.32	205
07188140	Flint Branch near Peoria, Okla.	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 mi (5.1 km) southwest of Peoria.	4.90	1964-84	04-22-84	14.58	982
07189700	Horse Creek at Afton, Okla.	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.	21.9	1966-84	03-04-84	10.95	1,520
07194515	Mill Creek near Park Hill, Okla.	Lat 35°48'08", long 98°47'15", in NW 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 mi (10.1 km) southwest of junction with State Highway 82 near Park Hill.	2.57	1965-84	11-27-83	5.11	108

Crest-stage partial-record stations

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Discharge (ft ³ /s)
ARKANSAS RIVER BASIN--Continued							
07228290	Rough Creek near Thomas, Okla.	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 mi (7.6 km) northwest of Thomas.	10.4	1964-84	---	<1.58	<2.8
07228930	Worley Creek near Tuttle, Okla.	Lat 35°17'28", long 97°45'10", in SE 1/4 SW 1/4 sec.32, T.10N., R.5 W., Grady County, at multi-barrel culvert on State Highway 37, 3.3 mi (5.3 km) east of Tuttle.	11.2	1965-72 1978-84	10-20-83	16.68	3,000
07229420	Julian Creek tributary near Asher, Okla.	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 Stage Highway 39, 3.4 mi (5.5 km) west of Asher.	2.28	1964-84	11-27-83	12.55	240
07231320	Leader Creek tributary near Atwood, Okla.	Lat 34°57'10", long 96°20'21", 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 mi (1.1 km) southwest of Atwood.	.72	1964-84	03-12-84	8.43	122
07231950	Pine Creek near Higgins, Okla.	Lat 34°47'40", long 95°20'50", in NW 1/4 NE 1/4 sec.30, T.4 N., R.19 E., Latimer County, at bridge on State Highway 63, 5.4 mi (8.7 km) east of Higgins.	9.99	1964-84	02-27-84	9.38	1,310
07232550	South Fork tributary near Guymon, Okla.	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 mi (2.9 km) southwest of junction of U.S. Highways 54 and 64 at Guymon.	.26	1964-84	---	<6.60	<4.0
07234050	North Fork Clear Creek tributary near Balko, Okla.	Lat 36°37'01", long 100°39'50", in SW 1/4 SW 1/4 sec.23, T.2N., R.22 E., Beaver County, at multi-barrel culvert on State Highway 3, 1.5 mi (2.4 km) southeast of Balko.	4.22	1964-84	07-30-84	11.83	147
07234290	Clear Creek tributary near Catesby, Okla.	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 mi (0.2 km) east of Catesby.	8.51	1966-84	---	<3.00	<77
07237750	Cottonwood Creek near Vici, Okla.	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 mi (8.7 km) east of Vici.	11.8	1964-84	06-11-84	9.09	1,420
07237800	Bent Creek near Selling, Okla.	Lat 36°11'26", long 99°00'36", in NW 1/4 SE 1/4 sec.21, T.20N., R.17 W., Woodward County, at bridge on U.S. Highway 183 and 270, 6 mi (10 km) northwest of Selling.	139	1964-70† 1971-84	06-11-84	16.43	2,760
07241880	Sand Creek near Cromwell, Okla.	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 mi (3.5 km) west of Cromwell.	9.48	1964-84	10-20-83	15.66	3,720
07242160	Alabama Creek near Weleetka, Okla.	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 mi (3.2 km) north of Weleetka.	16.5	1965-74 1976-84	---	6.49	193
07243550	Adams Creek near Beggs, Okla.	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 mi (3.2 km) northeast of Beggs.	5.90	1965-84	---	8.49	707
07246630	Big Black Fox Creek near Long, Okla.	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 mi (3.7 km) northwest of Long.	5.32	1964-84	05-07-84	7.93	575

Crest-stage partial-record stations

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
RED RIVER BASIN							
07300150	Bear Creek near Vinson, Okla.	Lat 34°54'10", long 99°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 mi (11.1 km) west of Vinson.	7.24	1964-84	10-20-83	5.46	44
07301455	Turkey Creek near Erick, Okla.	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 mi (6.1 km) southeast of Erick.	19.8	1964-72 1978-84	---	<2.00	<68
07301480	Short Creek near Sayre, Okla.	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 mi (1.4 km) northwest of Sayre.	9.12	1964-84	06-11-84	16.71	1,400
07312850	Nine Mile Beaver Creek near Elgin, Okla.	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 mi (3.2 km) east of Elgin.	6.29	1964-84	10-20-83	11.82	3,950
07313600	Cow Creek at Waurika, Okla.	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, at Chicago, Rock Island and Pacific Railway Co. bridge, near north edge of Waurika.	193	1967-70† 1971-84	10-20-83	25.01	18,100
07315680	Cottonwood Creek tributary near Loco, Okla.	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 mi (10.6 km) southeast of Loco.	1.74	1964-84	06-10-84	9.28	776
07316140	Brier Creek near Powell, Okla.	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 mi (5.8 km) northeast of Powell.	12.0	1965-84	03-28-84	8.70	1,250
07329500	Rush Creek near Maysville, Okla.	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.	206	1953-76† 1977-84	06-10-84	9.93	4,930
07329870	Honey Creek near Davis, Okla.	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 mi (6.4 km) south of Davis.	18.7	1964-84	06-10-84	9.78	6.8
07335310	Rock Creek near Boswell, Okla.	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 mi (6.7 km) south of Boswell.	.94	1965-84	03-12-84	4.37	217
07336000	Tenmile Creek near Miller, Okla.	Lat 34°17'55", long 95°44'40", in NW 1/4 sec.16, T.3 S., R.15 E., Pushmataha County, at county road bridge, 1.2 mi (1.9 km) south of Miller.	68	1957-70† 1971-84	05-03-84	14.11	2,090
07336520	Frazier Creek near Oleta, Okla.	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 mi (0.8 km) west of Oleta.	19.4	1965-84	03-24-84	8.02	724
07338520	Yanubbee Creek near Broken Bow, Okla.	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 mi (3.7 km) north of Broken Bow.	9.10	1964-84	05-03-84	15.77	4,700
07338780	Mountain Fork tributary near Smithville, Okla.	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 mi (4.0 km) northwest of Smithville.	.68	1965-84	05-20-84	4.45	206

† Operated as a continuous-record station.

* Revised.

DISCHARGE AT PARTIAL-RECORD STATIONS--Continued

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1984

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
ARKANSAS RIVER BASIN						
07148360	Greenwood Creek near Winchester, OK	Lat 36°55'23", long 98°47'27", in SW 1/4 NW 1/4 sec.11, T.28 N., R.14 N., Woods County, at county road bridge 2.4 mi (3.9 km) south of Winchester and at mile 1.9 (3.1 km).	41.2	1972-84	10-11-83	3.5
					02-16-84	1.9
					05-22-84	4.7
					07-19-84	1.2
07165507	Rock Creek at Sapulpa, OK	Lat 35°59'07", long 96°06'48", in NE 1/4 NW 1/4 sec.2, T.17 N., R.11 E., Creek County, at bridge on U.S. Highway Alt. 75, 0.2 mi (0.3 km) south of junction with State Highway 117, 0.3 mi (0.5 km) downstream from Biren Creek, 2.3 mi (3.7 km) upstream from mouth.	67.3	1979-84	11-22-83	0.47
					02-24-84	15.0
					04-24-84	9.0
					07-13-84	.24
					08-22-84	.49
					09-12-84	.26
07178500	Dog Creek near Claremore, OK	Lat 36°15'40", long 95°36'05", in SW 1/4 SE 1/4 sec.16, T.21 N., R.16 E., Rogers County, at bridge on State Highway 88, 0.8 mi (1.3 km) upstream from Cat Creek, 1.5 mi (2.4 km) south-east of junction with U.S. Highway 66 in Claremore, 3.0 mi (4.8 km) downstream from Lake Claremore, 5.9 mi (9.5 km) upstream from Panter Creek.	63.6	1981-84	10-04-83	est. 0.2
					12-14-84	7.8
					03-07-84	64.7
					04-27-84	108
					05-18-84	17.5
					06-21-84	.40
					07-09-84	0
					09-06-84	0

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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