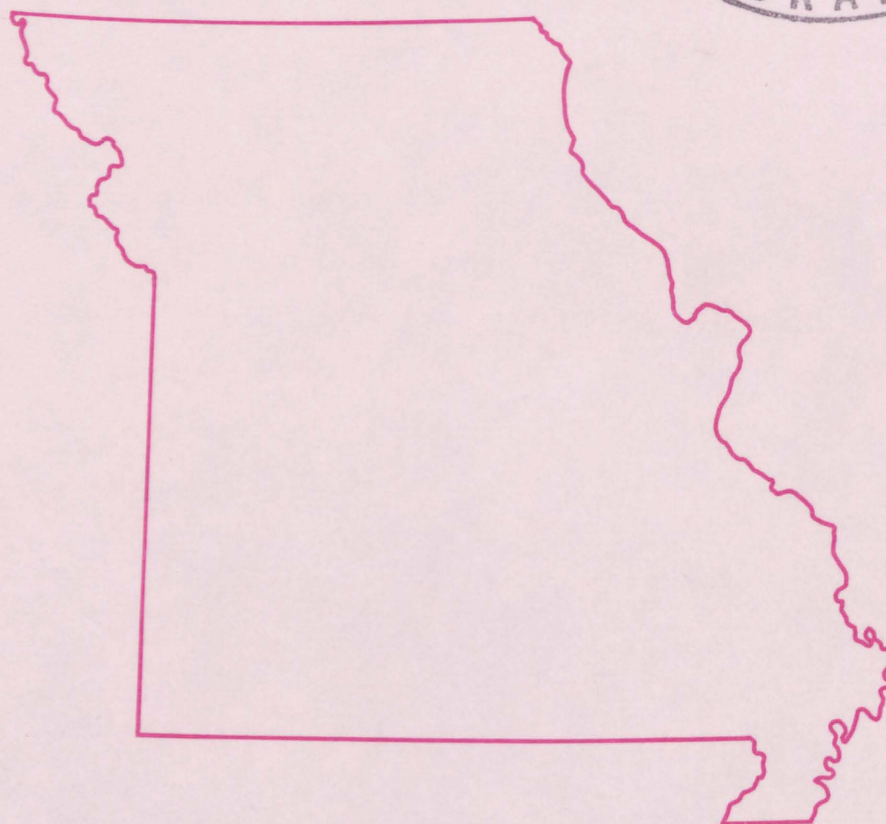
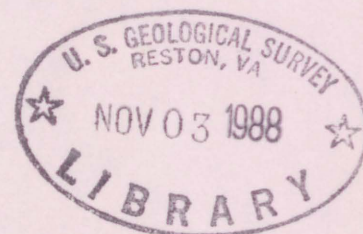


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Water Resources Data Missouri Water Year 1987



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MO-87-1
Prepared in cooperation with the Missouri Department of
Natural Resources, Division of Geology and Land Survey and
Division of Environmental Quality; Missouri State Highway
Commission; and with other State and Federal agencies

CALENDAR FOR WATER YEAR 1987

1986

OCTOBER

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Water Resources Data Missouri Water Year 1987

by L.A. Waite, J.V. Davis, H.L. Reed, D.O. Hatten, and T.J. Perkins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MO-87-1
Prepared in cooperation with the Missouri Department of
Natural Resources, Division of Geology and Land Survey and
Division of Environmental Quality; Missouri State Highway
Commission; and with other State and Federal agencies

DEPARTMENT OF THE INTERIOR
DONALD PAUL HODEL, Secretary
U.S. GEOLOGICAL SURVEY
Dallas L. Peck, Director

For information on the water program in Missouri write to:
District Chief, Water Resources Division
U.S. Geological Survey
1400 Independence Road - Mail Stop 200
Rolla, Missouri 65401

PREFACE

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

This report is the culmination of a concerted effort by personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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(Letter after station name designates type of data: (d) discharge, (c) chemical, (m) microbiological, (t) water temperature, (s) sediment, (r) radiochemical, and (e) elevation and contents)

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WATER RESOURCES DATA FOR MISSOURI, 1987

INTRODUCTION

The U.S. Geological Survey, in cooperation with local, State, and Federal agencies and organizations, obtains a large quantity of data pertaining to the water resources of Missouri each water year (October 1 to September 30). These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of Missouri. 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 FOR MISSOURI." This volume contains records for water discharge at 105 gaging stations; stage and contents at 10 lakes and reservoirs; water quality at 60 sampling stations (including 2 lakes); and data for 18 crest-stage stations.

Records of discharge and stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey Water-Supply Papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these Water-Supply Papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1970 in an annual series of Water-Supply Papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of Water-Supply Papers entitled, "Ground-Water Levels in the United States." Water-Supply Papers are in the libraries of the principal cities in the United States or may be purchased from the U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 810, Box 25425, Denver, CO 80225.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published in Survey reports on a State-boundary basis. These Survey reports carry 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 MO-87-1." For archiving and general distribution, the reports for water years 1971-74 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 the back of the title page or by telephone (703) 487-4650.

COOPERATION

The U.S. Geological Survey and organizations of the State of Missouri have had cooperative agreements for the systematic collection of streamflow records since 1921, and for water-quality records since 1964. Organizations that assisted in collecting data through a cooperative agreement with the Survey are:

Missouri Department of Conservation,
Jerry J. Presley, Director.

Missouri Department of Health,
Dr. John Bagby, Director.

Missouri Department of Natural Resources,
Dr. Frederick A. Brunner, Director.

Division of Geology and Land Survey,
Dr. James H. Williams, Director.

Division of Environmental Quality,
William C. Ford, Director.

Missouri State Highway and Transportation Commission,
Wayne Muri, Chief Engineer.

City Utilities of Springfield,
R. David Plank, Manager, Engineering Division.

The following Federal and State agencies and organizations assisted in collection of records published in this report by providing funds or services:

U.S. Army Corps of Engineers, in collecting records for
85 gaging stations, 2 water-quality stations, and 7 sediment stations.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service.

National Park Service, Midwest Region.

Little River Drainage District.

Union Electric Company of Missouri.

Missouri Park Board.

WATER USE

Listed below are general water-use facts for the state of Missouri. Figures 1 and 2 show the major water uses and percentage of surface and ground water for 1985.

MISSOURI WATER-USE FACT SHEET

1. Total offstream water use was 6,110 million gallons per day (Mgal/d).
2. Ground-water use was 640 Mgal/d, about 10 percent of total offstream use. The largest ground-water use was for irrigation in southeastern Missouri.
3. Offstream surface-water use was 5,470 Mgal/d, about 90 percent of total offstream use. The largest use was in the St. Louis and Kansas City metropolitan areas.
4. Consumptive use of fresh water was 498 Mgal/d, which was about 8 percent of the total use. Irrigation consumptive use was about 44 percent of total consumptive use.
5. The largest use of water in Missouri was for onstream hydroelectric power generation, about 20,100 Mgal/d.
6. Total population was 5.03 million, an increase of 2.3 percent from 1980.
7. Per capita water use for all offstream uses was 1,210 gallons per day.
8. Public water supplied was 645 Mgal/d: 27 percent ground water and 73 percent surface water.
9. Domestic water use was 408 Mgal/d: 13 percent self-supplied and 87 percent public-supplied.
10. Commercial water use was 77.6 Mgal/d: 22 percent self-supplied and 78 percent public-supplied.
11. Industrial water use was 221 Mgal/d: 40 percent self-supplied and 60 percent public-supplied.
12. Mining water use was 27.6 Mgal/d, mostly from dewatering of active and inactive lead mines.
13. The largest offstream use of water was 4,930 Mgal/d (mostly surface water) to produce 48,500 gigawatt hours of electricity. This was 81 percent of the total offstream water use.
14. Non-irrigation agricultural water use was 40.8 Mgal/d for fish culture and livestock use.
15. The largest use of ground water was 283 Mgal/d for irrigation. Total irrigation water use was 306 Mgal/d.
16. About 2,230 municipal and other sewage-treatment facilities released 885 Mgal/d of effluent.

SURFACE WATER

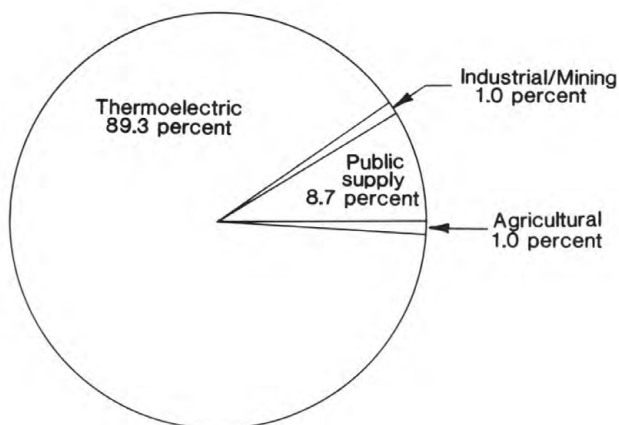


Figure 1.--Major water use categories and percentage of surface water used in Missouri during 1985.

GROUND WATER

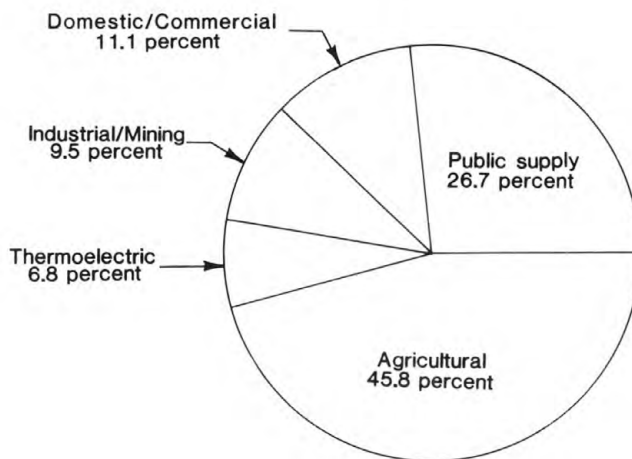


Figure 2.--Major water use categories and percentage of ground water used in Missouri during 1985.

PHYSIOGRAPHY

Missouri has three distinct physiographic areas--the Central Lowland in the north and west, the Mississippi Alluvial Plain, and between them the Ozark Plateau (fig. 3).

The Central Lowland includes most of the area north of the Missouri River and a large part of the area south of the river in the western part of the State. Elevations range from about 450 to 1,000 feet above sea level. The area has numerous, wide, flat valleys incised by rivers.

The Ozark Plateau in the southern part of the State is wooded, rugged, and has deep, narrow valleys with sharp ridges separating the valleys. Elevations range from about 1,000 to 1,600 feet above sea level.

The Mississippi Alluvial Plain is a relatively flat area of about 3,000 square miles and is located in the extreme southeast part of the State. Elevations range from about 200 to 300 feet above sea level. The area is well drained and contains excellent farmland.

HYDROLOGIC CONDITIONS

Precipitation was greater than normal in the Northwest Prairie, West Central Plains and West Ozarks. Precipitation was less than normal in the rest of the State during the 1987 water year. The normal precipitation for the standard period 1951-80 was about 36 inches in the northwest to 47 inches in the southeast. Precipitation data for the six National Weather Service divisions in Missouri are listed in table 1.

Table 1.--Precipitation and departures from normal, in inches

National Weather Service Division (fig. 2)	October-March		April-September		Water Year 1987	
	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal
Northwest Prairie	13.51	+2.13	24.29	-0.41	37.80	+1.72
Northeast Prairie	15.10	+1.57	19.83	-2.76	34.93	-1.19
West Central Plains	21.98	+7.97	22.12	-2.35	44.10	+5.62
West Ozarks	18.95	+2.94	21.57	-2.62	40.52	+0.32
East Ozarks	17.03	-1.21	19.23	-4.00	36.26	-5.21
Mississippi Alluvial Plain	18.24	-4.48	18.29	-5.77	36.53	-10.25

Streamflow

Streamflow generally reflects precipitation patterns unless a stream is regulated. Both monthly mean discharges during water year 1987 and long-term monthly mean discharges at representative stations are shown in figure 4. Streamflow was greater than long-term means during many months from October to March and less than long-term means at most stations during April to September reflecting precipitation patterns. Mean annual discharges were greater than long-term annual discharges in the western and northwestern parts of the State (fig. 3).

Listed in table 2 are 17 selected gaging stations for which the peak discharge for the period of record and the peak discharge for water year 1987 are compared. The 7-day low flow for water year 1987 is compared to the 7-day 2-year low flow for selected stations in table 3. The 7-day, 2-year low flow is the 7-day average minimum flow with a recurrence interval of 2 years.

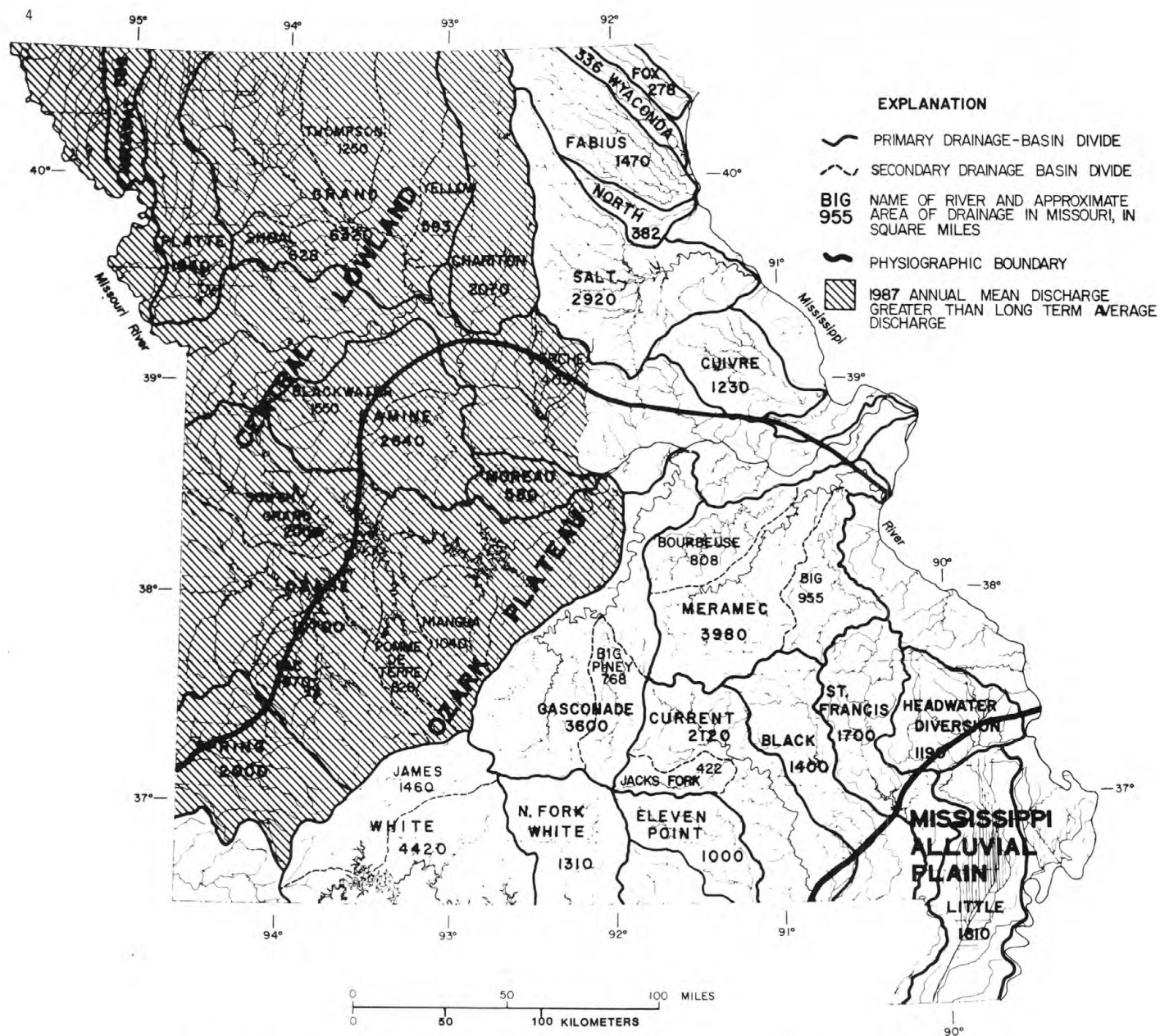


Figure 3--Major drainage basins, physiographic areas, and areas of greater-than-average discharge during 1987.

WATER RESOURCES DATA FOR MISSOURI, 1987

5

Table 2.--Comparisons of peak discharge for the 1987 water year with those for period of record for selected stations

Station identification		Peak discharge during 1987 water year		Peak discharge for period of record	
		Cubic feet per second	Date	Cubic feet per second	Date
05508000	Salt River near New London	13,400	Oct. 3	107,000	Apr. 22, 1973
05587500	Mississippi River at Grafton, Il.	423,000	Oct. 10	535,000	Apr. 29, 1973
06818000	Missouri River at St. Joseph	207,000	May 28	397,000	Apr. 22, 23, 1952
06893000	Missouri River at Kansas City	224,000	May 29	573,000	July 14, 1951
06893890	East Fork Little Blue River near Blue Springs	594	Oct. 2	11,000	Aug. 13, 1982
06894000	Little Blue River near Lake City	6,980	Feb. 28	42,300	Aug. 13, 1982
06895500	Missouri River at Waverly	196,000	May 30	549,000	July 16, 1951
06897500	Grand River near Gallatin	29,700	July 13	69,100	June 24, 1947
06905500	Chariton River near Prairie Hill	27,200	Oct. 3	31,900	Apr. 23, 1973
06909000	Missouri River at Boonville	334,000	Oct. 5	550,000	July 17, 1951
06934500	Missouri River at Hermann	549,000	Oct. 5	676,000	June 6-7, 1903
07010000	Mississippi River at St. Louis	728,000	Oct. 9	1,019,000	June 10-11, 1903
07016500	Bourbeuse River at Union	20,300	Oct. 4	73,300	Dec. 5, 1982
07018500	Big River at Byrnesville	12,700	Oct. 1	43,000	Nov. 21, 1985
07019000	Meramec River near Eureka	39,700	Oct. 5	145,000	Dec. 6, 1982
07020500	Mississippi River at Chester, Il.	754,000	Oct. 10	886,000	July 3, 1947
07022000	Mississippi River at Thebes, Il.	762,000	Oct. 14	893,000	Apr. 30, 1973 May 27, 1943

Table 3.--Comparisons of 1987 7-day low flows to 7-day, 2-year low flows and minimum daily flows for the period of record at selected stations.

[Flows in cubic feet per second]

Station identification and period of record (water years) used	Average 7-day low flows		Minimum daily flows for period of record used	
	1987	2-year	Discharge	Years of occurrence
05495000 Fox River at Wayland (1922-85)	2.0	1.3	0	Several years
06813000 Tarkio River at Fairfax (1922-85)	168	9.0	0	Several years
06921070 Pomme de Terre River near Polk (1969-85)	5.2	3.0	0.3	1980
07016500 Bourbeuse River at Union (1921-85)	41	32	11	1956
07067000 Current River at Van Buren (1912-85)	727	700	473	1956
07187000 Shoal Creek above Joplin (1942-85)	86	92	12	1954

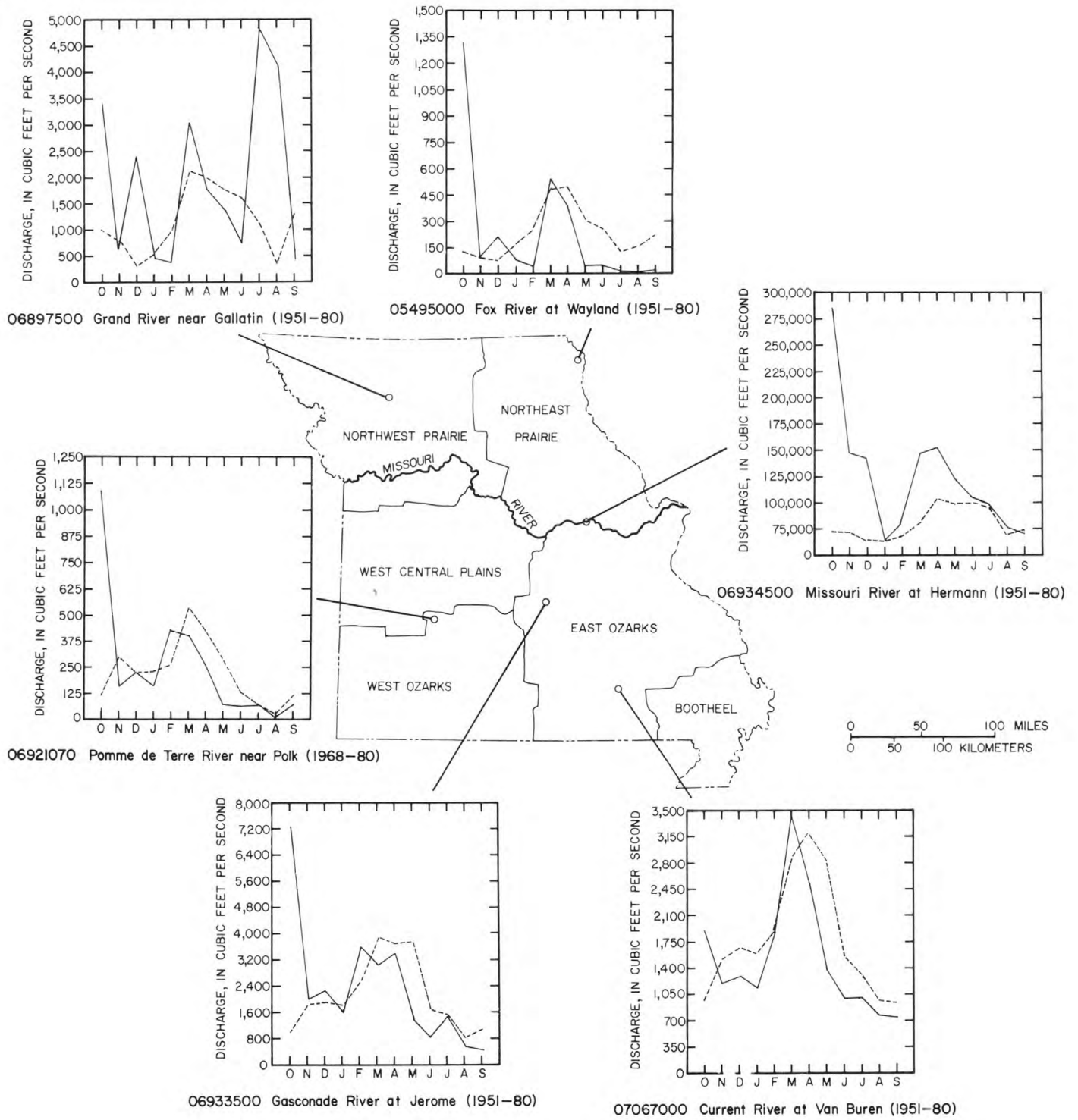


Figure 4.--Comparison of 1987 water-year streamflow to long-term means.

Chemical Quality of Streamflow

Samples for determining the chemical quality of streamflow were collected at 62 stations in Missouri. Data collected at these stations, in addition to streamflow data, include some or all of the following properties or constituents: water temperature, specific conductance, dissolved oxygen, pH, carbonate, bicarbonate, alkalinity, inorganic constituents, nutrients, trace metals, indicator bacteria, and sediment. Water-quality data did not indicate unusual changes during the year.

Missouri streams for the most part are not contaminated by industrial wastes. Localized stream pollution does occur near urban areas, industrialized centers, agricultural-chemical-use areas, and waste-dump sites. Ranges in dissolved-solids concentrations in selected streams are given in the following table:

Station identification	Dissolved-solids concentration (milligrams per liter)	
	Minimum	Maximum
Missouri River at Hermann	254	501
Missouri River at St. Joseph	398	505
Des Moines River at St. Francisville	299	471
Grand River near Summer	114	322
Center Creek near Cartersville	159	241

Daily suspended-sediment samples and data on the particle-size of suspended sediment were collected at 7 stations in Missouri. The following table lists two selected stations in the Central Lowland and Mississippi River at Thebes and their respective daily mean suspended-sediment concentrations:

Station identification	Daily mean suspended-sediment concentration (milligrams per liter)	
	Minimum	Maximum
Middle Fork Salt River at Paris	9	2,450
Salt River near New London	6	1,470
Mississippi River at Thebes	119	2,320

DOWNSTREAM ORDER AND STATION NUMBER

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 on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. The 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.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. 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 8-digit number for each station such as 06909000, which appears just to the left of the station name, includes the 2-digit part number "06" plus the 6-digit downstream order number "909000".

NUMBERING SYSTEM FOR MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the miscellaneous sites and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the sites within a 1-second grid. See figure 5 below.

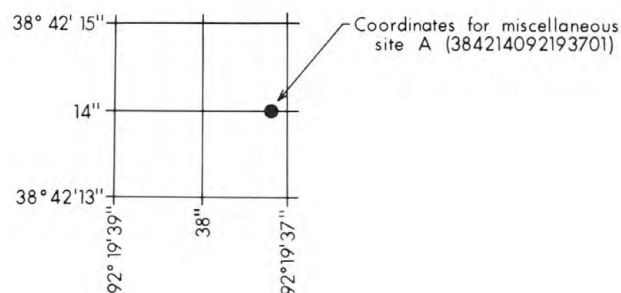


Figure 5.—System for numbering miscellaneous sites (latitude and longitude).

SPECIAL NETWORKS AND PROGRAMS

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by -digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, Book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. 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 computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

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 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.

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

For a lake or reservoir, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic surveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is 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 on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulation of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the hydrologic-data station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964 to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations 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 revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, location, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 14.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the 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 may be 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-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar year and water years.

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

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

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 discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge at crest-stage 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. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

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

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

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharge of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

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 data available

Information of a more detailed nature than that published for cost of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the District Office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District Office.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogenous. 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.

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 and minimum 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 District Office.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperature are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once daily, the water temperatures are taken at about the same time each day. Large streams have a small daily 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.

At stations where recording instruments are used, maximum and minimum temperatures for each day are published.

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 value computed as the product of discharge times mean concentration time 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 loads 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.

The daily suspended sediment concentrations at Mississippi River at St. Louis are derived from turbidity reading from the Howard Bend water treatment plant and the East St. Louis water treatment plant. Approximately once a week two depth integrated verticals are taken to adjust the relationship between suspended sediment and turbidity.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting Inch-Pound Units to International System of units (SI) 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 equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, 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.

Fecal coliform bacteria are bacteria that are present in the intestines 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 which produce blue colonies within 24 hours when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ 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 intestines 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 $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

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.

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 (FT^3/s , ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 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 (CFSM) 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 the amount of substance present in true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (colloidal) suspended particles. Analysis are performed on filtered samples.

Drainage area of a stream at a specific 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 river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earth (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

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 8-digit number.

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

Micrograms per liter (MG/L, mg/L) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

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

National Geodetic Vertical Datum of 1929 (NGVD) 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 "mean sea level."

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 suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawn 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 recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
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 distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material 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.

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 yield 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Recurrence interval as applied to floods, is the average number of years within which a given flood peak will be equaled or exceeded once. For example, a 100-year flood discharge will be exceeded on the average of once in 100 years. In terms of probability, there is a 1 percent chance that such a flood will occur in any year.

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 stream 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.

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).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

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

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

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks 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 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.

Surface area of a lake is that area outlined on the latest USGS 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 planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that 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 the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a -0.45 micrometer filter.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that automatically records water temperatures on paper tape.

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 water 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 in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total (as used in tables of chemical analyses) refers to the amount of a substance that is present both in solution and in suspension. Analyses are performed on representative samples of water-suspended sediment mixtures.

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

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 soluble 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 would be 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, 1980, is called "1980 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).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the "REVISED RECORDS" paragraph to refer to State annual basic-data reports published before 1975.

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

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting 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) pertains to 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, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for 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-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 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-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 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 programed 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. Ehke, 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-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 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-A2. *Installation and service manual for U.S. Geological Survey manometers* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 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.

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05490600 DES MOINES RIVER AT ST. FRANCISVILLE, MO
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 40°27'45", long 91°34'00", Clark County, in SW ¼ NW ¼ sec.4, T.65 N., R.6 W., Hydrologic Unit 07100009, at bridge on County Highway B at St. Francisville, and 8 mi upstream from Sugar Creek.

DRAINAGE AREA.--14,300 mi².

PERIOD OF RECORD.--August 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1973 to September 1974, October 1975 to September 1981.

WATER TEMPERATURE: October 1973 to September 1974, October 1975 to September 1981.

SEDIMENT RECORDS: April 1978 to September 1982, April 1983 to current year.

REMARKS.--The number of missing days of record exceeds 20 percent of the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1976-80): Maximum daily, 1,080 microsiemens, Jan. 25, 1977; minimum daily, 214 microsiemens, Sept. 2, 1980.

WATER TEMPERATURE (water years 1976-80): Maximum daily, 35.0°C, July 6, 1977; minimum, 0.0°C many days during winter periods.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,010 mg/L, Apr. 13, 1981; minimum daily mean, 11 mg/L, Nov. 23, 1980.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 765,000 tons, Mar. 20, 1982; minimum daily, 41 tons, Apr. 6, 1981.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,930 mg/L, Mar. 18; minimum daily mean, 43 mg/L, Jan. 18.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 132,000 tons, Apr. 15; minimum daily, 346 tons, Feb. 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 19...	0920	23000	641	8.60	3.0	8.8	14.7	111	2600	820
JAN 07...	0930	4550	770	8.50	1.5	4.0	14.4	103	K28	K28
MAR 03...	1000	6900	536	8.10	4.0	88	--	--	860	5000
MAY 12...	0915	9840	551	8.00	20.5	13	9.5	107	84	K16
JUL 07...	0920	3330	480	9.20	25.5	13	7.9	98	540	220
SEP 15...	0900	8280	453	8.60	20.5	12	8.6	97	280	310

DATE	HARD- NESS (MG/L AS CaCO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CaCO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS Ca) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CaCO3 (MG/L) (39086)
NOV 19...	330	71	87	28	9.7	6	0.2	3.1	253
JAN 07...	390	88	100	33	15	8	0.3	2.3	298
MAR 03...	260	91	70	21	14	10	0.4	3.1	170
MAY 12...	280	69	75	23	10	7	0.3	2.8	213
JUL 07...	250	63	62	23	12	9	0.3	3.5	187
SEP 15...	250	48	64	21	9.7	8	0.3	4.6	198

K--Results based on colony count outside the acceptable range (non-ideal colony count).

DES MOINES RIVER BASIN

05490600 DES MOINES RIVER AT ST. FRANCISVILLE, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 19...	56	15	0.40	21	407	430	0.55	25300	6.50
JAN 07...	85	22	0.40	18	471	530	0.64	5790	6.80
MAR 03...	92	17	0.30	9.5	337	330	0.46	6280	3.70
MAY 12...	54	17	0.10	13	352	320	0.48	9350	6.80
JUL 07...	55	21	0.40	11	309	320	0.42	2780	4.00
SEP 15...	43	13	0.10	15	299	310	0.41	6680	3.00

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 19...	0.030	0.04	1.3	0.190	0.200	0.130	104	6460	50
JAN 07...	0.060	0.08	1.0	0.180	0.120	0.100	82	1010	30
MAR 03...	0.150	0.19	2.6	0.320	0.040	0.030	438	8160	93
MAY 12...	0.030	0.04	3.2	0.190	0.090	0.090	98	2600	61
JUL 07...	0.050	0.06	2.0	0.260	0.040	0.040	68	611	40
SEP 15...	<0.010	--	1.0	0.150	0.130	0.110	54	1210	60

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 19...	<10	2	87	<0.5	1	<1	<3	3	7	<5
JAN 07...	<10	2	93	<0.5	<1	<1	<3	3	<3	<5
MAY 12...	<10	2	99	<0.5	<1	<1	<3	--	<3	<5
JUL 07...	<10	2	84	<0.5	4	<1	<3	3	<3	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 19...	24	3	<0.1	<10	4	2	<1	230	<6	17
JAN 07...	27	4	<0.1	<10	<1	1	<1	300	<6	12
MAY 12...	20	1	<0.1	<10	1	2	<1	220	<6	10
JUL 07...	19	<1	0.3	<10	<1	2	<1	240	<6	4

05490600 DES MOINES RIVER AT ST. FRANCISVILLE, MO--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70339)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)	SED. SUSP. FALL DIAM. % FINER THAN (70346)
OCT 01...	1350	31900	34	40	49	63	91	95	98	100	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)	BED MAT. SIEVE DIAM. % FINER THAN (80172)	BED MAT. SIEVE DIAM. % FINER THAN (80173)
APR 22...	0	0	3	30	72	88	92	95	99	100

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	31600	917	78300	24100	161	10500	21300	90	5200
2	24700	1280	85300	24100	143	9300	18400	107	5300
3	27300	1290	94900	24000	138	8950	16500	108	4830
4	24400	1120	73600	23700	147	9430	16100	108	4710
5	13500	629	22900	23500	143	9050	14300	122	4710
6	9880	356	9510	23400	81	5110	12500	145	4900
7	8370	234	5300	23600	110	7030	11200	160	4820
8	7720	164	3420	23500	200	12700	9700	151	3950
9	7400	140	2810	23800	206	13300	11500	152	4710
10	7190	122	2360	23700	138	8800	13000	220	7710
11	7150	117	2260	23500	119	7560	13500	199	7260
12	7090	131	2500	23400	121	7640	11800	135	4300
13	10900	190	5610	23300	160	10100	9720	119	3140
14	12800	640	22100	23100	178	11100	5640	111	1680
15	9040	439	10700	23400	128	8080	4460	103	1250
16	7960	200	4310	23300	128	8040	4620	146	1830
17	12400	174	5830	23100	114	7120	4910	123	1630
18	18800	316	16100	23000	109	6800	6700	115	2080
19	21800	391	23000	23000	155	9620	7520	160	3240
20	22300	349	21000	22800	137	8410	8090	110	2410
21	22400	367	22200	22700	109	6700	8400	116	2620
22	23100	209	13000	22500	150	9120	8500	114	2620
23	23600	172	10900	22500	159	9670	9000	94	2290
24	23200	185	11600	23400	104	6600	7800	117	2460
25	24500	205	13500	23400	89	5620	7440	142	2850
26	40100	544	58800	23200	93	5800	6600	118	2100
27	34900	698	65700	23000	104	6480	6600	116	2070
28	23600	476	30300	22700	147	9000	6600	127	2260
29	22600	214	13100	22300	197	11900	6510	172	3020
30	23900	159	10300	22100	118	7020	5640	98	1490
31	24000	152	9870	---	---	---	4750	84	1080
TOTAL	578200	---	751080	697100	---	256550	299300	---	104520

DES MOINES RIVER BASIN

05490600 DES MOINES RIVER AT ST. FRANCISVILLE, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	4490	92	1120	11600	---	---	2900	247	1930
2	5040	101	1370	10300	---	---	5510	1120	16700
3	5030	88	1200	4760	---	---	6900	916	17100
4	4870	90	1190	3420	---	---	7060	167	3190
5	4600	92	1140	3420	---	---	7570	139	2840
6	4580	129	1590	4050	69	752	8090	313	6840
7	4550	112	1380	4030	63	688	8620	176	4100
8	4300	61	706	3570	80	768	7800	120	2540
9	4300	79	913	3320	86	768	6040	116	1890
10	4260	88	1020	3310	87	779	5680	100	1540
11	4300	79	920	3300	92	821	4610	76	943
12	4280	60	689	3250	85	746	4800	95	1240
13	4550	66	813	3270	86	759	5830	117	1840
14	4260	72	825	3280	67	595	5720	117	1800
15	3820	70	720	3310	62	558	5200	100	1440
16	3730	118	1190	3300	65	576	5240	100	1480
17	3760	71	725	3030	71	584	5100	363	5000
18	3640	43	421	2850	71	548	4870	2930	38500
19	3710	---	---	2840	64	492	5560	1520	22800
20	3900	---	---	2800	78	588	7210	415	8070
21	3700	---	---	2900	124	975	7300	118	2330
22	3870	---	---	2850	141	1090	8840	367	8750
23	3440	---	---	2980	75	604	8500	201	4620
24	2900	---	---	2780	54	409	7900	147	3140
25	2530	---	---	2880	54	423	8800	311	7390
26	3900	---	---	2840	45	346	10100	250	6810
27	3900	---	---	2850	56	434	11000	424	12600
28	4720	---	---	2850	79	606	12500	560	18900
29	5370	---	---	---	---	---	15700	1280	54100
30	5550	---	---	---	---	---	15800	1240	53000
31	8010	---	---	---	---	---	15200	560	23000
TOTAL	133860	---	---	105940	---	---	241950	---	336423
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	17200	659	30600	11800	221	7060	18100	329	16100
2	17000	251	11500	10600	206	5910	21500	288	16700
3	16600	277	12400	10600	297	8510	21100	247	14100
4	17500	242	11400	10300	232	6450	19900	206	11100
5	15600	210	8840	12900	180	6260	14700	186	7370
6	16800	189	8560	18400	212	10500	11300	165	5040
7	17000	186	8550	20600	359	20000	9780	165	4370
8	16500	193	8600	19800	536	28700	9300	181	4550
9	16400	288	12800	16400	395	17500	8540	207	4770
10	16300	668	29400	11600	218	6820	8120	233	5110
11	15600	923	38900	10300	182	5080	7580	197	4030
12	15300	1640	67600	9840	185	4910	7210	182	3530
13	14900	1210	48900	8080	230	5030	7200	197	3830
14	15800	1030	43900	7680	256	5310	7140	208	4010
15	22400	2170	132000	7320	203	4020	6730	198	3590
16	20800	1380	77400	7100	173	3320	6090	203	3340
17	24400	647	42600	6480	209	3650	5530	151	2260
18	28100	505	38300	6210	245	4100	4950	131	1750
19	30400	478	39300	6160	245	4070	4590	153	1890
20	29800	452	36400	6140	192	3180	4790	259	3340
21	28500	426	32800	6170	214	3570	4770	228	2930
22	24700	400	26700	7490	245	4960	4780	229	2950
23	23400	490	31000	8650	251	5850	4870	277	3650
24	23200	491	30700	7860	266	5650	4990	230	3100
25	22400	341	20600	6130	203	3360	7150	279	5390
26	19800	256	13700	5640	205	3120	6900	286	5320
27	15600	251	10600	6000	1540	24900	4650	390	4890
28	13500	263	9590	11500	2710	84100	9210	434	10800
29	13100	236	8350	7240	579	11300	13000	327	11500
30	12800	262	9040	10400	391	11000	8490	298	6820
31	---	---	---	16000	370	16000	---	---	---
TOTAL	581400	---	901030	311390	---	334190	272960	---	178130

DES MOINES RIVER BASIN

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05490600 DES MOINES RIVER AT ST. FRANCISVILLE, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	5500	316	4690	5810	391	6130	22400	---	---
2	4800	262	3400	5210	355	5000	22300	---	---
3	3820	210	2170	5200	240	3370	22100	---	---
4	3670	202	2000	4980	160	2160	21900	---	---
5	4120	203	2250	3900	179	1890	21800	---	---
6	3710	212	2130	3720	186	1870	21700	---	---
7	3330	235	2120	3700	168	1680	21700	---	---
8	3200	270	2330	3720	125	1260	21700	---	---
9	3200	294	2540	3770	201	2040	21700	---	---
10	4800	250	3240	2970	126	1010	18600	263	13200
11	12700	483	16600	3860	69	724	15400	216	8960
12	15000	730	29600	4400	203	2410	13300	225	8090
13	19300	641	33400	5030	254	3450	11900	246	7920
14	21900	1270	75400	5890	255	4050	8940	150	3630
15	21600	1580	92100	7270	307	6020	8280	124	2770
16	21700	781	45700	9670	282	7370	6220	124	2080
17	21700	899	52700	8730	120	2880	5830	182	2870
18	21700	559	32800	8160	212	4670	12800	536	18500
19	21600	409	23900	7960	310	6650	13400	676	24500
20	20800	328	18400	6920	238	4450	13200	488	17400
21	17100	265	12200	6100	176	2900	12500	295	9970
22	10900	236	6950	5350	141	2040	12200	226	7440
23	8110	231	5060	4600	143	1780	12000	283	9170
24	7490	226	4570	5440	162	2390	10700	203	5870
25	10900	224	6600	5660	177	2700	9500	168	4300
26	11700	227	7180	7140	153	2950	8680	142	3320
27	10100	240	6550	21000	137	7770	7350	133	2630
28	8840	251	5980	18500	134	6680	6830	130	2390
29	8210	278	6160	16800	135	6140	6990	151	2850
30	7870	321	6830	20200	139	7610	6810	248	4560
31	6940	359	6730	21700	139	8120	---	---	---
TOTAL	346310	---	522280	243360	---	120164	418730	---	---

FOX RIVER BASIN

05495000 FOX RIVER AT WAYLAND, MO

LOCATION.--Lat 40°23'33", long 91°35'50", in NW ¼ sec.31, T.65 N., R.6 W., Clark County, Hydrologic Unit 07110001, on left bank 30 ft downstream from bridge on U.S. Highway 136, 0.8 mi west of Wayland, and 5.0 mi downstream from Brush Creek, and at mile 15.2.

DRAINAGE AREA.--400 mi², approximately.

PERIOD OF RECORD.--February 1922 to current year.

REVISED RECORDS.--WSP 785: 1934.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 501.52 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1929, nonrecording gage at bridge 2.8 mi upstream at different datum; Oct. 1, 1929 to June 11, 1936, nonrecording gage, at bridge 90 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 24 to Dec. 7, and Mar. 2-11. Records good except for estimated daily discharges and period of ice effect Dec. 10 to Feb. 5, which are fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--65 years, 261 ft³/s, 8.86 in/yr, 189,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft³/s, Apr. 22, 1973, gage height, 21.71 ft; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	1100	*9,300	*16.92	Oct. 26	1645	4,990	13.34

Minimum daily discharge, 1.9 ft³/s, Aug 4-9, Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4610	198	77	65	39	636	353	55	39	9.5	4.6	14
2	3900	165	208	62	52	1030	267	52	514	8.9	3.7	9.5
3	7720	145	179	55	73	580	196	52	213	8.9	2.7	7.1
4	5090	142	127	61	71	301	150	53	75	9.2	1.9	6.0
5	3480	131	89	70	54	203	123	53	45	17	1.9	4.7
6	919	120	73	65	54	156	104	98	32	33	1.9	3.4
7	554	112	627	61	82	131	90	64	25	15	1.9	3.3
8	404	106	1500	66	134	118	78	52	20	13	1.9	2.8
9	316	101	913	60	91	97	69	44	18	12	1.9	2.3
10	249	92	559	55	49	83	65	40	16	9.5	4.2	2.3
11	208	87	237	60	45	71	63	37	14	10	7.4	2.2
12	212	84	170	63	38	67	59	35	14	15	7.0	1.9
13	222	83	128	68	33	67	551	32	13	14	16	2.2
14	410	99	172	77	27	66	1900	30	12	19	20	2.3
15	516	69	135	130	24	90	3330	27	11	18	16	18
16	341	67	120	117	20	385	1470	25	9.8	14	8.4	89
17	219	72	115	108	13	366	653	25	8.8	14	8.3	210
18	169	76	115	251	12	811	410	24	8.0	11	8.6	54
19	141	76	101	117	9.6	2900	289	25	7.8	8.1	7.5	74
20	124	78	95	88	9.2	1340	215	28	7.4	6.8	5.6	57
21	113	82	97	82	10	594	162	27	7.8	5.4	4.3	43
22	105	88	82	80	9.7	381	135	25	11	14	3.3	27
23	99	91	81	81	9.9	276	129	20	73	11	2.5	17
24	92	88	81	96	9.0	300	130	21	71	5.7	2.3	11
25	225	80	79	56	10	793	117	20	38	3.9	3.7	8.4
26	4000	74	76	36	13	579	101	19	23	3.0	4.1	5.0
27	3780	78	73	35	13	369	87	19	16	2.7	4.9	3.4
28	1330	74	70	34	26	319	75	19	13	2.7	5.7	3.0
29	550	74	69	25	---	1800	66	29	11	3.2	13	6.1
30	347	68	69	32	---	1260	60	54	10	6.6	15	18
31	249	---	66	39	---	602	---	36	---	6.8	17	---
TOTAL	40694	2900	6583	2295	1030.4	16771	11497	1140	1376.6	330.9	207.2	707.9
MEAN	1313	96.7	212	74.0	36.8	541	383	36.8	45.9	10.7	6.68	23.6
MAX	7720	198	1500	251	134	2900	3330	98	514	33	20	210
MIN	92	67	66	25	9.0	66	59	19	7.4	2.7	1.9	1.9

CAL YR 1986 TOTAL 222481.0 MEAN 610 MAX 11600 MIN 12
WTR YR 1987 TOTAL 85532.5 MEAN 234 MAX 7720 MIN 1.9

05496000 WYACONDA RIVER ABOVE CANTON, MO

LOCATION.--Lat 40°08'32", long 91°33'55", in SW ¼ SW ¼ NE ¼ sec.28, T.62 N., R.6 W., Lewis County, Hydrologic Unit 07110001, on left bank on downstream side of bridge on State Highway 16, 1.9 mi upstream from Sugar Creek, and 2.5 mi west of Canton, and at mile 16.7.

DRAINAGE AREA.--393 mi².

PERIOD OF RECORD.--October 1932 to September 1972, October 1979 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 517.41 ft above National Geodetic Vertical Datum of 1929. Prior to May 1, 1939, nonrecording gage 500 ft downstream at datum 2.00 ft lower. Sept. 25, 1975, to Sept. 17, 1979, nonrecording gage at present site and at datum 2.00 ft lower.

REMARKS.--Estimated daily discharges: Oct. 29 to Nov. 19, Dec. 9-20, Mar. 4-9, 16 to Apr. 9, 20-26. Records good except for estimated daily discharges and period of ice effect Dec. 20 to Feb. 10, which are fair. Several observations of water temperature and specific conductance made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, (water years 1933-72, 1980-current year) 258 ft³/s, 8.92 in/yr, 186,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft³/s, June 30, 1933, maximum gage height, 31.33 ft, Sept. 22, 1986; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	1600	6,680	22.26	Oct. 28	0100	4,320	18.42
Oct. 4	2200	*8,000	*23.98				

Minimum daily discharge, 3.6 ft³/s, Aug. 12, Sept. 5, 6, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6470	213	293	60	100	642	313	50	17	10	5.3	5.4
2	5140	169	721	57	140	854	220	47	366	9.4	4.6	4.6
3	6470	140	423	46	173	408	164	47	183	8.9	4.3	4.2
4	7740	138	204	52	140	202	132	49	79	12	4.2	3.8
5	6980	124	109	58	118	133	115	45	48	25	4.3	3.6
6	3240	105	81	60	179	106	102	47	34	36	4.2	3.6
7	966	93	773	61	336	91	95	41	26	190	4.1	4.2
8	413	87	2350	57	268	82	88	37	21	29	4.0	5.1
9	261	82	1390	51	187	73	84	34	18	11	4.0	4.2
10	187	74	741	34	110	63	80	31	16	12	4.0	3.8
11	148	66	267	50	92	55	76	30	14	14	4.0	3.6
12	177	61	185	71	91	53	74	27	23	11	3.6	3.7
13	164	43	154	76	79	52	652	25	15	13	38	3.9
14	191	49	147	92	73	52	2210	24	13	12	113	4.3
15	327	47	143	206	70	57	3050	23	11	13	56	6.0
16	197	47	128	176	62	293	2480	22	9.6	10	24	237
17	124	53	127	97	51	411	951	22	8.8	9.0	30	555
18	95	57	129	108	46	536	482	29	8.0	8.0	24	231
19	79	61	102	148	47	2750	288	24	7.6	7.3	17	109
20	68	76	92	123	46	1780	204	24	7.9	6.6	11	61
21	61	81	98	98	49	646	149	30	28	6.1	8.4	32
22	54	84	95	83	49	342	112	25	20	5.7	6.3	20
23	52	83	80	76	47	245	102	21	15	5.7	5.1	13
24	48	77	85	67	43	250	102	19	153	5.4	4.7	10
25	325	67	82	41	41	812	97	18	38	5.1	4.7	8.2
26	3360	70	78	27	41	504	93	18	20	4.9	4.8	6.8
27	3950	85	71	26	41	273	85	18	14	5.2	8.1	5.4
28	2990	81	64	27	65	263	68	17	12	6.8	7.1	4.8
29	934	67	62	34	---	1950	58	16	10	6.1	8.8	5.0
30	493	59	64	50	---	1560	53	23	9.8	11	8.0	4.7
31	295	---	63	63	---	569	---	19	---	10	6.4	---
TOTAL	51999	2539	9401	2275	2784	16107	12779	902	1245.7	519.2	436.0	1366.9
MEAN	1677	84.6	303	73.4	99.4	520	426	29.1	41.5	16.7	14.1	45.6
MAX	7740	213	2350	206	336	2750	3050	50	366	190	113	555
MIN	48	43	62	26	41	52	53	16	7.6	4.9	3.6	3.6

CAL YR 1986 TOTAL 265504.8 MEAN 727 MAX 16500 MIN 4.5
WTR YR 1987 TOTAL 102353.4 MEAN 280 MAX 7740 MIN 3.6

05497000 NORTH FABIUS RIVER AT MONTICELLO, MO

LOCATION.--Lat 40°06'30", long 91°42'51", in SW ¼ SE ¼ sec.6, T.61 N., R.7 W., Lewis County, Hydrologic Unit 07110002, on right bank upstream from bridge on State Highway 16, 1.0 mi south of Monticello, and 19.0 mi upstream from Middle Fabius River.

DRAINAGE AREA.--452 mi².

PERIOD OF RECORD.--February 1922 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 925: 1937-39(M). WSP 1308: 1922(M), 1924-26(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 540.73 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1930, nonrecording gage at site 400 ft downstream at datum 0.03 ft lower. Nov. 22, 1930 to Nov. 28, 1967, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Oct. 3-5 and Apr. 16, 17. Records good except for estimated daily discharges and period with ice effect Dec. 10 to Feb. 5, which are fair. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--65 years, 295 ft³/s, 8.86 in/yr, 213,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,700 ft³/s, Apr. 22, 1973, gage height, 33.03 ft, from graph based on gage readings; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	Unknown	*10,200	*24.97	Oct. 26	2200	5,930	20.29

Minimum daily discharge, 4.2 ft³/s, Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5470	213	133	32	85	576	290	53	123	18	5.1	16
2	4110	176	399	26	111	887	231	54	757	16	6.3	13
3	6500	160	301	72	147	414	190	58	211	14	5.1	10
4	9380	178	187	100	131	240	162	66	96	22	5.3	8.8
5	3880	159	114	80	140	180	146	97	63	38	5.5	8.0
6	1050	142	96	58	222	152	134	86	47	39	4.8	7.8
7	655	128	508	37	311	132	127	63	37	41	4.2	9.5
8	499	118	1840	31	242	119	118	53	30	33	4.5	8.9
9	401	108	1100	25	186	109	110	45	26	24	5.0	7.7
10	312	99	578	25	136	97	104	41	22	33	4.9	6.8
11	262	90	464	32	119	88	101	38	22	26	5.9	6.7
12	267	84	358	37	118	83	96	34	37	23	6.4	6.3
13	267	61	229	53	109	82	666	31	24	28	46	6.4
14	354	68	226	64	103	80	2610	28	20	25	81	6.2
15	399	74	256	147	99	89	3570	25	18	30	48	20
16	284	76	212	130	93	550	1410	24	16	22	25	439
17	219	75	178	209	81	409	583	23	15	17	53	1060
18	186	77	157	327	75	710	346	27	14	18	33	935
19	165	76	122	324	72	3350	247	32	17	13	26	248
20	151	84	107	266	71	1160	191	35	17	12	17	118
21	140	86	107	170	72	513	158	45	123	9.5	25	70
22	132	94	91	140	72	336	135	40	41	9.0	22	49
23	125	86	51	85	72	256	125	27	32	7.9	15	38
24	120	80	51	77	69	317	124	24	124	7.1	12	31
25	238	74	49	58	66	695	117	24	57	7.1	11	26
26	4900	74	46	42	64	589	102	25	32	7.5	15	22
27	3800	78	40	36	63	306	89	23	22	8.4	20	20
28	961	76	36	35	92	254	79	23	19	7.1	36	18
29	520	69	35	42	---	1940	71	51	18	6.3	46	17
30	365	67	34	56	---	1250	64	59	18	6.3	28	21
31	274	---	33	68	---	461	---	42	---	5.8	19	---
TOTAL	46386	3030	8138	2884	3221	16424	12496	1296	2098	574.0	641.0	3254.1
MEAN	1496	101	263	93.0	115	530	417	41.8	69.9	18.5	20.7	108
MAX	9380	213	1840	327	311	3350	3570	97	757	41	81	1060
MIN	120	61	33	25	63	80	64	23	14	5.8	4.2	6.2

CAL YR 1986 TOTAL 221804.6 MEAN 608 MAX 13200 MIN 4.2
WTR YR 1987 TOTAL 100441.9 MEAN 275 MAX 9380 MIN 4.2

05498000 MIDDLE FABIUS RIVER NEAR MONTICELLO, MO

LOCATION.--Lat 40°05'37", long 91°44'08", in SE ¼ sec.12, T.61 N., R.8 W., Lewis County, Hydrologic Unit 07110002, on left bank on downstream end of bridge pier on State Highway 16, 2.5 mi southwest of Monticello, 8 mi downstream from Radish Branch, and 17 miles upstream from mouth.

DRAINAGE AREA.--393 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 540.46 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1967, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--42 years, 280 ft³/s, 9.68 in/yr, 202,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft³/s, Apr. 23, 1973, gage height, 27.14 ft; no flow at times in 1953-56.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 17, 1945, reached a stage of 23.3 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	1000	*9,100	*21.40	Oct. 26	1900	3,560	14.31

Minimum daily discharge, 1.8 ft³/s, Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4600	159	180	65	108	807	289	54	24	8.2	2.4	13
2	2840	134	433	60	138	1450	216	50	21	7.2	2.7	9.9
3	6400	127	461	53	153	551	175	51	21	6.5	65	8.1
4	8780	169	275	54	137	277	145	71	16	6.8	10	7.0
5	5900	144	162	54	118	186	126	58	17	40	6.9	6.2
6	977	130	114	59	159	152	114	56	15	38	4.4	5.9
7	463	113	556	60	366	132	107	51	13	15	2.9	7.5
8	294	101	1850	61	396	115	99	39	11	22	2.7	6.5
9	259	91	1520	58	314	102	92	36	9.7	12	2.5	6.2
10	164	82	732	51	167	91	86	34	9.0	9.3	2.1	5.9
11	136	76	336	53	120	81	82	30	9.0	7.7	2.0	5.8
12	198	68	178	53	113	72	78	27	16	9.9	2.0	6.4
13	159	59	129	69	106	70	894	25	15	18	236	6.1
14	222	61	150	97	100	68	1890	23	11	15	563	6.3
15	227	54	161	222	89	75	1990	22	8.9	12	86	8.5
16	188	50	128	252	83	527	1850	20	8.2	9.6	26	15
17	130	52	126	145	73	587	604	20	7.3	12	63	166
18	103	58	132	94	61	727	332	22	8.8	11	73	283
19	89	63	129	108	53	2480	228	23	7.4	8.7	27	271
20	77	71	116	102	55	2320	180	26	7.2	7.1	27	82
21	68	73	92	88	55	619	151	43	7.7	6.0	719	37
22	66	75	93	87	56	373	131	58	8.8	5.6	129	23
23	66	81	91	68	56	264	120	38	9.0	5.1	27	17
24	62	69	88	62	54	381	114	34	11	4.2	14	14
25	238	66	87	51	51	1100	114	25	29	3.7	11	12
26	3110	68	85	39	48	940	108	21	42	3.4	10	9.5
27	3410	66	79	33	48	388	94	19	19	3.1	11	8.9
28	2200	68	70	32	128	345	83	17	12	2.8	11	7.9
29	508	68	68	36	---	1500	71	16	16	2.7	8.6	6.3
30	288	63	66	52	---	1660	60	28	9.1	2.6	7.8	4.2
31	199	---	66	70	---	485	---	31	---	2.5	13	---
TOTAL	42421	2559	8747	2388	3405	18925	10623	1068	413.1	317.7	1908.0	1066.1
MEAN	1368	85.3	282	77.0	122	610	354	34.5	13.8	10.2	61.5	35.5
MAX	8780	169	1850	252	396	2480	1990	71	42	40	719	283
MIN	62	50	66	32	48	68	60	16	7.2	2.5	2.0	4.2

CAL YR 1986 TOTAL 178503.8 MEAN 489 MAX 8930 MIN 8.1
WTR YR 1987 TOTAL 93840.5 MEAN 257 MAX 8780 MIN 2.0

FABIUS RIVER BASIN

05500000 SOUTH FABIUS RIVER NEAR TAYLOR, MO

LOCATION.--Lat 39°53'49", long 91°34'49", in SW ¼ NW ¼ sec.21, T.59 N., R.6 W., Marion County, Hydrologic Unit 07110003, on right bank at downstream side of county highway bridge, 4.5 mi southwest of Taylor, 5.0 mi downstream from Grassy Creek, and 5.3 mi upstream from confluence with North Fabius River.

DRAINAGE AREA.--620 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year. Prior to December 1934 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 825: 1936.

GAGE.--Water-stage recorder. Datum of gage is 482.91 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to May 14, 1936, nonrecording gage at bridge 4.0 mi downstream at datum 21.94 ft lower. May 14, 1936 to Dec. 2, 1940, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--53 years, 419 ft³/s, 9.18 in/yr, 303,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft³/s, June 8, 1947, gage height, 19.5 ft, from rating curve extended above 11,000 ft³/s; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1928 reached a stage of 18.49 ft, from floodmarks, at present site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	2000	11,200	13.81	Oct. 3	1430	*13,400	*15.11

Minimum daily discharge, 4.5 ft³/s, Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10400	235	441	105	931	2600	523	82	225	15	7.2	20
2	9270	191	1890	103	1130	2460	365	77	190	12	6.1	17
3	12200	168	1560	98	794	1130	286	79	280	11	5.5	14
4	11900	200	744	91	481	548	236	85	99	10	4.8	12
5	11000	278	410	84	319	358	199	93	78	16	4.8	11
6	8410	255	271	84	271	277	177	81	55	213	5.7	9.4
7	2380	205	1040	88	623	230	165	76	39	2910	5.4	9.7
8	925	171	3100	89	922	200	156	71	30	318	5.6	94
9	585	147	3580	95	956	180	144	65	26	111	5.4	29
10	493	131	1940	99	524	159	135	59	20	65	5.1	14
11	307	121	884	99	304	144	129	56	22	46	4.7	10
12	207	112	454	94	239	133	123	53	22	42	4.5	12
13	279	101	262	91	211	126	1440	50	22	86	121	11
14	288	87	262	123	191	121	3730	48	22	181	1350	8.9
15	376	81	250	315	176	121	3070	45	18	93	1390	18
16	291	83	203	411	158	126	1620	42	18	55	500	34
17	198	80	191	302	145	151	1100	39	17	47	250	54
18	154	76	192	183	133	504	527	42	15	45	167	112
19	128	79	189	190	125	2460	341	136	13	41	82	95
20	111	87	179	166	117	2610	257	165	17	30	138	66
21	99	95	163	177	114	1240	205	557	14	25	2270	48
22	90	99	147	121	112	607	176	442	12	24	938	37
23	82	103	140	142	109	439	155	184	12	20	223	38
24	77	106	140	161	112	826	141	103	12	17	126	29
25	109	100	136	119	108	2170	130	73	13	15	91	22
26	3740	119	134	84	102	1970	122	81	11	13	65	18
27	4280	208	128	67	98	822	119	62	9.3	12	49	14
28	3220	150	121	65	171	618	110	48	7.6	11	39	11
29	1010	129	114	59	---	2330	99	47	7.2	9.7	32	11
30	465	129	110	80	---	2350	90	44	10	8.8	26	8.8
31	313	---	106	230	---	1110	---	34	---	8.2	23	---
TOTAL	83387	4128	19481	4215	9676	29120	16072	3119	1336.1	4510.7	7944.6	887.8
MEAN	2696	138	628	136	346	939	536	101	44.5	146	256	29.6
MAX	12200	278	3580	411	1130	2610	3730	557	280	2910	2270	112
MIN	77	78	106	59	98	121	90	34	7.2	8.2	4.5	8.8

CAL YR 1986 TOTAL 252637.0 MEAN 692 MAX 12200 MIN 5.6
WTR YR 1987 TOTAL 183877.1 MEAN 504 MAX 12200 MIN 4.5

05500000 SOUTH FABIUS RIVER NEAR TAYLOR, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1972 to August 1973, October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 22...	0900	91	409	8.00	14.0	10.1	99	24	K50	200
NOV 19...	1120	79	480	8.20	3.5	13.9	106	14	K6100	--
DEC 17...	0930	191	383	7.90	1.5	14.4	104	19	K60	--
JAN 07...	1230	91	503	8.40	2.5	13.9	102	17	K28	240
FEB 05...	1000	329	319	8.00	1.0	14.6	103	23	K190	--
MAR 03...	1245	1020	260	7.70	6.0	--	--	67	K1500	--
APR 08...	0900	161	429	8.20	12.0	11.9	112	15	54	200
MAY 12...	1320	53	518	8.10	25.5	9.8	121	18	K14	--
JUN 03...	0745	293	261	7.90	21.5	6.5	74	14	>12000	--
JUL 07...	1145	3610	115	7.70	21.0	5.6	64	15	K79000	61
AUG 12...	0830	4.5	415	8.40	25.0	7.2	89	--	K52	--
SEP 15...	1115	15	312	8.30	20.5	7.7	87	38	>3000	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 22...	35	59	12	11	4.6	162	3.1	42	8.4	0.20
NOV 19...	--	--	--	--	--	184	2.3	--	--	--
DEC 17...	--	--	--	--	--	142	3.5	--	--	--
JAN 07...	57	71	16	17	2.8	186	1.4	76	10	0.10
FEB 05...	--	--	--	--	--	110	2.1	--	--	--
MAR 03...	--	--	--	--	--	70	2.7	--	--	--
APR 08...	38	60	12	13	3.2	161	2.0	59	8.1	0.10
MAY 12...	--	--	--	--	--	209	3.2	--	--	--
JUN 03...	--	--	--	--	--	83	2.0	--	--	--
JUL 07...	0	18	3.9	2.3	3.4	62	2.4	11	2.6	0.20
AUG 12...	--	--	--	--	--	176	1.2	--	--	--
SEP 15...	--	--	--	--	--	134	1.3	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

05501000 NORTH RIVER AT PALMYRA, MO

LOCATION.--Lat 39°49'06", long 91°31'13", in SE ¼ SW ¼ sec.13, T.58 N., R.6 W., Marion County, Hydrologic Unit 07110004, on right bank 100 ft upstream from City Waterworks dam, 1,000 ft upstream from upstream bridge on dual U.S. Highways 24 and 61, 0.5 mi north of Palmyra, and 7.0 mi upstream from mouth.

DRAINAGE AREA.--373 mi².

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 464.81 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1945, nonrecording gage at bridge 1,000 ft downstream; Oct. 1, 1945 to June 22, 1951, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good except for period of backwater, Oct. 1-16, which are fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

COOPERATION.--River stages at Lock and Dam 21 tailwater and Hannibal, Mo., which aided in the computation of the backwater period, Oct. 1-16, were furnished by U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--52 years, 264 ft³/s, 9.61 in/yr, 191,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,500 ft³/s, Apr. 21, 1973, gage height, 29.70 ft; no flow on many days in 1936, 1941, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage prior to 1934, about 28.0 ft, from floodmarks, date unknown, at site 1,000 ft downstream, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	1715	a	25.91	No other peak greater than base discharge.			

^aBackwater from Mississippi River.

Minimum discharge, 6.4 ft³/s, Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4620	120	1290	76	781	1960	239	55	472	15	8.8	12
2	2540	104	1780	74	977	684	196	50	518	14	8.2	10
3	18800	95	767	71	596	323	163	54	696	14	8.4	9.5
4	12200	98	354	68	304	202	143	92	146	16	8.9	9.2
5	3100	98	228	66	213	154	129	70	90	15	7.9	8.6
6	1600	89	178	67	178	132	119	55	67	413	7.1	8.5
7	710	85	1630	68	202	116	112	46	53	3300	6.9	10
8	480	82	2250	66	322	102	105	44	45	337	7.7	22
9	290	72	1650	68	213	92	97	35	39	141	8.7	16
10	185	66	761	72	160	82	94	36	36	87	7.5	23
11	140	64	364	71	129	75	90	39	48	65	6.8	20
12	185	59	254	69	115	68	86	35	47	68	6.4	13
13	210	54	173	71	103	66	2740	31	41	707	15	10
14	267	50	168	107	97	64	3140	23	31	336	352	9.2
15	171	48	152	407	92	64	1010	18	25	149	992	17
16	123	51	147	222	85	68	421	16	21	144	444	21
17	99	50	149	151	79	63	281	24	18	87	134	27
18	86	47	145	119	74	315	215	40	16	66	83	68
19	78	46	131	108	71	1300	177	347	15	46	59	50
20	71	51	121	108	69	482	149	314	25	38	92	36
21	67	55	114	91	68	273	129	760	17	31	613	25
22	64	52	109	97	67	208	113	1870	15	24	229	18
23	63	49	101	83	65	191	103	296	74	21	146	14
24	59	45	100	84	62	815	97	135	74	19	68	12
25	123	43	96	81	61	1120	86	150	34	15	44	11
26	4830	155	92	70	60	485	79	114	37	14	38	10
27	1540	210	88	65	60	284	73	81	25	13	30	9.7
28	694	120	83	63	92	464	66	62	15	11	25	9.5
29	267	87	82	72	---	2130	61	62	13	10	21	12
30	182	72	80	179	---	654	58	60	19	9.6	17	12
31	143	---	77	300	---	331	---	44	---	9.2	14	---
TOTAL	53987	2317	13714	3314	5395	13367	10571	5062	2772	6234.8	3509.3	533.2
MEAN	1742	77.2	442	107	193	431	352	163	92.4	201	113	17.8
MAX	18800	210	2250	407	977	2130	3140	1870	696	3300	992	68
MIN	59	43	77	63	60	63	58	16	13	9.2	6.4	8.5

CAL YR 1986 TOTAL 146818.2 MEAN 402 MAX 18800 MIN 1.9
WTR YR 1987 TOTAL 120776.1 MEAN 331 MAX 18800 MIN 6.4

MISSISSIPPI RIVER MAIN STEM

05501600 MISSISSIPPI RIVER AT HANNIBAL, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 39°43'26", long 91°21'44", Marion County, Hydrologic Unit 07110004, at railroad bridge upstream from Highway 36 bridge at Hannibal, Mo.

PERIOD OF RECORD.--October 1981 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)
OCT										
21...	1450	460	8.00	12.0	9.9	92	31	400	230	46
NOV										
18...	1420	560	8.50	3.0	13.3	100	20	K280	--	--
DEC										
17...	1100	536	8.40	0.0	16.3	113	19	280	--	--
JAN										
07...	1445	492	8.70	1.0	15.5	109	18	--	260	41
FEB										
04...	1545	502	8.70	1.0	16.9	119	29	K100	--	--
MAR										
02...	1640	420	8.60	5.0	--	--	38	K900	--	--
APR										
08...	1030	475	8.60	9.5	11.7	104	24	K40	240	51
MAY										
11...	1540	458	7.70	23.0	7.6	90	18	K60	--	--
JUN										
03...	1000	449	8.30	25.0	5.6	68	10	8400	--	--
JUL										
06...	1440	435	8.50	27.0	5.6	72	<10	K650	210	46
AUG										
12...	1000	370	8.80	27.0	8.1	104	19	K40	--	--
SEP										
14...	1550	434	8.20	22.0	7.1	82	36	140	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
OCT										
21...	61	20	7.7	3.5	189	3.7	37	13	0.20	289
NOV										
18...	--	--	--	--	230	0.9	--	--	--	348
DEC										
17...	--	--	--	--	211	1.6	--	--	--	328
JAN										
07...	63	24	10	2.0	215	0.4	40	16	0.10	297
FEB										
04...	--	--	--	--	212	0.8	--	--	--	300
MAR										
02...	--	--	--	--	173	0.8	--	--	--	251
APR										
08...	61	22	11	2.5	192	0.9	42	17	0.20	288
MAY										
11...	--	--	--	--	177	6.8	--	--	--	272
JUN										
03...	--	--	--	--	180	1.7	--	--	--	275
JUL										
06...	48	23	13	2.6	169	0.7	37	20	0.20	252
AUG										
12...	--	--	--	--	158	0.4	--	--	--	232
SEP										
14...	--	--	--	--	189	2.3	--	--	--	269

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

BEAR CREEK BASIN

05502000 BEAR CREEK AT HANNIBAL, MO

LOCATION.--Lat 39°40'43", long 91°24'41", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 1, T.56 N., R.5 W., Ralls County, Hydrologic Unit 07110004, on right bank 42 ft upstream from upstream bridge on dual U.S. Highway 61 at Hannibal, and 4.65 mi upstream from mouth.

DRAINAGE AREA.--31.0 mi².

PERIOD OF RECORD.--October 1938 to September 1942, October 1947 to current year in reports of Geological Survey. Monthly discharge only for some periods, published in WSP 1308. October 1936 to November 1938 (gage heights and discharge measurements only) in reports of Missouri Geological Survey.

REVISED RECORDS.--WSP 1115: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 508.91 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 26, 1948, nonrecording gage, and Mar. 26, 1948, to Sept. 30, 1953, water-stage recorder, present site and datum 2.00 ft higher. Oct. 1, 1953 to Oct. 30, 1961, water-stage recorder, present site and datum. Oct. 31, 1961, to Sept. 5, 1972, water-stage recorder 400 ft downstream at present datum. Sept. 6, 1972, to July 2, 1986, water-stage recorder 525 ft upstream at present datum. July 2, 1986, to present, water-stage recorder 525 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. High flow regulated by Bear Creek flood control reservoir, 1.0 mi upstream, since Aug. 7, 1961. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--44 years, 20.9 ft³/s, 15,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,500 ft³/s, Aug. 3, 1957, gage height, 14.05 ft, present datum; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,430 ft³/s, May 17, gage height, 8.57 ft; minimum daily, 0.33 ft³/s, Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	11	88	6.5	68	43	17	4.4	6.4	2.5	.82	1.6
2	167	9.3	161	6.2	68	17	14	4.4	19	1.1	.70	1.5
3	299	9.6	72	5.8	63	12	12	9.9	18	.89	.56	1.3
4	177	12	24	5.5	26	9.5	10	15	7.0	1.1	.85	1.0
5	468	12	18	5.2	17	9.0	9.8	6.3	5.6	32	.83	1.0
6	519	12	16	5.5	17	8.2	9.1	5.1	4.7	20	.68	1.0
7	418	10	82	5.8	16	7.6	8.5	4.6	4.4	64	.55	.92
8	52	12	137	5.1	14	6.9	7.3	4.0	4.1	82	.53	2.2
9	18	9.3	129	5.9	9.9	6.7	6.9	3.5	3.8	26	.84	1.6
10	16	8.7	57	6.9	10	6.0	7.2	3.2	12	9.5	.38	.91
11	14	8.3	21	5.9	10	5.8	7.1	3.0	6.7	17	.39	.91
12	14	8.0	18	5.8	9.4	5.7	6.1	2.5	4.4	35	.33	.91
13	13	6.6	14	6.8	8.8	5.2	157	2.4	3.4	49	58	.91
14	12	6.5	13	24	8.8	5.1	248	2.4	2.9	22	79	.83
15	11	6.7	13	56	8.1	5.3	253	2.1	2.5	13	40	4.0
16	9.7	7.6	14	18	7.0	5.4	37	1.9	2.2	9.2	7.8	6.0
17	8.8	7.1	15	12	6.9	5.4	27	142	2.0	6.9	2.6	4.2
18	7.9	6.5	14	12	6.7	15	21	156	1.9	5.2	2.5	1.8
19	7.8	6.3	11	11	6.1	21	19	146	2.6	4.9	1.9	1.6
20	7.5	8.6	9.9	12	6.2	10	17	44	11	3.4	27	.91
21	6.9	7.8	9.8	19	6.1	8.2	15	52	3.6	3.0	159	.91
22	6.8	7.5	9.0	9.5	6.0	7.1	13	157	2.3	2.9	158	.91
23	6.5	8.1	8.7	14	5.7	6.4	12	32	2.1	2.2	52	.91
24	6.5	7.1	8.8	22	5.4	36	11	16	2.1	2.2	9.5	.91
25	21	11	8.6	10	5.3	29	9.3	16	3.5	2.4	8.0	.84
26	119	184	7.9	7.4	5.1	14	8.1	13	2.0	1.5	6.4	1.0
27	37	63	7.4	7.3	5.1	11	7.0	10	1.7	1.2	5.3	1.7
28	20	24	7.0	9.4	11	45	6.1	8.9	1.6	1.1	5.0	.91
29	15	17	6.9	12	---	163	5.9	14	1.6	1.0	3.9	.91
30	13	15	6.9	37	---	49	5.1	8.3	1.7	.86	2.9	.90
31	12	---	6.6	42	---	21	---	7.2	---	.72	2.5	---
TOTAL	2599.4	522.6	1014.5	411.5	436.6	599.5	986.5	897.1	146.8	423.77	638.76	45.00
MEAN	83.9	17.4	32.7	13.3	15.6	19.3	32.9	28.9	4.89	13.7	20.6	1.50
MAX	519	184	161	56	68	163	253	157	19	82	159	6.0
MIN	6.5	6.3	6.6	5.1	5.1	5.1	5.1	1.9	1.6	.72	.33	.83

CAL YR 1986 TOTAL 7370.56 MEAN 20.2 MAX 519 MIN 1.4
WTR YR 1987 TOTAL 8721.92 MEAN 23.9 MAX 519 MIN .33

05502300 NORTH FORK SALT RIVER AT HAGERS GROVE, MO

LOCATION.--Lat 39°49'40", long 92°14'10", in NE ¼ SW ¼ sec.15, T.58 N., R.12 W., Shelby County, Hydrologic Unit 07110005, at bridge on State Highway 151, 200 ft downstream from old channel carrying Bear Creek, 0.25 mi west of Hagers Grove, 2.5 mi upstream from Ten Mile Creek, and at mile 143.8.

DRAINAGE AREA.--365 mi².

PERIOD OF RECORD.--September 1974 to current year. (Prior to October 1983 published as Salt River at Hagers Grove, Mo.). September 1939 to August 1974, gage height and miscellaneous measurements published by U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 702.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 7-30, Dec. 7-9, Jan. 5-8, May 18 to June 17, and Aug. 1-11. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--13 years, 310 ft³/s, 11.53 in/yr, 224,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,900 ft³/s, June 6, 1947, gage height, 19.7 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1928 reached a stage of 19.1 ft, according to information furnished by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	0230	*11,900	*17.97	Oct. 26	Unknown	5,680	13.85

Minimum daily discharge, 2.8 ft³/s, Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	99	547	53	621	1840	197	27	16	7.1	3.5	12
2	1440	81	1300	56	396	719	161	25	21	5.6	3.2	12
3	9930	75	449	54	223	283	132	35	29	4.9	3.5	9.2
4	8260	115	196	51	133	183	114	48	14	4.8	7.0	8.2
5	3670	135	118	52	105	140	101	44	12	24	7.6	8.7
6	768	106	91	59	175	118	91	31	9.5	36	4.4	8.7
7	285	87	790	55	499	105	84	23	8.8	36	3.5	61
8	190	78	2670	49	743	87	77	20	8.2	24	2.8	38
9	179	71	1390	50	387	78	70	18	7.8	30	5.3	23
10	154	62	499	58	159	69	66	16	7.4	24	4.8	11
11	135	55	179	63	132	60	66	15	7.4	13	4.4	11
12	145	50	152	66	115	56	64	13	7.0	43	6.5	9.2
13	181	36	118	61	102	55	1260	11	7.0	102	1630	7.5
14	302	45	145	147	96	54	1740	11	6.6	65	939	7.9
15	198	41	112	291	91	59	1630	10	6.6	50	285	11
16	128	42	108	154	82	219	900	9.5	6.3	68	118	200
17	103	46	111	94	70	322	309	9.5	6.3	52	99	181
18	87	48	116	118	69	954	194	14	5.3	22	89	146
19	72	49	98	125	66	2340	140	24	4.8	11	61	89
20	61	56	87	115	61	640	111	27	4.8	8.1	90	38
21	58	75	80	93	61	303	89	26	5.7	8.3	992	22
22	50	78	79	70	61	222	74	21	11	7.1	385	15
23	48	64	81	70	60	172	67	19	13	7.2	116	12
24	54	58	81	60	58	652	66	16	20	6.7	52	9.7
25	296	55	76	53	56	1670	61	16	23	5.4	34	8.9
26	4280	81	67	49	53	444	53	15	13	5.3	30	8.2
27	2040	127	63	43	53	244	47	14	9.3	7.7	23	7.7
28	287	105	63	37	132	266	40	19	7.4	9.9	21	7.1
29	232	79	62	49	---	1680	35	18	7.0	7.5	33	7.3
30	159	69	58	236	---	610	31	21	7.6	6.1	24	6.2
31	123	---	52	404	---	271	---	20	---	5.6	17	---
TOTAL	37225	2168	10038	2935	4859	14915	8070	636.0	312.8	707.3	5094.5	996.5
MEAN	1201	72.3	324	94.7	174	481	269	20.5	10.4	22.8	164	33.2
MAX	9930	135	2670	404	743	2340	1740	48	29	102	1630	200
MIN	48	36	52	37	53	54	31	9.5	4.8	4.8	2.8	6.2

CAL YR 1986 TOTAL 152155.1 MEAN 417 MAX 13000 MIN 7.7
WTR YR 1987 TOTAL 87956.7 MEAN 241 MAX 9930 MIN 2.8

SALT RIVER BASIN

05502300 NORTH FORK SALT RIVER AT HAGERS GROVE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.06	.59	.36	.03	3.32	6.96	1.15	-.10	-.27	-.36	-.44	-.46
2	5.16	.45	5.81	.05	2.20	3.93	.95	-.12	-.30	-.39	-.45	-.43
3	15.97	.39	2.64	.01	1.30	1.63	.86	-.10	-.02	-.42	-.45	-.49
4	16.91	.65	1.38	.03	.72	1.00	.64	.13	-.25	-.42	-.36	-.51
5	10.71	.82	.73	.04	.42	.72	.52	.06	-.28	-.12	-.34	-.48
6	3.92	.63	.49	.01	.62	.56	.44	-.05	-.31	-.12	-.41	-.47
7	1.76	.49	---	-.02	2.94	.42	.39	-.14	-.33	-.06	-.43	.11
8	1.22	.44	9.11	-.02	3.90	.32	.32	-.18	-.35	-.19	-.46	-.26
9	1.18	.38	5.83	.06	---	.25	.26	-.20	-.35	.01	-.39	-.29
10	.92	.32	2.99	.03	.90	.16	.25	-.22	-.35	-.10	-.41	-.45
11	.86	.27	1.00	.07	.68	.10	.26	-.24	-.35	-.23	-.43	-.45
12	.82	.12	.78	.10	.52	.07	.23	-.26	-.35	-.30	-.43	-.46
13	1.16	.11	.66	.02	.42	.05	6.12	-.29	-.35	.78	10.34	-.53
14	1.91	.17	.41	.36	.36	.04	6.57	-.30	-.35	.35	2.68	-.49
15	1.22	.20	.36	1.50	.34	.05	5.36	-.31	-.35	-.02	1.70	-.45
16	.86	.16	.36	.72	.28	.78	4.61	-.32	-.43	.25	.58	1.29
17	.64	.20	.36	.32	.14	.97	1.84	-.32	-.43	.17	.19	.96
18	.51	.20	.41	.59	.15	2.23	1.19	-.25	-.41	-.13	.16	.68
19	.44	.21	.26	.68	.14	9.16	.82	-.13	-.42	-.28	.14	.42
20	.35	.25	.16	.65	.10	3.33	.61	-.25	-.42	-.34	-.21	-.09
21	.30	.37	.17	.55	.12	1.79	.44	-.08	-.42	-.36	5.69	-.25
22	.27	.43	.17	.33	.10	1.33	.32	-.14	-.30	-.36	2.43	-.34
23	.25	.33	.18	.39	.10	1.02	.27	-.19	-.29	-.39	.58	-.39
24	.23	.29	.18	.30	.07	.88	.25	-.23	-.27	-.37	.03	-.42
25	.30	.27	.16	.30	.06	7.30	.22	-.25	-.10	-.41	-.15	-.44
26	---	.39	.10	.28	.03	2.55	.15	-.28	-.24	-.41	-.20	-.45
27	---	.77	.06	.27	.03	1.46	.10	-.30	-.31	-.42	-.25	-.46
28	---	.63	.06	.20	.11	1.11	.03	-.18	-.36	-.30	-.31	-.47
29	---	.43	.06	.19	---	7.39	-.02	-.22	-.38	-.36	-.18	-.47
30	1.00	.37	.02	1.00	---	3.35	-.06	-.16	-.36	-.38	-.26	-.50
31	.74	---	.05	2.17	---	1.60	---	-.21	---	-.39	-.36	---

05503500 NORTH FORK SALT RIVER NEAR HUNNEWELL, MO

LOCATION.--Lat 39°40'05", long 91°54'11", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.9, T.56 N., R.9 W., Shelby County, Hydrologic Unit 07110005, on right bank near downstream end of bridge on U.S. Highway 36, 1.5 mi downstream from Black Creek and 2 mi west of Hunnewell, at mile 105.8.

DRAINAGE AREA.--626 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to September 1940, October 1979 to current year. April 1930 to September 1931 (fragmentary), October 1931 to September 1940 (published as Salt River near Hunnewell, Mo.), March 1966 to June 1967 (gage heights only), July 1967 to September 1979 (published by Corps of Engineers), and October 1979 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 615.64 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 4 to Nov. 26. Water-discharge records good except for period of estimated daily discharges, which are poor. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--17 years (water years 1932-40, 1980 to current year), 466 ft³/s, 10.11 in/yr, 337,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,560 ft³/s, April 23, 1973, gage height, 25.16 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	1615	12,300	20.43	Oct. 5	1000	a	*20.86

^aBackwater from Mark Twain Reservoir.

Minimum daily discharge, 5.4 ft³/s, Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12300	150	726	82	964	1590	323	53	294	13	7.2	19
2	10500	110	2650	79	1270	2160	249	48	286	10	6.3	16
3	10900	130	1640	70	772	677	201	59	281	11	5.9	14
4	11800	150	569	58	389	343	169	74	137	11	6.4	13
5	12600	190	316	53	239	248	145	78	76	13	7.2	12
6	5600	200	217	63	198	201	129	67	48	64	6.7	12
7	840	160	704	77	430	174	119	56	28	737	5.4	36
8	395	130	3530	72	752	151	112	44	19	292	7.2	24
9	300	110	4150	73	766	129	105	31	15	147	7.9	54
10	247	100	1960	69	318	115	96	35	15	83	6.2	34
11	219	90	602	61	211	101	89	30	13	67	5.5	27
12	245	80	310	61	186	91	84	26	13	158	5.8	18
13	280	70	267	73	166	86	1650	23	13	983	316	14
14	400	55	165	111	146	81	4250	23	13	522	2240	13
15	300	56	196	312	130	82	3190	21	12	232	1830	15
16	228	64	177	361	118	87	1870	19	12	177	497	18
17	180	62	174	194	104	260	713	19	11	190	157	270
18	140	64	175	117	86	668	367	20	11	98	110	310
19	100	70	175	127	79	2380	262	79	11	58	115	183
20	75	83	154	123	75	2080	203	77	11	33	135	121
21	70	96	138	129	71	582	165	107	8.8	20	1050	60
22	65	116	129	123	69	355	134	680	8.0	13	992	32
23	60	136	120	103	69	285	114	232	7.0	13	357	22
24	70	134	117	71	66	449	106	100	10	12	147	17
25	350	135	119	69	62	1830	103	75	13	11	78	14
26	2790	168	117	58	58	1370	98	45	17	10	49	13
27	4530	306	111	50	55	468	88	38	24	10	33	12
28	2230	315	102	50	138	457	76	31	14	8.7	26	12
29	624	274	93	60	---	1670	65	22	12	8.2	22	12
30	365	245	88	129	---	1820	57	18	13	8.4	19	14
31	201	---	86	437	---	552	---	25	---	8.3	22	---
TOTAL	79004	4049	20077	3515	7987	21542	15332	2255	1445.8	4021.6	8272.7	1431
MEAN	2549	135	648	113	285	695	511	72.7	48.2	130	267	47.7
MAX	12600	315	4150	437	1270	2380	4250	680	294	983	2240	310
MIN	60	55	86	50	55	81	57	18	7.0	8.2	5.4	12

CAL YR 1986 TOTAL 251159.2 MEAN 688 MAX 13900 MIN 8.8
WTR YR 1987 TOTAL 168931.8 MEAN 463 MAX 12600 MIN 5.4

SALT RIVER BASIN

05503500 NORTH FORK SALT RIVER NEAR HUNNEWELL, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.00	5.04	3.95	3.15	5.82	5.96	4.29	2.92	5.20	2.45	2.21	2.54
2	19.27	4.59	9.60	3.13	6.88	9.44	4.00	2.86	3.29	2.33	2.17	2.47
3	19.19	4.20	8.26	3.08	5.69	5.45	3.81	2.87	4.00	2.37	2.16	2.42
4	19.19	3.96	5.13	2.98	4.55	4.36	3.65	3.12	3.55	2.35	2.18	2.39
5	20.82	4.01	4.28	2.93	3.97	3.99	3.53	3.12	3.13	2.46	2.20	2.37
6	18.79	4.22	3.88	3.01	3.75	3.79	3.44	3.02	2.92	2.38	2.20	2.34
7	11.77	4.08	3.83	3.12	3.93	3.67	3.38	2.94	2.71	5.23	2.14	2.92
8	11.44	3.98	10.85	3.08	5.31	3.55	3.34	2.83	2.57	4.23	2.20	2.45
9	11.40	3.95	12.53	3.07	5.87	3.45	3.28	2.74	2.49	3.58	2.24	2.98
10	11.38	3.86	9.02	3.09	4.29	3.38	3.22	2.73	2.49	3.18	2.17	2.76
11	11.28	3.82	5.30	2.91	3.86	3.27	3.18	2.68	2.42	3.06	2.14	2.68
12	11.14	3.78	4.20	2.93	3.73	3.20	3.14	2.65	2.43	2.93	2.15	2.52
13	10.95	3.72	4.13	3.07	3.63	3.16	5.44	2.57	2.44	5.77	2.26	2.42
14	10.91	3.62	3.52	3.27	3.53	3.14	12.38	2.60	2.41	4.99	7.65	2.40
15	10.56	3.60	3.77	4.09	3.46	3.14	11.29	2.57	2.40	3.89	8.93	2.45
16	10.20	3.70	3.67	4.49	3.38	3.16	8.44	2.51	2.37	3.81	5.11	2.50
17	9.97	3.67	3.66	3.79	3.31	4.25	5.56	2.50	2.35	3.90	3.64	2.71
18	9.37	3.68	3.65	3.36	3.18	4.34	4.46	2.51	2.37	3.29	3.24	4.40
19	8.78	3.70	3.67	3.13	3.12	8.66	4.05	3.19	2.34	3.00	3.32	3.72
20	8.19	3.73	3.56	3.21	3.10	9.47	3.80	3.09	2.36	2.76	3.27	3.46
21	7.57	3.75	3.49	3.23	3.08	5.13	3.64	3.09	2.29	2.59	5.54	3.02
22	6.97	3.82	3.43	3.39	3.06	4.39	3.48	6.12	2.26	2.38	6.29	2.74
23	6.68	3.91	3.39	3.20	3.05	4.14	3.36	3.98	2.23	2.41	4.49	2.59
24	6.15	3.84	3.36	2.95	3.03	3.95	3.29	3.23	2.32	2.37	3.60	2.49
25	5.77	3.77	3.38	3.02	3.00	7.46	3.27	3.15	2.46	2.33	3.15	2.42
26	10.71	3.84	3.38	2.96	2.97	7.66	3.24	2.87	2.49	2.31	2.90	2.38
27	14.01	4.49	3.33	2.89	2.95	4.79	3.19	2.75	2.65	2.30	2.75	2.35
28	11.37	4.43	3.28	2.89	3.04	4.23	3.10	2.73	2.47	2.26	2.65	2.35
29	6.97	4.19	3.21	2.94	---	6.54	3.02	2.61	2.39	2.24	2.58	2.36
30	6.19	4.01	3.18	3.29	---	8.88	2.95	2.53	2.38	2.25	2.54	2.43
31	5.57	---	3.17	4.30	---	5.06	---	2.66	---	2.24	2.60	---

05503500 NORTH FORK SALT RIVER NEAR HUNNEWELL, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT: July 1980 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,460 mg/L, Sept. 30, 1986; minimum daily mean, 1 mg/L, Nov. 29, 30, and Dec. 3, 1980.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 78,900 tons, Sept. 30, 1986; minimum daily, 0.03 tons, Nov. 29, 30 and Dec. 3, 1980.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,690 mg/L, Aug. 14; minimum daily mean, 9 mg/L, Apr. 11.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 16,300 tons, Aug. 14; minimum daily, 1.3 tons, June 23.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)
			.002 MM	.004 MM	.016 MM	.062 MM
DEC						
03...	0850	1930	59	67	86	98

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)	BED MAT. SIEVE DIAM. % FINER THAN (80172)	BED MAT. SIEVE DIAM. % FINER THAN (80173)
	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM	8.00 MM	16.0 MM	32.0 MM
APR										
21...	0	0	3	13	21	26	30	34	41	71

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	12300	254	8440	150	60	24	726	755	2030
2	10500	234	6640	110	54	16	2650	1510	10800
3	10900	293	8620	130	47	16	1640	692	3070
4	11800	309	9850	150	44	18	569	351	540
5	12600	271	9230	190	52	27	316	205	175
6	5600	137	2070	200	40	21	217	194	114
7	840	108	245	160	52	23	704	561	1070
8	395	71	75	130	47	17	3530	1340	12700
9	300	47	38	110	43	13	4150	815	9130
10	247	50	33	100	50	14	1960	376	1990
11	219	45	26	90	42	10	602	226	367
12	245	34	23	80	52	11	310	129	108
13	280	37	28	70	44	8.4	267	91	66
14	400	39	42	55	42	6.3	165	72	32
15	300	43	35	56	47	7.0	196	62	33
16	228	44	27	64	48	8.2	177	58	28
17	180	53	26	62	48	8.0	174	48	23
18	140	63	24	64	44	7.5	175	35	17
19	100	56	15	70	39	7.4	175	43	20
20	75	53	11	83	45	10	154	44	18
21	70	40	7.6	96	36	9.4	138	45	17
22	65	39	6.8	116	34	11	129	64	22
23	60	34	5.5	136	60	22	120	34	11
24	70	100	19	134	50	18	117	27	8.4
25	350	390	480	135	69	25	119	34	11
26	2790	920	6930	168	88	40	117	34	11
27	4530	569	6960	306	58	48	111	34	10
28	2230	341	2060	315	54	46	102	40	11
29	614	171	288	274	62	46	93	43	11
30	365	105	103	245	48	32	88	37	8.8
31	201	64	35	---	---	---	86	32	7.4
TOTAL	79004	---	62392.9	4049	---	570.2	20077	---	42459.6

SALT RIVER BASIN

05503500 NORTH FORK SALT RIVER NEAR HUNNEWELL, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	82	33	7.2	964	---	---	1590	1300	6960
2	79	34	7.2	1270	---	---	2160	1400	8170
3	70	40	7.6	772	272	567	677	583	1070
4	58	42	6.6	389	154	162	343	255	236
5	53	42	6.0	239	99	64	248	122	82
6	63	47	8.0	198	74	39	201	81	44
7	77	44	9.2	430	179	208	174	75	35
8	72	34	6.5	752	539	1090	151	66	27
9	73	44	8.7	766	773	1600	129	52	18
10	69	47	8.8	318	367	315	115	38	12
11	61	36	5.9	211	218	124	101	34	9.2
12	61	36	5.9	186	131	66	91	24	5.8
13	73	36	7.0	166	75	33	86	21	4.9
14	111	60	18	146	60	24	81	29	6.3
15	312	100	85	130	56	20	82	39	8.5
16	361	92	89	118	46	15	87	36	8.4
17	194	91	47	104	40	11	260	57	40
18	117	84	27	86	33	7.6	668	703	2680
19	127	84	29	79	39	8.3	2380	1690	10900
20	123	---	---	75	28	5.7	2080	869	4880
21	129	---	---	71	35	6.6	582	328	516
22	123	---	---	69	45	8.4	355	181	173
23	103	---	---	69	32	6.0	285	97	74
24	71	---	---	66	31	5.5	449	305	370
25	69	---	---	62	28	4.7	1830	801	3960
26	58	---	---	58	29	4.5	1370	480	1780
27	50	---	---	55	78	12	468	217	274
28	50	---	---	138	481	179	457	136	168
29	60	---	---	---	---	---	1670	481	2170
30	129	---	---	---	---	---	1820	594	2920
31	437	---	---	---	---	---	552	255	380
TOTAL	3515	---	---	7987	---	---	21542	---	47982.1

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	323	128	112	53	30	4.3	294	821	652
2	249	71	48	48	36	4.7	286	935	722
3	201	50	27	59	42	6.7	281	948	719
4	169	28	13	74	39	7.7	137	466	172
5	145	24	9.4	78	37	7.8	76	202	41
6	129	22	7.6	67	38	6.8	48	168	22
7	119	17	5.6	56	41	6.3	28	138	10
8	112	17	5.0	44	51	6.1	19	121	6.2
9	105	17	4.8	31	44	3.7	15	115	4.6
10	96	12	3.1	35	38	3.6	15	126	5.1
11	89	9	2.3	30	40	3.2	13	92	3.2
12	84	40	9.0	26	40	2.8	13	67	2.4
13	1650	900	8450	23	43	2.7	13	67	2.3
14	4250	632	7250	23	58	3.6	13	69	2.4
15	3190	910	7830	21	52	2.9	12	65	2.1
16	1870	1280	6450	19	48	2.4	12	56	1.8
17	713	829	1600	19	44	2.2	11	69	2.0
18	367	160	158	20	53	2.8	11	72	2.1
19	262	65	46	79	133	28	11	64	1.9
20	203	48	27	77	180	37	11	67	2.0
21	165	43	19	107	306	89	8.8	60	1.4
22	134	41	15	680	1510	2770	8.0	73	1.6
23	114	28	8.7	232	911	570	7.0	71	1.3
24	106	22	6.4	100	406	110	10	89	2.4
25	103	30	8.3	75	294	60	13	92	3.2
26	98	26	6.8	45	281	34	17	110	5.0
27	88	34	8.0	38	253	26	24	115	7.4
28	76	31	6.3	31	203	17	14	104	3.9
29	65	30	5.3	22	163	9.7	12	103	3.3
30	57	31	4.7	18	135	6.6	13	121	4.2
31	---	---	---	25	141	9.5	---	---	---
TOTAL	15332	---	32146.3	2255	---	3847.1	1445.8	---	2409.8

SALT RIVER BASIN

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05503500 NORTH FORK SALT RIVER NEAR HUNNEWELL, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY				AUGUST			SEPTEMBER		
1	13	119	4.2	7.2	92	1.8	19	110	5.8
2	10	105	2.8	6.3	114	1.9	16	88	3.8
3	11	103	3.1	5.9	90	1.4	14	83	3.2
4	11	118	3.5	6.4	85	1.5	13	100	3.6
5	13	84	3.0	7.2	97	1.9	12	90	2.9
6	64	181	91	6.7	89	1.6	12	100	3.4
7	737	1080	2160	5.4	110	1.6	36	197	19
8	292	761	600	7.2	98	1.9	24	121	7.9
9	147	380	151	7.9	110	2.5	54	95	14
10	83	266	60	6.2	131	2.2	34	80	7.3
11	67	219	40	5.5	145	2.2	27	84	6.1
12	158	294	125	5.8	120	1.9	18	88	4.3
13	983	1070	2840	316	850	2140	14	56	2.1
14	522	512	722	2240	2690	16300	13	60	2.1
15	232	295	185	1830	1810	8950	15	61	2.5
16	177	372	178	497	563	755	18	74	3.6
17	190	257	132	157	231	98	270	206	150
18	98	195	52	110	184	55	310	512	429
19	58	207	32	115	189	59	183	237	117
20	33	191	17	135	405	148	121	152	50
21	20	153	8.2	1050	1320	3730	60	114	18
22	13	112	3.9	992	1220	3270	32	126	11
23	13	116	4.1	357	574	553	22	94	5.6
24	12	95	3.1	147	342	136	17	119	5.4
25	11	72	2.1	78	233	49	14	111	4.2
26	10	53	1.4	49	188	25	13	79	2.8
27	10	77	2.1	33	162	14	12	64	2.1
28	8.7	95	2.2	26	139	9.7	12	68	2.2
29	8.2	86	1.8	22	150	8.9	12	58	1.9
30	8.4	90	2.0	19	149	7.7	14	56	2.1
31	8.3	65	1.5	22	120	7.1	---	---	---
TOTAL	4021.6	---	7434.0	8272.7	---	36337.8	1431	---	892.9

SALT RIVER BASIN

05503800 CROOKED CREEK NEAR PARIS, MO

LOCATION.--Lat 39°35'06", long 91°59'36", near NW corner S ½ sec.2, T.55 N., R.10 W., Monroe County, Hydrologic Unit 07110005 on right bank downstream from county road bridge, 7 mi north of Paris, 1.4 mi north of State Route 15, and at mile 8.9.

DRAINAGE AREA.--80.0 mi².

PERIOD OF RECORD.--October 1979 to current year. March 1966 to October 1979 published by U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 650.00 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 8, 1967 wire-weight gage and Nov. 9, 1967 to Sept. 1979 recording gage at datum 50 ft lower.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--8 years, 68.1 ft³/s, 11.56 in/yr, 49,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s, April 21, 1973, gage height, 15.53 ft; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	1745	*5,060	*12.05	No other peak greater than base discharge.			

Minimum daily discharge, 0.07 ft³/s, Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	8.4	434	5.7	281	466	24	1.6	.47	1.3	.16	.28
2	819	7.0	696	5.7	273	159	19	1.6	.72	1.2	.16	.26
3	3870	5.4	147	5.7	118	43	15	2.6	.28	.76	.13	.21
4	2400	5.6	50	5.3	54	27	12	3.0	4.2	.66	.14	.19
5	211	6.0	28	4.8	32	21	10	2.8	3.2	.70	.14	.19
6	59	6.3	21	4.7	26	17	9.1	2.0	1.4	26	.13	.20
7	28	6.3	298	4.8	24	14	8.2	1.5	1.0	55	.11	8.4
8	19	7.3	639	4.7	23	12	7.0	1.6	.60	58	.11	.82
9	12	7.9	425	5.2	20	11	6.2	1.6	.59	17	.10	.36
10	7.8	6.1	203	6.3	16	8.7	5.7	1.6	.54	7.7	.10	.28
11	5.5	5.7	45	6.3	13	7.3	5.7	1.5	.54	3.8	.08	.21
12	4.3	5.0	29	6.3	12	6.2	4.6	1.3	.54	144	.07	.19
13	3.7	4.4	19	6.4	12	5.7	631	1.3	.54	511	.09	.17
14	3.0	3.4	17	19	11	5.7	781	1.1	.48	285	169	.20
15	2.0	2.9	15	108	10	6.1	178	1.1	.48	33	606	.97
16	2.0	2.9	15	62	8.8	6.3	51	1.1	.42	12	51	1.4
17	2.0	2.9	16	27	7.9	6.3	32	.90	.35	5.0	10	28
18	1.8	2.6	17	21	6.9	27	23	1.0	.34	1.9	4.9	48
19	1.2	1.7	16	17	5.8	82	17	2.3	.36	1.0	2.7	14
20	.82	2.6	14	17	5.7	42	14	6.7	.51	.60	1.6	3.9
21	1.1	3.5	12	14	5.7	25	11	16	4.5	.48	1.7	1.3
22	.90	4.2	11	14	5.7	19	8.1	36	8.9	.48	1.8	.60
23	.65	7.2	10	12	5.7	16	6.7	11	3.3	.41	1.8	.46
24	.73	7.9	10	7.7	5.3	30	6.1	5.7	1.5	.34	.86	.41
25	68	8.3	10	5.6	5.2	88	5.6	3.1	.65	.31	.69	.39
26	871	31	9.7	4.9	5.0	44	5.1	1.7	.77	.31	.90	.39
27	369	94	8.6	4.8	4.7	26	4.6	1.3	.49	.28	.85	.33
28	62	38	7.1	5.8	57	92	4.2	.82	.58	.25	.66	.25
29	30	19	6.3	10	---	290	3.5	.58	.48	.22	.47	.25
30	18	11	6.2	70	---	87	3.0	.48	.75	.19	.39	.22
31	12	---	5.7	149	---	35	---	.48	---	.17	.32	---
TOTAL	9935.49	324.5	3240.6	640.7	1054.4	1705.3	1911.4	115.36	138.48	1169.06	857.16	112.83
MEAN	320	10.8	105	20.7	37.7	55.0	63.7	3.72	4.62	37.7	27.7	3.76
MAX	3870	94	696	149	281	466	781	36	72	511	606	48
MIN	.65	1.7	5.7	4.7	4.7	5.7	3.0	.48	.34	.17	.07	.17

CAL YR 1986 TOTAL 27297.75 MEAN 74.8 MAX 3870 MIN .12
WTR YR 1987 TOTAL 21204.94 MEAN 58.1 MAX 3870 MIN .07

SALT RIVER BASIN

05503800 CROOKED CREEK NEAR PARIS, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.13	2.67	2.86	2.56	3.99	4.77	2.82	2.47	2.38	2.45	2.29	2.38
2	4.42	2.66	5.40	2.56	4.14	3.61	2.75	2.47	2.37	2.45	2.29	2.38
3	10.19	2.63	3.63	2.55	3.47	3.03	2.70	2.47	2.86	2.42	2.27	2.35
4	9.83	2.63	3.09	2.54	3.11	2.86	2.66	2.50	2.54	2.42	2.28	2.35
5	3.89	2.63	2.88	2.53	2.92	2.77	2.63	2.50	2.51	2.40	2.28	2.34
6	3.15	2.64	2.78	2.53	2.84	2.73	2.61	2.48	2.46	2.43	2.27	2.34
7	2.92	2.64	3.17	2.53	2.81	2.69	2.60	2.45	2.44	3.11	2.26	2.68
8	2.79	2.64	5.33	2.53	2.79	2.66	2.58	2.46	2.41	3.25	2.25	2.47
9	2.73	2.67	4.42	2.53	2.76	2.63	2.57	2.47	2.41	2.74	2.24	2.40
10	2.67	2.64	3.93	2.57	2.70	2.61	2.56	2.46	2.40	2.59	2.24	2.38
11	2.63	2.63	3.05	2.57	2.68	2.59	2.56	2.46	2.40	2.52	2.23	2.36
12	2.60	2.61	2.88	2.57	2.66	2.57	2.52	2.45	2.40	2.58	2.22	2.34
13	2.59	2.60	2.71	2.57	2.65	2.56	5.51	2.45	2.40	5.49	2.24	2.33
14	2.59	2.59	2.72	2.63	2.64	2.55	5.81	2.44	2.39	4.52	2.35	2.33
15	2.56	2.58	2.69	3.39	2.62	2.57	3.81	2.44	2.38	2.94	5.48	2.48
16	2.56	2.58	2.69	3.20	2.61	2.57	3.09	2.44	2.37	2.68	3.10	2.50
17	2.56	2.58	2.69	2.84	2.60	2.57	2.91	2.43	2.35	2.54	2.70	2.80
18	2.56	2.58	2.71	2.76	2.59	2.64	2.81	2.43	2.35	2.48	2.57	3.13
19	2.54	2.55	2.71	2.70	2.56	3.19	2.72	2.48	2.34	2.45	2.53	2.70
20	2.51	2.56	2.68	2.72	2.55	3.02	2.68	2.51	2.38	2.41	2.48	2.56
21	2.53	2.59	2.65	2.69	2.55	2.84	2.63	2.76	2.40	2.39	2.51	2.49
22	2.52	2.59	2.63	2.68	2.55	2.76	2.60	3.08	2.63	2.39	2.48	2.45
23	2.48	2.66	2.62	2.65	2.55	2.71	2.58	2.65	2.51	2.38	2.52	2.43
24	2.51	2.66	2.62	2.58	2.54	2.69	2.57	2.53	2.47	2.36	2.47	2.43
25	2.51	2.67	2.62	2.55	2.54	3.28	2.55	2.51	2.41	2.35	2.45	2.42
26	5.79	2.74	2.62	2.53	2.54	3.04	2.54	2.47	2.43	2.35	2.47	2.42
27	4.61	3.47	2.61	2.52	2.53	2.85	2.53	2.45	2.39	2.34	2.47	2.41
28	3.18	3.02	2.58	2.54	2.60	2.76	2.52	2.43	2.41	2.33	2.46	2.39
29	2.92	2.80	2.57	2.58	---	4.16	2.51	2.41	2.39	2.32	2.43	2.39
30	2.79	2.72	2.57	3.05	---	3.33	2.51	2.39	2.38	2.31	2.41	2.38
31	2.72	---	2.56	3.51	---	2.95	---	2.39	---	2.29	2.39	---

SALT RIVER BASIN

05504800 SOUTH FORK SALT RIVER ABOVE SANTA FE, MO

LOCATION.--Lat 39°19'34", long 91°50'02", in SE ¼ SE ¼ sec.31, T.53 N., R.8 W., Audrain County, Hydrologic Unit 07110006, on left bank near downstream side of bridge on county road, 4.0 mi southwest of Santa Fe, 1.0 mi upstream from Littleby Creek, and at mile 104.2 above mouth of Salt River.

DRAINAGE AREA.--233 mi².

PERIOD OF RECORD.--October 1986 to current year. Published as "near Santa Fe" October 1969 to September 1975 and as "at Santa Fe" February 1940 to September 1968 and October 1975 to September 1986.

GAGE.--Water-stage recorder. Datum of gage is 644.87 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 5, 1940, nonrecording gage; Feb. 5, 1940 to Sept. 30, 1968 and Oct. 1975 to Sept. 1986, water-stage recorder 8.0 mi downstream at datum 613.05; Oct. 1, 1968 to Sept. 30, 1975, water-stage recorder, 1.0 mi downstream at datum 639.09 ft higher.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, 200 ft³/s, 11.66 in/yr, 144,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,800 ft³/s, Oct. 13, 1969, gage height, 28.24 ft, at site and datum then in use; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	0430	*4,850	*16.06				

Minimum daily discharge, 0.81 ft³/s, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	859	33	822	22	690	173	101	16	15	2.7	1.8	1.9
2	1360	26	1280	21	519	204	77	15	23	2.9	1.4	1.5
3	4340	22	498	21	294	109	62	15	242	2.9	.85	1.2
4	3870	21	244	26	181	68	52	19	131	2.9	.81	1.1
5	549	22	150	19	120	52	48	41	49	3.0	1.8	1.1
6	232	22	112	19	94	43	39	33	24	79	7.2	1.4
7	138	21	406	19	80	38	36	21	17	789	3.7	1.4
8	98	22	1230	19	70	34	32	17	12	307	2.3	1.3
9	93	24	542	20	60	30	29	15	9.9	122	2.0	1.3
10	63	23	217	24	49	27	27	14	7.9	51	1.8	1.1
11	47	26	150	25	42	24	27	13	6.8	32	3.9	.99
12	41	23	124	25	41	22	25	11	5.9	41	3.5	1.1
13	34	20	93	27	38	21	404	9.9	5.2	540	6.1	1.3
14	30	18	75	90	35	21	1760	11	4.6	480	40	1.3
15	28	17	67	395	31	20	520	18	4.0	107	33	2.4
16	25	16	64	230	30	20	208	49	3.5	49	13	13
17	22	16	64	118	28	20	135	22	3.5	29	8.6	12
18	20	15	63	86	26	35	97	17	3.5	20	5.7	9.1
19	18	15	57	96	24	143	74	15	3.7	15	8.4	4.8
20	16	17	48	87	23	134	60	15	91	13	11	2.9
21	15	16	41	93	23	76	48	14	59	11	5.4	2.0
22	14	16	36	64	22	55	39	22	27	8.9	4.0	1.8
23	14	16	34	65	22	45	33	27	18	7.6	3.3	1.4
24	14	16	32	49	21	134	30	18	14	7.7	2.7	1.0
25	18	22	32	32	21	334	27	16	9.6	6.4	2.7	.91
26	565	1310	30	24	20	151	25	15	6.4	6.4	2.3	.92
27	445	763	27	23	19	91	23	20	4.5	5.9	2.2	1.1
28	168	255	25	26	29	118	21	19	3.8	3.2	3.5	1.1
29	94	152	23	40	---	633	19	17	4.0	2.7	3.0	1.5
30	61	111	22	367	---	324	17	25	3.3	2.6	2.4	1.4
31	43	---	22	709	---	150	---	20	---	2.5	2.3	---
TOTAL	13334	3096	6630	2875	2652	3349	4095	599.9	812.1	2753.3	190.66	75.32
MEAN	430	103	214	92.7	94.7	108	136	19.4	27.1	88.8	6.15	2.51
MAX	4340	1310	1280	709	690	633	1760	49	242	789	40	13
MIN	14	15	22	19	19	20	17	9.9	3.3	2.5	.81	.91

CAL YR 1986 TOTAL 29711.09 MEAN 146 MAX 4340 MIN 1.7
WTR YR 1987 TOTAL 40462.02 MEAN 111 MAX 4340 MIN .81

SALT RIVER BASIN

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05504800 SOUTH FORK SALT RIVER ABOVE SANTA FE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.46	4.72	6.50	4.53	8.24	5.55	5.39	4.33	4.32	4.04	4.02	4.01
2	8.72	4.62	10.14	4.53	8.05	6.30	5.18	4.31	4.26	4.05	3.99	4.00
3	15.55	4.54	7.36	4.51	6.77	5.48	5.03	4.29	5.21	4.05	3.94	3.98
4	15.79	4.53	6.48	4.50	6.07	5.09	4.92	4.33	5.71	4.05	3.93	3.97
5	7.55	4.54	5.80	4.48	5.59	4.93	4.90	4.43	4.92	4.05	3.98	3.97
6	6.42	4.53	5.48	4.48	5.32	4.83	4.78	4.65	4.60	4.07	4.24	3.99
7	5.72	4.54	5.70	4.48	5.18	4.77	4.75	4.45	4.43	7.70	4.12	3.99
8	5.34	4.55	10.61	4.47	5.09	4.72	4.70	4.35	4.34	6.85	4.04	3.98
9	5.35	4.59	8.01	4.47	5.00	4.67	4.66	4.31	4.27	5.60	4.01	3.98
10	5.04	4.55	5.43	4.56	4.90	4.63	4.63	4.28	4.22	4.96	3.99	3.96
11	4.88	4.64	5.55	4.60	4.81	4.59	4.62	4.25	4.18	4.79	4.08	3.96
12	4.82	4.58	5.57	4.59	4.79	4.54	4.59	4.22	4.16	4.61	4.09	3.96
13	4.73	4.50	5.33	4.59	4.77	4.53	5.33	4.17	4.14	7.99	4.11	3.98
14	4.66	4.45	5.16	4.82	4.73	4.51	11.65	4.20	4.12	8.11	4.62	3.98
15	4.63	4.44	5.06	6.93	4.69	4.51	7.82	4.20	4.10	5.49	4.79	4.03
16	4.59	4.42	5.03	6.43	4.67	4.50	6.24	4.86	4.08	4.92	4.37	4.14
17	4.54	4.41	5.03	5.54	4.65	4.49	5.67	4.48	4.08	4.75	4.25	4.32
18	4.50	4.39	5.03	5.25	4.61	4.59	5.33	4.36	4.08	4.49	4.15	4.26
19	4.47	4.40	4.98	5.56	4.57	5.37	5.12	4.34	4.08	4.41	4.17	4.15
20	4.43	4.43	4.89	5.36	4.56	5.71	4.97	4.28	5.79	4.37	4.36	4.08
21	4.39	4.41	4.81	5.54	4.55	5.17	4.85	4.28	5.03	4.27	4.17	4.02
22	4.36	4.42	4.75	5.04	4.54	4.96	4.75	4.45	4.59	4.30	4.12	4.01
23	4.35	4.42	4.72	5.20	4.53	4.85	4.67	4.58	4.47	4.20	4.09	3.99
24	4.35	4.41	4.70	4.92	4.52	4.93	4.61	4.39	4.36	4.19	4.05	3.96
25	4.38	4.40	4.69	4.71	4.51	7.23	4.55	4.34	4.27	4.18	4.05	3.95
26	7.73	10.03	4.67	4.62	4.50	5.85	4.52	4.32	4.18	4.21	4.05	3.95
27	7.30	8.83	4.63	4.59	4.49	5.31	4.48	4.35	4.12	4.18	4.02	3.97
28	5.98	6.54	4.59	4.63	4.51	5.09	4.43	4.40	4.09	4.08	4.09	3.97
29	5.34	5.82	4.57	4.70	---	7.85	4.40	4.38	4.10	4.05	4.08	3.99
30	5.04	5.47	4.55	6.61	---	6.97	4.36	4.48	4.07	4.04	4.03	3.99
31	4.83	---	4.54	8.57	---	5.82	---	4.43	---	4.05	4.03	---

05506500 MIDDLE FORK SALT RIVER AT PARIS, MO

LOCATION.--Lat 39°29'05", long 91°59'50", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.11, T.54 N., R.10 W., Monroe County, Hydrologic Unit 07110006, on right bank near upstream side of bridge on E. Madison Street in Paris, 600 ft downstream from Wabash Railroad bridge, 12.5 mi upstream from Elk Fork Salt River, and at mile 104.5 above mouth of Salt River.

DRAINAGE AREA.--356 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.88 ft above National Geodetic Vertical Datum of 1929, 1961 adjustment. Prior to Jan. 22, 1940, nonrecording gage; Jan. 22, 1940 to Sept. 30, 1968, water-stage recorder, 600 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Water-discharge records good except for periods of backwater from the Clarence Cannon Dam, Oct. 6-25, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, 257 ft³/s, 9.80 in/yr, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s, Apr. 21, 1973, gage height, 33.5 ft, from floodmark; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	1900	*11,600	*21.21	No other peak greater than base discharge.			

Minimum discharge, 1.2 ft³/s, Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7050	80	842	40	483	935	184	28	5.8	21	2.2	5.9
2	7600	64	2200	39	480	921	135	27	45	18	2.0	5.2
3	8590	57	1650	36	412	437	109	27	569	17	1.8	5.1
4	10900	54	590	34	247	266	91	27	135	22	7.1	5.6
5	9410	53	240	33	153	142	79	26	55	30	3.5	6.1
6	4820	53	160	32	111	112	70	25	29	53	2.0	6.6
7	1270	53	593	32	93	96	65	26	18	257	2.4	9.1
8	175	53	1890	34	105	85	60	25	13	494	2.2	251
9	138	48	2600	34	173	75	58	23	11	128	2.7	97
10	120	42	1750	36	129	67	56	21	8.4	102	3.8	35
11	115	38	633	35	88	59	52	18	7.6	64	2.2	20
12	130	35	224	36	66	54	51	34	6.5	344	2.5	13
13	151	31	128	41	59	50	1360	24	5.5	1760	6.6	8.2
14	245	29	120	67	56	49	2940	15	4.3	1350	145	7.2
15	199	27	107	257	52	49	3150	12	4.1	239	2280	14
16	130	27	93	247	47	51	1210	11	4.2	94	2760	7.7
17	66	27	93	162	43	50	351	10	3.8	49	564	52
18	70	27	95	97	40	67	213	9.9	3.4	31	114	166
19	52	27	99	73	37	163	148	15	132	23	122	77
20	45	29	82	79	34	406	114	40	83	18	103	53
21	40	28	70	64	34	279	91	67	49	17	72	29
22	37	31	62	66	34	151	75	98	38	14	38	16
23	35	33	58	51	34	112	64	38	29	11	26	10
24	38	35	56	42	33	150	58	27	25	8.2	44	7.2
25	75	36	55	37	31	339	51	18	31	7.3	38	4.6
26	1480	82	55	30	29	370	47	14	26	6.7	24	3.8
27	1580	234	51	27	28	245	42	12	40	4.7	17	2.0
28	1090	250	47	28	85	236	39	9.8	37	3.5	13	4.6
29	340	156	44	40	---	591	36	9.4	28	2.8	9.9	1.5
30	156	107	41	176	---	619	32	7.6	22	2.1	7.7	1.3
31	104	---	40	333	---	318	---	7.2	---	2.2	6.6	---
TOTAL	56255	1846	14168	2338	3216	7484	11031	751.9	1468.6	5193.5	6425.2	924.7
MEAN	1815	61.5	457	75.4	115	241	368	24.3	49.0	168	207	30.8
MAX	10900	250	2200	333	483	935	3150	98	569	1760	2760	251
MIN	35	27	40	27	28	45	32	7.2	3.4	2.1	1.8	1.3

CAL YR 1986 TOTAL 126116.4 MEAN 346 MAX 10900 MIN .22
WTR YR 1987 TOTAL 111101.5 MEAN 304 MAX 10900 MIN 1.3

SALT RIVER BASIN

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05506500 MIDDLE FORK SALT RIVER AT PARIS, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.34	3.59	4.50	3.23	4.91	6.09	4.01	3.03	2.73	2.93	2.76	2.86
2	17.17	3.48	8.62	3.23	4.91	6.07	3.77	3.00	2.70	2.92	2.75	2.85
3	17.85	3.42	7.76	3.21	4.84	4.97	3.64	2.99	5.72	2.88	2.74	2.84
4	20.41	3.41	5.39	3.17	4.35	4.11	3.53	3.00	3.81	2.94	2.91	2.85
5	19.85	3.40	4.30	3.17	3.93	3.82	3.46	3.00	3.30	3.05	2.81	2.86
6	14.75	3.40	3.97	3.15	3.72	3.65	3.39	2.98	3.05	2.93	2.75	2.87
7	8.78	3.40	4.31	3.15	3.59	3.57	3.35	3.00	2.91	3.70	2.77	2.92
8	5.44	3.42	7.87	3.17	3.59	3.48	3.30	2.99	2.84	5.14	2.76	4.79
9	5.40	3.40	8.09	3.17	4.07	3.42	3.29	2.97	2.80	3.77	2.76	3.76
10	5.33	3.34	7.85	3.19	3.82	3.36	3.27	2.94	2.78	3.64	2.82	3.27
11	5.40	3.29	5.51	3.19	3.58	3.29	3.23	2.91	2.75	5.35	2.76	3.08
12	5.14	3.28	4.25	3.18	3.45	3.28	3.23	2.89	2.73	3.30	2.76	2.98
13	4.91	3.24	3.82	3.22	3.40	3.24	5.65	2.99	2.72	7.52	2.90	2.92
14	4.86	3.21	3.72	3.29	3.36	3.22	9.67	2.87	2.68	7.75	3.04	2.87
15	4.65	3.17	3.69	4.30	3.34	3.22	10.72	2.82	2.68	4.32	8.40	3.10
16	4.54	3.18	3.59	4.35	3.30	3.24	7.08	2.80	2.68	3.70	9.84	2.93
17	4.18	3.18	3.59	4.01	3.27	3.23	4.65	2.78	2.68	3.36	5.20	3.44
18	3.94	3.18	3.60	3.65	3.23	3.28	4.13	2.79	2.66	3.18	3.77	4.21
19	3.76	3.18	3.65	3.54	3.21	3.79	3.84	2.82	2.66	3.09	3.87	3.65
20	3.65	3.21	3.53	3.53	3.18	4.68	3.65	2.94	3.35	3.03	3.58	3.48
21	3.59	3.19	3.47	3.35	3.17	4.42	3.52	3.22	3.09	3.01	3.53	3.23
22	3.56	3.23	3.41	3.45	3.17	3.87	3.40	3.61	3.16	2.98	3.29	3.09
23	3.53	3.24	3.38	3.34	3.17	3.65	3.34	3.15	3.03	2.93	3.11	---
24	3.52	3.27	3.36	3.23	3.17	3.60	3.29	3.03	2.97	2.88	3.25	---
25	3.53	3.25	3.35	3.21	3.15	4.52	3.24	2.92	3.06	2.86	3.28	---
26	7.15	3.66	3.35	3.11	3.14	4.66	3.21	2.86	3.03	2.86	3.11	---
27	7.46	4.08	3.34	3.11	3.12	4.27	3.16	2.82	3.07	2.82	3.03	---
28	6.51	4.39	3.29	3.11	3.17	3.88	3.13	2.79	3.12	2.81	2.98	---
29	4.76	4.01	3.28	3.13	---	5.09	3.11	2.80	3.04	2.79	2.92	---
30	3.99	3.75	3.24	3.83	---	5.40	3.06	2.75	2.95	2.76	2.88	---
31	3.72	---	3.23	4.49	---	4.55	---	2.75	---	2.76	2.87	---

SALT RIVER BASIN

05506500 MIDDLE FORK SALT RIVER AT PARIS, MO

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT: August 1980 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,170 mg/L, July 23, 1981; minimum daily mean, 4 mg/L, Dec. 9, 10, 1984, Jan. 24, 25, 1985.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 40,200 tons, Mar. 5, 1985; minimum daily, 0.00 tons, Oct. 3, 8, 9, 10, 1983.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,450 mg/L, June 3; minimum daily mean, 10 mg/L, Jan 25, 27.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 11,400 tons, Oct. 1; minimum daily, 0.06 tons, Sept. 30.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SED. SUSP. FALL DIAM. % FINER THAN (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70339)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)
DEC 02...	1400	2220	53	61	65	82	99	99	100	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)	BED MAT. SIEVE DIAM. % FINER THAN (80172)	BED MAT. SIEVE DIAM. % FINER THAN (80173)
APR 21...	0	1	1	2	3	4	6	10	21	55

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	7050	598	11400	80	61	13	842	433	1130
2	7600	184	3780	64	65	11	2200	891	5280
3	8590	162	3750	57	63	9.6	1650	515	2290
4	10900	159	4700	54	60	8.7	590	300	477
5	9410	202	5130	53	50	7.1	240	182	118
6	4820	228	2960	53	50	7.2	160	148	64
7	1270	124	424	53	45	6.4	593	215	345
8	175	76	36	53	49	7.0	1890	684	3500
9	138	56	21	48	49	6.4	2000	600	3240
10	120	53	17	42	48	5.5	1750	193	912
11	115	72	22	38	43	4.4	633	121	206
12	130	51	18	35	55	5.2	224	118	71
13	151	54	22	31	53	4.4	128	93	32
14	249	45	31	29	58	4.5	120	94	31
15	199	64	34	27	44	3.2	107	77	22
16	130	66	23	27	41	3.0	93	62	16
17	66	56	10	27	45	3.2	93	60	15
18	70	59	11	27	39	2.8	95	51	13
19	52	58	8.2	27	41	3.0	99	50	13
20	45	54	6.6	29	46	3.6	82	49	11
21	40	55	5.9	28	39	3.0	70	38	7.1
22	37	50	5.0	31	63	5.3	62	49	8.1
23	35	43	4.1	33	77	6.8	58	53	8.3
24	38	40	4.1	35	61	5.8	56	53	7.9
25	75	69	14	36	31	3.0	55	48	7.2
26	1480	220	901	82	34	7.6	55	34	5.1
27	1580	234	997	234	77	49	51	35	4.9
28	1090	107	314	250	81	55	47	41	5.2
29	340	67	62	156	88	37	44	41	4.9
30	156	45	19	107	89	26	41	40	4.4
31	104	58	16	---	---	---	40	42	4.5
TOTAL	56255	---	34745.9	1846	---	317.7	14168	---	17853.6

05506500 MIDDLE FORK SALT RIVER AT PARIS, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	40	36	3.8	483	96	125	935	515	1300
2	39	33	3.5	480	97	126	921	338	840
3	36	45	4.4	412	84	94	437	357	421
4	34	45	4.1	247	76	51	206	265	148
5	33	30	2.7	153	89	37	142	174	67
6	32	32	2.8	111	89	27	112	143	43
7	32	38	3.3	93	50	12	96	123	32
8	34	36	3.2	105	50	14	85	134	31
9	34	32	2.9	173	81	38	75	97	20
10	36	43	4.1	129	66	23	67	74	13
11	35	29	2.8	88	49	12	59	51	8.2
12	36	26	2.6	66	47	8.5	54	34	5.0
13	41	47	5.2	59	42	6.7	50	28	3.7
14	67	37	6.7	56	46	6.9	49	23	3.0
15	257	37	26	52	54	7.6	49	25	3.3
16	247	57	38	47	72	9.2	51	27	3.7
17	162	56	24	43	76	8.9	50	26	3.5
18	97	49	13	40	50	5.4	67	30	5.4
19	73	55	11	37	59	5.9	163	39	17
20	79	63	13	34	56	5.2	406	125	137
21	64	53	9.2	34	42	3.8	279	161	121
22	66	34	6.1	34	35	3.2	151	251	103
23	51	25	3.5	34	45	4.1	112	230	69
24	42	13	1.4	33	51	4.5	150	160	65
25	37	10	.96	31	37	3.1	339	153	140
26	30	16	1.3	29	39	3.1	370	132	132
27	27	10	.71	28	73	45	245	144	95
28	28	40	3.0	85	103	24	236	122	78
29	40	46	5.0	---	---	---	591	235	374
30	176	80	38	---	---	---	619	323	540
31	333	89	80	---	---	---	318	208	178
TOTAL	2338	---	326.27	3216	---	714.1	7484	---	4999.8
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	184	133	66	28	115	8.7	5.8	81	1.3
2	135	139	51	27	95	7.0	45	217	26
3	109	139	41	27	97	7.1	569	2490	3820
4	91	141	35	27	97	7.1	135	1330	485
5	79	148	32	26	102	7.2	55	916	136
6	70	156	30	25	103	7.0	29	699	55
7	65	133	23	26	86	6.0	18	502	24
8	60	92	15	25	88	5.9	13	403	14
9	58	116	18	23	89	5.5	11	332	9.9
10	56	88	13	21	80	4.5	8.4	241	5.5
11	52	143	20	18	92	4.5	7.6	206	4.2
12	51	124	17	34	95	8.7	6.5	177	3.1
13	1360	122	447	24	96	6.2	5.5	137	2.0
14	2940	592	4700	15	102	4.1	4.3	86	1.0
15	3150	606	5150	12	95	3.1	4.1	79	.88
16	1210	680	2220	11	102	3.0	4.2	89	1.0
17	351	292	277	10	100	2.7	3.8	77	.79
18	213	149	86	9.9	80	2.1	3.4	60	.55
19	148	125	50	15	65	2.6	132	104	37
20	114	112	34	40	65	7.0	83	349	78
21	91	124	31	67	67	12	49	298	39
22	75	132	27	98	123	33	38	256	26
23	64	125	22	38	111	11	29	186	15
24	58	121	19	27	70	5.1	25	123	8.3
25	51	116	16	18	61	3.0	31	94	7.9
26	47	99	13	14	78	3.0	26	94	6.6
27	42	76	8.6	12	91	3.0	40	90	9.7
28	39	139	15	9.8	96	2.5	37	96	9.6
29	36	135	13	9.4	78	2.0	28	85	6.4
30	32	128	11	7.6	78	1.6	22	70	4.2
31	---	---	---	7.2	72	1.4	---	---	---
TOTAL	11031	---	13500.6	751.9	---	187.6	1468.6	---	4837.91

SALT RIVER BASIN

05506500 MIDDLE FORK SALT RIVER AT PARIS, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	21	87	4.9	2.2	48	.28	5.9	50	.80
2	18	155	7.5	2.0	70	.38	5.2	54	.75
3	17	132	6.0	1.8	65	.32	5.1	57	.79
4	22	114	6.8	7.1	55	1.1	5.6	64	.97
5	30	110	8.6	3.5	62	.58	6.1	54	.89
6	53	255	36	2.0	67	.36	6.6	67	1.2
7	257	404	281	2.4	62	.40	9.1	66	1.6
8	494	339	452	2.2	75	.44	251	96	65
9	128	458	158	2.7	60	.44	97	140	37
10	102	509	140	3.8	54	.55	35	132	12
11	64	419	72	2.2	63	.38	20	131	7.1
12	344	543	505	2.5	62	.42	13	96	3.4
13	1760	866	4110	6.6	68	1.2	8.2	84	1.9
14	1350	1130	4130	145	358	255	7.2	87	1.7
15	239	552	356	2280	1420	8730	14	87	3.3
16	94	260	66	2760	1080	8040	7.7	76	1.6
17	49	172	23	564	417	635	52	110	15
18	31	171	14	114	110	33	166	122	55
19	23	137	8.5	122	86	28	77	100	21
20	18	122	5.9	103	90	25	53	124	18
21	17	61	2.8	72	110	21	29	90	7.0
22	14	61	2.3	38	100	10	16	134	5.8
23	11	87	2.6	26	87	6.1	10	114	3.1
24	8.2	76	1.7	44	97	12	7.2	80	1.6
25	7.3	110	2.1	38	63	6.5	4.6	60	.74
26	6.7	110	1.9	24	62	4.0	3.8	64	.66
27	4.7	68	.86	17	83	3.8	2.0	66	.35
28	3.5	26	.25	13	61	2.1	4.6	49	.61
29	2.8	22	.16	9.9	58	1.5	1.5	35	.14
30	2.1	42	.24	7.7	65	1.4	1.3	17	.06
31	2.2	42	.25	6.6	57	1.0	---	---	---
TOTAL	5193.5	---	10406.35	6425.2	---	17822.24	924.7	---	269.06
YEAR	111146.0		106002.16						

05506800 ELK FORK SALT RIVER NEAR MADISON, MO

LOCATION.--Lat 39°26'05", long 92°10'04", in SE ¼ NE ¼ SW ¼ sec.29, T.54 N., R.11 W., Monroe County, Hydrologic Unit 07110006, on downstream side of highway, 25 ft to the left of bridge on State Highway AA, 500 ft downstream from Allen Creek, 3.5 mi southeast of Madison, and at mile 29.8.

DRAINAGE AREA.--200 mi².

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR MO 1973: 1976(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 690.16 ft above National Geodetic Vertical Datum of 1929 (Missouri State Highway Commission bench mark).

REMARKS.--Estimated daily discharges: Jan. 23-25. Records good except for estimated daily discharges, which are fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--19 years, 183 ft³/s, 12.43 in/yr, 132,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,300 ft³/s, Apr. 21, 1973, gage height, 33.4 ft, from floodmarks; no flow Aug. 4-10, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 9, 1967, reached a stage of 31.25 ft, from floodmark, discharge, 31,200 ft³/s, by contracted-opening method. Flood in 1871 reached nearly the same stage, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	0015	6,640	19.29	Apr. 14	0745	3,210	14.12
Oct. 3	2245	*15,700	*25.99				

Minimum daily discharge, 0.42 ft³/s, Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6000	37	1320	20	512	1170	62	12	5.8	2.1	1.4	1.3
2	3020	31	1810	20	324	309	49	11	8.5	2.5	1.2	1.1
3	10400	28	334	20	156	118	40	12	449	3.9	1.3	.79
4	9540	27	143	19	92	75	33	14	85	3.3	2.5	.52
5	847	28	87	18	63	58	29	17	25	3.3	2.3	.42
6	189	29	66	18	51	48	26	18	15	11	4.8	1.2
7	115	28	1030	18	44	41	24	15	11	164	3.1	6.3
8	80	25	1830	18	39	35	23	12	8.3	150	2.4	9.8
9	66	24	776	19	34	30	22	10	6.5	39	2.1	12
10	47	22	407	22	29	26	21	9.7	5.3	16	1.5	6.0
11	38	20	125	22	27	23	21	8.6	4.7	9.7	1.3	4.2
12	35	20	88	22	27	22	21	8.2	4.5	498	1.0	3.1
13	31	18	61	23	25	21	1370	7.5	4.2	1610	1.5	2.6
14	31	18	54	100	24	21	2230	7.4	4.1	562	70	10
15	30	17	48	461	23	22	398	7.6	3.5	62	105	30
16	27	17	46	154	23	22	155	7.0	3.0	30	28	47
17	24	16	47	75	22	21	99	6.2	2.6	24	14	100
18	19	16	48	56	21	33	71	6.0	2.4	17	10	25
19	18	15	42	50	21	69	53	233	2.1	11	7.8	14
20	18	15	37	50	21	59	42	103	2.4	8.5	6.7	7.8
21	16	16	33	40	20	42	34	174	2.6	6.9	5.0	4.9
22	15	18	30	38	20	34	28	122	7.1	5.7	3.8	3.7
23	14	17	28	31	20	29	25	33	5.3	4.4	2.8	2.9
24	13	16	28	25	19	96	23	20	4.1	3.7	2.1	2.3
25	119	16	28	21	18	101	22	15	3.0	3.2	1.7	1.9
26	1800	360	26	19	17	76	21	12	2.4	2.8	1.5	1.8
27	502	474	24	19	17	53	19	9.9	2.3	2.3	1.4	1.9
28	154	125	22	21	138	172	17	8.6	2.0	2.3	1.4	1.6
29	89	74	21	36	---	525	15	7.9	2.0	2.1	1.3	1.7
30	60	55	21	355	---	178	12	6.8	2.0	1.7	1.3	1.7
31	47	---	20	480	---	87	---	6.1	---	1.4	1.3	---
TOTAL	33398	1622	8680	2290	1847	3616	5005	940.5	685.7	3263.8	291.5	307.53
MEAN	1077	54.1	280	73.9	66.0	117	167	30.3	22.9	105	9.40	10.3
MAX	10400	474	1830	480	512	1170	2230	233	449	1610	105	100
MIN	13	15	20	18	17	21	12	6.0	2.0	1.4	1.0	.42

CAL YR 1986 TOTAL 81308.00 MEAN 223 MAX 10400 MIN .50
WTR YR 1987 TOTAL 61946.70 MEAN 170 MAX 10400 MIN .42

SALT RIVER BASIN

05506800 ELK FORK SALT RIVER NEAR MADISON, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.96	4.27	4.96	3.96	6.86	9.93	4.59	3.77	3.57	3.39	3.29	3.28
2	13.24	4.18	12.39	3.96	6.29	6.20	4.44	3.74	3.56	3.39	3.27	3.27
3	21.39	4.13	6.28	3.95	5.35	5.09	4.32	3.74	7.13	3.49	3.27	3.23
4	23.49	4.12	5.27	3.95	4.90	4.72	4.22	3.81	4.85	3.46	3.37	3.20
5	7.83	4.12	4.83	3.92	4.60	4.53	4.15	3.87	4.09	3.46	3.35	3.18
6	5.55	4.17	4.62	3.92	4.46	4.43	4.09	3.92	3.85	3.45	3.49	3.18
7	5.05	4.15	5.88	3.93	4.37	4.32	4.06	3.84	3.74	4.67	3.41	3.67
8	4.77	4.11	12.22	3.93	4.31	4.24	4.03	3.76	3.67	5.63	3.36	3.37
9	4.57	4.08	7.90	3.93	4.22	4.16	4.00	3.72	3.61	4.35	3.35	3.73
10	4.41	4.05	6.76	3.99	4.14	4.11	3.99	3.70	3.56	3.90	3.31	3.53
11	4.29	4.03	5.17	4.01	4.11	4.05	3.99	3.66	3.53	3.71	3.28	3.46
12	4.23	4.01	4.85	4.00	4.11	4.01	3.99	3.65	3.52	4.16	3.25	3.41
13	4.17	3.99	4.44	4.00	4.08	3.98	10.36	3.64	3.50	12.35	3.30	3.38
14	4.17	3.98	4.46	4.26	4.07	3.98	14.12	3.63	3.50	7.33	3.75	3.35
15	4.16	3.98	4.39	7.09	4.05	4.01	6.57	3.64	3.48	4.61	5.27	4.20
16	4.13	3.97	4.38	5.37	4.03	4.01	5.34	3.62	3.45	4.12	4.09	3.97
17	4.05	3.97	4.38	4.73	4.01	3.98	4.94	3.59	3.42	3.92	3.78	5.23
18	3.95	3.96	4.39	4.50	3.99	4.05	4.69	3.58	3.41	3.82	3.68	4.00
19	3.93	3.94	4.31	4.38	3.98	4.62	4.49	4.12	3.39	3.70	3.59	3.76
20	3.93	3.94	4.24	4.48	3.98	4.56	4.35	4.95	3.39	3.61	3.52	3.60
21	3.91	3.95	4.19	4.28	3.96	4.36	4.23	6.13	3.43	3.56	3.51	3.49
22	3.86	4.00	4.14	4.28	3.95	4.23	4.14	5.06	3.69	3.52	3.44	3.43
23	3.85	3.98	4.11	4.18	3.94	4.15	4.08	4.26	3.56	3.46	3.39	3.39
24	3.82	3.97	4.11	4.08	3.92	4.25	4.03	3.97	3.51	3.43	3.34	3.37
25	3.88	3.94	4.11	3.98	3.91	4.88	3.99	3.83	3.46	3.40	3.32	3.33
26	11.19	5.13	4.08	3.92	3.89	4.75	3.98	3.75	3.41	3.38	3.30	3.31
27	6.94	7.41	4.05	3.91	3.88	4.49	3.94	3.71	3.40	3.35	3.29	3.32
28	5.34	5.14	4.01	3.97	4.03	4.35	3.87	3.68	3.38	3.35	3.29	3.31
29	4.86	4.72	3.99	4.05	---	7.14	3.82	3.65	3.38	3.34	3.28	3.30
30	4.56	4.51	3.99	5.60	---	5.48	3.77	3.62	3.38	3.32	3.28	3.31
31	4.41	---	3.97	6.72	---	4.85	---	3.58	---	3.29	3.28	---

SALT RIVER BASIN

51

05507600 LICK CREEK AT PERRY, MO

LOCATION.--Lat 39°25'53", long 91°40'34", near center of NW ¼ SW ¼ sec.27, T.54 N., R.7 W., Ralls County, Hydrologic Unit 07110007, on right bank and downstream side of State Highway 154 bridge, 0.1 mi west of Perry and at mile 11.9.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1979 to current year. Prior to October 1979 gages were maintained and operated by U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 625.00 ft above National Geodetic Vertical Datum of 1929. Prior to November 1967 nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 1-4 and June 2-8. Records good except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--8 years, 75.5 ft³/s, 9.86 in/yr, 54,700 acre ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum stage 26.24 ft, Oct. 12, 1969 determined by U.S. Army Corps of Engineers; no flow on many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
July 7	0130	*3,390	*14.67	No other peak greater than base discharge.			
No flow Aug. 12.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	3.9	1380	4.4	403	81	26	2.7	.95	2.4	.07	.11
2	185	3.4	744	4.4	380	49	19	2.5	2.0	1.0	.05	.08
3	1230	2.8	125	4.5	186	23	14	3.1	120	.66	.03	.05
4	806	2.7	45	4.1	62	14	12	3.6	30	.45	.03	.04
5	100	2.5	25	4.0	37	11	10	5.0	8.0	.35	.03	.03
6	30	2.4	18	4.0	27	8.9	8.8	3.3	5.0	217	.03	.03
7	15	2.2	626	3.8	22	7.6	8.2	2.7	3.5	959	.03	.03
8	9.7	1.8	578	3.6	18	6.9	7.4	2.4	2.0	85	.02	.03
9	7.0	1.8	333	4.1	13	6.5	6.8	2.2	.75	25	.02	.03
10	5.4	2.0	113	5.3	11	5.7	6.3	1.9	.59	10	.02	.03
11	4.3	2.0	34	5.3	9.8	5.1	6.3	1.7	.46	5.8	.01	.03
12	3.6	2.0	21	5.3	9.1	4.6	6.0	1.5	.42	7.3	.0	.03
13	3.0	2.0	14	5.4	7.9	4.4	639	1.4	.36	40	166	.03
14	2.9	1.9	11	46	7.4	4.3	740	1.2	.27	31	135	.36
15	2.5	1.8	11	192	7.1	4.0	158	1.1	.21	12	81	2.5
16	2.1	1.8	10	66	7.0	4.0	57	1.0	.14	8.5	25	1.2
17	1.7	1.8	10	28	6.2	4.1	30	.92	.12	6.4	9.5	.77
18	1.5	1.8	10	20	5.4	20	20	.85	.12	2.9	5.0	.57
19	1.4	1.8	9.9	16	5.2	72	14	14	3.9	2.0	3.0	.43
20	1.2	2.2	8.9	15	5.0	31	10	18	29	1.4	2.0	.30
21	1.0	2.2	7.8	12	4.9	18	9.1	6.1	31	1.1	1.9	.19
22	1.0	2.6	7.1	11	4.8	13	7.9	6.6	8.1	.77	1.4	.14
23	1.0	2.5	6.9	9.9	4.6	10	7.2	6.2	3.2	.74	.92	.10
24	1.1	2.6	6.9	7.3	4.4	104	6.8	3.8	1.7	.57	.77	.06
25	13	27	6.5	6.1	4.2	117	6.0	2.9	1.6	.50	.65	.04
26	269	998	5.9	5.6	4.0	41	5.3	2.2	.96	.39	.60	.04
27	92	187	5.6	5.6	4.0	26	4.8	1.7	.57	.34	.51	.04
28	30	53	5.3	5.6	5.4	172	4.1	1.5	.36	.28	.50	.07
29	15	27	5.3	7.9	---	923	3.6	1.5	4.9	.19	.42	.15
30	8.8	19	4.8	65	---	122	3.1	1.5	2.6	.14	.29	.15
31	6.3	---	4.6	142	---	42	---	1.3	---	.09	.19	---
TOTAL	2971.5	1365.5	4193.5	719.2	1265.4	1955.1	1856.7	106.37	262.78	1423.27	434.99	7.66
MEAN	95.9	45.5	135	23.2	45.2	63.1	61.9	3.43	8.76	45.9	14.0	.26
MAX	1230	998	1380	192	403	923	740	18	120	959	166	2.5
MIN	1.0	1.8	4.6	3.6	4.0	4.0	3.1	.85	.12	.09	.00	.03
CAL YR 1986	TOTAL 15767.40	MEAN 43.2	MAX 1690	MIN .00								
WTR YR 1987	TOTAL 16561.75	MEAN 45.4	MAX 1380	MIN .00								

SALT RIVER BASIN

05507600 LICK CREEK AT PERRY, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	5.33	7.08	5.35	7.62	6.43	5.89	5.23	5.07	5.24	4.89	4.91
2	---	5.30	9.28	5.35	7.81	6.19	5.77	5.21	---	5.09	4.87	4.89
3	---	5.27	6.76	5.34	7.14	5.85	5.68	5.20	---	5.02	4.84	4.87
4	---	5.27	6.15	5.34	6.31	5.68	5.62	5.28	---	4.99	4.83	4.85
5	6.61	5.27	5.88	5.33	6.04	5.60	5.58	5.39	---	4.97	4.83	4.84
6	5.95	5.27	5.74	5.32	5.90	5.55	5.54	5.27	---	5.36	4.83	4.83
7	5.68	5.27	7.00	5.32	5.83	5.50	5.53	5.23	---	8.05	4.83	4.83
8	5.53	5.24	8.62	5.30	5.77	5.47	5.49	5.20	---	6.50	4.82	4.84
9	5.42	5.24	7.82	5.29	5.66	5.45	5.47	5.18	5.04	5.89	4.81	4.84
10	5.37	5.26	6.70	5.40	5.60	5.43	5.44	5.16	5.01	5.60	4.80	4.84
11	5.31	5.26	6.00	5.40	5.57	5.39	5.44	5.14	4.99	5.44	4.79	4.84
12	5.28	5.26	5.81	5.39	5.55	5.36	5.43	5.12	4.98	5.31	4.77	4.84
13	5.24	5.26	5.72	5.39	5.51	5.35	7.39	5.10	4.97	5.90	5.17	4.84
14	5.23	5.25	5.61	5.52	5.49	5.35	9.40	5.09	4.95	5.96	6.55	4.82
15	5.21	5.25	5.59	7.14	5.48	5.33	6.99	5.07	4.94	5.66	6.51	5.30
16	5.18	5.25	5.58	6.35	5.48	5.33	6.26	5.06	4.92	5.53	5.89	5.11
17	5.15	5.25	5.58	5.93	5.44	5.33	5.96	5.05	4.91	5.48	5.59	5.04
18	5.12	5.25	5.58	5.77	5.41	5.45	5.79	5.04	4.91	5.27	5.39	5.00
19	5.11	5.25	5.57	5.70	5.39	6.48	5.68	5.34	4.90	5.19	5.27	4.99
20	5.10	5.28	5.54	5.73	5.38	5.97	5.60	5.80	5.79	5.13	5.19	4.97
21	5.07	5.28	5.51	5.67	5.37	5.76	5.54	5.43	6.13	5.09	5.18	4.95
22	5.07	5.31	5.48	5.59	5.37	5.65	5.50	5.45	5.55	5.04	5.12	4.93
23	5.07	5.30	5.47	5.59	5.36	5.58	5.46	5.45	5.30	5.03	5.06	4.92
24	5.07	5.31	5.46	5.51	5.35	5.60	5.44	5.32	5.17	5.00	5.04	4.90
25	5.12	5.31	5.45	5.45	5.34	6.70	5.41	5.27	5.10	4.99	5.01	4.88
26	7.32	9.74	5.42	5.43	5.33	6.10	5.38	5.21	5.07	4.98	5.01	4.87
27	6.55	7.06	5.41	5.43	5.32	5.88	5.36	5.16	5.01	4.96	4.99	4.87
28	5.96	6.23	5.39	5.43	5.32	5.76	5.32	5.13	4.97	4.95	4.99	4.87
29	5.67	5.90	5.39	5.45	---	10.11	5.29	5.13	5.36	4.93	4.98	4.93
30	5.50	5.77	5.38	6.13	---	6.74	5.26	5.13	5.22	4.92	4.95	4.93
31	5.43	---	5.36	6.76	---	6.11	---	5.11	---	4.90	4.93	---

05507800 SALT RIVER NEAR CENTER, MO

LOCATION.--Lat 39°34'26", long 91°34'15", near SE corner, sec.4, T.55 N., R.6 W., Ralls County, Hydrologic Unit 07110007, on left bank at left downstream end of bridge on Highway A, 0.5 mi downstream from Clarence Cannon Recharge Dam, 5 mi northwest of Center, at mile 53.1.

DRAINAGE AREA.--2,350 mi², approximately.

PERIOD OF RECORD.--October 1979 to current year. Prior to October 1979, gage heights only by U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 500.00 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1979 nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 20 to Dec. 18. Records good except for estimated daily discharges, which are fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station. Flow regulated by Clarence Cannon Dam 0.5 mi upstream.

AVERAGE DISCHARGE.--8 years, 2,118 ft³/s, 1,534,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, Apr. 22, 1973, gage height, 33.00 ft; minimum gage height, 2.6 ft, April 27, 1963, determined by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 10,700 ft³/s, sometime during period Nov. 17 to Dec. 18, 1986, gage height, 14.14 ft, minimum daily discharge, 16.0 ft³/s, Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2140	6820	6990	1510	83	145	1650	1300	2560	101	217	83
2	2120	6550	4040	1260	82	2100	1510	153	2600	99	208	81
3	3650	7530	5260	814	1890	874	1190	105	1320	100	184	86
4	914	8870	7460	1180	1750	1050	851	967	80	99	140	84
5	98	8800	8020	2400	1730	288	163	797	75	100	182	87
6	86	9020	6350	1200	1980	563	580	1680	76	104	177	84
7	78	8690	5910	939	1030	81	767	2390	74	100	130	80
8	69	6160	4220	1330	176	80	904	1150	66	1160	186	75
9	75	6120	5800	254	558	1120	1090	203	209	770	136	114
10	1240	7250	5360	1960	713	1390	836	197	780	1040	82	121
11	1950	6500	5180	1590	1840	2210	103	2610	221	728	59	125
12	1970	94	5290	896	1190	1810	101	2080	125	258	56	64
13	2320	89	5390	1170	1010	1580	746	185	204	196	62	62
14	3740	2110	5310	164	747	561	3310	179	177	189	54	62
15	5130	5010	5370	158	141	83	3510	176	571	169	44	270
16	4950	4930	3130	243	2640	2730	3190	191	1860	1040	40	1710
17	5680	4850	4030	138	2990	3310	3460	191	1600	2680	759	1110
18	8430	5040	2910	137	1880	3250	3100	186	836	1270	207	139
19	8440	5040	3180	131	1750	380	3080	283	221	1480	1100	136
20	8790	6130	1200	128	1980	1180	2800	406	196	3570	281	130
21	9120	9620	244	276	885	312	2450	198	158	3390	1120	124
22	6620	6090	2200	148	658	114	2060	1170	120	2740	217	109
23	5680	5610	1880	1930	2120	1840	2090	465	561	3580	161	588
24	6090	6200	512	1410	3360	3650	1430	94	2460	3400	137	1250
25	3990	4760	93	116	2140	3550	209	93	1390	3590	96	200
26	3030	6560	92	120	1200	1660	188	92	137	3850	19	181
27	5620	7650	633	1100	1000	2050	431	270	117	2860	16	303
28	6920	7420	844	749	161	1580	128	579	102	1980	112	2460
29	9000	4880	492	82	---	2320	876	753	95	2890	113	1520
30	8740	6750	113	83	---	2440	1640	502	99	2110	98	723
31	8340	---	103	82	---	2010	---	140	---	994	92	---
TOTAL	135020	181143	107606	23698	37684	46311	44443	19785	19090	46637	6485	12161
MEAN	4355	6038	3471	764	1346	1494	1481	638	636	1504	209	405
MAX	9120	9620	8020	2400	3360	3650	3510	2610	2600	3850	1120	2460
MIN	69	89	92	82	82	80	101	92	66	99	16	62

CAL YR 1986 TOTAL 880345 MEAN 2412 MAX 9980 MIN 44
WTR YR 1987 TOTAL 680063 MEAN 1863 MAX 9620 MIN 16

SALT RIVER BASIN

05507800 SALT RIVER NEAR CENTER, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.99	10.87	11.25	3.39	3.17	3.55	7.01	8.70	3.36	3.23	3.65	3.13
2	7.11	10.79	10.46	3.42	3.17	3.54	7.33	3.27	8.38	3.21	3.62	3.08
3	8.70	10.78	8.79	3.49	3.16	5.83	8.03	3.24	8.03	3.22	3.57	3.13
4	6.06	12.90	11.91	4.04	7.31	6.92	6.50	7.78	3.10	3.22	3.34	3.12
5	3.29	12.80	12.18	6.56	3.46	7.33	3.62	8.62	3.05	3.21	3.54	3.15
6	3.26	13.41	9.04	5.17	8.57	8.66	3.61	8.01	3.08	3.22	3.54	3.13
7	3.25	12.84	4.93	3.58	8.39	3.23	8.47	7.98	3.07	3.21	3.32	3.10
8	3.14	10.74	8.99	3.65	3.60	3.21	8.49	4.06	3.01	3.22	3.54	3.07
9	3.19	10.71	10.56	3.19	8.13	5.31	7.28	3.60	2.98	3.80	3.40	3.34
10	3.83	10.62	10.64	3.17	3.41	8.69	8.95	3.58	3.23	3.60	3.16	3.15
11	7.05	13.03	9.70	8.81	8.71	8.64	3.36	3.57	3.02	3.69	2.96	3.55
12	7.05	3.30	10.01	8.25	3.34	8.70	3.35	8.56	2.92	3.61	2.94	3.00
13	7.05	3.27	10.65	8.22	5.67	7.89	3.57	3.55	3.60	3.58	3.09	2.98
14	8.03	3.25	10.21	3.53	3.17	3.39	7.09	3.52	3.54	3.56	2.91	2.97
15	9.91	9.90	10.09	6.10	3.54	3.23	8.97	3.50	3.49	3.51	2.87	3.02
16	9.69	9.99	7.69	3.14	3.55	7.71	8.80	3.57	3.79	3.51	2.84	3.38
17	9.35	9.85	8.88	3.53	8.22	8.54	8.91	3.55	3.72	3.85	2.84	5.85
18	12.58	9.92	8.97	3.53	7.54	8.39	7.66	3.55	3.80	3.99	3.44	3.33
19	12.64	9.93	4.15	3.52	7.96	3.73	8.43	3.58	3.64	3.66	3.42	3.33
20	12.68	9.76	7.04	3.47	7.95	3.47	3.73	3.59	3.58	4.79	3.67	3.31
21	13.00	12.94	3.42	5.14	5.49	3.73	8.82	3.54	3.45	3.69	3.67	3.29
22	12.20	7.39	7.44	3.56	3.43	3.43	8.86	4.93	3.28	3.51	3.52	3.20
23	10.05	7.58	8.11	6.40	8.33	3.41	8.88	3.48	3.32	3.71	3.48	3.19
24	10.87	8.42	3.63	3.78	7.78	6.55	8.78	3.18	8.08	6.79	3.38	4.73
25	10.85	8.88	3.30	3.43	6.69	6.59	3.58	3.18	7.60	2.94	3.35	3.56
26	4.74	10.62	3.29	3.40	8.41	7.75	3.56	3.17	3.39	4.23	2.70	3.52
27	5.81	11.72	3.27	7.58	7.77	8.30	3.53	3.16	3.31	3.12	2.67	3.49
28	7.56	13.14	3.18	8.29	3.26	8.57	3.37	3.24	3.24	3.70	3.33	3.26
29	12.12	5.48	3.56	3.17	---	6.53	3.23	3.63	3.17	3.66	3.29	3.53
30	12.67	9.96	3.41	3.17	---	7.90	3.25	3.52	3.21	3.75	3.21	3.71
31	12.78	---	3.36	3.17	---	8.12	---	3.40	---	4.37	3.18	---

SALT RIVER BASIN

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05508000 SALT RIVER NEAR NEW LONDON, MO

LOCATION.--Lat 39°36'44", long 91°24'30", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.56 N., R.5 W., Ralls County, Hydrologic Unit 07110007, on left bank near downstream end of bridge on north bound side of dual U.S. Highway 61, 9.9 miles downstream from Clarence Cannon Recharge Dam, 2.0 mi north of New London, 8.0 mi upstream from Spencer Creek and at mile 35.5.

DRAINAGE AREA.--2,480 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is 477.03 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 7, 1931, nonrecording gage at present site at datum 0.03 ft higher; Apr. 7, 1931 to Jan. 17, 1935, nonrecording gage at site 180 ft downstream at datum 0.04 ft lower.

REMARKS.--No estimated daily discharges. Water discharge records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station. Flow regulated by Clarence Cannon Dam 9.9 mi upstream since September 1979.

AVERAGE DISCHARGE.--65 years (1981-1986), 1,738 ft³/s, 1,259,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107,000 ft³/s, Apr. 22, 1973, gage height, 31.8 ft, from floodmark; no flow Aug. 3-14, 1934, Aug. 21 to Sept. 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1858, reached a stage of 27.6 ft, present site and datum, based on comparison of June 1928 flood crest at stone marker 1.0 mi downstream of gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,400 ft³/s, Oct. 3, gage height, 13.69 ft; minimum, 28 ft³/s, Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2960	7020	8190	663	301	572	1950	1920	1310	90	244	89
2	3100	6610	5850	1860	313	1080	1610	581	3360	87	221	78
3	9760	7620	4590	752	1080	1750	1810	153	1990	84	207	73
4	2550	9230	7540	1550	2270	1500	969	886	305	84	169	80
5	399	9220	8540	1800	1670	475	326	892	83	91	153	77
6	204	9410	7150	2070	2420	597	237	859	67	134	182	81
7	164	9480	6700	712	1310	250	1240	2190	65	316	160	78
8	132	6770	5340	1860	558	147	911	2360	59	263	143	74
9	115	6430	6060	535	612	585	548	234	49	1190	170	70
10	594	7010	5580	1150	273	1460	1590	209	213	741	111	118
11	2130	8590	5440	2710	1520	2060	229	732	847	1020	60	153
12	2130	628	5440	833	1490	2050	159	4000	122	730	41	92
13	2280	146	5440	1150	1670	1620	1900	302	158	240	440	55
14	3430	619	5250	659	810	1380	3970	190	196	221	180	51
15	5190	4940	5490	371	436	228	4150	178	237	198	92	84
16	5110	4810	3200	282	1520	1560	3460	178	1030	206	39	381
17	5350	4860	3980	255	3070	3320	3510	349	1780	2230	30	2540
18	8550	4780	3690	224	2420	3530	3390	266	1330	2010	773	196
19	8850	4950	2500	213	2190	1890	3170	281	621	853	208	149
20	9050	5480	2570	203	1980	812	3170	514	239	2900	1150	142
21	9550	9090	287	308	1690	904	2670	337	194	3840	695	134
22	7850	6830	1420	245	583	243	2390	1490	151	2720	1040	119
23	5660	6100	2570	1140	1580	823	2270	1070	176	3580	197	182
24	6330	6440	1280	2500	3210	3730	1620	147	1910	3850	174	1200
25	5520	6080	180	497	2530	4100	896	111	2330	3230	153	546
26	2380	7630	161	168	1860	2350	220	96	220	4610	93	205
27	5590	8260	329	386	1050	2250	210	88	131	2520	40	200
28	7290	9100	993	1560	590	2070	422	314	111	2390	31	1040
29	8940	4780	568	312	---	3080	133	671	92	2730	115	2230
30	9290	7240	544	217	---	2660	1460	910	84	2160	120	1560
31	9130	---	179	217	---	2410	---	157	---	2430	101	---
TOTAL	149578	190153	117051	27402	41006	51486	50590	22665	19460	47748	7532	12077
MEAN	4825	6338	3776	884	1464	1661	1686	731	649	1540	243	403
MAX	9760	9480	8540	2710	3210	4100	4150	4000	3360	4610	1150	2540
MIN	115	146	161	168	273	147	133	88	49	84	30	51

CAL YR 1986 TOTAL 915878 MEAN 2509 MAX 10400 MIN 63
WTR YR 1987 TOTAL 736748 MEAN 2018 MAX 9760 MIN 30

SALT RIVER BASIN

05508000 SALT RIVER NEAR NEW LONDON, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.65	9.16	8.88	2.83	3.12	4.21	5.14	4.72	2.70	2.46	3.01	2.39
2	5.90	9.23	7.86	6.07	3.26	3.24	4.40	4.58	6.27	2.46	2.93	2.34
3	13.24	9.64	5.37	4.53	3.03	5.12	4.99	2.66	5.79	2.43	2.88	2.30
4	6.83	11.15	8.23	6.63	5.96	4.61	3.33	2.84	3.22	2.43	2.79	2.33
5	3.61	11.16	9.22	4.87	4.85	3.24	3.25	3.25	2.45	2.45	2.62	2.32
6	2.94	11.19	9.09	5.70	5.16	2.91	3.03	2.99	2.36	2.48	2.78	2.34
7	2.79	11.29	8.23	4.51	4.78	3.01	4.53	5.69	2.34	3.33	2.77	2.33
8	2.67	9.31	8.08	5.52	4.31	2.63	2.99	7.64	2.33	2.77	2.55	2.31
9	2.59	9.19	9.37	3.87	2.98	2.60	3.21	3.02	2.24	4.85	2.78	2.26
10	2.57	9.10	8.27	4.00	2.98	4.18	4.70	2.94	3.34	4.02	2.59	2.53
11	5.74	11.03	8.29	6.00	4.43	5.14	3.00	2.91	4.29	4.73	2.36	2.53
12	5.75	3.71	8.53	3.31	5.57	5.10	2.77	7.87	2.64	4.58	2.15	2.43
13	5.74	2.71	8.40	4.28	5.99	5.10	5.53	3.18	2.70	3.00	3.47	2.19
14	6.57	2.66	8.23	4.35	3.55	5.29	6.77	2.88	2.85	2.95	2.60	2.16
15	8.35	8.28	8.42	3.41	3.44	2.92	6.61	2.83	2.76	2.86	2.52	2.30
16	8.20	8.31	5.68	2.89	2.91	2.63	5.95	2.81	3.67	2.75	2.14	3.67
17	8.06	8.30	7.25	3.08	5.09	5.63	5.61	2.86	5.24	6.22	2.04	7.26
18	10.32	8.25	7.36	2.99	6.23	5.93	6.13	3.21	4.79	6.42	4.71	2.79
19	10.89	8.30	5.13	2.95	5.20	5.63	5.46	3.15	3.82	4.97	2.71	2.62
20	11.01	8.24	6.48	2.92	5.39	3.07	6.34	4.53	3.02	7.52	4.88	2.59
21	11.30	10.84	3.18	2.89	4.91	5.13	5.44	2.99	2.86	7.56	3.81	2.56
22	11.36	8.22	3.59	3.04	3.11	3.00	5.37	5.60	2.72	6.84	4.76	2.53
23	8.30	7.37	6.01	2.96	4.52	2.85	4.62	5.65	2.77	7.34	2.78	2.44
24	9.07	7.17	5.93	6.22	5.16	5.48	4.42	2.74	5.33	8.14	2.70	6.07
25	9.06	9.34	2.82	3.56	5.24	7.23	4.41	2.61	6.75	5.33	2.63	4.08
26	4.91	10.23	2.80	2.65	5.00	5.65	2.97	2.56	2.94	7.67	2.46	2.81
27	8.40	8.82	2.80	2.84	3.89	5.46	2.94	2.52	2.65	4.92	2.06	2.80
28	10.39	11.68	4.09	4.73	3.98	4.72	4.20	4.06	2.56	6.10	1.93	3.89
29	10.40	5.95	4.00	3.18	---	6.04	2.69	4.84	2.49	5.58	2.50	6.63
30	10.98	9.73	3.87	2.87	---	5.12	4.82	5.63	2.43	6.15	2.51	6.54
31	11.10	---	2.86	2.89	---	5.28	---	2.77	---	7.10	2.44	---

SALT RIVER BASIN

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05508000 SALT RIVER NEAR NEW LONDON, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1967 to July 1975, July 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1979 to September 1981.

WATER TEMPERATURE: March 1979 to September 1981.

SUSPENDED-SEDIMENT: July 1980 to current year.

REMARKS.--Discontinued as National stream-quality accounting network station September 1986. Sediment record poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 733 microsiemens, Jan. 12, 1981; minimum daily, 86 microsiemens, Dec. 3, 1979.

WATER TEMPERATURE: Maximum daily, 36.0°C, July 18, 19, 21, Aug. 23, 24, 1980; minimum daily, 0.0°C, Mar. 1, 1980.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,380 mg/L, Dec. 2, 1982; minimum daily mean, 4 mg/L, Dec. 11, 1984.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 143,000 tons, May 18, 1981; minimum daily, 0.24 tons, Dec. 11, 1984.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,420 mg/L, May 22; minimum daily mean, 5 mg/L, Jan. 25, 26.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 21,900 tons, Oct. 3; minimum daily, 1.9 tons, Aug. 12.

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.	BED MAT. SIEVE DIAM.
	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN	% FINER THAN
	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM	8.00 MM	16.0 MM	32.0 MM
	(80164)	(80165)	(80166)	(80167)	(80168)	(80169)	(80170)	(80171)	(80172)	(80173)
AUG 12...	0	0	2	17	20	24	31	44	72	100

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	2960	75	599	7020	118	2250	8190	93	2060
2	3100	125	1050	6610	162	2890	5850	90	1420
3	9760	832	21900	7620	234	4820	4590	203	2880
4	2550	361	2490	9230	209	5200	7540	115	2340
5	399	55	59	9220	224	5590	8540	47	1080
6	204	44	24	9410	136	3450	7150	48	934
7	164	40	18	9480	98	2520	6700	59	1070
8	132	48	17	6770	82	1500	5340	52	745
9	115	50	16	6430	59	1030	6060	49	807
10	594	57	92	7010	53	1000	5580	60	902
11	2130	46	267	8590	59	1380	5440	50	727
12	2130	88	506	628	57	97	5440	42	621
13	2280	77	473	146	63	25	5440	48	702
14	3430	158	1460	619	48	80	5250	46	658
15	5190	114	1590	4940	41	543	5490	39	584
16	5110	135	1860	4810	70	909	3200	35	305
17	5350	90	1310	4860	114	1500	3980	34	366
18	8550	56	1290	4780	68	878	3690	21	206
19	8850	173	4130	4950	75	1010	2500	10	69
20	9050	221	5400	5480	109	1610	2570	15	102
21	9550	102	2630	9090	310	7600	287	27	21
22	7850	53	1120	6830	66	1220	1420	38	146
23	5660	40	609	6100	64	1060	2570	34	238
24	6330	37	629	6440	161	2800	1280	18	62
25	5520	37	549	6080	86	1420	180	20	9.9
26	2380	163	1400	7630	161	3330	161	19	8.4
27	5590	278	4190	8260	261	5820	329	18	16
28	7290	202	3980	9100	325	7970	993	22	58
29	8940	149	3600	4780	320	4120	568	21	33
30	9290	158	3970	7240	243	4740	544	19	28
31	9130	152	3760	---	---	---	179	19	9.0
TOTAL	149578	---	70988	190153	---	78362	117051	---	19207.3

SALT RIVER BASIN

05508000 SALT RIVER NEAR NEW LONDON, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	663	22	39	301	19	15	572	15	23
2	1860	20	100	313	27	23	1080	31	91
3	752	18	37	1080	106	309	1750	27	126
4	1550	32	133	2270	64	391	1500	17	68
5	1800	23	110	1670	42	190	475	17	22
6	2070	16	90	2420	36	237	597	29	47
7	712	18	34	1310	30	106	250	19	13
8	1860	29	147	558	17	25	147	12	4.6
9	535	22	32	612	13	21	585	14	22
10	1150	24	75	273	25	18	1460	46	182
11	2710	26	192	1520	61	250	2060	74	413
12	833	22	50	1490	33	133	2050	38	213
13	1150	25	78	1670	13	57	1620	18	77
14	659	20	35	810	10	21	1380	16	60
15	371	28	28	436	17	20	228	31	19
16	282	25	19	1520	20	83	1560	78	330
17	255	9	6.1	3070	13	107	3320	57	514
18	224	16	9.7	2420	15	101	3530	47	446
19	213	18	10	2190	42	247	1890	56	285
20	203	22	12	1980	33	178	812	126	276
21	308	30	25	1690	13	57	904	100	243
22	245	32	21	583	63	100	243	26	17
23	1140	18	56	1580	29	122	823	15	33
24	2500	12	79	3210	15	133	3730	26	262
25	497	5	6.4	2530	15	101	4100	86	952
26	168	5	2.2	1860	21	104	2350	103	653
27	386	7	7.0	1050	15	42	2250	66	399
28	1560	19	81	590	14	22	2070	103	573
29	312	14	12	---	---	---	3080	443	3690
30	217	10	5.8	---	---	---	2660	407	2920
31	217	13	7.6	---	---	---	2410	373	2430
TOTAL	27402	---	1539.8	41006	---	3213	51486	---	15403.6

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	1950	87	457	1920	51	262	1310	821	4800
2	1610	100	433	581	172	270	3360	550	4990
3	1810	78	383	153	122	51	1990	173	932
4	969	17	45	886	161	386	305	94	78
5	326	9	8.4	892	114	275	83	60	13
6	237	14	8.6	859	62	144	67	70	13
7	1240	20	67	2190	74	439	65	58	10
8	911	84	205	2360	49	313	59	55	8.8
9	548	37	55	234	36	23	49	66	8.7
10	1590	37	157	209	29	17	213	73	42
11	229	106	66	732	33	65	847	97	221
12	159	393	169	4000	33	358	122	84	28
13	1900	787	4040	302	34	28	158	67	28
14	3970	902	9670	190	38	20	196	84	45
15	4150	807	9040	178	36	17	237	107	69
16	3460	544	5080	178	34	16	1030	100	281
17	3510	219	2070	349	58	55	1780	95	455
18	3390	80	734	266	122	88	1330	86	310
19	3170	68	581	281	183	139	621	76	128
20	3170	90	767	514	205	285	239	76	49
21	2670	279	2010	337	356	541	194	98	51
22	2390	273	1760	1490	1420	5710	151	87	36
23	2270	151	926	1070	1050	3040	176	100	47
24	1620	87	379	147	1070	426	1910	107	550
25	896	46	111	111	274	82	2330	125	787
26	220	44	26	96	96	25	220	89	53
27	210	41	23	88	106	25	131	48	17
28	422	40	45	314	83	70	111	44	13
29	133	44	16	671	122	221	92	46	11
30	1460	41	160	910	127	312	84	55	13
31	---	---	---	157	294	125	---	---	---
TOTAL	50590	---	39492.0	22665	---	13828	19460	---	14087.5

SALT RIVER BASIN

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05508000 SALT RIVER NEAR NEW LONDON, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY				AUGUST			SEPTEMBER		
1	90	50	12	244	16	11	89	20	4.8
2	87	73	17	221	17	10	78	24	5.1
3	84	60	14	207	19	11	73	22	4.3
4	84	47	11	169	26	12	80	18	3.9
5	91	49	12	153	22	9.1	77	33	6.9
6	134	41	15	182	16	7.9	81	28	6.1
7	316	137	117	160	18	7.8	78	34	7.2
8	263	162	115	143	20	7.8	74	21	4.2
9	1190	69	223	170	28	13	70	20	3.8
10	741	54	108	111	23	6.9	118	28	8.9
11	1020	87	238	60	16	2.6	153	25	10
12	730	115	227	41	17	1.9	92	27	6.7
13	240	65	42	440	27	32	55	35	5.2
14	221	41	24	180	40	19	51	20	2.8
15	198	37	20	92	52	13	84	38	8.6
16	206	32	18	39	64	6.7	381	32	33
17	2230	33	202	30	73	5.9	2540	39	267
18	2010	20	110	773	41	86	196	32	17
19	853	23	54	208	25	14	149	32	13
20	2900	38	294	1150	17	53	142	25	9.6
21	3840	45	462	695	80	150	134	17	6.2
22	2720	31	231	1040	172	483	119	14	4.5
23	3580	76	734	197	27	14	182	17	8.4
24	3850	47	484	174	30	14	1200	35	113
25	3230	41	362	153	28	12	546	20	29
26	4610	20	252	93	19	4.8	205	15	8.3
27	2520	20	137	40	25	2.7	200	14	7.6
28	2390	21	137	31	52	4.4	1040	15	42
29	2730	17	126	115	26	8.1	2230	20	120
30	2160	21	124	120	34	11	1560	20	84
31	2430	22	146	101	22	6.0	---	---	---
TOTAL	47748	---	5068	7532	---	1040.6	12077	---	851.1
YEAR	736748		263079.7						

05508805 SPENCER CREEK BELOW PLUM CREEK NEAR FRANKFORD, MO

LOCATION.--Lat 39°31'13", long 91°20'32", in NW ¼ NW ¼ NW ¼ sec.27, T.55 N., R.4 W., Ralls County, Hydrologic Unit 07110007, on left bank 25 ft downstream from bridge on U.S. Highway 61, 0.75 mi downstream from Plum Creek, 2.5 mi northwest of Frankford, and at mile 4.5.

DRAINAGE AREA.--206 mi².

PERIOD OF RECORD.--October 1, 1979 to current year, March 27, 1930 to Sept. 1978, fragmentary record.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 485.00 ft above National Geodetic Vertical Datum of 1929. March 24, 1930 to September 30, 1936 nonrecording gage at site 0.75 mi upstream at datum 3.63 ft higher; October 7, 1961 to July 15, 1974, fragmentary record, at present site and datum unknown; July 26, 1974 to April 15, 1975 from nonrecording gage present site and datum.

REMARKS.--Estimated daily discharges: Mar. 1-9, Apr. 16-27, May 19 to June 15, June 20 to July 28, and Aug. 14 to Sept. 1. Records good except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--8 years, 200 ft³/s, 12.98 in/yr, 144,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,200 ft³/s, July 28, 1981, gage height, 16.86 ft; minimum, 0.11 ft³/s, Aug. 23, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	0745	7,860	12.93	July 7	Unknown	*8,660	*13.41
May 22	0045	7,960	12.99				

Minimum daily discharge, 1.0 ft³/s, Aug. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	733	33	1490	53	404	1330	143	29	22	15	2.4	4.3
2	1860	28	1170	31	579	310	123	29	112	11	2.1	3.8
3	4890	26	310	30	459	150	110	65	172	8.1	1.9	3.1
4	1760	27	159	29	169	99	99	85	58	6.2	1.6	3.2
5	348	28	116	28	115	81	90	47	34	4.7	1.7	2.5
6	158	28	99	29	93	70	88	35	27	325	1.6	2.3
7	102	27	1130	27	85	63	86	31	20	3080	1.4	2.2
8	77	30	1040	26	76	58	79	27	18	1000	1.2	3.9
9	57	32	603	27	60	53	77	25	17	150	1.2	2.6
10	46	26	301	30	51	45	60	22	14	49	1.1	1.8
11	40	24	136	29	50	42	71	21	13	39	1.0	2.1
12	37	24	111	28	49	41	68	18	13	37	1.1	2.1
13	32	21	88	30	46	41	2520	17	11	110	722	1.8
14	30	20	80	83	46	40	1060	17	8.9	66	370	1.9
15	26	20	73	329	40	40	354	15	7.1	46	83	56
16	24	21	72	157	40	39	188	13	5.3	32	42	43
17	22	20	71	88	35	38	141	21	4.4	26	21	18
18	20	19	65	73	35	227	104	24	3.8	20	12	12
19	20	19	59	65	35	361	87	465	3.2	15	8.4	7.6
20	19	20	55	63	34	129	76	129	199	12	39	5.0
21	18	21	50	55	33	92	72	970	72	10	544	3.5
22	17	21	47	56	33	77	62	1090	20	9.6	53	2.8
23	17	20	46	47	32	70	56	127	62	10	27	2.5
24	17	19	45	40	30	903	53	68	21	13	17	1.9
25	34	26	43	38	28	396	51	60	14	10	15	2.0
26	729	2210	41	35	28	186	46	110	13	7.4	15	2.0
27	268	419	38	35	27	137	42	64	11	5.6	14	2.1
28	116	175	35	37	37	1300	32	40	6.8	4.9	10	1.8
29	67	124	35	48	---	1850	33	34	40	4.1	8.4	2.2
30	47	101	34	138	---	301	30	29	28	3.2	6.8	2.2
31	39	---	33	165	---	177	---	24	---	3.1	5.4	---
TOTAL	11670	3629	7675	1929	2749	8746	6101	3751	1050.5	5132.9	2031.3	202.2
MEAN	376	121	248	62.2	98.2	282	203	121	35.0	166	65.5	6.74
MAX	4890	2210	1490	329	579	1850	2520	1090	199	3080	722	56
MIN	17	19	33	26	27	38	30	13	3.2	3.1	1.0	1.8

CAL YR 1986 TOTAL 43263.6 MEAN 119 MAX 4890 MIN .43
WTR YR 1987 TOTAL 54666.7 MEAN 150 MAX 4890 MIN 1.0

SALT RIVER BASIN

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05508805 SPENCER CREEK BELOW PLUM CREEK NEAR FRANKFORD, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.52	3.23	3.47	3.03	4.48	---	3.60	2.97	---	2.80	2.54	2.62
2	3.89	3.18	6.54	3.02	5.16	---	3.56	2.98	2.86	2.72	2.52	2.56
3	12.93	3.15	4.41	3.00	4.96	---	3.46	2.96	3.72	2.68	2.51	2.53
4	7.90	3.16	3.85	2.99	3.90	---	3.41	3.46	3.30	2.64	2.50	2.53
5	4.53	3.17	3.60	2.98	3.60	---	3.34	3.16	3.08	2.58	2.50	2.51
6	3.85	3.18	3.52	2.98	3.48	---	3.32	3.05	2.98	2.58	2.48	2.50
7	3.60	3.16	3.96	2.97	3.41	---	3.32	3.01	---	8.61	2.48	2.50
8	3.49	3.17	6.32	2.95	3.38	---	3.27	2.97	2.84	---	2.47	2.52
9	3.40	3.21	5.15	2.94	3.30	---	---	2.94	2.82	---	2.48	2.51
10	3.31	3.14	4.30	3.01	3.25	3.14	---	2.91	2.76	3.21	2.47	2.47
11	3.27	3.14	3.71	2.99	3.22	3.11	3.24	2.89	2.75	3.10	2.47	2.48
12	3.26	3.14	3.56	2.98	3.19	3.09	3.18	2.84	2.74	3.00	2.45	2.48
13	3.22	3.10	3.46	2.98	3.16	3.10	4.14	2.81	2.71	3.30	2.65	2.46
14	3.19	3.08	3.44	3.12	3.15	3.09	7.24	2.84	---	3.25	---	2.48
15	3.15	3.08	3.35	4.54	3.12	3.09	4.69	2.79	2.67	---	---	2.75
16	3.12	3.09	3.34	3.82	3.10	3.09	---	2.75	2.61	3.02	3.14	3.14
17	3.11	3.08	3.34	3.47	3.06	3.06	---	2.74	2.58	2.98	2.91	2.87
18	3.08	3.08	3.31	3.36	3.05	3.16	3.54	2.95	2.56	2.88	2.80	2.75
19	3.07	3.06	3.26	3.23	3.05	5.14	3.45	5.98	2.54	2.82	2.72	2.65
20	3.05	3.08	3.23	3.16	3.04	3.77	3.38	3.64	---	2.79	2.66	2.61
21	3.04	3.10	3.19	2.99	3.02	3.49	3.36	3.29	3.38	2.74	5.09	2.56
22	3.03	3.09	3.17	3.24	3.02	---	3.26	6.15	2.89	2.72	3.26	2.52
23	3.04	3.10	3.15	3.00	3.01	---	3.24	3.72	---	2.72	2.98	2.51
24	3.03	3.06	3.15	3.02	3.00	3.30	3.21	3.34	2.92	2.82	2.84	2.47
25	3.06	3.06	3.13	3.06	2.98	---	3.20	3.22	2.78	---	2.77	2.49
26	5.83	9.40	3.11	3.05	2.98	3.92	3.26	---	2.73	2.70	---	2.47
27	4.28	4.72	3.08	3.05	2.97	3.66	3.17	---	2.74	2.66	---	2.49
28	3.68	3.93	3.06	3.07	3.01	3.52	3.01	3.14	2.65	2.64	2.72	2.48
29	3.46	3.64	3.05	3.08	---	9.84	3.01	3.06	2.76	2.61	2.68	2.50
30	3.33	3.53	3.04	3.69	---	4.50	2.99	---	3.01	2.57	2.65	2.50
31	3.28	---	3.03	3.77	---	3.86	---	---	---	2.59	2.61	---

05514500 CUIVRE RIVER NEAR TROY, MO

LOCATION.--Lat 39°00'59", long 90°59'00", in SE ¼ sec.14, T.49 N., R.1 W., Lincoln County, Hydrologic Unit 07110008, on downstream side of right end of downstream bridge on dual U.S. Highway 61, 1.2 mi downstream from confluence of North and West Forks Cuivre River and 2 mi north of Troy.

DRAINAGE AREA.--903 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1922 to July 1972, May 1979 to current year.

REVISED RECORDS.--WSP 855: 1933(m), 1935(m), 1937(m). WSP 895: 1939. WSP 1005: 1942(m). WSP 1308: 1922-25(m).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 450.27 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1930, nonrecording gage at site 3 mi downstream at datum 4.31 ft lower. Oct. 1, 1930 to July 1939, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Sept. 13-22, 29, 30. Water-discharge records good except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--57 years (water years 1922-71, 1980 to current year) 675 ft³/s, 10.15 in/yr, 489,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 120,000 ft³/s, October 5, 1941, gage height, 33.4 ft, from floodmarks; no flow at times in 1936, 1954, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1895 was 5 or 6 feet lower at Frenchmens Bluff, 3 mi downstream, than the October 1941 flood which is the highest flood since 1888.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	0630	15,600	23.16	Apr. 14	0815	*16,900	*23.62

Minimum daily discharge, 2.9 ft³/s, Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249	105	2070	96	2050	302	574	120	38	20	11	3.5
2	584	83	5760	94	2380	547	442	112	36	15	10	3.2
3	5990	65	3130	90	1750	401	360	116	36	12	8.8	3.2
4	11700	58	958	86	925	279	309	199	194	11	7.6	3.2
5	2050	67	507	81	579	227	274	159	168	11	7.3	3.2
6	671	62	362	81	450	196	250	124	86	60	7.6	3.2
7	341	59	1250	78	382	175	234	105	53	5340	7.5	3.2
8	237	61	4510	75	337	161	219	93	40	1840	7.6	3.2
9	179	57	2450	83	286	152	204	86	33	1450	19	3.5
10	142	54	1910	94	259	143	192	79	28	424	17	3.5
11	121	60	770	93	243	135	193	72	105	178	11	3.2
12	374	58	467	91	230	129	181	66	148	121	9.1	2.9
13	269	53	330	93	217	124	3780	60	102	443	7.9	3.0
14	145	50	277	182	207	119	12800	63	69	1080	8.7	3.2
15	112	52	244	1680	195	115	2840	68	59	365	36	3.4
16	92	52	225	1060	186	103	1100	88	39	178	60	5.2
17	76	50	219	560	174	109	698	58	29	104	33	10
18	68	49	208	390	165	141	526	54	25	70	23	40
19	60	45	196	312	157	679	422	173	22	50	18	38
20	53	46	179	280	152	598	349	222	19	39	17	27
21	48	44	163	265	148	362	305	131	19	33	13	16
22	44	43	150	263	144	284	281	130	71	28	19	12
23	41	43	141	216	139	313	247	84	94	25	18	9.1
24	39	41	136	207	134	1470	225	65	48	23	15	8.8
25	51	47	128	190	131	3150	207	59	63	20	12	7.3
26	462	1130	121	153	127	926	192	54	37	18	10	6.3
27	694	1610	115	141	126	553	173	65	25	18	7.9	6.6
28	429	749	108	141	145	423	153	55	19	17	5.7	7.4
29	255	348	104	182	---	5470	143	51	16	14	4.9	10
30	176	239	100	1640	---	2530	130	50	40	14	3.7	9.0
31	131	---	96	1960	---	891	---	43	---	12	3.5	---
TOTAL	25883	5480	27384	10957	12418	21207	28003	2904	1761	12033	439.8	261.3
MEAN	835	183	883	353	443	684	933	93.7	58.7	388	14.2	8.71
MAX	11700	1610	5760	1960	2380	5470	12800	222	194	5340	60	40
MIN	39	41	96	75	126	103	130	43	16	11	3.5	2.9

CAL YR 1986 TOTAL 177930.4 MEAN 487 MAX 12900 MIN 3.4
WTR YR 1987 TOTAL 148730.7 MEAN 407 MAX 12800 MIN 2.9

CUIVRE RIVER BASIN

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05514500 CUIVRE RIVER NEAR TROY, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PEK (31673)
NOV 19...	1415	45	421	7.90	5.0	4.2	12.3	98	420	K60
JAN 08...	0735	76	448	8.00	3.0	3.9	12.3	92	K52	K60
MAR 03...	1545	371	360	7.90	8.0	20	--	--	370	1400
APR 08...	1415	221	390	7.90	15.0	10	10.0	101	54	K6
MAY 13...	0740	60	428	7.90	22.0	6.1	7.4	86	32	50
JUL 07...	1500	8280	106	7.60	21.0	250	5.9	67	K100000	>100000
AUG 12...	1345	9.1	331	8.10	27.5	4.2	9.2	119	140	K76
SEP 15...	1340	3.3	371	7.90	21.0	5.7	3.7	42	>3000	210

DATE	HARD- NESS (MG/L AS CAO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CAO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CAO3 (MG/L) (39086)
NOV 19...	210	22	64	11	9.2	9	0.3	4.1	183
JAN 08...	210	31	66	11	11	10	0.3	3.3	179
MAR 03...	150	33	47	8.7	14	16	0.5	3.9	120
APR 08...	180	5	56	9.0	9.0	10	0.3	3.4	151
MAY 13...	200	9	64	10	10	10	0.3	3.6	192
JUL 07...	42	0	13	2.3	4.2	16	0.3	5.1	41
AUG 12...	160	0	50	8.1	7.3	9	0.3	4.5	160
SEP 15...	180	9	56	9.6	11	11	0.4	4.7	170

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 19...	31	13	0.20	5.0	245	250	0.33	30	0.510
JAN 08...	37	12	0.10	7.8	257	260	0.35	52	1.50
MAR 03...	44	16	0.10	3.9	220	210	0.30	220	0.850
APR 08...	33	9.3	0.10	8.8	230	230	0.31	137	1.60
MAY 13...	34	11	<0.10	1.7	244	250	0.33	40	0.210
JUL 07...	14	4.5	0.30	5.0	77	80	0.10	1720	0.930
AUG 12...	14	8.6	0.20	7.9	196	200	0.27	4.8	<0.100
SEP 15...	19	13	0.60	7.3	--	220	0.35	2.3	<0.100

K--Results based on colony count outside the acceptable range (non-ideal colony count).

CUIVRE RIVER BASIN

05514500 CUIVRE RIVER NEAR TROY, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SED1- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SED1- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 19...	0.050	0.06	0.40	0.040	<0.010	<0.010	38	4.6	70
JAN 08...	0.030	0.04	0.60	0.030	0.010	<0.010	28	5.7	70
MAR 03...	0.040	0.05	2.1	0.090	0.010	<0.010	23	23	78
APR 08...	0.050	0.06	0.80	0.040	0.010	<0.010	--	--	--
MAY 13...	0.010	0.01	1.2	0.070	0.030	<0.010	63	10	53
JUL 07...	0.180	0.23	3.3	1.00	0.040	0.020	2350	52500	85
AUG 12...	0.020	0.03	1.3	0.130	0.010	<0.010	30	0.74	55
SEP 15...	0.030	0.04	0.90	0.030	0.010	<0.010	31	0.28	58

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 19...	<10	<1	110	<0.5	1	<1	<3	1	91	<5
JAN 08...	<10	1	100	<0.5	1	<1	<3	2	18	<5
MAY 13...	<10	<1	130	<0.5	<1	<1	3	--	6	<5
JUL 07...	140	<1	47	<0.5	6	<1	<3	4	93	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 19...	8	520	<0.1	<10	2	<1	<1	120	<6	10
JAN 08...	9	460	--	<10	<1	<1	<1	130	<6	5
MAY 13...	10	430	--	<10	4	<1	<1	130	<6	14
JUL 07...	<4	67	<0.1	<10	<1	<1	<1	39	<6	21

MISSISSIPPI RIVER MAIN STEM

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05587450 MISSISSIPPI RIVER AT GRAFTON, IL

LOCATION.--Lat 38°58'05", long 90°25'42", in NE ¼ sec. 15, T.6N., R.12W., Jersey County, Hydrologic Unit 07110009, on left bank two tenths of a mile downstream from the mouth of Illinois River and 15.3 miles above Lock and Dam 26, 23.0 miles above mouth of Missouri River and at mile 218.6 upstream of the mouth of Ohio River.

DRAINAGE AREA.--171,300 mi², approximately.

PERIOD OF RECORD.--Gage height: August 1879 thru September 1892, 1929 to September 30, 1986. Stages also available from reports of National Weather Service. Discharge intermittently from 1880 to 1928, computed daily 1928 to 1932 by National Weather Service and or U.S. Army Corps of Engineers. Discharge previously published as Mississippi River at Alton, Illinois 1927 to September 30, 1986 and October 1, 1986 to current year as Mississippi River at Grafton, Illinois.

GAGE.--Water-stage recorder. Datum of gage is 403.79 above National Geodetic Vertical Datum of 1929. Auxiliary water-stage recorder 15.3 miles downstream.

REMARKS.--Estimated daily discharges: July 14-20 and Aug. 24-28. Records good. Natural flow of river affected by many navigation dams in upper Mississippi River basin. Flood water from Missouri River overtops or breaches the levees at extreme high stages.

AVERAGE DISCHARGE.--60 years, 103,800 ft³/s, 75,203,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535,000 ft³/s, Apr. 29, 1973, includes undetermined amount of overflow from Missouri River; maximum elevation, 436.99 ft, Apr. 28, 1973; minimum stage prior to construction of Alton Dam, 402.59 ft, Dec. 30, 1933; minimum stage since completion of dam, 416.39 ft, Feb. 11, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1844 reached a stage of 435.89 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 423,000 ft³/s, Oct. 10 at 1600; maximum elevation, 433.46 ft, Oct. 9; minimum daily, 60,000 ft³/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231000	305000	148000	101000	88900	77000	161000	109000	110000	72200	71900	112000
2	246000	290000	152000	96900	91800	91100	150000	110000	115000	76000	83200	114000
3	271000	270000	173000	99700	95800	102000	145000	105000	130000	74500	73900	107000
4	308000	257000	168000	97600	100000	106000	137000	100000	132000	65300	79200	95000
5	352000	232000	152000	97700	94400	101000	137000	94200	122000	62700	82500	92000
6	363000	218000	151000	95300	96100	97200	136000	89000	117000	65000	77700	85800
7	376000	210000	155000	94900	97500	97900	127000	93100	107000	85100	75600	72500
8	400000	201000	161000	94300	91300	98000	123000	99500	99700	71800	72800	73000
9	415000	192000	176000	94500	98100	94300	120000	98000	92000	65100	65100	81100
10	419000	183000	176000	94100	97800	90600	115000	90800	86500	62800	60000	74800
11	416000	175000	167000	91600	93800	95800	110000	85400	89300	60800	65700	72900
12	409000	168000	147000	91200	95300	97300	105000	84000	85700	69500	64300	75300
13	405000	157000	123000	87400	96900	98200	108000	85600	81600	73200	67000	71200
14	398000	148000	95400	89400	95700	101000	141000	83300	72300	79600	73200	69300
15	381000	140000	94100	90700	92400	107000	163000	81200	70900	79900	78400	66400
16	364000	136000	101000	93900	92300	110000	159000	75300	79600	69800	76700	69400
17	353000	131000	105000	91500	89600	114000	167000	74900	80300	75100	76200	65300
18	342000	122000	110000	91900	92000	116000	162000	73600	81300	76100	86400	69400
19	333000	128000	116000	90900	97200	114000	161000	80300	71900	75300	87900	71700
20	325000	131000	115000	84500	91700	122000	167000	78700	69500	70200	86800	73200
21	316000	137000	118000	78400	94200	119000	164000	83500	69900	60400	86200	79900
22	308000	132000	120000	71700	88600	110000	152000	93600	66400	71300	83400	78500
23	301000	131000	121000	74900	88600	106000	151000	103000	75900	71700	82800	75500
24	293000	124000	119000	79400	87400	105000	146000	93000	79000	74400	81700	77200
25	287000	117000	117000	77000	86700	106000	136000	87900	75400	71300	81100	73900
26	281000	124000	115000	82100	89100	111000	132000	84500	71200	75000	77800	70700
27	283000	143000	112000	86300	84300	111000	129000	79800	72400	72300	101000	69000
28	288000	146000	111000	93800	87500	112000	124000	87900	71700	70100	117000	69900
29	298000	144000	108000	88900	---	118000	115000	95600	66000	74000	122000	71400
30	308000	148000	102000	87300	---	142000	112000	99100	69100	73600	119000	68900
31	311000	---	104000	89700	---	181000	---	108000	---	80300	111000	---
TOTAL	10381000	5140000	4032500	2778500	2595000	3357400	4155000	2806800	2610600	2224400	2567500	2346200
MEAN	334900	171300	130100	89630	92680	108300	138500	90540	87020	71750	82820	78210
MAX	419000	305000	176000	101000	100000	181000	167000	110000	132000	85100	122000	114000
MIN	231000	117000	94100	71700	84300	77000	105000	73600	66000	60400	60000	65300

WTR YR 1987 TOTAL 44994600 MEAN 123300 MAX 419000 MIN 60000

05587500 MISSISSIPPI RIVER AT ALTON, IL

WATER-QUALITY RECORDS

LOCATION.--Lat 38°53'06", long 90°10'51", in NE ¼ sec.14, T.5 N., R.10 W., Madison County, Hydrologic Unit 07110009, at Missouri and Illinois Bridge and Belt Railroad bridge, 7.7 mi upstream from Missouri River, and at mile 202.7 upstream from Ohio River.

DRAINAGE AREA.--171,500 mi², approximately.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT: October 1980 to October 1985, October 1986 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean, 2,120 mg/L May 13, 1981; minimum daily mean, 7 mg/L March 17, 1981.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 1,120,000 tons July 7 and 8, 1981; minimum daily, 1,290 tons March 17, 1981.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 718 mg/L, Oct. 4; minimum daily mean, 16 mg/L, May 16.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 597,000 tons, Oct. 4; minimum daily, 3,310 tons, May 16.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70339)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)	SED. SUSP. FALL DIAM. % FINER THAN (70346)
OCT 02...	1120	246000	26	39	53	69	98	98	99	100	--
DEC 12...	1130	147000	38	45	53	67	90	90	91	100	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)	BED MAT. SIEVE DIAM. % FINER THAN (80172)
AUG 18...	0	0	3	35	76	92	96	98	100

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	231000	292	182000	305000	133	110000	148000	110	43500
2	246000	334	222000	290000	190	149000	152000	183	74900
3	271000	291	213000	270000	368	268000	173000	215	100000
4	308000	718	597000	257000	122	84300	168000	246	112000
5	352000	425	404000	232000	173	108000	152000	179	73400
6	363000	191	187000	218000	198	117000	151000	180	73300
7	376000	216	219000	210000	238	135000	155000	174	72800
8	400000	278	300000	201000	254	138000	161000	196	85100
9	415000	154	173000	192000	303	157000	176000	183	86900
10	419000	149	168000	183000	340	168000	176000	178	84700
11	416000	240	270000	175000	228	108000	167000	220	99400
12	409000	107	118000	168000	230	104000	147000	236	93600
13	405000	205	224000	157000	166	70500	123000	234	77800
14	398000	175	188000	148000	192	76600	95400	218	56300
15	381000	116	119000	140000	171	64600	94100	203	51600
16	364000	183	180000	136000	167	61400	101000	220	59900
17	353000	119	113000	131000	124	43700	105000	214	60600
18	342000	155	143000	122000	149	49200	110000	199	59000
19	333000	162	146000	128000	144	49800	116000	149	46800
20	325000	211	185000	131000	164	57900	115000	150	46500
21	316000	515	439000	137000	134	49700	118000	163	52000
22	308000	135	112000	132000	153	54500	120000	173	56000
23	301000	120	97400	131000	173	61300	121000	156	50800
24	293000	149	118000	124000	155	51800	119000	177	56700
25	287000	201	156000	117000	120	37700	117000	170	53700
26	281000	116	88100	124000	110	35900	115000	178	55200
27	283000	188	144000	143000	110	41600	112000	141	42500
28	288000	373	290000	146000	139	54700	111000	131	39100
29	298000	194	156000	144000	215	83700	108000	120	35900
30	308000	115	95800	148000	257	103000	102000	100	27500
31	311000	160	134000	---	---	---	104000	84	23600
TOTAL	10381000	---	6181300	5140000	---	2693900	4032500	---	1951100

05587500 MISSISSIPPI RIVER AT ALTON, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	101000	76	20700	88900	47	11400	77000	50	10500
2	96900	75	19700	91800	59	14500	91100	64	15600
3	99700	75	20100	95800	48	12500	102000	21	5700
4	97600	74	19500	100000	49	13300	106000	17	4960
5	97700	69	18100	94400	61	15500	101000	26	7110
6	95300	59	15100	96100	55	14300	97200	24	6410
7	94900	93	23900	97500	77	20200	97900	21	5550
8	94300	92	23500	91300	96	23600	98000	28	7440
9	94500	86	21900	98100	63	16700	94300	20	5170
10	94100	89	22500	97800	79	20800	96600	26	6700
11	91600	144	35600	93800	76	19300	95800	26	6670
12	91200	76	18700	95300	76	19600	97300	19	4920
13	87400	64	15100	96900	63	16400	98200	32	8550
14	89400	66	15900	95700	69	17900	101000	21	5640
15	90700	100	25200	92400	62	15400	107000	32	9120
16	93900	86	21800	92300	72	17800	110000	24	6990
17	91500	176	43400	89600	93	22500	114000	24	7270
18	91900	84	20900	92000	112	27900	116000	25	7710
19	90900	68	16700	97200	119	31100	114000	36	11000
20	84500	78	17700	91700	186	46000	122000	33	10900
21	78400	67	14100	94200	141	35900	119000	33	10700
22	71700	46	8830	88600	59	14100	110000	32	9610
23	74900	45	9130	88600	46	11000	106000	29	8230
24	79400	42	8940	87400	62	14700	105000	29	8190
25	77000	41	8580	86700	50	11600	106000	30	8560
26	82100	41	9060	89100	59	14200	111000	32	9560
27	86300	40	9420	84300	82	18800	111000	24	7050
28	93800	50	12500	87500	70	16500	112000	20	6000
29	88900	39	9270	---	---	---	118000	21	6640
30	87300	47	11000	---	---	---	142000	21	8020
31	89700	46	11200	---	---	---	181000	22	10700
TOTAL	2778500	---	548030	2595600	---	533500	3357400	---	247170

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	161000	23	9990	109000	125	36800	110000	172	51100
2	150000	22	8950	110000	104	30800	115000	170	52700
3	145000	22	8680	105000	106	29900	130000	177	62100
4	137000	21	7870	100000	94	25500	132000	200	71300
5	137000	24	8980	94200	92	23400	122000	207	68200
6	136000	24	8940	89000	84	20200	117000	217	68500
7	127000	26	9050	93100	61	15400	107000	222	64100
8	123000	26	8790	99500	54	14600	99700	185	49900
9	120000	26	8290	98000	56	14900	92000	82	20300
10	115000	23	7050	90800	217	53100	86500	74	17200
11	110000	22	6470	85400	411	94700	89300	85	20400
12	105000	22	6200	84000	82	18500	85700	96	22100
13	108000	28	8140	85600	54	12500	81600	100	21900
14	141000	34	12900	83300	75	17000	72300	83	16300
15	163000	58	25600	81200	25	5590	70900	86	16500
16	159000	50	21600	75300	16	3310	79600	74	16000
17	167000	37	16900	74900	17	3500	80300	70	15200
18	162000	35	15500	73600	32	6270	81300	83	18300
19	161000	39	16800	80300	27	5960	71900	91	17700
20	167000	51	23000	78700	23	4970	69500	94	17700
21	164000	54	24000	83500	79	17900	69900	91	17200
22	152000	120	49300	93600	82	20800	66400	68	12200
23	151000	366	149000	103000	70	19500	75900	31	6360
24	146000	154	60900	93000	69	17300	79000	24	5120
25	136000	110	40400	87900	67	15900	75400	25	5090
26	132000	319	114000	84500	53	12000	71200	34	6530
27	129000	202	70200	79800	32	6990	72400	36	7030
28	124000	113	37800	87900	34	8180	71700	37	7150
29	115000	96	29700	95600	63	16200	66000	30	5340
30	112000	210	63600	99100	95	25500	69100	25	4650
31	---	---	---	108000	155	45100	---	---	---
TOTAL	4155000	---	878600	2806800	---	642270	2610600	---	784170

MISSISSIPPI RIVER MAIN STEM

05587500 MISSISSIPPI RIVER AT ALTON, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	72200	22	4280	71900	67	13000	112000	117	35400
2	76000	20	4090	83200	67	15100	114000	145	44500
3	74500	23	4610	73900	87	17500	107000	135	39100
4	65300	21	3690	79200	98	20900	95000	94	24200
5	62700	24	4040	82500	127	28200	92000	181	45000
6	65000	25	4360	77700	105	22100	85800	169	39100
7	85100	39	8910	75600	71	14400	72500	188	36800
8	71800	46	8860	72600	60	11900	73000	113	22300
9	65100	43	7510	65100	125	22000	81100	143	31300
10	62800	44	7410	60000	103	16700	74800	102	20600
11	60800	94	15500	65700	66	11700	72900	45	8810
12	69500	166	31100	64300	54	9310	75300	40	8060
13	73200	65	12900	67000	42	7660	71200	46	8790
14	79600	55	11700	73200	85	16800	69300	51	9490
15	79900	61	13200	78400	56	11800	66400	76	13600
16	69800	68	12900	76700	80	16500	69400	86	16100
17	75100	68	13900	76200	78	16000	65300	71	12500
18	76100	73	15100	86400	81	18900	69400	75	14000
19	75300	66	13300	87900	90	21500	71700	59	11300
20	70200	61	11500	86800	77	18000	73200	136	26900
21	60400	71	11600	86200	81	18800	79900	86	18500
22	71300	74	14200	83400	95	21500	78500	96	20300
23	71700	66	12800	82600	77	17100	75500	74	15200
24	74400	75	15100	81700	82	18000	77200	48	10100
25	71300	86	16600	81100	76	16700	73900	84	16800
26	75000	77	15700	77800	67	14100	70700	92	17600
27	72300	86	16700	101000	92	25000	69000	91	17000
28	70100	86	16200	117000	156	49200	69900	104	19700
29	74000	84	16700	122000	123	40400	71400	84	16200
30	73600	123	24500	119000	95	30400	68900	75	14000
31	80300	83	18000	111000	110	33000	---	---	---
TOTAL	2224400	---	386960	2567500	---	614170	2346200	---	633250
YEAR	44994600		16095200						

05587550 MISSISSIPPI RIVER BELOW ALTON, IL
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 38°51'41", long 90°08'15", Madison County, Hydrologic Unit 07110009, 1.0 mi downstream from gaging station, 6.7 mi upstream from Missouri River and at mile 201.7 upstream from Ohio River.

DRAINAGE AREA.--171,500 mi² approximately above gage.

PERIOD OF RECORD.--Water year 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURE: October 1974 to September 1981.

REMARKS.--Records of discharge are given for gaging station 05587500 Mississippi River at Alton, IL.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 704 microsiemens, Jan. 24, 1977; minimum, 286 microsiemens, July 5, 1978.

WATER TEMPERATURE: Maximum, 30.0°C on several days during July; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 20...	1130	131000	519	8.40	4.0	17	13.4	103	K50	K110
JAN 08...	1215	86300	521	8.70	1.5	6.9	17.3	125	540	80
MAR 04...	0930	103000	512	8.80	5.0	10	12.2	95	K12	K20
MAY 13...	1140	65600	495	3.30	23.0	7.6	9.8	116	K4	<20
JUL 08...	1015	25300	462	8.60	25.0	15	6.4	78	>12000	K900
SEP 16...	1030	43200	442	8.30	23.0	19	7.3	87	250	K20

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
NOV 20...	270	57	67	25	11	8	0.3	2.9	213
JAN 08...	270	56	66	25	13	9	0.4	2.3	212
MAR 04...	250	72	61	24	16	12	0.5	2.4	188
MAY 13...	240	59	56	25	13	10	0.4	2.6	184
JUL 08...	230	57	51	24	16	13	0.5	3.3	169
SEP 16...	210	24	52	20	13	12	0.4	4.3	169

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 20...	45	19	0.30	14	323	310	0.44	114000	3.90
JAN 08...	49	19	0.20	9.4	324	310	0.44	75500	3.10
MAR 04...	47	25	0.20	5.8	315	290	0.43	87600	2.70
MAY 13...	51	19	0.20	1.2	312	330	0.42	55300	3.10
JUL 08...	47	25	0.30	3.1	284	290	0.39	19400	2.00
SEP 16...	38	26	0.30	11	261	270	0.35	30400	2.90

K--Results based on colony count outside the acceptable range (non-ideal colony count).

MISSISSIPPI RIVER MAIN STEM

05587550 MISSISSIPPI RIVER BELOW ALTON, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 20...	0.060	0.08	1.4	0.190	0.090	0.080	60	21200	70
JAN 08...	0.040	0.05	1.1	0.130	0.030	0.020	20	4660	27
MAR 04...	0.030	0.04	7.0	0.140	0.020	<0.010	25	6950	4
MAY 13...	0.060	0.08	2.8	0.130	0.050	0.030	31	5490	91
JUL 08...	0.100	0.13	1.5	0.630	0.090	0.070	3	212	40
SEP 16...	0.010	0.01	0.80	0.150	0.140	0.110	56	6530	89

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 20...	<10	2	64	<0.5	1	<1	<3	4	10	8
JAN 08...	<10	1	54	<0.5	<1	<1	<3	6	13	<5
MAY 13...	20	1	63	<0.5	<1	<1	<3	--	7	12
JUL 08...	10	2	75	1	2	<1	<3	9	6	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 20...	13	11	<0.1	<10	3	<1	<1	150	<6	12
JAN 08...	14	15	<0.1	<10	<1	<1	<1	140	<6	7
MAY 13...	15	4	<0.1	<10	2	<1	<1	150	<6	11
JUL 08...	13	1	0.1	<10	<1	5	<1	150	<6	17

TARKIO RIVER BASIN

06813000 TARKIO RIVER AT FAIRFAX, MO

LOCATION.--Lat 40°20'20", long 95°24'11", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.64 N., R.40 W., Atchison County, Hydrologic Unit 10240005, on left bank 50 ft downstream from bridge on State Road J, 0.5 mi west of Fairfax, and 2 mi downstream from Cow Branch, and at mile 13.3.

DRAINAGE AREA.--508 mi².

PERIOD OF RECORD.--March 1922 to current year.

REVISED RECORDS.--WSP 856: 1937.

GAGE.--Water-stage recorder. Datum of gage is 867.66 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 50 ft downstream at datum 2.0 ft higher. Oct. 1, 1931 to Oct. 22, 1953, nonrecording gage at site 50 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 12 to Dec. 2, Dec. 10 to Feb. 19, Mar. 11, 18, 19, Apr. 14, and May 14-28. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--65 years, 212 ft³/s, 5.67 in/yr, 153,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s, June 20, 1942, from rating curve extended above 11,000 ft³/s; maximum gage height, 25.48 ft, May 27, 1987; no flow on several days in July and August 1934, January 28 to February 10, 1977, February 6-12, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft³/s and maximum (*);

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 12	0015	5,870	18.73	July 10	0130	9,240	22.88
May 20	1100	5,940	^a 18.08	Aug. 27	0030	8,190	22.00
May 27	1100	*11,900	^a *25.48	Sept. 16	1530	7,630	21.32

^aMaximum observed

Minimum discharge, 147 ft³/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	822	447	475	269	220	550	749	365	1750	330	197	484
2	878	544	850	265	205	387	745	358	1330	316	183	452
3	1110	480	501	269	197	306	634	361	1150	311	173	424
4	619	442	413	267	189	279	583	354	897	408	165	381
5	590	414	365	263	192	293	568	361	720	310	157	364
6	459	401	379	261	194	282	570	367	653	307	151	434
7	411	386	592	259	163	270	536	336	602	325	174	389
8	381	435	1280	257	175	270	500	320	561	6330	920	348
9	356	399	873	273	170	253	469	308	1230	8020	791	334
10	338	355	569	277	175	246	457	300	669	7410	282	623
11	2510	341	473	254	172	244	430	291	604	2550	236	397
12	3200	332	393	261	168	243	412	277	789	1740	313	313
13	1100	300	381	267	166	242	403	273	878	1420	626	286
14	821	310	384	265	166	243	1540	273	522	777	329	283
15	694	341	405	288	166	301	1940	267	473	600	1330	470
16	616	343	424	280	165	316	1120	261	444	585	340	6740
17	566	328	393	250	158	311	881	250	834	503	224	2820
18	518	306	365	200	155	1060	752	250	500	595	196	979
19	480	304	339	220	173	1070	669	293	766	715	269	696
20	458	321	343	250	174	668	605	3210	493	454	272	526
21	440	298	341	240	170	611	553	2920	441	404	199	462
22	425	296	328	230	167	543	525	820	412	374	178	420
23	458	286	324	220	165	502	527	655	628	351	172	393
24	530	275	317	230	169	494	493	624	426	332	168	371
25	1010	270	311	240	168	540	464	2570	767	310	1470	345
26	658	265	302	240	166	472	445	4600	457	291	7430	325
27	543	255	298	230	170	441	421	11100	363	274	6060	313
28	492	250	294	220	228	439	391	7850	345	258	1790	335
29	449	240	292	200	---	521	389	3980	395	242	966	305
30	423	235	290	210	---	466	380	2830	373	226	614	277
31	413	---	288	215	---	570	---	2430	---	211	561	---
TOTAL	22768	10199	13582	7670	4946	13433	19151	49454	20472	37279	26936	21289
MEAN	734	340	438	247	177	433	638	1595	682	1203	869	710
MAX	3200	544	1280	288	228	1070	1940	11100	1750	8020	7430	6740
MIN	338	235	288	200	155	242	380	250	345	211	151	277

CAL YR 1986 TOTAL 159688 MEAN 438 MAX 6000 MIN 40
WTR YR 1987 TOTAL 247179 MEAN 677 MAX 11100 MIN 151

MISSOURI RIVER MAIN STEM

06813500 MISSOURI RIVER AT RULO, NE

LOCATION.--Lat 40°03'13", long 95°25'19", in NW ¼ NW ¼ sec.17, T.1 N., R.18 E., Richardson County, Hydrologic Unit 10240005, on right bank at downstream side of bridge on U.S. Highway 159 at Rulo, 3.2 mi upstream from Big Nemaha River, and at mile 498.0.

DRAINAGE AREA.--414,900 mi², approximately. The 3,959 mi² in Great Divide basin are not included.

PERIOD OF RECORD.--October 1949 to current year in reports of U.S. Geological Survey. Gage-height record collected at site 80 ft upstream January 1886 to December 1899 published in reports of Missouri River Commission September 1929 to September 1950 in files of Kansas City office of U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above NGVD. Oct. 1949 to Sept. 12, 1950, nonrecording gage at site 80 ft upstream and Sept. 13, 1950 to Apr. 19, 1983, recording gage on downstream end of middle pier, all at same datum.

REMARKS.--Estimated daily discharges: Jan. 18-20, 22-31, Mar. 26-31, Apr. 6, 7, 12, 13, 21-23 and Aug. 12-17. Records good except those for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. U.S. Army Corps of Engineers satellite data collection platform at station.

AVERAGE DISCHARGE.--38 years, 41,740 ft³/s, 30,241,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 358,000 ft³/s, Apr. 22, 1952, gage height, 25.60 ft; minimum daily discharge, 4,420 ft³/s, Jan. 13, 1957; minimum gage height, 0.65 ft, Jan. 7, 1971, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1881 reached a stage of 22.9 ft, from floodmark, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 146,000 ft³/s, Mar. 25, gage height, 20.97 ft; maximum gage height, 22.93 ft, May 28, (backwater from Big Nemaha River); minimum daily discharge, 35,200 ft³/s, Jan. 26; minimum gage height, 8.22 ft, Jan. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80300	66900	64200	46800	38500	40100	87000	50800	70600	44700	41200	47800
2	79000	67400	68100	48100	38700	39900	92000	50300	65300	42300	39700	45900
3	77900	67200	66400	47900	39000	39200	100000	53400	71800	41500	38500	44300
4	75200	66700	63500	47100	39400	39200	96500	53500	61900	41600	38300	43300
5	74900	65800	60300	47500	39100	38800	92000	55800	56800	41900	38300	42700
6	70200	65500	58400	47300	38800	38500	89000	56300	55800	41900	37500	43000
7	67900	65500	59400	46900	39100	39300	85400	56600	51100	44700	38100	43200
8	65200	65900	64800	47800	38700	39000	81500	53300	49900	60100	46700	45400
9	63000	68200	62700	46800	38500	39200	77300	51900	54200	69300	63700	43800
10	61600	67900	59600	46800	38500	39500	73300	50000	58500	69800	50500	49000
11	74300	67000	56900	46400	37800	38900	70200	50000	52200	60400	45600	46800
12	128000	65400	55000	45800	38100	38700	69600	49200	50400	61200	43000	44200
13	127000	61700	55100	45100	38300	38000	69000	48600	54800	68200	46000	42100
14	105000	58900	55200	46500	38300	37900	82600	48400	54500	59600	47000	41700
15	85300	58200	53800	44300	38100	37600	108000	47800	51400	53400	44000	44200
16	76400	58200	55100	41800	38000	37700	92300	47900	51000	50200	41000	73900
17	72700	59200	59700	40700	38200	38300	81700	46800	49700	48800	42700	62700
18	71800	60000	58200	38200	37800	37800	76400	46500	50900	47400	44500	58400
19	71300	63800	57600	37000	37600	66300	73600	46800	62100	49300	41500	55000
20	72200	65700	55200	36000	36400	67800	71200	53600	58300	46900	45100	53600
21	72900	65900	50400	36000	36200	59700	69000	57300	52500	47300	43400	50900
22	72600	65700	46800	36200	36400	63600	67000	54600	52000	47000	41000	48600
23	72100	64400	46400	36000	36300	67300	64000	51500	51000	45900	39800	47300
24	73900	65000	47800	36200	36300	104000	61400	49300	49300	46400	38600	45900
25	78100	66000	47700	36000	36500	140000	57600	57300	49400	45400	42500	45400
26	81000	65200	48600	35200	36500	129000	54100	67400	54500	46500	104000	45400
27	79400	64700	47800	35300	36700	112000	53500	122000	50000	48100	100000	44200
28	74200	64300	46200	35500	37300	100000	52400	132000	47100	46100	77900	43000
29	70700	63900	46700	35800	---	95000	52100	107000	48200	44800	61400	43500
30	69300	63100	47900	36400	---	90000	50700	83800	49000	43900	54500	43000
31	67400	---	46900	37000	---	88000	---	72700	---	42100	50800	---
TOTAL	2410800	1933300	1712400	1290400	1059100	1888100	2249800	1872400	1634200	1546700	1526800	1428200
MEAN	77770	64440	55240	41630	37820	60910	74990	60400	54470	49890	49250	47610
MAX	128000	68200	68100	48100	39400	140000	108000	132000	71800	69800	104000	73900
MIN	61600	58200	46200	35200	36200	37600	50700	46500	47100	41500	37500	41700

CAL YR 1986 TOTAL 21053100 MEAN 57680 MAX 128000 MIN 23500
WTR YR 1987 TOTAL 20552200 MEAN 56310 MAX 140000 MIN 35200

NODAWAY RIVER BASIN

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06817700 NODAWAY RIVER NEAR GRAHAM, MO

LOCATION.--Lat 40°12'08", long 95°04'07", NE ¼ NE ¼ NE ¼ sec.9, T.62 N., R.37 W., Holt County, Hydrologic Unit 10240010, at right downstream end of bridge on Highway A, 0.15 mi east of Maitland and 1.5 mi west of Graham.

DRAINAGE AREA.--1,380 mi², approximately.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 852.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 11-13, 24, 25, May 5 to June 15, June 28 to July 5, July 9-12, Aug. 27, 28, and Sept. 18. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s, June 15, 1984, gage height, 20.4 ft; minimum, 23 ft³/s, Sept. 9, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,900 ft³/s, Aug. 27, gage height, 20.34 ft; minimum observed, 234 ft³/s, May 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3630	1410	1640	684	650	1440	1790	851	3600	485	361	2130
2	2770	1980	2470	692	614	1450	2200	817	3100	437	338	1750
3	3790	1920	1470	658	613	1090	2080	830	2780	437	316	1510
4	2640	1550	1130	632	553	882	1740	845	1950	510	298	1330
5	2770	1400	909	669	523	820	1560	911	1480	531	293	1190
6	2270	1300	862	681	524	763	1480	2030	1260	478	288	1120
7	1590	1230	1170	677	515	731	1440	1540	1170	469	301	1090
8	1340	1240	2630	641	523	701	1340	683	1110	2120	423	1150
9	1200	1270	2630	633	495	665	1210	642	2890	11700	3780	1010
10	1110	1190	1610	604	467	622	1150	619	1760	10700	1820	1510
11	1680	1070	1100	531	455	601	1090	557	1190	7610	859	1420
12	8090	1010	993	515	459	576	1020	548	1140	8030	622	1240
13	4820	886	983	664	461	573	996	536	1350	8460	883	1100
14	3230	708	848	785	457	576	2860	498	804	3850	815	1030
15	2460	744	936	742	453	623	6420	469	769	2260	4940	1000
16	1990	1030	1020	599	446	620	4570	465	726	2070	1540	1130
17	1720	1070	1070	382	412	683	3400	425	768	1660	992	3240
18	1550	1030	1030	320	371	1920	2660	406	844	1340	730	2770
19	1410	926	967	448	380	3080	2190	406	1350	1330	635	1690
20	1300	922	917	550	405	2310	1860	3090	980	1750	669	1360
21	1230	902	888	539	423	1560	1630	2220	718	1140	547	1190
22	1180	867	847	523	407	1320	1450	894	645	909	486	1080
23	1200	843	831	468	396	1190	1390	340	621	783	435	1010
24	1880	853	828	492	396	1130	1350	247	633	693	384	943
25	2900	810	818	522	395	1200	1270	705	569	616	3000	795
26	2970	763	769	522	390	1330	1170	2230	644	556	17900	704
27	2480	736	722	497	394	1290	1090	15200	690	508	20200	641
28	1990	711	737	490	462	1160	1000	8580	597	469	10800	610
29	1660	692	744	496	---	1320	935	5190	494	438	4840	852
30	1480	681	683	518	---	1320	885	3550	465	408	3330	944
31	1380	---	664	572	---	1290	---	3580	---	384	2680	---
TOTAL	71710	31744	34916	17746	13039	34836	55226	59904	37097	73131	85505	38539
MEAN	2313	1058	1126	572	466	1124	1841	1932	1237	2359	2758	1285
MAX	8090	1980	2630	785	650	3080	6420	15200	3600	11700	20200	3240
MIN	1110	681	664	320	371	573	885	247	465	384	288	610

CAL YR 1986 TOTAL 547875 MEAN 1501 MAX 12400 MIN 130
WTR YR 1987 TOTAL 553393 MEAN 1516 MAX 20200 MIN 247

NODAWAY RIVER BASIN

06817800 NODAWAY RIVER NEAR OREGON, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 39°58'19", long 94°59'46", in SE ¼ sec.36, T.60 N., R.37 W., Holt County, Hydrologic Unit 10240010, at bridge on U.S. Highway I-29, 7 mi east of Oregon.

PERIOD OF RECORD.--November 1968 to July 1975, July 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
22...	1300	1500	408	8.00	14.5	10.0	97	28	1600	200
NOV										
19...	1500	360	415	8.20	1.5	14.5	104	21	K800	--
DEC										
08...	1600	3300	349	7.90	4.0	13.5	102	65	5200	--
JAN										
13...	1530	800	465	8.00	2.0	13.0	94	15	96	230
FEB										
10...	1615	560	431	7.90	4.5	13.4	103	13	K4	--
MAR										
10...	1630	660	429	8.20	6.0	14.2	112	36	210	--
APR										
08...	0900	700	390	7.90	9.0	11.3	98	28	800	180
MAY										
13...	0930	125	433	8.50	20.0	9.0	98	<10	K72	--
JUN										
03...	0700	3000	297	7.90	20.0	7.1	78	14	18000	--
JUL										
07...	1700	2750	326	7.90	24.0	5.9	70	18	12000	150
AUG										
12...	0940	780	268	7.60	26.0	6.8	83	30	12000	--
SEP										
08...	1700	1200	375	8.10	22.0	8.4	96	34	>6000	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
22...	31	56	15	9.4	2.9	166	3.3	27	8.6	0.30
NOV										
19...	--	--	--	--	--	166	2.0	--	--	--
DEC										
08...	--	--	--	--	--	124	3.0	--	--	--
JAN										
13...	34	64	16	10	1.8	192	3.7	32	11	0.30
FEB										
10...	--	--	--	--	--	174	4.2	--	--	--
MAR										
10...	--	--	--	--	--	174	2.1	--	--	--
APR										
08...	27	50	14	9.7	2.4	156	3.8	26	8.7	0.30
MAY										
13...	--	--	--	--	--	184	1.0	--	--	--
JUN										
03...	--	--	--	--	--	113	2.8	--	--	--
JUL										
07...	15	43	10	8.5	3.5	134	3.3	24	8.3	0.40
AUG										
12...	--	--	--	--	--	92	4.5	--	--	--
SEP										
08...	--	--	--	--	--	157	2.4	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

06818000 MISSOURI RIVER AT ST. JOSEPH, MO

LOCATION.--Lat 39°45'12", long 94°51'28", in NW ¼ SW ¼ sec.17, T.57 N., R.35 W., Buchanan County, Hydrologic Unit 10240011, on left bank at left abutment of St. Joseph and Grand Island Railroad bridge in St. Joseph. River mile 448.2.

DRAINAGE AREA.--420,300 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Gage-height records collected in vicinity 1873-99 are contained in reports of Missouri River Commission; since 1900 in reports of National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area

GAGE.--Water-stage recorder. Datum of gage is 788.19 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 21, 1931, nonrecording gage and Oct. 21, 1931, to Dec. 31, 1933, water-stage recorder at same site at datum 5.50ft higher.

REMARKS.--Estimated daily discharges: May 8-13, 26, 27, and June 7-9. Water-discharge records good except for estimated daily discharges, which are fair. Discharge measurements made weekly except during ice-flow periods. Some regulation from many upstream reservoirs. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--59 years, 41,620 ft³/s, 30,150,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 397,000 ft³/s, Apr. 22, 23, 1952, gage height, 26.82 ft; minimum, 2,300 ft³/s, Jan. 9, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 29, 1881, reached a stage of 27.2 ft, present datum, discharge, about 370,000 ft³/s, computed by U.S. Army Corps of Engineers. Flood of June 1844 reached a stage of 24.5 ft, discharge, about 350,000 ft³/s, computed by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 207,000 ft³/s, May 28, gage height, 23.83 ft; minimum, 36,400 ft³/s, Jan. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94600	76400	68000	50500	40200	46800	96300	56300	91900	49700	44100	55600
2	85200	77100	76000	51300	42100	48100	99100	56500	78400	45800	43500	53300
3	88700	77300	73200	51500	41100	44900	101000	70500	82900	44100	42500	51300
4	88700	75400	71200	50100	42000	44700	104000	61700	75400	42600	42100	50100
5	85300	74200	68100	49300	41800	44300	100000	63700	65800	43300	42700	48800
6	81300	73100	66200	50700	41700	43600	95100	64000	63000	42000	42300	48900
7	77500	73500	66500	50200	41700	43800	91800	62700	61900	46400	41900	49000
8	73800	74500	74700	50300	41700	44000	89700	60500	59200	50100	45000	51200
9	70100	77600	76400	51000	41300	43800	85800	58400	60300	79700	76400	49000
10	67400	79000	69700	50600	41500	44400	82200	56000	73200	93600	66700	55000
11	69700	77600	65000	50900	41200	44100	79900	54900	64500	69500	53400	55100
12	139000	75800	62100	50600	41000	43700	78700	54400	60000	72600	49100	51000
13	149000	70000	60200	50100	41500	43200	77800	54200	65400	80800	50300	48800
14	133000	65700	60300	51100	41700	42900	89100	54400	64900	75200	52500	48600
15	103000	63100	58700	50100	41900	42700	123000	53000	59400	62800	62200	50500
16	88100	62700	57700	46400	41900	42300	109000	52600	57700	57600	59100	82900
17	81300	62300	63000	45200	41800	42100	91300	51600	55800	56400	49000	82400
18	77500	62300	63500	42800	42000	49100	83500	51000	55300	53700	51300	69500
19	75800	64100	62600	41400	41600	75400	78600	51100	66100	55600	50300	66000
20	76000	67300	61900	40500	41000	80600	76500	54200	71200	55000	52400	62800
21	76200	68400	58800	39800	40300	66100	73300	68200	59300	53600	50800	59900
22	75400	67700	54700	39600	40400	65700	70800	67300	56500	55200	48000	57000
23	76700	66000	54200	38600	40400	67400	69300	61100	55100	52200	46600	54600
24	80000	65800	55800	38200	40100	94400	67200	57300	52900	52500	45200	53400
25	91400	66500	55000	37200	40500	145000	64700	60700	51200	51200	44300	50500
26	94400	66400	54400	36500	40300	149000	61000	75300	55700	50200	116000	50400
27	93300	66100	53700	37500	40500	138000	59600	179000	55300	52200	141000	48900
28	87400	65300	51500	38000	41700	126000	58700	202000	51100	50200	120000	47100
29	82000	65700	51000	38700	---	122000	57700	177000	53300	47900	81000	46500
30	78900	65200	51400	38900	---	107000	57000	137000	55200	46500	65600	47100
31	76600	---	50900	38900	---	96800	---	102000	---	44800	59600	---
TOTAL	2717300	2092100	1916400	1396500	1154900	2131900	2471700	2328600	1877900	1733000	1834900	1645200
MEAN	87650	69740	61820	45050	41250	68770	82390	75120	62600	55900	59190	54840
MAX	149000	79000	76400	51500	42100	149000	123000	202000	91900	93600	141000	82900
MIN	67400	62300	50900	36500	40100	42100	57000	51000	51100	42000	41900	46500

CAL YR 1986 TOTAL 23768000 MEAN 65120 MAX 149000 MIN 28000
WTR YR 1987 TOTAL 23300400 MEAN 63840 MAX 202000 MIN 36500

06818000 MISSOURI RIVER AT ST. JOSEPH, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1984 to December 1984, July 1985 through September 1985, and April 1986 to September 1986.

DISSOLVED OXYGEN: May 1984 to November 1984, July 1985 through September 1985, and April 1986 to September 1986.

INSTRUMENTATION.--Water-quality monitor May 1984 to December 1984, July 1985 to September 1985, and April 1986 to September 1986.

REMARKS.--Discontinued as National stream-quality accounting network station, September 1986.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE- WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
22...	1430	75500	740	8.10	13.5	43	9.4	89	11000	9800
NOV										
20...	0730	66300	780	8.40	2.0	35	8.1	58	K13000	K1300
DEC										
09...	0800	76900	724	8.10	2.0	180	13.6	97	5800	16000
JAN										
13...	1700	50100	774	8.10	1.0	16	14.4	101	K6500	3800
FEB										
11...	0800	41300	722	8.10	3.5	17	13.2	99	3600	K280
MAR										
11...	0800	44400	703	8.40	7.0	20	11.6	94	2200	720
APR										
08...	0730	90000	661	8.10	7.0	140	12.0	99	2200	K16000
MAY										
13...	0730	54500	783	8.40	20.5	22	7.7	85	520	K60
JUN										
03...	0930	82100	570	8.00	22.0	350	6.0	68	K15000	13000
JUL										
08...	0900	46500	732	7.80	23.0	120	6.0	70	6200	22000
AUG										
12...	0730	49700	646	8.00	26.0	330	5.8	71	7800	4400
SEP										
09...	0730	40100	684	8.00	21.5	62	7.7	87	K1600	920

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
OCT									
22...	270	78	70	24	52	29	1	5.8	193
NOV									
20...	280	88	72	25	63	32	2	5.3	195
DEC									
09...	240	70	63	20	49	30	1	5.0	170
JAN									
13...	280	81	72	23	58	31	2	4.8	194
FEB									
11...	270	63	70	22	57	31	2	5.4	202
MAR									
11...	270	65	69	23	56	31	2	5.6	202
APR									
08...	290	100	75	26	35	20	0.9	7.8	194
MAY									
13...	280	80	69	25	53	29	1	6.4	196
JUN									
03...	240	65	64	20	36	24	1	6.6	177
JUL									
08...	250	90	64	22	61	34	2	6.2	160
AUG									
12...	220	80	56	19	52	33	2	6.1	138
SEP									
09...	250	69	62	22	61	34	2	6.0	176

K--Results based on colony count outside the acceptable range (non-ideal colony count).

MISSOURI RIVER MAIN STEM

06818000 MISSOURI RIVER AT ST. JOSEPH, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
OCT 22...	170	17	0.50	14	505	470	0.69	103000	1.90
NOV 20...	200	16	0.50	12	504	540	0.69	90200	1.70
DEC 09...	160	15	0.50	13	448	430	0.61	93000	1.70
JAN 13...	190	19	0.50	14	495	500	0.67	67000	1.40
FEB 11...	170	18	0.40	15	483	480	0.66	53900	1.50
MAR 11...	150	18	0.50	14	471	470	0.64	56500	1.40
APR 08...	150	22	0.30	17	479	450	0.65	116000	3.20
MAY 13...	190	19	0.40	9.8	503	510	0.68	74000	1.30
JUN 03...	120	15	0.40	13	398	380	0.54	88200	3.10
JUL 08...	190	26	0.40	9.6	490	480	0.67	61500	0.980
AUG 12...	150	15	0.40	10	429	390	0.58	57600	1.30
SEP 09...	180	17	0.50	12	434	470	0.59	47000	0.910

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 22...	0.070	0.09	0.80	0.130	0.120	0.100	362	73800	80
NOV 20...	0.060	0.08	0.30	0.150	0.060	0.070	534	95600	27
DEC 09...	0.050	0.06	1.2	0.120	0.080	0.080	1870	388000	55
JAN 13...	0.080	0.10	0.80	0.150	0.070	0.060	141	19100	87
FEB 11...	0.040	0.05	0.60	0.150	0.070	0.070	463	51600	9
MAR 11...	0.050	0.06	0.90	0.200	0.080	0.070	393	47100	19
APR 08...	0.060	0.08	0.50	0.560	0.130	0.090	--	--	--
MAY 13...	0.040	0.05	2.0	0.420	0.050	0.060	482	70900	22
JUN 03...	0.090	0.12	4.3	0.860	0.120	0.090	1920	426000	81
JUL 08...	0.130	0.17	1.9	0.510	0.090	0.060	1270	159000	71
AUG 12...	0.040	0.05	1.5	0.320	0.120	0.090	1130	152000	72
SEP 09...	0.040	0.05	1.3	0.200	0.070	0.060	545	59000	48

06818000 MISSOURI RIVER AT ST. JOSEPH, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 20...	20	2	93	<0.5	<1	<1	<3	1	30	5
JAN 13...	10	2	90	<0.5	<1	<1	<3	7	11	<5
MAY 13...	<10	3	99	<0.5	<1	3	<3	3	<3	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 20...	50	10	<0.1	<10	3	2	<1	520	<6	19
JAN 13...	49	20	<0.1	<10	<1	2	<1	520	<6	9
MAY 13...	46	11	0.5	<10	<1	3	<1	510	<6	54

PLATTE RIVER BASIN (IOWA-MISSOURI)

06819500 ONE HUNDRED AND TWO RIVER AT MARYVILLE, MO

LOCATION.--Lat 40°20'45", long 94°49'56", in SW ¼ SW ¼ sec.15, T.64 N., R.35 W., Nodaway County, Hydrologic Unit 10240013, on right bank at intake for City Waterworks, just upstream from City Waterworks dam, 150 ft upstream from bridge on U.S. Highway 136, 0.3 mi downstream from Thill Branch, 1 mi east of Maryville and at mile 64.0.

DRAINAGE AREA.--515 mi².

PERIOD OF RECORD.--October 1932 to current year. April to June 1934 monthly discharge only, published in WSP 1310. June 1934 to October 1971, published as "near Maryville".

GAGE.--Water-stage recorder. Datum of gage is 964.65 ft above National Geodetic Vertical Datum of 1929. Nonrecording gage prior to Sept. 15, 1958. Prior to June 20, 1934, at present site and datum. June 20, 1934, to Oct. 31, 1971, at site 3 mi upstream at datum 5.68 ft higher.

REMARKS.--Estimated daily discharges: Nov. 10-15, 21, 24, 27, Dec. 4, 5, 9-13, 25, 30, Jan. 8-12, 15-28, Feb. 8-10, 16-18, 21-23, Mar. 2, 3, 9-11, 18-24, 29-31, and Apr. 2-4. Records fair. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--55 years, 241 ft³/s, 6.36 in/yr, 174,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s, October 12, 1973, gage height, 19.25 ft; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 16, 1926, reached a stage of 15 ft, present site, from floodmark; discharge, 14,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 12	0230	9,240	12.83	July 9	2330	*14,800	*15.99
May 27	0800	14,100	15.63	July 12	1915	11,400	14.03
May 28	0500	9,960	13.16	Aug. 27	0130	13,200	15.27

Minimum discharge, 29 ft³/s, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1890	443	1190	153	118	1370	509	129	1520	98	47	224
2	913	817	2006	121	114	995	433	123	689	84	43	182
3	3640	517	865	115	111	524	314	134	957	77	38	155
4	1080	394	438	133	96	347	265	159	500	126	32	135
5	735	322	302	123	87	293	240	156	381	99	35	115
6	464	283	312	139	94	256	228	146	328	76	32	100
7	369	252	824	136	108	229	212	135	286	74	35	99
8	314	300	2440	111	130	201	197	119	253	74	1520	112
9	273	302	1390	119	106	175	189	111	603	7620	1476	100
10	238	202	571	172	89	178	181	105	370	5700	241	145
11	2590	205	350	67	90	135	185	94	277	1660	132	266
12	5350	202	336	127	97	137	163	92	247	5580	100	132
13	1160	188	234	142	90	138	175	89	215	4000	339	97
14	676	184	251	207	95	145	2740	88	186	760	341	83
15	502	202	291	188	106	274	2820	87	164	484	3060	80
16	408	209	309	42	92	213	1230	77	149	369	592	88
17	383	195	304	46	67	282	769	68	139	280	210	393
18	306	189	266	111	70	4240	549	67	187	486	126	197
19	269	170	219	124	73	2870	435	69	289	1150	98	132
20	241	231	225	106	73	897	364	1410	253	342	88	107
21	234	249	217	94	76	601	300	545	164	226	76	89
22	219	204	200	85	72	459	267	423	132	173	64	77
23	341	197	198	99	70	393	266	204	245	143	52	68
24	1170	162	202	99	71	369	253	168	253	123	43	65
25	1140	142	184	99	73	549	221	231	627	108	759	63
26	950	149	154	99	70	474	202	4180	317	95	10500	57
27	595	133	150	99	76	361	181	11100	152	84	6700	53
28	413	126	151	80	155	325	150	6190	115	75	981	50
29	321	128	142	76	---	346	140	1730	113	64	544	47
30	263	131	153	100	---	374	140	1250	122	58	364	48
31	245	---	132	100	---	475	---	1270	---	52	292	---
TOTAL	27692	7428	15000	3512	2569	18625	14318	30749	10233	30334	28954	3559
MEAN	893	248	484	113	91.7	601	477	992	341	979	934	119
MAX	5350	817	2440	207	155	4240	2820	11100	1520	7620	10500	393
MIN	219	126	132	42	67	135	140	67	113	52	32	47

CAL YR 1986 TOTAL 217903 MEAN 597 MAX 10300 MIN 16
WTR YR 1987 TOTAL 192973 MEAN 529 MAX 11100 MIN 32

06820500 PLATTE RIVER NEAR AGENCY, MO

LOCATION.--Lat 39°41'19", long 94°42'15", in NE ¼ NW ¼ sec.10, T.56 N., R.34 W., Buchanan County, Hydrologic Unit 10240012, on left bank 10 ft downstream from bridge of U.S. Highway 169, 1.5 mi downstream from Third Fork, 3.5 mi northeast of Agency, and at mile 66.8.

DRAINAGE AREA.--1,760 mi², approximately.

PERIOD OF RECORD.--May 1924 to August 1930 (published as "at Agency"), May 1932 to current year.

GAGE.--Water-stage recorder. Datum of gage is 807.38 ft above National Geodetic Vertical Datum of 1929. May 22, 1924 to Aug. 9, 1930, nonrecording gage at site 4 mi downstream at different datum. May 13, 1932 to Nov. 14, 1965, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Jan. 17-30. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage height and U.S. Army Corps of Engineers satellite telemeters at stations.

AVERAGE DISCHARGE.--60 years (1924-29, 1932-87), 949 ft³/s, 7.32 in/yr, 687,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s, from loop rating, July 20, 1965, gage height, 35.05 ft; no flow at times in July and August 1934 and October 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0830	10,400	21.17	Apr. 15	1400	8,090	19.21
Oct. 4	0630	11,500	21.99	May 28	0900	9,070	20.30
Oct. 13	0330	10,100	20.91	July 10	1715	9,160	20.64
Oct. 25	1730	7,880	18.75	July 14	0015	14,100	24.13
Dec. 2	1100	7,050	17.84	Aug. 16	0300	8,270	19.54
Mar. 19	0945	11,900	21.75	Aug. 27	1500	*20,000	*25.90

Minimum discharge, 134 ft³/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9700	1000	1910	639	643	3460	1050	477	1430	237	179	1210
2	4970	996	6420	652	657	3850	1030	457	2190	212	168	1040
3	7770	1820	4000	640	602	2670	1010	896	1610	183	161	885
4	10600	1760	1960	597	566	1750	868	609	1500	188	158	787
5	4420	1280	1260	599	564	1410	774	543	1030	208	143	706
6	2280	1100	1050	617	564	1240	712	571	776	196	136	694
7	1550	999	2050	606	555	1150	675	551	653	810	139	899
8	1290	986	4630	592	547	1080	662	475	568	1360	252	1450
9	1116	932	5150	600	538	1000	630	428	516	414	991	865
10	994	969	3050	572	553	936	607	383	974	6350	2120	912
11	1170	844	1560	537	531	880	575	366	1110	8000	762	927
12	6690	753	1140	538	502	843	551	332	672	9500	466	714
13	8800	632	1060	620	494	805	679	324	606	12400	415	642
14	3570	560	949	803	501	785	2880	310	513	12300	714	791
15	2000	611	952	803	492	783	7380	290	417	3840	2810	817
16	1560	735	1050	715	492	956	5360	275	362	1250	6240	691
17	1280	773	1050	550	497	1070	2510	263	339	999	1586	786
18	1140	754	1020	460	473	3590	1680	246	313	823	973	712
19	1030	731	943	430	446	10900	1290	230	294	875	758	822
20	933	734	880	400	437	5950	1100	230	381	1910	584	602
21	854	736	851	380	449	2320	971	1490	752	902	434	489
22	841	827	841	400	446	1670	869	1220	493	608	373	430
23	1550	750	803	390	431	1390	808	827	337	474	336	394
24	1510	704	791	380	430	1290	763	543	441	397	300	364
25	6540	681	787	370	422	1420	733	485	474	344	289	335
26	4920	641	766	380	414	1400	684	425	553	302	10700	313
27	2920	611	725	400	417	1360	622	2790	591	266	17600	295
28	2120	608	694	450	665	1140	568	8710	330	236	17300	276
29	1560	595	696	480	---	1140	532	8740	287	218	15400	260
30	1250	574	674	540	---	1090	498	5880	270	202	6770	243
31	1090	---	626	574	---	1130	---	2120	---	189	1720	---
TOTAL	98012	25696	50338	16714	14328	60458	39071	41486	20782	66193	90971	20351
MEAN	3162	857	1624	539	512	1950	1302	1338	693	2135	2935	678
MAX	10600	1820	6420	803	665	10900	7380	8740	2190	12400	17600	1450
MIN	841	560	626	370	414	783	498	230	270	183	136	243

CAL YR 1986 TOTAL 725531 MEAN 1988 MAX 23000 MIN 108
WTR YR 1987 TOTAL 544400 MEAN 1492 MAX 17600 MIN 136

PLATTE RIVER BASIN (IOWA-MISSOURI)

06821140 SMITHVILLE RESERVOIR NEAR SMITHVILLE, MO

LOCATION.--Lat 39°23'50", long 94°33'25", SW $\frac{1}{4}$ sec.13, T.53 N., R.33 W., Clay County, Hydrologic Unit 10240012, in control tower at outlet works on the Little Platte River, and 1.0 mi northeast of Smithville and 5.0 mi north of Kansas City.

DRAINAGE AREA.--213 mi².

PERIOD OF RECORD.--July 1981 to current year. Records collected at same site since 1976 and are available from U.S. Army Corps of Engineers.

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

REMARKS.--Lake is formed by a rolled earthfill type dam. Storage began on July 13, 1976. An uncontrolled limited service type spillway, 50 ft wide, is located at the right abutment. Capacity of surcharge pool (elevations 876.2 ft to 891.1 ft), 182,209 acre-ft; of flood control pool (elevations 864.2 to 876.2 ft), 101,800 acre-ft; and of multipurpose pool (elevations 799.0 ft to 864.2 ft), 144,600 acre-ft. Lake is used for flood control, water supply, water quality control, recreation, and fish and wildlife enhancement.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 217,000 acre-ft, Nov. 15-17, 1985, maximum elevation 873.17 ft, Nov. 16, 17, 1985; minimum, 2,360 acre-ft, Jan. 13, 1980, elevation, 819.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 176,000 acre-ft, Apr. 15-22, maximum elevation, 868.38 ft, Apr. 18; minimum contents, 144,000 acre-ft, June 18-29, minimum elevation, 864.06 ft, June 29.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157000	164000	148000	150000	145000	152000	168000	154000	150000	145000	151000	151000
2	158000	162000	149000	150000	146000	154000	168000	153000	150000	145000	151000	151000
3	162000	160000	149000	150000	146000	154000	168000	161000	150000	145000	150000	151000
4	165000	158000	149000	150000	146000	154000	168000	167000	149000	145000	150000	151000
5	167000	157000	149000	149000	146000	155000	168000	167000	149000	145000	150000	151000
6	167000	155000	149000	149000	146000	154000	168000	167000	148000	145000	150000	151000
7	167000	154000	149000	149000	146000	155000	167000	168000	148000	146000	149000	151000
8	168000	154000	153000	148000	146000	155000	167000	167000	147000	157000	150000	151000
9	168000	154000	154000	148000	146000	155000	167000	166000	147000	157000	150000	151000
10	167000	153000	154000	148000	146000	154000	167000	163000	146000	157000	149000	151000
11	167000	153000	155000	148000	146000	154000	167000	160000	146000	157000	149000	151000
12	169000	153000	155000	147000	146000	154000	166000	157000	146000	158000	149000	151000
13	169000	152000	155000	147000	146000	154000	167000	155000	146000	159000	149000	151000
14	169000	151000	154000	147000	146000	154000	170000	153000	146000	158000	150000	151000
15	169000	151000	154000	147000	146000	154000	176000	153000	145000	158000	150000	151000
16	170000	151000	154000	147000	146000	154000	176000	153000	145000	158000	150000	150000
17	170000	151000	154000	146000	146000	155000	176000	152000	145000	158000	150000	151000
18	168000	151000	154000	146000	146000	157000	176000	152000	144000	158000	151000	151000
19	166000	150000	154000	146000	146000	162000	176000	152000	144000	158000	151000	151000
20	164000	150000	154000	145000	146000	163000	176000	151000	144000	158000	151000	151000
21	163000	150000	153000	145000	146000	164000	176000	151000	144000	157000	151000	151000
22	161000	149000	153000	145000	146000	164000	176000	150000	144000	156000	151000	151000
23	159000	149000	153000	145000	146000	164000	175000	150000	144000	154000	151000	150000
24	158000	149000	153000	145000	146000	165000	171000	150000	144000	154000	151000	150000
25	166000	148000	152000	145000	146000	166000	169000	149000	144000	153000	151000	150000
26	167000	148000	152000	145000	146000	167000	166000	149000	144000	153000	151000	150000
27	168000	148000	152000	145000	146000	167000	164000	149000	144000	153000	152000	150000
28	168000	147000	151000	145000	146000	168000	160000	148000	144000	152000	152000	150000
29	168000	147000	151000	145000	---	168000	158000	149000	144000	152000	152000	150000
30	168000	147000	151000	145000	---	168000	155000	149000	145000	151000	152000	150000
31	166000	---	151000	145000	---	168000	---	150000	---	151000	152000	---

WTR YR 1987

(+)	867.07	864.52	865.04	864.31	864.41	867.31	865.63	864.88	864.29	865.07	865.15	864.93
(-)	+11000	-19000	+4000	-6000	+1000	+22000	-13000	-5000	-5000	+6000	+1000	-2000
MAX	170000	164000	155000	150000	146000	168000	176000	168000	150000	159000	152000	151000
MIN	157000	147000	148000	145000	145000	152000	155000	148000	144000	145000	149000	150000

CAL YR 1986.....+2000

WTR YR 1987.....-5000

(+) Elevation, in feet NGVD, at end of month.

(-) Change in contents, in acre-feet.

06821150 LITTLE PLATTE RIVER AT SMITHVILLE, MO

LOCATION.--Lat 39°23'17", long 94°34'44", in NW ½ SW ¼ sec.23, T.53 N., R.33 W., Clay County, Hydrologic Unit 10240012, on left bank behind city equipment shelter on old bridge abutment, 500 ft upstream from town bridge in Smithville, 1,500 ft upstream from bridge on U.S. Highway 169, 0.5 mi downstream from Wilkerson Creek, 2.4 mile downstream from Smithville Lake and at mile 11.1.

DRAINAGE AREA.--234 mi².

PERIOD OF RECORD.--June 1965 to current year. Occasional measurements 1942, 1943, 1946, 1962-65.

REVISED RECORDS.--WDR MO 1970: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 778.18 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Mar. 23 1966, nonrecording gage at site 1,500 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 29, 30, and Jan. 24. Records fair. Construction of dam for Smithville Lake (station 06821140) began in June 1974 and partial regulation began Aug. 6, 1977. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--22 years, 168 ft³/s, 121,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,600 ft³/s, slope-area measurement of peak flow, July 20, 1965, gage height, 44.8 ft, from floodmark; no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1947 reached a stage of 37.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft³/s, Feb. 28, gage height, 22.48 ft; minimum, 0.88 ft³/s, Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	1050	278	217	56	463	23	222	6.5	13	8.5	1.3
2	285	1050	184	215	56	67	20	222	43	13	7.7	2.0
3	504	1050	24	215	55	45	90	433	120	12	7.9	5.9
4	57	1050	21	215	55	115	224	25	224	12	8.0	5.8
5	30	1050	88	215	58	239	224	17	224	13	7.6	5.7
6	21	636	220	215	61	168	221	16	223	14	7.6	7.1
7	18	225	440	213	62	69	218	126	223	283	7.9	6.7
8	40	226	389	213	58	67	219	518	223	21	8.8	6.6
9	70	224	186	216	57	64	219	1370	222	125	7.8	6.8
10	128	223	34	217	57	63	219	1370	222	240	7.5	7.2
11	318	226	27	214	57	62	219	1370	224	8.3	7.5	6.8
12	155	224	144	214	56	61	219	889	224	24	7.8	6.6
13	51	224	237	222	56	60	435	991	223	11	18	6.6
14	51	222	236	226	56	59	429	607	224	7.8	12	32
15	51	223	235	222	56	59	351	222	223	6.6	8.5	18
16	39	224	235	220	57	61	279	223	223	5.9	6.4	10
17	478	224	233	221	56	231	255	223	147	5.9	2.2	9.3
18	1050	223	229	220	56	633	242	223	40	6.2	5.2	8.0
19	1030	220	226	220	56	80	238	223	22	147	28	7.3
20	1030	221	225	146	57	44	233	224	21	544	10	7.1
21	1030	220	224	59	57	36	235	224	21	548	7.5	7.2
22	1030	219	223	55	56	30	385	224	22	552	7.2	7.2
23	1030	219	222	55	55	28	1220	224	59	369	7.0	7.3
24	936	217	222	55	55	140	1380	224	23	224	7.2	7.3
25	367	217	221	54	55	107	1370	224	85	224	7.8	7.4
26	25	217	219	54	55	42	1370	224	21	224	9.0	7.2
27	16	218	219	54	56	35	1360	223	13	224	5.6	7.1
28	13	217	219	55	489	34	1350	223	12	224	2.3	7.4
29	367	215	220	58	---	30	1350	112	13	225	14	7.6
30	1060	214	218	59	---	25	997	8.6	13	160	39	7.9
31	1060	---	216	56	---	24	---	6.5	---	9.0	7.3	---
TOTAL	12399	11188	6314	4890	2016	3241	15594	11431.1	3583.5	4495.7	298.8	240.4
MEAN	400	373	204	158	72.0	105	520	369	119	145	9.64	8.01
MAX	1060	1050	440	226	489	633	1380	1370	224	552	39	32
MIN	13	214	21	54	55	24	20	6.5	6.5	5.9	2.2	1.3

CAL YR 1986 TOTAL 69156.7 MEAN 189 MAX 1610 MIN 3.8

WTR YR 1987 TOTAL 75691.1 MEAN 207 MAX 1380 MIN 1.3

PLATTE RIVER BASIN (IOWA-MISSOURI)

06821190 PLATTE RIVER AT SHARPS STATION, MO

LOCATION.--Lat 39°24'03", long 94°43'36", in NW ¼ SE ¼ SW ¼ sec.16, T.53 N., R.34 W., Platte County, Hydrologic Unit 10240012, on downstream side of center pier at Sharps bridge, 0.2 mi upstream from Jowler Creek, 3.3 mi downstream from Little Platte River, 3.6 mi south of Camden Point, and at mile 25.1.

DRAINAGE AREA.--2,380 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 754.23 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Water-discharge records poor. Some regulation from Smithville Lake (station 06821140) 17.0 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--8 years, 1,972 ft³/s, 1,429,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s, June 10, 1984, gage height 34.55 ft; minimum, 19 ft³/s, Dec. 4, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s, Aug. 30, gage height, 31.32 ft; minimum, 285 ft³/s, Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12000	2670	1220	1050	843	4370	1560	1160	4100	577	421	11800
2	13900	2540	4800	1040	864	5400	1450	969	2320	486	396	2920
3	15600	2630	7760	1040	845	4320	1410	6440	3230	444	379	1310
4	14400	3510	5340	1010	782	2940	1520	11500	2600	409	418	1030
5	15500	3460	2880	953	754	2130	1380	7590	2330	406	407	871
6	16000	2770	2030	943	808	1740	1270	1960	1650	501	340	788
7	7560	1800	2240	954	826	1410	1200	1380	1300	1790	320	794
8	2700	1630	5440	924	795	1250	1160	1400	1140	5370	326	1120
9	2130	1580	7410	908	757	1130	1140	2290	1030	2760	410	1870
10	1840	1510	6970	919	733	1030	1100	2530	985	1910	1810	1200
11	1820	1530	4390	850	747	964	1070	2460	1620	7640	2530	1240
12	3670	1380	2500	804	724	906	1020	2130	1740	9740	1130	1250
13	8440	1220	2050	867	690	877	1610	1630	1430	10900	751	965
14	10200	996	1890	960	680	863	3240	1600	1170	12500	901	1060
15	7170	996	1730	1230	686	848	7720	868	1010	15000	1020	2290
16	2900	1150	1750	1180	677	857	9570	803	899	15000	4620	1900
17	2120	1260	1900	998	681	1190	8860	778	840	6410	6190	1250
18	2710	1290	1870	798	685	2940	4550	754	669	1840	2600	1250
19	2630	1250	1750	738	670	7210	2850	737	613	1320	1440	1080
20	2490	1220	1620	794	649	9710	2200	722	572	2220	1820	1190
21	2380	1220	1520	691	635	9720	1890	720	676	3240	945	866
22	2300	1260	1470	725	642	4200	1680	2240	1120	2040	617	721
23	2410	1390	1440	700	638	2250	2270	1910	979	1520	522	633
24	3950	1270	1380	627	619	1950	2710	1410	730	999	468	577
25	6220	1200	1360	575	622	2370	2650	1110	746	881	428	537
26	9070	1160	1330	604	613	2220	2590	1030	805	818	2730	494
27	8210	1100	1270	646	609	2090	2490	1140	845	761	8860	461
28	4460	1060	1210	615	763	1890	2400	5220	929	709	11600	431
29	2910	1060	1180	634	---	1620	2330	8800	594	667	16800	414
30	2670	1030	1150	719	---	1590	2230	9850	900	640	19700	381
31	2850	---	1100	801	---	1550	---	9500	---	495	18700	---
TOTAL	193210	48142	81950	26297	20037	83535	79120	92631	39572	109993	109599	42693
MEAN	6233	1605	2644	848	716	2695	2637	2988	1319	3548	3535	1423
MAX	16000	3510	7760	1230	864	9720	9570	11500	4100	15000	19700	11800
MIN	1820	996	1100	575	609	848	1020	720	572	406	320	381

CAL YR 1986 TOTAL 1224280 MEAN 3354 MAX 26600 MIN 233
WTR YR 1987 TOTAL 926779 MEAN 2539 MAX 19700 MIN 320

PLATTE RIVER BASIN

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06821190 PLATTE RIVER AT SHARPS STATION, MO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1979 to September 1981.

WATER TEMPERATURE: April 1979 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS. / 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. / PER 100 ML) (31673)
NOV										
19...	1315	1270	441	8.10	3.5	31	13.0	98	K160	K220
JAN										
13...	1410	860	454	8.00	1.0	11	15.0	105	360	K80
MAY										
12...	1530	2090	350	8.00	19.5	49	12.5	134	K700	K400
JUL										
07...	1400	1360	268	7.30	23.0	700	4.2	49	49000	72000

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (00410)
NOV									
19...	210	0	62	14	13	12	0.4	3.3	183
JAN									
13...	220	32	65	14	13	11	0.4	2.9	188
MAY									
12...	160	14	47	9.3	9.5	11	0.3	4.4	144
JUL									
07...	120	26	37	7.1	8.3	12	0.3	3.9	96

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV									
19...	33	11	0.20	14	261	260	0.35	895	1.70
JAN									
13...	37	14	0.30	11	268	270	0.36	622	1.40
MAY									
12...	25	9.0	0.30	4.6	194	200	0.26	1090	0.730
JUL									
07...	30	7.1	0.30	7.3	191	160	0.26	701	0.740

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDIM- ENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
NOV 19...	0.080	0.10	0.80	0.080	0.040	0.050	149	511	85
JAN 13...	0.090	0.12	0.90	0.110	0.030	0.030	51	118	77
MAY 12...	0.120	0.15	1.6	0.510	0.160	0.170	409	2310	80
JUL 07...	0.290	0.37	1.1	3.20	0.080	0.060	82	301	81

K--Results based on colony count outside the acceptable range (non-ideal colony count).

PLATTE RIVER BASIN

06821190 PLATTE RIVER AT SHARPS STATION, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 19...	<10	1	130	<0.5	<1	<1	<3	2	8	<5
JAN 13...	10	<1	120	<0.5	1	<1	<3	1	7	<5
MAY 12...	10	3	120	<0.5	<1	3	<3	5	17	<5
JUL 07...	30	2	120	<0.5	<1	2	<3	4	35	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 19...	12	190	<0.1	<10	4	2	<1	260	<6	13
JAN 13...	16	230	<0.1	<10	<1	<1	<1	280	<6	15
MAY 12...	8	120	0.3	<10	<1	<1	<1	210	<6	180
JUL 07...	7	470	--	<10	<1	--	<1	180	<6	110

06892350 KANSAS RIVER AT DESOTO, KS
(National stream-quality accounting network station)

LOCATION.--Lat 38°59'00", long 94°57'52", in SE ¼ NE ¼ NE ¼ sec.27, T.12 S., R.22 E., Leavenworth County, Hydrologic Unit 10270104, on left bank at downstream side of bridge on county road, north edge of DeSoto, 0.4 mi upstream from Kill Creek and at mile 31.0.

DRAINAGE AREA.--59,756 mi², of which a large area is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1917 to current year. Monthly discharge only for some periods published in WSP 1310. Prior to October 1973, published as "at Bonner Springs."

REVISED RECORDS.--WSP 806: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 758.87 ft above sea level. July 9, 1917, to Apr. 23, 1934, non-recording gage; Apr. 24, 1934 to Nov. 25, 1960, water-stage recorder at site 9.7 mi downstream at datum 11.81 ft lower; Nov. 26, 1960 to Feb. 9, 1961, nonrecording gage; Feb. 10, 1961 to Sept. 30, 1971, water-stage recorder at site 10.2 mi downstream at datum 17.81 ft lower; and Oct. 1, 1971 to Sept. 30, 1973, at site 10.2 mi downstream at datum 22.81 ft lower.

REMARKS.--Estimated daily discharges: Jan. 20-25. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by lakes and reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Diurnal fluctuations caused by hydroelectric plant 20.8 mi upstream; since storage capacity is small, daily flows are not affected appreciably. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--70 years, 7,288, ft³/s, 5,280,000 acre-ft per yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 510,000 ft³/s, July 13, 1951, gage height, 37.3 ft, from floodmarks, present site and datum, from rating curve extended above 128,000 ft³/s on basis of slope-area measurement of peak flow at mile 19.52 and at mile 18.60; minimum discharge observed, 160 ft³/s, Oct. 11, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1844, that of July 13, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 76,300 ft³/s, Mar. 19, gage height, 18.09 ft; minimum discharge, 3,600 ft³/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33100	26900	4440	5620	6250	23100	32600	45100	21700	10700	6800	7250
2	25900	21300	4460	5570	6000	24300	39000	44800	20300	10500	6680	7090
3	34200	15600	4470	5560	5920	16000	38100	49300	22400	11500	6650	7810
4	33400	12900	4880	5530	5810	14900	33200	55300	27500	12900	6650	8370
5	41500	12400	5520	5540	5790	13800	31800	58000	35600	13600	6530	8280
6	27700	11400	5490	5400	6370	13400	32000	56100	41400	15700	6390	8120
7	22700	11200	6730	5300	6470	12600	32800	53400	42300	14800	6200	6470
8	18600	10900	10300	4970	6180	11900	32800	35100	41700	16800	6090	5620
9	17300	10900	13200	4730	5880	11500	36800	19300	31600	16600	5900	5200
10	17300	10600	12400	4680	5700	10400	37900	14700	24200	14600	5350	4210
11	19900	9960	10900	4310	5610	9870	40300	18500	18200	14700	5110	3680
12	35900	9870	12000	4020	5550	7230	43700	43200	16100	15900	5060	3420
13	32100	9830	12400	3990	5500	6090	36700	45800	10000	16300	5380	4740
14	23400	9480	12200	4070	5520	5840	31500	40500	8550	14600	6630	5720
15	23400	9410	12200	4100	5550	5660	52600	40200	9200	13400	6640	6390
16	25400	9410	12200	4140	5790	5570	59300	40200	11000	13100	5650	6840
17	28800	9230	12100	4090	5830	5780	49200	39600	9190	12400	5350	6230
18	33500	8380	12000	3930	5760	30300	45200	39200	10200	11300	5180	6370
19	35800	7610	11100	4330	5720	69600	48700	38800	12600	10600	5330	5970
20	35400	5470	10700	4800	5850	49800	47100	39500	13100	9120	5270	6990
21	34600	4680	8930	4600	5470	30000	38200	38700	13900	8560	6020	7170
22	34900	4380	6870	4500	5300	25800	31300	35100	13600	8250	6300	7130
23	34800	4480	6070	4500	4980	23200	48800	31400	15700	7790	6350	7100
24	36600	4820	5900	4500	4740	22800	50200	26500	15300	7580	6400	7090
25	40700	4740	5980	4300	4640	37600	41400	25300	15700	7400	6200	6920
26	42100	4710	5930	4270	4520	38500	24900	28500	15500	7690	5280	6540
27	39600	4680	5860	4560	4420	32100	19600	25900	14600	7410	7100	6780
28	37000	4600	5760	5660	6730	30000	38500	50900	12800	7240	7430	6200
29	35700	4540	5720	6720	---	29500	45100	50000	10800	7200	5890	6070
30	35100	4480	5690	7650	---	30100	44300	30700	11300	7040	5540	6000
31	31000	---	5620	7230	---	30000	---	23500	---	6910	6400	---
TOTAL	967400	278860	258020	153170	157850	677240	1183600	1183100	566040	352190	187750	191770
MEAN	31210	9295	8323	4941	5638	21850	39450	38160	18870	11360	6056	6392
MAX	42100	26900	13200	7650	6730	69600	59300	58000	42300	16800	7430	8370
MIN	17300	4380	4440	3930	4420	5570	19600	14700	8550	6910	5060	3420
CAL YR 1986	TOTAL	4491120	MEAN	12300	MAX	53600	MIN	3650				
WTR YR 1987	TOTAL	6156990	MEAN	16870	MAX	69600	MIN	3420				

LOCATION.--Lat 39°06'43", long 94°35'16", in sec.32, T.50 N., R.33 W., Jackson County, Hydrologic Unity 10300101, on downstream side of right pier of Chicago, Burlington and Quincy Railroad bridge at Kansas City, 1.4 mi downstream from Kansas River, and at mile 366.1.

PERIOD OF RECORD.--October 1897 to current year. Prior to August 1928 monthly discharge only, published in WSP 1310. Gage-height records collected at same site 1873-99 are contained in reports of Missouri River Commission; those since 1900 are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 716.40 ft above National Geodetic Vertical Datum of 1929. Prior to May 4, 1931, nonrecording gage, and May 4, 1931, to Aug. 23, 1934, water-stage recorder, at present site and datum. Aug. 24, 1934 to May 15, 1947, water-stage recorder at site 200 ft upstream at same datum. May 16, 1947, to Feb. 28, 1948, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: May 24-26. Records good except for estimated daily discharges, which are fair. Discharge measurements made weekly except during ice-flow periods. Some regulation from many upstream reservoirs. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 573,000 ft³/s, July 14, 1951; maximum gage height, 36.2 ft, July 14, 1951; minimum discharge, about 1,500 ft³/s, Jan. 9, 10, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1844, reached a stage of 38.0 ft, discharge, about 625,000 ft³/s, computed by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 224,000 ft³/s, May 29, gage height, 22.95 ft; minimum, 42,800 ft³/s, Jan. 26.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157000	112000	77700	58100	48300	74400	125000	101000	116000	68300	54500	81200
2	139000	106000	83600	58400	50200	82400	133000	99400	107000	60400	53800	72100
3	148000	100000	90500	59000	51900	72300	136000	127000	103000	57200	53300	64300
4	153000	95900	87000	58800	51700	64700	136000	136000	110000	57800	52000	62400
5	145000	93200	82500	57600	52800	62100	132000	135000	108000	58700	51400	60600
6	130000	90500	78800	57400	52800	60400	128000	133000	109000	61800	51500	60100
7	116000	88600	79300	58200	52700	58000	126000	126000	111000	64800	50900	60100
8	100000	87600	87100	57700	52300	56600	123000	112000	108000	79500	50800	59100
9	92200	88700	99300	57900	51600	55600	122000	98600	97600	89300	59900	61400
10	88300	91000	95300	57600	50900	54400	121000	78600	95800	113000	88400	61100
11	88600	91000	85800	56400	50200	53200	118000	74500	95900	108000	73400	67100
12	132000	89300	80300	55500	49400	51100	119000	95700	84300	104000	60800	65400
13	181000	87800	77800	54900	49300	48400	124000	109000	87000	108000	57700	62500
14	172000	83200	75600	54500	49200	47100	116000	102000	78000	111000	60600	64700
15	150000	79800	74700	55500	49400	46300	159000	97800	73800	96600	61600	66900
16	127000	78900	73800	53900	49100	45900	185000	96300	71200	89000	73800	70400
17	119000	79300	75500	50600	48800	46600	163000	95500	68800	84200	66500	101000
18	119000	78700	79800	49300	48500	63800	139000	94300	65400	74900	59700	84200
19	120000	78900	78500	47700	48300	121000	133000	93800	70100	69400	59000	77000
20	119000	79800	77200	47500	48400	141000	125000	94200	84600	69800	60100	71500
21	117000	80800	73900	46700	47800	111000	117000	103000	84300	68800	59600	69100
22	116000	80700	67600	46200	46900	94900	102000	110000	75100	66900	56600	66000
23	117000	79200	63000	46200	47200	92500	113000	104000	79500	66200	54700	63300
24	120000	77500	63000	45100	47000	97500	122000	92700	76000	62700	53300	61500
25	137000	77800	63800	44500	46700	150000	116000	88800	71100	62300	52000	59900
26	147000	78800	62900	43300	46800	174600	96000	105600	70600	60900	85400	57600
27	143000	78800	62800	43400	46700	163000	81600	138000	74400	60600	145000	57700
28	137000	78000	61600	45200	50900	152000	90600	195000	70900	62100	144000	56400
29	128000	77200	59600	47000	---	146000	104000	218000	64100	59700	113000	54900
30	122000	76900	59200	48400	---	139000	103000	188000	68300	57700	90900	54800

CAL	YR	1986	TOTAL	30031500	MEAN	82280	MAX	189000	MIN	32400
WTR	YR	1987	TOTAL	30936400	MEAN	84760	MAX	218000	MIN	43300

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LOCATION.--Lat 38°57'26", long 94°33'31", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.48 N., R.33 W., Jackson County, Hydrologic Unit 10300101, on downstream side of right pier of bridge on Bannister Road, 0.4 mi downstream from Indian Creek, in Kansas City and at mile 23.2.

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

REVISED RECORDS.--WSP 926: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 753.73 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 1, 1939, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 12, 13. Records good. Low flow regulated by commercial plants above station. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--48 years, 159 ft³/s, 11.48 in/yr, 115,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,000 ft³/s, Sept. 13, 1961, gage height, 44.46 ft; no flow September 1939 to February 1940 and in August 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 17, 1928, reached a stage of about 39 ft, from information by City of Kansas City.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	0900	9,680	24.47	Mar. 18	1030	8,820	23.20
Feb. 28	2215	*9,750	*24.49				

Minimum discharge, 21 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	930	127	103	80	86	3890	169	89	70	164	37	36
2	4420	118	107	79	84	637	152	92	446	98	35	35
3	8060	121	105	78	80	414	142	207	187	76	35	34
4	1880	143	96	77	75	322	132	367	89	65	59	33
5	593	217	89	76	194	272	120	1340	72	330	48	52
6	431	160	89	74	240	232	118	789	61	149	39	195
7	330	126	886	72	153	205	113	299	57	95	39	76
8	274	116	578	71	124	188	108	191	53	78	34	46
9	227	106	488	77	108	168	104	147	53	67	45	37
10	189	106	291	86	102	153	108	125	54	59	39	67
11	370	116	218	74	98	144	100	111	73	53	43	42
12	757	102	190	77	96	135	96	103	71	277	39	34
13	299	89	163	90	96	128	2480	95	849	260	143	33
14	246	85	153	106	97	123	1080	89	152	100	878	68
15	191	88	149	99	111	118	596	83	87	69	80	56
16	155	89	144	87	156	295	401	82	78	59	53	79
17	139	89	138	80	162	769	276	78	62	53	46	44
18	123	88	126	79	154	5530	214	131	56	56	192	36
19	110	88	118	81	178	914	179	125	127	50	73	32
20	105	102	114	79	281	454	156	86	528	46	137	32
21	100	92	109	73	304	343	398	77	265	44	74	33
22	157	86	106	73	259	268	197	67	359	41	53	32
23	212	83	101	69	196	308	159	64	861	37	45	31
24	625	83	99	65	167	874	138	71	187	39	67	31
25	2010	81	97	65	152	574	127	80	108	39	75	30
26	521	266	91	63	140	340	117	71	84	38	62	28
27	308	148	89	65	159	276	110	358	70	39	47	28
28	234	112	87	71	3740	302	102	220	66	36	47	30
29	186	108	86	97	---	258	99	187	80	38	43	27
30	162	102	85	119	---	200	103	102	315	35	39	26
31	143	---	82	90	---	182	---	80	---	36	39	---
TOTAL	24487	3437	5377	2472	7792	19016	8394	6006	5620	2626	2685	1343
MEAN	790	115	173	79.7	278	613	280	194	187	84.7	86.6	44.8
MAX	8060	266	886	119	3740	5530	2480	1340	861	330	878	195
MIN	100	81	82	63	75	118	96	64	53	35	34	22

CAL YR 1986	TOTAL 114402	MEAN 313	MAX 9540	MIN 24
WTR YR 1987	TOTAL 89255	MEAN 245	MAX 8060	MIN 26

LITTLE BLUE RIVER BASIN

06893791 LONGVIEW RESERVOIR AT KANSAS CITY, MO

LOCATION.--Lat 38°55'29", long 94°27'35", SE ¼ NE ¼ NW ¼ sec.4, T.48 N., R.32 W., Jackson County, Hydrologic Unit 10300101, in the U.S. Army Corps of Engineers Administration building at the right end of dam on Little Blue River at Kansas City and 3.1 miles upstream from Cedar Creek.

DRAINAGE AREA.--50.3 mi².

PERIOD OF RECORD.--October 1985 to current year.

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

REMARKS.--Lake is formed by a rolled earthfill type dam. Closure began June 16, 1983. Storage began on Sept. 16, 1985. An uncontrolled limited service type spillway 200 ft wide is located at the left abutment. Capacity of surcharge pool (909.0 ft to 922.9 ft), 82,310 acre-ft; of flood control pool (elevation 891.0 ft to 909.0 ft), 24,800 acre-ft; and of multipurpose pool (elevation 816.0 ft to 891.0 ft), 22,100 acre-ft. Lake is used for flood control, water quality control, recreation and fish and wildlife enhancement.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 28,700 acre-ft, Oct. 3, 1986, elevation, 897.17 ft; minimum, 2,680 acre-ft, Oct. 1, 1985, elevation, 849.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 28,700 acre-ft, Oct. 3, elevation, 897.17 ft; minimum, 21,100 acre-ft, Sept. 30, elevation, 889.90 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26900	22400	22600	22500	22600	25400	22800	22500	22700	22500	22000	21900
2	25600	22300	22600	22500	22600	24600	22800	22500	22600	22500	22000	21800
3	28700	22200	22600	22500	22600	24000	22700	22500	22900	22500	22000	21800
4	28400	22300	22600	22400	22500	23600	22700	22500	22900	22400	21900	21800
5	26600	22500	22600	22400	22600	23300	22600	22800	22800	22400	21900	21700
6	25000	22300	22500	22400	22700	23100	22600	22900	22700	22600	21900	21700
7	24000	22300	22700	22400	22700	23000	22600	23000	22600	22600	21800	21700
8	23500	22400	23200	22400	22700	22900	22600	22900	22600	22600	21800	21700
9	23300	22400	23300	22500	22700	22900	22600	22800	22500	22600	21800	21700
10	23000	22400	23200	22500	22600	22800	22600	22700	22500	22500	21800	21600
11	22800	22500	23000	22500	22600	22700	22500	22600	22500	22500	21700	21600
12	22900	22500	23000	22500	22600	22700	22500	22800	22500	22500	21700	21600
13	22800	22500	22900	22500	22600	22700	22700	22700	23200	22600	21700	21500
14	22700	22500	22800	22500	22600	22600	23100	22700	23100	22600	21900	21500
15	22700	22500	22800	22600	22600	22600	23200	22600	23000	22500	21900	21500
16	22600	22500	22700	22500	22600	22600	23100	22600	22900	22500	21900	21500
17	22600	22500	22700	22500	22600	22700	23000	22500	22700	22400	21900	21500
18	22500	22500	22700	22600	22600	24300	22900	22500	22700	22400	22000	21400
19	22500	22400	22600	22600	22700	24800	22900	22600	22600	22400	22000	21400
20	22400	22500	22600	22500	22700	24100	22800	22500	22500	22300	22100	21400
21	22400	22500	22600	22500	22800	23600	22800	22500	22600	22300	22100	21300
22	22500	22500	22600	22500	22800	23300	22800	22500	22600	22300	22000	21300
23	22500	22500	22600	22500	22800	23200	22700	22400	22700	22300	22000	21300
24	22600	22500	22600	22500	22700	23300	22700	22400	22700	22300	22000	21300
25	23300	22400	22500	22500	22700	23400	22600	22500	22600	22200	22000	21200
26	23300	22600	22500	22400	22700	23300	22600	22400	22500	22200	22000	21200
27	23600	22600	22500	22400	22700	23100	22600	22500	22500	22200	22000	21200
28	23300	22600	22500	22400	23100	23000	22500	22600	22400	22100	22000	21200
29	23000	22600	22500	22500	---	23000	22500	22900	22400	22100	21900	21200
30	22700	22600	22500	22600	---	22900	22500	22900	22500	22100	21900	21100
31	22700	---	22500	22600	---	22900	---	22800	---	22000	21900	---

WTR YR 1987

(*)	891.65	891.48	891.36	891.48	892.04	891.78	891.37	891.68	891.40	890.90	890.74	889.90
(‡)	-5200	-100	-100	+100	+500	-200	-400	+300	-300	-500	-100	-800
MAX	28700	22600	23300	22600	23100	25400	23200	23000	23000	22600	22100	21900
MIN	22400	22200	22500	22400	22500	22600	22500	22400	22400	22000	21700	21100

CAL YR 1986.....+13060

WTR YR 1987.....-6800

(*) Elevation, in feet NGVD, at end of month.

(‡) Change in contents, in acre-feet.

LITTLE BLUE RIVER BASIN

91

06893793 LITTLE BLUE RIVER BELOW LONGVIEW DAM AT KANSAS CITY, MO

LOCATION.--Lat 38°55'26", long 94°28'05", in NE ¼ SW ¼ NW ¼ sec.4, T.47 N., R.32 W., Jackson County, Hydrologic Unit 10300101, on right bank 300 ft downstream from Longview Dam.

DRAINAGE AREA.--50.3 mi².

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

REVISED RECORDS.--WDR MO-77-1: 1975-76. WDR MO-86-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 798.60 ft above National Geodetic Vertical Datum of 1929. Aug. 1, 1966 to Oct. 24, 1974 at site 0.7 mi upstream at datum 24.90 ft higher. Oct. 25, 1974 to Sept. 30, 1985 at site 0.5 mi downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Construction of dam began Oct. 1982 and storage began Sept. 1985. Several observations of water temperature and specific conductance were made during the year. Complete regulation by Longview Reservoir (station 06893791) 300 ft upstream.

AVERAGE DISCHARGE.--21 years, 42.2 ft³/s, 30,570 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,700 ft³/s, Aug. 13, 1982, gage height, 21.24 ft, from highwater mark. No flow at times during Sept. 1983, Aug. to Sept. 1984, and Apr. 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s, Oct. 2, gage height, 8.31 ft; minimum, 0.31 ft³/s, July 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	63	31	17	25	677	45	13	40	17	8.3	7.1
2	1000	53	34	17	25	383	39	11	43	16	8.3	6.9
3	1060	46	33	16	23	251	34	11	74	15	8.3	7.7
4	1030	44	31	16	22	183	30	13	60	13	8.3	8.3
5	988	47	28	16	29	135	28	48	47	18	8.0	8.3
6	601	47	26	16	41	102	25	68	38	23	7.5	8.3
7	336	44	87	14	42	81	23	72	29	21	7.5	8.3
8	235	39	138	14	39	66	23	58	21	21	7.5	8.3
9	166	34	145	16	35	54	21	48	18	18	7.5	8.3
10	125	30	122	17	32	44	20	40	14	16	7.5	8.3
11	101	29	96	17	30	38	19	34	13	14	7.5	8.3
12	122	24	78	16	28	34	17	48	13	16	7.5	8.3
13	106	21	65	18	26	30	53	43	104	19	7.5	8.3
14	91	20	56	23	25	28	104	35	104	18	8.0	8.5
15	77	18	49	24	25	25	118	28	78	16	7.6	8.3
16	65	18	44	24	30	28	103	23	59	14	7.5	8.3
17	56	18	41	23	31	67	85	19	46	12	7.5	8.3
18	49	17	38	23	32	511	70	16	34	10	7.5	8.3
19	43	16	34	23	35	428	60	20	30	9.0	7.1	8.3
20	40	19	31	23	44	256	52	19	31	7.9	7.1	8.3
21	36	19	29	22	50	195	51	16	34	7.0	7.7	8.3
22	35	19	28	21	50	141	48	12	31	6.3	7.5	8.3
23	44	18	25	19	46	108	41	8.4	38	5.5	7.1	8.3
24	113	18	24	17	42	139	35	8.8	35	6.1	7.1	8.3
25	322	16	23	16	38	143	31	11	30	8.9	7.3	8.3
26	267	32	22	14	35	115	26	10	26	8.6	7.2	8.3
27	201	38	21	14	35	92	21	14	14	8.4	7.1	8.3
28	151	37	20	14	317	81	19	24	13	8.3	7.1	8.3
29	114	33	19	18	---	77	17	64	12	5.9	6.8	8.3
30	92	31	18	25	---	64	15	63	16	5.5	6.8	8.3
31	76	---	18	26	---	53	---	50	---	8.3	7.2	---
TOTAL	8784	908	1454	579	1232	4629	1273	948.2	1145	392.7	232.4	246.0
MEAN	283	30.3	46.9	18.7	44.0	149	42.4	30.6	38.2	12.7	7.50	8.20
MAX	1060	63	145	26	317	677	118	72	104	23	8.3	8.5
MIN	35	16	18	14	22	25	15	8.4	12	5.5	6.8	6.9

CAL YR 1986 TOTAL 19183.9 MEAN 52.6 MAX 1090 MIN .00
WTR YR 1987 TOTAL 21823.1 MEAN 59.8 MAX 1060 MIN 5.5

LITTLE BLUE RIVER BASIN

06893890 EAST FORK LITTLE BLUE RIVER NEAR BLUE SPRINGS, MO

LOCATION.--Lat 39°01'32", long 94°20'37", in NE ¼ NE ¼ NW ¼ sec.33, T.49 N., R.31 W., Jackson County, Hydrologic Unit 10300101, on left downstream side of bridge on east bound lane of U.S. Highway 40, 2.6 mi west of Blue Springs and 1.5 miles upstream from mouth.

DRAINAGE AREA.--34.4 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 753.09 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Estimated daily discharges: Oct. 4-21, 26-28, Jan. 6, 7, Aug. 6-13, Sept. 1-6, 10-13, and 23-28. Records fair. Several observations of water temperature and specific conductance were made during the year. Flow impounded or detained in Jackson County Lake at times, and by Blue Springs Reservoir subsequent to July 1986.

AVERAGE DISCHARGE.--13 years, 29.6 ft³/s, 21,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Aug. 13, 1982, gage height, 22.14 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 594 ft³/s, Oct. 2, gage height, 12.23 ft; minimum observed, 0.05 ft³/s, Aug. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	406	22	38	14	10	196	42	17	16	21	1.5	.50
2	491	11	39	13	10	117	38	16	22	17	.98	.45
3	505	11	31	13	9.9	113	35	17	30	15	.68	.40
4	453	19	27	12	9.4	141	32	15	20	12	.55	.35
5	430	58	25	12	11	144	30	15	17	18	.40	.30
6	422	64	24	12	15	135	27	18	15	22	.35	.25
7	417	61	67	11	17	115	26	16	14	39	.30	2.0
8	401	57	89	10	17	86	24	14	13	72	.25	1.1
9	372	43	89	11	16	62	23	12	11	74	.20	.68
10	366	34	86	12	16	48	22	12	11	69	.15	.45
11	364	31	81	12	15	40	21	11	11	59	.10	.40
12	350	26	72	12	15	36	20	14	9.6	57	.07	.35
13	333	22	63	12	14	33	61	14	9.3	59	.05	.30
14	319	19	57	14	13	33	76	13	9.2	47	4.7	15
15	306	18	51	13	13	31	70	12	8.4	39	4.5	36
16	298	17	46	12	15	34	63	11	7.5	32	2.4	11
17	280	15	41	12	16	54	56	9.6	6.7	27	1.3	5.0
18	259	13	37	13	16	123	50	8.8	5.7	25	3.0	3.1
19	231	12	34	13	16	151	46	8.4	5.2	21	3.5	2.4
20	203	15	30	13	19	161	43	8.7	5.1	17	9.4	1.6
21	175	14	28	12	20	166	44	9.6	7.2	14	6.1	1.1
22	146	13	26	11	20	141	42	8.2	11	11	4.1	.83
23	103	12	24	10	20	126	37	6.8	17	10	2.5	.40
24	93	11	22	9.0	20	104	33	6.7	14	8.4	1.3	.35
25	156	10	22	8.3	19	90	30	6.7	11	6.7	1.2	.30
26	171	13	20	7.8	19	75	28	6.1	8.9	5.8	1.4	.25
27	164	13	19	7.7	19	64	24	6.7	7.1	4.9	1.0	.20
28	134	13	18	8.0	84	58	22	11	6.0	3.9	.85	.40
29	94	12	17	10	---	58	20	29	5.4	3.0	.62	5.9
30	59	12	16	11	---	51	19	23	24	2.3	.62	4.3
31	42	---	14	10	---	46	---	18	---	1.7	.53	---
TOTAL	8543	691	1253	350.8	504.3	2742	1104	394.3	358.3	813.7	54.60	95.66
MEAN	276	23.0	40.4	11.3	18.0	88.5	36.8	12.7	11.9	26.2	1.76	3.19
MAX	505	64	89	14	84	166	76	29	30	74	9.4	36
MIN	42	10	14	7.7	9.4	31	19	6.1	5.1	1.7	.05	.20

CAL YR 1986 TOTAL 19563.17 MEAN 53.6 MAX 505 MIN .03
WTR YR 1987 TOTAL 16904.52 MEAN 46.3 MAX 505 MIN .05

06894000 LITTLE BLUE RIVER NEAR LAKE CITY, MO

LOCATION.--Lat 39°06'02", long 94°18'01", in SW ¼ SE ¼ sec.35 T.50 N., R.31 W., Jackson County, Hydrologic Unit 10300101, on right bank 50 ft downstream from bridge on west bound lane of State Highway 78, 3 mi southwest of Lake City, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--March 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 719.15 ft above National Geodetic Vertical Datum of 1929. Prior to July 24, 1957, nonrecording gage at site 50 ft downstream at same datum. Water-stage recorder July 24, 1957 to Apr. 28, 1977. Nonrecording gage Apr. 29, 1977 to May 10, 1979. May 11, 1979 to Sept. 12, 1983 water-stage recorder at site 50 ft upstream at present datum.

REMARKS.--Estimated daily discharges: June 13-23. Records good except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--39 years, 154 ft³/s, 11.37 in/yr, 111,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,300 ft³/s, Aug. 13, 1982; maximum gage height, 27.94 ft, Sept. 14, 1961; no flow at times during 1953-54, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 3	0645	6,110	*17.60	Apr. 13	0630	3,220	11.01
Oct. 24	2400	2,010	9.77	June 2	1845	4,210	12.32
Feb. 28	2115	*6,980	15.09	Sept. 14	1815	2,100	9.22
Mar. 18	1115	5,020	13.23				

No flow Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1940	169	261	63	74	3220	162	73	71	89	12	11
2	3350	130	186	59	70	1180	141	61	966	64	12	11
3	5010	126	132	57	67	834	126	95	390	53	12	11
4	2520	125	114	56	61	632	115	69	133	45	13	11
5	1780	175	104	54	87	504	108	89	96	125	12	11
6	1450	166	100	55	148	396	102	146	77	141	11	56
7	983	147	654	53	122	312	95	130	60	308	11	108
8	868	140	637	48	111	245	88	105	50	198	11	23
9	737	123	544	53	95	198	83	87	44	139	11	18
10	661	110	381	64	91	162	81	74	39	119	15	16
11	638	106	292	61	87	140	78	64	48	162	13	13
12	863	94	243	61	82	125	72	77	39	182	15	14
13	685	83	207	71	77	116	1550	73	129	215	18	14
14	574	78	185	84	76	111	885	62	500	119	339	355
15	563	76	168	80	78	104	659	53	300	89	59	125
16	521	73	167	73	89	174	427	45	180	71	25	57
17	453	70	144	70	94	525	308	40	120	63	20	31
18	413	65	129	77	101	2960	240	36	90	64	76	22
19	373	62	118	73	102	1310	200	53	70	48	50	18
20	304	78	110	77	129	853	172	41	75	41	70	16
21	282	69	103	73	137	642	249	35	85	34	28	14
22	269	66	98	69	133	485	176	30	75	30	20	14
23	318	66	93	68	122	388	150	24	156	23	16	13
24	712	61	90	61	112	489	129	28	101	21	14	12
25	1310	59	85	57	104	438	113	29	72	21	18	12
26	915	88	80	55	97	323	103	27	54	21	19	5.9
27	663	98	77	54	103	263	92	42	43	22	18	13
28	496	87	72	56	2670	275	81	104	47	19	16	12
29	347	83	71	69	---	266	76	315	35	16	16	14
30	262	78	67	85	---	206	71	127	86	12	13	14
31	228	---	64	75	---	180	---	91	---	11	12	---
TOTAL	30488	2951	5776	2011	5319	18059	6932	2325	4231	2505	995	1064.9
MEAN	983	98.4	186	64.9	190	583	231	75.0	141	80.8	32.1	35.5
MAX	5010	175	654	85	2670	3220	1550	315	966	308	339	355
MIN	228	59	64	48	61	104	71	24	35	11	11	5.9

CAL YR 1986 TOTAL 84422.0 MEAN 231 MAX 5010 MIN 4.0
WTR YR 1987 TOTAL 82656.9 MEAN 226 MAX 5010 MIN 5.9

06897500 GRAND RIVER NEAR GALLATIN, MO

LOCATION.--Lat 39°55'37", long 93°56'33", in SW ¼ NW ¼ sec.16, T.59 N., R.27 W., Davies County, Hydrologic Unit 10280101, on left bank 100 ft upstream from bridge on State Highway 6, 50 ft downstream from Chicago, Rock Island and Pacific Railroad Co. Bridge, 1 mi northeast of Gallatin, 6 mi upstream from Honey Creek, and at mile 90.

DRAINAGE AREA.--2,250 mi², approximately.

PERIOD OF RECORD.--June 1921 to current year.

REVISED RECORDS.--WSP 786: 1933-34. WSP 1280: 1922. WDR MO-81-1: 1981.

GAGE.--Water-stage recorder. Datum of gage is 717.56 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 31, 1922, nonrecording gage at site 100 ft upstream at datum 5.00 ft lower. Jan. 31, 1922, to Nov. 15, 1936, nonrecording gage, at site about 1,100 ft upstream at datum 4.83 ft lower. Nov. 16, 1936, to Nov. 14, 1937, nonrecording gage, and Nov. 15, 1937, to Sept. 21, 1961, water-stage recorder on center pier of highway bridge at datum 5.00 ft lower. Sept. 22-27, 1961, nonrecording gage at railroad bridge, 100 ft upstream at datum, 5.00 ft lower, Sept. 28, 1961, to Mar. 4, 1964, water-stage recorder on downstream side of left bank pier of highway bridge and wire-weight gage for stages below 7.2 ft at datum 5.00 ft lower. Mar. 5, 1964 to Mar. 5, 1982 at present site at datum 5.00 ft. lower.

REMARKS.--Estimated daily discharges: Nov. 13-18. Records fair. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--66 years, 1,191 ft³/s, 7.19 in/yr, 862,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,100 ft³/s, June 24, 1947, gage height, 39.55 ft; maximum gage height, 42.02 ft, June 2, 1929, (present site and datum); minimum discharge, 2.2 ft³/s, June 3, 4, Oct. 27, 28, 29, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 45 ft, July 8, 1909, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Mar. 19	0815	27,400	26.66	Aug. 16	0530	25,000	25.50
July 8	0145	22,800	24.47	Aug. 27	1530	29,000	27.26
July 13	0445	*29,700	*27.54				

Minimum discharge, 158 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13900	663	5390	510	557	6860	1190	468	1270	257	243	1010
2	6070	630	15100	533	612	6810	1020	443	826	219	231	799
3	11300	690	6700	510	576	3620	874	6330	854	196	226	661
4	13500	1000	2970	477	510	2230	769	3850	826	179	412	568
5	7370	937	1780	484	473	1570	697	1530	799	171	266	496
6	2770	774	1260	492	466	1210	651	1340	518	280	210	457
7	1900	687	2510	492	497	1000	617	878	407	9120	203	439
8	1460	641	8090	484	492	870	591	662	348	18400	255	552
9	1210	628	7560	455	469	764	562	549	531	9170	536	671
10	1050	600	4180	466	413	672	534	483	1320	14900	1600	448
11	1040	580	2000	400	400	599	512	435	800	12200	786	365
12	9130	527	1300	436	400	560	492	392	550	20200	414	348
13	10100	404	997	484	390	546	553	357	558	28200	1200	304
14	3690	342	879	600	376	521	5020	332	426	18800	2400	287
15	2030	342	936	826	375	521	14400	310	336	5780	10700	285
16	1500	418	1040	729	362	682	8030	291	291	2150	21600	365
17	1240	415	948	470	352	1160	3700	277	265	1430	9620	1520
18	1070	522	945	366	317	11300	2400	283	248	1220	3020	1110
19	940	528	884	470	299	22800	1690	475	1650	1140	1750	695
20	816	526	772	522	306	6980	1230	449	1850	1070	1030	436
21	747	549	729	495	308	3450	1300	3750	1290	875	764	311
22	702	574	734	440	316	2400	1200	2080	653	636	612	262
23	747	580	699	397	310	1880	942	939	573	510	484	235
24	1190	545	661	362	297	1610	837	596	1010	435	411	218
25	1120	492	666	362	289	1610	751	490	446	380	378	204
26	2110	464	641	346	291	1880	680	471	1140	340	17500	193
27	2040	451	600	299	287	1770	622	517	583	312	27900	183
28	1640	424	568	283	460	1370	568	1270	326	294	14700	177
29	1090	411	564	306	---	1580	518	3680	260	278	5260	172
30	867	401	564	397	---	2770	492	5610	275	264	2160	168
31	741	---	522	470	---	2060	---	3430	---	252	1360	---
TOTAL	105080	16745	73189	14363	11200	93655	53442	42967	21229	149658	128231	13939
MEAN	3390	558	2361	463	400	3021	1781	1386	708	4828	4136	465
MAX	13900	1000	15100	826	612	22800	14400	6330	1850	28200	27900	1520
MIN	702	342	522	283	287	521	492	277	248	171	203	168

CAL YR 1986 TOTAL 841038 MEAN 2304 MAX 37000 MIN 135
WTR YR 1987 TOTAL 723698 MEAN 1983 MAX 28200 MIN 168

06899500 THOMPSON RIVER AT TRENTON, MO

LOCATION.--Lat 40°04'46", long 93°38'39" in NE ¼ SW ¼ sec.18, T.61 N., R.24 W., Grundy County, Hydrologic Unit 10280102 at downstream side of center pier of bridge in Trenton, 1.8 mi downstream from Weldon River, and at mile 26.0.

DRAINAGE AREA.--1,670 mi², approximately.

PERIOD OF RECORD.--June 1921 to September 1923 (published as "near Hickory"), August 1928 to current year. Monthly discharge only for some periods, published in WSP 1310. Gage-height records collected in vicinity 1910-14 and since 1925 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1116: 1945(M). WDR MO-83-1: 1981

GAGE.--Water-stage recorder and nonrecording gage. Datum of gage is 721.87 ft above National Geodetic Vertical Datum of 1929. June 25, 1921 to Aug. 26, 1923, nonrecording gage at two sites 12 mi downstream (by old channel route) at different datums. Aug. 1, 1928, to Sept. 15, 1930, nonrecording gage at present site and datum. Sept. 16, 1930, to May 31, 1945, nonrecording gage at site 1.5 mi downstream at datum 3.46 ft lower. June 1, 1945, to Dec. 7, 1959, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 13-15 and Jan. 16-20. Records fair. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--61 years (1921-23, 1928-87), 976 ft³/s, 7.94 in/yr, 707,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,000 ft³/s, June 6, 1947, gage height, 25.7 ft, from floodmark; minimum daily, 1 ft³/s, June 17, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 30.7 ft, July 6, 1909, present site and datum, from information by local residents, discharge, 50,000 ft³/s, determination by U.S. Army Corps of Engineers, occurred before new channel was dredged.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	1030	15,700	13.21	Aug. 15	1445	22,100	15.40
July 12	2000	*28,000	*16.40	Aug. 26	2245	16,200	13.63

Minimum discharge, 118 ft³/s, Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8920	932	4060	421	634	6440	1530	378	1380	684	183	1920
2	3920	922	4700	416	523	4640	1390	351	5470	377	165	1490
3	10900	1370	2390	398	500	3200	1300	6480	3470	282	157	1230
4	6500	1390	1420	365	467	2560	1150	5590	2090	230	170	1050
5	3180	1070	924	407	437	1580	984	3260	1240	266	143	911
6	2130	917	738	411	451	1200	861	1730	914	302	125	810
7	1840	831	2120	431	470	977	786	1150	742	529	122	701
8	1350	788	4170	406	454	835	725	857	627	7620	268	804
9	1100	795	4130	410	434	722	676	690	623	10300	1150	782
10	924	743	2410	415	425	628	645	578	712	13000	1700	530
11	1130	667	1250	369	370	563	589	491	657	13400	773	451
12	9770	583	833	348	359	520	552	422	569	19000	504	399
13	6640	1050	800	437	342	494	576	361	462	14900	1550	365
14	4110	1070	750	561	341	481	2400	321	418	7870	6260	349
15	2340	1030	600	712	343	526	8030	283	352	3430	12800	336
16	1690	992	847	600	331	1260	6440	250	306	2470	7010	349
17	1370	651	830	500	309	894	4040	228	268	1850	2480	1580
18	1170	617	854	400	279	4180	2330	214	860	1360	1750	1830
19	1020	593	750	500	265	7020	1690	2090	1030	1050	1100	1260
20	913	563	645	550	258	4640	1330	4890	1550	848	818	826
21	823	585	629	615	267	2580	2430	4150	1640	734	660	562
22	762	633	629	707	285	1740	2540	2050	2750	654	550	461
23	753	628	586	542	288	1370	1410	1130	1820	532	468	395
24	748	603	544	449	276	1290	1080	712	1020	457	397	351
25	3060	608	563	494	268	3510	901	618	650	399	363	310
26	4450	546	555	420	263	2840	777	564	577	349	8430	286
27	4620	507	485	384	256	1810	653	978	472	310	12700	260
28	2540	462	448	395	1020	1380	547	3630	384	275	12200	251
29	1690	447	453	481	---	2420	478	3160	749	248	11200	241
30	1300	433	475	639	---	4210	426	4260	2060	224	9610	226
31	1070	---	456	661	---	2130	---	3030	---	202	4710	---
TOTAL	92743	23030	41244	14844	10915	68640	49266	54896	35862	104152	100516	21316
MEAN	2992	768	1330	479	390	2214	1642	1771	1195	3360	3242	711
MAX	10900	1390	4700	712	1020	7020	8030	6480	5470	19000	12800	1920
MIN	748	433	448	348	256	481	426	214	268	202	122	226

CAL YR 1986 TOTAL 650764 MEAN 1783 MAX 25700 MIN 87
WTR YR 1987 TOTAL 617424 MEAN 1692 MAX 19000 MIN 122

GRAND RIVER BASIN

97

06899620 THOMPSON RIVER NEAR CHILLICOTHE, MO

WATER QUALITY RECORDS

LOCATION.--Lat 39°49'46", long 93°36'24", in SE ¼ NE ¼ NW ¼ sec.21, T.58 N., R.24 W., Livingston County, Hydrologic Unit 10280102, at bridge on State Highway 190, 3.0 mi northwest of Chillicothe.

PERIOD OF RECORD.--November 1968 to July 1975, November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 23...	0815	600	461	8.10	14.0	10.2	97	31	6000	230
NOV 20...	1015	620	490	8.30	3.0	13.8	101	11	1100	--
DEC 08...	1315	4000	242	7.60	4.5	12.9	99	62	4400	--
JAN 14...	0900	550	516	8.10	2.0	14.0	101	15	100	250
FEB 11...	1130	425	454	8.10	5.0	12.9	100	18	46	--
MAR 10...	1330	570	442	8.20	6.0	13.9	109	38	160	--
APR 07...	1530	500	451	7.80	12.0	12.0	111	24	180	220
MAY 13...	1300	320	459	8.80	22.5	12.2	139	<10	92	--
JUN 02...	1500	2000	279	7.80	23.0	5.9	69	21	K9800	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 23...	34	69	14	10	4.7	197	3.0	35	8.5	0.20
NOV 20...	--	--	--	--	--	210	2.0	--	--	--
DEC 08...	--	--	--	--	--	80	3.9	--	--	--
JAN 14...	34	73	16	15	2.6	214	3.3	53	12	0.20
FEB 11...	--	--	--	--	--	186	2.9	--	--	--
MAR 10...	--	--	--	--	--	186	2.3	--	--	--
APR 07...	20	65	14	11	3.3	200	6.2	43	8.8	0.20
MAY 13...	--	--	--	--	--	216	0.6	--	--	--
JUN 02...	--	--	--	--	--	125	3.8	--	--	--

K--Results based colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	
	OCT 23...	297	104	1.40	0.040	0.040	<1	<1	12	2	3400
	NOV 20...	261	94	1.50	0.110	0.130	--	--	--	--	--
	DEC 08...	--	754	1.40	0.130	0.170	--	--	--	--	--
JAN 14...	316	54	0.700	0.100	0.100	<1	<1	7	3	1600	
FEB 11...	291	40	0.600	0.040	0.080	--	--	--	--	--	
MAR 10...	289	94	1.00	0.050	0.140	--	--	--	--	--	
APR 07...	276	180	1.40	0.050	0.270	<1	<1	13	3	7900	
MAY 13...	280	77	<0.100	0.030	0.200	--	--	--	--	--	
JUN 02...	217	456	2.50	0.130	0.930	--	--	--	--	--	

[illegible]

GRAND RIVER BASIN

99

06900000 MEDICINE CREEK NEAR GALT, MO

LOCATION.--Lat 40°17'45", long 93°21'45", in SW ¼ NW ¼ sec.34, T.62 N., R.22 W., Sullivan County, Hydrologic Unit 10280103, on left bank 15 ft upstream from bridge on State Highway 6, 1.2 mi east of Galt, 2 mi upstream from West Medicine Creek, and at mile 32.0.

DRAINAGE AREA.--225 mi².

PERIOD OF RECORD.--July 1921 to September 1975, October 1977 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1340: 1926. WSP 1730: 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 767.48 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at site 150 ft downstream at following datums: prior to Oct. 1, 1924, at datum 6.97 ft higher; Oct. 1, 1924 to Sept. 30, 1926, at datum 4.97 ft higher; Oct. 1, 1926 to Dec. 2, 1934, at datum 1.97 ft higher; Dec. 3, 1934 to Apr. 25, 1956, nonrecording gage, and Apr. 26 to Sept. 30, 1956; water-stage recorder at site 30 ft downstream at datum 2.00 ft higher; Oct. 1, 1956 to Apr. 5, 1969, water-stage recorder at site 30 ft downstream at present datum; Apr. 6, 1969 to July 24, 1975, water-stage recorder; July 25, 1975 to Aug. 21, 1978, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 12-15, 19, 20, Jan. 16, and Feb. 17. Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--64 years (water year 1922-75, 78-87), 148 ft³/s, 8.93 in/yr, 107,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s, June 6, 1947, gage height, 20.9 ft, present datum, from floodmark; no flow at times in 1934, 1936-37, 1940, 1954, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge of 8,000 ft³/s was determined for flood of July 1909 by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	1400	4,210	7.33	July 11	0215	3,840	6.82
Oct. 3	1200	5,710	9.25	July 12	1615	5,520	8.99
May 3	1215	*6,300	*10.03				

Minimum discharge, 3.4 ft³/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2550	66	684	39	60	1410	156	39	42	15	7.9	16
2	735	62	560	33	53	738	116	39	43	17	6.8	13
3	4350	77	254	28	53	365	91	4320	41	12	7.8	10
4	2550	87	107	37	43	208	79	1990	43	9.0	8.1	8.1
5	530	76	66	36	43	134	71	438	34	54	5.8	7.6
6	255	66	68	40	59	105	66	167	26	60	4.3	17
7	143	63	489	41	64	87	63	99	22	55	5.4	8.8
8	104	101	692	38	61	76	59	75	20	1570	18	7.7
9	83	186	614	38	46	65	55	60	20	1040	51	215
10	70	92	237	37	37	55	51	51	18	2120	25	47
11	69	65	102	40	42	51	48	44	18	1730	15	22
12	1120	50	77	38	42	48	47	37	18	3710	11	13
13	619	20	57	53	38	49	77	32	17	1970	48	8.8
14	268	28	54	83	40	50	313	31	16	294	400	7.7
15	154	44	64	84	38	129	2030	27	14	187	1100	11
16	104	51	76	48	33	473	763	25	12	156	912	176
17	84	51	91	18	24	231	296	25	13	80	127	559
18	70	56	88	39	22	992	166	42	29	59	68	346
19	59	49	66	41	32	1550	111	308	69	47	37	79
20	54	61	54	23	32	436	88	784	78	39	26	43
21	50	59	63	20	31	243	409	1130	78	32	19	27
22	48	61	55	27	33	162	410	277	140	28	20	19
23	70	52	52	15	33	122	207	101	220	25	22	14
24	97	44	54	15	31	390	141	77	73	22	13	11
25	208	38	52	10	31	820	97	69	48	18	14	9.8
26	870	40	46	9.0	29	352	78	69	29	15	156	9.3
27	576	35	36	9.5	32	203	65	142	17	13	489	7.6
28	249	33	39	12	177	251	53	327	12	12	139	10
29	138	33	44	23	---	781	47	111	28	11	63	18
30	97	33	41	37	---	479	43	72	15	9.8	38	6.3
31	77	---	38	37	---	224	---	55	---	8.8	25	---
TOTAL	16451	1779	5020	1048.5	1259	11279	6296	11063	1253	13418.6	3882.1	1747.7
MEAN	531	59.3	162	33.8	45.0	364	210	357	41.8	433	125	58.3
MAX	4350	186	692	84	177	1550	2030	4320	220	3710	1100	559
MIN	48	20	36	9.0	22	48	43	25	12	8.8	4.3	6.3

CAL YR 1986 TOTAL 86420.4 MEAN 237 MAX 7500 MIN 2.6
WTR YR 1987 TOTAL 74496.8 MEAN 204 MAX 4350 MIN 4.3

GRAND RIVER BASIN

06902000 GRAND RIVER NEAR SUMNER, MO

LOCATION.--Lat 39°38'25", long 93°16'25", in NE ¼ sec.29, T.56 N., R.21 W., Livingston County, Hydrologic Unit 10280103, near right bank on downstream side of pier of bridge on State Highway 139, 240 ft downstream from Chicago, Burlington and Quincy Railroad bridge, 2 mi southwest of Sumner, 2.5 mi downstream from Locust Creek and at mile 41.0.

DRAINAGE AREA.--6,880 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Prior to April 1924 monthly discharge only, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 631.18 ft above National Geodetic Vertical Datum of 1929. Prior to July 11, 1926, nonrecording gage at site 200 ft upstream at same datum. July 11, 1926 to July 9, 1939, nonrecording gage at same site and datum. July 10, 1939 to Aug. 8, 1952, water-stage recorder at site 200 ft upstream at same datum. Aug. 9, 1952 to Nov. 12, 1953, nonrecording gage at site 120 ft upstream and at same datum. Nov. 13, 1953 to July 6, 1964, water-stage recorder and nonrecording gage, for stages below 8.3 ft, at site 120 ft upstream and at same datum. July 7, 1964 to May 26, 1965, nonrecording gage at present site and datum. Auxiliary water-stage recorder at site 3.2 mi downstream from base gage at datum 631.30 ft above National Geodetic Vertical Datum of 1929. Mar. 15, 1939 to Aug. 4, 1942, auxiliary nonrecording gage at various sites. Aug. 5, 1942 to Dec. 14, 1956, auxiliary nonrecording gage at present site.

REMARKS.--Estimated daily discharges: Oct. 1-3, Dec. 1-3, 10, 12, Jan. 24-29, and Feb 21-23. Water-discharge records fair except for estimated daily discharges, which are poor. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--64 years, 3,957 ft³/s, 7.81 in/yr, 2,867,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s, June 7, 8, 1947; gage height, 39.5 ft, from floodmark; minimum observed, 10 ft³/s, Aug. 12, 1934; minimum gage height, 2.19 ft, Aug. 22, 23, 31, Sept. 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 9, 1909, reached a stage of 36.7 ft from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base discharge of 38,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 5	0230	47,900	34.83	Apr. 16	0900	38,100	31.88
Oct. 5	0830	a	34.88	May 4	1215	40,700	32.29
Dec. 2	2030	38,000	32.17	July 14	1300	*66,000	*35.69
Mar. 19	2145	42,300	32.31	Aug. 28	0915	39,400	32.13
Mar. 19	2315	a	32.32	Aug. 28	1300	a	32.17

^aVariable slope

Minimum discharge 497 ft³/s, Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39900	2990	5430	1640	1960	23500	6150	1690	6190	2050	776	4960
2	36300	2670	36800	1560	2120	32500	4520	1570	3520	1690	712	3530
3	34100	2520	30800	1530	2090	23100	3880	10500	6600	1260	659	2680
4	44500	2880	14700	1470	1930	11600	3440	39600	4590	1140	646	2310
5	44300	3390	6890	1420	1750	7310	3110	24700	3300	1010	726	2010
6	24600	3020	4610	1450	1790	5090	2810	9760	2490	1070	763	1780
7	10300	2570	6100	1480	2730	4030	2600	5950	1850	6210	562	1840
8	6140	2410	24100	1480	2870	3400	2450	4030	1500	28700	515	1590
9	5740	2330	27100	1440	2330	2970	2320	3000	1290	32300	630	1530
10	4450	2320	18600	1410	1890	2620	2180	2520	1270	31300	1370	1920
11	3540	2290	9470	1350	1690	2320	2060	2150	2320	33800	3120	1450
12	13900	2070	5330	1270	1590	2110	1940	1880	1860	35600	2060	1180
13	28900	1770	3670	1270	1530	1980	3350	1660	1540	49300	3630	1070
14	18300	1400	2730	1490	1470	1910	12000	1480	1340	61500	9940	973
15	9300	1350	3050	2030	1420	1880	31000	1340	1200	49400	15900	931
16	6000	1500	3110	2470	1380	2220	36400	1220	1020	19900	35300	1010
17	4660	1680	3290	1870	1340	4150	25300	1130	889	9770	27500	3370
18	3750	1780	3210	1420	1280	12200	11000	1050	801	6080	12700	4840
19	3280	1800	3120	1260	1220	38200	6820	3110	1110	4340	6440	3890
20	2910	1800	2810	1370	1230	37700	5110	5780	2920	3690	3740	2540
21	2630	1860	2480	1390	1280	20100	4590	9710	3800	3100	2550	1790
22	2430	1870	2380	1300	1210	9390	8250	9840	3210	2580	2050	1310
23	2330	1900	2360	1240	1140	6610	6210	4970	3700	2240	1900	1070
24	5210	1860	2310	1200	1110	5610	4220	2920	3220	1840	1530	935
25	5400	1750	2130	1100	1080	8020	3430	2300	2710	1580	1290	836
26	12800	1680	2070	1000	1040	9610	2910	1810	1960	1380	8600	775
27	16300	1640	1970	950	1030	7280	2560	1810	2020	1230	34700	725
28	10700	1570	1790	900	1240	5500	2260	2750	1670	1100	38200	687
29	6300	1480	1690	1000	---	8720	2030	6200	1140	999	32600	957
30	4540	1410	1700	1360	---	10900	1830	8180	1400	912	20000	891
31	3490	---	1720	1750	---	9730	---	10400	---	839	13900	---
TOTAL	417000	61560	237520	43870	44740	322260	206730	185010	72430	397910	285009	55380
MEAN	13450	2052	7662	1415	1598	10400	6891	5968	2414	12840	9194	1846
MAX	44500	3390	36800	2470	2870	38200	36400	39600	6600	61500	38200	4960
MIN	2330	1350	1690	900	1030	1880	1830	1050	801	839	515	687

CAL YR 1986 TOTAL 2404350 MEAN 6587 MAX 62600 MIN 296
WTR YR 1987 TOTAL 2329420 MEAN 6382 MAX 61500 MIN 515

06902000 GRAND RIVER NEAR SUMNER, MO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1962 to June 1963 and August 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1974 to September 1981.

WATER TEMPERATURE: January 1974 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)
OCT												
23...	1015	2310	418	7.90	14.5	42	9.7	94	1400	7800	230	17
NOV												
20...	1150	1800	520	8.20	3.0	23	13.7	100	160	360	260	63
DEC												
09...	1215	23700	250	7.70	4.5	320	13.5	102	4600	13000	100	10
JAN												
14...	1100	1480	526	7.90	2.5	12	13.8	100	980	280	260	33
FEB												
11...	1400	1690	460	8.00	5.0	13	12.8	99	570	210	220	35
MAR												
11...	1030	1730	468	8.20	6.0	38	11.7	92	1000	660	240	50
APR												
07...	1340	2560	466	7.80	10.0	57	11.6	102	K310	300	220	8
MAY												
13...	1430	1630	452	8.50	23.0	25	11.7	135	80	K64	210	22
JUN												
02...	1315	3200	251	8.00	25.0	440	5.9	71	4400	4400	110	9
JUL												
08...	1200	25500	136	7.20	21.0	960	3.8	42	40000	74000	58	4
AUG												
12...	1440	1910	242	7.40	26.5	310	6.1	75	12000	6600	100	18
SEP												
09...	1100	1440	385	8.00	22.0	45	7.8	89	2300	200	190	24

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
OCT											
23...	69	13	10	9	0.3	4.8	209	36	7.9	0.20	15
NOV											
20...	78	16	14	10	0.4	3.4	198	49	9.8	0.20	14
DEC											
09...	31	5.9	5.3	10	0.2	4.4	92	26	7.8	0.20	8.9
JAN											
14...	79	15	13	10	0.4	2.5	226	53	11	0.20	13
FEB											
11...	68	13	14	12	0.4	2.7	188	52	11	0.20	9.3
MAR											
11...	73	14	13	10	0.4	3.7	190	50	10	0.30	10
APR											
07...	65	13	12	11	0.4	3.4	208	50	8.6	0.20	11
MAY											
13...	64	13	12	11	0.4	4.1	192	40	8.9	0.20	10
JUN											
02...	34	6.5	5.5	9	0.2	4.1	103	23	5.8	0.30	10
JUL											
08...	18	3.1	2.4	8	0.1	2.8	54	15	2.3	0.20	6.4
AUG											
12...	31	5.9	5.6	10	0.3	3.7	84	21	4.9	0.30	8.7
SEP											
09...	57	11	8.6	9	0.3	4.7	164	28	6.8	0.30	12

K--Results based on colony count outside the acceptable range (non-ideal colony count).

GRAND RIVER BASIN

06902000 GRAND RIVER NEAR SUMNER, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 23...	298	280	0.41	1860	0.960	0.050	0.06	0.80	0.090	0.080	0.080
NOV 20...	309	300	0.42	1500	0.810	0.070	0.09	0.40	0.170	0.030	0.030
DEC 09...	158	140	0.21	10100	1.40	0.070	0.09	1.8	0.170	0.080	0.070
JAN 14...	322	320	0.44	1290	0.590	0.090	0.12	0.60	0.120	0.020	0.020
FEB 11...	283	280	0.38	1290	0.580	0.050	0.06	0.80	0.100	0.020	0.030
MAR 11...	296	290	0.40	1380	0.860	0.060	0.08	1.4	0.210	0.050	0.040
APR 07...	283	290	0.38	1960	1.10	0.130	0.17	0.70	0.330	0.060	0.040
MAY 13...	269	290	0.37	1180	<0.100	0.050	0.06	1.9	0.250	0.030	0.030
JUN 02...	179	150	0.24	1550	2.20	0.040	0.05	9.4	0.990	0.080	0.050
JUL 08...	114	84	0.16	7850	1.40	0.140	0.18	4.8	0.520	0.030	0.030
AUG 12...	156	130	0.21	804	0.820	0.040	0.05	1.3	0.330	0.080	0.060
SEP 09...	208	230	0.28	809	0.340	0.030	0.04	1.3	0.140	0.060	0.050

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01060)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 20...	<10	1	120	<0.5	<1	<1	<3	3	26	<5
JAN 14...	10	<1	110	<0.5	1	<1	<3	1	12	<5
MAY 13...	20	2	110	<0.5	<1	<1	<3	6	31	5
JUL 08...	100	1	62	<0.5	<1	<1	<3	4	120	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 20...	12	130	<0.1	<10	4	<1	<1	270	<6	11
JAN 14...	16	170	<0.1	<10	3	<1	<1	280	<6	13
MAY 13...	11	18	0.2	<10	<1	<1	<1	240	<6	32
JUL 08...	<4	22	--	<10	<1	--	<1	76	<6	62

06904050 CHARITON RIVER AT LIVONIA, MO

LOCATION.--Lat 40°29'00", long 92°41'10", in NW ¼ SE ¼ NW ¼ sec.34, T.66 N., R.16 W., Schuyler County, Hydrologic Unit 10280201, on left bank 10 ft downstream from bridge on U.S. Highway 136, 1 mi upstream from Shoal Creek, and 0.5 mi east of Livonia, and at mile 90.9.

DRAINAGE AREA.--864 mi².

PERIOD OF RECORD.--May 1974 to current year. Occasional discharge measurements were made from October 1962 to May 1974.

REVISED RECORDS.--WDR MO-83-1: 1981.

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Jan. 24 and May 30 to June 5. Records poor. Several observations of water temperature and specific conductance were made during the year. Considerable regulation by Rathbun Lake (station 06903880) 51 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--13 years, 716 ft³/s, 518,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,800 ft³/s, May 17, 1986; maximum gage height, 24.26 ft, July 4, 1974; minimum, 13 ft³/s, Jan. 11 to Feb. 9, 1977, July 24, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,320 ft³/s, Oct. 3, gage height, 20.45 ft; minimum, 34 ft³/s, July 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3560	872	985	1240	115	1120	645	124	600	38	449	497
2	2900	879	1170	1230	115	1280	1060	353	560	38	435	677
3	3750	915	1380	979	104	781	1040	1040	540	37	436	795
4	3180	925	1380	534	105	558	1010	1120	480	36	390	863
5	2440	901	1340	505	101	1090	1000	596	448	38	281	807
6	1280	921	1340	406	104	1320	1010	455	438	40	269	810
7	379	927	1480	156	117	1310	1000	889	433	74	265	814
8	550	943	1550	115	125	1300	1010	884	428	95	255	821
9	585	956	1570	103	114	1290	997	872	358	122	218	822
10	637	990	1600	102	101	1280	998	857	117	142	120	819
11	636	925	1440	105	99	1270	686	837	59	102	66	820
12	686	903	983	104	99	1260	258	833	50	132	215	819
13	723	885	308	113	96	890	319	824	48	347	274	816
14	783	890	460	133	93	269	1270	831	45	332	243	819
15	737	890	878	164	93	262	2470	818	41	229	111	1110
16	692	898	1350	128	87	619	2270	829	43	318	94	1270
17	657	907	1330	111	78	500	951	820	41	695	159	668
18	656	910	1330	133	75	1140	575	824	43	671	268	615
19	661	910	1310	114	71	2110	874	742	57	664	249	551
20	667	918	1290	102	76	1070	1010	270	96	737	305	512
21	680	923	1300	109	75	727	982	124	59	848	461	649
22	706	923	1290	121	77	1060	993	69	66	843	424	857
23	721	930	1280	87	78	1030	988	53	68	854	410	862
24	731	926	1280	108	77	1430	970	173	64	841	407	862
25	911	921	1270	96	75	1920	956	228	53	837	460	861
26	2270	923	1280	79	73	1230	943	236	57	844	546	860
27	1950	938	1280	81	72	986	932	606	50	838	501	860
28	740	966	1270	87	118	1340	648	768	40	831	379	883
29	542	973	1270	87	---	2030	202	232	37	817	211	904
30	881	976	1270	105	---	1880	137	188	37	813	433	872
31	877	---	1250	113	---	694	---	500	---	694	442	---
TOTAL	37162	27664	38514	7650	2613	35046	28204	17995	5456	13947	9776	24135
MEAN	1199	922	1242	247	93.3	1131	940	580	182	450	315	804
MAX	3750	990	1600	1240	125	2110	2470	1120	600	854	546	1270
MIN	379	872	308	79	71	262	137	53	37	36	66	497

CAL YR 1986 TOTAL 392921 MEAN 1076 MAX 6430 MIN 105
WTR YR 1987 TOTAL 248162 MEAN 680 MAX 3750 MIN 36

LOCATION.--Lat 40°14'05", long 92°41'14", on south line of SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.63 N., R.16 W., Adair County, Hydrologic Unit 10280202, on right bank at the downstream side of center pier on bridge on State Highway 6, 0.6 mi east of Novinger, 1 mi downstream from Rye Creek, 2 mi upstream from Spring Creek, and at mile 73.1.

PERIOD OF RECORD.--October 1930 to September 1952. October 1954 to current year. Prior to February 1931 monthly discharge only, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 737.65 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 20, 1939, nonrecording gage at bridge over old channel, 500 ft east, at the same datum. Dec. 20, 1939, to Sept. 30, 1952 and Oct. 1, 1954, to Aug. 1, 1956, water-stage recorder, supplemented by nonrecording gage, at same site and datum. Aug. 3, 1956, to May 16, 1957, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--55 years, 855 ft³/s, 8.47 in/yr, 619,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/s, June 7, 13, 1947, gage height, 28.50 ft; minimum, 0.1 ft³/s, Aug. 31, Sept. 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 28.6 ft in June 1917.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1730	12,800	16.35	Oct. 26	0430	10,800	14.33
Oct. 3	1000	*15,200	*18.54				

Minimum discharge, 32 ft³/s, July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9960	1130	1120	1430	264	3616	928	164	757	42	562	571
2	8630	1080	1370	1416	271	2420	1360	144	745	36	492	716
3	12800	1070	1460	1310	277	1440	1330	2320	637	34	485	883
4	10400	1060	1370	796	237	891	1260	1820	612	43	476	919
5	5930	1030	1310	710	222	1190	1220	1050	587	222	335	926
6	3540	1000	1380	678	243	1590	1190	606	558	61	282	943
7	1370	988	2520	398	367	1570	1160	972	541	801	271	962
8	1190	988	2910	240	381	1520	1150	1080	532	462	276	936
9	1090	970	2320	185	255	1490	1130	1050	517	294	284	925
10	1110	1046	2000	174	222	1440	1130	1040	295	212	221	924
11	1060	985	1690	193	224	1430	985	1020	150	329	101	931
12	1180	940	1480	210	222	1410	439	1010	115	1190	114	926
13	1270	881	665	208	207	1210	1580	994	82	904	460	920
14	1430	876	534	349	208	519	2740	988	74	693	401	926
15	1270	883	827	464	200	1020	4700	978	63	805	231	1140
16	1120	907	1540	268	177	1340	3450	967	54	468	157	2120
17	1050	926	1590	213	158	1180	1810	969	49	743	158	2830
18	1010	945	1540	222	154	4900	926	974	44	760	262	1010
19	983	934	1500	231	151	4250	1020	1010	72	727	305	756
20	978	957	1500	185	158	1950	1240	753	256	721	525	666
21	974	966	1490	149	162	1190	1200	784	140	851	1760	661
22	974	958	1480	210	159	1450	1170	212	125	865	674	935
23	975	962	1470	358	152	1380	1190	146	148	875	590	944
24	995	945	1480	315	146	3780	1160	167	111	876	558	939
25	2220	925	1460	228	144	3410	1110	388	78	881	598	939
26	8760	927	1450	193	136	1890	1090	401	57	871	1590	928
27	4420	923	1450	202	137	1410	1060	1210	62	864	1190	922
28	1920	943	1450	204	346	2970	934	1630	57	863	769	948
29	939	958	1470	237	---	3790	402	696	46	863	436	1270
30	1240	983	1450	283	---	3050	184	401	44	859	492	984
31	1210	---	1450	302	---	1450	---	526	---	831	579	---
TOTAL	91998	29080	46726	12555	5980	62140	40248	26470	7608	19046	15634	30394
MEAN	2968	969	1507	405	214	2005	1342	854	254	614	504	1013
MAX	12800	1130	2910	1430	381	4900	4700	2320	757	1190	1760	2830
MIN	939	876	534	149	136	519	184	144	44	34	101	571

CAL	YR	1986	TOTAL	641039	MEAN	1756	MAX	16000	MIN	151
WTR	YR	1987	TOTAL	387879	MEAN	1063	MAX	12800	MIN	34

CHARITON RIVER BASIN

105

06905500 CHARITON RIVER NEAR PRAIRIE HILL, MO

LOCATION.--Lat 39°32'25", long 92°47'23", in NW ¼ SW ¼ sec.26, T.55 N., R.17 W., Chariton County, Hydrologic Unit 10280202, on right bank on downstream side of road at bridge on State Highway 129, 3.2 mi northwest of Prairie Hill, 13.5 mi upstream from Puzzle Creek, and at mile 19.6.

DRAINAGE AREA.--1,870 mi², approximately.

PERIOD OF RECORD.--October 1928 to current year. Prior to Oct. 1, 1953, published as "near Keytesville". Prior to May 1929, monthly discharge only, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 632.05 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1953, nonrecording gage at site 8.2 mi downstream at datum 13.68 ft lower. Oct. 1, 1953, to July 2, 1958, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Jan. 19-24 and July 7-9. Records fair. Some regulation by Rathbun Lake (station 06903880). National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--59 years, 1,249 ft³/s, 9.07 in/yr, 904,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s, Apr. 23, 1973, gage height, 21.96 ft; maximum gage height, 25.3, June 8, 9, 1947, from floodmark, site and datum then in use; minimum discharge, 4.6 ft³/s, Aug. 7, 9, 10, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 3	0730	*27,200	*20.22	Mar. 19	0700	9,790	12.28
Oct. 26	1645	12,400	13.93	July 7	1700	10,600	12.75

Minimum discharge, 105 ft³/s, June 19, 20, July 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10200	1300	2770	1430	589	1790	1790	409	434	130	886	593
2	14400	1210	4380	1420	581	4660	1120	340	1030	121	665	582
3	23000	1180	2500	1380	507	2740	1460	344	898	114	523	682
4	21400	1220	1980	1280	446	1540	1420	3880	635	108	557	871
5	11000	1230	1680	824	379	934	1340	2260	565	107	556	929
6	5790	1200	1560	755	374	1080	1290	1310	536	179	447	934
7	3160	1180	3340	726	520	1540	1250	802	505	4850	349	959
8	1440	1180	7920	537	753	1530	1230	963	485	6430	332	955
9	1460	1190	5750	398	673	1470	1190	1150	474	1630	338	944
10	1230	1180	3450	344	453	1410	1170	1110	471	859	347	934
11	1200	1250	2470	293	386	1360	1160	1090	439	593	331	929
12	1270	1230	1970	299	362	1340	1060	1070	276	1880	258	922
13	1400	1160	1550	325	341	1340	2970	1040	232	5010	2490	916
14	1470	1090	829	364	317	1220	5730	1020	179	1770	3440	909
15	1530	1090	650	480	302	655	6690	1000	144	1030	1820	952
16	1320	1100	949	607	292	862	6610	984	131	1150	698	1110
17	1150	1130	1650	421	274	2080	4290	975	119	747	411	2910
18	1070	1140	1720	303	248	2720	2270	989	113	768	359	3110
19	1030	1140	1680	320	236	8950	1240	2240	109	865	364	1160
20	992	1150	1570	290	233	5330	1210	1260	116	804	413	861
21	973	1190	1550	250	229	2790	1420	880	220	781	783	724
22	955	1180	1560	290	228	1560	1350	986	238	896	1880	676
23	955	1160	1530	450	229	1630	1300	396	172	938	771	907
24	950	1150	1520	380	227	2600	1310	294	298	930	611	972
25	1130	1120	1510	410	211	5680	1270	259	295	924	579	967
26	9150	1230	1480	397	208	4790	1210	378	183	932	586	958
27	7900	1250	1450	359	202	2620	1170	474	141	915	1420	947
28	4200	1160	1440	347	245	1770	1130	1220	125	909	1360	944
29	2020	1160	1440	379	---	4730	1040	1790	127	903	889	955
30	1080	1140	1450	606	---	5330	635	792	143	902	571	1230
31	1320	---	1430	617	---	3780	---	488	---	898	459	---
TOTAL	136145	35290	66728	17281	10045	81831	58325	32193	9833	39073	25493	31442
MEAN	4392	1176	2153	557	359	2640	1944	1038	328	1260	822	1048
MAX	23000	1300	7920	1430	753	8950	6690	3880	1030	6430	3440	3110
MIN	950	1090	650	250	202	655	635	259	109	107	258	582

CAL YR 1986 TOTAL 843498 MEAN 2311 MAX 25000 MIN 159
WTR YR 1987 TOTAL 543679 MEAN 1490 MAX 23000 MIN 107

CHARITON RIVER BASIN

06906000 MUSSEL FORK NEAR MUSSELFORK, MO

LOCATION.--Lat 39°31'26", long 92°56'59", in SW ¼ SW ¼ SE ¼ sec.32, T.55 N., R.18 W., Chariton County, Hydrologic Unit 10280202, on left bank at downstream side of pier of bridge on State Highway 5, 4.5 mi southwest of Mussel fork, and 1.5 mi upstream from Long Branch.

DRAINAGE AREA.--267 mi².

PERIOD OF RECORD.--October 1948 to December 1951, October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 639.25 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1952, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Aug. 26 to Sept. 29. Records poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years (1948-51, 1962-87), 246 ft³/s, 12.51 in/yr, 178,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s, Apr. 22, 1973, gage height, 22.11 ft; no flow Sept. 29 to Oct. 16, Oct. 30 to Nov. 2, 1963, Aug. 16-26, 27-29, Nov. 16-24, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 4	1715	6,180	20.49	July 9	2400	*10,100	*21.30
Dec. 3	0030	2,160	18.07	July 14	1700	2,130	17.96
Dec. 9	0845	2,260	18.35	Aug. 14	2045	5,630	20.34
Apr. 14	1230	2,420	18.82				

Minimum daily discharge, 8.5 ft³/s, June 23, July 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2740	80	855	44	267	644	214	32	19	8.6	12	18
2	2310	63	2080	42	195	909	161	29	16	8.6	11	19
3	3800	54	1550	41	165	342	133	30	15	8.6	11	19
4	5400	50	382	39	113	161	112	382	15	8.5	11	19
5	4200	51	191	34	78	112	97	496	15	8.5	12	19
6	1970	66	132	32	75	91	85	124	13	8.5	16	25
7	430	70	731	32	102	78	74	66	10	393	24	200
8	125	61	2070	33	270	68	67	46	9.6	1730	18	60
9	81	55	2070	34	299	61	62	38	9.4	4360	14	40
10	72	51	834	35	130	54	57	32	9.1	6590	12	25
11	69	48	287	35	86	49	54	29	9.1	768	11	23
12	68	45	165	33	75	45	51	26	9.1	740	11	21
13	92	40	127	33	71	43	1540	22	9.1	1630	1300	20
14	99	35	109	37	63	41	2320	20	9.1	2040	4300	18
15	106	31	96	97	55	43	1660	18	8.9	640	2760	100
16	91	30	87	153	55	59	1110	16	8.9	138	399	180
17	63	30	92	109	50	184	409	15	8.9	88	77	130
18	45	30	98	65	45	616	259	16	8.8	59	54	70
19	37	32	99	54	42	1330	170	806	8.8	46	72	50
20	32	34	82	59	41	1170	130	256	8.8	38	39	35
21	29	39	66	61	41	332	101	72	8.6	32	28	25
22	26	40	63	58	40	207	83	38	8.6	28	22	20
23	26	41	62	48	40	157	70	27	8.5	25	19	15
24	25	46	60	39	40	517	63	21	9.5	23	18	10
25	68	43	59	53	38	1390	59	18	87	21	19	10
26	1020	155	58	29	36	649	54	16	32	19	19	10
27	1760	201	56	26	35	282	48	15	18	18	19	9.0
28	800	162	54	25	84	206	42	21	11	17	19	9.0
29	209	120	51	49	---	391	38	34	8.8	16	19	9.0
30	142	87	48	250	---	711	35	54	8.7	15	19	8.8
31	116	---	46	294	---	313	---	27	---	13	18	---
TOTAL	26051	1890	12800	1953	2635	11255	9358	2842	421.3	19538.3	9383	1216.8
MEAN	840	63.0	413	63.0	94.1	363	312	91.7	14.0	630	303	40.6
MAX	5400	201	2080	294	299	1390	2320	806	87	6590	4300	200
MIN	25	30	46	25	35	41	35	15	8.5	8.5	11	8.8

CAL YR 1986 TOTAL 115795.1 MEAN 317 MAX 9010 MIN 3.1
WTR YR 1987 TOTAL 99343.3 MEAN 272 MAX 6590 MIN 8.5

06906190 LONG BRANCH RESERVOIR NEAR MACON, MO

LOCATION.--Lat 39°45'05", long 92°30'20", NW ¼ sec.10, T.57 N., R.14 W., Macon County, in Administration building at left end of dam on East Fork Little Chariton River, 2 mi west of junction U.S. Highway 63 and 36 in Macon and 2 mi below confluence with Long Branch.

DRAINAGE AREA.--109 mi².

PERIOD OF RECORD.--September 1978 to current year. Contents published 1982 to current year. Records collected at same site since 1978 and are available from U.S. Army Corps of Engineers.

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

REMARKS.--Lake is formed by a rolled earthfill type dam. Closure began on September 3, 1976. Storage began on Aug. 2, 1978. An uncontrolled limited service type spillway, 50 ft wide, is located at the right abutment. Capacity of surcharge pool (elevations 801.0 ft to 820.7 ft), 98,590 acre-ft; of flood control pool (elevations 791.0 ft to 801.0 ft), 30,600 acre-ft; and of multipurpose pool (elevations 751.1 ft to 791.0), 34,640 acre-ft. Lake is used for flood control, water supply, water quality control, and recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 59,800 acre-ft, July 28, 1981, elevation, 799.56 ft; minimum, 14,300 acre-ft, Dec. 5, 1980, elevation, 780.21 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 55,400 acre-ft, Oct. 5, elevation, 798.26 ft; minimum, 30,400 acre-ft, Aug. 4, 9-12, elevation, 789.20.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43300	43700	37600	36400	34400	34500	36400	35900	33600	32400	30800	33000
2	44500	43200	38800	36300	34600	35000	36400	35800	33600	32400	30600	33000
3	47100	42700	39100	36200	34700	35100	36200	35800	33700	32300	30500	32800
4	53700	42400	38900	36100	34700	35000	36100	35700	33600	32300	30400	32700
5	55400	42100	38700	35900	34700	35000	36000	35600	33500	32300	30900	32600
6	54300	41600	38500	35800	34700	34900	35900	35400	33400	32300	30600	32400
7	53100	41200	38500	35800	34800	34900	35800	35400	33400	32700	30600	32400
8	52400	41100	40100	35700	35100	34800	35700	35200	33200	33200	30600	32300
9	51600	40800	41100	35600	35300	34800	35500	35100	33200	33300	30400	32200
10	51100	40300	41200	35500	35300	34700	35400	35200	33100	33200	30400	32100
11	50400	40100	40800	35400	35300	34500	35400	34900	33100	32700	30400	32000
12	49800	39800	40500	35300	35400	34400	35200	34800	33000	33200	30400	31900
13	49400	39500	40200	35200	35200	34300	35600	34700	32900	33600	32300	31700
14	49000	39300	39900	35100	35100	34200	36900	34600	32900	33400	33700	31600
15	48500	39100	39600	35100	35100	34200	37700	34500	32900	33400	33900	31600
16	47900	39000	39200	35100	35000	34200	38300	34500	32900	33400	33900	31700
17	47500	38700	39100	35000	34900	34100	38300	34400	32800	33200	33900	31700
18	46800	38600	38800	35100	34800	34100	38100	34400	32700	33100	33900	31700
19	46200	38400	38600	35000	34800	34900	38000	34400	32600	33100	34100	31700
20	45600	38400	38300	35000	34600	35500	37800	34300	32800	33000	34100	31600
21	45100	38200	38200	34800	34600	35600	37800	34300	32700	32900	34100	31400
22	44600	38100	38000	34800	34400	35600	37400	34200	32700	32900	34400	31300
23	44100	38000	37700	34800	34400	35500	37300	34200	32700	32800	34100	31200
24	43700	37900	37600	34600	34300	35600	37100	34100	32600	32700	33900	31000
25	43300	37800	37500	34500	34200	35800	36900	34000	32700	32900	33700	31000
26	44200	37900	37300	34400	34100	36000	36800	33900	32600	32700	33700	30900
27	45700	37700	37100	34300	34100	36000	36700	33900	32400	32600	33700	30700
28	45400	37700	36900	34200	34100	36000	36500	33800	32400	32500	33600	30600
29	45000	37600	36800	34200	---	36100	36200	33800	32400	32400	33500	30600
30	44500	37600	36700	34200	---	36600	36100	33700	32400	30900	33300	30500
31	44100	---	36600	34300	---	36500	---	33700	---	30900	33200	---

WTR YR 1987

(+)	794.58	792.18	791.78	790.88	790.78	791.74	791.59	790.64	790.06	789.40	790.41	789.22
(#)	+3100	-6500	-1000	-2300	-200	+2400	-400	-2400	-1300	-1500	+2300	-2700
MAX	55400	43700	41200	36400	35400	36600	38300	35900	33700	33600	34400	33000
MIN	43300	37600	36600	34200	34100	34100	35200	33700	32400	30900	30400	30500

CAL YR 1986.....-2000

WTR YR 1987.....-10500

(+) Elevation, in feet NGVD, at end of month.

(#) Change in contents, in acre-feet.

LITTLE CHARITON RIVER BASIN

06906200 EAST FORK LITTLE CHARITON RIVER NEAR MACON, MO

LOCATION.--Lat 39°44'59", long 92°31'03", NW ¼ NW ¼ NW ¼ sec.18, T.57 N., R.14 W., Macon County, Hydrologic Unit 10280203, on right bank 250 ft downstream from Long Branch Lake and 3 mi west of Macon.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--September 1971 to current year. Partial-record station May 1970 to August 1971.

GAGE.--Water-stage recorder. Datum of gage is 741.43 ft above National Geodetic Vertical Datum of 1929. Sept. 8, 1971 to Aug. 1, 1985 water-stage recorder at site 400 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year. Complete regulation from Long Branch Reservoir (station 06906190) 250 ft upstream.

AVERAGE DISCHARGE.--16 years, 113 ft³/s, 81,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,700 ft³/s, Apr. 21, 1973, gage height, 20.60 ft; no flow in most years prior to completion of Long Branch Reservoir.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 941 ft³/s, Oct. 5, gage height, 12.83 ft; minimum, 1.8 ft³/s, June 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340	281	81	86	59	59	84	62	27	25	7.5	54
2	349	272	123	81	59	59	81	59	26	25	7.5	54
3	459	263	172	78	59	60	76	59	26	25	8.0	54
4	755	254	190	75	59	60	73	58	28	25	9.8	54
5	885	245	182	72	59	60	71	55	27	25	9.3	54
6	719	235	175	71	59	59	67	53	28	25	9.4	54
7	604	227	188	69	59	58	65	52	27	25	9.2	54
8	523	217	234	67	61	59	63	51	27	25	9.2	54
9	490	208	259	66	63	58	61	49	26	41	9.3	55
10	457	198	256	66	64	58	58	48	26	54	9.8	54
11	425	188	245	65	64	57	57	48	24	54	10	54
12	406	177	233	64	63	58	56	36	25	54	10	54
13	389	163	223	63	62	58	82	28	25	54	11	54
14	374	150	215	62	62	57	121	26	25	54	11	54
15	363	138	207	62	62	57	165	28	25	54	9.7	55
16	355	128	199	61	60	57	189	28	25	54	7.8	55
17	347	118	192	61	60	57	186	28	25	54	7.8	54
18	339	110	184	61	59	58	175	28	25	54	7.8	52
19	331	99	176	60	59	60	162	26	25	54	7.8	53
20	323	96	169	60	59	64	151	26	25	54	7.8	53
21	314	87	161	59	59	65	139	26	25	55	35	53
22	305	82	153	59	59	65	123	28	25	54	55	53
23	297	79	145	59	59	64	112	28	25	54	55	53
24	290	73	137	58	59	65	103	28	25	25	54	53
25	290	70	128	58	59	71	93	28	25	7.0	54	53
26	308	73	121	58	59	74	87	28	25	7.0	54	53
27	324	70	113	59	59	72	81	28	26	7.2	54	53
28	317	65	106	59	60	73	73	28	25	7.3	54	52
29	309	64	101	59	---	82	69	28	25	7.3	55	53
30	299	62	95	59	---	91	66	28	25	7.5	54	53
31	290	---	89	59	---	86	---	28	---	7.5	54	---
TOTAL	12576	4492	5252	1996	1684	1981	2989	1156	768	1073.8	757.7	1608
MEAN	406	150	169	64.4	60.1	63.9	99.6	37.3	25.6	34.6	24.4	53.6
MAX	885	281	259	86	64	91	189	62	28	55	55	55
MIN	290	62	81	58	59	57	56	26	24	7.0	7.5	52

CAL YR 1986 TOTAL 50793.2 MEAN 139 MAX 885 MIN 7.8
WTR YR 1987 TOTAL 36333.4 MEAN 99.5 MAX 885 MIN 7.0

LITTLE CHARITON RIVER BASIN

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06906300 EAST FORK LITTLE CHARITON RIVER NEAR HUNTSVILLE, MO

LOCATION.--Lat 39°27'18", long 92°34'07", in NW ¼ NW ¼ NW ¼ sec.26, T.54 N., R.15 W., Randolph County, Hydrologic Unit 10280203, on right bank downstream end of bridge on State Highway C, 1 mi downstream from Sugar Creek, and 1.5 mi northwest of Huntsville.

DRAINAGE AREA.--220 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year. Occasional low-flow measurements, water years 1942-43, 1945-46.

GAGE.--Water-stage recorder. Datum of gage is 655.86 ft above National Geodetic Vertical Datum of 1929 (levels by Missouri State Highway and Transportation Commission). From July 18, 1972, to Sept. 23, 1974, at datum 0.63 ft higher and from Sept. 24, 1974, at present datum.

REMARKS.--Estimated daily discharges: Oct. 27, 30, Nov. 1, 2, 3-6, 9, 11, 13-15, and Dec. 1 to Jan. 22. Water-discharge records fair except for estimated daily discharges, which are poor. Some regulation by Long Branch Reservoir (station 06906190) 34 mi upstream since 1978. Low flow affected by operation of pump 7 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--25 years, 243 ft³/s, 15.00 in/yr, 176,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, Apr. 21, 1973, gage height, 20.78 ft, at datum then in use from rating curve extended above 4,000 ft³/s on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 3	1300	*9,470	*18.96	July 13	1200	1,950	13.32
Apr. 13	1415	2,510	14.52	Aug. 14	1245	2,290	14.06
July 12	1445	1,560	12.25				

No flow Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3170	317	495	113	177	494	125	81	22	29	5.8	48
2	1360	303	472	111	157	177	113	79	130	23	6.4	52
3	7760	294	301	110	111	124	104	83	204	21	5.2	52
4	5660	288	266	105	95	106	99	81	62	20	13	52
5	1960	275	231	102	89	96	97	73	32	21	7.8	52
6	861	262	211	98	88	89	94	71	24	24	1.2	58
7	707	251	665	96	87	83	89	68	14	213	1.0	227
8	615	237	779	92	86	82	83	65	16	81	.0	60
9	548	219	771	86	79	78	79	63	12	58	3.9	53
10	521	202	513	82	81	76	77	59	13	51	4.5	51
11	479	193	346	82	83	74	78	58	21	60	3.7	51
12	465	165	295	80	82	73	75	59	19	693	4.0	52
13	443	158	273	75	79	72	1620	37	22	1160	16	51
14	428	147	266	78	81	72	1000	25	23	260	1410	50
15	401	145	237	90	77	77	440	24	23	118	823	117
16	386	142	217	130	73	72	308	24	21	92	94	177
17	373	136	213	110	71	72	243	24	21	75	61	131
18	360	129	199	100	71	115	202	23	25	67	55	70
19	350	123	195	90	71	158	178	388	30	63	66	62
20	339	131	188	95	71	109	160	67	107	60	30	58
21	330	119	178	95	70	101	147	56	41	58	19	54
22	321	113	167	100	71	95	139	61	27	57	35	53
23	317	109	158	95	68	90	131	34	34	54	53	53
24	309	101	150	97	66	156	125	32	25	53	51	53
25	401	99	142	91	66	168	115	32	92	31	52	52
26	732	210	136	81	66	128	110	29	43	6.9	53	51
27	505	171	132	83	66	116	102	27	26	4.9	53	51
28	419	129	129	84	174	168	95	26	23	6.1	52	52
29	376	116	123	125	---	311	90	29	22	3.1	52	54
30	349	114	120	229	---	168	85	23	28	13	52	52
31	330	---	116	173	---	137	---	23	---	3.4	50	---
TOTAL	31575	5398	8684	3178	2456	3937	6403	1824	1202	3479.4	3133.5	2049
MEAN	1019	180	280	103	87.7	127	213	58.8	40.1	112	101	68.3
MAX	7760	317	779	229	177	494	1620	388	204	1160	1410	227
MIN	309	99	116	75	66	72	75	23	12	3.1	.00	48

CAL YR 1986 TOTAL 97698.3 MEAN 268 MAX 7760 MIN 3.4
WTR YR 1987 TOTAL 73318.8 MEAN 201 MAX 7760 MIN .00

LITTLE CHARITON RIVER BASIN

06906300 EAST FORK LITTLE CHARITON RIVER NEAR HUNTSVILLE, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1963 to September 1968, October 1973 to July 1975, October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 22...	0800	324	376	7.70	15.5	9.7	96	23	92	160
NOV 20...	1410	123	732	7.70	5.5	11.8	92	30	180	--
DEC 09...	1430	790	465	7.30	4.5	14.3	108	24	740	--
JAN 14...	1315	80	953	7.30	3.0	13.7	101	21	K64	470
FEB 11...	1630	83	711	7.50	6.0	12.3	98	23	<2	--
MAR 11...	1315	73	706	7.60	5.5	13.9	108	19	K24	--
APR 07...	1150	88	655	8.20	8.0	13.4	112	21	K64	300
MAY 13...	1730	29	634	7.90	24.0	9.9	116	<10	68	--
JUN 02...	1045	18	707	8.10	26.0	6.3	78	16	200	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT DIS- SOLVED FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 22...	91	39	15	12	4.2	68	2.6	120	4.1	0.20
NOV 20...	--	--	--	--	--	74	2.9	--	--	--
DEC 09...	--	--	--	--	--	64	6.2	--	--	--
JAN 14...	390	110	48	30	4.2	84	8.2	430	10	0.30
FEB 11...	--	--	--	--	--	80	4.9	--	--	--
MAR 11...	--	--	--	--	--	89	4.4	--	--	--
APR 07...	200	72	28	25	4.3	98	1.2	250	5.5	0.20
MAY 13...	--	--	--	--	--	76	1.9	--	--	--
JUN 02...	--	--	--	--	--	97	1.5	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

LAMINE RIVER BASIN

06908000 BLACKWATER RIVER AT BLUE LICK, MO

LOCATION.--Lat 38°59'32", long 93°11'48", in SW ¼ SW ¼ SW ¼ sec.26, T.49 N., R.21 W., Saline County, Hydrologic Unit 10300104, on left bank at upstream side of bridge on northbound lane of U.S. Highway 65, 1.2 mi downstream from Finney Creek, 1.8 mi southeast of Blue Lick, and at mile 30.3.

DRAINAGE AREA.--1,120 mi².

PERIOD OF RECORD.--June 1922 to September 1933, May 1938 to current year.

REVISED RECORDS.--WSP 1006: 1929. WDR MO-83-1: 1982.

GAGE.--Water-stage recorder. Datum of gage is 593.79 ft above National Geodetic Vertical Datum of 1929. Prior to July 25, 1925, nonrecording gage at site 75 ft downstream at datum 0.10 ft lower. July 25 to Sept. 30, 1933 and May 23, 1938 to Dec. 3, 1956, nonrecording gage at site 25 ft downstream at same datum. Prior to Oct. 1, 1986 at site 0.5 mi upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 12-14, Dec. 13, and Jan. 19-28. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--60 years, 762 ft³/s, 9.24 in/yr, 552,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,000 ft³/s, Nov. 18, 1928, gage height 41.25 ft, from floodmarks, from rating curve extended above 32,000 ft³/s; maximum gage height, 41.53 ft, Oct. 3, 1986; minimum discharge, 0.08 ft³/s, Aug. 9, 10, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 3	1845	*44,800	*41.53	No other peak greater than base discharge.			

Minimum discharge, 6.5 ft³/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28300	239	2970	202	3140	5220	356	126	61	189	12	31
2	32900	213	5270	198	1220	6020	322	121	53	110	11	24
3	43000	197	5520	191	691	7830	283	122	1160	85	9.1	20
4	42600	202	5500	182	496	9000	251	200	681	69	9.2	16
5	38200	258	3870	176	395	7840	236	172	184	98	8.1	13
6	31200	421	1160	173	358	3430	225	158	94	647	8.5	16
7	23500	450	2400	173	396	767	219	130	68	555	34	526
8	16900	359	4830	162	443	583	212	134	53	1360	25	317
9	12200	749	5250	155	370	493	198	124	41	2630	18	110
10	9140	478	5390	174	291	434	189	110	48	1150	13	65
11	4330	314	4500	225	272	381	201	102	38	300	162	42
12	859	267	1590	210	265	355	220	1160	41	713	575	456
13	915	238	751	219	247	330	1930	428	38	2600	147	209
14	808	195	572	773	231	308	5480	180	93	2830	3240	295
15	781	175	534	1700	235	275	5500	110	115	778	4520	2670
16	530	185	517	1070	243	261	5390	92	90	272	1070	651
17	416	204	514	495	322	1630	3050	81	63	159	203	323
18	359	209	476	354	319	3850	847	72	64	115	143	264
19	319	200	359	308	310	4950	535	78	48	94	183	117
20	290	192	359	290	520	5660	418	88	65	80	1530	74
21	263	220	341	275	810	6080	342	127	434	69	1260	52
22	246	228	316	260	587	4220	291	88	348	60	314	34
23	254	203	294	250	431	967	259	84	137	50	126	23
24	821	187	287	245	333	798	240	71	295	41	83	17
25	1380	173	283	240	286	902	215	58	228	35	63	14
26	1250	1530	267	230	259	674	196	49	106	35	55	12
27	1090	3550	247	225	241	499	181	47	75	32	51	9.9
28	642	3440	231	220	1510	440	162	55	58	25	47	8.2
29	418	2280	223	743	---	665	144	115	46	22	58	7.7
30	319	893	219	3660	---	613	135	110	39	17	61	7.1
31	270	---	211	3970	---	427	---	80	---	14	45	---
TOTAL	294500	18449	55291	17748	15221	75902	28227	4672	4864	15234	14083.9	6423.9
MEAN	9500	615	1784	573	544	2448	941	151	162	491	454	214
MAX	43000	3550	5520	3970	3140	9000	5500	1160	1160	2830	4520	2670
MIN	246	173	211	155	231	261	135	47	38	14	8.1	7.1

CAL YR 1986 TOTAL 633090.1 MEAN 1734 MAX 43000 MIN 9.5
WTR YR 1987 TOTAL 550615.2 MEAN 1509 MAX 43000 MIN 7.1

06909000 MISSOURI RIVER AT BOONVILLE, MO

LOCATION.--Lat 38°58'42", long 92°45'13", sec.35, T.49 N., R.17 W., Cooper County, Hydrologic Unit 10300102, on downstream side of second pier from right abutment of Missouri-Kansas-Texas Railroad Co. bridge at Boonville, and at mile 196.6.

DRAINAGE AREA.--501,700 mi², approximately.

PERIOD OF RECORD.--October 1925 to current year. Gage-height records collected at same site 1893-99 are contained in reports of Missouri River Commission; since 1900 in reports of National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 565.42 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1928, nonrecording gage at site 0.4 mi downstream at datum 3.14 ft lower. Oct. 1, 1928 to May 9, 1931, nonrecording gage at site 50 ft upstream from present site a present datum. May 10, 1931, to Apr. 12, 1934, water-stage recorder at site 0.4 mi downstream at different datum.

REMARKS.--Estimated daily discharges: May 31 to June 2 and June 4, 5. Records good. Discharge measurements made weekly except during ice-flow periods. Some regulation from many upstream reservoirs. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--62 years, 61,180 ft³/s, 44,320,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 550,000 ft³/s, July 17, 1951; maximum gage height, 32.82 ft, July 17, 1951; minimum discharge, about 1,800 ft³/s, Jan. 10, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1844, reached a stage of 32.7 ft, discharge, about 710,000 ft³/s, computed by U.S. Army Corps of Engineers. Flood of June 6, 1903, reached a stage of 30.5 ft, discharge, about 612,000 ft³/s, computed by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 334,000 ft³/s, Oct. 5, gage height, 31.85 ft; minimum, 43,400 ft³/s, Jan. 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	267000	124000	85100	63000	58800	74400	145000	106000	162000	66800	55200	97800
2	292000	117000	128000	62700	55600	142000	134000	103000	131000	71600	53600	86600
3	313000	111000	143000	62300	53200	136000	137000	102000	124000	66700	51600	77700
4	325000	105000	134000	62400	54300	114000	140000	139000	120000	60700	50700	68500
5	326000	102000	118000	62700	54100	93000	140000	167000	115000	59500	49500	64600
6	298000	100000	98000	61400	54200	81600	137000	158000	111000	60800	48300	62700
7	269000	97700	91000	60500	55100	72100	134000	144000	109000	65800	47600	62700
8	232000	94800	119000	61100	56200	67600	132000	129000	109000	90500	47000	62300
9	180000	93100	142000	61100	56600	64000	129000	116000	107000	111000	46100	59600
10	140000	92800	145000	60600	55200	62100	126000	96200	100000	116000	46200	58600
11	117000	94100	132000	60200	53400	60700	124000	82600	95600	133000	64200	59300
12	102000	95000	109000	59600	52500	59500	120000	77400	97300	140000	79600	59300
13	136000	93700	92200	58200	51500	58000	131000	84800	88100	147000	63700	62500
14	186000	91900	86300	58600	50400	55100	174000	105000	86500	155000	67500	58800
15	190000	87800	83000	62600	50200	52400	184000	103000	84500	151000	68200	62100
16	169000	83100	82100	64400	50500	50400	201000	96700	75800	143000	92800	65300
17	142000	80900	80800	62200	51000	52400	218000	94300	72700	130000	95600	64300
18	128000	80900	81400	56500	50400	62300	208000	93200	71000	108000	97200	89100
19	124000	80800	85700	52500	49800	114000	172000	95300	68200	88500	78700	91800
20	123000	81100	85300	50500	49900	177000	151000	98600	68400	76000	69200	77000
21	121000	81700	83100	49200	50100	185000	139000	98800	78300	71800	67200	72400
22	120000	82800	80700	49600	49800	152000	135000	104000	90000	70700	65300	69200
23	120000	83300	75300	48100	48000	119000	123000	111000	81900	68700	62400	67300
24	123000	82400	70400	46500	46400	109000	120000	104000	80700	67100	58400	64900
25	132000	80500	68700	45500	45800	116000	128000	94000	82100	64800	56400	62800
26	151000	86300	69000	44600	44700	162000	123000	86700	75100	62500	54700	62000
27	175000	96600	68600	44300	44400	189000	108000	94100	71900	61600	84300	60400
28	170000	98800	67500	43500	47100	182000	91000	122000	72600	60200	152000	59200
29	157000	82700	66300	44300	---	171000	89000	172000	73100	60300	156000	59500
30	141000	78300	64000	55300	---	168000	103000	194000	68100	60100	137000	58100
31	131000	---	62800	62500	---	160000	---	193000	---	57400	114000	---
TOTAL	5600000	2751100	2897300	1736500	1439200	3361600	4196000	3564700	2769900	2746100	2300200	2026400
MEAN	180600	91700	93460	56020	51400	108400	139900	115000	92330	88580	74200	67550
MAX	326000	124000	145000	64400	58800	189000	218000	194000	162000	155000	156000	97800
MIN	102000	78300	62800	43500	44400	50400	89000	77400	68100	57400	46100	58100

CAL YR 1986 TOTAL 34841000 MEAN 95450 MAX 326000 MIN 35700
WTR YR 1987 TOTAL 35388900 MEAN 96960 MAX 326000 MIN 43500

MISSOURI RIVER BASIN

06910410 CEDAR CREEK NEAR COLUMBIA, MO

LOCATION.--Lat 38°57'16", long 92°08'57", in NW ¼ SW ¼ sec. 10, T.48 N., R.11 W., Boone County, Hydrologic Unit 10300102, on road fill at left upstream end of Interstate 70 north outer road bridge, 1 mi downstream from Manacle Creek and 9.5 mi east of Columbia.

DRAINAGE AREA.--44.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1964 to Feb. 1976. April 1986 to current year.

GAGE.--Water stage recorder. Datum of gage is 776.45 ft above National Geodetic Vertical Datum of 1929. Water stage recorder June 1964 to Feb. 1976 at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. A U.S. Geological Survey minimonitor measuring Ph and conductance housed in a metal shelter is attached to the bridge. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years (water years 1965-75) 40.7 ft³/s, 12.34 in/yr. 29,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 5,140 ft³/s Oct. 12, 1969, gage height 16.13 ft. No flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period of April to Sept., 2,180 ft³/s, May 17, gage height 12.37 ft; minimum .04 ft³/s, Sept. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	18	1.6	296	.43	.12
2	---	---	---	---	---	---	---	4.9	1.3	112	.30	.13
3	---	---	---	---	---	---	---	2.3	1.1	16	.22	.11
4	---	---	---	---	---	---	17	1.8	.91	5.6	.16	.13
5	---	---	---	---	---	---	11	1.4	1.3	2.7	.15	.11
6	---	---	---	---	---	---	7.1	1.3	16	1.6	.24	.08
7	---	---	---	---	---	---	5.2	1.0	9.5	.97	.26	.09
8	---	---	---	---	---	---	4.9	1.3	5.3	.76	.20	.07
9	---	---	---	---	---	---	3.6	1.3	4.7	.73	.18	.05
10	---	---	---	---	---	---	2.8	1.9	6.0	.91	.25	.05
11	---	---	---	---	---	---	2.5	2.0	4.1	210	.14	2.5
12	---	---	---	---	---	---	3.9	1.5	3.0	53	.14	2.4
13	---	---	---	---	---	---	4.8	1.2	1.9	11	.19	1.8
14	---	---	---	---	---	---	5.2	.89	1.6	452	.15	.60
15	---	---	---	---	---	---	4.3	16	1.7	158	.20	.25
16	---	---	---	---	---	---	3.4	47	1.8	26	.43	.17
17	---	---	---	---	---	---	3.3	959	1.4	9.1	.35	3.1
18	---	---	---	---	---	---	3.4	198	1.1	4.6	.41	3.3
19	---	---	---	---	---	---	3.5	49	1.1	2.8	.48	2.6
20	---	---	---	---	---	---	3.4	23	.95	1.9	.35	2.1
21	---	---	---	---	---	---	3.4	8.5	.80	1.3	.20	1.5
22	---	---	---	---	---	---	3.1	3.8	.73	.98	.13	1.2
23	---	---	---	---	---	---	2.6	2.9	.61	.80	.13	138
24	---	---	---	---	---	---	2.4	2.4	.61	.85	.10	243
25	---	---	---	---	---	---	2.1	2.2	.59	.82	.10	27
26	---	---	---	---	---	---	2.0	8.9	.51	.55	.14	10
27	---	---	---	---	---	---	2.2	3.5	9.1	.49	.74	352
28	---	---	---	---	---	---	1.8	2.6	159	.38	.26	73
29	---	---	---	---	---	---	1.1	2.2	11	.69	.35	25
30	---	---	---	---	---	---	14	2.5	4.2	.93	.22	256
31	---	---	---	---	---	---	---	2.1	---	.79	.15	---
TOTAL	---	---	---	---	---	---	---	1374.39	253.51	1374.25	7.75	1146.46
MEAN	---	---	---	---	---	---	---	44.3	8.45	44.3	.25	38.2
MAX	---	---	---	---	---	---	---	959	159	452	.74	352
MIN	---	---	---	---	---	---	---	.89	.51	.38	.10	.05

06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1986 to present.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1986 to present.

pH: April 1986 to present.

INSTRUMENTATION.--Water-quality monitor April 1986 to present.

REMARKS.--The number of missing days of specific conductance and pH record exceeds 20 percent of the year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
APR							
04...	1200	18	850	6.60	14.5	9.0	88
MAY							
05...	1315	1.1	881	6.60	17.5	9.0	94
JUN							
04...	1330	1.2	1120	6.20	21.5	9.7	109
JUL							
15...	1415	93	339	6.90	24.5	6.9	82
AUG							
15...	0830	0.18	1420	6.60	22.0	8.3	94
SEP							
04...	1230	0.14	1610	6.00	20.5	9.9	109

DATE	ACIDITY (MG/L AS H) (71825)	ALKA- LINITY WHI WAT TOTAL FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
APR							
04...	0.1	19	430	661	14	1200	3400
MAY							
05...	0.2	35	410	665	16	2800	3700
JUN							
04...	0.2	28	600	916	16	3800	4400
JUL							
15...	0.1	34	120	208	212	8400	790
AUG							
15...	0.3	50	760	1210	5	680	360
SEP							
04...	0.3	12	930	1330	15	3200	7000

06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C. WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	860	500	711
2	---	---	---	---	---	---	---	---	---	820	440	703
3	---	---	---	---	---	---	---	---	---	800	530	733
4	---	---	---	---	---	---	---	---	---	870	750	822
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	1000	920	965
7	---	---	---	---	---	---	---	---	---	1050	950	1010
8	---	---	---	---	---	---	---	---	---	1140	910	1040
9	---	---	---	---	---	---	---	---	---	1150	1080	1120
10	---	---	---	---	---	---	---	---	---	1160	1000	1100
11	---	---	---	---	---	---	---	---	---	1270	1140	1210
12	---	---	---	---	---	---	1060	960	1030	1240	1140	1210
13	---	---	---	---	---	---	1550	920	1230	1250	1120	1200
14	---	---	---	---	---	---	1040	940	1010	1300	1070	1200
15	---	---	---	---	---	---	1340	980	1130	1520	700	1110
16	---	---	---	---	---	---	1000	960	986	1240	640	957
17	---	---	---	---	---	---	1050	960	1020	760	190	342
18	---	---	---	---	---	---	1070	960	1030	390	290	358
19	---	---	---	---	---	---	1150	1000	1100	520	290	394
20	---	---	---	---	---	---	1220	1080	1170	610	420	530
21	---	---	---	---	---	---	1220	1150	1200	640	530	589
22	---	---	---	---	---	---	1200	1120	1170	700	580	660
23	---	---	---	---	---	---	1210	1130	1180	740	670	714
24	---	---	---	---	---	---	1190	1170	1180	790	700	756
25	---	---	---	---	---	---	1210	1170	1190	820	780	800
26	---	---	---	---	---	---	1250	1200	1210	820	650	733
27	---	---	---	---	---	---	1290	1230	1250	760	650	689
28	---	---	---	---	---	---	1310	1270	1290	950	760	851
29	---	---	---	---	---	---	1320	1270	1290	1030	950	994
30	---	---	---	---	---	---	1750	540	1240	1030	960	1020
31	---	---	---	---	---	---	---	---	---	990	940	964
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

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SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

PH (STANDARD UNITS), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986[illegible]

CEDAR CREEK BASIN

06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	7.0	5.6	6.4
2	---	---	---	---	---	---	---	---	---	6.9	6.4	6.6
3	---	---	---	---	---	---	---	---	---	6.7	6.4	6.5
4	---	---	---	---	---	---	---	---	---	6.5	6.4	6.4
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	6.6	6.5	6.6
7	---	---	---	---	---	---	---	---	---	6.7	6.4	6.5
8	---	---	---	---	---	---	---	---	---	6.9	6.4	6.6
9	---	---	---	---	---	---	---	---	---	6.4	6.2	6.3
10	---	---	---	---	---	---	---	---	---	6.6	6.2	6.3
11	---	---	---	---	---	---	---	---	---	6.3	5.3	5.6
12	---	---	---	---	---	---	6.5	6.3	6.4	5.9	5.2	5.4
13	---	---	---	---	---	---	6.4	4.4	5.3	5.9	5.3	5.6
14	---	---	---	---	---	---	6.4	6.0	6.2	6.5	5.2	5.9
15	---	---	---	---	---	---	6.2	4.6	5.3	6.3	4.4	5.4
16	---	---	---	---	---	---	6.5	6.2	6.3	7.2	4.7	5.8
17	---	---	---	---	---	---	6.5	6.2	6.3	7.4	6.3	6.8
18	---	---	---	---	---	---	6.5	6.3	6.4	7.0	6.6	6.8
19	---	---	---	---	---	---	6.5	5.9	6.1	6.9	6.9	6.9
20	---	---	---	---	---	---	6.3	5.5	5.8	6.9	6.7	6.8
21	---	---	---	---	---	---	6.2	5.7	5.9	7.1	6.6	6.9
22	---	---	---	---	---	---	6.3	5.9	6.0	7.0	7.0	7.0
23	---	---	---	---	---	---	6.3	6.0	6.1	7.0	6.8	6.9
24	---	---	---	---	---	---	6.3	6.1	6.2	6.8	6.7	6.8
25	---	---	---	---	---	---	6.3	6.2	6.2	6.8	6.7	6.8
26	---	---	---	---	---	---	6.3	6.2	6.3	7.0	6.7	6.9
27	---	---	---	---	---	---	6.3	6.2	6.3	6.8	6.4	6.5
28	---	---	---	---	---	---	6.3	6.2	6.2	6.6	6.3	6.5
29	---	---	---	---	---	---	6.3	6.2	6.2	6.4	6.1	6.2
30	---	---	---	---	---	---	6.3	4.6	6.0	6.4	6.1	6.2
31	---	---	---	---	---	---	---	---	---	6.4	6.2	6.3
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

PH (STANDARD UNITS), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	6.4	6.3	6.4	6.4	5.6	6.3	6.4	6.3	6.4	6.5	6.3	6.4
2	6.4	6.3	6.4	6.8	6.1	6.6	6.5	6.4	6.4	6.4	6.1	6.2
3	6.3	6.2	6.3	6.8	6.7	6.7	6.6	6.4	6.5	6.3	6.0	6.1
4	6.3	6.2	6.2	6.7	6.7	6.7	6.6	6.5	6.5	6.1	5.8	5.9
5	6.3	6.2	6.2	6.7	6.6	6.6	6.6	6.5	6.6	6.0	5.8	5.9
6	6.3	4.3	5.9	6.6	6.5	6.6	6.6	6.5	6.6	6.0	5.9	5.9
7	6.3	4.8	5.6	6.6	6.5	6.6	6.6	6.5	6.5	6.1	6.0	6.0
8	6.3	5.9	6.1	6.6	6.5	6.6	6.6	6.5	6.5	6.2	6.1	6.1
9	6.5	6.0	6.3	6.6	6.5	6.6	6.6	6.5	6.5	6.3	6.1	6.2
10	5.9	4.7	5.0	6.6	6.5	6.6	6.6	6.5	6.6	6.3	6.2	6.3
11	5.8	4.7	5.3	6.9	5.6	6.5	6.6	6.5	6.6	6.5	4.7	5.7
12	6.3	5.8	6.0	6.9	6.9	6.9	6.6	6.5	6.6	4.8	4.5	4.6
13	6.1	6.0	6.1	6.9	6.7	6.8	6.7	6.6	6.6	5.1	4.8	4.9
14	6.1	5.8	6.0	6.8	5.5	6.6	6.7	6.5	6.6	5.3	5.1	5.2
15	6.1	5.8	5.9	7.0	6.8	6.9	6.6	6.5	6.6	5.3	5.1	5.2
16	5.8	5.5	5.6	7.0	6.9	7.0	6.6	6.4	6.5	5.3	5.0	5.2
17	5.7	5.3	5.5	6.9	6.8	6.9	6.5	6.3	6.4	6.0	4.6	5.2
18	5.8	5.7	5.7	6.8	6.7	6.8	6.4	6.3	6.4	4.6	4.4	4.5
19	5.8	5.7	5.8	6.8	6.7	6.7	6.4	6.3	6.4	4.6	4.4	4.5
20	5.9	5.8	5.9	6.8	6.6	6.7	6.5	6.4	6.4	4.7	4.6	4.6
21	6.0	5.9	5.9	6.7	6.6	6.7	6.5	6.4	6.5	4.7	4.6	4.7
22	6.0	5.9	6.0	6.7	6.6	6.6	6.6	6.5	6.5	4.8	4.6	4.7
23	6.0	5.9	6.0	6.7	6.6	6.6	6.6	6.5	6.5	5.9	4.0	4.7
24	6.1	6.0	6.1	6.6	6.5	6.6	6.7	6.5	6.6	7.0	4.6	6.3
25	6.1	6.1	6.1	6.6	6.5	6.6	6.7	6.5	6.6	7.0	6.8	7.0
26	6.1	6.1	6.1	6.7	6.5	6.6	6.9	6.6	6.7	6.8	6.7	6.7
27	6.2	4.9	6.1	6.6	6.5	6.6	6.9	6.4	6.6	7.0	6.3	6.8
28	6.5	5.0	6.2	6.6	6.5	6.6	6.5	6.4	6.5	7.0	6.9	7.0
29	6.5	6.4	6.5	---	---	---	6.5	6.4	6.5	6.9	6.7	6.8
30	6.4	6.3	6.4	---	---	---	6.5	6.4	6.5	7.2	6.2	6.9
31	---	---	---	---	---	---	6.5	6.4	6.5	---	---	---
MONTH	6.5	4.3	5.99	---	---	---	6.9	6.3	6.52	7.2	4.0	5.74

06910410 CEDAR CREEK NEAR COLUMBIA, MO

LOCATION.--Lat 38°57'16", long 92°08'57", in NW ¼ SW ¼ sec. 10, T.48 N., R.11 W., Boone County, Hydrologic Unit 10300102, on road fill at left upstream end of Interstate 70 north outer road bridge, 1 mi downstream from Manacle Creek and 9.5 mi east of Columbia.

DRAINAGE AREA.--44.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1964 to Feb. 1976. April 1986 to current year.

GAGE.--Water stage recorder. Datum of gage is 776.45 ft above National Geodetic Vertical Datum of 1929. Water stage recorder June 1964 to Feb. 1976 at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. A U.S. Geological Survey minimonitor measuring pH and conductance housed in a metal shelter is attached to the bridge. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years (water years 1965-75, 1987) 39.7 ft³/s, 12.03 in/yr. 28,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,140 ft³/s Oct. 12, 1969, gage height 16.13 ft. No flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 3	2030	*2,660	*13.16	No other peak greater than base discharge.			

Minimum discharge, no flow several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	345	3.3	655	2.7	153	40	11	4.3	.07	.05	.21	.07
2	501	2.5	295	2.7	83	24	7.6	2.2	.09	.06	.19	.04
3	1990	2.3	93	2.5	49	13	5.8	8.1	7.7	1.3	.03	.02
4	848	3.0	40	2.5	27	9.1	4.6	4.5	5.1	.67	.07	.02
5	80	4.5	24	2.3	20	7.6	3.9	2.6	1.7	.24	.03	.04
6	32	4.5	19	2.6	16	6.5	3.8	3.2	.84	.41	.01	.05
7	17	4.6	314	2.3	14	5.8	3.7	2.4	.40	.59	.00	.19
8	9.9	7.6	245	2.1	11	5.1	3.5	1.9	.17	.12	.01	.16
9	7.7	8.4	166	2.4	8.0	4.3	5.2	1.2	.61	4.6	.25	.12
10	8.1	5.0	62	4.4	7.2	3.7	3.3	.98	1.1	2.1	.11	.09
11	6.6	4.4	26	4.3	7.0	3.1	2.9	.87	.70	1.3	.10	.10
12	5.9	4.4	18	4.1	6.3	2.6	3.7	.65	.41	.51	.04	.72
13	5.1	3.2	12	6.2	5.9	2.6	232	.61	.32	312	.23	.67
14	4.8	2.4	10	77	6.2	2.6	491	.90	.17	33	.10	.69
15	4.4	2.4	11	111	5.8	2.5	89	.58	.09	4.5	.06	1.2
16	3.7	2.6	11	26	5.6	2.6	37	3.8	.08	2.0	.01	1.1
17	2.9	2.8	11	14	5.2	2.8	23	.92	.07	1.1	.00	1.1
18	2.8	2.7	9.4	13	4.6	6.8	16	.52	.08	.60	.58	.99
19	2.3	2.3	7.2	13	4.0	16	12	.95	.37	.79	.91	.91
20	2.8	2.8	5.9	12	4.0	11	9.7	3.0	12	.20	.86	.76
21	2.1	3.1	5.3	9.2	4.0	7.6	7.2	1.2	2.5	.14	.56	.72
22	2.0	2.7	4.8	8.9	4.0	5.9	5.5	1.5	.71	.18	.36	.70
23	2.0	3.0	4.7	6.7	3.8	5.8	4.8	.77	3.7	.33	.18	.73
24	2.1	2.8	4.7	4.8	3.8	11	4.6	.59	1.9	.10	.16	.69
25	4.1	50	4.4	3.8	3.7	20	4.0	7.0	.47	.01	.17	.61
26	112	624	4.3	3.3	3.5	13	3.6	4.1	.18	.02	.23	.62
27	39	96	3.6	3.8	3.5	8.5	4.3	1.3	.09	.01	.29	.49
28	15	38	2.9	4.7	9.9	15	2.9	.47	.06	.01	.31	1.1
29	7.7	25	3.0	76	---	80	1.8	.56	.06	.00	.16	3.3
30	5.3	17	2.9	285	---	28	1.9	.18	.04	.00	.14	1.3
31	4.3	---	2.5	150	---	15	---	.10	---	.00	.18	---
TOTAL	4075.6	937.3	2077.6	863.3	479.0	381.5	1009.3	73.00	42.36	487.30	6.42	19.30
MEAN	131	31.2	67.0	27.8	17.1	12.3	33.6	2.35	1.41	15.7	.21	.64
MAX	1990	624	655	285	153	80	491	12	12	312	.86	3.3
MIN	2.0	2.3	2.5	2.1	3.5	2.5	1.8	.10	.04	.00	.00	.02

CAL YR 1986 TOTAL 11370.79 MEAN 41.8 MAX 1990 MIN .05
WTR YR 1987 TOTAL 10451.79 MEAN 28.6 MAX 1990 MIN .00

CEDAR CREEK BASIN

06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1986 to current year.

pH: April 1986 to current year.

INSTRUMENTATION.--Water-quality monitor April 1986 to current year.

REMARKS.--The number of missing days of pH record exceeds 20 percent of the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,160 microsiemens, Sept. 11, 1986; minimum, 120 microsiemens, June 28 and July 11, 1986.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,920 microsiemens, May 25 and June 5; minimum, 140 microsiemens, July 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)
OCT							
21...	1600	2.0	1100	6.00	14.5	8.3	80
NOV							
21...	0840	3.3	1050	6.50	3.5	10.8	80
DEC							
10...	0815	69	343	7.10	2.0	13.3	94
JAN							
15...	0845	127	377	7.20	2.5	12.6	91
FEB							
12...	0730	6.1	720	6.50	4.0	12.1	91
MAR							
11...	1545	3.5	903	6.80	5.5	13.7	107
APR							
08...	1600	3.6	788	6.90	12.5	11.1	104
MAY							
14...	1060	1.1	1370	6.50	20.0	7.4	81
JUN							
04...	0830	5.4	1650	5.30	19.0	6.6	71
JUL							
09...	0800	5.1	912	6.90	23.0	8.5	98
AUG							
13...	0850	0.41	1170	6.20	24.5	7.6	91
SEP							
10...	0800	0.09	1750	6.60	20.0	7.3	81

DATE	ACIDITY (MG/L AS H) (71825)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT							
21...	0.2	23	590	917	11	3600	5200
NOV							
21...	0.1	26	570	862	30	4100	4700
DEC							
10...	0.1	52	100	234	74	3400	720
JAN							
15...	<0.1	54	130	262	84	3300	990
FEB							
12...	0.1	32	350	546	9	3800	3400
MAR							
11...	0.1	46	400	689	4	--	--
APR							
08...	0.2	54	370	597	25	3600	3200
MAY							
14...	0.1	24	800	1230	7	4400	7000
JUN							
04...	0.3	12	980	1440	19	1300	810
JUL							
09...	<0.1	28	450	760	22	940	2700
AUG							
13...	0.1	14	650	959	14	1400	4900
SEP							
10...	0.1	24	80	268	12	1000	790

CEDAR CREEK BASIN

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06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	320	230	267	800	720	767	599	179	330	1010	990	1000
2	330	190	256	840	800	819	360	220	283	1010	980	995
3	220	160	187	880	840	861	420	330	375	1040	1000	1020
4	310	180	244	890	870	883	520	430	470	1070	1030	1050
5	420	320	368	921	880	899	570	510	534	1080	1050	1060
6	490	410	453	972	921	950	640	580	608	1160	1060	1100
7	540	490	511	992	962	977	700	240	487	1150	1110	1120
8	600	540	560	1190	993	1060	330	230	287	1150	1110	1130
9	670	590	630	1020	963	994	370	300	323	1150	1110	1130
10	730	670	698	1040	1020	1030	420	300	356	1120	1060	1090
11	780	730	751	1030	995	1010	520	420	471	1110	1060	1090
12	830	780	802	1060	1000	1020	570	520	555	1150	1080	1100
13	870	830	846	1100	1050	1080	630	570	599	1190	1000	1120
14	900	860	881	1070	1020	1040	670	620	647	1000	461	778
15	920	890	907	1050	1030	1040	700	660	684	481	350	393
16	940	910	924	1050	1030	1040	760	680	721	430	360	390
17	960	940	947	1060	1020	1040	760	740	754	480	420	456
18	990	960	975	1070	1060	1060	770	740	756	530	480	503
19	1020	990	1000	1080	1060	1070	800	750	773	570	530	554
20	1070	1010	1040	1090	1050	1070	800	750	775	590	560	571
21	1160	1070	1100	1090	1040	1070	820	780	797	670	590	639
22	1190	1150	1170	1070	1030	1050	850	810	825	---	---	---
23	1200	1180	1190	1120	1060	1100	870	850	855	---	---	---
24	1230	1190	1210	1140	1110	1130	900	870	889	---	---	---
25	1260	1200	1240	1160	325	1090	900	890	898	---	---	---
26	1410	410	719	415	255	305	920	880	895	---	---	---
27	480	410	446	417	316	370	960	910	937	---	---	---
28	560	480	518	487	417	449	960	940	952	---	---	---
29	640	550	592	548	488	509	970	940	951	---	---	---
30	690	630	653	589	548	575	970	940	955	---	---	---
31	730	680	718	---	---	---	1010	970	988	---	---	---
MONTH	1410	160	736	1190	255	912	1010	179	669	---	---	---
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	1050	690	817	650	570	618	1200	904	1020
2	---	---	---	830	710	736	670	640	656	1030	914	973
3	---	---	---	730	710	722	710	670	689	1660	877	1120
4	---	---	---	750	720	737	740	700	729	901	796	828
5	---	---	---	800	750	769	770	740	763	921	824	876
6	---	---	---	820	790	803	800	770	788	896	821	845
7	---	---	---	830	810	814	820	790	809	1000	896	983
8	---	---	---	850	820	833	840	800	819	1080	956	1010
9	---	---	---	860	850	856	850	780	803	1080	1040	1050
10	---	---	---	870	850	861	880	830	859	1150	1080	1120
11	---	---	---	910	870	888	930	850	888	1180	1130	1170
12	---	---	---	930	890	912	930	870	911	1280	1180	1230
13	770	730	754	960	920	944	910	290	629	1340	1270	1310
14	809	760	779	980	950	967	308	230	266	1380	1280	1360
15	820	800	813	1010	970	992	430	310	374	1380	1350	1360
16	820	790	805	1000	990	995	497	420	463	1510	1200	1280
17	830	800	813	1010	990	999	540	490	515	1230	1210	1220
18	860	820	839	1160	990	1020	600	540	567	1260	1220	1240
19	910	850	876	1190	820	922	640	590	611	1780	620	1110
20	930	890	912	1050	850	963	680	630	654	1110	980	1080
21	930	900	912	910	830	850	720	670	694	1170	1110	1140
22	950	910	929	860	830	839	760	710	735	1230	1170	1200
23	970	930	948	870	850	860	800	750	772	1200	1110	1140
24	980	950	966	930	830	872	820	790	810	1460	1140	1340
25	960	950	955	910	760	795	864	820	847	1920	1350	1530
26	980	950	969	900	740	812	890	860	882	1520	690	807
27	1020	970	993	760	740	748	930	890	911	1020	700	838
28	1080	990	1030	840	640	770	1000	910	958	1230	970	1140
29	---	---	---	770	440	549	1020	977	1000	1440	1220	1360
30	---	---	---	510	450	477	1050	997	1020	1420	1270	1350
31	---	---	---	580	510	551	---	---	---	1380	1270	1320
MONTH	---	---	---	1190	440	828	1050	230	735	1920	620	1140

CEDAR CREEK BASIN

06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1570	1380	1490	---	---	---	1620	1170	1280	1460	1430	1440
2	1710	1570	1650	---	---	---	1660	1510	1580	1450	1420	1430
3	1720	1430	1550	---	---	---	1530	1270	1350	1430	1410	1420
4	1880	1470	1660	---	---	---	1290	1180	1210	1420	1390	1410
5	1920	1880	1910	---	---	---	1250	1190	1230	1410	1380	1400
6	1890	1840	1850	---	---	---	1260	1210	1250	1410	1360	1390
7	1850	1820	1830	---	---	---	1200	1120	1150	1380	1330	1350
8	1840	1790	1800	---	---	---	1140	1080	1100	1390	1330	1350
9	1790	1220	1670	---	---	---	1140	1050	1090	1390	1330	1360
10	1590	1430	1540	980	930	960	1130	1100	1110	---	---	---
11	1480	1330	1380	980	930	958	1100	1080	1090	1370	1300	1320
12	1380	1310	1350	1020	420	883	1120	1090	1110	1310	1260	1280
13	1330	1290	1310	690	140	322	1210	1110	1170	1260	1020	1140
14	1350	1310	1330	350	230	287	1250	1210	1240	1150	970	1040
15	1390	1340	1370	450	350	401	1270	1240	1260	1210	1120	1150
16	1450	1390	1420	560	450	510	1290	1260	1280	1150	1140	1140
17	1500	1450	1480	640	560	595	1310	1290	1300	1150	1140	1140
18	1540	1500	1520	698	620	649	1720	1260	1430	1160	1140	1150
19	1660	1530	1560	750	690	727	1680	1480	1610	1160	1150	1160
20	1670	880	1300	840	750	792	1530	1470	1510	1170	1160	1160
21	1450	1200	1260	878	830	853	1520	1450	1470	1180	1160	1170
22	1320	1240	1270	920	870	903	1460	1390	1420	1180	1160	1170
23	1460	1310	1360	1020	920	990	1410	1380	1390	1180	1170	1170
24	1650	1410	1570	940	890	912	1400	1380	1390	1320	970	1150
25	1660	1620	1650	930	890	910	1400	1390	1400	1460	1030	1190
26	1640	1610	1630	970	930	949	1420	1390	1410	1090	1030	1050
27	1620	1600	1610	1020	970	1000	1430	1410	1420	1150	1040	1090
28	1630	1590	1600	1070	1010	1040	1460	1420	1440	1140	1100	1130
29	1620	1590	1610	1100	1050	1080	1480	1450	1460	1140	1120	1130
30	---	---	---	1140	1090	1120	1510	1470	1490	1140	1110	1120
31	---	---	---	1190	1130	1160	1520	1420	1470	---	---	---
MONTH	---	---	---	---	---	---	1720	1050	1326	---	---	---

PH (STANDARD UNITS), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.2	6.8	7.2	6.6	6.6	6.6	7.1	6.5	6.9	6.4	6.3	6.4
2	7.2	6.9	7.1	6.6	6.5	6.6	7.2	6.9	7.0	6.4	6.3	6.4
3	7.1	7.0	7.0	6.5	6.5	6.5	7.2	6.9	7.0	6.4	6.4	6.4
4	7.1	6.9	7.0	6.5	6.4	6.4	6.9	6.8	6.9	6.4	6.3	6.3
5	7.0	6.9	6.9	6.4	6.4	6.4	6.8	6.7	6.8	6.4	6.2	6.3
6	6.9	6.8	6.9	6.4	6.3	6.3	6.7	6.7	6.7	6.6	6.4	6.5
7	6.8	6.7	6.7	6.3	6.2	6.3	7.2	6.3	6.8	6.6	6.4	6.5
8	6.7	6.6	6.6	6.3	5.3	5.9	7.2	7.0	7.1	6.6	6.5	6.6
9	6.6	6.6	6.6	5.9	5.7	5.8	7.1	6.9	7.1	6.6	6.3	6.4
10	6.6	6.2	6.4	6.1	5.9	6.0	7.2	7.0	7.1	6.4	6.0	6.3
11	6.4	6.4	6.4	6.2	6.1	6.1	7.0	6.9	7.0	6.3	6.1	6.2
12	6.4	6.2	6.3	6.2	6.1	6.2	6.9	6.9	6.9	6.3	6.2	6.2
13	6.2	6.0	6.1	6.1	6.0	6.1	6.9	6.8	6.8	6.2	5.9	6.1
14	6.1	6.0	6.1	6.3	6.0	6.1	6.8	6.7	6.7	7.0	5.3	6.5
15	6.1	5.9	6.1	6.3	6.2	6.2	6.7	6.7	6.7	7.2	6.7	6.9
16	6.2	6.1	6.1	6.3	6.2	6.2	6.8	6.6	6.7	6.8	6.7	6.8
17	6.1	6.1	6.1	6.3	6.2	6.2	6.8	6.6	6.7	6.8	6.7	6.7
18	6.1	6.0	6.1	6.3	6.2	6.2	6.7	6.6	6.7	6.7	6.7	6.7
19	6.0	6.0	6.0	6.3	6.2	6.2	6.7	6.6	6.6	6.7	6.6	6.7
20	6.0	5.9	6.0	6.3	6.2	6.3	6.6	6.6	6.6	6.7	6.7	6.7
21	6.1	6.0	6.0	6.3	6.1	6.2	6.6	6.5	6.6	6.7	6.6	6.7
22	6.1	6.0	6.1	6.3	6.1	6.2	6.5	6.5	6.5	---	---	---
23	6.1	5.9	6.0	6.3	6.1	6.2	6.5	6.4	6.5	---	---	---
24	6.1	5.9	6.0	6.1	5.9	6.0	6.5	6.4	6.4	---	---	---
25	6.2	6.0	6.1	6.4	5.4	6.1	6.4	6.3	6.4	---	---	---
26	7.3	4.8	6.7	7.2	6.6	7.0	6.5	6.4	6.4	---	---	---
27	7.3	7.1	7.2	7.0	6.9	7.0	6.5	6.3	6.4	---	---	---
28	7.1	6.9	7.0	6.9	6.9	6.9	6.4	6.3	6.3	---	---	---
29	6.9	6.8	6.9	6.8	6.8	6.8	6.5	6.3	6.4	---	---	---
30	6.8	6.7	6.7	6.8	6.7	6.8	6.5	6.4	6.4	---	---	---
31	6.7	6.6	6.7	---	---	---	6.5	6.3	6.4	---	---	---
MONTH	7.3	4.8	6.49	7.2	5.3	6.33	7.2	6.3	6.69	---	---	---

CEDAR CREEK BASIN

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06910410 CEDAR CREEK NEAR COLUMBIA, MO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	8.0	7.9	8.0	7.2	7.2	7.2
2	---	---	---	---	---	---	8.0	7.8	7.9	7.2	7.2	7.2
3	---	---	---	7.1	7.0	7.1	7.8	7.6	7.7	7.2	7.2	7.2
4	---	---	---	7.1	6.9	7.0	7.7	7.4	7.6	---	---	---
5	---	---	---	7.0	6.9	6.9	7.5	7.2	7.4	---	---	---
6	---	---	---	6.9	6.8	6.9	7.4	7.2	7.3	---	---	---
7	---	---	---	6.9	6.8	6.8	7.2	7.0	7.2	---	---	---
8	---	---	---	6.9	6.7	6.8	8.2	6.9	7.1	---	---	---
9	---	---	---	6.9	6.8	6.9	7.4	7.2	7.3	---	---	---
10	---	---	---	7.0	6.8	6.9	---	---	---	---	---	---
11	---	---	---	6.9	6.3	6.7	---	---	---	---	---	---
12	---	---	---	6.4	6.3	6.3	---	---	---	---	---	---
13	---	---	---	6.3	6.2	6.2	---	---	---	---	---	---
14	---	---	---	6.2	6.1	6.2	---	---	---	---	---	---
15	---	---	---	6.2	6.1	6.2	---	---	---	---	---	---
16	---	---	---	6.3	6.2	6.2	---	---	---	---	---	---
17	---	---	---	6.4	6.3	6.3	---	---	---	---	---	---
18	---	---	---	6.4	6.0	6.3	---	---	---	---	---	---
19	---	---	---	6.6	5.8	6.4	---	---	---	---	---	---
20	---	---	---	6.6	6.4	6.5	---	---	---	---	---	---
21	---	---	---	6.6	6.5	6.6	---	---	---	---	---	---
22	---	---	---	6.7	6.6	6.6	---	---	---	---	---	---
23	---	---	---	6.7	6.6	6.7	---	---	---	---	---	---
24	---	---	---	6.8	6.5	6.7	---	---	---	---	---	---
25	---	---	---	7.7	6.5	7.1	---	---	---	---	---	---
26	---	---	---	8.1	7.7	7.9	---	---	---	---	---	---
27	---	---	---	8.2	8.0	8.1	---	---	---	---	---	---
28	---	---	---	8.2	8.1	8.2	---	---	---	---	---	---
29	---	---	---	8.3	8.2	8.2	7.1	7.0	7.1	---	---	---
30	---	---	---	8.3	8.1	8.2	7.2	7.1	7.2	---	---	---
31	---	---	---	8.2	8.0	8.1	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	6.2	6.1	6.1	5.7	5.4	5.5
2	---	---	---	---	---	---	6.2	5.9	6.1	5.8	5.6	5.7
3	---	---	---	---	---	---	6.0	5.8	5.9	6.0	5.8	5.9
4	---	---	---	---	---	---	5.9	5.8	5.9	6.0	5.9	6.0
5	4.7	4.6	4.6	---	---	---	5.9	5.8	5.9	6.1	6.0	6.1
6	5.0	4.7	4.8	---	---	---	6.0	5.9	5.9	6.2	6.1	6.1
7	5.2	5.0	5.0	---	---	---	5.9	5.8	5.9	6.3	6.1	6.2
8	---	---	---	---	---	---	5.9	5.8	5.8	6.3	6.2	6.3
9	---	---	---	---	---	---	6.0	5.8	5.9	6.4	6.2	6.3
10	---	---	---	6.6	6.5	6.6	6.0	5.7	5.9	6.5	6.2	6.4
11	---	---	---	6.6	6.5	6.6	5.9	5.8	5.9	6.4	6.2	6.3
12	---	---	---	6.9	5.5	6.4	6.2	5.9	6.0	6.3	6.2	6.2
13	6.8	6.4	6.6	7.2	5.9	6.8	6.2	5.2	5.7	6.2	5.9	6.1
14	6.7	6.4	6.6	7.0	6.8	6.9	5.3	5.2	5.3	6.1	5.7	6.0
15	6.7	6.3	6.4	6.8	6.5	6.7	5.5	5.3	5.4	6.1	5.9	6.0
16	6.6	6.1	6.4	6.6	6.4	6.5	5.7	5.4	5.6	6.2	6.0	6.1
17	6.5	6.2	6.4	6.4	6.3	6.4	5.8	5.6	5.7	6.2	6.0	6.1
18	6.5	6.1	6.3	6.4	6.3	6.4	5.9	5.8	5.8	6.1	6.0	6.1
19	6.5	5.8	6.4	6.4	6.2	6.3	5.8	5.6	5.7	6.1	6.0	6.0
20	7.4	5.4	6.5	6.3	6.3	6.3	5.7	5.6	5.6	6.1	5.9	6.0
21	7.4	7.1	7.2	6.4	6.3	6.3	5.8	5.6	5.7	6.0	5.9	6.0
22	7.1	5.9	6.9	6.4	6.3	6.3	5.8	5.6	5.7	6.0	5.9	5.9
23	6.7	4.9	6.2	6.4	6.2	6.3	5.7	5.5	5.7	6.0	5.8	5.9
24	4.9	4.8	4.8	6.3	6.2	6.3	6.4	5.7	5.9	6.1	5.8	5.9
25	4.9	4.8	4.9	6.4	6.2	6.3	6.4	5.7	6.1	6.2	5.6	5.9
26	5.0	4.9	5.0	6.4	6.3	6.3	6.5	5.7	6.2	5.8	5.2	5.6
27	5.2	5.1	5.1	6.4	6.3	6.3	6.8	6.3	6.6	5.8	5.4	5.7
28	5.6	5.2	5.4	6.4	6.3	6.4	6.7	5.9	6.4	6.0	5.7	5.9
29	6.1	5.4	5.8	6.4	6.3	6.3	6.6	6.0	6.4	6.0	5.9	6.0
30	---	---	---	6.3	6.1	6.2	6.7	6.0	6.3	6.0	5.9	6.0
31	---	---	---	6.2	6.1	6.2	6.3	5.3	5.8	---	---	---
MONTH	---	---	---	---	---	---	6.8	5.2	5.90	6.5	5.2	6.01

CEDAR CREEK BASIN

06910414 CEDAR CREEK NEAR ASHLAND, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°45'29", long 92°10'28", in NW ¼ NW ¼ sec.21, T.46 N., R.11 W., Boone County, Hydrologic Unit 10300102, at bridge on County Highway Y, 5.0 mi east of Ashland.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
21...	1110	10	520	8.00	13.5	10.1	94	19	49	250
NOV										
19...	0855	0.50	580	8.00	4.5	12.2	92	12	K12	--
DEC										
10...	1245	155	280	7.60	2.5	13.8	98	29	800	--
JAN										
15...	1145	300	466	7.60	2.5	13.0	93	38	620	180
FEB										
12...	1400	22	440	8.10	6.0	13.1	103	16	K3	--
MAR										
12...	0930	34	495	7.90	5.5	13.5	104	21	K6	--
APR										
09...	0745	5.0	450	7.60	10.0	9.1	80	13	K30	240
MAY										
14...	1530	2.0	668	8.10	21.5	8.7	97	11	K12	--
JUN										
04...	1030	6.0	612	7.70	21.0	6.0	66	<10	51	--
JUL										
09...	1345	12	706	8.00	28.0	8.9	112	18	350	340
AUG										
13...	1300	0.17	510	7.90	26.0	6.4	78	26	K260	--
SEP										
14...	1100	0.11	438	7.80	21.5	7.2	81	35	K45	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
21...	130	77	15	7.0	4.1	125	2.4	130	5.6	0.20
NOV										
19...	--	--	--	--	--	205	4.0	--	--	--
DEC										
10...	--	--	--	--	--	72	3.5	--	--	--
JAN										
15...	130	48	14	10	3.6	52	2.5	130	15	0.20
FEB										
12...	--	--	--	--	--	108	1.7	--	--	--
MAR										
12...	--	--	--	--	--	121	3.0	--	--	--
APR										
09...	97	75	13	9.3	2.7	144	7.0	100	7.1	0.30
MAY										
14...	--	--	--	--	--	148	2.3	--	--	--
JUN										
04...	--	--	--	--	--	130	5.0	--	--	--
JUL										
09...	290	94	26	9.6	6.2	52	1.0	300	20	0.40
AUG										
13...	--	--	--	--	--	162	4.0	--	--	--
SEP										
14...	--	--	--	--	--	166	5.1	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

06918070 OSAGE RIVER ABOVE SCHELL CITY, MO

LOCATION.--Lat 38°03'20", long 94°08'44", in SE ¼ SW ¼ NW ¼ sec.20, T.38 N., R.29 W., Bates County, Hydrologic Unit 10290105, 0.8 mi downstream from Shaw Branch, 0.2 mi upstream from McKenzie Creek, and 3.0 mi northwest of Schell City.

DRAINAGE AREA.--5,410 mi², by U.S. Army Corps of Engineers.

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder and slope gage 1.7 miles downstream. Datum of gage is 700.00 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. No estimated daily discharges. Periods of low flow could not be calculated using fall computations. Stage discharge relation affected by backwater from Truman Reservoir. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 133,000 ft³/s, Oct. 5, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 133,000 ft³/s, Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36200	11100	9750	---	---	23900	8680	1630	12500	---	---	776
2	50500	9990	8940	---	---	30700	8150	1150	10600	---	---	604
3	69900	10700	7720	---	---	35300	7860	1010	9670	---	---	485
4	109000	10700	6370	---	---	38800	7550	1600	8180	---	---	393
5	133000	12000	5220	---	2650	37900	7220	11700	6800	2140	130	310
6	132000	13500	4650	---	2560	34600	5870	14800	4860	4920	177	297
7	118000	13900	6440	---	3040	27300	4420	18800	3470	5950	324	250
8	108000	13700	---	---	3840	20000	3300	20300	2800	5420	308	230
9	92200	12300	---	---	3730	16500	2800	18600	2410	3590	206	214
10	79800	10300	---	---	2870	14100	2660	13100	2010	2070	186	---
11	69900	8780	---	---	2360	11700	2560	8980	1680	1550	165	---
12	59600	8200	10600	---	2030	9910	2270	6810	1610	1690	140	240
13	51700	7830	8780	1500	1890	9140	2820	5180	2880	2840	140	457
14	46700	7680	7360	2460	1940	8600	8160	4720	3650	4360	160	381
15	43000	6970	6500	4420	5160	7860	11000	4230	3050	3370	247	572
16	39700	6400	5950	5040	10500	6040	12000	3350	1600	2280	1590	949
17	35000	5940	5610	4400	16000	4890	12500	2860	---	1770	1910	1300
18	30800	5500	5350	3520	19000	11700	11800	2260	---	---	1230	1180
19	26700	4900	4730	3010	19700	19900	7690	3260	---	---	753	1080
20	22700	3930	4310	2830	19200	23300	6280	6700	---	630	2460	698
21	19300	3280	3750	2610	18500	25200	6530	2930	1940	520	4330	576
22	---	3360	3270	2580	17800	25000	6800	1630	3060	350	4540	463
23	---	3010	3040	2770	16600	23900	6730	---	6190	282	2480	377
24	---	2740	2950	2920	13400	21400	6390	---	8190	239	1290	333
25	---	2930	2870	2950	9900	19200	6110	1450	9870	---	1280	360
26	---	7740	2740	2890	8270	18700	5670	1720	8310	---	1410	360
27	---	9260	2620	2510	7340	18000	5400	2140	3790	---	1890	351
28	---	10300	2480	2010	13200	14500	5140	11100	1900	---	2100	318
29	---	10400	2400	---	---	9630	4420	16900	1120	---	1600	361
30	---	9980	---	---	---	9420	2640	18400	---	---	1280	416
31	12400	---	---	---	---	9320	---	16900	---	---	1020	---
TOTAL	---	247320	---	---	---	586410	191420	---	---	---	---	---
MEAN	---	8244	---	---	---	18920	6381	---	---	---	---	---
MAX	---	13900	---	---	---	38800	12500	---	---	---	---	---
MIN	---	2740	---	---	---	4890	2270	---	---	---	---	---

06918070 OSAGE RIVER ABOVE SCHELL CITY, MO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1979 to current year, formerly published as 06918080 Osage River near Schell City, Mo.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1979 to September 1981.

WATER TEMPERATURE: March 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,950 microsiemens, Oct. 11, 1980; minimum daily, 114 microsiemens, June 12, 1981.

WATER TEMPERATURE: Maximum daily, 32.0°C, July 11, 1980; minimum daily, 0.0°C, Feb. 5, 1980, Feb. 11-14, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (60400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 07...	0930	20000	356	7.80	11.5	44	9.0	82	1800	2800
JAN 07...	1615	1500	489	8.10	4.0	9.4	13.6	101	K22	82
MAR 04...	1500	39800	178	7.40	7.5	200	10.4	85	1300	3400
MAY 21...	0930	3100	316	7.50	23.5	280	4.8	56	2400	2800
JUL 07...	1400	6050	280	7.50	24.0	300	5.6	66	26000	21000
SEP 03...	1230	506	438	7.70	24.0	63	6.6	77	220	460

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
NOV 07...	170	33	52	9.3	9.2	10	0.3	3.5	136
JAN 07...	230	58	72	11	13	11	0.4	3.2	168
MAR 04...	81	17	26	4.0	4.4	10	0.2	3.0	64
MAY 21...	140	43	45	7.4	9.1	12	0.3	3.0	100
JUL 07...	120	29	39	6.2	6.7	10	0.3	3.0	94
SEP 03...	160	45	49	9.8	15	16	0.5	4.0	118

K--Results based on colony count outside the acceptable range (non-ideal colony count).

OSAGE RIVER BASIN

06918070 OSAGE RIVER ABOVE SCHELL CITY, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 07...	59	6.3	0.20	8.8	239	230	0.33	12900	0.330
JAN 07...	73	9.6	0.20	6.5	304	290	0.41	1230	0.420
MAR 04...	22	3.5	0.10	6.5	110	120	0.15	11800	0.550
MAY 21...	56	6.2	0.20	7.2	204	190	0.28	1710	0.910
JUL 07...	38	3.4	0.20	7.9	171	160	0.23	2790	0.500
SEP 03...	69	10	0.30	9.3	244	240	0.33	333	0.610

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 07...	0.030	0.04	0.40	0.080	0.050	0.030	--	--	--
JAN 07...	0.040	0.05	0.80	0.020	0.020	0.020	42	170	85
MAR 04...	0.110	0.14	0.40	0.350	0.050	0.040	345	37100	96
MAY 21...	0.080	0.10	2.9	0.590	0.050	0.040	773	6470	93
JUL 07...	0.210	0.27	1.7	0.280	0.060	0.030	1130	18500	95
SEP 03...	0.020	0.03	0.30	0.080	0.050	0.030	131	179	95

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01600)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 07...	30	1	76	<0.5	<1	<1	<3	2	46	<5
JAN 07...	20	1	84	<0.5	<1	<1	<3	2	17	<5
MAY 21...	50	1	69	<0.5	<1	<1	<3	3	62	<5
JUL 07...	210	<1	58	0.5	<1	1	<3	3	190	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 07...	8	51	0.2	<10	4	<1	<1	260	<6	21
JAN 07...	9	120	<0.1	<10	2	<1	<1	350	<6	32
MAY 21...	9	6	0.1	<10	2	<1	<1	220	<6	35
JUL 07...	7	23	<0.1	<10	<1	<1	<1	190	<6	12

OSAGE RIVER BASIN

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06918440 SAC RIVER NEAR DADEVILLE, MO

LOCATION.--Lat 37°26'35", long 93°41'05", in NE ¼ NE ¼ NW ¼ sec.9, T.31 N., R.25 W., Dade County, Hydrologic Unit 10290106, on downstream side of bridge on State Highway 245, 2 mi upstream from Cave Spring Branch and 2 mi south of Dadeville.

DRAINAGE AREA.--257 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1966 to current year. Annual maximum, water years 1965-66.

GAGE.--Water-stage recorder. Datum of gage is 869.78 ft above National Geodetic Vertical Datum of 1929 (levels by Missouri State Highway and Transportation Commission). Prior to June 1966, crest-stage gage at same site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--21 years, 230 ft³/s, 12.15 in/yr, 166,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s, Oct. 1, 1986, gage height, 20.83 ft; minimum, 4.0 ft³/s, Sept. 16, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1415	*13,600	*20.83	Sept. 15	0445	3,450	13.90
June 30	2345	3,310	13.65				

Minimum discharge, 15 ft³/s, Aug. 8, 9, 11, 12, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7510	148	143	128	237	1320	369	156	69	727	21	24
2	3830	142	148	124	253	1030	345	149	66	122	20	23
3	1840	139	144	122	251	829	326	253	64	91	19	22
4	1460	155	142	120	248	696	310	767	61	186	19	21
5	1070	207	140	114	243	605	299	344	58	162	18	21
6	833	247	140	112	237	534	288	285	57	133	18	21
7	683	249	153	107	230	481	277	255	55	92	17	20
8	582	268	189	105	223	443	264	229	53	75	16	23
9	515	270	228	110	211	411	253	201	51	69	16	23
10	464	263	263	115	205	379	248	179	50	61	16	21
11	424	216	282	110	198	354	239	161	51	53	15	21
12	421	232	284	109	191	332	228	160	52	49	19	22
13	385	218	273	110	201	314	234	142	51	165	17	21
14	356	211	260	114	230	300	459	135	48	113	18	62
15	327	208	252	120	805	287	343	130	46	86	20	1880
16	305	197	241	128	1530	273	312	120	44	70	17	295
17	287	185	231	139	1240	281	292	114	41	60	66	189
18	270	178	218	161	951	560	276	110	38	54	26	125
19	252	170	207	184	864	538	259	103	37	49	22	100
20	238	165	197	195	766	450	245	97	41	44	42	79
21	227	160	188	204	696	416	232	92	43	40	40	63
22	226	155	180	213	630	389	222	91	42	37	29	53
23	226	152	174	214	560	409	213	89	51	35	25	47
24	211	150	169	212	507	946	204	90	48	33	26	42
25	200	145	162	206	464	807	195	88	42	31	26	38
26	196	173	155	199	432	668	186	84	37	29	24	34
27	187	161	149	195	416	583	179	80	34	28	27	32
28	177	152	144	199	548	516	171	79	34	27	32	31
29	168	147	140	221	---	467	166	81	32	25	31	32
30	159	144	136	227	---	425	161	76	508	24	28	29
31	154	---	131	226	---	394	---	73	---	23	26	---
TOTAL	24183	5607	5863	4843	13567	16437	7795	5013	1904	2793	756	3414
MEAN	780	187	189	156	485	530	260	162	63.5	90.1	24.4	114
MAX	7510	270	284	227	1530	1320	459	767	508	727	66	1880
MIN	154	139	131	105	191	273	161	73	32	23	15	20

CAL YR 1986 TOTAL 76527 MEAN 210 MAX 7510 MIN 13
WTR YR 1987 TOTAL 92175 MEAN 253 MAX 7510 MIN 15

OSAGE RIVER BASIN

06918440 SAC RIVER NEAR DADEVILLE, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1983 to June 1987 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1974 to September 1978; October 1980 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.5°C, Aug. 22, 23, 1975; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
14...	1300	353	420	8.00	12.0	10.2	94	<10	500	220
NOV										
05...	1315	207	408	8.10	12.5	9.0	83	10	200	--
DEC										
02...	1525	148	420	8.00	7.5	11.6	97	<10	K36	--
JAN										
05...	1345	114	421	8.10	5.5	14.6	115	<10	K12	220
FEB										
02...	1330	253	414	8.20	8.5	12.4	106	<10	27	--
MAR										
02...	1400	1010	356	7.90	8.5	11.4	96	<10	620	--
APR										
07...	1230	277	384	8.20	11.5	12.5	114	<10	43	210
MAY										
19...	1300	103	421	8.20	22.0	7.3	84	<10	200	--
JUN										
09...	1240	51	428	8.10	22.0	6.5	74	<10	270	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
14...	29	77	6.1	3.4	1.5	188	3.6	9.5	8.4	<0.10
NOV										
05...	--	--	--	--	--	186	2.9	--	--	--
DEC										
02...	--	--	--	--	--	211	4.0	--	--	--
JAN										
05...	21	75	7.2	3.8	1.1	196	3.0	9.6	9.5	<0.10
FEB										
02...	--	--	--	--	--	204	2.5	--	--	--
MAR										
02...	--	--	--	--	--	158	3.9	--	--	--
APR										
07...	24	73	6.3	3.6	0.90	184	2.3	8.1	8.1	<0.10
MAY										
19...	--	--	--	--	--	192	2.3	--	--	--
JUN										
09...	--	--	--	--	--	200	3.1	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 14...	--	5	2.10	0.020	0.030	1	<1	5	<1	160
NOV 05...	239	<1	1.40	0.010	0.040	--	--	--	--	--
DEC 02...	244	6	1.70	0.010	0.020	--	--	--	--	--
JAN 05...	243	1	1.80	0.020	<0.010	<1	1	7	1	80
FEB 02...	250	5	1.80	<0.010	0.030	--	--	--	--	--
MAR 02...	198	24	2.00	0.030	0.070	--	--	--	--	--
APR 07...	226	6	1.60	<0.010	0.020	<1	1	4	2	190
MAY 19...	244	28	1.60	0.040	0.080	--	--	--	--	--
JUN 09...	190	32	1.60	0.040	0.120	--	--	--	--	--

[illegible]

OSAGE RIVER BASIN

06918460 TURNBACK CREEK ABOVE GREENFIELD, MO

LOCATION.--Lat 37°24'09", long 93°48'06", on line between secs.21 and 28, T.31 N., R.26 W., Dade County, Hydrologic Unit 10290106, on downstream side of left pier of bridge on State Highway O, 1.5 mi downstream from Limestone Creek, and 2 mi southeast of Greenfield.

DRAINAGE AREA.--252 mi².

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

REVISED RECORDS.--WDR MO-84-1 1968, 1970, 1972-74, 1976, 1978-79, 1983 (p).

GAGE.--Water-stage recorder. Datum of gage is 870.34 ft above National Geodetic Vertical Datum of 1929 (levels by Missouri State Highway and Transportation Commission).

REMARKS.--Estimated daily discharges: Nov. 11-25, July 1, 3, 5, 6. Records good except for estimated daily discharges which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--22 years, 256 ft³/s, 13.80 in/yr, 185,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,000 ft³/s, Oct. 1, 1986, gage height, 23.74 ft, in gage well, 25.4 ft from floodmark; minimum, 9.8 ft³/s, Sept. 15, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0730	*44,000	*23.74	No other peak greater than base discharge.			

Minimum discharge, 25 ft³/s, Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14200	126	158	135	292	1340	434	169	66	150	42	34
2	2690	121	162	131	316	1020	393	163	64	140	39	29
3	1550	119	161	130	296	847	362	164	62	80	37	28
4	1340	128	152	129	282	730	334	166	59	144	38	27
5	1020	204	147	126	271	651	311	156	56	180	38	27
6	812	228	144	123	260	583	292	161	55	155	37	26
7	672	227	160	118	250	528	278	151	54	137	35	27
8	569	254	222	115	240	486	263	143	51	118	33	29
9	491	252	260	120	227	446	250	136	49	104	34	28
10	434	246	285	130	218	410	243	131	49	95	33	27
11	395	210	295	129	210	379	235	125	50	85	32	27
12	388	220	292	124	201	350	223	121	50	77	33	27
13	354	210	277	129	201	327	233	117	49	142	34	26
14	327	205	264	134	230	310	360	114	47	101	32	27
15	298	195	252	137	1160	292	295	109	46	85	30	344
16	275	185	243	141	1820	275	277	103	45	76	30	104
17	256	175	236	152	1270	314	262	102	43	71	40	88
18	236	170	223	192	1020	1680	251	98	44	66	43	73
19	219	160	211	212	937	989	240	93	52	63	40	65
20	205	155	200	222	819	772	230	88	50	59	64	57
21	193	150	190	232	749	655	221	84	48	55	64	49
22	191	145	181	240	683	576	215	84	45	53	52	45
23	195	142	175	240	618	671	208	85	49	51	48	42
24	181	140	170	237	564	1560	202	88	55	49	48	39
25	172	138	163	230	519	1090	196	87	54	47	46	36
26	165	172	158	221	483	876	191	80	50	59	43	34
27	158	167	154	215	480	755	187	75	47	60	50	32
28	150	163	149	227	852	663	182	78	48	50	57	33
29	143	161	146	276	---	589	179	79	49	49	50	33
30	136	159	143	287	---	525	175	75	51	46	44	31
31	131	---	139	287	---	475	---	70	---	44	39	---
TOTAL	28546	5327	6112	5521	15468	21164	7722	3495	1537	2691	1285	1494
MEAN	921	178	197	178	552	683	257	113	51.2	86.8	41.5	49.8
MAX	14200	254	295	287	1820	1680	434	169	66	180	64	344
MIN	131	119	139	115	201	275	175	70	43	44	30	26

CAL YR 1986 TOTAL 96430 MEAN 264 MAX 14200 MIN 18
WTR YR 1987 TOTAL 100362 MEAN 275 MAX 14200 MIN 26

06918740 LITTLE SAC RIVER NEAR MORRISVILLE, MO

LOCATION.--Lat 37°28'58", long 93°29'07", SW ¼ SW ¼ sec.20, T.32 N., R.23 W., Polk County, Hydrologic Unit 10290106, on downstream side of center pier of Hamilton Bridge of State Highway 215, 0.7 mi upstream from Slagle Creek and 3 mi west of Morrisville.

DRAINAGE AREA.--237 mi².

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR MO-84-1 1969-70, 1972-75, 1977-79, 1981, 1983 (P).

GAGE.--Water-stage recorder. Elevation of gage is 881 ft (from topographic map).

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--19 years, 230 ft³/s, 13.18 in/yr, 166,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 22,300 ft³/s, Nov. 1, 1972, gage height, 21.95 ft, minimum, 0.3 ft³/s, Sept. 15, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1130	*20,300	*21.29	Sept. 15	0600	10,800	16.74
Apr. 13	2230	3,340	9.64				

Minimum discharge, 7.0 ft³/s, Aug. 11-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12700	79	100	78	203	1770	251	107	46	145	12	17
2	3130	76	106	78	283	949	226	101	40	99	12	15
3	1560	73	111	78	237	714	202	100	36	65	11	15
4	1250	91	110	76	205	597	184	155	36	57	9.8	15
5	856	158	105	75	185	510	175	147	34	177	9.3	14
6	675	180	103	74	172	437	163	143	32	141	9.8	13
7	552	162	125	75	159	374	160	138	31	82	9.6	13
8	449	174	218	73	153	325	149	117	30	62	8.6	14
9	376	157	288	79	139	288	140	102	28	61	8.5	14
10	317	142	276	88	134	257	135	91	28	48	7.9	13
11	272	169	251	87	130	225	131	83	29	40	7.6	13
12	273	191	223	85	123	200	125	81	29	34	7.2	12
13	249	177	194	88	128	185	628	75	28	47	7.5	12
14	226	163	173	98	162	177	1290	71	26	62	9.9	281
15	206	153	160	107	1350	166	600	70	24	50	10	4350
16	182	141	156	110	1740	157	435	63	20	39	12	417
17	170	132	153	120	996	190	337	60	20	35	24	235
18	160	126	142	165	754	739	272	58	19	32	16	159
19	145	118	134	181	752	699	232	56	19	27	15	129
20	135	111	128	171	651	438	201	53	34	24	77	108
21	128	104	119	162	600	353	178	51	32	21	64	89
22	128	101	113	157	535	299	166	54	35	19	38	77
23	131	98	109	151	462	551	156	55	43	18	27	70
24	118	92	106	144	397	1830	150	57	41	18	23	64
25	111	91	100	141	344	946	146	68	31	19	24	59
26	108	105	96	134	309	648	136	70	26	19	22	54
27	102	104	92	131	287	524	127	60	24	19	22	51
28	96	102	89	144	1070	443	120	53	26	18	26	49
29	92	99	86	232	---	401	116	57	22	14	27	48
30	85	96	83	245	---	343	112	58	38	12	24	45
31	82	---	81	196	---	293	---	53	---	12	20	---
TOTAL	25064	3765	4330	3823	12660	16028	7443	2507	907	1516	601.7	6465
MEAN	809	125	140	123	452	517	248	80.9	30.2	48.9	19.4	215
MAX	12700	191	288	245	1740	1830	1290	155	46	177	77	4350
MIN	82	73	81	73	123	157	112	51	19	12	7.2	12

CAL YR 1986 TOTAL 63557.1 MEAN 174 MAX 12700 MIN 7.2
WTR YR 1987 TOTAL 85109.6 MEAN 233 MAX 12700 MIN 7.2

06918990 STOCKTON LAKE NEAR STOCKTON, MO

LOCATION.--Lat 37°41'38", long 93°45'55", SW ¼ SE ¼ SW ¼ sec.10, T.34 N., R.26 W., Cedar County, Hydrologic Unit 10290106, in power house at dam on Sac River, 2 mi east of Stockton.

DRAINAGE AREA.--1,160 mi².

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Non-recording gage prior to May 30, 1973. Datum of gage is at National Geodetic Vertical Datum of 1929 (level by U.S. Army Corps of Engineers).

REMARKS.--Lake is formed by a rock shell earthfill type dam. Spillway is equipped with 4 taintor gates, 40 ft by 30.5 ft, crest elevation, 861.5 ft. Embankment closed and river diverted on Sept. 23, 1968. Gates closed and storage began on Dec. 12, 1969; minimum power elevation 830.0 ft reached on May 1, 1970. Gross storage at top of flood control pool is 1,666,659 acre-ft at elevation 892 ft, of which 779,550 acre-ft between elevations 867 ft and 892 ft is used for flood control, and 887,109 acre-ft between elevations 760 ft and 867 ft is used for multipurpose and power. Sedimentation reserve is 25,000 acre-ft. Lake is used for flood control, hydroelectric power, and recreational purposes.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,450,000 acre-ft, Apr. 28, 1973, elevation, 885.94 ft; minimum, since initial filling to minimum power pool level, 352,000 acre-ft, Aug. 27 to Sept. 4, 1970, elevation, 839.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,090,000 acre-ft, Nov. 17-19, elevation, 874.58 ft; minimum, 811,000 acre-ft, Sept. 13, elevation, 863.86 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	937000	1060000	1020000	885000	871000	936000	939000	875000	844000	831000	827000	823000
2	968000	1060000	1010000	884000	875000	939000	937000	875000	839000	832000	827000	822000
3	989000	1060000	1010000	882000	877000	942000	935000	876000	841000	832000	823000	820000
4	1000000	1070000	999000	882000	879000	942000	934000	877000	840000	836000	824000	818000
5	1010000	1070000	993000	877000	878000	941000	932000	881000	840000	839000	823000	818000
6	1020000	1070000	987000	874000	875000	940000	929000	881000	840000	838000	822000	818000
7	1020000	1070000	984000	873000	875000	942000	928000	882000	836000	838000	822000	818000
8	1030000	1070000	980000	870000	876000	945000	925000	883000	836000	838000	821000	816000
9	1030000	1070000	975000	872000	877000	943000	920000	884000	836000	839000	821000	815000
10	1030000	1080000	972000	867000	878000	940000	915000	884000	837000	839000	820000	815000
11	1040000	1080000	967000	864000	877000	936000	910000	880000	837000	839000	820000	812000
12	1040000	1080000	961000	861000	874000	933000	906000	880000	837000	839000	820000	812000
13	1040000	1080000	956000	859000	875000	930000	906000	874000	837000	843000	821000	811000
14	1040000	1080000	952000	860000	882000	927000	906000	870000	837000	844000	821000	820000
15	1040000	1080000	947000	860000	896000	928000	903000	864000	837000	843000	821000	844000
16	1050000	1080000	942000	861000	907000	925000	901000	865000	833000	844000	820000	844000
17	1050000	1090000	937000	863000	912000	924000	897000	865000	829000	844000	820000	843000
18	1050000	1090000	932000	865000	914000	932000	894000	860000	830000	844000	820000	844000
19	1050000	1090000	927000	866000	915000	934000	893000	855000	830000	843000	824000	844000
20	1050000	1080000	924000	867000	917000	934000	889000	853000	830000	839000	824000	844000
21	1050000	1070000	921000	867000	920000	935000	885000	848000	830000	836000	823000	844000
22	1050000	1070000	916000	868000	923000	935000	880000	848000	829000	836000	822000	844000
23	1060000	1060000	911000	862000	922000	939000	876000	850000	829000	834000	823000	843000
24	1060000	1060000	909000	862000	919000	948000	872000	849000	827000	832000	823000	839000
25	1060000	1050000	907000	863000	917000	950000	873000	849000	827000	832000	823000	839000
26	1060000	1050000	903000	862000	915000	950000	874000	848000	827000	832000	823000	839000
27	1060000	1040000	898000	860000	914000	950000	875000	848000	826000	832000	824000	839000
28	1060000	1030000	895000	859000	923000	950000	876000	850000	826000	832000	824000	835000
29	1060000	1030000	890000	864000	---	947000	874000	846000	826000	830000	824000	833000
30	1060000	1020000	890000	867000	---	946000	873000	845000	827000	828000	823000	828000
31	1060000	---	887000	870000	---	943000	---	844000	---	827000	823000	---

WTR YR 1987

(†)	873.65	872.20	867.00	866.30	868.44	869.23	866.45	865.22	864.51	864.54	864.34	864.58
(‡)	+261000	-40000	-133000	-17000	+53000	+20000	-70000	-29000	-17000	0	-4000	+5000

MAX	1060000	1090000	1020000	885000	923000	950000	939000	884000	844000	844000	827000	844000
MIN	937000	1020000	887000	859000	871000	924000	872000	844000	826000	827000	820000	811000

CAL YR 1986.....-59000

WTR YR 1987.....+29000

(†) Elevation, in feet NGVD, at end of month.

(‡) Change in contents, in acre-feet.

06919000 SAC RIVER NEAR STOCKTON, MO

LOCATION.--Lat 37°41'51", long 93°45'43", in SE ¼ NW ¼ SE ¼ sec.10, T.34 N., R.26 W., Cedar County, Hydrologic Unit 10290106, on left bank 0.5 mi upstream from bridge on State Highway 32, 0.5 mi downstream from Stockton Dam, 2.0 mi upstream from Bear Creek, 2.0 mi east of Stockton, and at mile 49.5

DRAINAGE AREA.--1,160 mi², approximately.

PERIOD OF RECORD.--July 1921 to current year.

REVISED RECORDS.--WSP 926: 1940.

GAGE.--Water-stage recorder. Datum of gage is 758.12 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1973, all previous gages at site 0.5 mi downstream and at datum 6.00 ft higher. Prior to May 4, 1960, nonrecording gage. Datum lowered 6.00 ft Oct. 1, 1978.

REMARKS.--Estimated daily discharges: Oct. 1 to Nov. 19, Jan. 29 to Feb. 3, Feb. 14-16, Feb. 28, Mar. 1, Mar. 24-26, and July 13, 14 due to backwater from Bear Creek. Records fair. Several observations of water temperature and specific conductance were made during the year. Flow completely regulated by Stockton Lake (station 06918990) 0.5 mi upstream since Dec. 12, 1969.

AVERAGE DISCHARGE.--66 years, 985 ft³/s, 713,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 120,000 ft³/s, May 19, 1943, gage height, 31.8 ft; no flow Sept. 9-23, 1954, Oct. 14, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage prior to 1943, 29.3 ft in July 1909.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,140 ft³/s, Nov. 20; minimum daily, 45 ft³/s, June 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	55	3570	1080	60	60	2880	62	105	61	58	65
2	55	55	3330	760	60	2650	2600	63	1300	57	56	64
3	55	55	3240	1200	60	2400	2560	63	148	54	1040	782
4	55	55	3530	965	458	2760	1420	643	51	56	81	589
5	55	55	3510	2600	1240	2640	1680	60	51	55	60	82
6	55	55	3420	1560	2240	3100	2630	60	50	1290	59	62
7	55	55	3370	955	1140	190	1440	62	1010	134	59	62
8	55	55	3320	1310	80	60	2040	60	168	68	59	930
9	55	55	3290	152	576	2640	3490	58	51	63	61	87
10	55	55	3060	2300	68	2800	3350	56	51	61	61	57
11	55	55	3480	1820	910	3000	3030	1940	50	56	60	1100
12	55	55	3650	1640	1730	2830	3050	1720	50	56	60	114
13	55	55	3660	1640	970	2530	2680	2760	50	60	63	61
14	55	55	3120	72	70	2420	2960	3060	49	60	61	638
15	55	55	3290	184	60	332	2840	2980	49	58	61	890
16	55	55	3630	472	1900	2810	2880	190	1360	55	61	1640
17	55	55	3500	62	2770	2510	3180	60	1360	53	65	1360
18	55	55	3160	65	3190	2900	2520	2810	170	54	63	94
19	55	150	3310	68	2810	2410	1600	2940	47	54	63	71
20	55	4140	2360	598	2550	2390	2450	2360	45	1440	69	70
21	55	3950	1740	409	1200	1350	3190	2000	45	1360	64	69
22	55	3130	2990	499	1020	2590	2900	1160	1080	89	66	67
23	55	3280	3360	2570	2950	2430	2340	48	2100	616	65	472
24	55	3600	1600	1140	2820	2500	2670	49	1220	890	63	1700
25	55	4020	1210	80	2860	2400	184	48	199	103	61	142
26	55	3920	2190	1220	2570	2900	74	48	63	58	65	60
27	55	3230	2740	1640	2700	2800	77	47	55	61	65	60
28	55	3780	2390	995	550	2590	78	48	55	60	64	2730
29	55	3590	2420	60	---	2550	1240	1000	59	320	68	1090
30	55	3600	738	60	---	2980	248	634	60	895	66	1960
31	55	---	1260	60	---	2880	---	1180	---	110	66	---
TOTAL	1705	41380	89438	28236	39612	71402	64281	28269	11151	8407	2933	17168
MEAN	55.0	1379	2885	911	1415	2303	2143	912	372	271	94.6	572
MAX	55	4140	3660	2600	3190	3100	3490	3060	2100	1440	1040	2730
MIN	55	55	738	60	60	60	74	47	45	53	56	57

CAL YR 1986 TOTAL 395018 MEAN 1082 MAX 4140 MIN 51
WTR YR 1987 TOTAL 403982 MEAN 1107 MAX 4140 MIN 45

OSAGE RIVER BASIN

06919020 SAC RIVER AT HIGHWAY J BELOW STOCKTON, MO

LOCATION.--Lat 37°44'07", long 93°46'47", NW ¼ sec.4, T.34 N., R.26 W., Cedar County, Hydrologic Unit 10290106, on right bank on downstream side of bridge on State Highway J, 4.5 mi downstream from Bear Creek, 6.3 mi downstream from Stockton Lake, 3 mi north of Stockton and at mile 44.9.

DRAINAGE AREA.--1,292 mi², approximately.

PERIOD OF RECORD.--October 1973 to current year. Occasional discharge measurements in water year 1973.

GAGE.--Water-stage recorder. Datum of gage is 750.19 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year. Considerable regulation by Stockton Lake (station 06918990) 6.3 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 1,158 ft³/s, 839,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s, Oct. 1, 1986, maximum gage height, 24.91 ft Feb. 23, 1985; minimum, 24 ft³/s, Mar. 25, 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9,370 ft³/s, Oct. 1; minimum daily, 60 ft³/s, Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9370	114	3560	1350	218	1130	2890	133	351	146	76	68
2	6750	110	3420	996	216	2600	2600	126	1070	105	71	66
3	3080	107	3090	1210	197	2550	2480	121	640	96	1030	732
4	3810	126	3470	1410	617	2760	1820	776	96	100	246	749
5	1080	190	3530	2530	1180	2690	1650	157	90	252	73	224
6	553	182	3290	1780	2280	3190	2390	165	87	1270	69	66
7	422	160	3330	1000	1470	749	1850	125	813	447	67	64
8	369	164	3390	1630	160	220	1760	115	779	140	66	907
9	330	187	3310	305	739	2350	3360	109	88	123	65	265
10	301	173	2990	2070	135	2910	3240	103	85	120	65	60
11	279	167	3580	2340	866	2930	2920	1620	83	102	65	1030
12	271	165	3640	1600	1810	2700	3130	1830	80	96	64	345
13	271	150	3610	1690	1200	2570	2780	2570	77	341	65	67
14	254	137	3180	293	269	2250	2930	2930	73	141	68	706
15	231	134	3220	326	570	1010	2860	2900	72	109	67	985
16	213	130	3620	647	2570	2470	2760	818	1180	98	64	1700
17	201	123	3480	128	2760	2560	3150	125	1420	89	65	1530
18	191	117	3220	189	3320	3150	2570	2450	797	88	69	258
19	181	119	3340	137	2920	2370	1550	2920	77	86	69	100
20	173	3540	2510	802	2640	2450	2500	2270	70	1370	85	90
21	166	4000	1810	571	1670	1810	3210	2440	68	1510	75	84
22	163	2980	2820	677	923	2380	2820	1370	917	298	79	80
23	166	3270	3310	2300	2930	2530	2260	138	2570	600	73	584
24	161	3560	2080	1680	2860	3590	2690	111	1180	956	71	1390
25	155	3870	1390	150	2910	3210	756	105	761	341	70	638
26	152	3890	2080	1140	2600	3390	165	100	118	87	71	74
27	144	3220	2680	1600	2800	2830	157	95	96	84	73	70
28	136	3780	2430	1700	1330	2740	152	94	91	81	72	2350
29	129	3540	2470	416	---	2500	928	821	110	363	71	1310
30	124	3550	1090	393	---	2950	947	1070	111	878	72	1940
31	118	---	1130	262	---	2810	---	1330	---	356	68	---
TOTAL	29944	41955	90070	33322	44160	76349	65275	30037	14050	10873	3304	18532
MEAN	966	1398	2905	1075	1577	2463	2176	969	468	351	107	618
MAX	9370	4000	3640	2530	3320	3590	3360	2930	2570	1510	1030	2350
MIN	118	107	1090	128	135	220	152	94	68	81	64	60

CAL YR 1986 TOTAL 452713 MEAN 1240 MAX 9370 MIN 59
WTR YR 1987 TOTAL 457871 MEAN 1254 MAX 9370 MIN 60

06919500 CEDAR CREEK NEAR PLEASANT VIEW, MO

LOCATION.--Lat 37°50'03", long 93°52'31", in NE ¼ sec.2, T.35 N., R.27 W., Cedar County, Hydrologic Unit 10290106, on downstream side of right pier of bridge on State Highway 39, 1.5 mi north of Pleasant View, 1.8 mi downstream from Alder Creek, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--420 mi², approximately.

PERIOD OF RECORD.--April 1923 to September 1926, October 1948 to current year.

REVISED RECORDS.--WSP 1146: 1923-26, drainage area. WSP 1176: 1924(M).

GAGE.--Water-stage recorder. Datum of gage is 739.46 ft above National Geodetic Vertical Datum of 1929. Apr. 22, 1923, to Sept. 30, 1926, and Oct. 1, 1948, to May 10, 1950 nonrecording gage at site 50 ft downstream at same datum. May 11, 1950 to Dec. 17, 1952, nonrecording gage, at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--42 years (1924-26, 1949-87), 318 ft³/s, 10.28 in/yr, 230,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,000 ft³/s revised, July 17, 1958, gage height, 27.35 ft; no flow at times many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 27.7 ft, July 20, 1909, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1830	*36,300	*27.28	Mar. 1	1715	8,190	20.42
Oct. 3	1015	24,500	25.87	Mar. 19	0045	6,300	18.34
Feb. 16	1615	4,950	16.30	Mar. 24	1530	5,280	16.88

Minimum discharge, 1.4 ft³/s, Aug. 13.

REVISIONS.--The maximum discharge for the water year 1958 has been revised to 37,000 ft³/s, July 17, 1958, gage height, 27.35 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19200	78	270	93	660	7670	324	64	76	24	5.3	27
2	20100	71	259	87	551	6400	284	60	55	80	4.5	19
3	20500	66	242	83	501	1350	251	55	51	130	4.2	14
4	13600	104	223	81	417	767	224	368	44	88	4.0	11
5	9480	559	198	81	335	615	206	783	36	824	3.7	8.4
6	3080	858	177	80	292	520	189	1190	29	940	2.5	6.6
7	799	506	290	77	265	437	178	510	25	409	2.8	5.6
8	573	357	719	75	244	371	165	264	21	214	2.7	5.2
9	446	299	860	75	217	322	153	177	18	129	2.3	4.4
10	361	266	690	84	198	272	142	130	16	90	2.0	4.0
11	307	247	510	90	184	239	132	101	15	67	1.8	3.7
12	317	237	376	102	172	215	122	89	16	53	1.6	3.1
13	436	222	312	124	163	196	240	77	16	248	1.8	2.9
14	500	196	277	275	175	183	1350	64	14	265	2.8	2.7
15	441	171	256	350	1790	171	909	159	13	179	3.3	425
16	316	160	241	261	4820	154	551	244	12	118	2.7	724
17	257	154	233	226	2710	310	426	121	12	76	3.1	355
18	217	145	229	229	967	4660	340	84	22	55	7.9	167
19	188	129	211	263	893	4020	281	78	17	42	7.7	97
20	164	118	191	324	830	1070	239	157	11	33	103	64
21	149	109	175	352	655	688	199	120	12	26	454	49
22	136	103	158	357	546	562	174	71	14	22	176	37
23	144	99	150	323	456	806	157	98	378	18	87	30
24	201	94	144	288	383	4540	141	188	300	16	61	25
25	185	119	137	271	336	3050	125	147	81	14	35	21
26	156	1010	128	223	303	1060	113	139	52	12	24	18
27	139	1110	118	198	287	738	101	88	43	11	23	15
28	124	518	111	205	3080	604	88	89	34	9.3	25	14
29	109	369	106	1030	---	517	78	114	27	8.2	24	17
30	95	303	100	2770	---	429	70	191	23	7.0	23	15
31	86	---	95	1140	---	366	---	138	---	6.2	28	---
TOTAL	92806	8777	8186	10217	22430	43302	7952	6158	1483	4213.7	1129.7	2190.6
MEAN	2994	293	264	330	801	1397	265	199	49.4	136	36.4	73.0
MAX	20500	1110	860	2770	4820	7670	1350	1190	378	940	454	724
MIN	86	66	95	75	163	154	70	55	11	6.2	1.6	2.7

CAL YR 1986 TOTAL 191617.6 MEAN 525 MAX 20500 MIN 1.2
WTR YR 1987 TOTAL 208844.6 MEAN 572 MAX 20500 MIN 1.6

LOCATION.--Lat 37°52'12", long 93°48'11", in NW ¼ NE ¼ SW ¼ sec.21, T.35 N., R.26 W., St. Clair County, Hydrologic Unit 10290106, on right downstream wingwall of bridge on State Highway W, 1.5 mi downstream from Cedar Creek and 5 mi north of Caplinger Mills.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 720.82 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 6 to Nov. 7. Records good except for periods of backwater from Truman Lake (station 06922440) Oct. 6 to Nov. 7, which are poor. Several observations of water temperature and specific conductance were made during the year. Some regulation from Stockton Lake (station 06918990). U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--13 years, 1,562 ft³/s, 1,132,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,000 ft³/s, Oct. 2, 1986, gage height, 30.00 ft; minimum, 48 ft³/s, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 60,000 ft³/s, Oct. 2, gage height 30.00 ft; minimum, 65 ft³/s, Aug. 17, 18.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19400	270	4130	1880	1150	9530	3470	262	1300	309	99	99
2	51200	260	4040	1380	960	9360	3350	222	822	226	79	91
3	42700	250	3500	1110	869	5080	2900	206	1250	263	271	102
4	30000	400	4000	1990	1140	3780	2920	846	183	223	1110	1030
5	17000	800	3960	2320	1130	3750	1870	1480	137	1080	96	798
6	10000	1400	3730	2620	2850	3880	2230	1880	122	1840	77	95
7	5000	900	3960	1060	2380	2400	3040	851	111	1920	71	79
8	1500	681	4370	2130	703	775	1500	467	1630	440	67	169
9	900	596	4510	693	1010	1890	3370	346	144	314	67	1120
10	725	521	4070	1270	529	3590	3690	282	108	247	67	88
11	650	469	4160	3360	414	3370	3510	991	104	198	68	165
12	625	449	4290	1650	2000	3390	3540	2290	100	165	68	1330
13	800	420	4270	1960	2120	3100	3080	2370	101	685	70	92
14	900	377	3690	1180	897	2600	4890	3290	89	571	71	263
15	1000	344	3700	742	2020	2250	4360	3080	81	340	71	965
16	900	328	4050	984	7180	1820	3510	2260	164	259	70	2340
17	650	319	4060	534	6130	3330	3790	323	1760	188	67	2440
18	500	302	3760	444	4620	7510	3380	1670	1830	156	71	1360
19	425	278	3940	494	4370	7760	2610	3040	194	140	80	230
20	375	2530	3160	1130	3880	4360	2320	2920	104	471	137	163
21	360	4380	2270	1096	3370	3400	3600	3200	91	1740	576	136
22	340	3170	2800	1140	1690	2480	3250	1900	110	1280	293	118
23	320	3540	3640	1870	2900	3710	2690	635	3240	133	182	529
24	450	3800	3350	2930	3510	8940	3050	310	1810	894	141	587
25	500	4410	1740	688	3550	7600	2110	326	1780	1120	115	1820
26	450	5100	1850	897	3250	4870	385	277	245	112	98	117
27	360	5160	2930	1690	3360	4180	341	223	189	93	97	89
28	340	4200	2810	2300	5290	3620	304	204	156	88	101	1290
29	320	4190	2760	1750	---	3250	275	231	154	84	97	2020
30	300	4110	2150	3490	---	3680	1890	1810	144	482	95	1930
31	280	---	501	1930	---	3510	---	1090	---	1160	98	---
TOTAL	189270	53954	106151	48706	73272	132765	81225	39282	18253	17221	4670	21655
MEAN	6105	1798	3424	1571	2617	4283	2707	1267	608	556	151	722
MAX	51200	5160	4510	3490	7180	9530	4890	3290	3240	1920	1110	2440
MIN	280	250	501	444	414	775	275	204	81	84	67	77

CAL	YR	1986	TOTAL	761678	MEAN	2087	MAX	51200	MIN	71
WTR	YR	1987	TOTAL	786424	MEAN	2155	MAX	51200	MIN	67

06921070 POMME DE TERRE RIVER NEAR POLK, MO

LOCATION.--Lat 37°40'56", long 93°22'12", in NE ¼ NW ¼ NW ¼ sec.17, T.34 N., R.22 W., Polk County, Hydrologic Unit 10290107, on right bank 150 ft upstream from Jefferson Bridge on State Highway D and 5 mi southwest of Polk.

DRAINAGE AREA.--276 mi².

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 872.61 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 14 to Nov. 4, May 24 to June 16, Aug. 5-12 and Aug. 26 to Sept. 8. Records fair. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--19 years, 272 ft³/s, 13.38 in/yr, 197,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s, Oct. 1, 1986, gage height, 23.08 ft; minimum, 0.3 ft³/s, Aug. 11, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0730	*23,100	*23.08	No other peak greater than base discharge.			

Minimum discharge, 3.7 ft³/s, Aug. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18500	115	177	97	253	1860	240	87	32	96	7.5	6.9
2	5510	110	325	94	344	755	215	81	30	165	7.1	6.8
3	1700	105	307	91	310	534	193	86	27	92	6.7	6.7
4	1520	150	256	90	263	429	178	305	25	101	6.3	6.6
5	748	189	226	88	233	370	164	165	23	254	6.0	6.5
6	526	249	210	84	211	324	154	133	22	444	5.7	10
7	399	205	253	81	196	288	146	121	21	179	5.4	12
8	322	216	442	77	184	259	137	97	19	121	5.3	14
9	276	224	483	79	166	235	125	83	18	135	5.2	7.9
10	298	190	449	94	156	211	122	73	17	84	5.1	7.0
11	253	240	368	99	148	192	122	67	17	64	5.0	6.3
12	275	313	319	92	142	175	114	76	16	53	4.8	6.1
13	315	240	279	99	136	162	928	61	16	133	8.5	6.1
14	280	201	251	120	339	152	1420	56	16	71	6.4	6.2
15	260	185	233	137	1260	144	559	51	15	52	12	1100
16	240	174	228	141	1580	134	475	43	15	43	20	363
17	230	160	236	154	748	151	379	42	134	36	16	192
18	215	145	226	229	602	541	314	41	149	33	15	107
19	200	129	203	256	695	550	263	39	74	28	13	73
20	190	121	187	240	548	351	224	37	85	24	35	56
21	180	115	172	219	514	283	195	35	65	20	37	44
22	175	108	160	213	470	243	176	47	284	18	21	36
23	180	104	151	202	402	287	161	59	472	15	15	30
24	165	96	145	187	344	1380	145	56	104	14	13	26
25	155	95	136	174	305	642	135	52	76	13	9.9	23
26	150	137	127	161	273	450	124	50	51	12	9.0	21
27	140	149	120	155	257	378	115	47	39	12	8.5	19
28	135	141	113	192	1040	332	106	43	37	11	11	18
29	130	138	109	450	---	334	98	40	31	9.7	9.0	20
30	125	138	105	346	---	307	92	37	54	9.2	8.0	16
31	120	---	99	273	---	266	---	34	---	8.2	7.5	---
TOTAL	33912	4882	7095	5014	12119	12719	7819	2244	1984	2350.1	344.9	2253.1
MEAN	1094	163	229	162	433	410	261	72.4	66.1	75.8	11.1	75.1
MAX	18500	313	483	450	1580	1860	1420	305	472	444	37	1100
MIN	120	95	99	77	136	134	92	34	15	8.2	4.8	6.1

CAL YR 1986 TOTAL 109772.3 MEAN 301 MAX 18500 MIN 4.2
WTR YR 1987 TOTAL 92735.9 MEAN 254 MAX 18500 MIN 4.8

06921200 LINDLEY CREEK NEAR POLK, MO

LOCATION.--Lat 37°45'02", long 93°15'58", in NE ¼ SE ¼ sec.29, T.35 N., R.21 W., Polk County, Hydrologic Unit 10290107, on left bank 30 ft upstream from county highway bridge, 0.5 mi downstream from Panther Creek, 2.5 mi northeast of Polk, and 11 mi upstream from Ingalls Creek.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--April 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 884.08 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 25, 1957, nonrecording gage at site 30 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--30 years, 98.0 ft³/s, 11.88 in/yr, 71,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s, Oct. 1, 1986, from rating extended above 24,900 ft³/s, maximum gage height 23.60 ft, May 5, 1961; no flow on many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1914 reached a stage of about 25.2 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0800	*31,900	*23.32	Apr. 13	1915	4,010	13.49

Minimum discharge, 0.04 ft³/s, June 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12000	40	110	41	100	746	78	22	3.4	11	.55	2.7
2	5110	36	360	40	107	237	70	19	2.8	8.7	.53	2.1
3	3170	32	211	37	89	165	64	18	2.4	3.3	.45	2.0
4	2040	85	140	37	76	130	59	19	1.9	2.5	.42	2.2
5	432	201	115	36	69	113	55	17	1.6	52	.41	2.2
6	251	129	102	36	64	99	52	18	1.4	66	.33	2.1
7	182	103	141	31	60	89	49	17	1.3	19	.26	2.1
8	142	131	191	29	57	81	45	14	1.2	37	.25	1.9
9	123	118	206	36	49	75	41	13	1.1	33	.27	1.6
10	111	97	146	49	48	67	40	12	.91	9.3	.25	1.3
11	101	128	118	42	47	61	41	11	.94	4.6	.24	1.3
12	143	111	101	38	44	57	36	30	1.0	3.9	.24	1.6
13	122	91	92	59	43	53	983	13	.92	220	.30	1.5
14	117	78	86	64	98	51	613	11	.74	55	.41	1.7
15	100	77	81	58	267	48	285	9.5	.60	15	.50	3.7
16	88	74	86	53	454	44	201	8.5	.64	8.5	.49	8.6
17	79	68	96	60	187	67	138	8.0	19	5.1	.59	5.2
18	71	62	86	101	200	269	109	7.4	.20	3.8	35	3.1
19	65	55	75	107	260	154	93	7.0	.15	2.7	49	2.0
20	61	55	70	91	192	104	79	6.6	.10	2.1	453	2.4
21	56	51	64	82	165	86	68	6.3	.06	1.7	45	2.9
22	56	48	61	79	144	79	62	8.1	45	1.5	11	2.5
23	65	48	60	71	121	145	55	13	476	1.2	5.6	2.2
24	59	44	58	66	110	554	50	10	32	1.1	3.5	2.4
25	60	46	54	60	101	189	45	8.8	6.6	.94	2.8	2.5
26	85	108	51	55	94	132	40	7.6	2.2	.87	2.7	2.7
27	76	84	48	55	92	114	36	6.8	1.2	.84	19	2.7
28	65	71	46	86	686	105	30	5.9	.82	.80	23	2.8
29	57	67	46	258	---	120	28	5.9	.94	.73	11	5.5
30	51	63	44	150	---	95	25	5.2	1.9	.62	6.1	6.8
31	46	---	41	108	---	84	---	4.1	---	.54	3.9	---
TOTAL	25184	2401	3186	2115	4024	4413	3570	362.7	609.02	573.34	677.09	84.3
MEAN	812	80.0	103	68.2	144	142	119	11.7	20.3	18.5	21.8	2.81
MAX	12000	201	360	258	686	746	983	30	476	220	453	8.6
MIN	46	32	41	29	43	44	25	4.1	.06	.54	.24	1.3

CAL YR 1986 TOTAL 58104.70 MEAN 159 MAX 12000 MIN .00
WTR YR 1987 TOTAL 47199.04 MEAN 129 MAX 12000 MIN .06

06921325 POMME DE TERRE LAKE NEAR HERMITAGE, MO

LOCATION.--Lat 37°54'06", long 93°19'05", in NE ¼ sec.2, T.36 N., R.22 W., Hickory County, Hydrologic Unit 10290107, in intake tower at dam on Pomme de Terre River, and 3 mi southwest of Hermitage.

DRAINAGE AREA.--611 mi².

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

GAGE.--Water-stage recorder. Non-recording gage prior to Nov. 9, 1961. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Lake is formed by earthfill embankment with a concrete gravity section-type dam. Closure operation began on June 28, 1960; conservation pool level reached June 15, 1963. Capacity at top of flood control pool, 648,700 acre-ft at elevation, 874 ft, crest of spillway, of which 407,200 acre-ft between elevations 839 ft and 874 ft is used for flood control, and 228,700 acre-ft between elevation 783 ft and 839 ft is used for conservation and 12,840 acre-ft below elevation 783 ft is sediment storage. Lake used for flood control and recreational purposes.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 481,000 acre-ft, Apr. 30, 1973, elevation, 862.35 ft, minimum, since initial filling to conservation pool level, 216,000 acre-ft, Mar. 3, 1964, elevation, 835.61 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 467,000 acre-ft, Oct. 19-21, elevation, 861.29 ft, Oct. 21; minimum, 241,000 acre-ft, Dec. 28 to Jan. 1, Jan. 27-29, Feb. 13, and Sept. 15, elevation, 838.92 ft, Jan. 28, 29.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	296000	403000	259000	241000	244000	261000	261000	253000	250000	255000	248000	245000
2	373000	397000	258000	242000	244000	264000	259000	253000	250000	255000	248000	244000
3	409000	392000	255000	242000	244000	264000	257000	253000	250000	255000	247000	244000
4	442000	386000	251000	242000	244000	264000	254000	254000	249000	255000	247000	244000
5	453000	381000	246000	242000	244000	262000	252000	254000	249000	256000	247000	244000
6	456000	377000	245000	242000	243000	261000	250000	254000	249000	258000	246000	243000
7	457000	372000	245000	242000	243000	259000	249000	254000	249000	259000	246000	243000
8	459000	367000	246000	242000	242000	257000	249000	254000	249000	259000	246000	243000
9	459000	363000	247000	242000	242000	255000	248000	254000	249000	261000	245000	243000
10	460000	358000	248000	243000	242000	253000	247000	254000	249000	261000	245000	242000
11	461000	353000	248000	243000	242000	251000	247000	254000	249000	261000	244000	242000
12	462000	348000	248000	243000	242000	250000	246000	255000	250000	261000	244000	242000
13	463000	343000	249000	243000	241000	250000	246000	255000	248000	264000	244000	242000
14	464000	338000	249000	243000	242000	249000	257000	255000	248000	263000	244000	242000
15	465000	332000	248000	244000	243000	249000	261000	255000	248000	262000	244000	241000
16	466000	326000	248000	244000	251000	248000	263000	254000	248000	260000	244000	244000
17	466000	321000	248000	245000	255000	248000	264000	254000	247000	258000	243000	245000
18	466000	315000	247000	245000	257000	249000	264000	254000	247000	256000	244000	245000
19	467000	310000	246000	246000	258000	250000	263000	254000	247000	254000	243000	245000
20	467000	304000	246000	247000	260000	253000	262000	254000	247000	252000	243000	245000
21	467000	298000	245000	247000	261000	253000	261000	254000	247000	251000	247000	245000
22	461000	293000	243000	246000	261000	253000	258000	254000	247000	251000	247000	245000
23	456000	287000	243000	245000	262000	254000	256000	254000	253000	251000	246000	245000
24	450000	281000	242000	244000	260000	263000	253000	253000	254000	250000	246000	245000
25	444000	276000	242000	243000	259000	268000	253000	253000	254000	250000	246000	245000
26	439000	271000	242000	242000	256000	270000	253000	253000	254000	250000	246000	244000
27	433000	268000	242000	241000	255000	270000	253000	253000	254000	250000	246000	244000
28	427000	266000	241000	241000	253000	268000	253000	253000	254000	249000	246000	244000
29	421000	264000	241000	241000	---	267000	253000	253000	254000	249000	245000	245000
30	415000	262000	241000	243000	---	265000	253000	253000	254000	249000	245000	245000
31	409000	---	241000	244000	---	263000	---	253000	---	248000	245000	---

WTR YR 1987

(†)	856.47	841.48	838.96	839.25	840.42	841.70	840.48	840.37	840.55	839.85	839.42	839.43
(‡)	+159000	-147000	-21000	+3000	+9000	+10000	-10000	0	+1000	-6000	-3000	0
MAX	467000	403000	259000	247000	262000	270000	264000	255000	254000	264000	248000	245000
MIN	296000	262000	241000	241000	241000	248000	246000	253000	247000	248000	243000	241000

CAL YR 1986.....-4000

WTR YR 1987.....-5000

(†) Elevation, in feet NGVD, at end of month.

(‡) Change in contents, in acre-feet.

OSAGE RIVER BASIN

06921350 POMME DE TERRE RIVER NEAR HERMITAGE, MO

LOCATION.--Lat 37°54'20", long 93°19'45", in NW ¼ NW ¼ sec.2, T.36 N., R.22 W., Hickory County, Hydrologic Unit 10290107, on right bank 2,000 ft downstream from outlet of Pomme de Terre Lake, 2.5 mi southwest of Hermitage, 4.5 mi upstream from Green Branch, and at mile 43.4.

DRAINAGE AREA.--615 mi².

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

GAGE.-- Water-stage recorder. Datum of gage is 749.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. Flow regulated by Pomme de Terre Lake (station 06921325) 0.5 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--27 years, 511 ft³/s, 370,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s, May 9, 1961, gage height, 15.02 ft; no flow Sept. 10, 1960, Mar. 9-17, 1971, and Nov. 4-6 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,280 ft³/s, Oct. 21, gage height 8.95 ft; minimum, 15 ft³/s, June 4-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	3130	1580	87	515	1500	1510	136	94	102	102	102
2	138	3120	2030	87	515	1500	1510	137	94	101	102	102
3	130	3110	2890	88	515	1500	1510	137	94	101	102	102
4	79	3100	2880	87	516	1490	1510	135	111	102	102	102
5	58	3100	2090	87	514	1490	1510	133	15	104	102	102
6	55	3080	457	88	516	1490	871	133	15	102	101	102
7	55	3080	458	87	516	1490	490	134	15	105	101	102
8	54	3070	457	87	517	1490	491	136	15	120	101	102
9	54	3060	458	88	517	1490	492	139	15	108	102	102
10	53	3050	458	89	380	1480	424	140	15	104	102	102
11	54	3040	457	88	240	1090	487	135	28	104	101	80
12	54	3030	457	87	241	477	489	132	98	113	102	44
13	54	3110	457	87	241	477	514	128	99	651	102	43
14	54	3180	457	87	241	477	505	123	99	1120	102	44
15	54	3160	457	87	244	477	508	118	99	1120	102	44
16	53	3140	568	87	245	477	510	114	100	1110	102	45
17	53	3130	679	87	392	478	714	111	99	1110	102	44
18	53	3120	679	87	704	483	1050	107	100	1110	103	45
19	53	3110	679	87	703	481	1050	104	100	1110	107	45
20	53	3090	679	376	703	482	1060	100	100	707	107	45
21	1830	3080	679	757	703	483	1350	98	100	104	103	45
22	3250	3070	678	757	704	491	1650	97	100	104	103	45
23	3220	3050	678	754	1100	494	1650	96	101	104	103	45
24	3210	3030	452	752	1490	496	946	95	101	104	103	45
25	3210	3020	231	751	1490	494	117	94	101	103	102	45
26	3200	2570	232	679	1490	679	120	94	101	104	102	44
27	3180	1590	233	511	1490	1330	124	94	102	104	103	44
28	3180	1580	234	512	1490	1520	127	94	101	103	103	46
29	3170	1580	236	516	---	1520	131	94	101	102	102	66
30	3150	1580	154	515	---	1350	134	94	102	102	102	43
31	3140	---	87	514	---	1510	---	94	---	102	102	---
TOTAL	35069	86160	23221	9053	18932	30686	23554	3576	2415	10440	3175	1967
MEAN	1131	2872	749	292	676	990	785	115	80.5	337	102	65.6
MAX	3250	3180	2890	757	1490	1520	1650	140	111	1120	107	102
MIN	53	1580	87	87	240	477	117	94	15	101	101	43

CAL YR 1986 TOTAL 257019 MEAN 704 MAX 3250 MIN 43
WTR YR 1987 TOTAL 248248 MEAN 680 MAX 3250 MIN 15

OSAGE RIVER BASIN

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06921600 SOUTH GRAND RIVER AT URICH, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°27'08", long 94°00'13", in SE ¼ NW ¼ sec.10, T.42 N., R.28 W., Henry County, Hydrologic Unit 10290108, at bridge on County Highway K, 0.5 mi south of Urich, 1.0 mi upstream from White Oak Creek, and 1.7 mi downstream from Knob Creek.

DRAINAGE AREA.--670 mi².

PERIOD OF RECORD.--October 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)
OCT										
16...	1325	294	7.90	10.0	10.1	88	29	7200	140	18
NOV										
07...	1230	415	7.90	9.5	10.6	92	53	1400	--	--
DEC										
02...	1200	390	7.60	3.5	12.9	97	13	K200	--	--
JAN										
07...	1730	520	8.10	4.5	11.9	90	11	K20	260	54
FEB										
04...	1715	383	7.80	4.5	12.6	95	13	88	--	--
MAR										
05...	0800	320	7.70	8.5	11.4	96	26	540	--	--
APR										
09...	0945	485	8.30	12.0	12.2	112	15	K3	240	47
MAY										
21...	1230	198	7.60	23.5	4.3	50	<10	K650	--	--
JUN										
11...	1015	343	8.30	25.5	12.7	154	12	84	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
OCT										
16...	46	5.7	6.7	3.6	120	2.9	26	6.1	0.10	187
NOV										
07...	--	--	--	--	170	5.4	--	--	--	282
DEC										
02...	--	--	--	--	152	7.4	--	--	--	263
JAN										
07...	86	11	16	2.6	206	3.2	60	10	0.10	326
FEB										
04...	--	--	--	--	136	4.2	--	--	--	248
MAR										
05...	--	--	--	--	124	4.8	--	--	--	196
APR										
09...	81	9.8	15	2.1	196	1.9	55	9.3	0.20	296
MAY										
21...	--	--	--	--	74	3.6	--	--	--	146
JUN										
11...	--	--	--	--	132	1.3	--	--	--	213

K--Results based on colony count outside the acceptable range (non-ideal colony count).

OSAGE RIVER BASIN

06921600 SOUTH GRAND RIVER AT URICH, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	
	OCT 16...	60	0.500	0.110	0.160	1	1	50	3	2400
	NOV 07...	43	0.400	0.040	0.170	--	--	--	--	--
	DEC 02...	47	0.700	0.080	0.160	--	--	--	--	--
JAN 07...	3	0.400	0.040	0.040	<1	<1	10	3	370	
FEB 04...	37	0.800	0.150	0.150	--	--	--	--	--	
MAR 05...	62	0.900	0.140	0.210	--	--	--	--	--	
APR 09...	16	0.500	0.020	0.060	<1	<1	7	2	500	
MAY 21...	202	1.20	0.210	0.360	--	--	--	--	--	
JUN 11...	36	0.700	0.080	0.150	--	--	--	--	--	

[illegible]

06921760 SOUTH GRAND RIVER NEAR CLINTON, MO

LOCATION.--Lat 38°22'16", long 93°51'23", in NW ¼ SW ¼ SE ¼ sec. 1, T.41N., R.27W., Henry County, Hydrologic Unit 10290108 at right upstream end of bridge on state Highway 18, 4.4 mi west of Clinton and 5.4 mi downstream from Big Creek.

DRAINAGE AREA.--1,270 mi².

PERIOD OF RECORD.--July 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft above National Geodetic Vertical Datum of 1929. Auxilliary water-stage recorder 3.3 mi upstream from base gage at same datum.

REMARKS.--No estimated daily discharges. Records poor. Many periods could not be calculated using fall computations. Stage discharge relation affected by backwater from Truman Reservoir. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 66,000 ft³/s, Oct. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 66,000 ft³/s, Oct. 1, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62300	---	1600	270	---	---	1100	184	1100	253	31	55
2	56800	---	1960	252	---	---	901	168	553	269	31	43
3	48300	---	2340	236	1400	---	761	159	425	234	30	34
4	37800	---	2130	221	1080	5800	658	155	799	191	29	27
5	22600	---	1640	213	860	3760	534	261	583	222	28	21
6	12600	---	1260	206	713	2460	416	679	281	539	26	21
7	---	---	1290	199	760	1890	341	728	196	847	26	21
8	---	---	4380	194	913	1490	295	604	155	1830	27	20
9	---	---	6630	199	812	1200	238	406	124	2550	30	20
10	---	---	5500	199	624	1020	201	263	107	2890	27	20
11	---	---	4220	204	487	889	184	198	96	1890	25	18
12	---	---	2580	217	412	773	199	165	92	1070	25	15
13	---	---	1950	215	385	608	623	302	180	1270	27	30
14	---	---	1580	348	366	521	3560	242	1140	1820	173	41
15	---	3460	1380	1210	407	450	5340	195	1080	1580	862	34
16	---	3020	1160	1520	1660	396	4110	163	448	862	358	27
17	---	2720	1120	1040	2770	819	2570	139	205	430	131	55
18	---	2480	1040	670	1850	3270	1890	120	147	252	100	75
19	---	1690	916	516	1800	16700	1420	994	118	186	83	51
20	---	1240	801	485	---	16400	1060	3680	115	135	395	37
21	---	959	671	521	---	6610	858	2880	472	102	1800	28
22	---	863	514	491	---	3740	958	1240	919	84	1130	24
23	---	822	483	416	---	2340	970	559	1140	73	372	19
24	---	720	452	288	---	2680	750	288	1110	62	186	18
25	---	652	448	265	---	4530	573	216	740	55	135	20
26	---	2150	440	238	---	4470	441	189	413	51	105	17
27	---	4990	410	230	---	2830	382	175	264	50	90	19
28	---	4780	378	230	---	1970	295	469	173	47	93	20
29	---	2770	354	481	---	1650	233	1920	118	43	96	19
30	---	1850	349	---	---	1610	204	3110	122	36	87	20
31	---	---	317	---	---	1360	---	2110	---	32	71	---
TOTAL	---	---	50293	---	---	---	32065	22961	13415	19955	6629	869
MEAN	---	---	1622	---	---	---	1069	741	447	644	214	29.0
MAX	---	---	6630	---	---	---	5340	3680	1140	2890	1800	75
MIN	---	---	317	---	---	---	184	120	92	32	25	15

OSAGE RIVER BASIN

06922190 WEST FORK TEBO CREEK NEAR LEWIS, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°25'16", long 93°39'36", in NW ¼ NW ¼ NW ¼ sec.23, T.42 N., R.25 W., Henry County, Hydrologic Unit 10290108, at bridge on county road, 2 miles southeast of Lewis.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT												
16...	1440	5.0	535	7.30	12.0	8.7	79	58	250	190	67	21
NOV												
07...	1345	13	2010	8.10	11.5	11.1	102	88	1100	890	280	100
DEC												
02...	1050	4.0	690	7.40	4.0	12.9	98	3500	370	270	97	31
JAN												
08...	0830	3.0	2130	7.90	2.5	12.6	91	29	1100	830	270	94
FEB												
05...	0800	3.0	1580	7.90	5.0	11.2	86	56	880	700	230	74
MAR												
05...	0930	18	1440	7.90	8.5	11.2	94	210	800	640	210	68
APR												
09...	1145	1.5	1860	8.10	13.5	12.6	120	100	1100	920	290	95
MAY												
21...	1350	1.0	2010	8.10	25.5	9.7	118	210	1200	960	300	100
JUN												
11...	1215	1.0	2130	7.90	22.5	9.7	111	220	1200	1000	310	110
JUL												
07...	1100	1.8	1850	8.00	26.5	6.5	81	K260	880	710	210	86
AUG												
06...	0930	0.50	2020	7.70	23.0	6.8	79	100	1100	930	270	100
SEP												
03...	1530	0.50	2370	8.00	24.0	8.4	99	160	1200	1000	270	120

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
16...	10	6.0	68	200	3.3	0.20	10	--	<0.100	1.3	0.120
NOV											
07...	56	6.0	228	1200	7.2	0.40	8.7	1880	<0.100	0.40	0.040
DEC											
02...	17	5.3	96	300	7.1	0.30	8.9	491	0.800	1.1	0.210
JAN											
08...	60	5.8	236	1200	3.5	0.30	8.5	1820	<0.100	<0.20	<0.010
FEB											
05...	42	5.2	182	740	6.4	0.40	8.4	1330	0.400	0.50	0.030
MAR											
05...	38	5.4	162	700	10	0.30	8.7	1190	0.600	0.20	0.040
APR											
09...	56	5.3	196	1000	3.0	0.40	6.5	1680	<0.100	0.40	0.020
MAY											
21...	69	7.4	196	1100	8.5	0.50	7.7	1920	0.100	0.70	0.050
JUN											
11...	71	7.6	194	1200	6.6	0.40	10	1990	0.200	0.60	0.060
JUL											
07...	55	7.3	170	960	5.5	0.40	9.3	1670	0.300	2.5	0.080
AUG											
06...	67	9.1	159	1100	6.3	0.40	9.7	1890	<0.100	0.90	0.040
SEP											
03...	65	6.3	166	1200	5.7	0.40	5.6	2020	<0.100	--	0.010

K--Results based on colony count outside the acceptable range (non-ideal colony count).

06922190 WEST FORK TEBO CREEK NEAR LEWIS, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01108)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
OCT 16...	--	2700	<1	<1	<10	7	3	7
JAN 08...	110	15000	<1	<1	<10	4	6	540
APR 09...	50	3000	<1	1	10	10	3	9
JUL 07...	250	5200	1	1	20	320	3	10

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G) AS FE) (01170)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
OCT 16...	240	9900	<5	10	220	570	210	40
JAN 08...	250	6600	<5	20	770	1300	10	40
APR 09...	140	15000	<5	30	350	1800	20	80
JUL 07...	270	36000	<5	60	160	4700	<10	120

OSAGE RIVER BASIN

06922440 HARRY S. TRUMAN RESERVOIR AT WARSAW, MO

LOCATION.-- Lat 38°15'30", long 93°23'40", in sec.7, T.40 N., R.22 W., Benton County, Hydrologic Unit 10290105, in control room near middle of dam on Osage River, and 1.5 mi northwest of Warsaw and at mile 175.

DRAINAGE AREA.--11,500 mi².

PERIOD OF RECORD.--October 1981 to current year. Records collected at same site since 1977 and are available from Corps of Engineers.

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

REMARKS.--Lake is formed by a rolled earthfill type dam. Storage began on July 21, 1977. Spillway is equipped with 4 tainter gates 40 ft wide by 47.3 ft high. Capacity of surcharge pool (elevations 739.6 ft to 751.1 ft), 2,911,000 acre-ft; of flood control pool (elevations 706.0 ft to 739.6 ft, 4,006,000 acre-ft; and of multipurpose pool (elevations 635.0 ft to 706.0), 1,203,000 acre-ft. Lake is used for flood control, hydroelectric power, recreation, fish and wildlife conservation.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,020,000 acre-ft, Oct. 11, 12, 1986, elevation, 738.69 ft, Oct. 11, 1986; minimum, 41,700 acre-ft, Nov. 14, 1978, elevation, 661.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,020,000 acre-ft, Oct. 11, 12, elevation, 738.69 ft, Oct. 11; minimum, 1,150,000 acre-ft, Aug. 12, elevation, 705.10 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1920000	3390000	1660000	1220000	1300000	1370000	1410000	1210000	1200000	1210000	1170000	1230000
2	2670000	3310000	1670000	1210000	1300000	1450000	1370000	1220000	1210000	1210000	1170000	1220000
3	3550000	3230000	1660000	1210000	1290000	1520000	1320000	1220000	1200000	1210000	1160000	1210000
4	4070000	3150000	1630000	1210000	1280000	1550000	1270000	1220000	1200000	1220000	1170000	1210000
5	4430000	3080000	1600000	1200000	1260000	1580000	1220000	1230000	1200000	1230000	1160000	1210000
6	4630000	3010000	1550000	1210000	1240000	1610000	1200000	1230000	1200000	1240000	1160000	1210000
7	4770000	2940000	1530000	1210000	1220000	1630000	1200000	1220000	1210000	1250000	1160000	1220000
8	4870000	2870000	1520000	1210000	1220000	1650000	1180000	1220000	1210000	1270000	1160000	1220000
9	4950000	2800000	1520000	1220000	1210000	1650000	1180000	1220000	1210000	1270000	1160000	1220000
10	4990000	2740000	1510000	1200000	1200000	1650000	1170000	1220000	1210000	1260000	1160000	1210000
11	5020000	2660000	1500000	1210000	1190000	1640000	1180000	1200000	1210000	1260000	1160000	1210000
12	5020000	2570000	1480000	1200000	1200000	1620000	1180000	1180000	1210000	1250000	1150000	1210000
13	4970000	2490000	1520000	1200000	1210000	1590000	1210000	1160000	1210000	1260000	1160000	1210000
14	4920000	2400000	1540000	1220000	1210000	1550000	1200000	1180000	1210000	1260000	1160000	1220000
15	4850000	2310000	1500000	1210000	1220000	1510000	1250000	1200000	1210000	1260000	1170000	1220000
16	4760000	2220000	1460000	1220000	1230000	1460000	1290000	1210000	1190000	1250000	1170000	1220000
17	4650000	2130000	1410000	1230000	1250000	1420000	1320000	1210000	1180000	1230000	1170000	1220000
18	4540000	2040000	1360000	1240000	1250000	1420000	1330000	1190000	1190000	1230000	1170000	1210000
19	4430000	1980000	1310000	1250000	1250000	1440000	1330000	1190000	1190000	1220000	1180000	1220000
20	4300000	1930000	1270000	1240000	1250000	1470000	1320000	1190000	1190000	1210000	1190000	1220000
21	4210000	1890000	1220000	1240000	1250000	1480000	1310000	1190000	1190000	1190000	1210000	1220000
22	4130000	1840000	1210000	1220000	1250000	1480000	1300000	1200000	1200000	1200000	1220000	1220000
23	4050000	1780000	1210000	1190000	1240000	1480000	1280000	1200000	1200000	1190000	1220000	1220000
24	3960000	1730000	1220000	1190000	1240000	1510000	1270000	1200000	1240000	1200000	1230000	1220000
25	3900000	1710000	1240000	1200000	1230000	1530000	1250000	1210000	1250000	1180000	1230000	1210000
26	3830000	1710000	1230000	1200000	1200000	1530000	1260000	1210000	1250000	1180000	1230000	1210000
27	3760000	1710000	1240000	1200000	1200000	1530000	1240000	1210000	1240000	1180000	1230000	1210000
28	3690000	1690000	1240000	1200000	1280000	1530000	1220000	1210000	1220000	1180000	1230000	1220000
29	3620000	1680000	1240000	1230000	---	1500000	1210000	1210000	1200000	1180000	1230000	1210000
30	3540000	1650000	1240000	1260000	---	1480000	1220000	1220000	1210000	1170000	1230000	1210000
31	3460000	---	1230000	1280000	---	1450000	---	1230000	---	1170000	1230000	---

WTR YR 1987

(†)	729.77	712.86	706.41	707.42	707.32	710.00	706.31	706.44	706.07	705.39	706.49	706.07
(‡)	+1794000	-1810000	-420000	+50000	0	+170000	-230000	+10000	-20000	-40000	+60000	-20000

MAX 5020000 3390000 1670000 1280000 1300000 1650000 1410000 1230000 1250000 1270000 1230000 1230000

MIN 1920000 1650000 1210000 1190000 1190000 1370000 1170000 1160000 1180000 1170000 1150000 1210000

CAL YR 1986.....-201000

WTR YR 1987.....-456000

(†) Elevation, in feet NGVD, at end of month.

(‡) Change in contents, in acre-feet.

OSAGE RIVER BASIN

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06922450 OSAGE RIVER BELOW HARRY S. TRUMAN DAM AT WARSAW, MO

LOCATION.--Lat 38°15'41", long 93°24'16", NE ¼ SW ¼ sec.17, T.40 N., R.22 W., Benton County, Hydrologic Unit 10290109, on right bank 2,000 ft below Harry S. Truman Dam, and 1.5 mi northwest of Warsaw.

DRAINAGE AREA.--7,856 mi² uncontrolled area below other reservoirs.

PERIOD OF RECORD.--May 1978 to current year.

GAGE.--Acoustic flow monitor. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records are fair above 500 ft³/s and poor below 500 ft³/s. Records not published prior to 1982 water year due to test period of acoustic flow monitor which included periods of unreliable record. Flow completely regulated by Harry S. Truman Dam (station 06922440) 2,000 ft upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 71,100 ft³/s, Oct. 20, 1986; no flow most years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 71,100 ft³/s, Oct. 20; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	49300	28100	8980	11300	12200	33500	3670	21100	2600	696	3320
2	300	47300	25600	7470	12500	21800	34200	0	14500	950	721	3270
3	0	48900	24000	6520	15100	31500	34800	0	15000	0	717	2840
4	0	47600	28600	4470	15100	31000	36100	2820	14900	338	371	1690
5	17500	47200	30800	6970	17600	30400	37300	7850	10600	367	425	0
6	58200	48400	32800	4380	17300	30700	21700	18300	1000	6470	1120	0
7	60300	48000	33100	4000	13000	30200	12100	18700	354	7380	296	358
8	70000	48300	33000	4970	10200	30200	10200	20000	5630	6230	1100	0
9	69800	47400	28900	3220	11400	30000	10700	16900	1370	6970	367	0
10	69600	48300	30900	11900	10300	30300	9970	17600	3040	7210	364	2960
11	69500	49200	33100	2120	7670	30200	4390	23000	3590	6500	733	0
12	69500	47700	33500	7260	1750	30200	5070	21600	3620	4710	746	358
13	69800	49700	8400	5760	2010	30700	6670	18200	3370	10600	371	0
14	70000	50200	7510	0	2280	30600	24400	0	3150	7110	367	0
15	70000	50400	32700	6600	4570	30600	8110	801	5420	6790	0	0
16	70100	50400	33100	8500	21500	31100	2650	1430	11900	12700	367	363
17	70400	50100	33600	2370	21000	31800	8410	895	5980	13100	367	7770
18	70700	49600	34400	758	22400	31700	16900	16800	371	785	367	3160
19	71000	37500	35300	3900	23100	31600	19700	6230	1080	6380	367	0
20	71100	31100	30600	8330	25100	31900	18300	10900	1430	8250	367	0
21	55800	31800	30600	8240	25600	31800	18300	12600	1120	7550	363	0
22	51800	32300	13900	12400	25100	31900	17900	1890	1970	138	358	967
23	51800	32500	7660	18400	26400	32000	17800	363	1580	1660	358	0
24	52400	32300	3910	8600	26400	31900	17400	725	5270	336	358	0
25	49900	32100	1440	1880	26400	31900	16700	725	7520	10200	0	6660
26	50800	31900	4790	3900	27500	31800	0	1090	8390	375	3280	0
27	51600	31900	6230	3640	20900	31700	16800	2080	11700	375	0	0
28	51700	31900	6130	6930	15000	32200	16200	7500	11600	721	3290	0
29	52300	31900	4010	0	---	32000	8350	14700	7510	283	0	4110
30	50600	32300	8170	4940	---	32700	2880	17500	0	721	0	4160
31	48300	---	10400	10700	---	32700	---	18400	---	4230	3710	---
TOTAL	1614821	1267500	675250	188108	458480	941300	487500	283269	184065	142029	21946	41986
MEAN	52090	42250	21780	6068	16370	30360	16250	9138	6135	4582	708	1400
MAX	71100	50400	35300	18400	27500	32700	37300	23000	21100	13100	3710	7770
MIN	0	31100	1440	0	1750	12200	0	0	0	0	0	0

CAL YR 1986 TOTAL 5774753 MEAN 15820 MAX 71100 MIN 0
WTR YR 1987 TOTAL 6306254 MEAN 17280 MAX 71100 MIN 0

06923500 BENNETT SPRING AT BENNETT SPRINGS, MO

LOCATION.--Lat 37°43'03", long 92°51'26", in NW ¼ sec.1, T.34 N., R.18 W., Dallas County, Hydrologic Unit 10290110, on left bank 300 ft downstream from spring outlet, 1.5 mi upstream from Niangua River and at Bennett Springs.

PERIOD OF RECORD.--September 1916 to March 1920, October 1928 to September 1941, October 1965 to current year. Prior to March 1920 and October 1939 to September 1941 monthly discharge only published in WSP 1310. Occasional discharge measurements 1923, 1964, 1965.

GAGE.--Water stage recorder. Prior to May 26, 1987 nonrecording stage. Datum of gage 864.71 ft above National Geodetic Vertical Datum of 1929. Sept. 1916 to Mar. 1920, in the vicinity, datum unknown; Oct. 17, 1928 to Apr. 11, 1934, at site 1,780 ft downstream at datum 2.30 ft lower; Apr. 12 to Dec. 13, 1934, nonrecording gage; Dec. 14, 1934 to Sept. 17, 1941, water-stage recorder at present site and datum; and Sept 18, 1941 to May 25, 1987, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Oct. 1, 9, 13, 15, 21, 22, 28, Nov. 5, 7, 8, 11-13, 18, 19, 22, 27, Dec. 1, 3, 8, 17, 22, 25, 31, Jan. 1, 5, 6, 12, 19, 20, 26, 27, 31, Feb. 1, 3, 9, 11, 15-17, 19-22, 24-26, Mar. 2, 3, 8-13, 16-18, 23, 24, 30, 31, Apr. 1, 8, 9, 13, 14, 21, 22, May 2, 7, 17-21, and 25. Records poor. Several observations of water temperature and specific conductance were made during the year. Occasional runoff from drainage area of 42.4 mi² included in records.

AVERAGE DISCHARGE.--38 years (1916-19, 1928-41, 1965-87), 175 ft³/s, 126,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft³/s, Oct. 1, 1986, gage height, 11.1 ft, from floodmark, includes about 12,600 ft³/s from Spring Creek, from rating curve extended above 9,000 ft³/s; minimum, about 55 ft³/s, Nov. 13, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6,350 ft³/s, Oct. 1; minimum daily, 119 ft³/s, Sept. 26-28, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6350	235	206	170	173	276	193	180	142	154	148	129
2	1090	232	216	169	174	265	187	181	140	149	146	129
3	848	227	248	169	172	254	182	182	138	144	146	129
4	829	227	237	165	169	243	180	182	136	142	144	129
5	640	244	227	163	169	232	178	180	135	159	144	129
6	560	261	227	162	169	221	176	178	135	186	143	127
7	488	257	224	161	169	218	180	176	134	167	142	127
8	466	252	242	159	169	213	178	174	132	160	139	126
9	421	248	259	161	167	208	176	172	131	156	136	126
10	383	248	254	161	165	203	174	169	131	151	136	126
11	358	245	254	159	164	198	174	165	130	147	136	126
12	337	243	245	159	163	194	172	165	129	147	136	124
13	334	240	232	159	161	189	194	163	129	291	138	124
14	330	237	227	167	169	185	217	161	128	256	141	123
15	319	237	227	172	187	182	240	161	126	214	136	136
16	307	235	218	165	205	189	279	159	125	188	136	136
17	288	235	214	165	224	196	251	159	125	173	136	132
18	273	231	210	169	243	203	243	158	126	166	145	128
19	262	226	202	169	260	210	235	157	127	160	146	124
20	259	221	200	169	270	210	229	157	129	156	142	122
21	252	216	197	169	258	200	222	156	129	155	139	121
22	246	210	196	169	250	195	215	153	128	152	136	120
23	240	205	195	169	243	207	208	155	135	151	134	120
24	235	202	195	169	238	219	205	155	162	151	133	120
25	235	200	190	167	232	235	200	155	151	149	133	120
26	276	205	185	166	226	224	197	154	140	149	134	119
27	271	203	185	164	221	216	195	148	137	151	147	119
28	263	200	178	163	216	213	192	146	135	149	142	119
29	256	195	174	165	---	213	192	145	134	149	135	120
30	248	195	174	169	---	207	185	142	135	148	133	119
31	245	---	172	171	---	199	---	143	---	148	131	---
TOTAL	17909	6812	6610	5134	5626	6617	6049	5031	4014	5118	4317	3749
MEAN	578	227	213	166	201	213	202	162	134	165	139	125
MAX	6350	261	259	172	270	276	279	182	162	291	148	136
MIN	235	195	172	159	161	182	172	142	125	142	131	119
CAL YR 1986	TOTAL 91029	MEAN 249	MAX 6350	MIN 138								
WTR YR 1987	TOTAL 76986	MEAN 211	MAX 6350	MIN 119								

06923700 NIANGUA RIVER AT BENNETT SPRINGS, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°44'17", long 92°51'37", in SE ¼ SE ¼ sec. 25, T.35 N., R.18 W., Dallas County, Hydrologic Unit 10290110, at bridge on Highway 64.

PERIOD OF RECORD.--October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
14...	1000	840	286	7.70	13.5	9.3	88	<10	320	140
NOV										
05...	1030	490	330	7.70	13.0	9.1	86	<10	110	--
DEC										
02...	0800	80	342	7.50	10.5	10.4	93	12	K28	--
JAN										
05...	1100	250	358	8.00	8.5	12.1	102	<10	K18	190
FEB										
02...	1100	460	353	8.00	8.0	11.4	96	<10	21	--
MAR										
02...	1120	1460	239	7.80	7.0	11.5	93	23	2100	--
APR										
07...	0915	432	326	8.10	11.0	11.0	99	<10	28	170
MAY										
19...	0915	190	371	7.80	17.0	8.5	88	<10	31	--
JUN										
09...	0915	150	383	7.80	16.5	9.4	95	<10	58	--
JUL										
07...	0800	80	350	8.00	21.0	7.2	81	38	190	190
AUG										
04...	0930	147	369	7.70	16.5	8.2	83	<10	55	--
SEP										
01...	1030	125	390	7.60	16.5	9.6	96	15	29	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
14...	21	30	17	2.9	2.0	124	4.9	9.2	5.1	<0.10
NOV										
05...	--	--	--	--	--	170	6.6	--	--	--
DEC										
02...	--	--	--	--	--	179	11	--	--	--
JAN										
05...	11	37	23	3.2	1.4	176	3.4	8.1	6.0	<0.10
FEB										
02...	--	--	--	--	--	174	3.4	--	--	--
MAR										
02...	--	--	--	--	--	112	3.5	--	--	--
APR										
07...	10	35	21	3.5	1.2	164	2.5	8.6	5.9	0.10
MAY										
19...	--	--	--	--	--	178	5.5	--	--	--
JUN										
09...	--	--	--	--	--	194	6.0	--	--	--
JUL										
07...	1	39	22	3.1	2.1	187	3.6	7.4	4.8	<0.10
AUG										
04...	--	--	--	--	--	170	6.6	--	--	--
SEP										
01...	--	--	--	--	--	194	9.5	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

06925500 LAKE OF THE OZARKS NEAR BAGNELL, MO

LOCATION.--Lat 38°12'19", long 92°37'21", in SE ¼ sec.19, T.40 N., R.15 W., Miller County, Hydrologic Unit 10290111, at left end of powerhouse section near left end of Bagnell Dam on Osage River, 2 mi southwest of Bagnell, and at mile 81.7.

DRAINAGE AREA.--14,000 mi².

PERIOD OF RECORD.--April 1931 to current year. Gage-height records collected at same site since 1932 and are contained in reports of the National Weather Service, published as Osage River at Bagnell Dam, Lakeside.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum, adjustment of 1912. To obtain National Geodetic Vertical Datum of 1929 subtract 0.88 ft.

REMARKS.--Lake is formed by concrete gravity dam. Spillway is equipped with 12 taintor gates 34 ft wide by 22 ft high. Storage began in 1931. Usable capacity 1,218,000 acre-ft between elevations 630.00 ft (maximum draw-down) and 660.00 ft (top of gates). Dead storage, 708,800 acre-ft. Figures given herein are usable contents. Lake is used for flood control, power, and recreational purposes.

COOPERATION.--Records were provided by Union Electric Company of Missouri.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,527,000 acre-ft, May 22, 1943, elevation, 665.45 ft; minimum, 322,100 acre-ft, Feb. 13, 1948, elevation, 639.95 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,445,000 acre-ft, Oct. 3, elevation, 664.24 ft; minimum, 948,000 acre-ft, Feb. 13, elevation, 655.04 ft.

MONTH END ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-ft)	Change in contents (acre-feet)
Sept. 30	659.33	1,180,000	-----
Oct. 31	659.99	1,218,000	+38,000
Nov. 30	659.91	1,213,000	-5,000
Dec. 31	658.92	1,156,000	-57,000
CAL YR 1986	-----	-----	+154,000
Jan. 31	656.84	1,042,000	-114,000
Feb. 28	655.98	996,000	-46,000
Mar. 31	658.10	1,110,000	+114,000
Apr. 30	656.26	1,011,000	-99,000
May 31	658.60	1,138,000	+127,000
June 30	659.16	1,170,000	+32,000
July 31	659.20	1,172,000	+2,000
Aug. 31	658.68	1,142,000	-30,000
Sept. 30	659.04	1,163,000	+21,000
WTR YR 1987	-----	-----	-17,000

LOCATION.--Lat 38°11'29", long 92°36'26", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.29, T.40 N., R.15 W., Miller County, Hydrologic Unit 10290111, on center pier of U.S. Highway 54 bridge, 1.3 mi downstream from hydroelectric plant of Union Electric Company of Missouri, and at mile 80.5.

PERIOD OF RECORD.--October 1880 to current year. Monthly discharge only for some periods published in WSP 1310.
Gage-height records collected in this vicinity 1880-1931 are contained in reports of Missouri River Commission or
National Weather Service.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Lake of the Ozarks (station 06925500) 1.3
mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 220,000 ft³/s, May 19, 1943, gage height, 48.8 ft (former site and datum); minimum, 183 ft³/s, Sept. 9, 1969; minimum daily discharge, 220 ft³/s, Dec. 12, 1917.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 127,000 ft³/s, Oct. 4; minimum, 400 ft³/s, Aug. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36300	52500	33700	6350	13300	13900	29800	1680	19700	1700	2600	739
2	47700	52400	34300	6080	14700	19800	33300	578	20000	2720	1100	3410
3	89400	52200	34100	7240	17800	31400	33300	502	15200	990	3190	2400
4	105000	52200	33900	7060	19200	31500	33400	502	10500	517	990	1730
5	82600	52200	33800	7120	18300	31500	33500	1590	1610	575	741	1070
6	75700	52300	33800	7160	18300	31400	32700	12900	780	2390	659	1010
7	74000	52500	33900	6280	13100	31600	17500	14200	795	7560	4280	1140
8	76200	52400	33900	6280	13500	31500	15500	13200	4640	12600	4900	817
9	76800	52300	33900	4240	15100	31500	14500	12800	4310	13200	1090	1120
10	76300	52200	33800	848	15600	31500	12900	9540	1010	13000	728	1300
11	76500	52200	33800	1070	15100	31300	12000	15200	1970	12600	765	1670
12	76400	52200	33800	4260	11000	31400	8600	19100	2890	3610	2110	743
13	76000	52000	27300	7680	4110	31500	15900	13300	2110	4980	1160	739
14	75600	52000	19100	8560	690	31600	32200	8140	1110	7740	1370	3160
15	75600	52300	22400	8920	532	31600	22900	862	2740	7060	828	1090
16	75600	52300	28800	9000	6960	31500	8160	518	8120	8180	1610	593
17	74400	52400	29800	11300	16200	31700	11400	645	6420	8580	918	872
18	71300	51500	29900	9620	26400	31700	19500	6640	5810	6600	687	5640
19	70900	49700	29900	6500	27500	31700	19200	10900	2290	1210	915	1680
20	70800	37800	29900	6680	27600	31700	21500	5920	802	3340	759	737
21	67900	34000	29900	8600	27200	31800	25200	7840	6510	5660	1750	1510
22	58300	34000	29900	10300	27600	31800	24300	7700	3300	2180	1400	761
23	55500	33900	18800	12200	27600	31900	22100	1270	5750	2540	743	713
24	52500	33800	7360	11800	27400	31900	22000	585	6920	1680	719	715
25	52400	33200	6560	5900	29100	31800	19900	585	1840	1530	715	718
26	52400	32400	5880	11300	30100	31800	8040	5400	5330	1100	712	739
27	52500	32300	5760	12700	21300	31700	21100	1300	5800	4120	721	751
28	51400	32300	5640	13300	17800	31800	18100	548	7000	4140	2940	1990
29	54200	32400	8160	10200	---	30600	8120	12500	11600	3900	1020	803
30	53600	32300	7480	8520	---	31800	5030	15400	10500	2710	740	718
31	52500	---	9520	14100	---	31800	---	15600	---	3100	724	---
TOTAL	2086300	1358200	758760	251168	503092	950000	601650	217445	177357	151812	43584	41078
MEAN	67300	45270	24480	8102	17970	30650	20050	7014	5912	4897	1406	1369
MAX	105000	52500	34300	14100	30100	31900	33500	19100	20000	13200	4900	5640
MIN	36300	32300	5640	848	532	13900	5030	502	780	517	659	593
CAL YR 1986	TOTAL 6835960		MEAN 18730	MAX 105000		MIN 465						
WTK YR 1987	TOTAL 7140450		MEAN 19560	MAX 105000		MIN 502						

OSAGE RIVER BASIN

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06926500 OSAGE RIVER NEAR ST. THOMAS, MO

LOCATION.--Lat 38°20'20", long 92°13'34", in SE ¼ SW ¼ sec.35, T.42 N., R.12 W., Cole County, Hydrologic Unit 10290111, on left bank 0.5 mi downstream from Sugar Creek, 2.5 mi south of St. Thomas, and at mile 43.1.

DRAINAGE AREA.--14,500 mi², approximately.

PERIOD OF RECORD.--August 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 528.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. Considerable regulation by Lake of the Ozarks (station 06925500) 38.6 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--56 years, 10,486 ft³/s, 7,597,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 216,00 ft³/s, May 20, 1943, gage height, 43.8 ft; minimum, 346 ft³/s, July 12, 1959, and Sept. 18, 1960; minimum daily discharge, 373 ft³/s, July 12, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage prior to 1943, about 39.4 in June 1844.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 111,00 ft³/s, Oct. 4; minimum, 716 ft³/s, July 5, Sept. 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41800	52900	34600	8310	16700	15200	32400	5270	19500	8170	3430	1020
2	43800	52600	36900	6000	15900	18700	34300	2440	20500	1630	2410	1070
3	72900	52500	36300	7080	19000	31200	35400	1090	16900	2990	1210	4270
4	105000	52500	35100	7270	19700	33100	35400	897	13900	1140	3340	2220
5	103000	52500	34400	7480	19200	33000	35500	893	8370	766	1170	2150
6	85100	52700	33900	7350	19100	32900	35300	4700	1740	992	873	1320
7	74700	52700	33900	7690	17900	32900	27000	18500	967	3020	823	1270
8	72400	52800	34300	6590	14300	32900	15100	12900	1110	9440	5540	1440
9	74800	52700	34500	5820	15700	32900	16400	15600	5480	12800	5040	1090
10	77500	52600	34500	4330	17500	32900	15600	11600	4590	12700	1310	1310
11	79300	52500	34300	1360	16100	32800	13200	11900	1270	12700	964	1860
12	79200	52500	33900	1620	15300	32700	13100	20500	2240	10100	1000	1620
13	78100	52400	32300	6430	9990	32800	13100	17600	3370	3230	2240	1010
14	75400	52300	20100	8980	3620	32800	36300	12100	2620	6360	1380	977
15	73000	52300	19000	9100	1320	32800	36200	7200	1240	5480	1530	4060
16	71400	52300	25700	9380	1780	32800	15600	1370	4170	7780	1120	1360
17	75300	52200	28600	10300	12800	32900	11900	852	8850	8700	1810	857
18	75300	52000	28900	11800	25200	33100	18400	1290	6650	8360	1240	1080
19	73000	51400	29000	9480	28100	33100	21700	10500	5850	5850	1040	6870
20	72200	44100	29000	7330	28700	33300	21700	10000	1820	1320	1170	1530
21	71800	34500	29000	8230	28500	33900	25400	7000	1090	4570	1110	879
22	64600	33400	29000	10100	28700	34200	28400	10200	3740	6030	1950	1340
23	58500	33300	24900	11700	28700	33900	23700	7180	3360	1690	1620	834
24	54100	33300	10400	12700	28600	34800	22800	1570	6640	3140	1110	742
25	53000	33200	6710	10100	28900	34800	22700	875	7520	1880	1050	724
26	53200	32800	6310	9580	31900	34100	13900	959	1990	1190	1050	716
27	53400	32300	5880	14460	24900	34300	14500	6930	5640	1090	1060	720
28	53400	32000	6250	14300	21400	34600	20000	1530	6320	4850	1070	769
29	53800	31800	5800	12500	---	34000	15600	3480	9060	3650	3320	1630
30	55000	31700	9300	12000	---	34600	8150	17200	11000	3640	1410	842
31	53600	---	7830	11700	---	34500	---	16300	---	2770	1070	---
TOTAL	2127600	13688800	770580	271010	539510	1002500	678750	240426	187497	158028	54460	47580
MEAN	68630	45630	24860	8742	19270	32340	22620	7756	6250	5098	1757	1586
MAX	105000	52900	36900	14400	31900	34800	36300	20500	20500	12800	5540	6870
MIN	41800	31700	5800	1360	1320	15200	8150	852	967	766	823	716

CAL YR 1986 TOTAL 7047580 MEAN 19310 MAX 105000 MIN 911
WTR YR 1987 TOTAL 7446740 MEAN 20400 MAX 105000 MIN 716

OSAGE RIVER BASIN

06926510 OSAGE RIVER BELOW ST. THOMAS, MO
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 38°25'18", long 92°12'31", in NW ¼ NW ¼ sec.1, T.42 N., R.12 W., Cole County, Hydrologic Unit 10290111, at bridge on State Highway B, 3.8 mi north of St. Thomas, 8.6 mi downstream from gaging station, and at mile 34.5.

DRAINAGE AREA.--14,500 mi² approximately.

PERIOD OF RECORD.--October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURE: October 1974 to September 1981.

REMARKS.--Records of discharge are given for gaging station 06926500 Osage River near St. Thomas.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 398 microsiemens, Jan. 1, 1981; minimum daily, 140 microsiemens, Sept. 3, 1981.

WATER TEMPERATURE: Maximum daily, 30.0°C, July 29, 1977, July 25, Aug. 11, 1980; minimum daily, 0.0°C, Jan. 21, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV										
19...	0640	51400	160	7.80	11.5	20	11.5	103	K28	K44
JAN										
15...	1345	6360	277	7.80	5.5	7.1	11.5	89	K14	K8
MAR										
12...	1145	32700	320	7.90	6.0	3.2	13.3	103	K4	K8
MAY										
15...	0900	7950	280	7.70	16.0	12	8.5	84	230	560
JUL										
09...	1540	8080	305	7.90	22.0	2.7	5.5	62	100	330
SEP										
10...	1125	2490	304	8.10	24.0	2.5	10.9	129	K32	K56

DATE	HARD- NESS DISSOLV (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
NOV									
19...	70	11	21	4.2	2.9	8	0.2	3.9	59
JAN									
15...	120	15	33	8.3	4.5	7	0.2	3.5	102
MAR									
12...	150	25	44	9.9	7.1	9	0.3	2.9	126
MAY									
15...	130	32	37	9.5	5.6	8	0.2	2.6	100
JUL									
09...	140	34	41	10	6.0	8	0.2	2.7	110
SEP									
10...	140	18	39	11	6.1	8	0.2	2.3	125

K--Results based on colony count outside the acceptable range (non-ideal colony count).

06926510 OSAGE RIVER BELOW ST. THOMAS, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 19...	22	3.7	0.10	8.2	119	100	0.16	16500	0.300
JAN 15...	27	4.3	0.10	8.1	154	150	0.21	2650	0.370
MAR 12...	45	6.9	0.10	3.2	196	190	0.27	17300	0.320
MAY 15...	29	5.0	<0.10	4.5	159	150	0.22	3410	0.520
JUL 09...	31	5.6	0.10	3.9	182	170	0.25	3970	0.250
SEP 10...	30	5.4	0.10	4.1	168	170	0.23	1130	<0.100

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 19...	0.020	0.03	0.60	0.130	0.090	0.110	4	500	73
JAN 15...	<0.010	--	0.60	0.080	0.040	0.030	15	258	61
MAR 12...	0.010	0.01	0.70	0.030	0.010	<0.010	15	1320	90
MAY 15...	0.020	0.03	0.70	0.220	0.020	0.020	7	140	43
JUL 09...	0.010	0.01	0.80	0.030	0.040	0.010	14	306	61
SEP 10...	0.030	0.04	0.60	0.030	0.020	0.020	6	42	14

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 19...	60	1	44	<0.5	<1	<1	<3	5	95	<5
JAN 15...	50	1	53	2	1	<1	<3	1	51	<5
MAY 15...	40	<1	58	<0.5	<1	2	<3	2	36	10

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 19...	4	5	0.1	<10	3	<1	<1	83	<6	17
JAN 15...	7	33	<0.1	<10	4	<1	<1	120	<6	6
MAY 15...	5	16	<0.1	<10	<1	<1	<1	120	<6	17

GASCONADE RIVER BASIN

06930450 BIG PINEY RIVER AT DEVIL'S ELBOW, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°50'53", long 92°03'44" in SE ¼ NE ¼ sec.18, T.36 N., R.10 W., Pulaski County, Hydrologic Unit 10290202, at bridge on County Highway V at Devil's Elbow.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
28...	0845	465	318	7.90	12.5	9.8	92	13	40	170
NOV										
25...	1200	420	388	8.40	8.5	12.1	102	<10	K9	--
DEC										
29...	1230	430	318	8.00	5.5	13.9	109	<10	K2	--
JAN										
26...	1100	600	305	8.10	2.5	14.4	103	<10	K2	170
FEB										
23...	1300	600	279	7.60	8.0	12.9	107	16	K7	--
MAR										
24...	0930	860	280	8.10	14.0	9.8	96	<10	42	--
APR										
20...	1445	1050	254	8.40	19.0	9.6	102	10	K34	130
MAY										
27...	1415	390	312	8.20	24.5	9.0	106	<10	20	--
JUN										
29...	1200	120	330	8.30	24.5	6.9	82	<10	K9	--
JUL										
29...	1100	320	328	7.80	26.0	8.4	102	<10	K17	170
AUG										
27...	0930	219	329	7.90	23.5	6.6	77	--	K260	--
SEP										
23...	1145	240	332	8.10	17.5	8.8	91	19	K180	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
28...	8	34	20	2.9	1.4	159	3.9	7.8	3.8	0.10
NOV										
25...	--	--	--	--	--	172	1.3	--	--	--
DEC										
29...	--	--	--	--	--	158	3.1	--	--	--
JAN										
26...	10	35	21	2.8	1.2	164	2.5	9.0	5.4	<0.10
FEB										
23...	--	--	--	--	--	134	6.5	--	--	--
MAR										
24...	--	--	--	--	--	140	2.2	--	--	--
APR										
20...	0	28	15	3.0	1.2	134	1	14	4.3	<0.10
MAY										
27...	--	--	--	--	--	160	2.0	--	--	--
JUN										
29...	--	--	--	--	--	90	0.9	--	--	--
JUL										
29...	30	35	21	3.1	1.8	144	4.4	7.4	4.6	0.10
AUG										
27...	--	--	--	--	--	177	4.3	--	--	--
SEP										
23...	--	--	--	--	--	180	2.8	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

06930800 GASCONADE RIVER ABOVE JEROME, MO
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 37°55'12", long 91°58'33", in NE ¼ sec.24, T.37 N., R.10 W., Phelps County, Hydrologic Unit 10290203, at bridge on County Highway D at Jerome, 150 ft upstream from Little Piney Creek, 0.7 mi upstream from gaging station.

DRAINAGE AREA.--2,570 mi².

PERIOD OF RECORD.--January 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1978 to September 1981.

WATER TEMPERATURE: March 1978 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 588 microsiemens, Sept. 23, 1981; minimum, 133 microsiemens, Sept. 1, 1981.

WATER TEMPERATURE: Maximum daily, 34.0°C, Aug. 11, 17, 1980; minimum, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED CENT SATUR- ATION (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
28...	1005	1510	318	7.90	13.0	2.0	9.9	93	K36	K18
NOV										
25...	1330	1300	403	8.40	8.0	0.70	12.4	104	K5	K11
DEC										
29...	1330	1150	336	8.10	5.0	0.70	14.3	110	<1	K3
JAN										
26...	1300	1690	332	8.10	3.0	0.50	14.1	102	<1	K2
FEB										
23...	1415	4780	294	8.00	7.5	4.0	13.6	111	K8	K8
MAR										
24...	1100	2580	318	8.10	14.0	3.2	10.2	100	110	54
APR										
20...	1600	3770	273	8.20	19.0	4.5	9.4	100	46	54
MAY										
27...	1300	1080	344	8.10	24.0	2.7	8.5	99	32	39
JUN										
29...	1400	581	360	8.20	24.0	2.5	6.7	79	K11	--
JUL										
29...	1400	607	334	8.00	27.5	2.1	8.0	100	24	31
AUG										
26...	1045	423	333	8.10	23.0	2.1	8.1	94	K18	K12
SEP										
23...	1030	448	343	8.00	18.0	19	9.9	103	K300	K24

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
OCT									
28...	170	8	36	20	3.2	4	0.1	2.2	164
NOV									
25...	180	15	37	22	3.0	3	0.1	1.7	168
DEC									
29...	180	15	37	22	2.9	3	0.1	1.5	168
JAN									
26...	180	13	37	22	2.9	3	0.1	1.4	170
FEB									
23...	160	14	32	19	2.8	4	0.1	1.5	144
MAR									
24...	170	15	34	20	2.8	3	0.1	1.4	152
APR									
20...	140	3	30	17	2.5	4	0.1	1.4	142
MAY									
27...	180	19	37	22	2.9	3	0.1	1.7	164
JUN									
29...	180	0	36	22	2.9	3	0.1	1.8	183
JUL									
29...	180	28	35	22	2.9	3	0.1	1.8	150
AUG									
26...	180	0	35	23	2.9	3	0.1	1.6	187
SEP									
23...	200	15	40	25	3.2	3	0.1	1.6	188

K--Results based on colony count outside the acceptable range (non-ideal colony count).

06930800 GASCONADE RIVER ABOVE JEROME, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO ₂) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)
OCT 28...	8.4	11	<0.10	8.7	190	190	0.26	775	0.650
NOV 25...	8.8	5.1	<0.10	5.3	175	190	0.24	615	0.350
DEC 29...	9.3	5.8	<0.10	3.8	177	180	0.24	548	0.350
JAN 26...	9.8	6.6	<0.10	4.6	169	190	0.23	770	0.490
FEB 23...	10	7.7	<0.10	7.3	155	170	0.21	2000	0.910
MAR 24...	8.6	5.9	<0.10	3.1	158	170	0.21	1100	0.290
APR 20...	9.6	4.7	<0.10	6.9	154	160	0.21	1570	0.440
MAY 27...	6.0	4.2	<0.10	9.3	198	180	0.27	580	0.390
JUN 29...	8.4	4.8	<0.10	11	196	200	0.27	307	<0.100
JUL 29...	6.8	4.6	0.10	9.6	173	170	0.24	284	<0.100
AUG 26...	7.0	4.1	0.10	10	184	200	0.25	210	0.140
SEP 23...	19	3.5	0.10	9.1	215	210	0.29	260	0.170

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 mm (70331)
OCT 28...	0.030	0.04	0.50	0.030	0.040	0.010	20	82	52
NOV 25...	<0.010	--	0.20	<0.010	0.020	<0.010	31	109	49
DEC 29...	<0.010	--	0.30	<0.010	<0.010	<0.010	16	50	33
JAN 26...	0.020	0.03	0.40	<0.010	0.010	<0.010	11	50	33
FEB 23...	<0.010	--	1.0	0.010	<0.010	<0.010	4	46	20
MAR 24...	<0.010	--	0.40	0.020	0.010	<0.010	2	15	57
APR 20...	0.010	0.01	0.30	0.030	0.020	0.010	7	72	55
MAY 27...	0.030	0.04	0.70	0.030	0.020	<0.010	8	23	13
JUN 29...	<0.010	--	0.50	0.040	0.030	<0.010	--	--	--
JUL 29...	<0.010	--	0.30	0.020	<0.010	<0.010	4	6.6	14
AUG 26...	0.030	0.04	<0.20	0.020	<0.010	<0.010	19	22	14
SEP 23...	0.030	0.04	0.30	0.020	0.010	0.020	5	5.6	15

GASCONADE RIVER BASIN

06930800 GASCONADE RIVER ABOVE JEROME, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 25...	30	<1	54	<0.5	1	<1	<3	1	11	<5
JAN 26...	<10	<1	45	<0.5	<1	<1	<3	2	9	<5
MAY 27...	20	<1	59	<0.5	<1	<1	<3	4	13	<5
JUL 29...	<10	1	55	<0.5	<1	<1	<3	1	10	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 25...	5	30	<0.1	<10	3	<1	<1	40	<6	22
JAN 26...	<4	10	<0.1	<10	1	<1	<1	37	<6	4
MAY 27...	<4	23	<0.1	<10	3	<1	<1	45	<6	14
JUL 29...	<4	15	<0.1	<10	<1	<1	<1	40	<6	37

06932000 LITTLE PINEY CREEK AT NEWBURG, MO

LOCATION.--Lat 37°54'35", long 91°54'12", in SW ¼ SE ¼ sec.22, T.37 N., R.9 W., Phelps County, Hydrologic Unit 10290203, on left bank at downstream side of bridge on State Highway P and T at Newburg, and 2 mi upstream from Mill Creek.

DRAINAGE AREA.--200 mi², approximately.

PERIOD OF RECORD.--October 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 693.40 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1951, all gages at datum 3.0 ft higher. Prior to Nov. 21, 1963, nonrecording gage at site 100 ft downstream. Nov. 21, 1963, to May 9, 1966, nonrecording gage at present site.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--59 years, 158 ft³/s, 10.73 in/yr, 114,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft³/s, Aug. 14, 1946, gage height, 16.2 ft, present datum, from floodmark, from rating curve extended above 21,000 ft³/s, on basis of slope-area measurements at gage heights 15.0 ft and 16.2 ft; maximum gage height, 16.6 ft, June 17, 1985, minimum discharge, 24 ft³/s, Aug. 22-31, 1936, Sept. 19, 20, 1954, and Oct. 10-16, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 16.7 ft, Aug. 20, 1915, from floodmark, present datum; discharge, 30,000 ft³/s, from rating curve based on discharge measurements made in 1935 and extended above 25,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 4,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0830	8,100	11.25	Oct. 2	1315	*9,270	*11.64

Minimum discharge, 57 ft³/s, Aug. 22-24 and Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5110	102	378	101	110	190	150	130	88	93	63	62
2	3050	91	330	101	127	212	147	127	90	87	62	63
3	896	91	259	99	126	190	143	954	98	108	61	62
4	607	107	221	98	118	172	140	255	88	89	76	62
5	464	182	195	96	111	163	138	179	85	101	101	61
6	364	190	179	96	107	156	137	158	85	99	73	62
7	306	171	181	93	104	149	134	147	82	94	68	63
8	264	167	213	91	102	146	133	139	81	94	64	66
9	230	155	239	102	97	144	131	132	84	84	63	64
10	209	142	228	103	95	139	132	125	85	82	63	67
11	189	159	183	96	95	134	134	122	89	80	70	71
12	207	160	196	94	94	133	129	117	90	81	69	68
13	182	125	176	99	92	132	790	113	93	214	67	65
14	170	115	167	147	118	132	865	110	89	117	66	65
15	160	136	158	168	147	134	376	108	84	102	66	69
16	152	131	153	150	216	136	276	106	89	94	62	77
17	144	126	149	140	203	144	233	104	98	90	65	75
18	138	121	141	137	189	239	210	106	90	85	69	67
19	132	114	135	138	206	202	191	105	93	77	66	66
20	126	117	129	128	207	172	179	111	98	73	63	64
21	121	108	126	120	225	162	169	102	90	73	61	63
22	119	106	119	121	226	156	162	113	100	70	59	64
23	118	103	119	118	205	151	157	99	103	69	59	63
24	117	99	119	109	185	155	151	93	99	69	60	63
25	129	99	117	106	168	157	147	92	91	71	59	63
26	140	108	111	101	153	154	143	91	87	70	70	63
27	135	103	108	101	146	150	141	87	84	70	86	62
28	127	101	102	101	161	148	137	86	84	82	77	63
29	121	99	102	105	---	157	134	87	82	70	67	77
30	111	100	103	109	---	154	132	82	81	66	64	61
31	107	---	103	105	---	145	---	81	---	65	64	---
TOTAL	14445	3728	5239	3473	4133	4908	6241	4461	2680	2719	2083	1961
MEAN	466	124	169	112	148	158	208	144	89.3	87.7	67.2	65.4
MAX	5110	190	378	168	226	239	865	954	103	214	101	77
MIN	107	91	102	91	92	132	129	81	81	65	59	61

CAL YR 1986 TOTAL 62493 MEAN 171 MAX 5110 MIN 62
WTR YR 1987 TOTAL 56071 MEAN 154 MAX 5110 MIN 59

06933500 GASCONADE RIVER AT JEROME, MO

LOCATION.--Lat 37°55'47", long 91°58'38", in NE ¼ NE ¼ SE ¼ sec.13, T.37 N., R.10 W., Phelps County, Hydrologic Unit 10290203, on left bank at Jerome, 0.5 mi downstream from Little Piney Creek, and at mile 107.

DRAINAGE AREA.--2,840 mi², approximately.

PERIOD OF RECORD.--April 1903 to July 1906 (published as "at Arlington") and January 1923 to current year. October to December 1922 monthly discharge only, published in WSP 1310. Gage-height records collected intermittently in the vicinity 1885-1926 and at same site since 1938 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 172: 1904. WSP 566: Drainage area. WSP 1340: 1903-04, 1928(M).

GAGE.--Water-stage recorder. Datum of gage is 657.64 ft above National Geodetic Vertical Datum of 1929. Prior to July 26, 1904, nonrecording gage at site 0.8 mi downstream at different datum. July 26, 1904, to July 21, 1906, nonrecording gage at site 0.5 mi upstream from present site at datum about 0.85 ft higher than present gage. Jan. 3, 1923, to Sept. 29, 1928, nonrecording gage at site 400 ft downstream from present site at datum 0.14 ft lower than present datum. Sept. 30, 1928, to Jan. 17, 1939, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--67 years (1903-05, 1922-87), 2,572 ft³/s, 12.30 in/yr, 1,863,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 136,000 ft³/s, Dec. 5, 1982, gage height, 31.34 ft; minimum, 254 ft³/s, Sept. 21, 22, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 6, 1897, reached a stage of about 29.0 ft, discharge, 120,000 ft³/s. A stage of 28.6 ft was reached on Aug. 20, 22, 1915, discharge, 114,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	1730	*54,400	*21.10	No other peak greater than base discharge.			

Minimum discharge, 475 ft³/s, Sept. 10, 13-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27600	1410	2250	1210	1590	3300	2730	1680	1060	737	691	528
2	45000	1340	2460	1170	1660	3990	2540	1610	1020	994	665	522
3	47800	1280	2590	1140	1700	5450	2340	2460	1000	4260	638	506
4	32800	1320	2660	1120	1780	4900	2180	1930	943	2590	658	492
5	8700	1600	2540	1100	1960	4070	2030	1680	915	1960	727	485
6	5600	1850	2440	1080	2020	3490	1910	1900	885	1670	619	483
7	4290	2230	2380	1070	1960	3120	1820	1970	853	2380	585	487
8	3530	3020	2500	1050	1880	2850	1730	1730	827	3040	575	499
9	3040	3040	2730	1100	1780	2660	1650	1570	797	2630	564	486
10	2680	2760	3050	1120	1700	2460	1610	1450	769	2140	553	490
11	2400	2630	3550	1090	1630	2300	1580	1380	746	1870	576	502
12	2880	2550	3740	1090	1590	2150	1520	1310	731	1650	587	492
13	3060	2570	3380	1110	1530	2020	3520	1250	728	2140	577	482
14	3590	2580	3020	1220	1600	1920	8440	1220	730	1610	611	477
15	3320	2460	2730	1430	1780	1830	12400	1170	696	1710	571	502
16	2890	2310	2510	1600	3610	1740	8440	1130	701	1510	571	551
17	2530	2180	2340	1980	9920	1700	7000	1110	751	1280	636	559
18	2280	2070	2200	2380	11500	2030	5960	1110	780	1120	649	539
19	2060	1940	2060	2410	7990	2260	4910	1240	1050	1020	628	541
20	1870	1850	1940	2330	6210	2530	4150	1360	926	942	593	569
21	1720	1730	1820	2280	5490	2840	3560	1280	863	877	561	583
22	1610	1630	1710	2220	5160	2810	3130	1230	787	825	537	558
23	1520	1570	1620	2120	5090	2580	2830	1200	788	773	538	539
24	1530	1500	1550	2030	4910	2810	2590	1160	818	748	534	523
25	1460	1470	1480	1930	4370	3000	2380	1130	796	726	522	522
26	1560	1500	1430	1840	3820	4930	2230	1240	757	704	526	519
27	1620	1490	1370	1750	3430	4750	2090	1220	759	704	577	502
28	1680	1480	1330	1670	3330	3850	1960	1190	736	740	593	498
29	1650	1560	1300	1620	---	3430	1840	1160	704	712	562	522
30	1560	1920	1280	1620	---	3100	1760	1120	687	687	550	500
31	1480	---	1230	1580	---	2880	---	1090	---	695	544	---
TOTAL	225310	58840	69190	48460	100990	93750	102830	43280	24603	45444	18318	15458
MEAN	7268	1961	2232	1563	3607	3024	3428	1396	820	1466	591	515
MAX	47800	3040	3740	2410	11500	5450	12400	2460	1060	4260	727	583
MIN	1460	1280	1230	1050	1530	1700	1520	1090	687	687	522	477

CAL YR 1986 TOTAL 893087 MEAN 2447 MAX 47800 MIN 563
WTR YR 1987 TOTAL 846473 MEAN 2319 MAX 47800 MIN 477

06934000 GASCONADE RIVER NEAR RICH FOUNTAIN, MO

LOCATION.--Lat 38°23'20", long 91°49'15", in SE ¼ sec. 16, T.41 N., R.8 W., Osage County, Hydrologic Unit 10290203, on downstream side of State Highway 89 bridge, 100 ft downstream from Brush Creek Slough, 800 ft upstream from Swan Creek and 4 miles east of Rich Fountain.

DRAINAGE AREA.--3,180 mi² (by U.S. Army Corps of Engineers).

PERIOD OF RECORD.--October 1921 to September 1959, October 31, 1986 to current year. From 1959 to 1986 annual peaks only.

GAGE.--Water-stage recorder. Datum of gage 553.70 ft above National Geodetic Vertical Datum of 1929. From Oct. 10, 1921 to Sept. 13, 1932, chain gage on former bridge, 50 ft downstream. Sept. 14, 1932 to Mar. 9, 1934, wire-weight gage on former bridge. Mar. 10, 1934 to Aug. 26, 1956, water-stage recorder on former bridge. Aug. 26, 1956 to May 11, 1966 gage readings were obtained by measuring from a reference point on present bridge. May 11, 1966 to Oct. 31, 1986, type A wire-weight gage on present bridge. All gages have been maintained at present datum.

REMARKS.--Estimated daily discharges: Oct. 6-15, 17-22, 24-30, Nov. 13, 14, Dec. 12-17, 19-24, 26-31, Jan. 2-7, 9-14. Records fair except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--38 years (water year 1923-1959, 1987), 2,930 ft³/s, 12.51 in/yr, 2,123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 134,000 ft³/s, Dec. 6, 1982, gage height, 33.27 ft; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	0600	*62,500	*23.96	No other peak greater than base discharge.			

Minimum discharge, 516 ft³/s, Sept. 6 and 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11100	1630	3920	1380	1930	3960	3410	1940	1160	904	800	557
2	27700	1570	4320	1340	1910	3890	3150	1860	1290	910	793	552
3	53300	1510	3430	1300	1930	4510	2900	2480	1170	1550	770	544
4	58200	1480	3200	1280	1930	5100	2670	4430	1050	3820	745	537
5	40900	1630	3030	1250	2030	4530	2470	2420	993	2790	822	536
6	12000	2080	2820	1220	2200	4060	2310	2090	961	2080	864	521
7	6000	2230	2750	1200	2210	3730	2190	2220	937	2180	761	526
8	4500	2670	2930	1230	2080	3430	2070	2160	909	2570	719	546
9	3440	3390	3130	1270	1980	3150	1980	1940	887	3220	721	531
10	3000	3210	3360	1300	1880	2930	1900	1780	868	2600	686	536
11	2800	2970	3410	1240	1800	2720	1870	1670	865	2150	680	541
12	3000	2840	4300	1200	1720	2550	1810	1490	848	1880	698	557
13	3300	2800	4000	1250	1650	2400	4170	1500	854	1880	685	529
14	3600	2720	3700	1400	1720	2260	10300	1440	860	2110	677	540
15	3800	2730	3400	1600	1990	2160	11200	1400	870	1660	718	542
16	3240	2590	3100	1710	2510	2060	11300	1340	856	1740	658	546
17	3000	2440	2800	1830	5140	1980	7660	1330	847	1540	671	593
18	2700	2290	2580	2230	10200	2660	6550	1290	933	1370	706	579
19	2400	2160	2400	2670	9420	3200	5530	1280	946	1250	707	562
20	2150	2030	2300	2650	6550	2970	4730	1400	1160	1150	663	553
21	2000	1940	2150	2510	5510	3050	4190	1510	1060	1080	631	568
22	1800	1820	2000	2490	5040	3720	3810	1450	1010	1020	589	606
23	1690	1720	1900	2430	4850	3490	3450	1360	1000	964	558	570
24	1640	1640	1800	2300	4780	3480	3120	1300	1020	914	576	560
25	1600	1610	1760	2200	4580	3760	2860	1260	997	891	560	546
26	1680	1720	1680	2110	4200	3880	2640	1240	958	868	549	540
27	1740	1740	1600	2020	3900	5070	2460	1310	905	926	579	533
28	1780	1650	1500	1950	3750	4520	2290	1280	902	905	608	530
29	1800	1620	1480	2200	---	4360	2160	1230	887	880	601	568
30	1760	1600	1440	2270	---	4000	2030	1190	862	840	576	532
31	1720	---	1440	2050	---	3660	---	1250	---	805	565	---
TOTAL	269340	64030	83630	55080	99390	107240	119180	51840	28865	49447	20936	16481
MEAN	8688	2134	2698	1777	3550	3459	3973	1672	962	1595	675	549
MAX	58200	3390	4320	2670	10200	5100	11300	4430	1290	3820	864	606
MIN	1600	1480	1440	1200	1650	1980	1810	1190	847	805	549	521

WTR YR 1987 TOTAL 965459 MEAN 2645 MAX 58200 MIN 521

LOCATION.--Lat 38°42'36", long 91°26'21", in SW ¼ sec.25, T.46 N., R.5 W., Montgomery County, Hydrologic Unit 10300200, on downstream side of third pier from right abutment of bridge on State Highway 19 at Hermann. River mile 97.9.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WDR MO-76-1: Drainage area.

REMARKS.--Estimated daily discharges: Dec. 25-28. Water-discharge records good. Discharge measurements made weekly except during period of no navigation in winter months. Some regulation from many upstream reservoirs. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 676,000 ft³/s, June 6, 7, 1903, gage height, 29.5 ft, discharge computed by U.S. Army Corps of Engineers; maximum gage height, 35.79 ft, Oct. 5, 1986; minimum, about 4,200 ft³/s, Jan. 10-12, 1940; minimum gage height observed, -0.80 ft, Jan. 5, 6, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 549,000 ft³/s, Oct. 5, gage height, 35.79 ft; minimum, 54,100 ft³/s, Aug. 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275000	182000	137000	76600	86200	82300	197000	116000	206000	83200	63800	111000
2	322000	179000	173000	75500	85300	118000	181000	114000	182000	78500	61700	97300
3	374000	177000	198000	73300	81000	169000	177000	109000	160000	77600	59400	88000
4	435000	171000	197000	73500	80100	170000	178000	111000	147000	75300	57200	81800
5	519000	166000	182000	73300	80700	151000	181000	146000	137000	71700	57400	72900
6	519000	163000	164000	73300	80200	134000	181000	164000	126000	69300	56200	67600
7	456000	161000	150000	71700	80200	125000	178000	164000	117000	76500	54900	65000
8	414000	158000	164000	71300	77900	116000	164000	156000	112000	79600	54600	63700
9	384000	154000	185000	71400	76700	110000	155000	143000	111000	110000	58100	62700
10	354000	152000	198000	70800	78300	107000	152000	130000	111000	131000	58900	61100
11	315000	152000	194000	68600	78400	106000	149000	111000	105000	136000	56500	60300
12	272000	153000	175000	66000	75600	104000	145000	103000	99500	149000	67700	61500
13	239000	154000	152000	65700	72500	103000	152000	105000	99600	151000	85900	62300
14	255000	153000	133000	69600	66900	102000	221000	107000	93400	160000	76100	64300
15	281000	153000	116000	75700	60800	99300	254000	115600	91800	163000	75400	62600
16	287000	150000	112000	79100	58900	97200	251000	108000	88500	156000	90300	66800
17	276000	147000	114000	79600	60300	95800	243000	102000	85000	148000	94000	69500
18	252000	145000	114000	79000	76100	98400	249000	99300	84400	136000	96400	68800
19	232000	144000	114000	75600	92100	111000	241000	101000	81700	116000	94100	89300
20	221000	142000	117000	69600	92600	174000	207000	109000	78700	97400	81400	94200
21	213000	133000	116000	65900	91100	219000	183000	110000	76500	85100	73300	80900
22	205000	128000	114000	65600	90100	216000	173000	112000	83200	82900	70300	75100
23	193000	127000	111000	67100	89900	189000	166000	119000	94200	82700	69000	72600
24	184000	127000	99900	67600	88800	162000	152000	120000	90500	77300	67500	70400
25	181000	126000	95600	67100	87400	155000	151000	111000	91100	75300	64000	68300
26	190000	138000	92000	62900	87300	163000	153000	103000	91000	72300	61800	66800
27	208000	148000	87700	62900	87300	205000	139000	99000	82600	69100	60200	66000
28	223000	144000	84200	66100	80400	227000	131000	109000	81400	67100	96300	64800
29	218000	135000	79700	66100	---	223000	120000	137000	82800	68100	153000	63900
30	203000	130000	79100									

CAL	YR	1986	TOTAL	45429700	MEAN	124500	MAX	519000	MIN	45600
WTR	YR	1987	TOTAL	46493700	MEAN	127400	MAX	519000	MIN	54600

06934500 MISSOURI RIVER AT HERMANN, MO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURE: October 1974 to current year.

DISSOLVED OXYGEN: June 1984 to September 1984, April 1985 to September 1985, and April 1986 to September 1986.

INSTRUMENTATION.--Water-quality monitor June 1984 to September 1984, April 1985 to September 1985, and April 1986 to September 1986.

REMARKS.--Water temperature and specific conductance samples collected daily by observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: (Water years 1976-to current year) Maximum daily, 2,150 microsiemens, Dec. 9, 1978; minimum daily, 205 microsiemens, Apr. 16, 1979.

WATER TEMPERATURE: (Water years 1976-to current year) Maximum daily, 32.5°C, July 31, 1987; minimum daily, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 815 microsiemens, Aug. 12; minimum daily, 223 microsiemens, Oct. 3.

WATER TEMPERATURE: Maximum daily, 32.5°C, July 31; minimum daily, 0.0°C, Jan. 20, 21, 22, and 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
21...	1055	185000	387	7.90	15.0	110	10.0	100	1000	--
NOV										
18...	1015	148000	500	8.20	6.0	42	11.8	96	3200	2500
DEC										
16...	1030	115000	531	8.10	2.5	32	13.8	102	1800	1600
JAN										
06...	1020	73200	690	8.30	2.5	14	12.6	95	1200	270
FEB										
04...	1155	80600	523	8.10	4.0	14	13.9	106	430	210
MAR										
02...	1030	118000	590	8.20	6.0	85	--	--	1900	2900
APR										
07...	1130	180000	521	8.30	8.5	100	13.9	121	1200	280
MAY										
11...	1100	110000	560	8.10	21.0	38	6.7	77	1100	K130
JUN										
02...	1100	185000	411	8.40	23.5	240	6.5	78	5200	4200
JUL										
06...	1050	69300	657	8.50	26.0	120	5.8	73	1000	K800
AUG										
11...	0957	55600	743	8.60	28.0	23	6.2	81	K120	K10
SEP										
14...	1157	64800	677	8.40	23.0	38	7.8	92	K360	130

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
OCT									
21...	150	28	41	12	18	20	0.7	5.5	124
NOV									
18...	180	25	49	15	31	26	1	4.5	160
DEC									
16...	210	42	55	17	32	25	1	4.6	165
JAN									
06...	260	63	70	21	45	27	1	5.0	199
FEB									
04...	210	45	57	17	31	24	1	4.4	167
MAR									
02...	230	43	61	18	38	26	1	4.5	183
APR									
07...	220	35	58	18	23	18	0.7	5.7	152
MAY									
11...	210	48	58	16	32	24	1	5.5	163
JUN									
02...	150	28	41	11	22	24	0.8	5.4	120
JUL									
06...	240	67	64	19	52	32	2	6.0	172
AUG									
11...	250	75	67	21	65	35	2	6.1	179
SEP									
14...	230	61	61	20	58	34	2	6.3	174

K--Results based on colony count outside the acceptable range (non-ideal colony count).

06934500 MISSOURI RIVER AT HERMANN, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO ₂) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)
OCT 21...	61	8.8	0.20	10	254	230	0.35	127000	1.10
NOV 18...	100	11	0.30	11	317	320	0.43	126000	0.970
DEC 16...	100	16	0.30	12	368	340	0.50	114000	1.10
JAN 06...	130	18	0.40	13	426	420	0.58	84100	1.40
FEB 04...	91	15	0.30	11	331	330	0.45	72000	1.10
MAR 02...	110	22	0.30	11	373	370	0.51	119000	1.20
APR 07...	100	13	0.20	11	333	340	0.45	161000	2.10
MAY 11...	100	21	<0.10	9.6	346	340	0.47	103000	1.50
JUN 02...	70	16	0.30	9.0	254	250	0.35	127000	2.70
JUL 06...	140	27	0.40	11	432	420	0.59	80800	1.50
AUG 11...	160	33	0.40	8.8	501	500	0.68	75200	0.870
SEP 14...	160	26	0.20	11	455	450	0.62	79700	1.00

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 21...	0.040	0.05	1.8	0.090	0.090	0.070	257	128000	94
NOV 18...	0.050	0.06	0.70	0.150	0.110	0.080	64	25500	87
DEC 16...	0.040	0.05	1.0	0.090	0.070	0.070	74	22900	85
JAN 06...	0.050	0.06	0.40	0.290	0.070	0.070	86	17000	29
FEB 04...	0.060	0.08	0.80	0.100	0.060	0.060	13	2830	63
MAR 02...	0.070	0.09	1.4	0.290	0.050	0.060	114	36300	92
APR 07...	0.070	0.09	1.2	0.370	0.070	0.050	--	--	--
MAY 11...	0.040	0.05	1.7	0.280	0.070	0.070	--	--	--
JUN 02...	0.050	0.06	3.9	1.50	0.090	0.050	1030	516000	97
JUL 06...	0.080	0.10	1.7	0.480	0.100	0.100	580	109000	78
AUG 11...	0.030	0.04	1.0	0.220	0.130	0.110	218	32700	35
SEP 14...	0.010	0.01	0.80	0.150	0.140	0.130	220	38500	65

06934500 MISSOURI RIVER AT HERMANN, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 18...	40	2	85	<0.5	5	<1	<3	6	41	<5
JAN 06...	20	2	110	<0.5	1	<1	<3	5	8	<5
MAY 11...	<10	2	110	<0.5	3	<1	<3	--	3	25
JUL 06...	<10	3	140	<0.5	210	2	<3	8	7	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 18...	27	7	<0.1	<10	3	1	<1	300	<6	20
JAN 06...	37	12	<0.1	<10	1	2	<1	450	<6	12
MAY 11...	26	3	0.1	<10	5	2	<1	350	<6	13
JUL 06...	36	19	1.1	<10	<1	2	<1	440	<6	68

SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	360	469	590	686	609	629	488	680	413	687	715	365
2	348	493	557	695	621	607	515	648	454	698	725	392
3	223	504	501	693	608	473	575	636	479	711	727	518
4	241	511	442	694	610	434	551	633	489	706	745	630
5	250	516	485	694	624	445	578	634	545	693	753	565
6	265	521	491	697	626	462	575	636	571	710	772	560
7	298	533	514	701	626	489	576	645	589	709	775	679
8	325	541	525	702	630	531	619	646	620	762	805	693
9	347	548	513	703	637	552	627	659	611	626	810	714
10	359	550	475	704	622	565	622	576	630	575	790	718
11	402	570	488	716	616	579	622	567	643	529	811	732
12	428	575	482	730	620	581	613	616	656	503	815	725
13	449	561	495	732	648	596	546	638	675	479	785	724
14	506	558	527	715	667	595	542	599	691	408	800	733
15	445	560	564	685	695	604	484	655	651	407	521	722
16	435	540	591	679	703	609	511	725	654	440	492	695
17	380	547	586	672	708	611	563	638	634	425	503	667
18	379	568	587	646	641	626	493	651	661	410	510	708
19	381	566	596	660	580	606	492	656	687	433	547	712
20	447	581	611	680	594	507	493	655	746	503	543	679
21	463	629	615	687	596	430	494	655	751	568	510	544
22	482	625	608	682	591	465	541	656	756	610	555	539
23	492	622	611	680	598	426	543	621	771	659	595	601
24	481	631	673	544	615	461	594	635	705	687	645	642
25	518	638	644	788	589	478	595	638	697	680	646	651
26	512	553	682	739	598	508	598	611	680	685	665	664
27	505	610	684	737	588	550	589	626	667	702	693	684
28	468	564	690	738	619	492	582	665	683	617	700	691
29	466	584	689	739	---	480	624	684	714	646	603	697
30	479	618	695	738	---	464	650	603	667	705	415	703
31	453	---	693	739	---	471	---	635	---	728	370	---
MEAN	406	563	578	700	624	527	563	639	640	603	656	645
MAX	518	638	695	788	708	629	650	725	771	762	815	733
MIN	223	469	442	544	580	426	484	567	413	407	370	365

WTR YR 1987 TOTAL 217173 MEAN 595 MAX 815 MIN 223

MISSOURI RIVER MAIN STEM

06934500 MISSOURI RIVER AT HERMANN, MO--Continued

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	9.0	5.5	4.5	4.0	7.0	15.0	13.0	25.0	28.0	27.0	23.5
2	16.5	9.0	5.0	4.0	4.5	6.5	14.5	13.5	24.0	27.0	27.0	24.0
3	16.5	8.5	5.0	3.5	4.0	7.0	15.0	13.5	23.0	26.0	27.5	23.5
4	16.5	8.5	5.0	3.5	4.5	7.0	15.0	13.5	25.0	27.0	28.0	24.0
5	16.5	8.5	4.5	3.0	4.5	6.5	15.0	13.5	25.5	27.0	28.0	23.5
6	16.5	8.0	4.5	3.0	4.5	6.5	15.5	14.0	25.5	28.0	28.0	23.0
7	16.0	8.0	4.5	2.5	4.0	7.0	16.0	14.0	26.0	27.5	27.5	24.0
8	16.5	7.5	4.5	2.5	4.5	7.5	16.0	14.0	26.5	27.0	28.0	23.5
9	16.5	7.5	4.0	2.0	4.5	7.0	15.5	14.0	26.0	26.0	28.0	24.0
10	16.5	7.5	4.0	1.5	4.0	7.5	15.0	14.5	26.5	26.5	27.5	24.0
11	16.0	7.0	4.0	1.5	4.0	8.0	14.5	14.5	27.0	26.0	27.0	23.5
12	16.0	7.5	4.5	1.0	4.0	8.0	14.5	15.0	27.5	26.5	27.5	23.5
13	16.0	7.0	4.5	1.0	4.5	10.0	14.5	15.0	27.0	25.5	27.0	23.0
14	16.0	7.0	4.0	1.0	4.5	11.0	14.0	15.0	27.5	25.0	26.5	22.5
15	16.5	7.0	4.0	1.0	4.5	11.5	14.0	15.0	27.5	26.5	26.0	22.0
16	16.5	6.5	4.0	.5	4.5	12.0	14.0	16.0	27.5	26.5	25.0	22.5
17	15.5	6.5	4.0	.5	5.0	12.0	13.5	21.0	28.0	27.5	24.5	22.0
18	16.0	6.5	4.0	.5	5.0	14.0	13.0	21.0	28.5	28.0	24.0	22.0
19	16.0	6.0	4.0	.5	5.0	14.0	13.5	22.0	28.0	28.5	24.5	21.5
20	16.0	6.0	4.0	.0	5.0	16.0	11.5	22.0	28.0	29.0	24.0	22.0
21	15.5	6.0	4.0	.0	5.5	16.0	12.0	22.5	28.0	29.0	24.5	22.5
22	15.5	6.0	4.0	.0	5.5	14.0	12.0	23.0	27.5	29.5	24.0	22.0
23	15.0	6.0	4.0	.0	6.0	14.0	12.5	23.0	28.0	30.5	23.5	21.5
24	15.0	6.0	3.5	.5	5.5	16.0	13.5	23.5	27.5	31.0	24.0	22.0
25	15.0	5.5	4.0	1.0	6.0	16.0	14.0	23.0	28.0	31.0	24.0	22.0
26	15.0	5.5	4.0	1.0	6.0	14.0	13.5	23.5	28.5	32.0	24.5	21.0
27	15.0	5.5	4.0	1.0	6.0	14.0	13.5	24.0	27.5	32.0	24.0	21.5
28	15.0	5.5	4.0	1.0	6.5	15.0	13.5	24.0	28.0	32.0	24.0	22.0
29	15.0	5.5	3.5	1.0	---	14.5	14.0	24.0	27.5	32.0	23.5	21.5
30	15.0	5.5	3.5	1.0	---	14.0	13.5	24.0	28.0	32.0	23.0	21.5
31	15.0	---	3.5	1.0	---	14.0	---	24.0	---	32.5	23.0	---
MEAN	15.9	6.87	4.18	1.45	4.86	11.2	14.0	18.5	26.9	28.5	25.6	22.6
MAX	17.0	9.0	5.5	4.5	6.5	16.0	16.0	24.0	28.5	32.5	28.0	24.0
MIN	15.0	5.5	3.5	.0	4.0	6.5	11.5	13.0	23.0	25.0	23.0	21.0

WTR YR 1987 TOTAL 5513.5 MEAN 15.1 MAX 32.5 MIN .0

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO

LOCATION.--Lat 38°37'44", long 90°10'47". Hydrologic Unit 07140101, on downstream side of west pier of Eads Bridge at St. Louis, 15 mi downstream from Missouri River, 19.2 mi upstream from Meramec River, and at mile 180.0 above the Ohio River.

DRAINAGE AREA.--697,000 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: January 1861 to current year. Monthly discharge only for some periods, published in WSP 1311.

Gage heights: March 1933 to current year in reports of Geological Survey. Since January 1861 in reports of Mississippi River commission. Since January 1890 in reports of National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 379.94 ft above National Geodetic Vertical Datum of 1929. Prior to May 5, 1934, nonrecording gage 0.4 mi downstream and May 5, 1934 to Dec. 9, 1952, water-stage recorder at site 20 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Apr. 25-27. Water-discharge records good. Natural flow of stream affected by many reservoirs and navigation dams in upper Mississippi River basin and by many reservoirs and diversions for irrigation in Missouri River basin. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--126 years, 180,700 ft³/s, 130,900,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,019,000 ft³/s, June 10, 11, 1903, gage height, 38.00 ft; maximum gage height, 43.23 ft, Apr. 28, 1973; minimum daily discharge, 18,000 ft³/s, Dec. 21-23, 1863.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 27, 1844, reached a stage of 41.32 ft, from floodmarks, discharge, 1,300,000 ft³/s, computed by U.S. Army Corps of Engineers. Flood in April 1785 may have reached a stage 42.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 728,000 ft³/s, Oct. 9, gage height, 39.13 ft; minimum discharge, 83,100 ft³/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	449000	493000	267000	171000	146000	161000	351000	217000	310000	137000	141000	238000
2	495000	476000	295000	164000	168000	163000	333000	223000	303000	140000	133000	225000
3	550000	458000	348000	164000	173000	210000	316000	216000	294000	146000	133000	211000
4	621000	437000	357000	160000	174000	258000	311000	210000	277000	125000	137000	194000
5	664000	415000	335000	157000	167000	252000	314000	203000	257000	118000	137000	187000
6	697000	393000	318000	156000	164000	225000	312000	229000	243000	115000	133000	173000
7	710000	372000	305000	160000	170000	212000	306000	249000	224000	159000	129000	146000
8	720000	356000	298000	154000	170000	205000	298000	260000	209000	155000	118000	134000
9	721000	341000	331000	151000	166000	192000	282000	252000	200000	125000	114000	140000
10	713000	327000	350000	156000	165000	188000	271000	232000	192000	144000	93200	143000
11	701000	320000	351000	153000	165000	183000	266000	210000	200000	163000	93400	132000
12	683000	316000	328000	149000	167000	185000	253000	187000	193000	181000	91300	137000
13	656000	306000	286000	139000	167000	183000	245000	182000	182000	214000	91700	130000
14	623000	295000	234000	140000	166000	185000	325000	181000	167000	223000	126000	125000
15	600000	288000	216000	145000	156000	190000	401000	182000	153000	226000	143000	118000
16	590000	282000	213000	155000	151000	195000	418000	175000	162000	224000	148000	113000
17	584000	277000	216000	157000	150000	191000	411000	167000	158000	219000	155000	119000
18	576000	261000	222000	159000	146000	194000	393000	157000	152000	215000	177000	128000
19	562000	261000	228000	161000	149000	202000	390000	165000	142000	204000	190000	136000
20	541000	268000	227000	154000	162000	222000	378000	167000	127000	181000	187000	157000
21	520000	270000	230000	134000	171000	288000	350000	181000	124000	152000	175000	179000
22	506000	261000	231000	124000	168000	316000	326000	202000	117000	141000	167000	172000
23	493000	255000	227000	117000	165000	295000	315000	225000	131000	132000	159000	154000
24	480000	245000	225000	113000	162000	269000	299000	217000	157000	139000	157000	150000
25	470000	232000	213000	109000	161000	257000	278000	207000	154000	143000	147000	141000
26	464000	241000	196000	103000	162000	259000	275000	198000	150000	133000	142000	133000
27	467000	280000	187000	103000	158000	269000	275000	179000	149000	131000	140000	122000
28	480000	290000	184000	111000	157000	312000	261000	179000	135000	130000	167000	121000
29	495000	281000	181000	120000	---	337000	242000	199000	131000	122000	211000	130000
30	502000	271000	175000	128000	---	368000	227000	230000	128000	125000	267000	128000
31	502000	---	171000	130000	---	374000	---	287000	---	139000	260000	---
TOTAL	17835000	9568000	7945000	4397000	4546000	7340000	9422000	6368000	5521000	4901000	4662600	4516000
MEAN	575300	318900	256300	141800	162400	236800	314100	205400	184000	158100	150400	150500
MAX	721000	493000	357000	171000	174000	374000	418000	287000	310000	226000	267000	238000
MIN	449000	232000	171000	103000	146000	161000	227000	157000	117000	115000	91300	113000

CAL YR 1986 TOTAL 106333000 MEAN 291300 MAX 721000 MIN 102000
WTR YR 1987 TOTAL 87021000 MEAN 238400 MAX 721000 MIN 91300

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.24	29.98	17.42	10.39	7.99	9.10	21.85	14.09	20.08	6.97	7.81	15.91
2	29.46	29.21	18.46	9.69	10.21	8.74	20.73	14.62	19.64	7.29	7.17	14.86
3	31.78	28.24	21.92	9.90	10.49	11.46	19.70	13.93	19.32	8.38	7.46	13.85
4	34.41	27.26	22.70	9.45	10.43	16.87	19.25	13.74	18.45	7.29	7.75	12.23
5	35.67	26.02	21.68	9.22	10.18	16.93	19.45	12.70	17.20	6.52	7.55	11.80
6	36.99	24.89	20.56	8.94	9.34	14.82	19.36	14.59	16.22	5.07	7.29	10.66
7	37.77	23.68	19.97	9.61	10.19	13.69	19.11	16.24	14.75	6.94	6.79	9.22
8	38.61	22.71	19.01	8.89	10.06	13.41	18.61	17.11	13.53	9.71	6.01	7.51
9	38.75	22.01	20.94	8.64	9.68	12.09	17.81	16.79	12.97	6.83	6.00	6.95
10	38.59	21.05	22.14	9.20	9.48	11.80	16.94	15.38	11.96	7.88	4.24	8.11
11	38.23	20.66	22.48	8.83	9.57	11.24	16.65	13.83	12.81	9.16	4.00	6.89
12	37.80	20.42	21.38	8.43	9.74	11.78	15.99	11.74	12.27	10.02	3.74	7.06
13	36.84	20.06	19.17	7.65	9.65	11.21	14.89	11.29	11.47	13.18	3.02	6.43
14	35.54	19.21	15.61	7.86	9.57	11.33	--	11.18	10.34	14.33	5.60	5.86
15	34.47	18.98	14.07	8.07	8.89	11.64	23.84	11.19	8.68	15.15	7.82	5.31
16	33.98	18.43	13.50	8.96	8.20	12.13	25.14	10.74	9.28	14.75	8.50	5.09
17	33.77	18.44	13.95	9.14	8.32	11.81	25.03	10.06	9.43	14.32	8.61	5.28
18	33.50	17.09	14.25	9.31	7.88	11.74	24.21	9.22	8.70	14.01	10.54	5.72
19	32.97	17.20	14.88	9.44	7.67	12.71	24.16	9.73	8.45	13.09	11.84	6.57
20	32.11	17.61	14.91	9.13	9.15	13.62	23.90	10.15	6.80	11.29	11.80	7.83
21	31.27	17.91	15.03	7.63	9.79	18.11	22.51	10.75	6.32	8.53	10.81	10.31
22	30.61	17.22	15.09	6.35	9.78	20.16	21.03	12.29	6.01	8.10	10.26	9.82
23	30.00	16.87	14.92	5.76	9.40	19.47	20.34	14.55	6.22	7.02	9.61	8.23
24	29.37	16.29	14.69	5.70	9.08	17.87	19.62	14.17	9.31	7.50	9.20	8.00
25	28.79	15.27	14.01	5.35	9.03	16.89	---	13.58	8.91	8.18	8.41	7.34
26	28.46	15.46	12.62	4.66	9.19	16.94	18.04	12.75	8.75	7.42	7.57	6.61
27	28.52	18.16	11.74	4.32	8.94	16.99	---	10.89	8.53	7.06	7.74	6.12
28	29.04	18.99	11.54	5.27	8.77	19.29	17.39	10.35	7.59	7.26	9.23	5.87
29	29.87	18.43	11.15	5.93	---	20.55	16.03	12.32	7.21	6.68	12.44	6.52
30	30.29	17.93	10.88	6.81	---	22.46	14.94	14.26	6.67	5.89	17.60	6.33
31	30.35	---	10.34	6.87	---	23.06	---	18.25	---	7.49	17.56	---

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

WATER TEMPERATURES: October 1951 to current year.

SEDIMENT RECORDS: April 1948 to current year.

REMARKS.--Sediment discharge for many days computed from turbidity readings.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 6,720 mg/L, Feb. 24, 1985; minimum daily mean, 19 mg/L, Jan. 21, 22, 1967.

SEDIMENT LOADS: Maximum daily, 9,830,000 tons, Feb. 24, 1985; minimum daily, 2,800 tons, Jan. 21, 1967.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,780 mg/L, May 11; minimum daily mean, 122 mg/L, Feb. 18.

SEDIMENT LOADS: Maximum daily, 1,670,000 tons, May 9; minimum daily, 48,100 tons, Feb. 18.

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	2.0	5.5	---	---	24.5	---	---	---
3	---	---	---	---	---	---	---	---	---	---	32.5	---
4	---	---	---	---	---	---	---	---	---	---	---	22.0
5	---	---	---	2.5	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	26.5	---	---
8	19.0	---	---	---	---	---	---	---	25.0	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	18.5	10.0	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	21.5	25.5	---	---	---
12	---	---	3.5	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	13.0	---	---	---	---	24.0
15	14.5	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	27.0	29.0	---
18	---	---	3.5	---	3.0	---	---	---	---	---	28.5	---
19	---	---	---	---	---	9.0	---	---	---	---	---	---
20	---	---	---	1.0	---	---	15.0	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	29.5	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	5.0	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	13.0	---	---	---	---	---	18.5	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	22.0
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	6.5	---	---	---	---	---	---

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70339)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)
			.002 MM	.004 MM	.008 MM	.016 MM	.062 MM	.125 MM	.250 MM	.500 MM
DEC 12...	0930	332000	31	35	41	52	79	82	98	100
APR 20...	1050	379000	35	40	47	57	90	93	99	100
JUN 08...	1335	208000	19	56	64	75	94	95	100	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)
	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM	8.00 MM
AUG 18...	0	1	40	85	95	98	99	100

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT	MEAN	MEAN	SEDIMENT
	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	449000	498	604000	493000	339	452000	267000	318	230000
2	495000	541	723000	476000	336	431000	295000	335	267000
3	550000	543	807000	458000	332	411000	348000	351	330000
4	621000	551	924000	437000	328	387000	357000	368	355000
5	664000	446	800000	415000	325	364000	335000	384	348000
6	697000	399	751000	393000	321	340000	318000	401	344000
7	710000	427	818000	372000	317	319000	305000	417	344000
8	720000	530	1030000	356000	313	301000	298000	434	349000
9	721000	445	866000	341000	310	285000	331000	450	403000
10	713000	360	693000	327000	306	270000	350000	467	441000
11	701000	377	714000	320000	299	258000	351000	483	458000
12	683000	395	728000	316000	291	249000	328000	500	443000
13	656000	412	730000	306000	284	235000	286000	485	375000
14	623000	430	723000	295000	277	220000	234000	471	298000
15	600000	447	724000	288000	269	209000	216000	456	266000
16	590000	440	700000	282000	262	199000	213000	442	254000
17	584000	432	681000	277000	254	190000	216000	427	249000
18	576000	425	661000	261000	247	174000	222000	413	247000
19	562000	417	633000	261000	240	169000	228000	398	245000
20	541000	410	599000	268000	232	168000	227000	384	235000
21	520000	402	565000	270000	225	164000	230000	369	229000
22	506000	395	540000	261000	218	153000	231000	355	221000
23	493000	388	516000	255000	210	145000	227000	340	208000
24	480000	380	493000	245000	203	134000	225000	325	198000
25	470000	373	473000	232000	219	137000	213000	311	179000
26	464000	365	458000	241000	236	154000	196000	296	157000
27	467000	358	451000	280000	252	191000	187000	282	142000
28	480000	354	459000	290000	269	211000	184000	267	133000
29	495000	351	469000	281000	285	217000	181000	253	124000
30	502000	347	470000	271000	302	221000	175000	238	113000
31	502000	343	465000	---	---	---	171000	224	103000
TOTAL	17835000	---	20268000	9568000	---	7358000	7945000	---	8288000

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	171000	209	96600	146000	239	94200	161000	142	61800
2	164000	195	86200	168000	244	111000	163000	144	63400
3	164000	180	79700	173000	236	110000	210000	144	81700
4	160000	166	71500	174000	229	107000	258000	144	101000
5	157000	151	64000	167000	221	99700	252000	145	98300
6	156000	153	64400	164000	213	94500	225000	145	87900
7	160000	155	66900	170000	206	94500	212000	145	82900
8	154000	157	65200	170000	198	91000	205000	145	80300
9	151000	159	64700	166000	191	85400	192000	145	75300
10	156000	161	67700	165000	183	81500	188000	145	73800
11	153000	163	67200	165000	175	78100	183000	146	71900
12	149000	165	66200	167000	168	75600	185000	146	72800
13	139000	166	62500	167000	160	72200	183000	146	72100
14	140000	168	63700	166000	152	68400	185000	146	73000
15	145000	170	66700	156000	145	61000	190000	146	75000
16	155000	172	72100	151000	137	56000	195000	146	77100
17	157000	174	73800	150000	130	52500	191000	147	75600
18	159000	176	75600	146000	122	48100	194000	147	76900
19	161000	178	77400	149000	124	49800	202000	147	80200
20	154000	180	74800	162000	126	55000	222000	214	128000
21	134000	185	66900	171000	127	58900	288000	281	218000
22	124000	190	63600	168000	129	58700	316000	348	297000
23	117000	195	61500	165000	131	58400	295000	415	330000
24	113000	200	60900	162000	133	58200	269000	482	350000
25	109000	205	60200	161000	135	58600	257000	548	381000
26	103000	210	58300	162000	137	59800	259000	615	430000
27	103000	214	59600	158000	138	59100	269000	682	496000
28	111000	219	65700	157000	140	59500	312000	749	631000
29	120000	224	72700	---	---	---	337000	816	743000
30	128000	229	79200	---	---	---	368000	883	877000
31	130000	234	82200	---	---	---	374000	950	959000
TOTAL	4397000	---	2157700	4546000	---	2056700	7340000	---	7321000
APRIL			MAY			JUNE			
1	351000	930	881000	217000	1180	693000	310000	447	374000
2	333000	909	817000	223000	1340	808000	303000	336	275000
3	316000	889	758000	216000	1500	876000	294000	418	332000
4	311000	868	729000	210000	1660	942000	277000	500	374000
5	314000	848	719000	203000	1820	998000	257000	582	404000
6	312000	827	697000	229000	1980	1220000	243000	665	436000
7	306000	807	667000	249000	2140	1440000	224000	747	452000
8	298000	787	633000	260000	2300	1620000	209000	829	468000
9	282000	766	583000	252000	2460	1670000	200000	805	435000
10	271000	746	546000	232000	2620	1640000	192000	782	405000
11	266000	725	521000	210000	2780	1580000	200000	758	409000
12	253000	705	481000	187000	2670	1350000	193000	712	371000
13	245000	684	453000	182000	2560	1260000	182000	667	328000
14	325000	664	583000	181000	2450	1200000	167000	621	280000
15	401000	790	855000	182000	2340	1150000	153000	576	238000
16	418000	916	1030000	175000	2220	1050000	162000	530	232000
17	411000	1040	1160000	167000	2110	953000	158000	485	207000
18	393000	1170	1240000	157000	2000	849000	152000	439	180000
19	390000	1290	1360000	165000	1890	843000	142000	394	151000
20	378000	1420	1450000	167000	1780	803000	127000	348	119000
21	350000	1290	1220000	181000	1670	816000	124000	303	101000
22	326000	1170	1030000	202000	1560	850000	117000	257	81200
23	315000	1040	888000	225000	1450	879000	131000	267	94300
24	299000	919	742000	217000	1340	783000	157000	276	117000
25	278000	794	596000	207000	1220	684000	154000	286	119000
26	275000	668	496000	198000	1110	595000	150000	295	120000
27	275000	543	403000	179000	1000	485000	149000	305	123000
28	261000	703	495000	179000	891	431000	135000	314	115000
29	242000	863	564000	199000	780	419000	131000	324	115000
30	227000	1020	627000	230000	669	416000	128000	333	115000
31	---	---	---	287000	558	433000	---	---	---
TOTAL	9422000	---	23224000	6368000	---	29736000	5521000	---	7570500

07010000 MISSISSIPPI RIVER AT ST. LOUIS, MO--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	137000	343	127000	141000	343	130000	238000	786	505000
2	140000	352	133000	133000	247	88600	225000	807	490000
3	146000	362	143000	133000	151	54200	211000	829	472000
4	125000	371	125000	137000	169	62500	194000	850	445000
5	118000	381	121000	137000	187	69200	187000	780	394000
6	115000	390	121000	133000	205	73700	173000	710	332000
7	159000	400	172000	129000	223	77800	146000	641	253000
8	155000	538	225000	118000	241	76900	134000	571	207000
9	125000	676	228000	114000	259	79900	140000	501	189000
10	144000	814	316000	93200	277	69800	143000	431	166000
11	163000	952	419000	93400	296	74500	132000	361	129000
12	181000	1090	533000	91300	314	77300	137000	292	108000
13	214000	1230	710000	91700	332	82100	130000	222	77900
14	223000	1370	822000	126000	350	119000	125000	152	51300
15	226000	1500	918000	143000	368	142000	118000	159	50500
16	224000	1640	993000	148000	386	154000	113000	165	50300
17	219000	1780	1050000	155000	404	169000	119000	172	55100
18	215000	1680	978000	177000	485	232000	128000	178	61500
19	204000	1590	875000	190000	506	260000	136000	185	67700
20	181000	1490	729000	187000	528	267000	157000	191	81000
21	152000	1400	573000	175000	549	260000	179000	198	95500
22	141000	1300	495000	167000	571	257000	172000	204	94700
23	132000	1200	429000	159000	592	254000	154000	211	87500
24	139000	1110	416000	157000	614	260000	150000	217	87900
25	143000	1010	391000	147000	635	252000	141000	224	85100
26	133000	918	330000	142000	657	252000	133000	230	82600
27	131000	822	291000	140000	678	256000	122000	237	77900
28	130000	726	255000	167000	700	315000	121000	243	79400
29	122000	630	208000	211000	721	411000	130000	154	54200
30	125000	534	180000	267000	743	535000	128000	144	49900
31	139000	438	165000	260000	764	536000	---	---	---
TOTAL	4901000	---	13471000	4662600	---	5947500	4516000	---	4980000
YEAR	87021000		132378400						

07013000 MERAMEC RIVER NEAR STEELVILLE, MO

LOCATION.--Lat 37°59'58", long 91°21'39", in NE ¼ sec.21, T.38 N., R.4 W., Crawford County, Hydrologic Unit 07140102, on left bank 20 ft downstream from railroad bridge, 400 ft upstream from highway bridge, 0.8 mi upstream from Whittenburg Creek, 1.5 mi north of Steelville, and at mile 149.4.

DRAINAGE AREA.--781 mi².

PERIOD OF RECORD.--October 1922 to current year. Prior to January 1923 monthly discharges only, published in WSP 1311. Gage-height records for 1916-33 at site 1 mi upstream in reports of National Weather Service.

REVISED RECORDS.--WSP 897: 1939. WSP 1007: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is 681.68 ft above National Geodetic Vertical Datum of 1929. Prior to May 24, 1934 and July 20, 1966 to July 20, 1967, nonrecording gage, and May 24, 1934 to Oct. 10, 1942, water-stage recorder at site 400 ft downstream at present datum. July 21, 1967 to Feb. 13, 1973 at site 1,900 ft downstream and at datum 2.0 ft lower.

REMARKS.--Estimated daily discharges: May 30 to June 29. Records good. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--65 years, 581 ft³/s, 10.10 in/yr, 420,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,200 ft³/s, June 18, 1985, gage height, 26.15 ft; minimum, 74 ft³/s, July 22, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 20, 1915, reached a stage of 26.5 ft, discharge, 60,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	1945	*13,500	13.32	No other peak greater than base discharge.			
Minimum discharge, 141 ft ³ /s, Aug. 4.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4400	241	752	276	342	931	634	295	210	284	144	162
2	11300	238	1640	273	365	1250	570	285	215	246	143	161
3	6570	234	1090	265	417	989	506	1260	210	238	143	159
4	1780	245	833	263	402	813	461	2240	205	220	143	158
5	1260	286	691	260	378	714	432	907	200	219	192	157
6	980	423	610	260	357	648	411	692	195	241	198	157
7	829	462	559	257	342	575	395	572	190	616	161	157
8	731	425	576	251	333	519	377	494	185	832	155	157
9	654	391	648	264	311	475	360	442	180	405	153	157
10	595	372	717	273	294	440	350	405	175	290	151	158
11	535	369	657	269	291	411	350	377	170	216	151	159
12	514	411	599	267	282	386	343	354	170	186	152	159
13	486	417	548	262	272	366	432	325	200	195	153	158
14	441	387	514	311	291	354	2360	314	230	237	154	157
15	398	368	454	512	375	345	1660	295	250	218	154	157
16	359	356	435	608	578	321	1090	279	220	192	155	159
17	339	342	417	553	705	315	887	274	200	178	156	160
18	322	328	401	516	630	486	757	276	270	167	152	159
19	308	309	384	511	624	1170	669	270	260	163	156	161
20	296	307	370	489	661	913	593	386	300	158	156	159
21	285	299	354	456	681	761	517	344	280	153	157	157
22	273	296	337	435	691	670	464	345	250	152	156	156
23	270	287	329	416	661	605	435	333	230	151	155	155
24	277	276	325	391	604	643	409	292	240	150	157	155
25	282	276	317	365	537	901	384	273	270	149	157	155
26	290	284	305	344	485	845	365	258	350	148	158	155
27	309	297	294	325	459	724	346	245	300	146	167	154
28	283	304	288	314	475	651	329	237	250	146	179	154
29	268	297	284	326	---	685	316	227	225	157	179	161
30	258	291	281	348	---	750	305	220	218	153	171	159
31	250	---	276	347	---	688	---	215	---	148	166	---
TOTAL	36142	9818	16285	11007	12843	20344	17507	13731	6848	7154	4924	4732
MEAN	1166	327	525	355	459	656	584	443	228	231	159	158
MAX	11300	462	1640	608	705	1250	2360	2240	350	832	198	162
MIN	250	234	276	251	272	315	305	215	170	146	143	154

CAL YR 1986 TOTAL 172706 MEAN 473 MAX 11300 MIN 169
WTR YR 1987 TOTAL 161335 MEAN 442 MAX 11300 MIN 143

07013000 MERAMEC RIVER NEAR STEELVILLE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.07	1.99	2.26	2.08	2.24	2.98	2.84	2.21	---	2.15	2.14	2.09
2	11.19	1.98	4.41	2.07	2.28	3.88	2.75	2.19	---	2.00	2.12	2.08
3	11.31	1.97	3.62	2.05	2.43	3.46	2.66	2.17	---	2.00	2.11	2.06
4	4.58	1.97	3.21	2.05	2.40	3.16	2.58	4.80	---	1.92	2.09	2.05
5	3.87	2.07	2.95	2.04	2.34	2.98	2.52	3.33	---	1.91	2.15	2.05
6	3.41	2.36	2.80	2.04	2.30	2.86	2.48	2.95	---	1.99	2.38	2.04
7	3.11	2.51	2.68	2.03	2.26	2.75	2.44	2.73	---	2.06	2.22	2.05
8	2.91	2.42	2.67	2.02	2.25	2.67	2.40	2.57	---	3.44	2.16	2.04
9	2.75	2.35	2.80	2.04	2.20	2.61	2.36	2.46	---	2.81	2.14	2.05
10	2.62	2.30	2.99	2.08	2.16	2.54	2.32	2.38	---	2.62	2.11	2.05
11	2.52	2.29	2.88	2.06	2.16	2.47	2.32	2.32	---	2.46	2.10	2.06
12	2.51	2.35	2.77	2.06	2.14	2.42	2.32	2.30	---	2.37	2.10	2.06
13	2.44	2.42	2.68	2.04	2.11	2.38	2.28	2.20	---	2.33	2.10	2.05
14	2.40	2.35	2.60	2.10	2.15	2.34	5.86	2.18	---	2.45	2.10	2.05
15	2.34	2.30	2.49	2.50	2.33	2.33	4.41	2.14	---	2.49	2.10	2.05
16	2.28	2.27	2.44	2.80	2.64	2.29	3.61	2.09	---	2.38	2.09	2.06
17	2.23	2.24	2.41	2.69	2.98	2.24	3.28	2.07	---	2.34	2.11	2.07
18	2.20	2.21	2.37	2.61	2.82	2.32	3.06	2.09	---	2.29	2.07	2.06
19	2.16	2.16	2.33	2.60	2.77	3.75	2.90	2.07	---	2.28	2.07	2.08
20	2.13	2.16	2.30	2.56	2.86	3.32	2.77	2.04	---	2.24	2.07	2.07
21	2.11	2.14	2.26	2.49	2.89	3.07	2.67	2.25	---	2.20	2.07	2.04
22	2.08	2.13	2.23	2.44	2.92	2.91	2.59	2.25	---	2.20	2.06	2.03
23	2.07	2.11	2.21	2.41	2.88	2.79	2.53	2.24	---	2.19	2.04	2.03
24	2.08	2.09	2.20	2.36	2.79	2.77	2.47	2.13	---	2.19	2.04	2.03
25	2.09	2.07	2.18	2.29	2.70	3.23	2.42	2.08	---	2.19	2.05	2.03
26	2.11	2.10	2.15	2.25	2.62	3.22	2.38	2.04	---	2.16	2.03	2.03
27	2.18	2.11	2.12	2.19	2.58	3.00	2.33	2.01	---	2.16	2.14	2.02
28	2.11	2.15	2.11	2.17	2.57	2.85	2.29	1.99	---	2.14	2.15	2.02
29	2.06	2.13	2.10	2.18	---	2.87	2.26	1.95	---	2.17	2.19	2.08
30	2.03	2.12	2.09	2.25	---	3.04	2.24	---	---	2.22	2.15	2.06
31	2.02	---	2.08	2.26	---	2.93	---	---	---	2.19	2.13	---

07013050 CROOKED CREEK NEAR DILLARD, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°42'42", long. 91°11'48", in NW ¼ sec.31, T.35 N., R.2 W., Crawford County, Hydrologic Unit 07140102, at bridge on county road.

PERIOD OF RECORD.--October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT DIS- SOLVED (UG/L AS CO) (01035)
OCT											
20...	0940	5.4	454	8.00	15.0	13.8	136	<1	1	<1	<1
NOV											
14...	1320	7.0	540	7.80	5.5	12.8	101	1	4	<1	<1
DEC											
12...	1110	13	333	7.90	5.0	13.3	--	<1	3	1	<1
JAN											
06...	1000	4.3	365	7.40	3.0	14.5	109	<1	<1	<1	<1
FEB											
03...	0915	11	340	7.20	5.0	13.3	104	1	<1	1	<1
MAR											
02...	1000	43	258	7.80	5.0	12.7	99	2	2	<1	1
APR											
03...	1100	10	358	8.00	8.5	11.1	94	1	<1	<1	<1
MAY											
05...	0905	9.1	433	7.70	13.5	10.2	98	<1	1	<1	<1
JUN											
04...	1250	5.7	504	8.00	22.0	8.2	92	1	1	<1	<1
JUL											
15...	1200	5.5	420	8.10	23.5	8.6	102	<1	<1	<1	<1
AUG											
05...	1200	3.9	410	7.60	26.0	5.7	71	3	<1	<1	<1
SEP											
09...	0945	4.3	555	8.00	22.0	7.2	82	1	1	2	<1

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT										
20...	20	1	60	4	<5	<5	2	<1	--	77
NOV										
14...	6	8	10	14	<5	<5	<1	1	<10	29
DEC										
12...	1	1	60	19	<5	<5	<1	<1	<10	19
JAN										
06...	10	1	50	3	<5	<5	3	<1	<10	28
FEB										
03...	3	2	<10	<3	<5	5	<1	1	<10	25
MAR										
02...	3	3	140	28	<5	<5	3	5	--	66
APR										
03...	3	2	20	<3	<5	<5	<1	2	<10	11
MAY										
05...	6	2	<10	6	<5	<5	3	<1	40	59
JUN										
04...	4	<1	<10	6	<5	<5	7	<1	<10	17
JUL										
15...	2	<1	20	<3	15	<5	<1	1	<10	17
AUG										
05...	8	<1	10	3	<5	<5	6	<1	<10	16
SEP										
09...	2	1	20	3	<5	<5	<1	2	<10	10

07014500 MERAMEC RIVER NEAR SULLIVAN, MO

LOCATION.--Lat 38°09'30", long 91°06'30", in SE ¼ NE ¼ sec.35, T.40 N., R.2 W., Crawford County, Hydrologic Unit 07140102, on right bank at upstream side of Sappington Bridge, 3.8 mi downstream from Brazil Creek, 4.0 mi southeast of Sullivan, and at mile 117.0.

DRAINAGE AREA.--1,475 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to September 1933, October 1943 to current year. Monthly discharge only for October 1943, published in WSP 1311.

REVISED RECORDS.--WSP 1007: 1922,(M), 1924-30, 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 581.82 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 21, 1952, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Oct. 2-6 and Sept. 1-30. Water-discharge records good except for estimated daily discharges, which are poor. Water diverted from river 0.5 mi above gage by mining company. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--56 years, 1,212 ft³/s, 11.16 in/yr, 878,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,300 ft³/s, June 9, 1945, gage height, 32.0 ft; maximum gage height, 32.34 ft, Dec. 4, 1982; minimum discharge, 131 ft³/s, Sept. 20, 22, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1915 reached a stage of 33.5 ft, from information by local residents, discharge 90,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 2	1530	*17,700	*16.62	No other peak greater than base discharge.			

Minimum discharge, 271 ft³/s, Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7940	553	1370	557	722	1970	1350	720	539	805	360	368
2	14300	544	3020	554	767	2900	1240	703	530	638	357	340
3	15100	535	2610	546	835	2400	1140	752	547	599	353	319
4	4630	552	1990	541	861	1930	1050	3090	541	554	353	302
5	2740	650	1610	535	822	1640	981	1820	526	540	353	284
6	2100	834	1390	531	784	1460	929	1380	507	566	423	276
7	1690	995	1250	523	756	1310	893	1130	490	766	441	273
8	1490	977	1190	511	734	1190	861	981	472	2180	371	275
9	1170	909	1290	530	706	1100	830	881	459	1260	351	275
10	1100	850	1420	555	680	1010	814	812	445	941	336	280
11	1040	848	1410	553	662	937	829	764	440	784	324	295
12	985	851	1290	546	652	874	825	775	437	679	317	290
13	942	871	1170	545	654	824	1020	747	459	628	317	288
14	934	832	1070	608	706	789	3880	720	547	656	317	285
15	870	792	991	834	785	766	4950	698	569	681	317	280
16	811	762	934	1160	1080	744	2840	661	516	616	317	300
17	762	736	885	1170	1480	726	2210	639	504	559	317	353
18	710	704	841	1090	1460	1100	1860	642	590	517	315	331
19	690	670	806	1060	1390	3280	1610	647	571	484	314	315
20	660	660	769	1020	1430	2640	1430	647	620	454	314	300
21	636	644	736	949	1450	2030	1280	754	598	428	314	296
22	610	628	704	896	1470	1730	1160	707	585	410	312	293
23	597	613	677	857	1450	1530	1070	693	540	400	311	290
24	603	597	658	819	1360	1700	995	677	571	394	309	287
25	627	590	642	773	1250	2180	930	641	641	383	308	284
26	648	629	624	738	1150	2140	878	606	685	378	308	280
27	652	643	606	704	1090	1800	839	587	623	373	394	275
28	643	666	590	689	1150	1570	800	564	566	369	414	271
29	610	654	582	683	---	1530	766	553	522	364	463	317
30	588	638	574	706	---	1560	742	550	507	372	466	314
31	569	---	561	719	---	1480	---	543	---	365	418	---
TOTAL	67447	21427	34260	22502	28336	48840	41002	26084	16147	19143	10884	8936
MEAN	2176	714	1105	726	1012	1575	1367	841	538	618	351	298
MAX	15100	995	3020	1170	1480	3280	4950	3090	685	2180	466	368
MIN	569	535	561	511	652	726	742	543	437	364	308	271

CAL YR 1986 TOTAL 407470 MEAN 1116 MAX 15100 MIN 362
WTR YR 1987 TOTAL 345008 MEAN 945 MAX 15100 MIN 271

07014500 MERAMEC RIVER NEAR SULLIVAN, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.25	2.42	3.25	2.43	2.77	4.45	3.98	2.73	2.29	3.30	1.86	---
2	14.13	2.40	5.17	2.42	2.85	6.43	3.79	2.69	2.25	2.55	1.85	---
3	15.75	2.38	6.02	2.41	2.98	5.72	3.60	2.67	2.28	2.45	1.84	---
4	8.11	2.37	5.10	2.39	3.07	4.99	3.43	7.32	2.29	2.33	1.84	---
5	6.23	2.59	4.47	2.38	2.99	4.48	3.29	4.84	2.24	2.24	1.84	---
6	5.25	2.91	4.07	2.37	2.92	4.19	3.17	4.09	2.20	2.35	1.84	---
7	4.65	3.30	3.77	2.34	2.86	3.92	3.10	3.61	2.15	2.56	2.07	---
8	4.23	3.30	3.67	2.33	2.81	3.69	3.03	3.30	2.12	5.95	1.90	---
9	3.88	3.18	3.81	2.34	2.76	3.52	2.96	3.10	2.08	3.90	1.84	---
10	3.62	3.05	4.01	2.43	2.70	3.36	2.92	2.95	2.05	3.25	1.80	---
11	3.41	3.04	4.08	2.43	2.67	3.22	2.96	2.83	2.04	2.91	1.78	---
12	3.32	3.03	3.88	2.41	2.64	3.10	2.95	2.90	2.03	2.66	1.75	---
13	3.20	3.09	3.66	2.40	2.64	3.00	2.91	2.79	2.06	2.53	1.75	---
14	3.23	3.01	3.47	2.48	2.74	2.93	5.12	2.73	2.26	2.55	1.75	---
15	3.09	2.93	3.31	2.87	2.83	2.88	9.10	2.69	2.39	2.66	1.75	---
16	2.97	2.87	3.20	3.59	3.33	2.83	6.36	2.59	2.23	2.51	1.75	---
17	2.87	2.81	3.12	3.66	4.15	2.77	5.42	2.53	2.15	2.37	1.75	---
18	2.80	2.75	3.04	3.49	4.16	3.02	4.86	2.53	2.48	2.26	1.74	---
19	2.72	2.69	2.97	3.43	4.00	6.82	4.45	2.55	2.26	2.17	1.74	---
20	2.66	2.66	2.89	3.36	4.08	5.99	4.13	2.55	2.49	2.10	1.74	---
21	2.61	2.63	2.82	3.24	4.11	5.06	3.85	2.91	2.43	2.03	1.74	---
22	2.56	2.58	2.75	3.13	4.15	4.60	3.63	2.70	2.42	1.98	1.73	---
23	2.52	2.56	2.70	3.06	4.13	4.30	3.45	2.66	2.30	1.96	1.73	---
24	2.54	2.52	2.66	2.99	4.00	4.23	3.33	2.64	2.34	1.94	1.73	---
25	2.57	2.48	2.62	2.90	3.78	5.25	3.19	2.55	2.35	1.92	1.72	---
26	2.63	2.58	2.59	2.83	3.61	5.32	3.07	2.46	2.67	1.90	1.72	---
27	2.63	2.61	2.55	2.76	3.51	4.76	2.99	2.41	2.52	1.89	1.92	---
28	2.64	2.68	2.51	2.72	3.49	4.36	2.91	2.35	2.37	1.88	1.98	---
29	2.56	2.65	2.49	2.69	---	4.25	2.84	2.33	2.25	1.87	2.07	---
30	2.50	2.61	2.46	2.75	---	4.30	2.77	2.31	2.16	1.89	2.14	---
31	2.46	---	2.44	2.78	---	4.22	---	2.29	---	1.87	2.01	---

MERAMEC RIVER BASIN

07014500 MERAMEC RIVER NEAR SULLIVAN, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1963 to July 1975, July 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
23...	1245	600	310	8.10	15.0	10.1	101	14	24	180
NOV										
21...	1250	644	340	8.40	7.5	12.1	102	12	<4	--
DEC										
18...	1340	841	309	8.40	7.0	12.7	107	<10	K7	--
JAN										
12...	0945	546	342	8.30	4.0	11.8	91	<10	K2	190
FEB										
06...	1300	788	339	8.20	7.5	12.5	105	10	<1	--
MAR										
05...	0915	1670	278	8.10	9.0	8.8	77	21	K12	--
APR										
09...	1345	834	290	8.40	15.0	10.6	108	<10	K2	160
MAY										
14...	1245	714	298	8.40	23.0	9.4	111	<10	30	--
JUN										
09...	1315	459	336	8.50	26.0	5.6	70	<10	K11	--
JUL										
09...	1230	1240	241	8.40	23.5	6.8	81	32	660	140
AUG										
13...	1025	320	333	8.30	24.5	7.4	91	<10	28	--
SEP										
17...	1125	353	309	8.40	22.0	7.1	83	19	36	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
23...	10	36	21	2.7	1.3	176	2.5	10	3.3	<0.10
NOV										
21...	--	--	--	--	--	188	1.4	--	--	--
DEC										
18...	--	--	--	--	--	170	1.3	--	--	--
JAN										
12...	0	38	23	3.1	1.0	192	1.9	13	3.7	<0.10
FEB										
06...	--	--	--	--	--	183	2.2	--	--	--
MAR										
05...	--	--	--	--	--	138	2.1	--	--	--
APR										
09...	1	33	20	2.5	1.0	164	1.3	11	3.1	<0.10
MAY										
14...	--	--	--	--	--	168	1.3	--	--	--
JUN										
09...	--	--	--	--	--	189	1.2	--	--	--
JUL										
09...	1	30	17	2.2	1.5	144	0.7	12	2.5	<0.10
AUG										
13...	--	--	--	--	--	188	1.8	--	--	--
SEP										
17...	--	--	--	--	--	188	0.9	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07015720 BOURBEUSE RIVER NEAR HIGH GATE, MO

LOCATION.--Lat 38°08'49", long 91°34'50", in SW ¼ NE ¼ sec.4, T.39 N., R.6 W., Phelps County, Hydrologic Unit 07140103, on downstream side of right bridge pier on State Highway B, 1.8 mi downstream from Lanes Fork, 5 mi east of High Gate, and 11 mi north of St. James.

DRAINAGE AREA.--135 mi².

PERIOD OF RECORD.--July 1965 to current year. Occasional low-flow measurements 1963, 1964.

REVISED RECORDS.--WDR MO-83-1: 1982.

GAGE.--Water-stage recorder. Datum of gage is 804.1 ft above National Geodetic Vertical Datum of 1929 (levels by Missouri State Highway Commission). Prior to Aug. 17, 1966, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Jan. 9-12, 18-28, May 15-26, and June 22-23. Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 132 ft³/s, 13.28 in/yr, 95,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,300 ft³/s, Dec. 3, 1982, from rating curve extended above 33,500 ft³/s, gage height, 23.65 ft; no flow Aug. 27 to Sept. 15, 1971, July 28 to Aug. 24, 1975, and Aug. 18-22, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1957 reached a stage of about 23 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	1630	*17,800	*19.66	Apr. 13	2130	10,700	15.88
Dec. 1	1230	6,070	12.44	May 3	1615	6,160	12.52

No flow, Sept. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5420	22	2310	19	88	508	92	13	3.3	221	.58	.51
2	6220	21	594	18	98	192	72	11	3.2	34	.49	.40
3	1880	20	254	17	82	120	58	1320	3.6	13	.50	.36
4	1860	19	145	16	62	89	47	371	3.1	8.1	3.0	.27
5	444	149	98	15	50	74	42	126	3.0	13	48	.16
6	198	137	79	15	40	61	38	65	2.9	48	4.1	.10
7	116	83	82	14	35	50	36	35	2.7	73	1.4	.14
8	80	87	210	12	34	40	34	25	2.4	68	.93	.17
9	61	92	323	11	32	36	31	24	2.4	18	.85	.13
10	51	67	194	12	30	34	28	22	2.3	5.5	.73	.16
11	47	88	119	15	29	33	26	20	2.2	3.2	.61	.18
12	117	92	87	20	26	31	24	17	2.2	2.4	.54	.10
13	77	59	67	150	25	30	2980	14	38	2.5	.48	.04
14	55	42	56	267	218	29	1200	13	13	2.6	.64	.10
15	39	36	49	137	384	28	340	12	5.6	2.1	1.4	.23
16	35	35	47	89	373	26	185	15	3.9	1.7	1.1	.52
17	33	34	46	85	183	28	120	13	152	1.4	.77	1.1
18	29	32	39	90	166	1080	89	11	13	1.2	.73	.84
19	26	29	32	80	262	405	70	10	8.0	1.0	.75	.62
20	23	28	29	70	217	176	55	9.0	5.9	.93	.62	.42
21	22	26	28	60	180	117	42	8.0	4.9	.88	.52	.32
22	21	26	28	52	129	116	31	7.0	4.2	.81	.43	.23
23	18	24	27	45	96	135	30	6.0	2.7	.74	.37	.20
24	17	22	25	40	77	662	28	12	54	.70	.33	.20
25	16	22	24	35	64	298	27	10	21	.70	.27	.15
26	41	34	23	30	54	156	25	8.5	4.5	.75	.30	.11
27	43	43	22	25	53	114	22	4.5	3.3	.74	.63	.06
28	35	35	22	50	108	94	20	4.1	2.5	.74	.79	.12
29	33	34	21	197	---	385	18	3.8	2.1	.64	.68	.48
30	29	32	21	192	---	203	15	3.7	126	1.4	.60	.34
31	26	---	20	108	---	124	---	3.5	---	.64	.66	---
TOTAL	17112	1470	5121	1986	3195	5474	5825	2217.1	497.9	529.37	73.80	8.76
MEAN	552	49.0	165	64.1	114	177	194	71.5	16.6	17.1	2.38	.29
MAX	6220	149	2310	267	384	1080	2980	1320	152	221	48	1.1
MIN	16	19	20	11	25	26	15	3.5	2.1	.64	.27	.04

CAL YR 1986 TOTAL 49095.41 MEAN 135 MAX 9050 MIN .70
WTR YR 1987 TOTAL 43509.55 MEAN 119 MAX 6220 MIN .04

07015720 BOURBEUSE RIVER NEAR HIGH GATE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.08	2.31	8.98	2.22	2.86	5.08	2.93	2.12	1.82	3.58	1.71	1.77
2	5.20	2.27	5.25	2.20	2.97	3.62	2.74	2.09	1.81	2.46	1.70	1.75
3	6.07	2.24	3.95	2.18	2.84	3.16	2.60	2.05	1.84	2.15	1.68	1.74
4	7.84	2.22	3.35	2.17	2.64	2.89	2.51	4.45	1.81	2.01	1.69	1.72
5	4.74	3.32	3.01	2.16	2.53	2.76	2.45	3.25	1.80	1.99	2.55	1.70
6	3.65	3.31	2.85	2.15	2.44	2.62	2.42	2.70	1.79	2.64	2.03	1.70
7	3.11	2.90	2.74	2.14	2.39	2.53	2.40	2.42	1.78	2.33	1.91	1.68
8	2.83	2.85	3.76	2.11	2.38	2.44	2.38	2.29	1.76	2.91	1.84	1.71
9	2.62	---	4.32	---	2.36	2.40	2.35	2.27	1.75	2.34	1.81	1.70
10	2.50	---	3.65	---	2.34	2.38	2.32	2.25	1.75	2.12	1.80	1.68
11	2.46	---	3.23	---	2.32	2.37	2.30	2.22	1.74	2.02	1.76	1.71
12	3.04	---	2.94	---	2.30	2.35	2.28	2.18	1.73	1.95	1.76	1.69
13	2.85	---	2.75	2.76	2.28	2.34	2.41	2.15	2.85	1.96	1.75	1.69
14	2.64	---	2.64	4.17	4.19	2.33	6.14	2.12	2.13	1.96	1.74	1.69
15	2.48	---	2.57	3.31	3.50	2.32	4.32	---	1.94	1.93	1.91	1.72
16	2.45	---	2.56	2.94	4.57	2.30	3.58	---	1.87	1.89	1.88	1.76
17	2.43	---	2.55	2.87	3.57	2.29	3.14	---	3.07	1.86	1.81	1.93
18	2.39	---	2.50	2.92	3.24	6.56	2.90	---	2.14	1.82	1.77	1.85
19	2.36	---	2.42	---	3.95	4.60	2.71	---	2.01	1.80	1.81	1.81
20	2.32	---	2.39	---	3.77	3.53	2.57	---	1.94	1.78	1.78	1.78
21	2.28	---	2.38	---	3.57	3.13	2.48	---	1.91	1.77	1.76	1.76
22	2.25	---	2.37	---	3.23	2.90	2.35	---	---	1.76	1.75	1.74
23	2.21	---	2.36	---	2.96	3.25	2.34	---	---	1.74	1.73	1.73
24	2.18	---	2.35	---	2.78	5.79	2.31	---	1.83	1.73	1.72	1.74
25	2.16	2.29	2.33	---	2.66	4.15	2.31	---	2.29	1.73	1.71	1.72
26	2.17	2.31	2.32	---	2.55	3.40	2.28	2.08	2.01	1.74	1.70	1.71
27	2.54	2.53	2.31	---	2.54	3.10	2.25	1.89	1.96	1.74	1.77	1.71
28	2.45	2.45	2.29	---	2.55	2.91	2.23	1.87	1.89	1.74	1.82	1.71
29	2.43	2.44	2.26	3.28	---	5.03	2.19	1.85	1.85	1.72	1.81	1.80
30	2.39	2.42	2.25	3.64	---	3.68	2.16	1.84	1.84	1.71	1.77	1.77
31	2.35	---	2.24	3.06	---	3.19	---	1.84	---	1.71	1.80	---

MERAMEC RIVER BASIN

07016400 BOURBEUSE RIVER ABOVE UNION, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°25'55", long 91°01'11", in SW ¼ NW ¼ sec.34, T.43 N., R.1 W., Franklin County, Hydrologic Unit 07140103, at bridge on North Bend Drive, 5.5 mi upstream from gaging station, 0.5 mi southwest of Union.

DRAINAGE AREA.--808 mi² approximately.

PERIOD OF RECORD.--August 1963 to September 1974, November 1983 to June 1987 (discontinued).

REMARKS.--Discharge from Bourbeuse River at Union, Mo.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
23...	1100	223	239	7.80	14.5	9.4	93	<10	25	120
NOV										
21...	1115	223	285	8.10	5.5	13.1	105	<10	K65	--
DEC										
18...	1130	381	220	7.80	4.0	13.3	102	<10	33	--
JAN										
12...	1120	202	291	8.20	2.0	14.0	103	<10	K2	150
FEB										
05...	1400	453	225	8.00	5.5	13.2	105	10	K10	--
MAR										
05...	1125	601	210	7.90	9.0	10.6	93	26	96	--
APR										
09...	1120	240	214	8.00	13.5	9.9	97	<10	K11	110
MAY										
14...	1040	170	200	7.80	24.0	6.6	80	12	47	--
JUN										
09...	1135	91	270	8.30	26.5	5.9	74	11	28	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
23...	19	25	15	3.8	2.1	105	3.2	20	4.1	<0.10
NOV										
21...	--	--	--	--	--	127	2.0	--	--	--
DEC										
18...	--	--	--	--	--	83	2.6	--	--	--
JAN										
12...	9	30	18	4.7	1.4	140	1.7	25	4.8	<0.10
FEB										
05...	--	--	--	--	--	85	1.7	--	--	--
MAR										
05...	--	--	--	--	--	72	1.8	--	--	--
APR										
09...	11	21	13	4.6	1.5	95	1.8	23	4.5	<0.10
MAY										
14...	--	--	--	--	--	92	2.8	--	--	--
JUN										
09...	--	--	--	--	--	122	1.2	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07016500 BOURBEUSE RIVER AT UNION, MO

LOCATION.--Lat 38°26'45", long 90°59'30", in SE ¼ sec.26, T.43 N., R.1 W., Franklin County, Hydrologic Unit 07140103, on left bank upstream side of the bridge on U.S. Highway 50, 800 ft upstream from Flat Creek, 0.5 mi east of Union, 7.0 mi upstream from Birch Creek, and at mile 13.4.

DRAINAGE AREA.--808 mi².

PERIOD OF RECORD.--June 1921 to current year; Oct. 1916 to 1921 gage heights are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 957: 1941. WSP 1147: Drainage area. WSP 1281: 1924.

GAGE.--Water-stage recorder. Datum of gage is 488.58 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1948, datum of all gages 3.00 ft higher. Prior to Oct. 21, 1933, nonrecording gage, at site 30 ft upstream. Oct. 21, 1933, to June 11, 1944, nonrecording gage, at present site.

REMARKS.--Estimated daily discharges: Oct. 6-21. Records good except for estimated daily discharges, which are fair. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps satellite telemeters at station.

AVERAGE DISCHARGE.--66 years, 655 ft³/s, 11.01 in/yr, 474,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,300 ft³/s, December 5, 1982, gage height, 33.80 ft; minimum, 11 ft³/s, Oct. 10, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 22, 1915, reached a stage of 28.5 ft, present datum, from floodmarks, discharge, about 50,000 ft³/s, determined from extension of rating curve for main channel based on measurements made since 1921 and study of overflow areas in vicinity of gaging station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 4	0230	*20,300	*19.65	Apr. 16	0045	12,100	15.40

Minimum daily discharge, 40 ft³/s, Sept. 5, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9490	227	638	213	895	382	901	224	105	97	84	44
2	13500	209	4340	210	664	1240	642	212	104	87	72	44
3	17800	200	5870	207	560	1320	503	254	106	79	65	42
4	19400	199	1770	205	506	795	415	390	101	100	61	41
5	18800	205	1060	202	457	601	356	1650	98	201	61	40
6	15700	207	771	204	402	490	311	759	98	156	57	41
7	2890	227	637	200	358	422	282	475	97	196	53	40
8	2090	399	595	195	326	373	255	351	94	142	52	42
9	1820	397	677	196	360	335	235	284	91	259	58	43
10	1650	354	983	202	279	305	216	244	90	247	56	42
11	1530	347	1130	202	265	279	207	214	89	176	53	42
12	1450	343	825	207	245	262	197	195	110	167	65	42
13	1370	331	634	223	239	247	1040	184	109	151	65	42
14	1370	335	537	262	235	235	6090	168	99	127	60	44
15	1430	338	473	380	225	226	10600	158	91	114	57	44
16	1350	303	433	904	228	216	5800	150	85	101	58	47
17	1280	277	403	831	584	213	1590	167	82	91	54	46
18	1220	261	381	627	773	225	1070	160	79	83	52	45
19	1190	247	363	554	563	275	806	143	83	77	51	44
20	1150	238	347	522	506	1610	650	135	92	70	50	42
21	716	226	330	510	650	918	546	132	94	67	47	44
22	235	215	297	469	600	1000	469	128	113	64	46	44
23	223	208	276	421	540	1060	411	124	102	62	44	43
24	218	201	267	381	466	1360	371	124	94	60	44	41
25	235	204	256	355	400	2170	339	135	88	59	45	41
26	251	222	247	352	348	2370	315	136	82	57	45	41
27	256	225	240	311	317	1120	288	129	76	55	48	42
28	266	284	233	293	316	754	269	123	75	82	50	45
29	256	301	228	320	---	905	253	116	78	104	48	61
30	250	290	222	438	---	1730	237	112	94	81	47	52
31	246	---	218	1100	---	1550	---	109	---	77	45	---
TOTAL	119632	8020	25681	11696	12247	24988	35664	7885	2799	3489	1693	1311
MEAN	3859	267	828	377	437	806	1189	254	93.3	113	54.6	43.7
MAX	19400	399	5870	1100	895	2370	10600	1650	113	259	84	61
MIN	218	199	218	195	225	213	197	109	75	55	44	40

CAL YR 1986 TOTAL 269766 MEAN 739 MAX 19400 MIN 34
WTR YR 1987 TOTAL 255105 MEAN 699 MAX 19400 MIN 40

07016500 BOURBEUSE RIVER AT UNION, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.90	1.97	2.51	1.82	3.61	2.47	3.89	2.23	1.79	1.81	1.71	1.40
2	15.91	1.91	7.44	1.81	3.08	3.94	3.30	2.20	1.77	1.74	1.63	1.40
3	18.19	1.86	11.76	1.79	2.83	4.62	2.96	2.16	1.80	1.69	1.59	1.39
4	19.49	1.84	5.34	1.78	2.70	3.50	2.74	3.06	1.78	1.66	1.55	1.37
5	18.96	1.88	4.03	1.77	2.59	3.07	2.57	6.62	1.75	2.30	1.55	1.37
6	18.91	1.88	3.41	1.76	2.46	2.80	2.43	3.74	1.75	2.11	1.52	1.37
7	5.40	1.92	3.09	1.75	2.32	2.62	2.34	3.08	1.75	2.40	1.49	1.37
8	3.98	2.48	2.97	1.73	2.24	2.49	2.25	2.72	1.73	1.99	1.47	1.37
9	3.48	2.52	3.12	1.72	2.15	2.39	2.17	2.51	1.72	2.04	1.50	1.39
10	3.08	2.38	3.70	1.75	2.08	2.29	2.11	2.36	1.72	2.50	1.51	1.38
11	2.86	2.36	4.12	1.75	2.03	2.21	2.08	2.25	1.72	2.16	1.49	1.39
12	2.70	2.35	3.51	1.75	1.99	2.14	2.03	2.18	1.76	2.13	1.57	1.39
13	2.54	2.31	3.08	1.78	1.95	2.10	2.30	2.14	1.84	2.09	1.59	1.37
14	2.52	2.31	2.84	1.90	1.94	2.06	9.83	2.07	1.77	1.95	1.55	1.39
15	2.68	2.36	2.68	2.11	1.92	2.03	13.88	2.03	1.74	1.89	1.52	1.41
16	2.50	2.23	2.57	3.43	1.93	2.00	12.22	1.99	1.70	1.82	1.53	1.40
17	2.36	2.14	2.49	3.43	2.61	1.99	5.22	2.06	1.68	1.75	1.50	1.42
18	2.25	2.09	2.41	2.97	3.44	2.00	4.29	2.05	1.67	1.70	1.47	1.40
19	2.16	2.04	2.36	2.76	2.93	2.11	3.74	1.97	1.68	1.66	1.47	1.40
20	2.09	2.01	2.31	2.67	2.71	5.85	3.40	1.93	1.68	1.63	1.46	1.37
21	2.04	1.96	2.26	2.65	3.15	3.86	3.15	1.91	1.74	1.61	1.44	1.39
22	2.00	1.91	2.15	2.58	3.00	4.21	2.96	1.90	1.88	1.59	1.44	1.40
23	1.95	1.90	2.08	2.42	2.86	3.87	2.81	1.88	1.82	1.57	1.41	1.39
24	1.95	1.86	2.04	2.29	2.70	4.22	2.69	1.86	1.77	1.56	1.41	1.36
25	1.95	1.85	2.00	2.15	2.53	4.94	2.61	1.91	1.73	1.54	1.41	1.36
26	2.05	1.96	1.97	2.26	2.38	6.75	2.53	1.95	1.70	1.53	1.41	1.36
27	2.05	1.93	1.94	2.15	2.29	4.28	2.47	1.90	1.66	1.52	1.44	1.37
28	2.08	2.11	1.90	2.08	2.25	3.50	2.38	1.88	1.66	1.50	1.46	1.39
29	2.07	2.22	1.89	2.04	---	3.76	2.34	1.85	1.67	1.85	1.44	1.52
30	2.03	2.18	1.87	2.23	---	5.29	2.28	1.83	1.74	1.70	1.42	1.46
31	2.03	---	1.84	3.78	---	5.18	---	1.81	---	1.62	1.42	---

07017200 BIG RIVER AT IRONDALE, MO

LOCATION.--Lat 37°49'48", long 90°41'27", in SE ¼ SW ¼ sec.15, T.36 N., R.3 E., Washington County, Hydrologic Unit 07140104, on right bank 50 ft upstream from bridge on State Highway U, 0.2 mi upstream from Mill Creek, and 0.8 mi west of Irondale.

DRAINAGE AREA.--175 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 753.28 ft above National Geodetic Vertical Datum of 1929 (Missouri State Highway Commission benchmark).

REMARKS.--Estimated daily discharges: Oct. 1-20 and Mar. 18 to May 13. Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 185 ft³/s, 14.36 in/yr, 134,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,200 ft³/s, Nov. 1, 1972, gage height, 27.92 ft, from floodmarks, from rating curve extended above 13,000 ft³/s on basis of step backwater computations and indirect measurement of peak flow of February 1966 flood; minimum, 2.2 ft³/s, Sept. 16, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	1045	*4,420	*8.43				

Minimum discharge, 3.5 ft³/s, Sept. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1810	50	670	55	68	1030	69	35	26	23	9.2	8.0
2	503	48	581	55	83	486	67	34	22	24	9.2	7.0
3	211	45	303	53	85	338	62	38	24	21	8.2	6.7
4	131	49	208	53	80	255	58	49	22	20	9.3	5.8
5	89	359	167	50	78	204	49	38	19	23	11	5.9
6	73	325	147	49	73	171	60	35	17	46	10	6.0
7	60	188	135	48	72	145	62	32	17	58	9.5	6.0
8	53	163	135	47	70	128	58	30	16	86	11	5.9
9	48	135	192	53	64	112	60	28	16	58	14	5.3
10	43	109	191	60	62	98	65	26	15	42	12	5.2
11	42	103	163	58	62	91	92	24	16	34	9.8	6.9
12	464	91	146	54	61	83	86	32	15	29	9.5	6.5
13	154	83	128	66	60	79	300	34	14	68	8.5	6.5
14	99	77	120	181	77	77	1110	33	13	65	10	6.0
15	77	74	112	214	120	75	537	31	11	43	9.2	5.9
16	66	72	106	156	247	75	395	28	17	35	8.9	7.8
17	58	69	101	134	186	78	279	28	28	30	7.7	7.1
18	54	66	94	156	165	970	200	28	23	26	7.1	6.6
19	48	65	88	166	223	553	156	29	22	22	7.5	5.8
20	44	65	84	142	234	305	116	33	20	20	6.9	5.2
21	43	60	78	124	214	269	95	30	18	17	6.3	4.6
22	41	57	73	117	225	164	89	32	15	16	8.1	4.1
23	40	55	70	100	209	127	80	30	24	16	6.7	4.5
24	55	52	67	95	178	196	75	27	164	18	6.5	4.3
25	80	52	67	109	157	229	67	29	79	16	6.0	4.1
26	80	64	64	74	142	156	53	28	42	14	6.0	4.2
27	73	67	61	61	168	124	47	26	31	12	15	4.3
28	65	63	60	59	1050	105	43	23	26	11	36	6.0
29	59	60	59	61	---	92	38	22	23	12	23	16
30	55	60	57	67	---	83	37	24	21	11	15	11
31	52	---	55	67	---	72	---	26	---	11	10	---
TOTAL	4770	2826	4582	2784	4513	6910	4505	942	816	927	327.1	189.2
MEAN	154	94.2	148	89.8	161	223	150	30.4	27.2	29.9	10.6	6.31
MAX	1810	359	670	214	1050	1030	1110	49	164	86	36	16
MIN	40	45	55	47	60	72	37	22	11	11	6.0	4.1

CAL YR 1986 TOTAL 45760.0 MEAN 125 MAX 1970 MIN 12
WTR YR 1987 TOTAL 34091.2 MEAN 93.4 MAX 1810 MIN 4.1

07017200 BIG RIVER AT IRONDALE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.11	3.05	3.22	3.03	3.08	5.03	3.11	2.94	2.88	2.84	2.69	2.71
2	4.11	3.04	4.25	3.03	3.14	4.07	3.12	2.93	2.83	2.86	2.68	2.69
3	3.55	3.03	3.70	3.02	3.15	3.77	3.09	2.92	2.85	2.83	2.68	2.69
4	3.35	3.01	3.49	3.02	3.13	3.62	3.07	3.04	2.83	2.81	2.68	2.67
5	3.24	3.47	3.37	3.01	3.13	3.51	3.06	2.97	2.81	2.81	2.71	2.68
6	3.17	3.78	3.33	3.00	3.11	3.43	3.08	2.92	2.78	3.06	2.70	2.68
7	3.11	3.49	3.29	3.00	3.10	3.38	3.10	2.92	2.78	3.08	2.70	2.68
8	3.07	3.41	3.29	2.99	3.10	3.34	3.11	2.90	2.78	3.25	2.68	2.68
9	3.03	3.36	3.35	2.99	3.07	3.29	3.09	2.88	2.77	3.11	2.75	2.67
10	3.01	3.29	3.45	3.05	3.06	3.27	3.05	2.86	2.77	3.00	2.73	2.66
11	2.99	3.28	3.35	3.04	3.06	3.23	3.20	2.84	2.78	2.94	2.70	2.70
12	4.95	3.24	3.33	3.03	3.06	3.21	3.16	2.85	2.77	2.90	2.70	2.69
13	3.41	3.22	3.27	3.05	3.05	3.20	3.05	2.97	2.75	2.90	2.67	2.69
14	3.27	3.19	3.25	3.39	3.10	3.18	4.99	2.93	2.73	3.15	2.71	2.68
15	3.19	3.17	3.23	3.51	3.18	3.17	4.05	2.92	2.72	3.02	2.69	2.68
16	3.14	3.16	3.21	3.36	3.59	3.17	3.90	2.89	2.71	2.96	2.68	2.72
17	3.10	3.15	3.20	3.29	3.42	3.18	3.68	2.89	2.88	2.90	2.67	2.70
18	3.08	3.14	3.18	3.31	3.35	5.02	3.58	2.89	2.84	2.87	2.64	2.70
19	3.04	3.12	3.16	3.38	3.53	4.22	3.45	2.89	2.84	2.84	2.66	2.68
20	3.01	3.12	3.15	3.32	3.56	3.72	3.33	2.93	2.82	2.81	2.65	2.67
21	3.01	3.10	3.13	3.28	3.48	3.54	3.24	2.91	2.79	2.78	2.64	2.67
22	2.99	3.09	3.11	3.25	3.51	3.45	3.18	2.91	2.77	2.77	2.67	2.65
23	2.98	3.08	3.10	3.18	3.48	3.35	3.25	2.91	2.89	2.75	2.64	2.66
24	3.03	3.07	3.08	3.19	3.40	3.33	3.25	2.88	3.38	2.79	2.64	2.66
25	3.19	3.05	3.08	3.46	3.35	3.60	3.13	2.91	3.23	2.78	2.63	2.66
26	3.20	3.12	3.07	3.18	3.31	3.42	3.05	2.90	3.02	2.74	2.63	2.66
27	3.17	3.13	3.06	3.03	3.33	3.33	3.02	2.87	2.92	2.73	2.67	2.66
28	3.13	3.12	3.05	3.06	4.37	3.27	2.99	2.85	2.87	2.71	2.96	2.67
29	3.10	3.10	3.05	3.04	---	3.28	2.97	2.83	2.85	2.74	2.86	2.82
30	3.09	3.10	3.04	3.08	---	3.19	2.95	2.83	2.83	2.70	2.78	2.77
31	3.07	---	3.03	3.08	---	3.14	---	2.87	---	2.71	2.75	---

07018100 BIG RIVER NEAR RICHWOODS, MO

LOCATION.--Lat 38°09'34", long 90°42'22", in sec.33, T.40 N., R.3 E., Jefferson County, Hydrologic Unit 07140104, on left bank downstream side of bridge on State Highway H, 1.8 mi east of Fletcher, 6.8 mi east of Richwoods, and at mile 53.7.

DRAINAGE AREA.--735 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year. Prior to May 1949 monthly discharge only, published in WSP 1311. Prior to 1984 published as Big River near De Soto, Mo.

GAGE.--Water-stage recorder. Datum of gage is 523.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 4 to Jan. 13. Water-discharge records good except for estimated daily discharges, which are fair. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--39 years, 692 ft³/s, 12.79 in/yr, 501,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,800 ft³/s, June 30, 1957, gage height, 27.15 ft, (former datum); minimum discharge, 20 ft³/s, Sept. 19, 1954, minimum gage height, 1.89 ft, (former datum), Sept. 15, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1915 reached a stage of about 29.4 ft, (former datum) from floodmark, 1.0 mi downstream adjusted to gage site by comparison with recorded flood 5.5 ft lower; discharge, 70,500 ft³/s, from rating curve extended above 37,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 2	1830	*6,900	*12.28				

Minimum daily discharge 83 ft³/s, Aug. 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	255	1930	269	318	3900	465	291	166	918	156	126
2	6050	246	3430	266	393	2190	436	283	165	398	137	114
3	2350	240	1600	261	421	1270	412	976	178	231	110	105
4	1210	244	1060	251	396	958	387	941	178	191	116	101
5	856	371	803	246	366	808	367	540	162	205	195	97
6	635	875	664	241	342	714	353	421	153	244	159	93
7	502	815	604	241	325	647	342	349	146	254	130	92
8	422	638	553	236	311	592	335	305	139	488	115	96
9	370	557	612	244	298	550	326	278	136	382	119	97
10	331	496	698	262	287	507	318	253	132	309	142	92
11	301	459	667	264	280	468	358	237	132	245	144	93
12	420	430	593	265	276	439	416	230	134	201	124	97
13	1110	394	538	268	272	418	462	223	152	188	116	96
14	631	363	487	340	345	399	2820	217	157	188	109	96
15	482	342	448	540	421	387	2190	209	143	178	107	93
16	396	333	428	603	568	372	1350	196	134	195	103	94
17	347	321	408	515	731	360	1080	188	143	170	99	112
18	311	308	396	476	645	469	866	186	158	152	98	115
19	286	292	396	509	662	1900	728	190	531	139	99	107
20	270	302	384	512	720	1250	638	186	321	129	99	99
21	253	295	369	454	692	879	567	180	202	122	97	95
22	239	285	363	425	655	828	508	185	173	115	91	93
23	231	275	354	399	626	822	458	188	156	113	87	89
24	248	263	345	331	593	731	424	177	147	113	83	90
25	307	256	339	355	542	897	393	176	162	112	83	89
26	373	298	328	326	498	845	369	176	262	111	84	87
27	385	314	314	312	496	708	350	172	226	119	229	86
28	346	312	300	315	1170	634	330	167	184	156	244	86
29	313	298	290	306	---	581	314	162	168	149	209	97
30	285	285	282	316	---	545	301	164	273	116	172	114
31	267	---	274	319	---	505	---	168	---	123	149	---
TOTAL	23837	11162	20257	10667	13649	26573	18663	8614	5513	6754	4005	2941
MEAN	769	372	653	344	487	857	622	278	184	218	129	98.0
MAX	6050	875	3430	603	1170	3900	2820	976	531	918	244	126
MIN	231	240	274	236	272	360	301	162	132	111	83	86

CAL YR 1986 TOTAL 192072 MEAN 526 MAX 6050 MIN 137
WTR YR 1987 TOTAL 152635 MEAN 418 MAX 6050 MIN 83

07018100 BIG RIVER NEAR RICHWOODS, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.89	3.09	3.93	3.14	3.35	9.72	3.81	3.22	2.74	5.04	2.53	2.48
2	11.70	3.05	9.12	---	3.60	7.45	3.73	3.19	2.73	3.68	2.58	2.40
3	7.69	3.03	6.34	---	3.72	5.72	3.65	3.16	2.78	3.02	2.40	2.34
4	5.60	3.01	---	3.07	3.65	5.06	3.57	5.04	2.81	2.82	2.34	2.31
5	4.89	3.33	4.67	3.06	3.56	4.70	3.51	4.10	2.71	2.75	2.90	2.28
6	4.33	4.00	4.35	3.03	3.45	4.47	3.45	3.75	2.66	3.05	2.66	2.26
7	3.95	4.80	---	3.03	3.39	4.28	3.41	3.50	2.62	3.00	2.52	2.23
8	3.69	4.31	4.04	3.01	3.34	4.13	3.39	3.35	2.58	3.79	2.42	2.27
9	3.52	4.08	---	3.00	3.28	4.01	3.35	3.26	2.56	3.58	2.42	2.28
10	3.39	3.92	4.44	---	3.23	3.89	3.32	3.17	2.53	3.33	2.53	2.24
11	3.27	3.79	4.37	---	3.20	3.77	3.41	3.11	2.53	3.07	2.60	2.24
12	3.28	3.71	4.16	---	3.18	3.68	3.67	3.10	2.53	2.87	2.47	2.28
13	5.88	3.60	4.00	---	3.15	3.61	3.61	3.09	2.54	2.78	2.43	2.27
14	4.32	3.49	3.88	3.28	3.34	3.55	7.92	3.07	2.66	2.82	2.39	2.28
15	3.89	3.42	3.75	3.90	3.64	3.50	7.36	3.03	2.58	2.72	2.38	2.25
16	3.61	3.38	3.70	4.24	3.96	3.45	5.81	2.96	2.52	2.85	2.35	2.25
17	3.44	3.34	3.64	3.98	4.57	3.39	5.37	2.92	2.54	2.72	2.33	2.35
18	3.31	3.30	3.58	3.86	4.33	3.50	4.86	2.89	2.61	2.63	2.29	2.41
19	3.21	3.23	3.59	3.95	4.28	7.11	4.54	2.90	4.58	2.54	2.33	2.34
20	3.15	3.26	3.55	4.01	4.51	5.71	4.30	2.89	3.36	2.50	2.33	2.29
21	3.08	3.25	3.50	3.85	4.42	4.91	4.10	2.85	2.89	2.45	2.32	2.25
22	3.02	3.20	3.47	3.76	4.32	4.55	3.94	2.86	2.73	2.41	2.28	2.23
23	2.99	3.17	3.45	3.68	4.23	4.78	3.79	2.89	2.64	2.39	2.25	2.20
24	3.02	3.12	3.42	3.35	4.17	4.45	3.69	2.82	2.57	2.40	2.23	2.20
25	3.25	3.07	3.40	3.53	4.03	4.93	3.59	2.82	2.65	2.39	2.23	2.19
26	3.48	3.23	3.36	3.49	3.90	4.82	3.50	2.82	3.09	2.38	2.23	2.18
27	3.56	3.31	3.32	3.42	3.87	4.49	3.44	2.79	3.02	2.37	3.18	2.16
28	3.44	3.31	3.26	3.48	4.27	4.28	3.37	2.77	2.77	2.71	3.06	2.16
29	3.32	3.25	3.22	3.34	---	4.13	3.31	2.73	2.71	2.69	2.97	2.25
30	3.21	3.21	3.20	3.36	---	4.03	3.26	2.73	2.60	2.43	2.72	2.37
31	3.14	---	3.17	3.38	---	3.92	---	2.76	---	2.49	2.62	---

07018100 BIG RIVER NEAR RICHWOODS, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 23...	0845	231	472	8.20	14.5	9.4	93	<10	56	270
NOV 21...	0940	298	481	8.00	5.5	10.8	86	<10	23	--
DEC 18...	0950	393	460	8.10	7.0	12.4	103	<10	K17	--
JAN 13...	0945	272	510	8.50	2.5	17.0	126	<10	K2	270
FEB 06...	0815	345	470	8.30	5.5	15.8	126	10	K5	--
MAR 05...	1400	798	360	8.10	10.0	10.6	95	21	K17	--
APR 09...	0920	326	450	8.30	13.5	9.7	95	<10	K6	250
MAY 15...	0940	212	472	8.30	22.5	9.6	112	10	<1	--
JUN 09...	0950	136	511	8.50	26.0	5.6	70	<10	33	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 23...	41	55	32	5.0	1.9	228	2.8	38	5.8	<0.10
NOV 21...	--	--	--	--	--	244	4.7	--	--	--
DEC 18...	--	--	--	--	--	236	3.6	--	--	--
JAN 13...	32	55	33	5.6	1.3	241	1.0	46	6.4	0.10
FEB 06...	--	--	--	--	--	230	2.2	--	--	--
MAR 05...	--	--	--	--	--	172	2.7	--	--	--
APR 09...	38	49	31	5.1	1.3	212	2.1	38	5.8	<0.10
MAY 15...	--	--	--	--	--	233	2.3	--	--	--
JUN 09...	--	--	--	--	--	236	1.0	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

MERAMEC RIVER BASIN

07018500 BIG RIVER AT BYRNESVILLE, MO

LOCATION.--Lat 38°23'30", long 90°38'16", in SE ¼ sec.12, T.42 N., R.3 E., Jefferson County, Hydrologic Unit 07140104, on right bank on downstream side of pier of privately owned bridge at Byrnesville, 4.0 mi upstream from Heads Creek, at mile 14.1.

DRAINAGE AREA.--917 mi².

PERIOD OF RECORD.--October 1921 to current year. Prior to June 1922 monthly discharge only, published WSP 1311.

REVISED RECORDS.--WSP 667: 1927. WSP 877: 1938. WSP 1007: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 433.69 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 9, 1940, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharge. Records good. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--66 years, 853 ft³/s, 12.63 in/yr, 618,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,000 ft³/s, Nov. 21, 1985, gage height, 26.47 ft; minimum discharge, 25 ft³/s, Aug. 30, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 21, 1915, reached a stage of 30.2 ft from floodmarks, discharge, 80,000 ft³/s, by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	1445	*12,700	*18.37	Oct. 2	1830	11,100	17.38

Minimum discharge, 37 ft³/s, Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8790	333	934	312	413	2960	553	327	210	662	135	173
2	8420	323	3840	309	438	3530	513	316	205	969	146	155
3	7150	315	2960	305	504	2020	482	337	213	401	161	141
4	2620	317	1650	301	507	1400	458	1420	210	263	138	128
5	1610	361	1150	299	474	1100	430	850	207	227	158	103
6	1100	563	914	295	438	921	409	591	195	228	195	95
7	825	1030	776	292	411	807	394	475	187	385	184	108
8	667	856	707	291	394	719	380	403	176	506	155	107
9	563	717	776	295	373	659	368	360	168	491	144	109
10	492	631	855	303	358	607	363	333	163	392	134	110
11	438	581	864	312	349	559	365	309	157	325	140	109
12	415	548	771	313	341	519	391	296	157	274	154	106
13	664	512	684	318	333	486	639	289	164	245	140	108
14	1050	472	620	364	338	461	1950	283	161	215	128	107
15	680	438	571	475	407	439	3120	276	175	212	124	109
16	549	416	539	620	492	421	1990	265	163	199	119	110
17	471	401	514	654	643	407	1530	255	158	212	117	115
18	416	387	490	597	763	415	1200	251	153	195	112	116
19	380	374	468	580	686	858	952	248	164	181	110	123
20	356	367	443	601	742	1890	800	247	407	169	110	118
21	339	368	419	588	775	1190	697	242	306	158	109	111
22	323	363	401	545	747	1040	619	238	225	150	106	105
23	310	352	386	510	702	1240	560	237	202	143	104	102
24	320	339	374	454	673	1080	513	242	176	139	100	100
25	360	334	363	415	630	1060	474	234	169	138	98	98
26	418	363	356	420	583	1100	440	229	184	136	99	97
27	462	399	349	401	557	932	411	223	224	133	144	96
28	455	399	337	392	734	785	386	216	232	133	184	96
29	414	389	328	395	---	698	361	210	200	170	248	113
30	381	372	321	415	---	639	345	208	189	166	228	113
31	353	---	316	412	---	593	---	207	---	147	194	---
TOTAL	41791	13620	24476	12783	14805	31535	22093	10617	5900	8364	4418	3381
MEAN	1348	454	790	412	529	1017	736	342	197	270	143	113
MAX	8790	1030	3840	654	775	3530	3120	1420	407	969	248	173
MIN	310	315	316	291	333	407	345	207	153	133	98	95

CAL YR 1986 TOTAL 244656 MEAN 670 MAX 10000 MIN 133
WTR YR 1987 TOTAL 193783 MEAN 531 MAX 8790 MIN 95

07018500 BIG RIVER AT BYRNESVILLE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.63	3.91	4.10	3.82	4.20	8.43	4.70	3.89	3.33	3.87	2.78	3.04
2	13.13	3.87	10.71	3.81	4.25	10.79	4.57	3.84	3.29	6.28	2.81	2.94
3	15.86	3.84	9.87	3.79	4.51	7.88	4.46	3.80	3.33	4.29	2.98	2.85
4	9.20	3.81	7.22	3.78	4.55	6.68	4.38	6.55	3.33	3.67	2.82	2.76
5	7.15	3.91	6.22	3.76	4.44	6.07	4.29	5.59	3.32	3.45	2.82	2.70
6	6.10	4.58	5.70	3.74	4.32	5.68	4.21	4.86	3.25	3.37	3.09	2.52
7	5.48	5.97	5.34	3.73	4.22	5.41	4.15	4.47	3.21	3.76	3.12	2.61
8	5.06	5.55	5.14	3.73	4.16	5.19	4.10	4.20	3.16	4.67	2.93	2.61
9	4.74	5.19	5.22	3.72	4.08	5.03	4.06	4.03	3.13	4.50	2.85	2.61
10	4.51	4.95	5.47	3.78	4.02	4.87	4.01	3.92	3.11	4.14	2.78	2.62
11	4.33	4.79	5.52	3.82	3.97	4.72	4.03	3.82	3.08	3.86	2.80	2.62
12	4.24	4.68	5.33	3.81	3.94	4.59	4.09	3.75	3.06	3.62	2.93	2.59
13	4.21	4.57	5.10	3.84	3.91	4.48	4.33	3.72	3.09	3.50	2.84	2.60
14	6.09	4.43	4.91	3.95	3.91	4.39	6.42	3.69	3.08	3.31	2.76	2.60
15	5.11	4.32	4.76	4.35	4.12	4.32	9.89	3.66	3.17	3.29	2.72	2.61
16	4.71	4.23	4.64	4.80	4.45	4.26	7.79	3.61	3.10	3.20	2.69	2.62
17	4.44	4.18	4.57	5.03	4.81	4.19	6.89	3.56	3.08	3.28	2.67	2.65
18	4.25	4.13	4.49	4.84	5.33	4.19	6.28	3.52	3.05	3.17	2.64	2.66
19	4.11	4.08	4.41	4.76	5.06	4.36	5.76	3.50	3.09	3.08	2.62	2.73
20	4.01	4.05	4.33	4.82	5.15	7.79	5.40	3.50	4.50	3.01	2.62	2.70
21	3.93	4.05	4.25	4.82	5.33	6.30	5.13	3.48	3.87	2.94	2.62	2.65
22	3.87	4.04	4.18	4.67	5.26	5.69	4.92	3.46	3.43	2.89	2.60	2.60
23	3.81	3.99	4.12	4.56	5.13	6.38	4.73	3.45	3.31	2.85	2.58	2.57
24	3.83	3.94	4.08	4.33	5.05	5.78	4.57	3.47	3.16	2.82	2.55	2.55
25	3.95	3.89	4.03	4.18	4.94	5.90	4.44	3.45	3.10	2.81	2.53	2.54
26	4.22	3.99	4.01	4.30	4.80	6.02	4.33	3.42	3.22	2.80	2.52	2.53
27	4.36	4.15	3.97	4.22	4.70	5.72	4.23	3.40	3.34	2.78	2.77	2.52
28	4.38	4.16	3.93	4.18	4.81	5.36	4.12	3.36	3.47	2.76	2.94	2.52
29	4.23	4.13	3.89	4.16	---	5.12	4.04	3.34	3.29	3.02	3.44	2.67
30	4.11	4.07	3.86	4.22	---	4.96	3.97	3.32	3.21	2.97	3.33	2.65
31	4.00	---	3.84	4.20	---	4.83	---	3.30	---	2.89	3.16	---

07019000 MERAMEC RIVER NEAR EUREKA, MO

LOCATION.--Lat 38°30'20", long 90°35'30", in SE ¼ sec.32, T.44 N., R.4 E., St. Louis County, Hydrologic Unit 07140102, on right bank, 44 ft upstream from bridge on north access roadway of I-44, 2.0 mi east of Eureka, 3.0 mi downstream from Big River, and at mile 34.1.

DRAINAGE AREA.--3,788 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1903 to July 1906, October 1921 to current year. Monthly discharge only for January, February, and March 1904, published in WSP 1311.

REVISED RECORDS.--WSP 877: 1938(M). WSP 977: 1942. WSP 1007: Drainage area. WSP 1281: 1924-25.

GAGE.--Water-stage recorder. Datum of gage is 404.18 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1933, nonrecording gage at site 200 ft upstream at different datum. Jan. 17, 1933, to Sept. 22, 1937, nonrecording gage, and Sept. 23, 1937 to Sept. 30, 1971, water-stage recorder at present site at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Aug. 14-28 and Sept. 4-30. Water-discharge records good except for estimated daily discharges, which are fair. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--68 years, 3,150 ft³/s, 11.29 in/yr, 2,282,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 145,000 ft³/s, Dec. 6, 1982, gage height, 42.89 ft; minimum, 196 ft³/s, Aug. 27, 31, Sept. 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 22, 1915, reached a stage of 42.2 ft, from floodmarks, present datum, discharge, 175,000 ft³/s, by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 22,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 5	0745	*39,700	*22.85	No other peak greater than base discharge.			

Minimum daily discharge, 450 ft³/s, Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22300	1410	2120	1150	2630	5070	4240	1720	962	1110	608	696
2	31000	1330	8180	1140	2370	7000	3570	1650	970	2200	599	632
3	36300	1280	12600	1110	2200	6960	3080	1640	953	1650	605	583
4	38100	1270	10300	1090	2140	5820	2730	2850	955	1250	583	570
5	38900	1340	5850	1070	2080	4660	2450	4260	932	1400	608	562
6	31600	1570	4510	1050	1970	3960	2240	4940	881	1320	661	551
7	23000	2250	3800	1030	1820	3500	2060	3370	850	1600	653	541
8	8880	2540	3390	1010	1700	3110	1930	2760	814	2240	659	530
9	6810	2660	3280	1030	1590	2800	1820	2400	779	2820	685	540
10	6080	2450	3540	1070	1500	2540	1740	2080	754	2810	619	570
11	5320	2270	3970	1080	1440	2330	1710	1840	736	2260	583	550
12	4600	2180	3960	1080	1390	2130	1690	1680	727	1790	579	530
13	3770	2110	3450	1090	1340	1980	2170	1580	750	1630	590	525
14	3650	2040	3000	1220	1310	1850	8750	1540	773	1380	585	520
15	2930	2000	2690	1550	1370	1750	14600	1460	781	1210	578	515
16	2650	1920	2450	1940	1570	1670	17900	1380	858	1200	570	520
17	2320	1810	2280	2950	1850	1600	10900	1300	836	1140	562	540
18	2060	1720	2130	2940	2990	1610	6160	1290	762	1030	554	570
19	1880	1610	1990	2690	3250	1860	4900	1260	813	930	542	600
20	1730	1560	1880	2540	3000	5180	4120	1240	1090	848	536	580
21	1610	1510	1770	2440	3070	6070	3590	1190	1170	781	530	540
22	1520	1470	1670	2320	3240	5140	3190	1210	1060	727	520	520
23	1450	1420	1560	2140	3130	5270	2920	1270	1060	682	510	510
24	1450	1380	1480	1920	3010	4950	2690	1220	946	652	500	500
25	1500	1350	1420	1770	2810	5490	2520	1240	866	629	488	490
26	1610	1460	1380	1750	2580	6700	2370	1200	934	620	480	480
27	1690	1540	1320	1710	2400	5990	2210	1130	1020	603	475	460
28	1690	1560	1280	1540	2440	4650	2050	1060	1080	586	590	450
29	1640	1620	1240	1510	---	4140	1920	1010	967	625	687	485
30	1550	1630	1200	1810	---	4210	1810	967	876	699	734	545
31	1470	---	1170	1910	---	4770	---	950	---	643	735	---
TOTAL	291060	52260	100860	50650	62190	124760	124030	54687	26955	39065	18208	16205
MEAN	9389	1742	3254	1634	2221	4025	4134	1764	898	1260	587	540
MAX	38900	2660	12600	2950	3250	7000	17900	4940	1170	2820	735	696
MIN	1450	1270	1170	1010	1310	1600	1690	950	727	586	475	450

CAL YR 1986 TOTAL 1090490 MEAN 2988 MAX 38900 MIN 578
WTR YR 1987 TOTAL 960930 MEAN 2633 MAX 38900 MIN 450

07019000 MERAMEC RIVER NEAR EUREKA, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.78	3.08	3.25	3.02	4.14	5.19	5.34	3.28	2.68	2.68	2.39	2.48
2	18.84	3.03	6.98	3.01	3.97	7.32	4.79	3.24	2.70	3.54	2.36	2.41
3	21.48	2.98	10.18	2.99	3.82	7.18	4.44	3.20	2.70	3.29	2.37	2.35
4	22.08	2.95	9.81	2.97	3.79	6.57	4.21	3.65	2.71	2.96	2.35	---
5	22.85	3.01	6.60	2.95	3.75	5.65	4.02	4.68	2.69	3.10	2.33	---
6	20.27	3.15	5.55	2.94	3.68	5.10	3.86	6.12	2.64	3.01	2.43	---
7	16.79	3.60	4.96	2.92	3.57	4.73	3.74	4.67	2.61	3.09	2.43	---
8	8.32	3.89	4.64	2.91	3.48	4.46	3.64	4.11	2.58	3.64	2.40	---
9	7.13	3.98	4.50	2.91	3.39	4.25	3.56	3.78	2.55	3.85	2.44	---
10	6.67	3.86	4.69	2.94	3.32	4.07	3.49	3.55	2.52	4.12	2.39	---
11	6.13	3.72	5.02	2.96	3.27	3.93	3.47	3.38	2.50	3.70	2.35	---
12	5.63	3.64	5.12	2.96	3.22	3.80	3.45	3.27	2.49	3.35	2.34	---
13	4.97	3.61	4.70	2.97	3.19	3.68	3.51	3.18	2.49	3.24	2.33	---
14	5.00	3.55	4.39	3.03	3.16	3.58	7.76	3.16	2.54	3.06	---	---
15	4.24	3.53	4.17	3.31	3.18	3.50	10.83	3.10	2.53	2.91	---	---
16	4.01	3.48	4.01	3.51	3.34	3.45	12.98	3.04	2.60	2.91	---	---
17	3.78	3.40	3.89	4.30	3.49	3.38	10.04	2.99	2.61	2.86	---	---
18	3.59	3.33	3.78	4.35	4.21	3.38	6.80	2.96	2.54	2.78	---	---
19	3.45	3.24	3.69	4.17	4.56	3.45	5.85	2.95	2.51	2.69	---	---
20	3.34	3.21	3.61	4.06	4.35	5.72	5.24	2.93	2.69	2.62	---	---
21	3.25	3.16	3.53	3.99	4.37	6.84	4.80	2.89	2.88	2.55	---	---
22	3.18	3.13	3.45	3.92	4.52	5.84	4.48	2.87	2.80	2.50	---	---
23	3.12	3.09	3.36	3.81	4.45	6.08	4.23	2.96	2.79	2.46	---	---
24	3.10	3.06	3.30	3.63	4.37	5.63	4.02	2.91	2.71	2.42	---	---
25	3.14	3.02	3.25	3.46	4.26	6.07	3.86	2.93	2.62	2.40	---	---
26	3.21	3.10	3.21	3.37	4.10	6.83	3.73	2.91	2.68	2.39	---	---
27	3.28	3.18	3.17	3.46	3.97	6.71	3.62	2.85	2.74	2.37	---	---
28	3.30	3.20	3.13	3.35	3.92	5.65	3.51	2.79	2.82	2.35	2.32	---
29	3.26	3.23	3.10	3.30	---	5.13	3.42	2.75	2.73	2.37	2.43	---
30	3.20	3.26	3.07	3.57	---	5.12	3.35	2.72	2.63	2.49	2.50	---
31	3.13	---	3.04	3.48	---	5.66	---	2.70	---	2.42	2.50	---

MERAMEC RIVER BASIN

07019000 MERAMEC RIVER NEAR EUREKA, MO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1978 to September 1981.

WATER TEMPERATURE: January 1978 to September 1981.

SUSPENDED-SEDIMENT: February 1969 to September 1970, October 1980 to May 1981, November 1981 to September 1986 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 660 microsiemens, June 11, 1980; minimum daily, 136 microsiemens, Mar. 27, 1978.

WATER TEMPERATURE: Maximum daily, 32.0°C, July 1, 9, 1978; minimum daily, 0.0°C many days during winter periods.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,380 mg/L, Nov. 21, 1985; minimum daily mean, 2 mg/L, Dec. 10, 13, 16, 17, 20, 1980, Oct. 7, 8, 1985, Aug. 11, 15, 16, 1986.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 619,000 tons, Nov. 21, 1985; minimum daily, 3.2 tons, Dec. 20, 1980.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED SEDIMENT CONCENTRATIONS: Maximum daily mean, 3380 mg/L, Nov. 21; minimum daily mean, 2 mg/L, Oct. 7, 8, Aug. 11, 15, 16.

SUSPENDED SEDIMENT LOADS.--Maximum daily, 619,000 tons, Nov. 21; minimum daily, 3.5 tons, Oct. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 20...	1450	1560	419	8.30	6.5	3.2	13.2	108	26	66
JAN 13...	1220	1080	390	8.40	3.0	2.1	15.5	116	K4	K13
MAR 04...	1330	5660	320	8.00	9.0	12	12.2	105	70	42
MAY 14...	0815	1550	321	8.30	24.0	4.9	8.0	96	27	K8
JUL 09...	0940	2750	314	8.50	25.5	30	6.8	84	660	300
SEP 17...	0915	540	356	8.50	23.0	5.5	6.6	78	K74	130

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
NOV 20...	220	19	52	23	6.5	6	0.2	1.6	206
JAN 13...	210	18	42	25	5.0	5	0.2	1.2	190
MAR 04...	140	1	30	17	4.1	6	0.2	1.5	144
MAY 14...	160	0	34	19	3.8	5	0.1	1.5	166
JUL 09...	170	14	35	20	4.4	5	0.2	1.9	156
SEP 17...	200	21	38	26	4.9	5	0.2	1.6	181

K--Results based on colony count outside the acceptable range (non-ideal colony count).

07019000 MERAMEC RIVER NEAR EUREKA, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV 20...	29	8.4	0.10	5.1	233	250	0.32	981	0.120
JAN 13...	24	6.6	<0.10	3.1	207	220	0.28	604	0.130
MAR 04...	22	5.9	<0.10	6.3	160	170	0.22	2450	0.290
MAY 14...	14	4.0	<0.10	3.1	179	180	0.24	749	0.130
JUL 09...	16	5.2	0.10	9.7	198	200	0.27	1470	0.250
SEP 17...	21	6.4	0.10	8.8	210	220	0.29	306	<0.100

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY) (80155)	SEL. SUSP. SIEVE DIAM. % FINER THAN .062 mm (70331)
NOV 20...	0.030	0.04	0.20	0.030	0.030	<0.010	27	114	29
JAN 13...	<0.010	--	0.50	0.010	0.010	<0.010	24	70	43
MAR 04...	0.030	0.04	1.4	0.060	0.010	<0.010	17	260	76
MAY 14...	0.020	0.03	1.1	0.040	0.030	0.010	14	55	52
JUL 09...	0.060	0.08	0.50	0.150	0.100	0.040	57	423	79
SEP 17...	0.020	0.03	<0.20	0.020	0.030	<0.010	14	20	56

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01060)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
NOV 20...	<10	<1	140	<0.5	<1	<1	<3	<1	13	<5
JAN 13...	30	<1	150	<0.5	1	<1	<3	2	19	11
MAY 14...	<10	<1	150	<0.5	<1	<1	<3	--	8	<5
JUL 09...	20	<1	140	<0.5	<1	<1	<3	3	9	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 20...	7	36	<0.1	<10	2	<1	<1	73	<6	11
JAN 13...	7	51	<0.1	<10	<1	<1	<1	57	<6	4
MAY 14...	6	24	<0.1	<10	4	<1	<1	50	<6	13
JUL 09...	<4	6	<0.1	<10	<1	<1	<1	55	<6	7

MERAMEC RIVER BASIN

07019280 MERAMEC RIVER AT PAULINA HILLS, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°27'46", long 90°24'53", Jefferson County, Hydrologic Unit 07140102, at bridge on State Highway 21 at Paulina Hills, 0.3 mi downstream from Saline Creek, and 10 mi upstream from mouth.

DRAINAGE AREA.--3,950 mi², approximately.

PERIOD OF RECORD.--August 1963 to July 1975, October 1981 to current year.

REMARKS.--Records of discharge are given for gaging station near Eureka, Mo.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
22...	1430	1670	322	7.90	16.0	8.6	88	<10	K90	170
NOV										
21...	0745	1660	398	8.00	5.5	10.8	86	<10	1200	--
DEC										
17...	1500	2500	352	8.00	4.5	14.4	113	<10	420	--
JAN										
12...	1415	1190	430	8.00	5.0	13.9	111	12	230	200
FEB										
06...	0940	2190	378	8.20	5.5	13.9	111	13	300	--
MAR										
06...	0730	4510	298	8.10	9.0	11.8	102	<10	530	--
APR										
08...	1610	2110	325	8.20	14.0	10.0	99	<10	50	170
MAY										
15...	0730	1610	341	7.60	23.5	8.1	96	13	K30	--
JUN										
03...	1415	1050	365	8.60	27.0	6.5	82	<10	K80	--
JUL										
09...	0730	2530	321	8.20	25.0	5.7	70	32	590	160
AUG										
13...	0730	637	377	8.30	27.0	6.9	88	11	120	--
SEP										
17...	0730	594	384	8.30	23.0	5.8	69	30	K300	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
22...	18	37	19	5.8	2.3	153	3.7	21	6.8	0.10
NOV										
21...	--	--	--	--	--	195	3.8	--	--	--
DEC										
17...	--	--	--	--	--	151	2.9	--	--	--
JAN										
12...	13	42	24	15	1.4	191	3.7	27	21	<0.10
FEB										
06...	--	--	--	--	--	172	2.1	--	--	--
MAR										
06...	--	--	--	--	--	135	2.1	--	--	--
APR										
08...	13	35	19	6.0	1.5	153	1.9	21	7.9	<0.10
MAY										
15...	--	--	--	--	--	162	7.9	--	--	--
JUN										
03...	--	--	--	--	--	183	0.5	--	--	--
JUL										
09...	18	36	18	9.3	2.1	146	1.8	19	11	0.10
AUG										
13...	--	--	--	--	--	175	1.7	--	--	--
SEP										
17...	--	--	--	--	--	179	1.7	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

MISSISSIPPI RIVER MAIN STEM

07020500 MISSISSIPPI RIVER AT CHESTER, IL

LOCATION.--Lat 37°54'10", long 89°51'10", in SW ¼ sec.24, T.7 S., R.7 W., third principal meridian, Randolph County, Hydrologic Unit 07140105, on downstream side of left pier of main truss of highway bridge at Chester 8.1 mi downstream from Kaskaskia River, and at mile 109.9 above Ohio River.

DRAINAGE AREA.--708,600 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: October 1927 to current year in reports of Geological Survey. Monthly discharge only for some periods, published in WSP 1311. Since August 1873, results of discharge measurements in reports of Mississippi River Commission.

Gage heights: July 1942 to current year in reports of U.S. Geological Survey. Since May 1891, in reports of Mississippi River Commission and National Weather Service.

REVISED RECORDS.--WDR MO-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 341.05 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1962, nonrecording gage 0.4 mi downstream at present datum.

REMARKS.--Estimated daily discharges: Oct. 1-3. Water-discharge records good. Natural flow of stream affected by many reservoirs and navigation dams in upper Mississippi River basin and by many reservoirs and diversions for irrigation in Missouri River basin. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--60 years, 192,000 ft³/s, 139,100,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge determined, 886,000 ft³/s, July 3, 1947, Apr. 30, 1973; discharge including unmeasured overflow, was greater May 24, 1943; maximum gage height, 43.32 ft, Apr. 30, 1973; minimum daily discharge, 30,000 ft³/s, Dec. 12, 1937.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 30, 1844, reached a stage of 39.8 ft and a discharge of 1,350,000 ft³/s, computed by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 754,000 ft³/s, Oct. 10, gage height, 39.54 ft, minimum discharge, 97,900 ft³/s, Aug. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	441000	503000	286000	179000	140000	173000	366000	233000	306000	137000	139000	261000
2	479000	495000	300000	176000	160000	173000	341000	229000	314000	147000	139000	242000
3	525000	482000	342000	173000	179000	183000	322000	230000	310000	149000	131000	228000
4	567000	465000	375000	170000	185000	245000	309000	226000	296000	148000	132000	211000
5	614000	445000	372000	167000	185000	279000	308000	217000	278000	135000	135000	198000
6	648000	421000	347000	164000	176000	260000	309000	221000	260000	131000	133000	188000
7	682000	396000	332000	164000	175000	236000	305000	250000	243000	133000	131000	171000
8	712000	373000	316000	164000	177000	223000	298000	265000	225000	174000	127000	145000
9	731000	356000	328000	161000	173000	211000	288000	270000	212000	162000	123000	135000
10	744000	338000	354000	160000	172000	200000	273000	257000	201000	140000	117000	140000
11	742000	326000	369000	161000	170000	195000	268000	235000	200000	153000	104000	137000
12	732000	319000	361000	158000	170000	193000	259000	211000	201000	169000	102000	129000
13	714000	314000	330000	153000	170000	190000	247000	192000	194000	198000	99700	130000
14	688000	304000	282000	146000	170000	191000	279000	188000	181000	227000	106000	124000
15	655000	298000	242000	150000	166000	193000	368000	186000	164000	234000	130000	119000
16	629000	292000	229000	157000	158000	199000	416000	184000	156000	236000	144000	114000
17	616000	289000	228000	166000	154000	200000	429000	177000	162000	234000	149000	114000
18	605000	278000	230000	168000	151000	199000	421000	168000	158000	229000	161000	117000
19	593000	272000	238000	170000	148000	208000	411000	162000	153000	221000	183000	123000
20	578000	275000	242000	171000	154000	216000	408000	170000	140000	207000	193000	131000
21	559000	282000	241000	159000	164000	256000	391000	171000	131000	180000	186000	154000
22	541000	279000	244000	142000	171000	317000	363000	189000	127000	155000	176000	169000
23	525000	270000	243000	133000	167000	330000	342000	214000	122000	141000	166000	161000
24	510000	263000	239000	128000	164000	305000	328000	231000	139000	136000	160000	147000
25	496000	251000	235000	123000	162000	281000	309000	222000	156000	141000	156000	143000
26	483000	245000	219000	119000	161000	276000	294000	211000	154000	142000	146000	134000
27	474000	266000	203000	114000	162000	275000	294000	198000	150000	134000	148000	127000
28	474000	298000	195000	114000	163000	296000	285000	181000	147000	134000	148000	120000
29	484000	300000	192000	121000	---	324000	264000	188000	136000	131000	178000	122000
30	494000	292000	188000	129000	---	351000	249000	210000	131000	125000	241000	126000
31	502000	---	181000	135000	---	372000	---	255000	---	132000	277000	---
TOTAL	18237000	9987000	8483000	4695000	4647000	7550000	9744000	6541000	5747000	5115000	4660700	4560000
MEAN	588300	332900	273600	151500	166000	243500	324800	211000	191600	165000	150300	152000
MAX	744000	503000	375000	179000	185000	372000	429000	270000	314000	236000	277000	261000
MIN	441000	245000	181000	114000	140000	173000	247000	162000	122000	125000	99700	114000

CAL YR 1986 TOTAL 110098600 MEAN 301600 MAX 744000 MIN 116000
WTR YR 1987 TOTAL 89966200 MEAN 246500 MAX 744000 MIN 99700

07020500 MISSISSIPPI RIVER AT CHESTER, IL--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.26	31.22	19.54	12.54	9.10	12.12	23.94	16.52	20.55	8.96	9.25	18.31
2	28.71	30.92	20.16	12.48	10.61	12.21	22.72	15.98	21.15	10.13	9.56	17.13
3	30.95	30.34	22.23	12.11	12.43	12.30	21.71	16.33	21.05	10.08	8.91	16.16
4	32.64	29.59	24.11	11.93	12.97	16.52	20.90	15.87	20.23	10.33	9.00	15.15
5	34.76	28.66	24.25	11.67	13.10	19.32	20.80	15.53	19.27	8.73	9.52	14.01
6	36.02	27.52	23.01	11.45	12.44	18.41	20.86	15.18	18.16	8.79	9.26	13.41
7	37.20	26.36	22.23	11.35	12.22	16.76	20.71	17.23	17.21	8.39	9.00	12.22
8	38.21	25.19	21.33	11.56	12.43	15.80	20.27	18.18	16.08	12.07	8.63	10.02
9	38.88	24.26	21.55	11.25	12.18	15.05	19.90	18.75	15.03	11.69	7.89	8.98
10	39.44	23.36	23.02	11.03	12.11	14.23	18.98	18.08	14.28	9.36	7.52	9.36
11	39.42	22.71	23.93	11.21	11.87	13.80	18.57	16.72	13.99	10.30	5.75	9.27
12	39.26	22.19	23.68	11.03	11.83	13.54	18.16	15.16	14.24	11.73	5.35	8.35
13	38.79	21.90	22.27	10.70	11.97	13.40	17.29	13.57	13.77	13.65	5.12	8.57
14	38.07	21.28	19.91	9.98	11.90	13.43	18.25	13.23	12.93	15.91	5.30	7.96
15	37.11	20.81	17.09	10.18	11.70	13.56	23.43	13.10	11.67	16.34	8.18	7.37
16	36.14	20.37	16.19	10.63	11.02	13.96	25.87	13.08	10.72	16.48	9.60	6.80
17	35.61	20.13	15.96	11.53	10.63	14.18	26.59	12.52	11.35	16.43	10.14	6.60
18	35.17	19.50	16.10	11.65	10.45	14.02	26.34	11.87	11.00	16.15	10.85	6.94
19	34.77	18.85	16.60	11.82	10.14	14.67	25.79	11.14	10.56	15.75	12.63	7.72
20	34.16	18.82	16.91	11.96	10.44	15.05	25.70	11.91	9.63	14.91	13.58	8.27
21	33.48	19.33	16.88	11.17	11.32	16.97	25.02	11.78	8.70	13.15	13.29	10.21
22	32.76	19.26	17.09	9.71	11.97	21.09	23.67	13.11	8.23	10.89	12.48	11.88
23	32.08	18.74	17.11	8.74	11.73	22.24	22.55	14.80	7.59	9.71	11.65	11.43
24	31.49	18.33	16.86	8.32	11.51	20.88	21.90	16.40	8.86	8.94	11.09	10.11
25	30.87	17.64	16.62	7.76	11.27	19.47	20.93	15.72	10.87	9.42	10.87	9.73
26	30.29	17.07	15.64	7.25	11.17	19.01	19.91	14.99	10.61	9.74	10.06	9.04
27	29.91	17.91	14.50	6.65	11.33	18.91	19.86	14.27	10.28	8.89	10.09	8.34
28	29.84	20.24	13.78	6.45	11.10	19.84	19.68	12.89	10.20	8.74	9.96	7.37
29	30.25	20.41	13.54	7.28	---	21.47	18.45	13.03	9.06	8.61	11.92	7.44
30	30.73	20.08	13.33	8.09	---	22.79	17.60	14.49	8.67	8.09	16.03	8.10
31	31.11	---	12.82	8.84	---	24.05	---	17.13	---	8.38	19.16	---

07020500 MISSISSIPPI RIVER AT CHESTER, IL--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT: August 1980 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,510 mg/L, May 25, 1981; minimum daily mean, 13 mg/L, Mar. 18, 1981.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 3,170,000 tons, June 6, 1982; minimum daily, 3,580 tons, Mar. 18, 1981.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,380 mg/L, Apr. 13; minimum daily mean, 152 mg/L, Aug. 13.

SUSPENDED-SEDIMENT LOADS: Maximum daily 2,250,000 tons, Apr. 13; minimum daily, 41,000 tons, Aug. 13.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70339)	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)	SED. SUSP. FALL DIAM. % FINER THAN (70346)
			.002 MM	.004 MM	.008 MM	.016 MM	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM
OCT 17...	1050	632000	30	35	41	51	77	82	94	98	100
DEC 11...	--	369000	21	25	28	35	59	65	93	100	--
APR 17...	0910	429000	28	32	37	45	78	83	97	100	--
JUN 11...	1130	199000	47	55	64	75	93	94	99	100	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN (80164)	BED MAT. SIEVE DIAM. % FINER THAN (80165)	BED MAT. SIEVE DIAM. % FINER THAN (80166)	BED MAT. SIEVE DIAM. % FINER THAN (80167)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)	BED MAT. SIEVE DIAM. % FINER THAN (80172)
	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM	8.00 MM	16.0 MM
AUG 20...	0	0	13	50	82	93	98	99	100

07020500 MISSISSIPPI RIVER AT CHESTER, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	441000	1050	1250000	503000	724	982000	286000	479	370000
2	479000	1410	1830000	495000	684	914000	300000	454	368000
3	525000	1240	1750000	482000	576	750000	342000	507	468000
4	567000	1010	1540000	465000	402	505000	375000	757	766000
5	614000	777	1290000	445000	369	443000	372000	801	805000
6	648000	607	1060000	421000	464	527000	347000	738	692000
7	682000	438	806000	396000	468	500000	332000	817	731000
8	712000	377	724000	373000	452	456000	316000	960	818000
9	731000	421	831000	356000	427	410000	328000	1470	1300000
10	744000	370	744000	338000	401	367000	354000	856	819000
11	742000	391	784000	326000	361	318000	369000	526	525000
12	732000	432	854000	319000	335	288000	361000	736	718000
13	714000	465	896000	314000	317	269000	330000	892	794000
14	688000	282	524000	304000	295	242000	282000	937	714000
15	655000	220	390000	298000	277	223000	242000	900	587000
16	629000	377	641000	292000	259	204000	229000	916	567000
17	616000	442	736000	289000	246	192000	228000	764	470000
18	605000	418	683000	278000	258	194000	230000	682	424000
19	593000	386	618000	272000	575	422000	238000	911	584000
20	578000	357	556000	275000	415	309000	242000	1120	733000
21	559000	392	593000	282000	227	173000	241000	1360	883000
22	541000	367	536000	279000	249	187000	244000	1550	1020000
23	525000	353	501000	270000	356	260000	243000	1550	1020000
24	510000	348	479000	263000	474	336000	239000	1360	878000
25	496000	368	492000	251000	355	241000	235000	936	593000
26	483000	392	511000	245000	336	222000	219000	512	303000
27	474000	408	523000	266000	451	324000	203000	432	237000
28	474000	331	424000	298000	378	304000	195000	522	275000
29	484000	493	644000	300000	337	273000	192000	646	334000
30	494000	554	740000	292000	399	315000	188000	684	348000
31	502000	669	907000	---	---	---	181000	626	307000
TOTAL	18237000	---	24857000	9987000	---	11150000	8483000	---	19451000
JANUARY			FEBRUARY			MARCH			
1	179000	445	215000	140000	515	195000	173000	1990	930000
2	176000	247	117000	160000	503	218000	173000	1660	772000
3	173000	191	89000	179000	460	222000	183000	744	367000
4	170000	308	141000	185000	422	210000	245000	417	276000
5	167000	503	226000	185000	400	200000	279000	1360	1030000
6	164000	591	262000	176000	599	285000	260000	1350	945000
7	164000	412	183000	175000	887	419000	236000	1140	728000
8	164000	556	247000	177000	1010	480000	223000	912	550000
9	161000	771	335000	173000	991	464000	211000	679	387000
10	160000	770	332000	172000	746	345000	200000	996	539000
11	161000	779	339000	170000	469	215000	195000	1910	1010000
12	158000	828	353000	170000	343	157000	193000	2060	1070000
13	153000	573	236000	170000	306	141000	190000	2140	1090000
14	146000	407	161000	170000	310	142000	191000	1720	885000
15	150000	351	142000	166000	300	134000	193000	410	213000
16	157000	352	149000	158000	278	118000	199000	256	137000
17	166000	399	179000	154000	288	120000	200000	294	159000
18	168000	458	208000	151000	416	170000	199000	226	121000
19	170000	523	241000	148000	604	241000	208000	215	121000
20	171000	576	265000	154000	644	269000	216000	259	151000
21	159000	586	251000	164000	878	389000	256000	168	116000
22	142000	541	207000	171000	1370	633000	317000	337	289000
23	133000	443	160000	167000	1680	758000	330000	652	582000
24	128000	345	119000	164000	1380	611000	305000	1450	1200000
25	123000	280	93300	162000	1250	549000	281000	1180	899000
26	119000	269	86000	161000	1790	778000	276000	1330	990000
27	114000	247	76000	162000	2290	1000000	275000	999	743000
28	114000	257	79300	163000	2240	986000	296000	813	650000
29	121000	363	119000	---	---	---	324000	699	611000
30	129000	453	157000	---	---	---	351000	1000	948000
31	135000	532	194000	---	---	---	372000	1740	1750000
TOTAL	4695000	---	5961600	4647000	---	10449000	7550000	---	20259000

MISSISSIPPI RIVER MAIN STEM

07020500 MISSISSIPPI RIVER AT CHESTER, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	366000	1720	1700000	233000	459	290000	306000	1590	1310000
2	341000	1440	1320000	229000	490	303000	314000	2120	1800000
3	322000	1160	1010000	230000	476	296000	310000	1700	1420000
4	309000	1120	932000	226000	431	263000	296000	1240	994000
5	308000	1230	1030000	217000	407	239000	278000	1010	759000
6	309000	1320	1100000	221000	341	203000	260000	897	630000
7	305000	1230	1010000	250000	485	327000	243000	892	585000
8	298000	1910	1530000	265000	1370	981000	225000	798	485000
9	288000	1450	1130000	270000	1990	1450000	212000	771	441000
10	273000	1060	783000	257000	2320	1610000	201000	591	321000
11	268000	990	715000	235000	2230	1420000	200000	652	352000
12	259000	1560	1090000	211000	1050	599000	201000	531	288000
13	247000	3380	2250000	192000	488	253000	194000	400	210000
14	279000	2110	1590000	188000	419	213000	181000	339	166000
15	368000	1240	1240000	186000	387	194000	164000	296	131000
16	416000	1170	1310000	184000	364	181000	156000	278	117000
17	429000	1020	1190000	177000	342	164000	162000	270	118000
18	421000	1110	1260000	168000	320	145000	158000	391	167000
19	411000	1510	1670000	162000	289	126000	153000	409	169000
20	408000	1810	2000000	170000	257	118000	140000	365	138000
21	391000	1490	1570000	171000	236	109000	131000	331	117000
22	363000	1140	1120000	189000	274	140000	127000	331	113000
23	342000	933	862000	214000	380	220000	122000	304	100000
24	328000	1040	923000	231000	465	290000	139000	296	111000
25	309000	698	583000	222000	481	288000	156000	270	114000
26	294000	560	445000	211000	440	251000	154000	252	105000
27	294000	491	389000	198000	333	178000	150000	278	113000
28	285000	466	358000	181000	388	190000	147000	313	124000
29	264000	464	331000	188000	541	275000	136000	365	134000
30	249000	451	303000	210000	819	464000	131000	322	114000
31	---	---	---	255000	1130	781000	---	---	---
TOTAL	9744000	---	32744000	6541000	---	12561000	5747000	---	11746000
JULY			AUGUST			SEPTEMBER			
1	137000	252	93300	139000	217	81600	261000	1630	1150000
2	147000	235	93200	139000	217	81600	242000	1440	941000
3	149000	---	---	131000	209	73900	228000	988	608000
4	148000	---	---	132000	270	96100	211000	743	423000
5	135000	---	---	135000	217	79300	198000	598	320000
6	131000	---	---	133000	183	65600	188000	508	258000
7	133000	---	---	131000	174	61500	171000	417	193000
8	174000	---	---	127000	174	59700	145000	353	138000
9	162000	---	---	123000	187	62100	135000	280	102000
10	140000	---	---	117000	200	63200	140000	262	99100
11	153000	---	---	104000	217	61100	137000	226	83400
12	169000	---	---	102000	204	56300	129000	217	75500
13	198000	226	121000	99700	152	41000	130000	208	73100
14	227000	209	128000	106000	157	44800	124000	190	63600
15	234000	200	126000	130000	217	76300	119000	200	64300
16	236000	187	119000	144000	217	84600	114000	196	60300
17	234000	191	121000	149000	200	80500	114000	403	124000
18	229000	252	156000	161000	304	132000	117000	289	91200
19	221000	339	202000	183000	409	202000	123000	203	67300
20	207000	444	248000	193000	470	245000	131000	194	68500
21	180000	674	328000	186000	445	224000	154000	243	101000
22	155000	500	209000	176000	412	196000	169000	341	156000
23	141000	1170	447000	166000	378	170000	161000	411	179000
24	136000	931	342000	160000	340	147000	147000	549	218000
25	141000	870	331000	156000	275	116000	143000	492	190000
26	142000	826	317000	146000	240	94600	134000	390	141000
27	134000	805	291000	148000	250	99800	127000	347	119000
28	134000	1190	431000	148000	287	114000	120000	298	96600
29	131000	1450	514000	178000	472	227000	122000	329	108000
30	125000	1640	555000	241000	794	516000	126000	550	187000
31	132000	492	175000	277000	1180	880000	---	---	---
TOTAL	5115000	---	---	4660700	---	4532600	4560000	---	6498900

07021000 CASTOR RIVER AT ZALMA, MO

LOCATION.--Lat 37°08'48", long 90°04'32", in SE ¼ sec.29, T.29 N., R.9 E., Bollinger County, Hydrologic Unit 07140107, on downstream side of left bridge pier on State Highway 51 in Zalma, and 2.5 mi downstream from Perkins Creek.

DRAINAGE AREA.--423 mi².

PERIOD OF RECORD.--January 1920 to current year. Prior to October 1921 monthly discharge only published in WSP 1931.

REVISED RECORDS.--WSP 1147: 1922-23(M). WSP 1281: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 350.38 ft above National Geodetic Vertical Datum of 1929. Jan. 1920 to Oct. 1, 1925, at site 500 ft upstream at datum 49.82 ft lower, Oct. 1, 1925 to Nov. 12, 1930, at site 500 ft upstream at datum 0.18 ft higher. Nov. 13, 1930 to June 8, 1953, nonrecording gage at present site and datum. Since Dec. 18, 1949, auxiliary nonrecording gage, 6.0 mi downstream.

REMARKS.--Estimated daily discharges: Jan. 21-27. Records good except for Jan. 21-27, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--67 years, 516 ft³/s, 16.56 in/yr, 373,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,100 ft³/s, Dec. 4, 1982, gage height, 29.92 ft; minimum, 16 ft³/s, Aug. 31, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1915 reached a stage of 28.0 ft, present datum, from floodmarks by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 15	0430	*5,470	*19.12	No other peak greater than base discharge.			

Minimum discharge, 55 ft³/s, Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	127	164	158	184	3220	354	278	96	125	105	71
2	146	126	213	155	226	2260	333	261	94	223	99	67
3	301	125	326	153	232	1330	313	244	92	224	96	65
4	235	128	352	154	226	912	293	232	91	188	87	64
5	193	155	319	152	224	702	276	220	88	195	101	62
6	166	194	293	150	222	592	261	209	84	235	103	62
7	147	218	275	148	220	522	250	199	81	257	90	62
8	134	219	271	147	217	478	240	187	78	343	82	66
9	126	211	280	150	210	444	229	176	76	288	77	63
10	122	201	301	160	206	408	220	165	75	250	74	62
11	118	195	311	161	204	373	218	156	77	216	71	62
12	119	189	310	159	201	346	213	150	80	190	69	64
13	130	179	293	158	197	323	262	144	78	173	67	64
14	126	170	276	160	214	305	3660	138	76	159	66	62
15	121	166	263	166	249	289	4750	133	76	142	65	61
16	116	162	252	167	306	276	2530	128	105	129	64	70
17	112	158	241	171	408	266	1520	123	121	117	63	76
18	109	154	230	179	425	490	1090	121	105	108	68	82
19	105	150	220	190	428	1160	789	118	95	100	68	86
20	102	149	211	193	442	1040	630	115	120	93	66	81
21	101	145	204	185	437	782	563	112	134	88	63	76
22	100	141	197	170	424	642	1380	113	128	84	62	72
23	104	139	191	165	407	557	789	110	121	81	60	70
24	114	136	192	160	385	561	584	112	108	78	58	69
25	137	138	187	155	364	649	492	111	100	77	57	67
26	147	153	180	165	344	686	430	119	111	76	56	66
27	145	160	174	181	364	581	385	126	111	74	58	65
28	141	159	170	183	1090	508	346	114	97	72	69	64
29	137	156	166	181	---	454	318	106	87	72	79	70
30	133	153	162	179	---	424	295	104	83	76	77	73
31	130	---	159	175	---	387	---	98	---	83	74	---
TOTAL	4218	4856	7383	5130	9056	21967	24013	4722	2868	4616	2294	2044
MEAN	136	162	238	165	323	709	800	152	95.6	149	74.0	68.1
MAX	301	219	352	193	1090	3220	4750	278	134	343	105	86
MIN	100	125	159	147	184	266	213	98	75	72	56	61

CAL YR 1986 TOTAL 140266 MEAN 384 MAX 5510 MIN 74
WTR YR 1987 TOTAL 93167 MEAN 255 MAX 4750 MIN 56

07022000 MISSISSIPPI RIVER AT THEBES, IL

LOCATION.--Lat 37°13'00", long 89°27'50", in NW ¼ sec.17, T.15 S., R.3 W., Alexander County, Hydrologic Unit 07140105, near center span on downstream side of railroad bridge at Thebes, 5.0 mi downstream from Headwater Diversion Channel, and at mile 43.7 above Ohio River.

DRAINAGE AREA.--713,200 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: Oct. 1932 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to April 1941, published as "at Cape Girardeau, Mo.".

Gage heights: March 1933 to February 1938 and October 1939 to current year in reports of Geological Survey (prior to April 1941, published as "at Cape Girardeau, Mo."). Since November 1878, under name of "at Grays Point" in files of St. Louis District office of Corps of Engineers. January 1879 to May of 1896, published as "at Grays Point" and since May 1896, published as "at Cape Girardeau" in reports of Mississippi River Commission. February 1891 to February 1894 and since 1904, published as "at Cape Girardeau" in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: 1844(M). WDR MO-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 300.00 ft above National Geodetic Vertical Datum of 1929. Mar. 17, 1933 to Dec. 21 1934, nonrecording gage and Dec. 22, 1934 to Apr. 4, 1941, water-stage recorder, at site 8.2 mi upstream at datum 4.65 ft higher. Apr. 5, 1941 to Sept. 30, 1941, nonrecording gage at present site and datum and Oct. 1, 1941 to Oct. 11, 1943, at datum 0.07 ft higher. Prior to Apr. 5, 1941, various auxiliary gages used. Since Oct. 1, 1943, former gage at Cape Girardeau used as auxiliary gage.

REMARKS.--Estimated daily discharges. Oct. 1 to Feb. 4. Water-discharge records good except for estimated daily discharges, which are fair. Natural flow of stream affected by many reservoirs and navigation dams in upper Mississippi River basin and by many reservoirs and diversions for irrigation in Missouri River basin. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--55 years, 198,600 ft³/s, 143,900,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 893,000 ft³/s, May 27, 1943, elevation, 340.33 ft, present datum; maximum elevation, 343.43 ft, Apr. 30, 1973; minimum discharge, 23,400 ft³/s, Dec. 13, 1937, at site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 4, 1844, reached an elevation of 345.14 ft, present datum, at Grays Point, from floodmarks, discharge, 1,375,000 ft³/s, computed by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 762,000 ft³/s, Oct. 14, gage height, 41.52 ft; minimum discharge, 100,000 ft³/s, Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	443000	525000	315000	187000	149000	200000	372000	242000	279000	138000	137000	269000
2	466000	520000	319000	186000	157000	198000	362000	232000	311000	146000	142000	251000
3	503000	507000	339000	181000	178000	192000	345000	234000	311000	149000	143000	235000
4	550000	488000	375000	177000	190000	215000	332000	231000	302000	152000	140000	220000
5	604000	467000	391000	174000	195000	274000	327000	229000	287000	147000	143000	203000
6	655000	441000	372000	169000	193000	286000	327000	219000	272000	140000	144000	191000
7	692000	413000	348000	167000	186000	266000	324000	234000	257000	136000	141000	180000
8	717000	391000	330000	168000	187000	249000	316000	259000	239000	154000	138000	164000
9	739000	371000	322000	165000	186000	237000	307000	270000	221000	179000	132000	144000
10	748000	357000	337000	163000	184000	222000	293000	265000	209000	165000	127000	136000
11	746000	347000	355000	162000	181000	210000	282000	249000	198000	155000	118000	141000
12	745000	339000	363000	162000	180000	201000	277000	226000	199000	167000	107000	137000
13	735000	332000	357000	159000	179000	197000	269000	203000	196000	183000	104000	133000
14	713000	326000	330000	153000	180000	192000	278000	189000	189000	216000	101000	133000
15	685000	318000	292000	151000	179000	193000	336000	186000	179000	238000	110000	128000
16	653000	311000	267000	156000	175000	197000	397000	184000	165000	242000	131000	124000
17	626000	304000	259000	164000	169000	202000	432000	181000	163000	241000	144000	121000
18	604000	296000	259000	171000	166000	205000	442000	175000	165000	236000	150000	121000
19	590000	282000	260000	174000	164000	208000	435000	167000	160000	229000	164000	125000
20	573000	276000	262000	177000	163000	216000	428000	166000	154000	217000	181000	132000
21	555000	278000	258000	177000	170000	232000	418000	171000	141000	197000	187000	144000
22	536000	279000	254000	166000	179000	286000	389000	175000	132000	173000	180000	166000
23	516000	273000	250000	154000	182000	322000	363000	193000	127000	155000	172000	175000
24	498000	266000	245000	148000	180000	317000	347000	221000	126000	142000	164000	166000
25	484000	260000	239000	143000	178000	297000	329000	229000	147000	139000	159000	157000
26	468000	252000	228000	139000	177000	286000	306000	218000	157000	143000	154000	151000
27	457000	256000	213000	133000	179000	284000	293000	209000	155000	141000	147000	143000
28	453000	287000	202000	127000	186000	291000	284000	191000	152000	135000	148000	136000
29	494000	309000	198000	127000	---	316000	267000	182000	146000	137000	154000	129000
30	510000	313000	196000	135000	---	339000	253000	194000	138000	132000	189000	131000
31	520000	---	192000	143000	---	361000	---	225000	---	129000	255000	---
TOTAL	18278000	10384000	8927000	4958000	4972000	7691000	10130000	6549600	5877000	5253000	4606000	4786000
MEAN	589600	346100	288000	159900	177600	248100	337700	211300	195900	169500	148600	159500
MAX	748000	525000	391000	187000	195000	361000	442000	270000	311000	242000	255000	269000
MIN	443000	252000	192000	127000	149000	192000	253000	166000	126000	129000	101000	121000
CAL YR	1986	TOTAL	112903500	MEAN	309300	MAX	748000	MIN	126000			
WTR YR	1987	TOTAL	92410300	MEAN	253200	MAX	748000	MIN	101000			

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
30.23	33.35	25.28	17.81	13.96	18.79	27.47	21.87	22.87	13.44	13.41	22.97
30.87	33.22	25.49	17.69	14.40	19.29	27.07	21.10	25.14	14.17	13.87	21.85
32.31	33.02	26.21	17.27	16.10	19.32	26.20	20.97	25.20	14.56	13.95	20.84
33.82	32.45	28.17	16.72	17.30	20.49	25.47	20.82	24.74	14.82	13.56	20.05
35.57	31.55	29.11	16.67	17.69	24.41	25.10	20.53	24.01	14.60	13.78	18.94
37.34	30.91	28.63	16.23	17.70	25.44	25.37	19.84	23.03	13.76	---	18.16
38.45	29.80	27.52	16.13	17.14	24.19	25.33	20.44	22.24	13.51	13.80	17.35
39.50	28.91	26.75	16.10	17.09	22.92	25.04	22.06	21.25	14.27	13.56	16.13
40.47	27.98	26.32	16.02	17.25	22.14	24.59	22.72	19.92	17.30	13.07	14.31
40.56	27.34	27.27	15.76	16.94	21.15	24.02	22.74	19.34	16.16	12.71	13.46
41.09	26.95	28.19	15.70	16.71	20.27	23.41	21.85	18.49	14.92	11.97	13.89
41.08	26.50	28.68	15.71	16.61	19.47	23.19	20.45	18.60	15.86	10.53	13.50
40.98	26.26	28.28	15.48	16.58	19.18	22.85	19.03	18.48	17.01	10.30	12.91
40.41	25.99	26.54	15.03	16.66	18.67	22.91	17.98	18.08	19.25	9.95	12.90
39.68	25.57	24.27	14.68	16.46	18.52	25.98	17.71	17.20	20.86	10.50	12.36
39.06	25.18	22.54	14.96	16.37	18.65	29.15	17.45	16.12	21.17	12.86	11.87
38.13	24.74	22.19	15.50	15.76	18.91	30.83	17.34	15.58	21.18	14.09	11.50
37.72	24.50	22.10	16.10	15.58	19.18	31.28	16.80	15.90	20.88	14.55	11.41
37.28	23.59	22.15	16.26	15.37	19.23	30.95	16.18	15.55	20.46	15.58	11.69
36.89	23.21	22.32	16.40	15.12	19.67	30.81	15.95	15.01	19.86	17.08	12.32
36.22	23.14	22.10	16.32	15.75	20.24	30.44	16.48	14.05	18.73	17.80	13.11
35.42	23.45	21.83	15.56	16.45	23.16	29.55	16.56	13.22	16.85	17.31	14.98
34.78	23.16	21.71	14.53	16.87	25.61	28.42	17.84	12.85	15.25	16.53	16.04
34.28	22.58	21.47	13.89	16.65	25.59	27.52	19.72	12.45	14.07	15.90	15.37
33.63	22.26	21.03	13.49	16.54	24.33	26.81	20.52	14.20	13.67	15.48	14.41
33.08	21.86	20.55	---	16.44	23.49	25.52	19.89	15.25	14.10	15.17	14.01
32.50	21.78	19.57	---	16.58	23.29	24.79	19.30	15.14	14.08	14.39	13.36
32.44	23.58	18.74	---	17.06	23.39	24.46	18.26	14.83	13.43	14.54	12.70
32.46	24.90	18.46	12.05	---	24.66	23.64	17.29	14.55	13.63	14.61	12.03
32.71	25.26	18.43	12.70	---	25.69	22.71	17.99	13.68	13.23	16.98	12.11
32.93	---	18.28	13.44	---	26.89	---	19.63	---	12.88	21.58	---

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURE: October 1974 to September 1981.

SUSPENDED-SEDIMENT: October 1980 to current year.

REMARKS.--Discontinued as National stream-quality accounting network station September 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 705 microsiemens, Aug. 5-7, 1980; minimum daily, 272 microsiemens, Apr. 6, 1979.

WATER TEMPERATURE: Maximum daily, 31.5°C, July 10, 11, 1975, July 17, 1977; minimum daily, 0.0°C on several days during winter periods.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,890 mg/L, Dec. 22, 1986; minimum daily mean, 13 mg/L, Jan. 28, 1981.

SUSPENDED-SEDIMENT LOADS: Maximum daily 6,280,000 tons, Mar. 1, 1985; minimum daily, 2,530 tons, Jan. 28, 1981.

EXTREMES FOR CURRENT YEAR.--

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,320 mg/L, June 3; minimum daily mean 119 mg/L, Jan. 31.

SUSPENDED-SEDIMENT LOADS: Maximum daily, 2,410,000 tons, Oct. 6; minimum daily, 45,800 tons, Jan. 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	COLI- FORM, FECAL, 0.7 UM-MF (COLS. / 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. / PER 100 ML) (31673)
OCT											
29...	1420	494000	445	8.00	14.0	46	9.6	94	26	2800	620
NOV											
13...	1200	332000	508	8.30	8.0	37	13.6	113	16	K3500	3800
DEC											
10...	1500	340000	501	8.30	4.5	32	10.3	80	26	1200	370
JAN											
21...	1330	178000	601	8.30	2.5	4.0	14.5	107	17	K650	K950
FEB											
19...	1245	163000	621	8.40	4.0	5.4	10.6	81	15	250	610
MAR											
16...	1000	196000	518	8.30	10.5	4.3	8.8	80	17	430	310
APR											
16...	1425	401000	515	8.00	12.5	45	9.3	89	48	1200	6200
MAY											
28...	1330	189000	575	8.30	26.5	27	5.6	70	22	3400	200
JUN											
10...	1450	208000	530	8.20	25.5	160	6.9	85	41	2500	1200
JUL											
23...	1500	153000	414	8.30	28.5	210	5.6	73	49	6000	660
AUG											
04...	1540	136000	551	8.30	31.5	19	5.5	76	22	K1300	84
SEP											
02...	0850	253000	465	8.20	23.0	66	5.4	64	52	8000	4800

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FIELD MG/L AS CACO3 (00904)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA) (00929)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K) (00937)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WATER DISSOLV FLD. AS CACO3 (MG/L) (39086)
OCT											
29...	200	43	54	51	18	17	18	18	3.9	3.6	155
NOV											
13...	220	48	57	56	20	19	21	21	3.5	3.2	170
DEC											
10...	230	52	59	58	20	20	22	22	3.5	3.3	175
JAN											
21...	260	100	66	65	23	23	30	30	3.1	3.0	156
FEB											
19...	270	59	68	67	25	25	31	31	3.0	2.8	212
MAR											
16...	220	54	57	55	20	20	26	26	3.9	3.7	166
APR											
16...	220	60	65	56	22	20	23	23	5.0	3.9	163
MAY											
28...	230	54	59	55	23	22	35	35	4.4	4.0	174
JUN											
10...	220	55	62	56	24	20	26	26	6.7	4.2	168
JUL											
23...	180	37	52	44	21	16	24	23	6.7	4.1	139
AUG											
04...	240	59	59	57	24	23	28	30	4.7	4.2	178
SEP											
02...	180	39	58	46	22	16	22	22	6.7	3.6	142

K--Results based on colony count outside the acceptable range (non-ideal colony count).

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, TOTAL (MG/L AS F) (00951)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L) (00535)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)
OCT 29...	60	15	0.3	186	22	2.10	<0.100	0.90	0.290	0.070	2200
NOV 13...	67	15	0.3	82	14	2.30	<0.100	0.80	0.240	0.130	1500
DEC 10...	71	17	0.2	388	44	2.60	<0.100	1.2	0.270	0.080	3100
JAN 21...	87	24	0.3	34	4	2.10	<0.100	0.90	0.130	0.070	490
FEB 19...	87	31	0.3	75	10	2.50	0.140	1.0	0.130	0.060	850
MAR 16...	69	22	0.3	70	8	1.70	<0.100	1.4	0.090	0.020	830
APR 16...	77	18	0.2	144	20	2.30	<0.100	3.0	0.450	0.070	6900
MAY 28...	95	29	0.3	145	17	1.70	<0.100	1.6	0.200	--	3100
JUN 10...	70	25	0.3	620	70	3.00	<0.100	2.6	0.380	0.120	15000
JUL 23...	64	20	0.3	16	6	1.40	<0.100	2.2	0.740	0.120	17000
AUG 04...	89	25	0.4	82	8	1.40	0.150	0.60	0.280	0.140	2600
SEP 02...	85	20	0.3	866	58	1.50	<0.100	1.2	1.00	0.170	22000

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
OCT 29...	<50	6	100	88	<0.5	<0.5	<50	<50	880	240
NOV 13...	<50	3	100	80	<0.5	<0.5	<50	<50	450	160
DEC 10...	100	2	100	74	<1.0	<0.5	<50	<50	210	17
JAN 21...	<50	2	100	77	<0.5	<0.5	<50	<50	<3	<3
FEB 19...	<50	2	90	71	<0.5	<0.5	<50	<50	19	<3
MAR 16...	<50	2	80	68	<0.5	<0.5	<50	<50	<3	<3
APR 16...	<50	6	200	84	<1.0	<0.5	<50	<50	<3	<3
MAY 28...	<50	4	200	110	<0.5	<0.5	<50	<50	<3	<3
JUN 10...	<50	4	300	120	<2.0	<2	80	80	<3	<3
JUL 23...	<50	7	300	99	<1.0	<0.5	<50	<50	<3	<3
AUG 04...	<50	5	100	110	<0.5	<0.5	<50	<50	<3	<3
SEP 02...	<50	7	400	98	<2.0	<0.5	90	80	20	6

MISSISSIPPI RIVER MAIN STEM

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT 29...	<5	<5	<5	<5	88	18	7100	<50	<100	<50
NOV 13...	5	<5	<5	<5	100	32	3500	<50	<50	<50
DEC 10...	6	<5	<5	<5	79	20	5000	77	<100	<50
JAN 21...	<5	<5	<5	<5	<5	6	1100	<50	<50	<50
FEB 19...	5	<5	<5	<5	15	5	1800	<50	<100	<50
MAR 16...	<5	<5	<5	<5	10	<5	1300	<50	<50	<50
APR 16...	12	<5	9	<5	17	6	10000	<50	<100	<50
MAY 28...	9	8	<5	<5	150	10	5000	<50	120	<50
JUN 10...	15	<5	<10	<5	19	<5	17000	<50	<100	<100
JUL 23...	20	<5	6	<5	28	<5	21000	<50	100	<50
AUG 04...	7	<5	<5	<5	16	8	3000	<50	<50	<50
SEP 02...	29	<5	20	<5	110	8	31000	<50	<100	<50

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR) (01082)	STRONTIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANADIUM, TOTAL (UG/L AS V) (01087)
OCT 29...	250	36	<0.05	13	13	10	<3	200	190	<5
NOV 13...	150	9	<0.05	10	<5	<3	<3	220	220	6
DEC 10...	200	10	<0.05	5	<5	<3	<3	220	220	9
JAN 21...	130	55	<0.05	<5	<5	<3	<3	270	260	<5
FEB 19...	95	7	<0.05	<5	<5	<3	<3	250	250	<5
MAR 16...	99	<5	<0.05	<5	<5	<3	<3	240	230	<5
APR 16...	570	<5	<0.05	22	<5	<3	<3	270	240	19
MAY 28...	230	7	<0.05	17	8	<3	<3	330	310	10
JUN 10...	550	<5	<0.05	13	<5	<3	<3	320	280	31
JUL 23...	810	26	<0.05	52	<5	<3	<3	270	220	38
AUG 04...	180	23	--	8	<5	<3	<3	290	280	10
SEP 02...	1300	19	<0.05	37	<5	<3	<3	310	230	55

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 29...	<5	<100	<50	--	<0.005	<5	1	--	--	--
NOV 13...	<5	<100	<50	6.2	<0.005	<5	<1	--	--	--
DEC 10...	<5	<100	<100	7.8	<0.005	<5	1	214	196000	92
JAN 21...	<5	<50	<50	6.4	<0.005	<5	2	--	--	--
FEB 19...	<5	<50	<50	6.4	<0.005	<5	2	--	--	--
MAR 16...	<5	120	67	5.6	--	5	<1	--	--	--
APR 16...	<5	150	<100	9.7	<0.005	5	1	--	--	--
MAY 28...	6	100	<100	7.5	--	<5	1	--	--	--
JUN 10...	<5	<100	<50	11	<0.005	<5	<1	--	--	--
JUL 23...	<5	--	160	14	<0.005	<5	1	688	284000	98
AUG 04...	<5	<50	<100	6.1	<0.005	<5	1	67	24600	78
SEP 02...	<5	100	<100	15	<0.005	<5	1	1360	929000	89

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR 16...	1400	403000	23	26	31	40	78	81	96	100	100
JUN 10...	1410	208000	49	58	66	77	93	95	98	100	--
SEP 02...	0730	252000	34	45	54	67	91	92	98	100	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
SEP 02...	0	0	17	61	81	87	91	93	95	100

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	443000	1190	1420000	525000	518	735000	315000	413	350000
2	466000	1290	1620000	520000	487	684000	319000	451	388000
3	503000	1230	1670000	507000	514	703000	339000	381	348000
4	550000	1160	1720000	488000	593	782000	375000	488	495000
5	604000	1100	1790000	467000	367	463000	391000	691	729000
6	655000	1360	2410000	441000	483	576000	372000	778	781000
7	692000	639	1190000	413000	676	754000	348000	922	867000
8	717000	785	1520000	391000	694	733000	330000	1110	992000
9	739000	768	1530000	371000	471	472000	322000	553	480000
10	748000	614	1240000	357000	360	348000	337000	405	368000
11	746000	499	1000000	347000	---	---	355000	570	546000
12	745000	494	993000	339000	---	---	363000	786	771000
13	735000	346	687000	332000	---	---	357000	729	702000
14	713000	334	643000	326000	---	---	330000	558	498000
15	685000	243	450000	318000	---	---	292000	540	426000
16	653000	305	538000	311000	---	---	267000	503	363000
17	626000	374	632000	304000	---	---	259000	495	347000
18	604000	644	1050000	296000	---	---	259000	426	298000
19	590000	648	1030000	282000	---	---	260000	386	271000
20	573000	511	790000	276000	---	---	262000	358	253000
21	555000	425	637000	278000	---	---	258000	361	251000
22	536000	414	599000	279000	---	---	254000	365	250000
23	516000	425	593000	273000	---	---	250000	289	196000
24	498000	378	509000	266000	---	---	245000	274	182000
25	484000	353	462000	260000	266	186000	239000	283	183000
26	468000	419	529000	252000	438	299000	228000	255	157000
27	457000	518	638000	256000	472	326000	213000	315	181000
28	453000	350	428000	287000	410	318000	202000	266	145000
29	494000	403	537000	309000	472	393000	198000	311	166000
30	510000	447	615000	313000	628	532000	196000	235	125000
31	520000	590	829000	---	---	---	192000	335	174000
TOTAL	18278000	---	30299000	10384000	---	---	8927000	---	12283000
JANUARY			FEBRUARY			MARCH			
1	187000	262	133000	149000	190	76400	200000	447	242000
2	186000	271	136000	157000	162	68700	198000	242	130000
3	181000	292	142000	178000	246	118000	192000	203	105000
4	177000	198	94700	190000	335	172000	215000	235	137000
5	174000	145	67800	195000	355	187000	274000	498	369000
6	169000	133	60800	193000	323	169000	286000	845	652000
7	167000	133	60100	186000	268	134000	266000	877	631000
8	168000	178	80700	187000	240	121000	249000	699	469000
9	165000	223	99700	186000	262	132000	237000	632	405000
10	163000	160	70200	184000	245	121000	222000	490	294000
11	162000	143	62800	181000	245	120000	210000	436	248000
12	162000	163	71500	180000	221	107000	201000	321	175000
13	159000	194	83000	179000	178	86200	197000	320	170000
14	153000	144	59600	180000	190	92400	192000	318	165000
15	151000	154	62700	179000	222	107000	193000	308	160000
16	156000	186	77900	175000	317	150000	197000	236	126000
17	164000	180	79600	169000	300	137000	202000	313	171000
18	171000	211	97500	166000	224	101000	205000	310	172000
19	174000	245	115000	164000	235	104000	208000	325	183000
20	177000	210	100000	163000	189	83000	216000	312	182000
21	177000	168	80300	170000	184	84500	232000	400	250000
22	166000	179	80700	179000	190	91400	286000	934	721000
23	154000	191	79400	182000	246	121000	322000	1800	1570000
24	148000	179	71600	180000	201	97700	317000	1640	1400000
25	143000	168	64900	178000	202	96800	297000	1660	1340000
26	139000	157	58900	177000	202	96700	286000	1030	792000
27	133000	151	54300	179000	159	77100	284000	823	631000
28	127000	157	53700	186000	309	155000	291000	520	409000
29	127000	140	48000	---	---	---	316000	904	772000
30	135000	135	49300	---	---	---	339000	1160	1060000
31	143000	119	45800	---	---	---	361000	1550	1510000
TOTAL	4958000	---	2441500	4972000	---	3206900	7691000	---	15641000

07022000 MISSISSIPPI RIVER AT THEBES, IL--Continued

SUSPENDED SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	372000	2060	2070000	242000	1480	965000	279000	775	583000
2	362000	1520	1480000	232000	1020	638000	311000	1790	1510000
3	345000	1320	1230000	234000	791	500000	311000	2320	1950000
4	332000	1230	1100000	231000	414	258000	302000	1690	1370000
5	327000	1080	951000	229000	396	245000	287000	1250	972000
6	327000	941	832000	219000	372	220000	272000	1090	796000
7	324000	818	716000	234000	427	270000	257000	970	673000
8	316000	801	685000	259000	711	497000	239000	655	423000
9	307000	785	649000	270000	1390	1020000	221000	652	390000
10	293000	688	545000	265000	1610	1160000	209000	675	380000
11	282000	662	504000	249000	1320	886000	198000	659	352000
12	277000	758	568000	226000	995	608000	199000	788	424000
13	269000	598	434000	203000	628	344000	196000	673	357000
14	278000	628	472000	189000	478	244000	189000	647	331000
15	336000	911	826000	186000	432	218000	179000	403	195000
16	397000	1260	1350000	184000	393	195000	165000	368	164000
17	432000	1420	1660000	181000	283	138000	163000	473	208000
18	442000	1420	1700000	175000	358	169000	165000	620	276000
19	435000	1330	1560000	167000	378	170000	160000	416	180000
20	428000	1330	1540000	166000	377	169000	154000	430	179000
21	418000	1560	1760000	171000	375	173000	141000	460	175000
22	389000	554	582000	175000	374	177000	132000	582	208000
23	363000	558	547000	193000	373	195000	127000	434	149000
24	347000	580	543000	221000	372	222000	126000	335	114000
25	329000	782	695000	229000	381	235000	147000	315	125000
26	306000	710	586000	218000	380	224000	157000	305	129000
27	293000	916	725000	209000	378	213000	155000	285	119000
28	284000	740	567000	191000	387	200000	152000	363	149000
29	267000	786	567000	182000	428	210000	146000	570	225000
30	253000	633	433000	194000	494	259000	138000	746	278000
31	---	---	---	225000	560	339000	---	---	---
TOTAL	10130000	---	27877000	6549000	---	11361000	5877000	---	13384000
JULY			AUGUST			SEPTEMBER			
1	138000	469	175000	137000	349	129000	269000	1160	840000
2	146000	371	146000	142000	354	136000	251000	1440	974000
3	149000	341	137000	143000	283	109000	235000	1170	742000
4	152000	351	144000	140000	207	78300	220000	1010	599000
5	147000	263	104000	143000	254	98000	203000	814	446000
6	140000	282	107000	144000	272	106000	191000	519	267000
7	136000	437	160000	141000	234	89300	180000	546	266000
8	154000	572	238000	138000	187	69800	164000	437	193000
9	179000	504	244000	132000	168	60000	144000	378	147000
10	165000	373	166000	127000	234	80100	136000	365	134000
11	155000	334	140000	118000	271	86300	141000	291	111000
12	167000	343	155000	107000	261	75400	137000	273	101000
13	183000	735	363000	104000	214	60200	133000	279	100000
14	216000	1210	708000	101000	186	50700	133000	256	92000
15	238000	1250	804000	110000	218	64900	128000	257	88800
16	242000	1270	829000	131000	251	88600	124000	306	102000
17	241000	1660	1080000	144000	213	82900	121000	264	86100
18	236000	1670	1060000	150000	264	107000	121000	260	84800
19	229000	1400	865000	164000	333	147000	125000	275	92800
20	217000	1210	707000	181000	490	239000	132000	358	128000
21	197000	1130	600000	187000	480	242000	144000	306	119000
22	173000	984	459000	180000	567	276000	166000	360	162000
23	155000	916	383000	172000	460	214000	175000	420	199000
24	142000	981	376000	164000	377	167000	166000	446	200000
25	139000	581	218000	159000	386	166000	157000	590	250000
26	143000	632	244000	154000	330	137000	151000	582	237000
27	141000	389	148000	147000	321	127000	143000	401	155000
28	135000	337	123000	148000	339	135000	136000	323	119000
29	137000	336	124000	154000	293	122000	129000	319	111000
30	132000	308	110000	189000	320	163000	131000	345	122000
31	129000	303	105000	255000	588	405000	---	---	---
TOTAL	5253000	---	11222000	4606000	---	4111500	4786000	---	7268500

07034000 ST. FRANCIS RIVER NEAR ROSELLE, MO

LOCATION.--Lat 37°35'45", long 90°29'50", in NE ¼ sec.7, T.33 N., R.5 E., Madison County, Hydrologic Unit 08020202, on State Highway 72, 0.25 mi above Stouts Creek and 1.5 mi east of Roselle.

DRAINAGE AREA.--234 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 684.99 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: June 30 to July 3. Records fair except for period of no gage-height record, which are poor. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,000 ft³/s, Nov. 19, 1985, gage height 20.40 ft, from rating curve extended above 23,000 ft³/s; minimum, 0.76 ft³/s, Aug. 22, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,070 ft³/s, Oct. 1, gage height, 7.34 ft; minimum, 1.8 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1270	43	1140	62	112	1810	159	56	20	80	62	6.3
2	855	47	1310	61	164	749	150	53	25	45	50	5.2
3	400	45	590	59	174	487	130	48	27	20	40	4.4
4	216	46	364	58	150	355	120	46	21	12	34	3.9
5	147	188	259	57	134	293	111	44	18	11	29	3.5
6	100	382	206	58	122	254	109	42	17	30	25	3.3
7	73	234	185	58	116	218	107	40	15	45	21	3.1
8	58	240	201	56	111	196	103	36	14	111	19	3.0
9	50	214	335	57	101	174	97	34	13	45	17	3.0
10	44	158	355	61	94	153	95	32	12	18	15	3.0
11	39	138	264	65	93	138	154	29	14	13	14	3.5
12	39	124	220	63	94	130	187	28	13	10	13	3.9
13	54	106	182	70	90	117	181	26	12	8.0	12	4.4
14	49	90	159	153	108	109	820	25	11	7.0	22	5.1
15	44	84	148	247	167	105	651	23	12	6.0	24	6.0
16	39	82	140	219	304	101	528	21	14	5.2	14	7.0
17	35	79	132	182	286	97	411	20	73	4.6	11	6.0
18	32	75	122	197	245	1080	310	18	53	4.2	8.6	6.0
19	30	70	111	264	342	1110	245	17	28	3.8	7.4	5.7
20	31	66	103	250	365	595	205	16	18	3.5	7.0	5.7
21	32	65	96	207	352	395	172	19	16	3.1	6.7	5.4
22	35	63	90	196	322	315	148	24	14	3.0	6.0	4.8
23	47	61	85	166	282	273	128	23	11	2.9	5.7	4.4
24	54	58	84	135	234	280	114	25	9.2	3.0	5.1	3.5
25	82	58	82	126	206	417	103	26	7.9	3.2	4.8	3.0
26	96	76	76	106	185	311	92	23	7.6	3.4	4.4	2.5
27	80	99	73	99	251	256	85	21	7.7	4.6	4.4	2.2
28	66	89	69	98	1580	221	76	20	8.5	9.8	6.0	1.9
29	57	83	67	102	---	196	69	18	12	8.9	32	2.7
30	49	78	66	115	---	190	63	20	30	10	14	2.2
31	45	---	65	114	---	181	---	20	---	56	9.0	---
TOTAL	4248	3241	7379	3761	6784	11306	5923	893	553.9	590.2	543.1	124.6
MEAN	137	108	238	121	242	365	197	28.8	18.5	19.0	17.5	4.15
MAX	1270	382	1310	264	1580	1810	820	56	73	111	62	7.0
MIN	30	43	65	56	90	97	63	16	7.6	2.9	4.4	1.9

CAL YR 1986 TOTAL 73623.2 MEAN 202 MAX 10800 MIN 7.2

WTR YR 1987 TOTAL 45346.6 MEAN 124 MAX 1810 MIN 1.9

07034000 ST. FRANCIS RIVER NEAR ROSELLE, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.75	2.67	3.26	2.60	2.85	6.38	---	2.62	2.46	2.55	3.05	2.43
2	4.84	2.71	5.63	2.59	3.03	4.62	---	2.60	2.51	2.56	2.74	2.39
3	4.03	2.70	4.33	2.58	3.13	4.01	---	2.57	2.59	2.56	2.61	2.36
4	3.47	2.68	3.76	2.57	3.03	3.67	---	2.55	2.51	2.55	2.54	2.33
5	3.22	2.92	3.45	2.57	2.97	3.50	---	2.53	2.47	2.52	2.49	2.31
6	3.01	3.93	3.29	2.57	2.92	3.39	---	2.52	2.48	2.55	2.54	2.34
7	2.85	3.45	3.20	2.58	2.88	3.26	---	2.51	2.45	2.87	2.49	2.40
8	2.74	3.40	3.22	2.56	2.87	3.19	---	2.47	2.43	3.20	2.44	2.45
9	2.68	3.38	3.52	2.55	2.82	3.13	---	2.45	2.42	2.98	2.39	2.43
10	2.63	3.18	3.74	2.59	2.78	3.05	---	2.43	2.40	2.68	2.36	2.43
11	2.58	3.09	3.45	2.62	2.76	2.98	---	2.42	2.44	2.57	2.53	2.50
12	2.57	3.04	3.31	2.61	2.77	---	---	2.42	2.48	2.50	2.45	2.49
13	2.74	2.95	3.19	2.61	2.75	---	---	2.39	2.49	2.44	2.39	2.51
14	2.67	2.85	3.09	2.93	2.80	---	---	2.39	2.50	2.40	2.52	2.56
15	2.64	2.81	3.05	3.37	3.03	---	---	2.40	2.46	2.37	2.69	2.59
16	2.59	2.80	3.01	3.31	3.52	---	---	2.36	2.48	2.41	2.51	2.59
17	2.55	2.79	2.98	3.17	3.50	---	3.81	2.36	2.54	2.36	2.42	2.59
18	2.52	2.75	2.94	3.15	3.34	---	3.55	2.35	2.96	2.33	2.37	2.58
19	2.51	2.72	2.89	3.41	3.62	---	3.37	2.36	2.73	2.29	2.34	2.58
20	2.50	2.70	2.85	3.40	3.66	---	3.24	2.36	2.61	2.26	2.32	2.58
21	2.52	2.68	2.81	3.24	3.65	---	3.13	2.37	2.57	2.23	2.31	2.57
22	2.56	2.67	2.78	3.23	3.57	---	3.05	2.44	2.57	2.22	2.30	2.57
23	2.71	2.65	2.76	3.09	3.47	---	2.97	2.43	2.49	2.21	2.30	2.54
24	2.75	2.62	2.75	2.95	3.33	---	2.92	2.44	2.45	2.22	2.26	2.46
25	2.88	2.60	2.73	2.95	3.23	---	2.86	2.49	2.42	2.23	2.27	2.44
26	3.01	2.70	2.70	2.82	3.16	---	2.82	2.46	2.42	2.23	2.26	2.45
27	2.95	2.89	2.68	2.82	3.28	---	2.78	2.45	2.42	2.24	2.33	2.43
28	2.85	2.82	2.65	2.79	4.60	---	2.73	2.45	2.44	2.42	2.38	---
29	2.79	2.78	2.63	2.80	---	---	2.69	2.43	2.56	2.40	2.90	---
30	2.73	2.75	2.63	2.87	---	---	2.66	2.47	2.55	2.40	2.63	2.43
31	2.70	---	2.62	2.89	---	---	---	2.47	---	2.49	2.49	---

07035000 LITTLE ST. FRANCIS RIVER AT FREDERICKTOWN, MO

LOCATION.--Lat 37°33'33", long 90°18'46", in NW ¼ sec.7, T.33 N., R.7 E., Madison County, Hydrologic Unit 08020202, on right bank at downstream side of State Highway 72 bridge, 0.5 mi downstream from Village Creek, 1.3 mi below City Lake, and 1.0 mi west of courthouse in Fredericktown.

DRAINAGE AREA.--90.5 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 679.23 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, May 16, 1986, gage height, 22.22 ft, from rating curve extended above 8,400 ft³/s; minimum, 0.66 ft³/s, Oct. 8, 11, 16, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft³/s, Apr. 13, gage height, 7.90 ft; minimum, 0.95 ft³/s, Aug. 23 and 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	15	325	19	35	549	63	25	5.5	49	10	1.6
2	139	14	315	19	50	252	64	23	5.3	16	4.3	1.6
3	80	12	158	18	50	176	55	23	5.8	7.6	3.1	1.6
4	48	19	105	17	42	134	50	22	4.2	6.1	4.4	1.5
5	34	57	80	17	38	113	46	21	3.1	17	3.7	1.5
6	26	65	66	17	36	97	42	19	2.7	18	2.7	1.5
7	21	45	60	17	34	85	42	18	2.4	64	2.4	1.5
8	18	40	67	16	33	76	39	15	2.3	57	2.2	1.6
9	16	37	163	20	27	67	36	16	2.1	29	1.9	1.5
10	14	35	132	22	28	57	38	14	2.1	19	1.8	1.5
11	12	34	96	19	28	51	49	13	2.2	14	1.7	1.7
12	24	30	79	19	27	47	45	13	2.1	11	1.7	1.7
13	20	24	63	22	25	44	337	12	2.0	9.9	1.7	1.4
14	17	21	55	39	45	41	707	11	1.9	7.4	1.8	1.3
15	15	21	51	53	55	40	318	10	3.4	5.4	1.7	1.3
16	13	21	47	44	97	37	197	8.5	16	4.7	1.6	2.3
17	11	20	44	39	83	39	142	7.6	44	3.9	1.5	4.2
18	10	19	40	48	75	392	106	7.4	11	3.3	1.5	1.6
19	9.1	16	36	65	109	332	86	6.7	7.6	2.9	1.5	1.4
20	8.4	19	34	63	117	186	72	6.4	8.8	2.6	1.4	1.3
21	7.3	17	31	57	111	135	67	6.2	5.6	2.4	1.4	1.2
22	6.8	16	29	57	99	110	63	7.7	4.1	2.4	1.3	1.2
23	8.4	16	28	48	85	96	53	5.2	2.9	2.3	1.1	1.1
24	28	14	28	39	72	159	47	7.8	11	2.2	1.1	1.2
25	33	20	25	37	65	199	42	12	10	2.3	1.1	1.1
26	33	32	24	32	61	138	38	6.5	3.5	2.1	1.4	1.1
27	27	32	23	31	99	110	35	5.4	2.3	2.2	1.4	1.1
28	22	27	21	30	651	93	30	5.2	2.0	30	3.9	1.1
29	20	25	21	32	---	86	28	4.2	2.1	12	2.2	2.0
30	18	23	20	34	---	82	27	4.9	2.2	4.1	1.8	1.3
31	16	---	19	31	---	71	---	6.7	---	12	1.7	---
TOTAL	957.0	786	2285	1021	2277	4094	2964	363.4	180.2	421.8	83.6	46.0
MEAN	30.9	26.2	73.7	32.9	81.3	132	98.8	11.7	6.01	13.6	2.70	1.53
MAX	202	65	325	65	651	549	707	25	44	64	14	4.2
MIN	6.8	12	19	16	25	37	27	4.2	1.9	2.1	1.1	1.1

CAL YR 1986 TOTAL 32685.2 MEAN 89.5 MAX 5290 MIN 2.2
WTR YR 1987 TOTAL 15478.9 MEAN 42.4 MAX 707 MIN 1.1

07035000 LITTLE ST. FRANCIS RIVER AT FREDERICKTOWN, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.92	2.00	2.82	2.05	2.18	4.63	2.47	2.10	1.80	2.14	1.88	1.62
2	2.90	1.99	3.74	2.04	2.36	3.46	2.48	2.08	1.79	2.03	1.77	1.62
3	2.62	1.97	3.03	2.03	2.38	3.09	2.42	2.07	1.81	1.87	1.72	1.62
4	2.37	1.97	2.75	2.02	2.31	2.88	2.38	2.07	1.76	1.81	1.78	1.61
5	2.24	2.37	2.59	2.01	2.27	2.78	2.35	2.04	1.71	1.87	1.74	1.62
6	2.15	2.52	2.50	2.01	2.24	2.69	2.31	2.02	1.69	2.02	1.69	1.61
7	2.08	2.36	2.44	2.01	2.22	2.61	2.31	1.99	1.68	2.56	1.67	1.61
8	2.04	2.30	2.48	1.99	2.22	2.56	2.28	1.94	1.67	2.45	1.67	1.62
9	2.01	2.24	2.93	2.00	2.15	2.51	2.25	1.96	1.66	2.17	1.65	1.62
10	1.98	2.25	2.89	2.09	2.15	2.44	2.23	1.94	1.66	2.02	1.64	1.62
11	1.97	2.26	2.69	2.04	2.16	2.38	2.35	1.91	1.66	1.94	1.63	1.64
12	2.18	2.20	2.58	2.03	2.15	2.35	2.34	1.91	1.66	1.89	1.63	1.64
13	2.06	2.12	2.49	2.06	2.12	2.33	2.29	1.90	1.64	1.86	1.63	1.63
14	2.04	2.09	2.42	2.24	2.33	2.31	5.27	1.90	1.64	1.83	1.64	1.61
15	2.00	2.09	2.39	2.41	2.39	2.29	3.72	1.88	1.64	1.79	1.63	1.61
16	1.97	2.09	2.36	2.34	2.69	2.26	3.21	1.85	1.71	1.77	1.62	1.67
17	1.94	2.08	2.33	2.28	2.61	2.24	2.92	1.84	2.51	1.75	1.61	1.71
18	1.92	2.07	2.29	2.34	2.53	3.61	2.74	1.84	1.95	1.73	1.60	1.65
19	1.90	2.02	2.25	2.49	2.78	3.82	2.63	1.82	1.85	1.71	1.61	1.62
20	1.89	2.07	2.22	2.49	2.81	3.14	2.53	1.81	1.91	1.69	1.61	1.61
21	1.87	2.03	2.20	2.41	2.76	2.89	2.46	1.82	1.84	1.68	1.61	1.60
22	1.86	2.03	2.17	2.44	2.70	2.76	2.48	1.85	1.79	1.67	1.59	1.59
23	1.88	2.01	2.16	2.32	2.62	2.69	2.40	1.79	1.74	1.67	1.58	1.59
24	2.22	1.98	2.17	2.21	2.54	2.73	2.35	1.76	1.71	1.66	1.57	1.59
25	2.23	1.99	2.13	2.25	2.49	3.24	2.30	1.92	1.93	1.67	1.58	1.59
26	2.23	2.21	2.12	2.18	2.45	2.91	2.25	1.82	1.76	1.66	1.59	1.58
27	2.17	2.22	2.10	2.17	2.63	2.76	2.21	1.79	1.71	1.66	1.94	1.58
28	2.11	2.16	2.08	2.17	3.71	2.66	2.17	1.80	1.68	1.66	1.76	1.58
29	2.07	2.14	2.07	2.19	---	2.60	2.14	1.76	1.69	1.92	1.68	1.73
30	2.04	2.12	2.07	2.22	---	2.60	2.13	1.74	1.67	1.75	1.65	1.61
31	2.02	---	2.05	2.19	---	2.53	---	1.83	---	1.77	1.63	---

07036100 ST. FRANCIS RIVER NEAR SACO, MO

LOCATION.--Lat 37°23'06", long 90°28'27", in NE ¼ SE ¼ NE ¼ sec.10, T.31 N., R.5 E., Madison County, Hydrologic Unit 08020202, on right bank at downstream side of State Highway C bridge, 1.3 mi downstream from Twelvemile Creek, and 3.5 mi northwest of Saco.

DRAINAGE AREA.--664 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 472.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,800 ft³/s, Nov. 19, 1985, gage height, 25.80 ft, from rating curve extended above 50,000 ft³/s; minimum, 4.0 ft³/s, Sept. 24, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,510 ft³/s, Feb. 28, gage height 11.47 ft; minimum, 13 ft³/s, Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	141	716	168	269	7000	446	191	68	309	121	65
2	2760	134	4150	163	335	2990	415	178	67	326	154	51
3	874	128	1780	159	427	1740	384	165	74	169	114	40
4	532	129	1030	155	412	1200	346	156	96	124	90	34
5	353	163	725	150	375	927	318	148	84	134	78	29
6	266	579	574	147	348	780	296	138	70	271	63	26
7	209	543	488	145	329	665	282	130	62	456	53	23
8	174	418	474	142	314	575	267	121	56	612	50	20
9	156	429	761	145	291	508	251	113	51	491	47	17
10	137	353	1070	155	272	441	235	103	49	289	42	15
11	130	306	814	161	255	385	254	97	48	198	36	15
12	131	284	651	159	248	347	334	91	44	154	31	15
13	133	252	552	158	239	316	372	87	40	131	27	15
14	158	222	475	182	286	291	2450	81	38	111	44	16
15	146	201	431	407	398	271	2410	77	45	94	55	17
16	135	190	400	517	905	253	1550	72	61	82	46	20
17	124	183	372	448	1010	243	1150	71	63	71	54	27
18	117	178	348	429	808	3260	872	69	81	64	44	27
19	109	164	320	549	864	4440	709	66	150	56	40	28
20	103	156	295	595	1040	2180	602	64	110	56	33	26
21	98	150	273	552	1020	1380	652	61	85	44	28	26
22	93	146	255	517	932	997	864	61	67	39	25	24
23	91	140	240	483	824	817	570	58	59	35	20	22
24	108	134	232	392	696	750	451	63	56	32	18	20
25	146	134	224	359	601	1080	384	74	131	31	15	19
26	197	145	213	323	529	950	333	78	126	29	14	18
27	219	183	202	294	587	767	296	72	90	28	38	17
28	197	205	190	276	3750	660	262	66	67	28	97	16
29	178	194	182	264	---	583	229	60	55	29	92	20
30	161	184	176	266	---	558	209	61	45	31	72	19
31	149	---	172	269	---	506	---	65	---	97	83	---
TOTAL	8594	6768	18785	9129	18364	37860	18193	2937	2138	4615	1724	727
MEAN	277	226	606	294	656	1221	606	94.7	71.3	149	55.6	24.2
MAX	2760	579	4150	595	3750	7000	2450	191	150	612	154	65
MIN	91	128	172	142	239	243	209	58	38	28	14	15

CAL YR 1986 TOTAL 229992 MEAN 630 MAX 22900 MIN 19
WTR YR 1987 TOTAL 129834 MEAN 356 MAX 7000 MIN 14

07036100 ST. FRANCIS RIVER NEAR SACO, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.42	1.73	2.15	1.80	2.25	10.74	3.09	2.11	1.33	1.55	1.62	1.34
2	7.58	1.68	8.71	1.77	2.45	7.23	2.99	2.04	1.31	2.76	1.95	1.24
3	4.22	1.63	5.76	1.76	2.83	5.64	2.91	1.97	1.35	2.04	1.68	1.14
4	3.40	1.61	4.56	1.73	2.81	4.80	2.77	1.92	1.53	1.75	1.50	1.09
5	2.87	1.76	3.88	1.71	2.68	4.31	2.67	1.87	1.45	1.65	1.43	1.05
6	2.49	3.42	3.47	1.69	2.59	3.99	2.57	1.81	1.35	2.63	1.33	1.01
7	2.23	3.42	3.21	1.69	2.53	3.70	2.50	1.76	1.29	2.33	1.25	.99
8	2.03	2.99	3.14	1.66	2.46	3.46	2.45	1.70	1.25	3.61	1.21	.95
9	1.89	3.07	3.61	1.66	2.37	3.28	2.39	1.65	1.21	3.36	1.20	.93
10	1.82	2.83	4.64	1.72	2.29	3.10	2.31	1.58	1.19	2.60	1.17	.88
11	1.77	2.62	4.09	1.77	2.22	2.91	2.35	1.54	1.19	2.18	1.11	.89
12	1.74	2.53	3.67	1.75	2.19	2.77	2.70	1.50	1.16	1.94	1.06	.88
13	1.74	2.40	3.39	1.74	2.16	2.66	2.72	1.47	1.12	1.79	1.02	.89
14	1.90	2.28	3.11	1.79	2.27	2.57	7.01	1.42	1.10	1.67	1.06	.89
15	1.84	2.17	2.94	2.60	2.69	2.49	6.97	1.41	1.07	1.56	1.27	.91
16	1.77	2.10	2.81	3.14	3.95	2.41	5.63	1.37	1.27	1.48	1.15	.95
17	1.69	2.07	2.69	2.92	4.50	2.33	4.99	1.35	1.31	1.40	1.26	1.02
18	1.64	2.04	2.58	2.82	4.06	5.33	4.42	1.34	1.22	1.35	1.16	1.02
19	1.58	1.98	2.47	3.17	4.03	8.76	3.95	1.32	1.85	1.30	1.14	1.03
20	1.54	1.95	2.37	3.39	4.46	6.26	3.63	1.30	1.67	1.24	1.08	1.01
21	1.51	1.90	2.28	3.27	4.44	5.09	3.35	1.28	1.49	1.19	1.03	1.01
22	1.47	1.88	2.20	3.12	4.29	4.45	4.27	1.29	1.37	1.15	1.06	.99
23	1.45	1.84	2.14	3.04	4.01	4.08	3.47	1.26	1.30	1.13	.95	.97
24	1.52	1.80	2.11	2.77	3.78	3.83	3.12	1.25	1.27	1.09	.93	.94
25	1.76	1.78	2.07	2.52	3.53	4.41	2.90	1.35	1.74	1.08	.89	.93
26	1.98	1.84	2.03	2.30	3.33	4.37	2.72	1.42	1.81	1.06	.87	.93
27	2.17	2.03	1.97	2.40	3.30	3.96	2.58	1.35	1.57	1.05	.97	.90
28	2.05	2.20	1.91	2.31	4.49	3.68	2.45	1.32	1.41	1.03	1.47	.90
29	1.93	2.13	1.87	2.25	---	3.47	2.30	1.27	1.32	1.05	1.53	.94
30	1.85	2.08	1.84	2.25	---	3.37	2.21	1.27	1.24	1.05	1.36	.93
31	1.79	---	1.82	2.27	---	3.27	---	1.29	---	1.28	1.47	---

07036100 ST. FRANCIS RIVER NEAR SACO, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1982 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
20...	1305	103	244	8.30	16.0	10.7	106	11	K24	120
NOV										
14...	0930	222	--	7.80	4.0	13.6	101	<10	K8	--
DEC										
11...	0745	842	185	7.60	4.0	12.1	91	<10	160	--
JAN										
06...	1345	117	239	7.70	5.5	13.7	108	<10	K17	120
FEB										
03...	1455	440	223	8.10	5.0	14.1	109	<10	K3	--
MAR										
02...	1315	2910	132	8.10	5.5	13.2	103	17	540	--
APR										
02...	1630	415	176	8.20	11.0	12.8	113	<10	K3	86
MAY										
05...	1220	148	202	7.90	18.0	8.8	91	14	K10	--
JUN										
04...	0845	99	215	7.70	23.5	5.9	67	<10	20	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
20...	20	23	14	5.3	2.7	95	0.9	21	6.3	<0.10
NOV										
14...	--	--	--	--	--	95	2.9	--	--	--
DEC										
11...	--	--	--	--	--	66	3.2	--	--	--
JAN										
06...	18	25	14	5.3	1.5	102	3.9	23	6.1	<0.10
FEB										
03...	--	--	--	--	--	88	1.4	--	--	--
MAR										
02...	--	--	--	--	--	48	0.7	--	--	--
APR										
02...	18	18	10	3.9	1.8	68	0.8	16	4.7	<0.10
MAY										
05...	--	--	--	--	--	66	1.6	--	--	--
JUN										
04...	--	--	--	--	--	82	3.2	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

ST. FRANCIS RIVER BASIN

07036940 BIG CREEK AT CHLORIDE, MO

WATER-QUALITY RECORDS

LOCATION.--Lat. 37°27'42", long. 90°41'10", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.14, T.32 N., R.3 E., Iron County, Hydrologic Unit 08020202, at bridge on county road.

PERIOD OF RECORD.--Partial-record station 1969 to 1975 water year; October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (00301)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBAL'T, DIS- SOLVED (UG/L AS CO) (01035)
OCT											
20...	1135	5.3	288	8.10	14.5	10.2	99	9	7	<1	<1
NOV											
14...	1130	2.4	330	7.70	4.0	13.9	104	6	5	<1	<1
DEC											
11...	1320	34	150	8.00	5.5	13.6	--	<1	4	1	<1
JAN											
06...	1145	4.1	241	7.30	4.5	16.5	128	6	4	<1	<1
FEB											
03...	1105	11	199	7.30	5.5	13.6	107	4	2	<1	<1
MAR											
02...	1150	75	122	7.70	5.5	13.2	104	2	2	<1	2
APR											
03...	0910	15	168	8.00	6.0	12.2	96	4	2	<1	<1
MAY											
05...	1055	5.8	247	8.00	14.5	10.3	100	7	7	<1	<1
JUN											
04...	1050	13	288	8.10	19.5	9.0	96	9	7	<1	<1
JUL											
15...	1000	8.0	280	8.20	20.0	11.2	123	12	11	<1	1
AUG											
05...	0930	5.1	320	8.00	24.0	7.9	94	21	16	<1	1
SEP											
09...	1200	1.5	390	8.20	24.5	8.5	100	12	11	2	3

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT										
20...	10	2	120	17	14	<5	8	1	190	47
NOV										
14...	14	2	50	11	5	<5	<1	3	40	46
DEC										
11...	8	8	100	29	41	<5	<1	<1	40	25
JAN										
06...	8	1	50	8	<5	<5	3	2	40	44
FEB										
03...	2	1	40	9	<5	<5	<1	2	20	38
MAR										
02...	3	2	70	27	7	<5	3	5	<10	18
APR										
03...	4	1	20	5	5	<5	4	2	30	25
MAY										
05...	6	4	40	9	5	<5	2	<1	40	37
JUN										
04...	4	1	10	12	19	<5	2	1	40	42
JUL										
15...	3	1	50	12	18	9	2	2	70	71
AUG										
05...	2	1	60	12	28	<5	1	<1	80	80
SEP										
09...	4	3	70	18	16	<5	<1	3	50	47

07037000 BIG CREEK AT DES ARC, MO

LOCATION.--Lat 37°17'35", long 90°37'45", in SE ¼ sec.8, T.30 N., R.4 E., Iron County, Hydrologic Unit 08020202, at bridge on State Highway 143 at north edge of Des Arc, 420 ft above Black Creek and 6 mi above Pond Creek.

DRAINAGE AREA.--99.6 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 507.89 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Nov. 19, 1985, gage height, 12.92 ft, on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 5.2 ft³/s, Aug. 28-30, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s, Aug. 13, gage height, 5.30 ft; minimum, 13 ft³/s, June 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	43	73	27	49	576	90	46	42	155	117	37
2	196	42	213	25	60	310	85	43	36	149	83	33
3	121	38	160	24	62	217	78	42	40	109	65	30
4	92	37	126	25	62	172	72	43	44	93	66	28
5	74	49	105	23	62	145	66	37	39	142	56	25
6	61	101	91	21	61	127	62	35	35	232	45	25
7	52	94	84	20	62	117	59	33	31	253	38	26
8	46	89	85	19	61	112	55	31	27	379	34	23
9	41	94	125	21	54	98	51	28	21	244	32	18
10	39	84	158	23	50	85	50	28	21	170	29	18
11	36	76	138	24	48	75	56	27	20	134	24	18
12	38	69	119	25	45	67	56	24	19	114	21	19
13	37	63	105	25	43	60	69	22	16	103	147	19
14	36	58	86	27	61	56	247	22	13	86	269	18
15	35	56	83	45	73	53	292	22	19	71	115	18
16	34	55	74	62	124	47	252	21	24	60	88	22
17	32	53	68	59	140	44	211	22	30	51	64	30
18	31	47	61	61	128	293	183	23	43	43	54	29
19	31	40	56	73	123	368	160	23	144	37	48	27
20	28	41	52	76	127	248	141	23	75	32	42	26
21	27	40	50	75	134	194	127	24	58	28	37	20
22	25	38	45	74	136	162	116	25	46	24	34	18
23	25	39	39	72	127	141	104	24	39	21	29	18
24	36	38	40	67	115	138	93	28	393	19	27	17
25	52	37	38	63	105	156	85	32	335	21	24	16
26	70	41	36	59	95	146	78	29	158	23	24	16
27	70	46	34	55	95	133	71	25	108	20	58	18
28	60	51	32	52	318	123	63	21	80	19	79	16
29	54	54	29	49	---	116	57	19	63	19	59	16
30	48	53	25	47	---	108	51	29	54	20	47	16
31	44	---	26	43	---	98	---	46	---	96	41	---
TOTAL	1640	1666	2456	1361	2620	4785	3180	897	2073	2967	1896	660
MEAN	52.9	55.5	79.2	43.9	93.6	154	106	28.9	69.1	95.7	61.2	22.0
MAX	196	101	213	76	318	576	292	46	393	379	269	37
MIN	25	37	25	19	43	44	50	19	13	19	21	16

CAL YR 1986 TOTAL 33808 MEAN 92.6 MAX 1690 MIN 8.5
WTR YR 1987 TOTAL 26201 MEAN 71.8 MAX 576 MIN 13

07037000 BIG CREEK AT DES ARC, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.56	2.69	2.52	2.64	4.47	2.87	2.57	2.53	2.65	3.03	---
2	3.41	2.57	3.56	2.50	2.77	3.77	2.86	2.53	2.47	3.18	2.85	---
3	3.06	2.55	3.34	2.47	2.78	3.49	2.80	2.53	2.49	2.97	2.74	---
4	2.90	2.49	3.17	2.49	2.78	3.32	2.77	2.55	2.56	2.86	2.68	---
5	2.80	2.61	3.06	2.48	2.79	3.22	2.73	2.49	2.51	2.89	2.68	---
6	2.72	2.95	3.00	2.44	2.79	3.12	2.71	2.47	2.47	3.50	2.59	---
7	2.65	2.91	2.95	2.44	2.78	3.05	2.69	2.44	2.42	3.46	2.52	---
8	2.60	2.86	2.95	2.43	2.78	3.06	2.66	2.42	2.39	4.03	2.48	---
9	2.57	2.90	3.11	2.42	2.73	2.99	2.63	2.39	2.33	3.53	2.45	---
10	2.54	2.86	3.33	2.47	2.70	2.94	2.61	2.38	2.31	3.26	2.44	---
11	2.52	2.81	3.23	2.47	2.69	2.87	2.67	2.40	2.32	3.10	2.39	---
12	2.52	2.77	3.13	2.49	2.66	2.82	2.67	2.35	2.30	2.98	2.35	---
13	2.52	2.72	3.06	2.47	2.64	2.78	2.68	2.33	2.27	2.93	2.32	---
14	2.52	2.69	3.01	2.49	2.78	2.73	3.42	2.31	2.22	2.85	---	---
15	2.50	2.68	2.95	2.59	2.83	2.73	3.63	2.33	2.22	2.77	---	---
16	2.49	2.67	2.91	2.80	3.09	2.69	3.49	2.31	2.35	2.70	---	---
17	2.47	2.67	2.87	2.78	3.20	2.64	3.36	2.33	2.42	2.64	---	---
18	2.46	2.62	2.82	2.78	3.14	3.17	3.25	2.33	2.37	2.57	---	---
19	2.46	2.56	2.79	2.86	3.11	3.90	3.17	2.34	3.12	2.52	---	---
20	2.43	2.54	2.75	2.88	3.11	3.53	3.08	2.31	2.77	2.47	---	---
21	2.43	2.54	2.74	2.87	3.15	3.35	3.03	2.35	2.67	2.42	---	---
22	2.41	2.52	2.70	2.88	3.17	3.22	2.97	2.36	2.55	2.39	---	---
23	2.40	2.53	2.65	2.85	3.12	3.12	2.90	2.36	2.51	2.36	---	---
24	2.50	2.54	2.65	2.82	3.07	3.10	2.85	2.35	4.11	2.33	---	---
25	2.63	2.50	2.63	2.80	3.02	3.20	2.80	2.43	3.81	2.33	---	---
26	2.77	2.56	2.62	2.77	2.97	3.16	2.77	2.42	3.22	2.37	---	---
27	2.78	2.58	2.60	2.73	2.96	3.09	2.73	2.37	2.97	2.33	---	---
28	2.71	2.64	2.58	2.71	3.15	3.03	2.68	2.32	2.84	2.33	---	---
29	2.66	2.66	2.55	2.70	---	3.01	2.64	2.30	2.73	2.31	---	---
30	2.62	2.65	2.51	2.68	---	2.97	2.60	2.31	2.64	2.34	---	---
31	2.59	---	2.51	2.65	---	2.91	---	2.56	---	2.63	---	---

07037500 ST. FRANCIS RIVER NEAR PATTERSON, MO

LOCATION.--37°11'40", long 90°30'12", in NE ¼ sec.16, T.29 N., R.5 E., Wayne County, Hydrologic Unit 08020202, near left bank on downstream side of pier of bridge on State Highway 34, 1 mi upstream from Clark Creek, and 3 mi east of Patterson.

DRAINAGE AREA.--956 mi².

PERIOD OF RECORD.--October 1920 to current year. Prior to June 1921, monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 732: 1922-23.

GAGE.--Water-stage recorder. Datum of gage is 370.45 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, nonrecording gage at site 50 ft upstream at datum 2.00 ft higher. Oct. 1, 1938 to Apr. 12, 1939, nonrecording gage and Apr. 13, 1939 to Sept. 5, 1956, water-stage recorder at site 50 ft upstream at present datum. Sept. 6, 1956 to Sept. 26, 1958, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

AVERAGE DISCHARGE.--67 years, 1,125 ft³/s, 15.99 in/yr, 815,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 155,000 ft³/s, Dec. 3, 1982, gage height, 35.77 ft, on basis of contracted-opening measurement of peak flow; minimum discharge, 8 ft³/s, Aug. 28 to Sept. 1, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Aug. 1915 reached a stage of 33.8 ft, present datum, from floodmarks, discharge, 100,000 ft³/s, from rating curve extended above 55,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 21,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 1	1215	*9,020	*13.60				

Minimum discharge, 52 ft³/s, Sept. 15, 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	257	399	271	431	7390	831	414	116	420	211	157
2	1440	240	2270	268	493	4320	777	381	112	745	261	145
3	1530	227	2400	260	552	2490	735	357	110	566	277	123
4	982	221	1420	258	606	1810	693	340	113	401	297	107
5	720	282	1040	253	587	1430	653	321	124	421	298	93
6	582	337	851	246	556	1220	617	302	125	719	210	83
7	484	756	740	259	531	1080	588	286	111	902	171	77
8	406	666	699	234	511	962	562	267	98	1350	144	72
9	356	607	806	240	482	866	535	249	87	1140	126	67
10	323	595	1150	251	456	782	510	227	81	849	115	61
11	298	533	1140	254	432	710	508	212	81	634	104	60
12	286	483	961	262	412	652	528	198	80	499	93	59
13	284	448	830	262	396	603	651	184	77	421	83	57
14	274	408	734	266	480	562	1560	173	70	363	599	54
15	289	378	667	299	545	528	3380	162	69	306	309	53
16	277	352	617	547	833	498	2480	151	82	265	228	63
17	260	331	573	608	1310	480	1980	140	93	229	184	68
18	241	323	536	579	1220	1360	1600	136	101	199	161	75
19	228	305	496	600	1110	4840	1320	129	168	176	150	75
20	213	296	464	714	1220	3220	1140	122	253	157	129	71
21	201	283	436	732	1280	2160	991	119	226	139	114	67
22	188	271	404	689	1230	1670	1170	119	178	124	98	64
23	185	266	377	661	1150	1380	1040	110	148	112	84	62
24	214	257	363	621	1040	1250	844	108	299	104	75	61
25	249	253	349	554	926	1290	741	118	578	100	69	58
26	286	264	336	514	836	1470	669	119	382	96	64	56
27	341	268	324	484	809	1270	608	120	314	90	75	53
28	357	305	309	453	1490	1130	549	111	241	81	131	52
29	328	333	298	433	---	1010	497	102	189	77	180	57
30	298	325	286	415	---	948	452	99	165	78	201	55
31	275	---	278	407	---	893	---	110	---	95	171	---
TOTAL	12594	10870	22553	12874	21924	50274	29209	5986	4871	11858	5412	2205
MEAN	406	362	728	415	783	1622	974	193	162	383	175	73.5
MAX	1530	756	2400	732	1490	7390	3380	414	578	1350	599	157
MIN	185	221	278	234	396	480	452	99	69	77	64	52

CAL YR 1986 TOTAL 286956 MEAN 786 MAX 16500 MIN 50
WTR YR 1987 TOTAL 190630 MEAN 522 MAX 7390 MIN 52

07037500 ST. FRANCIS RIVER NEAR PATTERSON, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.48	4.63	4.92	4.61	5.00	13.18	6.00	4.98	3.95	4.55	4.19	4.01
2	5.14	4.57	6.01	4.59	5.25	10.76	5.86	4.88	3.93	5.86	4.46	3.97
3	7.52	4.52	8.85	4.55	5.38	8.75	5.77	4.81	3.91	5.62	4.55	3.86
4	6.59	4.47	7.44	4.55	5.59	7.83	5.66	4.76	3.92	5.06	4.43	3.76
5	5.97	4.70	6.78	4.51	5.54	7.26	5.56	4.71	3.98	4.85	4.66	3.68
6	5.60	4.85	6.37	4.48	5.45	6.92	5.46	4.64	4.00	5.99	4.26	3.62
7	5.31	6.27	6.10	4.46	5.38	6.67	5.38	4.59	3.92	6.16	4.09	3.58
8	5.07	5.95	5.98	4.43	5.34	6.44	5.31	4.52	3.85	7.20	3.96	3.54
9	4.90	5.74	6.16	4.42	5.25	6.25	5.24	4.46	3.78	6.86	3.87	3.50
10	4.80	5.75	6.84	4.49	5.15	6.06	5.15	4.38	3.74	6.27	3.81	3.45
11	4.69	5.58	6.95	4.50	5.08	5.88	5.13	4.33	3.73	5.69	3.75	3.43
12	4.65	5.42	6.59	4.52	5.02	5.73	5.17	4.27	3.71	5.30	3.69	3.42
13	4.64	5.31	6.31	4.52	4.96	5.60	5.41	4.23	3.70	5.04	3.63	3.42
14	4.61	5.19	6.07	4.54	5.20	5.48	6.35	4.19	3.65	4.87	6.32	3.38
15	4.66	5.10	5.90	4.60	5.34	5.38	9.57	4.15	3.60	4.64	4.70	3.36
16	4.64	4.99	5.77	5.41	5.92	5.29	8.53	4.11	3.71	4.48	4.34	3.47
17	4.57	4.94	5.65	5.65	7.06	5.21	7.84	4.06	3.78	4.34	4.16	3.50
18	4.50	4.89	5.53	5.55	6.92	6.26	7.33	4.05	3.84	4.21	4.01	3.56
19	4.45	4.83	5.42	5.54	6.67	11.24	6.93	4.03	3.85	4.11	4.00	3.56
20	4.40	4.79	5.31	5.87	6.84	9.45	6.63	3.99	4.55	4.01	3.89	3.53
21	4.35	4.73	5.22	5.94	6.99	8.13	6.35	3.98	4.44	3.93	3.81	3.50
22	4.31	4.67	5.12	5.83	6.92	7.43	6.48	4.00	4.23	3.86	3.72	3.47
23	4.28	4.66	5.03	5.75	6.79	7.03	6.48	3.93	4.08	3.80	3.63	3.44
24	4.39	4.62	4.98	5.65	6.58	6.78	6.09	3.88	3.96	3.74	3.57	3.44
25	4.54	4.58	4.92	5.38	6.37	6.72	5.85	3.96	5.90	3.71	3.51	3.42
26	4.68	4.65	4.88	5.25	6.18	7.17	5.66	3.97	4.97	3.69	3.47	3.39
27	4.88	4.65	4.83	5.20	6.09	6.83	5.51	3.99	4.80	3.67	3.48	3.37
28	4.99	4.78	4.77	5.14	6.50	6.59	5.36	3.94	4.49	3.60	3.82	3.36
29	4.90	4.92	4.72	5.08	---	6.37	5.22	3.89	4.27	3.57	4.03	3.40
30	4.79	4.88	4.68	5.02	---	6.24	5.09	3.84	4.11	3.57	4.22	3.39
31	4.70	---	4.64	4.99	---	6.13	---	3.90	---	3.64	4.10	---

07039000 WAPPAPELLO LAKE AT WAPPAPELLO, MO

LOCATION.--Lat 36°55'42", long 90°17'04", in NW ¼ SE ¼ sec.3, T.26 N., R.7 E., Wayne County, Hydrologic Unit 08020202, at intake tower at dam on St. Francis River 0.8 mi southwest of Wappapello, and at mile 309.

DRAINAGE AREA.--1,310 mi², approximately.

PERIOD OF RECORD.--April 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to June 19, 1941, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by earthfill type dam. Closure of channel at dam began July 10, 1940; river began to flow through outlet structure July 24, 1940. Stop logs placed in outlet structure and storage began Apr. 1, 1941; conservation pool level reached Apr. 20, 1941. Capacity at bottom of outlet tunnels (gage height, -9.0 ft), 2,600 acre-ft; at conservation pool level (gage height, 7.0 ft), 30,900 acre-ft; at spillway crest (gage height, 47.0 ft), 613,000 acre-ft; at maximum pool level (gage height, 62.4 ft), uncontrollable above spillway crest, 1,022,000 acre-ft. Lake is used for flood control, power, and recreational purposes. U.S. Army Corps of Engineers satellite telemeter at station.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 729,800 acre-ft, Apr. 16, 1945, gage height, 51.35 ft; minimum, since initial filling to conservation pool level, 23,340 acre-ft, Mar. 1, 2, 3, 1970; minimum gage height, 4.20 ft, Sept. 26, 27, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 92,600 acre-ft, Dec. 12, elevation, 363.29 ft, minimum, 30,700 acre-ft, Feb. 13, elevation, 354.95 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66100	62600	74700	45600	30800	41400	33300	50300	61700	62800	61300	63800
2	66100	62700	76400	43000	31900	56600	34100	51000	61900	62800	61300	63600
3	68900	62700	82700	40400	31800	61600	34500	51700	62200	62000	62000	63700
4	69600	62500	87500	39100	31500	61900	35600	52400	62300	60500	62000	63700
5	69600	62600	89300	37200	31200	60800	36700	53100	62400	61300	62000	63500
6	68600	61600	90000	34600	31100	58900	37700	53700	62600	62000	62000	63200
7	67900	61300	90000	33900	31300	56500	38800	54200	62700	62800	61300	63100
8	67300	61700	90500	33100	31700	53900	39900	54800	62800	64500	61300	63400
9	66700	62100	91200	32300	31600	51200	40900	55200	63000	65400	61300	63400
10	66600	62800	91200	32200	31400	48400	41800	55600	63100	65400	61300	63400
11	66500	62600	92200	32000	31100	46000	41800	56000	63300	62000	61300	63900
12	66600	61200	92600	31500	30800	43800	41900	56400	63300	60500	61300	63800
13	66800	60400	92300	31300	30700	41900	41900	56700	63700	60500	63500	63600
14	66500	60800	91800	31100	31100	40200	45000	57000	63700	61300	63500	63400
15	65800	61700	91100	31200	31700	38400	50500	57500	64100	61300	64500	63000
16	65200	62600	90300	31400	32900	36700	56000	57600	64100	60500	65000	63900
17	64300	63500	91500	31700	33400	34800	57100	57800	64100	59800	65500	63700
18	63700	64500	90700	32200	33900	34300	54200	58100	64000	59800	64500	63500
19	63700	65100	89500	32600	34000	37300	50800	58400	64100	59800	64000	63500
20	64100	66100	86900	32900	33900	43100	47100	58700	64500	59800	63200	63500
21	64600	66800	83800	32800	34300	44500	47000	59000	65300	59800	63100	63500
22	64900	67400	80600	32700	34800	45600	46900	59300	65500	60500	63100	63500
23	65500	68000	78600	32300	35200	45600	47100	59600	65300	60500	63300	63500
24	66600	68900	76600	32500	34400	45200	47300	59800	64300	60500	63200	63500
25	66500	69400	71900	32700	33900	42400	46900	60200	63300	62000	63100	63500
26	65600	70900	67700	32500	33200	40300	46500	60500	63500	62800	63100	63600
27	64900	71300	63300	31700	33500	38300	46500	60700	63200	62800	63300	63600
28	63900	72000	59300	31400	34100	36700	47300	60800	62800	62000	63800	63600
29	63000	72800	55400	30900	---	35100	48300	60900	62700	61300	63800	64300
30	62400	73600	51400	30800	---	33500	49200	61300	60500	61300	64000	64200
31	62300	---	48100	30800	---	32500	---	61400	---	61300	64300	---

WTR YR 1987

(+)	359.67	360.98	357.71	354.72	355.38	355.07	357.77	359.55	359.72	359.81	359.91	359.90
(#)	-2900	+11300	-25500	-17300	+3300	-1600	+16700	+12200	-900	+800	+3000	-100

MAX	69600	73600	92600	45600	35200	61900	57100	61400	65500	65400	65500	64300
MIN	62300	60400	48100	30800	30700	32500	33300	50300	60500	59800	61300	63000

CAL YR 1986.....-127900

WTR YR 1987.....-1000

(+) Elevation, in feet NGVD, at end of month.

(#) Change in contents, in acre-feet.

07039500 ST. FRANCIS RIVER AT WAPPAPELLO, MO

LOCATION.--Lat 36°55'41", long 90°15'55", in NW ¼ SE ¼ sec.2, T.26 N., R.7 E., Wayne County, Hydrologic Unit 08020202, on right bank at downstream side of highway bridge, 0.5 mi southeast of Wappapello and 1.25 mi downstream from Wappapello Dam.

DRAINAGE AREA.--1,311 mi².

PERIOD OF RECORD.--October 1940 to current year. Since January 1939 in reports of Mississippi River Commission. Gage-height records collected in this vicinity since April 1920 are contained in reports of the Corps of Engineers.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 315.15 ft (revised) above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1984 at datum 10.00 ft higher at present site. Prior to Oct. 14, 1940 nonrecording gage at same site.

REMARKS.--No estimated daily discharges. Records good except days with considerable change in discharge, which are poor. Flow completely regulated by Wappapello Lake (station 07029000) 1.25 mi upstream. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

AVERAGE DISCHARGE.--47 years, 1,568 ft³/s, 1,136,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft³/s, Apr. 16, 1945, gage height, 25.60 ft, (datum then in use); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1920, 30.7 ft (datum then in use), May 15, 1933, discharge 82,500 ft³/s, determined by U.S. Army Corps of Engineers. Maximum discharge, 85,000 ft³/s, determined by U.S. Army Corps of Engineers, Aug. 1915 (stage unknown).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,340 ft³/s, Apr. 19; minimum, 35 ft³/s, Nov. 15, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	235	241	47	1780	521	1170	716	61	61	486	127	405
2	424	237	47	1720	609	1520	655	67	61	1080	215	106
3	665	309	43	1520	762	2320	499	67	61	1510	222	139
4	967	581	185	1280	900	2660	241	60	61	1050	281	230
5	1000	819	806	1410	888	2710	213	58	61	702	372	236
6	960	757	896	1410	744	2710	144	58	62	725	378	170
7	817	724	911	867	585	2680	80	57	60	945	336	79
8	710	742	919	780	560	2650	71	56	61	816	239	73
9	596	562	923	733	616	2570	64	63	62	1190	163	73
10	475	398	921	590	713	2370	246	63	62	1680	80	74
11	392	939	1020	567	747	2150	526	63	63	1900	76	99
12	384	1220	1200	548	676	1940	547	63	63	1180	75	234
13	410	767	1210	480	547	1680	415	64	63	533	75	250
14	521	134	1210	455	462	1620	104	63	63	460	76	251
15	597	38	1210	382	449	1590	371	63	91	502	77	213
16	604	35	854	406	620	1570	1290	62	210	571	76	154
17	604	38	561	489	1020	1550	2310	62	186	425	251	248
18	490	42	1100	546	1390	1560	3210	63	72	280	573	184
19	184	46	1280	553	1450	1790	3330	63	64	266	600	82
20	72	47	1910	650	1430	2520	2860	64	125	183	435	78
21	62	47	2010	887	1300	2430	1580	64	219	87	104	77
22	61	46	1840	919	1270	1950	1320	64	328	82	80	77
23	61	46	1580	859	1430	1860	1170	62	540	75	75	76
24	167	46	1840	686	1650	2090	1090	63	782	71	73	76
25	591	47	2360	663	1490	2580	1050	63	712	67	74	78
26	703	46	2420	759	1340	2630	934	63	504	65	75	78
27	731	46	2410	867	1100	2530	643	62	479	231	76	78
28	817	46	2370	768	1140	2190	128	62	414	454	73	78
29	809	46	2420	715	---	2090	66	63	239	420	72	121
30	608	46	2300	602	---	1940	62	62	226	218	71	240
31	339	---	1980	524	---	1260	---	62	---	76	236	---
TOTAL	16056	9138	40783	25415	26409	64880	25935	1930	6055	18330	5736	4357
MEAN	518	305	1316	820	943	2093	864	62.3	202	591	185	145
MAX	1000	1220	2420	1780	1650	2710	3330	67	782	1900	600	405
MIN	61	35	43	382	449	1170	62	56	60	65	71	73

CAL YR 1986 TOTAL 488222 MEAN 1338 MAX 6390 MIN 35
WTR YR 1987 TOTAL 245024 MEAN 671 MAX 3330 MIN 35

07039500 ST. FRANCIS RIVER AT WAPPAPELLO, MO--Continued

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	5.90	3.68	14.72	7.88	11.76	9.29	4.08	3.94	5.68	3.86	7.32
2	---	5.82	3.70	14.46	7.94	11.72	8.85	4.08	3.94	10.08	5.42	4.44
3	7.62	5.82	3.68	14.10	9.30	16.36	8.78	4.10	3.92	13.46	5.48	4.00
4	10.65	7.60	3.34	12.38	10.26	18.26	5.86	4.08	3.92	11.24	5.50	5.50
5	10.87	9.00	9.64	12.50	10.40	18.48	5.60	4.04	3.92	9.06	6.62	5.58
6	10.89	10.02	10.24	13.92	9.54	18.48	5.44	4.04	3.92	8.62	6.68	5.58
7	10.08	9.24	10.36	10.22	8.38	18.40	4.28	4.02	3.90	10.74	6.68	4.06
8	9.36	9.38	10.40	9.62	8.20	18.28	4.24	3.96	3.90	8.90	5.62	3.98
9	8.66	9.38	10.44	9.50	8.18	18.16	4.04	4.00	3.94	---	5.56	3.96
10	7.88	6.12	10.42	8.42	9.02	17.40	4.02	4.00	3.92	---	4.08	3.96
11	7.01	9.74	10.42	8.24	9.38	16.52	7.94	3.98	3.94	---	4.02	3.98
12	6.94	12.34	11.90	8.20	9.40	15.57	8.08	4.00	3.94	---	4.02	5.52
13	6.92	10.90	12.02	7.64	8.22	14.29	8.12	4.00	3.94	---	4.02	5.68
14	7.67	5.17	11.98	7.56	7.52	13.95	4.70	4.00	3.94	---	4.02	5.68
15	8.46	3.46	11.98	6.92	7.42	13.85	4.06	3.98	3.98	---	4.04	5.68
16	8.50	3.34	11.96	6.82	7.42	13.74	10.66	3.98	5.46	8.32	4.04	4.26
17	8.50	3.38	5.34	7.46	10.58	13.64	15.28	3.98	5.58	7.72	4.04	5.64
18	8.50	3.52	11.32	8.08	12.78	13.66	20.08	3.98	4.10	6.00	8.06	5.68
19	5.98	3.66	11.66	8.16	13.14	13.71	20.52	3.98	3.96	5.88	8.30	4.08
20	4.26	3.72	15.16	8.16	13.20	17.47	20.38	3.98	3.96	5.86	8.31	4.02
21	4.06	3.70	15.70	10.18	12.40	18.25	14.00	4.00	5.56	4.26	4.41	4.00
22	4.02	3.68	15.60	10.40	12.26	15.50	12.64	4.00	5.60	4.18	4.08	4.02
23	4.02	3.68	13.76	10.42	12.24	15.06	11.98	3.96	7.42	4.14	4.02	4.00
24	4.06	3.68	13.72	9.04	14.26	14.98	11.34	3.96	9.46	3.92	4.00	3.98
25	8.12	3.68	17.08	8.88	13.36	17.99	11.26	3.98	9.68	3.94	3.98	4.02
26	9.12	3.70	17.40	8.84	13.18	18.21	10.70	3.96	7.74	3.90	4.02	4.02
27	9.24	3.68	17.36	10.20	11.40	18.13	9.76	3.96	7.54	3.88	4.04	4.02
28	9.80	3.68	17.26	9.52	11.36	16.53	5.02	3.94	7.50	7.26	4.00	4.02
29	9.96	3.68	17.10	9.40	---	16.08	4.20	3.94	5.72	7.40	4.00	4.10
30	8.76	3.68	17.48	8.78	---	15.92	4.10	3.94	5.56	5.68	3.96	5.60
31	7.14	---	15.90	7.94	---	13.86	---	4.00	---	4.10	3.96	---

ST. FRANCIS RIVER BASIN

07042500 LITTLE RIVER DITCH 251 NEAR LILBOURN, MO

LOCATION.--Lat 36°33'20", long 89°40'12", SW ¼ SE ¼ sec.8, T.22 N., R.13 E., New Madrid County, Hydrologic Unit 08020204, on right bank 150 ft upstream from bridge on U.S. Highway 62, 3.7 mi southwest of Lilbourn, and 4.0 mi northwest of Marston.

DRAINAGE AREA.--235 mi²

PERIOD OF RECORD.--October 1945 to current year. Prior to January 1946 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WDR MO80-1: 1980, (M).

GAGE.--Water-stage recorder, nonrecording gage and crest-stage gage. Datum of gage is 263.46 ft above National Geodetic Vertical Datum of 1929 (Missouri State Highway and Transportation Commission). Prior to Oct. 27, 1967, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 22 to Dec. 17. Records good except Nov. 22 to Dec. 17, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--42 years, 327 ft³/s, 18.90 in/yr, 236,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,580 ft³/s, Mar. 29, 1975, gage height, 14.17 ft; maximum gage height, 15.16 ft, Feb. 15, 1950; minimum discharge, 29 ft³/s, Sept. 20, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1945 reached a stage of 15.6 ft, from floodmark, discharge, 3,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,070 ft³/s, Feb. 28, gage height, 10.45 ft; minimum daily, 38 ft³/s, Sept. 24-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	74	100	112	114	2420	165	139	366	176	165	56
2	76	75	200	112	230	986	167	138	189	328	120	55
3	73	74	150	112	182	437	162	138	171	268	94	55
4	73	79	120	115	145	302	158	140	252	189	88	56
5	72	84	100	111	134	263	154	136	199	240	87	57
6	70	82	95	122	126	248	154	133	162	269	85	56
7	70	82	95	134	123	233	152	133	152	246	83	51
8	70	207	100	118	124	222	149	130	146	284	79	50
9	70	150	250	127	120	218	144	125	142	197	78	51
10	70	100	200	161	118	208	143	124	137	163	84	50
11	69	98	170	129	118	205	147	132	134	143	76	48
12	71	94	140	118	121	200	146	146	132	128	75	49
13	74	87	130	116	117	193	164	161	130	124	73	50
14	74	68	120	114	122	187	435	150	121	121	74	50
15	74	90	110	115	133	188	294	162	119	118	73	44
16	75	90	110	111	153	183	240	124	113	115	72	50
17	74	90	111	109	138	176	213	120	111	110	72	57
18	71	88	112	117	136	222	193	221	107	107	74	47
19	71	89	112	133	147	216	179	332	164	103	72	45
20	71	89	112	124	135	199	170	164	219	99	69	42
21	72	90	108	116	132	190	163	139	179	98	68	41
22	74	90	108	115	131	183	158	128	140	92	66	40
23	80	90	109	113	130	179	159	120	157	90	65	39
24	88	90	165	113	128	181	159	120	130	116	65	38
25	104	95	141	112	126	184	153	133	117	214	64	38
26	95	125	123	112	133	174	152	146	113	121	64	38
27	85	105	118	113	226	167	149	127	112	97	66	38
28	80	95	115	111	1710	161	141	116	108	89	64	38
29	79	90	115	109	---	161	140	114	104	93	62	42
30	75	90	115	109	---	171	142	170	105	101	61	41
31	74	---	114	105	---	172	---	208	---	118	59	---
TOTAL	2346	2870	3968	3638	5452	9429	5245	4569	4531	4757	2397	1412
MEAN	75.7	95.7	128	117	195	304	175	147	151	153	77.3	47.1
MAX	104	207	250	161	1710	2420	435	332	366	328	165	57
MIN	69	74	95	105	114	161	140	114	104	89	59	38

CAL YR 1986 TOTAL 112308 MEAN 308 MAX 5480 MIN 66
WTR YR 1987 TOTAL 50614 MEAN 139 MAX 2420 MIN 38

07043500 LITTLE RIVER DITCH 1 NEAR MOREHOUSE, MO

LOCATION.--Lat 36°50'03", long 89°43'48", in SW ¼ SE ¼ sec.2, T.25 N., R.12 E., Stoddard County, Hydrologic Unit 08020204, on downstream side of second pier right of left abutment of bridge on State Highway 114, 1.5 mi downstream from Little River Ditch 39, and 2.0 mi west of Morehouse.

DRAINAGE AREA.--450 mi².

PERIOD OF RECORD.--October 1945 to current year. Prior to January 1946 monthly discharge only, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 280.76 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1949, June 11, 1951, to Feb. 22, 1962, nonrecording gage at same datum. Nov. 17, 1949 to June 10, 1951 nonrecording gage at site 50 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. Little River Ditch 1 flows into Little River Ditch 251 at point 35.3 mi downstream, and is independent of the Ditch for which records are published as Little River Ditch 1 near Kennett.

AVERAGE DISCHARGE.--42 years, 531 ft³/s, 16.02 in/yr, 384,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s, Mar. 31, 1985, gage height, 18.42 ft; maximum gage height, 19.81 ft, Mar. 11, 1964; minimum, 21 ft³/s, Sept. 18, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1945 reached a stage of 19.85 ft, from floodmark, discharge, 5,830 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,190 ft³/s, Mar. 1, gage height, 10.64 ft; minimum, 67 ft³/s, Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	118	152	123	104	3760	229	205	205	1410	287	84
2	163	117	283	122	222	2070	223	204	168	1520	201	87
3	137	120	214	120	195	1420	214	204	253	732	155	84
4	122	126	162	120	164	1110	202	195	280	568	137	81
5	112	139	145	117	144	791	193	190	218	718	137	79
6	111	149	139	119	130	525	186	186	163	1040	141	77
7	110	144	141	115	123	374	182	183	152	676	126	76
8	111	143	153	111	119	314	176	175	145	552	120	73
9	118	129	194	115	110	289	168	172	141	488	119	71
10	125	123	201	123	111	259	166	170	142	406	114	71
11	134	124	172	121	114	240	173	169	144	292	111	74
12	145	121	158	120	114	228	166	166	139	246	108	72
13	147	114	148	119	111	217	170	166	140	226	109	72
14	150	116	144	119	122	213	808	236	126	212	108	70
15	151	123	145	118	125	205	1060	238	126	197	105	73
16	145	124	143	111	168	187	824	188	157	185	100	82
17	140	123	142	107	209	179	598	163	186	177	97	85
18	135	122	139	112	183	373	442	161	160	171	104	81
19	134	117	136	116	186	621	357	162	426	165	92	79
20	132	121	134	111	180	473	310	158	442	155	87	75
21	128	119	132	110	167	367	280	151	350	148	83	73
22	129	120	129	109	155	324	281	141	310	145	83	72
23	134	122	131	105	150	278	346	139	233	171	78	71
24	140	118	141	100	142	280	337	146	249	216	79	73
25	145	129	139	99	139	328	295	232	195	183	81	73
26	146	173	133	129	133	322	261	190	202	160	78	73
27	138	163	128	100	156	276	241	156	160	155	79	72
28	128	143	126	89	1050	241	227	145	149	148	82	72
29	124	134	126	93	---	223	221	142	141	152	89	75
30	120	131	125	93	---	260	214	162	153	234	86	72
31	120	---	123	91	---	250	---	259	---	251	84	---
TOTAL	4088	3865	4678	3457	5026	16997	9550	5554	6055	12099	3460	2272
MEAN	132	129	151	112	179	548	318	179	202	390	112	75.7
MAX	163	173	283	129	1050	3760	1060	259	442	1520	287	87
MIN	110	114	123	89	104	179	166	139	126	145	78	70

CAL YR 1986 TOTAL 127563 MEAN 349 MAX 8350 MIN 91
WTR YR 1987 TOTAL 77101 MEAN 211 MAX 3760 MIN 70

ST. FRANCIS RIVER BASIN

07046001 LITTLE RIVER DITCHES NEAR KENNETT, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 36°14'11", long 89°58'06", in NW ¼ sec.3, T.18 N., R.10 E., Dunklin County, at bridges on State Highway 84, 4 mi east of Kennett.

PERIOD OF RECORD.--November 1969 to June 1970, August 1972 to September 1973, July 1977 to current year.

REMARKS.--Analyses represent a composite of water from five ditches.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
21...	0830	180	424	7.80	17.5	8.7	88	30	28	200
NOV										
13...	1345	231	316	8.00	4.0	15.2	125	11	80	--
DEC										
10...	1330	4400	101	6.70	8.5	9.8	81	61	520	--
JAN										
07...	0900	610	388	8.00	4.5	13.8	104	<10	40	160
FEB										
04...	0945	968	228	7.50	6.5	11.4	90	30	440	--
MAR										
03...	0850	7060	99	7.40	6.5	10.5	83	63	K1200	--
APR										
02...	0945	652	306	8.10	11.5	11.0	97	17	110	150
MAY										
06...	1000	530	399	7.40	17.5	8.7	89	14	K20	--
JUN										
03...	1230	955	249	7.90	27.0	7.2	87	12	160	--
JUL										
14...	1400	523	310	8.10	29.0	8.2	104	11	K32	130
AUG										
04...	1530	306	310	8.30	34.0	8.5	118	16	K8	--
SEP										
10...	0850	162	440	8.30	24.0	7.2	83	<10	K24	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
21...	19	56	14	14	2.1	178	5.5	23	16	0.20
NOV										
13...	--	--	--	--	--	126	2.4	--	--	--
DEC										
10...	--	--	--	--	--	43	17	--	--	--
JAN										
07...	14	44	12	12	2.5	145	2.8	26	12	0.10
FEB										
04...	--	--	--	--	--	76	4.6	--	--	--
MAR										
03...	--	--	--	--	--	30	2.3	--	--	--
APR										
02...	23	40	11	11	2.2	122	1.9	19	14	0.20
MAY										
06...	--	--	--	--	--	177	14	--	--	--
JUN										
03...	--	--	--	--	--	98	2.4	--	--	--
JUL										
14...	3	37	10	10	2.7	131	2.0	14	14	0.40
AUG										
04...	--	--	--	--	--	138	1.3	--	--	--
SEP										
10...	--	--	--	--	--	166	1.6	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07050700 JAMES RIVER NEAR SPRINGFIELD, MO

LOCATION.--Lat 37°09'00", long 93°12'12", in SW ¼ SE ¼ SW ¼ sec.2, T.28 N., R.21 W., Greene County, Hydrologic Unit 11010002, on right bank on county road at Kinser bridge, 1.1 mi downstream from Pearson Creek, and 2.5 mi southeast of Springfield.

DRAINAGE AREA.--246 mi².

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,143.27 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 19, 1955, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: June 19, 20, 27, 28 and July 13. Records good. Flows are affected by pumping for Blackman Water Treatment Plant 1.0 mi upstream. Several observations of water temperature and specific conductance were made during the year. Springfield City Utilities gage-height telemeter at station.

AVERAGE DISCHARGE.--32 years, 224 ft³/s, 12.36 in/yr, 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s, Dec. 17, 1957, gage height, 18.20 ft; minimum, 0.1 ft³/s, Sept. 16, 24, 25, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1909 reached a stage of about 22 ft, from information by local resident, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1845	*13,700	*15.55	No other peak greater than base discharge.			

Minimum discharge, 7.9 ft³/s, Aug, 18, 19, Sept. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7180	33	48	56	135	1380	291	120	41	305	13	11
2	1980	31	49	54	164	894	258	112	39	156	12	10
3	858	39	52	53	199	627	232	118	40	74	12	9.9
4	566	58	58	52	180	494	212	146	38	54	11	9.6
5	444	80	61	50	155	418	192	139	37	53	11	8.9
6	330	129	65	49	137	360	173	121	35	112	10	8.8
7	253	166	71	47	122	312	175	113	33	64	10	8.8
8	204	162	96	46	113	268	159	104	32	52	9.7	8.8
9	190	152	264	50	98	226	147	97	31	35	9.1	8.8
10	154	138	413	52	91	186	138	91	31	38	8.9	8.5
11	129	164	349	53	85	157	132	86	32	32	9.6	8.3
12	162	200	290	52	75	132	124	81	32	29	9.6	8.2
13	278	179	231	55	82	130	245	76	31	34	9.2	7.9
14	227	155	184	75	105	128	1100	72	30	38	9.0	9.2
15	188	144	153	200	1010	118	694	69	29	29	8.7	381
16	157	132	133	228	1690	108	614	67	29	24	8.2	230
17	129	114	115	202	1040	122	516	65	30	21	8.2	126
18	110	101	107	198	692	459	442	62	42	19	8.2	73
19	99	91	95	200	584	709	383	59	40	17	8.0	52
20	83	84	90	175	511	507	322	56	38	16	15	37
21	76	77	84	161	555	415	277	57	37	16	13	28
22	71	72	77	153	646	344	235	56	35	15	12	23
23	69	71	70	142	551	352	200	54	34	14	19	19
24	64	55	70	135	461	2110	194	56	33	14	15	17
25	63	58	70	121	394	1040	184	61	31	14	12	16
26	62	64	64	106	334	694	166	58	30	15	12	15
27	53	65	59	97	290	544	153	53	28	17	14	14
28	52	61	56	97	389	463	142	49	26	15	16	13
29	43	52	47	104	---	424	133	47	26	14	14	13
30	36	52	50	126	---	370	126	44	24	14	13	12
31	34	---	58	136	---	328	---	41	---	13	12	---
TOTAL	14344	2979	3629	3325	10888	14819	8359	2430	994	1363	352.4	1195.7
MEAN	463	99.3	117	107	389	478	279	78.4	33.1	44.0	11.4	39.9
MAX	7180	200	413	228	1690	2110	1100	146	42	305	19	381
MIN	34	31	47	46	75	108	124	41	24	13	8.0	7.9

CAL YR 1986 TOTAL 54317.0 MEAN 149 MAX 7180 MIN 7.6
WTR YR 1987 TOTAL 64678.0 MEAN 177 MAX 7180 MIN 7.9

07051600 JAMES RIVER NEAR WILSON CREEK, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°04'35", long 93°22'15", in SW ¼ NW ¼ sec.5, T.27 N., R.22 W., Christian County, Hydrologic Unit 11010002, at Nelson Mill Bridge on county road, 2.5 mi southeast of Wilson Creek, Mo., 2.0 mi upstream from Wilson Creek.

PERIOD OF RECORD.--August 1967 to September 1982, November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 15...	0945	262	391	8.20	16.5	8.5	86	<10	390	190
NOV 06...	1000	100	382	7.90	15.5	8.6	86	<10	500	--
DEC 03...	1500	30	380	7.40	8.5	12.5	107	20	K12	--
JAN 06...	1630	80	411	7.40	8.5	12.9	110	<10	K2	200
FEB 03...	1530	230	348	8.10	9.5	12.5	109	<10	K8	--
MAR 03...	1230	907	277	7.80	9.5	12.0	104	<10	K180	--
APR 08...	0850	195	330	8.10	14.0	8.8	85	<10	54	170
MAY 20...	1130	62	380	8.00	20.5	7.0	78	73	46	--
JUN 10...	1000	45	388	7.90	19.0	7.8	84	<10	46	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 15...	29	63	7.8	4.9	2.8	160	2.0	20	9.7	<0.10
NOV 06...	--	--	--	--	--	170	4.2	--	--	--
DEC 03...	--	--	--	--	--	181	14	--	--	--
JAN 06...	24	71	6.0	5.0	1.7	178	14	15	11	<0.10
FEB 03...	--	--	--	--	--	152	2.3	--	--	--
MAR 03...	--	--	--	--	--	118	3.6	--	--	--
APR 08...	22	56	7.9	4.7	1.5	150	2.3	15	9.1	<0.10
MAY 20...	--	--	--	--	--	154	2.9	--	--	--
JUN 10...	--	--	--	--	--	150	3.7	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

07051600 JAMES RIVER NEAR WILSON CREEK, MO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 15...	210	14	1.60	0.010	0.020	1	<1	8	3	260
NOV 06...	228	2	1.30	0.020	0.040	--	--	--	--	--
DEC 03...	232	3	1.40	<0.010	0.020	--	--	--	--	--
JAN 06...	230	1	2.40	0.030	0.010	<1	1	12	2	70
FEB 03...	206	5	1.20	<0.010	<0.010	--	--	--	--	--
MAR 03...	164	9	1.60	0.020	0.040	--	--	--	--	--
APR 08...	193	13	1.20	<0.010	0.020	<1	1	7	4	170
MAY 20...	224	11	0.800	0.040	0.050	--	--	--	--	--
JUN 10...	228	60	0.600	0.040	0.080	--	--	--	--	--

[illegible]

07052250 JAMES RIVER NEAR BOAZ, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°00'25", long 93°21'50", in NE ¼ NE ¼ NW ¼ sec.32, T.27 N., R.22 W., Christian County, Hydrologic Unit 11010002, at Frazier Bridge, 0.2 mi upstream from Turkey Hollow, 2.0 mi southeast of Boaz.

DRAINAGE AREA.--462 mi².

PERIOD OF RECORD.--August 1967 to September 1982, November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
15...	0815	350	462	8.10	14.5	8.4	82	13	300	210
NOV										
06...	0845	265	440	7.90	14.0	8.0	77	14	560	--
DEC										
03...	1300	150	480	7.70	8.5	13.8	118	<10	130	--
JAN										
06...	1530	180	534	8.30	8.5	15.5	133	<10	K11	220
FEB										
03...	1430	450	444	8.20	10.0	14.1	125	<10	K24	--
MAR										
02...	1600	1820	316	7.90	10.5	11.9	106	14	4500	--
APR										
07...	1445	370	401	8.90	15.0	19.3	191	<10	20	200
MAY										
20...	1015	150	530	8.00	23.5	5.4	64	10	88	--
JUN										
10...	0830	105	618	7.90	22.5	5.9	68	<10	66	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
15...	35	73	6.4	15	3.0	174	2.7	23	20	0.10
NOV										
06...	--	--	--	--	--	166	4.1	--	--	--
DEC										
03...	--	--	--	--	--	192	7.4	--	--	--
JAN										
06...	45	78	7.3	21	3.1	180	1.8	42	30	0.20
FEB										
03...	--	--	--	--	--	168	2.1	--	--	--
MAR										
02...	--	--	--	--	--	132	3.2	--	--	--
APR										
07...	41	68	6.2	14	2.0	154	0.3	24	20	0.20
MAY										
20...	--	--	--	--	--	162	3.1	--	--	--
JUN										
10...	--	--	--	--	--	160	3.9	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07052500 JAMES RIVER AT GALENA, MO

LOCATION.--Lat 36°48'19", long 93°27'41", in SW ¼ SE ¼ SW ¼ sec.6, T.24 N., R.23 W., Stone County, Hydrologic Unit 11010002, on downstream side of right pier of first arch span from left end of bridge on State Highways 13 and 248 in Galena, 0.7 mi upstream from Railey Creek, and 42.3 mi above mouth.

DRAINAGE AREA.--987 mi².

PERIOD OF RECORD.--October 1921 to current year (October 1921, monthly discharge only published in WSP 1311).

REVISED RECORDS.--WSP 977: 1935(M), 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 921.37 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 11, 1927, nonrecording gage at site 500 ft downstream at datum 1.48 ft higher. Dec. 11, 1927 to July 22, 1939, nonrecording gage, and July 23, 1939 to Sept. 30, 1953, water-stage recorder at present site and at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--66 years, 955 ft³/s, 13.14 in/yr, 691,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,700 ft³/s, May 20, 1943, gage height, 29.82 ft, present datum; minimum, 10 ft³/s, Sept. 20, 1954

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	1300	*15,000	*13.34	No other peak greater than base discharge.			

Minimum discharge, 117 ft³/s, Sept. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9310	274	335	354	696	2700	1360	673	259	1750	171	143
2	12000	263	358	345	737	3430	1240	632	258	1190	167	139
3	3930	263	350	349	750	2710	1130	620	250	823	155	135
4	2540	292	347	350	804	2270	1050	1000	277	595	149	131
5	1920	467	340	335	802	1980	974	898	237	623	146	129
6	1540	626	353	314	762	1780	918	793	222	597	140	127
7	1300	644	370	308	726	1620	861	698	208	487	136	125
8	1120	790	472	293	687	1450	815	621	194	427	134	124
9	1000	813	695	353	644	1330	765	573	193	358	131	126
10	894	758	1230	423	608	1210	736	526	197	322	129	128
11	799	774	1600	455	578	1110	713	493	197	299	159	126
12	790	788	1470	444	549	1020	669	469	215	286	157	124
13	805	775	1300	438	551	944	955	445	211	338	147	124
14	874	747	1140	458	729	887	2750	429	200	505	140	119
15	836	714	1020	523	1920	845	2520	407	181	371	136	411
16	753	675	926	779	5350	795	2030	387	172	303	132	804
17	675	638	843	933	4940	890	1780	369	195	269	131	710
18	619	598	767	961	3210	1840	1580	364	351	253	128	476
19	559	545	704	977	2600	2670	1420	352	251	236	130	365
20	509	512	657	1000	2290	2460	1300	333	273	216	152	286
21	467	476	611	988	2110	2070	1200	316	314	204	303	234
22	439	451	568	988	2050	1820	1120	346	256	193	190	207
23	449	434	536	962	2000	1760	1050	346	250	183	166	186
24	432	407	503	923	1830	3960	997	339	233	179	149	172
25	402	396	482	866	1670	4440	951	360	229	181	145	163
26	368	384	455	798	1520	2950	903	380	206	264	145	155
27	356	408	443	736	1410	2380	840	340	191	368	155	146
28	352	367	404	691	1460	2060	779	310	196	277	186	142
29	328	354	386	608	---	1840	730	313	189	234	205	139
30	302	338	376	669	---	1660	693	313	198	207	175	136
31	299	---	357	671	---	1490	---	280	---	186	154	---
TOTAL	46967	15971	20398	19352	43983	60371	34829	14725	6803	12724	4843	6532
MEAN	1515	532	658	624	1571	1947	1161	475	227	410	156	218
MAX	12000	813	1600	1000	5350	4440	2750	1000	351	1750	303	804
MIN	299	263	335	293	549	795	669	280	172	179	128	119

CAL YR 1986 TOTAL 246883 MEAN 676 MAX 12000 MIN 106
WTR YR 1987 TOTAL 287498 MEAN 788 MAX 12000 MIN 119

07053400 TABLE ROCK LAKE NEAR BRANSON, MO

LOCATION.--Lat 36°35'46", long 93°18'35", in NW ¼ sec.22, T.22 N., R.22 W., Taney County, Hydrologic Unit 11010001, at dam on White River, 3 mi upstream from Fall Creek, and 6.1 mi southwest of Branson.

DRAINAGE AREA.--4,020 mi².

PERIOD OF RECORD.--September 1956 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). Prior to July 18, 1958, non-recording gage at same site and datum.

REMARKS.--Lake is formed by combination concrete-gravity and embankment type dam. Storage began on Sept. 9, 1956. Storage for purpose of filling to power pool level at elevation 881 ft and capacity 1,520,500 acre-ft began Nov. 24, 1958, and was reached Dec. 19, 1959. Capacity is 3,567,500 acre-ft at top of spillway gates, elevation 933 ft. Capacity is 3,462,000 acre-ft at top of flood control pool, elevation 931 ft. Capacity between elevations 915 ft and 931 ft is reserved for flood control, 760,000 acre-ft. The capacity at the lowest outlet, elevation 721.96 ft., is 3,530 acre-ft. Lake is used for flood control, power, and recreational purposes.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents 3,542,000 acre-ft, May 10, 1961, elevation, 932.52 ft; minimum, since initial filling to bottom of power pool level, 1,536,000 acre-ft, Feb. 8, 1965, elevation, 881.54 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,790,000 acre-ft, Mar. 31 to Apr. 2, elevation, 917.04 ft; minimum, 2,250,000 acre-ft, Dec. 13-16, 18-24, elevation, 903.69 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2370000	2470000	2360000	2260000	2430000	2740000	2790000	2690000	2570000	2550000	2460000	2390000
2	2420000	2470000	2350000	2270000	2430000	2750000	2790000	2690000	2570000	2550000	2450000	2390000
3	2450000	2460000	2340000	2270000	2440000	2760000	2780000	2700000	2570000	2550000	2446000	2390000
4	2460000	2460000	2330000	2270000	2450000	2760000	2770000	2690000	2570000	2550000	2430000	2390000
5	2480000	2470000	2320000	2270000	2450000	2760000	2760000	2690000	2570000	2550000	2430000	2390000
6	2480000	2480000	2310000	2270000	2460000	2750000	2750000	2690000	2570000	2550000	2430000	2390000
7	2470000	2490000	2310000	2270000	2470000	2750000	2740000	2680000	2570000	2550000	2430000	2390000
8	2470000	2500000	2310000	2270000	2470000	2740000	2730000	2680000	2570000	2550000	2420000	2390000
9	2470000	2510000	2300000	2280000	2480000	2730000	2720000	2680000	2570000	2550000	2410000	2380000
10	2460000	2510000	2290000	2280000	2490000	2720000	2710000	2680000	2570000	2550000	2410000	2380000
11	2470000	2510000	2280000	2290000	2490000	2720000	2700000	2660000	2570000	2550000	2410000	2380000
12	2470000	2510000	2270000	2310000	2490000	2710000	2700000	2640000	2560000	2550000	2410000	2380000
13	2460000	2500000	2250000	2320000	2500000	2700000	2710000	2630000	2550000	2550000	2410000	2380000
14	2470000	2490000	2250000	2330000	2500000	2690000	2730000	2620000	2530000	2550000	2410000	2380000
15	2460000	2490000	2250000	2340000	2540000	2670000	2730000	2610000	2530000	2550000	2410000	2380000
16	2460000	2490000	2250000	2350000	2580000	2660000	2740000	2600000	2520000	2560000	2410000	2380000
17	2460000	2480000	2260000	2350000	2610000	2690000	2740000	2600000	2520000	2550000	2400000	2380000
18	2460000	2470000	2250000	2360000	2630000	2730000	2750000	2590000	2530000	2560000	2400000	2380000
19	2460000	2460000	2250000	2360000	2650000	2750000	2750000	2590000	2530000	2560000	2400000	2380000
20	2460000	2450000	2250000	2370000	2670000	2750000	2750000	2580000	2530000	2550000	2400000	2380000
21	2460000	2440000	2250000	2390000	2680000	2740000	2740000	2570000	2530000	2550000	2390000	2380000
22	2460000	2440000	2250000	2400000	2700000	2740000	2730000	2580000	2530000	2550000	2390000	2380000
23	2470000	2440000	2250000	2400000	2700000	2760000	2720000	2580000	2540000	2540000	2390000	2380000
24	2460000	2430000	2250000	2400000	2710000	2780000	2710000	2580000	2530000	2540000	2390000	2370000
25	2470000	2420000	2260000	2410000	2700000	2780000	2710000	2580000	2540000	2520000	2390000	2370000
26	2470000	2400000	2260000	2410000	2700000	2770000	2690000	2570000	2540000	2510000	2390000	2370000
27	2470000	2400000	2260000	2420000	2700000	2750000	2690000	2570000	2540000	2510000	2390000	2370000
28	2470000	2390000	2260000	2420000	2720000	2760000	2690000	2570000	2540000	2500000	2390000	2360000
29	2480000	2380000	2260000	2420000	---	2780000	2690000	2570000	2540000	2490000	2390000	2350000
30	2480000	2370000	2260000	2430000	---	2780000	2700000	2580000	2540000	2470000	2390000	2350000
31	2470000	---	2260000	2430000	---	2790000	---	2570000	---	2460000	2390000	---

WTR YR 1987

(+)	909.53	906.84	904.13	908.40	915.33	916.97	914.85	911.95	911.26	909.22	907.41	906.35
(±)	+178000	-100000	-110000	+170000	+290000	+70000	-90000	-130000	-30000	-80000	-70000	-40000

MAX	2480000	2510000	2360000	2430000	2720000	2790000	2790000	2700000	2570000	2560000	2460000	2390000
MIN	2370000	2370000	2250000	2260000	2430000	2660000	2690000	2570000	2520000	2460000	2390000	2350000

CAL YR 1986.....-555000

WTR YR 1987.....+58000

(+) Elevation, in feet NGVD, at end of month.

(±) Change in contents, in acre-feet.

LOCATION.--Lat 36°35'51", long 93°17'42", in SE ¼ NE ¼ sec.22, T.22 N., R.22 W., Taney County, Hydrologic Unit 11010003, on left bank 0.9 mi downstream from Table Rock Dam, 2.1 mi upstream from Fall Creek, 5 mi southwest of Branson, 7.4 mi upstream from Missouri Pacific bridge, and at mile 527.8.

PERIOD OF RECORD.--July 1909 to December 1910 (gage heights and discharge measurements only), October 1951 to current year.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Table Rock Lake (station 07053400) since Sept. 9, 1956.

AVERAGE DISCHARGE.--36 years, 3,650 ft³/s, 2,644,000 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 16, 1945, reached a stage of 52.8 ft, from floodmark, discharge, 203,000 ft³/s.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

CAL YR 1986	TOTAL 1439030	MEAN 3943	MAX 10200	MIN 40
WTR YR 1987	TOTAL 1206240	MEAN 3305	MAX 14900	MIN 40

07053600 LAKE TANEYCOMO AT THE SCHOOL OF THE OZARKS, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 36°36'33", long 93°14'04", in sec.4, T.22 N., R.21 W., Taney County, Hydrologic Unit 11010003, on the right bank in the School of the Ozarks water intake pump house, and 4.75 miles below Table Rock Dam.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1984 to current year.

DISSOLVED OXYGEN: May 1984 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1984.

REMARKS.--The number of missing days of dissolved-oxygen record exceeds 20 percent of the year, primarily because recorded data deviated from field measurements slightly more than the criteria for adjustment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

TEMPERATURE: Maximum, 21.1 °C, July 15, 1987; minimum, 3.0 °C, Feb. 11, 12, 1986.

EXTREMES FOR CURRENT YEAR.--

TEMPERATURE: Maximum, 21.1 °C, July 15; minimum, 4.9 °C, Jan. 21.

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	14.3	13.2	13.8	11.0	10.3	10.8	11.1	10.9	11.0	6.7	6.2	6.5
2	16.3	13.1	14.4	10.6	10.4	10.5	11.0	10.5	10.9	7.1	5.8	6.3
3	13.6	13.0	13.3	11.1	10.3	10.7	11.1	10.3	10.8	6.2	5.8	6.0
4	13.8	13.0	13.3	10.8	10.6	10.7	10.9	10.2	10.6	6.1	5.7	5.9
5	14.2	12.9	13.5	10.8	10.6	10.7	10.8	10.1	10.6	9.0	5.8	7.5
6	13.9	12.4	13.2	11.0	10.6	10.8	10.8	10.2	10.6	9.1	7.8	8.5
7	13.6	12.0	12.5	11.4	10.6	11.0	10.6	10.2	10.4	8.8	8.1	8.5
8	12.6	11.9	12.4	11.1	10.8	11.0	10.7	9.9	10.4	8.2	7.7	7.9
9	12.8	12.3	12.5	11.2	10.4	10.8	10.5	10.0	10.4	7.7	6.8	7.2
10	12.6	12.3	12.5	10.7	10.0	10.5	10.4	9.6	10.2	8.2	5.7	7.2
11	12.9	12.1	12.4	10.8	10.1	10.6	10.5	9.6	10.1	8.1	7.2	7.5
12	13.0	12.3	12.6	10.8	10.0	10.6	10.4	9.4	10.0	8.8	6.6	7.8
13	12.6	11.6	12.1	11.2	9.4	10.6	10.2	9.5	10	8.7	7.6	8.2
14	11.6	9.6	11.0	11.0	10.9	11.0	9.9	9.5	9.7	8.7	8.1	8.5
15	10.9	9.6	10.2	11.2	10.2	10.9	10.1	9.4	9.8	8.7	8.3	8.5
16	11.5	9.6	10.4	11.2	10.3	10.7	10.2	10.0	10.1	8.3	7.3	7.8
17	11.9	9.8	10.6	11.4	10.5	11.0	10.3	9.8	10.1	7.5	7.1	7.4
18	11.2	10.3	10.8	11.6	10.9	11.3	10.3	9.3	9.9	7.2	6.6	6.9
19	12.4	10.1	10.8	11.4	10.4	11.1	10.1	9.3	9.7	6.6	5.4	6.1
20	11.8	10.4	10.9	11.7	10.8	11.3	10.0	9.0	9.4	5.7	5.1	5.3
21	11.3	10.2	10.7	11.7	10.7	11.2	9.7	8.6	9.0	6.1	4.9	5.5
22	11.4	10.3	10.9	11.3	10.6	11.0	9.5	8.2	8.7	6.2	5.2	5.8
23	10.9	10.4	10.6	11.0	10.7	10.9	9.4	8.9	9.2	7.6	5.6	7.0
24	11.1	10.3	10.7	11.4	10.5	11.0	9.3	8.4	8.8	7.0	6.5	6.8
25	10.6	10.3	10.5	11.2	10.8	11.1	9.3	7.9	8.4	7.0	6.5	6.8
26	11.1	10.4	10.8	11.2	10.9	11.2	7.8	7.0	7.5	7.3	6.2	6.6
27	11.3	10.5	11.0	11.1	10.6	11.0	7.4	6.8	7.0	6.8	5.9	6.3
28	11.7	10.0	10.9	11.3	10.4	10.9	7.2	6.6	6.8	6.4	5.5	6.1
29	11.6	10.3	11.1	11.3	10.2	10.8	6.9	6.4	6.7	7.1	6.0	6.6
30	11.3	9.9	10.6	11.1	10.4	10.9	7.4	6.3	6.7	7.5	6.7	7.1
31	11.5	9.9	10.7	---	---	---	6.9	6.2	6.5	7.7	7.0	7.3
MONTH	16.3	9.6	11.7	11.7	9.4	10.9	11.1	6.2	9.35	9.1	4.9	7.01

07053600 LAKE TANAYCOMO AT THE SCHOOL OF THE OZARKS, MO--Continued

TEMPERATURE, WATER, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.6	6.8	7.1	7.1	6.8	7.0	---	---	---	9.5	8.1	8.5
2	7.7	6.9	7.2	7.4	6.7	7.0	---	---	---	10.9	8.1	9.1
3	7.7	6.8	7.2	6.9	6.4	6.7	8.7	7.2	7.7	11.7	10.2	10.9
4	8.1	7.2	7.6	6.9	6.3	6.5	8.1	7.5	7.8	11.9	8.1	9.7
5	7.5	6.8	7.2	8.1	6.3	6.7	8.2	7.6	7.8	9.1	8.1	8.5
6	7.1	6.6	6.9	7.0	6.4	6.6	8.0	7.7	7.8	9.6	8.2	8.7
7	7.4	6.4	6.9	7.0	6.3	6.6	8.2	7.6	7.9	9.3	8.1	8.6
8	7.6	6.9	7.2	6.9	6.3	6.6	8.5	7.3	7.9	9.4	8.1	8.6
9	7.8	6.4	7.1	6.6	6.4	6.5	---	---	---	11.6	8.2	9.5
10	7.7	6.6	7.1	6.6	6.3	6.5	8.2	7.5	7.8	11.2	8.5	9.9
11	7.8	6.7	7.3	7.0	6.4	6.6	8.4	7.1	7.8	9.3	8.6	8.9
12	8.1	6.6	7.3	7.1	6.0	6.6	8.2	7.6	7.9	9.4	8.7	9.0
13	7.5	6.7	7.2	7.1	6.3	6.7	8.1	7.7	7.9	9.4	8.9	9.1
14	7.7	7.4	7.6	7.2	6.3	6.7	8.1	7.7	7.9	---	---	---
15	7.9	7.7	7.8	7.0	6.5	6.8	8.0	7.8	7.9	---	---	---
16	7.7	6.4	7.1	7.0	6.7	6.8	8.8	7.8	8.2	---	---	---
17	6.9	6.2	6.6	7.0	6.7	6.9	8.9	7.8	8.2	---	---	---
18	7.1	6.4	6.8	7.0	6.6	6.8	8.8	7.7	8.3	---	---	---
19	7.0	6.3	6.8	7.3	6.3	6.8	8.7	7.8	8.2	---	---	---
20	6.9	6.5	6.7	7.3	6.5	6.9	8.7	7.8	8.2	---	---	---
21	8.0	6.4	6.9	7.3	6.8	7.0	8.3	7.9	8.1	9.6	8.8	9.2
22	7.3	6.7	7.0	7.3	6.9	7.1	8.7	8.1	8.3	11.6	9.1	10.1
23	7.8	6.3	7.1	7.2	6.9	7.0	8.9	8.0	8.4	14.0	9.2	11.8
24	7.1	6.5	6.8	7.2	6.8	7.0	9.6	7.9	8.4	11.1	9.1	10.1
25	7.2	6.6	6.9	7.9	7.0	7.4	10.7	8.0	8.8	13.4	10.7	12.0
26	7.0	6.8	6.9	7.6	7.2	7.4	8.8	8.0	8.3	12.8	9.2	10.7
27	7.0	6.9	7.0	7.7	7.2	7.4	11.1	7.9	8.7	11.8	9.2	9.9
28	7.1	6.9	7.0	8.3	7.1	7.7	10.2	7.7	8.8	10.9	9.2	9.9
29	---	---	---	7.7	7.1	7.5	11.2	8.0	8.7	10.0	9.2	9.6
30	---	---	---	---	---	---	9.7	8.0	8.5	12.8	9.6	11.0
31	---	---	---	---	---	---	---	---	---	13.7	9.0	11.4
MONTH	8.1	6.2	7.08	---	---	---	---	---	---	---	---	---
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.8	9.0	9.6	14.4	12.0	13.2	12.9	9.8	10.5	16.1	12.8	13.9
2	---	---	---	14.3	10.8	12.8	11.3	9.9	10.3	15.9	13.4	14.2
3	---	---	---	13.9	10.8	12.1	10.6	9.9	10.2	17.5	13.7	14.9
4	---	---	---	14.1	13.3	13.8	11.9	9.9	10.9	20.3	9.9	14.8
5	---	---	---	14.3	12.6	13.5	16.8	11.8	14.1	13.4	9.9	10.7
6	---	---	---	14.2	10.1	12.4	13.9	10.5	11.6	14.2	11.5	12.9
7	---	---	---	14.5	10.1	11.6	12.1	10.0	10.6	13.7	12.7	13.1
8	---	---	---	17.4	12.6	14.8	11.6	10.0	10.3	14.8	10.1	12.6
9	---	---	---	15.2	10.9	13.1	13.9	10.0	11.3	14.7	10.0	11.5
10	---	---	---	15.3	11.0	12.6	16.0	10.8	13.8	13.3	10.1	12.2
11	---	---	---	16.3	13.9	14.7	12.1	10.1	11.0	11.8	10.0	10.3
12	---	---	---	18.3	14.2	16.5	11.1	10.1	10.4	11.9	10.0	10.7
13	---	---	---	17.9	15.9	16.7	14.0	10.1	11.3	13.5	11.4	12.3
14	---	---	---	20.6	16.1	17.3	16.5	11.2	13.3	14.3	11.0	12.5
15	---	---	---	21.1	16.8	18.0	14.4	10.5	12.1	12.0	11.2	11.6
16	---	---	---	19.2	12.3	16.2	14.6	10.5	11.9	14.0	10.2	12.1
17	12.8	10.0	10.7	17.5	11.7	14.2	17.0	10.7	14.4	12.2	10.1	10.6
18	11.2	9.9	10.5	15.3	11.2	12.8	12.6	9.3	10.9	11.3	10.1	10.5
19	15.0	10.1	11.7	19.0	11.5	15.4	13.8	10.1	11.1	13.7	10.5	11.8
20	17.1	12.5	14.6	12.3	10.3	11.2	11.5	10.0	10.7	14.8	11.7	12.6
21	17.2	13.6	15.1	12.4	10.3	10.8	12.2	9.8	10.5	14.9	12.2	12.7
22	15.4	10.1	12.8	14.1	10.4	11.6	13.7	9.9	11.2	13.5	12.1	12.8
23	12.6	10.0	11.0	14.7	10.1	11.6	14.3	12.3	13.5	14.4	10.3	12.4
24	13.6	10.3	12.2	11.8	10.0	10.5	15.8	12.3	13.6	10.7	9.9	10.2
25	13.0	10.1	11.2	11.6	10.0	10.4	15.0	11.1	13.2	11.8	9.9	10.3
26	17.0	12.3	13.7	12.1	10.0	10.4	13.5	10.8	11.7	11.5	10.0	10.4
27	16.8	14.2	15.0	11.1	9.8	10.2	14.3	12.9	13.5	12.6	9.9	10.5
28	17.2	14.6	15.4	11.4	9.8	10.1	14.3	13.1	13.7	12.1	10.0	10.6
29	15.3	11.2	13.2	11.2	9.7	10.1	17.9	13.0	14.2	11.0	10.0	10.4
30	15.2	11.2	12.6	10.5	8.7	9.9	17.0	13.3	14.4	11.0	10.1	10.5
31	---	---	---	10.8	9.8	10.1	16.7	13.0	14.1	---	---	---
MONTH	---	---	---	21.1	8.7	12.9	17.9	9.3	12.1	20.3	9.9	11.9

07053600 LAKE TANEYCOMO AT THE SCHOOL OF THE OZARKS, MO--Continued--

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.5	6.7	7.9	10.4	7.7	8.8	8.7	4.6	5.4	9.4	7.0	8.4
2	---	---	---	11.4	7.5	8.9	7.6	4.3	5.3	9.4	7.8	8.5
3	---	---	---	10.7	7.0	8.2	7.0	5.0	5.5	10.1	7.8	8.5
4	---	---	---	11.1	9.3	10.3	7.2	5.4	6.2	9.4	5.3	7.9
5	---	---	---	9.9	8.5	9.1	11.8	6.4	10	7.3	4.7	6.1
6	---	---	---	10.5	6.9	9.2	11.0	6.5	8.1	10.1	6.9	8.7
7	---	---	---	8.0	6.5	7.1	9.2	5.7	7.0	8.5	7.4	8.0
8	---	---	---	11.3	7.1	9.5	8.7	4.8	6.5	8.6	4.0	7.1
9	---	---	---	10.7	7.0	8.6	7.6	4.9	5.9	7.0	3.9	5.0
10	---	---	---	11.2	6.7	8.0	12.3	7.6	10.2	8.7	5.2	7.3
11	---	---	---	10.8	7.6	9.5	8.3	5.0	7.0	5.9	3.5	4.2
12	---	---	---	11.4	7.5	9.6	8.2	4.5	6.0	7.6	4.0	5.1
13	---	---	---	9.8	8.1	8.9	7.3	5.8	6.5	8.3	5.1	7.2
14	---	---	---	10.2	8.1	8.9	11.5	5.9	8.8	8.1	5.2	6.9
15	---	---	---	10.3	8.0	8.9	9.1	4.7	7.3	6.3	5.0	5.7
16	---	---	---	10.9	7.8	9.6	6.0	3.9	4.9	7.8	4.7	6.4
17	11.2	7.1	8.4	10.1	7.0	8.3	10.7	3.2	6.7	7.7	4.1	5.0
18	11.0	7.6	9.1	8.0	6.0	6.9	8.4	3.2	5.3	6.5	4.0	5.2
19	10.0	8.7	9.4	10.7	6.9	9.1	7.6	5.0	5.9	8.7	5.0	7.1
20	12.6	8.8	11.2	8.3	5.8	6.6	8.1	4.8	6.0	9.2	6.9	7.8
21	12.1	8.3	10.8	9.0	5.5	6.5	7.3	4.2	4.8	9.7	7.6	8.6
22	9.5	6.9	8.2	9.9	5.1	6.3	9.5	4.5	5.4	8.6	7.6	8.1
23	11.5	7.0	8.2	8.0	5.3	6.5	9.5	7.2	9.0	8.9	4.6	7.6
24	11.4	8.6	10.5	8.1	4.7	5.6	7.9	5.9	6.9	6.4	3.8	4.6
25	9.1	7.8	8.3	6.9	4.8	5.4	9.2	6.4	7.6	6.7	3.7	4.3
26	10.9	7.7	9.0	7.4	4.8	5.2	9.2	5.5	6.5	6.5	3.6	4.4
27	12.0	9.7	10.6	7.2	5.0	5.7	9.3	7.4	8.7	5.3	3.4	4.1
28	10.4	9.5	10	7.4	4.8	5.4	8.8	7.3	8.1	7.6	3.9	4.6
29	11.4	7.7	9.2	7.7	4.8	5.2	9.8	6.9	8.1	6.8	3.6	5.2
30	9.1	7.1	8.2	7.6	4.8	5.3	9.9	7.8	9.1	7.3	5.2	6.2
31	---	---	---	7.1	4.3	5.0	9.7	7.4	8.4	---	---	---
MONTH	---	---	---	11.4	4.3	7.62	12.3	3.2	7.00	10.1	3.4	6.46

WHITE RIVER BASIN

07053700 LAKE TANEYCOMO AT BRANSON, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 36°38'09", long 93°12'52", in SE ¼ NW ¼ sec.4, T.22 N., R.21 W., Taney County, Hydrologic Unit 11010003, 1000 ft downstream from Turkey Creek, at bridge on Business Route 65 in Branson.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00346)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)
OCT										
14...	1600	220	7.60	11.5	4.7	42	<10	100	110	9
NOV										
05...	1545	274	7.70	12.0	4.9	45	<10	220	--	--
DEC										
04...	1200	210	7.80	10.5	7.5	66	<10	K1	--	--
JAN										
06...	1300	234	7.90	9.5	8.0	69	11	K4	110	2
FEB										
03...	0730	218	7.90	6.5	10.7	86	16	K11	--	--
MAR										
03...	0900	215	7.90	7.0	11.3	91	13	K8	--	--
APR										
07...	1710	228	8.10	8.5	10.0	84	<10	K9	110	10
MAY										
19...	1600	243	8.10	10.0	8.2	72	<10	K16	--	--
JUN										
09...	1630	230	8.00	12.5	11.2	103	<10	K6	--	--
JUL										
09...	0900	240	8.30	22.0	11.2	128	76	220	110	0
AUG										
04...	1415	235	7.50	10.0	6.1	53	<10	41	--	--
SEP										
01...	1730	226	8.80	22.0	10.4	117	33	K7	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
OCT										
14...	34	5.4	2.7	1.5	98	4.8	8.6	4.1	<0.10	134
NOV										
05...	--	--	--	--	140	5.4	--	--	--	164
DEC										
04...	--	--	--	--	98	3.0	--	--	--	113
JAN										
06...	35	5.6	3.8	1.9	108	2.6	9.1	6.4	<0.10	136
FEB										
03...	--	--	--	--	106	2.6	--	--	--	137
MAR										
03...	--	--	--	--	98	2.4	--	--	--	130
APR										
07...	34	6.0	3.7	1.6	100	1.5	8.7	5.6	0.10	131
MAY										
19...	--	--	--	--	106	1.6	--	--	--	136
JUN										
09...	--	--	--	--	108	2.1	--	--	--	131
JUL										
09...	34	6.8	4.1	2.0	113	1.1	9.8	6.5	<0.10	152
AUG										
04...	--	--	--	--	102	6.2	--	--	--	133
SEP										
01...	--	--	--	--	96	0.3	--	--	--	137

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07057500 NORTH FORK RIVER NEAR TECUMSEH, MO

LOCATION.--Lat 36°37'22", long 92°14'53", in NE ¼ SE ¼ sec.35, T.23 N., R.12 W., Ozark County, Hydrologic Unit 11010006, on right bank 3.2 mi downstream from Spring Creek, and 3.5 mi northeast of Tecumseh.

DRAINAGE AREA.--561 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 584.67 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 12, 1945, nonrecording gage at same site and datum 0.22 ft lower.

REMARKS.--Estimated daily discharges: May 29-31, June 1, 2, 6-9, 11-20, 28-30, and July 1-8. Water-discharge records good except estimated discharges, which are fair. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--43 years, 729 ft³/s, 17.65 in/yr, 528,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 133,000 ft³/s, Nov. 19, 1985, gage height, 28.10 ft, on basis of slope-area measurement of peak flow; minimum, 187 ft³/s, Sept. 14-18, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	0030	*4,330	*6.08				

Minimum discharge, 282 ft³/s, Sept. 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	453	378	322	327	405	1030	727	609	455	400	362	305
2	623	375	327	325	416	1190	710	609	450	395	358	303
3	563	369	325	331	435	1010	684	615	439	390	352	301
4	489	381	327	333	447	876	662	626	427	390	351	300
5	453	403	323	328	441	797	645	629	421	385	348	297
6	432	455	318	328	433	760	638	597	418	620	341	296
7	416	490	329	329	429	727	631	576	412	600	336	296
8	406	458	361	327	426	708	623	557	408	580	333	298
9	401	434	421	351	417	693	613	539	404	535	331	302
10	412	418	504	365	415	671	611	524	398	510	327	297
11	480	411	502	364	414	648	610	515	396	484	326	297
12	477	402	464	358	413	630	606	504	394	475	322	296
13	453	389	430	360	414	616	616	490	390	488	323	300
14	448	382	406	374	439	606	2230	481	400	473	325	297
15	434	380	391	396	1310	604	1770	471	450	456	323	301
16	421	380	380	446	3280	600	1540	461	420	440	320	309
17	411	375	367	443	2120	605	1330	459	400	427	317	308
18	401	371	357	448	1450	661	1130	464	420	418	319	304
19	398	364	349	462	1110	748	971	461	450	407	312	298
20	393	362	343	481	938	740	857	451	470	399	314	293
21	390	354	335	474	846	712	796	446	445	392	308	288
22	392	347	329	467	802	712	752	461	650	388	306	287
23	408	344	328	460	759	811	720	484	584	384	305	287
24	412	338	329	447	712	1080	694	496	545	389	303	287
25	409	343	328	435	684	1190	670	493	494	408	301	287
26	404	342	327	423	664	1020	650	480	470	400	305	286
27	398	338	327	417	653	890	637	464	451	404	335	284
28	394	332	326	409	720	826	621	461	440	395	342	286
29	389	323	327	409	---	798	608	470	425	383	326	301
30	385	322	327	404	---	765	604	470	415	373	316	295
31	381	---	326	400	---	743	---	465	---	365	308	---
TOTAL	13326	11360	11155	12221	21992	24467	24956	15828	13341	13553	10095	8886
MEAN	430	379	360	394	785	789	832	511	445	437	326	296
MAX	623	490	504	481	3280	1190	2230	629	650	620	362	309
MIN	381	322	318	325	405	600	604	446	390	365	301	284

CAL YR 1986 TOTAL 236506 MEAN 648 MAX 2540 MIN 318
WTR YR 1987 TOTAL 181180 MEAN 496 MAX 3280 MIN 284

07057500 NORTH FORK RIVER NEAR TECUMSEH, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to June 1972, October 1978 to September 1979, November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
22...	0900	392	378	7.80	14.5	8.7	84	76	180	210
NOV										
12...	1230	402	388	8.30	9.5	12.9	110	<10	K18	--
DEC										
09...	0950	421	367	8.10	10.5	10.6	94	--	24	--
JAN										
08...	0905	327	365	7.60	6.5	11.2	90	<10	K5	210
FEB										
05...	0925	441	372	8.20	7.5	11.3	93	<10	K9	--
MAR										
04...	0850	876	328	7.80	8.5	11.5	96	<10	27	--
APR										
01...	1200	727	320	8.20	12.5	12.4	115	<10	K63	180
MAY										
07...	0750	576	330	7.90	14.0	8.7	84	<10	24	--
JUN										
02...	1300	450	364	8.30	21.0	11.3	125	11	23	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
22...	12	44	25	1.8	1.6	201	6.2	5.2	3.2	<0.10
NOV										
12...	--	--	--	--	--	215	2.1	--	--	--
DEC										
09...	--	--	--	--	--	194	3.0	--	--	--
JAN										
08...	0	43	26	1.7	1.3	223	11	5.5	3.3	<0.10
FEB										
05...	--	--	--	--	--	197	2.4	--	--	--
MAR										
04...	--	--	--	--	--	164	5.0	--	--	--
APR										
01...	9	38	21	1.6	1.6	172	2.1	5.9	3.8	<0.10
MAY										
07...	--	--	--	--	--	155	3.8	--	--	--
JUN										
02...	--	--	--	--	--	194	1.9	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 22...	260	2	0.700	0.030	<0.010	<1	<1	--	1	110
NOV 12...	207	<1	0.500	<0.010	<0.010	--	--	--	--	--
DEC 09...	211	8	0.600	--	--	--	--	--	--	--
JAN 08...	214	1	0.600	<0.010	<0.010	<1	1	7	1	10
FEB 05...	206	2	0.700	<0.010	<0.010	--	--	--	--	--
MAR 04...	165	<1	0.900	<0.010	0.010	--	--	--	--	--
APR 01...	173	<1	0.600	0.030	0.020	<1	<1	5	<1	70
MAY 07...	205	<1	0.500	0.010	0.010	--	--	--	--	--
JUN 02...	202	1	0.500	0.020	0.050	--	--	--	--	--

[illegible]

07061300 EAST FORK BLACK RIVER AT LESTERVILLE, MO

LOCATION.--Lat 37°27'03", long 90°49'38", in NE ¼ SE ¼ sec.16, T.32 N., R.2 E., Reynolds County, Hydrologic Unit 11010007, at bridge on State Highway 21, 49, and 72 at Lesterville, and 0.8 mi upstream from Black River.

DRAINAGE AREA.--94.5 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 655.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. Low flow regulated by Union Electric Company Tamm Sauk pumped-storage power plant lower reservoir, 4 mi upstream, since Feb. 19, 1963, capacity 6,350 acre-ft.

AVERAGE DISCHARGE.--27 years, 118 ft³/s, 85,491 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft³/s, Nov. 19, 1985, gage height, 12.53 ft, on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times during 1963, 1964, 1971, 1983, and 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1935 reached a stage of about 13.8 ft from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,480 ft³/s, Oct. 1, gage height, 6.98 ft; minimum, 0.02 ft³/s, June 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	42	138	40	7.0	1320	63	33	1.0	78	21	2.4
2	717	41	412	27	42	405	81	30	.94	76	15	1.8
3	172	39	192	26	49	177	69	32	1.0	40	6.0	1.4
4	110	39	121	25	69	183	68	35	.95	36	3.5	1.2
5	103	43	119	18	132	120	49	27	.90	27	2.5	1.1
6	71	216	96	4.7	90	105	35	23	.82	66	1.8	1.0
7	33	183	94	11	50	103	56	21	.74	53	1.5	1.1
8	27	148	91	19	48	97	52	19	.66	103	22	1.0
9	26	135	183	37	47	47	43	17	.62	62	9.0	4.7
10	24	86	140	45	48	63	45	24	.58	62	11	14
11	24	76	150	38	38	58	46	20	.51	41	5.0	15
12	24	100	97	21	31	75	71	17	.39	38	2.7	15
13	22	63	114	5.4	10	58	169	20	.22	35	2.7	6.0
14	21	66	57	27	48	42	1110	16	.1	34	2.7	2.7
15	20	54	87	99	52	36	420	17	.05	34	2.0	1.9
16	17	69	50	171	54	29	227	16	.06	19	1.7	1.8
17	6.3	57	71	185	45	40	160	13	.09	12	1.4	1.5
18	4.8	52	48	184	54	1340	137	14	.17	11	1.3	1.2
19	4.0	51	40	103	134	894	116	19	.61	10	1.2	1.1
20	3.2	47	30	15	297	271	106	17	.91	9.6	1.0	.91
21	1.1	33	25	9.7	153	156	92	14	.96	9.6	.91	.82
22	2.0	32	20	44	180	124	77	10	1.1	9.4	.81	.74
23	4.5	17	20	100	166	104	68	4.0	6.9	9.4	.72	.65
24	34	38	41	232	149	175	63	2.7	13	8.1	.55	.58
25	51	38	44	119	96	245	52	2.2	14	3.4	.33	.49
26	51	39	42	14	96	150	47	1.7	28	2.1	.16	2.2
27	51	50	33	8.4	110	135	46	1.5	14	1.5	21	4.0
28	50	86	33	7.6	704	112	40	1.4	13	6.1	40	1.7
29	49	64	19	7.7	---	106	33	1.1	12	12	36	1.4
30	47	55	5.4	9.5	---	66	36	1.3	9.3	4.6	12	1.1
31	42	---	17	5.5	---	96	---	1.1	---	10	4.0	---
TOTAL	2871.9	2059	2629.4	1658.5	2999.0	6926	3677	471.0	123.58	922.8	231.48	90.49
MEAN	92.6	68.6	84.8	53.5	107	223	123	15.2	4.12	29.8	7.47	3.02
MAX	1060	216	412	232	704	1340	1110	35	28	103	40	15
MIN	1.1	17	5.4	4.7	7.0	29	33	1.1	.05	1.5	.16	.49
CAL YR 1986	TOTAL 30704.13	MEAN 84.1	MAX 3330	MIN .46								
WTR YR 1987	TOTAL 24660.00	MEAN 67.6	MAX 1340	MIN .05								

07061500 BLACK RIVER NEAR ANNAPOLIS, MO

LOCATION.--Lat 37°20'10", long 90°47'19", in SW ¼ NW ¼ sec.25, T.31 N., R.2 E., Reynolds County, Hydrologic Unit 11010007, on right bank 0.4 mi downstream from Mayberry Branch, 7 mi southwest of Annapolis, 11 mi downstream from East Fork, and at mile 278.5.

DRAINAGE AREA.--484 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 569.72 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Aug. 21, 1942, at site 415 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Jan. 26-28 and July 18-22. Records good except for estimated daily discharges, which are poor. Several observations of water temperature and specific conductance were made during the year. Small regulation from upstream reservoir since Feb. 1963. U.S. Army Corps of Engineers gage-height and satellite telemeters at station.

AVERAGE DISCHARGE.--48 years, 589 ft³/s, 16.53 in/yr, 426,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,500 ft³/s, Nov. 19, 1985, gage height, 25.81 ft; minimum, 65 ft³/s, Aug. 16, 17, 18, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	0130	8,650	9.59	Apr. 14	1315	*9,040	*9.78

Minimum discharge, 131 ft³/s, Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530	284	323	246	279	2910	494	321	195	557	201	170
2	4420	276	873	262	311	1980	475	310	188	676	182	161
3	1540	271	922	255	330	1320	438	299	200	428	168	154
4	989	276	695	251	329	1040	409	312	192	346	162	149
5	772	320	650	247	388	867	371	319	183	323	160	147
6	628	559	561	235	384	746	342	299	175	378	157	145
7	495	680	521	229	320	668	352	282	170	437	151	144
8	427	636	520	232	309	608	337	269	166	610	148	144
9	385	572	604	252	302	514	320	258	161	566	171	145
10	361	519	719	271	298	459	328	253	161	444	146	149
11	338	460	669	272	295	452	354	247	163	360	146	160
12	341	466	636	257	278	427	371	239	162	322	138	163
13	483	423	575	239	262	377	393	233	159	310	165	164
14	467	389	520	245	292	360	4920	229	155	333	232	153
15	413	369	486	343	342	331	2840	222	161	301	213	149
16	375	352	450	518	428	311	1730	219	166	266	189	158
17	337	354	429	542	536	309	1250	214	185	234	173	165
18	312	331	406	551	538	1870	1030	213	191	215	162	156
19	294	319	381	533	542	3060	868	219	210	195	159	154
20	277	311	367	415	777	1660	747	221	193	185	155	150
21	261	295	350	382	675	1180	657	212	180	180	149	145
22	249	281	333	414	677	994	585	217	171	175	146	142
23	243	268	301	500	688	817	531	213	174	171	140	139
24	272	262	306	600	653	840	493	210	378	167	136	138
25	331	266	308	400	564	1290	459	204	332	164	134	137
26	344	279	303	338	540	1080	421	199	303	161	133	136
27	338	295	290	314	536	908	395	194	261	158	187	136
28	328	302	281	299	768	788	372	190	226	154	251	137
29	316	332	272	290	---	692	347	186	208	156	252	146
30	304	298	252	285	---	602	331	205	195	157	215	154
31	293	---	245	280	---	547	---	198	---	198	185	---
TOTAL	18463	11045	14548	10497	12635	30007	22960	7406	5964	9327	5306	4490
MEAN	596	368	469	339	451	968	765	239	199	301	171	150
MAX	4420	680	922	600	777	3060	4920	321	378	676	252	170
MIN	243	262	245	229	262	309	320	186	155	154	133	136

CAL YR 1986 TOTAL 163479 MEAN 448 MAX 4750 MIN 132
WTR YR 1987 TOTAL 152648 MEAN 418 MAX 4920 MIN 133

07062000 CLEARWATER LAKE NEAR PIEDMONT, MO

LOCATION.--Lat 37°08'00", long 90°46'31", NW ¼ sec.6, T.28 N., R.3 E., Wayne County, Hydrologic Unit 11010007, in intake tower at dam on Black River, 2.3 mi upstream from Brewer Bay, 4.5 mi west of Piedmont, and at mile 257.4.

DRAINAGE AREA.--898 mi².

PERIOD OF RECORD.--June 1948 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.--Lake is formed by earthfill type dam. Storage began June 3, 1948; conservation pool level reached July 4, 1948. Capacity at crest of spillway 413,700 acre-ft at elevation 567 ft, of which 391,800 acre-ft is available for flood-control storage, and 21,920 acre-ft is permanent storage which under normal operating conditions will be maintained for purposes of conservation and recreation at elevation 494 ft. Lake used for flood control and recreational purposes.

COOPERATION.--Records were provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 399,400 acre-ft, May 28, 1957, elevation, 565.59 ft; minimum, since initial filling to conservation pool level, 15,800 acre-ft, Jan. 20, 23, 1972, elevation, 490.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 36,700 acre-ft, Apr. 16, elevation, 501.91 ft; minimum, 21,700 acre-ft, Apr. 9, elevation, 493.87 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23900	22100	22300	22000	22300	27900	22400	29000	29700	29600	27500	27100
2	32200	22200	22600	22100	22100	31100	22300	29200	29900	30200	27700	27100
3	33900	22200	23100	22200	22000	30700	22300	29300	30100	29900	27900	26900
4	33900	22100	22900	22200	22100	29400	22400	29300	30300	29600	28300	26600
5	33300	22000	22800	22200	22200	27800	22600	29300	30500	29700	28400	26200
6	32200	22100	22700	22300	22300	25800	22500	29200	30600	29700	28200	25800
7	31000	22700	22600	22200	22300	24400	22300	29100	30700	30000	28000	25600
8	29100	22800	22500	22100	22100	23200	21900	29100	30800	29900	27600	25700
9	27400	22700	22400	22200	22000	22600	21700	29000	31000	29900	27300	25700
10	26800	22400	22600	22200	22100	22100	21900	29000	31000	29300	27200	25800
11	25400	22300	22600	22200	22100	22000	22100	29000	30700	29000	27300	25900
12	24100	22100	22400	22100	21900	22200	22400	29000	30300	29100	27300	26000
13	22900	22000	22300	22100	22000	22200	22700	29000	29800	29100	27400	26200
14	22400	22000	22200	22100	22200	22200	29700	29000	29300	29000	27700	26200
15	22400	22000	22000	22200	22600	22000	35200	29000	29200	29100	27500	26100
16	22100	22000	22000	22600	23000	22000	36700	29000	29200	29000	27300	26000
17	22000	22000	21900	22900	23400	22500	36200	29000	29200	29000	27000	25800
18	22000	22300	22000	22700	23200	24400	34800	29000	29400	29100	26900	25700
19	22000	22900	22000	22300	23000	30300	33100	29000	29600	29200	27000	25800
20	22000	23100	22100	22100	23100	31200	31200	29100	29600	29200	27100	25800
21	22000	22700	22100	22100	23200	30600	29900	29100	29300	29200	27300	25900
22	22000	22500	22100	22000	23400	29500	29200	29100	29100	29100	27300	25900
23	22000	22200	22000	22100	23300	27900	29000	29100	29000	29200	27400	25900
24	22300	22000	22000	22400	23000	26400	29200	29200	29300	29100	27400	26000
25	22500	22200	22000	22700	22600	25700	29200	29200	29700	29100	27400	26000
26	22800	22800	22000	22600	22300	24900	29200	29200	29900	29100	27500	26000
27	22800	22700	22000	22400	22300	24000	29200	29100	29800	29100	27800	26000
28	22500	22500	22000	22200	22900	23600	29100	29100	29600	29200	27900	26000
29	22200	22400	22000	22200	---	23300	29000	29000	29400	29200	27800	26100
30	22000	22300	22000	22200	---	22700	29000	29300	29400	27900	27600	26100
31	22000	---	22000	22100	---	22400	---	29600	---	27200	27300	---

WTR YR 1987

(+)	494.04	494.25	494.06	494.11	494.59	494.31	498.04	498.39	498.27	497.10	497.16	496.48
(+)	-1600	+300	-300	+100	+800	-500	+6600	+600	-200	-2200	+100	-1200

MAX	33900	23100	23100	22900	23400	31200	36700	29600	31000	30200	28400	27100
MIN	22000	22000	21900	22000	21900	22000	21700	29000	29000	27200	26900	25600

CAL YR 1986.....-121000

WTR YR 1987.....+2500

(+) Elevation, in feet NGVD, at end of month.

(+) Change in contents, in acre-feet.

07062500 BLACK RIVER AT LEEPER, MO

LOCATION.--Lat 37°03'32", long 90°41'12", in NE ¼ SE ¼ NE ¼ sec.35, T.28 N., R.3 E., Wayne County, Hydrologic Unit 11010007, on downstream side of center pier of bridge on State Highway 49, 1 mi south of Leeper, 4 mi downstream from McKenzie Creek, 8 mi downstream from Clearwater Dam, and at mile 249.

DRAINAGE AREA.--987 mi².

PERIOD OF RECORD.--June 1921 to current year.

REVISED RECORDS.--WSP 762: 1933(M). WSP 1007: 1943. WSP 1281: 1922-23, 1927-29(M).

GAGE.--Water-stage recorder. Datum of gage is 416.54 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 22, 1937, nonrecording gage; Oct. 22, 1937 to Jan. 21, 1942, water-stage recorder; and Jan. 22 to Apr. 6, 1942, nonrecording gage; all at site 1,900 ft downstream from Highway 34 at datum 3.85 ft lower. From Apr. 7, 1942 to Jan. 28, 1981, records were obtained from water-stage recorder attached to downstream pier on Highway 34 bridge.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Clearwater Lake (station 07062000) 8 mi upstream since June 3, 1948. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--66 years, 974 ft³/s, 705,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,400 ft³/s, May 14, 1933, gage height, 20.01 ft, site and datum then in use, from rating curve extended above 55,000 ft³/s; minimum, 62 ft³/s, Sept. 22-25, 1966, at site and datum then in use, result of closure of Clearwater Dam: minimum, prior to regulation, 133 ft³/s, Aug. 11, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1904 reached a stage of about 22.3 ft, at site and datum of gage operated from Apr. 7, 1942 to Jan. 28, 1981, from floodmarks, discharge, 125,000 ft³/s, from rating curve extended above 55,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,250 ft³/s, Mar. 3, gage height, 5.30 ft; minimum, 217 ft³/s, Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	553	465	559	471	533	903	866	534	331	723	349	363
2	583	460	711	467	567	979	843	502	333	554	270	278
3	1230	474	793	466	635	2190	817	492	308	788	259	285
4	1300	536	1050	464	540	2220	652	491	300	738	262	359
5	1300	591	1020	461	533	2200	630	538	297	639	293	365
6	1290	637	864	461	537	2150	648	542	295	537	321	365
7	1350	543	863	467	592	1900	713	537	294	614	338	347
8	1550	756	866	485	593	1580	723	492	289	781	380	245
9	1550	839	876	491	576	1350	712	476	289	781	384	232
10	921	844	866	485	515	1100	580	471	297	994	350	228
11	1200	804	919	484	513	936	514	467	376	808	254	228
12	1210	722	1040	489	546	678	502	452	485	585	251	226
13	1190	708	875	505	518	671	551	449	505	569	251	231
14	1040	664	866	460	508	693	810	443	509	552	253	232
15	669	592	861	452	500	689	1110	421	483	499	361	258
16	671	580	781	449	529	639	1460	417	377	487	382	318
17	627	578	726	521	549	551	1760	415	365	459	382	320
18	522	539	673	752	870	618	2050	414	362	395	341	294
19	514	346	631	878	912	884	2030	414	379	383	251	240
20	506	349	600	809	913	1970	2000	415	461	380	246	233
21	480	652	594	623	913	2040	1860	412	491	377	237	231
22	465	618	591	610	910	2030	1340	411	475	376	227	230
23	468	613	594	592	944	2010	1040	407	471	377	222	229
24	486	599	575	551	1060	2000	734	410	384	376	223	232
25	474	512	535	547	1060	1960	698	404	371	377	221	231
26	469	353	531	575	1040	1950	680	399	393	374	220	232
27	493	414	529	653	890	1860	656	398	463	362	231	231
28	630	601	526	573	938	1470	643	399	467	313	257	229
29	642	622	524	523	---	1250	637	395	465	312	358	232
30	629	586	501	515	---	1250	591	356	481	541	367	228
31	551	---	492	513	---	1160	---	339	---	1080	369	---
TOTAL	25563	17597	22432	16792	19734	43881	28850	13712	11796	17131	9110	7952
MEAN	825	587	724	542	705	1416	962	442	393	553	294	265
MAX	1550	844	1050	878	1060	2220	2050	542	509	1080	384	365
MIN	465	346	492	449	500	551	502	339	289	312	220	226

CAL YR 1986 TOTAL 365667 MEAN 1002 MAX 3890 MIN 249
WTR YR 1987 TOTAL 234550 MEAN 643 MAX 2220 MIN 220

07063000 BLACK RIVER AT POPLAR BLUFF, MO

LOCATION.--Lat 36°45'34", long 90°23'17", in SW ¼ NW ¼ sec.2, T.24 N., R.6 E., Butler County, Hydrologic Unit 11010007, on right bank at City Light and Water Plant in Poplar Bluff, 1,500 ft upstream from bridge on Business Route Highway 60, 4.8 mi downstream from Indian Creek, and at mile 211.2.

DRAINAGE AREA.--1,245 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1936 to September 1937, October 1939 to current year. Gage-height records collected at site 1,800 ft downstream September 1923 to July 1935, and since July 1935 at site 1,500 ft downstream are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 317.48 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1940, nonrecording gage at site 1,500 ft downstream at datum 2.00 ft higher; Oct. 1, 1940, to June 7, 1955, at site 1,500 ft downstream at present datum. Prior to July 12, 1985 at datum .10 lower.

REMARKS.--Estimated daily discharges: Dec. 4-16 and Aug. 21-25. Water-discharge records good except for estimated daily discharges, which are fair. Considerable regulation by Clearwater Lake (station 07062000) 46 mi upstream since, June 3, 1948. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--49 years, 1,319 ft³/s, 955,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,600 ft³/s, Dec. 4, 1982, computed from slope-area measurement, gage height, 21.68 ft; minimum, 180 ft³/s, Sept. 25, 26, 1966, closure of Clearwater Dam for repairs; minimum prior to regulation, 236 ft³/s, Aug. 12, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1904 reached a maximum discharge of 100,000 ft³/s, and flood on Mar. 12, 1935, reached a stage of 21.1 ft, present datum (affected by levees constructed since 1904).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,080 ft³/s, Mar. 1, gage height, 8.58 ft; minimum, 309 ft³/s, Aug. 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	881	661	768	605	697	2910	1410	782	415	1010	1150	479
2	711	580	768	581	848	2060	1210	722	405	1010	689	478
3	745	559	878	574	850	1770	1150	681	395	853	530	401
4	1200	569	980	577	872	2470	1090	659	367	1010	491	383
5	1310	646	1100	571	778	2580	950	646	362	1110	498	458
6	1340	689	1080	568	753	2550	904	679	358	1310	507	485
7	1340	714	970	567	744	2490	907	677	355	1140	530	498
8	1420	651	940	568	786	2210	951	661	354	1050	557	492
9	1570	736	930	597	784	1930	960	613	354	1140	617	389
10	1560	747	930	620	762	1640	930	589	354	1140	628	369
11	1130	755	950	610	706	1410	815	577	352	1240	594	351
12	1290	768	1020	603	694	1230	742	569	387	1120	479	339
13	1310	782	1100	607	710	1020	723	554	506	926	457	343
14	1280	833	970	628	716	973	1100	544	546	869	455	337
15	1130	836	940	590	720	977	1390	536	570	831	456	338
16	855	773	940	574	808	963	1640	509	565	771	560	412
17	822	760	919	569	878	916	1830	500	447	738	612	448
18	762	762	879	650	889	1120	2100	500	418	695	619	456
19	667	724	820	874	1110	1330	2290	495	410	627	581	441
20	642	559	771	993	1170	1520	2310	491	443	584	458	366
21	626	516	736	951	1170	2230	2290	493	593	569	400	344
22	596	757	719	812	1160	2360	2050	496	623	558	360	334
23	584	775	717	792	1150	2360	1620	490	601	554	340	330
24	595	772	718	777	1180	2360	1300	479	589	556	310	328
25	603	771	698	742	1250	2360	1070	487	489	555	310	328
26	583	714	661	738	1260	2300	995	482	447	553	309	328
27	570	552	650	770	1280	2270	949	473	454	540	316	326
28	588	556	645	833	1730	2140	908	467	523	526	328	326
29	700	727	641	766	---	1780	879	468	538	476	337	340
30	725	768	639	710	---	1580	852	467	574	452	441	334
31	719	---	615	686	---	1540	---	438	---	708	474	---
TOTAL	28854	21012	26092	21103	26455	57349	38315	17224	13794	25221	15393	11581
MEAN	931	700	842	681	945	1850	1277	556	460	814	497	386
MAX	1570	836	1100	993	1730	2910	2310	782	623	1310	1150	498
MIN	570	516	615	567	694	916	723	438	352	452	309	326

CAL YR 1986 TOTAL 482564 MEAN 1322 MAX 5370 MIN 428
WTR YR 1987 TOTAL 302393 MEAN 828 MAX 2910 MIN 309

WHITE RIVER BASIN

07063000 BLACK RIVER AT POPLAR BLUFF, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 20...	1540	642	274	8.30	17.0	9.5	96	14	K30	140
NOV 14...	0700	799	--	8.00	8.0	11.9	98	<10	26	--
DEC 10...	1050	930	258	7.70	7.0	12.0	96	<10	25	--
JAN 06...	1610	567	248	7.90	5.0	16.1	124	<10	K13	140
FEB 04...	0645	901	238	8.00	6.0	12.3	96	<10	23	--
MAR 02...	1620	1900	148	8.00	7.0	12.4	100	<10	K140	--
APR 02...	1345	1200	197	8.00	11.5	10.5	93	<10	K13	100
MAY 06...	0650	679	229	8.00	16.5	8.4	84	<10	K60	--
JUN 03...	1645	395	252	8.00	24.0	8.0	92	<10	55	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 20...	10	29	17	2.4	1.1	132	1.3	11	2.7	<0.10
NOV 14...	--	--	--	--	--	137	2.7	--	--	--
DEC 10...	--	--	--	--	--	116	4.5	--	--	--
JAN 06...	5	27	17	2.4	1.0	132	3.2	10	2.8	<0.10
FEB 04...	--	--	--	--	--	120	2.3	--	--	--
MAR 02...	--	--	--	--	--	69	1.3	--	--	--
APR 02...	8	22	12	1.7	1.6	96	1.9	11	2.4	<0.10
MAY 06...	--	--	--	--	--	101	2.0	--	--	--
JUN 03...	--	--	--	--	--	126	2.4	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07066000 JACKS FORK AT EMINENCE, MO

LOCATION.--Lat 37°09'18", long 91°21'31", in SW ¼ NW ¼ sec.26, T.29 N., R.4 W., Shannon County, Hydrologic Unit 11010008, on left bank 50 ft upstream from bridge on State Highway 19, at Eminence, 1.5 mi downstream from Mahans Creek, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--398 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1311.

REVISED RECORDS.--WSP 787: 1928(M), 1934. WSP 877: 1938. WSP 927: Drainage area. WSP 1281: 1929.

GAGE.--Water-stage recorder. Datum of gage is 617.87 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 27, 1934, nonrecording gage at site 1,350 ft upstream at datum 2.11 ft higher. Jan. 27, 1934 to Jan. 10, 1935, nonrecording gage at site 75 ft downstream at datum 0.04 ft lower. Jan. 11, 1935 to July 9, 1964, nonrecording gage at site 50 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records fair. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--66 years, 453 ft³/s, 15.46 in/yr, 328,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,800 ft³/s, Nov. 19, 1985, gage height, 17.58 ft, present site and datum; minimum, 64 ft³/s, Aug. 28, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1895 and March 1904 reached a stage of about 25 ft, present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1800	*3,290	*5.33				

Minimum discharge, 117 ft³/s, Sept. 7, 8, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283	183	201	171	216	1600	443	271	232	231	157	130
2	577	184	218	171	266	1490	405	266	223	246	156	129
3	483	183	230	166	341	1020	372	268	220	245	144	122
4	347	189	243	166	334	738	346	279	216	251	139	122
5	292	229	241	166	300	587	329	332	210	298	140	122
6	264	300	231	165	276	501	317	308	210	419	133	120
7	248	343	224	169	258	446	308	300	206	404	132	119
8	239	297	235	168	248	406	296	298	212	360	132	124
9	233	271	288	178	240	378	285	286	217	441	134	120
10	223	255	409	185	226	349	281	273	212	332	135	122
11	212	247	385	187	220	345	279	253	210	276	135	124
12	243	235	331	185	214	317	282	248	209	245	136	124
13	239	229	297	186	212	280	284	247	206	243	136	124
14	230	221	271	198	236	269	1330	257	204	229	139	122
15	221	217	257	269	317	261	1440	263	208	220	140	137
16	209	210	248	328	2020	255	1060	232	208	203	133	153
17	204	210	237	295	1420	276	813	240	202	196	129	145
18	196	205	224	283	908	2080	646	271	275	187	128	139
19	192	201	219	287	640	2330	535	249	298	182	127	131
20	189	196	215	295	519	1550	465	240	298	177	125	125
21	182	189	205	285	488	1130	419	257	258	174	125	123
22	182	189	203	269	494	881	389	312	240	172	124	120
23	181	188	198	256	477	730	361	295	239	167	122	125
24	202	186	196	244	431	1030	345	275	235	164	121	123
25	213	189	194	232	388	1640	327	251	234	165	124	133
26	211	194	190	223	353	1170	311	241	245	165	123	136
27	202	192	182	217	340	895	297	235	232	164	139	132
28	195	192	179	213	634	717	285	225	224	164	141	126
29	202	192	174	207	---	596	279	219	218	161	139	125
30	195	192	174	204	---	529	278	231	219	160	141	133
31	188	---	171	200	---	484	---	237	---	164	134	---
TOTAL	7477	6508	7270	6768	13016	25280	13807	8159	6820	7205	4163	3830
MEAN	241	217	235	218	465	815	460	263	227	232	134	128
MAX	577	343	409	328	2020	2330	1440	332	298	441	157	153
MIN	181	183	171	165	212	255	278	219	202	160	121	119

CAL YR 1986 TOTAL 145480 MEAN 399 MAX 3880 MIN 165
WTR YR 1987 TOTAL 110303 MEAN 302 MAX 2330 MIN 119

07067000 CURRENT RIVER AT VAN BUREN, MO

LOCATION.--Lat 36°59'29", long 91°00'53", in NE ¼ NW ¼ sec.25, T.27 N., R.1 W., Carter County, Hydrologic Unit 11010008, near right bank on downstream side of pier of bridge on U.S. Highway 60 in Van Buren, 0.4 mi downstream from Pike Creek, 4.7 mi upstream from Big Creek, and at mile 90.4.

DRAINAGE AREA.--1,667 mi².

PERIOD OF RECORD.--October 1912 to current year. Prior to July 1921 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 877: 1938. WSP 897: 1939. WSP 927: Drainage area. WSP 1281: 1929.

GAGE.--Water-stage recorder. Datum of gage is 442.78 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1926, nonrecording gage at site 100 ft downstream at different datum; Sept. 1, 1926 to Oct. 19, 1934, nonrecording gage and Oct. 20, 1934 to Sept. 30, 1939, water-stage recorder, at present site and datum 3.00 ft higher, set to read same as gage 100 ft downstream.

REMARKS.--Estimated daily discharges: Oct. 3-15 and Apr. 13, 14. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--75 years, 1,915 ft³/s, 15.61 in/yr, 1,387,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s, Aug. 21, 1915, gage height, 25.9 ft, present datum, minimum, 473 ft³/s, Oct. 7, 8, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 26, 1904, reached a stage of 29.0 ft, present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	0630	*9.380	*7.94				

Minimum discharge, 716 ft³/s, Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1630	1160	1050	948	1110	6210	2500	1590	1170	899	841	774
2	7500	1150	1220	940	1450	5840	2350	1540	1120	1030	804	763
3	5300	1130	1440	937	1480	4670	2210	1540	1120	1040	795	757
4	3600	1160	1430	928	1510	3800	2090	1600	1090	990	815	753
5	2500	1350	1340	916	1420	3240	2000	1600	1060	1060	792	749
6	2200	1620	1260	912	1340	2850	1940	1570	1020	1260	774	746
7	2000	1810	1240	906	1280	2540	1900	1490	1010	1430	772	743
8	1900	1760	1340	897	1240	2290	1830	1430	989	1560	770	749
9	1700	1620	1590	932	1180	2130	1780	1380	976	1500	764	760
10	1600	1490	1900	982	1140	2010	1790	1340	954	1380	760	747
11	1500	1420	2010	952	1120	1870	1830	1310	953	1180	752	771
12	1600	1370	1870	926	1090	1780	1780	1290	951	1100	755	782
13	1700	1290	1710	926	1070	1710	1790	1270	939	1120	762	802
14	1600	1220	1550	963	1230	1670	5140	1250	932	1130	828	770
15	1500	1180	1450	1080	1400	1650	6170	1330	952	1040	819	764
16	1400	1160	1380	1380	2680	1640	4770	1270	966	983	796	801
17	1340	1150	1320	1460	3840	1680	4010	1220	951	930	780	819
18	1290	1130	1260	1420	3270	4330	3520	1470	997	898	765	783
19	1250	1090	1210	1420	2680	7780	3180	1400	1170	874	763	766
20	1220	1070	1170	1430	2340	5800	2870	1290	1140	854	765	752
21	1190	1050	1130	1410	2200	4630	2600	1230	1150	836	755	737
22	1170	1020	1090	1370	2190	3960	2360	1610	1020	821	747	730
23	1190	1010	1060	1350	2210	3550	2190	1580	965	822	735	724
24	1320	992	1060	1300	2130	3750	2080	1410	949	810	729	726
25	1440	993	1050	1250	2010	4880	1970	1340	921	837	729	730
26	1410	1050	1030	1190	1890	4330	1880	1280	937	828	733	728
27	1350	1050	1010	1150	1840	3780	1800	1250	906	820	802	727
28	1300	1020	991	1110	3250	3390	1730	1190	866	806	907	724
29	1250	1010	979	1100	---	3100	1660	1150	847	797	866	746
30	1210	1000	967	1080	---	2850	1610	1260	846	810	822	760
31	1180	---	957	1060	---	2660	---	1230	---	798	796	---
TOTAL	58340	36525	40064	34625	51590	106370	75330	42710	29867	31243	24293	22683
MEAN	1882	1217	1292	1117	1842	3431	2511	1378	996	1008	784	756
MAX	7500	1810	2010	1460	3840	7780	6170	1610	1170	1560	907	819
MIN	1170	992	957	897	1070	1640	1610	1150	846	797	729	724

CAL YR 1986 TOTAL 774899 MEAN 2123 MAX 11000 MIN 957
WTR YR 1987 TOTAL 553640 MEAN 1517 MAX 7780 MIN 724

07067500 BIG SPRING NEAR VAN BUREN, MO

LOCATION.--Lat 36°57'05", long 90°59'36", in SW ¼ NE ¼ sec. 6, T.26 N., R.1 E., Carter County, Hydrologic Unit 11010008, on right bank 400 feet downstream from spring outlet, 0.4 mi upstream from Current River, and 3.5 mi southeast of Van Buren.

PERIOD OF RECORD.--October 1921 to current year. Prior to Oct. 1, 1923, published as "near Chicopee". Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1922-23, 1928(M), 1929.

GAGE.--Nonrecording gage. Datum of gage is 429.08 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 19, 1971, nonrecording gage; prior to Oct. 1, 1934 at datum 1.0 ft higher. Water-stage recorder Feb. 19, 1971 to Mar. 15, 1978, at present datum.

REMARKS.--Estimated daily discharges: Oct. 2-4, Feb. 16-18, Mar. 1-4, 17-19, 24-26, and April 14-19. Records good except for periods of estimated daily discharges due to backwater from Current River, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--66 years, 441 ft³/s, 319,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,000 ft³/s, estimated, Dec. 3, 1982, Feb. 24, 1985, and Nov. 21, 1985, during period of backwater from Current River; minimum, 236 ft³/s, Oct. 6, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 805 ft³/s, Mar. 19; minimum daily, 287 ft³/s, Sept. 24, 26-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	385	338	321	302	297	620	496	420	347	307	300	295
2	404	335	318	300	297	630	483	416	341	307	300	295
3	485	335	318	297	307	610	477	413	335	302	297	295
4	455	341	318	297	305	580	464	439	335	304	295	290
5	407	341	318	297	305	539	464	442	335	305	295	295
6	395	341	321	297	305	513	458	420	329	338	295	294
7	382	341	321	297	302	474	458	407	332	360	295	292
8	382	341	323	292	302	455	451	398	332	370	292	295
9	382	335	323	295	302	442	451	395	326	361	290	292
10	382	335	323	297	302	426	451	388	326	347	290	292
11	376	335	332	295	302	404	455	385	326	339	290	297
12	376	335	326	297	302	398	451	376	321	338	292	297
13	370	326	326	295	302	398	451	370	321	338	292	297
14	364	326	321	295	310	398	550	367	323	332	292	295
15	364	326	321	297	310	407	710	370	323	329	292	292
16	358	326	321	297	367	413	700	367	323	323	292	297
17	358	326	321	297	455	750	680	361	318	317	292	292
18	358	323	321	297	460	800	641	364	318	313	290	292
19	356	321	315	295	420	805	586	361	353	313	292	295
20	353	321	315	295	388	764	539	350	323	310	290	293
21	353	321	310	297	370	672	516	350	326	310	290	292
22	350	321	307	297	370	649	496	350	326	307	290	290
23	350	321	313	295	370	641	480	350	326	307	290	290
24	350	321	313	295	364	700	464	350	321	307	292	287
25	350	321	307	292	358	720	451	350	315	307	292	290
26	350	323	307	292	353	705	448	347	310	305	292	287
27	350	323	305	292	353	641	439	350	313	307	295	287
28	350	323	305	292	506	597	432	344	307	302	295	287
29	350	321	302	292	---	570	429	350	307	305	295	287
30	344	321	300	292	---	536	426	350	307	300	297	287
31	344	---	302	292	---	496	---	347	---	300	295	---
TOTAL	11533	9864	9794	9159	9684	17753	14991	11647	9745	9910	9086	8766
MEAN	372	329	316	295	346	573	500	376	325	320	293	292
MAX	485	341	332	302	506	805	710	442	353	370	300	297
MIN	344	321	300	292	297	398	426	344	307	300	290	287

CAL YR 1986 TOTAL 173852 MEAN 476 MAX 1100 MIN 300
WTR YR 1987 TOTAL 131932 MEAN 361 MAX 805 MIN 287

07068000 CURRENT RIVER AT DONIPHAN, MO

LOCATION.--Lat 36°37'19", long 90°50'51", in NW ¼ NW ¼ sec.27, T.23 N., R.2 E., Ripley County, Hydrologic Unit 11010008, on right bank 0.5 mi upstream from U.S. Highway 160, 1 mi west of Doniphan, 2.5 mi upstream from Briar Creek, and at mile 51.3.

DRAINAGE AREA.--2,038 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1918 to current year. Prior to July 1921 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 877: 1937-38(M). WSP 927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 321.21 ft above National Geodetic Vertical Datum of 1929. July 1936 to Sept. 30, 1971, datum was 1.00 ft higher. Prior to July 3, 1936, nonrecording gages at several sites 0.5 mi downstream at various datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. National Weather Service gage-height and U.S. Army Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--69 years, 2,764 ft³/s, 18.42 in/yr, 2,002,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 122,000 ft³/s, December 3, 1982, gage height, 25.49 ft, present site and datum, from contracted opening measurement; minimum, 852 ft³/s, Oct. 8-19, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1904 reached a stage of 25.9 ft, from floodmarks, present site and datum, discharge, 130,000 ft³/s, from rating curve extended above 60,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	2215	*8,270	*5.01				

Minimum discharge, 1,160 ft³/s, Sept. 28 and 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1580	1700	1770	1330	1570	6070	3340	2290	1770	1560	1400	1360
2	4450	1690	1820	1320	1790	6710	3190	2250	1700	1470	1410	1340
3	5850	1690	1990	1330	2010	5820	3030	2220	1660	1620	1370	1320
4	4090	1740	2130	1320	2030	4870	2880	2330	1620	1560	1370	1310
5	3240	1860	2080	1300	2020	4220	2740	2330	1580	1600	1440	1290
6	2750	2610	2000	1290	1520	3790	2630	2310	1530	1980	1360	1290
7	2390	2260	1940	1280	1840	3470	2550	2240	1490	2070	1340	1300
8	2190	2400	1960	1270	1770	3200	2480	2160	1460	2250	1340	1290
9	2060	2300	2090	1310	1720	2970	2410	2090	1440	2240	1340	1300
10	2020	2190	2340	1360	1670	2790	2350	2020	1420	2180	1340	1300
11	2000	2110	2580	1370	1630	2630	2340	1980	1400	2000	1330	1290
12	1990	2050	2560	1340	1600	2470	2360	1980	1410	1820	1330	1310
13	2030	1990	2360	1310	1570	2330	2360	1950	1390	1810	1340	1360
14	2050	1960	2150	1320	1630	2230	2330	1900	1370	1780	1390	1320
15	1970	1930	1980	1380	1830	2150	6710	1890	1480	1750	1430	1290
16	1880	1900	1880	1540	2220	2110	6080	1940	1450	1660	1420	1400
17	1810	1890	1820	1820	3890	2110	5140	1860	1430	1580	1410	1350
18	1760	1870	1750	1870	4040	3530	4520	1860	1430	1520	1390	1340
19	1710	1840	1700	1860	3530	6890	4070	2140	1580	1480	1380	1290
20	1670	1820	1640	1860	3140	7320	3730	1950	1700	1440	1380	1270
21	1640	1780	1590	1880	2920	5820	3450	1870	1750	1420	1370	1230
22	1620	1760	1550	1850	2820	5010	3220	1850	1630	1390	1350	1210
23	1680	1730	1520	1820	2800	4470	3030	2290	1530	1380	1340	1200
24	1810	1710	1490	1800	2780	4330	2880	2110	1470	1390	1310	1190
25	1840	1730	1480	1750	2660	4710	2760	1980	1430	1380	1300	1180
26	1900	1760	1460	1690	2540	5380	2660	1890	1410	1430	1300	1180
27	1860	1780	1430	1650	2470	4850	2560	1830	1410	1390	1430	1170
28	1810	1770	1400	1610	3410	4370	2460	1790	1380	1380	1500	1160
29	1770	1740	1380	1570	---	4030	2390	1730	1340	1370	1520	1160
30	1740	1720	1360	1550	---	3750	2330	1740	1440	1360	1460	1180
31	1720	---	1350	1530	---	3520	---	1840	---	1390	1410	---
TOTAL	68880	56680	56550	47480	65820	127920	95880	62610	45100	50650	42800	38180
MEAN	2222	1889	1824	1532	2351	4126	3196	2020	1503	1634	1381	1273
MAX	5850	2400	2580	1880	4040	7320	6710	2330	1770	2250	1520	1400
MIN	1580	1690	1350	1270	1570	2110	2330	1730	1340	1360	1300	1160

CAL YR 1986 TOTAL 968090 MEAN 2652 MAX 12200 MIN 1350
WTR YR 1987 TOTAL 758550 MEAN 2078 MAX 7320 MIN 1160

WHITE RIVER BASIN

07068000 CURRENT RIVER AT DONIPHAN, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to July 1975, October 1979 to September 1980, October 1981 to September 1982, October 1983 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March 1965 to September 1975.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 27.0°C several days during summer months in 1967, 1968, 1969; minimum, 2.5°C, Jan. 9, 10, 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
21...	1340	1630	328	8.10	14.5	10.4	100	12	K10	180
NOV										
13...	0730	2000	334	8.00	7.0	12.1	96	<10	K9	--
DEC										
10...	0650	2280	312	8.20	8.0	12.8	106	<10	K3	--
JAN										
07...	1250	1280	368	8.10	7.0	12.7	102	<10	K3	180
FEB										
04...	1530	2030	312	8.10	9.0	13.2	112	<10	K5	--
MAR										
03...	1250	5800	248	7.90	8.5	11.0	91	18	K12	--
APR										
01...	1645	3300	250	8.10	12.5	11.0	102	12	K3	140
MAY										
06...	1530	2320	291	8.10	16.0	9.2	92	<10	K7	--
JUN										
03...	0745	1660	315	8.10	22.0	8.9	99	<10	K16	--
JUL										
14...	1100	1780	320	8.30	23.0	8.6	98	<10	K6	170
AUG										
04...	1330	1350	315	8.30	28.0	8.5	107	<10	25	--
SEP										
09...	1650	1300	338	8.30	23.5	8.4	96	<10	K6	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
21...	5	36	21	1.8	0.90	171	2.6	4.0	2.4	<0.10
NOV										
13...	--	--	--	--	--	188	3.6	--	--	--
DEC										
10...	--	--	--	--	--	161	2.0	--	--	--
JAN										
07...	3	37	22	1.9	0.90	180	2.8	4.3	2.5	<0.10
FEB										
04...	--	--	--	--	--	170	2.6	--	--	--
MAR										
03...	--	--	--	--	--	134	3.3	--	--	--
APR										
01...	6	29	16	1.2	1.1	132	2.0	5.1	2.4	<0.10
MAY										
06...	--	--	--	--	--	135	2.1	--	--	--
JUN										
03...	--	--	--	--	--	168	2.6	--	--	--
JUL										
14...	0	35	20	1.9	0.80	177	1.7	3.9	2.2	0.20
AUG										
04...	--	--	--	--	--	179	1.7	--	--	--
SEP										
09...	--	--	--	--	--	168	1.6	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 21...	220	5	0.200	0.020	<0.010	<1	<1	--	2	140
NOV 13...	172	<1	0.200	0.010	<0.010	--	--	--	--	--
DEC 10...	180	11	0.300	<0.010	<0.010	--	--	--	--	--
JAN 07...	186	<1	0.300	<0.010	<0.010	<1	<1	9	2	60
FEB 04...	176	5	0.200	<0.010	<0.010	--	--	--	--	--
MAR 03...	132	17	0.300	0.010	0.010	--	--	--	--	--
APR 01...	139	3	0.300	0.020	0.020	<1	<1	12	1	130
MAY 06...	154	<1	0.200	0.020	0.010	--	--	--	--	--
JUN 03...	170	<1	0.200	0.010	0.060	--	--	--	--	--
JUL 14...	125	<1	0.100	--	<0.010	<1	<1	4	<1	30
AUG 04...	180	<1	0.200	0.020	0.010	--	--	--	--	--
SEP 09...	176	<1	0.100	<0.010	<0.010	--	--	--	--	--

[illegible]

07071000 GREER SPRING AT GREER, MO

LOCATION.--Lat 36°47'11", long 91°20'53", in SE ¼ SW ¼ sec.36, T.25 N., R.4 W., Oregon County, Hydrologic Unit 11010011, on right bank 300 ft downstream from lower outlet of spring, 1 mi north of Greer, and 1 mi upstream from Eleven Point River.

PERIOD OF RECORD.--August to December 1904 (gage heights and discharge measurements only), October 1921 to current year. October to December 1921 monthly discharge only, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 564.00 ft above National Geodetic Vertical Datum of 1929. Aug. 10 to Dec. 31, 1904, nonrecording gage at site 250 ft downstream at different datum. Nov. 17, 1921, to June 25, 1934, nonrecording gage at site 250 ft downstream at datum 0.74 ft lower than present datum.

REMARKS.--No estimated daily discharges. Records good. Occasional runoff from drainage area of 2.97 mi² included in records.

AVERAGE DISCHARGE.--66 years, 338 ft³/s, 244,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft³/s, Dec. 3, 1982, includes about 930 ft³/s surface runoff, gage height, 2.97 ft, from rating curve extended above 700 ft³/s, maximum excluding surface runoff, 942 ft³/s, Dec. 3, 1982; minimum, 104 ft³/s, Nov. 16-19, 1956, Jan. 18, 19, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 443 ft³/s, Mar. 19, gage height, 1.11 ft; minimum daily, 198 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	258	258	262	244	414	363	308	277	233	240	212
2	269	254	262	262	254	419	355	308	277	233	236	212
3	269	254	262	262	258	414	350	308	277	229	240	212
4	269	254	258	258	254	400	350	308	273	229	236	212
5	266	258	254	258	251	390	341	308	269	262	236	212
6	266	262	254	254	251	377	333	308	266	350	233	212
7	262	262	251	254	251	372	333	308	266	350	236	212
8	262	262	251	251	247	368	329	304	266	341	233	215
9	266	262	258	251	251	368	329	304	258	333	233	215
10	266	262	262	251	251	359	325	300	254	321	236	215
11	266	262	262	251	251	355	325	300	254	308	236	215
12	266	262	258	251	247	355	321	296	254	292	233	215
13	266	262	258	251	244	336	316	296	247	281	236	215
14	262	262	254	254	251	333	327	296	251	281	233	215
15	262	258	262	254	285	329	346	296	247	273	233	212
16	258	258	281	254	350	325	350	296	247	266	233	212
17	258	258	281	254	368	325	350	292	244	266	237	212
18	258	258	281	254	363	419	346	292	240	258	233	205
19	258	258	281	258	350	443	341	292	240	254	229	202
20	262	262	277	258	346	433	343	292	240	254	229	202
21	258	262	273	258	341	428	337	288	240	251	226	202
22	258	258	273	262	337	409	333	292	240	247	226	202
23	262	258	273	258	341	404	329	288	244	247	222	202
24	262	258	273	258	337	409	325	285	240	247	222	202
25	266	261	273	251	329	414	321	285	236	247	222	202
26	266	258	273	251	325	404	316	285	233	244	219	202
27	262	258	269	247	321	400	312	288	233	244	219	202
28	262	258	269	244	350	395	312	285	229	244	219	202
29	258	254	269	244	---	386	312	285	222	240	215	202
30	262	254	262	244	---	377	308	285	222	240	215	198
31	258	---	262	244	---	368	---	285	---	240	212	---
TOTAL	8154	7767	8234	7863	8248	11928	9978	9163	7486	8305	7108	6250
MEAN	263	259	266	254	295	385	333	296	250	268	229	208
MAX	269	262	281	262	368	443	363	308	277	350	240	215
MIN	258	254	251	244	244	325	308	285	222	229	212	198

CAL YR 1986 TOTAL 126488 MEAN 347 MAX 515 MIN 251
WTR YR 1987 TOTAL 100484 MEAN 275 MAX 443 MIN 198

07071500 ELEVEN POINT RIVER NEAR BARDLEY, MO

LOCATION.--Lat 36°38'55", long 91°12'03", in NE ¼ SE ¼ sec.17, T.23 N., R.2 W., Oregon County, Hydrologic Unit 11010011, on downstream side of right pier of main truss of bridge on U.S. Highway 160, 7 mi southwest of Bardley, 7.5 mi upstream from Fredericks Fork, and at mile 53.7.

DRAINAGE AREA.--793 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to current year. October 1921 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 827: 1927-28, 1935. WSP 927: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 410.84 ft above National Geodetic Vertical Datum of 1929. Prior to June 26, 1934, nonrecording gage at site 100 ft upstream at datum 0.06 ft higher. June 26, 1934 to Oct. 19, 1939, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: May 31 to June 1, July 28 to Aug. 3. Water-discharge records fair. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--66 years, 776 ft³/s, 13.12 in/yr, 555,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft³/s, Dec. 3, 1982, gage height, 21.64 ft; minimum, 152 ft³/s, Jan. 27, 1956 and Jan. 11, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 19.7 ft in August 1915, from floodmarks, discharge, 44,000 ft³/s, from rating curve extended above 25,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	1845	*1,440	*3.84				

Minimum discharge, 232 ft³/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	425	377	357	309	316	1350	703	505	402	376	336	266
2	432	377	360	309	346	1100	683	495	394	383	331	265
3	433	378	352	311	355	964	653	497	392	387	327	264
4	428	397	346	315	350	877	635	500	382	392	324	262
5	422	414	341	312	339	815	619	503	375	400	323	261
6	417	404	336	309	331	763	606	511	370	544	315	261
7	413	398	340	305	328	720	598	505	368	577	311	261
8	412	396	352	301	324	690	586	493	364	540	308	265
9	412	387	358	318	318	662	574	480	361	523	306	259
10	411	376	363	324	313	636	565	470	359	495	303	260
11	411	375	362	323	309	611	560	461	357	465	300	260
12	421	373	357	319	309	586	554	457	357	450	298	257
13	414	365	348	317	305	566	556	449	355	464	301	278
14	410	362	347	317	321	553	611	442	351	433	300	259
15	405	372	344	317	385	546	662	444	425	410	296	262
16	400	373	343	320	609	534	662	434	383	403	292	283
17	398	373	342	319	710	542	652	430	369	400	289	264
18	395	369	337	322	648	1080	639	435	368	399	286	258
19	393	361	334	328	599	1270	620	431	425	400	282	254
20	390	362	330	330	568	1090	602	424	422	400	281	250
21	389	357	326	324	553	991	586	416	402	391	278	247
22	392	353	323	329	544	918	568	414	396	383	277	245
23	415	356	324	331	530	867	558	404	387	385	278	243
24	444	351	324	327	514	886	548	404	378	376	272	244
25	422	355	324	324	504	936	537	402	370	375	270	243
26	411	362	324	318	502	905	527	398	363	382	271	241
27	402	354	323	314	507	869	521	389	358	372	301	239
28	396	348	317	311	804	837	512	385	353	362	287	239
29	391	347	317	312	---	803	505	378	348	355	277	240
30	387	346	315	312	---	762	502	417	349	347	272	236
31	380	---	312	305	---	730	---	411	---	341	268	---
TOTAL	12671	11118	10478	9832	12541	25459	17704	13784	11283	12910	9160	7666
MEAN	409	371	338	317	448	821	590	445	376	416	295	256
MAX	444	414	363	331	804	1350	703	511	425	577	336	283
MIN	380	346	312	301	305	534	502	378	348	341	268	236

CAL YR 1986 TOTAL 279542 MEAN 766 MAX 6820 MIN 312
WTR YR 1987 TOTAL 154606 MEAN 424 MAX 1350 MIN 236

WHITE RIVER BASIN

07071500 ELEVEN POINT RIVER NEAR BARDLEY, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to June 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
21...	1515	389	358	7.80	15.5	11.4	112	<10	K8	200
NOV										
12...	1615	377	350	8.00	10.0	12.1	104	<10	K12	--
DEC										
09...	1435	358	341	8.20	11.5	11.1	100	--	K7	--
JAN										
07...	1430	305	335	7.70	9.0	12.8	108	12	K7	190
FEB										
05...	0710	339	354	8.30	8.5	10.0	84	<10	K17	--
MAR										
03...	1420	964	281	8.10	11.5	11.9	106	<10	K24	--
APR										
01...	1530	703	276	8.10	14.5	11.9	115	<10	K6	150
MAY										
06...	1315	559	324	7.90	15.0	10.5	102	<10	K5	--
JUN										
02...	1645	392	342	8.30	22.5	9.7	110	21	K7	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
21...	2	41	23	1.7	1.2	195	6.0	3.0	2.0	<0.10
NOV										
12...	--	--	--	--	--	206	4.0	--	--	--
DEC										
09...	--	--	--	--	--	192	2.3	--	--	--
JAN										
07...	0	39	23	1.6	1.2	201	7.8	3.3	2.1	<0.10
FEB										
05...	--	--	--	--	--	195	1.9	--	--	--
MAR										
03...	--	--	--	--	--	150	2.3	--	--	--
APR										
01...	8	32	18	1.2	1.6	146	2.2	3.8	2.6	<0.10
MAY										
06...	--	--	--	--	--	160	3.9	--	--	--
JUN										
02...	--	--	--	--	--	186	1.8	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

07186000 SPRING RIVER NEAR WACO, MO

LOCATION.--Lat 37°14'44", long 94°33'58", on line between SE ¼ sec.7 and NE ¼ sec.18, T.29 N., R.33 W., Jasper County, Hydrologic Unit 11070207, on left bank on downstream side of left pier of county highway bridge, 0.8 mi downstream from Blackberry Creek, 1.5 mi east of Waco, and 47.6 mi upstream from mouth.

DRAINAGE AREA.--1,164 mi².

PERIOD OF RECORD.--April 1924 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 833.23 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 23, 1935, no recording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 1, Aug. 1-4. Records good except for periods of estimated discharge, which are poor. Low flow slightly regulated by gristmills above station. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--63 years, 884 ft³/s, 10.31 in/yr, 640,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s, May 19, 1943, gage height, 30.94 ft, from floodmark; minimum, 4.2 ft³/s, Aug. 28, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 2	0200	*64,800	*28.39	Mar. 1	unknown	21,200	^a 20.5
Feb. 16	0330	13,700	17.06				

^aMaximum observed

Minimum discharge, 63 ft³/s, Aug. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45300	422	578	320	1280	21000	973	362	411	1700	88	130
2	51000	397	539	309	1180	15400	901	351	309	2040	85	116
3	29000	378	515	301	1100	5340	834	343	279	940	81	105
4	23300	699	488	296	915	2190	776	352	305	858	77	99
5	15600	2440	453	291	752	1760	729	367	283	2700	75	94
6	7380	2110	425	285	675	1530	690	1060	240	2890	75	89
7	2430	1270	601	279	629	1360	662	956	214	1100	75	90
8	1460	923	1870	275	589	1230	633	528	195	677	73	88
9	1240	871	2080	276	550	1140	608	404	184	478	70	86
10	1120	783	1610	314	515	1050	583	352	178	382	70	84
11	1020	864	1110	351	490	974	568	325	178	306	68	82
12	1030	942	821	353	465	911	544	304	181	323	66	82
13	1140	820	709	407	485	869	559	293	185	1780	70	81
14	1130	732	655	538	1190	825	1320	281	172	881	89	78
15	1010	673	622	603	8950	790	1480	371	175	472	77	81
16	859	646	608	528	12800	758	909	322	175	306	73	473
17	745	626	604	466	9740	1220	765	311	167	240	74	595
18	675	600	591	473	4930	3160	687	300	179	209	72	254
19	621	559	562	575	2810	3050	629	268	314	178	78	164
20	574	525	524	714	2650	1910	580	266	434	163	118	127
21	535	500	485	780	2110	1250	539	283	277	152	259	109
22	574	471	454	753	1600	1090	514	303	475	139	417	97
23	883	444	432	697	1310	1186	492	475	3490	126	248	89
24	967	425	420	638	1160	5320	471	459	1320	118	558	84
25	2880	577	409	590	1060	5500	452	561	569	114	338	81
26	1200	3800	393	537	990	3160	433	432	382	109	195	75
27	787	2650	378	502	1060	1750	416	339	291	101	161	71
28	611	1150	364	565	11700	1440	400	2240	611	101	161	78
29	530	719	351	3490	---	1270	387	2550	331	91	204	90
30	478	627	341	4210	---	1140	375	1530	347	94	208	83
31	441	---	331	3050	---	1040	---	692	---	91	155	---
TOTAL	196520	28643	20323	23766	73685	90607	19909	17980	12851	19859	4458	3855
MEAN	6339	955	656	767	2632	2923	664	580	428	641	144	128
MAX	51000	3800	2080	4210	12800	21000	1480	2550	3490	2890	558	595
MIN	441	378	331	275	465	758	375	266	167	91	66	71

CAL YR 1986 TOTAL 455399 MEAN 1248 MAX 51000 MIN 55
WTR YR 1987 TOTAL 512456 MEAN 1404 MAX 51000 MIN 66

07186400 CENTER CREEK NEAR CARTERVILLE, MO

LOCATION.--Lat 37°08'26", long 94°22'57", in NW ¼ NW ¼ NW ¼ sec.24, T.28 N., R.32 W., Jasper County, Hydrologic Unit 11070207, on downstream side of right pier of bridge on State Highway HH, 1.5 mi downstream from Grove Creek, 3 mi east of Carterville, and 17 mi above mouth.

DRAINAGE AREA.--232 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 913.21 ft above National Geodetic Vertical Datum of 1929 (Missouri State Highway and Transportation Commission).

REMARKS.--No estimated daily discharges. Water-discharge records good.

AVERAGE DISCHARGE.--25 years, 203 ft³/s, 11.88 in/yr, 147,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,300 ft³/s, July 3, 1976, gage height, 17.68 ft; minimum, 9.4 ft³/s, Aug. 20, 21, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 2, 1959, reached a stage of 18.57 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 6,730 ft³/s, Oct. 1, stage falling, peak occurred Sept. 30, 1986; maximum peak discharge, 3,340 ft³/s, Feb. 28, gage height 8.31 ft; minimum discharge, 30 ft³/s Sept. 27, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4810	167	136	95	220	2050	303	141	93	322	41	43
2	1310	161	134	94	222	967	286	138	90	176	41	42
3	945	156	129	94	216	738	273	137	89	131	41	42
4	940	174	124	93	207	614	261	136	84	121	41	40
5	722	227	118	92	197	537	251	140	81	112	41	39
6	589	259	114	92	189	477	243	179	78	99	40	38
7	513	253	119	91	180	424	235	157	75	90	39	39
8	456	247	123	91	174	385	227	143	73	83	38	40
9	406	240	135	100	165	352	220	137	71	78	38	38
10	364	231	152	102	159	325	215	133	71	73	38	38
11	330	309	160	105	155	305	210	128	75	68	38	38
12	312	290	160	108	149	289	204	124	74	66	43	38
13	294	269	155	109	148	274	209	120	69	71	51	36
14	273	254	151	110	165	264	224	118	66	64	44	35
15	254	244	146	110	707	253	218	133	66	60	41	35
16	239	231	143	112	1140	243	211	114	83	58	40	40
17	228	218	138	116	704	316	205	109	68	57	40	38
18	218	206	134	128	579	516	200	107	64	57	39	36
19	210	195	130	153	569	345	194	102	67	54	40	36
20	201	187	126	163	495	308	188	98	69	53	64	35
21	195	177	122	166	445	290	182	95	64	51	54	34
22	204	170	118	171	407	284	177	99	63	51	46	33
23	205	165	116	170	371	304	172	94	77	49	46	32
24	199	158	114	167	343	1070	164	97	78	49	45	32
25	197	155	111	163	319	667	159	95	81	47	45	31
26	194	159	108	157	305	522	155	90	74	46	46	31
27	189	148	104	152	302	455	150	86	69	46	56	31
28	185	145	102	153	1670	405	147	121	77	45	55	36
29	181	141	99	215	---	365	145	122	70	44	49	38
30	177	138	97	226	---	336	143	108	77	43	47	33
31	172	---	95	220	---	317	---	99	---	42	45	---
TOTAL	15712	6074	3913	4118	10902	14997	6171	3700	2236	2406	1372	1097
MEAN	507	202	126	133	389	484	206	119	74.5	77.6	44.3	36.6
MAX	4810	309	160	226	1670	2050	303	179	93	322	64	43
MIN	172	138	95	91	148	243	143	86	63	42	38	31

CAL YR 1986 TOTAL 78628 MEAN 215 MAX 10000 MIN 30
WTR YR 1987 TOTAL 72698 MEAN 199 MAX 4810 MIN 31

ARKANSAS RIVER BASIN

07186400 CENTER CREEK NEAR CARTERVILLE, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1962 to September 1975, October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
15...	1730	256	321	7.40	13.5	8.4	79	<10	210	150
NOV										
06...	1715	259	300	7.60	13.0	9.4	88	10	570	--
DEC										
03...	0700	133	320	7.80	7.0	10.9	89	<10	K40	--
JAN										
07...	1210	91	350	7.90	6.5	11.7	94	<10	31	140
FEB										
04...	1100	207	302	7.70	9.5	10.4	90	<10	K16	--
MAR										
03...	1700	699	251	7.50	12.0	10.0	91	13	130	--
APR										
08...	1635	227	289	8.60	15.5	15.0	149	<10	K16	140
MAY										
20...	1600	95	335	7.90	24.5	7.2	86	<10	62	--
JUN										
10...	1515	71	347	8.00	23.0	12.5	145	<10	90	--
JUL										
08...	0800	84	340	7.60	24.0	5.7	68	<10	K64	150
AUG										
05...	1430	41	364	8.00	28.0	9.6	122	<10	39	--
SEP										
03...	0730	36	398	7.70	21.0	5.9	65	26	560	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
15...	25	56	2.7	5.6	1.8	126	9.7	13	7.5	0.40
NOV										
06...	--	--	--	--	--	122	5.9	--	--	--
DEC										
03...	--	--	--	--	--	137	4.2	--	--	--
JAN										
07...	9	52	1.8	4.5	1.4	128	3.1	17	9.6	0.20
FEB										
04...	--	--	--	--	--	118	4.6	--	--	--
MAR										
03...	--	--	--	--	--	98	6.0	--	--	--
APR										
08...	26	53	2.7	6.4	1.1	117	0.5	11	7.9	0.20
MAY										
20...	--	--	--	--	--	128	3.1	--	--	--
JUN										
10...	--	--	--	--	--	128	2.5	--	--	--
JUL										
08...	19	56	2.9	8.6	2.1	133	6.5	11	9.6	0.20
AUG										
05...	--	--	--	--	--	116	2.3	--	--	--
SEP										
03...	--	--	--	--	--	128	4.9	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

ARKANSAS RIVER BASIN

07186480 CENTER CREEK NEAR SMITHFIELD, MO

WATER-QUALITY RECORDS

LOCATION.--Lat 37°09'20", long 94°36'10", NE ¼ sec.14, T.28 N., R.34 W., Jasper County, Hydrologic Unit 11070207, at bridge on county road, 1 mi south of Smithfield.

PERIOD OF RECORD.--October 1968 to July 1975, July 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
16...	0800	300	370	7.90	12.0	10.0	91	<10	76	180
NOV										
06...	1600	340	384	7.70	13.0	10.3	97	<10	K680	--
DEC										
03...	0800	30	420	7.40	6.5	12.0	97	<10	K26	--
JAN										
07...	1330	155	420	8.00	6.5	12.3	98	<10	K19	190
FEB										
04...	1230	300	366	7.90	9.5	11.6	100	<10	K15	--
MAR										
04...	1100	1000	306	7.70	11.5	10.6	95	<10	110	--
APR										
08...	1500	300	350	8.20	15.0	12.6	124	<10	K3	170
MAY										
20...	1715	145	400	8.10	25.0	7.4	89	<10	K34	--
JUN										
10...	1645	120	422	8.10	24.0	13.0	153	<10	K28	--
JUL										
08...	0930	30	420	8.20	25.0	7.0	85	<10	140	200
AUG										
05...	1545	46	445	8.10	29.5	9.5	124	<10	21	--
SEP										
03...	0945	70	537	7.90	22.0	9.0	102	26	84	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
16...	54	67	3.1	6.7	1.6	126	3.1	40	7.7	0.20
NOV										
06...	--	--	--	--	--	122	4.7	--	--	--
DEC										
03...	--	--	--	--	--	140	11	--	--	--
JAN										
07...	58	72	3.5	8.1	1.5	136	2.6	50	9.4	0.20
FEB										
04...	--	--	--	--	--	120	2.9	--	--	--
MAR										
04...	--	--	--	--	--	110	4.2	--	--	--
APR										
08...	45	63	2.9	7.4	1.2	124	1.5	34	7.6	0.20
MAY										
20...	--	--	--	--	--	130	2.0	--	--	--
JUN										
10...	--	--	--	--	--	134	2.1	--	--	--
JUL										
08...	67	75	3.5	8.4	2.1	135	1.6	65	8.7	0.30
AUG										
05...	--	--	--	--	--	124	1.9	--	--	--
SEP										
03...	--	--	--	--	--	132	3.2	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 16...	227	6	4.50	0.060	0.070	3	3	5	1	220
NOV 06...	246	10	4.20	0.080	0.090	--	--	--	--	--
DEC 03...	246	3	4.40	0.020	0.060	--	--	--	--	--
JAN 07...	252	3	1.90	0.040	0.060	1	2	7	2	90
FEB 04...	230	4	3.90	0.040	0.090	--	--	--	--	--
MAR 04...	190	30	3.30	0.080	0.100	--	--	--	--	--
APR 08...	203	12	3.80	0.020	0.050	<1	1	5	2	150
MAY 20...	237	7	3.80	0.040	0.110	--	--	--	--	--
JUN 10...	260	9	3.50	0.030	0.130	--	--	--	--	--
JUL 08...	276	19	3.50	0.050	0.140	3	<1	3	2	620
AUG 05...	262	8	4.60	0.020	0.110	--	--	--	--	--
SEP 03...	313	9	7.20	0.030	0.190	--	--	--	--	--

[illegible]

07187000 SHOAL CREEK ABOVE JOPLIN, MO

LOCATION.--Lat 37°01'23", long 94°30'58", in SE ¼ NE ¼ NE ¼ sec.34, T.27 N., R.33 W., Newton County, Hydrologic Unit 11070207, on right bank 250 ft upstream from mouth of Spring Creek, 1,400 ft downstream from bridge on State Highway 86, 0.5 mi south of city limits of Joplin and 13.2 mi above mouth.

DRAINAGE AREA.--427 mi².

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 886.87 ft above National Geodetic Vertical Datum of 1929. Prior to July 21, 1966, water-stage recorder at site 1.8 mi upstream, at datum 15.5 ft higher.

REMARKS.--No estimated daily discharges. Records good. Several observations of water temperature and specific conductance were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--46 years, 406 ft³/s, 12.91 in/yr, 294,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,100 ft³/s, May 18, 1943, gage height, 16.8 ft, former site and datum; minimum, 12 ft³/s, Sept. 7, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,390 ft³/s, Oct. 1, stage falling, peak occurred Sept. 30, 1986; maximum peak discharge, 2,250 ft³/s, Mar. 1, gage height, 6.00 ft, no peak discharge greater than base discharge of 6,000 ft³/s; minimum discharge, 79 ft³/s, Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7760	341	301	238	389	2160	638	298	318	224	112	122
2	3160	328	298	233	403	1770	591	303	299	241	110	116
3	2030	313	288	230	395	1450	549	309	292	207	107	113
4	1710	349	276	229	388	1240	518	317	273	227	102	112
5	1370	454	266	226	378	1100	493	383	260	226	102	108
6	1160	512	262	220	368	991	475	503	249	224	102	109
7	1020	505	273	220	356	902	457	437	242	196	102	111
8	911	499	283	215	348	839	441	398	235	181	99	109
9	829	487	299	242	339	773	421	377	225	172	98	107
10	747	459	320	265	330	708	415	363	222	166	98	106
11	700	545	340	285	321	658	404	351	228	159	98	105
12	663	610	347	294	317	606	386	336	238	158	118	103
13	636	602	348	299	314	565	396	330	228	193	171	101
14	577	645	344	301	434	543	445	324	213	194	120	98
15	524	538	338	301	788	520	434	320	205	181	109	96
16	493	512	331	297	1540	499	418	307	193	172	106	106
17	470	482	324	303	1440	641	401	301	187	163	115	107
18	438	449	317	321	1210	1110	391	305	183	166	105	105
19	418	418	306	340	1060	985	381	306	185	162	110	103
20	403	398	300	349	950	865	372	292	194	153	157	99
21	379	379	293	360	871	796	362	283	184	144	178	88
22	389	361	283	368	806	774	352	294	180	138	148	84
23	408	357	276	370	737	759	345	306	200	137	136	85
24	408	337	276	370	670	1070	342	314	293	134	140	85
25	449	324	271	363	605	1150	335	310	230	134	131	86
26	438	341	264	351	555	1030	332	306	202	133	130	86
27	403	328	256	341	548	947	325	287	188	130	180	85
28	384	320	251	337	1180	877	311	446	186	125	184	100
29	370	313	248	358	---	804	304	436	182	119	165	107
30	357	301	245	371	---	739	302	382	182	118	142	98
31	349	---	241	375	---	685	---	345	---	115	132	---
TOTAL	30353	12807	9065	9372	18040	28556	12336	10569	6696	5192	3907	3040
MEAN	979	427	292	302	644	921	411	341	223	167	126	101
MAX	7760	645	348	375	1540	2160	638	503	318	241	184	122
MIN	349	301	241	215	314	499	302	283	180	115	98	84

CAL YR 1986 TOTAL 165595 MEAN 454 MAX 8140 MIN 90
WTR YR 1987 TOTAL 149933 MEAN 411 MAX 7760 MIN 84

67189000 ELK RIVER NEAR TIFF CITY, MO

LOCATION.--Lat 36°37'50", long 94°35'12", in NE ¼ 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 downstream from Blackfoot Branch, 2.8 mi upstream from Buffalo Creek, 3.0 mi southeast of Tiff City, and at mile 15.8.

DRAINAGE AREA.--872 mi².

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, 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 downstream.

REMARKS.--Records good. Several unpublished observations of water temperature, specific conductance, and pH were made during the year and are available at the District Office.

AVERAGE DISCHARGE.--48 years, 801 ft³/s, 12.47 in/yr, 580,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft³/s, Apr. 19, 1941, gage height, 28.4 ft, from floodmark, from rating curve extended above 60,000 ft³/s on basis of slope-area measurement of peak flow minimum daily discharge, 5.1 ft³/s, Sept. 5-6, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Oct. 1	0630	*30,500	*20.09	Mar. 18	1300	10,300	11.95

Minimum daily discharge, 75 ft³/s, Aug. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28800	581	405	352	846	7390	1110	574	852	297	112	136
2	17700	545	398	341	902	6070	1030	554	734	284	106	123
3	6340	505	390	336	921	4090	965	534	648	265	99	116
4	4200	501	383	342	913	3210	911	546	563	263	93	108
5	3250	653	367	337	887	2660	862	1120	499	288	93	102
6	2820	885	357	336	855	2310	822	1140	449	294	90	98
7	2330	1010	354	340	816	2050	786	1110	409	266	90	93
8	1990	1060	367	328	774	1880	755	920	373	242	87	94
9	1720	1070	397	384	732	1760	723	786	344	216	84	92
10	1590	1040	586	1280	690	1640	721	687	323	203	78	92
11	1430	1060	774	1750	656	1540	739	612	328	191	75	90
12	1360	1240	800	1560	622	1450	728	554	337	199	75	89
13	1300	1200	769	1340	600	1380	748	514	323	242	96	95
14	1230	1110	726	1230	752	1320	1670	516	304	378	136	92
15	1110	1040	675	1100	2040	1270	2120	478	283	321	139	92
16	1010	946	646	977	5510	1230	1710	437	265	277	132	119
17	925	875	606	900	5220	1750	1420	413	246	242	122	124
18	855	807	567	945	3720	8010	1280	413	231	225	176	127
19	799	737	528	1110	2980	5100	1150	405	218	212	203	124
20	744	649	502	1230	2530	3180	1050	374	211	199	184	116
21	707	609	475	1220	2280	2280	964	347	243	184	176	108
22	678	569	450	1210	1940	1950	894	332	251	169	169	99
23	678	532	434	1170	1760	1630	841	332	317	161	154	93
24	669	494	418	1110	1670	1840	793	332	1130	154	136	89
25	911	474	406	1070	1480	2360	753	522	720	146	127	86
26	862	476	395	995	1350	2090	717	646	596	143	116	83
27	795	463	389	931	1300	1830	686	537	475	136	140	81
28	753	449	389	879	2110	1600	653	1020	376	132	163	98
29	710	435	381	857	---	1450	623	1370	328	129	189	102
30	662	421	362	858	---	1310	598	1180	303	122	172	102
31	614	---	357	842	---	1200	---	1000	---	115	153	---
TOTAL	89542	22436	15053	27660	46856	78770	28822	20305	12679	6695	3965	3063
MEAN	2888	748	486	892	1673	2541	961	655	423	216	128	102
MAX	28800	1240	800	1750	5510	8010	2120	1370	1130	378	203	136
MIN	614	421	354	328	600	1200	598	332	211	115	75	81

CAL YR 1986	TOTAL 398272	MEAN 1091	MAX 33700	MIN 72
WTR YR 1987	TOTAL 355846	MEAN 975	MAX 28800	MIN 75

07189000 ELK RIVER NEAR TIFF CITY, MO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1962 to June 1963; November 1965 to July 1975; October 1980 to September 1981; October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD- NESS (MG/L AS CACO3) (00900)
OCT										
15...	1500	1060	288	8.10	16.0	9.1	90	<10	K12	140
NOV										
06...	1400	889	280	8.00	14.5	10.5	102	<10	38	--
DEC										
03...	1010	475	290	7.60	7.5	12.8	105	<10	K6	--
JAN										
07...	0930	340	288	8.00	6.5	11.7	93	<10	23	140
FEB										
04...	0830	889	269	7.50	9.0	10.9	93	13	K16	--
MAR										
04...	0845	3210	229	7.80	10.0	10.5	90	17	59	--
APR										
08...	1215	748	240	8.40	13.5	13.8	131	<10	K5	120
MAY										
20...	1450	373	274	8.20	24.0	8.2	97	<10	21	--
JUN										
10...	1300	311	280	8.10	23.5	7.8	90	<10	30	--
JUL										
08...	1200	242	280	8.30	27.0	8.2	103	<10	20	140
AUG										
05...	1230	93	280	7.80	29.5	9.4	122	<10	46	--
SEP										
02...	1700	115	269	8.10	27.0	11.5	142	16	21	--

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
15...	16	53	2.8	3.4	1.9	128	2.0	6.9	4.8	<0.10
NOV										
06...	--	--	--	--	--	138	2.7	--	--	--
DEC										
03...	--	--	--	--	--	140	6.8	--	--	--
JAN										
07...	8	52	2.9	3.7	1.6	134	2.6	7.8	6.0	<0.10
FEB										
04...	--	--	--	--	--	124	7.6	--	--	--
MAR										
04...	--	--	--	--	--	116	3.6	--	--	--
APR										
08...	2	44	2.4	3.1	1.2	118	0.8	6.6	4.8	<0.10
MAY										
20...	--	--	--	--	--	128	1.6	--	--	--
JUN										
10...	--	--	--	--	--	128	2.0	--	--	--
JUL										
08...	0	50	2.8	4.1	2.0	138	1.3	7.5	5.6	<0.10
AUG										
05...	--	--	--	--	--	110	3.4	--	--	--
SEP										
02...	--	--	--	--	--	116	1.8	--	--	--

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

DISCHARGE AT PARTIAL-RECORD STATIONS

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained 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, water year 1987

Station no.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Dis-charge (ft ³ /s)
Kings Lake basin							
05513600	Camp Creek near Elsberry	Lat 39°06'54", long 90°46'26", in SW portion survey 1724, T.50 N., R.2 E., Hydrologic Unit 07110004, Lincoln County, at downstream end of double 12 ft. box culvert (right side of right barrel) on State Highway 79 about one mile upstream from C.B. & Q. railroad crossing and 3.6 mi south of Elsberry, Lincoln County, Missouri.	1.50	1954-87	+	2.51	120
Platte River (Iowa-Missouri) basin							
06818900	Platte River at Ravenwood	Lat 40°20'42", long 94°41'09", in SE¼SE¼ sec.14, T.64 N., R.34 W., Hydrologic Unit 10240012 Nodaway County, on downstream side of left pier of U.S. Highway 136 bridge, 0.8 mi west of Ravenwood.	486	1922-71† 1972-87	7-10-87 8-27-87	15.65	8,760
06820300	Big Slough near Wilcox	Lat 40°23'23", long 94°55'32", on south line of SW¼ sec.35, T.65 N., R.36 W., Hydrologic Unit 10240010, Nodaway County, at culvert on U.S. Highway 71, 3 mi southeast of Wilcox.	1.30	1949-87	10-12-86	5.08	680
Shoal Creek basin							
06895000	Crooked River near Richmond	Lat 39°20'00", long 93°58'45", in NW¼NW¼ sec.7, T.52 N., R.27 W., Hydrologic Unit 10300101, Ray County, on downstream side of third pier from left end of bridge on State Highway 13, 4.0 mi upstream from West Fork Crooked River, and 24.5 mi upstream from mouth.	159	1948-70† 1971-87	+	+	+
Wakenda Creek basin							
06896000	Wakenda Creek at Carrollton	Lat 39°20'48", long 93°29'44", in NE¼SE¼ sec.5, T.52 N., R.23 W., Hydrologic Unit 10300101, Carroll County, on U.S. Highway 65 bridge in Carrollton.	248	1948-70† 1972-87	10-86	26.60	13,100
Grand River basin							
06897000	East Fork Big Creek near Bethany	Lat 40°17'50", long 94°01'36", in SE¼ sec.34, T.64 N., R.28 W., Hydrologic Unit 10280101, Harrison County on right bank 50 ft downstream from bridge on old U.S. Highway 69, 2 mi north of Bethany and 4 mi upstream from confluence with West Fork.	95	1934-72† 1973-87	8-15-87	14.44	3,210
Chariton River basin							
06904300	Shoal Creek near Hartford	Lat 40°29'00", long 92°46'20", in NE¼NE¼ sec.35, T.66 N., R.17 W., Hydrologic Unit 10280201, Putnam County, at bridge on U.S. Highway 136, 3 mi northeast of Hartford.	155	1963-87	10-3-86	17.20	3,100
06905000	Chariton River at Elmer	Lat 39°56'58", long 92°39'43", in E¼ sec.3, T. 59 N., R.16 W., Hydrologic Unit 10280202, Macon County, at bridge on County Road J, 0.8 mi southwest of Elmer.	1,660	1921-30† 1961-87	10-3-86	21.68	13,800
06906400	Middle Fork Chariton River at Thomas Hill	Lat 39°30'51", long 92°39'53", in NE¼NE¼ sec.2, T.54 N., R.16 W., Hydrologic Unit 10280203, Randolph County, at bridge on State Highway 3, 0.5 mi SW of Thomas Hill.	150	1962-87	10-3-86	15.18	2,600

Annual maximum discharge at crest-stage partial-record stations, water year 1987--Continued

Station no.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum Date	Gage height (feet)	Dis-charge (ft ³ /s)
Lamine River basin							
06907000	Lamine River at Clifton City	Lat 38°45'26", long 93°01'20", in NW¼ sec.16, T.46 N., R.19 W., Hydrologic Unit 10300103 Cooper County, on downstream side of highway bridge, 0.8 mi east of Clifton City.	598	1922-71† 1972-87	10-86	32.89	64,000
06908500	Shiloh Branch near Marshall	Lat 39°06'59", long 93°05'48", in NW¼ sec.15 T.50 N., R.20 W., Hydrologic Unit 10300104, Saline County, at culvert on State Highway 41, in front of Shiloh Church, 5.5 mi east of Marshall.	2.87	1952-65† 1966-87	+	5.73	750
Moniteau Creek basin							
06909500	Moniteau Creek near Fayette	Lat 39°07'15", long 92°33'40", in SE¼SE¼ sec.14, T.50 N., R.15 W., Hydrologic Unit 10300102, Howard County, at "Buoy" bridge, 1 mi downstream from Hungry Mother Creek, 7 mi east of Fayette and 15 mi upstream from mouth.	81	1948-60 1962-69† 1979-87	+	19.39	4,020
Moreau River basin							
06910500	Moreau River near Jefferson City	Lat 38°31'44", long 92°11'31", in SE¼NW¼SE¼ sec.25, T.44 N., R.12 W., Hydrologic Unit 10300102, Cole County, on downstream side of bridge on Tanner Bridge Road, 3 mi south of Jefferson City.	561	1947-74† 1975-87	10-86	39.05	+
Osage River basin							
06921720	Big Creek at Blainstown	Lat 38°33'17", long 93°57'54", in NE¼SW¼ sec.36, T.44 N., R.28 W., Hydrologic Unit 10290108, Henry County, on downstream side of right bridge pier on County Highway N, 0.3 mi west of Blainstown, 0.8 mi downstream from Bear Creek and 1.5 mi upstream from Brushy Creek.	414	1960-74† 1975-87	10-1-86	26.63	+
06925200	Starks Creek at Preston	Lat 37°56'30", long 93°11'30", in NW¼SW¼ sec.24, T.37 N., R.21 W., Hydrologic Unit 10290107, Hickory County, attached to right downstream wingwall of U.S. Highway 54 bridge, 0.6 mi east of Preston.	4.18	1956-76† 1977-87	10-1-86	10.47	1,400
06927000	Maries River at Westphalia	Lat 38°25'55", long 91°59'23", in NE¼ sec.35, T.43 N., R.10 W., Hydrologic Unit 10290111, Osage County, at bridge on U.S. Highway 63, 0.8 mi southeast of Westphalia, 1.2 mi downstream from Little Maries Creek, and at mile 9.9.	257	1947-70† 1971-87	10-1-86	15.52	14,600
Meramec River basin							
07011200	Love Creek near Salem	Lat 37°38'10", long 91°33'35", in W¼NE¼ sec.23, T.34 N., R.6 W., Hydrologic Unit 07140102, Dent County, at culvert under State Highways 32 and 72, 0.5 mi west of Salem.	0.89	1955-59 1960-63f 1964-87	+	+	+
White River basin							
07066800	Sycamore Creek near Winona	Lat 37°02'49", long 91°19'30", in SW¼SW¼ sec.31, T.28 N., R.3 W., Hydrologic Unit 11010008, Shannon County, on left bank just upstream from culvert under State Highway 19, about 3 mi north of Winona.	0.86	1954-87	+	3.79	84

+ Not determined.

† Operated as continuous-record gaging station.

f Discharge measurements, daily gage-height, and rainfall records available.

Water-quality partial record stations are sites where chemical-quality, biological and or sediment data are collected systematically over a period of years for use in hydrologic analysis. The data are collected usually less than quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
07064400 MONTAUK SPRINGS AT MONTAUK, MO (LAT 37 27 36N LONG 091 40 59W)										
OCT 1986										
14...	1100	83	274	7.30	13.0	8.2	78	48	130	141
MAY 1987										
11...	1030	8.2	253	7.40	13.0	9.6	91	K4	K3	131
07064440 CURRENT RIVER BELOW MONTAUK STATE PARK (LAT 37 27 01N LONG 091 29 41W)										
OCT 1986										
14...	1135	113	274	7.70	12.5	10.7	101	46	120	146
MAY 1987										
11...	1130	114	252	8.10	15.0	13.6	135	K12	K17	144
07064530 WELCH SPRING NEAR AKERS MO (LAT 37 23 38N LONG 091 34 25W)										
OCT 1986										
14...	1315	176	250	7.10	14.5	9.0	88	44	290	128
MAY 1987										
11...	1320	173	281	7.60	13.0	9.2	87	K9	K9	159
07064555 PULLTITE SPRING NEAR ROUND SPRING, MO (LAT 37 20 03N LONG 091 29 24W)										
OCT 1986										
14...	1500	70	278	7.20	14.5	8.0	78	K26	230	145
MAY 1987										
11...	1440	85	238	7.70	13.0	9.4	89	K2	K2	128
07065000 ROUND SPRING AT ROUND SPRING MO (LAT 37 16 57N LONG 091 24 27W)										
OCT 1986										
14...	1615	34	230	6.90	13.5	7.1	68	68	190	122
MAY 1987										
11...	1600	52	260	7.50	13.5	10.6	101	K2	K8	152
07065500 ALLEY SPRING AT ALLEY MO (LAT 37 09 14N LONG 091 26 29W)										
OCT 1986										
15...	1400	100	286	7.20	13.5	8.9	84	44	230	143
MAY 1987										
12...	1200	115	239	7.40	13.5	9.0	86	24	21	126
07066110 JACKS FORK ABOVE TWO RIVERS (LAT 37 10 53N LONG 091 17 36W)										
OCT 1986										
15...	1210	205	335	8.00	13.5	11.1	105	K24	K12	184
MAY 1987										
12...	1100	220	292	8.10	19.5	9.0	97	K15	K9	172
07066510 CURRENT RIVER ABOVE POWDER MILL (LAT 37 10 32N LONG 091 12 48W)										
OCT 1986										
15...	1015	1080	300	8.00	12.5	10.8	100	K20	K32	163
MAY 1987										
12...	1000	985	284	8.00	19.0	7.9	84	K15	K15	158
07066550 BLUE SPRING NEAR EMINENCE, MO. (LAT 37 09 58N LONG 091 09 47W)										
OCT 1986										
15...	0915	119	274	7.30	14.0	8.5	81	K18	76	135
MAY 1987										
12...	0840	118	231	7.60	13.0	8.8	83	K1	K1	121
07067500 BIG SPRING NEAR VAN BUREN MO (LAT 36 57 05N LONG 090 59 36W)										
OCT 1986										
16...	0855	359	346	7.00	14.0	9.2	88	K10	K26	187
MAY 1987										
12...	1600	480	304	7.70	14.0	9.3	89	K1	K1	168

K--Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
07064400 MONTAUK SPRINGS AT MONTAUK, MO (LAT 37 27 36N LONG 091 40 59W)										
OCT 1986										
14...	<0.010	1.00	0.020	0.60	1.6	0.020	<1	<5	<1	<10
MAY 1987										
11...	<0.010	0.900	<0.010	0.30	1.2	0.010	<1	<5	<1	<10
07064440 CURRENT RIVER BELOW MONTAUK STATE PARK (LAT 37 27 01N LONG 091 29 41W)										
OCT 1986										
14...	<0.010	0.800	0.040	0.50	1.3	0.020	<1	6	<1	30
MAY 1987										
11...	<0.010	0.700	0.020	0.60	1.3	0.020	2	38	<1	<10
07064530 WELCH SPRING NEAR AKERS MO (LAT 37 23 38N LONG 091 34 25W)										
OCT 1986										
14...	<0.010	0.800	<0.010	0.90	1.7	0.010	<1	<5	1	10
MAY 1987										
11...	<0.010	0.700	0.020	0.50	1.2	0.010	<1	<5	<1	<10
07064555 PULLTITE SPRING NEAR ROUND SPRING, MO (LAT 37 20 03N LONG 091 29 24W)										
OCT 1986										
14...	<0.010	0.600	<0.010	0.50	1.1	0.010	<1	6	1	410
MAY 1987										
11...	<0.010	0.500	<0.010	0.20	0.70	0.010	<1	<5	<1	<10
07065000 ROUND SPRING AT ROUND SPRING MO (LAT 37 16 57N LONG 091 24 27W)										
OCT 1986										
14...	<0.010	0.500	0.020	0.90	1.4	0.020	<1	<5	<1	120
MAY 1987										
11...	<0.010	0.300	<0.010	0.60	0.90	0.010	<1	16	<1	<10
07065500 ALLEY SPRING AT ALLEY MO (LAT 37 09 14N LONG 091 26 29W)										
OCT 1986										
15...	<0.010	0.700	<0.010	0.80	1.5	<0.010	<1	6	1	290
MAY 1987										
12...	<0.010	0.700	<0.010	0.40	1.1	0.010	3	98	<1	<10
07066110 JACKS FORK ABOVE TWO RIVERS (LAT 37 10 53N LONG 091 17 36W)										
OCT 1986										
15...	<0.010	0.300	<0.010	0.80	1.1	<0.010	<1	<5	<1	<10
MAY 1987										
12...	<0.010	0.400	0.020	0.40	0.80	0.010	<1	<5	<1	<10
07066510 CURRENT RIVER ABOVE POWDER MILL (LAT 37 10 32N LONG 091 12 48W)										
OCT 1986										
15...	<0.010	0.400	<0.010	2.7	3.1	<0.010	<1	5	<1	<10
MAY 1987										
12...	<0.010	0.300	<0.010	0.40	0.70	0.010	2	25	<1	180
07066550 BLUE SPRING NEAR EMINENCE, MO. (LAT 37 09 58N LONG 091 09 47W)										
OCT 1986										
15...	<0.010	0.400	<0.010	0.80	1.2	<0.010	<1	5	<1	70
MAY 1987										
12...	<0.010	0.400	<0.010	0.20	0.60	0.010	<1	8	1	<10
07067500 BIG SPRING NEAR VAN BUREN MO (LAT 36 57 05N LONG 090 59 36W)										
OCT 1986										
16...	<0.010	0.300	<0.010	0.50	0.80	<0.010	<1	6	1	320
MAY 1987										
12...	<0.010	0.400	<0.010	0.50	0.90	0.010	<1	25	<1	<10

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED SATUR- ATION (MG/L) (00300)	OXYGEN, DIS- SOLVED CENT UM-MF (00301)	COLI- FORM, FECAL, 0.7 PER (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER (31673)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
07067800 CURRENT RIVER BELOW HAWES CAMPGROUND (LAT 36 49 08N LONG 090 56 48W)										
OCT 1986										
15...	1625	2000	328	8.00	14.5	11.2	107	K8	K22	168
MAY 1987										
12...	1500	1950	288	8.20	20.0	9.1	98	K2	K1	163

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

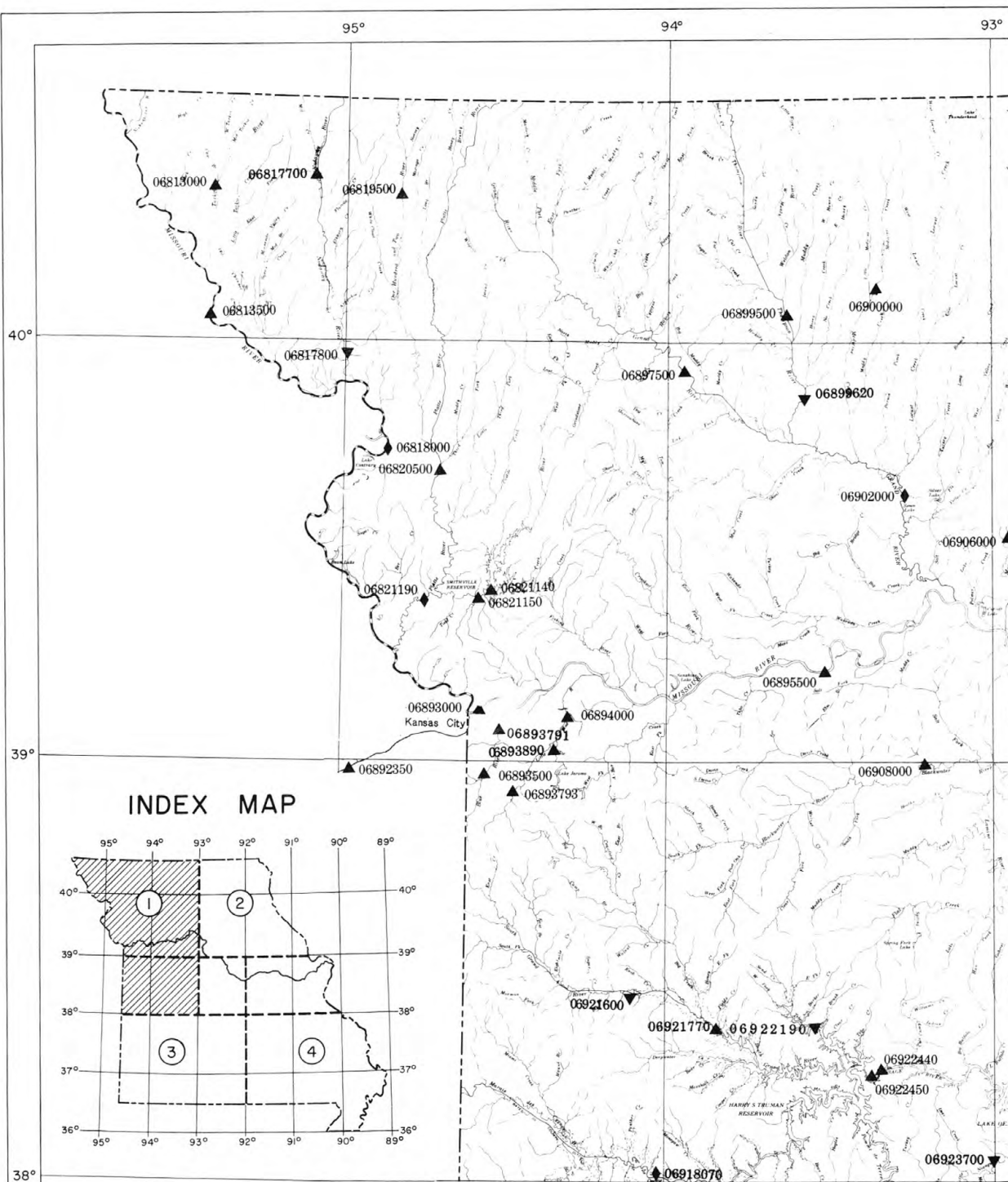
DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
07067800	CURRENT RIVER BELOW HAWES CAMPGROUND (LAT 36 49 08N LONG 090 56 48W)									
OCT 1986										
15...	<0.010	0.300	<0.010	1.3	1.6	<0.010	<1	<5	<1	20
MAY 1987										
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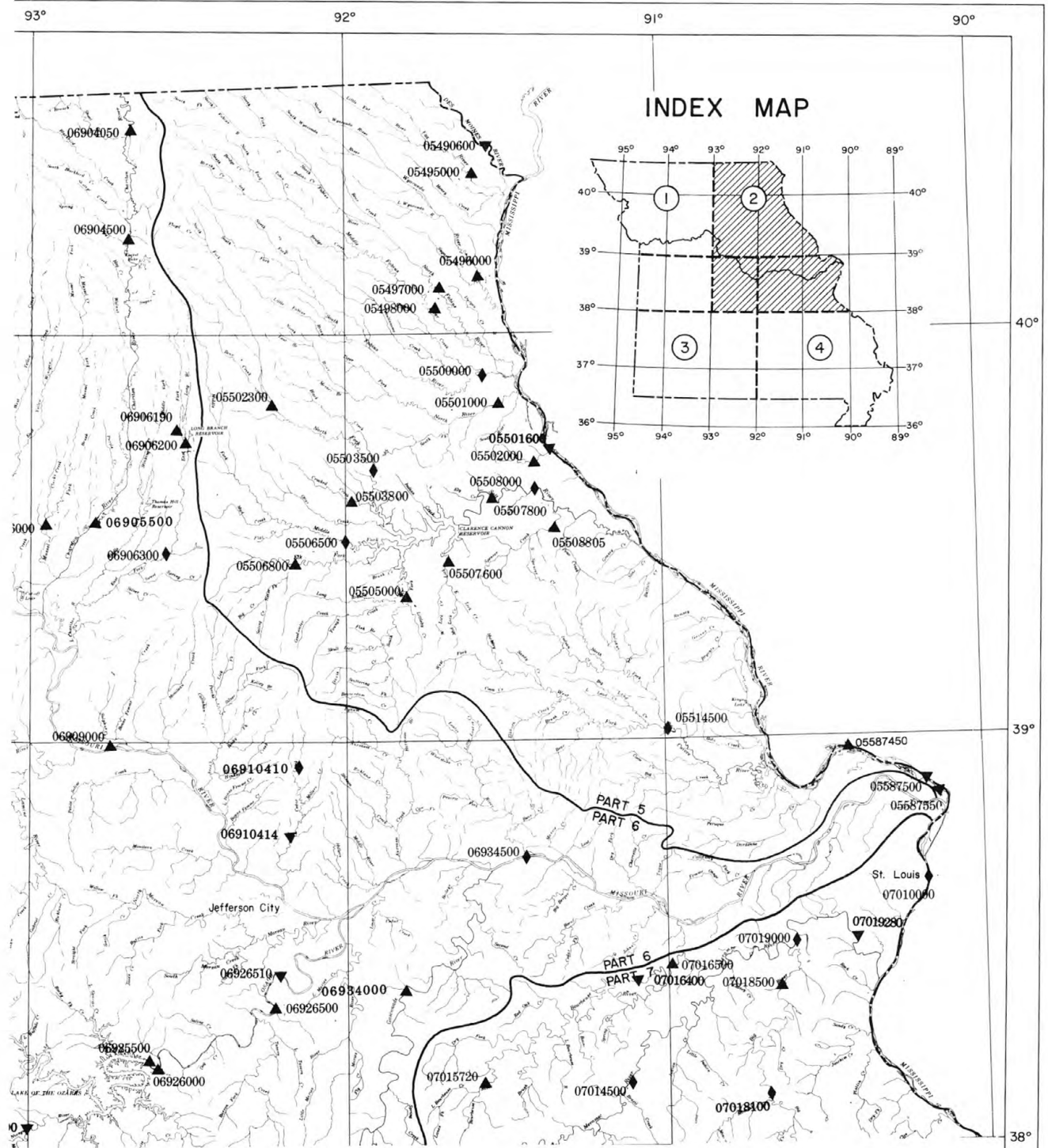
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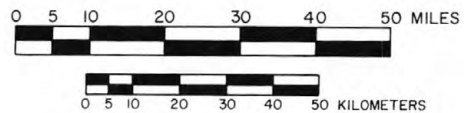
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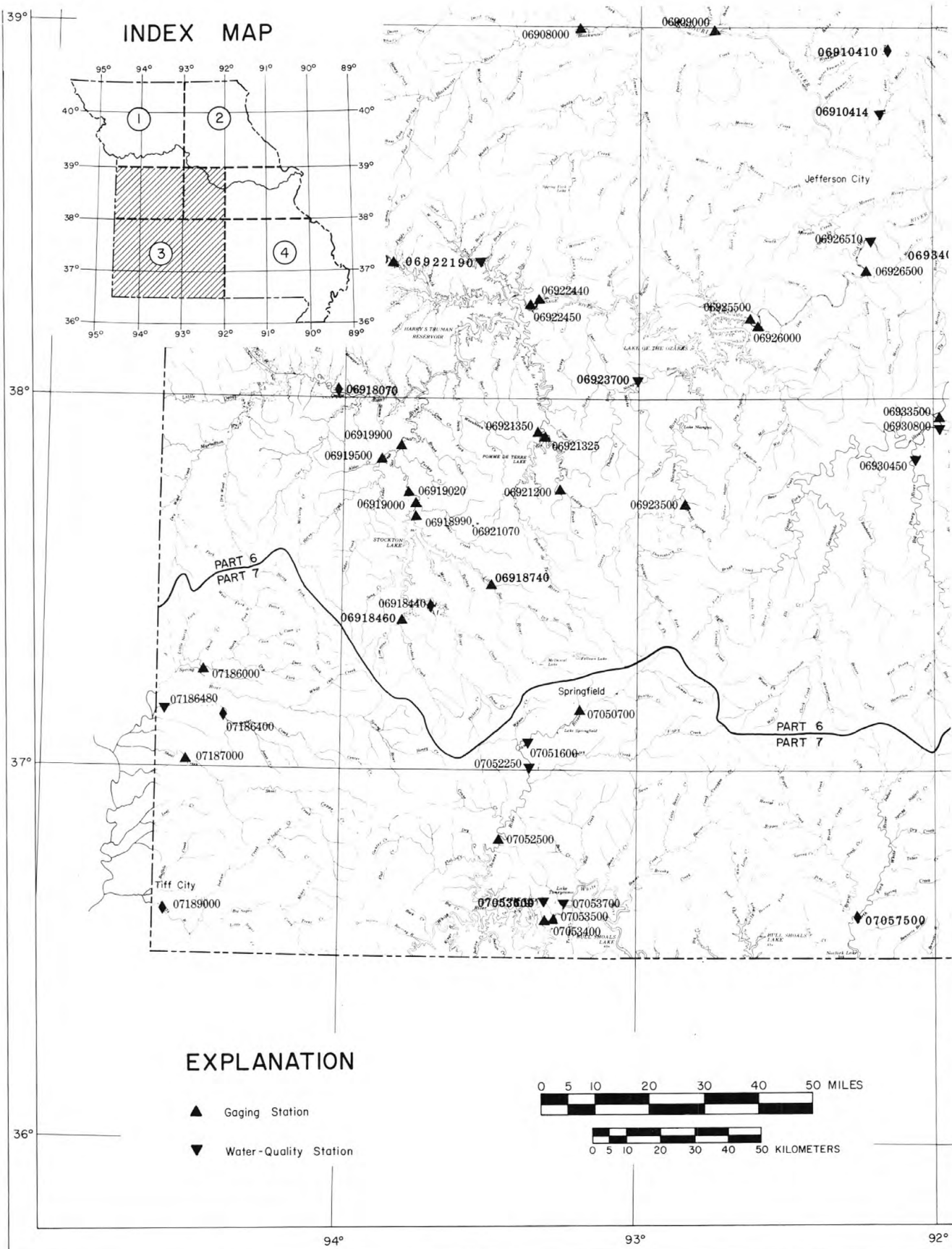


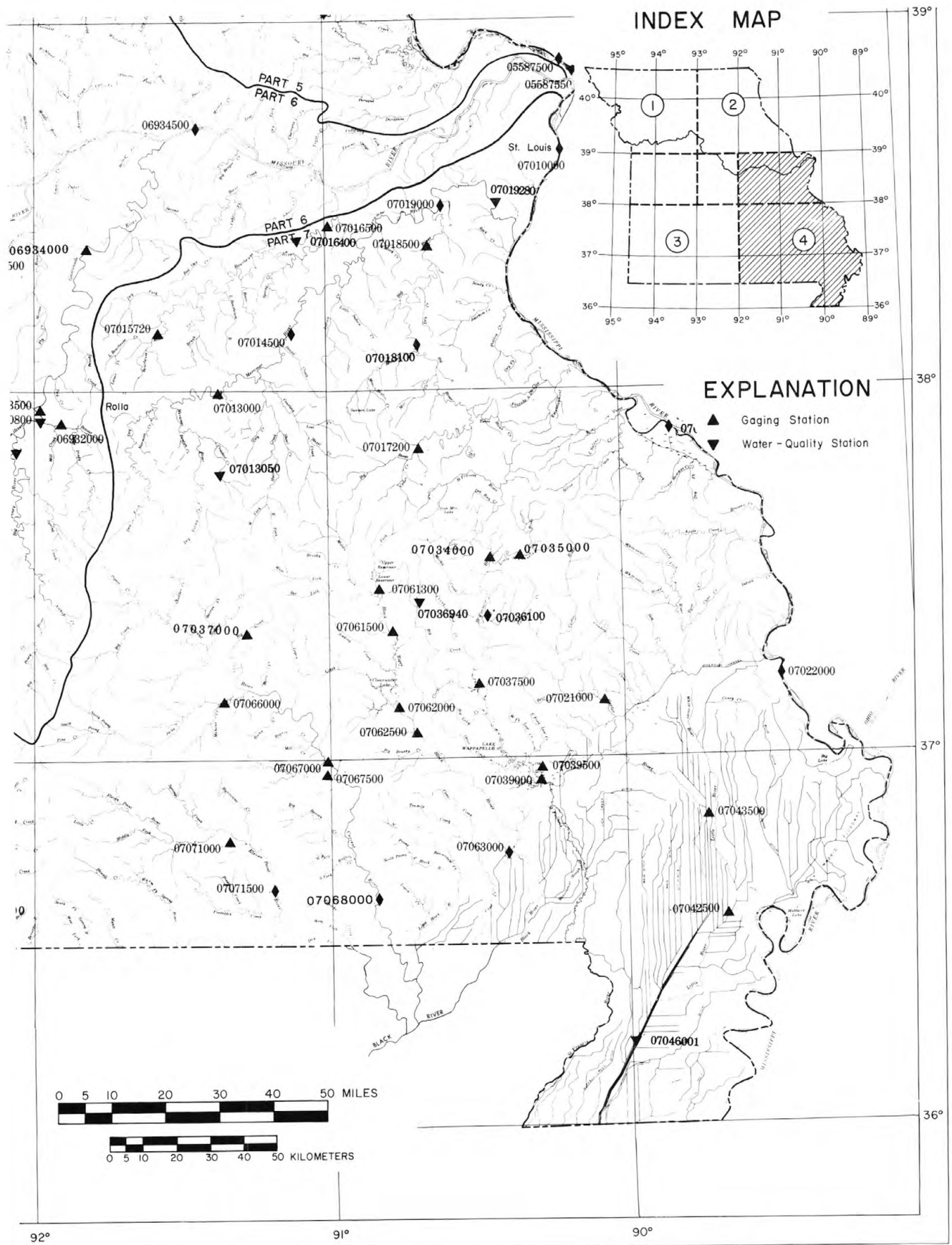


EXPLANATION

- ▲ Gaging Station
- ▼ Water-Quality Station







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).

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)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm 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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