

Prepared in cooperation with the  
**KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT** and the  
**KANSAS DEPARTMENT OF TRANSPORTATION**

## **Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**



Scientific Investigations Report 2004–5033

**Cover photographs**—Taken by Trudy Bennett, U.S. Geological Survey, Wichita, Kansas. Top left: Little Arkansas River near Sedgwick, Kansas, low flow on February 27, 2003. Bottom right: Little Arkansas River near Sedgwick, Kansas, high flow on March 20, 2003.

# **Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

By Charles A. Perry, David M. Wolock, and Joshua C. Artman

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Scientific Investigations Report 2004–5033

**U.S. Department of the Interior**  
**U.S. Geological Survey**

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*Suggested citation:*

Perry, C.A., Wolock, D.M., and Artman, J.C., 2004, Estimates of flow duration, mean flow, and peak-discharge frequency values for Kansas stream locations: U.S. Geological Survey Scientific Investigations Report 2004–5033, 651 p.

**Prepared by the U.S. Geological Survey in Lawrence, Kansas (<http://ks.water.usgs.gov>)**

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## Conversion Factors, Abbreviations, Datum, and Definitions

<b>Multiply</b>	<b>By</b>	<b>To obtain</b>
cubic foot per second (ft <sup>3</sup> /s)	0.02832	cubic meter per second (m <sup>3</sup> /s)
foot (ft)	0.3048	meter (m)
foot per mile (ft/mi)	0.1894	meter per kilometer (m/km)
inch (in.)	2.54	centimeter (cm)
inch per hour (in/h)	2.54	centimeter per hour (cm/h)
meter (m)	3.281	foot (ft)
mile (mi)	1.609	kilometer (km)
square mile (mi <sup>2</sup> )	2.590	square kilometer (km <sup>2</sup> )

Horizontal coordinate information in this report is referenced to the North American Datum of 1983 (NAD 83).

Vertical coordinate information in this report is referenced to the North American Vertical Datum of 1988 (NAVD 88).

Water year in this report is the 12-month period being October 1 and ending September 30. The water year is designated by the calendar year in which it ends. For example, the period October 1, 1999, through September 30, 2000, is called the "2000 water year."



# Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

By Charles A. Perry, David M. Wolock, and Joshua C. Artman

## Abstract

Streamflow statistics of flow duration and peak-discharge frequency were estimated for 4,771 individual locations on streams listed on the 1999 Kansas Surface Water Register. These statistics included the flow-duration values of 90, 75, 50, 25, and 10 percent, as well as the mean flow value. Peak-discharge frequency values were estimated for the 2-, 5-, 10-, 25-, 50-, and 100-year floods.

Least-squares multiple regression techniques were used, along with Tobit analyses, to develop equations for estimating flow-duration values of 90, 75, 50, 25, and 10 percent and the mean flow for uncontrolled flow stream locations. The contributing-drainage areas of 149 U.S. Geological Survey stream-flow-gaging stations in Kansas and parts of surrounding States that had flow uncontrolled by Federal reservoirs and used in the regression analyses ranged from 2.06 to 12,004 square miles. Logarithmic transformations of climatic and basin data were performed to yield the best linear relation for developing equations to compute flow durations and mean flow.

In the regression analyses, the significant climatic and basin characteristics, in order of importance, were contributing-drainage area, mean annual precipitation, mean basin permeability, and mean basin slope. The analyses yielded a model standard error of prediction range of 0.43 logarithmic units for the 90-percent duration analysis to 0.15 logarithmic units for the 10-percent duration analysis. The model standard error of prediction was 0.14 logarithmic units for the mean flow. Regression equations used to estimate peak-discharge frequency values were obtained from a previous report, and estimates for the 2-, 5-, 10-, 25-, 50-, and 100-year floods were determined for this report.

The regression equations and an interpolation procedure were used to compute flow durations, mean flow, and estimates of peak-discharge frequency for locations along uncontrolled flow streams on the 1999 Kansas Surface Water Register. Flow durations, mean flow, and peak-discharge frequency values determined at available gaging stations were used to interpolate the regression-estimated flows for the stream locations where available. Streamflow statistics for locations that had uncontrolled flow were interpolated using data from gaging stations weighted according to the drainage area and the bias between the regression-estimated and gaged flow information. On controlled reaches of Kansas streams, the streamflow statistics

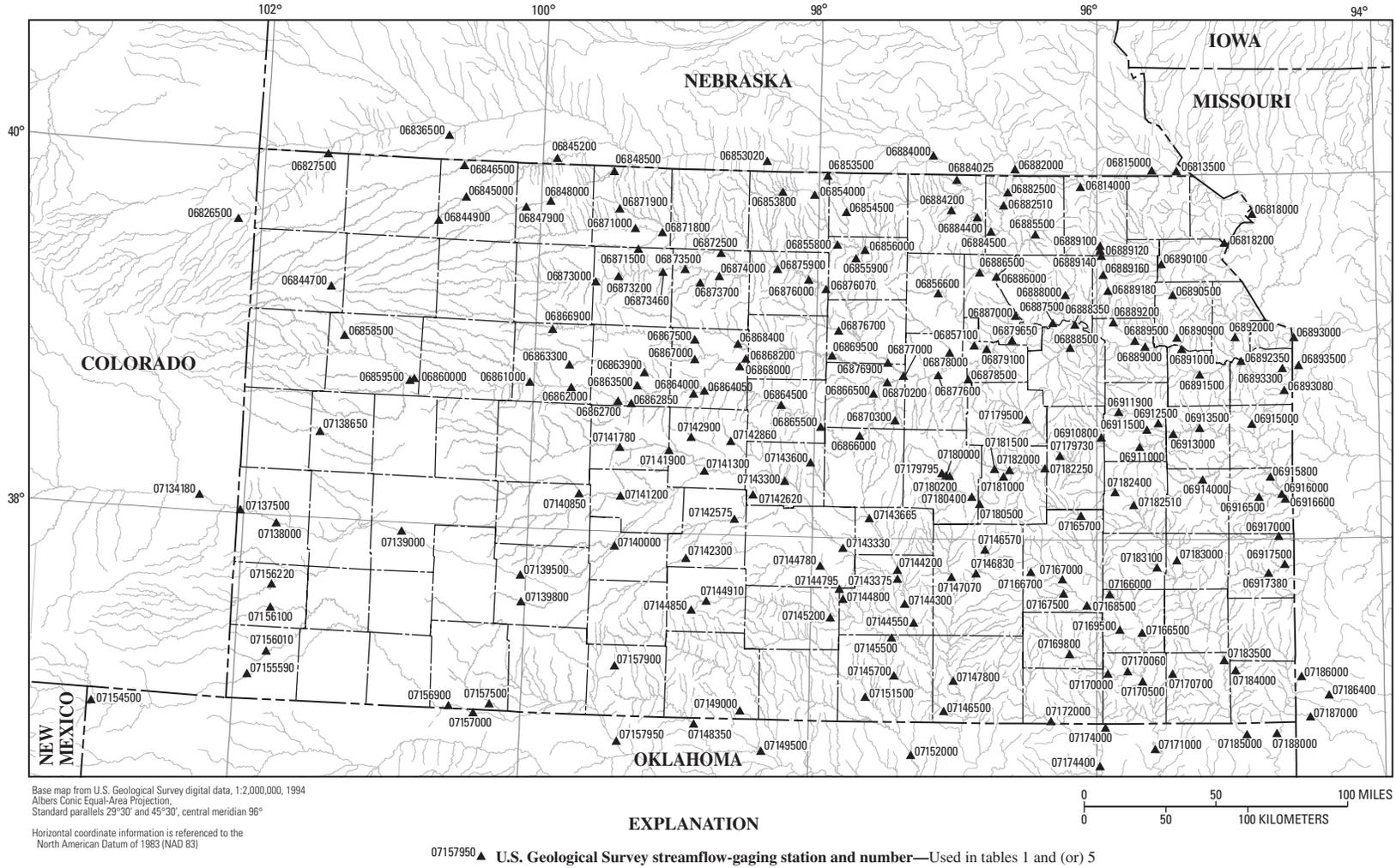
were interpolated between gaging stations using only gaged data weighted by drainage area.

## Introduction

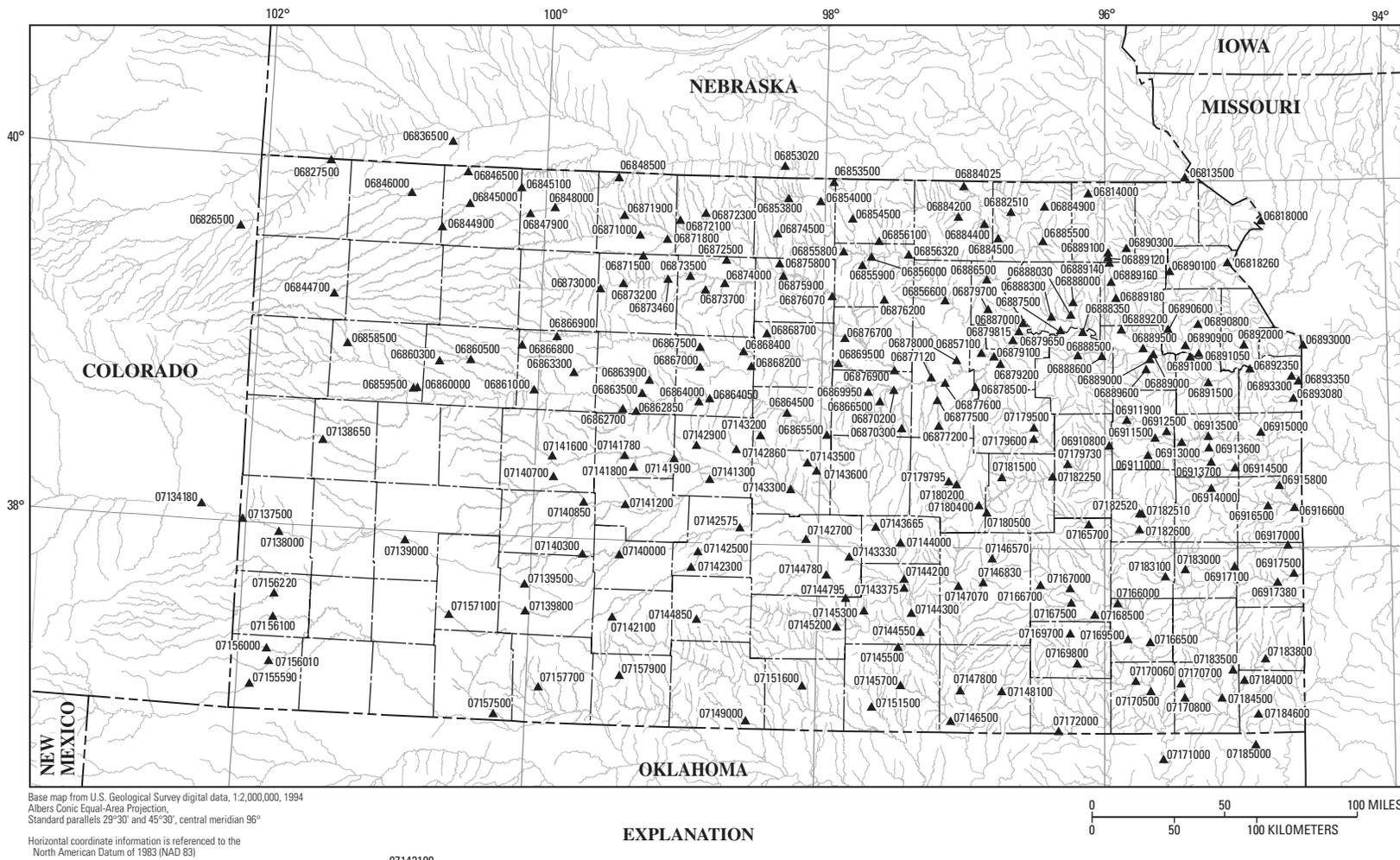
The expected amount and historical range of flow in Kansas streams are important considerations for the classification, evaluation, and regulation of water supplies, recreation, aquatic-life habitat, pollution control, and the design of hydrologic structures within the State. Water-quality regulations in Kansas apply numeric water-quality criteria to classified stream segments. These 2,232 stream segments are listed on the 1999 Kansas Surface Water Register. This register is maintained by the Kansas Department of Health and Environment (KDHE) and is used to identify designated uses of stream segments.

Flow-duration statistics for specific locations throughout Kansas and parts of surrounding States are available for 216 continuous-record streamflow-gaging stations where daily flow data have been collected by the U.S. Geological Survey (USGS) for 10 or more years (fig. 1). Peak-discharge frequency statistics for 253 peak streamflow-gaging stations in Kansas were used to develop regression equations to estimate peak streamflow at unregulated rural streams (Rasmussen and Perry, 2000). Two hundred and thirty-seven streamflow-gaging stations were used in the interpolation process described in a later section of this report (fig. 2). The current and historical streamflow information collected by the USGS provides a resource for estimating the expected amount and range of streamflow throughout the State. The measured streamflow record can be used to define statistics that summarize historical streamflow amounts at each stream gage. These statistics then can be related to the physical characteristics of the drainage basins that contribute to measured flow at the gage. Furthermore, statistical models that are based on these relations can be used to estimate streamflow statistics for ungaged locations.

To address the need for streamflow statistics, a study of flow durations, mean flow, and peak-discharge frequency information for Kansas streams was conducted by the USGS in cooperation with KDHE and the Kansas Department of Transportation. Streamflow data used in this study were collected by the USGS (Putnam and others, 2001) through other cooperative



**Figure 1.** Location of U.S. Geological Survey streamflow-gaging stations in Kansas and parts of surrounding States with 10 or more years of record that were available for computing flow durations and mean flows.



**Figure 2.** Location of U.S. Geological Survey streamflow-gaging stations with peak-discharge frequency analysis in Kansas and parts of surrounding States with 10 or more years of record that were used in the interpolation process.

## 4 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

studies with various government agencies. This report includes analyses of flow durations of 90, 75, 50, 25, and 10 percent, mean flows, and the peak-discharge frequency values for the 2-, 5-, 10-, 25-, 50-, and 100-year floods.

### Purpose and Scope

The purpose of this report is to document the methods and results of a study designed to estimate the flow durations, mean flow, and the peak-discharge frequency values for locations on streams on the 1999 Kansas Surface Water Register (KSWR). In this report, 5,427 locations along the KSWR stream coverage were identified as determination sites for which flow statistics were computed from upstream climatic and basin conditions. Flow statistics were not reported for 656 of these determination sites because they were located on reservoirs or irrigation ditches. Flow statistics for each determination site either were computed from gaged-location streamflow records, estimated from statewide regression models, or interpolated between gaged locations or gaged and regression-estimated locations.

This report documents the development of regression models to estimate flow durations and mean flow from climatic and basin characteristics. Regression equations for flow durations were developed using Tobit statistical analysis of uncontrolled flow durations determined at 149 gaging stations. “Uncontrolled flow” is defined as that streamflow that is unaffected by Federal reservoir releases. The entire period of record for each uncontrolled flow streamflow-gaging station was used in the analyses of flow durations. Regression equations for the estimation of peak discharge for unregulated rural streams in Kansas are available in (Rasmussen and Perry, 2000) and are used in this report. The equations were based on 253 streamflow-gaging stations in Kansas.

This report describes application of the drainage-area ratio method and the regression model method of estimating the flow statistics for stream locations on the 1999 KSWR, the interpolation of estimates for ungaged locations, and the Internet dissemination of results and a geographic-information-system (GIS) database. The information contained in this report can be used by State agencies and others to help in the effective management of Kansas surface-water resources. Optimal reservoir operations, legally distributed in-stream withdrawals, and water-quality concerns are issues directly linked to flow durations. Peak-discharge frequency information is used in the cost effective construction of hydraulic structures such as bridges and culverts and for flood-plain management. The methods described herein can be applied nationwide using USGS streamflow data that are available throughout the United States.

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### Previous Studies

A study by Perry and others (2004) determined the median flow (50-percent duration) for the 2,232 complete stream segments on the 1999 KSWR. The methods of analysis for the flow

durations and mean flow in this report are similar to the study by Perry and others (2004).

Previous low-flow and flow-duration studies for Kansas include an investigation by Furness (1959) who developed a method for estimating flow-duration curves for ungaged sites that was based on regionalized flow-duration data from 122 continuous-record, streamflow-gaging stations with drainage areas of between 100 and 3,000 mi<sup>2</sup> for the period 1921–56. Maps were developed showing a variety of statewide low and mean streamflow. Furness (1959) also noted that the low-flow parts of the flow-duration curves could be verified or improved by relating base-flow measurements at the ungaged site to base-flow measurements at a nearby, index streamflow-gaging station.

Jordan (1983) updated the maps developed by Furness (1959) by including additional streamflow-gaging stations and data for the period 1957–76. Jordan’s study included a map that depicted the areas of Kansas where the median streamflow for a 500-mi<sup>2</sup> basin was greater than 0.1 ft<sup>3</sup>/s. Two studies by Studley (2000, 2001) evaluated the application of the Furness method to ungaged stream sites in Kansas using nearby streamflow-gaging stations as index stations. The results of these two recent studies indicated that the Furness method continues to be a useful tool for estimating flow-duration curves for ungaged sites and that the method could be used for sites with drainage areas less than 100 mi<sup>2</sup>.

Many studies have been conducted to evaluate low flow and peak flows from regression equations that relate low flow and peak flow to basin characteristics. In a recent USGS study (Ries and Friesz, 2000), basin characteristics were determined from digital map data, and flow statistics were computed for individual stream segments in Massachusetts using GIS techniques. Ries and Friesz (2000) used the drainage-area ratio method to compute streamflow characteristics for stream segments in Massachusetts that had between 0.5 and 1.5 times the drainage area of streamflow-gaging stations on the same stream. Many other States have used regression analysis to regionalize low-flow frequency statistics including New Hampshire, Rhode Island, and Vermont (Johnson, 1970); New York (Ku and others, 1975); Montana (Parrett and Hull, 1985); Indiana (Arihood and Glatfelter, 1991); and central New England (Wandle and Randall, 1994). All the States have conducted regression analyses to regionalize peak-discharge frequency values, and these studies have been collected into a national report by Ries and Crouse (2002).

### Acknowledgments

The authors would like to thank Aldo “Skip” Vecchia, Timothy Cohn, and Gregory Schwarz of the USGS who helped with the Tobit analyses and with the review of the statistical methods used in this report. The authors also would like to acknowledge the efforts of Michael Butler from KDHE who provided the initial stream coverage and reviewed much of the data presented.

## Factors Affecting Streamflow

### Physical Setting

Physiographically, Kansas is located almost entirely within the Interior Plains as described by Schoewe (1949). A description of the hydrologic characteristics of the physiographic provinces within the Interior Plains is beyond the scope of this report, but the fact that there are significant variations denotes the complex nature of and difficulty in attempting to define flow characteristics across Kansas.

The topography of the western two-thirds of the State is typical of the High Plains region (Rasmussen and Perry, 2000) and is characterized by flat or gently sloping surfaces with little relief. The topography of the eastern one-third of the State is more variable, with alternating hills and lowlands. Land-surface elevations within the State range from about 700 ft above the North American Vertical Datum of 1988 (NAVD 88) at the Kansas-Oklahoma State line in southeast Kansas to about 4,135 ft above the NAVD 88 at a point near the Kansas-Colorado State line in western Kansas—a vertical difference of about 3,435 ft (fig. 3). The average land-surface slope for Kansas (fig. 4) using 30-m grid elevation data (U.S. Geological Survey, 1998) is about 1.9 degrees.

Other physical characteristics affecting the flow characteristics of watersheds are the types of soils and land-use and treatment practices within the watershed. For example, with all other factors being equal the low-flow potential from watersheds with soils of low permeability (fig. 5) is less than that from watersheds where highly permeable soils tend to allow greater infiltration and a greater ground-water contribution to base flow of the stream (Thomas, 1966). The western two-thirds of the State typically has soils of moderate to high permeability, whereas the eastern one-third has soils of lower permeability. Land-treatment practices, such as contour farming and construction of water-retention structures, can increase the amount of infiltration of runoff to ground water, which ultimately can return to stream channels as base flow. However, land-treatment practices are difficult to assess and apply to the various types of basins statewide.

### Climatic Characteristics

The climate of Kansas is affected by the movement of various air masses of tropical and continental origin over the open, inland plains, and seasonal precipitation extremes are common. About 75 percent of the mean annual precipitation falls from April through September. Precipitation during early spring and late fall occurs in association with frontal air masses that produce low-intensity rainfall of regional coverage. During the summer months, the weather is dominated by warm, moist air from the Gulf of Mexico or by hot, dry air from the Southwest. Summer precipitation generally occurs as high-intensity thunderstorms (Paulson and others, 1991).

Watersheds in Kansas exhibit a wide range of climatic characteristics that affect streamflow. Generally, precipitation varies in an east-west direction, with little north-south variation. The general climate of the western part of Kansas is semiarid with hot, dry summer months and cold, windy winter months. The eastern part of the State tends to be more humid, with sultry summer months and cold, damp winter months. Mean annual precipitation, the major climatic factor affecting streamflow in the State, varies from about 16 in. in extreme western Kansas to about 42 in. in southeastern Kansas (Daly and others, 1997) (fig. 6). Mean annual precipitation values for 149 streamflow-gaging station basins used in the regression analyses of flow durations and mean flow for uncontrolled flow stream locations on the KWSR are given in table 1.

### Basin Characteristics

Basin characteristics used in the regression analyses were selected on the basis of their theoretical relation to differences in flow magnitudes of streams, results of previous studies in similar hydrologic environments, and on the ability to measure the characteristics. The basin characteristics considered in this report included contributing-drainage area, in square miles; mean basin elevation, in feet above NAVD 88; mean basin permeability, in inches per hour; mean basin slope, in degrees; a base-flow index (Wahl and Wahl, 1995); mean annual runoff for hydrologic basins in the United States, in cubic feet per second (Gebert and others, 1987); and runoff from a water-balance model (Wolock and McCabe, 1999) (parameter-elevation regressions on independent slope model), in cubic feet per second, using the mean annual precipitation grid for the United States developed by Daly and others (1994). The mean annual runoff reflects the difference between precipitation and evapotranspiration. Selected basin characteristics for the 149 streamflow-gaging stations used in the final regression analyses for uncontrolled flow stream locations are provided in table 1.

All basin characteristics were measured from digital-map data using automated GIS procedures. The automated procedure was created using the AML programming language of the ARC/INFO GIS software (Environmental Systems Research Institute, Inc., 1991). The automated procedure determined the drainage-basin boundary at the gaging station or for the downstream end of a stream segment and created a digital data layer of the basin boundary, then overlaid the boundary on the other digital data layers to determine the other basin characteristics for the station or location. The grid values then were averaged for the area within the contributing-drainage basin. Basin slope was determined from the 30-m elevation grid using the GIS command SLOPE (Burrough, 1986). The slope in degrees is essentially an average of the slope between the center grid cell and its eight surrounding cells.

The peak-discharge frequency regression equations developed by Rasmussen and Perry (2000) require channel slope as one of their variables. Channel slope is defined as the difference

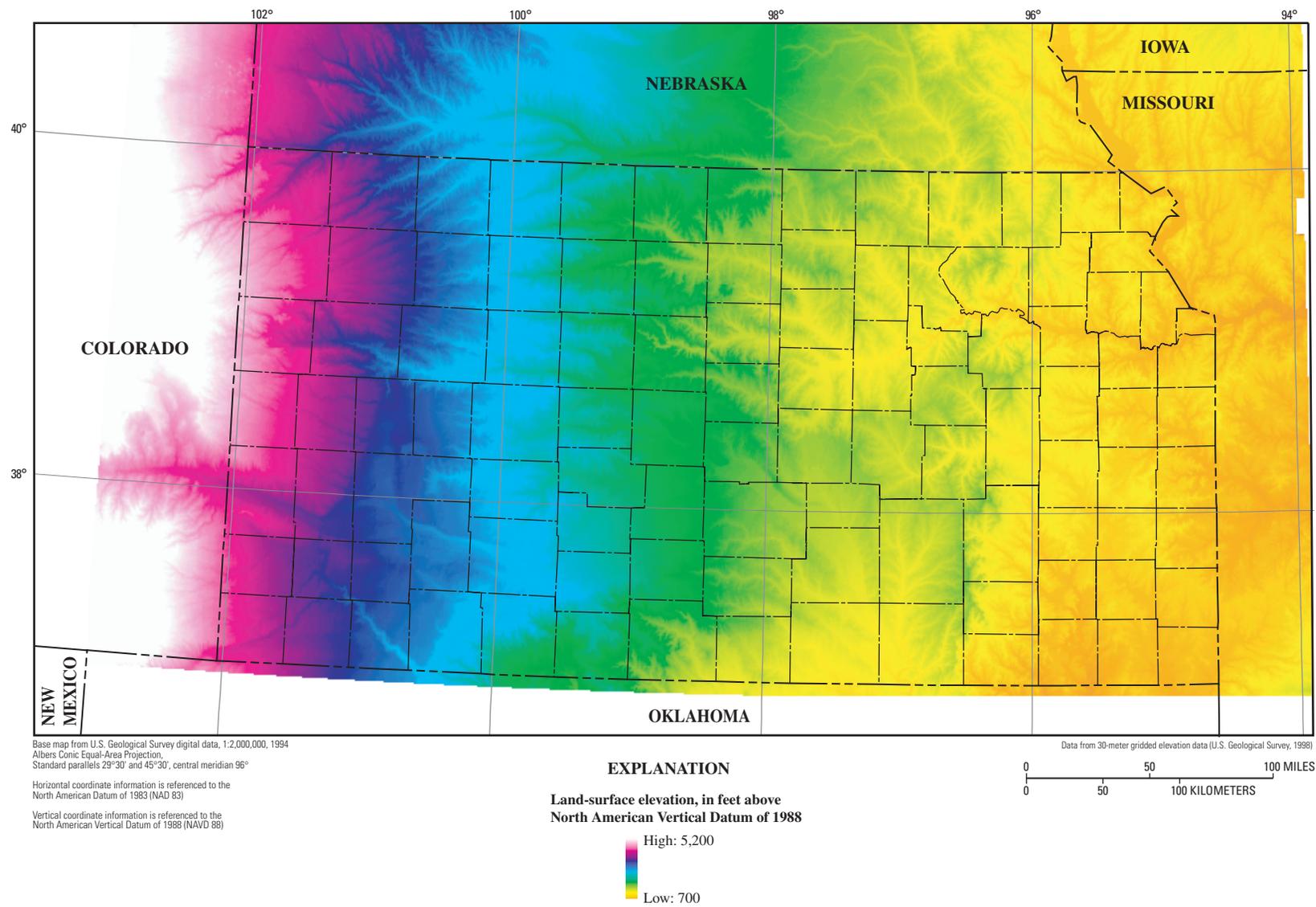
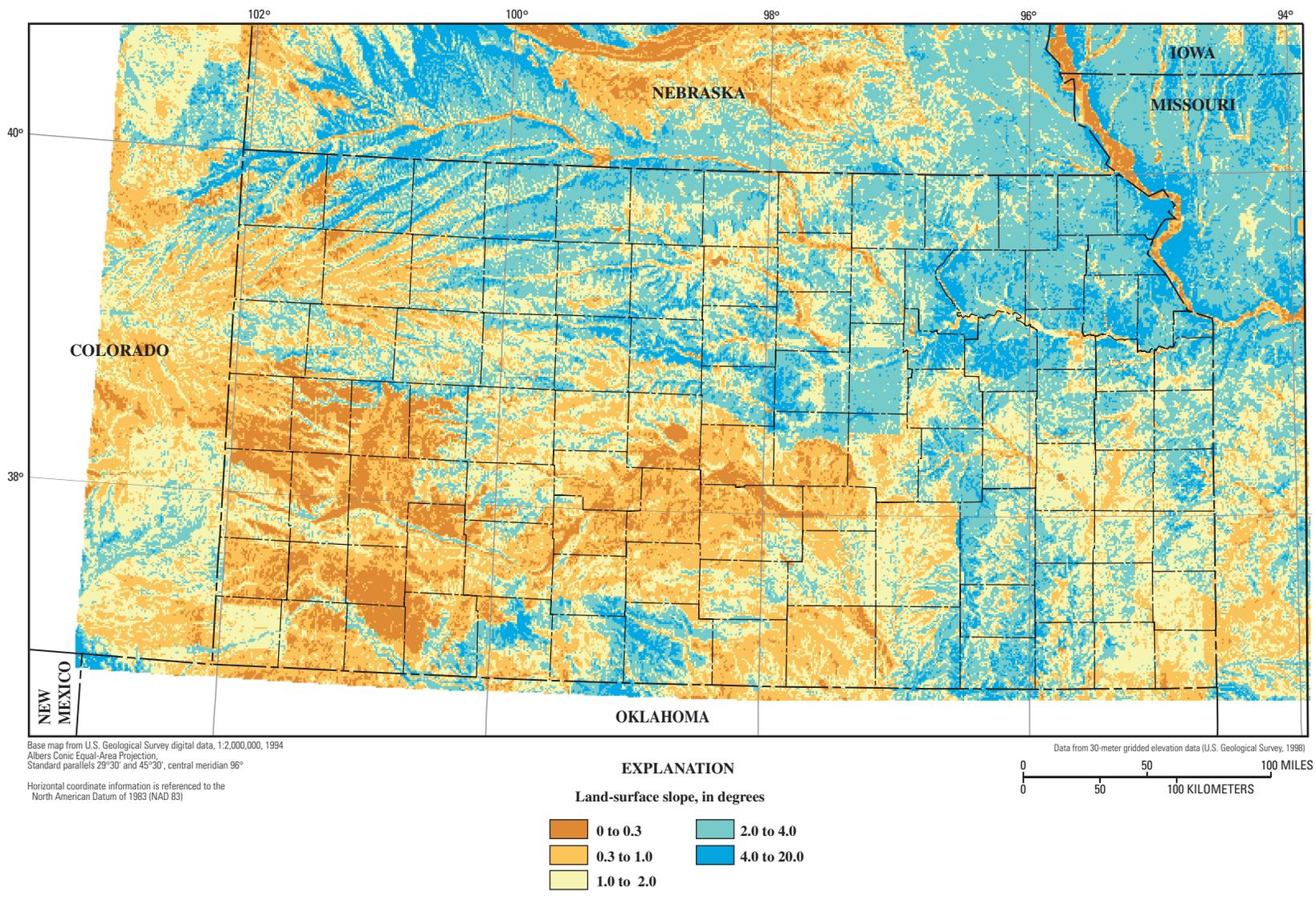
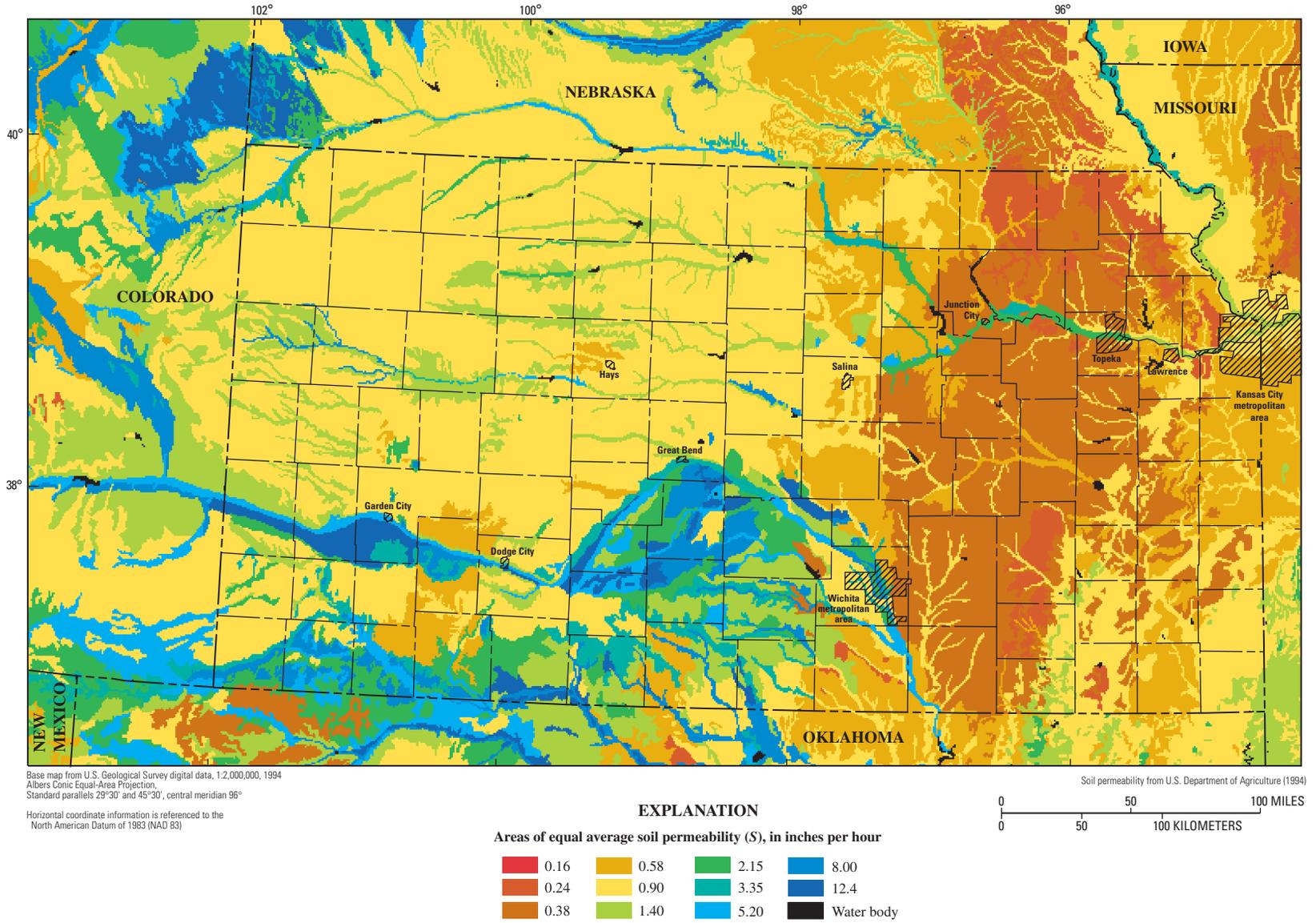


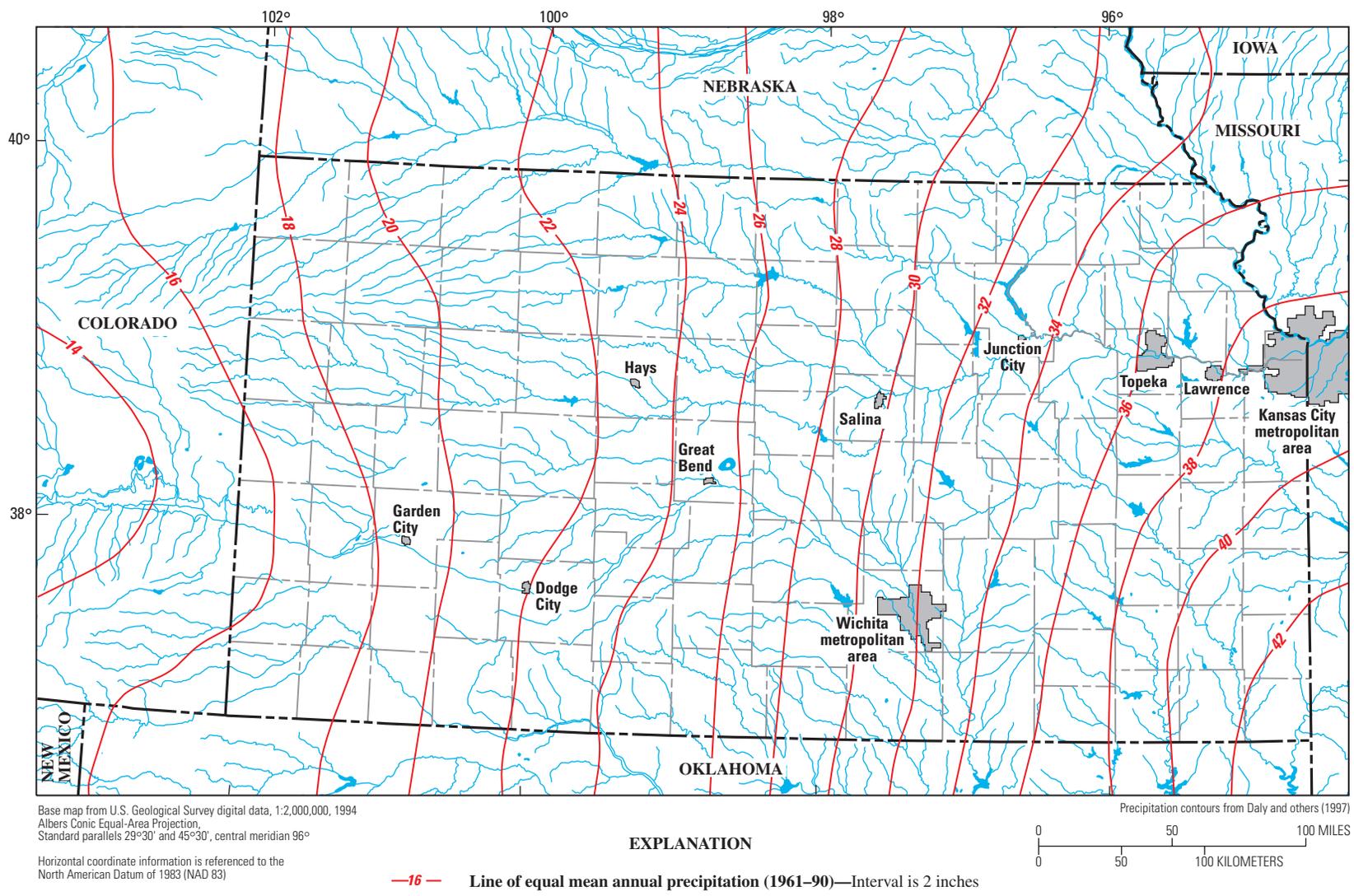
Figure 3. Land-surface elevation in Kansas and parts of surrounding States.



**Figure 4.** Average land-surface slope in Kansas and parts of surrounding States.



**Figure 5.** Areas of equal average soil permeability in Kansas and parts of surrounding States.



**Figure 6.** Mean annual precipitation in Kansas and parts of surrounding States (Daly and others, 1997).

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas.

[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
06814000	Turkey Creek near Seneca, KS	1950–2000	51	2.1	7.4	22	69	203	129	276	32.35	0.467	3.1
06815000	Big Nemaha River at Falls City, NE	1944–2000	56	45	80	159	390	1,050	631	1,339	32.55	.510	2.8
06818200	Doniphan Creek at Doniphan, KS	1961–70	10	.24	.50	.87	1.6	3.8	3.0	415	36.71	1.08	4.8
06836500	Driftwood Creek near McCook, NE	1977–86	10	.30	2.1	4.8	6.7	11	9.5	361	20.94	1.30	2.9
06844700	South Fork Sappa Creek near Brewster, KS	1968–87	20	0	0	0	0	0	.23	71.3	18.40	1.30	.83
06844900	South Fork Sappa Creek near Achilles, KS	1960–2000	41	0	0	0	.32	2.3	3.4	412	19.20	1.30	1.4
06845000	Sappa Creek near Oberlin, KS	1930–2000	71	0	.10	.70	.54	18	16	1,086	19.82	1.32	1.5
06845200	Sappa Creek near Beaver City, NE	1938–72	35	0	1.1	5.0	17	60	38	1,500	20.57	1.36	1.9
06847900	Prairie Dog Creek above Keith Sebelius Lake, KS	1963–2000	38	0	.16	2.1	5.8	11	9.0	590	20.65	1.36	1.7
06848000	Prairie Dog Creek at Norton, KS	1945–63	19	.70	3.0	7.5	15	42	39	684	20.96	1.36	1.9
06848500	Prairie Dog Creek near Woodruff, KS	1930–63	34	0	3.7	10	23	71	57	1,007	21.56	1.37	2.1
06853800	White Rock Creek near Burr Oak, KS	1958–2000	43	.47	1.8	6.0	17	40	29	227	26.49	1.30	2.5
06854000	White Rock Creek at Lovewell, KS	1947–56	10	0	1.6	5.7	20	80	68	354	27.07	1.31	2.6
06855800	Buffalo Creek near Jamestown, KS	1960–89	30	.95	3.1	11	41	133	72	330	27.94	1.10	1.9
06855900	Wolf Creek near Concordia, KS	1963–81	19	0	.10	1.0	4.3	17	11	56	28.76	1.01	2.5
06858500	North Fork Smoky Hill River near McAllaster, KS	1948–84	27	0	0	0	1.0	3.0	3.7	752	17.12	1.53	1.3
06859500	Ladder Creek below Chalk Creek near Scott City, KS	1952–79	28	0	.39	1.9	4.0	10	8.0	1,432	17.65	1.40	1.0
06860000	Smoky Hill River at Elkader, KS	1940–2000	61	0	.11	1.5	6.0	22	24	3,555	17.67	1.53	1.3
06861000	Smoky Hill River near Arnold, KS	1951–2000	50	.01	.17	2.3	15	47	44	5,220	18.44	1.52	1.4
06863300	Big Creek near Ogallah, KS	1956–68	13	.20	1.2	2.9	6.6	16	22	297	21.43	1.28	1.1
06863500	Big Creek near Hays, KS	1947–2000	54	1.9	3.5	7.9	19	38	33	594	21.80	1.18	1.4
06863900	North Fork Big Creek near Victoria, KS	1963–86	24	0	0	0	0	.90	3.1	90.3	22.61	1.20	1.7
06864000	Smoky Hill River near Russell, KS	1940–49	10	5.0	15	40	104	356	184	6,965	19.48	1.46	1.4
06866000	Smoky Hill River near Lindsborg, KS	1906–47	42	18	30	57	148	498	244	8,110	20.60	1.46	1.5
06866500	Smoky Hill River near Mentor, KS	1925–47	23	35	60	116	218	560	329	8,358	20.84	1.45	1.6
06866900	Saline River near Wakeeney, KS	1956–2000	45	0	.03	2.6	12	24	21	696	20.60	1.37	1.5

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas. —Continued

[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
06867000	Saline River near Russell, KS	1946–2000	55	4.8	12	31	73	165	98	1,502	21.68	1.39	2.2
06868000	Saline River near Wilson, KS	1930–63	34	11	21	46	107	274	166	1,900	22.36	1.36	2.4
06868400	Wolf Creek near Lucas, KS	1960–71	12	.70	1.1	2.2	6.8	18	16	163	25.02	1.20	2.6
06869500	Saline River at Tescott, KS	1920–63	44	15	34	70	157	418	247	2,820	23.69	1.31	2.5
06870300	Gypsum Creek near Gypsum, KS	1955–2000	46	0	1.0	7.0	15	34	26	120	30.88	.882	2.9
06871000	North Fork Solomon River at Glade, KS	1953–2000	48	0	.20	8.4	22	48	28	849	21.31	1.34	2.5
06871500	Bow Creek near Stockton, KS	1952–2000	49	.44	2.6	5.6	10	18	14	341	21.57	1.45	1.8
06871800	North Fork Solomon River at Kirwin, KS	1920–54	35	4.4	15	31	52	120	87	1,367	21.47	1.38	2.3
06871900	Deer Creek near Phillipsburg, KS	1967–81	15	0	0	.69	1.5	2.7	4.0	65	23.00	1.37	3.0
06873000	South Fork Solomon River above Webster Reservoir, KS	1946–2000	55	.03	1.0	14	37	77	54	1,040	20.87	1.46	2.1
06873500	South Fork Solomon River at Alton, KS	1920–57	38	2.2	9.0	30	62	145	104	1,720	21.64	1.41	2.1
06873700	Kill Creek near Bloomington, KS	1964–81	18	0	0	0	0	1.8	2.1	49.4	24.57	1.25	2.6
06876000	Solomon River at Beloit, KS	1930–54	25	10	40	93	224	743	457	5,530	23.06	1.33	2.2
06876700	Salt Creek near Ada, KS	1960–2000	41	1.6	4.0	12	30	106	70	384	26.98	1.11	2.6
06877000	Smoky Hill River at Solomon, KS	1919–34	16	126	202	404	750	1,880	931	8,830	22.1	1.39	1.9
06878000	Chapman Creek near Chapman, KS	1955–2000	46	7.7	13	24	49	126	93	300	30.89	1.02	2.2
06878500	Lyon Creek near Woodbine, KS	1955–74	20	3.4	17	33	65	135	108	230	34.13	.533	2.4
06879650	Kings Creek near Manhattan, KS	1980–2000	20	0	0	.19	2.0	5.7	2.6	409	33.00	.458	5.9
06882000	Big Blue River near Barnestown, NE	1933–2000	78	103	167	280	616	1,800	867	4,447	28.54	.820	1.3
06882500	Big Blue River near Hull, KS	1931–40	10	88	130	217	365	895	470	4,685	28.66	.810	1.4
06882510	Big Blue River at Marysville, KS	1985–2000	16	200	286	467	924	2,590	1,190	4,777	28.67	.809	1.4
06884000	Little Blue River near Fairbury, NE	1911–2000	90	92	119	160	251	581	383	2,350	27.34	1.43	1.4
06884025	Little Blue River at Hollenberg, KS	1975–2000	26	109	141	211	377	885	535	2,752	27.64	1.37	1.6
06884200	Mill Creek at Washington, KS	1960–2000	41	3.2	7.5	19	56	181	108	344	30.62	.908	2.4
06884400	Little Blue River near Barnes, KS	1959–2000	42	128	170	268	525	1,340	704	3,324	28.23	1.28	1.7

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas. —Continued[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
06884500	Little Blue River at Waterville, KS	1923–57	35	104	144	200	385	1,110	619	3,509	28.23	1.28	1.7
06885500	Black Vermillion River near Frankfort, KS	1954–2000	47	4.0	11	29	79	246	174	410	33.31	.359	2.4
06886000	Big Blue River at Randolph, KS	1919–60	42	270	380	600	1,240	3,410	1,690	9,100	28.94	.946	1.7
06886500	Fancy Creek at Winkler, KS	1955–71	17	0	2.0	11	23	59	47	174	30.98	.731	2.5
06888000	Vermillion Creek near Wamego, KS	1937–71	35	.40	2.5	17	53	143	87	243	34.94	.427	3.4
06888500	Mill Creek near Paxico, KS	1955–2000	46	4.8	19	56	156	339	194	316	34.67	.505	4.2
06889100	Soldier Creek near Goff, KS	1965–86	22	0	0	.08	.30	1.0	1.4	206	35.54	.318	2.6
06889120	Soldier Creek near Bancroft, KS	1965–87	23	.01	.15	.55	2.0	6.0	6.9	10.5	35.16	.344	2.6
06889140	Soldier Creek near Soldier, KS	1965–98	34	.21	.48	1.2	3.5	10	11	16.9	35.16	.359	2.7
06889160	Soldier Creek near Circleville, KS	1965–2000	36	.80	2.0	4.6	13	39	32	49.3	35.82	.381	2.8
06889180	Soldier Creek near St. Clere, KS	1965–80	16	2.3	5.0	10	28	75	51	80	35.53	.434	3.0
06889200	Soldier Creek near Delia, KS	1959–2000	42	2.9	8.4	21	58	153	99	157	35.63	.476	3.2
06889500	Soldier Creek near Topeka, KS	1930–2000	71	2.2	9.4	30	89	243	158	290	35.73	.557	3.3
06890100	Delaware River near Muscotah, KS	1970–2000	31	6.2	18	51	146	450	280	431	35.97	.398	3.1
06890500	Delaware River at Valley Falls, KS	1923–67	45	6.0	18	65	189	600	388	922	36.28	.432	3.1
06891500	Wakarusa River near Lawrence, KS	1930–76	47	0	2.0	23	105	333	195	425	36.61	.617	2.6
06892000	Stranger Creek near Tonganoxie, KS	1930–2000	71	2.0	9.0	40	135	433	247	406	37.89	.503	3.2
06893080	Blue River near Stanley, KS	1975–2000	26	.07	.69	5.0	19	57	36	46	39.35	.609	2.1
06910800	Marais des Cygnes River near Reading, KS	1970–2000	31	.18	2.3	15	56	174	113	177	35.80	.399	2.2
06911000	Marais des Cygnes River at Melvern, KS	1940–64	25	0	3.0	23	86	300	196	351	36.61	.421	2.2
06911500	Salt Creek near Lyndon, KS	1940–99	60	0	.54	5.1	24	82	66	111	36.60	.461	2.1
06911900	Dragoon Creek near Burlingame, KS	1961–2000	40	0	1.0	8.0	32	93	68	114	36.07	.443	2.7
06912500	Hundred and Ten Mile Creek near Quenemo, KS	1940–62	23	0	1.2	17	79	246	181	322	36.21	.465	2.3
06913000	Marais des Cygnes River near Pomona, KS	1923–62	40	1.0	3.0	26	126	417	303	1,040	36.54	.478	2.2
06913500	Marais des Cygnes River near Ottawa, KS	1903–62	60	1.5	10	70	306	1,040	627	1,250	36.70	.520	2.2
06914000	Pottawatomie Creek near Garnett, KS	1940–2000	61	.10	2.0	21	90	361	235	334	38.31	.545	1.3

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas. —Continued

[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
06915000	Big Bull Creek near Hillsdale, KS	1959–80	22	0.34	4.0	14	50	228	104	147	39.25	0.660	2.1
06916000	Marais des Cygnes River at Trading Post, KS	1929–58	30	2.9	23	209	884	4,208	1,690	2,880	38.14	.595	2.0
06916500	Big Sugar Creek at Farlinville, KS	1930–70	41	0	1.2	11	61	185	127	198	40.18	.657	2.2
06917000	Little Osage River at Fulton, KS	1950–2000	51	.20	2.9	32	129	396	238	295	40.67	.728	2.0
06917380	Marmaton River near Marmaton, KS	1972–2000	29	.46	4.1	43	159	470	302	292	41.34	.829	1.9
06917500	Marmaton River at Fort Scott, KS	1922–71	50	1.0	2.7	31	130	446	288	408	41.47	.827	1.9
07138650	White Woman Creek near Leoti, KS	1967–85	19	0	0	0	0	0	1.0	758	15.74	1.20	.57
07139800	Mulberry Creek near Dodge City, KS	1969–90	22	0	0	0	0	0	.64	217	21.70	1.23	.83
07140850	Pawnee River near Burdett, KS	1982–2000	19	0	0	0	2.4	10	11	1,252	20.49	1.11	1.1
07141200	Pawnee River at Rozel, KS	1925–2000	76	0	0	3.7	15	59	63	2,148	20.98	1.12	1.1
07141780	Walnut Creek at Nekoma, KS	1970–2000	31	0	0	1.0	13	30	25	1,192	21.02	1.17	1.1
07141900	Walnut Creek at Albert, KS	1959–2000	42	0	0	2.3	23	61	49	1,410	21.40	1.18	1.2
07142300	Rattlesnake Creek near Macksville, KS	1960–2000	41	1.2	6.5	15	28	40	26	784	24.14	5.57	.82
07142575	Rattlesnake Creek near Zenith, KS	1974–2000	27	4.6	12	29	50	82	50	1,047	24.41	5.90	.68
07142620	Rattlesnake Creek near Raymond, KS	1961–98	38	2.2	4.2	24	59	104	49	1,167	24.41	5.90	.68
07142860	Cow Creek near Claflin, KS	1967–81	15	0	0	.13	.80	4.0	7.0	43	25.85	1.04	1.3
07142900	Blood Creek near Boyd, KS	1963–80	18	0	.10	.48	1.2	4.0	7.1	61	24.45	1.07	1.5
07143300	Cow Creek near Lyons, KS	1939–2000	62	3.2	6.5	12	30	133	80	728	26.15	1.30	.87
07143600	Little Arkansas River near Little River, KS	1960–70	11	0	.20	.80	1.9	6.9	9.5	71	27.67	.856	1.3
07143665	Little Arkansas River at Alta Mills, KS	1974–2000	27	4.9	9.2	22	62	325	229	736	29.49	2.07	.759
07144200	Little Arkansas River at Valley Center, KS	1923–2000	78	21	33	60	127	488	312	1,327	30.34	2.02	.754
07144780	North Fork Ninnescah River above Cheney Reservoir, KS	1966–2000	35	24	47	76	126	222	147	787	26.87	5.48	.69
07144800	North Fork Ninnescah River near Cheney, KS	1951–64	14	9.3	38	85	148	262	160	930	27.47	4.96	.83
07144850	South Fork South Fork Ninnescah River near Pratt, KS	1962–80	19	0	0	0	0	0	2.6	23.1	25.58	2.02	.92

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas. —Continued[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
07145200	South Fork Ninescah River near Murdock, KS	1951–2000	50	66	97	135	194	304	209	650	27.25	3.08	1.3
07145500	Ninescah River near Peck, KS	1939–63	25	78	156	272	450	920	550	2,129	28.06	3.78	1.1
07145700	Slate Creek at Wellington, KS	1970–2000	31	.91	3.3	8.0	21	73	73	154	30.73	.876	.81
07146570	Cole Creek near DeGraff, KS	1962–79	18	0	.07	1.8	4.8	13	17	30	33.68	.448	1.1
07147070	Whitewater River at Towanda, KS	1962–2000	39	7.6	17	36	85	242	206	426	33.05	.468	1.2
07147800	Walnut River at Winfield, KS	1922–80	58	18	48	152	430	1,300	793	1,880	34.31	.488	1.4
07148350	Salt Fork Arkansas near Winchester, OK	1960–93	24	.35	7.4	34	75	160	96	856	24.58	2.81	2.6
07149000	Medicine Lodge River near Kiowa, KS	1939–2000	62	12	47	85	141	271	154	903	25.47	2.56	2.7
07149500	Salt Fork Arkansas River near Cherokee, OK	1941–50	10	2.0	50	125	246	731	393	2,439	25.44	2.80	2.5
07151500	Chikaskia River near Corbin, KS	1951–2000	50	19	47	94	190	430	250	794	28.69	2.65	1.1
07152000	Chikaskia River near Blackwell, OK	1937–2000	64	23	66	144	324	895	585	1,859	32.94	.800	.95
07154500	Cimarron River near Kenton, OK	1951–2000	50	0	.06	.91	2.8	7.5	17	1,106	16.29	2.07	1.0
07155590	Cimarron River near Elkhart, KS	1972–2000	29	0	0	0	0	1.5	11	3,410	16.33	3.04	1.8
07156010	North Fork Cimarron River at Richfield, KS	1972–85	14	0	0	0	0	2	5.6	492	16.12	3.27	.97
07156100	Sand Arroyo Creek near Johnson, KS	1972–85	14	0	0	0	0	0	.25	751	15.90	3.12	.93
07156220	Bear Creek near Johnson, KS	1967–98	32	0	0	0	0	0	3.4	1,093	15.85	1.27	1.2
07156900	Cimarron River near Forgan, OK	1966–2000	35	27	35	45	62	82	58	8,536	16.85	3.16	1.1
07157000	Cimarron River near Mocane, OK	1943–65	13	27	42	60	85	137	100	8,670	17.07	3.32	1.2
07157500	Crooked Creek near Englewood, KS	1943–2000	58	2.4	7.1	12	18	33	31	1,157	20.51	1.67	.72
07157900	Cavalry Creek at Coldwater, KS	1967–81	15	.65	1.0	1.5	2.0	2.9	3.4	39	24.81	2.73	1.1
07157950	Cimarron River near Buffalo, OK	1961–94	34	.03	10	56	123	232	128	12,004	19.53	3.19	1.3
07165700	Verdigris River near Madison, KS	1956–76	21	.50	4.9	28	78	204	123	181	36.14	.486	2.8
07166000	Verdigris River near Coyville, KS	1940–59	20	0.10	5.2	45	189	670	465	747	36.75	.541	2.4
07166500	Verdigris River near Altoona, KS	1940–59	20	0	10	71	295	1,230	691	1,138	37.51	.671	2.4
07167000	Fall River near Eureka, KS	1947–76	30	.70	5.2	40	134	324	190	307	35.32	.515	3.1

**Table 1.** Streamflow-gaging stations and computed flow-duration values, mean discharge for period of uncontrolled flow record, and climatic and basin characteristics used in regression analyses of uncontrolled flow stream locations in Kansas. —Continued

[ft<sup>3</sup>/s, cubic feet per second; mi<sup>2</sup>, square miles; in/h, inches per hour]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					Mean discharge for period of uncontrolled record (ft <sup>3</sup> /s)	Contributing-drainage area (mi <sup>2</sup> )	Mean annual precipitation, 1961–90 <sup>1</sup> (inches)	Mean basin permeability <sup>2</sup> (in/h)	Mean basin slope <sup>3</sup> (degrees)
				90-percent	75-percent	50-percent	25-percent	10-percent					
07167500	Otter Creek at Climax, KS	1947–2000	54	0	1.0	10	44	121	82	129	36.19	0.461	2.8
07168500	Fall River near Fall River, KS	1905–48	44	1.0	10	53	184	550	331	585	35.84	.518	2.8
07169500	Fall River at Fredonia, KS	1939–48	10	2.4	12	75	272	848	506	827	36.26	.616	2.7
07169800	Elk River at Elk Falls, KS	1967–2000	33	.64	2.9	22	91	271	154	220	36.46	.447	2.5
07170000	Elk River near Elk City, KS	1939–69	31	0	2.6	26	119	412	308	575	37.41	.740	2.6
07170700	Big Hill Creek near Cherryvale, KS	1958–2000	43	0	.03	1.3	10	48	27	37	41.31	.834	2.3
07172000	Caney River near Elgin, KS	1940–2000	61	.07	5.0	40	172	528	273	445	35.53	.556	3.2
07174000	Little Caney River near Copan, OK	1944–58	15	.10	.50	9.5	64	323	237	424	37.51	1.01	2.9
07174400	Caney River above Coon Creek near Bartlesville, OK	1986–2000	15	26	36	173	1,820	4,420	1,290	1,392	36.75	.970	3.1
07179500	Neosho River at Council Grove, KS	1939–63	25	0	1.0	16	48	134	123	250	33.77	.433	1.8
07180000	Cottonwood River near Marion, KS	1939–68	30	3.0	8.0	18	43	108	112	329	32.37	.662	1.5
07180500	Cedar Creek near Cedar Point, KS	1939–2000	62	1.8	6.0	16	36	76	58	110	33.33	.518	1.6
07181000	Cottonwood River at Elmdale, KS	1923–32	10	20	42	88	220	691	357	1,045	32.92	.566	1.6
07181500	Middle Creek near Elmdale, KS	1939–50	12	0	2.4	7.0	22	59	45	92	34.05	.456	2.2
07182000	Cottonwood River at Cottonwood Falls, KS	1933–67	35	10	34	108	302	785	511	1,740	33.09	.545	1.9
07182400	Neosho River at Strawn, KS	1949–62	14	5.0	54	285	920	3,040	1,390	2,933	34.11	.508	1.9
07183100	Owl Creek near Piqua, KS	1960–70	11	0	.57	4.0	21	115	122	177	40.36	.609	1.7
07183500	Neosho River near Parsons, KS	1922–63	42	29	133	472	1,600	5,820	2,450	4,905	36.39	.579	1.7
07184000	Lightning Creek near McCune, KS	1939–2000	62	0	1.4	12	52	270	169	197	42.25	1.02	1.2
07186000	Spring River at Waco, MO	1925–2000	76	66	124	301	730	1,816	947	1,164	43.38	1.41	1.2
07186400	Center Creek near Carterville, MO	1963–91	29	32	47	97	206	399	204	232	42.92	1.46	1.6
07187000	Shoal Creek above Joplin, MO	1942–2000	59	88	130	237	448	879	427	427	43.21	1.48	2.7
07188000	Spring River near Quapaw, OK	1940–2000	61	211	376	850	1,950	4,400	2,200	2,510	43.18	1.43	1.4

<sup>1</sup>Mean annual precipitation for each gaging station from Daly and others (1997).

<sup>2</sup>Mean basin permeability for each gaging station from U.S. Department of Agriculture (1994).

<sup>3</sup>Mean basin slope for each gaging station from U.S. Geological Survey (1998).

in elevation between 10- and 85-percent lengths of the main channel from the point of the stream statistic computation. In the GIS, the coverage for the streams was overlain on the elevation coverage. A program was developed to determine the longest continuous stream length upstream from the point of statistic computation. The 10-percent and 85-percent distance elevations were obtained, and along with the distance between the two points, a main-stream channel slope for each stream location was derived.

## Methods for Estimating Flow Durations, Mean Flows, and Peak-Discharge Frequency Values

Climatic and basin characteristics were used in the analyses of flow durations and mean flows at gaged and ungaged sites on uncontrolled flow streams. For this study, ARC/INFO GIS software was used to estimate climatic and basin characteristics. Many spatial data sets were available for this task, including: (1) 30-year (1961–90) mean annual precipitation data (Daly and others, 1997), (2) 30-m gridded elevation data (U.S. Geological Survey, 1998) for determining contributing-drainage area, mean basin slope, and mean basin elevation, and (3) STATSGO soil-permeability data (U.S. Department of Agriculture, 1994).

The flow-duration information was computed for the 216 gaging stations in Kansas and the surrounding States with at least 10 years of streamflow record. Streamflow at 149 of these stations, which were on uncontrolled flow stream locations (table 1), were included in the regression analyses to develop predictive equations for streamflow. The flows of uncontrolled flow stream locations are unaffected by storage and release from Federal upstream reservoirs. One hundred thirty-one streamflow-gaging stations in Kansas and 18 in surrounding States (3 in Missouri, 5 in Nebraska, and 10 in Oklahoma) measured uncontrolled flow. All available records through water year (October through September) 2000 were used to compute the flow duration and mean flow for these gaging stations.

Three gaging stations in Kansas that measured uncontrolled flow and had at least 10 years of record were not included in the regression analyses. One station, Indian Creek at Overland Park, Kansas (station 06893300), was not used because it is affected by extensive urbanization. Two other stations, Beaver Creek at Cedar Bluffs, Kansas (station 06846500), and Paradise Creek near Paradise, Kansas (station 06867500), were not used because streamflow statistics developed for these stations were not consistent with statistics for other nearby stations. These two gaging stations were located on stream reaches that were losing surface flow to ground water (losing streams).

## Estimates at Gaged Stream Sites

The USGS has established standard methods for estimating flow duration (Searcy, 1959) for streamflow-gaging stations. The computer software programs IOWDM, ANNIE, and SWSTAT were used to format input data, manage and display data, and complete the flow-duration statistical analyses (Lumb and others, 1990; Flynn and others, 1995). These programs are available on the World Wide Web (URL [http://water.usgs.gov/software/surface\\_water.html](http://water.usgs.gov/software/surface_water.html)). For this study a computer software program was developed by the USGS (Xiaodong Jian, written commun., 2003) and was used to compute flow durations and mean flow using the data from the streamflow-gaging stations. This software program is on file at the USGS office in Lawrence, Kansas.

Daily mean flows for all complete water years of record were used to determine flow-duration statistics for continuous-record, streamflow-gaging stations. The water year begins on October 1 and ends on September 30 of the following year. Daily mean flows for USGS streamflow-gaging stations in Kansas are available on the World Wide Web (URL <http://waterdata.usgs.gov/ks/nwis/>).

A flow-duration curve (fig. 7) is a graphical representation of the percentage of time that streamflow for a given time step (usually daily) is equaled or exceeded during a specified period (usually the complete period of record) at a stream site. Flow-duration curves usually are constructed by first ranking all of the daily mean discharges for the period of record at a gaging station from largest to smallest, next computing the probability for each value being equaled or exceeded, then plotting the discharges against their associated exceedance probabilities (Loaiciga, 1989, p. 82). The daily mean discharges are not fit to an assumed distribution. Flow-duration analysis can be done by use of the USGS software described previously or by use of commercially available statistical software.

Flow-duration statistics are points along a flow-duration curve. For example, the 99-percent duration streamflow is equaled or exceeded 99 percent of the time, whereas the 50-percent duration streamflow (median) is equaled or exceeded 50 percent of the time. Strictly interpreted, flow-duration statistics reflect only the period for which they are calculated; however, when the period of record used to compute the statistics is sufficiently long, the statistics often are used as an indicator of probable future conditions (Searcy, 1959).

Estimates of peak discharge for selected frequencies can be computed by using observed annual peak-discharge data for streamflow-gaging stations. Log-Pearson Type-III distributions are fitted to the observed annual peak-discharge data for each streamflow-gaging station by using techniques recommended by the Interagency Committee on Water Data (1981).

## Estimates at Ungaged Stream Sites

Estimates of streamflow statistics often are needed for sites on streams where no gaged data are available. The two

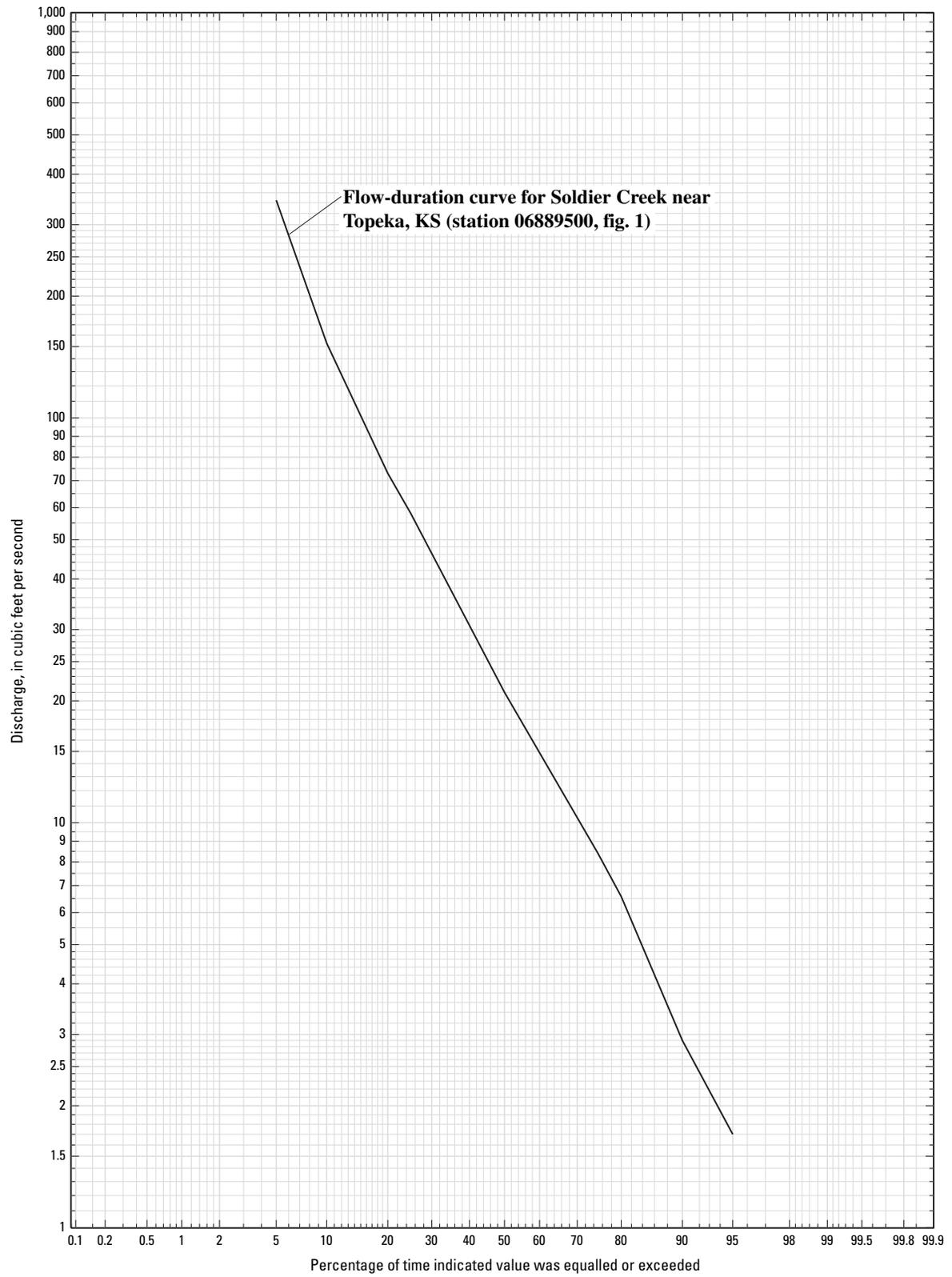


Figure 7. Flow-duration curve for Soldier Creek near Topeka, Kansas (station 06889500, fig. 1).

## 18 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

methods most commonly used to estimate statistics for ungaged sites are the drainage-area ratio method and multiple linear-regression analysis. The drainage-area ratio method is most appropriate for use when the ungaged site is near a streamflow-gaging station on the same stream. Multiple linear-regression analysis is used to obtain estimates for most other ungaged sites.

### Drainage-Area Ratio Method

The drainage-area ratio method assumes that the streamflow at an ungaged site for the same stream is the same per unit area or at least responds in the same fashion as that at a nearby, hydrologically similar streamflow-gaging station used as an index. Drainage areas for the ungaged site and the index station are determined from topographic maps, digital elevation maps (DEMs), or by other GIS methods. Streamflow statistics are computed for the index station, then the statistics are divided by the drainage area to determine streamflow per unit area at the index station. These values are multiplied by the drainage area at the ungaged site to obtain estimated statistics for the site. This method is most commonly applied when the index gaging station is on the same stream as the ungaged site because the accuracy of the method depends on the proximity of the two sites and on similarities in drainage area and on other climatic and basin characteristics of the respective drainage basins.

Several researchers have provided guidelines as to how large the difference in drainage areas can be before use of multiple linear-regression analysis is preferred over use of the drainage-area ratio method. Guidelines have been provided for estimating peak-discharge statistics, and usually the preferred guideline has been that the drainage area for the ungaged site should be within 0.5 and 1.5 times the drainage area of the index station (Sauer, 1974; Choquette, 1988, p. 41; Koltun and Roberts, 1990, p. 6; Lumia, 1991, p. 34; Bisese, 1995, p. 13). One report (Koltun and Schwartz, 1986, p. 32) selected a range of 0.85 to 1.15 times the drainage area of the index station for estimating low flows at ungaged sites in Ohio. None of these researchers provided any scientific basis for use of these guidelines (R.E. Thompson, Jr., U.S. Geological Survey, written commun., 1999).

In this report, streamflow statistics at controlled, ungaged sites were determined by the drainage-area ratio method with no limit on the ratios between the gaged-location drainage area and the ungaged-location drainage area. Flow statistics for uncontrolled flow, ungaged sites were determined by an interpolation procedure that utilized a drainage-area weighted ratio of gaged site information and regression-equation estimates at ungaged sites. This procedure is explained in greater detail in a following section, "Estimates of Streamflow Statistics for Stream Locations."

### Multiple Linear-Regression Analysis

Multiple linear-regression analysis (regression analysis) has been used by the USGS and other researchers throughout

the United States and elsewhere to develop equations for estimating streamflow statistics at ungaged sites. In regression analysis, a streamflow statistic (the dependent variable) for a group of gaging stations is related statistically to the climatic or basin characteristics of the drainage basins for the stations (the independent variables). This results in an equation that can be used to estimate the statistic for sites where no streamflow data are available.

Equations can be developed by use of several different regression analysis algorithms. The various algorithms use different methods to minimize the differences between the values of the dependent variable for the stations used in the analysis (the observed values) and the corresponding values provided by the resulting regression equation (the estimated or fitted values). Choice of one algorithm over another depends on the characteristics of the data used in the analysis and on the underlying assumptions for use of the algorithm. The multiple linear-regression equation takes the general form:

$$Y_i = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n + \epsilon_i, \quad (1)$$

where  $Y_i$  is the value of the dependent variable for site  $i$ ,  $X_1$  to  $X_n$  are the  $n$  independent variables,  $b_0$  to  $b_n$  are the  $n + 1$  regression-model coefficients, and  $\epsilon_i$  is the error (difference between the observed and estimated values of the dependent variable) for site  $i$ . Assumptions for use of regression analysis are (1) equation 1 adequately describes the relation between the dependent and the independent variables, (2) the variance of the  $\epsilon_i$  is constant and independent of the values of  $X_n$ , (3) the  $\epsilon_i$  are normally distributed for a Tobit analysis, and (4) the  $\epsilon_i$  are independent of each other (Inman and Conover, 1983, p. 367). Tobit analysis is discussed in the following paragraph. Regression analysis results need to be evaluated to assure that these assumptions are met. Streamflow and basin characteristics used in hydrologic regression usually are log-normally distributed; therefore, transformation of the variables to logarithms is usually necessary to satisfy regression assumption 3. Transformation results in a model of the form:

$$\log Y_i = b_0 + b_1 \log X_1 + b_2 \log X_2 + \dots + b_n \log X_n + \epsilon_i. \quad (2)$$

The algebraically equivalent form when logarithms-base 10 ( $\log_{10}$ ) are used in the transformations, and the equation retransformed to original units is:

$$Y_i = 10^{b_0} (X_1^{b_1}) (X_2^{b_2}) \dots (X_n^{b_n}) 10^{\epsilon_i}; \quad (3)$$

$$Y_i = 10^{[b_0 + b_1 \log X_1 + b_2 \log X_2 + \dots + b_n \log X_n + \epsilon_i]}. \quad (4)$$

To include zero values in a logarithmic transformation analysis, the Tobit analysis was used. Tobit analysis is a widely accepted method for estimating a regression-like model when there are adjusted data (Tobin, 1958; Judge and others,

1985; Cohn, 1988). Adjusted data are data that either are censored or have had a discrete value of delta ( $\delta$ ) added to them. Censored data are values less than a threshold value and are increased to the censoring value (for example, all values less than 0.7 are increased to 0.7). Discrete values of delta ( $\delta$ ) are added to all data before transformation and then subtracted from the final regression model value. By applying these techniques, zero values of data can be transformed logarithmically. The Tobit procedure uses a maximum likelihood estimator (Cohn, 1988). The Survival Regression Procedure in the S-Plus 2000 software package (MathSoft, 1999) was used in this study to fit the Tobit model.

A Tobit analysis was conducted for each of the flow durations and for the mean flow data sets, and the resulting plots of observed and regression-estimated values are shown in figures 8A through 8F. The graphs show the observed specific flow plotted with the regression-estimated flow. All observed and regression-estimated flow duration have the delta value added.

The equations for regression-estimated flow durations and mean flow and uncertainty measures are listed in table 2. Only the 149 gaging stations on streams with uncontrolled flow with at least 10 years of record (table 1) were used in the regression analyses. The drainage area of these gaging stations ranged from 2.06 to 12,004 mi<sup>2</sup>. The Chi<sup>2</sup> is a measure of the fit of the Tobit analysis model. The delta value is varied until the Chi<sup>2</sup> is maximized. For these analyses the contributing-drainage area (CDA) was divided by 1,000, the 30-year mean precipitation (PREC) was divided by 28, and the mean basin slope (SLOPE) was divided by 2 before the log transformation was made so that the log values of each of these parameters were balanced between greater than and less than zero. This eliminated the multi-collinearity problems that occur when using squared values (A.V. Vecchia, USGS, written commun., 2002). The addition of the squares of log contributing-drainage area and log mean annual precipitation to the regression equation improved the models substantially.

Regression equations for peak-discharge frequency estimates for Kansas are provided by Rasmussen and Perry (2000). Peak discharges were estimated at recurrence intervals (frequencies) ranging from 2 to 100 years using log-Pearson Type-III (distributions for 253 streamflow-gaging stations in Kansas (see Rasmussen and Perry, 2000, table 5). The annual peak-discharge data, through the 1997 water year, were from streamflow-gaging stations with uncontrolled flow in mostly rural basins. A weighted least-squares regression model was used to generalize the coefficients of station skewness. The resulting generalized skewness equation provides more reliable skewness estimates for the log-Pearson Type-III analyses than the previously developed equation for Kansas (Clement, 1987).

Rasmussen and Perry (2000) used a generalized least-squares regression model to develop equations for estimating peak streamflow for sites without stream gages for selected frequencies from selected physical and climatic basin characteristics for sites with stream gages. The equations can be used to estimate peak streamflow for selected frequencies using

contributing-drainage area, mean annual precipitation, soil permeability, and slope of the main channel for ungaged sites in Kansas with contributing-drainage areas greater than 0.17 and less than 9,100 mi<sup>2</sup>. The equations and their errors are provided in table 3.

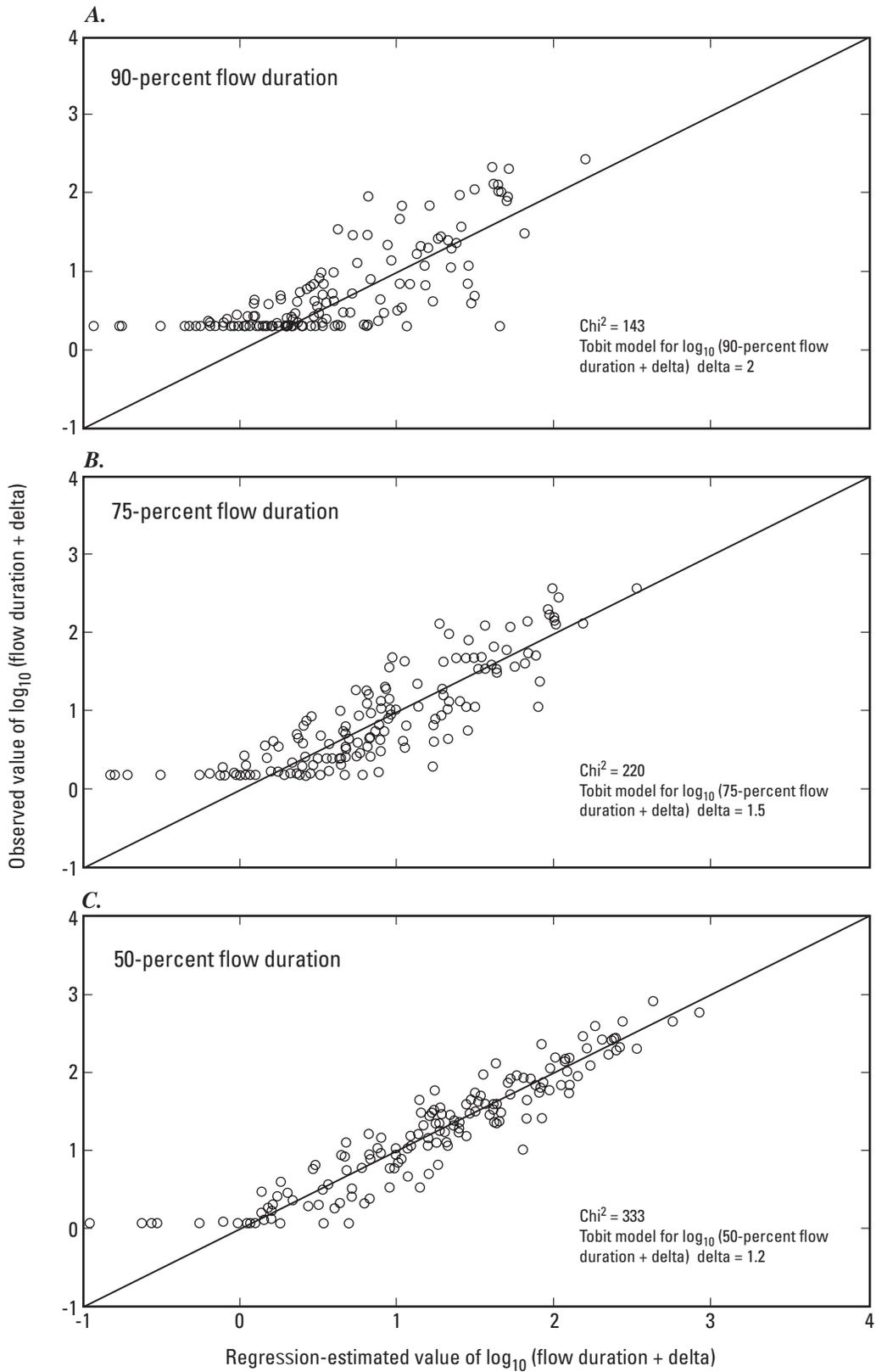
## 1999 Kansas Surface Water Register

In 1994, KDHE adopted the Reach File Version 2 (RF2) stream-segment coverage within the State of Kansas as the basic coverage for stream classification. RF2 was completed in the late 1980s by the U.S. Environmental Protection Agency (USEPA) using the Feature File of the USGS Geographic Names Information System (GNIS) to add one new level of reach segments to the Reach File Version 1 (RF1) coverage (U.S. Environmental Protection Agency, 1996). The source of RF1 (completed in 1982) was the USGS's 1:250,000-scale hydrography that was photographically reduced to a scale of 1:500,000 by the National Oceanic and Atmospheric Administration (NOAA).

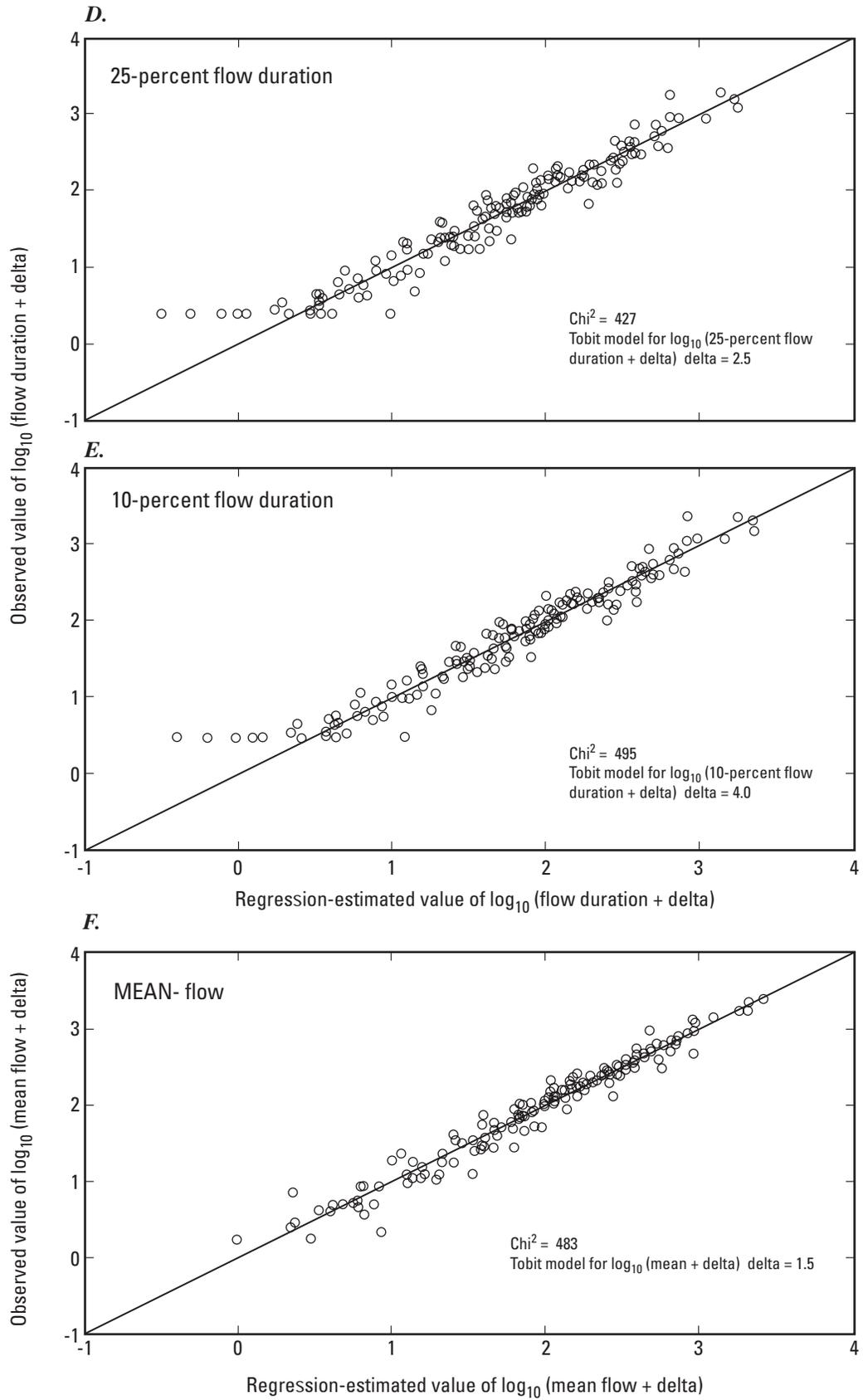
In addition to the RF2 segments, other segments have been added to the KSWR by KDHE primarily for the protection of aquatic life and other water-quality issues. The 1999 KSWR has 2,232 stream segments. Each segment on the 1999 KSWR is identified by a unique CUSEGA number (tables 7–111, at the end of this report). CUSEGA stands for catalog unit segment number alpha. Individual CUSEGA segments may have one or more subsegments associated with it. The KSWR of June 1, 1999, is a public document and can be obtained from the World Wide Web (URL <http://www.kdhe.state.ks.us/pdf/befs/register99.pdf>).

The original RF2 coverage had almost 30,000 subsegments in Kansas. By combining subsegments and by ending the stream segments at hydrologic breaks such as at the confluence of tributaries or at lakes, the total number of segments within Kansas was reduced to 5,427 for this report. Streamflow statistics were determined at the downstream end of these segments (called streamflow-statistics determination sites in this report). Of the 5,427 determination sites, 656 are located in lakes or along irrigation ditches where statistical computations are not reported. Therefore, stream statistics are reported at 4,771 sites and their associated stream segments.

Because many of the stream basins in Kansas extend into the surrounding States, the data used for developing the 1999 KSWR stream network, which is based on the more detailed RF2, were joined with the national RF1 coverage that is available for Colorado, Missouri, Nebraska, and Oklahoma. This process was done in a GIS procedure by clipping the Kansas extent of the original RF1 stream coverage and replacing it with the more detailed version of the RF2 stream coverage. The two coverages were joined at the State boundaries for continuity. The line topology was reconfigured so that spatial relations between connecting stream segments (from and to nodes) were updated. Then the updated stream coverage was rechecked to



**Figure 8.** Results of regression with Tobit analysis for flow durations of (A) 90, (B) 75, (C) 50, (D) 25, and (E) 10 percent and (F) mean flow.



**Figure 8.** Results of regression with Tobit analysis for flow durations of (A) 90, (B) 75, (C) 50, (D) 25, and (E) 10 percent and (F) mean flow.—Continued

**Table 2.** Regression equations used to estimate 90-, 75-, 50-, 25-, and 10-percent flow durations and mean flow for uncontrolled flow stream locations on the 1999 Kansas Surface Water Register<sup>1</sup>

[Chi<sup>2</sup>, Chi square statistical distribution; n, number of stations used in the analysis; *CDA*, contributing-drainage area, in square miles; *PREC*, precipitation, in inches; *PERM*, soil permeability, in inches per hour; *SLOPE*, land-surface slope, in degrees;  $\log da = \log_{10}\left(\frac{CDA}{1,000}\right)$ ;  $\log prec = \log_{10}\left(\frac{PREC}{28}\right)$ ;  $\log perm = \log_{10}PERM$ ;  $\log slope = \log_{10}\left(\frac{SLOPE}{2}\right)$  ]

Flow value	Equation	Chi <sup>2</sup>	Standard error (log units)	Degrees of freedom	n
90-percent duration	$Q_{90} = \left[ 10^{[0.902 + 1.030\log da + 4.046\log prec + 0.732\log perm + 0.008\log slope + 0.292(\log da)^2 + (-17.89(\log prec)^2)]} \right]^{-2.0}$	143	0.434	6	149
75-percent duration	$Q_{75} = \left[ 10^{[1.268 + 1.073\log da + 4.310\log prec + 0.755\log perm + 0.339\log slope + 0.222(\log da)^2 + (-17.63(\log prec)^2)]} \right]^{-1.5}$	220	.344	6	149
50-percent duration	$Q_{50} = \left[ 10^{[1.685 + 1.124\log da + 5.283\log prec + 0.638\log perm + 0.517\log slope + 0.152(\log da)^2 + (-15.38(\log prec)^2)]} \right]^{-1.2}$	333	.250	6	149
25-percent duration	$Q_{25} = \left[ 10^{[2.082 + 1.079\log da + 5.365\log prec + 0.393\log perm + 0.490\log slope + 0.104(\log da)^2 + (-11.10(\log prec)^2)]} \right]^{-2.5}$	427	.177	6	149
10-percent duration	$Q_{10} = \left[ 10^{[2.502 + 1.109\log da + 5.638\log prec + 0.218\log perm + 0.434\log slope + 0.085(\log da)^2 + (-9.984(\log prec)^2)]} \right]^{-4.0}$	495	.154	6	149
Mean flow	$Q_{mean} = \left[ 10^{[2.286 + 0.978\log da + 4.884\log prec + 0.084\log perm + 0.279\log slope + 0.040(\log da)^2 + (-7.331(\log prec)^2)]} \right]^{-1.5}$	483	.143	6	149

<sup>1</sup>The Kansas Surface Water Register is maintained by the Kansas Department of Health and Environment (Topeka).

**Table 3.** Generalized least-squares regression equations for estimating 2- to 100-year peak-streamflow discharges for unregulated, rural streams in Kansas (modified from Rasmussen and Perry, 2000).

[ $Q_t$ , estimated peak discharge, in cubic feet per second, for a  $t$ -year recurrence interval;  $CDA$ , contributing-drainage area for the site, in square miles;  $P$ , average mean annual precipitation for the entire basin, in inches;  $SI$ , slope of the main channel, in feet per mile;  $S$ , average soil permeability for the entire basin, in inches per hour]

$Q_t$	Regression equations	Model standard error of prediction ( $\log_{10}$ units)
For contributing-drainage areas ranging from 30 to 9,100 square miles		
$Q_2$	$0.00001477(CDA)^{0.646}(P)^{4.307}(SI)^{0.5266}(S)^{-0.1736}$	0.155
$Q_5$	$0.001336(CDA)^{0.590}(P)^{3.373}(SI)^{0.4235}(S)^{-0.2231}$	.133
$Q_{10}$	$0.01085(CDA)^{0.568}(P)^{2.945}(SI)^{0.374}(S)^{-0.248}$	.131
$Q_{25}$	$0.0829(CDA)^{0.549}(P)^{2.532}(SI)^{0.326}(S)^{-0.275}$	.136
$Q_{50}$	$0.283(CDA)^{0.539}(P)^{2.283}(SI)^{0.298}(S)^{-0.293}$	.144
$Q_{100}$	$0.810(CDA)^{0.532}(P)^{2.070}(SI)^{0.272}(S)^{-0.309}$	.153
For contributing-drainage areas ranging from 0.17 to less than 30 square miles		
$Q_2$	$0.0126(CDA)^{0.579}(P)^{2.824}$	.216
$Q_5$	$0.300(CDA)^{0.600}(P)^{2.138}$	.184
$Q_{10}$	$1.224(CDA)^{0.611}(P)^{1.844}$	.183
$Q_{25}$	$4.673(CDA)^{0.622}(P)^{1.572}$	.198
$Q_{50}$	$10.26(CDA)^{0.628}(P)^{1.415}$	.214
$Q_{100}$	$19.80(CDA)^{0.634}(P)^{1.288}$	.232

correct any remaining digitizing errors including cycles, overshoots, and undershoots (that is, an arc that does not extend far enough to intersect another arc). Finally, the topology was checked for consistency (that is, all segments point downstream). All GIS analyses were performed using the Environmental Systems Research Institute (ESRI) ArcGIS and ArcInfo software.

A GIS database was used to manage and display the basin characteristics and estimated streamflow statistics for stream locations on the 1999 KSWR. The relational database design facilitates identification and analysis of data unique to individual stream locations. The stream coverage and associated data are available on the World Wide Web (URL <http://ks.water.usgs.gov/Kansas/studies/strmstats/index.shtml>).

### Basin Characteristics for Stream Locations

Drainage basins for each stream location on the 1999 KSWR were determined in the GIS by converting the vector stream-location coverage into a raster-grid network with a raster size of 492 by 492 ft (150 by 150 m). Euclidean allocation was performed on the rasterized stream network to calculate for each cell the identity of the closest source or stream cell using

the Euclidean distance. Euclidean distance is defined as the shortest length between two points in two-dimensional space. GIS Euclidean allocation zones may not coincide with actual topographic basin divides. Therefore, basin contributing-drainage areas obtained by the GIS method used herein may differ from those obtained using conventional topographic planimetry methods.

Mean values for climatic and basin characteristics were calculated for stream-location drainage basins using zonal statistics on basin-characteristic grids with Euclidean allocation zones. Zonal statistics were recorded in an attribute table and included the area and mean of the values of all cells in the basin-characteristic grids that belong to the same Euclidean zone. The climatic and basin characteristics computed included contributing-drainage area, mean annual precipitation, mean basin elevation, mean basin permeability, mean basin slope, a base-flow index (BFI), and mean annual runoff (Gebert and others, 1987) and water-balance model runoff (Wolock and McCabe, 1999) flow values. Output zonal statistics tables were relationally joined back to the original vector streams coverage so that each stream location had an estimated value for each climatic and basin characteristic for the entire basin upstream from each stream location.

One parameter that needed a separate GIS computation was the main channel slope for each of the determination sites.

## 24 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

The slope of the main channel is measured by dividing the difference in elevation at points in the channel at 10 and 85 percent of the distance upstream along the main channel length by the intervening main channel length. A computer software program was written (D.M. Wolock, USGS, written commun., 2003) that searches upstream from each determination site, finds the longest stream distance, computes the 10- and 85-percent distance locations, and uses the elevation at those locations and distance along the stream channel to determine the main channel slope.

### Estimates of Streamflow Statistics for Stream Locations

Initially, streamflow statistics were computed for each flow determination site. Flow durations and peak-discharge frequencies were checked at each site for a logical progression of flow values. At some determination sites with small drainage areas of less than 5 mi<sup>2</sup>, the quadratic part of the equations for the lower (10- and 25-percent) flow durations resulted in flow values that decreased with increasing durations. If the drainage area resulted in a more negative logarithm, the square of that value could dominate the other factors in the equation, and an anomalously high value for flow would result. All determination sites were checked for decreasing flow with increasing flow duration. Of the few sites that were affected, the higher durations (50, 75, and 90 percent) were graphically extrapolated to recompute the 10- and 25-percent duration flows.

Next, different interpolation procedures were used to refine the estimate of flow durations, mean flow, and peak-discharge frequency values for each stream location depending on whether the location had controlled or uncontrolled flow and whether or not there was a streamflow-gaging station located either upstream or downstream from the location. These interpolation procedures utilize the previously defined drainage-area ratio method and multiple linear-regression equations and are summarized in table 4. The interpolation procedures outlined in table 4 for an ungaged location between two gaged locations selects the upstream gage location (if there is more than one) that has the largest drainage area. These procedures were applied to flow statistics developed for each stream location.

Flow-duration and mean flow value computations for controlled and uncontrolled flow streamflow-gaging stations used in the interpolation of the flow duration and mean flow are listed in table 5. Flow durations and mean flows at gages representing controlled stream locations (those with Federal reservoirs upstream) were computed from the controlled period of record only. These records had to be at least 10 years in length for the period 1961 to 2000. Use of the 1961-to-2000 time period maintains a degree of consistency for comparison and interpolation of flow durations and mean flow between gaging stations at controlled locations and is reasonably representative of long-term average precipitation.

Peak-discharge frequency values at controlled and uncontrolled flow streamflow-gaging stations (fig. 2) and used in the

interpolation of peak-discharge-frequency values are listed in table 6. Peak-discharge frequency values at gaging stations representing uncontrolled flow stream locations were from Rasmussen and Perry (2000, see table 5). Peak-discharge-frequency values at gaging stations representing controlled stream locations were available from several sources. The U.S. Army Corps of Engineers (USCOE), Kansas City District (oral commun., 2003) was used as the primary source of peak-discharge frequency values for controlled stream locations. If no frequency values for a particular stream location were available from USCOE, then published Federal Emergency Management Agency's Flood Insurance Studies for communities in Kansas (Federal Emergency Management Agency, various years) served as a secondary source. The third and final source of peak-discharge frequency values was a log-Pearson Type-III analyses of the controlled period of record. This final source was a Bulletin 17B estimate (Interagency Advisory Committee on Water Data, 1981) using either the systematic record skew values or the regional skew values to generate the estimated peak-discharge frequency values. When systematic skew values were extremely negative (less than -1.2), the regional skew value was used.

### Interpolation Example

Figure 9 shows part of a stream network and some streamflow-gaging stations in central Kansas. The large numbers next to the gaging stations are the 50-percent (median) flow-duration values observed for those stations. The regression equations used are described in the section on "Multiple Linear-Regression Analysis." The smaller numbers are the 50-percent flow-duration values estimated from those regression equations. A comparison of the regression-estimated 50-percent flow-duration values with the observed gaging-station 50-percent flow-duration values shows substantial "local" differences between the estimated and the observed values.

Figure 10 shows the effect of interpolating the observed gaging-station 50-percent (median) flow-duration values with the regression-estimated values to develop the best-estimated flow for each stream location. The local differences in estimated 50-percent flow-duration values noted in figure 9 (regression estimates) are not as large in figure 10 (estimates derived in this report) because of the effect of incorporating local gaging-station data. As a result, the interpolation procedure used in this report to develop stream-statistic estimates appears to provide more accurate estimates than those that result from using only the regression equations.

### Estimated Stream Statistics

The interpolation procedure was performed on all the flow durations, the mean flow, and all the peak-discharge values for all uncontrolled and controlled flow determination sites. The

**Table 4.** Summary of interpolation procedures used to estimate flow duration, mean flow, and peak-discharge flow information for streamflow-statistics determination sites on the 1999 Kansas Surface Water Register (KSWR).

[ $Q$ , flow statistic;  $DA$ , drainage area;  $B$ , bias equals measured gaging station  $Q$  minus regression equation  $Q$ ; Subscripts:  $r$ , regression-equation estimate of flow;  $s$ , segment (ungaged);  $b$ , with bias added;  $u$ , upstream gaging station;  $d$ , downstream gaging station;  $g$ , at streamflow gage]

Case number	Case	Controlled segment interpolation procedure	Uncontrolled segment interpolation procedure
1	No gage on stream.	Never occurs.	Use regression estimate (no adjustment).
2	Gage on determination site segment .	Use gaged value.	Use gaged value.
3	Gage on stream only upstream or downstream from that determination site segment.	Estimate flow from gage data using ratio of gage drainage area to the determination site drainage area. Ignore regression equations.	Use regression estimate adjusted by weighting the bias between the gaged value and the estimated value at the gaged site by the ratio of the gaged drainage area to the determination site drainage area.
		$Q_s = \frac{Q_u}{DA_u} \times DA_s \quad \text{or}$ $Q_s = \frac{Q_d}{DA_d} \times DA_s$	$B_s = \frac{B_u}{DA_u} \times DA_s \times \frac{DA_u}{DA_s}; \text{ or } B_s = \frac{B_d}{DA_d} \times DA_s \times \frac{DA_s}{DA_d}$ $Q_{sb} = Q_{sr} + B_s$
4	Gage on stream both upstream and downstream from that flow determination site segment .	Estimate the flow from upstream and downstream gage data using weighted average ratios of gage drainage areas to the determination site drainage area. Ignore regression equations.	Use regression estimate adjusted by a weighted average bias between the two gages using drainage areas of gages and the determination site.
		$Q_s = \frac{Q_u(DA_d - DA_s) + Q_d(DA_s - DA_u)}{DA_d - DA_u}$	$B_s = \frac{B_u(DA_d - DA_s) + B_d(DA_s - DA_u)}{DA_d - DA_u}$ $Q_{sb} = Q_{sr} + B_s$

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
06813500	Missouri River at Rulo, NE	22,000	33,500	40,800	53,900	69,000	44,800
06814000	Turkey Creek near Seneca, KS	2.10	7.40	22.0	69.0	203	129
06815000	Big Nemaha River at Falls City, NE	45.0	80.0	160	390	1,050	627
06818000	Missouri River at St. Joseph, MO	23,600	34,500	43,300	57,600	75,000	48,100
06826500	South Fork Republican River near Hale, CO	5.20	5.80	6.20	7.60	39.0	16.6
06827500	South Fork Republican River near Benkleman, NE	0	.52	16.0	31.0	61.0	26.9
06836500	Driftwood Creek near McCook, NE	.30	2.10	4.80	6.70	11.0	9.50
06844700	South Fork Sappa Creek near Brewster, KS	0	0	0	0	0	.23
06844900	South Fork Sappa Creek near Achilles, KS	0	0	0	.32	2.30	3.42
06845000	Sappa Creek near Oberlin, KS	0	.10	.70	5.40	18.0	16.3
06845200	Sappa Creek near Beaver City, NE	0	1.10	5.00	17.0	60.0	38.2
06846500	Beaver Creek at Cedar Bluffs, KS	0	0	.02	5.65	23.0	13.6
06847900	Prairie Dog Creek above Keith Sebelius Lake, KS	0	.16	2.10	5.80	11.0	9.05
06848000	Prairie Dog Creek at Norton, KS	0	.02	.10	.47	3.10	5.50
06848500	Prairie Dog Creek near Woodruff, KS	0	0	2.00	7.50	16.0	11.1
06853020	Republican River at Guide Rock, NE	6.80	55.0	111	170	448	212
06853500	Republican River near Hardy, NE	63.0	110	167	307	728	333
06853800	White Rock Creek near Burr Oak, KS	.47	1.80	6.00	17.0	40.0	28.6
06854000	White Rock Creek at Lovewell, KS	.06	.10	.20	.57	55.0	33.2
06854500	Republican River at Scandia, KS	120	155	244	537	1,100	484
06855800	Buffalo Creek near Jamestown, KS	.95	3.10	11.0	41.0	133	71.7
06855900	Wolf Creek near Concordia, KS	0	.10	1.00	4.30	17.0	11.0
06856000	Republican River at Concordia, KS	113	170	284	577	1,250	577
06856600	Republican River at Clay Center, KS	140	220	396	837	1,830	872
06857100	Republican River below Milford Dam, KS	57.0	126	357	1,020	2,400	960
06858500	North Fork Smoky Hill River near McAllaster, KS	0	0	0	1.00	3.00	3.68
06859500	Ladder Creek below Chalk Creek near Scott City, KS	0	.39	1.90	4.00	10.0	8.00

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
06860000	Smoky Hill River at Elkader, KS	0	0.11	1.50	6.00	22.0	23.9
06861000	Smoky Hill River near Arnold, KS	.01	.17	2.30	15.0	47.0	44.0
06862000	Smoky Hill River at Cedar Bluffs Dam, KS	0	0	.28	.90	6.50	7.98
06862700	Smoky Hill River near Schoenchen, KS	.37	2.70	11.0	18.0	29.0	23.7
06862850	Smoky Hill River below Schoenchen, KS	0	0	1.80	11.0	25.0	19.6
06863300	Big Creek near Ogallah, KS	.20	1.20	2.90	6.60	16.0	21.7
06863500	Big Creek near Hays, KS	1.90	3.50	7.90	19.0	38.0	33.3
06863900	North Fork Big Creek near Victoria, KS	0	0	0	0	.90	3.10
06864000	Smoky Hill River near Russell, KS	16.0	22.0	35.0	75.0	206	148
06864050	Smoky Hill River near Bunker Hill, KS	8.50	17.0	34.0	77.0	198	128
06864500	Smoky Hill River at Ellsworth, KS	19.0	34.0	65.0	138	357	223
06865500	Smoky Hill River near Langley, KS	20.0	40.0	78.0	194	672	267
06866500	Smoky Hill River near Mentor, KS	41.0	72.0	135	315	948	381
06866900	Saline River near Wakeeney, KS	0	.03	2.60	12.0	24.0	21.3
06867000	Saline River near Russell, KS	4.80	12.0	31.0	73.0	165	98.4
06867500	Paradise Creek near Paradise, KS	0	0	.13	4.00	26.0	19.4
06868200	Saline River at Wilson Dam, KS	5.10	8.70	16.0	21.0	191	91.6
06868400	Wolf Creek near Lucas, KS	.70	1.10	2.20	6.80	18.0	16.2
06869500	Saline River at Tescott, KS	15.0	24.0	45.0	126	490	212
06870200	Smoky Hill River at New Cambria, KS	70.5	116	224	557	1,870	688
06870300	Gypsum Creek near Gypsum, KS	0	1.00	7.00	15.0	34.3	25.9
06871000	North Fork Solomon River at Glade, KS	0	.20	8.40	22.0	48.0	27.9
06871500	Bow Creek near Stockton, KS	.44	2.60	5.60	10.0	18.0	13.7
06871800	North Fork Solomon River at Kirwin, KS	0	0	.03	.12	.50	8.76
06871900	Deer Creek near Phillipsburg, KS	0	0	.69	1.50	2.70	4.04
06872500	North Fork Solomon River at Portis, KS	12.0	20.0	34.0	75.0	162	98.4
06873000	South Fork Solomon River above Webster Reservoir, KS	.03	1.00	14.0	37.0	77.0	53.8
06873200	South Fork Solomon River below Webster Reservoir, KS	0	0	0	22.0	123	33.9

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
06873460	South Fork Solomon River at Woodston, KS	0.43	1.30	6.50	29.0	99.0	51.5
06873700	Kill Creek near Bloomington, KS	0	0	0	0	1.80	2.09
06874000	South Fork Solomon River at Osborne, KS	6.00	11.0	21.0	58.0	174	91.2
06875900	Solomon River near Glen Elder, KS	14.0	21.0	54.0	186	700	254
06876070	Solomon River near Simpson, KS	30.0	63.0	187	531	1,940	561
06876700	Salt Creek near Ada, KS	1.60	4.00	12.0	30.0	106	70.4
06876900	Solomon River at Niles, KS	57.0	85.0	174	457	1,400	562
06877600	Smoky Hill River at Enterprise, KS	190	299	595	1,470	3,930	1,570
06878000	Chapman Creek near Chapman, KS	7.70	13.0	24.0	49.0	126	93.3
06878500	Lyon Creek near Woodbine, KS	3.40	17.0	33.0	65.0	135	108
06879100	Kansas River at Fort Riley, KS	408	637	1,350	3,310	7,450	3,010
06882000	Big Blue River near Barnestown, NE	103	167	280	616	1,800	868
06882500	Big Blue River near Hull, KS	88.0	130	217	365	895	470
06882510	Big Blue River at Marysville, KS	200	286	467	924	2,590	1,190
06884000	Little Blue River near Fairbury, NE	92.0	119	160	251	581	383
06884025	Little Blue River at Hollenberg, KS	109	141	211	377	885	535
06884200	Mill Creek at Washington, KS	3.20	7.50	19.0	56.0	181	108
06884400	Little Blue River near Barnes, KS	128	170	268	525	1,340	704
06885500	Black Vermillion River near Frankfort, KS	4.00	11.0	29.0	79.0	246	174
06886500	Fancy Creek at Winkler, KS	0	2.00	11.0	23.0	59.0	47.4
06887000	Big Blue River near Manhattan, KS	178	444	974	2,450	6,500	2,490
06887500	Kansas River at Wamego, KS	846	1,360	2,720	6,340	13,600	5,650
06888000	Vermillion Creek near Wamego, KS	.40	2.50	17.0	53.0	143	87.4
06888350	Kansas River near Belvue, KS	960	1,790	3,480	7,800	18,700	7,180
06888500	Mill Creek near Paxico, KS	4.80	19.0	56.0	156	339	194
06889000	Kansas River at Topeka, KS	974	1,630	3,020	7,060	15,800	6,400
06889100	Soldier Creek near Goff, KS	0	0	.08	.30	1.10	1.38
06889120	Soldier Creek near Bancroft, KS	.01	.15	.55	2.00	6.60	6.94

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
06889140	Soldier Creek near Soldier, KS	0.21	0.48	1.20	3.50	10.0	10.7
06889160	Soldier Creek near Circleville, KS	.80	2.00	4.60	13.0	39.0	32.4
06889180	Soldier Creek near St. Clere, KS	2.30	5.00	10.0	28.0	75.0	51.2
06889200	Soldier Creek near Delia, KS	2.90	8.40	21.0	58.0	153	99.4
06889500	Soldier Creek near Topeka, KS	2.20	9.40	30.0	89.0	243	158
06890100	Delaware River near Muscotah, KS	6.20	18.0	51.0	146	450	280
06890900	Delaware River below Perry Dam, KS	25.0	25.0	100	562	2,040	728
06891000	Kansas River at Lecompton, KS	1,140	1,900	3,580	8,350	19,000	7,550
06891500	Wakarusa River near Lawrence, KS	5.60	14.0	29.0	260	893	265
06892000	Stranger Creek near Tonganoxie, KS	2.00	9.00	40.0	135	433	247
06892350	Kansas River at DeSoto, KS	1,250	2,100	4,000	9,605	21,600	8,460
06893000	Missouri River at Kansas City, MO	26,600	38,500	50,200	69,600	96,400	57,900
06893080	Big Blue River near Stanley, KS	.07	.69	5.00	19.0	57.0	36.0
06893300	Indian Creek at Overland Park, KS	1.30	4.70	13.0	22.0	56.0	34.6
06893500	Blue River near Kansas City, MO	6.30	20.0	46.0	114	279	166
06910800	Marais des Cygnes River near Reading, KS	.18	2.30	15.0	56.0	174	113
06911000	Marais des Cygnes River at Melvern, KS	2.50	14.0	33.0	99.0	382	208
06911500	Salt Creek near Lyndon, KS	0	.54	5.10	24.0	82.0	66.0
06911900	Dragoon Creek near Burlingame, KS	0	1.00	8.00	32.0	93.0	68.4
06912500	Hundred and Ten Mile Creek near Quenemo, KS	14.0	16.0	22.0	103	515	193
06913000	Marais des Cygnes River near Pomona, KS	38.0	48.0	106	712	2,350	738
06913500	Marias des Cygnes River near Ottawa, KS	40.0	51.0	146	791	2,573	850
06914000	Pottawatomie Creek near Garnett, KS	.10	2.00	21.0	90.0	361	235
06915000	Big Bull Creek near Hillsdale, KS	4.30	6.50	20.0	71.0	375	116
06915800	Marais des Cygnes River at La Cygne, KS	64.9	117	526	2,180	6,190	2,270
06916500	Big Sugar Creek at Farlinville, KS	0	1.20	11.0	61.0	185	127
06916600	Marais des Cygnes River near Kansas-Missouri State line, KS	41.0	109	579	2,310	6,440	2,380
06917000	Little Osage River at Fulton, KS	.20	2.90	32.0	129	396	238

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
06917380	Marmaton River near Marmaton, KS	0.46	4.08	43.0	159	470	302
06917500	Marmaton River near Fort Scott, KS	1.00	2.70	31.0	130	446	288
07134180	Arkansas River near Granado, CO	7.00	43.0	112	198	579	236
07137500	Arkansas River near Coolidge, KS	9.30	47.0	129	242	482	237
07138000	Arkansas River at Syracuse, KS	6.50	50.0	133	250	474	233
07138650	White Woman Creek near Leoti, KS	0	0	0	0	0	1.00
07139000	Arkansas River at Garden City, KS	0	1.10	32.0	161	314	163
07139500	Arkansas River at Dodge City, KS	0	0	8.70	71.0	180	86.5
07139800	Mulberry Creek near Dodge City, KS	0	0	0	0	0	.64
07140000	Arkansas River near Kinsley, KS	.71	2.60	32.0	104	203	101
07140850	Pawnee River near Burdett, KS	0	0	0	2.40	10.0	11.1
07141200	Pawnee River near Larned, KS	0	0	3.70	15.0	59.0	63.2
07141300	Arkansas River at Great Bend, KS	2.60	6.90	41.0	150	356	172
07141780	Walnut Creek near Rush Center, KS	0	0	1.00	13.0	30.0	24.8
07141900	Walnut Creek at Albert, KS	0	0	2.30	23.0	61.4	48.9
07142300	Rattlesnake Creek near Macksville, KS	1.20	6.50	15.0	28.0	40.0	25.9
07142575	Rattlesnake Creek near Zenith, KS	4.60	12.0	29.0	50.0	82.3	50.5
07142620	Rattlesnake Creek near Raymond, KS	2.20	4.20	24.0	59.0	104	49.1
07142860	Cow Creek near Claflin, KS	0	0	.13	.80	4.40	7.02
07142900	Blood Creek near Boyd, KS	0	.10	.48	1.20	4.40	7.09
07143300	Cow Creek near Lyons, KS	3.20	6.50	12.0	30.0	133	79.6
07143330	Arkansas River near Hutchinson, KS	95.0	153	275	512	1,120	541
07143375	Arkansas River near Maize, KS	64.0	134	303	600	1,260	730
07143600	Little Arkansas River near Little River, KS	0	.20	.80	1.90	6.90	9.46
07143665	Little Arkansas River at Alta Mills, KS	4.90	9.20	22.0	62.0	325	229
07144200	Little Arkansas River at Valley Center, KS	21.0	33.0	60.0	127	488	312
07144300	Arkansas River at Wichita, KS	126	226	433	858	2,220	1,050
07144550	Arkansas River at Derby, KS	192	304	541	1,110	2,590	1,210

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
07144780	North Fork Ninescah River above Cheney Reservoir, KS	24.0	47.0	76.0	126	222	147
07144795	North Fork Ninescah River at Cheney Dam, KS	.16	.24	.48	75.0	381	121
07144850	South Fork South Fork Ninescah River near Pratt, KS	0	0	0	0	0	2.63
07144910	South Fork Ninescah River near Pratt, KS	6.00	8.60	11.0	14.0	20.0	19.3
07145200	South Fork Ninescah River near Murdock, KS	66.0	97.0	135	194	304	209
07145500	Ninescah River near Peck, KS	76.4	125	212	483	1,126	511
07145700	Slate Creek at Wellington, KS	.91	3.30	8.00	21.0	73.2	73.1
07146500	Arkansas River at Arkansas City, KS	373	558	1,030	2,000	4,440	2,090
07146570	Cole Creek near DeGraff, KS	0	.07	1.80	4.80	13.0	16.5
07146830	Walnut River at Highway 54 east of El Dorado, KS	11.0	15.0	24.0	68.3	519	161
07147070	Whitewater River at Towanda, KS	7.60	17.0	36.0	85.0	242	206
07147800	Walnut River at Winfield, KS	60.0	104	262	860	2,655	1,140
07148350	Salt Fork Arkansas River near Winchester, OK	.35	7.40	34.0	75.0	161	96.0
07149000	Medicine Lodge River near Kiowa, KS	12.0	47.0	85.0	141	271	154
07149500	Salt Fork Arkansas River near Cherokee, OK	2.00	50.0	125	246	731	393
07151500	Chikaskia River near Corbin, KS	19.0	47.0	94.0	190	430	250
07152000	Chikaskia River near Blackwell, OK	23.0	66.0	144	324	895	589
07154500	Cimarron River near Kenton, OK	0	.06	.91	2.80	7.50	17.2
07155590	Cimarron River near Elkhart, KS	0	0	0	0	1.50	10.7
07156010	North Fork Cimarron River at Richfield, KS	0	0	0	0	.12	5.60
07156100	Sand Arroyo Creek near Johnson, KS	0	0	0	0	0	.25
07156220	Bear Creek near Johnson, KS	0	0	0	0	0	3.35
07156900	Cimarron River near Forgan, OK	27.0	35.0	45.0	62.0	82.0	58.4
07157500	Crooked Creek near Nye, KS	2.40	7.10	12.0	18.0	33.0	30.5
07157900	Cavalry Creek at Coldwater, KS	.65	1.00	1.50	2.00	2.90	3.45
07157950	Cimarron River near Buffalo, OK	.03	10.0	56.0	123	232	128
07165700	Verdigris River near Madison, KS	.50	4.90	28.0	78.0	204	123
07166000	Verdigris River near Coyville, KS	6.20	12.0	74.0	470	1,760	520

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
07166500	Verdigris River near Altoona, KS	10.0	24.0	138	800	2,590	808
07167000	Fall River near Eureka, KS	.70	5.20	40.0	134	324	190
07167500	Otter Creek at Climax, KS	0	1.00	10.0	44.0	121	82.0
07168500	Fall River near Fall River, KS	5.90	13.0	53.0	270	1,061	361
07169500	Fall River at Fredonia, KS	11.0	20.0	92.0	492	1,740	550
07169800	Elk River at Elk Falls, KS	.64	2.90	22.0	91.0	271	154
07170060	Elk River below Elk City Lake, KS	3.00	7.10	21.0	324	1,530	460
07170500	Verdigris River at Independence, KS	30.0	75.0	401	2,130	6,780	2,080
07170700	Big Hill Creek near Cherryvale, KS	0	.02	.88	18.0	69.0	29.2
07171000	Verdigris River near Lenopah, OK	35.0	104	570	2,690	8,425	2,580
07172000	Caney River near Elgin, KS	.07	5.00	40.0	172	528	273
07174000	Little Caney River near Copan, OK	.10	.50	9.5	64.0	323	238
07174400	Caney River above Coon Creek near Bartlesville, OK	26.0	36.0	173	1,820	4,420	1,290
07179500	Neosho River at Council Grove, KS	3.20	6.30	13.0	73.0	358	132
07179730	Neosho River near Americus, KS	12.0	21.0	70.0	240	937	341
07179795	North Cottonwood River below Marion Lake, KS	1.90	3.90	7.65	14.0	110	77.8
07180200	Cottonwood River at Marion, KS	8.70	13.0	32.0	107	576	214
07180400	Cottonwood River near Florence, KS	29.0	48.0	88.0	217	738	348
07180500	Cedar Creek near Cedar Point, KS	1.80	6.00	16.0	36.0	76.0	57.6
07181500	Middle Creek near Elmdale, KS	0	2.40	7.00	22.0	59.0	44.7
07182250	Cottonwood River near Plymouth, KS	48.0	105	298	794	2,080	950
07182510	Neosho River at Burlington, KS	28.0	67.0	397	1,620	5,420	1,660
07183000	Neosho River near Iola, KS	42.0	119	581	2,410	7,300	2,220
07183100	Owl Creek near Piqua, KS	0	.57	4.00	21.0	115	122
07183500	Neosho River near Parsons, KS	54.0	182	852	3,560	9,760	3,120
07184000	Lightning Creek near McCune, KS	0	1.40	12.0	52.0	270	169
07185000	Neosho River near Commerce, OK	77.0	281	1,140	4,450	11,700	4,020
07186000	Spring River at Waco, MO	66.0	124	301	730	1,816	942

**Table 5.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of flow durations and mean flows at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register. —Continued

Station number (fig. 1)	Stream name	Computed flow duration, in cubic feet per second, for indicated percentage of time flow equaled or exceeded					Mean flow for period of record (cubic feet per second)
		90 percent	75 percent	50 percent	25 percent	10 percent	
07186400	Center Creek near Carterville, MO	32.0	47.0	97.0	206	399	205
07187000	Shoal Creek above Joplin, MO	88.0	130	237	448	879	427
07188000	Spring River near Quapaw, OK	211	376	850	1,950	4,400	2,200

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06813500	Missouri River at Rulo, NE	418,859	yes	96,100	132,000	158,000	184,000	220,000	250,000	(1)
06814000	Turkey Creek near Seneca, KS	276	no	5,820	12,500	18,400	27,700	36,000	45,300	(2)
06818000	Missouri River at St. Joseph, MO	424,000	yes	109,000	147,000	174,000	199,000	233,000	261,000	(1)
06818260	White Clay Creek at Atchison, KS	13.1	no	1,100	2,180	3,120	4,610	5,950	7,490	(2)
06826500	South Fork Republican River near Hale, CO	1,825	yes	113	249	440	920	1,590	2,735	(3)
06827500	South Fork Republican River near Benkleman, NE	2,740	yes	1,000	3,700	7,180	14,400	22,300	32,900	(3)
06844700	South Fork Sappa Creek near Brewster, KS	74	no	52	382	996	2,600	4,670	7,740	(2)
06844900	South Fork Sappa Creek near Achilles, KS	446	no	342	1,210	2,290	4,430	6,730	9,730	(2)
06845000	Sappa Creek near Oberlin, KS	1,063	no	827	2,570	4,570	8,320	12,200	17,000	(2)
06845100	Long Branch Draw near Norcatour, KS	31.7	no	294	693	1,070	1,680	2,230	2,870	(2)
06846000	Beaver Creek at Ludell, KS	1,460	no	440	1,110	1,780	2,920	4,000	5,300	(2)
06846500	Beaver Creek at Cedar Bluffs, KS	1,620	no	413	1,060	1,730	2,960	4,190	5,740	(2)
06847900	Prairie Dog Creek above Keith Sebelius Lake, KS	590	no	599	1,680	2,820	4,820	6,760	9,100	(2)
06848000	Prairie Dog Creek at Norton, KS	684	yes	84	155	180	194	199	201	(3)
06848500	Prairie Dog Creek near Woodruff, KS	1,007	yes	652	1,610	2,330	3,220	3,830	4,380	(3)
06853020	Republican River at Guide Rock, NE	22,100	yes	3,870	5,970	7,380	9,140	10,400	11,700	(3)
06853500	Republican River near Hardy, NE	22,401	yes	4,940	8,500	11,000	14,000	16,300	18,490	(3)
06853800	White Rock Creek near Burr Oak, KS	227	no	1,520	3,040	4,430	6,680	8,760	11,200	(2)
06854000	White Rock Creek at Lovewell, KS	345	yes	460	1,300	2,260	3,760	5,080	6,380	(4)
06854500	Republican River at Scandia, KS	23,560	yes	6,450	10,700	24,800	36,000	47,200	59,000	(5)
06855800	Buffalo Creek near Jamestown, KS	330	no	1,670	3,890	6,140	10,100	14,000	18,900	(2)
06855900	Wolf Creek near Concordia, KS	56	no	910	1,770	2,490	3,570	4,490	5,520	(2)
06856000	Republican River at Concordia, KS	23,560	yes	6,720	11,700	16,300	24,000	31,400	40,400	(3)
06856100	West Creek near Talmo, KS	42	no	676	1,870	3,250	5,920	8,780	12,600	(2)
06856320	Elk Creek at Clyde, KS	73	no	546	1,350	2,170	3,640	5,100	5,910	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06856600	Republican River at Clay Center, KS	24,542	yes	11,500	19,900	26,400	35,500	42,800	50,700	(3)
06857100	Republican River below Milford Dam, KS	24,880	yes	5,130	9,360	15,000	18,000	24,000	37,500	(5)
06858500	North Fork Smoky Hill River near McAllaster, KS	670	no	327	1,930	4,580	11,000	18,900	30,100	(2)
06859500	Ladder Creek below Chalk Creek near Scott City, KS	1,460	no	646	2,590	5,270	11,100	17,900	27,500	(2)
06860000	Smoky Hill River at Elkader, KS	3,560	no	1,510	6,400	13,000	26,900	42,200	62,500	(2)
06860300	South Branch Hackberry Creek near Orion, KS	49.6	no	397	1,190	2,050	3,590	5,110	6,970	(2)
06860500	Hackberry Creek near Gove, KS	426	no	508	2,340	5,100	11,500	19,300	30,600	(2)
06861000	Smoky Hill River near Arnold, KS	5,220	no	2,230	7,660	14,400	27,800	42,300	61,400	(2)
06862700	Smoky Hill River near Schoenchen, KS	5,750	yes	992	4,700	9,170	16,900	23,900	31,500	(3)
06862850	Smoky Hill River below Schoenchen, KS	5,810	yes	992	4,700	9,170	16,900	23,900	31,500	(3)
06863300	Big Creek near Ogallah, KS	297	no	1,340	4,430	8,090	15,100	22,500	31,900	(2)
06863500	Big Creek near Hays, KS	594	no	1,280	3,210	5,050	7,990	10,600	13,600	(2)
06863900	North Fork Big Creek near Victoria, KS	54	no	263	1,250	2,640	5,570	8,770	13,000	(2)
06864000	Smoky Hill River near Russell, KS	6,965	yes	7,340	14,400	19,900	27,900	34,300	41,100	(3)
06864050	Smoky Hill River near Bunker Hill, KS	7,075	yes	4,010	9,850	14,800	22,100	27,900	33,900	(3)
06864500	Smoky Hill River at Ellsworth, KS	7,580	yes	8,850	16,300	24,800	33,000	41,300	48,200	(5)
06865500	Smoky Hill River near Langley, KS	7,857	yes	2,120	4,760	7,230	11,200	14,900	19,200	(3)
06866500	Smoky Hill River near Mentor, KS	9,358	yes	4,360	7,890	8,800	15,000	22,000	32,000	(5)
06866800	Saline River tributary at Collyer, KS	3.13	no	161	565	1,050	1,980	2,930	4,130	(2)
06866900	Saline River near Wakeeney, KS	696	no	2,720	8,200	14,200	25,100	35,900	49,100	(2)
06867000	Saline River near Russell, KS	1,500	no	2,270	6,630	11,500	20,500	29,700	41,400	(2)
06867500	Paradise Creek near Paradise, KS	212	no	947	3,160	5,780	10,800	15,900	22,400	(2)
06868200	Saline River at Wilson Dam, KS	1,917	yes	744	1,610	2,190	2,840	3,250	3,610	(3)
06868400	Wolf Creek near Lucas, KS	163	no	1,570	3,660	5,600	8,730	11,600	14,800	(2)
06868700	North Branch Spillman Creek near Ash Grove, KS	26.1	no	342	1,100	1,960	3,600	5,260	7,360	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06869500	Saline River at Tescott, KS	2,820	yes	2,530	5,030	6,790	8,970	10,500	12,000	(3)
06869950	Mulberry Creek near Salina, KS	250	no	2,310	4,530	6,380	9,100	11,400	13,900	(2)
06870200	Smoky Hill River at New Cambria, KS	11,730	yes	6,050	11,600	15,500	24,000	34,000	45,500	(5)
06870300	Gypsum Creek near Gypsum, KS	120	no	2,290	4,310	5,960	8,400	10,500	12,700	(2)
06871000	North Fork Solomon River at Glade, KS	849	no	1,580	4,790	8,320	14,700	21,000	28,800	(2)
06871500	Bow Creek near Stockton, KS	341	no	926	2,960	5,320	9,790	14,400	20,200	(2)
06871800	North Fork Solomon River at Kirwin, KS	1,367	yes	18	188	606	2,010	4,240	8,180	(3)
06871900	Deer Creek near Phillipsburg, KS	65.0	no	1,210	3,430	5,760	9,790	13,600	18,300	(2)
06872100	Middle Cedar Creek at Kensington, KS	58.9	no	577	1,350	2,100	3,390	4,610	6,100	(2)
06872300	Middle Beaver Creek near Smith Center, KS	71.0	no	765	1,390	1,880	2,590	3,170	3,790	(2)
06872500	North Fork Solomon River at Portis, KS	2,315	yes	2,860	6,380	9,620	14,800	19,500	24,900	(3)
06873000	South Fork Solomon River above Webster Reservoir, KS	1,040	no	2,800	8,330	14,600	26,300	38,300	53,600	(2)
06873200	South Fork Solomon River below Webster Reservoir, KS	1,150	yes	231	677	1,080	1,640	2,090	2,530	(4)
06873460	South Fork Solomon River at Woodston, KS	1,502	yes	554	2,000	3,610	6,370	8,900	11,800	(3)
06873500	South Fork Solomon River at Alton, KS	1,720	no	3,600	12,300	23,400	46,300	72,000	107,000	(2)
06873700	Kill Creek near Bloomington, KS	52.0	no	182	1,150	2,890	7,480	13,600	23,100	(2)
06874000	South Fork Solomon River at Osborne, KS	2,012	yes	1,400	4,850	9,310	18,700	29,500	44,300	(3)
06874500	East Limestone Creek near Ionia, KS	25.6	no	608	1,320	1,940	2,880	3,680	4,580	(2)
06875800	Limestone Creek near Glen Elder, KS	210	no	1,060	1,910	2,600	3,590	4,430	5,340	(2)
06875900	Solomon River near Glen Elder, KS	5,340	yes	1,720	3,630	5,170	7,350	9,080	10,900	(3)
06876070	Solomon River near Simpson, KS	5,538	yes	3,100	6,050	8,000	10,300	11,800	13,100	(3)
06876200	Middle Pipe Creek near Miltonvale, KS	10.2	no	532	1,270	2,000	3,220	4,380	5,760	(2)
06876700	Salt Creek near Ada, KS	384	no	1,430	4,030	6,800	11,700	16,600	22,500	(2)
06876900	Solomon River at Niles, KS	6,770	yes	5,190	10,500	18,300	28,000	38,600	50,700	(3)
06877120	Mud Creek at Abilene, KS	87.0	no	2,570	4,670	6,330	8,710	10,700	12,800	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06877200	West Turkey Creek near Elmo, KS	26.6	no	1,200	2,220	3,000	4,080	4,940	5,850	(2)
06877500	Turkey Creek near Abilene, KS	143	no	2,960	6,550	9,870	15,300	20,200	25,900	(2)
06877600	Smoky Hill River at Enterprise, KS	19,260	yes	12,400	26,000	35,600	51,000	68,100	85,300	(5)
06878000	Chapman Creek near Chapman, KS	300	no	3,630	7,130	10,300	15,300	20,000	25,400	(2)
06878500	Lyon Creek near Woodbine, KS	230	no	6,410	18,000	30,300	52,200	73,600	99,800	(2)
06879100	Kansas River at Fort Riley, KS	44,870	yes	19,100	31,100	44,000	73,000	102,000	140,000	(5)
06879200	Clark Creek near Junction City, KS	200	no	4,320	8,970	13,100	19,400	25,000	31,300	(2)
06879650	Kings Creek near Manhattan, KS	4.09	no	428	1,930	4,210	9,590	16,300	26,100	(2)
06879700	Wildcat Creek at Riley, KS	14	no	936	2,020	2,980	4,450	5,740	7,190	(2)
06879815	Wildcat Creek at Manhattan, KS	74	no	2,470	4,380	5,880	8,030	9,800	11,700	(2)
06882510	Big Blue River at Marysville, KS	4,780	no	19,100	32,800	42,900	56,700	67,500	78,800	(2)
06884025	Little Blue River at Hollenberg, KS	2,750	no	11,200	21,000	29,300	42,100	53,400	66,300	(2)
06884200	Mill Creek at Washington, KS	344	no	4,830	8,160	10,600	13,900	16,500	19,200	(2)
06884400	Little Blue River near Barnes, KS	3,320	no	13,100	21,200	27,200	35,400	41,900	48,700	(2)
06884500	Little Blue River at Waterville, KS	3,510	no	11,600	24,000	35,400	53,700	70,600	90,300	(2)
06884900	Robidoux Creek at Beattie, KS	40	no	1,850	3,930	5,780	8,700	11,300	14,300	(2)
06885500	Black Vermillion River near Frankfort, KS	410	no	7,030	15,700	24,100	38,000	51,200	66,900	(2)
06886500	Fancy Creek at Winkler, KS	174	no	5,690	10,600	14,600	20,500	25,400	30,700	(2)
06887000	Big Blue River near Manhattan, KS	9,640	yes	16,600	25,500	36,300	42,000	46,800	49,600	(5)
06887500	Kansas River at Wamego, KS	55,280	yes	28,600	54,500	78,400	108,000	156,000	202,000	(1)
06888000	Vermillion Creek near Wamego, KS	243	no	6,190	12,600	17,900	25,800	32,400	39,700	(2)
06888030	Vermillion Creek near Louisville, KS	297	no	6,610	9,650	11,800	14,600	16,800	19,100	(2)
06888300	Rock Creek near Louisville, KS	128	no	5,880	10,100	13,400	18,100	21,900	26,100	(2)
06888350	Kansas River near Belvue, KS	55,870	yes	33,800	59,800	82,100	117,000	148,000	183,000	(3)
06888500	Mill Creek near Paxico, KS	316	no	11,600	23,000	32,400	46,300	58,000	70,800	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06888600	Dry Creek near Maple Hill, KS	15.6	no	1,670	3,080	4,280	6,110	7,730	9,560	(2)
06889000	Kansas River at Topeka, KS	56,720	yes	36,600	67,000	93,600	123,000	173,000	217,000	(1)
06889100	Soldier Creek near Goff, KS	2.06	no	402	880	1,340	2,120	2,870	3,770	(2)
06889120	Soldier Creek near Bancroft, KS	10.5	no	1,220	2,200	3,030	4,280	5,380	6,640	(2)
06889140	Soldier Creek near Soldier, KS	16.9	no	1,850	3,360	4,640	6,580	8,270	10,200	(2)
06889160	Soldier Creek near Circleville, KS	49.3	no	4,030	6,850	9,140	12,500	15,400	18,700	(2)
06889180	Soldier Creek near St. Clere, KS	80.0	no	4,440	7,220	9,250	12,000	14,200	16,400	(2)
06889200	Soldier Creek near Delia, KS	157	no	4,510	7,650	10,200	13,900	17,100	20,600	(2)
06889500	Soldier Creek near Topeka, KS	290	no	5,970	11,700	16,400	23,300	29,000	35,200	(2)
06889600	South Branch Shunganunga Creek near Pauline, KS	3.84	no	758	1,450	2,040	2,950	3,740	4,640	(2)
06889630	Shunganunga Creek at Topeka, KS	33.5	no	2,150	2,910	3,390	3,970	4,390	4,790	(2)
06890100	Delaware River near Muscotah, KS	431	no	12,500	18,700	23,000	28,600	32,900	37,400	(2)
06890300	Spring Creek near Wetmore, KS	21.0	no	1,600	3,680	5,750	9,360	12,900	17,200	(2)
06890600	Rock Creek near Meriden, KS	22.0	no	2,090	3,220	4,040	5,170	6,060	7,010	(2)
06890800	Slough Creek near Oskaloosa, KS	31.0	no	3,670	5,510	6,850	8,670	10,100	11,700	(2)
06890900	Delaware River below Perry Dam, KS	1,117	yes	6,290	9,960	17,600	24,000	29,900	32,000	(5)
06891000	Kansas River at Lecompton, KS	58,460	yes	44,600	80,000	109,000	138,000	190,000	231,000	(1)
06891050	Stone House Creek at Williamstown, KS	12.9	no	1,720	3,720	5,470	8,160	10,500	13,100	(2)
06891500	Wakarusa River near Lawrence, KS	425	yes	3,580	5,590	6,540	8,200	10,180	11,910	(5)
06892000	Stranger Creek near Tonganoxie, KS	406	no	6,170	11,300	15,500	21,700	27,000	32,900	(2)
06892350	Kansas River at DeSoto, KS	59,756	yes	50,100	88,900	119,000	148,000	200,000	240,000	(1)
06893000	Missouri River at Kansas City, MO	485,200	yes	142,000	201,000	245,000	289,000	351,000	401,000	(1)
06893080	Big Blue River near Stanley, KS	46.0	no	4,820	8,610	11,700	16,400	20,500	25,000	(2)
06893300	Indian Creek at Overland Park, KS	26.6	no	4,060	6,210	7,770	9,890	11,600	13,300	(2)
06893350	Tomahawk Creek near Overland Park, KS	23.9	no	2,630	4,890	6,760	9,520	11,900	14,500	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
06910800	Marais des Cygnes River near Reading, KS	177	no	7,860	18,200	28,100	44,200	59,100	76,500	(2)
06911000	Marais des Cygnes River at Melvern, KS	351	no	7,050	17,300	27,300	43,800	59,000	76,900	(2)
06911500	Salt Creek near Lyndon, KS	111	no	4,270	9,170	13,400	19,800	25,200	31,200	(2)
06911900	Dragoon Creek near Burlingame, KS	114	no	4,780	8,780	12,000	16,600	20,500	24,700	(2)
06912500	Hundred and Ten Mile Creek near Quenemo, KS	322	yes	1,920	3,250	4,060	4,980	5,570	6,100	(4)
06913000	Marais des Cygnes River near Pomona, KS	1,040	yes	10,700	17,800	22,900	29,400	34,300	39,200	(3)
06913500	Marias des Cygnes River near Ottawa, KS	1,250	yes	12,400	19,600	24,000	28,900	32,100	35,000	(3)
06913600	Rock Creek near Ottawa, KS	10.2	no	597	1,300	1,960	3,060	4,090	5,310	(2)
06913700	Middle Creek near Princeton, KS	52.0	no	3,300	5,310	6,840	8,970	10,700	12,600	(2)
06914000	Pottawatomie Creek near Garnett, KS	334	no	11,300	20,100	27,100	37,200	45,700	54,900	(2)
06914500	Pottawatomie Creek at Lane, KS	513	no	13,400	25,500	36,000	52,100	66,500	82,800	(2)
06915000	Big Bull Creek near Hillsdale, KS	147	yes	986	2,140	3,040	4,230	5,130	6,020	(4)
06915800	Marais des Cygnes River at La Cygne, KS	2,669	yes	24,000	30,000	37,000	59,000	78,000	100,000	(5)
06916500	Big Sugar Creek at Farlinville, KS	198	no	6,490	13,100	19,200	29,000	38,100	48,800	(2)
06916600	Marais des Cygnes River near Kansas-Missouri State line, KS	3,230	yes	23,900	36,100	44,200	54,300	61,700	69,000	(3)
06917000	Little Osage River at Fulton, KS	295	no	8,560	14,800	19,900	27,500	34,000	41,400	(2)
06917100	Marmaton River tributary near Bronson, KS	.88	no	204	349	455	577	707	820	(2)
06917380	Marmaton River near Marmaton, KS	292	no	16,600	27,900	36,900	50,000	61,100	73,200	(2)
06917500	Marmaton River near Fort Scott, KS	408	no	11,800	22,900	32,100	45,600	56,900	69,300	(2)
07134180	Arkansas River near Granado, CO	23,707	yes	1,440	2,510	3,440	4,900	6,220	7,750	(3)
07137500	Arkansas River near Coolidge, KS	25,410	yes	2,380	6,750	13,200	29,800	53,500	94,000	(3)
07138000	Arkansas River at Syracuse, KS	25,763	yes	2,140	6,210	18,200	38,000	59,400	92,800	(5)
07138650	White Woman Creek near Leoti, KS	750	no	232	1,400	3,310	7,870	13,400	21,100	(2)
07139000	Arkansas River at Garden City, KS	27,071	yes	590	2,783	6,500	17,000	30,000	53,000	(5)
07139500	Arkansas River at Dodge City, KS	30,600	yes	759	3,260	11,300	22,000	34,200	49,900	(5)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

[mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second. Source of flood-frequency value code: (1) U.S. Army Corps of Engineers, Kansas City District, oral commun., 2003; (2) Rasmussen and Perry (2000); (3) Interagency Advisory Committee on Water Data (1981) using station skew from controlled flow period of record; (4) Interagency Advisory Committee on Water Data (1981) using regional skew from controlled flow period of record; and (5) Federal Emergency Management Agency (various years)]

Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
07139800	Mulberry Creek near Dodge City, KS	73.8	no	249	675	1,090	1,770	2,380	3,080	(2)
07140000	Arkansas River near Kinsley, KS	33,066	yes	606	3,090	8,500	16,000	25,500	39,000	(5)
07140300	Whitewoman Creek near Bellefont, KS	14.0	no	179	713	1,420	2,870	4,470	6,590	(2)
07140700	Guzzlers Gulch near Ness City, KS	582	no	425	1,260	2,130	3,650	5,080	6,780	(2)
07140850	Pawnee River near Burdett, KS	1,090	no	469	1,430	2,460	4,300	6,070	8,210	(2)
07141200	Pawnee River near Larned, KS	2,150	no	2,250	4,530	6,530	9,620	12,300	15,400	(2)
07141300	Arkansas River at Great Bend, KS	34,356	yes	2,960	7,570	15,000	22,500	29,500	36,900	(5)
07141600	Long Branch Creek near Ness City, KS	28	no	75	433	1,000	2,310	3,840	5,950	(2)
07141780	Walnut Creek near Rush Center, KS	1,260	no	1,000	2,390	3,700	5,790	7,670	9,830	(2)
07141800	Otter Creek near Rush Center, KS	17	no	394	955	1,470	2,280	2,990	3,790	(2)
07141900	Walnut Creek at Albert, KS	1,410	no	1,310	2,850	4,200	6,250	8,010	9,970	(2)
07142100	Rattlesnake Creek tributary near Mullinville, KS	10.3	no	416	1,090	1,730	2,750	3,650	4,670	(2)
07142300	Rattlesnake Creek near Macksville, KS	784	no	400	1,340	2,490	4,770	7,230	10,500	(2)
07142500	Spring Creek near Dillwyn, KS	14.3	no	305	1,170	2,260	4,400	6,650	9,530	(2)
07142575	Rattlesnake Creek near Zenith, KS	1,050	no	501	1,580	2,950	5,850	9,190	13,900	(2)
07142700	Salt Creek near Partridge, KS	85	no	1,150	2,160	2,950	4,070	4,980	5,950	(2)
07142860	Cow Creek near Claflin, KS	43	no	556	1,580	2,680	4,610	6,480	8,760	(2)
07142900	Blood Creek near Boyd, KS	61	no	955	2,320	3,570	5,540	7,270	9,220	(2)
07143200	Plum Creek near Holyrood, KS	19	no	657	1,230	1,690	2,370	2,950	3,580	(2)
07143300	Cow Creek near Lyons, KS	728	no	1,940	4,690	7,420	12,000	16,400	21,700	(2)
07143330	Arkansas River near Hutchinson, KS	38,910	yes	4,350	8,740	15,500	22,000	28,500	35,500	(5)
07143375	Arkansas River near Maize, KS	39,110	yes	8,270	20,800	24,000	34,500	44,800	55,200	(5)
07143500	Little Arkansas River near Geneseo, KS	25.0	no	927	1,360	1,630	1,970	2,210	2,440	(2)
07143600	Little Arkansas River near Little River, KS	71.0	no	1,200	2,360	3,360	4,900	6,240	7,760	(2)
07143665	Little Arkansas River at Alta Mills, KS	736	no	5,000	12,200	19,200	30,800	41,500	54,100	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

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Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
07144000	East Emma Creek near Halstead, KS	58.0	no	3,400	8,990	14,600	24,200	33,200	43,800	(2)
07144200	Little Arkansas River at Valley Center, KS	1,330	no	6,290	13,900	20,400	30,100	38,300	47,200	(2)
07144300	Arkansas River at Wichita, KS	40,490	yes	9,740	18,600	24,000	34,500	44,800	55,200	(5)
07144550	Arkansas River at Derby, KS	40,830	yes	14,200	24,000	27,200	37,000	46,200	55,200	(5)
07144780	North Fork Ninnescah River above Cheney Reservoir, KS	787	no	3,990	12,300	21,900	40,400	59,900	85,200	(2)
07144795	North Fork Ninnescah River at Cheney Dam, KS	901	yes	1,080	2,080	2,750	3,560	4,110	4,620	(4)
07144850	South Fork South Fork Ninnescah River near Pratt, KS	21	no	712	1,500	2,190	3,240	4,150	5,160	(2)
07145200	South Fork Ninnescah River near Murdock, KS	650	no	5,850	12,600	18,300	26,700	33,800	41,500	(2)
07145300	Clear Creek near Garden Plain, KS	5.03	no	612	1,060	1,380	1,800	2,120	2,430	(2)
07145500	Ninnescah River near Peck, KS	2,129	yes	11,500	21,700	26,900	34,000	41,300	47,300	(5)
07145700	Slate Creek at Wellington, KS	154	no	3,620	7,650	11,000	15,800	19,800	24,100	(2)
07146500	Arkansas River at Arkansas City, KS	43,713	yes	20,600	40,500	44,500	63,000	80,000	99,000	(5)
07146570	Cole Creek near DeGraff, KS	30	no	1,950	4,420	6,700	10,400	13,700	17,500	(2)
07146830	Walnut River at Highway 54 east of El Dorado, KS	350	yes	3,630	5,970	9,500	14,000	18,000	23,000	(5)
07147070	Whitewater River at Towanda, KS	426	no	7,490	17,300	26,200	40,500	53,300	67,900	(2)
07147800	Walnut River at Winfield, KS	1,880	yes	18,560	36,100	44,800	66,000	86,500	109,000	(5)
07148100	Grouse Creek near Dexter, KS	170	no	8,250	17,000	24,500	35,800	45,500	56,100	(2)
07149000	Medicine Lodge River near Kiowa, KS	903	no	4,030	7,450	10,000	13,500	16,300	19,100	(2)
07151500	Chikaskia River near Corbin, KS	794	no	8,530	18,700	27,400	40,300	51,200	63,000	(2)
07151600	Rush Creek near Harper, KS	12.0	no	1,190	2,290	3,140	4,310	5,250	6,220	(2)
07155590	Cimarron River near Elkhart, KS	2,900	no	1,330	4,000	6,800	11,600	16,000	21,300	(2)
07156000	North Fork Cimarron River tributary near Richfield, KS	103	no	791	2,420	4,100	6,930	9,510	12,500	(2)
07156010	North Fork Cimarron River at Richfield, KS	463	no	870	3,650	7,320	14,800	22,800	33,200	(2)
07156100	Sand Arroyo Creek near Johnson, KS	619	no	146	541	1,000	1,850	2,680	3,680	(2)
07156220	Bear Creek near Johnson, KS	835	no	724	3,020	5,940	11,600	17,300	24,400	(2)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

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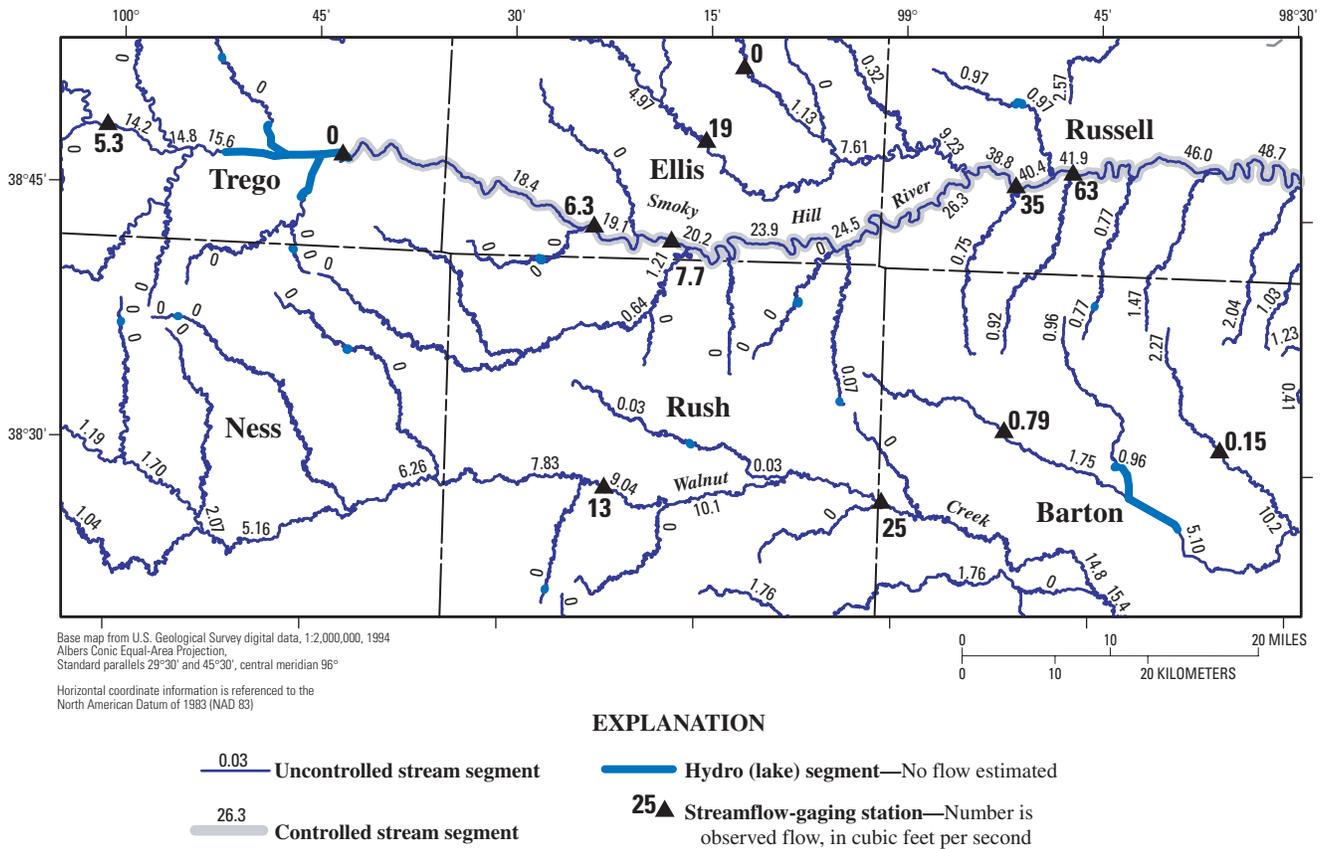
Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
07157100	Crooked Creek near Copeland, KS	44	no	488	1,630	2,860	4,960	6,900	9,120	(2)
07157500	Crooked Creek near Nye, KS	1,160	no	992	3,600	6,650	12,200	17,800	24,400	(2)
07157700	Kiger Creek near Ashland, KS	34	no	368	689	929	1,250	1,500	1,750	(2)
07157900	Cavalry Creek at Coldwater, KS	39	no	492	1,290	2,050	3,290	4,410	5,680	(2)
07165700	Verdigris River near Madison, KS	181	no	8,120	18,700	28,400	43,800	57,600	73,400	(2)
07166000	Verdigris River near Coyville, KS	747	yes	5,290	7,490	8,500	9,400	9,860	10,200	(3)
07166500	Verdigris River near Altoona, KS	1,138	yes	11,900	19,500	24,000	29,000	32,100	34,800	(3)
07166700	Burnt Creek at Reece, KS	8.85	no	1,630	4,100	6,570	10,800	14,800	19,600	(2)
07167000	Fall River near Eureka, KS	307	no	11,700	29,900	48,100	79,100	108,000	143,000	(2)
07167500	Otter Creek at Climax, KS	129	no	7,480	18,000	27,400	41,800	54,200	67,600	(2)
07168500	Fall River near Fall River, KS	585	yes	3,980	6,910	8,730	10,800	12,100	13,300	(4)
07169500	Fall River at Fredonia, KS	827	yes	9,750	17,000	21,800	27,500	31,500	35,200	(4)
07169700	Snake Creek near Howard, KS	1.84	no	497	969	1,360	1,920	2,390	2,890	(2)
07169800	Elk River at Elk Falls, KS	220	no	9,000	21,300	33,300	53,400	72,200	94,600	(2)
07170060	Elk River below Elk City Lake, KS	634	yes	4,740	7,170	8,600	10,200	11,200	12,100	(4)
07170500	Verdigris River at Independence, KS	2,892	yes	22,900	28,000	35,500	51,000	64,000	72,000	(5)
07170600	Cherry Creek near Cherryvale, KS	15.0	no	2,530	4,580	6,230	8,640	10,700	12,900	(2)
07170700	Big Hill Creek near Cherryvale, KS	37.0	yes	605	1,550	2,340	3,410	4,230	5,040	(4)
07170800	Mud Creek near Mound Valley, KS	4.22	no	1,270	2,180	2,870	3,840	4,630	5,460	(2)
07171000	Verdigris River near Lenopah, OK	3,639	yes	29,700	48,000	60,900	77,700	90,400	103,000	(3)
07172000	Caney River near Elgin, KS	445	no	14,900	30,100	42,200	59,400	73,100	87,600	(2)
07179500	Neosho River at Council Grove, KS	250	yes	1,870	3,060	3,820	4,740	5,370	5,960	(4)
07179600	Four Mile Creek near Council Grove, KS	55.0	no	5,370	11,300	16,700	25,400	33,400	42,600	(2)
07179730	Neosho River near Americus, KS	622	yes	7,400	11,600	27,500	45,000	62,500	83,500	(5)
07179795	North Cottonwood River below Marion Lake, KS	200	yes	1,090	2,320	3,140	4,070	4,660	5,170	(3)

**Table 6.** Streamflow-gaging stations in Kansas and parts of surrounding States used in the interpolation of peak-discharge frequency values at controlled and uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.—Continued

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Station number (fig. 2)	Stream name	Contributing-drainage area (mi <sup>2</sup> )	Controlled flow (yes/no)	Peak-discharge estimate (ft <sup>3</sup> /s) for indicated flood frequency						Source of flood-frequency value code
				2-year	5-year	10-year	25-year	50-year	100-year	
07180200	Cottonwood River at Marion, KS	502	yes	7,180	15,300	24,000	37,500	52,000	70,000	(5)
07180400	Cottonwood River near Florence, KS	754	yes	8,610	18,300	28,500	47,600	67,700	94,400	(3)
07180500	Cedar Creek near Cedar Point, KS	110	no	5,740	10,800	14,700	20,100	24,500	28,900	(2)
07181500	Middle Creek near Elmdale, KS	92.0	no	6,960	15,000	22,100	33,100	42,700	53,500	(2)
07182250	Cottonwood River near Plymouth, KS	1,740	yes	14,500	25,400	33,500	53,000	75,000	105,000	(5)
07182510	Neosho River at Burlington, KS	3,042	yes	10,900	14,100	16,000	40,000	71,000	125,000	(5)
07182520	Rock Creek at Burlington, KS	8.27	no	1,020	2,370	3,660	5,760	7,690	9,960	(2)
07182600	North Big Creek near Burlington, KS	46	no	3,210	4,850	6,000	7,500	8,660	9,830	(2)
07183000	Neosho River near Iola, KS	3,818	yes	22,000	31,300	33,800	59,500	86,000	122,300	(5)
07183100	Owl Creek near Piqua, KS	177	no	6,940	14,400	20,900	31,200	40,200	50,500	(2)
07183500	Neosho River near Parsons, KS	4,905	yes	29,400	42,100	50,410	60,000	86,000	121,000	(5)
07183800	Limestone Creek near Beulah, KS	12.0	no	3,140	6,540	9,400	13,600	17,200	21,100	(2)
07184000	Lightning Creek near McCune, KS	197	no	7,250	16,800	26,300	42,600	58,300	77,600	(2)
07184500	Labette Creek near Oswego, KS	211	no	8,330	13,200	16,600	21,200	24,700	28,300	(2)
07184600	Fly Creek near Faulkner, KS	27.0	no	4,190	11,000	17,900	29,700	40,900	54,200	(2)
07185000	Neosho River near Commerce, OK	5,876	yes	37,700	58,300	69,600	105,000	139,100	175,000	(3)

#### 44 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations



**Figure 9.** 50-percent (median) flow values for stream locations in central Kansas estimated from regression equations and observed median obtained from streamflow-gaging-station data before interpolation (modified from Perry and others, 2004).

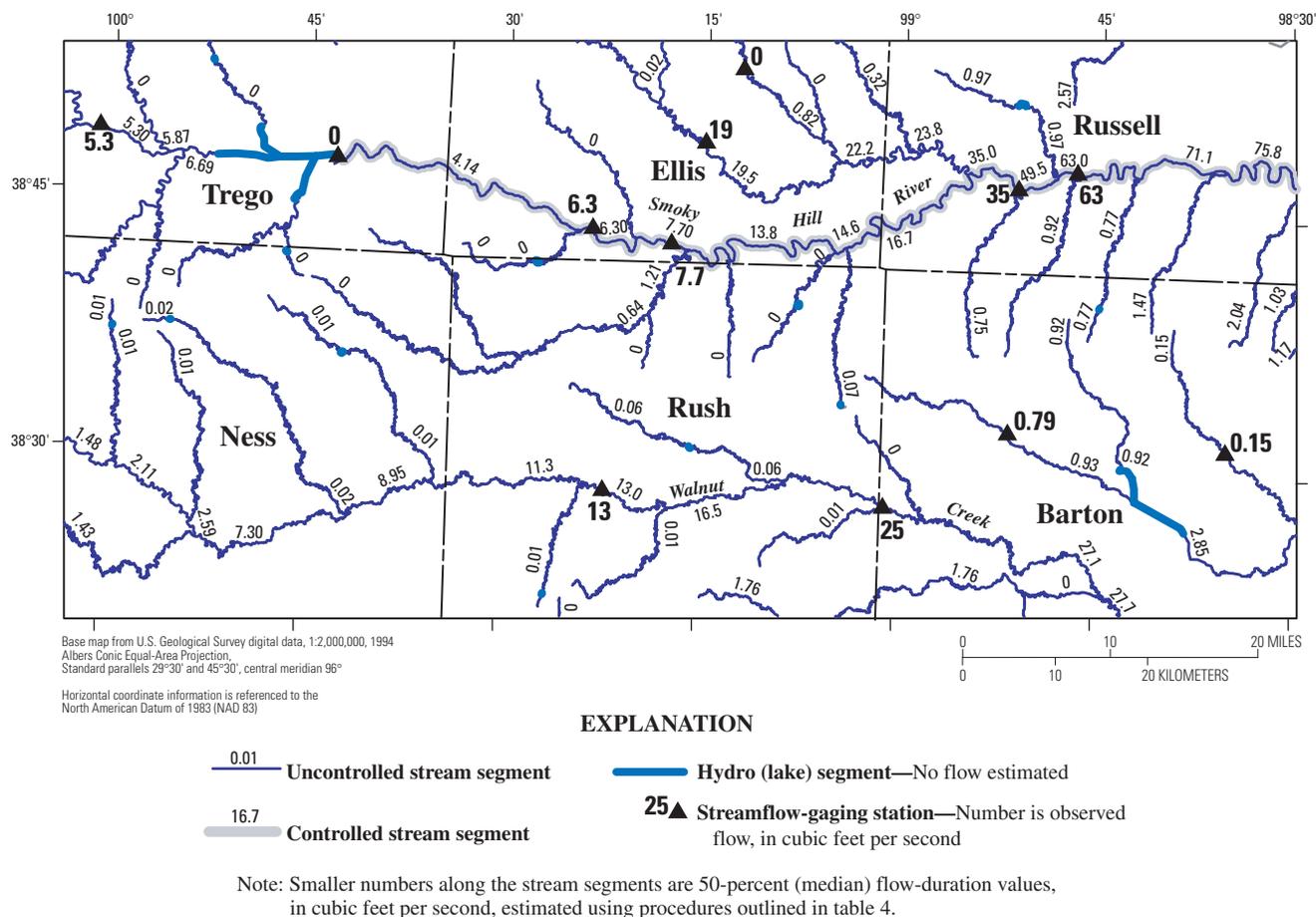
final streamflow statistics for each determination site for each county are listed in tables 7–111 located at the end of this report. A map of each county is provided to locate streams of interest (figs. 11–115, also at the end of this report). These figures show the location of the streamflow-statistics determination sites, the determination-site identification number, location of the gaging stations used in the interpolation process, and the names of the streams. The flow statistics in tables 7–111 are linked to the streamflow-statistics determination sites in figures 11–115 by the determination-site identification number. Although the streamflow-statistics determination sites are located in a unique county, the stream segment can occur in as many as four different counties. These other counties are included under the headings of second, third, and fourth in tables 7–111.

The uncertainty of each specific streamflow statistic varies depending on the analysis used to determine the estimate for that location. The greatest uncertainties exist for streams where no gaging-station information was available and only the regression estimates were used. For these locations, the uncertainty of the estimate is the model standard error of prediction. The uncertainty values are given with the various regression equations (tables 2 and 3). Smaller uncertainty values occur at determination sites where streamflow-gaging stations are avail-

able. At those locations the uncertainty is a function of the period of record of the gaging station (sample size) and the type and level of flow analysis conducted (90-, 75-, 50-, 25-, 10-percent flow durations, mean flow, or 5-, 10-, 25-, 50-, or 100-year flood frequency).

### Internet Dissemination of Results

This report and its associated figures and tables and the GIS database are available and can be downloaded from the World Wide Web (URL <http://ks.water.usgs.gov/streamstats>). This Web page is maintained by the USGS and has links to the GIS database described in this report to display the streamflow statistics by county for the State of Kansas. The county-map format includes county boundaries, State and Federal highways, and the stream locations for spatial reference. The estimated streamflow statistics, indexed with their respective determination-site identification number, are displayed in a pop-up window as the cursor is placed over a stream location.



**Figure 10.** Estimated 50-percent (median) flow values for stream locations in central Kansas after using interpolation procedures outlined in table 4 and observed median obtained from streamflow-gaging-station data (modified from Perry and others, 2004).

## Summary

Streamflow statistics of flow duration and peak-discharge frequency were estimated for 4,771 individual locations on streams listed on the 1999 Kansas Surface Water Register. These statistics included the flow-duration values of 90, 75, 50, 25, and 10 percent, as well as the mean flow value. Peak-discharge frequency values were estimated for the 2-, 5-, 10-, 25-, 50-, and 100-year floods.

Least-squares multiple-regression techniques, along with Tobit analyses, were used to develop equations for estimating flow durations and mean flows (dependent variables) for ungaged, uncontrolled flow stream locations. These streamflow statistics were determined from streamflow-gaging-station data using the entire period of record. Independent variables in the regression equations were the climatic and basin characteristics for streams flowing through Kansas. In the development of the regression equations, the significant climatic and basin characteristics, in order of importance, were contributing-drainage area, mean annual precipitation, mean basin permeability, and mean basin slope. Only the 149 gaging stations on uncontrolled flow streams (Kansas and parts of surrounding States) with at least 10 years of streamflow record were used in the regression

analyses. The contributing-drainage areas of these gages ranged from 2.06 to 12,004 mi<sup>2</sup>.

A logarithmic transformation of the basin characteristics was needed to develop a linear relation for computing flow durations and mean flow. Because there were numerous zero values for flow durations and mean flow in the gaging-station data, the Tobit analysis was used to include those zero values in the regression. The resulting regression equations were used to estimate flow durations and mean flow for the uncontrolled flow stream locations on the 1999 Kansas Surface Water Register.

Estimates of peak-discharge frequency for uncontrolled flow stream locations in Kansas were obtained using equations previously published in U.S. Geological Survey Water-Resources Investigations Report 00-4079 (Rasmussen and Perry, 2000), "Estimation of Peak Streamflows for Unregulated Rural Streams in Kansas." This report produced two sets of equations—one for basins between 0.17 and 30 mi<sup>2</sup> and one for basins between 30 and 9,100 mi<sup>2</sup>. For streams with a basin size of between 0.17 and 30 mi<sup>2</sup>, peak-discharge frequency values were computed from regression equations with contributing-drainage area and average mean annual precipitation for the basin as the predictor variables. For streams with basin sizes

between 30 and 9,100 mi<sup>2</sup>, the predictor variables were contributing-drainage area, average mean annual precipitation, mean soil permeability, and the slope of the main channel.

Streamflow-gaging-station data were used to improve the quality of the streamflow-statistic estimates along the streams that had gages. Streamflow statistics for the locations that had uncontrolled flow were interpolated using gaged data weighted according to the drainage area and the bias between the regression estimate and gaged flow information. On controlled reaches of Kansas streams, the streamflow-statistic information was interpolated between gaging stations by using only gaged data weighted by drainage area.

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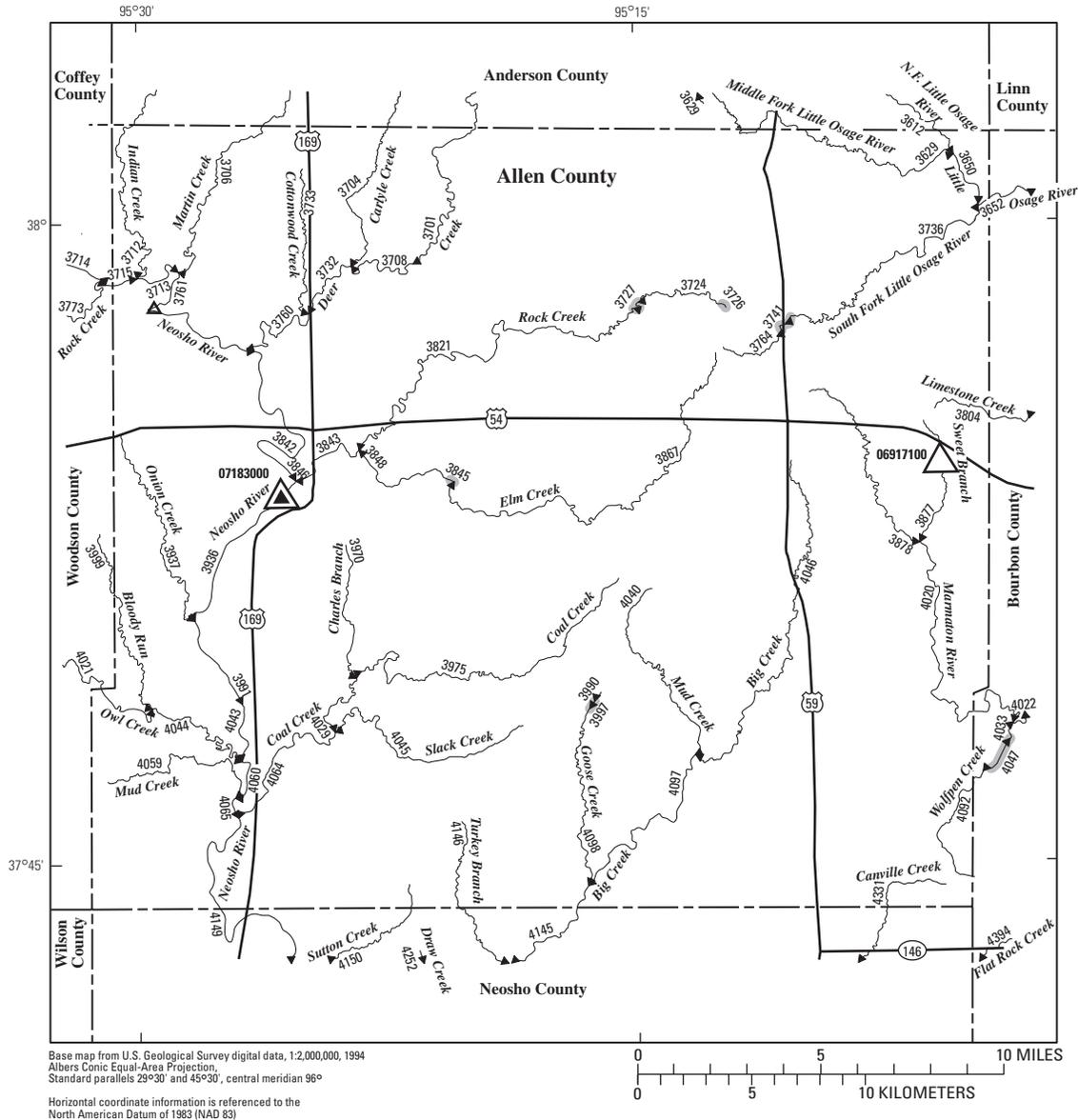
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## **Supplemental Information**

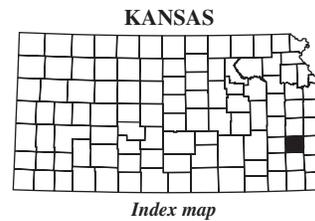
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**EXPLANATION**

- ◀ 6127 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06890100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07183000 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3741 Lake and determination site identification number



**Figure 11.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Allen County.

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**Table 7.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Allen County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 11)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3612	10290103220	AL	AN					North Fork Little Osage River	22.8	0
3629	1029010336	AL	AN			Middle Fork Little Osage River	33.3	0	.31	3.25	11.9	34.8
3650	102901033	AL				Little Osage River	58.2	0	.74	5.55	20.8	62.3
3652	102901033	AL	BB			Little Osage River	92.6	0	1.31	9.00	34.3	103
3701	110702049	AL	AN			Deer Creek	64.4	0	.71	5.16	19.8	61.7
3704	1107020447	AL	AN			Carlyle Creek	12.3	0	0	.90	3.79	12.1
3706	1107020449	AL	AN			Martin Creek	32.3	0	0	1.76	8.12	27.5
3708	110702049	AL				Deer Creek	68.3	0	.81	5.53	21.1	65.8
3712	11070204924	AL	AN			Indian Creek	46.9	0	0	2.57	10.9	36.4
3713	1107020410	AL				Neosho River	3,520	37.7	103	525	2,170	6,720
3715	1107020410	AL	WO			Neosho River	3,480	36.9	100	514	2,120	6,610
3724	110702047	AL				Rock Creek	16.1	0	0	1.01	4.52	14.8
3726	HYDRO	AL				HYDRO	1.83	NA	NA	NA	NA	NA
3727	HYDRO	AL				HYDRO	16.7	NA	NA	NA	NA	NA
3732	110702049	AL				Deer Creek	82.8	0	1.08	6.67	25.4	79.6
3733	1107020448	AL				Cottonwood Creek	8.15	0	0	.92	3.18	9.22
3736	10290103249	AL				South Fork Little Osage River	26.5	0	.19	2.93	10.8	31.3
3741	HYDRO	AL				HYDRO	4.07	NA	NA	NA	NA	NA
3760	110702049	AL				Deer Creek	96.0	0	1.41	7.94	29.9	93.4
3761	1107020410	AL				Neosho River	3,570	38.4	106	534	2,210	6,820
3764	10290103249	AL				South Fork Little Osage River	3.39	0	0	.04	.55	2.67
3804	102901035	AL	BB			Limestone Creek	34.1	0	.43	4.19	15.5	45.0
3821	110702047	AL				Rock Creek	47.8	0	.03	3.24	14.1	46.4
3842	110702048	AL				Neosho River	3,670	40.2	112	558	2,310	7,060
3843	110702047	AL				Rock Creek	94.1	0	1.08	7.35	29.4	94.8
3845	HYDRO	AL				HYDRO	37.3	NA	NA	NA	NA	NA
3846	110702048	AL				Neosho River	3,770	41.1	101	378	1,090	3,570
3848	110702041050	AL				Elm Creek	43.1	0	.38	3.94	15.2	46.4
3867	110702041050	AL				Elm Creek	36.5	0	.21	3.26	12.7	38.9
3877	1029010430	AL				Sweet Branch	8.41	0	0	.81	2.99	9.01
3878	1029010412	AL				Marmaton River	13.6	0	0	1.13	4.55	14.0
3936	110702046	AL				Neosho River	3,780	42.0	119	581	2,410	7,300
3937	1107020424	AL				Onion Creek	17.8	0	0	1.29	5.61	18.0
3970	1107020427	AL				Charles Branch	12.3	0	0	.94	4.33	14.0
3975	110702044	AL				Coal Creek	21.7	0	0	2.33	8.94	26.6
3990	1107020429	AL				Goose Creek	1.65	0	.05	.14	.14	.93
3991	110702046	AL				Neosho River	3,800	42.3	121	588	2,440	7,360

**Table 7.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Allen County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 11)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3612	20.2	2,590	5,230	7,460	10,800	13,500	16,600
3629	27.0	3,930	7,420	10,300	14,500	17,900	21,500
3650	46.2	5,420	10,000	13,800	19,300	23,900	28,700
3652	73.0	7,410	13,200	18,000	24,800	30,500	36,500
3701	47.8	5,040	9,710	13,700	19,500	24,400	29,600
3704	10.4	1,770	3,560	5,050	7,280	9,100	11,200
3706	23.8	4,470	8,650	12,200	17,300	21,600	26,200
3708	50.6	5,070	9,790	13,800	19,700	24,700	30,000
3712	31.3	4,760	9,230	13,000	18,500	23,200	28,200
3713	2,050	18,600	26,000	28,300	53,500	81,400	123,000
3715	2,010	17,900	25,000	27,300	52,400	80,500	123,000
3724	13.1	2,150	4,300	6,100	8,780	11,000	13,500
3726	NA	NA	NA	NA	NA	NA	NA
3727	NA	NA	NA	NA	NA	NA	NA
3732	60.4	5,510	10,600	15,000	21,300	26,700	32,500
3733	7.60	1,400	2,780	3,930	5,640	7,040	8,610
3736	23.7	2,870	5,780	8,240	11,900	14,900	18,400
3741	NA	NA	NA	NA	NA	NA	NA
3760	69.8	5,730	11,000	15,600	22,300	27,900	34,000
3761	2,070	19,200	26,900	29,200	54,500	82,100	123,000
3764	2.98	875	1,690	2,360	3,340	4,130	5,020
3804	32.5	6,040	10,600	14,300	19,400	23,500	27,800
3821	37.5	4,710	9,250	13,100	18,900	23,700	28,900
3842	2,150	20,600	29,100	31,500	57,000	84,100	123,000
3843	71.4	6,590	12,500	17,500	24,900	31,100	37,800
3845	NA	NA	NA	NA	NA	NA	NA
3846	1,750	23,200	44,900	64,000	93,100	118,000	147,000
3848	35.7	4,030	7,890	11,200	16,000	20,000	24,300
3867	30.4	3,530	7,000	9,980	14,400	18,100	22,000
3877	7.73	204	349	455	597	707	820
3878	11.9	1,970	3,910	5,540	7,950	9,920	12,200
3936	2,220	22,000	31,300	33,800	59,500	86,000	122,000
3937	15.1	2,220	4,480	6,380	9,220	11,500	14,200
3970	11.6	1,820	3,630	5,140	7,390	9,230	11,300
3975	20.4	2,570	5,170	7,360	10,600	13,300	16,300
3990	1.35	586	1,110	1,540	2,150	2,650	3,210
3991	2,240	22,200	31,600	34,200	59,500	86,000	122,000

**Table 7.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Allen County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

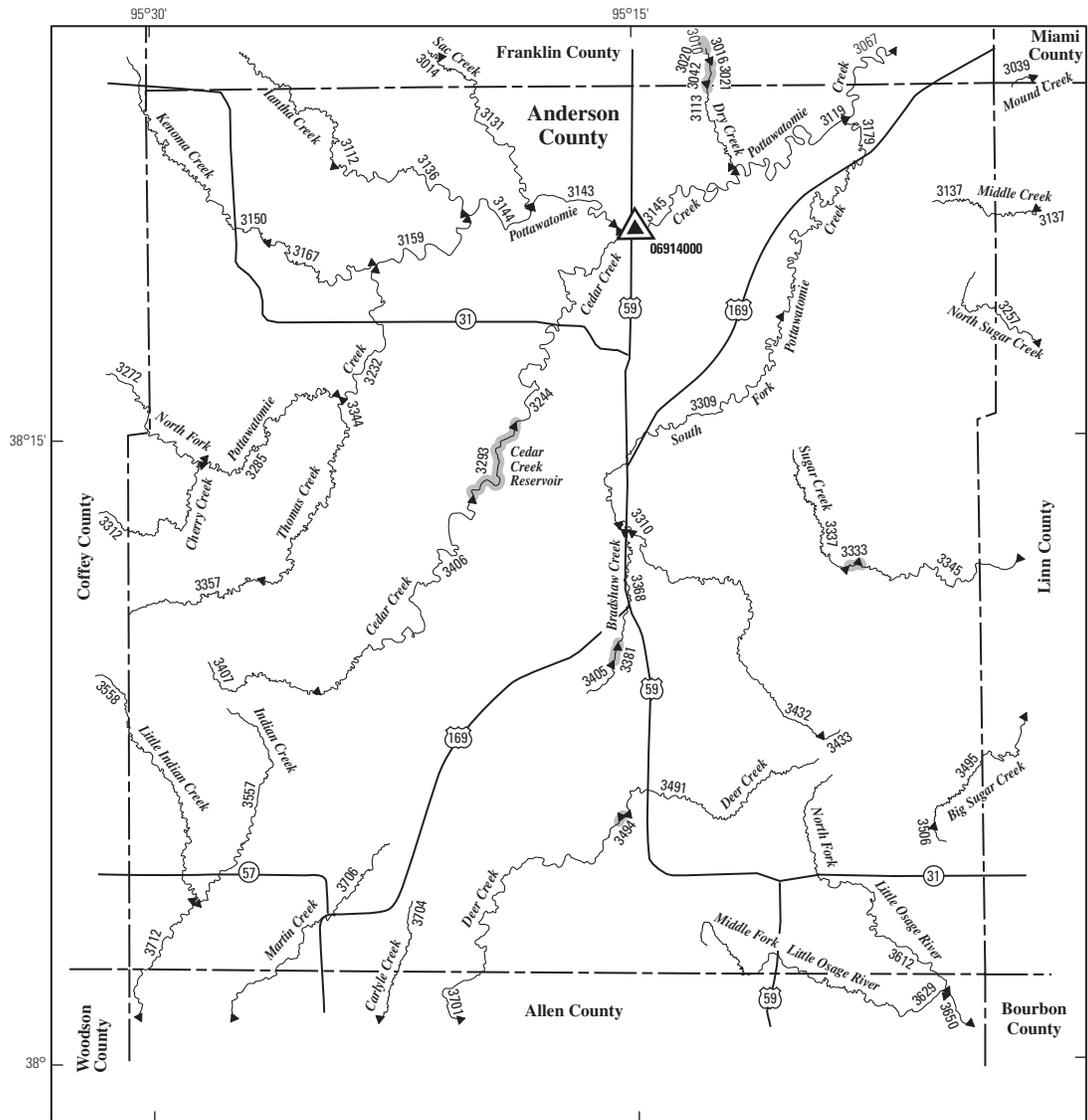
Determination site identification number (fig. 11)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3997	HYDRO	AL						HYDRO	2.21	NA	NA
3999	1107020425	AL	WO			Bloody Run	12.2	0	0	1.11	4.33	13.2	
4020	1029010412	AL	BB			Marmaton River	46.4	0	.88	5.76	20.3	58.0	
4021	1107020419	AL	WO			Owl Creek	178	0	.57	4.00	21.0	115	
4029	110702044	AL				Coal Creek	36.3	0	.24	3.57	13.9	42.4	
4040	1107020431	AL				Mud Creek	14.0	0	0	1.41	5.19	15.3	
4043	110702045	AL				Neosho River	3,800	42.3	121	588	2,440	7,360	
4044	1107020419	AL				Owl Creek	194	.13	.87	5.27	25.7	130	
4045	1107020430	AL				Slack Creek	13.5	0	0	1.70	5.97	16.9	
4046	110702042	AL				Big Creek	37.6	0	.22	3.03	11.7	36.0	
4059	1107020426	AL				Mud Creek	15.2	0	0	.80	4.24	14.7	
4060	110702045	AL				Neosho River	4,000	44.6	133	641	2,660	7,840	
4064	110702044	AL				Coal Creek	59.0	0	.90	6.09	22.9	69.1	
4065	110702045	AL				Neosho River	4,010	44.8	134	645	2,680	7,880	
4092	1029010437	AL	BB			Wolfpen Creek	11.8	0	0	1.63	5.71	16.0	
4097	110702042	AL				Big Creek	68.5	0	.80	5.49	21.2	66.5	
4098	1107020429	AL				Goose Creek	12.8	0	.30	2.35	7.38	19.3	
4145	110702042	AL	NO			Big Creek	92.5	0	1.47	8.30	31.5	97.7	
4146	1107020428	AL	NO			Turkey Branch	11.9	0	.24	2.18	6.91	18.1	
4149	110702043	AL	NO			Neosho River	4,090	45.8	139	666	2,770	8,070	
4150	1107020435	AL	NO			Sutton Creek	11.2	0	.15	1.90	6.11	16.3	
4331	1107020516	AL	NO			Canville Creek	48.6	0	.51	4.73	18.6	57.1	

**Table 7.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Allen County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

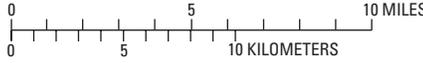
Determination site identification number (fig. 11)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3997	NA	NA	NA	NA	NA	NA	NA
3999	11.0	1,820	3,620	5,130	7,370	9,200	11,300
4020	42.0	3,750	6,750	9,190	12,700	15,700	18,700
4021	122	11,100	21,500	30,400	44,200	56,100	69,600
4029	32.1	4,230	8,160	11,500	16,300	20,300	24,600
4040	12.5	2,020	4,020	5,680	8,150	10,200	12,500
4043	2,240	22,200	31,600	34,200	59,500	86,000	122,000
4044	132	10,900	21,300	30,300	44,200	56,200	69,800
4045	13.1	1,980	3,930	5,550	7,960	9,930	12,200
4046	29.2	4,110	7,830	10,900	15,400	19,100	23,100
4059	13.1	2,140	4,240	6,000	8,610	10,700	13,200
4060	2,410	23,600	33,700	37,500	59,600	86,000	122,000
4064	50.5	5,010	9,550	13,400	19,000	23,600	28,600
4065	2,430	23,700	33,900	37,700	59,600	86,000	122,000
4092	12.3	1,900	3,720	5,230	7,470	9,290	11,300
4097	51.8	6,000	11,100	15,400	21,500	26,500	32,000
4098	13.8	1,940	3,830	5,410	7,740	9,650	11,800
4145	72.2	6,880	12,600	17,400	24,300	30,100	36,200
4146	13.0	1,880	3,710	5,220	7,460	9,280	11,300
4149	2,500	24,300	34,700	39,000	59,700	86,000	122,000
4150	12.0	1,830	3,600	5,060	7,220	8,980	11,000
4331	43.1	5,250	9,760	13,500	18,900	23,400	28,100





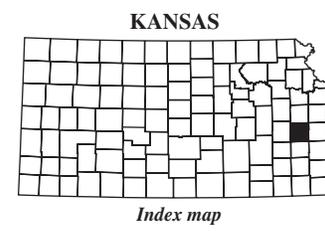
Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°

Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 3706 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06914000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06914000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3494 Lake and determination site identification number



**Figure 12.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Anderson County.

58 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 8.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Anderson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 12)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3067	1029010155	AN	FR					Pottawatomie Creek	475	1.24
3112	1029010162	AN	CF	FR		Iantha Creek	24.6	0	.07	2.05	7.13	21.4
3113	1029010157	AN	FR			Dry Creek	22.7	0	0	1.80	7.10	22.0
3119	1029010156	AN				Pottawatomie Creek	353	.33	2.58	23.5	99.1	392
3131	1029010160	AN	FR			Sac Creek	46.0	0	.25	3.23	12.3	39.2
3136	1029010162	AN				Iantha Creek	33.8	0	.10	2.41	8.95	28.0
3137	1029010230	AN	LN	MI		Middle Creek	30.3	0	.46	3.73	13.0	37.0
3143	1029010159	AN				Pottawatomie Creek	234	.08	2.02	15.3	62.1	234
3144	1029010161	AN				Pottawatomie Creek	181	0	1.70	11.8	47.0	171
3145	1029010158	AN				Pottawatomie Creek	323	.10	2.00	21.0	90.0	361
3150	1029010164	AN	CF			Kenoma Creek	26.6	0	0	1.57	6.38	20.9
3159	1029010163	AN				Pottawatomie Creek	144	0	1.37	9.35	36.9	131
3167	1029010164	AN				Kenoma Creek	36.1	0	0	1.94	8.16	27.5
3179	1029010167	AN				South Fork Pottawatomie Creek	110	0	1.58	9.24	35.7	113
3232	1029010165	AN				North Fork Pottawatomie Creek	100	0	1.09	7.04	26.8	89.6
3244	1029010166	AN				Cedar Creek	77.0	0	.35	4.87	20.8	72.2
3257	1029010239	AN	LN			North Sugar Creek	45.8	0	.61	4.88	19.0	55.2
3272	1029010165	AN	CF			North Fork Pottawatomie Creek	34.3	0	.25	2.83	10.0	30.2
3285	1029010165	AN				North Fork Pottawatomie Creek	59.8	0	.76	4.93	17.6	54.6
3293	HYDRO	AN				HYDRO	54.5	NA	NA	NA	NA	NA
3309	1029010167	AN				South Fork Pottawatomie Creek	90.5	0	1.05	7.14	28.2	90.3
3310	1029010167	AN				South Fork Pottawatomie Creek	57.1	0	.26	3.98	16.6	54.0
3312	1029010174	AN	CF			Cherry Creek	11.9	0	.07	1.47	4.55	12.6
3333	HYDRO	AN				HYDRO	22.0	NA	NA	NA	NA	NA
3337	1029010242	AN				Sugar Creek	20.9	0	0	1.50	6.84	21.8
3344	1029010172	AN				Thomas Creek	29.1	0	0	1.72	7.05	23.2
3345	1029010242	AN	LN			Sugar Creek	57.7	0	.46	4.65	19.9	60.5
3357	1029010172	AN	CF			Thomas Creek	11.8	0	0	.97	3.55	10.9
3368	1029010175	AN				Bradshaw Creek	23.7	0	0	1.20	5.97	20.6
3381	HYDRO	AN				HYDRO	15.8	NA	NA	NA	NA	NA
3405	1029010175	AN				Bradshaw Creek	14.1	0	0	.39	2.85	11.0
3406	1029010166	AN				Cedar Creek	44.8	0	0	2.19	10.3	36.5
3407	1029010166	AN				Cedar Creek	9.22	0	0	.23	1.67	6.66
3432	1029010167	AN				South Fork Pottawatomie Creek	32.5	0	0	2.63	10.7	33.7
3433	1029010167	AN				South Fork Pottawatomie Creek	6.63	0	0	.17	1.50	5.93
3491	110702049	AN				Deer Creek	19.3	0	0	1.19	5.17	16.8
3494	HYDRO	AN				HYDRO	19.6	NA	NA	NA	NA	NA

**Table 8.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Anderson County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 12)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3067	335	13,100	24,600	34,600	49,700	63,100	78,200
3112	17.2	2,260	4,780	6,950	10,200	13,000	16,100
3113	18.0	2,410	4,960	7,130	10,400	13,100	16,100
3119	254	11,100	20,100	27,400	38,200	47,500	57,700
3131	31.2	3,430	6,990	10,100	14,700	18,600	22,900
3136	22.7	2,550	5,380	7,880	11,600	14,900	18,400
3137	27.0	4,350	8,120	11,200	15,700	19,300	23,200
3143	159	8,810	16,300	22,400	31,500	39,100	47,400
3144	120	7,150	13,600	19,100	27,200	34,100	41,700
3145	235	11,300	20,100	27,100	37,200	45,700	54,900
3150	17.6	2,320	4,930	7,180	10,600	13,500	16,700
3159	94.3	6,170	12,000	17,000	24,400	30,700	37,700
3167	23.2	3,080	6,450	9,430	13,900	17,800	22,000
3179	82.8	6,700	12,800	18,100	25,700	32,300	39,400
3232	66.4	4,960	9,820	14,000	20,200	25,600	31,400
3244	55.9	4,500	9,130	13,200	19,300	24,500	30,300
3257	39.8	5,580	10,300	14,200	19,800	24,400	29,400
3272	23.6	3,330	6,680	9,550	13,800	17,400	21,200
3285	40.9	3,870	7,770	11,100	16,100	20,400	25,000
3293	NA	NA	NA	NA	NA	NA	NA
3309	67.8	7,170	13,400	18,700	26,300	32,700	39,600
3310	43.0	6,660	12,300	17,100	23,900	29,500	35,600
3312	9.89	1,560	3,210	4,610	6,710	8,430	10,400
3333	NA	NA	NA	NA	NA	NA	NA
3337	17.9	2,370	4,840	6,930	10,100	12,700	15,600
3344	19.9	2,740	5,680	8,190	12,000	15,100	18,700
3345	45.6	5,730	10,800	15,000	21,200	26,400	32,000
3357	9.31	1,610	3,280	4,690	6,800	8,540	10,500
3368	18.2	2,570	5,250	7,510	10,900	13,700	16,900
3381	NA	NA	NA	NA	NA	NA	NA
3405	10.7	1,900	3,830	5,460	7,880	9,870	12,100
3406	31.1	3,080	6,570	9,700	14,500	18,600	23,200
3407	6.75	1,430	2,880	4,100	5,910	7,400	9,080
3432	26.8	4,710	8,910	12,400	17,400	21,600	26,100
3433	5.80	1,260	2,480	3,500	5,000	6,220	7,600
3491	14.8	2,310	4,670	6,660	9,640	12,100	14,900
3494	NA	NA	NA	NA	NA	NA	NA

**60 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 8.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Anderson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

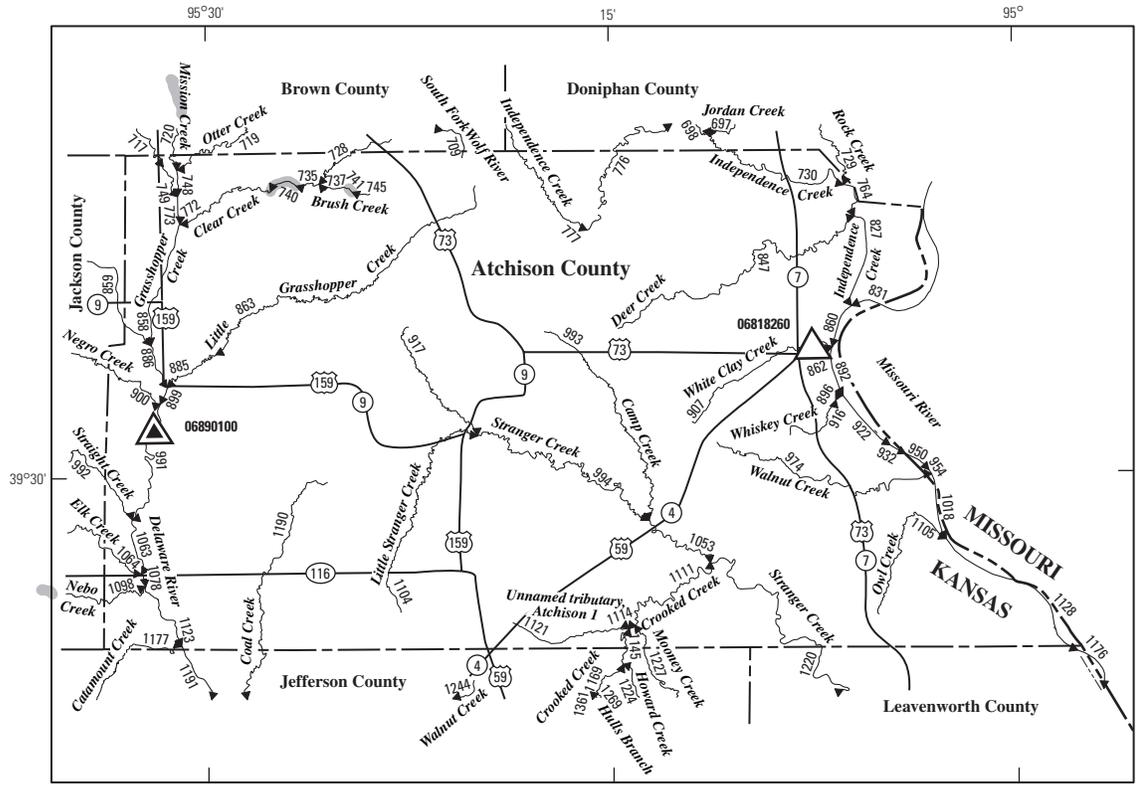
Determination site identification number (fig. 12)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3495	1029010232	AN	LN					Big Sugar Creek	36.7	0
3506	1029010232	AN				Big Sugar Creek	5.55	0	0	.59	2.03	6.09
3557	11070204924	AN				Indian Creek	17.5	0	0	.52	3.23	12.2
3558	11070204939	AN	CF			Little Indian Creek	17.6	0	0	1.03	4.43	14.5

**Table 8.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Anderson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 12)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3495	29.9	3,750	7,290	10,300	14,700	18,400	22,300
3506	5.29	1,160	2,260	3,170	4,520	5,620	6,850
3557	12.0	2,120	4,320	6,170	8,940	11,200	13,800
3558	12.9	2,100	4,280	6,120	8,890	11,200	13,800



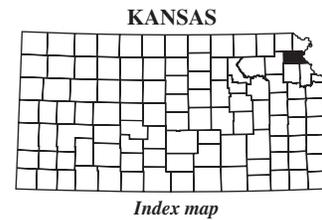


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 1244 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06890100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06818260 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 740 Lake and determination site identification number



**Figure 13.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Atchison County.

**64 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 9.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Atchison County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 13)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		717	1027010320	AT	BR					Grasshopper Creek	37.0	0.03
719	1027010341	AT	BR			Otter Creek	21.1	.01	.02	1.31	5.65	18.4
720	1027010340	AT	BR			Mission Creek	12.0	0	.01	.85	3.55	11.3
728	1027010319	AT	BR			Clear Creek	8.31	0	0	.04	1.23	5.67
730	1024001122	AT	DP			Independence Creek	83.4	.35	4.17	16.1	45.6	115
735	1027010319	AT				Clear Creek	15.6	.01	.01	.64	3.47	12.4
737	1027010344	AT				Brush Creek	5.56	0	0	0	.60	3.58
740	HYDRO	AT				HYDRO	17.3	NA	NA	NA	NA	NA
741	HYDRO	AT				HYDRO	3.43	NA	NA	NA	NA	NA
745	1027010344	AT				Brush Creek	3.36	0	0	0	0	1.23
748	1027010341	AT				Otter Creek	33.5	.02	.05	2.45	9.63	30.2
749	1027010320	AT				Grasshopper Creek	38.7	.03	.07	2.87	11.2	35.2
764	1024001120	AT	DP			Independence Creek	108	.69	5.37	20.9	59.5	151
772	1027010319	AT				Clear Creek	25.1	.01	.03	1.50	6.55	21.5
773	1027010320	AT				Grasshopper Creek	73.2	.12	.78	5.54	20.7	65.2
776	1024001122	AT	DP			Independence Creek	31.9	0	1.71	6.67	18.4	44.8
777	1024001122	AT	BR	DP		Independence Creek	15.7	0	.82	3.39	9.00	21.5
827	1024001120	AT				Independence Creek	142	1.02	6.45	25.5	73.8	191
831	1024001113	AT	DP			Missouri River	421,000	23,600	34,500	43,300	57,600	75,100
847	1024001132	AT				Deer Creek	28.7	0	1.33	5.46	15.4	38.0
858	1027010318	AT				Grasshopper Creek	106	.24	1.61	8.30	30.0	94.6
859	1027010321	AT	JA			Delaware River	280	2.04	8.14	26.8	82.7	254
860	1024001111	AT				Missouri River	421,000	23,600	34,500	43,300	57,700	75,100
862	102400119031	AT				White Clay Creek	14.9	0	.97	3.61	9.31	21.7
863	1027010316	AT				Little Grasshopper Creek	40.3	.03	.14	3.32	12.6	38.7
885	1027010316	AT				Little Grasshopper Creek	45.4	.04	.34	3.95	14.6	44.2
886	1027010317	AT				Delaware River	388	4.18	13.2	39.5	117	361
892	1024001111	AT				Missouri River	421,000	23,600	34,500	43,300	57,700	75,100
896	102400119235	AT				Whiskey Creek	4.99	.13	.95	2.16	4.32	8.76
899	1027010315	AT				Delaware River	434	5.26	15.8	45.8	133	412
900	1027010343	AT	JA			Negro Creek	23.9	.01	.03	1.67	6.72	21.2
907	1024001131	AT				White Clay Creek	13.9	0	.92	3.42	8.76	20.4
916	10240011235	AT				Whiskey Creek	4.82	.15	.93	2.08	4.14	8.38
917	102701049	AT				Stranger Creek	18.7	0	0	1.16	5.06	16.5
922	1024001111	AT				Missouri River	421,000	23,600	34,500	43,300	57,700	75,100
932	102400119	AT				Missouri River	421,000	23,600	34,500	43,300	57,700	75,100
950	102400119	AT				Missouri River	421,000	23,600	34,500	43,300	57,700	75,100

**Table 9.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Atchison County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 13)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
717	26.0	3,190	6,830	10,100	15,000	19,300	24,000
719	15.1	1,900	4,070	5,960	8,830	11,200	14,000
720	9.30	1,370	2,910	4,230	6,240	7,900	9,800
728	5.73	1,100	2,330	3,380	4,960	6,270	7,760
730	68.1	4,650	8,960	12,600	17,900	22,400	27,200
735	10.9	1,580	3,380	4,940	7,300	9,270	11,500
737	3.91	867	1,820	2,630	3,850	4,860	6,000
740	NA	NA	NA	NA	NA	NA	NA
741	NA	NA	NA	NA	NA	NA	NA
745	2.10	648	1,350	1,940	2,820	3,550	4,370
748	23.6	3,520	7,320	10,700	15,700	20,000	24,700
749	27.2	3,350	7,110	10,500	15,500	20,000	24,800
764	87.5	5,380	10,200	14,400	20,300	25,300	30,700
772	17.6	2,080	4,490	6,590	9,800	12,500	15,500
773	48.5	5,000	10,200	14,700	21,500	27,400	33,900
776	28.0	3,090	6,080	8,610	12,300	15,400	18,600
777	14.1	1,610	3,440	5,020	7,420	9,410	11,700
827	111	6,150	11,700	16,300	23,100	28,800	34,900
831	48,100	109,000	147,000	174,000	199,000	233,000	261,000
847	24.6	2,320	5,000	7,330	10,900	13,900	17,300
858	68.5	5,950	11,900	17,000	24,800	31,400	38,800
859	165	9,010	16,000	21,700	30,100	37,200	45,000
860	48,200	109,000	147,000	174,000	199,000	234,000	262,000
862	14.0	1,100	2,180	3,120	4,610	5,950	7,490
863	29.0	3,160	6,800	10,100	15,100	19,400	24,200
885	32.5	3,280	7,020	10,400	15,500	20,000	24,900
886	229	11,400	18,400	23,800	31,300	37,400	44,000
892	48,200	109,000	147,000	174,000	200,000	234,000	262,000
896	5.38	852	1,760	2,540	3,690	4,650	5,720
899	258	12,300	19,000	24,000	30,700	36,000	41,700
900	17.0	2,040	4,390	6,430	9,540	12,100	15,100
907	13.1	1,100	2,200	3,150	4,650	5,990	7,520
916	5.17	835	1,730	2,480	3,620	4,550	5,600
917	13.4	1,710	3,700	5,430	8,070	10,300	12,800
922	48,200	109,000	147,000	174,000	200,000	234,000	262,000
932	48,200	109,000	147,000	174,000	200,000	234,000	262,000
950	48,200	109,000	147,000	174,000	200,000	234,000	262,000

**Table 9.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Atchison County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

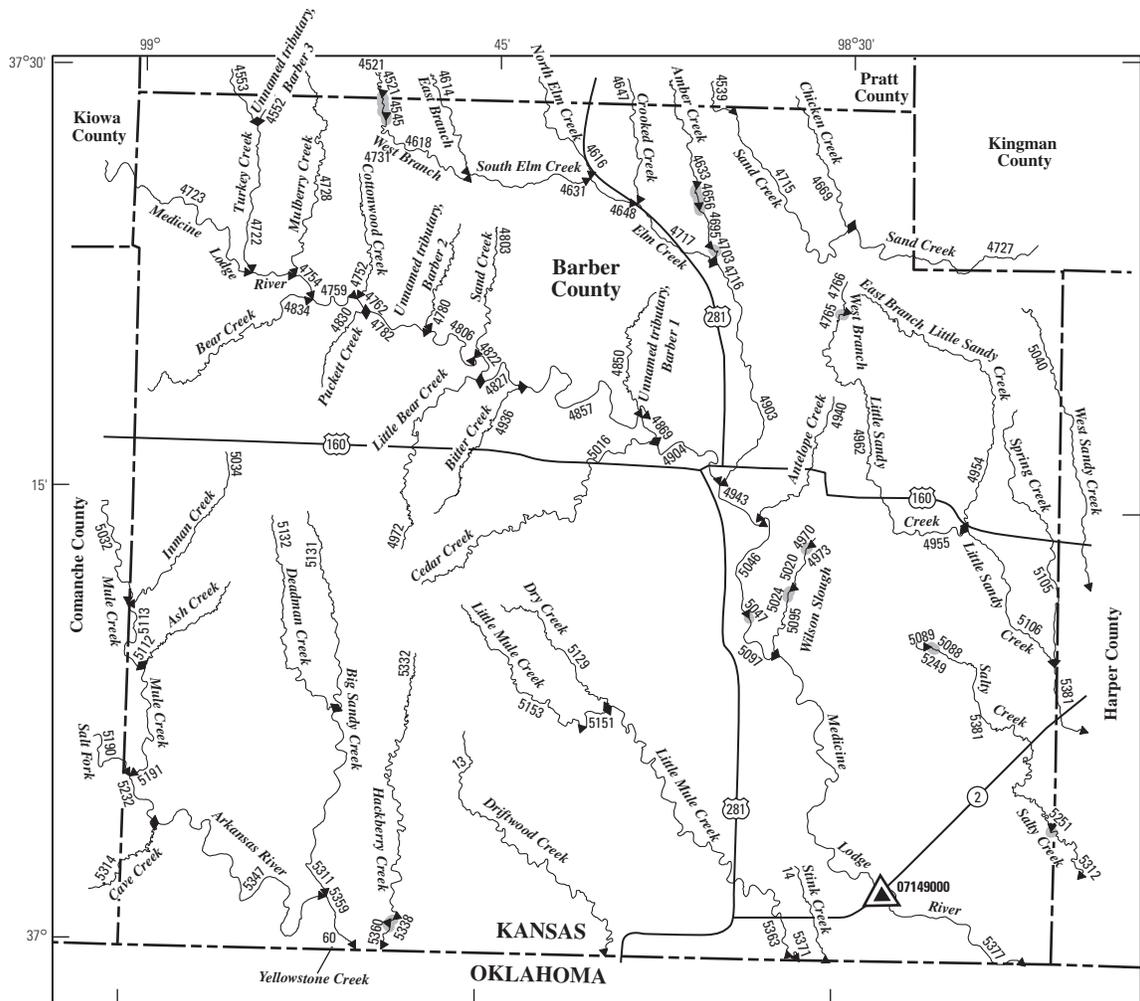
Determination site identification number (fig. 13)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		954	102400117	AT						Missouri River	421,000	23,600
974	1024001123	AT				Walnut Creek	18.4	0	1.47	5.21	13.4	30.7
991	1027010315	AT				Delaware River	470	6.20	18.0	51.0	146	450
992	1027010328	AT	JA			Straight Creek	113	.02	1.99	10.3	35.6	106
993	1027010441	AT				Camp Creek	24.8	0	.33	2.96	9.58	26.4
994	102701049	AT				Stranger Creek	71.3	.01	.62	5.26	19.9	62.3
1018	102400117	AT				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1053	102701049	AT				Stranger Creek	102	.02	1.51	8.44	30.1	92.0
1063	1027010314	AT				Delaware River	587	6.14	18.0	54.4	157	485
1064	1027010329	AT	JA			Elk Creek	134	.03	2.10	10.9	38.7	119
1078	1027010313	AT				Delaware River	722	6.02	17.8	57.8	167	523
1098	1027010348	AT	JA			Nebo Creek	15.4	0	0	1.12	4.58	14.4
1104	10270104959	AT				Little Stranger Creek	30.6	0	0	1.89	7.93	25.6
1105	1024001133	AT				Owl Creek	16.0	0	1.23	4.72	12.5	28.9
1111	1027010410	AT				Crooked Creek	75.3	.01	.57	5.36	21.3	68.8
1114	1027010410	AT				Crooked Creek	57.3	.01	.14	3.74	15.5	50.9
1121	1027010411	AT				Unnamed tributary, Atchison 1	17.5	0	0	1.14	5.02	16.3
1123	1027010313	AT				Delaware River	742	6.01	17.8	58.3	169	529
1128	102400115	AT				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1145	1027010412	AT	JF			Crooked Creek	39.7	0	0	2.51	10.9	35.8
1177	1027010349	AT	JF			Catamount Creek	12.3	0	0	1.19	4.20	12.4
1190	1027010350	AT	JF			Coal Creek	40.1	0	.13	3.17	12.0	36.6
1191	1027010313	AT	JF			Delaware River	761	6.03	17.8	59.1	171	536
1220	102701048	AT	LV			Stranger Creek	216	.26	3.99	18.7	65.5	205
1227	102701041011	AT	JF			Mooney Creek	10.1	0	0	.61	2.98	10.0

**Table 9.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Atchison County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 13)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
954	48,200	109,000	147,000	174,000	200,000	234,000	262,000
974	18.6	1,840	3,900	5,680	8,380	10,600	13,200
991	280	12,500	18,700	23,000	28,600	32,900	37,400
992	73.4	3,690	7,480	11,300	17,100	22,600	28,500
993	19.1	2,110	4,540	6,650	9,860	12,500	15,600
994	45.9	3,540	7,700	11,500	17,300	22,400	28,100
1018	48,200	109,000	147,000	175,000	200,000	234,000	262,000
1053	64.3	4,040	8,580	12,700	19,000	24,400	30,500
1063	308	12,100	18,300	23,500	29,700	34,700	39,200
1064	83.6	6,610	13,100	18,900	27,400	34,700	42,600
1078	338	11,800	18,100	24,400	31,500	37,300	41,900
1098	11.7	1,600	3,410	4,980	7,360	9,330	11,600
1104	20.7	2,940	6,340	9,390	14,000	18,000	22,400
1105	17.6	1,780	3,720	5,380	7,890	9,970	12,300
1111	51.3	5,050	10,300	14,900	21,800	27,700	34,200
1114	39.4	4,880	9,890	14,300	20,800	26,400	32,500
1121	13.3	1,770	3,760	5,480	8,080	10,200	12,700
1123	342	11,400	17,600	24,000	31,000	36,800	41,300
1128	48,200	109,000	147,000	175,000	200,000	234,000	262,000
1145	28.6	3,970	8,190	11,900	17,400	22,200	27,400
1177	9.82	1,430	3,030	4,400	6,480	8,190	10,100
1190	28.0	3,760	7,770	11,300	16,600	21,100	26,000
1191	347	11,000	16,900	23,300	30,200	35,900	40,200
1220	132	5,650	11,400	16,500	24,100	30,800	38,200
1227	8.46	1,350	2,790	4,030	5,880	7,400	9,130

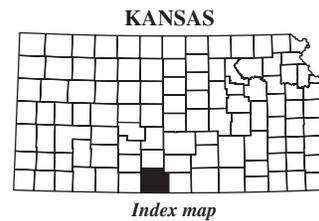




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ← 5347 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07149000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07149000 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5338 Lake and determination site identification number



**Figure 14.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Barber County.

**70 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 14)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		13	11060003905	BA						Driftwood Creek	30.6	0
14	1106000328	BA				Stink Creek	2.68	0	0	0	0	0
60	1106000217	BA				Yellowstone Creek	55.0	0	.03	1.39	3.32	7.68
4539	1106000511	BA	PR			Sand Creek	47.7	.02	.13	.72	1.35	3.75
4545	HYDRO	BA	PR			HYDRO	27.1	NA	NA	NA	NA	NA
4552	11060003452	BA				Unnamed tributary, Barber 3	1.91	0	0	0	0	0
4553	110600037	BA	PR			Turkey Creek	45.5	.01	.32	1.11	1.91	4.15
4614	1106000310	BA	PR			East Branch South Elm Creek	28.1	0	.02	.39	.50	1.54
4616	110600034	BA	PR			North Elm Creek	34.8	0	.52	1.25	2.00	4.12
4618	110600039005	BA				West Branch South Elm Creek	36.7	.01	.09	.69	1.16	2.88
4631	110600035	BA				South Elm Creek	75.5	.02	1.24	2.72	5.16	10.8
4633	1106000312	BA	PR			Amber Creek	10.6	0	0	0	0	.01
4647	1106000311	BA	PR			Crooked Creek	15.2	0	.20	.30	.37	.68
4648	110600033	BA				Elm Creek	116	.29	2.60	5.20	9.89	20.1
4656	HYDRO	BA				HYDRO	12.4	NA	NA	NA	NA	NA
4669	1106000536	BA	PR			Chicken Creek	22.5	.40	.50	.70	.78	1.56
4695	1106000312	BA				Amber Creek	15.4	0	.78	1.13	1.19	1.81
4703	HYDRO	BA				HYDRO	15.5	NA	NA	NA	NA	NA
4715	1106000511	BA				Sand Creek	66.7	.04	.77	1.86	3.73	8.72
4716	1106000312	BA				Amber Creek	17.0	0	.91	1.36	1.58	2.47
4717	110600033	BA				Elm Creek	139	.70	3.66	7.13	13.4	26.7
4722	110600037	BA				Turkey Creek	58.6	.01	.80	2.03	3.75	7.62
4723	110600038	BA	KW			Medicine Lodge River	314	1.32	7.58	14.9	27.6	54.2
4727	1106000511	BA	KM			Sand Creek	108	.67	2.45	4.62	9.09	19.7
4728	1106000314	BA	PR			Mulberry Creek	22.1	0	.16	.70	.87	1.76
4731	110600036	BA				Medicine Lodge River	374	1.99	9.83	18.9	34.6	67.7
4752	1106000316	BA				Cottonwood Creek	13.2	0	0	0	.01	.01
4754	110600036	BA				Medicine Lodge River	398	2.30	10.9	20.7	37.7	73.8
4759	110600036	BA				Medicine Lodge River	436	2.70	12.5	23.9	43.2	84.4
4762	110600036	BA				Medicine Lodge River	450	2.86	13.1	25.0	45.1	88.1
4765	HYDRO	BA				HYDRO	2.86	NA	NA	NA	NA	NA
4766	110600049039	BA				West Branch Little Sandy Creek	2.83	0	0	0	0	0
4780	11060003415	BA				Unnamed tributary, Barber 2	10.6	0	0	0	0	.01
4782	110600036	BA				Medicine Lodge River	472	3.08	14.1	26.8	48.2	94.5
4803	1106000317	BA				Sand Creek	16.1	0	.01	.44	.55	1.35
4806	110600036	BA				Medicine Lodge River	486	3.28	14.8	28.1	50.5	98.9
4822	110600036	BA				Medicine Lodge River	503	3.50	15.6	29.7	53.2	104
4827	110600036	BA				Medicine Lodge River	531	3.83	17.0	32.4	57.8	113

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 14)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
13	3.82	803	2,070	3,300	5,290	7,090	9,110
14	0	251	633	989	1,550	2,040	2,610
60	6.98	976	2,520	4,030	6,480	8,710	11,200
4539	4.99	461	1,290	2,160	3,590	4,930	6,480
4545	NA	NA	NA	NA	NA	NA	NA
4552	0	170	447	709	1,130	1,500	1,930
4553	4.76	786	1,970	3,100	4,890	6,500	8,290
4614	2.88	836	2,300	3,740	6,130	8,240	10,700
4616	4.49	683	1,710	2,700	4,260	5,650	7,200
4618	3.93	551	1,470	2,380	3,870	5,220	6,760
4631	9.59	967	2,400	3,780	5,970	7,930	10,100
4633	1.07	505	1,340	2,150	3,460	4,620	5,970
4647	1.76	611	1,640	2,650	4,290	5,730	7,430
4648	15.7	1,330	3,150	4,880	7,580	9,990	12,700
4656	NA	NA	NA	NA	NA	NA	NA
4669	2.69	832	2,210	3,550	5,720	7,640	9,890
4695	2.27	629	1,680	2,700	4,370	5,840	7,560
4703	NA	NA	NA	NA	NA	NA	NA
4715	8.52	607	1,650	2,720	4,490	6,120	8,000
4716	2.67	667	1,790	2,870	4,650	6,210	8,050
4717	19.8	1,500	3,510	5,380	8,290	10,900	13,700
4722	7.02	949	2,330	3,650	5,720	7,570	9,630
4723	36.6	1,880	4,370	6,720	10,400	13,700	17,400
4727	16.0	927	2,380	3,800	6,090	8,170	10,500
4728	2.59	708	1,950	3,180	5,200	7,000	9,120
4731	44.7	2,130	4,850	7,360	11,300	14,800	18,700
4752	1.29	532	1,450	2,340	3,800	5,090	6,610
4754	48.2	2,250	5,060	7,640	11,700	15,200	19,200
4759	54.2	2,400	5,340	8,020	12,200	15,800	19,900
4762	56.4	2,470	5,460	8,170	12,400	16,100	20,200
4765	NA	NA	NA	NA	NA	NA	NA
4766	0	251	638	1,000	1,580	2,080	2,660
4780	1.03	477	1,290	2,070	3,350	4,480	5,810
4782	59.9	2,560	5,620	8,390	12,700	16,400	20,600
4803	2.22	625	1,690	2,720	4,420	5,910	7,670
4806	62.4	2,590	5,670	8,440	12,700	16,500	20,700
4822	65.4	2,660	5,780	8,590	12,900	16,700	20,900
4827	70.3	2,740	5,920	8,760	13,100	16,900	21,200

72 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 14)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4830	1106000315	BA						Puckett Creek	16.0	0	0.01
4834	1106000313	BA				Bear Creek	36.0	.01	.36	1.48	2.68	5.21	
4850	11060003370	BA				Unnamed tributary, Barber 1	21.3	0	.32	1.04	1.63	3.24	
4857	110600036	BA				Medicine Lodge River	560	4.31	18.7	35.6	63.2	123	
4869	110600036	BA				Medicine Lodge River	582	4.64	20.0	37.9	67.1	131	
4903	110600033	BA				Elm Creek	183	1.42	5.71	11.1	20.4	40.2	
4904	110600036	BA				Medicine Lodge River	632	5.34	22.9	43.3	76.3	149	
4936	1106000318	BA				Bitter Creek	14.1	0	0	0	.01	.67	
4940	1106000322	BA				Antelope Creek	12.4	0	0	0	.01	.01	
4943	110600032	BA				Medicine Lodge River	822	8.80	35.5	65.2	110	213	
4954	1106000465	BA				East Branch Little Sandy Creek	31.0	.21	1.61	2.73	4.35	7.92	
4955	1106000439	BA				East Branch Little Sandy Creek	31.0	.21	1.61	2.73	4.35	7.92	
4962	110600049039	BA				West Branch Little Sandy Creek	41.5	0	1.23	2.42	4.23	8.41	
4970	1106000323	BA				Wilson Slough	3.82	0	0	0	0	0	
4972	1106000319	BA				Little Bear Creek	25.3	0	.02	.77	1.52	3.49	
4973	HYDRO	BA				HYDRO	4.19	NA	NA	NA	NA	NA	
5016	1106000320	BA				Cedar Creek	39.8	.01	.49	1.98	4.06	8.53	
5020	1106000323	BA				Wilson Slough	9.96	0	0	0	0	0	
5024	HYDRO	BA				HYDRO	10.5	NA	NA	NA	NA	NA	
5032	110600027	BA	CM			Mule Creek	155	.01	2.71	6.89	14.2	29.1	
5034	1106000221	BA	CM			Inman Creek	25.7	0	.11	.91	1.47	2.88	
5040	1106000467	BA	HP			West Sandy Creek	25.5	1.14	2.45	3.19	4.36	7.12	
5046	110600032	BA				Medicine Lodge River	850	9.38	37.6	68.9	116	224	
5047	HYDRO	BA				HYDRO	850	NA	NA	NA	NA	NA	
5088	HYDRO	BA				HYDRO	13.0	NA	NA	NA	NA	NA	
5089	1106000440	BA				Salty Creek	12.9	0	0	.53	.76	1.85	
5095	1106000323	BA				Wilson Slough	15.7	0	.01	.10	.17	.94	
5097	110600032	BA				Medicine Lodge River	861	9.60	38.5	70.3	118	228	
5105	1106000466	BA	HP			Spring Creek	18.2	.21	.59	.83	.93	2.00	
5106	1106000439	BA				Little Sandy Creek	86.3	1.08	3.61	6.63	11.9	23.0	
5112	1106000220	BA				Ash Creek	14.3	0	0	.01	.02	.04	
5113	110600027	BA	CM			Mule Creek	187	.19	3.54	9.02	18.6	38.2	
5129	1106000321	BA				Dry Creek	23.4	0	0	.56	1.23	3.25	
5131	110600025	BA				Big Sandy Creek	24.9	0	.01	.70	1.22	2.67	
5132	1106000222	BA				Deadman Creek	25.8	0	.01	.38	.70	1.89	
5151	110600039	BA				Little Mule Creek	23.7	0	.01	.54	1.05	2.69	
5153	110600039	BA				Little Mule Creek	22.6	0	0	.50	.94	2.46	
5190	110600028	BA	CM			Salt Fork Arkansas River	378	2.04	8.85	22.4	45.8	94.6	

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 14)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4830	1.84	580	1,590	2,590	4,230	5,680	7,390
4834	4.79	787	1,970	3,110	4,900	6,510	8,290
4850	3.43	756	2,040	3,290	5,340	7,140	9,270
4857	75.7	2,720	5,850	8,620	12,900	16,600	20,700
4869	79.9	2,800	5,970	8,770	13,000	16,800	20,900
4903	27.7	1,850	4,180	6,320	9,600	12,500	15,700
4904	89.6	3,000	6,280	9,140	13,500	17,200	21,300
4936	1.81	566	1,530	2,470	4,020	5,380	6,980
4940	1.13	572	1,510	2,420	3,880	5,170	6,680
4943	124	3,740	7,290	10,100	14,200	17,700	21,300
4954	6.38	959	2,190	3,310	5,010	6,480	8,060
4955	6.38	958	2,190	3,310	5,000	6,470	8,060
4962	7.23	1,030	2,410	3,680	5,620	7,330	9,190
4970	0	294	756	1,190	1,890	2,490	3,200
4972	3.73	766	2,120	3,450	5,660	7,620	9,930
4973	NA	NA	NA	NA	NA	NA	NA
5016	7.05	837	2,130	3,390	5,410	7,240	9,290
5020	1.00	513	1,340	2,140	3,430	4,550	5,870
5024	NA	NA	NA	NA	NA	NA	NA
5032	20.9	1,110	2,840	4,540	7,300	9,810	12,700
5034	3.21	719	2,020	3,330	5,490	7,420	9,710
5040	5.60	997	2,590	4,110	6,580	8,730	11,300
5046	129	3,790	7,310	10,100	14,100	17,400	20,900
5047	NA	NA	NA	NA	NA	NA	NA
5088	NA	NA	NA	NA	NA	NA	NA
5089	2.43	625	1,630	2,590	4,130	5,490	7,070
5095	2.16	668	1,770	2,830	4,550	6,060	7,830
5097	131	3,790	7,290	10,100	14,000	17,300	20,700
5105	2.91	820	2,110	3,350	5,330	7,060	9,090
5106	16.4	1,510	3,370	5,050	7,600	9,810	12,200
5112	1.00	499	1,400	2,290	3,760	5,070	6,620
5113	26.4	1,260	3,180	5,070	8,110	10,900	14,000
5129	3.71	783	2,130	3,440	5,600	7,510	9,760
5131	3.17	723	2,020	3,310	5,450	7,360	9,620
5132	2.82	713	2,010	3,310	5,470	7,400	9,690
5151	3.34	765	2,090	3,400	5,550	7,460	9,710
5153	3.16	743	2,030	3,300	5,390	7,230	9,410
5190	60.4	1,760	4,300	6,780	10,700	14,300	18,400

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

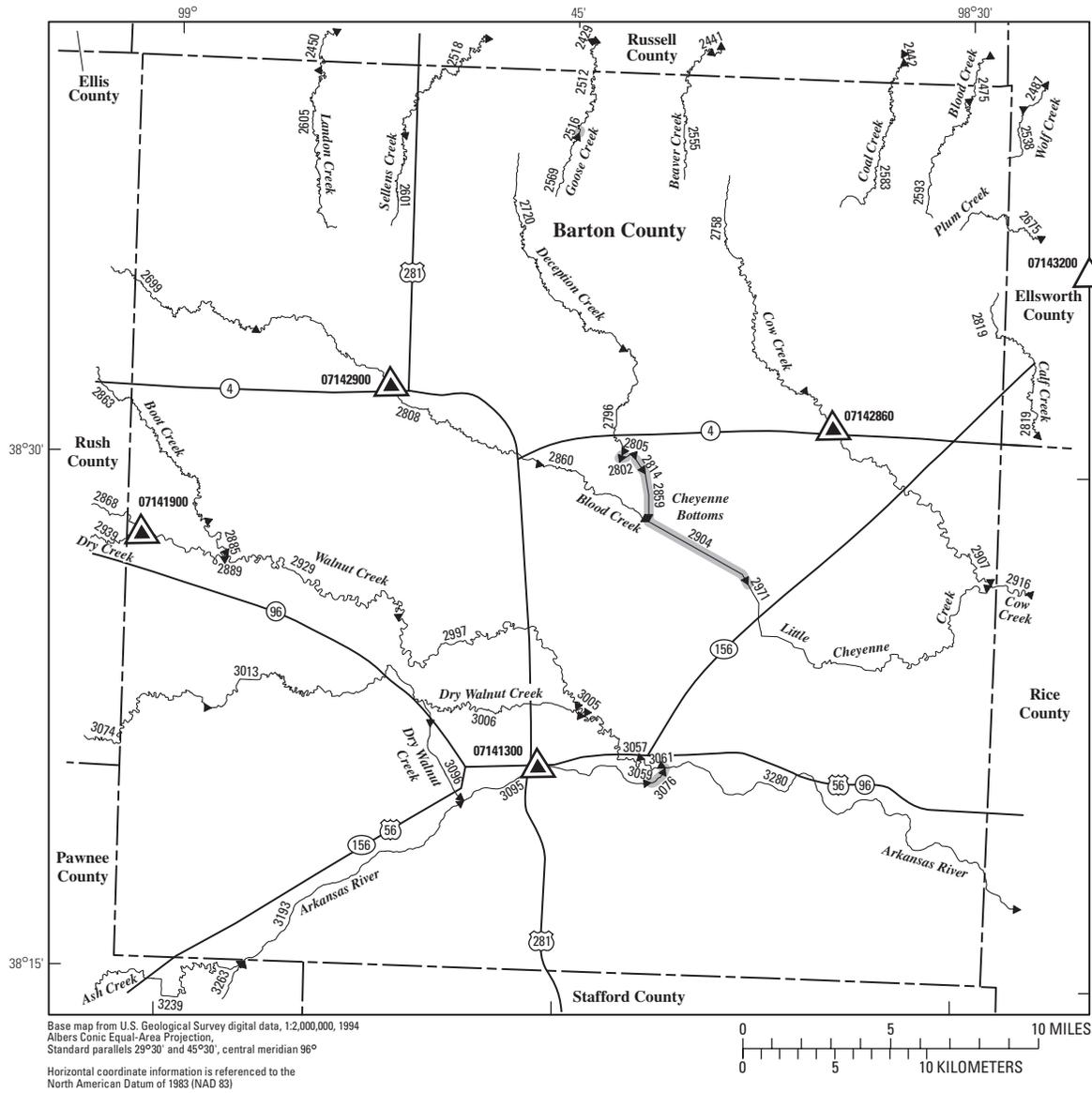
Determination site identification number (fig. 14)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
5191	110600027	BA				Mule Creek	215	0.41	4.24	10.8	22.3	45.9
5232	110600026	BA				Salt Fork Arkansas River	597	3.81	15.6	42.8	88.5	186
5249	1106000440	BA				Salty Creek	50.6	0	.46	1.88	4.39	10.7
5251	HYDRO	BA				HYDRO	52.7	NA	NA	NA	NA	NA
5311	110600025	BA				Big Sandy Creek	72.6	0	.71	2.69	5.79	12.3
5312	1106000440	BA	HP			Salty Creek	63.8	0	.60	2.23	5.36	13.3
5314	1106000228	BA	CM			Cave Creek	24.4	0	.01	.09	.22	1.11
5332	1106000223	BA				Hackberry Creek	37.5	0	.01	.60	1.50	4.00
5338	HYDRO	BA				HYDRO	38.1	NA	NA	NA	NA	NA
5347	110600026	BA				Salt Fork Arkansas River	653	4.29	17.5	49.0	101	213
5359	110600024	BA				Salt Fork Arkansas River	729	4.87	20.2	57.8	120	254
5360	1106000223	BA				Hackberry Creek	40.7	0	.02	.66	1.68	4.48
5363	110600039	BA				Little Mule Creek	105	0	1.26	4.13	9.86	23.4
5371	110600039	BA				Little Mule Creek	105	0	1.26	4.15	9.90	23.5
5377	110600032	BA				Medicine Lodge River	965	12.0	47.0	85.0	141	271
5381	1106000439	BA	HP			Little Sandy Creek	141	3.21	7.25	12.4	21.3	40.3

**Table 10.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barber County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

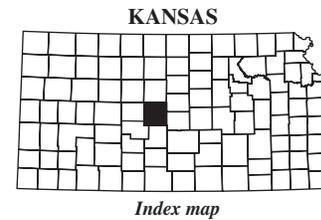
Determination site identification number (fig. 14)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5191	31.1	1,380	3,460	5,490	8,750	11,700	15,100
5232	113	2,610	6,120	9,480	14,800	19,600	25,000
5249	9.61	1,170	2,870	4,490	7,060	9,360	11,900
5251	NA	NA	NA	NA	NA	NA	NA
5311	9.91	1,090	2,730	4,310	6,830	9,110	11,700
5312	11.8	1,140	2,860	4,530	7,220	9,640	12,400
5314	2.32	655	1,870	3,090	5,130	6,960	9,140
5332	4.56	773	2,040	3,300	5,340	7,220	9,340
5338	NA	NA	NA	NA	NA	NA	NA
5347	129	2,640	6,230	9,660	15,100	20,000	25,600
5359	152	2,850	6,700	10,400	16,200	21,500	27,400
5360	4.97	788	2,090	3,390	5,500	7,450	9,660
5363	18.0	1,320	3,350	5,350	8,580	11,500	14,900
5371	18.1	1,320	3,350	5,350	8,590	11,500	14,900
5377	154	4,030	7,450	10,000	13,500	16,300	19,100
5381	26.9	1,730	3,790	5,630	8,410	10,800	13,400





**EXPLANATION**

- ◀ 3193 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07141300 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07143200 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- ▬ 3076 Lake and determination site identification number



**Figure 15.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Barton County.

**78 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 11.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barton County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 15)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2450	1026000631	BT	RS					Landon Creek	62.3	0
2475	1026000635	BT	EW	RS		Blood Creek	29.1	0	0	.64	1.56	4.29
2512	1026000639	BT	RS			Goose Creek	21.0	0	0	0	0	0
2516	HYDRO	BT				HYDRO	10.1	NA	NA	NA	NA	NA
2518	1026000632	BT	RS			Sellens Creek	37.0	0	0	0	.09	1.58
2538	1026000636	BT	EW			Wolf Creek	7.78	0	0	0	0	0
2555	1026000633	BT	RS			Beaver Creek	20.5	0	0	0	0	0
2569	1026000639	BT				Goose Creek	10.1	0	0	0	0	0
2583	1026000634	BT	RS			Coal Creek	30.2	0	0	.20	.65	2.61
2593	1026000635	BT				Blood Creek	13.2	0	0	0	0	0
2601	1026000632	BT				Sellens Creek	17.3	0	0	0	0	0
2605	1026000631	BT				Landon Creek	36.1	0	0	0	0	.19
2675	110300114	BT	EW			Plum Creek	30.5	0	0	0	.24	2.07
2699	1103001115	BT	RH			Blood Creek	32.4	0	0	0	0	0
2720	1103001113	BT				Deception Creek	40.3	0	0	.16	.61	2.76
2758	110300116	BT				Cow Creek	44.9	0	0	0	.17	2.17
2796	1103001113	BT				Deception Creek	55.1	0	0	.49	1.44	4.90
2802	HYDRO	BT				HYDRO	55.8	NA	NA	NA	NA	NA
2805	1103001113	BT				Deception Creek	57.0	0	0	.50	1.49	5.07
2808	1103001115	BT				Blood Creek	94.3	0	.10	.48	1.20	4.40
2814	HYDRO	BT				HYDRO	60.0	NA	NA	NA	NA	NA
2819	1103001116	BT	EW	RC		Calf Creek	36.6	0	0	0	.01	1.70
2859	HYDRO	BT				HYDRO	63.7	NA	NA	NA	NA	NA
2860	1103001115	BT				Blood Creek	109	0	.08	.62	1.61	6.79
2863	1103000815	BT	RH			Boot Creek	31.7	0	0	0	0	0
2868	110300082	BT	RH			Walnut Creek	1,640	0	0	1.88	20.4	53.4
2885	1103000815	BT				Boot Creek	34.2	0	0	0	0	0
2889	110300082	BT				Walnut Creek	1,690	0	0	2.30	23.0	61.4
2904	HYDRO	BT				HYDRO	195	NA	NA	NA	NA	NA
2907	110300116	BT				Cow Creek	90.8	0	0	.13	.80	4.40
2916	110300115	BT	RC			Cow Creek	349	.45	2.33	4.45	11.4	52.4
2929	110300082	BT				Walnut Creek	1,760	.30	.55	3.39	25.6	68.2
2939	1103000814	BT	RH			Dry Creek	44.9	0	0	0	0	.57
2971	110300117	BT				Little Cheyenne Creek	251	.03	1.17	2.44	6.55	31.9
2997	110300082	BT				Walnut Creek	1,790	.47	.86	4.01	27.1	71.9
3005	110300082	BT				Walnut Creek	1,790	.47	.86	4.02	27.1	71.9
3006	1103000813	BT				Dry Walnut Creek	9.94	0	0	0	0	0
3013	110300049013	BT				Dry Walnut Creek	132	0	0	.83	2.62	7.97

**Table 11.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barton County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 15)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2450	5.75	777	2,150	3,570	5,930	8,150	10,700
2475	4.77	946	2,540	4,100	6,640	8,880	11,500
2512	1.70	703	1,930	3,130	5,110	6,860	8,930
2516	NA	NA	NA	NA	NA	NA	NA
2518	3.39	532	1,530	2,580	4,360	6,030	7,980
2538	.41	445	1,160	1,840	2,940	3,900	5,020
2555	1.69	705	1,920	3,110	5,070	6,810	8,850
2569	.25	457	1,240	1,990	3,230	4,320	5,600
2583	3.87	789	2,060	3,310	5,330	7,180	9,260
2593	1.18	579	1,540	2,470	3,990	5,320	6,880
2601	.86	587	1,630	2,660	4,350	5,860	7,650
2605	2.41	515	1,490	2,520	4,260	5,910	7,830
2675	3.69	657	1,230	1,690	2,370	2,950	3,580
2699	1.62	495	1,400	2,340	3,920	5,400	7,110
2720	4.15	595	1,660	2,770	4,610	6,330	8,320
2758	4.23	548	1,570	2,650	4,500	6,250	8,320
2796	5.92	642	1,800	3,020	5,050	6,960	9,180
2802	NA	NA	NA	NA	NA	NA	NA
2805	6.08	658	1,840	3,080	5,150	7,090	9,360
2808	7.09	955	2,320	3,570	5,540	7,270	9,220
2814	NA	NA	NA	NA	NA	NA	NA
2819	3.61	693	1,880	3,090	5,090	6,940	9,070
2859	NA	NA	NA	NA	NA	NA	NA
2860	8.58	976	2,380	3,680	5,750	7,580	9,660
2863	1.50	420	1,250	2,150	3,690	5,150	6,870
2868	42.9	1,230	2,720	4,040	6,080	7,850	9,840
2885	1.70	404	1,220	2,100	3,620	5,080	6,790
2889	48.9	1,310	2,850	4,200	6,250	8,010	9,970
2904	NA	NA	NA	NA	NA	NA	NA
2907	7.02	556	1,580	2,680	4,610	6,480	8,760
2916	34.8	1,400	3,460	5,460	8,770	11,900	15,500
2929	53.5	1,360	2,980	4,420	6,610	8,510	10,600
2939	2.65	543	1,570	2,660	4,510	6,250	8,280
2971	23.4	1,220	3,030	4,790	7,670	10,300	13,500
2997	56.0	1,340	2,940	4,360	6,540	8,420	10,600
3005	56.0	1,330	2,920	4,330	6,490	8,360	10,500
3006	0	461	1,240	1,990	3,230	4,310	5,580
3013	9.37	783	2,270	3,860	6,590	9,200	12,300

**Table 11.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barton County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

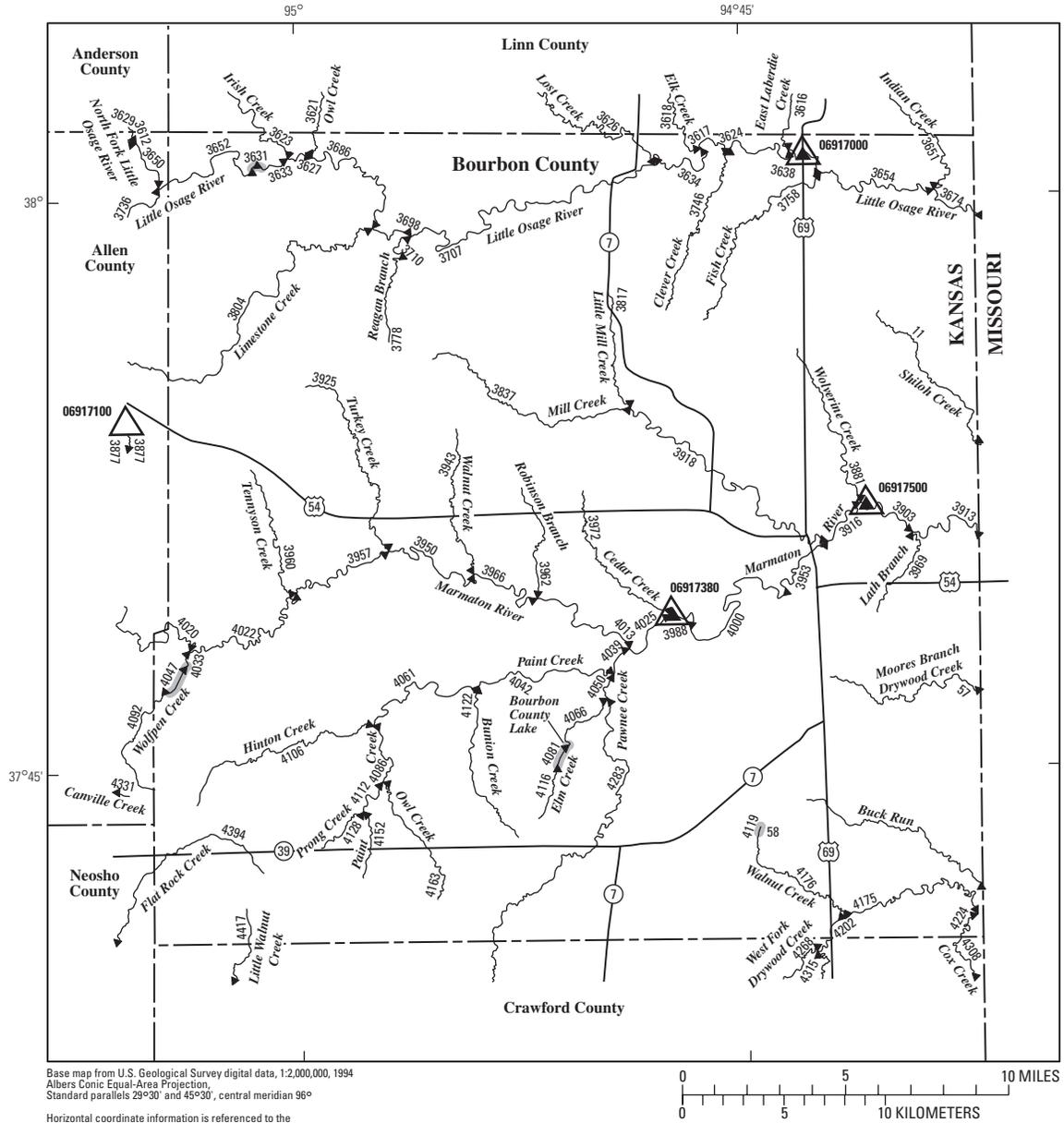
Determination site identification number (fig. 15)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
3057	110300081	BT				Walnut Creek	1,810	0.61	1.10	4.47	28.1	74.3
3059	110300042	BT				Arkansas River	31,700	30.6	41.6	55.3	117	274
3061	110300081	BT				Walnut Creek	1,810	.62	1.12	4.51	28.1	74.5
3074	110300049013	BT	PN	RH		Dry Walnut Creek	98.4	0	0	.32	1.36	4.81
3076	HYDRO	BT				HYDRO	31,700	NA	NA	NA	NA	NA
3095	110300042	BT				Arkansas River	31,700	2.60	6.90	41.0	150	356
3096	110300049013	BT				Dry Walnut Creek	140	0	0	1.11	3.18	9.05
3193	110300042	BT				Arkansas River	31,500	2.50	6.68	40.5	148	348
3239	110300043	BT	PN			Ash Creek	136	0	0	.82	2.20	6.29
3263	110300044	BT	PN			Arkansas River	31,200	2.38	6.39	39.9	145	337
3280	110300041	BT	RC			Arkansas River	33,600	41.7	68.7	140	303	681

**Table 11.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Barton County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

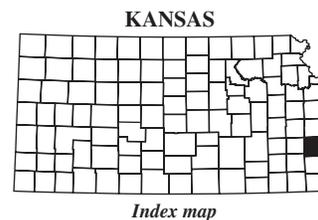
Determination site identification number (fig. 15)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3057	57.6	1,330	2,920	4,320	6,470	8,340	10,400
3059	178	5,510	13,300	21,200	34,500	47,200	62,700
3061	57.7	1,330	2,900	4,300	6,440	8,300	10,400
3074	6.57	721	2,090	3,550	6,060	8,440	11,300
3076	NA	NA	NA	NA	NA	NA	NA
3095	172	2,960	7,570	15,000	22,500	29,500	36,900
3096	10.1	774	2,230	3,790	6,450	8,990	12,000
3193	168	2,840	7,340	14,700	22,200	29,300	37,000
3239	7.87	567	1,700	2,930	5,060	7,100	9,540
3263	163	2,680	7,040	14,200	21,700	29,000	37,100
3280	328	3,550	8,060	15,200	22,300	29,100	36,300





**EXPLANATION**

- ← 4394 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 06917500 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 07143200 △ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 4047 **Lake and determination site identification number**



**Figure 16.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Bourbon County.

**84 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 12.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Bourbon County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 16)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		11	1029010436	BB						Shiloh Creek	16.6	0
57	1029010417	BB				Moore's Branch Drywood Creek	24.8	0	.25	2.99	10.9	31.5
58	1029010446	BB				Buck Run	23.1	0	.10	2.49	9.40	27.6
3616	1029010313	BB	LN			East Laberdie Creek	17.1	0	0	1.99	7.31	21.1
3617	102901033	BB				Little Osage River	261	.17	2.93	28.6	114	349
3618	1029010311	BB	LN			Elk Creek	25.7	0	.26	3.33	12.2	35.0
3621	102901039	BB	LN			Owl Creek	8.93	0	0	1.35	4.79	13.4
3623	10290103202	BB	LN			Irish Creek	19.1	0	0	1.63	6.74	20.9
3624	102901033	BB				Little Osage River	274	.17	2.89	29.9	120	368
3626	1029010310	BB	LN			Lost Creek	27.8	0	.19	3.25	12.4	36.3
3627	102901033	BB				Little Osage River	114	0	1.51	1.8	42.0	128
3631	HYDRO	BB				HYDRO	92.8	NA	NA	NA	NA	NA
3633	102901033	BB				Little Osage River	94.4	0	1.35	9.22	35.2	106
3634	102901033	BB				Little Osage River	234	.13	2.84	25.4	101	308
3638	102901033	BB				Little Osage River	293	.20	2.90	32.0	129	396
3651	1029010312	BB	LN			Indian Creek	29.9	0	.33	3.31	12.1	35.4
3654	102901033	BB				Little Osage River	319	.43	3.49	34.7	139	429
3674	102901033	BB				Little Osage River	356	.77	4.35	38.7	153	475
3686	102901033	BB				Little Osage River	133	0	1.85	13.3	51.8	158
3698	102901033	BB				Little Osage River	169	0	2.22	17.2	67.5	206
3707	102901033	BB				Little Osage River	204	.08	2.76	22.3	87.1	265
3710	102901036	BB				Reagan Branch	8.87	0	.42	2.44	7.13	17.4
3746	102901037	BB				Clever Creek	1.2	0	0	.82	3.78	12.1
3758	102901038	BB				Fish Creek	17.2	0	0	1.88	7.20	21.2
3778	102901036	BB				Reagan Branch	8.40	0	.43	2.41	6.95	16.8
3817	1029010434	BB				Little Mill Creek	13.6	0	0	1.83	6.83	19.5
3837	102901046	BB				Mill Creek	2.2	0	.18	2.85	10.3	29.2
3881	1029010435	BB				Wolverine Creek	19.7	0	0	2.04	7.83	23.2
3903	102901047	BB				Marmaton River	399	1.00	2.70	31.0	130	446
3913	102901045	BB				Marmaton River	417	1.18	3.18	33.3	138	472
3916	102901047	BB				Marmaton River	376	.88	3.07	34.0	138	454
3918	102901046	BB				Mill Creek	56.5	0	1.07	6.84	25.2	74.0
3925	1029010433	BB				Turkey Creek	19.8	0	.46	3.45	11.5	30.7
3943	1029010432	BB				Walnut Creek	11.0	0	0	1.14	4.70	14.3
3950	1029010412	BB				Marmaton River	123	.03	2.71	17.0	60.9	176
3953	102901047	BB				Marmaton River	317	.59	3.90	41.1	154	467
3957	1029010412	BB				Marmaton River	96.4	0	2.21	13.2	46.9	135
3960	1029010431	BB				Tennyson Creek	16.9	0	.58	3.52	11.0	28.4

**Table 12.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Bourbon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 16)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
11	16.2	2,390	4,680	6,580	9,400	11,700	14,300
57	23.9	3,050	6,000	8,470	12,100	15,100	18,500
58	21.7	2,980	5,830	8,210	11,700	14,600	17,900
3616	16.4	2,330	4,600	6,500	9,330	11,600	14,200
3617	213	8,860	15,400	20,800	28,700	35,400	42,900
3618	25.6	2,920	5,840	8,290	12,000	14,900	18,400
3621	9.97	1,560	3,060	4,300	6,150	7,650	9,340
3623	17.0	2,390	4,780	6,790	9,790	12,200	15,000
3624	223	8,720	15,100	20,400	28,200	34,900	42,400
3626	26.8	3,040	6,090	8,660	12,500	15,600	19,200
3627	89.0	8,590	15,100	20,400	28,000	34,200	40,900
3631	NA	NA	NA	NA	NA	NA	NA
3633	74.7	7,600	13,500	18,400	25,300	31,000	37,100
3634	191	8,690	15,300	20,700	28,600	35,400	42,800
3638	238	8,560	14,800	19,900	27,500	34,000	41,400
3651	27.0	3,250	6,500	9,240	13,300	16,700	20,500
3654	257	8,870	15,400	20,700	28,600	35,400	43,100
3674	284	9,610	16,600	22,300	30,700	38,000	46,200
3686	106	8,660	15,300	20,700	28,500	35,000	41,900
3698	135	9,420	16,400	22,200	30,400	37,300	44,800
3707	167	8,560	15,100	20,600	28,500	35,100	42,500
3710	11.4	1,590	3,100	4,350	6,200	7,700	9,400
3746	10.2	1,760	3,420	4,800	6,840	8,500	10,400
3758	16.7	2,390	4,720	6,650	9,520	11,900	14,500
3778	11.0	1,540	3,000	4,210	6,000	7,450	9,080
3817	14.7	2,070	4,070	5,730	8,180	10,200	12,400
3837	21.3	2,600	5,160	7,290	10,500	13,100	16,000
3881	18.5	2,610	5,150	7,270	10,400	13,000	15,900
3903	288	11,800	22,900	32,100	45,600	56,900	69,300
3913	302	11,900	23,200	32,500	46,100	57,600	70,100
3916	292	12,800	23,900	33,100	46,500	57,800	70,200
3918	52.4	5,200	9,680	13,400	18,700	23,100	27,800
3925	21.5	2,560	5,080	7,180	10,300	12,900	15,800
3943	11.5	1,840	3,600	5,050	7,200	8,940	10,900
3950	117	8,760	15,100	20,100	27,400	33,500	40,100
3953	300	14,900	26,000	35,000	48,100	59,200	71,300
3957	90.9	7,360	12,700	17,000	23,100	28,300	33,800
3960	19.3	2,320	4,600	6,490	9,320	11,600	14,200

**Table 12.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Bourbon County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

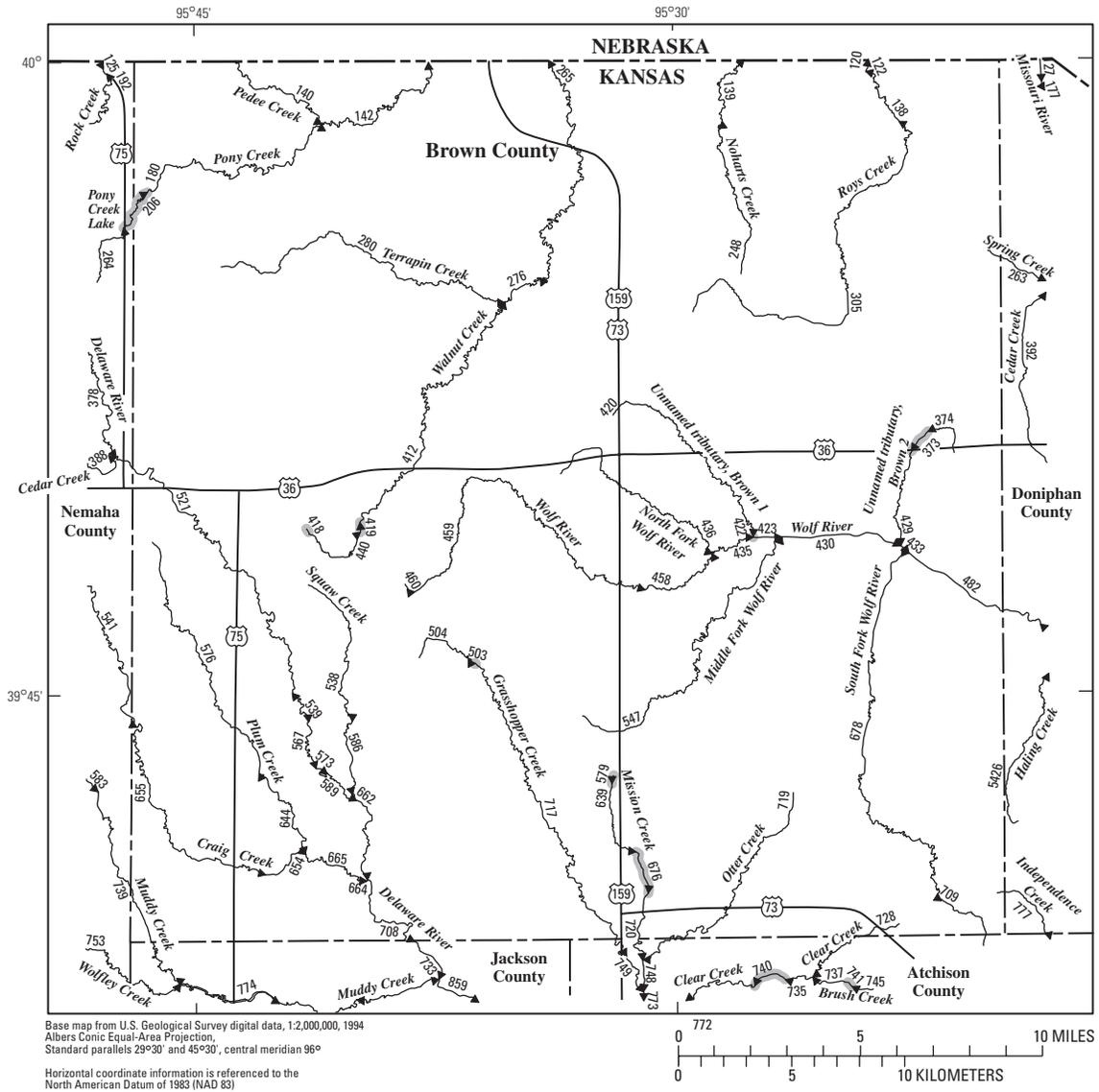
Determination site identification number (fig. 16)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3962	1029010440	BB						Robinson Branch	7.46	0
3966	1029010412	BB				Marmaton River	138	.06	2.82	18.7	67.6	197
3969	1029010442	BB				Lath Branch	9.72	0	.15	1.83	5.81	15.2
3972	1029010441	BB				Cedar Creek	13.6	0	0	1.30	5.41	16.5
3988	1029010411	BB				Marmaton River	298	.46	4.08	43.0	159	470
4000	102901048	BB				Marmaton River	313	.56	3.95	41.5	156	469
4013	1029010412	BB				Marmaton River	150	.10	2.92	20.2	73.2	214
4022	1029010412	BB				Marmaton River	72.1	0	1.58	9.48	33.6	96.3
4025	1029010411	BB				Marmaton River	283	.45	4.04	40.6	150	443
4033	1029010437	BB				Wolfpen Creek	14.7	0	.14	2.27	7.74	21.2
4039	1029010413	BB				Paint Creek	129	0	2.06	15.5	58.9	177
4042	1029010414	BB				Paint Creek	75.0	0	.83	7.83	31.1	95.6
4047	HYDRO	BB				HYDRO	14.3	NA	NA	NA	NA	NA
4050	10290104313	BB				Pawnee Creek	53.6	0	1.19	7.33	26.2	74.5
4061	1029010414	BB				Paint Creek	55.9	0	.50	5.73	22.9	70.3
4066	1029010415	BB				Elm Creek	7.99	0	0	.86	3.41	10.2
4081	HYDRO	BB				HYDRO	5.09	NA	NA	NA	NA	NA
4086	1029010414	BB				Paint Creek	27.8	0	0	2.29	10.2	32.6
4106	1029010438	BB				Hinton Creek	17.7	0	.20	2.69	9.42	26.0
4112	1029010414	BB				Paint Creek	13.3	0	0	1.06	5.02	16.2
4116	1029010415	BB				Elm Creek	4.21	0	0	.20	1.30	4.78
4119	HYDRO	BB				HYDRO	6.22	NA	NA	NA	NA	NA
4122	1029010439	BB				Bunion Creek	11.5	0	0	.94	4.53	14.6
4128	1029010444	BB				Prong Creek	5.30	0	0	.34	1.90	6.50
4152	1029010414	BB				Paint Creek	6.54	0	0	.28	1.99	7.32
4163	1029010445	BB				Owl Creek	11.3	0	0	.67	3.68	12.5
4175	1029010419	BB				West Fork Drywood Creek	84.9	0	2.31	11.7	41.8	121
4176	1029010447	BB				Walnut Creek	18.3	0	.21	2.65	9.37	26.0
4202	1029010419	BB	CR			West Fork Drywood Creek	58.6	0	1.74	8.95	31.5	88.4
4224	10290104324	BB	CR			Cox Creek	45.2	.02	1.84	8.10	26.3	69.7
4283	10290104313	BB	CR			Pawnee Creek	44.8	0	1.05	6.44	22.7	63.6
4394	1107020514	BB	NO			Flat Rock Creek	41.2	0	.52	4.30	16.3	48.5
4417	1107020546	BB	CR	NO		Little Walnut Creek	30.0	0	0	2.25	10.0	32.4

**Table 12.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Bourbon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

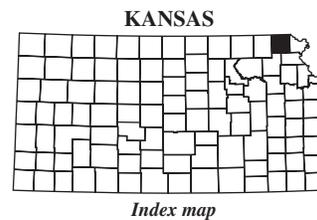
Determination site identification number (fig. 16)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3962	7.18	1,480	2,870	4,000	5,680	7,030	8,560
3966	131	9,440	16,200	21,700	29,600	36,300	43,400
3969	11.1	1,750	3,390	4,740	6,740	8,350	10,200
3972	13.5	2,110	4,120	5,790	8,260	10,300	12,500
3988	302	16,100	27,400	36,400	49,700	60,800	73,000
4000	301	15,300	26,600	35,600	48,800	60,000	72,200
4013	142	9,720	16,800	22,500	30,800	37,800	45,400
4022	66.9	5,960	10,400	13,900	19,000	23,200	27,700
4025	285	16,600	27,900	36,900	50,000	61,100	73,200
4033	15.6	2,170	4,260	6,000	8,590	10,700	13,100
4039	122	10,200	17,600	23,700	32,300	39,400	47,100
4042	69.8	7,270	13,100	17,900	24,900	30,600	36,700
4047	NA	NA	NA	NA	NA	NA	NA
4050	52.7	6,640	11,500	15,400	20,800	25,200	29,800
4061	52.4	7,140	12,700	17,200	23,600	28,900	34,400
4066	8.42	1,590	3,060	4,260	6,020	7,450	9,060
4081	NA	NA	NA	NA	NA	NA	NA
4086	26.3	3,280	6,470	9,140	13,100	16,300	20,000
4106	19.0	2,460	4,830	6,810	9,740	12,100	14,800
4112	13.4	2,120	4,130	5,780	8,230	10,200	12,500
4116	4.47	1,100	2,080	2,880	4,050	4,990	6,040
4119	NA	NA	NA	NA	NA	NA	NA
4122	12.1	1,960	3,790	5,300	7,530	9,340	11,400
4128	5.73	1,240	2,360	3,280	4,630	5,720	6,940
4152	6.72	1,410	2,710	3,760	5,310	6,570	7,980
4163	11.1	1,950	3,770	5,270	7,490	9,280	11,300
4175	81.8	7,510	13,000	17,500	23,700	28,800	34,100
4176	19.3	2,610	5,080	7,130	10,200	12,600	15,400
4202	60.0	8,040	13,300	17,500	23,200	27,800	32,500
4224	47.1	4,310	7,730	10,500	14,400	17,600	20,900
4283	45.0	6,030	10,500	14,000	18,900	22,900	27,100
4394	36.9	5,470	9,810	13,300	18,300	22,300	26,600
4417	26.7	4,590	8,570	11,900	16,600	20,500	24,600





**EXPLANATION**

- ← 774 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07141300 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07143200 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 676 Lake and determination site identification number



**Figure 17.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Brown County.

90 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 13.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Brown County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 17)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		120	NRTribal	BR						Roys Creek	52.7	0
122	NRTribal	BR				Roys Creek	52.6	0	2.34	8.52	23.6	58.8
138	NRTribal	BR				Roys Creek	51.1	0	2.27	8.29	23.0	57.3
139	NRTribal	BR				Noharts Creek	22.2	0	1.17	3.95	9.99	23.6
140	1024000841	BR				Pedee Creek	13.2	0	.14	1.47	4.00	10.4
142	1024000838	BR				Pony Creek	52.2	0	.71	4.48	14.7	41.6
180	1024000838	BR				Pony Creek	24.3	0	0	1.59	6.11	18.8
206	HYDRO	BR	NM			HYDRO	10.5	NA	NA	NA	NA	NA
248	1024000842	BR				Noharts Creek	14.3	0	.75	2.65	6.53	15.4
263	1024000565	BR	DP			Spring Creek	9.30	.10	1.03	2.51	5.32	11.4
265	1024000839	BR				Walnut Creek	105	0	1.70	8.66	29.6	88.1
276	1024000839	BR				Walnut Creek	74.6	0	.65	5.27	19.6	60.8
280	10240008308	BR				Terrapin Creek	37.3	0	0	1.91	8.08	26.6
305	1024000840	BR				Roys Creek	46.2	0	2.01	7.43	20.6	51.5
373	HYDRO	BR				HYDRO	9.60	NA	NA	NA	NA	NA
374	1024000555	BR				Unnamed tributary, Brown 2	6.36	.12	.66	1.60	3.29	7.24
412	1024000839	BR				Walnut Creek	35.0	0	.19	3.14	11.2	33.1
418	HYDRO	BR				HYDRO	5.20	NA	NA	NA	NA	NA
419	HYDRO	BR				HYDRO	9.36	NA	NA	NA	NA	NA
420	10240005240	BR				Unnamed tributary, Brown 1	20.5	0	.94	3.86	10.5	25.5
422	HYDRO	BR				HYDRO	20.5	NA	NA	NA	NA	NA
423	1024000556	BR				Wolf River	64.7	0	2.09	8.85	27.0	71.9
429	1024000555	BR				Unnamed tributary, Brown 2	17.3	0	1.16	3.84	9.60	22.2
430	1024000556	BR				Wolf River	99.2	.05	3.10	13.0	40.2	110
433	1024000554	BR				Wolf River	117	.30	3.83	15.6	47.8	130
435	1024000556	BR				Wolf River	43.7	0	1.26	5.87	18.0	48.0
436	1024000566	BR				North Fork Wolf River	12.2	0	.39	2.12	5.75	14.3
440	1024000839	BR				Walnut Creek	9.03	0	0	.26	1.85	7.09
458	1024000556	BR				Wolf River	30.6	0	.76	4.12	12.6	33.6
459	1024000556	BR				Wolf River	27.0	0	.50	3.36	10.6	28.6
460	1024000556	BR				Wolf River	2.06	0	0	0	0	0
482	1024000553	BR	DP			Wolf River	168	.79	5.36	21.9	67.5	187
503	HYDRO	BR				HYDRO	7.08	NA	NA	NA	NA	NA
504	1027010320	BR				Grasshopper Creek	6.99	0	0	0	.75	4.28
521	1027010323	BR	NM			Delaware River	48.3	.05	.30	3.48	12.6	38.5
538	1027010338	BR				Squaw Creek	8.47	0	0	0.16	1.52	6.23
539	1027010323	BR				Delaware River	49.1	.05	.33	3.60	13.0	39.5
541	1027010324	BR	NM			Craig Creek	27.6	.02	.04	1.72	6.76	21.3

**Table 13.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Brown County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRtribal, tribal stream]

Determination site identification number (fig. 17)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
120	37.9	3,440	6,840	9,750	14,000	17,600	21,500
122	37.8	3,450	6,860	9,770	14,000	17,600	21,500
138	36.9	3,390	6,750	9,630	13,800	17,400	21,200
139	16.0	1,790	3,940	5,830	8,730	11,200	14,000
140	8.16	1,220	2,700	4,010	6,030	7,720	9,650
142	30.4	3,800	7,840	11,400	16,700	21,200	26,100
180	15.0	1,770	3,960	5,910	8,920	11,400	14,400
206	NA	NA	NA	NA	NA	NA	NA
248	10.7	1,410	3,060	4,500	6,710	8,540	10,600
263	7.66	1,130	2,410	3,520	5,210	6,600	8,190
265	62.0	4,080	8,740	13,000	19,400	25,100	31,300
276	45.2	4,430	9,320	13,700	20,300	26,100	32,400
280	21.9	4,460	9,090	13,100	19,100	24,200	29,700
305	33.6	3,380	6,710	9,530	13,700	17,200	20,900
373	NA	NA	NA	NA	NA	NA	NA
374	5.22	935	1,970	2,850	4,180	5,280	6,530
412	24.5	2,940	6,290	9,280	13,800	17,700	22,000
418	NA	NA	NA	NA	NA	NA	NA
419	NA	NA	NA	NA	NA	NA	NA
420	17.0	1,850	3,990	5,850	8,690	11,100	13,800
422	NA	NA	NA	NA	NA	NA	NA
423	47.3	4,220	8,340	11,900	17,000	21,400	26,100
429	14.6	1,670	3,590	5,260	7,800	9,910	12,300
430	70.5	5,310	10,300	14,600	21,000	26,300	32,100
433	82.0	5,860	11,300	15,900	22,600	28,300	34,400
435	32.7	3,340	6,750	9,690	14,000	17,700	21,700
436	10.2	1,380	2,940	4,290	6,320	8,010	9,940
440	6.49	1,110	2,370	3,460	5,110	6,480	8,040
458	23.4	2,740	5,640	8,150	11,900	15,100	18,500
459	20.5	2,190	4,740	6,970	10,400	13,200	16,500
460	.74	484	997	1,430	2,070	2,600	3,190
482	115	6,880	13,200	18,500	26,400	33,100	40,300
503	NA	NA	NA	NA	NA	NA	NA
504	4.69	998	2,100	3,040	4,460	5,630	6,960
521	29.5	3,580	7,560	11,100	16,500	21,100	26,200
538	5.97	1,100	2,320	3,380	4,970	6,290	7,800
539	30.1	3,500	7,420	10,900	16,200	20,800	25,900
541	17.2	1,990	4,400	6,530	9,810	12,600	15,700

**Table 13.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Brown County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

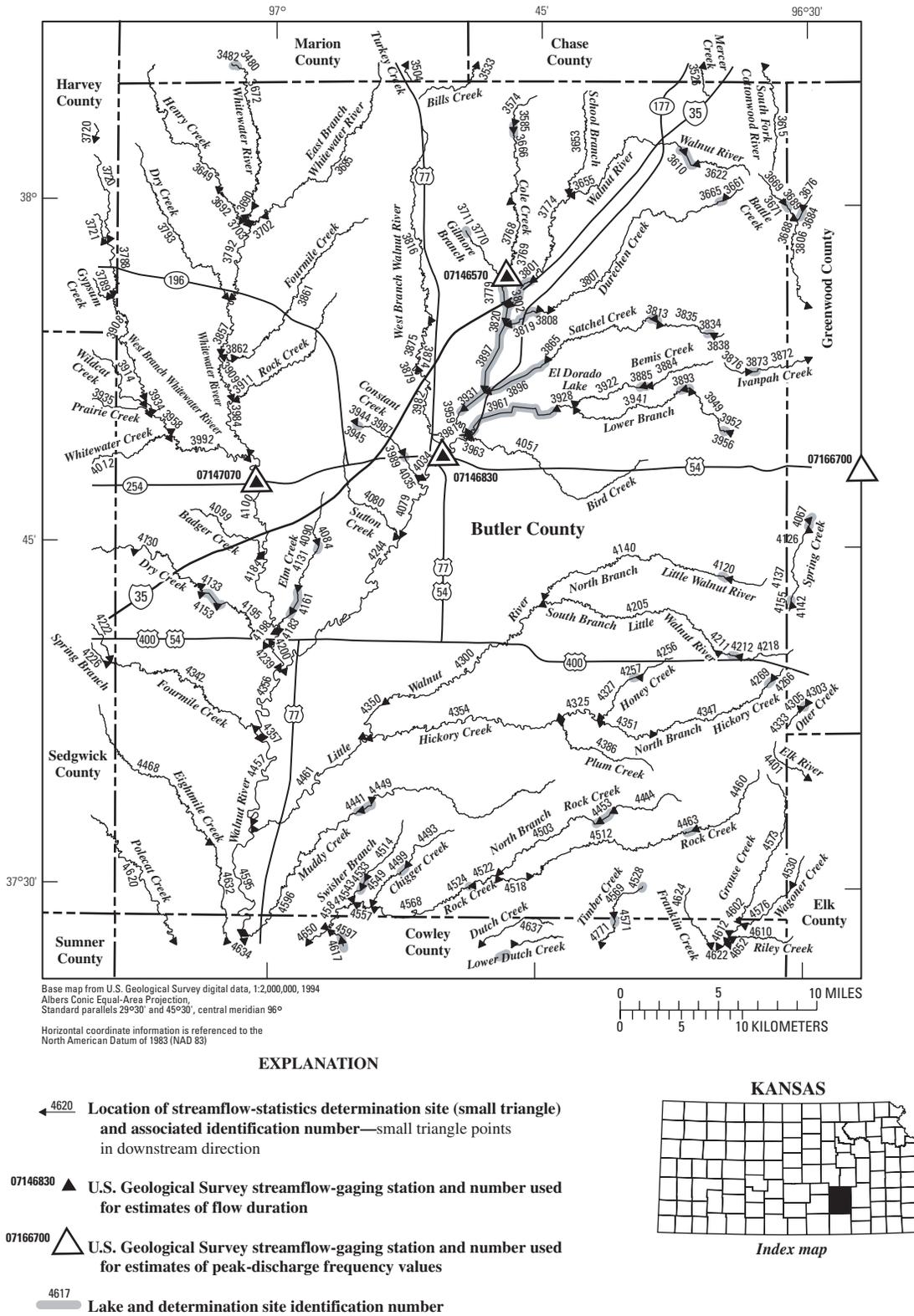
Determination site identification number (fig. 17)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		547	1024000567	BR						Middle Fork Wolf River	27.4	0
567	NRTribal	BR				Delaware River	50.7	.06	.41	3.82	13.6	41.2
573	NRTribal	BR				Delaware River	51.0	.06	.42	3.86	13.7	41.5
576	1027010336	BR				Plum Creek	16.8	.01	.01	1.11	4.48	14.2
579	HYDRO	BR				HYDRO	2.49	NA	NA	NA	NA	NA
586	NRTribal	BR				Squaw Creek	12.8	0	.01	.83	3.55	11.5
589	NRTribal	BR				Delaware River	52.4	.06	.49	4.05	14.3	43.1
639	1027010340	BR				Mission Creek	6.24	0	0	.07	1.15	5.00
644	NRTribal	BR				Plum Creek	2.7	.01	.02	1.67	6.16	18.5
654	NRTribal	BR				Craig Creek	45.3	.04	.25	3.44	12.6	38.4
655	1027010324	BR				Craig Creek	42.7	.04	.16	3.12	11.6	35.6
662	NRTribal	BR				Delaware River	71.9	.11	.99	5.82	20.3	61.2
664	1027010324	BR				Craig Creek	68.6	.10	.86	5.49	19.4	59.1
665	NRTribal	BR				Plum Creek	68.6	.10	.86	5.49	19.4	59.1
676	HYDRO	BR				HYDRO	10.2	NA	NA	NA	NA	NA
678	1024000557	BR				South Fork Wolf River	36.8	0	.97	5.06	15.7	41.9
708	NRTribal	BR				Delaware River	149	.48	3.14	12.7	42.2	129
709	1024000557	BR				South Fork Wolf River	4.63	0	0	0	.27	2.67
733	1027010322	BR	JA			Delaware River	153	.51	3.30	13.2	43.5	133
739	1027010326	BR	JA	NM		Muddy Creek	42.7	.04	.24	3.33	12.1	36.4

**Table 13.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Brown County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NR Tribal, tribal stream]

Determination site identification number (fig. 17)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
547	21.8	2,230	4,810	7,070	10,500	13,400	16,700
567	31.2	3,450	7,320	10,800	16,100	20,600	25,700
573	31.4	3,460	7,350	10,800	16,100	20,700	25,700
576	11.7	1,590	3,440	5,050	7,500	9,550	11,900
579	NA	NA	NA	NA	NA	NA	NA
586	9.55	1,400	2,990	4,360	6,440	8,170	10,100
589	32.4	3,470	7,360	10,800	16,100	20,700	25,800
639	4.81	940	1,970	2,850	4,170	5,260	6,500
644	14.6	1,800	3,910	5,740	8,540	10,900	13,600
654	29.1	3,210	6,910	10,200	15,300	19,800	24,600
655	27.2	3,130	6,760	10,000	15,000	19,400	24,200
662	44.8	4,180	8,690	12,700	18,700	24,000	29,700
664	43.3	4,280	8,870	12,900	19,100	24,400	30,200
665	43.3	4,280	8,860	12,900	19,100	24,400	30,200
676	NA	NA	NA	NA	NA	NA	NA
678	28.6	3,020	6,200	8,960	13,100	16,500	20,300
708	89.5	6,550	12,800	18,100	26,200	33,100	40,600
709	3.21	788	1,640	2,370	3,460	4,360	5,380
733	91.7	6,590	12,800	18,200	26,200	33,000	40,600
739	27.4	3,170	6,810	10,100	15,100	19,400	24,200





**Figure 18.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Butler County.

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equalled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3526	11070203716	BU	CS					Mercer Creek	20.0	0
3533	1107020230	BU	CS			Bills Creek	21.8	.09	.24	1.47	4.41	12.3
3574	1103001715	BU				Cole Creek	10.8	0	.01	.09	.51	3.10
3585	HYDRO	BU				HYDRO	11.9	NA	NA	NA	NA	NA
3610	HYDRO	BU				HYDRO	10.3	NA	NA	NA	NA	NA
3615	1107020310	BU	CS			South Fork Cottonwood River	15.3	0	0	.99	3.43	10.3
3622	1103001714	BU				Walnut River	7.75	0	0	0	0	.80
3649	1103001733	BU	MN			Henry Creek	29.7	.03	.05	.38	2.25	9.23
3653	1103001745	BU				School Branch	16.6	0	0	.02	1.05	5.36
3655	1103001714	BU				Walnut River	30.3	0	0	.48	2.59	10.1
3661	1103001712	BU				Durechen Creek	3.67	0	0	0	0	.75
3665	HYDRO	BU				HYDRO	4.41	NA	NA	NA	NA	NA
3666	1103001715	BU				Cole Creek	26.0	0	.04	1.11	3.33	9.94
3669	1107010218	BU				Battle Creek	4.30	0	0	.18	.62	2.44
3671	HYDRO	BU	GW			HYDRO	4.49	NA	NA	NA	NA	NA
3672	1103001723	BU	MN			Whitewater River	44.7	.06	.12	1.00	4.21	15.2
3685	1103001722	BU	MN			East Branch Whitewater River	37.4	.04	.08	.87	3.83	13.9
3690	1103001723	BU				Whitewater River	45.1	.06	.12	1.03	4.30	15.4
3692	1103001733	BU				Henry Creek	34.6	.04	.07	.71	3.20	11.8
3702	1103001722	BU				East Branch Whitewater River	38.5	.05	.09	.97	4.10	14.6
3703	1103001723	BU				Whitewater River	79.7	.20	.38	2.59	8.91	29.5
3711	HYDRO	BU				HYDRO	4.35	NA	NA	NA	NA	NA
3768	1103001715	BU				Cole Creek	32.7	0	.07	1.80	4.80	13.0
3769	1103001715	BU				Cole Creek	32.7	0	.07	1.80	4.80	13.0
3770	1103001739	BU				Gilmore Branch	11.2	0	0	0	.63	3.77
3774	1103001714	BU				Walnut River	58.6	0	0	1.63	6.61	22.6
3779	1103001715	BU				Cole Creek	44.3	0	.07	2.33	6.65	18.7
3788	1103001725	BU	HV			West Branch Whitewater River	64.3	.13	.40	2.63	8.38	25.6
3792	1103001721	BU				Whitewater River	127	.49	1.51	5.29	16.4	51.8
3793	1103001732	BU				Dry Creek	28.5	.02	.05	.61	2.83	10.5
3801	HYDRO	BU				HYDRO	60.3	NA	NA	NA	NA	NA
3802	HYDRO	BU				HYDRO	46.8	NA	NA	NA	NA	NA
3807	1103001712	BU				Durechen Creek	43.9	0	0	1.47	5.84	19.5
3808	1103001712	BU				Durechen Creek	44.8	0	0	1.54	6.05	20.0
3813	HYDRO	BU				HYDRO	19.8	NA	NA	NA	NA	NA
3816	1103001716	BU				West Branch Walnut River	39.8	0	0	1.43	5.43	17.7
3819	HYDRO	BU				HYDRO	47.4	NA	NA	NA	NA	NA
3820	HYDRO	BU				HYDRO	108	NA	NA	NA	NA	NA

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3526	9.71	1,450	3,300	4,960	7,530	9,700	12,200
3533	11.0	1,630	3,620	5,370	8,060	10,300	12,900
3574	4.66	1,020	2,290	3,410	5,150	6,610	8,300
3585	NA	NA	NA	NA	NA	NA	NA
3610	NA	NA	NA	NA	NA	NA	NA
3615	8.64	1,260	2,850	4,250	6,420	8,250	10,400
3622	2.52	833	1,860	2,770	4,160	5,330	6,670
3649	10.4	1,750	4,070	6,160	9,430	12,200	15,400
3653	6.42	1,290	2,930	4,390	6,660	8,570	10,800
3655	10.8	1,850	4,310	6,600	10,200	13,400	16,900
3661	1.64	557	1,220	1,790	2,660	3,380	4,210
3665	NA	NA	NA	NA	NA	NA	NA
3666	12.6	1,790	4,000	5,970	9,100	11,800	14,900
3669	2.54	615	1,350	1,980	2,950	3,760	4,690
3671	NA	NA	NA	NA	NA	NA	NA
3672	15.8	1,910	4,610	7,190	11,300	15,000	19,200
3685	14.2	2,190	5,070	7,760	11,900	15,700	19,800
3690	16.0	1,870	4,540	7,090	11,200	14,900	19,000
3692	12.5	1,660	4,020	6,270	9,860	13,100	16,700
3702	14.8	2,220	5,130	7,840	12,100	15,800	20,000
3703	28.4	2,680	6,300	9,740	15,200	20,100	25,600
3711	NA	NA	NA	NA	NA	NA	NA
3768	16.5	1,950	4,420	6,700	10,400	13,700	17,500
3769	16.5	1,950	4,410	6,690	10,400	13,700	17,500
3770	4.78	1,080	2,410	3,580	5,380	6,880	8,610
3774	21.3	2,610	5,980	9,110	14,000	18,400	23,300
3779	21.2	2,300	5,180	7,830	12,100	15,900	20,300
3788	23.3	2,120	5,020	7,770	12,100	16,000	20,500
3792	47.3	3,290	7,710	11,900	18,500	24,500	31,400
3793	10.9	1,740	4,020	6,080	9,280	12,000	15,100
3801	NA	NA	NA	NA	NA	NA	NA
3802	NA	NA	NA	NA	NA	NA	NA
3807	18.0	2,770	6,110	9,150	13,800	17,900	22,400
3808	18.4	2,770	6,110	9,140	13,800	17,900	22,400
3813	NA	NA	NA	NA	NA	NA	NA
3816	16.4	2,700	5,190	8,030	12,000	15,500	19,700
3819	NA	NA	NA	NA	NA	NA	NA
3820	NA	NA	NA	NA	NA	NA	NA

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equalled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
3834	HYDRO	BU			HYDRO	7.24	NA	NA	NA	NA	NA	
3835	1103001710	BU			Satchel Creek	17.4	0	0	0.89	3.50	11.2	
3838	1103001710	BU			Satchel Creek	6.85	0	0	.60	1.96	5.86	
3857	1103001721	BU			Whitewater River	164	.82	2.62	7.70	22.6	70.0	
3861	1103001720	BU			Fourmile Creek	29.5	.03	.05	.85	3.67	12.9	
3862	1103001720	BU			Fourmile Creek	30.0	.03	.05	.89	3.79	13.2	
3865	1103001710	BU			Satchel Creek	36.2	0	0	1.67	6.42	20.5	
3872	1107010219	BU	GW		Ivanpah Creek	21.4	0	.16	2.53	8.09	21.7	
3873	HYDRO	BU			HYDRO	5.22	NA	NA	NA	NA	NA	
3874	1103001716	BU			West Branch Walnut River	54.0	0	.08	2.20	7.96	25.3	
3875	1103001716	BU			West Branch Walnut River	53.6	0	.07	2.17	7.87	25.0	
3876	1107010219	BU			Ivanpah Creek	5.08	0	0	.56	1.67	4.85	
3879	1103001716	BU			West Branch Walnut River	53.8	0	.07	2.19	7.93	25.2	
3884	110300178	BU			Bemis Creek	6.65	0	0	0	0	.66	
3885	HYDRO	BU			HYDRO	7.36	NA	NA	NA	NA	NA	
3893	HYDRO	BU			HYDRO	23.1	NA	NA	NA	NA	NA	
3896	HYDRO	BU			HYDRO	41.9	NA	NA	NA	NA	NA	
3897	HYDRO	BU			HYDRO	164	NA	NA	NA	NA	NA	
3908	1103001725	BU	HV		West Branch Whitewater River	96.5	.28	1.17	4.52	13.6	40.8	
3909	1103001719	BU			Whitewater River	200	1.22	3.88	10.4	29.5	90.1	
3911	1103001737	BU			Rock Creek	30.3	.03	.05	.98	4.07	13.9	
3914	1103001726	BU	SG		Wildcat Creek	39.3	.05	.09	1.82	5.83	17.4	
3922	110300178	BU			Bemis Creek	14.9	0	0	.02	1.08	5.48	
3928	110300178	BU			Bemis Creek	53.0	0	.04	2.53	9.73	31.3	
3931	HYDRO	BU			HYDRO	208	NA	NA	NA	NA	NA	
3934	1103001724	BU			West Branch Whitewater River	137	.57	2.39	7.33	21.0	61.5	
3935	1103001735	BU	SG		Prairie Creek	19.8	.01	.02	.56	2.35	8.18	
3941	1103001742	BU			Lower Branch	36.1	0	0	1.90	7.34	23.3	
3944	1103001741	BU			Constant Creek	6.99	0	0	0	0	1.61	
3945	HYDRO	BU			HYDRO	7.24	NA	NA	NA	NA	NA	
3949	1103001742	BU			Lower Branch	22.7	0	0	1.22	4.88	15.6	
3952	HYDRO	BU			HYDRO	13.9	NA	NA	NA	NA	NA	
3956	1103001742	BU			Lower Branch	12.4	0	0	.87	3.24	9.95	
3958	1103001724	BU			West Branch Whitewater River	160	.78	3.12	9.03	25.4	74.1	
3959	110300173	BU			Walnut River	210	5.95	8.12	13.0	36.9	281	
3961	HYDRO	BU			HYDRO	60.8	NA	NA	NA	NA	NA	
3963	110300173	BU			Walnut River	271	7.68	10.5	16.8	47.7	363	
3981	110300173	BU			Walnut River	322	9.13	12.5	19.9	56.6	431	

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3834	NA	NA	NA	NA	NA	NA	NA
3835	9.81	1,450	3,230	4,800	7,210	9,240	11,600
3838	4.85	852	1,860	2,730	4,060	5,170	6,440
3857	62.6	3,800	8,850	13,600	21,200	28,000	35,800
3861	12.6	1,840	4,220	6,360	9,680	12,500	15,700
3862	12.8	2,090	4,780	7,270	11,100	14,500	18,300
3865	17.8	2,620	5,770	8,610	13,000	16,800	21,000
3872	15.5	1,700	3,810	5,680	8,580	11,000	13,800
3873	NA	NA	NA	NA	NA	NA	NA
3874	22.3	3,240	5,690	8,970	13,300	17,200	21,900
3875	22.1	3,260	5,730	9,020	13,400	17,300	22,000
3876	3.92	738	1,590	2,320	3,440	4,370	5,420
3879	22.2	3,250	5,710	8,990	13,400	17,200	22,000
3884	2.44	852	1,850	2,710	4,030	5,120	6,370
3885	NA	NA	NA	NA	NA	NA	NA
3893	NA	NA	NA	NA	NA	NA	NA
3896	NA	NA	NA	NA	NA	NA	NA
3897	NA	NA	NA	NA	NA	NA	NA
3908	35.7	2,640	6,200	9,550	14,900	19,600	25,100
3909	79.2	4,260	9,900	15,200	23,600	31,200	39,900
3911	13.4	2,520	5,560	8,290	12,500	16,100	20,100
3914	15.5	1,660	3,950	6,130	9,570	12,600	16,100
3922	6.54	1,360	3,000	4,440	6,650	8,500	10,600
3928	26.4	4,230	8,720	12,600	18,500	23,600	29,100
3931	NA	NA	NA	NA	NA	NA	NA
3934	52.1	3,290	7,610	11,700	18,100	23,800	30,300
3935	8.18	1,350	3,130	4,730	7,230	9,350	11,800
3941	19.6	3,380	7,090	10,300	15,200	19,500	24,000
3944	2.91	841	1,850	2,720	4,060	5,170	6,450
3945	NA	NA	NA	NA	NA	NA	NA
3949	13.3	1,780	3,940	5,850	8,780	11,200	14,000
3952	NA	NA	NA	NA	NA	NA	NA
3956	8.31	1,260	2,750	4,050	6,040	7,700	9,590
3958	62.2	3,590	8,300	12,700	19,700	25,900	33,000
3959	86.9	2,050	3,980	4,940	7,280	9,540	12,000
3961	NA	NA	NA	NA	NA	NA	NA
3963	112	2,640	5,140	6,380	9,390	12,300	15,500
3981	133	3,140	6,110	7,580	11,200	14,600	18,400

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equalled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
3982	1103001716	BU				West Branch Walnut River	63.0	0	0.32	2.87	9.98	30.9
3984	1103001719	BU				Whitewater River	237	1.75	5.34	13.5	37.0	112
3987	1103001741	BU				Constant Creek	14.6	0	0	.13	1.29	5.75
3989	HYDRO	BU				HYDRO	14.6	NA	NA	NA	NA	NA
3992	1103001724	BU				West Branch Whitewater River	195	1.16	4.32	11.7	32.2	93.8
4012	1103001734	BU	SG			Whitewater Creek	24.5	.02	.03	.62	2.79	9.99
4034	110300172	BU				Walnut River	388	11.0	15.0	24.0	68.3	519
4035	1103001741	BU				Constant Creek	17.0	0	0	.30	1.80	7.19
4051	11030017213	BU				Bird Creek	48.3	0	0	1.71	6.93	23.3
4079	110300172	BU				Walnut River	421	12.1	16.9	29.2	85.5	566
4080	1103001740	BU				Sutton Creek	16.2	0	0	.32	1.82	7.11
4084	1103001743	BU				Elm Creek	9.69	0	0	0	.52	3.47
4090	HYDRO	BU				HYDRO	10.6	NA	NA	NA	NA	NA
4091	1103001727	BU	SG			Dry Creek	18.5	0	0	.18	1.50	6.50
4099	1103001736	BU				Badger Creek	15.2	0	0	.34	1.96	7.51
4100	1103001718	BU				Whitewater River	448	7.60	17.0	36.0	85.0	242
4120	HYDRO	BU				HYDRO	11.5	NA	NA	NA	NA	NA
4126	1103001813	BU				North Branch Little Walnut River	9.23	0	0	.56	2.21	7.16
4130	1103001727	BU				Dry Creek	34.6	0	0	1.03	4.49	15.6
4131	1103001743	BU				Elm Creek	16.3	0	0	.27	1.82	7.41
4133	1103001727	BU				Dry Creek	36.6	0	0	1.13	4.88	16.8
4140	1103001813	BU				North Branch Little Walnut River	53.0	0	.22	3.06	11.2	34.9
4153	HYDRO	BU				HYDRO	40.5	NA	NA	NA	NA	NA
4161	HYDRO	BU				HYDRO	18.6	NA	NA	NA	NA	NA
4183	1103001743	BU				Elm Creek	19.8	0	0	.50	2.59	9.63
4184	1103001718	BU				Whitewater River	470	7.75	17.4	37.3	89.3	256
4195	1103001727	BU				Dry Creek	48.5	0	0	1.91	7.56	24.9
4198	1103001718	BU				Whitewater River	490	7.89	17.7	38.4	92.9	268
4200	1103001717	BU				Whitewater River	538	8.19	18.3	40.9	101	297
4205	1103001834	BU				South Branch Little Walnut River	39.9	0	.08	2.60	9.54	29.2
4211	1103001834	BU				South Branch Little Walnut River	13.0	0	0	.77	3.06	9.82
4212	HYDRO	BU				HYDRO	10.1	NA	NA	NA	NA	NA
4218	1103001834	BU	GW			South Branch Little Walnut River	10.0	0	0	.57	2.32	7.62
4239	1103001717	BU				Whitewater River	539	8.20	18.4	40.9	101	298
4244	110300172	BU				Walnut River	476	13.8	20.2	37.8	114	643
4256	1103001833	BU				Honey Creek	8.44	0	0	0	.63	3.73
4257	HYDRO	BU				HYDRO	9.26	NA	NA	NA	NA	NA
4266	110300189012	BU				North Branch Hickory Creek	2.29	0	0	0	0	.72

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3982	26.4	3,630	5,970	9,500	14,000	18,000	23,000
3984	97.3	4,760	11,000	16,900	26,200	34,600	44,100
3987	6.51	1,300	2,890	4,300	6,450	8,260	10,300
3989	NA	NA	NA	NA	NA	NA	NA
3992	78.1	3,950	9,180	14,100	21,800	28,800	36,700
4012	10.1	1,590	3,660	5,520	8,420	10,900	13,700
4034	161	3,780	7,360	9,130	13,400	17,600	22,200
4035	7.69	1,430	3,180	4,730	7,110	9,110	11,400
4051	21.4	3,770	7,850	11,400	16,800	21,500	26,500
4079	182	4,100	7,980	9,910	14,600	19,100	24,100
4080	7.53	1,410	3,130	4,640	6,970	8,910	11,100
4084	4.49	1,060	2,320	3,420	5,100	6,500	8,100
4090	NA	NA	NA	NA	NA	NA	NA
4091	7.28	1,360	3,110	4,670	7,100	9,150	11,500
4099	7.59	1,340	2,970	4,420	6,630	8,490	10,600
4100	206	7,490	17,300	26,200	40,500	53,300	67,900
4120	NA	NA	NA	NA	NA	NA	NA
4126	6.27	1,080	2,340	3,420	5,070	6,450	8,020
4130	14.7	1,880	4,450	6,870	10,700	14,100	17,900
4131	7.88	1,460	3,210	4,750	7,110	9,080	11,300
4133	15.7	1,960	4,610	7,110	11,000	14,600	18,500
4140	28.2	3,900	8,110	11,800	17,400	22,200	27,400
4153	NA	NA	NA	NA	NA	NA	NA
4161	NA	NA	NA	NA	NA	NA	NA
4183	9.71	1,660	3,650	5,400	8,090	10,300	12,900
4184	215	7,460	17,300	26,200	40,600	53,500	68,300
4195	21.9	2,520	5,740	8,720	13,400	17,500	22,100
4198	223	7,650	17,700	26,800	41,400	54,600	69,600
4200	242	8,170	18,700	28,300	43,600	57,300	73,000
4205	23.3	3,260	6,900	10,100	15,000	19,200	23,700
4211	8.51	1,330	2,890	4,250	6,320	8,040	10,000
4212	NA	NA	NA	NA	NA	NA	NA
4218	6.74	1,150	2,480	3,630	5,380	6,840	8,500
4239	242	8,140	18,600	28,200	43,500	57,200	72,900
4244	218	4,640	9,030	11,200	16,500	21,600	27,300
4256	4.49	1,020	2,210	3,230	4,790	6,080	7,560
4257	NA	NA	NA	NA	NA	NA	NA
4266	1.33	490	1,020	1,470	2,150	2,710	3,330

**102 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equalled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4269	HYDRO	BU						HYDRO	2.75	NA	NA
4300	1103001813	BU				Little Walnut River	139	0	1.73	8.54	30.1	94.1	
4325	1103001812	BU				Hickory Creek	51.3	0	.25	3.23	11.8	36.5	
4327	1103001833	BU				Honey Creek	16.2	0	0	.59	2.78	9.74	
4333	1107010213	BU	GW			Otter Creek	4.33	0	0	.38	1.19	3.79	
4342	1103001816	BU	SG			Fourmile Creek	57.2	0	.18	2.81	10.3	32.3	
4347	110300189012	BU				North Branch Hickory Creek	23.3	0	0	1.54	5.74	17.6	
4350	1103001813	BU				Little Walnut River	146	0	1.85	8.95	31.6	98.8	
4351	1103001812	BU				Hickory Creek	27.3	0	0	1.87	6.88	21.0	
4354	1103001812	BU				Hickory Creek	91.9	0	1.16	6.39	22.3	67.6	
4356	1103001815	BU				Walnut River	1,030	31.7	52.5	124	402	1,420	
4357	1103001816	BU				Fourmile Creek	58.3	0	.21	2.92	10.6	33.2	
4386	1103001836	BU				Plum Creek	13.0	0	0	.84	3.21	10.0	
4401	1107010414	BU	EK			Elk River	8.84	0	0	1.14	3.61	9.92	
4441	HYDRO	BU				HYDRO	33.4	NA	NA	NA	NA	NA	
4444	1103001835	BU				North Branch Rock Creek	12.0	0	0	.27	1.71	6.72	
4449	110300189	BU				Muddy Creek	31.6	0	0	.85	3.96	14.2	
4453	HYDRO	BU				HYDRO	13.1	NA	NA	NA	NA	NA	
4457	1103001814	BU				Walnut River	1,100	34.0	56.7	136	440	1,520	
4460	110300186	BU				Rock Creek	15.5	0	0	.69	3.01	10.2	
4461	1103001811	BU				Little Walnut River	256	.51	3.87	16.7	57.5	181	
4463	HYDRO	BU				HYDRO	16.2	NA	NA	NA	NA	NA	
4468	1103001830	BU	SG			Eightmile Creek	37.2	0	0	1.57	6.09	19.7	
4493	1103001821	BU				Chigger Creek	8.14	0	0	0	0	1.91	
4499	HYDRO	BU				HYDRO	8.41	NA	NA	NA	NA	NA	
4503	1103001835	BU				North Branch Rock Creek	24.9	0	0	1.23	4.93	16.0	
4512	110300186	BU				Rock Creek	35.7	0	0	2.29	8.46	26.0	
4514	1103001822	BU				Swisher Branch	8.14	0	0	0	0	1.99	
4518	110300186	BU				Rock Creek	38.1	0	.05	2.47	9.09	27.9	
4522	110300186	BU				Rock Creek	66.3	0	.49	4.11	15.0	46.3	
4524	HYDRO	BU				HYDRO	66.3	NA	NA	NA	NA	NA	
4528	HYDRO	BU				HYDRO	2.23	NA	NA	NA	NA	NA	
4533	HYDRO	BU				HYDRO	8.59	NA	NA	NA	NA	NA	
4543	1103001822	BU				Swisher Branch	10.3	0	0	0	.47	3.55	
4549	1103001821	BU				Chigger Creek	11.4	0	0	.02	.87	4.47	
4557	110300186	BU				Rock Creek	92.6	0	.95	5.63	20.1	62.0	
4568	110300186	BU				Rock Creek	80.1	0	.79	5.08	18.1	55.5	
4569	110300183	BU				Timber Creek	9.37	0	0	0	.53	3.65	

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4269	NA	NA	NA	NA	NA	NA	NA
4300	70.2	5,820	11,900	17,300	25,400	32,500	40,200
4325	29.0	3,780	7,890	11,500	17,000	21,700	26,800
4327	9.15	1,490	3,260	4,810	7,180	9,160	11,400
4333	3.33	718	1,520	2,200	3,230	4,090	5,050
4342	26.8	2,700	6,080	9,210	14,100	18,300	23,100
4347	14.5	1,870	4,100	6,060	9,070	11,600	14,500
4350	73.5	5,860	12,000	17,500	25,700	32,800	40,700
4351	16.9	2,040	4,510	6,680	10,000	12,800	16,000
4354	50.4	4,670	9,660	14,100	20,700	26,500	32,800
4356	575	10,000	19,500	24,200	35,600	46,700	58,800
4357	27.5	2,690	6,070	9,190	14,000	18,300	23,100
4386	8.54	1,310	2,860	4,210	6,270	7,980	9,950
4401	7.38	1,090	2,340	3,420	5,060	6,420	7,980
4441	NA	NA	NA	NA	NA	NA	NA
4444	6.82	1,270	2,760	4,050	6,020	7,650	9,530
4449	14.1	2,830	6,040	8,880	13,200	16,900	20,900
4453	NA	NA	NA	NA	NA	NA	NA
4457	622	10,700	20,800	25,900	38,100	49,900	62,900
4460	9.29	1,500	3,250	4,770	7,090	9,030	11,300
4461	127	7,780	15,600	22,600	33,100	42,200	52,200
4463	NA	NA	NA	NA	NA	NA	NA
4468	17.5	2,420	5,410	8,150	12,400	16,100	20,200
4493	3.39	970	2,110	3,100	4,600	5,850	7,280
4499	NA	NA	NA	NA	NA	NA	NA
4503	14.0	1,910	4,210	6,240	9,360	12,000	15,000
4512	21.0	3,080	6,530	9,580	14,200	18,200	22,500
4514	3.46	971	2,110	3,100	4,600	5,860	7,290
4518	22.4	3,150	6,680	9,800	14,500	18,600	23,000
4522	36.2	4,430	9,130	13,300	19,400	24,800	30,600
4524	NA	NA	NA	NA	NA	NA	NA
4528	NA	NA	NA	NA	NA	NA	NA
4533	NA	NA	NA	NA	NA	NA	NA
4543	4.71	1,110	2,430	3,570	5,320	6,790	8,460
4549	5.35	1,170	2,570	3,790	5,650	7,210	8,990
4557	47.8	4,840	10,000	14,600	21,400	27,400	33,900
4568	42.7	4,500	9,320	13,600	20,000	25,600	31,700
4569	4.63	1,070	2,330	3,420	5,070	6,450	8,030

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

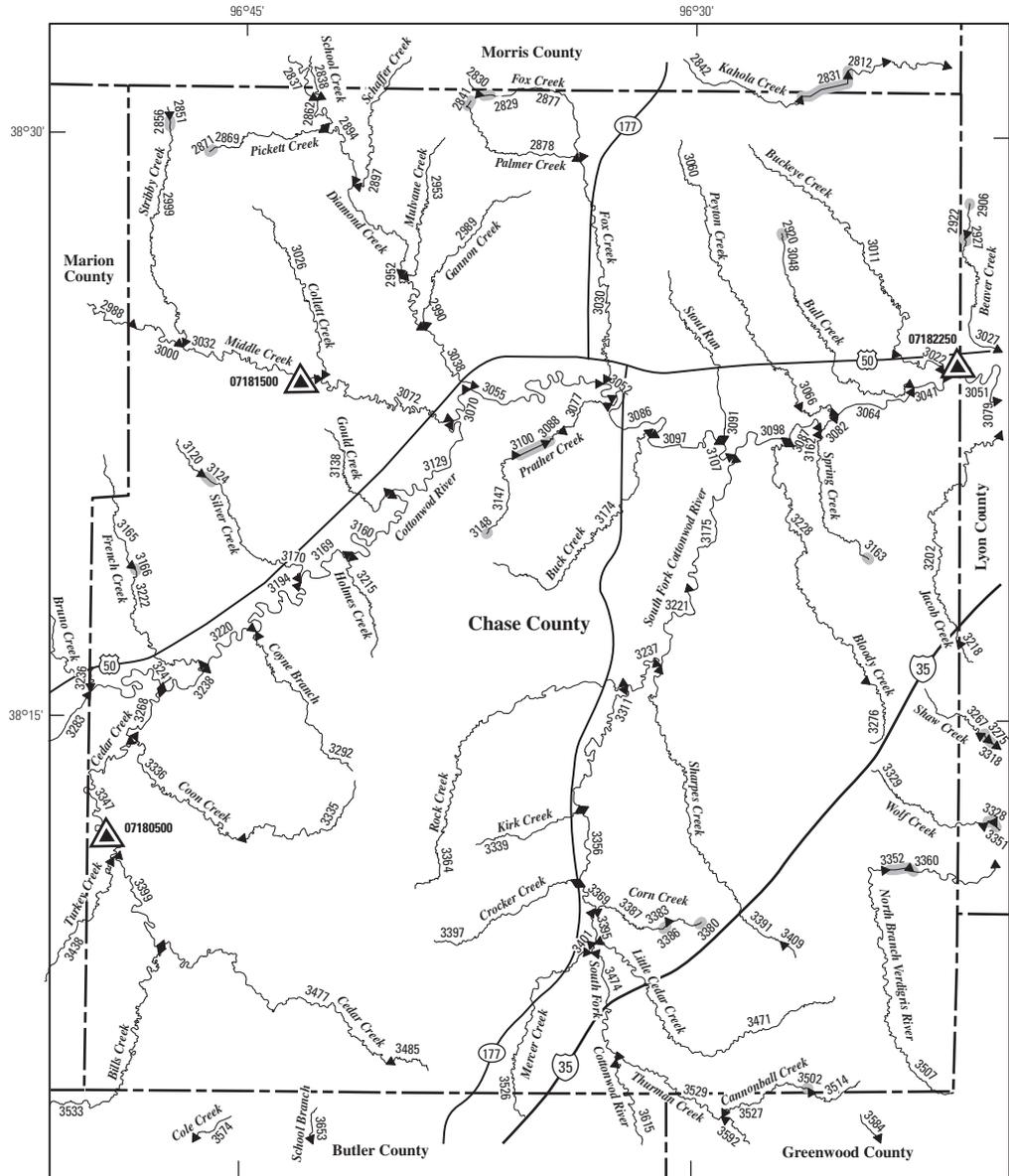
Determination site identification number (fig. 18)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equalled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4571	HYDRO	BU						HYDRO	10.0	NA	NA
4573	1106000116	BU				Grouse Creek	17.3	0	0	1.23	4.61	14.1	
4576	1106000136	BU	EK			Wagoner Creek	9.32	0	0	.57	2.26	7.32	
4584	110300186	BU	CL			Rock Creek	107	0	1.13	6.25	22.3	69.5	
4595	1103001810	BU	CL			Walnut River	1,360	42.6	72.4	177	579	1,900	
4596	110300189	BU	CL			Muddy Creek	54.3	0	.22	2.74	9.88	30.9	
4602	1106000116	BU	CL			Grouse Creek	27.5	0	0	2.07	7.53	22.6	
4620	1103001817	BU	CL	SG		Polecat Creek	35.2	0	0	.97	4.20	14.5	
4624	1106000135	BU	CL			Franklin Creek	11.7	0	0	.55	2.40	8.11	
4632	1103001830	BU	CL			Eightmile Creek	47.8	0	.09	2.30	8.24	25.6	
4637	110300184	BU	CL			Dutch Creek	10.9	0	0	0	.56	3.90	
4771	110300183	BU	CL			Timber Creek	37.8	0	0	1.93	7.32	23.2	

**Table 14.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Butler County.—Continued

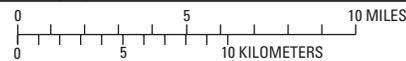
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 18)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4571	NA	NA	NA	NA	NA	NA	NA
4573	11.6	1,610	3,510	5,150	7,670	9,770	12,200
4576	6.45	1,130	2,410	3,520	5,210	6,610	8,200
4584	53.5	5,160	10,600	15,500	22,800	29,100	36,100
4595	795	13,300	25,900	32,100	47,300	62,000	78,100
4596	26.1	3,350	7,110	10,500	15,500	19,900	24,700
4602	17.9	2,120	4,660	6,880	10,300	13,100	16,400
4620	13.9	2,020	4,710	7,230	11,200	14,700	18,600
4624	7.38	1,260	2,730	4,000	5,940	7,560	9,400
4632	21.8	2,510	5,620	8,470	12,900	16,700	21,000
4637	5.01	1,140	2,490	3,670	5,480	6,990	8,710
4771	19.6	2,950	6,340	9,370	14,000	18,000	22,300



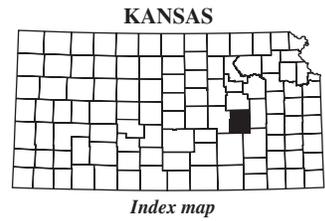


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 4773 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07182250 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07181500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3502 Lake and determination site identification number



**Figure 19.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Chase County.

**108 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 19)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2837	110702033	CS	MR					Diamond Creek	84.9	0
2838	1107020316	CS	MR			School Creek	12.6	0	0	.60	2.12	6.67
2841	HYDRO	CS				HYDRO	.49	NA	NA	NA	NA	NA
2842	1107020143	CS	MR			Kahola Creek	10.4	0	0	.65	2.35	7.33
2851	1107020320	CS				Stribby Creek	7.87	0	.02	.02	.17	2.17
2856	HYDRO	CS				HYDRO	8.13	NA	NA	NA	NA	NA
2862	110702033	CS				Diamond Creek	98.4	0	.72	4.61	16.1	49.6
2869	1107020318	CS				Pickett Creek	8.92	0	0	.39	1.39	4.69
2871	HYDRO	CS				HYDRO	1.13	NA	NA	NA	NA	NA
2877	1107020319	CS	MR			Fox Creek	10.9	0	0	.63	2.26	7.08
2878	11070203403	CS				Palmer Creek	6.24	0	0	.26	.94	3.45
2894	110702033	CS				Diamond Creek	109	0	.96	5.42	18.6	57.0
2897	1107020317	CS	MR			Schaffer Creek	13.0	0	0	.87	2.81	8.22
2920	HYDRO	CS				HYDRO	1.46	NA	NA	NA	NA	NA
2952	110702033	CS				Diamond Creek	129	0	1.41	6.97	23.5	71.0
2953	1107020322	CS				Mulvane Creek	7.00	0	0	.36	1.23	4.10
2988	110702035	CS	MN	MR		Middle Creek	41.6	0	.42	2.43	8.41	24.6
2989	1107020324	CS				Gannon Creek	12.8	0	0	1.14	3.54	9.92
2990	110702033	CS				Diamond Creek	140	0	1.64	7.81	26.2	78.9
2999	1107020320	CS				Stribby Creek	25.2	0	.15	1.64	5.61	16.3
3000	110702035	CS				Middle Creek	44.8	0	.49	2.86	9.74	27.9
3011	1107020344	CS				Buckeye Creek	23.0	0	0	1.35	4.76	14.5
3022	1107020344	CS				Buckeye Creek	24.6	0	0	1.46	5.08	15.3
3026	1107020321	CS				Collett Creek	16.9	0	0	1.21	4.04	11.8
3030	1107020319	CS				Fox Creek	33.9	0	.40	3.18	9.98	27.3
3032	110702035	CS				Middle Creek	81.2	0	2.40	7.00	22.0	59.0
3038	110702033	CS				Diamond Creek	157	0	2.05	9.28	30.8	92.4
3041	110702031	CS				Cottonwood River	1,660	47.5	103	292	777	2,040
3048	1107020326	CS				Bull Creek	12.2	0	0	.45	1.83	6.34
3051	110702031	CS	LY			Cottonwood River	1,680	48.0	105	298	794	2,080
3052	110702032	CS				Cottonwood River	1,300	40.5	82.6	215	567	1,550
3055	110702032	CS				Cottonwood River	1,270	39.9	80.6	208	547	1,510
3060	1107020325	CS				Peyton Creek	20.3	0	0	1.38	4.79	14.2
3064	110702031	CS				Cottonwood River	1,640	47.2	103	289	769	2,020
3066	1107020325	CS				Peyton Creek	21.1	0	0	1.45	4.98	14.7
3070	110702034	CS				Cottonwood River	1,100	36.6	70.9	172	448	1,280
3072	110702035	CS				Middle Creek	106	0	2.94	8.91	28.1	76.7
3077	1107020323	CS				Prather Creek	12.3	0	0	.74	2.60	8.01

**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 19)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2837	33.6	3,570	7,890	11,900	18,000	23,400	29,400
2838	6.06	1,010	2,340	3,520	5,370	6,930	8,730
2841	NA	NA	NA	NA	NA	NA	NA
2842	6.36	1,060	2,340	3,470	5,190	6,640	8,300
2851	3.20	841	1,900	2,830	4,260	5,480	6,860
2856	NA	NA	NA	NA	NA	NA	NA
2862	39.5	3,750	8,280	12,400	18,900	24,600	30,900
2869	4.50	856	1,950	2,910	4,410	5,670	7,110
2871	NA	NA	NA	NA	NA	NA	NA
2877	6.23	1,040	2,330	3,460	5,210	6,680	8,360
2878	3.47	745	1,650	2,450	3,670	4,690	5,850
2894	44.3	3,860	8,510	12,800	19,400	25,300	31,800
2897	6.94	1,080	2,460	3,690	5,600	7,220	9,070
2920	NA	NA	NA	NA	NA	NA	NA
2952	53.3	4,180	9,160	13,700	20,800	27,000	34,000
2953	3.89	779	1,740	2,590	3,890	4,980	6,230
2988	20.8	3,620	7,920	11,800	17,700	22,900	28,700
2989	7.88	1,150	2,570	3,830	5,770	7,410	9,280
2990	58.5	4,330	9,470	14,200	21,500	27,900	35,100
2999	13.5	1,980	4,480	6,710	10,200	13,100	16,500
3000	23.1	3,850	8,400	12,500	18,700	24,200	30,300
3011	12.3	1,690	3,790	5,650	8,530	11,000	13,700
3022	13.0	1,750	3,940	5,890	8,900	11,400	14,300
3026	9.61	1,330	3,020	4,520	6,830	8,780	11,000
3030	19.9	2,960	6,220	9,080	13,400	17,100	21,100
3032	44.7	6,960	15,000	22,100	33,100	42,700	53,500
3038	67.0	4,550	9,910	14,800	22,400	29,200	36,700
3041	933	14,300	25,200	33,400	52,900	74,800	105,000
3048	6.24	1,160	2,580	3,820	5,730	7,330	9,170
3051	950	14,500	25,400	33,500	53,000	75,000	105,000
3052	713	12,200	22,600	31,500	50,900	72,100	101,000
3055	692	12,000	22,400	31,400	50,700	71,900	100,000
3060	11.6	1,540	3,470	5,180	7,830	10,100	12,600
3064	924	14,300	25,100	33,300	52,800	74,700	105,000
3066	12.0	1,580	3,550	5,310	8,020	10,300	12,900
3070	590	11,000	21,100	30,500	49,800	70,600	98,700
3072	56.4	7,190	15,500	22,900	34,400	44,400	55,800
3077	6.99	1,140	2,540	3,770	5,670	7,270	9,100

**110 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 19)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3082	110702031	CS						Cottonwood River	1,620	46.7
3086	110702032	CS				Cottonwood River	1,320	40.9	83.6	219	577	1,580
3087	110702031	CS				Cottonwood River	1,610	46.5	100	281	748	1,970
3088	1107020323	CS				Prather Creek	10.6	0	0	.61	2.22	7.00
3091	1107020327	CS				Stout Run	11.2	0	0	.74	2.50	7.58
3097	110702032	CS				Cottonwood River	1,340	41.4	85.1	225	592	1,610
3098	110702031	CS				Cottonwood River	1,580	45.9	98.7	275	730	1,930
3100	HYDRO	CS				HYDRO	9.15	NA	NA	NA	NA	NA
3107	110702032	CS				Cottonwood River	1,360	41.6	85.8	227	600	1,630
3120	1107020334	CS				Silver Creek	7.20	0	0	.31	1.25	4.43
3124	HYDRO	CS				HYDRO	7.92	NA	NA	NA	NA	NA
3129	110702036	CS				Cottonwood River	993	34.5	64.6	149	385	1,130
3138	1107020336	CS				Gould Creek	9.38	0	0	.40	1.51	5.17
3147	1107020323	CS				Prather Creek	7.44	0	0	.29	1.18	4.27
3148	HYDRO	CS				HYDRO	1.63	NA	NA	NA	NA	NA
3160	110702036	CS				Cottonwood River	978	34.2	63.7	146	376	1,110
3162	1107020341	CS				Spring Creek	10.3	0	0	.64	2.21	6.88
3163	HYDRO	CS				HYDRO	1.62	NA	NA	NA	NA	NA
3165	1107020332	CS	MN			French Creek	14.1	0	0	.32	1.77	6.75
3166	HYDRO	CS				HYDRO	14.3	NA	NA	NA	NA	NA
3169	110702036	CS				Cottonwood River	960	33.9	62.7	142	365	1,080
3170	1107020334	CS				Silver Creek	19.8	0	0	1.53	5.10	14.6
3174	1107020339	CS				Buck Creek	23.4	0	0	1.51	5.19	15.4
3175	110702039	CS				South Fork Cottonwood River	218	.26	3.81	16.1	52.4	156
3194	110702036	CS				Cottonwood River	938	33.5	61.4	137	352	1,050
3202	1107020328	CS	LY			Jacob Creek	25.6	0	0	1.57	5.67	17.2
3215	1107020335	CS				Holmes Creek	12.5	0	0	.76	2.65	8.12
3218	1107020328	CS	LY			Jacob Creek	1.89	0	0	0	0	0
3220	110702036	CS				Cottonwood River	917	33.1	60.1	133	340	1,020
3221	110702039	CS				South Fork Cottonwood River	209	.18	3.58	15.3	49.9	148
3222	1107020332	CS				French Creek	22.0	0	0	1.12	4.14	12.9
3228	1107020340	CS				Bloody Creek	29.1	0	.23	2.60	8.34	23.3
3236	1107020227	CS	MN			Bruno Creek	45.7	0	.03	2.20	7.87	24.3
3237	110702039	CS				South Fork Cottonwood River	164	0	2.62	11.5	37.8	112
3238	110702036	CS				Cottonwood River	892	32.6	58.7	127	325	989
3241	110702021	CS				Cottonwood River	758	29.9	50.8	98.4	245	804
3267	1107010140	CS	LY			Shaw Creek	6.27	0	0	.24	.97	3.67
3268	1107020222	CS				Cedar Creek	130	1.80	6.43	17.6	41.3	92.6

**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 19)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3082	909	14,100	24,900	33,200	52,600	74,500	104,000
3086	724	12,300	22,700	31,600	51,000	72,300	101,000
3087	902	14,000	24,800	33,100	52,600	74,400	104,000
3088	6.18	1,040	2,320	3,450	5,180	6,630	8,300
3091	6.57	1,090	2,420	3,590	5,400	6,910	8,640
3097	740	12,400	22,900	31,800	51,100	72,500	101,000
3098	883	13,900	24,600	32,900	52,400	74,200	104,000
3100	NA	NA	NA	NA	NA	NA	NA
3107	747	12,500	23,000	31,800	51,200	72,500	101,000
3120	4.25	842	1,860	2,740	4,100	5,230	6,520
3124	NA	NA	NA	NA	NA	NA	NA
3129	524	10,300	20,400	30,000	49,200	69,800	97,500
3138	5.00	958	2,140	3,170	4,760	6,100	7,630
3147	4.20	848	1,880	2,780	4,150	5,310	6,620
3148	NA	NA	NA	NA	NA	NA	NA
3160	514	10,200	20,300	29,900	49,100	69,700	97,300
3162	6.11	1,060	2,340	3,460	5,180	6,620	8,270
3163	NA	NA	NA	NA	NA	NA	NA
3165	6.83	1,230	2,750	4,100	6,170	7,920	9,920
3166	NA	NA	NA	NA	NA	NA	NA
3169	503	10,100	20,100	29,800	49,000	69,600	97,100
3170	11.6	1,490	3,360	5,030	7,600	9,770	12,300
3174	12.7	1,650	3,730	5,590	8,470	10,900	13,700
3175	105	6,180	12,900	18,900	28,000	36,000	44,800
3194	489	9,990	20,000	29,700	48,900	69,400	96,900
3202	14.3	1,840	4,110	6,130	9,250	11,900	14,900
3215	7.03	1,120	2,520	3,760	5,670	7,270	9,120
3218	.48	416	876	1,270	1,850	2,340	2,880
3220	477	9,860	19,800	29,600	48,800	69,300	96,700
3221	100	6,310	13,000	19,100	28,200	36,100	45,000
3222	11.2	1,560	3,550	5,330	8,080	10,400	13,100
3228	17.5	1,940	4,380	6,550	9,910	12,700	16,000
3236	20.4	3,320	7,080	10,400	15,400	19,800	24,600
3237	78.1	5,590	11,600	17,100	25,300	32,400	40,300
3238	461	9,710	19,600	29,400	48,600	69,100	96,400
3241	378	8,900	18,700	28,700	47,900	68,100	94,900
3267	3.75	832	1,800	2,640	3,920	4,980	6,190
3268	69.5	6,310	12,000	16,500	22,700	27,900	33,200

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**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

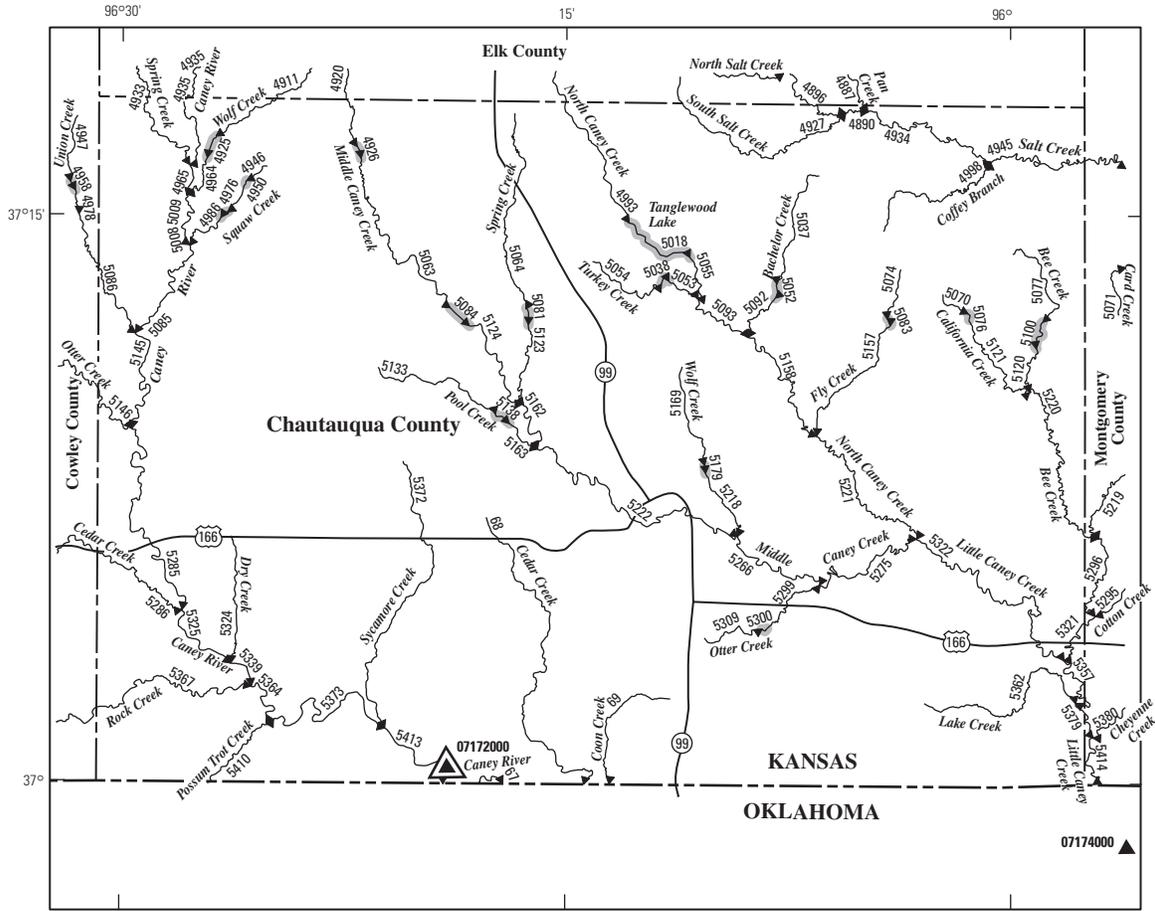
Determination site identification number (fig. 19)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3276	1107020340	CS						Bloody Creek	8.53	0
3283	110702021	CS	MN			Cottonwood River	710	29.0	48.0	88.0	217	738
3292	1107020333	CS				Coyne Branch	15.4	0	0	.87	3.13	9.64
3311	110702039	CS				South Fork Cottonwood River	129	0	2.04	9.39	30.8	90.4
3329	1107010141	CS	LY			Wolf Creek	13.1	0	.01	1.09	3.62	10.5
3335	1107020232	CS				Coon Creek	16.6	0	0	.25	1.58	6.42
3336	1107020232	CS				Coon Creek	28.7	0	0	1.13	4.37	14.1
3339	1107020348	CS				Kirk Creek	6.97	0	0	.28	.99	3.60
3347	1107020222	CS	MN			Cedar Creek	98.7	1.80	6.00	16.0	36.0	76.0
3352	HYDRO	CS				HYDRO	27.7	NA	NA	NA	NA	NA
3356	110702039	CS				South Fork Cottonwood River	114	0	1.69	8.15	27.0	79.3
3360	1107010115	CS	LY			North Branch Verdigris River	38.6	.02	.61	4.54	14.2	38.3
3364	1107020337	CS				Rock Creek	33.1	0	.01	1.97	6.71	19.9
3369	110702039	CS				South Fork Cottonwood River	94.7	0	1.37	6.97	23.1	67.2
3380	HYDRO	CS				HYDRO	.74	NA	NA	NA	NA	NA
3383	1107020347	CS				Corn Creek	3.96	0	0	0	.17	1.52
3386	HYDRO	CS				HYDRO	4.39	NA	NA	NA	NA	NA
3387	1107020347	CS				Corn Creek	7.80	0	0	.39	1.43	4.82
3391	1107020338	CS				Sharpes Creek	35.6	0	.41	3.36	10.7	29.6
3395	110702039	CS				South Fork Cottonwood River	85.9	0	1.21	6.34	21.0	60.9
3397	1107020346	CS				Crocker Creek	14.4	0	0	.54	2.20	7.47
3399	1107020222	CS				Cedar Creek	65.6	.80	2.49	7.71	18.6	42.6
3401	110702039	CS				South Fork Cottonwood River	66.4	0	.83	4.90	16.2	46.6
3409	1107020338	CS				Sharpes Creek	3.47	0	0	.09	.31	1.70
3438	1107020231	CS	MN			Turkey Creek	22.3	.09	.24	1.87	5.13	13.4
3471	1107020345	CS				Little Cedar Creek	18.6	0	0	1.40	4.76	13.9
3474	110702039	CS				South Fork Cottonwood River	46.3	0	.54	3.84	12.5	35.3
3477	1107020222	CS				Cedar Creek	38.1	.27	.72	2.82	7.60	19.7
3485	1107020222	CS				Cedar Creek	8.46	.01	.03	.07	.12	1.23
3502	HYDRO	CS				HYDRO	5.04	NA	NA	NA	NA	NA
3507	1107010115	CS				North Branch Verdigris River	26.5	.01	.31	3.18	9.97	26.8
3514	11070203745	CS				Cannonball Creek	4.55	0	0	.13	.60	2.61
3527	11070203745	CS	GW			Cannonball Creek	9.30	0	0	.60	2.14	6.72
3529	1107020311	CS	GW			Thurman Creek	25.9	0	.09	2.22	7.27	20.5

**Table 15.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chase County.—Continued

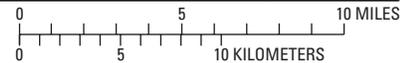
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 19)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3276	5.81	971	2,120	3,130	4,660	5,950	7,410
3283	348	8,610	18,300	28,500	47,600	67,700	94,400
3292	8.31	1,250	2,830	4,230	6,400	8,230	10,300
3311	63.6	5,110	10,600	15,600	23,000	29,600	36,700
3329	8.51	1,260	2,790	4,130	6,190	7,920	9,890
3335	6.95	1,300	2,950	4,410	6,690	8,610	10,800
3336	12.8	1,770	4,080	6,160	9,390	12,100	15,300
3339	3.69	798	1,770	2,630	3,940	5,030	6,290
3347	57.6	5,740	10,800	14,700	20,100	24,500	28,900
3352	NA	NA	NA	NA	NA	NA	NA
3356	56.6	5,390	11,000	16,000	23,500	30,000	37,100
3360	26.4	3,810	7,830	11,300	16,500	21,000	25,800
3364	16.3	2,810	5,990	8,800	13,000	16,700	20,700
3369	48.3	5,140	10,500	15,200	22,200	28,300	34,800
3380	NA	NA	NA	NA	NA	NA	NA
3383	2.06	585	1,280	1,880	2,800	3,560	4,430
3386	NA	NA	NA	NA	NA	NA	NA
3387	4.50	860	1,910	2,830	4,250	5,430	6,780
3391	21.5	3,370	6,960	10,100	14,700	18,700	23,000
3395	44.1	5,000	10,200	14,700	21,500	27,300	33,700
3397	7.10	1,210	2,730	4,080	6,170	7,920	9,940
3399	34.3	4,030	8,090	11,500	16,400	20,600	25,100
3401	34.5	4,280	8,820	12,800	18,800	23,900	29,500
3409	2.05	574	1,230	1,800	2,660	3,370	4,180
3438	11.3	1,620	3,630	5,390	8,100	10,400	13,000
3471	11.1	1,460	3,290	4,910	7,410	9,510	11,900
3474	26.0	3,490	7,290	10,600	15,600	19,900	24,600
3477	17.6	2,740	5,840	8,560	12,700	16,200	20,000
3485	2.87	882	1,970	2,920	4,390	5,620	7,020
3502	NA	NA	NA	NA	NA	NA	NA
3507	18.8	1,900	4,290	6,420	9,720	12,500	15,700
3514	2.79	678	1,460	2,140	3,160	4,020	4,980
3527	5.87	1,010	2,220	3,280	4,900	6,250	7,790
3529	15.7	1,800	4,060	6,070	9,180	11,800	14,800



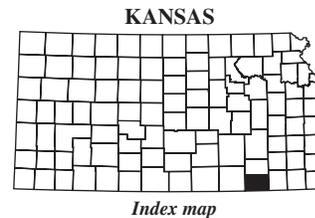


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 5410 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07174000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07172000 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5179 Lake and determination site identification number



**Figure 20.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Chautauqua County.

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**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 20)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		67	1107010619	CQ						Caney River	428	0.24
68	1107010632	CQ				Cedar Creek	32.3	.01	2.16	7.72	21.6	51.4
69	1107010636	CQ				Coon Creek	19.0	0	1.53	4.98	12.9	29.6
4896	1107010429	CQ	EK			North Salt Creek	9.99	0	.77	2.59	6.37	14.6
4911	1107010650	CQ	EK			Wolf Creek	16.8	0	0	1.01	3.93	12.4
4920	1107010612	CQ	EK			Middle Caney Creek	16.0	0	0	1.04	4.06	12.9
4925	HYDRO	CQ				HYDRO	17.4	NA	NA	NA	NA	NA
4926	HYDRO	CQ				HYDRO	18.3	NA	NA	NA	NA	NA
4927	1107010417	CQ	EK			South Salt Creek	16.1	0	.66	3.12	8.81	21.9
4933	1107010653	CQ	EK			Spring Creek	16.9	0	.05	2.04	6.62	18.1
4934	1107010417	CQ	EK			Salt Creek	44.1	0	2.11	8.16	23.5	59.3
4935	1107010620	CQ	EK			Caney River	57.9	0	.58	4.89	18.1	53.8
4945	1107010417	CQ	MG			Salt Creek	69.0	.25	3.18	12.2	35.7	91.5
4946	1107010642	CQ				Squaw Creek	4.02	0	0	0	.12	1.65
4950	HYDRO	CQ				HYDRO	4.33	NA	NA	NA	NA	NA
4964	1107010650	CQ				Wolf Creek	18.5	0	0	1.22	4.59	14.1
4965	1107010620	CQ				Caney River	76.1	0	.97	6.67	24.6	73.1
4976	1107010642	CQ				Squaw Creek	8.29	0	0	.41	1.69	5.81
4986	HYDRO	CQ				HYDRO	8.53	NA	NA	NA	NA	NA
4993	1107010611	CQ	EK			North Caney Creek	17.7	0	.74	3.33	9.38	23.5
4998	1107010420	CQ				Coffey Branch	12.3	.08	1.27	3.63	8.61	19.0
5008	1107010642	CQ				Squaw Creek	12.2	0	0	.88	3.21	9.84
5009	1107010620	CQ				Caney River	97.4	0	1.27	8.13	30.6	91.8
5018	HYDRO	CQ				HYDRO	23.3	NA	NA	NA	NA	NA
5037	1107010647	CQ				Bachelor Creek	11.7	0	.57	2.66	7.27	17.7
5038	HYDRO	CQ				HYDRO	9.93	NA	NA	NA	NA	NA
5052	HYDRO	CQ				HYDRO	13.3	NA	NA	NA	NA	NA
5053	1107010645	CQ				Turkey Creek	10.7	0	.54	2.47	6.65	16.1
5054	1107010645	CQ				Turkey Creek	9.57	0	.41	2.12	5.75	14.1
5055	1107010611	CQ				North Caney Creek	25.9	0	1.28	5.21	14.8	36.9
5063	1107010612	CQ				Middle Caney Creek	40.7	0	.51	3.80	13.0	38.4
5064	1107010644	CQ				Spring Creek	24.4	0	0	1.77	6.80	21.2
5070	1107010648	CQ				California Creek	4.02	1.07	1.45	2.25	3.87	7.20
5074	1107010646	CQ				Fly Creek	5.30	.58	1.24	2.42	4.71	9.35
5076	HYDRO	CQ				HYDRO	4.56	NA	NA	NA	NA	NA
5077	110701069	CQ				Bee Creek	9.73	0	.58	2.43	6.38	15.2
5081	HYDRO	CQ				HYDRO	25.1	NA	NA	NA	NA	NA
5083	HYDRO	CQ				HYDRO	6.22	NA	NA	NA	NA	NA

**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 20)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
67	281	14,900	30,100	42,200	59,400	73,000	87,500
68	31.1	4,050	7,400	10,100	13,900	17,000	20,300
69	18.4	1,940	4,090	5,930	8,720	11,000	13,700
4896	9.77	1,360	2,810	4,040	5,890	7,420	9,150
4911	10.6	1,590	3,440	5,060	7,520	9,580	11,900
4920	10.9	1,570	3,390	4,970	7,370	9,370	11,700
4925	NA	NA	NA	NA	NA	NA	NA
4926	NA	NA	NA	NA	NA	NA	NA
4927	14.9	1,780	3,720	5,390	7,900	9,980	12,300
4933	13.1	1,570	3,410	5,020	7,480	9,530	11,900
4934	38.1	4,080	7,680	10,700	14,900	18,500	22,200
4935	38.1	5,040	10,100	14,400	20,700	26,100	32,000
4945	57.6	4,430	8,430	11,800	16,700	20,700	25,000
4946	2.34	698	1,470	2,120	3,100	3,910	4,820
4950	NA	NA	NA	NA	NA	NA	NA
4964	11.8	1,680	3,640	5,360	7,980	10,200	12,700
4965	49.8	5,900	11,700	16,600	23,800	29,900	36,400
4976	5.45	1,060	2,260	3,300	4,860	6,160	7,640
4986	NA	NA	NA	NA	NA	NA	NA
4993	16.0	1,830	3,860	5,610	8,260	10,400	13,000
4998	12.2	1,550	3,210	4,620	6,740	8,490	10,500
5008	8.32	1,330	2,860	4,180	6,200	7,870	9,780
5009	61.7	6,710	13,200	18,700	26,700	33,500	40,800
5018	NA	NA	NA	NA	NA	NA	NA
5037	11.9	1,510	3,130	4,500	6,570	8,270	10,200
5038	NA	NA	NA	NA	NA	NA	NA
5052	NA	NA	NA	NA	NA	NA	NA
5053	10.8	1,430	2,950	4,240	6,180	7,780	9,590
5054	9.65	1,340	2,760	3,970	5,780	7,270	8,960
5055	24.1	2,320	4,910	7,150	10,600	13,400	16,600
5063	28.8	4,500	8,730	12,300	17,400	21,800	26,400
5064	17.3	2,150	4,590	6,710	9,940	12,600	15,700
5070	4.43	812	1,640	2,340	3,370	4,220	5,170
5074	5.83	954	1,940	2,770	4,010	5,020	6,170
5076	NA	NA	NA	NA	NA	NA	NA
5077	10.1	1,370	2,810	4,040	5,870	7,380	9,100
5081	NA	NA	NA	NA	NA	NA	NA
5083	NA	NA	NA	NA	NA	NA	NA

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**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 20)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5084	HYDRO	CQ						HYDRO	42.4	NA
5085	1107010620	CQ				Caney River	121	0	1.60	9.91	37.8	114
5086	1107010641	CQ	CL			Union Creek	19.3	0	.04	2.03	6.72	18.8
5092	1107010647	CQ				Bachelor Creek	15.4	0	1.08	3.98	10.5	24.7
5093	1107010611	CQ				North Caney Creek	39.9	0	1.80	7.49	22.2	57.4
5100	HYDRO	CQ				HYDRO	12.0	NA	NA	NA	NA	NA
5120	110701069	CQ				Bee Creek	13.6	0	.73	3.17	8.67	21.0
5121	1107010648	CQ				California Creek	14.7	0	1.49	4.71	11.6	25.9
5123	1107010644	CQ				Spring Creek	30.7	0	.11	2.70	9.94	30.2
5124	1107010612	CQ				Middle Caney Creek	45.9	0	.68	4.51	15.4	45.5
5133	1107010643	CQ				Pool Creek	22.1	0	.15	2.29	7.58	21.6
5138	HYDRO	CQ				HYDRO	23.2	NA	NA	NA	NA	NA
5145	1107010620	CQ				Caney River	152	0	2.07	12.6	48.7	148
5146	1107010621	CQ	CL			Otter Creek	50.7	0	.77	5.20	17.9	50.5
5157	1107010646	CQ				Fly Creek	17.1	.09	1.82	5.46	13.4	29.6
5158	1107010611	CQ				North Caney Creek	64.7	.09	3.06	12.3	36.9	97.3
5162	1107010612	CQ				Middle Caney Creek	79.4	0	1.35	7.45	26.6	82.2
5163	1107010643	CQ				Pool Creek	25.6	0	.42	3.11	9.93	27.5
5169	1107010635	CQ				Wolf Creek	13.1	0	.72	3.17	8.71	21.1
5179	HYDRO	CQ				HYDRO	13.8	NA	NA	NA	NA	NA
5218	1107010635	CQ				Wolf Creek	19.0	0	1.47	5.11	13.5	31.6
5220	110701069	CQ	MG			Bee Creek	42.8	0	2.49	9.50	27.0	67.4
5221	1107010611	CQ				North Caney Creek	97.8	.68	4.88	19.3	57.3	153
5222	1107010612	CQ				Middle Caney Creek	127	.09	3.12	14.4	49.5	152
5266	1107010612	CQ				Middle Caney Creek	152	.51	4.35	19.2	64.8	198
5275	1107010612	CQ				Middle Caney Creek	183	1.03	5.88	25.2	83.7	255
5285	1107010619	CQ				Caney River	218	0	2.95	18.6	73.9	225
5286	1107010630	CQ	CL			Cedar Creek	41.2	0	.57	4.15	13.8	38.5
5299	1107010633	CQ				Otter Creek	20.9	.01	1.70	5.37	13.6	31.3
5300	HYDRO	CQ				HYDRO	16.2	NA	NA	NA	NA	NA
5309	1107010633	CQ				Otter Creek	11.5	.04	1.07	3.10	7.38	16.6
5321	110701069	CQ	MG			Bee Creek	77.3	.30	3.53	14.1	42.7	114
5322	1107010610	CQ				Little Caney Creek	298	2.56	10.6	46.6	155	490
5324	1107010629	CQ				Dry Creek	21.0	0	.24	2.28	7.09	19.3
5325	1107010619	CQ				Caney River	262	0	3.42	22.5	91.6	280
5339	1107010619	CQ				Caney River	285	0	3.66	24.6	101	309
5357	110701068	CQ	MG			Little Caney Creek	377	3.54	13.7	61.7	209	675
5362	1107010634	CQ				Lake Creek	36.3	.11	2.36	7.79	20.5	49.1

**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 20)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5084	NA	NA	NA	NA	NA	NA	NA
5085	75.1	7,280	14,300	20,300	29,100	36,500	44,400
5086	13.9	1,680	3,670	5,420	8,090	10,300	12,900
5092	15.8	1,770	3,690	5,330	7,790	9,830	12,100
5093	37.0	4,850	8,860	12,100	16,700	20,500	24,500
5100	NA	NA	NA	NA	NA	NA	NA
5120	13.9	1,660	3,440	4,950	7,230	9,110	11,200
5121	15.9	1,710	3,570	5,150	7,530	9,500	11,700
5123	23.3	4,650	8,850	12,300	17,400	21,600	26,000
5124	33.3	4,470	8,750	12,400	17,700	22,200	26,900
5133	16.4	1,930	4,170	6,130	9,110	11,600	14,400
5138	NA	NA	NA	NA	NA	NA	NA
5145	93.7	8,020	15,800	22,400	32,100	40,300	49,000
5146	34.5	5,140	10,000	14,200	20,200	25,300	30,700
5157	18.0	1,880	3,920	5,660	8,300	10,500	13,000
5158	60.8	5,130	9,510	13,100	18,300	22,600	27,100
5162	59.0	6,350	12,100	16,900	23,900	29,800	36,200
5163	20.0	2,130	4,610	6,770	10,100	12,800	16,000
5169	13.8	1,660	3,410	4,900	7,140	8,980	11,100
5179	NA	NA	NA	NA	NA	NA	NA
5218	19.9	2,050	4,260	6,140	8,980	11,300	14,000
5220	41.7	3,390	6,570	9,250	13,100	16,400	19,800
5221	93.0	5,620	10,400	14,400	20,200	25,000	30,100
5222	103	7,060	13,400	18,700	26,500	33,100	40,200
5266	129	7,360	13,800	19,300	27,300	34,000	41,300
5275	163	7,560	14,200	19,800	28,000	34,900	42,400
5285	134	9,210	18,400	26,200	37,500	47,000	57,300
5286	26.9	4,590	9,000	12,700	18,100	22,700	27,600
5299	19.9	2,040	4,310	6,260	9,220	11,700	14,500
5300	NA	NA	NA	NA	NA	NA	NA
5309	11.0	1,470	3,050	4,400	6,430	8,100	10,000
5321	71.8	4,320	8,340	11,800	16,700	20,900	25,400
5322	303	9,470	17,400	24,200	34,000	42,200	51,100
5324	14.4	1,780	3,900	5,750	8,590	11,000	13,700
5325	161	10,400	20,800	29,500	42,200	52,600	63,900
5339	175	11,100	22,200	31,400	44,700	55,600	67,400
5357	414	10,700	19,600	27,100	37,900	47,000	56,900
5362	31.0	3,710	6,940	9,580	13,300	16,400	19,700

**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

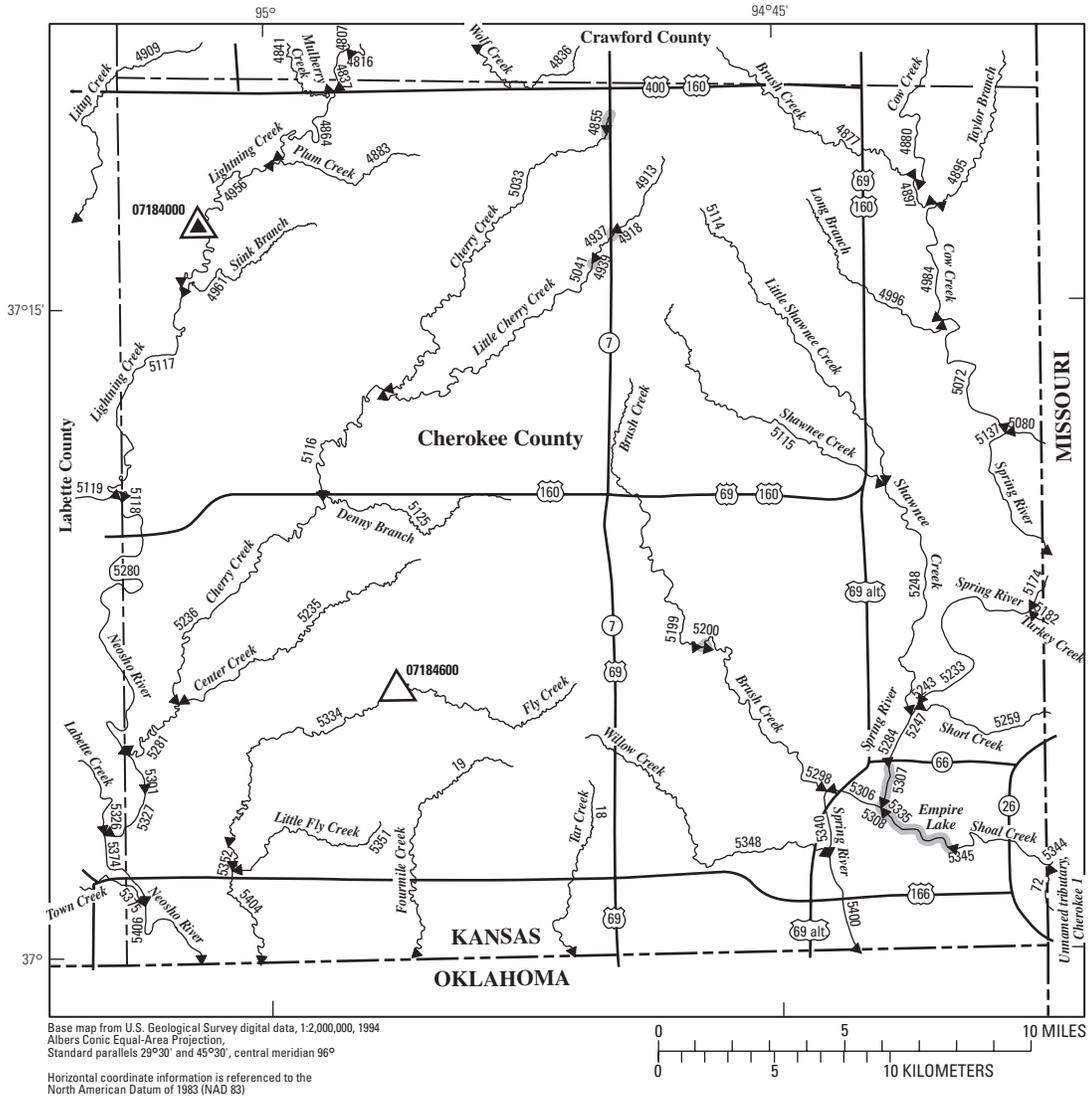
Determination site identification number (fig. 20)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5364	1107010619	CQ						Caney River	353	0
5367	1107010628	CQ	CL			Rock Creek	65.8	0	1.24	7.03	24.1	68.0
5372	1107010631	CQ				Sycamore Creek	36.7	0	.74	4.35	14.2	39.0
5373	1107010619	CQ				Caney River	378	.01	4.56	34.5	147	450
5379	110701068	CQ	MG			Little Caney Creek	414	4.09	15.4	69.4	234	765
5410	1107010674	CQ				Possum Trot Creek	15.7	0	.46	2.66	7.58	19.1
5413	1107010619	CQ				Caney River	424	.07	5.00	40.0	172	528

**Table 16.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Chautauqua County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

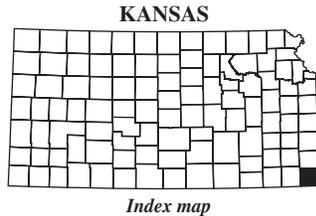
Determination site identification number (fig. 20)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5364	220	13,200	26,400	37,200	52,600	65,000	78,400
5367	45.1	5,650	11,000	15,500	22,000	27,500	33,300
5372	27.4	4,910	9,170	12,700	17,600	21,800	26,100
5373	239	13,500	27,300	38,400	54,300	67,100	80,700
5379	468	11,200	20,300	28,000	39,200	48,600	58,800
5410	13.2	1,600	3,420	5,000	7,400	9,390	11,700
5413	273	14,900	30,100	42,200	59,400	73,100	87,600





**EXPLANATION**

- ◀ 5404 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07184000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07184600 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5335 Lake and determination site identification number



**Figure 21.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Cherokee County.

**Table 17.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cherokee County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 21)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		18	1107020619	CK						Tar Creek	8.34	0
19	1107020618	CK				Fourmile Creek	20.2	0	.21	2.19	7.71	21.9
72	11070207886	CK				Unnamed tributary, Cherokee 1	2.50	.40	.78	1.51	3.13	6.31
4837	110702056	CK	CR			Lightning Creek	157	0	1.60	10.9	44.7	196
4841	1107020535	CK	CR			Mulberry Creek	26.9	0	.28	2.79	10.1	30.6
4855	HYDRO	CK				HYDRO	3.13	NA	NA	NA	NA	NA
4864	110702056	CK				Lightning Creek	188	.01	1.53	11.6	49.1	236
4877	1107020726	CK	CR			Brush Creek	29.1	.02	.46	3.54	12.8	36.5
4880	1107020716	CK	CR			Cow Creek	178	1.45	4.56	18.4	65.6	202
4883	1107020534	CK				Plum Creek	12.2	0	.09	1.69	5.65	15.8
4895	1107020725	CK	CR			Taylor Branch	34.7	.03	.25	2.79	10.6	32.4
4897	1107020716	CK				Cow Creek	209	2.02	5.75	22.5	79.2	243
4913	1107020532	CK				Little Cherry Creek	8.12	0	.02	1.35	4.40	11.8
4918	HYDRO	CK				HYDRO	8.13	NA	NA	NA	NA	NA
4937	1107020532	CK				Little Cherry Creek	10.8	0	.08	1.70	5.66	15.3
4939	HYDRO	CK				HYDRO	10.8	NA	NA	NA	NA	NA
4956	110702056	CK				Lightning Creek	213	0	1.40	12.0	52.0	270
4961	1107020537	CK				Stink Branch	13.2	0	.06	1.72	5.89	16.4
4984	1107020716	CK				Cow Creek	250	2.86	7.30	27.3	94.3	290
4996	1107020721	CK				Long Branch	13.2	0	.01	1.01	4.06	12.6
5033	110702054	CK				Cherry Creek	27.3	0	.58	3.76	12.9	35.7
5041	1107020532	CK				Little Cherry Creek	28.6	0	.52	3.63	12.7	35.9
5072	1107020716	CK				Cow Creek	274	3.43	8.36	30.6	105	321
5080	110702077	CK				Spring River	1,410	83.9	167	493	1,370	3,860
5114	1107020722	CK				Little Shawnee Creek	22.7	.01	.17	2.36	8.57	24.9
5115	1107020717	CK				Shawnee Creek	24.7	.01	.80	3.95	12.7	33.7
5116	110702054	CK				Cherry Creek	70.9	0	1.69	8.32	29.5	85.7
5117	110702056	CK	LB			Lightning Creek	245	.34	2.21	15.4	64.0	308
5125	1107020531	CK				Denny Branch	18.9	0	.20	2.29	7.98	22.5
5137	110702076	CK				Spring River	1,700	114	220	624	1,690	4,700
5174	1107020719	CK				Spring River	1,980	145	279	786	2,110	5,760
5182	1107020718	CK				Turkey Creek	75.0	.52	3.11	13.0	42.7	115
5199	1107020723	CK				Brush Creek	32.8	.13	1.69	6.56	19.8	50.2
5200	HYDRO	CK				HYDRO	32.9	NA	NA	NA	NA	NA
5233	110702074	CK				Spring River	2,070	154	296	834	2,230	6,080
5235	1107020525	CK				Center Creek	19.1	0	0	1.69	6.28	18.7
5236	110702054	CK				Cherry Creek	106	.27	2.44	11.3	40.6	121
5243	110702073	CK				Spring River	2,070	154	296	834	2,230	6,080

**Table 17.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cherokee County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 21)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
18	7.93	1,790	3,370	4,650	6,520	8,030	9,730
19	18.0	2,920	5,620	7,850	11,100	13,800	16,800
72	3.94	890	1,630	2,220	3,080	3,760	4,520
4837	129	7,520	16,000	24,100	37,500	50,100	65,200
4841	23.7	3,160	6,310	8,960	13,000	16,200	20,000
4855	NA	NA	NA	NA	NA	NA	NA
4864	151	7,440	16,600	25,500	40,500	54,900	72,400
4877	27.8	3,520	6,870	9,660	13,800	17,200	21,000
4880	144	9,810	17,000	22,900	31,200	38,100	45,400
4883	12.3	2,030	3,940	5,530	7,880	9,790	12,000
4895	27.4	4,400	7,920	10,800	14,800	18,100	21,500
4897	170	10,500	18,200	24,400	33,400	40,700	48,500
4913	9.10	1,650	3,150	4,370	6,170	7,630	9,260
4918	NA	NA	NA	NA	NA	NA	NA
4937	11.7	1,940	3,720	5,190	7,350	9,100	11,100
4939	NA	NA	NA	NA	NA	NA	NA
4956	169	7,250	16,800	26,300	42,600	58,300	77,600
4961	12.9	2,100	4,080	5,730	8,160	10,100	12,400
4984	200	11,300	19,500	26,200	35,800	43,600	52,100
4996	11.3	2,200	4,230	5,900	8,370	10,400	12,600
5033	26.5	3,290	6,460	9,100	13,000	16,200	19,900
5041	27.0	3,380	6,640	9,360	13,400	16,700	20,500
5072	219	11,100	19,300	26,100	35,800	43,800	52,400
5080	2,050	29,100	45,800	59,600	78,900	94,600	112,000
5114	20.2	3,000	5,840	8,210	11,700	14,600	17,800
5115	24.5	3,120	6,110	8,600	12,300	15,300	18,700
5116	61.7	4,250	8,120	11,400	16,200	20,100	24,400
5117	193	7,530	17,400	27,100	43,800	59,900	79,600
5125	17.7	2,640	5,160	7,240	10,300	12,900	15,700
5137	2,460	32,000	50,400	65,500	86,700	104,000	123,000
5174	2,940	35,000	54,600	70,800	93,500	112,000	132,000
5182	76.1	10,300	16,100	20,500	26,500	31,200	36,000
5199	34.0	4,020	7,100	9,570	13,000	15,700	18,600
5200	NA	NA	NA	NA	NA	NA	NA
5233	3,080	34,800	54,600	70,900	93,800	113,000	133,000
5235	16.0	2,680	5,220	7,330	10,500	13,000	15,900
5236	86.4	5,610	10,400	14,500	20,300	25,200	30,400
5243	3,080	34,800	54,600	70,900	93,800	113,000	133,000

**Table 17.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cherokee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

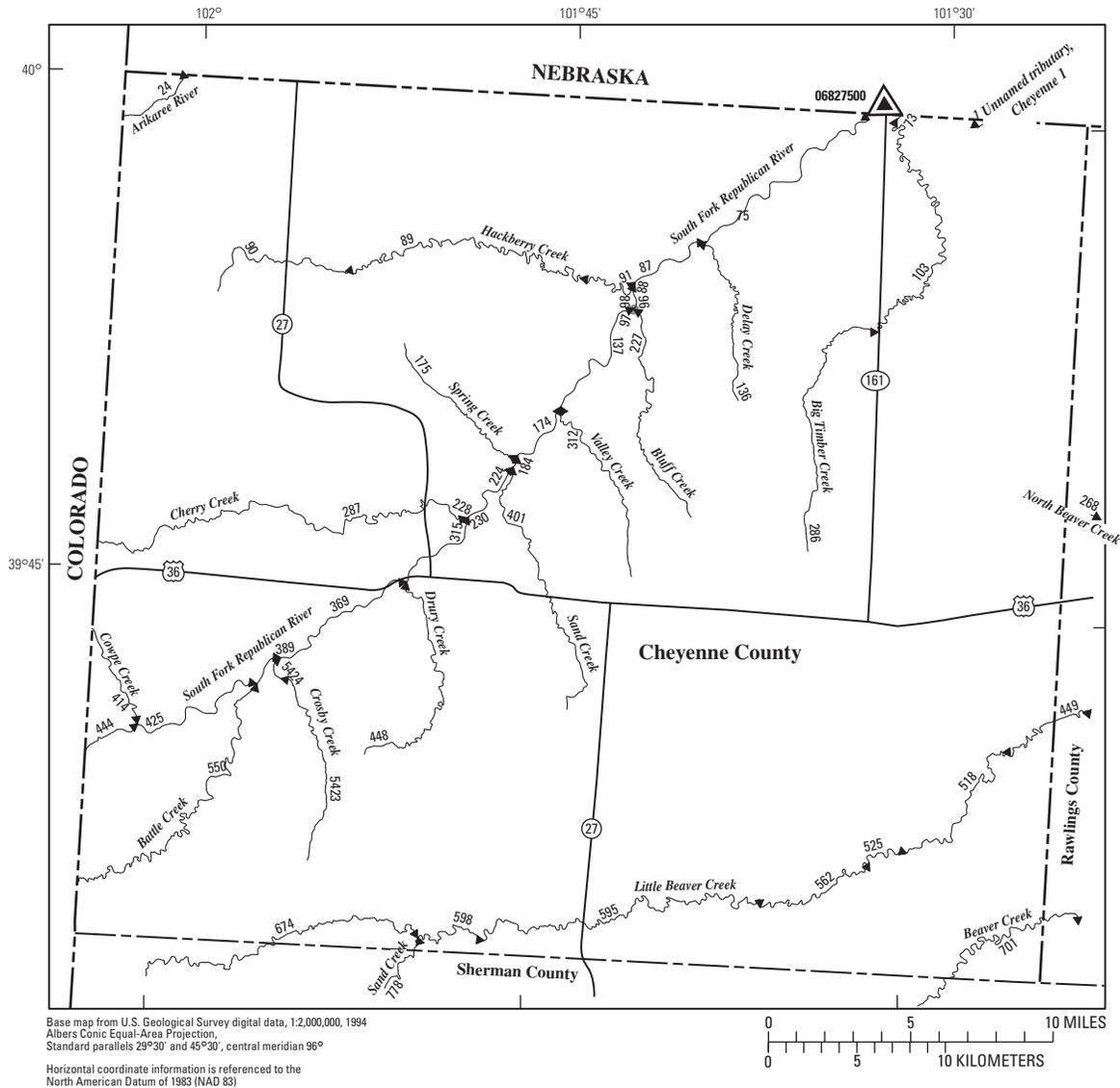
Determination site identification number (fig. 21)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5247	110702073	CK						Spring River	2,080	156
5248	1107020717	CK				Shawnee Creek	66.6	.20	1.92	8.31	28.2	79.9
5259	11070207881	CK				Short Creek	13.5	.16	1.27	4.27	11.6	26.6
5280	110702055	CK	LB			Neosho River	5,160	62.0	216	952	3,870	10,400
5281	110702054	CK				Cherry Creek	128	.48	2.85	12.9	46.6	140
5284	110702073	CK				Spring River	2,150	163	313	879	2,340	6,360
5298	1107020723	CK				Brush Creek	53.5	.36	2.36	9.30	29.2	77.1
5301	110702053	CK				Neosho River	5,290	64.6	228	985	3,970	10,700
5306	110702071	CK				Spring River	2,740	229	438	1,230	3,230	8,690
5307	HYDRO	CK				HYDRO	2,150	NA	NA	NA	NA	NA
5308	HYDRO	CK				HYDRO	2,730	NA	NA	NA	NA	NA
5327	110702052	CK	LB			Neosho River	5,290	64.7	228	986	3,970	10,700
5334	110702051	CK				Fly Creek	37.1	0	.49	3.43	12.4	36.7
5335	HYDRO	CK				HYDRO	583	NA	NA	NA	NA	NA
5340	110702071	CK				Spring River	2,790	235	450	1,260	3,300	8,900
5344	110702072	CK				Shoal Creek	563	94.7	153	350	823	1,970
5345	110702072	CK				Shoal Creek	578	95.7	155	358	846	2,030
5348	1107020720	CK				Willow Creek	27.0	.02	.46	3.05	10.6	29.9
5351	1107020526	CK				Little Fly Creek	11.2	0	0	1.08	3.94	11.6
5352	110702051	CK				Fly Creek	37.8	0	.49	3.45	12.5	37.1
5374	110702052	CK	LB			Neosho River	5,690	73.0	264	1,090	4,290	11,400
5375	1107020528	CK	LB			Town Creek	23.0	0	.18	2.51	9.17	26.6
5400	110702071	CK				Spring River	2,830	239	457	1,280	3,350	9,020
5404	110702051	CK				Fly Creek	61.2	0	.99	5.33	19.5	58.7
5406	110702052	CK				Neosho River	5,730	73.7	267	1,100	4,320	11,400

**Table 17.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cherokee County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

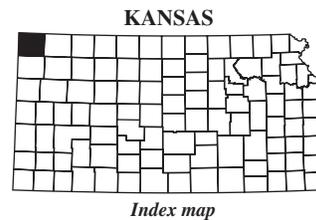
Determination site identification number (fig. 21)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5247	3,110	35,000	54,700	71,100	94,000	113,000	133,000
5248	57.8	5,160	9,300	12,700	17,500	21,400	25,600
5259	17.2	2,300	4,390	6,110	8,640	10,700	13,000
5280	3,430	32,300	47,700	57,000	75,600	104,000	140,000
5281	101	6,060	11,200	15,600	21,900	27,200	32,900
5284	3,210	35,400	55,500	72,100	95,400	114,000	135,000
5298	52.2	4,680	8,320	11,300	15,400	18,700	22,200
5301	3,540	33,200	49,600	59,300	80,800	111,000	146,000
5306	4,220	41,400	63,900	82,400	108,000	130,000	153,000
5307	NA	NA	NA	NA	NA	NA	NA
5308	NA	NA	NA	NA	NA	NA	NA
5327	3,540	33,300	49,600	59,300	80,900	111,000	146,000
5334	29.8	4,190	11,000	17,900	29,700	40,900	54,200
5335	NA	NA	NA	NA	NA	NA	NA
5340	4,310	41,700	64,300	83,000	109,000	131,000	154,000
5344	1,000	24,300	37,000	47,100	61,000	72,200	83,900
5345	1,030	25,400	38,400	48,800	62,900	74,300	86,200
5348	23.9	3,480	6,730	9,430	13,400	16,600	20,300
5351	10.1	2,030	3,880	5,390	7,620	9,420	11,500
5352	30.2	4,330	11,200	18,200	30,000	41,300	54,700
5374	3,870	36,300	55,500	66,200	97,100	130,000	166,000
5375	21.1	2,980	5,820	8,190	11,700	14,600	17,800
5400	4,370	41,500	64,100	82,800	109,000	131,000	154,000
5404	46.8	5,280	12,900	20,500	33,200	45,200	59,300
5406	3,890	36,500	56,000	66,800	98,500	131,000	167,000





**EXPLANATION**

- ← 778 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06827500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06827500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5335 Lake and determination site identification number



Index map

**Figure 22.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Cheyenne County.

**130 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 18.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cheyenne County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 22)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
1	1025000450	CN				Unnamed tributary, Cheyenne 1	11.0	0	0	0	0	0
24	102500011	CN				Arikaree River	1,960	0	0	.67	2.78	7.05
73	1025000361	CN				Big Timber Creek	150	0	0	0	0	0
75	102500032	CN				South Fork Republican River	2,700	.01	.53	16.0	31.0	61.0
87	102500032	CN				South Fork Republican River	2,650	.31	.84	15.4	29.6	59.7
88	102500032	CN				South Fork Republican River	2,530	0	0	.85	3.81	10.5
89	102500033	CN				Hackberry Creek	105	0	0	0	0	0
90	102500033	CN				Hackberry Creek	49.7	0	0	0	0	0
91	102500033	CN				Hackberry Creek	109	0	0	0	0	0
96	102500034	CN				South Fork Republican River	2,530	1.02	1.55	14.1	26.4	56.7
97	HYDRO	CN				HYDRO	28.4	NA	NA	NA	NA	NA
98	1025000370	CN				Bluff Creek	28.4	0	0	0	0	0
103	1025000361	CN				Big Timber Creek	150	0	0	0	0	0
136	1025000366	CN				Delay Creek	22.1	0	0	0	0	0
137	102500034	CN				South Fork Republican River	2,500	1.19	1.72	13.8	25.7	56.0
174	102500034	CN				South Fork Republican River	2,460	1.41	1.95	13.4	24.7	55.1
175	1025000367	CN				Spring Creek	31.7	0	0	0	0	0
184	102500034	CN				South Fork Republican River	2,430	1.62	2.16	13.0	23.7	54.2
224	102500034	CN				South Fork Republican River	2,370	1.96	2.51	12.3	22.2	52.7
227	1025000370	CN				Bluff Creek	28.4	0	0	0	0	0
228	102500035	CN				Cherry Creek	73.8	0	0	0	0	0
230	102500035	CN				Cherry Creek	73.8	0	0	0	0	0
286	1025000361	CN				Big Timber Creek	90.3	0	0	0	0	0
287	102500035	CN				Cherry Creek	73.8	0	0	0	0	0
312	1025000369	CN				Valley Creek	26.4	0	0	0	0	0
315	102500036	CN				South Fork Republican River	2,290	2.41	2.97	11.5	20.2	50.8
369	102500037	CN				South Fork Republican River	2,240	2.67	3.23	11.0	19.0	49.7
389	102500037	CN				South Fork Republican River	2,200	2.92	3.48	10.5	17.9	48.7
401	1025000368	CN				Sand Creek	59.7	0	0	0	0	0
414	102500038	CN				Cowpe Creek	56.5	0	0	0	0	0
425	102500037	CN				South Fork Republican River	2,160	3.17	3.74	10.0	16.7	47.6
444	102500039	CN				South Fork Republican River	2,090	3.58	4.15	9.25	14.9	45.9
448	1025000360	CN				Drury Creek	39.3	0	0	0	0	0
449	102500133	CN	RA			Little Beaver Creek	477	0	0	0	0	0
518	102500133	CN				Little Beaver Creek	420	0	0	0	0	0
525	102500133	CN				Little Beaver Creek	382	0	0	0	0	0
550	1025000371	CN				Battle Creek	39.2	0	0	0	0	0
562	102500133	CN				Little Beaver Creek	366	0	0	0	0	0

**Table 18.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cheyenne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 22)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1	0	227	736	1,280	2,240	3,130	4,190
24	9.51	1,160	3,510	6,110	10,700	15,200	20,600
73	2.15	517	1,660	2,950	5,250	7,530	10,300
75	26.9	999	3,700	7,170	14,400	22,300	32,900
87	26.3	946	3,490	6,770	13,600	21,100	31,100
88	13.1	1,450	4,450	7,820	13,900	19,800	27,200
89	.19	303	1,050	1,930	3,560	5,190	7,190
90	0	278	939	1,700	3,070	4,440	6,080
91	.26	295	1,030	1,890	3,490	5,090	7,060
96	24.9	827	3,030	5,860	11,800	18,300	27,000
97	NA	NA	NA	NA	NA	NA	NA
98	0	321	1,120	2,010	3,610	5,130	6,980
103	2.15	517	1,660	2,950	5,260	7,530	10,300
136	0	288	986	1,760	3,150	4,460	6,050
137	24.5	798	2,910	5,640	11,300	17,600	26,000
174	24.1	760	2,770	5,360	10,800	16,700	24,700
175	0	240	803	1,440	2,590	3,730	5,080
184	23.7	724	2,630	5,090	10,200	15,900	23,500
224	23.0	665	2,400	4,630	9,310	14,500	21,500
227	0	321	1,120	2,010	3,610	5,130	6,980
228	0	287	979	1,780	3,250	4,710	6,480
230	0	286	977	1,780	3,240	4,700	6,470
286	.36	450	1,440	2,540	4,490	6,400	8,690
287	0	287	979	1,780	3,250	4,710	6,480
312	0	298	1,040	1,880	3,390	4,820	6,570
315	22.1	589	2,100	4,050	8,150	12,700	18,900
369	21.6	544	1,930	3,720	7,470	11,700	17,400
389	21.1	502	1,760	3,400	6,840	10,700	16,000
401	0	236	784	1,410	2,530	3,620	4,930
414	0	258	891	1,630	2,980	4,330	5,960
425	20.6	459	1,590	3,070	6,180	9,670	14,500
444	19.8	390	1,320	2,540	5,120	8,050	12,100
448	0	187	639	1,160	2,100	3,030	4,140
449	2.17	498	1,700	3,120	5,750	8,430	11,800
518	1.23	440	1,540	2,850	5,310	7,830	11,000
525	.89	421	1,480	2,750	5,140	7,570	10,600
550	0	146	528	985	1,830	2,680	3,720
562	.80	415	1,460	2,720	5,080	7,490	10,500

## 132 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 18.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cheyenne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

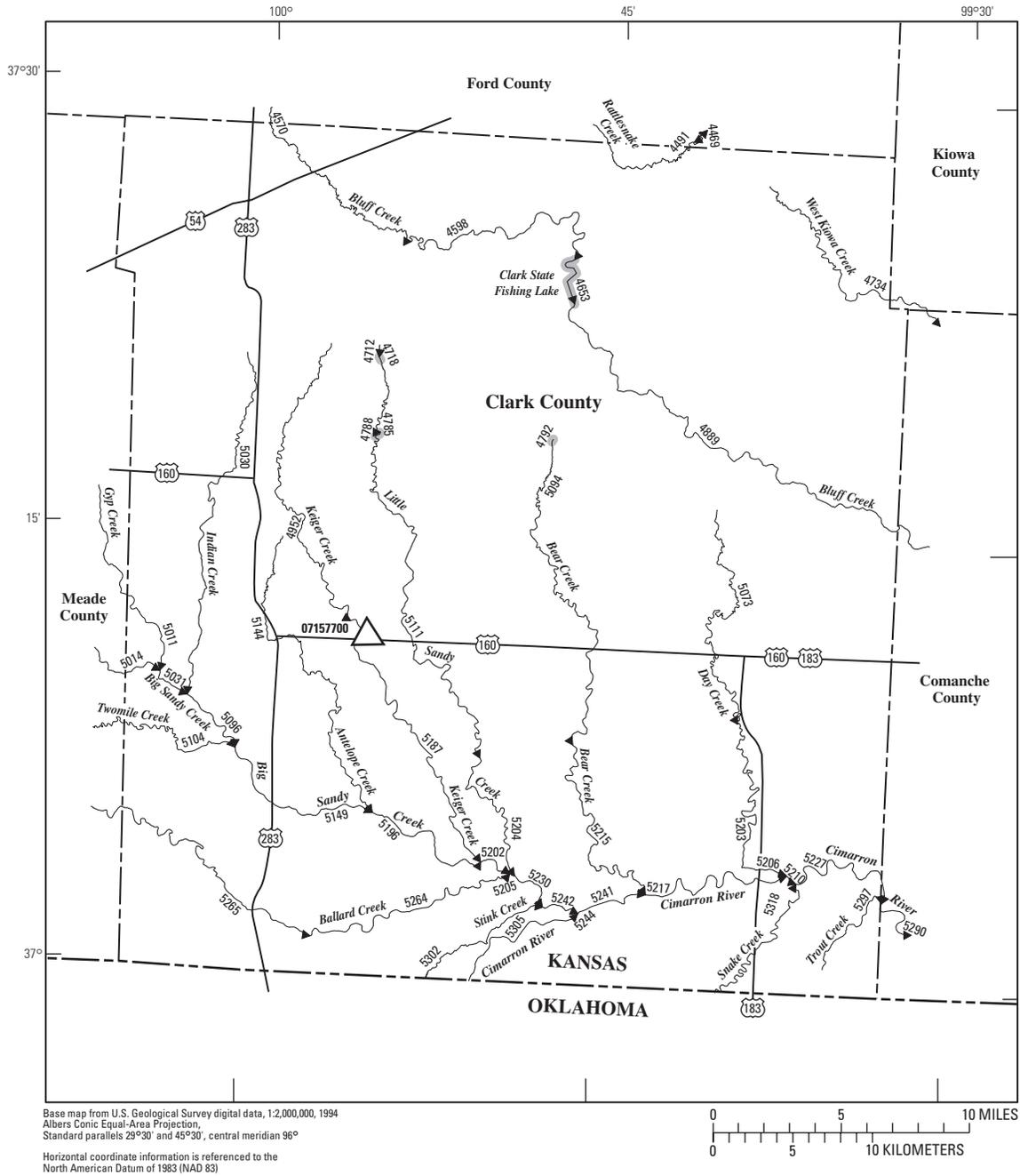
Determination site identification number (fig. 22)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		595	102500133	CN						Little Beaver Creek	340	0	0
598	102500133	CN				Little Beaver Creek	256	0	0	0	0	0	0
674	102500134	CN	SH			Little Beaver Creek	105	0	0	0	0	0	0
701	102500121	CN	RA	SH		Beaver Creek	571	0	0	0	0	0	0
778	102500137	CN	SH			Sand Creek	141	0	0	0	0	0	0
5423	1025000372	CN				Crosby Creek	25.6	0	0	0	0	0	0
5424	1025000372	CN				Crosby Creek	26.0	0	0	0	0	0	0

**Table 18.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cheyenne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

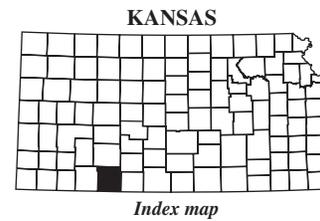
Determination site identification number (fig. 22)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
595	0.66	409	1,440	2,680	5,000	7,380	10,300
598	.09	359	1,290	2,420	4,540	6,720	9,440
674	0	220	821	1,570	2,980	4,440	6,270
701	1.39	455	1,600	2,980	5,570	8,240	11,600
778	0	254	941	1,790	3,400	5,060	7,140
5423	0	284	999	1,810	3,270	4,650	6,340
5424	0	286	1,010	1,830	3,300	4,700	6,410





**EXPLANATION**

- ← 5265 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07184000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07157700 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4653 Lake and determination site identification number



**Figure 23.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Clark County.

**136 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 19.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clark County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 23)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4491	110300094	CA	FO					Rattlesnake Creek	47.1	0	0
4570	1104000813	CA	FO			Bluff Creek	97.5	0	0	0	.01	.02	
4598	1104000813	CA				Bluff Creek	145	0	0	.19	1.18	4.52	
4653	HYDRO	CA				HYDRO	153	NA	NA	NA	NA	NA	
4712	11040008652	CA				Little Sandy Creek	8.05	0	0	0	0	0	
4718	HYDRO	CA				HYDRO	8.07	NA	NA	NA	NA	NA	
4734	110400081180	CA	CM	KW		West Kiowa Creek	81.3	0	.60	2.03	4.13	8.64	
4785	11040008652	CA				Little Sandy Creek	24.1	0	0	0	0	0	
4788	HYDRO	CA				HYDRO	25.0	NA	NA	NA	NA	NA	
4792	HYDRO	CA				HYDRO	10.7	NA	NA	NA	NA	NA	
4889	1104000813	CA	CM			Bluff Creek	261	0	.73	2.99	7.65	18.3	
4952	110400088	CA				Keiger Creek	38.2	0	0	0	0	0	
5011	1104000825	CA	ME			Gyp Creek	92.7	0	0	.06	.30	1.33	
5014	110400089	CA	ME			Big Sandy Creek	77.5	0	0	0	.04	1.03	
5030	1104000814	CA				Indian Creek	56.0	0	0	0	0	.01	
5031	110400089	CA				Big Sandy Creek	172	0	0	1.02	2.63	6.32	
5073	1104000820	CA				Day Creek	60.7	0	0	.14	.49	1.88	
5094	1104000818	CA				Bear Creek	81.3	0	0	.47	1.31	3.45	
5096	110400089	CA				Big Sandy Creek	235	0	.45	2.07	4.86	10.8	
5104	1104000815	CA	ME			Twomile Creek	26.2	0	0	0	0	0	
5111	11040008652	CA				Little Sandy Creek	80.8	0	0	.67	1.72	4.14	
5144	1104000816	CA				Antelope Creek	33.5	0	0	0	0	0	
5149	110400089	CA				Big Sandy Creek	281	0	1.33	3.50	7.44	15.3	
5187	110400088	CA				Keiger Creek	58.8	0	0	.35	.54	1.37	
5196	110400089	CA				Big Sandy Creek	325	0	2.05	4.68	9.58	19.2	
5202	110400087	CA				Big Sandy Creek	385	.02	2.71	5.97	12.2	24.5	
5203	1104000820	CA				Day Creek	91.0	0	0	.94	2.15	5.07	
5204	11040008652	CA				Little Sandy Creek	91.4	0	0	.92	2.19	5.03	
5205	110400086	CA				Big Sandy Creek	484	.80	4.39	8.79	17.2	33.6	
5206	1104000818	CA				Day Creek	91.0	0	0	.94	2.15	5.07	
5210	110400085	CA				Cimarron River	9,420	19.2	40.6	91.7	186	371	
5215	1104000818	CA				Bear Creek	105	0	.13	1.31	2.78	5.94	
5217	110400085	CA				Cimarron River	9,330	19.4	40.5	90.2	182	361	
5227	110400085	CA	CM			Cimarron River	9,490	19.2	41.0	93.3	190	379	
5230	110400086	CA				Big Sandy Creek	578	1.18	5.52	11.3	22.3	44.2	
5241	110400085	CA				Cimarron River	9,210	19.6	40.3	88.1	177	349	
5242	110400086	CA				Big Sandy Creek	588	1.32	5.80	11.7	23.0	45.3	
5244	110400085	CA				Cimarron River	8,610	21.3	40.4	79.9	152	295	

**Table 19.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clark County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 23)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4491	2.79	481	1,440	2,460	4,230	5,920	7,910
4570	2.63	614	1,850	3,210	5,560	7,840	10,500
4598	6.58	889	2,550	4,320	7,350	10,200	13,600
4653	NA	NA	NA	NA	NA	NA	NA
4712	0	281	824	1,380	2,300	3,130	4,120
4718	NA	NA	NA	NA	NA	NA	NA
4734	7.89	945	2,400	3,830	6,110	8,180	10,500
4785	0.84	529	1,590	2,680	4,540	6,230	8,250
4788	NA	NA	NA	NA	NA	NA	NA
4792	NA	NA	NA	NA	NA	NA	NA
4889	16.3	1,420	3,760	6,130	10,100	13,700	18,000
4952	1.49	453	1,140	1,810	2,890	3,880	5,000
5011	3.18	721	1,960	3,210	5,270	7,170	9,350
5014	2.95	598	1,720	2,890	4,870	6,730	8,900
5030	1.94	576	1,570	2,590	4,250	5,790	7,530
5031	7.22	923	2,520	4,160	6,880	9,420	12,400
5073	3.43	560	1,590	2,670	4,490	6,190	8,160
5094	4.58	672	1,880	3,130	5,220	7,170	9,430
5096	10.5	1,090	2,920	4,770	7,820	10,700	13,900
5104	0.58	514	1,570	2,680	4,580	6,320	8,400
5111	4.95	765	2,080	3,410	5,620	7,670	10,000
5144	0.97	292	830	1,390	2,310	3,160	4,130
5149	13.3	1,120	2,950	4,790	7,810	10,600	13,800
5187	2.82	368	689	929	1,250	1,500	1,750
5196	15.9	1,180	3,070	4,970	8,060	10,900	14,200
5202	19.5	1,160	2,650	4,050	6,250	8,220	10,500
5203	5.84	563	1,610	2,720	4,590	6,350	8,410
5204	5.62	740	2,030	3,340	5,510	7,540	9,860
5205	25.1	1,340	3,040	4,610	7,060	9,250	11,700
5206	5.84	563	1,610	2,720	4,590	6,350	8,410
5210	232	3,590	9,620	15,800	26,100	35,700	47,200
5215	6.27	600	1,690	2,830	4,740	6,520	8,600
5217	228	3,520	9,460	15,600	25,800	35,200	46,600
5227	236	3,650	9,760	16,000	26,500	36,100	47,700
5230	31.6	1,540	3,520	5,370	8,270	10,900	13,800
5241	222	3,450	9,300	15,300	25,400	34,800	46,000
5242	32.2	1,540	3,510	5,340	8,220	10,800	13,700
5244	197	3,080	8,470	14,100	23,500	32,300	42,900

**138 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 19.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clark County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

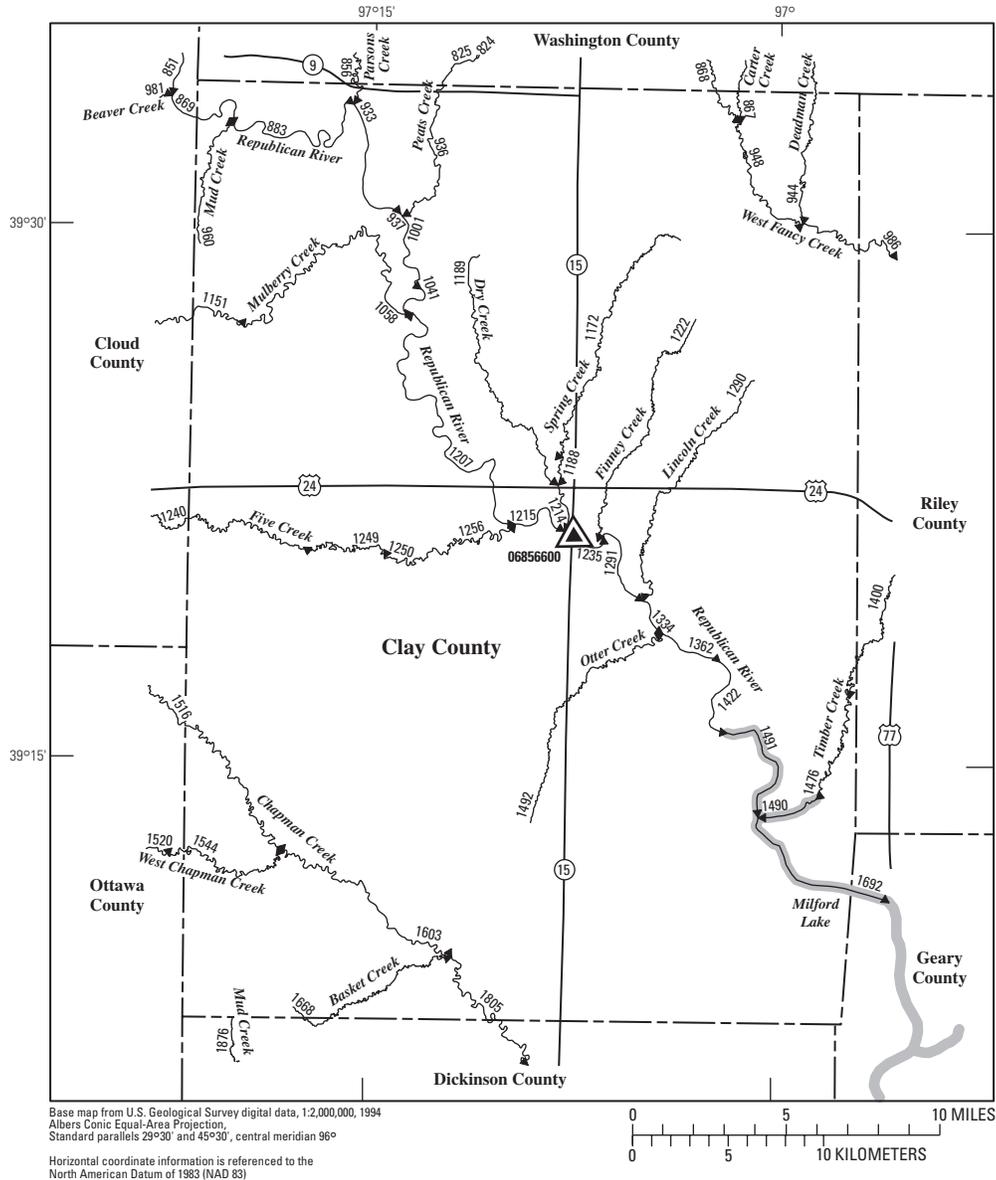
Determination site identification number (fig. 23)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5264	1104000810	CA						Ballard Creek	99.2	0
5265	1104000810	CA	ME			Ballard Creek	78.7	0	.36	1.04	1.50	2.58
5290	110400085	CA	CM			Cimarron River	9,540	19.3	41.3	94.3	193	385
5297	1104000819	CA	CM			Trout Creek	30.2	0	.50	.97	1.21	2.26
5302	1104000817	CA				Stink Creek	7.92	0	0	0	0	0
5305	1104000811	CA				Cimarron River	8,610	21.3	40.4	79.9	152	295
5318	1104000821	CA				Snake Creek	54.3	0	.91	1.93	3.25	6.26

**Table 19.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clark County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

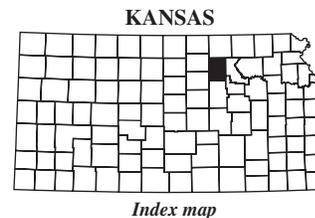
Determination site identification number (fig. 23)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5264	4.87	496	1,340	2,190	3,570	4,830	6,280
5265	3.62	514	1,370	2,240	3,630	4,910	6,350
5290	239	3,690	9,830	16,100	26,600	36,300	47,900
5297	3.09	655	1,600	2,490	3,880	5,100	6,440
5302	0	292	846	1,400	2,340	3,180	4,170
5305	197	3,080	8,470	14,100	23,500	32,300	42,900
5318	5.96	523	1,410	2,290	3,750	5,070	6,590





**EXPLANATION**

- ◀ 1876 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06856600 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06856600 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1692 Lake and determination site identification number



**Figure 24.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Clay County.

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**Table 20.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clay County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 24)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		856	1025001712	CY	WS					Parsons Creek	97.7	0
867	1027020559	CY	WS			Carter Creek	17.3	0	0	.92	2.24	6.09
868	1027020529	CY	WS			West Fancy Creek	31.5	0	.06	1.40	3.64	9.96
869	1025001713	CY	CD			Republican River	22,300	127	196	341	710	1,550
883	1025001713	CY				Republican River	22,300	128	197	344	717	1,560
933	1025001711	CY				Republican River	22,400	130	202	356	743	1,620
936	1025001710	CY	WS			Peats Creek	104	0	1.94	6.47	17.4	45.0
937	102500179	CY				Republican River	22,400	183	363	601	956	2,010
944	1027020560	CY	WS			Deadman Creek	21.6	0	0	1.18	3.04	8.15
948	1027020529	CY				West Fancy Creek	62.2	0	.66	3.36	8.28	21.5
960	1025001763	CY				Mud Creek	13.8	0	0	.43	1.12	3.59
986	1027020529	CY	RL			West Fancy Creek	104	0	1.34	6.14	14.3	36.6
1001	102500179	CY				Republican River	22,500	133	207	367	770	1,680
1041	102500178	CY				Republican River	22,500	133	207	368	771	1,680
1058	1025001740	CY				Mulberry Creek	72.1	0	1.12	4.09	10.9	28.3
1151	1025001740	CY	CD			Mulberry Creek	44.7	0	.46	2.45	6.67	17.5
1172	102500171354	CY				Spring Creek	38.2	0	.25	1.87	5.20	14.1
1188	102500171354	CY				Spring Creek	39.0	0	.29	1.96	5.40	14.5
1189	102500171369	CY				Dry Creek	26.4	0	.64	1.72	3.61	8.64
1207	102500178	CY				Republican River	22,600	136	212	378	796	1,740
1214	102500179354	CY				Huntress Creek	66.7	0	1.34	4.10	10.3	25.9
1215	102500178	CY				Republican River	22,700	138	217	388	819	1,790
1222	1025001764	CY				Finney Creek	21.1	0	.13	1.29	3.21	8.36
1235	102500178	CY				Republican River	22,800	140	220	396	837	1,830
1240	10250017413	CY	CD			Five Creek	41.0	0	.63	2.76	7.17	18.1
1249	10250017413	CY				Five Creek	59.5	0	1.12	4.11	10.8	27.0
1250	102500113	CY				Five Creek	62.8	0	1.23	4.41	11.5	28.8
1256	10250017413	CY				Five Creek	88.0	0	1.75	5.86	15.5	39.4
1290	1025001765	CY				Lincoln Creek	40.0	0	.55	2.58	6.90	17.9
1291	102500178	CY				Republican River	22,800	134	213	393	850	1,870
1334	102500178	CY				Republican River	22,800	124	202	388	873	1,940
1362	102500178	CY				Republican River	22,900	106	182	380	911	2,060
1400	102500176	CY	RL			Timber Creek	41.2	0	.10	2.10	6.72	19.4
1422	102500177	CY				Republican River	22,900	103	178	378	919	2,090
1476	102500176	CY				Timber Creek	58.7	0	.47	3.28	10.4	29.5
1490	HYDRO	CY				HYDRO	61.3	NA	NA	NA	NA	NA
1491	HYDRO	CY				HYDRO	22,900	NA	NA	NA	NA	NA
1492	1025001766	CY				Otter Creek	65.0	0	.89	3.70	10.4	28.1

**Table 20.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clay County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 24)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
856	30.0	1,900	4,540	7,080	11,100	14,700	18,800
867	5.82	1,070	2,550	3,900	6,040	7,860	9,970
868	9.36	1,750	3,910	5,860	8,850	11,500	14,300
869	728	9,170	15,900	21,500	29,900	37,200	45,700
883	735	9,290	16,100	21,700	30,200	37,500	45,900
933	765	9,780	16,900	22,800	31,400	38,700	47,000
936	33.1	2,020	4,800	7,430	11,600	15,300	19,600
937	805	8,640	19,500	30,000	46,900	62,300	80,500
944	7.38	1,220	2,910	4,470	6,920	9,020	11,500
948	18.2	2,380	5,160	7,660	11,500	14,800	18,500
960	4.03	860	2,090	3,230	5,030	6,580	8,370
986	29.6	3,130	6,470	9,420	13,900	17,800	22,200
1001	796	10,300	17,800	23,800	32,600	39,900	48,100
1041	797	10,300	17,800	23,800	32,600	39,900	48,100
1058	22.0	1,660	3,980	6,200	9,720	12,900	16,400
1151	14.2	1,530	3,630	5,620	8,750	11,500	14,600
1172	12.1	1,360	3,280	5,090	7,960	10,500	13,400
1188	12.4	1,320	3,190	4,980	7,810	10,300	13,200
1189	7.75	1,300	3,190	4,940	7,710	10,100	12,900
1207	826	10,800	18,600	24,800	33,700	41,000	49,100
1214	20.3	1,700	3,960	6,070	9,370	12,300	15,600
1215	851	11,200	19,300	25,700	34,700	42,000	50,000
1222	7.34	1,170	2,830	4,370	6,790	8,870	11,300
1235	872	11,500	19,900	26,400	35,500	42,800	50,700
1240	14.2	1,590	3,700	5,660	8,720	11,400	14,400
1249	20.3	1,710	4,010	6,180	9,590	12,600	16,000
1250	21.4	1,760	4,130	6,360	9,850	12,900	16,400
1256	28.9	1,820	4,340	6,740	10,500	13,900	17,800
1290	14.3	1,750	4,000	6,070	9,260	12,100	15,200
1291	878	11,000	19,100	25,600	34,200	41,400	49,700
1334	889	10,300	17,900	24,200	32,100	39,100	48,100
1362	908	8,920	15,600	21,800	28,400	35,200	45,300
1400	16.0	2,110	4,830	7,340	11,200	14,700	18,500
1422	912	8,640	15,200	21,300	27,600	34,400	44,800
1476	23.2	2,430	5,540	8,430	12,900	16,900	21,300
1490	NA	NA	NA	NA	NA	NA	NA
1491	NA	NA	NA	NA	NA	NA	NA
1492	22.2	2,320	5,220	7,880	12,000	15,600	19,600

**Table 20.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clay County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

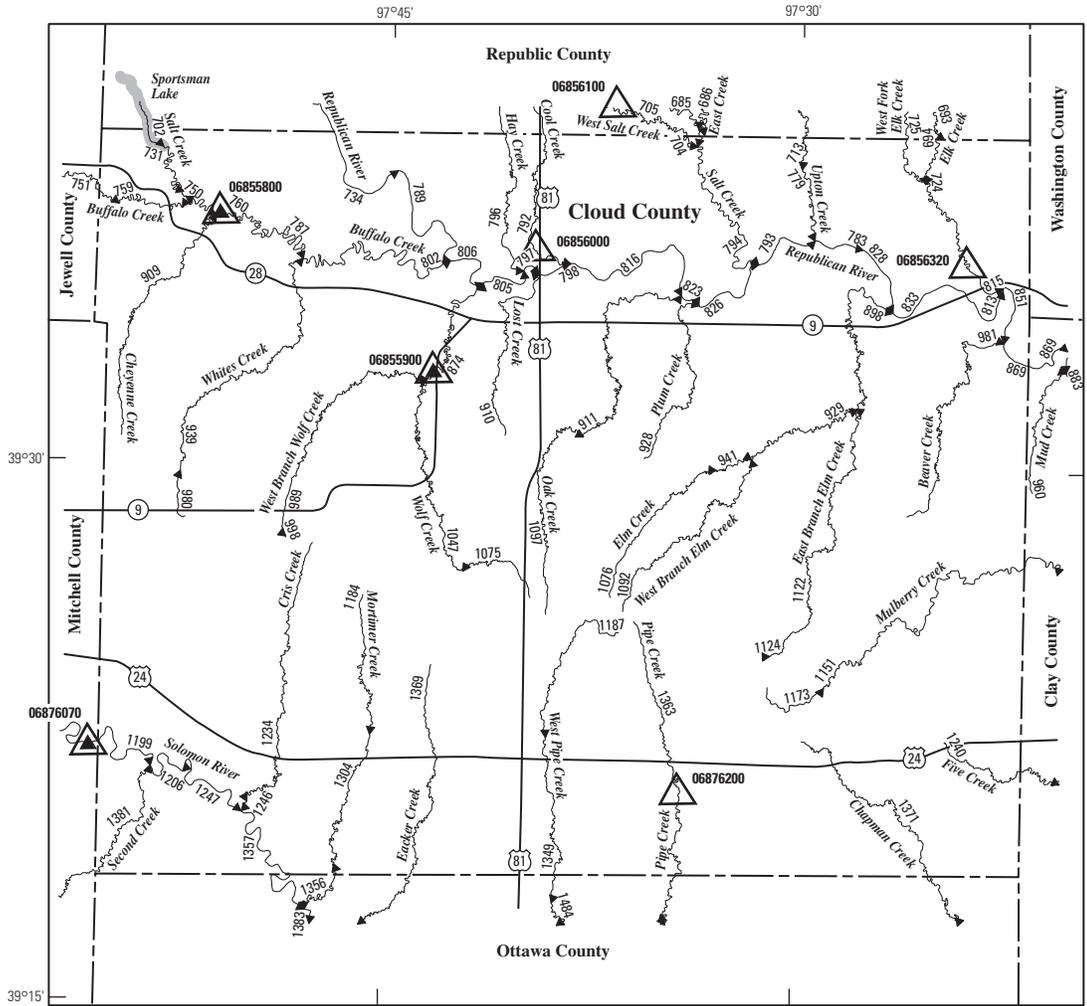
Determination site identification number (fig. 24)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1516	102600084	CY	OT					Chapman Creek	80.6	0.38
1544	102600085	CY	OT			West Chapman Creek	55.5	.18	1.38	4.16	9.99	24.1
1603	102600083	CY				Chapman Creek	169	2.30	5.70	12.6	28.3	70.0
1668	1026000840	CY	DK			Basket Creek	24.6	.04	.12	1.24	3.10	8.29
1692	HYDRO	CY	GE			HYDRO	23,100	NA	NA	NA	NA	NA
1805	102600083	CY	DK			Chapman Creek	269	5.76	10.4	19.9	41.8	107
1876	102600088	CY	DK			Mud Creek	66.8	0	1.08	4.04	10.8	27.8

**Table 20.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Clay County.—Continued

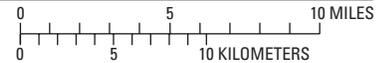
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 24)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1516	27.0	1,800	4,160	6,390	9,880	13,000	16,500
1544	18.3	1,470	3,490	5,400	8,410	11,100	14,100
1603	51.2	2,580	5,630	8,480	12,900	17,000	21,600
1668	7.67	1,240	3,040	4,700	7,330	9,600	12,200
1692	NA	NA	NA	NA	NA	NA	NA
1805	79.4	3,400	6,910	10,100	15,200	19,800	25,200
1876	21.3	1,870	4,080	6,090	9,190	11,900	15,000



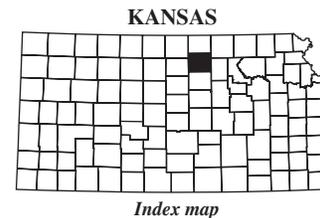


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 1357 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 06876070 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 06876200 ▽ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 1365 **Lake and determination site identification number**



**Figure 25.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Cloud County.

**Table 21.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cloud County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 25)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		702	HYDRO	CD	RP					HYDRO	137	NA
705	1025001725	CD	RP			West Salt Creek	70.8	0	0.91	3.47	9.21	23.8
713	1025001752	CD	RP			Upton Creek	14.2	0	0	.61	1.45	4.15
724	1025001715	CD	RP			Elk Creek	45.5	0	.69	2.87	7.40	18.6
725	1025001716	CD	RP			West Fork Elk Creek	26.8	0	.22	1.61	4.05	10.3
731	1025001730	CD				Salt Creek	142	0	1.53	5.22	15.6	43.8
734	1025001728	CD	RP			Republican River	21,200	119	158	251	544	1,130
750	1025001730	CD				Salt Creek	142	0	1.53	5.23	15.6	43.8
751	1025001737	CD	JW			Buffalo Creek	150	0	1.74	5.63	16.5	46.2
759	1025001737	CD				Buffalo Creek	154	0	1.78	5.76	17.0	47.6
760	1025001729	CD				Buffalo Creek	298	.70	2.92	9.96	34.8	109
779	1025001752	CD				Upton Creek	19.4	0	0	.93	2.30	6.22
783	1025001718	CD				Republican River	22,100	121	185	319	657	1,430
787	1025001729	CD				Buffalo Creek	348	.95	3.10	11.0	41.0	133
789	1025001726	CD				Republican River	21,200	119	158	252	545	1,130
792	1025001750	CD	RP			Cool Creek	11.9	0	.20	.74	1.16	2.74
793	1025001718	CD				Republican River	22,000	121	184	316	651	1,420
794	1025001719	CD	RP			Salt Creek	199	.72	4.09	12.2	31.4	80.2
796	1025001749	CD	RP			Hay Creek	19.3	0	.31	1.30	2.61	6.02
797	1025001726	CD				Republican River	21,700	113	170	284	577	1,250
798	1025001726	CD				Republican River	21,800	113	171	286	581	1,260
802	1025001729	CD				Buffalo Creek	405	1.40	4.21	14.0	48.3	152
805	1025001726	CD				Republican River	21,700	113	170	283	576	1,250
806	1025001726	CD				Republican River	21,700	114	168	279	572	1,230
813	1025001713	CD				Republican River	22,100	172	341	563	901	1,900
815	1025001714	CD				Elk Creek	85.5	0	1.78	5.64	14.4	35.8
816	1025001726	CD				Republican River	21,800	114	172	288	587	1,270
823	1025001726	CD				Republican River	21,800	115	173	292	595	1,290
826	1025001726	CD				Republican River	21,800	115	174	294	600	1,300
828	1025001717	CD				Republican River	22,100	121	186	319	658	1,430
833	1025001717	CD				Republican River	22,100	124	190	328	679	1,480
851	1025001713	CD				Republican River	22,200	126	194	338	703	1,530
874	1025001738	CD				Wolf Creek	59.6	0	.10	1.00	4.30	17.0
898	1025001739	CD				Elm Creek	77.0	0	1.26	4.24	10.9	27.6
909	1025001755	CD				Cheyenne Creek	40.9	0	0	1.15	3.18	8.87
910	1025001757	CD				Lost Creek	14.1	0	.38	1.20	2.11	4.49
911	1025001758	CD				Oak Creek	30.7	0	.64	2.16	4.73	10.8

**Table 21.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cloud County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 25)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
702	NA	NA	NA	NA	NA	NA	NA
705	19.0	676	1,870	3,250	5,920	8,780	12,600
713	4.29	860	2,100	3,260	5,080	6,640	8,460
724	14.6	1,130	2,690	4,190	6,580	8,740	11,200
725	8.70	1,140	2,840	4,420	6,970	9,160	11,800
731	29.6	1,590	3,920	6,210	9,940	13,400	17,400
734	501	6,500	10,900	23,200	33,800	44,300	55,600
750	29.6	1,570	3,870	6,140	9,850	13,300	17,300
751	30.6	1,600	3,920	6,200	9,910	13,300	17,300
759	31.4	1,550	3,810	6,040	9,710	13,100	17,100
760	61.5	1,970	4,570	7,130	11,500	15,600	20,600
779	5.87	1,030	2,530	3,930	6,160	8,070	10,300
783	668	8,200	14,200	19,400	27,500	34,900	43,600
787	71.7	1,670	3,890	6,140	10,100	14,000	18,900
789	502	6,500	10,900	23,100	33,600	44,000	55,300
792	3.05	720	1,790	2,790	4,370	5,730	7,320
793	661	8,090	14,000	19,200	27,300	34,700	43,300
794	55.6	1,910	4,530	7,220	11,900	16,500	22,400
796	5.37	943	2,370	3,720	5,860	7,720	9,890
797	577	6,720	11,700	16,300	24,000	31,400	40,400
798	581	6,790	11,800	16,400	24,200	31,600	40,600
802	83.1	1,640	3,900	6,230	10,300	14,400	19,600
805	574	6,710	11,700	16,600	24,400	31,900	41,000
806	565	6,680	11,600	17,400	25,600	33,500	42,800
813	765	8,490	19,200	29,600	46,200	61,400	79,400
815	26.3	546	1,350	2,170	3,640	5,100	6,910
816	588	6,900	12,000	16,700	24,400	31,800	40,800
823	597	7,050	12,300	17,000	24,800	32,200	41,100
826	603	7,140	12,400	17,200	25,000	32,400	41,300
828	669	8,210	14,300	19,400	27,600	35,000	43,600
833	693	8,600	14,900	20,300	28,500	35,900	44,500
851	720	9,040	15,700	21,200	29,600	36,900	45,400
874	11.0	910	1,770	2,490	3,570	4,490	5,520
898	21.4	1,610	3,880	6,050	9,490	12,600	16,100
909	8.06	1,030	2,610	4,140	6,600	8,830	11,300
910	4.02	775	1,940	3,040	4,780	6,290	8,050
911	8.67	942	2,320	3,640	5,720	7,590	9,660

**150 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 21.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cloud County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

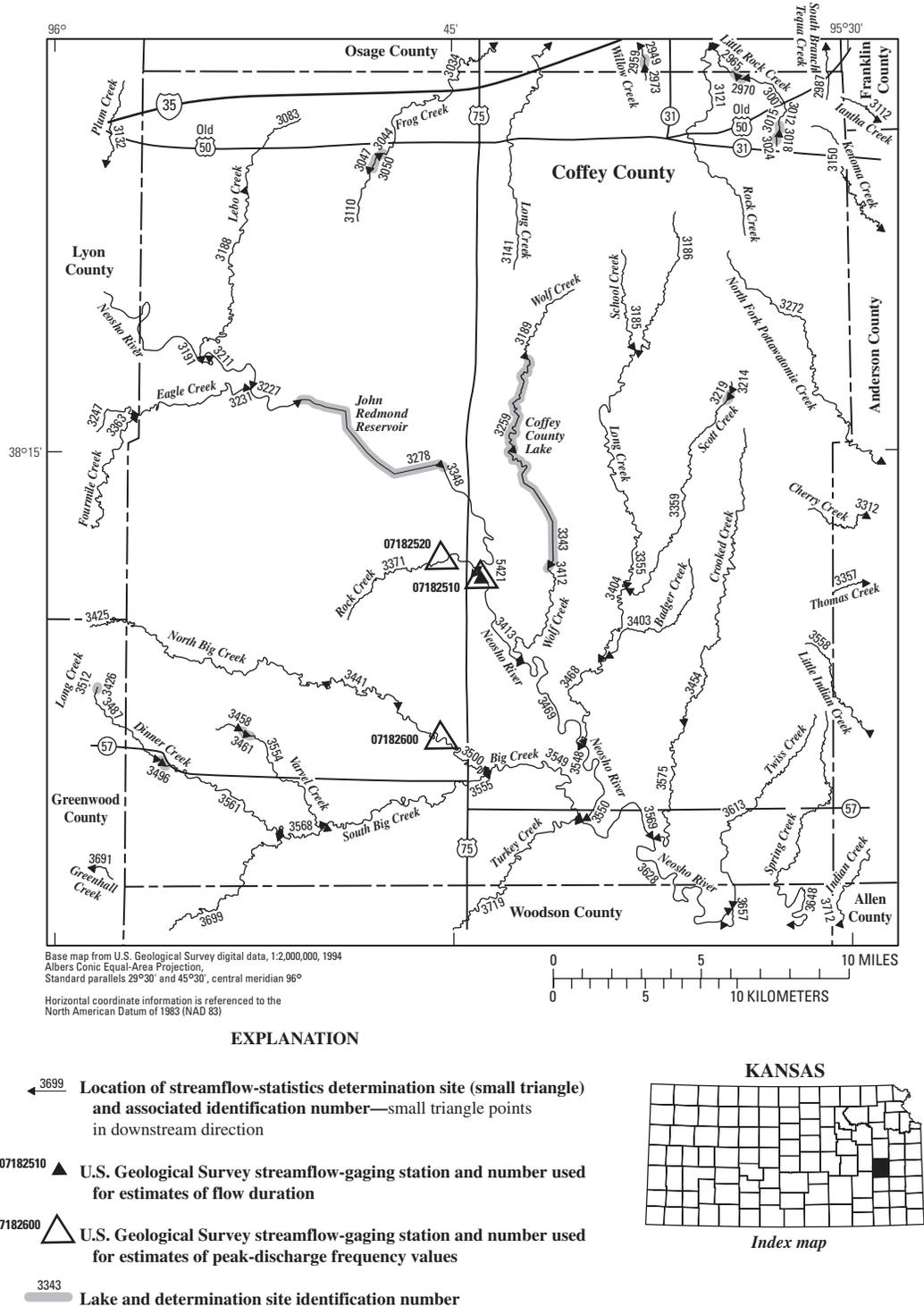
Determination site identification number (fig. 25)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		928	1025001760	CD						Plum Creek	15.1	0
929	1025001739	CD				Elm Creek	36.3	0	0.24	1.79	4.69	12.2
939	1025001754	CD				Whites Creek	46.2	0	.21	1.74	4.51	11.6
941	1025001739	CD				Elm Creek	12.0	0	0	.47	.97	2.83
980	1025001754	CD				Whites Creek	20.2	0	0	.48	1.17	3.48
981	1025001761	CD				Beaver Creek	21.0	0	0	0.81	2.01	5.71
989	1025001756	CD				West Branch Wolf Creek	25.2	0	0	.44	1.48	5.43
998	1025001756	CD				West Branch Wolf Creek	2.57	0	0	0	0	0
1047	1025001738	CD				Wolf Creek	28.1	0	.14	1.18	3.05	8.68
1075	1025001738	CD				Wolf Creek	7.43	0	0	0	0	.63
1076	1025001739	CD				Elm Creek	10.5	0	0	.43	.79	2.34
1092	1025001759	CD				West Branch Elm Creek	14.7	0	0	.56	1.36	3.98
1097	1025001758	CD				Oak Creek	16.4	0	.04	.94	2.01	4.96
1122	1025001762	CD				East Branch Elm Creek	28.0	0	0	1.19	3.23	8.90
1124	1025001762	CD				East Branch Elm Creek	4.22	0	0	0	0	.24
1173	1025001740	CD				Mulberry Creek	7.20	0	0	.29	.41	1.52
1184	1026001549	CD				Mortimer Creek	14.3	0	0	.38	.86	2.75
1187	1026001511	CD				West Pipe Creek	14.3	0	0	.60	1.36	3.79
1199	1026001512	CD	MC			Solomon River	5,740	30.0	63.0	187	531	1,940
1206	1026001512	CD				Solomon River	5,770	30.6	63.5	187	529	1,930
1234	1026001548	CD				Cris Creek	31.6	0	.06	1.28	3.20	8.20
1246	1026001548	CD				Cris Creek	31.8	0	.06	1.28	3.21	8.23
1247	1026001512	CD				Solomon River	5,780	30.8	63.7	187	529	1,920
1304	1026001549	CD				Mortimer Creek	25.5	0	0	.64	1.75	5.21
1349	1026001511	CD	OT			West Pipe Creek	33.2	0	.13	1.57	4.13	10.8
1356	1026001549	CD	OT			Mortimer Creek	27.5	0	0	.67	1.86	5.55
1357	1026001512	CD	OT			Solomon River	5,820	31.9	64.5	186	526	1,900
1363	1026001510	CD	OT			Pipe Creek	40.5	0	.54	2.53	6.52	16.4
1369	1026001550	CD	OT			Eacker Creek	30.6	0	0	1.10	2.94	8.01
1371	102600084	CD	OT			Chapman Creek	38.5	.09	.57	2.47	6.34	16.2
1381	1026001551	CD	MC			Second Creek	23.1	0	0	.69	1.58	4.19

**Table 21.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cloud County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 25)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
928	4.06	826	2,060	3,220	5,060	6,660	8,510
929	10.3	1,250	3,040	4,750	7,440	9,850	12,500
939	10.2	1,230	3,040	4,780	7,560	10,100	12,900
941	3.24	734	1,820	2,830	4,430	5,810	7,410
980	4.03	851	2,210	3,510	5,610	7,440	9,590
981	5.81	1,090	2,680	4,160	6,520	8,550	10,900
989	5.13	1,010	2,500	3,880	6,100	8,000	10,200
998	0	274	671	1,030	1,600	2,090	2,660
1047	6.82	1,100	2,690	4,160	6,150	8,530	10,900
1075	1.57	540	1,320	2,050	3,190	4,170	5,300
1076	2.82	678	1,670	2,600	4,060	5,330	6,790
1092	4.21	855	2,110	3,270	5,120	6,710	8,560
1097	4.64	855	2,140	3,350	5,290	6,960	8,900
1122	8.17	1,280	3,180	4,950	7,770	10,200	13,100
1124	1.05	431	1,030	1,560	2,400	3,120	3,950
1173	2.16	601	1,440	2,200	3,400	4,420	5,590
1184	3.35	763	1,930	3,020	4,770	6,280	8,040
1187	3.97	809	2,010	3,130	4,920	6,460	8,250
1199	561	3,100	6,050	8,000	10,300	11,800	13,100
1206	561	3,150	6,150	8,230	10,700	12,400	14,000
1234	7.44	1,100	2,710	4,240	6,670	8,840	11,300
1246	7.47	1,080	2,660	4,180	6,580	8,730	11,100
1247	561	3,160	6,180	8,300	10,800	12,600	14,200
1304	5.58	1,050	2,690	4,250	6,770	8,960	11,500
1349	9.27	1,380	3,270	5,060	7,840	10,300	13,100
1356	5.91	1,090	2,810	4,450	7,080	9,380	12,100
1357	561	3,240	6,360	8,710	11,500	13,600	15,700
1363	13.0	532	1,270	2,000	3,220	4,380	5,760
1369	7.53	1,200	2,920	4,550	7,110	9,410	12,000
1371	13.2	1,490	3,490	5,370	8,300	10,900	13,800
1381	4.46	881	2,320	3,700	5,960	7,930	10,200





**Figure 26.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Coffey County.

**154 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 22.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Coffey County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 26)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2973	1029010194	CF	OS					Willow Creek	5.60	0
2987	1029010145	CF	OS			South Branch Tequa Creek	11.6	0	0	.74	2.97	9.51
3007	1029010173	CF	OS			Little Rock Creek	8.96	0	0	.13	1.15	4.99
3012	HYDRO	CF				HYDRO	3.59	NA	NA	NA	NA	NA
3015	1029010173	CF				Little Rock Creek	3.42	0	0	0	0	.51
3018	HYDRO	CF				HYDRO	2.74	NA	NA	NA	NA	NA
3024	1029010173	CF				Little Rock Creek	2.48	0	0	0	0	0
3034	1029010142	CF	OS			Frog Creek	51.7	0	.23	3.31	12.9	40.8
3044	HYDRO	CF				HYDRO	22.2	NA	NA	NA	NA	NA
3047	1029010142	CF				Frog Creek	21.1	0	0	1.04	4.61	15.5
3050	HYDRO	CF				HYDRO	20.5	NA	NA	NA	NA	NA
3083	1107020151	CF				Lebo Creek	23.9	0	0	.79	4.45	16.5
3110	1029010142	CF				Frog Creek	20.4	0	0	.99	4.44	15.0
3121	1029010143	CF	OS			Rock Creek	20.4	0	0	1.06	4.35	14.2
3141	102901011531	CF	OS			Long Creek	38.7	0	.18	2.87	10.6	32.1
3185	1107020438	CF				School Creek	10.3	0	0	.84	2.66	7.88
3186	1107020412	CF				Long Creek	15.1	0	0	1.29	4.10	11.8
3188	1107020151	CF				Lebo Creek	45.0	0	0	2.25	9.83	33.3
3189	1107020437	CF				Wolf Creek	11.9	0	0	.81	2.76	8.48
3191	1107020126	CF	LY			Neosho River	2,740	31.4	73.4	380	1,480	4,850
3211	1107020126	CF				Neosho River	2,790	30.6	71.9	384	1,510	4,990
3214	1107020440	CF				Scott Creek	4.78	0	0	.24	.79	3.01
3219	HYDRO	CF				HYDRO	5.01	NA	NA	NA	NA	NA
3227	110702011	CF				Neosho River	2,920	28.6	68.2	394	1,590	5,310
3231	1107020125	CF	LY			Eagle Creek	115	0	.88	6.14	24.4	81.8
3259	HYDRO	CF				HYDRO	24.5	NA	NA	NA	NA	NA
3278	HYDRO	CF				HYDRO	2,950	NA	NA	NA	NA	NA
3343	HYDRO	CF				HYDRO	35.4	NA	NA	NA	NA	NA
3348	1107020413	CF				Neosho River	2,960	28.0	67.0	397	1,620	5,420
3355	1107020412	CF				Long Creek	45.9	0	.82	4.06	13.0	36.6
3359	1107020440	CF				Scott Creek	18.9	0	0	1.56	5.47	16.2
3371	1107020415	CF				Rock Creek	24.9	0	0	1.15	4.94	16.5
3403	1107020442	CF				Badger Creek	7.73	0	0	0	.68	4.34
3404	1107020412	CF				Long Creek	68.2	0	1.25	5.80	19.1	55.2
3412	1107020437	CF				Wolf Creek	41.7	0	.67	3.54	11.2	31.6
3413	1107020413	CF				Neosho River	2,990	28.6	69.2	405	1,650	5,500
3425	1107020416	CF	GW	LY		North Big Creek	41.8	0	0	2.43	9.89	32.1
3441	1107020416	CF				North Big Creek	52.0	0	.19	3.23	12.7	40.6

**Table 22.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Coffey County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 26)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2973	3.83	920	1,900	2,740	3,990	5,020	6,190
2987	8.33	1,400	2,940	4,270	6,270	7,920	9,800
3007	5.45	1,200	2,510	3,630	5,320	6,710	8,300
3012	NA	NA	NA	NA	NA	NA	NA
3015	1.74	683	1,410	2,010	2,920	3,660	4,500
3018	NA	NA	NA	NA	NA	NA	NA
3024	1.03	566	1,160	1,650	2,380	2,990	3,670
3034	33.0	4,140	8,380	12,100	17,600	22,300	27,400
3044	NA	NA	NA	NA	NA	NA	NA
3047	13.8	2,050	4,320	6,290	9,260	11,700	14,500
3050	NA	NA	NA	NA	NA	NA	NA
3083	15.6	2,350	4,900	7,090	10,400	13,100	16,200
3110	13.4	2,010	4,240	6,160	9,080	11,500	14,300
3121	12.7	1,920	4,100	5,990	8,860	11,200	14,000
3141	25.5	3,430	7,040	10,200	14,900	18,900	23,200
3185	6.96	1,280	2,700	3,920	5,760	7,280	9,010
3186	9.99	1,610	3,420	4,970	7,330	9,290	11,500
3188	28.6	3,640	7,600	11,100	16,400	20,900	25,900
3189	7.61	1,350	2,880	4,190	6,190	7,850	9,750
3191	1,540	11,500	16,000	19,000	42,200	71,700	122,000
3211	1,570	11,400	15,600	18,300	41,700	71,500	122,000
3214	3.25	846	1,740	2,500	3,630	4,560	5,620
3219	NA	NA	NA	NA	NA	NA	NA
3227	1,640	11,000	14,500	16,600	40,400	71,100	124,000
3231	65.2	5,240	10,900	15,900	23,500	30,100	37,500
3259	NA	NA	NA	NA	NA	NA	NA
3278	NA	NA	NA	NA	NA	NA	NA
3343	NA	NA	NA	NA	NA	NA	NA
3348	1,660	10,900	14,100	16,000	40,000	71,000	125,000
3355	28.2	2,560	5,440	8,000	11,900	15,200	18,800
3359	13.4	1,930	4,060	5,890	8,660	11,000	13,600
3371	14.9	1,020	2,370	3,660	5,760	7,690	9,960
3403	5.19	1,240	2,510	3,580	5,180	6,490	7,980
3404	41.6	3,280	6,850	10,000	14,800	18,900	23,300
3412	24.7	2,430	5,200	7,660	11,400	14,600	18,100
3413	1,690	11,400	14,800	16,700	40,800	71,600	125,000
3425	26.8	3,100	5,640	7,740	10,800	13,400	16,100
3441	33.1	3,030	5,090	6,710	9,010	10,900	12,900

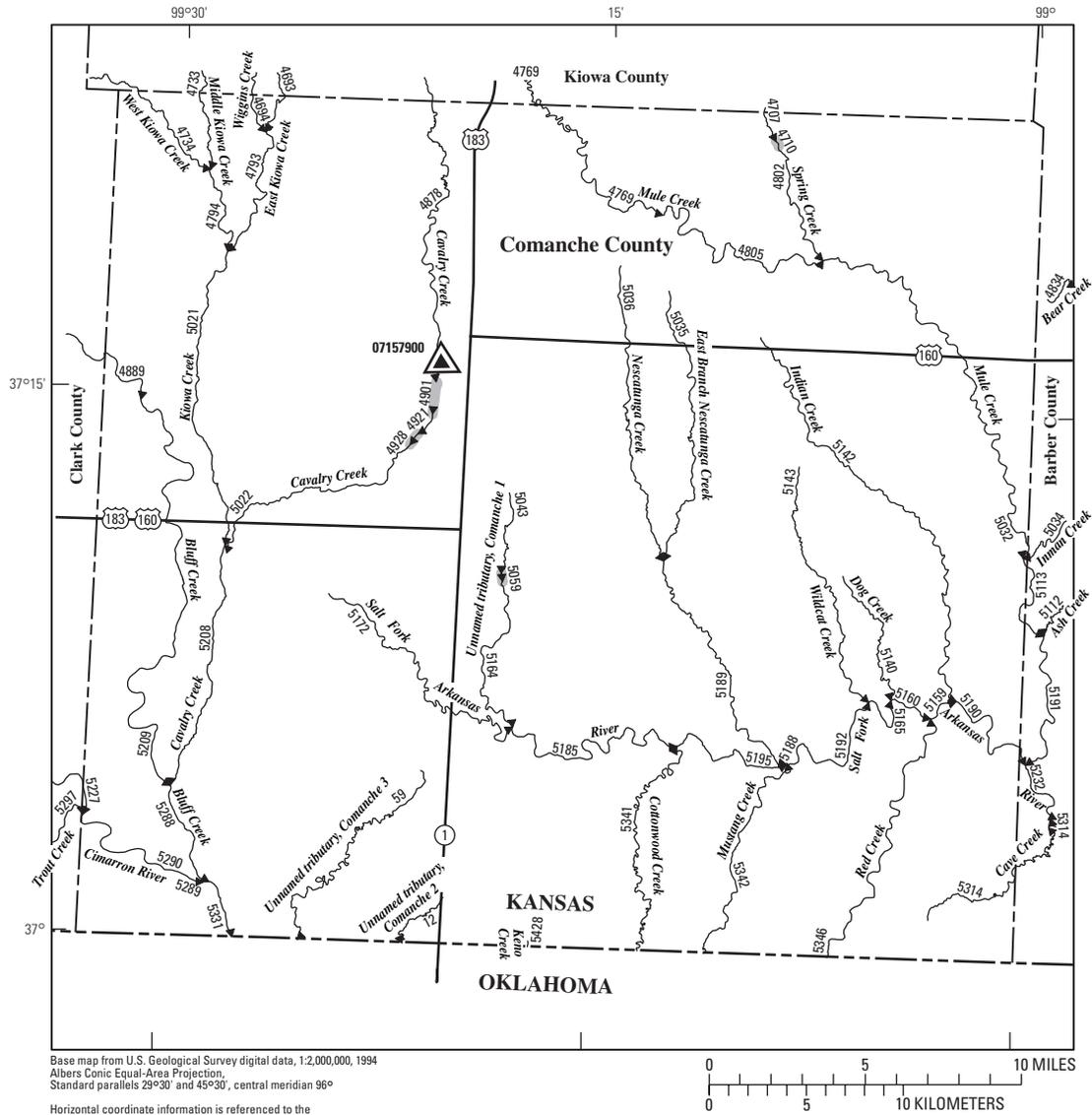
**Table 22.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Coffey County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 26)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3454	1107020444	CF						Crooked Creek	28.7	0
3458	1107020443	CF				Varvel Creek	3.65	0	0	0	0	1.39
3461	HYDRO	CF				HYDRO	4.45	NA	NA	NA	NA	NA
3468	1107020412	CF				Long Creek	81.9	0	1.38	6.50	22.0	65.3
3469	1107020413	CF				Neosho River	3,040	29.4	72.2	415	1,700	5,610
3487	11070204823	CF	GW			Dinner Creek	11.1	0	0	.38	2.23	8.28
3496	HYDRO	CF				HYDRO	12.5	NA	NA	NA	NA	NA
3500	1107020416	CF				North Big Creek	61.7	0	.39	3.94	15.2	48.6
3548	1107020410	CF				Neosho River	3,130	30.9	77.7	435	1,780	5,810
3549	1107020414	CF				Big Creek	160	.03	2.45	11.8	42.9	136
3550	1107020411	CF				Neosho River	3,290	33.6	87.9	471	1,940	6,170
3554	1107020443	CF				Varvel Creek	13.6	0	0	.60	2.96	10.3
3555	1107020417	CF				South Big Creek	91.3	0	1.38	7.39	26.6	81.4
3561	11070204823	CF				Dinner Creek	23.3	0	0	1.56	6.20	19.6
3568	1107020417	CF				South Big Creek	58.3	0	.74	4.89	17.6	52.9
3569	1107020410	CF				Neosho River	3,360	34.9	92.6	487	2,010	6,340
3575	1107020444	CF				Crooked Creek	38.8	0	.10	2.66	10.3	32.5
3613	1107020445	CF	WO			Twiss Creek	17.3	0	0	1.01	4.38	14.4
3628	1107020410	CF	WO			Neosho River	3,410	35.8	96.0	500	2,060	6,470
3648	1107020446	CF	WO			Spring Creek	15.0	0	0	.70	3.48	12.1
3699	1107020417	CF	WO			South Big Creek	30.5	0	.37	3.15	10.7	30.6
3719	1107020418	CF	WO			Turkey Creek	67.8	0	.91	5.93	22.1	67.5
5421	1107020413	CF				Neosho River	2,960	28.2	71.9	262	755	2,440

**Table 22.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Coffey County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

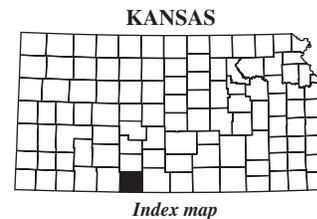
Determination site identification number (fig. 26)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3454	20.3	2,650	5,530	8,000	11,700	14,800	18,300
3458	2.34	756	1,530	2,180	3,150	3,940	4,830
3461	NA	NA	NA	NA	NA	NA	NA
3468	49.5	3,390	7,150	10,500	15,600	20,000	24,900
3469	1,720	12,000	15,800	17,800	42,000	72,500	125,000
3487	7.91	1,450	3,000	4,320	6,300	7,940	9,800
3496	NA	NA	NA	NA	NA	NA	NA
3500	39.0	3,210	4,850	6,000	7,500	8,660	9,830
3548	1,780	13,200	17,600	19,700	44,000	74,100	124,000
3549	98.6	5,750	9,550	12,500	16,800	20,200	23,900
3550	1,880	15,400	21,000	23,100	47,800	77,000	124,000
3554	9.55	1,630	3,390	4,890	7,150	9,020	11,100
3555	60.3	5,250	10,400	14,800	21,400	27,000	33,100
3561	16.4	2,220	4,670	6,780	9,980	12,600	15,700
3568	40.1	4,470	8,860	12,600	18,200	22,900	28,000
3569	1,930	16,400	22,600	24,700	49,600	78,400	124,000
3575	26.8	3,440	6,950	9,980	14,500	18,300	22,400
3613	12.9	2,140	4,340	6,190	8,960	11,200	13,800
3628	1,970	17,100	23,700	25,900	50,900	79,400	123,000
3648	11.3	1,980	3,990	5,680	8,210	10,300	12,600
3699	23.1	3,210	6,410	9,140	13,200	16,500	20,200
3719	50.4	4,210	8,500	12,200	17,800	22,600	27,800
5421	1,250	19,000	37,700	54,300	79,500	102,000	127,000





**EXPLANATION**

- ← 5331 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07157900 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07157900 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4903 Lake and determination site identification number



**Figure 27.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Comanche County.

**Table 23.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Comanche County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 27)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		12	1105000139	CM						Unnamed tributary, Comanche 2	2.58	0	0
59	1105000124	CM				Unnamed tributary, Comanche 3	34.2	0	.49	.96	1.15	2.03	
4693	1104000812	CM	KW			East Kiowa Creek	21.4	0	0	0	0	0	0
4694	110400081173	CM	KW			Wiggins Creek	13.5	0	0	0	0	0	0
4707	1106000224	CM	KW			Spring Creek	6.79	0	0	0	.01	.01	
4710	HYDRO	CM				HYDRO	7.53	NA	NA	NA	NA	NA	NA
4733	110400081182	CM	KW			Middle Kiowa Creek	42.5	0	0	.81	1.54	3.53	
4769	110600027	CM	KW			Mule Creek	62.3	0	.04	.85	2.04	5.33	
4793	1104000812	CM				East Kiowa Creek	50.9	0	.47	1.41	2.44	4.88	
4794	110400081180	CM				West Kiowa Creek	130	0	1.39	3.68	7.72	16.2	
4802	1106000224	CM				Spring Creek	21.2	0	.23	.45	.65	1.04	
4805	110600027	CM				Mule Creek	80.6	0	.49	2.03	4.37	9.76	
4878	110400083	CM	KW			Cavalry Creek	60.6	.65	1.00	1.50	2.00	2.90	
4901	HYDRO	CM				HYDRO	65.3	NA	NA	NA	NA	NA	NA
4921	110400083	CM				Cavalry Creek	68.1	.65	1.21	1.85	2.67	4.17	
4928	HYDRO	CM				HYDRO	69.7	NA	NA	NA	NA	NA	NA
5021	1104000812	CM				Kiowa Creek	213	.25	3.04	6.80	13.9	28.6	
5022	110400083	CM				Cavalry Creek	98.0	.71	2.10	3.24	5.18	8.77	
5035	1106000227	CM				East Branch Nescatunga Creek	22.9	0	0	0	.06	.12	
5036	1106000214	CM				Nescatunga Creek	36.2	.44	1.47	1.78	2.03	3.07	
5043	11060002503	CM				Unnamed tributary, Comanche 1	19.1	0	.05	.15	.20	.40	
5059	HYDRO	CM				HYDRO	19.8	NA	NA	NA	NA	NA	NA
5140	1106000229	CM				Dog Creek	8.73	0	0	0	.01	.02	
5142	110600029	CM				Indian Creek	44.2	0	.46	1.52	2.67	5.25	
5143	1106000212	CM				Wildcat Creek	22.3	0	0	.15	.32	.77	
5159	1106000210	CM				Salt Fork Arkansas River	326	1.63	7.39	18.3	37.2	76.5	
5160	1106000211	CM				Salt Fork Arkansas River	272	1.39	6.05	14.2	28.3	57.7	
5164	11060002503	CM				Unnamed tributary, Comanche 1	37.2	0	.68	1.18	1.52	2.74	
5165	1106000211	CM				Salt Fork Arkansas River	262	1.33	5.84	13.6	27.0	54.9	
5172	1106000215	CM				Salt Fork Arkansas River	34.0	0	.01	.14	.23	1.21	
5185	1106000215	CM				Salt Fork Arkansas River	93.5	0	1.25	3.06	5.95	12.3	
5188	1106000213	CM				Salt Fork Arkansas River	209	1.02	4.52	9.90	19.3	38.9	
5189	1106000214	CM				Nescatunga Creek	84.0	.45	2.33	3.96	6.51	11.8	
5192	1106000213	CM				Salt Fork Arkansas River	238	1.18	5.27	12.0	23.7	47.9	
5195	1106000215	CM				Salt Fork Arkansas River	125	.01	1.72	4.37	8.93	18.7	
5208	110400083	CM				Cavalry Creek	336	2.24	6.60	13.4	25.9	51.0	
5209	1104000813	CM				Bluff Creek	313	0	1.64	4.62	10.9	24.7	
5288	110400082	CM				Bluff Creek	657	3.19	9.48	21.2	43.4	89.9	

**Table 23.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Comanche County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 27)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
12	0	185	498	801	1,290	1,730	2,230
59	2.94	431	1,140	1,850	2,990	4,020	5,180
4693	1.55	617	1,750	2,880	4,770	6,460	8,460
4694	.59	468	1,320	2,160	3,560	4,810	6,290
4707	.01	319	882	1,430	2,340	3,150	4,100
4710	NA	NA	NA	NA	NA	NA	NA
4733	4.18	725	1,870	3,000	4,810	6,450	8,300
4769	6.00	588	1,660	2,770	4,650	6,400	8,440
4793	5.05	726	1,850	2,930	4,660	6,220	7,960
4794	13.1	1,310	3,230	5,070	8,010	10,700	13,600
4802	1.98	622	1,760	2,890	4,780	6,460	8,460
4805	8.86	698	1,900	3,130	5,170	7,060	9,240
4878	3.45	492	1,290	2,050	3,290	4,410	5,680
4901	NA	NA	NA	NA	NA	NA	NA
4921	4.35	538	1,390	2,200	3,520	4,710	6,060
4928	NA	NA	NA	NA	NA	NA	NA
5021	21.4	1,640	3,940	6,150	9,640	12,800	16,300
5022	7.51	762	1,860	2,880	4,490	5,920	7,520
5035	1.61	661	1,860	3,060	5,060	6,840	8,960
5036	3.47	584	1,400	2,160	3,320	4,340	5,450
5043	1.35	597	1,670	2,750	4,530	6,110	7,990
5059	NA	NA	NA	NA	NA	NA	NA
5140	.01	364	1,010	1,660	2,720	3,670	4,780
5142	5.07	838	2,060	3,230	5,060	6,680	8,490
5143	1.94	637	1,800	2,970	4,920	6,660	8,720
5159	49.7	1,660	4,050	6,380	10,100	13,500	17,300
5160	38.7	1,450	3,570	5,630	8,920	11,900	15,300
5164	3.45	570	1,430	2,250	3,540	4,690	5,960
5165	37.0	1,420	3,490	5,510	8,740	11,700	15,000
5172	2.72	392	1,130	1,900	3,210	4,430	5,840
5185	10.4	739	1,950	3,160	5,140	6,950	9,010
5188	27.4	1,190	2,970	4,710	7,490	10,000	12,900
5189	9.55	957	2,270	3,500	5,400	7,070	8,910
5192	32.7	1,330	3,290	5,190	8,240	11,000	14,100
5195	14.8	895	2,340	3,790	6,150	8,310	10,800
5208	34.3	1,870	4,350	6,650	10,200	13,400	17,000
5209	20.6	1,500	3,910	6,330	10,300	14,000	18,300
5288	58.8	2,420	5,750	8,920	14,000	18,600	23,800

**Table 23.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Comanche County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

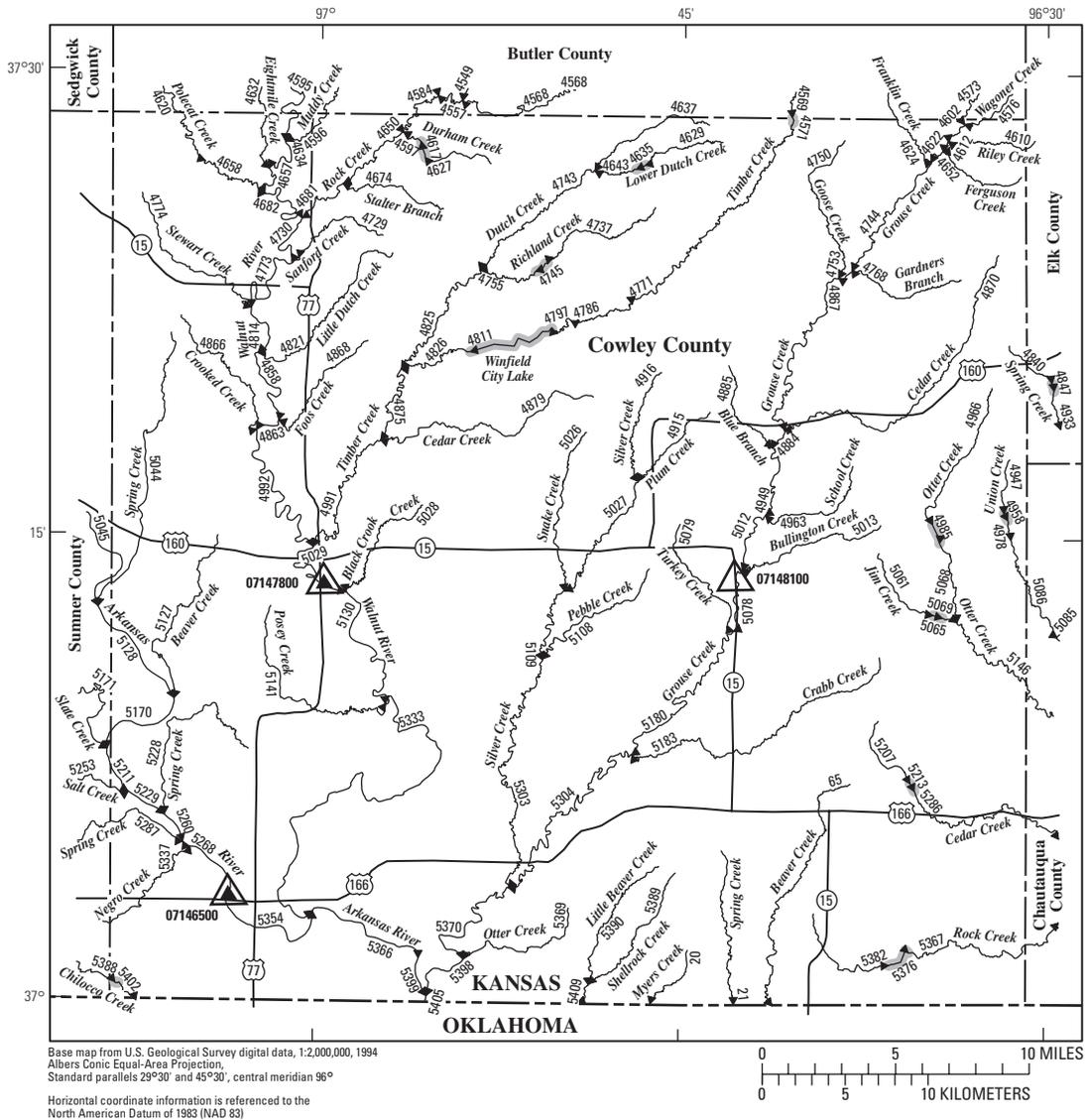
Determination site identification number (fig. 27)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5289	110400081	CM						Cimarron River	9,540	19.3
5331	110400081	CM				Cimarron River	10,200	19.2	44.4	109	228	465
5341	1106000230	CM				Cottonwood Creek	26.7	0	.01	.15	.20	.97
5342	1106000231	CM				Mustang Creek	20.6	0	0	.17	.18	.76
5346	1106000216	CM				Red Creek	53.0	0	.31	1.78	3.72	7.78
5428	1105000122	CM				Keno Creek	.25	0	0	0	0	0

**Table 23.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Comanche County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

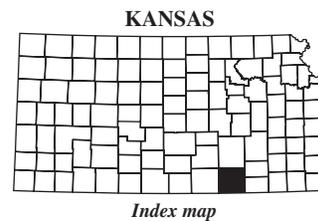
Determination site identification number (fig. 27)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5289	239	3,690	9,830	16,100	26,600	36,300	47,900
5331	276	4,220	11,000	17,900	29,300	39,900	52,400
5341	2.34	712	2,020	3,330	5,520	7,480	9,810
5342	1.94	607	1,720	2,830	4,680	6,340	8,300
5346	6.75	925	2,340	3,710	5,900	7,880	10,100
5428	0	47	121	191	301	393	506





**EXPLANATION**

- ◀ 5388 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07146500 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07148100 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5402 Lake and determination site identification number



**Figure 28.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Cowley County.

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**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 28)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		20	1106000124	CL						Myers Creek	4.02	0
21	1106000121	CL				Spring Creek	10.5	0	0	.82	2.80	8.39
65	110600019	CL				Beaver Creek	30.2	0	.13	2.37	8.04	23.4
4597	1103001823	CL				Durham Creek	9.26	0	0	0	.22	2.78
4610	1106000137	CL	EK			Riley Creek	5.69	0	0	.27	1.13	4.08
4612	1106000116	CL				Grouse Creek	33.4	0	.08	2.57	9.24	27.6
4617	HYDRO	CL				HYDRO	8.46	NA	NA	NA	NA	NA
4622	1106000116	CL				Grouse Creek	42.5	0	.29	3.36	12.0	35.6
4627	1103001823	CL				Durham Creek	7.73	0	0	0	0	1.67
4629	1103001820	CL				Lower Dutch Creek	6.91	0	0	0	0	1.03
4634	110300188	CL				Walnut River	1,420	44.4	75.6	186	608	1,970
4635	HYDRO	CL				HYDRO	7.52	NA	NA	NA	NA	NA
4643	1103001820	CL				Lower Dutch Creek	9.70	0	0	0	.12	2.71
4650	110300186	CL				Rock Creek	121	0	1.31	6.89	24.5	76.6
4652	1106000138	CL				Ferguson Creek	8.72	0	0	.68	2.43	7.47
4657	110300188	CL				Walnut River	1,470	45.9	78.5	194	633	2,040
4658	1103001817	CL				Polecat Creek	42.4	0	0	1.42	5.56	18.4
4674	1103001824	CL				Stalter Branch	8.73	0	0	0	.03	2.31
4681	110300186	CL				Rock Creek	132	0	1.46	7.37	26.1	82.1
4682	110300187	CL				Walnut River	1,510	47.4	81.1	201	656	2,110
4729	1103001829	CL				Sanford Creek	5.53	0	0	0	0	.72
4730	110300185	CL				Walnut River	1,650	51.7	89.0	222	726	2,290
4737	1103001825	CL				Richland Creek	12.4	0	0	0	.73	4.38
4743	110300184	CL				Dutch Creek	33.4	0	0	1.08	4.63	15.9
4744	1106000116	CL				Grouse Creek	65.4	0	.77	5.15	18.1	54.1
4745	HYDRO	CL				HYDRO	13.4	NA	NA	NA	NA	NA
4750	1106000134	CL				Goose Creek	14.8	0	0	1.04	3.67	11.1
4753	1106000116	CL				Grouse Creek	78.8	0	1.04	6.27	22.0	65.8
4755	1103001825	CL				Richland Creek	17.4	0	0	.29	1.87	7.54
4768	1106000139	CL				Gardners Branch	12.6	0	0	1.08	3.81	11.2
4773	110300185	CL				Walnut River	1,660	52.1	89.6	224	732	2,310
4774	1103001828	CL				Stewart Creek	23.1	0	0	.38	2.02	7.82
4786	110300183	CL				Timber Creek	44.2	0	.07	2.48	9.09	28.2
4797	110300183	CL				Timber Creek	47.1	0	.15	2.72	9.82	30.2
4811	HYDRO	CL				HYDRO	54.4	NA	NA	NA	NA	NA
4814	110300185	CL				Walnut River	1,680	52.9	91.1	228	746	2,350
4821	1103001827	CL				Little Dutch Creek	14.3	0	0	.38	1.80	6.58
4825	110300184	CL				Dutch Creek	60.7	0	.11	2.54	9.56	30.9

**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 28)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
20	2.34	660	1,400	2,040	3,000	3,800	4,700
21	7.05	1,150	2,500	3,670	5,450	6,940	8,640
65	18.4	3,240	6,620	9,530	13,800	17,500	21,500
4597	4.01	1,000	2,210	3,260	4,870	6,210	7,750
4610	3.92	841	1,790	2,600	3,820	4,830	5,980
4612	21.5	3,840	7,750	11,100	16,000	20,300	24,700
4617	NA	NA	NA	NA	NA	NA	NA
4622	27.1	4,400	8,800	12,600	18,100	22,900	27,900
4627	3.13	902	1,980	2,920	4,350	5,540	6,910
4629	2.69	871	1,890	2,780	4,120	5,240	6,520
4634	831	13,900	26,900	33,400	49,300	64,600	81,300
4635	NA	NA	NA	NA	NA	NA	NA
4643	4.13	1,060	2,310	3,410	5,080	6,480	8,080
4650	58.8	5,410	11,100	16,200	23,900	30,500	37,900
4652	6.29	1,070	2,290	3,350	4,950	6,290	7,810
4657	862	14,300	27,900	34,600	50,900	66,700	84,100
4658	16.8	2,190	5,060	7,740	11,900	15,700	19,800
4674	3.62	940	2,080	3,080	4,610	5,900	7,360
4681	62.9	5,600	11,500	16,800	24,800	31,700	39,300
4682	891	14,800	28,700	35,600	52,500	68,800	86,700
4729	2.07	697	1,540	2,280	3,410	4,350	5,430
4730	978	16,100	31,200	38,800	57,100	74,900	94,300
4737	5.48	1,210	2,660	3,940	5,900	7,540	9,410
4743	15.1	3,000	6,370	9,360	13,900	17,800	22,000
4744	40.0	4,980	10,100	14,500	21,000	26,500	32,600
4745	NA	NA	NA	NA	NA	NA	NA
4750	9.31	1,400	3,070	4,530	6,760	8,620	10,800
4753	47.8	5,590	11,200	16,100	23,300	29,400	36,100
4755	7.99	1,450	3,240	4,810	7,230	9,260	11,600
4768	9.00	1,300	2,840	4,170	6,200	7,890	9,830
4773	986	16,200	31,500	39,000	57,500	75,400	95,000
4774	8.37	1,460	3,400	5,160	7,890	10,200	12,900
4786	23.1	3,120	6,690	9,890	14,700	18,900	23,600
4797	24.6	3,170	6,800	10,000	15,000	19,300	23,900
4811	NA	NA	NA	NA	NA	NA	NA
4814	1,000	16,400	31,900	39,600	58,400	76,600	96,500
4821	6.64	1,200	2,710	4,050	6,120	7,870	9,870
4825	26.8	3,860	8,120	11,900	17,600	22,600	28,000

**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 28)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4826	110300183	CL						Timber Creek	58.9	0
4840	1107010653	CL	EK			Spring Creek	7.00	0	0	.89	2.66	7.33
4858	110300185	CL				Walnut River	1,700	53.5	92.1	230	755	2,370
4863	110300185	CL				Walnut River	1,710	53.9	92.9	232	761	2,390
4866	1103001831	CL				Crooked Creek	11.8	0	0	.25	.90	3.62
4867	1106000116	CL				Grouse Creek	113	0	1.80	9.09	31.3	93.6
4868	1103001826	CL				Foos Creek	11.6	0	0	.40	1.63	5.72
4870	1106000132	CL				Cedar Creek	33.6	0	.19	2.84	9.86	28.8
4875	110300182	CL				Timber Creek	125	0	1.29	6.54	23.0	71.9
4879	1103001819	CL				Cedar Creek	24.7	0	0	1.03	4.02	13.0
4884	1106000116	CL				Grouse Creek	147	0	2.43	11.7	40.3	122
4885	1106000130	CL				Blue Branch	11.3	0	0	.60	2.33	7.59
4915	1106000133	CL				Plum Creek	9.22	0	0	.02	.77	3.98
4916	1106000117	CL				Silver Creek	11.6	0	0	.12	1.10	4.96
4947	1107010641	CL				Union Creek	6.23	0	0	.71	2.13	6.06
4949	1106000116	CL				Grouse Creek	163	0	2.76	13.0	44.5	135
4958	HYDRO	CL				HYDRO	7.65	NA	NA	NA	NA	NA
4963	1106000131	CL				School Creek	9.22	0	0	.66	2.45	7.65
4966	1107010621	CL				Otter Creek	15.1	0	0	1.66	5.41	15.1
4978	1107010641	CL				Union Creek	9.25	0	0	1.11	3.47	9.57
4985	HYDRO	CL				HYDRO	16.6	NA	NA	NA	NA	NA
4991	110300182	CL				Timber Creek	160	0	1.88	8.55	29.5	92.3
4992	110300185	CL				Walnut River	1,740	54.7	94.3	236	774	2,420
5012	1106000116	CL				Grouse Creek	177	0	3.05	14.1	48.5	147
5013	1106000128	CL				Bullington Creek	13.4	0	0	1.03	3.70	11.1
5026	1106000125	CL				Snake Creek	18.6	0	0	.66	2.79	9.49
5027	1106000117	CL				Silver Creek	29.8	0	0	1.46	5.57	17.7
5028	1103001818	CL				Black Crook Creek	21.1	0	0	1.14	3.97	12.1
5029	110300181	CL				Walnut River	1,900	60.0	104	262	860	2,660
5044	1103001334	CL	SU			Spring Creek	27.6	.39	.89	1.97	4.22	10.3
5045	110300132	CL	SU			Arkansas River	40,600	346	521	958	1,870	4,170
5061	1107010649	CL				Jim Creek	10.0	0	0	.94	3.22	9.40
5065	HYDRO	CL				HYDRO	10.8	NA	NA	NA	NA	NA
5068	1107010621	CL				Otter Creek	23.0	0	.20	2.66	8.71	24.0
5069	1107010649	CL				Jim Creek	11.0	0	0	1.10	3.72	10.7
5078	1106000116	CL				Grouse Creek	197	.11	3.43	15.7	53.8	164
5079	1106000127	CL				Turkey Creek	11.3	0	0	.61	2.31	7.48
5108	1106000126	CL				Pebble Creek	15.2	0	0	.50	2.35	8.35

**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 28)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4826	29.8	3,430	7,330	10,800	16,100	20,700	25,700
4840	5.64	934	2,000	2,920	4,300	5,460	6,770
4858	1,010	16,600	32,300	40,000	59,000	77,300	97,400
4863	1,020	16,700	32,500	40,300	59,400	77,900	98,100
4866	4.36	997	2,290	3,440	5,220	6,730	8,470
4867	65.9	6,110	12,400	17,900	26,100	33,100	40,800
4868	5.66	1,060	2,380	3,550	5,360	6,880	8,630
4870	21.8	3,740	7,580	10,900	15,700	19,900	24,300
4875	56.1	5,340	11,000	16,100	23,700	30,400	37,700
4879	11.9	1,720	3,890	5,820	8,820	11,300	14,200
4884	84.3	7,350	14,900	21,300	31,000	39,300	48,300
4885	6.84	1,170	2,560	3,780	5,640	7,190	8,970
4915	4.65	1,030	2,240	3,300	4,920	6,280	7,820
4916	5.58	1,160	2,550	3,770	5,640	7,200	8,990
4947	4.88	875	1,870	2,720	4,010	5,080	6,290
4949	92.6	7,500	15,300	22,100	32,200	40,800	50,300
4958	NA	NA	NA	NA	NA	NA	NA
4963	6.47	1,070	2,320	3,410	5,060	6,430	8,000
4966	11.3	1,460	3,180	4,680	6,960	8,870	11,000
4978	7.28	1,100	2,370	3,460	5,130	6,510	8,090
4985	NA	NA	NA	NA	NA	NA	NA
4991	70.2	5,750	11,900	17,400	25,700	33,000	41,000
4992	1,040	17,000	33,000	40,900	60,300	79,000	99,600
5012	100	7,800	16,000	23,000	33,600	42,700	52,600
5013	9.06	1,330	2,900	4,270	6,360	8,110	10,100
5026	9.05	1,480	3,310	4,930	7,440	9,550	12,000
5027	15.4	2,010	4,510	6,730	10,200	13,100	16,400
5028	10.6	1,540	3,490	5,230	7,920	10,200	12,800
5029	1,140	18,600	36,100	44,800	66,000	86,500	109,000
5044	9.33	1,590	3,730	5,680	8,730	11,300	14,300
5045	1,960	19,700	38,100	42,000	59,200	75,000	92,500
5061	7.43	1,130	2,440	3,590	5,320	6,770	8,430
5065	NA	NA	NA	NA	NA	NA	NA
5068	17.1	1,860	4,090	6,040	9,040	11,500	14,400
5069	8.24	1,190	2,590	3,800	5,650	7,190	8,950
5078	111	8,250	17,000	24,500	35,800	45,500	56,100
5079	6.76	1,160	2,550	3,760	5,610	7,160	8,930
5108	8.03	1,360	3,010	4,460	6,690	8,560	10,700

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**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

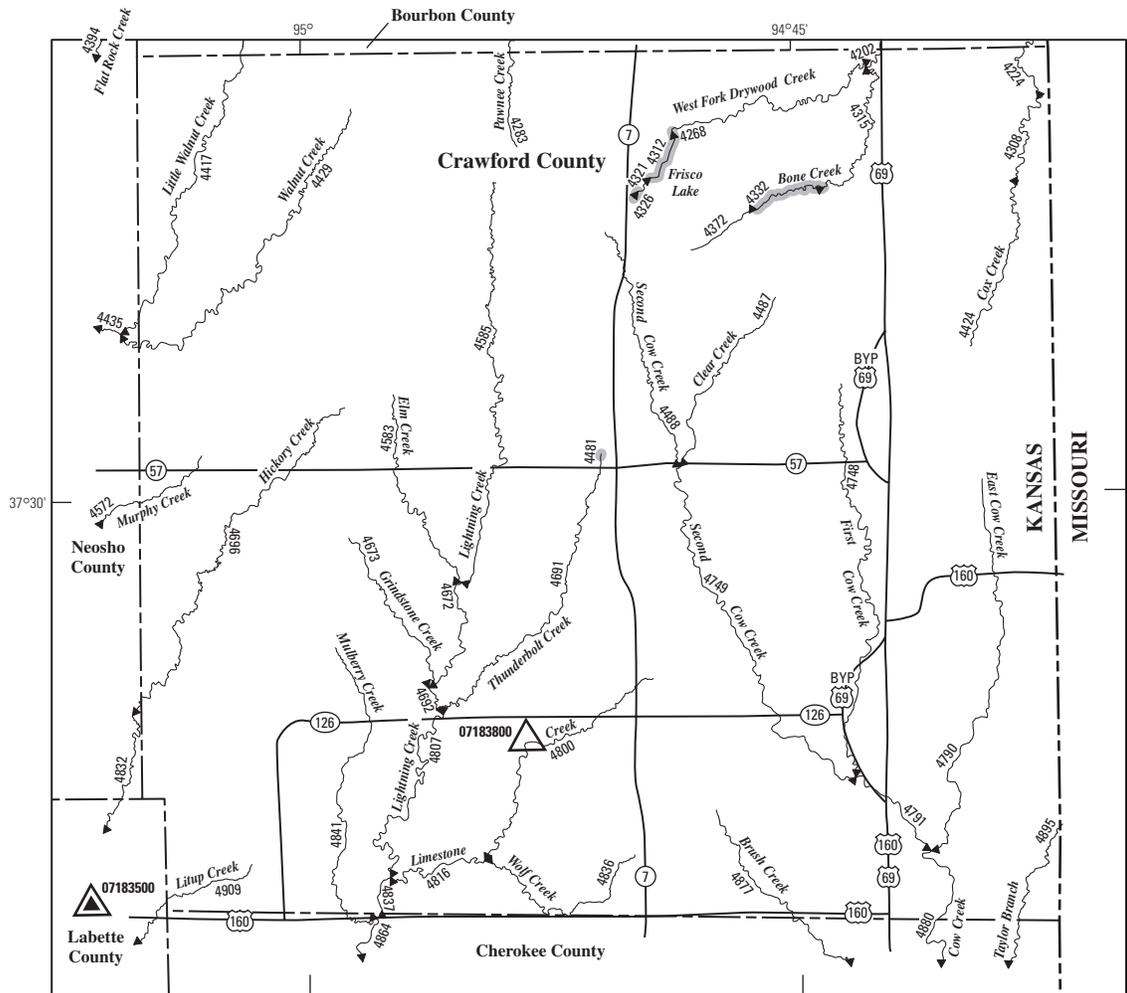
Determination site identification number (fig. 28)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5109	1106000117	CL						Silver Creek	59.1	0
5127	1103001333	CL				Beaver Creek	19.7	0	.06	.82	2.14	6.49
5128	110300132	CL	SU			Arkansas River	40,600	348	524	964	1,880	4,190
5130	110300181	CL				Walnut River	1,940	61.2	106	267	877	2,710
5141	1103001837	CL				Posey Creek	22.4	0	0	.91	3.06	9.69
5170	110300131	CL	SU			Arkansas River	40,600	350	526	968	1,890	4,200
5180	1106000116	CL				Grouse Creek	226	.33	4.07	18.2	61.9	189
5183	1106000129	CL				Crabb Creek	38.5	0	.26	3.15	10.9	31.8
5207	1107010630	CL				Cedar Creek	12.0	0	0	1.24	3.94	11.0
5211	110300131	CL	SU			Arkansas River	40,900	368	550	1,020	1,970	4,380
5213	HYDRO	CL				HYDRO	13.4	NA	NA	NA	NA	NA
5228	1103001321	CL				Spring Creek	19.1	.37	.81	1.84	3.96	9.60
5229	110300131	CL				Arkansas River	41,000	369	552	1,020	1,980	4,400
5253	1103001322	CL	SU			Salt Creek	23.1	0	0	1.02	3.16	9.59
5260	110300131	CL				Arkansas River	41,000	370	554	1,020	1,990	4,410
5268	110300131	CL				Arkansas River	41,000	371	555	1,020	1,990	4,420
5287	1103001319	CL	SU			Spring Creek	10.6	0	0	.52	1.45	4.62
5303	1106000117	CL				Silver Creek	101	0	1.22	6.32	21.6	65.1
5304	1106000116	CL				Grouse Creek	284	.73	5.28	23.3	78.5	240
5333	110300181	CL				Walnut River	2,010	63.3	110	276	907	2,800
5337	1103001320	CL	SU			Negro Creek	12.1	0	0	.38	1.36	4.89
5354	110300131	CL				Arkansas River	41,000	373	558	1,030	2,000	4,440
5366	1106000118	CL				Arkansas River	43,000	391	586	1,080	2,100	4,660
5369	1106000120	CL				Otter Creek	13.4	0	0	1.32	4.05	11.2
5370	1106000115	CL				Grouse Creek	396	1.50	7.28	31.0	103	321
5376	HYDRO	CL				HYDRO	28.2	NA	NA	NA	NA	NA
5382	1107010628	CL				Rock Creek	20.4	0	0	1.72	5.92	17.2
5387	1106000119	CL	SU			Chilocco Creek	12.3	0	0	.21	.98	4.12
5388	HYDRO	CL				HYDRO	12.4	NA	NA	NA	NA	NA
5389	1106000122	CL				Shellrock Creek	9.67	0	0	.62	1.98	6.12
5390	1106000111	CL				Little Beaver Creek	12.2	0	0	1.02	3.24	9.37
5398	1106000115	CL				Grouse Creek	415	1.70	7.84	33.2	110	339
5399	1106000114	CL				Arkansas River	43,000	391	586	1,080	2,100	4,660
5402	1106000119	CL				Chilocco Creek	18.9	0	0	.62	2.24	7.59
5405	1106000114	CL				Arkansas River	43,500	395	591	1,090	2,120	4,700
5409	1106000111	CL				Little Beaver Creek	24.6	0	.18	2.13	6.67	18.6

**Table 24.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Cowley County.—Continued

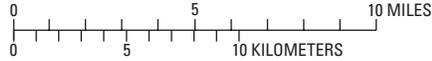
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 28)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5109	28.5	3,430	7,350	10,900	16,200	20,900	26,000
5127	6.89	1,400	3,200	4,820	7,340	9,470	11,900
5128	1,970	19,700	38,300	42,200	59,500	75,400	93,100
5130	1,170	18,900	36,800	45,700	67,300	88,200	111,000
5141	9.39	1,590	3,610	5,410	8,200	10,600	13,300
5170	1,970	19,800	38,400	42,300	59,700	75,700	93,400
5180	126	8,250	17,100	24,800	36,300	46,300	57,300
5183	23.9	3,500	7,260	10,500	15,400	19,700	24,200
5207	8.48	1,220	2,660	3,930	5,860	7,470	9,310
5211	2,060	20,400	40,000	44,000	62,200	79,000	97,700
5213	NA	NA	NA	NA	NA	NA	NA
5228	8.36	1,460	3,300	4,940	7,460	9,590	12,000
5229	2,070	20,500	40,100	44,100	62,400	79,200	98,000
5253	9.14	1,520	3,510	5,300	8,080	10,400	13,200
5260	2,070	20,500	40,200	44,200	62,600	79,500	98,300
5268	2,080	20,500	40,300	44,300	62,700	79,600	98,500
5287	4.80	1,030	2,290	3,410	5,130	6,580	8,230
5303	49.2	4,240	9,020	13,300	19,900	25,600	31,900
5304	156	8,670	18,000	26,200	38,500	49,200	61,000
5333	1,210	19,600	38,100	47,300	69,600	91,300	115,000
5337	5.33	1,140	2,530	3,760	5,650	7,240	9,060
5354	2,090	20,600	40,500	44,500	63,000	80,000	99,000
5366	2,190	21,600	42,500	46,700	66,100	83,900	104,000
5369	8.76	1,250	2,770	4,110	6,150	7,870	9,830
5370	204	9,980	20,600	29,800	43,800	55,900	69,400
5376	NA	NA	NA	NA	NA	NA	NA
5382	13.5	1,760	3,850	5,670	8,460	10,800	13,500
5387	4.94	1,120	2,510	3,750	5,640	7,230	9,060
5388	NA	NA	NA	NA	NA	NA	NA
5389	5.67	1,080	2,350	3,460	5,140	6,540	8,150
5390	7.77	1,220	2,670	3,950	5,890	7,520	9,380
5398	214	10,000	20,700	30,000	44,100	56,300	69,800
5399	2,190	21,600	42,500	46,700	66,100	84,000	104,000
5402	7.81	1,450	3,270	4,900	7,400	9,510	11,900
5405	2,210	21,800	42,900	47,100	66,700	84,800	105,000
5409	14.7	1,840	4,090	6,070	9,140	11,700	14,700



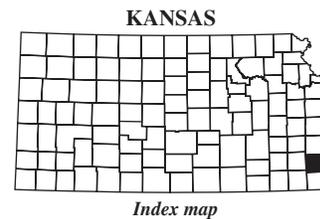


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 4909 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07183500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07183800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4855 Lake and determination site identification number



**Figure 29.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Crawford County.

**Table 25.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Crawford County.[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

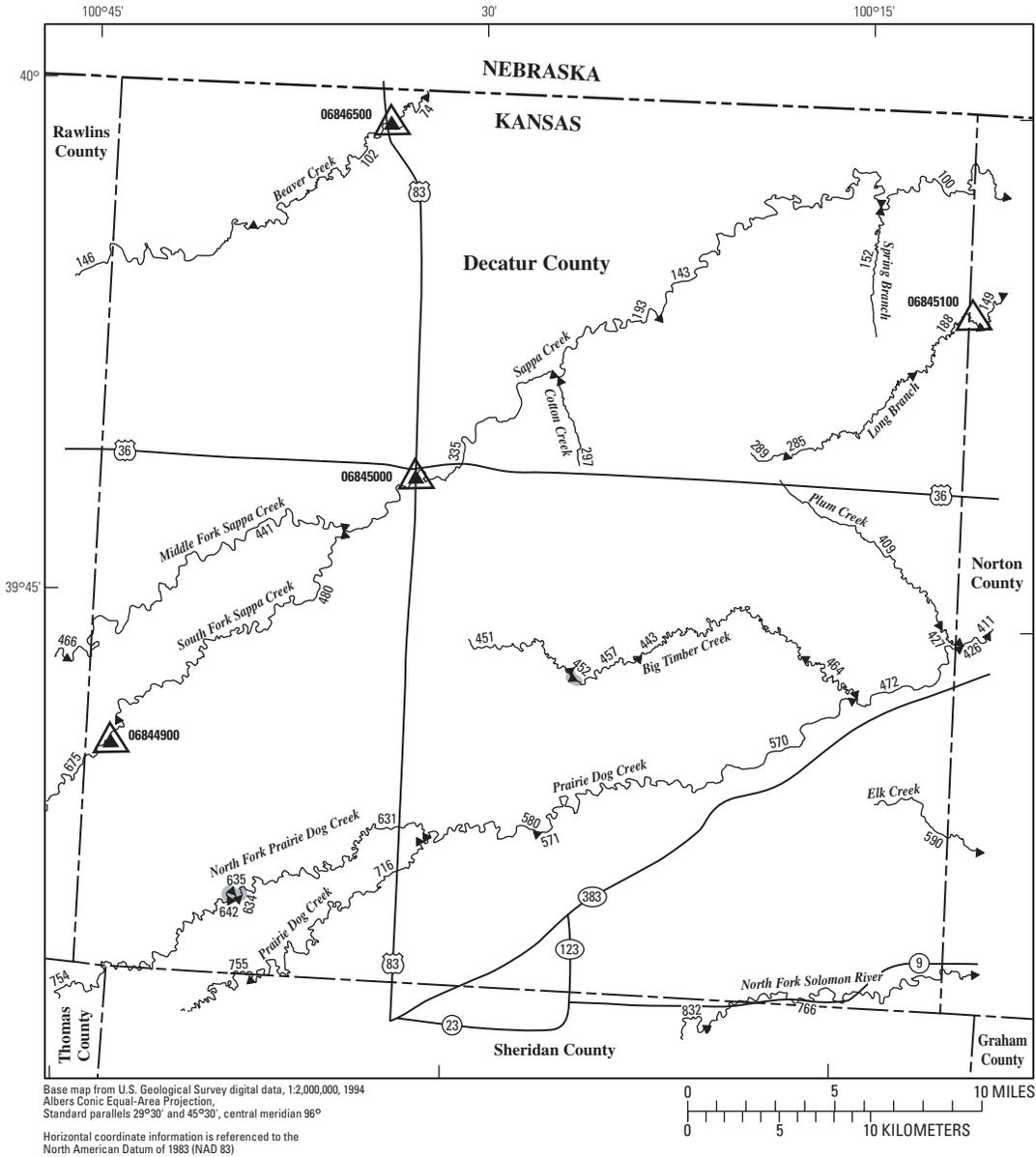
Determination site identification number (fig. 29)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4268	10290104323	CR						West Fork Drywood Creek	29.1	0
4308	10290104324	CR				Cox Creek	40.1	0	1.66	7.38	23.9	62.9
4312	HYDRO	CR				HYDRO	7.62	NA	NA	NA	NA	NA
4315	102901049019	CR				Bone Creek	28.0	0	.62	4.36	15.5	42.9
4321	10290104323	CR				West Fork Drywood Creek	4.10	.32	.35	1.19	2.95	6.93
4326	HYDRO	CR				HYDRO	2.57	NA	NA	NA	NA	NA
4332	HYDRO	CR				HYDRO	13.1	NA	NA	NA	NA	NA
4372	102901049019	CR				Bone Creek	7.27	0	0	1.29	4.35	11.7
4424	10290104324	CR				Cox Creek	30.1	0	1.21	5.70	18.5	48.2
4429	1107020513	CR	NO			Walnut Creek	41.6	0	.28	3.69	14.8	46.0
4481	HYDRO	CR				HYDRO	2.90	NA	NA	NA	NA	NA
4487	1107020728	CR				Clear Creek	19.7	.01	.11	2.43	9.10	26.2
4488	1107020716	CR				Second Cow Creek	19.6	.01	.09	2.28	8.56	24.8
4572	1107020541	CR	NO			Murphy Creek	16.4	0	0	1.65	6.39	19.0
4583	1107020543	CR				Elm Creek	16.7	0	.07	1.96	7.08	20.7
4585	110702058	CR				Lightning Creek	40.6	0	.50	4.08	15.5	49.4
4672	110702058	CR				Lightning Creek	61.1	0	.87	5.70	21.8	73.5
4673	1107020542	CR				Grindstone Creek	12.2	0	0	1.51	5.35	15.4
4691	1107020544	CR				Thunderbolt Creek	24.4	0	.15	2.62	9.96	30.3
4692	110702058	CR				Lightning Creek	73.7	0	1.05	6.61	25.5	88.8
4696	1107020510	CR	NO			Hickory Creek	40.3	0	.92	4.99	17.3	48.7
4748	1107020727	CR				First Cow Creek	43.1	.04	.45	3.68	14.2	43.3
4749	1107020716	CR				Second Cow Creek	72.5	.12	1.53	7.98	29.6	88.4
4790	1107020724	CR				East Cow Creek	46.6	.05	.60	4.20	15.9	48.0
4791	1107020716	CR				Cow Creek	122	.54	2.81	12.5	45.6	139
4800	110702057	CR				Limestone Creek	25.6	0	.20	2.70	10.1	30.7
4807	110702058	CR				Lightning Creek	107	0	1.38	8.60	34.1	130
4816	110702057	CR				Limestone Creek	48.0	0	.74	4.98	18.6	59.3
4836	1107020533	CR				Wolf Creek	17.3	0	.21	2.44	8.50	24.1
4909	1107020536	CR	LB			Litup Creek	24.7	0	.30	2.67	9.31	26.6

**Table 25.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Crawford County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

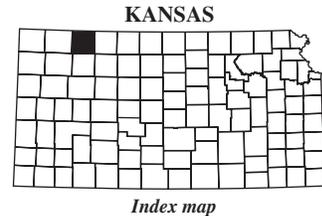
Determination site identification number (fig. 29)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4268	32.5	3,500	6,840	9,630	13,800	17,100	21,000
4308	42.6	4,440	7,850	10,600	14,400	17,500	20,700
4312	NA	NA	NA	NA	NA	NA	NA
4315	30.5	3,480	6,770	9,510	13,600	16,800	20,600
4321	5.11	1,140	2,130	2,930	4,100	5,030	6,080
4326	NA	NA	NA	NA	NA	NA	NA
4332	NA	NA	NA	NA	NA	NA	NA
4372	8.84	1,610	3,040	4,200	5,900	7,260	8,800
4424	33.1	4,650	8,010	10,700	14,300	17,200	20,200
4429	36.3	3,290	6,560	9,380	13,500	17,100	20,900
4481	NA	NA	NA	NA	NA	NA	NA
4487	20.3	2,940	5,630	7,850	11,100	13,800	16,700
4488	19.6	2,900	5,570	7,770	11,000	13,600	16,600
4572	15.5	2,420	4,710	6,610	9,430	11,700	14,300
4583	16.3	2,530	4,910	6,880	9,810	12,200	14,900
4585	37.1	4,310	8,030	11,100	15,700	19,500	23,500
4672	53.6	4,810	9,160	12,900	18,400	23,200	28,500
4673	12.3	2,080	4,020	5,630	8,000	9,920	12,100
4691	23.6	3,270	6,360	8,930	12,800	15,900	19,500
4692	63.6	5,310	10,200	14,300	20,700	26,100	32,200
4696	36.2	3,670	6,910	9,610	13,500	16,700	20,100
4748	35.5	4,040	7,530	10,400	14,600	18,000	21,600
4749	65.2	6,330	11,200	15,200	20,800	25,400	30,300
4790	38.6	4,790	8,670	11,800	16,300	20,000	23,900
4791	102	8,370	14,600	19,600	26,800	32,600	38,800
4800	23.9	3,140	6,540	9,400	13,600	17,200	21,100
4807	90.0	6,430	12,500	17,900	26,300	33,800	42,300
4816	43.4	5,080	9,850	13,900	20,000	25,400	31,200
4836	18.0	2,550	4,960	6,970	9,960	12,400	15,200
4909	21.1	2,920	5,800	8,230	11,800	14,800	18,100





**EXPLANATION**

- ← 755 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06844900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06845100 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 635 Lake and determination site identification number



**Figure 30.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Decatur County.

**Table 26.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Decatur County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

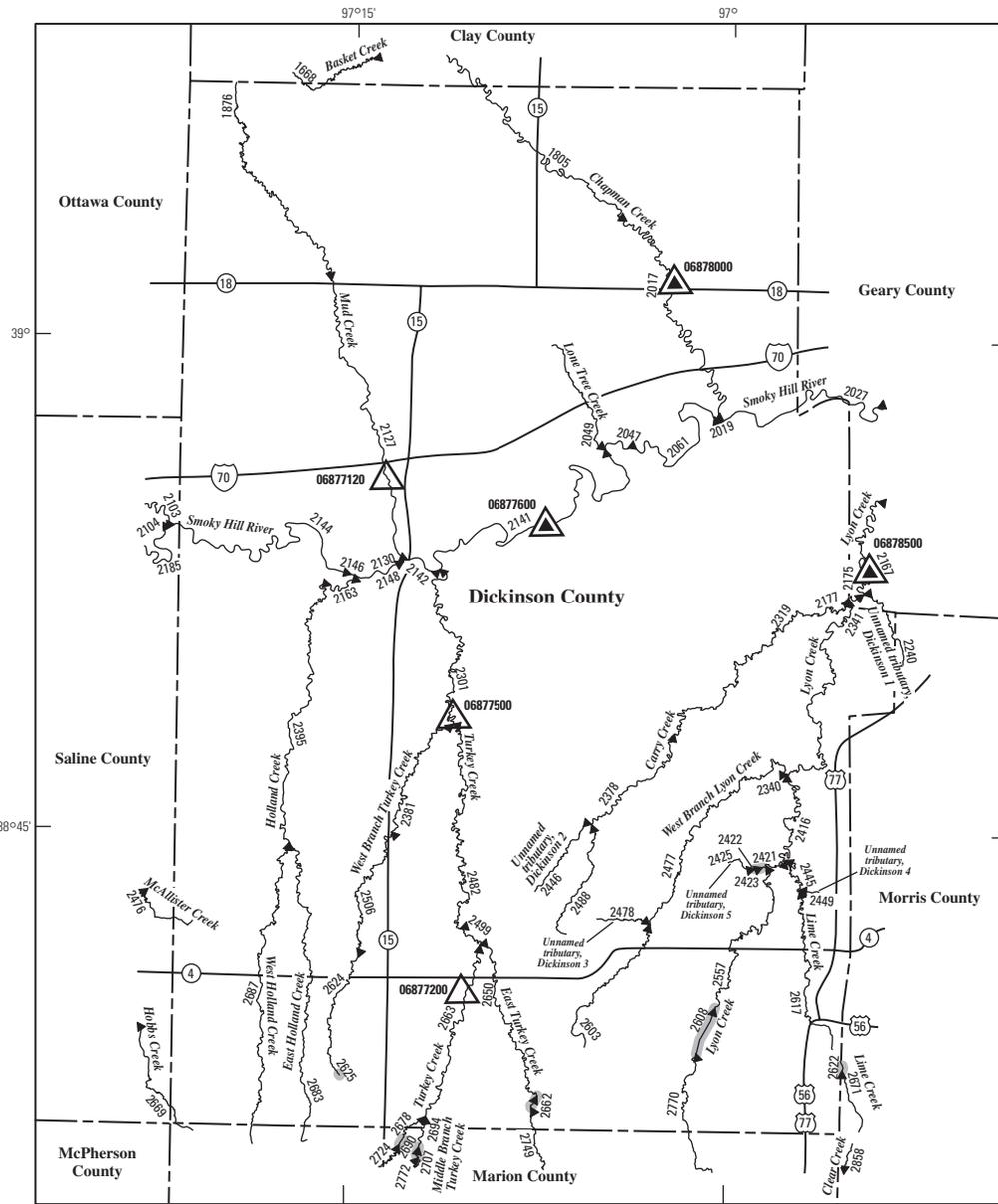
Determination site identification number (fig. 30)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		74	102500142	DC						Beaver Creek	1,680	0
100	102500114	DC	NT			Sappa Creek	1,300	0	1.62	5.40	18.2	55.2
102	102500142	DC				Beaver Creek	1,680	0	0	.02	5.65	23.0
143	102500114	DC				Sappa Creek	1,260	0	1.21	4.13	14.8	45.4
146	102500142	DC	RA			Beaver Creek	1,610	0	0	0	4.60	19.9
152	102500119	DC				Spring Branch	19.5	0	0	0	0	.01
188	102500115	DC	NT			Long Branch	60.6	0	0	.01	.03	.09
193	102500114	DC				Sappa Creek	1,200	0	.62	2.35	9.94	31.3
285	102500115	DC				Long Branch	39.2	0	0	0	.01	.04
289	102500115	DC				Long Branch	17.3	0	0	0	0	.01
297	1025001115	DC				Cotton Creek	24.9	0	0	0	0	.02
335	102500114	DC				Sappa Creek	1,140	0	.10	.70	5.40	18.0
409	1025001514	DC				Plum Creek	35.1	0	0	0	0	0
427	1025001514	DC	NT			Plum Creek	36.0	0	0	0	0	0
441	102500101	DC	RA			Middle Fork Sappa Creek	620	0	0	.34	2.74	9.40
443	102500159	DC				Big Timber Creek	83.6	0	0	0	0	.35
451	102500159	DC				Big Timber Creek	37.3	0	0	0	0	0
452	HYDRO	DC				HYDRO	38.6	NA	NA	NA	NA	NA
457	102500159	DC				Big Timber Creek	49.8	0	0	0	0	0
464	102500159	DC				Big Timber Creek	89.5	0	0	0	0	.64
472	102500158	DC	NT			Prairie Dog Creek	515	0	0	1.23	3.75	7.47
480	102500104	DC				South Fork Sappa Creek	461	0	0	0	1.01	4.05
570	1025001510	DC				Prairie Dog Creek	410	0	0	.44	1.87	4.17
571	1025001510	DC				Prairie Dog Creek	346	0	0	0	.63	1.90
580	1025001510	DC				Prairie Dog Creek	346	0	0	0	.63	1.90
590	1026001112	DC	NT			Elk Creek	41.9	0	0	0	0	0
631	1025001511	DC				North Fork Prairie Dog Creek	95.7	0	0	0	0	0
634	HYDRO	DC				HYDRO	58.7	NA	NA	NA	NA	NA
635	HYDRO	DC				HYDRO	58.0	NA	NA	NA	NA	NA
642	1025001511	DC				North Fork Prairie Dog Creek	58.6	0	0	0	0	0
675	102500104	DC	RA			South Fork Sappa Creek	413	0	0	0	.32	2.30
716	1025001512	DC	SD			Prairie Dog Creek	225	0	0	0	0	0
754	1025001511	DC	TH			North Fork Prairie Dog Creek	54.9	0	0	0	0	0
755	1025001512	DC	SD			Prairie Dog Creek	185	0	0	0	0	0
766	1026001113	DC	NT	SD		North Fork Solomon River	335	0	0	.26	1.61	4.92

**Table 26.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Decatur County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 30)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
74	13.6	414	1,060	1,730	2,970	4,200	5,750
100	42.2	971	2,940	5,180	9,320	13,600	18,800
102	13.6	413	1,060	1,730	2,960	4,190	5,740
143	35.4	943	2,870	5,050	9,110	13,300	18,400
146	12.1	422	1,080	1,750	2,950	4,140	5,610
152	.03	429	1,310	2,230	3,790	5,220	6,940
188	2.22	294	693	1,070	1,680	2,230	2,870
193	25.6	890	2,730	4,840	8,760	12,800	17,800
285	.93	316	885	1,480	2,490	3,450	4,570
289	0	378	1,140	1,930	3,280	4,500	5,970
297	.38	496	1,520	2,590	4,420	6,100	8,110
335	16.3	827	2,570	4,570	8,320	12,200	17,000
409	0.59	377	1,150	1,980	3,420	4,800	6,410
427	0.63	365	1,120	1,940	3,350	4,710	6,300
441	11.0	877	2,730	4,820	8,610	12,400	17,000
443	2.64	457	1,420	2,480	4,350	6,160	8,330
451	.50	339	1,060	1,850	3,240	4,570	6,160
452	NA	NA	NA	NA	NA	NA	NA
457	1.08	365	1,150	2,010	3,530	5,000	6,750
464	2.88	455	1,410	2,480	4,350	6,170	8,340
472	7.40	609	1,790	3,080	5,370	7,600	10,300
480	4.92	412	1,400	2,610	4,950	7,450	10,700
570	5.57	573	1,770	3,110	5,520	7,890	10,800
571	4.10	540	1,720	3,050	5,460	7,860	10,800
580	4.10	539	1,710	3,050	5,460	7,850	10,800
590	.79	356	1,110	1,950	3,410	4,820	6,490
631	1.39	392	1,270	2,270	4,070	5,840	7,970
634	NA	NA	NA	NA	NA	NA	NA
635	NA	NA	NA	NA	NA	NA	NA
642	.10	268	910	1,660	3,020	4,370	6,010
675	3.42	342	1,210	2,290	4,430	6,730	9,730
716	2.25	433	1,440	2,620	4,760	6,910	9,560
754	.01	257	877	1,600	2,910	4,220	5,810
755	1.28	385	1,310	2,390	4,380	6,370	8,830
766	6.32	718	2,310	4,120	7,390	10,600	14,600

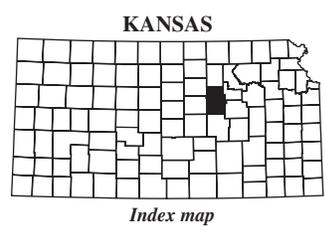




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ← 2669 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06878500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06877200 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2662 Lake and determination site identification number



**Figure 31.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Dickinson County.

**182 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 27.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Dickinson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 31)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2017	102600083	DK						Chapman Creek	313	7.70
2019	102600082	DK				Smoky Hill River	19,600	214	414	807	1,430	3,510
2027	102600082	DK	GE			Smoky Hill River	20,000	193	305	608	1,500	3,990
2047	102600086	DK				Smoky Hill River	19,600	190	299	596	1,470	3,940
2049	1026000841	DK				Lone Tree Creek	32.6	0	.88	3.39	8.83	21.9
2061	102600086	DK				Smoky Hill River	19,600	190	300	597	1,470	3,940
2127	102600088	DK				Mud Creek	130	.77	4.12	11.6	28.4	68.2
2130	102600086	DK				Smoky Hill River	19,200	184	290	578	1,430	3,830
2141	102600086	DK				Smoky Hill River	19,600	190	299	595	1,470	3,930
2142	102600086	DK				Smoky Hill River	19,400	186	294	584	1,440	3,870
2144	1026000810	DK	SA			Smoky Hill River	19,100	182	288	573	1,410	3,810
2146	102600089	DK				Smoky Hill River	19,100	182	288	573	1,410	3,810
2148	102600089	DK				Smoky Hill River	19,200	184	290	578	1,430	3,830
2163	1026000825	DK				Holland Creek	103	0	2.12	8.24	23.8	63.6
2175	1026000834	DK				Lyon Creek	171	.92	6.91	16.2	38.6	94.2
2177	1026000831	DK	GE			Lyon Creek	253	2.52	13.4	27.2	56.6	124
2240	10260008638	DK	GE	MR		Unnamed tributary, Dickinson 1	13.8	.01	.03	.86	2.77	8.22
2301	1026000828	DK				Turkey Creek	181	0	2.90	12.4	39.7	116
2319	1026000835	DK				Carry Creek	80.9	.21	2.06	6.82	18.9	49.4
2340	1026000834	DK				West Branch Lyon Creek	152	.73	5.62	13.8	34.0	85.0
2341	1026000831	DK	GE			Lyon Creek	171	.92	6.91	16.2	38.6	94.2
2378	1026000835	DK				Carry Creek	38.2	.05	.39	2.86	8.82	24.5
2381	1026000829	DK				West Branch Turkey Creek	40.3	0	.23	2.67	8.55	24.2
2395	1026000825	DK				Holland Creek	101	0	2.07	8.06	23.3	62.1
2416	1026000831	DK				Lyon Creek	109	.37	3.19	9.01	24.0	63.1
2421	10260008540	DK				Lyon Creek	67.0	.14	1.34	5.14	15.1	41.1
2422	10260008542	DK				Unnamed tributary, Dickinson 5	3.92	0	0	0	0	.84
2423	HYDRO	DK				HYDRO	3.87	NA	NA	NA	NA	NA
2425	10260008542	DK				Unnamed tributary, Dickinson 5	3.72	0	0	0	0	.65
2445	1026000851	DK				Lime Creek	34.8	.04	.28	2.39	7.54	21.6
2446	1026000832	DK				Unnamed tributary, Dickinson 2	10.6	0	.02	.47	1.72	5.68
2449	10260008618	DK				Unnamed tributary, Dickinson 4	3.67	0	0	0	0	.93
2476	1026000849	DK	SA			McAllister Creek	18.4	0	0	1.07	3.43	9.89
2477	1026000834	DK				West Branch Lyon Creek	42.5	.06	.64	3.55	10.7	29.3
2478	10260008515	DK				Unnamed tributary, Dickinson 3	3.63	0	0	0	0	.98
2482	1026000830	DK				Turkey Creek	114	0	1.48	7.38	24.4	71.5
2488	1026000835	DK				Carry Creek	9.64	0	.01	.48	1.73	5.64
2499	1026000830	DK				Turkey Creek	86.7	0	1.01	5.66	18.7	54.6

**Table 27.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Dickinson County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 31)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2017	93.3	3,630	7,130	10,300	15,300	20,000	25,400
2019	1,410	13,600	32,400	51,800	85,100	118,000	158,000
2027	1,590	12,500	26,100	35,700	51,400	68,700	86,200
2047	1,570	12,400	26,000	35,600	51,000	68,100	85,400
2049	16.0	2,560	5,310	7,690	11,200	14,200	17,400
2061	1,570	12,400	26,000	35,600	51,000	68,200	85,400
2127	45.4	2,570	4,670	6,330	8,710	10,700	12,800
2130	1,530	12,100	25,300	34,700	49,700	66,500	83,400
2141	1,570	12,400	26,000	35,600	51,000	68,100	85,300
2142	1,540	12,200	25,600	35,000	50,200	67,100	84,100
2144	1,510	12,000	25,100	34,400	49,400	66,000	82,900
2146	1,510	12,000	25,100	34,400	49,400	66,000	82,900
2148	1,530	12,100	25,300	34,700	49,700	66,500	83,400
2163	44.0	2,870	6,460	9,780	14,900	19,500	24,600
2175	73.4	4,880	12,000	19,100	31,000	42,300	55,600
2177	98.1	6,220	16,500	27,100	45,700	63,700	85,500
2240	7.27	1,180	2,670	3,990	6,050	7,780	9,780
2301	79.4	2,960	6,550	9,870	15,300	20,200	25,900
2319	37.9	3,260	7,520	11,500	18,000	23,800	30,500
2340	66.4	4,850	11,500	18,100	28,900	39,100	51,000
2341	73.4	4,880	12,000	19,100	31,000	42,300	55,600
2378	19.4	2,320	5,300	8,050	12,400	16,200	20,400
2381	18.7	1,900	4,420	6,780	10,500	13,800	17,500
2395	43.0	2,920	6,540	9,870	15,000	19,600	24,700
2416	49.8	3,930	9,130	14,100	22,200	29,600	38,200
2421	32.6	3,120	7,090	10,800	16,700	21,900	27,900
2422	1.79	614	1,330	1,940	2,870	3,640	4,520
2423	NA	NA	NA	NA	NA	NA	NA
2425	1.65	596	1,280	1,880	2,780	3,520	4,370
2445	18.1	2,660	5,770	8,560	12,800	16,500	20,600
2446	5.41	984	2,230	3,340	5,050	6,490	8,160
2449	1.79	605	1,300	1,890	2,790	3,540	4,380
2476	8.30	1,180	2,790	4,260	6,550	8,510	10,800
2477	22.6	2,460	5,570	8,440	12,900	16,900	21,300
2478	1.74	557	1,220	1,790	2,660	3,380	4,200
2482	51.5	2,370	5,030	7,420	11,200	14,600	18,400
2488	5.27	961	2,160	3,210	4,840	6,210	7,780
2499	40.1	2,570	5,150	7,340	10,700	13,500	16,700

**Table 27.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Dickinson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

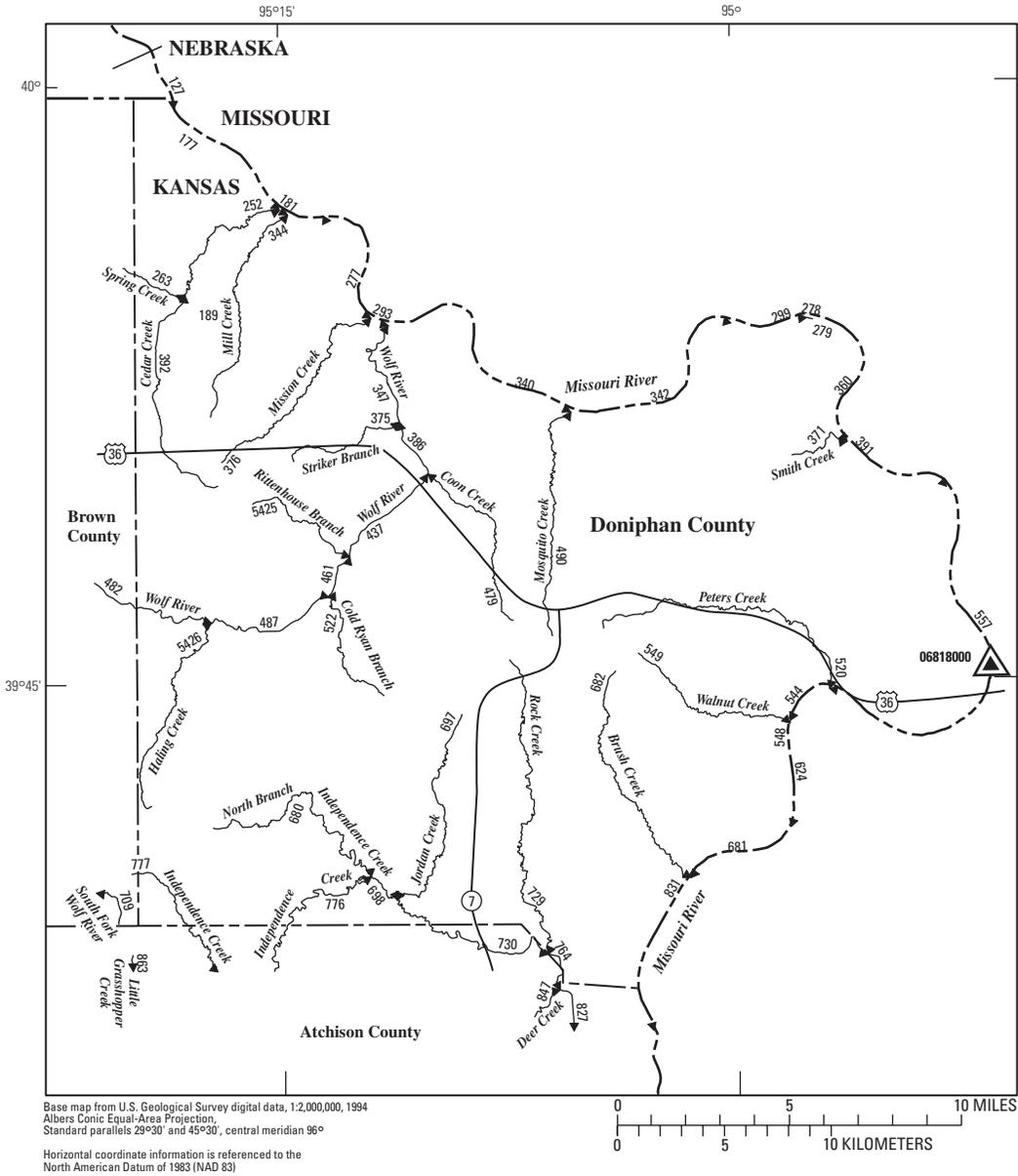
Determination site identification number (fig. 31)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2506	1026000829	DK						West Branch Turkey Creek	27.2	0
2557	10260008540	DK				Lyon Creek	62.6	.12	1.18	4.77	14.1	38.6
2603	1026000834	DK				West Branch Lyon Creek	19.8	.01	.06	1.37	4.55	13.2
2608	HYDRO	DK				HYDRO	49.1	NA	NA	NA	NA	NA
2617	1026000851	DK	MR			Lime Creek	29.4	.03	.12	1.88	6.10	17.8
2624	1026000829	DK				West Branch Turkey Creek	14.1	0	0	1.08	3.18	8.78
2625	HYDRO	DK				HYDRO	2.09	NA	NA	NA	NA	NA
2650	1026000850	DK				East Turkey Creek	39.2	0	.04	2.34	8.14	24.2
2662	HYDRO	DK				HYDRO	25.4	NA	NA	NA	NA	NA
2663	1026000830	DK				Turkey Creek	46.2	0	.39	3.26	10.5	29.5
2669	1026000848	DK	MN	SA		Hobbs Creek	30.3	0	.43	2.58	7.09	18.2
2678	1026000830	DK	MN			Turkey Creek	13.2	0	0	1.13	3.20	8.64
2683	1026000827	DK	MN			East Holland Creek	20.5	0	.23	2.00	5.50	14.1
2687	1026000826	DK	MN			West Holland Creek	32.3	0	.49	2.89	8.14	21.0
2694	1026000858	DK	MN			Middle Branch Turkey Creek	15.4	0	0	.86	3.02	9.15
2749	1026000850	DK	MN			East Turkey Creek	23.7	0	0	1.24	4.61	14.3
2770	10260008540	DK	MN			Lyon Creek	43.3	.06	.38	2.85	9.00	25.7

**Table 27.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Dickinson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

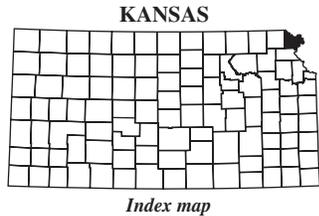
Determination site identification number (fig. 31)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2506	13.0	1,570	3,680	5,590	8,590	11,100	14,100
2557	30.6	3,050	6,920	10,500	16,200	21,300	27,100
2603	11.0	1,490	3,400	5,100	7,740	9,970	12,600
2608	NA	NA	NA	NA	NA	NA	NA
2617	15.3	2,010	4,540	6,810	10,400	13,400	16,800
2624	7.21	1,080	2,500	3,770	5,740	7,410	9,340
2625	NA	NA	NA	NA	NA	NA	NA
2650	19.3	2,350	5,300	8,010	12,200	15,900	20,000
2662	NA	NA	NA	NA	NA	NA	NA
2663	22.3	1,200	2,220	3,000	4,080	4,940	5,850
2669	13.7	1,730	3,940	5,970	9,090	11,800	14,800
2678	7.00	969	2,190	3,270	4,930	6,320	7,920
2683	10.7	1,340	3,130	4,740	7,270	9,410	11,900
2687	15.5	1,900	4,280	6,460	9,800	12,700	15,900
2694	7.84	1,050	2,360	3,520	5,300	6,780	8,500
2749	12.1	1,570	3,600	5,420	8,240	10,600	13,400
2770	21.2	3,120	6,800	10,100	15,300	19,800	24,700





**EXPLANATION**

- ← 863 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06818000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06818000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 776 Lake and determination site identification number



**Figure 32.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Doniphan County.

**Table 28.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Doniphan County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 32)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		127	1024000519	DP						Missouri River	418,000	22,800
177	1024000521	DP				Missouri River	418,000	22,800	34,000	42,000	55,700	72,000
181	102400052	DP				Missouri River	418,000	22,800	34,000	42,100	55,800	72,000
189	102400052	DP				Missouri River	418,000	22,800	34,000	42,100	55,800	72,100
252	1024000551	DP				Cedar Creek	34.8	.13	2.35	7.45	18.8	43.7
277	102400052	DP				Missouri River	418,000	22,900	34,100	42,200	56,000	72,300
278	1024001119	DP				Missouri River	420,000	23,600	34,500	43,200	57,500	74,900
279	1024001119	DP				Missouri River	420,000	23,600	34,500	43,200	57,500	74,900
293	102400052	DP				Missouri River	418,000	22,900	34,100	42,200	56,000	72,400
299	1024001119	DP				Missouri River	419,000	23,000	34,100	42,400	56,200	72,800
340	102400051	DP				Missouri River	418,000	23,000	34,100	42,300	56,200	72,700
342	102400051	DP				Missouri River	418,000	23,000	34,100	42,400	56,200	72,800
344	1024000552	DP				Mill Creek	13.0	.04	1.54	4.12	9.20	19.5
347	1024000553	DP				Wolf River	263	2.10	9.37	37.6	112	308
360	1024001119	DP				Missouri River	420,000	23,600	34,500	43,300	57,500	74,900
371	1024001128	DP				Smith Creek	11.7	.06	1.98	5.20	11.2	22.5
375	1024000572	DP				Striker Branch	6.59	.25	1.15	2.48	4.93	9.97
376	10240005339	DP				Mission Creek	11.6	.05	1.49	3.90	8.60	18.0
386	1024000553	DP				Wolf River	251	1.92	8.81	35.4	106	291
391	1024001119	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	74,900
392	1024000551	DP				Cedar Creek	18.4	0	1.44	4.27	10.3	23.1
437	1024000553	DP				Wolf River	233	1.64	7.89	31.7	95.7	264
461	1024000553	DP				Wolf River	218	1.42	7.22	29.1	88.5	245
479	1024000571	DP				Coon Creek	15.0	.02	1.71	4.88	11.3	24.3
487	1024000553	DP				Wolf River	200	1.17	6.49	26.4	80.6	223
490	1024000573	DP				Mosquito Creek	17.3	.07	2.44	7.09	16.2	33.7
520	1024001127	DP				Peters Creek	32.2	.10	2.89	9.37	23.2	51.6
522	1024000570	DP				Cold Ryan Branch	15.1	0	1.13	3.52	8.59	19.6
544	1024001115	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	75,000
548	1024001113	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	75,000
549	1024001125	DP				Walnut Creek	13.3	0	1.64	4.83	11.2	23.7
557	1024001115	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	75,000
624	1024001113	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	75,000
680	1024001129	DP				North Branch Independence Creek	21.7	0	1.61	5.45	13.9	31.9
681	1024001113	DP				Missouri River	420,000	23,600	34,500	43,300	57,600	75,000
682	1024001126	DP				Brush Creek	18.9	0	1.90	6.03	14.7	32.2
697	1024001130	DP				Jordan Creek	17.2	0	1.43	4.64	11.5	25.9
698	1024001122	DP				Independence Creek	55.1	0	2.86	10.9	30.7	75.8

**Table 28.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Doniphan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 32)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
127	46,400	103,000	139,000	166,000	191,000	226,000	255,000
177	46,400	103,000	139,000	166,000	191,000	226,000	255,000
181	46,500	103,000	140,000	166,000	192,000	227,000	256,000
189	46,500	103,000	140,000	166,000	192,000	227,000	256,000
252	27.4	2,900	5,680	8,010	11,400	14,200	17,200
277	46,600	103,000	140,000	167,000	192,000	227,000	256,000
278	48,000	109,000	147,000	174,000	199,000	233,000	261,000
279	48,000	109,000	147,000	174,000	199,000	233,000	261,000
293	46,600	103,000	140,000	167,000	192,000	227,000	256,000
299	46,900	104,000	141,000	168,000	193,000	228,000	257,000
340	46,800	104,000	141,000	168,000	193,000	228,000	257,000
342	46,900	104,000	141,000	168,000	193,000	228,000	257,000
344	11.9	1,390	2,980	4,360	6,460	8,200	10,200
347	179	7,780	14,800	20,900	29,700	37,300	45,500
360	48,100	109,000	147,000	174,000	199,000	233,000	261,000
371	12.5	1,310	2,800	4,090	6,040	7,670	9,520
375	6.30	959	2,020	2,920	4,290	5,420	6,700
376	11.0	1,310	2,810	4,100	6,050	7,670	9,530
386	171	7,860	14,900	21,000	29,800	37,300	45,500
391	48,100	109,000	147,000	174,000	199,000	233,000	261,000
392	15.1	1,720	3,710	5,440	8,070	10,300	12,800
437	157	7,660	14,600	20,500	29,200	36,500	44,500
461	147	7,520	14,300	20,100	28,700	35,900	43,700
479	14.6	1,570	3,360	4,890	7,230	9,160	11,400
487	136	7,230	13,800	19,500	27,800	34,800	42,400
490	18.7	1,700	3,630	5,310	7,860	9,980	12,400
520	29.7	3,800	7,010	9,620	13,300	16,300	19,400
522	13.0	1,590	3,380	4,920	7,270	9,220	11,400
544	48,100	109,000	147,000	174,000	199,000	233,000	261,000
548	48,100	109,000	147,000	174,000	199,000	233,000	261,000
549	13.8	1,450	3,090	4,500	6,660	8,440	10,500
557	48,100	109,000	147,000	174,000	199,000	233,000	261,000
624	48,100	109,000	147,000	174,000	199,000	233,000	261,000
680	19.8	1,950	4,190	6,130	9,090	11,600	14,400
681	48,100	109,000	147,000	174,000	199,000	233,000	261,000
682	18.9	1,800	3,860	5,650	8,360	10,600	13,200
697	16.1	1,720	3,670	5,350	7,910	10,000	12,500
698	46.2	4,210	8,060	11,300	16,000	19,800	24,000

**Table 28.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Doniphan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

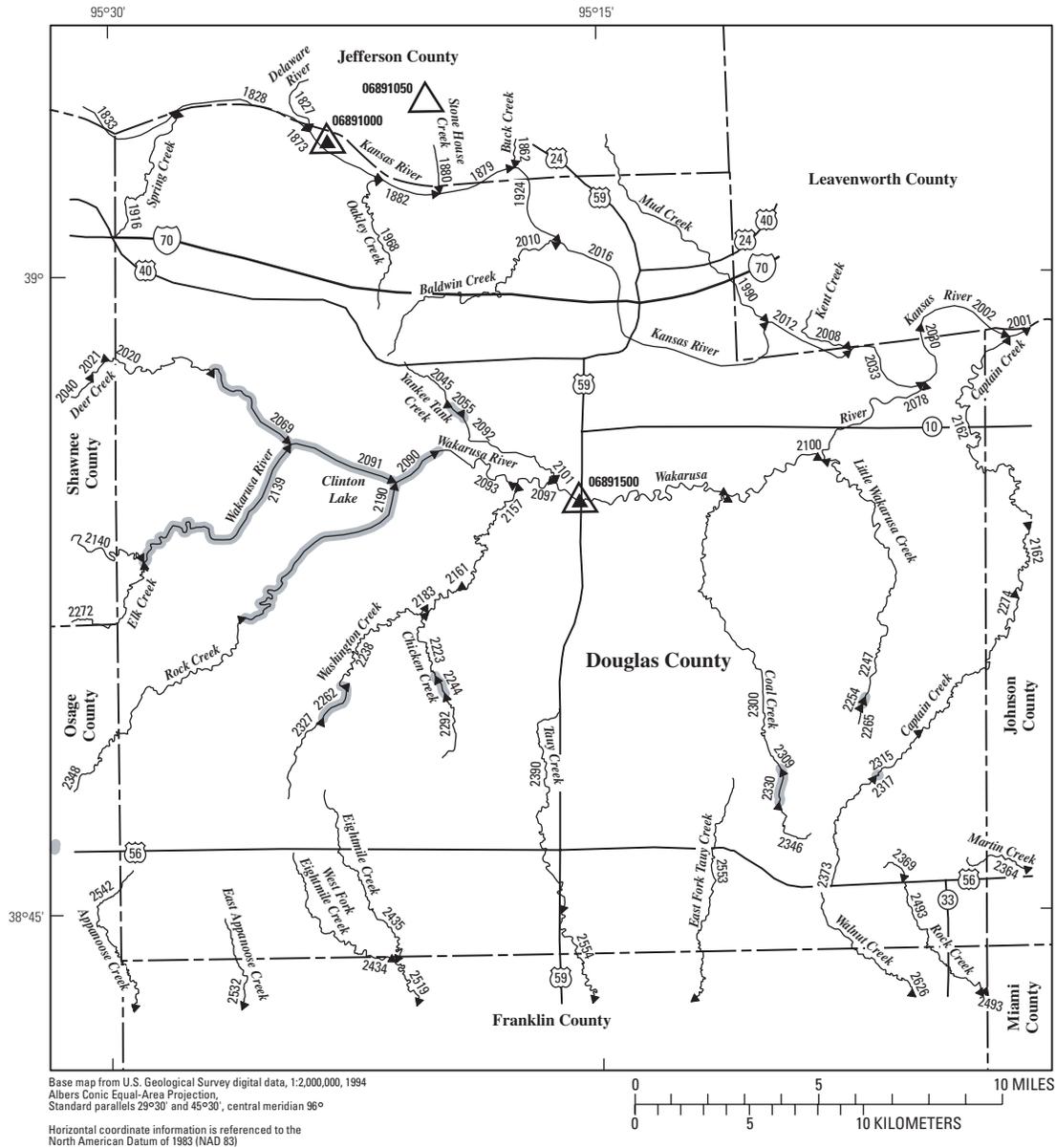
Determination site identification number (fig. 32)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		729	1024001121	DP						Rock Creek	23.1	0
5425	1024000569	DP				Rittenhouse Branch	8.66	.05	1.03	2.64	5.71	12.2
5426	1024000568	DP				Haling Creek	21.1	0	1.01	3.99	10.8	26.2

**Table 28.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Doniphan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

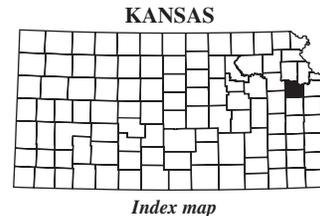
Determination site identification number (fig. 32)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
729	22.6	2,040	4,380	6,410	9,510	12,100	15,000
5425	7.92	1,130	2,390	3,470	5,100	6,450	7,990
5426	17.5	1,900	4,100	6,000	8,900	11,300	14,100





**EXPLANATION**

- ← 2532 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06891050 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06891500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2330 Lake and determination site identification number



**Figure 33.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Douglas County.

**194 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 29.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Douglas County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 33)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1827	102701031	DG	JF					Delaware River	1,170	23.4
1828	102701021	DG	JF			Kansas River	55,900	1,030	1,720	3,200	7,480	16,800
1833	102701021	DG	JF	SN		Kansas River	55,900	1,020	1,710	3,190	7,450	16,800
1873	1027010423	DG				Kansas River	57,100	1,140	1,900	3,580	8,350	19,000
1879	1027010423	DG	JF			Kansas River	57,100	1,140	1,910	3,590	8,390	19,100
1880	1027010457	DG	JF			Stone House Creek	19.9	0	1.09	4.70	13.4	32.8
1882	1027010423	DG				Kansas River	57,100	1,140	1,900	3,590	8,370	19,000
1916	10270102105	DG	JF	SN		Spring Creek	17.1	0	.74	3.88	11.3	27.8
1924	1027010421	DG	JF			Kansas River	57,100	1,150	1,910	3,600	8,410	19,100
1968	1027010456	DG				Oakley Creek	13.8	0	.54	3.26	9.71	24.2
1990	1027010420	DG	JF	LV		Mud Creek	48.8	0	1.99	9.09	28.4	74.4
2010	1027010469	DG				Baldwin Creek	16.4	0	.50	3.15	9.61	24.7
2012	1027010419	DG	LV			Kansas River	57,200	1,150	1,920	3,630	8,500	19,300
2016	1027010421	DG	LV			Kansas River	57,200	1,150	1,920	3,610	8,450	19,200
2020	10270104701	DG	SN			Deer Creek	26.0	0	.49	3.35	10.7	29.0
2030	1027010419	DG	LV			Kansas River	57,800	1,200	2,010	3,800	9,020	20,400
2033	1027010419	DG	LV			Kansas River	57,200	1,150	1,930	3,630	8,510	19,300
2045	1027010470	DG				Yankee Tank Creek	5.04	0	.09	1.06	2.80	7.09
2055	HYDRO	DG				HYDRO	6.52	NA	NA	NA	NA	NA
2069	HYDRO	DG				HYDRO	38.5	NA	NA	NA	NA	NA
2078	1027010424	DG				Wakarusa River	522	7.17	16.6	34.0	272	919
2090	HYDRO	DG				HYDRO	365	NA	NA	NA	NA	NA
2091	HYDRO	DG				HYDRO	321	NA	NA	NA	NA	NA
2092	1027010470	DG				Yankee Tank Creek	14.1	0	.32	2.40	7.28	19.0
2093	1027010425	DG				Wakarusa River	367	4.58	11.4	23.7	213	730
2097	1027010424	DG				Wakarusa River	418	5.21	13.0	27.0	242	832
2100	1027010424	DG				Wakarusa River	489	6.46	15.4	31.7	266	908
2101	1027010424	DG				Wakarusa River	449	5.60	14.0	29.0	260	893
2139	HYDRO	DG				HYDRO	276	NA	NA	NA	NA	NA
2140	1027010430	DG	SN			Wakarusa River	240	.54	4.46	19.9	68.1	209
2157	1027010436	DG				Washington Creek	50.0	0	1.61	7.27	22.6	60.4
2161	1027010436	DG				Washington Creek	40.4	0	1.17	5.66	17.7	47.3
2162	1027010472	DG	JO	LV		Captain Creek	44.0	0	.76	4.76	16.5	47.4
2183	1027010436	DG				Washington Creek	39.5	0	1.13	5.52	17.2	46.2
2190	HYDRO	DG				HYDRO	41.6	NA	NA	NA	NA	NA
2223	1027010479	DG				Chicken Creek	15.3	0	.43	2.63	7.69	19.7
2238	1027010436	DG				Washington Creek	21.5	0	.48	3.02	9.28	24.6
2244	HYDRO	DG				HYDRO	12.1	NA	NA	NA	NA	NA

**Table 29.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Douglas County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 33)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1827	155	915	1,640	2,240	2,830	3,900	4,740
1828	6,770	39,200	71,200	98,600	128,000	179,000	222,000
1833	6,750	39,100	71,000	98,300	128,000	178,000	221,000
1873	7,550	44,600	80,000	109,000	138,000	190,000	231,000
1879	7,570	44,800	80,300	109,000	138,000	190,000	231,000
1880	21.0	1,720	3,720	5,470	8,160	10,500	13,100
1882	7,560	44,700	80,100	109,000	138,000	190,000	231,000
1916	17.7	1,820	3,830	5,550	8,160	10,300	12,800
1924	7,590	44,900	80,400	109,000	138,000	190,000	231,000
1968	15.6	1,760	3,600	5,160	7,510	9,430	11,600
1990	46.9	5,290	9,680	13,300	18,400	22,600	27,000
2010	16.8	1,950	4,000	5,740	8,360	10,500	13,000
2012	7,650	45,300	81,100	110,000	139,000	191,000	232,000
2016	7,620	45,000	80,700	110,000	139,000	191,000	232,000
2020	20.8	2,260	4,830	7,050	10,400	13,200	16,500
2030	8,030	47,500	84,800	114,000	143,000	195,000	236,000
2033	7,660	45,300	81,200	110,000	139,000	191,000	232,000
2045	5.22	963	1,940	2,750	3,970	4,960	6,080
2055	NA	NA	NA	NA	NA	NA	NA
2069	NA	NA	NA	NA	NA	NA	NA
2078	275	3,640	5,700	6,680	8,380	10,400	12,200
2090	NA	NA	NA	NA	NA	NA	NA
2091	NA	NA	NA	NA	NA	NA	NA
2092	13.5	1,750	3,600	5,170	7,530	9,480	11,700
2093	216	2,930	4,570	5,350	6,700	8,320	9,730
2097	246	3,330	5,200	6,090	7,630	9,480	11,100
2100	270	3,610	5,650	6,620	8,300	10,300	12,100
2101	265	3,580	5,590	6,540	8,200	10,200	11,900
2139	NA	NA	NA	NA	NA	NA	NA
2140	139	8,860	17,200	24,400	35,000	44,200	54,200
2157	40.4	4,360	8,380	11,700	16,600	20,700	25,100
2161	32.4	4,660	8,730	12,100	16,900	20,900	25,100
2162	34.7	3,900	7,670	10,900	15,600	19,500	23,800
2183	31.7	4,600	8,640	12,000	16,700	20,700	24,800
2190	NA	NA	NA	NA	NA	NA	NA
2223	13.8	1,700	3,570	5,180	7,600	9,600	11,900
2238	17.7	2,050	4,350	6,330	9,340	11,800	14,700
2244	NA	NA	NA	NA	NA	NA	NA

**Table 29.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Douglas County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

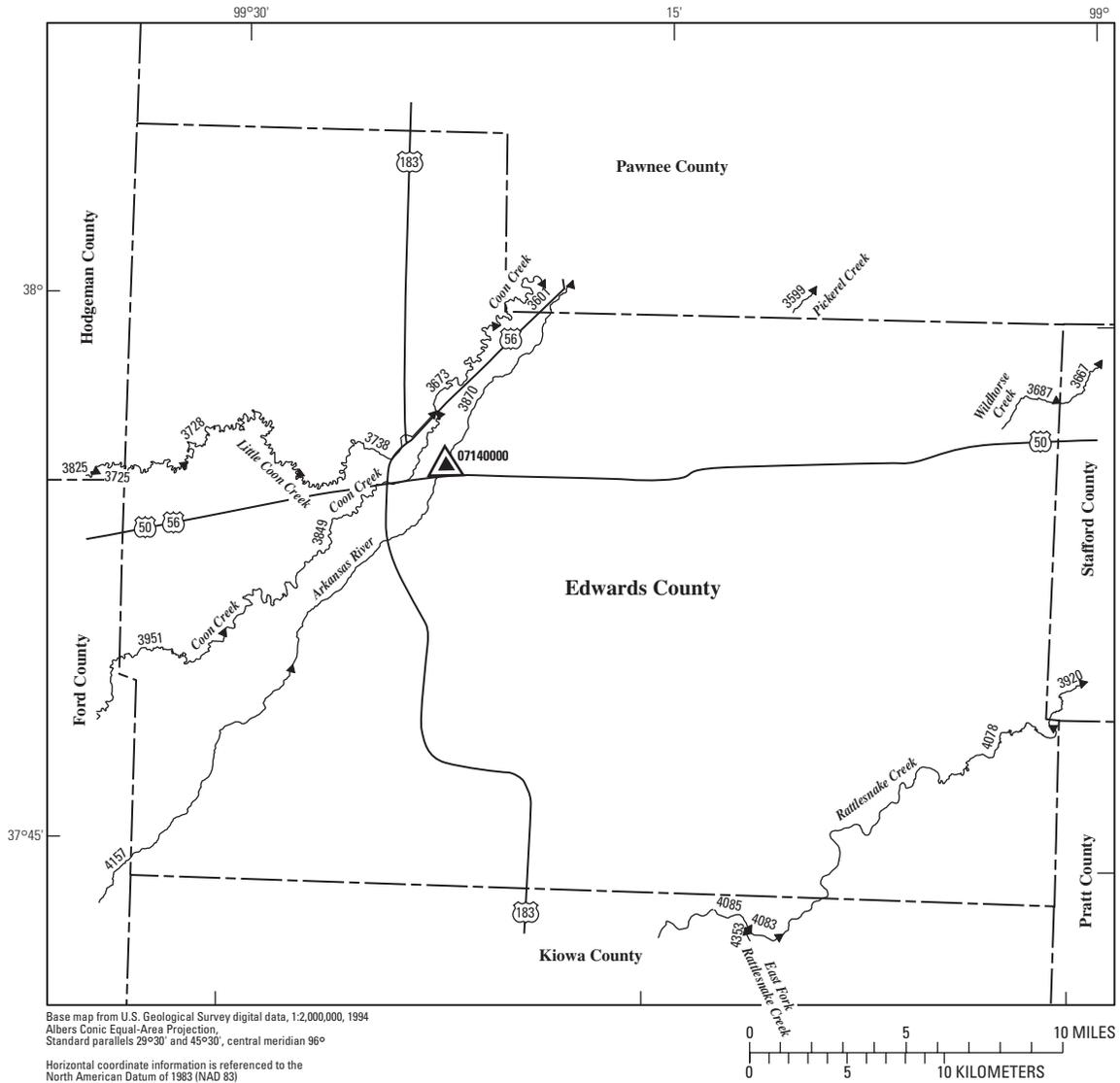
Determination site identification number (fig. 33)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2247	1027010471	DG						Little Wakarusa Creek	26.1	0
2254	HYDRO	DG				HYDRO	3.48	NA	NA	NA	NA	NA
2262	HYDRO	DG				HYDRO	13.7	NA	NA	NA	NA	NA
2265	1027010471	DG				Little Wakarusa Creek	3.00	.21	.32	.85	1.70	3.98
2272	1027010468	DG	OS	SN		Elk Creek	21.5	0	.01	2.02	7.00	20.3
2274	1027010472	DG	JO			Captain Creek	24.5	0	.46	3.12	10.1	27.7
2292	1027010479	DG				Chicken Creek	10.2	0	.09	1.45	4.25	11.3
2300	1027010480	DG				Coal Creek	32.6	0	1.31	5.76	17.2	44.3
2309	1027010480	DG				Coal Creek	5.43	0	.41	1.59	3.84	8.86
2315	1027010472	DG				Captain Creek	10.7	0	.34	1.98	5.57	14.1
2317	HYDRO	DG				HYDRO	6.29	NA	NA	NA	NA	NA
2327	1027010436	DG				Washington Creek	10.2	0	0	1.22	3.80	10.5
2330	HYDRO	DG				HYDRO	4.91	NA	NA	NA	NA	NA
2346	1027010480	DG				Coal Creek	3.40	.08	.30	.94	1.99	4.69
2348	1027010435	DG	OS			Rock Creek	28.4	0	.54	3.45	10.9	29.8
2364	1029010299	DG	JO			Martin Creek	16.0	0	0	1.56	5.59	16.4
2369	1029010227	DG				Rock Creek	3.42	0	0	.39	.92	2.87
2373	1027010472	DG				Captain Creek	6.12	0	.16	1.15	3.01	7.63
2390	1029010111	DG				Tauy Creek	32.9	0	.98	4.74	14.6	38.7
2434	1029010188	DG	FR			West Fork Eightmile Creek	10.7	0	0	.98	3.60	10.8
2435	1029010113	DG	FR			Eightmile Creek	15.8	0	.21	2.03	6.23	16.8
2493	1029010227	DG	FR	MI		Rock Creek	21.4	0	.01	2.16	7.89	23.2
2532	1029010189	DG	FR			East Appanoose Creek	14.8	0	0	1.74	5.94	16.8
2542	1029010116	DG	FR	OS		Appanoose Creek	41.3	0	.44	3.82	13.4	39.0
2553	1029010185	DG	FR			East Fork Tauy Creek	37.1	0	.76	4.43	14.6	40.9
2554	1029010111	DG	FR			Tauy Creek	48.2	0	1.44	6.49	20.3	55.0
2626	1029010190	DG	FR			Walnut Creek	39.0	0	.21	3.19	12.1	37.2

**Table 29.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Douglas County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

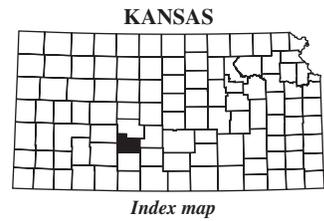
Determination site identification number (fig. 33)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2247	21.5	2,500	5,210	7,530	11,000	13,900	17,300
2254	NA	NA	NA	NA	NA	NA	NA
2262	NA	NA	NA	NA	NA	NA	NA
2265	3.02	710	1,420	2,000	2,860	3,570	4,360
2272	15.8	1,960	4,210	6,150	9,110	11,600	14,400
2274	20.5	2,430	5,050	7,290	10,700	13,500	16,600
2292	8.60	1,340	2,790	4,030	5,890	7,430	9,180
2300	29.4	3,640	6,930	9,660	13,600	16,800	20,300
2309	5.98	996	2,010	2,860	4,130	5,170	6,340
2315	10.2	1,500	3,060	4,380	6,360	7,990	9,830
2317	NA	NA	NA	NA	NA	NA	NA
2327	8.31	1,330	2,770	4,000	5,860	7,390	9,140
2330	NA	NA	NA	NA	NA	NA	NA
2346	3.47	760	1,520	2,150	3,090	3,850	4,710
2348	21.6	2,340	5,020	7,360	10,900	13,900	17,300
2364	13.2	1,940	3,970	5,690	8,280	10,400	12,800
2369	2.82	779	1,550	2,190	3,140	3,910	4,780
2373	5.81	1,070	2,170	3,100	4,470	5,590	6,860
2390	27.0	3,620	6,960	9,760	13,800	17,200	20,700
2434	8.74	1,370	2,860	4,130	6,050	7,630	9,420
2435	12.7	1,730	3,630	5,260	7,730	9,780	12,100
2493	18.0	2,290	4,730	6,800	9,920	12,500	15,400
2532	12.6	1,630	3,440	5,000	7,350	9,300	11,500
2542	28.9	3,380	7,000	10,200	14,900	19,000	23,400
2553	29.6	3,580	7,020	9,950	14,200	17,800	21,600
2554	38.0	3,090	6,280	9,060	13,200	16,700	20,500
2626	29.2	3,580	7,220	10,400	15,000	19,000	23,300





**EXPLANATION**

- ◀ 4157 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07140000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07140000 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2330 Lake and determination site identification number



**Figure 34.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Edwards County.

**Table 30.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Edwards County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

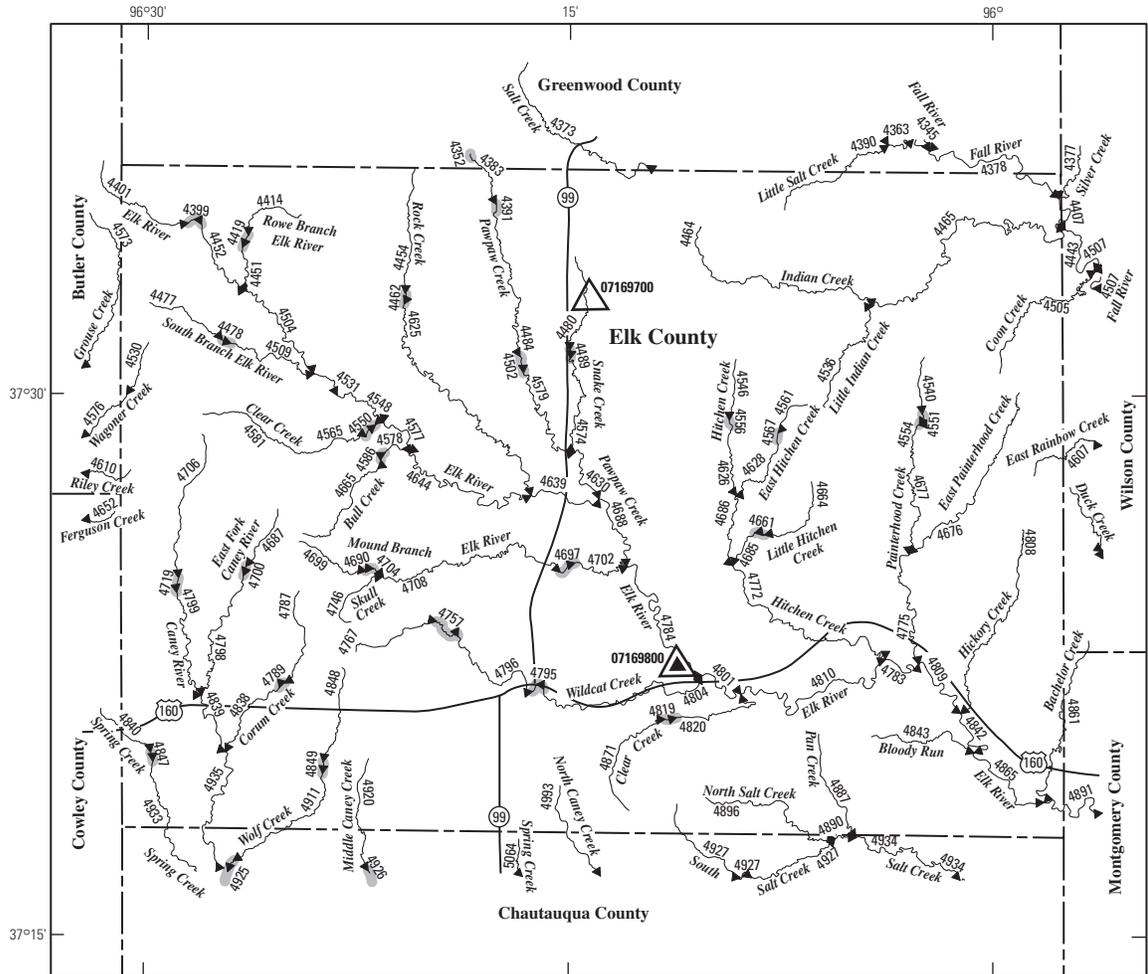
Determination site identification number (fig. 34)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3601	110300047	ED	PN					Coon Creek	436	0.18
3673	110300047	ED				Coon Creek	384	0	1.27	3.15	7.80	20.1
3687	110300092	ED				Wildhorse Creek	51.6	0	0	0	0	.06
3725	110300048	ED	HG			Little Coon Creek	117	0	0	0	.08	2.23
3728	110300048	ED				Little Coon Creek	161	0	0	.17	1.18	5.04
3738	110300048	ED				Little Coon Creek	175	0	0	.48	1.81	6.32
3849	110300049	ED				Coon Creek	188	0	.21	1.15	2.82	7.60
3870	1103000410	ED	PN			Arkansas River	28,100	.71	2.60	32.0	104	203
3920	110300093	ED	SF			Rattlesnake Creek	705	1.20	6.50	15.0	28.0	40.0
3951	110300049	ED	FO			Coon Creek	167	0	0	.76	2.03	5.97
4078	110300093	ED	KW			Rattlesnake Creek	622	1.00	5.60	12.9	24.7	37.5
4157	1103000410	ED	FO			Arkansas River	28,000	.58	2.11	27.6	97.8	198

**Table 30.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Edwards County.—Continued

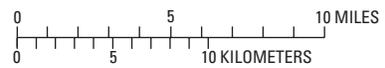
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 34)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3601	23.0	761	2,270	3,980	7,140	10,300	14,400
3673	20.0	734	2,180	3,830	6,850	9,920	13,800
3687	2.32	431	1,190	1,960	3,220	4,390	5,730
3725	5.05	368	1,240	2,300	4,350	6,520	9,330
3728	7.71	404	1,370	2,550	4,820	7,230	10,300
3738	8.71	376	1,280	2,380	4,530	6,810	9,760
3849	9.28	641	1,880	3,210	5,510	7,690	10,300
3870	101	606	3,090	8,500	16,000	25,500	39,000
3920	25.9	400	1,340	2,490	4,770	7,230	10,500
3951	7.94	621	1,830	3,140	5,410	7,570	10,100
4078	25.6	438	1,430	2,600	4,880	7,290	10,500
4157	97.9	635	3,120	9,030	17,100	27,100	41,100



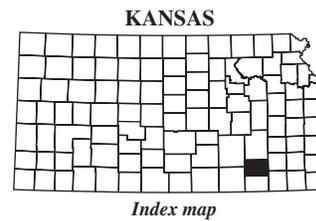


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 4933 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07169800 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07169700 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4925 Lake and determination site identification number



**Figure 35.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Elk County.

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 35)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4377	1107010233	EK	GW			WL	Silver Creek	19.0	36	2.22
4378	110701022	EK	GW		Fall River	590	7.80	15.6	67.5	353	1,310	
4383	1107010411	EK	GW		Pawpaw Creek	8.32	0	0	.49	2.01	6.66	
4390	1107010235	EK	GW		Little Salt Creek	12.2	0	.15	1.59	4.53	11.9	
4391	HYDRO	EK			HYDRO	8.67	NA	NA	NA	NA	NA	
4399	HYDRO	EK			HYDRO	11.5	NA	NA	NA	NA	NA	
4407	110701022	EK	WL		Fall River	610	8.19	16.1	70.5	370	1,370	
4414	1107010439	EK			Rowe Branch Elk River	10.6	0	0	.94	3.52	10.6	
4419	HYDRO	EK			HYDRO	11.0	SNA	NA	NA	NA	NA	
4451	1107010439	EK			Rowe Branch Elk River	12.9	0	0	1.22	4.47	13.2	
4452	1107010414	EK			Elk River	15.2	0	.02	1.96	6.36	17.3	
4454	1107010413	EK	GW		Rock Creek	15.8	0	0	.75	3.40	11.4	
4462	HYDRO	EK			HYDRO	17.0	NA	NA	NA	NA	NA	
4464	1107010215	EK			Indian Creek	25.2	0	.06	2.12	7.35	21.5	
4465	1107010215	EK	WL		Indian Creek	53.9	0	1.64	6.93	21.1	56.3	
4477	1107010438	EK			South Branch Elk River	6.14	0	0	.63	2.01	5.93	
4478	HYDRO	EK			HYDRO	6.86	NA	NA	NA	NA	NA	
4480	1107010434	EK			Snake Creek	14.5	0	0	.43	2.78	10.5	
4484	1107010411	EK			Pawpaw Creek	21.9	0	0	1.47	6.00	18.8	
4489	HYDRO	EK			HYDRO	14.7	NA	NA	NA	NA	NA	
4502	HYDRO	EK			HYDRO	22.8	NA	NA	NA	NA	NA	
4504	1107010414	EK			Elk River	35.9	.01	.24	3.46	12.6	36.7	
4505	1107010236	EK	WL		Coon Creek	12.7	0	.79	3.19	8.39	19.7	
4509	1107010438	EK			South Branch Elk River	11.6	0	0	1.36	4.52	12.6	
4530	1106000136	EK			Wagoner Creek	4.81	0	0	.11	.68	3.01	
4531	1107010414	EK			Elk River	49.3	.03	.55	4.86	17.7	51.5	
4536	1107010234	EK			Little Indian Creek	9.79	0	.74	2.40	5.74	13.1	
4540	110701045	EK			Painterhood Creek	6.64	0	.64	1.86	4.15	9.25	
4546	110701047	EK			Hitchen Creek	10.9	0	0	.18	1.61	6.72	
4548	1107010414	EK			Elk River	52.6	.03	.59	5.14	18.9	54.9	
4550	1107010432	EK			Clear Creek	13.1	0	0	1.08	4.10	12.4	
4551	HYDRO	EK			HYDRO	6.80	NA	NA	NA	NA	NA	
4554	110701045	EK			Painterhood Creek	1.36	0	.10	.27	.45	.91	
4556	HYDRO	EK			HYDRO	11.7	NA	NA	NA	NA	NA	
4561	1107010435	EK			East Hitchen Creek	3.86	0	0	.14	.55	2.45	
4565	HYDRO	EK			HYDRO	13.0	NA	NA	NA	NA	NA	
4567	HYDRO	EK			HYDRO	4.03	NA	NA	NA	NA	NA	
4574	1107010434	EK			Snake Creek	23.3	0	0	.95	4.92	17.2	

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 35)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4377	18.1	1,900	4,020	5,850	8,620	10,900	13,500
4378	432	6,120	10,700	13,600	17,000	19,300	21,400
4383	5.97	1,110	2,350	3,410	5,020	6,350	7,860
4390	9.12	1,350	2,890	4,220	6,230	7,910	9,820
4391	NA	NA	NA	NA	NA	NA	NA
4399	NA	NA	NA	NA	NA	NA	NA
4407	446	6,570	11,400	14,600	18,300	20,800	23,100
4414	8.39	1,250	2,680	3,910	5,790	7,340	9,130
4419	NA	NA	NA	NA	NA	NA	NA
4451	10.2	1,400	3,010	4,410	6,540	8,320	10,400
4452	12.4	1,500	3,260	4,800	7,150	9,120	11,400
4454	10.1	1,600	3,440	5,050	7,500	9,540	11,900
4462	NA	NA	NA	NA	NA	NA	NA
4464	17.1	2,130	4,590	6,730	10,000	12,700	15,800
4465	38.6	3,510	7,050	10,100	14,600	18,400	22,600
4477	4.86	890	1,890	2,750	4,040	5,110	6,330
4478	NA	NA	NA	NA	NA	NA	NA
4480	9.69	497	969	1,360	1,920	2,390	2,890
4484	15.2	1,960	4,250	6,260	9,330	11,900	14,900
4489	NA	NA	NA	NA	NA	NA	NA
4502	NA	NA	NA	NA	NA	NA	NA
4504	26.1	5,220	10,100	14,100	20,100	25,100	30,500
4505	12.7	1,520	3,170	4,590	6,730	8,500	10,500
4509	9.43	1,290	2,790	4,080	6,060	7,700	9,580
4530	3.21	771	1,630	2,360	3,460	4,370	5,400
4531	35.4	6,140	11,800	16,500	23,500	29,500	35,800
4536	8.91	1,270	2,660	3,850	5,650	7,130	8,820
4540	6.31	1,030	2,130	3,060	4,460	5,620	6,930
4546	6.92	1,340	2,830	4,100	6,010	7,600	9,410
4548	37.6	5,880	11,500	16,200	23,300	29,300	35,900
4550	9.83	1,400	3,010	4,410	6,550	8,340	10,400
4551	NA	NA	NA	NA	NA	NA	NA
4554	.95	418	834	1,180	1,680	2,090	2,550
4556	NA	NA	NA	NA	NA	NA	NA
4561	2.74	747	1,530	2,190	3,180	3,990	4,900
4565	NA	NA	NA	NA	NA	NA	NA
4567	NA	NA	NA	NA	NA	NA	NA
4574	15.1	1,030	2,300	3,440	5,250	6,830	8,660

**206 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRtribal, tribal stream]

Determination site identification number (fig. 35)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
4577	1107010414	EK				Elk River	67.8	0.05	0.83	6.46	24.2	71.0
4578	1107010433	EK				Bull Creek	7.81	0	0	.45	1.92	6.45
4579	1107010411	EK				Pawpaw Creek	27.6	0	0	1.93	7.70	23.8
4581	1107010432	EK				Clear Creek	12.7	0	0	1.02	3.90	11.9
4586	HYDRO	EK				HYDRO	7.26	NA	NA	NA	NA	NA
4607	1107010217	EK	WL			East Rainbow Creek	24.1	0	.54	3.55	11.4	30.6
4625	1107010413	EK				Rock Creek	34.1	0	0	2.37	9.39	28.9
4626	110701047	EK				Hitchen Creek	17.7	0	0	.97	4.13	13.5
4628	1107010435	EK				East Hitchen Creek	7.47	0	0	.97	2.75	7.51
4630	1107010411	EK				Pawpaw Creek	54.8	.03	.10	3.61	15.0	47.2
4639	1107010412	EK				Elk River	122	.16	1.61	11.3	44.2	132
4644	1107010414	EK				Elk River	84.4	.08	1.13	8.03	30.4	89.5
4661	HYDRO	EK				HYDRO	10.7	NA	NA	NA	NA	NA
4664	1107010437	EK				Little Hitchen Creek	10.2	.08	1.19	3.24	7.40	16.0
4665	1107010433	EK				Bull Creek	6.98	0	0	.31	1.51	5.43
4676	1107010436	EK				East Painterhood Creek	14.9	0	.64	3.00	8.35	20.6
4677	110701045	EK				Painterhood Creek	17.8	0	.99	3.86	10.4	25.0
4685	1107010437	EK				Little Hitchen Creek	11.6	0	1.17	3.39	8.01	17.7
4686	110701047	EK				Hitchen Creek	30.6	0	.23	2.79	9.71	28.3
4687	1107010652	EK				East Fork Caney River	6.17	0	0	.71	2.20	6.27
4688	1107010410	EK				Elk River	183	.36	2.30	17.2	70.5	211
4690	HYDRO	EK				HYDRO	3.44	NA	NA	NA	NA	NA
4697	HYDRO	EK				HYDRO	23.8	NA	NA	NA	NA	NA
4699	1107010415	EK				Mound Branch Elk River	3.08	0	0	0	.01	1.10
4700	HYDRO	EK				HYDRO	6.86	NA	NA	NA	NA	NA
4702	1107010415	EK				Mound Branch Elk River	27.2	0	0	2.02	7.85	24.0
4704	1107010415	EK				Mound Branch Elk River	4.50	0	0	0	.42	2.46
4706	1107010620	EK				Caney River	12.7	0	0	1.38	4.56	12.8
4708	1107010415	EK				Mound Branch Elk River	21.3	0	0	1.37	5.58	17.6
4719	HYDRO	EK				HYDRO	14.3	NA	NA	NA	NA	NA
4746	1107010431	EK				Skull Creek	3.19	0	0	0	.01	1.19
4757	HYDRO	EK				HYDRO	9.09	NA	NA	NA	NA	NA
4767	1107010416	EK				Wildcat Creek	6.74	0	0	.19	1.19	4.71
4772	110701047	EK				Hitchen Creek	56.6	0	1.84	7.79	23.9	63.9
4775	110701045	EK				Painterhood Creek	41.8	0	1.80	7.29	21.4	54.5
4783	110701046	EK				Elk River	341	1.88	6.27	35.6	134	403
4784	110701049	EK				Elk River	221	.64	2.90	22.0	91.0	271
4787	1107010651	EK				Corum Creek	6.85	0	0	.33	1.54	5.40

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 35)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4577	47.6	6,610	12,900	18,400	26,600	33,600	41,400
4578	5.71	1,040	2,220	3,220	4,750	6,020	7,460
4579	18.8	2,250	4,910	7,250	10,900	13,900	17,400
4581	9.50	1,370	2,950	4,330	6,430	8,180	10,200
4586	NA	NA	NA	NA	NA	NA	NA
4607	21.5	2,350	4,910	7,110	10,400	13,200	16,300
4625	22.5	3,580	7,430	10,800	15,900	20,200	25,000
4626	11.9	1,790	3,800	5,540	8,170	10,400	12,800
4628	6.07	1,100	2,280	3,290	4,800	6,040	7,460
4630	35.4	3,780	8,270	12,400	19,000	25,000	31,800
4639	82.7	7,140	15,100	22,400	33,800	44,100	55,800
4644	58.6	6,130	12,600	18,300	27,100	34,800	43,400
4661	NA	NA	NA	NA	NA	NA	NA
4664	10.2	1,350	2,810	4,050	5,920	7,460	9,210
4665	5.01	975	2,070	3,000	4,420	5,600	6,930
4676	14.0	1,710	3,570	5,160	7,550	9,530	11,800
4677	16.4	1,850	3,890	5,650	8,320	10,500	13,000
4685	11.4	1,460	3,030	4,380	6,410	8,090	9,990
4686	21.8	4,940	9,190	12,700	17,600	21,800	26,000
4687	5.02	895	1,900	2,750	4,050	5,120	6,340
4688	125	8,810	20,000	30,700	48,400	64,800	84,200
4690	NA	NA	NA	NA	NA	NA	NA
4697	NA	NA	NA	NA	NA	NA	NA
4699	1.83	602	1,260	1,810	2,640	3,320	4,090
4700	NA	NA	NA	NA	NA	NA	NA
4702	18.7	2,200	4,820	7,120	10,700	13,700	17,100
4704	2.89	752	1,580	2,290	3,350	4,230	5,230
4706	9.77	1,360	2,920	4,280	6,340	8,060	10,000
4708	14.4	1,890	4,120	6,070	9,060	11,600	14,500
4719	NA	NA	NA	NA	NA	NA	NA
4746	1.89	611	1,280	1,840	2,690	3,390	4,180
4757	NA	NA	NA	NA	NA	NA	NA
4767	4.63	948	2,010	2,920	4,290	5,420	6,720
4772	43.1	4,750	8,990	12,500	17,600	21,900	26,400
4775	35.5	3,840	7,350	10,300	14,500	18,000	21,700
4783	229	10,200	23,400	36,200	57,400	77,100	101,000
4784	154	9,000	21,300	33,300	53,400	72,200	94,600
4787	4.90	933	1,990	2,900	4,270	5,410	6,710

**208 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

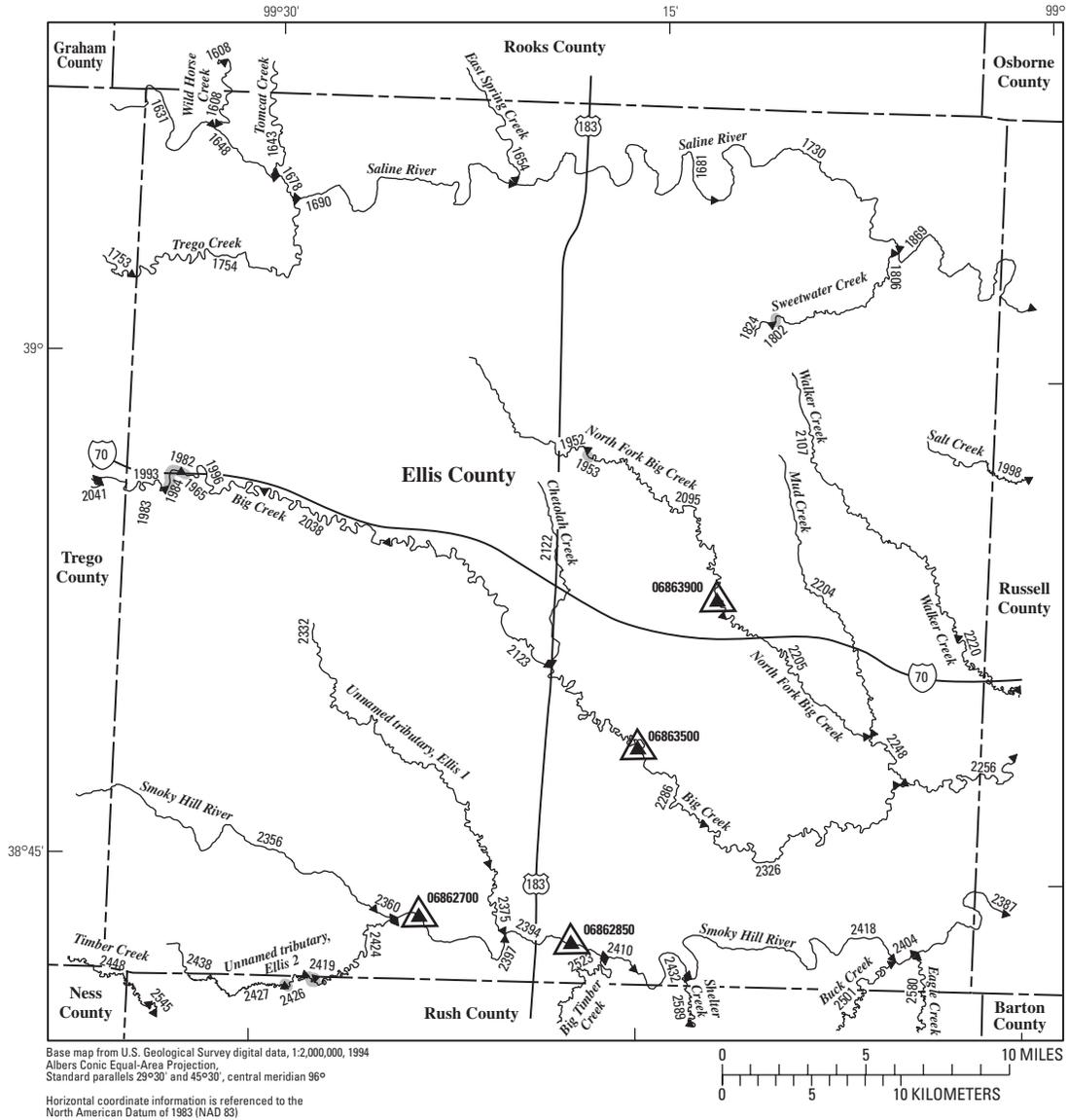
Determination site identification number (fig. 35)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
4789	HYDRO	EK				HYDRO	7.42	NA	NA	NA	NA	NA	NA
4795	HYDRO	EK				HYDRO	25.3	NA	NA	NA	NA	NA	NA
4796	1107010416	EK				Wildcat Creek	23.5	0	0	1.17	5.13	17.1	
4798	1107010652	EK				East Fork Caney River	13.8	0	0	1.49	5.07	14.4	
4799	1107010620	EK				Caney River	21.5	0	.07	2.30	7.79	21.9	
4801	110701048	EK				Elk River	259	.90	3.60	25.0	101	305	
4804	1107010416	EK				Wildcat Creek	35.9	0	.06	2.66	10.0	30.7	
4808	1107010428	EK				Hickory Creek	17.6	0	1.15	4.28	11.4	27.1	
4809	110701044	EK				Elk River	385	2.43	7.86	42.1	154	461	
4810	110701048	EK				Elk River	283	1.20	4.44	28.3	112	335	
4819	HYDRO	EK				HYDRO	9.81	NA	NA	NA	NA	NA	NA
4820	1107010430	EK				Clear Creek	14.4	0	.49	2.68	7.64	19.2	
4838	1107010651	EK				Corum Creek	12.6	0	0	.55	2.68	9.23	
4839	1107010620	EK				Caney River	38.3	0	.38	3.79	13.3	38.3	
4842	110701044	EK				Elk River	405	2.70	8.67	45.4	164	489	
4843	1107010426	EK				Bloody Run	8.35	0	.88	2.61	6.12	13.6	
4847	HYDRO	EK				HYDRO	7.61	NA	NA	NA	NA	NA	NA
4848	1107010650	EK				Wolf Creek	7.55	0	0	.15	1.05	4.40	
4849	HYDRO	EK				HYDRO	7.99	NA	NA	NA	NA	NA	NA
4861	1107010425	EK	MG	WL		Bachelor Creek	14.4	0	.98	3.97	10.8	25.3	
4865	110701044	EK				Elk River	420	2.95	9.41	48.4	173	514	
4871	1107010430	EK				Clear Creek	9.03	0	0	1.15	3.68	10.3	
4887	1107010427	EK				Pan Creek	7.46	0	.49	1.85	4.55	10.7	
4890	1107010417	EK				Salt Creek	26.5	0	1.22	5.03	14.4	35.8	
4891	110701044	EK	MG			Elk River	442	3.21	10.2	52.0	184	546	

**Table 31.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Elk County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 35)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4789	NA	NA	NA	NA	NA	NA	NA
4795	NA	NA	NA	NA	NA	NA	NA
4796	14.8	2,000	4,320	6,350	9,440	12,000	15,000
4798	10.8	1,410	3,050	4,480	6,650	8,450	10,500
4799	16.0	1,820	3,980	5,870	8,760	11,200	13,900
4801	175	9,740	22,600	35,100	56,000	75,400	98,500
4804	24.1	3,930	7,910	11,300	16,400	20,700	25,300
4808	17.4	1,920	4,010	5,790	8,490	10,700	13,200
4809	260	10,800	24,400	37,400	59,000	79,100	103,000
4810	192	9,220	21,800	34,100	54,700	73,900	96,900
4819	NA	NA	NA	NA	NA	NA	NA
4820	13.2	1,650	3,450	4,990	7,330	9,250	11,500
4838	8.23	1,320	2,860	4,200	6,230	7,930	9,860
4839	27.2	4,570	8,980	12,700	18,100	22,800	27,600
4842	274	11,000	24,600	37,800	59,500	79,600	103,000
4843	8.79	1,250	2,570	3,680	5,340	6,710	8,260
4847	NA	NA	NA	NA	NA	NA	NA
4848	4.61	993	2,120	3,090	4,560	5,780	7,160
4849	NA	NA	NA	NA	NA	NA	NA
4861	15.8	1,740	3,600	5,180	7,560	9,510	11,700
4865	286	10,900	24,500	37,600	59,300	79,400	103,000
4871	7.91	1,250	2,590	3,730	5,450	6,870	8,480
4887	7.39	1,170	2,390	3,420	4,960	6,230	7,670
4890	23.7	2,380	5,040	7,330	10,800	13,700	17,000
4891	303	10,800	24,400	37,500	59,200	79,300	103,000





**Figure 36.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Ellis County.

**212 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 32.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellis County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 36)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1608	1026000927	EL	RO					Wild Horse Creek	39.3	0
1631	1026000912	EL	RO	TR		Saline River	963	1.11	3.13	9.92	27.5	59.6
1643	1026000928	EL	RO			Tomcat Creek	32.0	0	0	.01	.02	.03
1648	1026000912	EL				Saline River	1,010	1.30	3.72	11.3	30.5	66.5
1654	1026000910	EL	RO			East Spring Creek	54.2	0	.01	.02	.05	.84
1678	1026000912	EL				Saline River	1,040	1.45	4.16	12.3	32.7	71.4
1681	102600099	EL				Saline River	1,260	2.68	7.41	20.0	49.2	109
1690	1026000911	EL				Saline River	1,150	1.94	5.77	16.1	40.8	90.0
1730	102600099	EL				Saline River	1,300	3.05	8.22	22.0	53.4	119
1754	1026000919	EL	TR			Trego Creek	75.9	.01	.02	.04	.36	1.94
1802	HYDRO	EL				HYDRO	16.5	NA	NA	NA	NA	NA
1806	1026000929	EL				Sweetwater Creek	36.3	0	0	.01	.16	1.08
1824	1026000929	EL				Sweetwater Creek	16.5	0	0	0	0	.01
1869	102600099	EL	RS			Saline River	1,400	3.84	9.90	25.9	62.0	139
1952	102600074	EL				North Fork Big Creek	50.9	0	0	0	0	0
1953	HYDRO	EL				HYDRO	51.0	NA	NA	NA	NA	NA
1965	102600075	EL				Big Creek	436	.99	2.00	5.17	12.2	25.7
1982	HYDRO	EL				HYDRO	436	NA	NA	NA	NA	NA
1983	102600075	EL				Big Creek	432	.97	1.97	5.11	12.1	25.4
1984	HYDRO	EL				HYDRO	432	NA	NA	NA	NA	NA
1993	102600075	EL	TR			Big Creek	432	.97	1.97	5.11	12.1	25.4
1996	102600075	EL				Big Creek	460	1.13	2.24	5.59	13.3	27.7
1998	1026000920	EL	RS			Salt Creek	35.1	0	0	.01	.22	1.54
2038	102600075	EL				Big Creek	489	1.31	2.53	6.13	14.7	30.2
2095	102600074	EL				North Fork Big Creek	9.3	0	0	0	0	.90
2107	102600072	EL				Walker Creek	40.4	0	0	0	0	.31
2122	102600078	EL				Chetolah Creek	23.0	0	0	.01	.02	.02
2123	102600075	EL				Big Creek	521	1.50	2.83	6.70	16.1	32.7
2204	102600079	EL				Mud Creek	31.6	0	0	0	0	0
2205	102600074	EL				North Fork Big Creek	113	0	0	.17	.60	2.38
2220	102600072	EL	RS			Walker Creek	59.4	0	0	0	.34	2.17
2248	102600074	EL				North Fork Big Creek	149	0	0	.56	1.65	4.99
2256	102600073	EL	RS			Big Creek	788	1.90	4.67	10.4	25.3	53.9
2286	102600075	EL				Big Creek	589	1.90	3.50	7.90	19.0	38.0
2326	102600075	EL				Big Creek	620	1.90	3.69	8.29	20.0	40.6
2332	1026000620	EL				Unnamed tributary, Ellis 1	74.1	0	0	0	0	0.41
2356	1026000622	EL	TR			Smoky Hill River	5,670	.24	1.77	7.32	12.1	21.3
2360	1026000622	EL				Smoky Hill River	5,670	.24	1.77	7.32	12.1	21.3

**Table 32.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellis County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 36)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1608	1.13	405	1,220	2,090	3,580	5,010	6,670
1631	40.9	2,520	7,600	13,200	23,500	33,700	46,500
1643	.65	397	1,170	2,000	3,400	4,730	6,270
1648	44.7	2,490	7,510	13,100	23,200	33,400	46,000
1654	2.72	629	1,770	2,950	4,940	6,790	8,940
1678	47.4	2,480	7,450	12,900	23,000	33,100	45,700
1681	68.2	2,360	7,030	12,200	21,800	31,400	43,600
1690	57.6	2,420	7,230	12,600	22,400	32,300	44,600
1730	73.5	2,330	6,920	12,000	21,500	31,000	43,100
1754	3.69	664	1,900	3,200	5,400	7,480	9,900
1802	NA	NA	NA	NA	NA	NA	NA
1806	2.53	828	2,130	3,400	5,440	7,290	9,360
1824	.23	456	1,330	2,230	3,730	5,090	6,700
1869	84.5	2,290	6,760	11,700	21,000	30,300	42,200
1952	1.52	401	1,330	2,430	4,480	6,560	9,140
1953	NA	NA	NA	NA	NA	NA	NA
1965	26.8	1,340	3,930	6,780	12,000	17,200	23,700
1982	NA	NA	NA	NA	NA	NA	NA
1983	26.7	1,340	3,940	6,820	12,100	17,300	23,900
1984	NA	NA	NA	NA	NA	NA	NA
1993	26.7	1,340	3,940	6,820	12,100	17,300	23,900
1996	27.9	1,340	3,850	6,570	11,400	16,300	22,300
1998	3.01	760	2,030	3,310	5,390	7,310	9,480
2038	29.2	1,340	3,730	6,270	10,700	15,100	20,400
2095	3.10	263	1,250	2,640	5,570	8,770	13,000
2107	2.37	486	1,420	2,410	4,090	5,680	7,530
2122	.02	487	1,480	2,510	4,270	5,880	7,800
2123	30.5	1,310	3,540	5,850	9,810	13,600	18,200
2204	1.00	417	1,240	2,120	3,630	5,070	6,740
2205	4.47	326	1,430	2,950	6,100	9,520	14,000
2220	4.07	543	1,600	2,720	4,660	6,490	8,660
2248	6.77	482	1,840	3,610	7,190	11,000	16,000
2256	45.0	1,610	4,060	6,430	10,200	13,700	17,700
2286	33.3	1,280	3,210	5,050	7,990	10,600	13,600
2326	35.2	1,320	3,320	5,240	8,300	11,000	14,200
2332	2.82	625	1,850	3,160	5,430	7,600	10,100
2356	18.3	982	4,650	9,080	16,700	23,700	31,200
2360	18.3	982	4,650	9,080	16,700	23,700	31,200

**Table 32.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellis County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

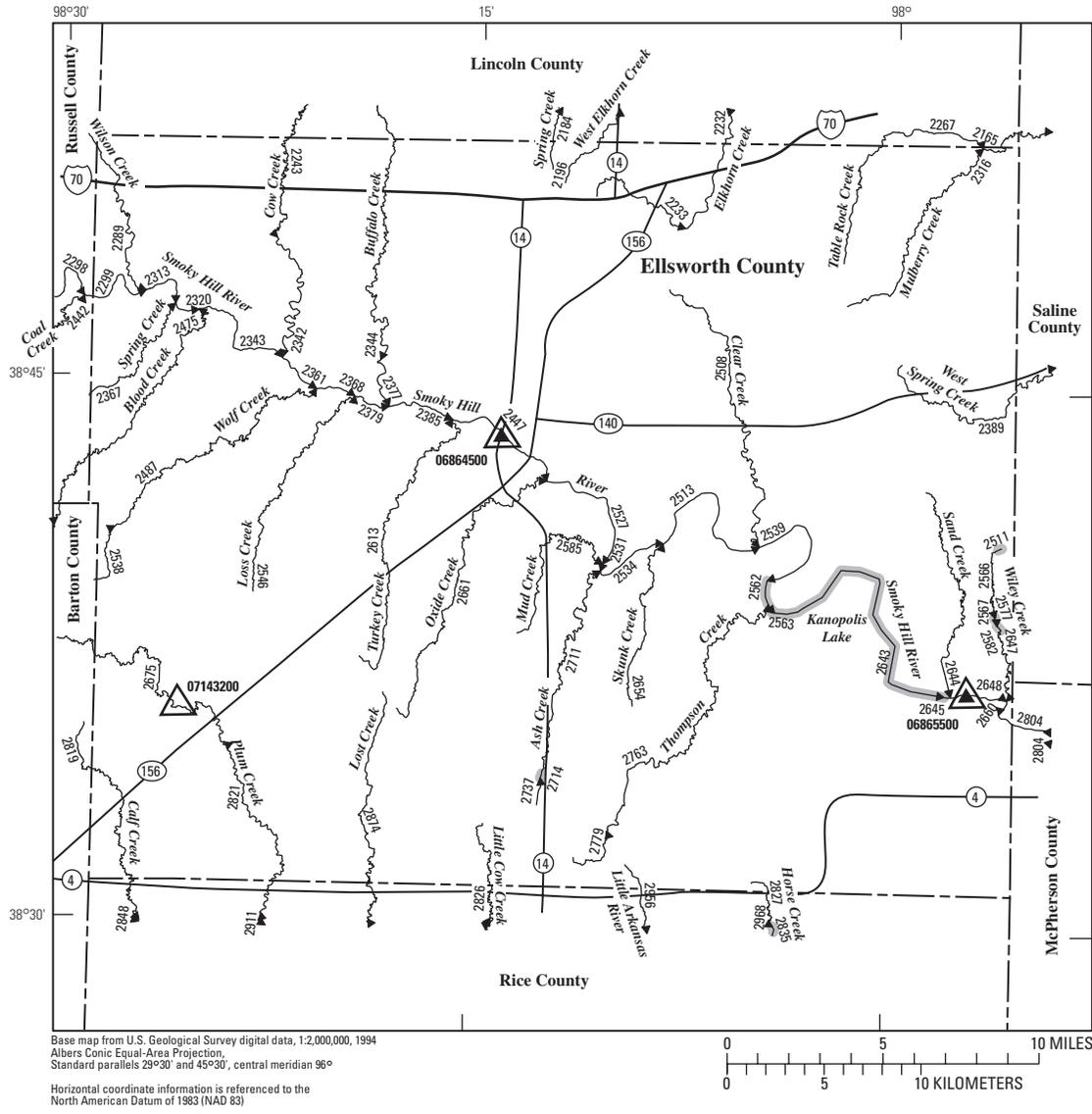
Determination site identification number (fig. 36)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2375	1026000620	EL						Unnamed tributary, Ellis 1	82.4	0	0
2387	1026000616	EL	RS			Smoky Hill River	6,250	5.25	7.22	12.7	32.0	84.4	
2394	1026000619	EL				Smoky Hill River	5,820	0	0	1.80	11.0	25.0	
2397	1026000621	EL				Smoky Hill River	5,730	.37	2.70	11.0	18.0	29.0	
2404	1026000617	EL				Smoky Hill River	6,150	4.06	5.58	10.2	27.2	70.9	
2410	1026000618	EL				Smoky Hill River	6,040	2.69	3.70	7.39	21.8	55.5	
2418	1026000618	EL				Smoky Hill River	6,110	3.59	4.94	9.25	25.4	65.6	
2419	HYDRO	EL	RH			HYDRO	28.1	NA	NA	NA	NA	NA	
2424	1026000623	EL	RH			Unnamed tributary, Ellis 2	42.1	0	0	0	0	0	
2427	1026000623	EL	RH			Unnamed tributary, Ellis 2	27.9	0	0	0	0	0	
2432	1026000618	EL				Smoky Hill River	6,050	2.75	3.79	7.52	22.0	56.2	
2438	1026000623	EL	RH			Unnamed tributary, Ellis 2	24.2	0	0	0	0	0	
2448	1026000626	EL	NS	RH	TR	Timber Creek	39.9	0	0	0	0	0	
2501	1026000629	EL	RH			Buck Creek	36.5	0	0	0	0	0	
2523	1026000624	EL	RH			Big Timber Creek	216	0	0	.61	2.33	7.36	
2580	1026000630	EL	RH			Eagle Creek	53.8	0	0	0	0	1.26	
2589	1026000643	EL	RH			Shelter Creek	40.5	0	0	0	0	0	

**Table 32.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellis County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

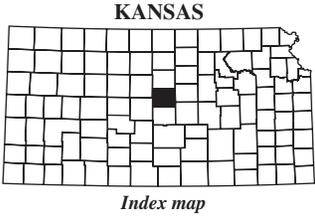
Determination site identification number (fig. 36)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2375	3.30	666	1,960	3,350	5,730	8,000	10,700
2387	61.8	3,080	7,880	12,700	20,500	27,300	34,700
2394	19.7	992	4,700	9,170	16,900	23,900	31,500
2397	23.7	992	4,700	9,170	16,900	23,900	31,500
2404	52.2	2,600	7,160	11,900	19,700	26,500	33,900
2410	41.3	2,060	6,330	11,000	18,800	25,700	33,100
2418	48.5	2,420	6,880	11,600	19,400	26,200	33,700
2419	NA	NA	NA	NA	NA	NA	NA
2424	1.02	381	1,180	2,070	3,620	5,110	6,880
2427	.28	527	1,620	2,770	4,740	6,540	8,700
2432	41.8	2,080	6,370	11,000	18,800	25,700	33,200
2438	.10	485	1,490	2,540	4,330	5,970	7,940
2448	.73	343	1,080	1,890	3,320	4,690	6,330
2501	1.93	467	1,370	2,330	3,960	5,510	7,310
2523	9.19	714	2,190	3,840	6,750	9,590	13,000
2580	3.40	558	1,630	2,770	4,730	6,580	8,750
2589	2.09	499	1,460	2,480	4,230	5,880	7,810





**EXPLANATION**

- ← 2911 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06865500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06864500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2643 Lake and determination site identification number



**Figure 37.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Ellsworth County.

**218 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 33.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellsworth County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 37)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2184	1026001016	EW	LC					Spring Creek	38.8	0
2196	1026001038	EW	LC			West Elkhorn Creek	32.8	0	.30	1.69	3.85	8.98
2232	1026001017	EW	LC			Elkhorn Creek	49.2	0	.74	2.83	6.62	15.2
2233	1026001017	EW				Elkhorn Creek	13.5	0	0	.53	.96	2.51
2243	1026000638	EW	LC			Cow Creek	23.6	0	0	0	.10	1.55
2267	1026001040	EW	LC			Table Rock Creek	22.8	0	.24	1.37	2.90	6.62
2289	1026000640	EW	RS			Wilson Creek	31.3	0	.35	1.61	3.36	7.43
2299	102600069	EW	RS			Smoky Hill River	7,540	13.9	25.7	49.9	108	280
2313	102600069	EW				Smoky Hill River	7,580	14.6	26.8	51.9	112	290
2316	1026001022	EW	LC			Mulberry Creek	26.3	0	.53	2.06	4.36	9.42
2320	102600069	EW				Smoky Hill River	7,590	14.7	27.1	52.4	113	292
2342	1026000638	EW				Cow Creek	33.0	0	.32	1.07	2.03	4.93
2343	102600068	EW				Smoky Hill River	7,620	15.4	28.2	54.4	117	302
2344	102600066	EW	LC			Buffalo Creek	43.5	0	.92	2.30	4.58	10.0
2361	102600068	EW				Smoky Hill River	7,660	16.1	29.2	56.3	121	312
2367	1026000641	EW	RS			Spring Creek	7.80	0	0	0	0	0
2368	102600067	EW				Smoky Hill River	7,680	16.6	30.1	57.8	124	320
2377	102600066	EW				Buffalo Creek	45.9	0	1.19	2.68	5.18	11.0
2379	102600067	EW				Smoky Hill River	7,710	17.2	31.0	59.5	127	329
2385	102600065	EW				Smoky Hill River	7,770	18.1	32.5	62.3	133	343
2389	1026001025	EW	SA			West Spring Creek	51.7	0	1.20	4.02	9.25	20.5
2447	102600065	EW				Smoky Hill River	7,810	19.0	34.0	65.0	138	357
2487	1026000636	EW				Wolf Creek	27.2	0	0	.89	2.03	5.13
2508	1026000642	EW				Clear Creek	45.6	0	.84	2.56	5.54	12.4
2511	HYDRO	EW				HYDRO	3.93	NA	NA	NA	NA	NA
2513	102600065	EW				Smoky Hill River	7,910	19.4	36.4	70.1	160	481
2527	102600065	EW				Smoky Hill River	7,850	19.1	34.9	66.9	146	402
2531	102600065	EW				Smoky Hill River	7,860	19.2	35.2	67.5	149	418
2534	102600065	EW				Smoky Hill River	7,890	19.3	35.8	68.8	154	449
2539	102600065	EW				Smoky Hill River	7,960	19.6	37.7	73.0	172	550
2546	1026000644	EW				Loss Creek	28.4	0	.01	1.04	2.38	5.94
2562	HYDRO	EW				HYDRO	7,970	NA	NA	NA	NA	NA
2563	HYDRO	EW				HYDRO	43.3	NA	NA	NA	NA	NA
2566	1026000847	EW				Wiley Creek	7.87	0	0	.18	.37	.87
2567	HYDRO	EW				HYDRO	7.92	NA	NA	NA	NA	NA
2577	1026000847	EW				Wiley Creek	8.09	0	.05	.25	.46	1.01
2582	HYDRO	EW				HYDRO	8.66	NA	NA	NA	NA	NA
2585	1026000647	EW				Mud Creek	11.9	0	0	.19	.20	1.04

**Table 33.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellsworth County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 37)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2184	8.83	1,150	2,800	4,370	6,860	9,080	11,600
2196	7.58	1,250	2,960	4,560	7,050	9,250	11,700
2232	11.8	1,390	3,320	5,140	7,990	10,500	13,300
2233	2.94	681	1,750	2,760	4,400	5,820	7,480
2243	3.21	901	2,370	3,780	6,070	8,070	10,400
2267	5.74	940	2,420	3,840	6,120	8,110	10,400
2289	6.40	1,060	2,550	3,940	6,130	8,070	10,200
2299	177	6,500	13,200	19,900	27,700	34,800	41,300
2313	183	6,810	13,600	20,600	28,400	35,600	42,200
2316	7.29	1,020	2,640	4,190	6,690	8,870	11,400
2320	184	6,880	13,700	20,700	28,600	35,800	42,400
2342	5.37	634	1,650	2,650	4,260	5,710	7,360
2343	190	7,190	14,100	21,400	29,300	36,700	43,300
2344	8.56	938	2,300	3,600	5,650	7,470	9,510
2361	196	7,490	14,500	22,000	29,900	37,500	44,200
2367	.66	457	1,180	1,870	2,980	3,950	5,080
2368	201	7,730	14,800	22,500	30,500	38,200	44,900
2377	9.11	916	2,240	3,510	5,510	7,280	9,260
2379	206	8,000	15,200	23,000	31,100	38,900	45,700
2385	215	8,430	15,700	23,900	32,000	40,100	47,000
2389	14.5	1,160	2,840	4,450	7,010	9,300	11,900
2447	223	8,850	16,300	24,800	33,000	41,300	48,200
2487	5.16	952	2,520	4,050	6,530	8,710	11,300
2508	10.1	1,110	2,700	4,210	6,590	8,710	11,100
2511	NA	NA	NA	NA	NA	NA	NA
2513	240	6,200	11,800	17,900	24,400	30,900	36,800
2527	229	7,880	14,600	22,300	29,900	37,500	44,000
2531	231	7,550	14,100	21,400	28,800	36,200	42,600
2534	236	6,890	12,900	19,700	26,700	33,600	39,800
2539	250	4,710	9,210	14,000	19,600	25,100	30,400
2546	5.71	999	2,640	4,220	6,790	9,050	11,700
2562	NA	NA	NA	NA	NA	NA	NA
2563	NA	NA	NA	NA	NA	NA	NA
2566	1.54	489	1,250	1,960	3,110	4,100	5,260
2567	NA	NA	NA	NA	NA	NA	NA
2577	1.62	496	1,270	1,990	3,160	4,170	5,350
2582	NA	NA	NA	NA	NA	NA	NA
2585	2.09	628	1,610	2,550	4,050	5,350	6,880

**220 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 33.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellsworth County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

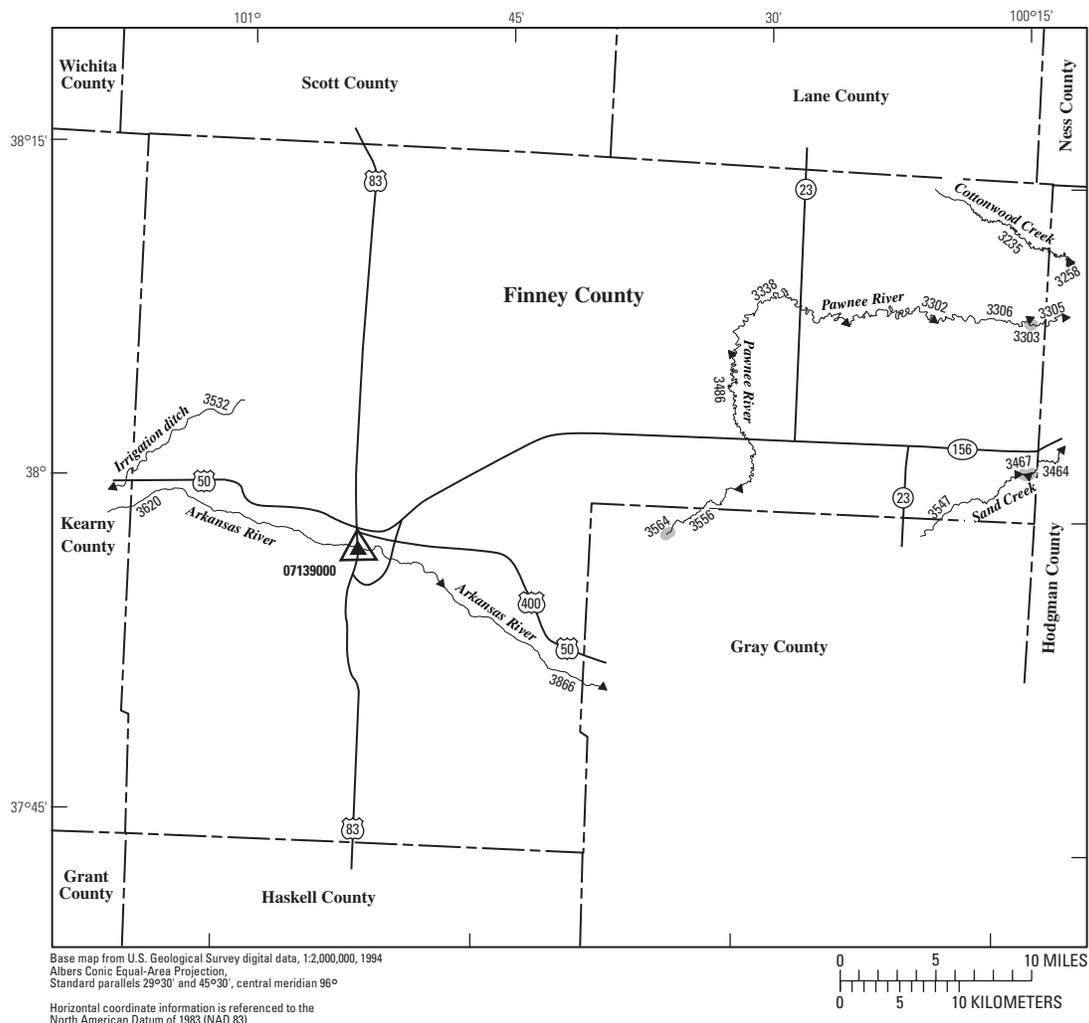
Determination site identification number (fig. 37)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2613	1026000646	EW						Turkey Creek	28.8	0
2643	HYDRO	EW				HYDRO	8,040	NA	NA	NA	NA	NA
2644	1026000846	EW				Sand Creek	19.0	0	1.54	2.66	3.96	6.58
2645	1026000815	EW				Smoky Hill River	8,040	19.9	39.5	76.9	189	646
2647	1026000847	EW				Wiley Creek	13.3	0	.34	1.07	1.63	3.14
2648	1026000815	EW				Smoky Hill River	8,060	20.0	40.0	78.0	194	672
2654	1026000648	EW				Skunk Creek	13.0	0	0	.19	.24	1.17
2660	1026000815	EW				Smoky Hill River	8,070	20.6	40.9	79.6	197	679
2661	1026000645	EW				Oxide Creek	25.2	0	.15	1.24	2.67	6.26
2711	102600061190	EW				Ash Creek	22.3	0	.01	.92	1.96	4.81
2714	HYDRO	EW				HYDRO	4.48	NA	NA	NA	NA	NA
2737	102600061190	EW				Ash Creek	4.30	0	0	0	0	0
2763	1026000637	EW				Thompson Creek	43.3	0	.37	1.86	4.37	10.4
2779	1026000637	EW				Thompson Creek	7.24	0	0	0	0	0
2804	1026000815	EW	MP			Smoky Hill River	8,140	23.7	45.6	87.9	215	720
2821	110300114	EW	RC			Plum Creek	53.3	0	0	.48	1.56	5.59
2826	110300112	EW	RC			Little Cow Creek	15.6	0	0	0	0	.02
2827	1103001219	EW	RC			Horse Creek	22.8	0	0	.37	.80	2.59
2874	1103001117	EW	RC			Lost Creek	32.6	0	0	0	0	1.54
2956	1103001214	EW	RC			Little Arkansas River	40.0	0	0	.40	1.21	4.32

**Table 33.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ellsworth County—Continued.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

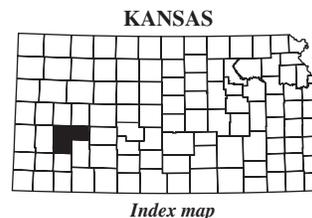
Determination site identification number (fig. 37)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2613	5.99	1,030	2,700	4,310	6,930	9,230	11,900
2643	NA	NA	NA	NA	NA	NA	NA
2644	4.82	802	2,090	3,330	5,330	7,080	9,130
2645	264	2,670	5,710	8,670	13,000	17,100	21,600
2647	3.00	644	1,670	2,660	4,240	5,630	7,240
2648	267	2,120	4,760	7,230	11,200	14,900	19,200
2654	2.24	655	1,690	2,670	4,250	5,630	7,240
2660	270	2,180	4,850	7,270	11,300	15,100	19,600
2661	5.67	964	2,520	4,010	6,420	8,540	11,000
2711	4.74	893	2,330	3,710	5,940	7,890	10,200
2714	NA	NA	NA	NA	NA	NA	NA
2737	0	343	865	1,350	2,130	2,800	3,580
2763	8.96	1,160	2,850	4,450	6,990	9,270	11,800
2779	.25	464	1,180	1,860	2,940	3,880	4,980
2804	287	2,510	5,300	7,500	11,900	16,100	21,400
2821	6.73	811	1,640	2,370	3,510	4,520	5,670
2826	1.39	719	1,870	2,960	4,730	6,270	8,080
2827	3.60	879	2,270	3,590	5,740	7,610	9,800
2874	3.62	632	1,730	2,850	4,700	6,420	8,400
2956	5.70	927	1,360	1,630	1,970	2,210	2,440





**EXPLANATION**

- ← 3620 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07139000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07139000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3564 Lake and determination site identification number



**Figure 38.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Finney County.

**Table 34.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Finney County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

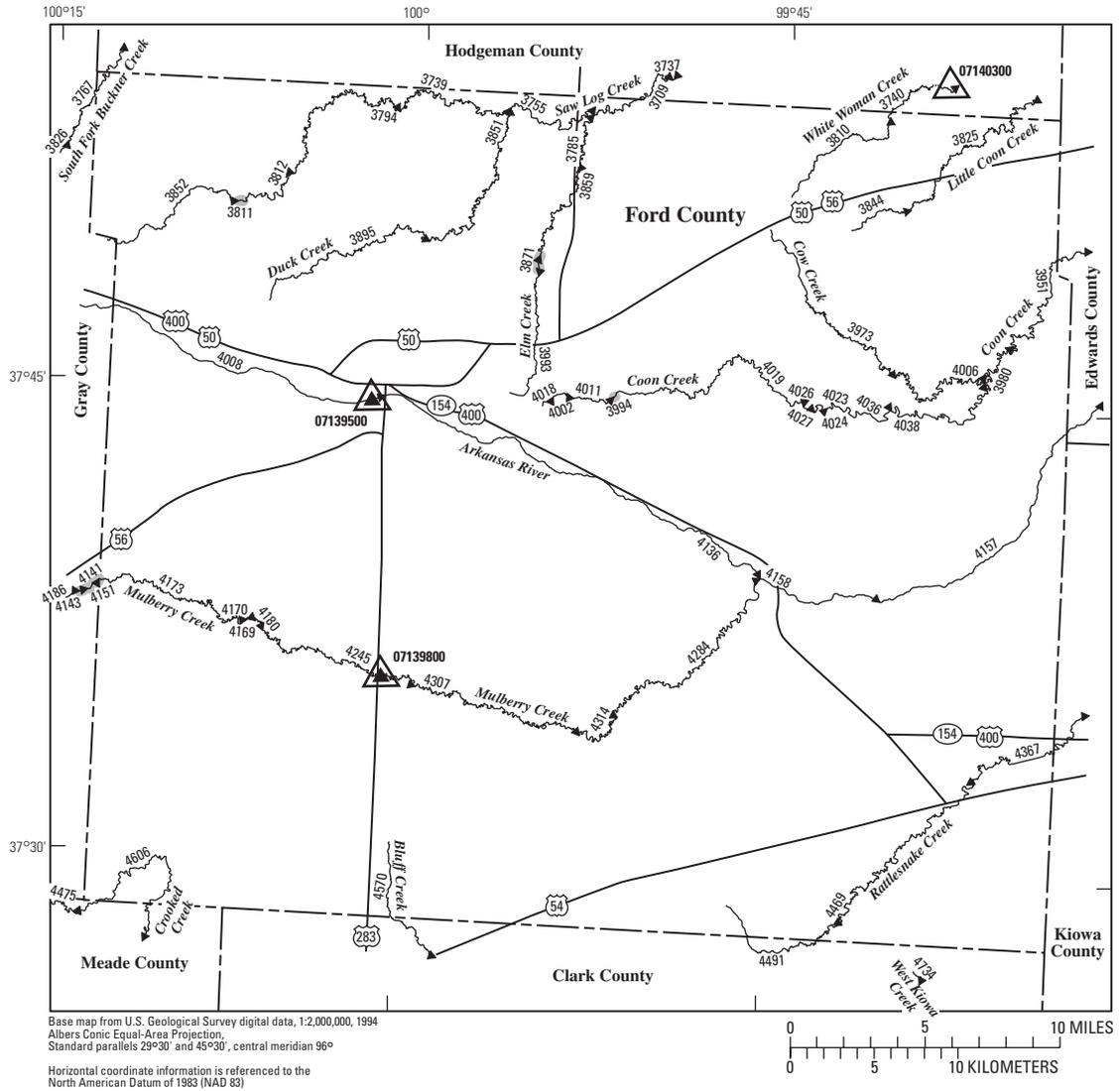
Determination site identification number (fig. 38)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3235	110300058	FI	HG					Cottonwood Creek	56.0	0	0
3302	110300055	FI				Pawnee River	401	0	0	0	0	0	.76
3303	HYDRO	FI				HYDRO	434	NA	NA	NA	NA	NA	NA
3305	110300055	FI	HG			Pawnee River	447	0	0	0	0	0	1.46
3306	110300055	FI				Pawnee River	433	0	0	0	0	0	1.25
3338	110300055	FI				Pawnee River	356	0	0	0	0	0	.01
3464	110300059	FI	HG			Sand Creek	85.0	0	0	0	0	0	0
3467	HYDRO	FI				HYDRO	57.7	NA	NA	NA	NA	NA	NA
3486	110300055	FI				Pawnee River	203	0	0	0	0	0	0
3532	NRDitch	FI	KE			NRDitch	185	0	0	0	0	0	0
3547	110300059	FI	GY			Sand Creek	54.8	0	0	0	0	0	0
3556	110300055	FI	GY			Pawnee River	105	0	0	0	0	0	0
3620	110300011	FI	KE			Arkansas River	26,900	0	1.10	32.0	161	314	
3866	110300031	FI	GY			Arkansas River	27,300	0	.34	15.8	98.4	221	

**Table 34.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Finney County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

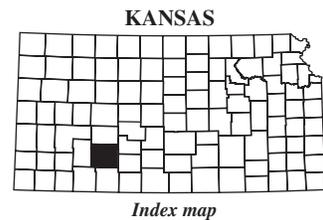
Determination site identification number (fig. 38)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3235	0.36	371	1,190	2,100	3,720	5,310	7,200
3302	4.42	587	1,960	3,570	6,510	9,470	13,100
3303	NA	NA	NA	NA	NA	NA	NA
3305	5.09	585	1,960	3,570	6,530	9,510	13,200
3306	4.90	573	1,930	3,510	6,440	9,380	13,000
3338	3.70	603	2,000	3,610	6,570	9,530	13,200
3464	.31	381	1,290	2,340	4,280	6,210	8,570
3467	NA	NA	NA	NA	NA	NA	NA
3486	1.46	547	1,810	3,260	5,900	8,540	11,800
3532	.33	253	956	1,840	3,540	5,310	7,550
3547	0	322	1,090	1,990	3,630	5,270	7,270
3556	.08	444	1,470	2,640	4,760	6,860	9,420
3620	163	590	2,780	6,500	17,000	30,000	53,000
3866	110	707	3,110	9,840	20,500	32,900	50,800





**EXPLANATION**

- ← 4606 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 07139500 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 07139800 △ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 3994 **Lake and determination site identification number**



**Figure 39.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Ford County.

**228 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 35.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ford County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 39)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3737	110300063	FO	HG					Saw Log Creek	223	0
3739	110300064	FO	HG			Saw Log Creek	86.8	0	0	0	0	0
3740	1103000415	FO	HG			White Woman Creek	69.1	0	0	0	0	0
3755	110300064	FO				Saw Log Creek	157	0	0	0	.21	2.50
3767	110300066	FO	GY	HG		South Fork Buckner Creek	55.5	0	0	0	0	0
3785	110300065	FO				Elm Creek	49.4	0	0	0	0	0
3794	110300064	FO				Saw Log Creek	67.7	0	0	0	0	0
3810	1103000415	FO				White Woman Creek	26.3	0	0	0	0	0
3811	HYDRO	FO				HYDRO	30.1	NA	NA	NA	NA	NA
3812	110300064	FO				Saw Log Creek	37.7	0	0	0	0	0
3825	110300048	FO	HG			Little Coon Creek	38.3	0	0	0	0	0
3844	110300048	FO				Little Coon Creek	13.8	0	0	0	0	0
3851	110300068	FO				Duck Creek	54.5	0	0	0	0	0
3852	110300064	FO				Saw Log Creek	29.9	0	0	0	0	0
3859	110300065	FO				Elm Creek	45.6	0	0	0	0	0
3871	HYDRO	FO				HYDRO	25.3	NA	NA	NA	NA	NA
3895	110300068	FO				Duck Creek	35.8	0	0	0	0	0
3973	1103000414	FO				Cow Creek	37.1	0	0	0	0	0
3980	110300049	FO				Coon Creek	132	0	0	.25	.92	3.52
3993	110300065	FO				Elm Creek	24.2	0	0	0	0	0
3994	HYDRO	FO				HYDRO	8.20	NA	NA	NA	NA	NA
4002	110300049	FO				Coon Creek	3.61	0	0	0	0	0
4006	1103000414	FO				Cow Creek	45.1	0	0	0	0	0
4008	110300031	FO	GY			Arkansas River	27,400	0	0	8.70	71.0	180
4011	110300049	FO				Coon Creek	8.20	0	0	0	0	0
4018	110300049	FO				Coon Creek	1.67	0	0	0	0	0
4019	110300049	FO				Coon Creek	51.1	0	0	0	0	0
4023	110300049	FO				Coon Creek	56.5	0	0	0	0	0
4024	110300049	FO				Coon Creek	56.6	0	0	0	0	0
4026	110300049	FO				Coon Creek	56.5	0	0	0	0	0
4027	110300049	FO				Coon Creek	53.9	0	0	0	0	0
4036	110300049	FO				Coon Creek	68.8	0	0	0	0	0
4038	110300049	FO				Coon Creek	82.9	0	0	0	0	.91
4136	1103000411	FO				Arkansas River	27,500	.09	.33	11.6	75.1	183
4158	1103000410	FO				Arkansas River	27,900	.45	1.65	23.5	91.9	194
4169	1103000412	FO				Mulberry Creek	162	0	0	0	0	0
4170	1103000412	FO				Mulberry Creek	154	0	0	0	0	0
4173	1103000412	FO	GY			Mulberry Creek	154	0	0	0	0	0

**Table 35.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ford County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 39)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3737	8.29	831	2,470	4,270	7,410	10,400	14,100
3739	2.31	485	1,530	2,710	4,800	6,840	9,300
3740	2.46	179	713	1,420	2,870	4,470	6,590
3755	5.25	673	2,060	3,590	6,290	8,910	12,100
3767	0.63	433	1,410	2,510	4,500	6,460	8,820
3785	1.18	379	1,180	2,060	3,600	5,090	6,850
3794	1.37	434	1,390	2,470	4,390	6,280	8,560
3810	.14	514	1,560	2,660	4,560	6,300	8,420
3811	NA	NA	NA	NA	NA	NA	NA
3812	0	335	1,100	1,980	3,550	5,100	6,960
3825	.97	381	1,180	2,060	3,590	5,060	6,820
3844	0	408	1,190	1,990	3,330	4,530	5,960
3851	1.15	365	1,170	2,060	3,650	5,210	7,070
3852	0	545	1,680	2,870	4,930	6,800	9,060
3859	.94	373	1,160	2,030	3,540	5,000	6,730
3871	NA	NA	NA	NA	NA	NA	NA
3895	.22	303	978	1,740	3,090	4,400	5,980
3973	.69	381	1,180	2,050	3,570	5,040	6,780
3980	5.81	578	1,720	2,950	5,070	7,110	9,530
3993	0	477	1,470	2,510	4,290	5,930	7,880
3994	NA	NA	NA	NA	NA	NA	NA
4002	0	162	478	797	1,330	1,820	2,380
4006	1.25	322	1,020	1,790	3,150	4,460	6,030
4008	86.5	759	3,260	11,300	22,000	34,200	49,900
4011	0	263	786	1,320	2,230	3,050	4,030
4018	0	104	301	499	826	1,120	1,460
4019	1.24	395	1,210	2,110	3,670	5,170	6,950
4023	1.58	413	1,260	2,180	3,780	5,310	7,130
4024	1.58	412	1,260	2,180	3,780	5,310	7,130
4026	1.57	414	1,260	2,190	3,790	5,320	7,140
4027	1.41	406	1,240	2,150	3,730	5,250	7,050
4036	2.38	449	1,350	2,340	4,030	5,650	7,570
4038	3.32	443	1,330	2,290	3,960	5,550	7,430
4136	88.3	740	3,240	10,900	21,200	33,100	48,500
4158	95.4	662	3,150	9,530	18,200	28,700	43,000
4169	1.11	481	1,380	2,330	3,930	5,440	7,220
4170	1.18	489	1,420	2,390	4,060	5,630	7,480
4173	1.15	497	1,440	2,420	4,100	5,690	7,560

**Table 35.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ford County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

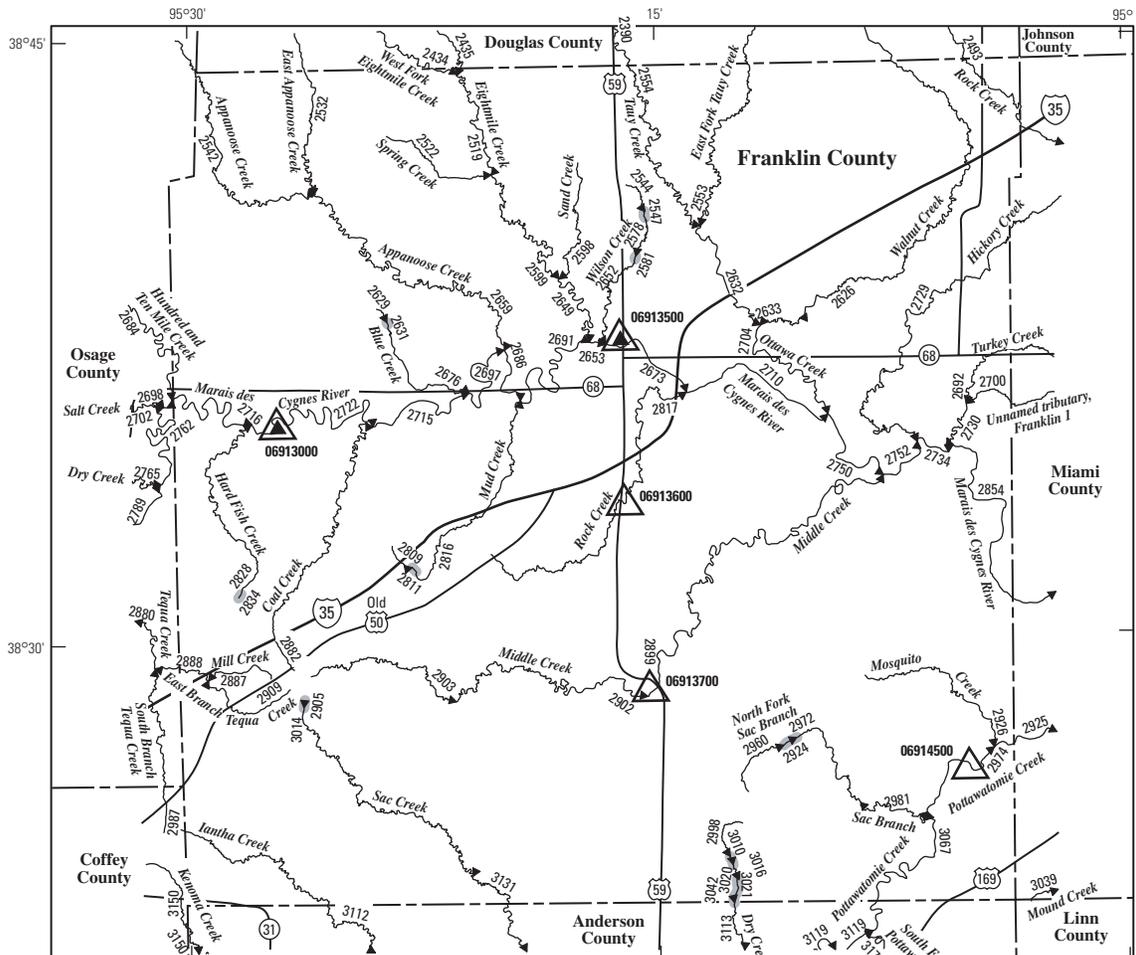
Determination site identification number (fig. 39)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4180	1103000412	FO						Mulberry Creek	164	0	0
4245	1103000412	FO				Mulberry Creek	217	0	0	0	0	0	0
4284	1103000412	FO				Mulberry Creek	335	0	.22	1.70	4.13	9.47	
4307	1103000412	FO				Mulberry Creek	263	0	0	.54	1.33	3.04	
4314	1103000412	FO				Mulberry Creek	286	0	0	.90	2.22	5.08	
4367	110300094	FO	KW			Rattlesnake Creek	164	0	.49	2.14	5.34	12.3	
4469	110300094	FO				Rattlesnake Creek	102	0	0	.35	1.62	5.37	
4606	110400072	FO	ME			Crooked Creek	755	.58	1.39	2.91	4.53	9.60	

**Table 35.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ford County.—Continued

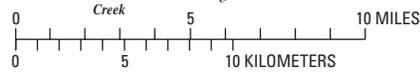
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 39)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4180	1.10	470	1,350	2,270	3,840	5,320	7,060
4245	.64	249	675	1,090	1,770	2,380	3,080
4284	8.15	384	1,030	1,680	2,760	3,740	4,890
4307	3.14	286	774	1,260	2,050	2,770	3,600
4314	4.74	312	846	1,380	2,260	3,060	3,990
4367	12.2	689	1,990	3,390	5,790	8,080	10,800
4469	7.23	600	1,820	3,150	5,480	7,720	10,400
4606	12.9	469	1,830	3,420	6,320	9,170	12,600



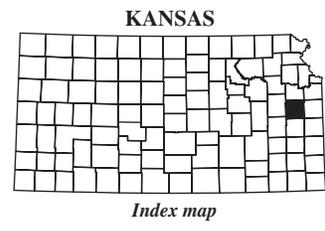


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 3150 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 06913500 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 06913700 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2905 Lake and determination site identification number



**Figure 40.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Franklin County.

**Table 36.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Franklin County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 40)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2519	1029010113	FR						Eightmile Creek	34.3	0
2522	1029010184	FR				Spring Creek	9.69	0	.19	1.74	5.01	12.8
2544	1029010183	FR				Wilson Creek	2.03	0	.05	.28	.45	1.55
2547	HYDRO	FR				HYDRO	2.09	NA	NA	NA	NA	NA
2578	1029010183	FR				Wilson Creek	4.15	0	0	.14	.81	3.33
2581	HYDRO	FR				HYDRO	4.19	NA	NA	NA	NA	NA
2598	1029010182	FR				Sand Creek	8.29	0	.21	1.54	4.25	10.8
2599	1029010113	FR				Eightmile Creek	51.1	0	1.26	6.24	20.2	56.1
2629	1029010181	FR				Blue Creek	3.85	0	.27	.92	1.96	4.70
2631	HYDRO	FR				HYDRO	3.88	NA	NA	NA	NA	NA
2632	1029010111	FR				Tauy Creek	94.0	0	2.39	10.7	35.3	101
2633	1029010190	FR				Walnut Creek	40.5	0	.27	3.38	12.8	39.0
2649	1029010113	FR				Eightmile Creek	61.7	0	1.60	7.50	24.4	67.9
2652	1029010183	FR				Wilson Creek	8.13	0	0	.31	1.79	6.63
2653	1029010112	FR				Marais des Cygnes River	1,240	39.9	50.8	144	786	2,560
2659	1029010116	FR				Appanoose Creek	75.1	0	1.56	7.97	26.9	77.6
2673	1029010112	FR				Marais des Cygnes River	1,260	40.0	51.0	146	791	2,570
2676	1029010181	FR				Blue Creek	8.98	0	.19	1.39	3.81	9.86
2684	1029010120	FR	OS			Hundred and Ten Mile Creek	320	14.0	16.0	22.0	103	515
2686	1029010115	FR				Marais des Cygnes River	1,150	39.0	49.6	127	753	2,470
2691	1029010114	FR				Marais des Cygnes River	1,180	39.3	49.9	132	763	2,490
2692	102901016	FR	MI			Turkey Creek	13.0	0	0	1.65	5.67	16.0
2697	1029010117	FR				Marais des Cygnes River	1,080	38.3	48.5	112	724	2,390
2700	102901015	FR	MI			Unnamed tributary, Franklin 1	7.67	0	0	1.06	3.47	9.68
2704	102901019011	FR				Ottawa Creek	139	.22	3.11	14.0	48.1	143
2710	1029010112	FR				Marais des Cygnes River	1,290	40.6	52.7	156	826	2,660
2715	1029010117	FR				Marais des Cygnes River	1,070	38.2	48.3	110	720	2,370
2716	1029010119	FR	OS			Marais des Cygnes River	1,020	37.2	46.9	103	691	2,290
2722	1029010118	FR				Marais des Cygnes River	1,040	38.0	48.0	106	712	2,350
2729	102901018	FR	MI			Hickory Creek	26.7	0	.16	2.78	10.1	29.7
2730	102901014	FR				Turkey Creek	22.1	0	.27	2.87	9.82	27.5
2734	102901017	FR				Marais des Cygnes River	1,540	44.9	63.9	220	1,060	3,280
2750	1029010110	FR				Marais des Cygnes River	1,430	43.0	59.0	192	960	3,010
2752	102901019	FR				Marais des Cygnes River	1,510	44.4	62.6	213	1,040	3,210
2762	1029010130	FR	OS			Marais des Cygnes River	552	14.4	25.4	57.6	305	1,040
2809	1029010149	FR				Mud Creek	3.78	0	0	.43	1.06	3.24
2811	HYDRO	FR				HYDRO	3.92	NA	NA	NA	NA	NA
2816	1029010149	FR				Mud Creek	19.8	0	.43	2.63	7.98	21.3

**Table 36.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Franklin County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 40)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2519	26.3	3,550	6,990	9,900	14,100	17,700	21,500
2522	9.19	1,330	2,760	3,970	5,780	7,280	8,980
2544	1.67	572	1,130	1,590	2,260	2,810	3,430
2547	NA	NA	NA	NA	NA	NA	NA
2578	3.41	866	1,730	2,450	3,530	4,400	5,380
2581	NA	NA	NA	NA	NA	NA	NA
2598	7.91	1,270	2,590	3,700	5,370	6,730	8,280
2599	39.1	3,260	6,680	9,670	14,100	17,900	22,000
2629	3.60	777	1,580	2,250	3,250	4,060	4,990
2631	NA	NA	NA	NA	NA	NA	NA
2632	69.0	4,520	9,000	12,900	18,700	23,600	29,000
2633	30.4	3,690	7,420	10,600	15,400	19,400	23,800
2649	46.9	3,310	6,840	9,940	14,600	18,600	22,900
2652	6.36	1,290	2,610	3,720	5,380	6,740	8,280
2653	843	12,300	19,500	23,900	28,900	32,200	35,300
2659	53.7	3,900	8,060	11,700	17,300	22,000	27,300
2673	850	12,400	19,600	24,000	28,900	32,100	35,000
2676	7.62	1,290	2,650	3,810	5,540	6,970	8,590
2684	193	1,920	3,250	4,060	4,980	5,570	6,100
2686	796	11,600	18,700	23,500	29,100	33,200	37,000
2691	810	11,800	19,000	23,600	29,100	32,900	36,500
2692	12.2	1,730	3,530	5,040	7,310	9,160	11,300
2697	756	11,000	18,100	23,100	29,300	34,000	38,500
2700	7.49	1,270	2,560	3,640	5,250	6,560	8,050
2704	97.4	5,660	11,200	16,000	23,100	29,100	35,800
2710	885	12,700	19,900	24,300	29,700	33,300	36,600
2715	749	10,900	18,000	23,000	29,400	34,100	38,800
2716	719	10,400	17,300	22,300	28,600	33,300	38,100
2722	738	10,700	17,800	22,900	29,400	34,300	39,200
2729	22.5	2,620	5,420	7,810	11,400	14,400	17,800
2730	20.1	2,360	4,850	6,970	10,200	12,800	15,800
2734	1,130	14,700	21,600	26,500	34,800	41,100	47,700
2750	1,020	13,800	20,900	25,600	32,600	37,700	42,900
2752	1,100	14,400	21,400	26,300	34,200	40,200	46,500
2762	386	8,280	17,500	25,800	39,000	50,700	64,200
2809	3.05	776	1,570	2,240	3,230	4,040	4,950
2811	NA	NA	NA	NA	NA	NA	NA
2816	15.9	2,060	4,300	6,220	9,120	11,500	14,200

**Table 36.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Franklin County.—Continued

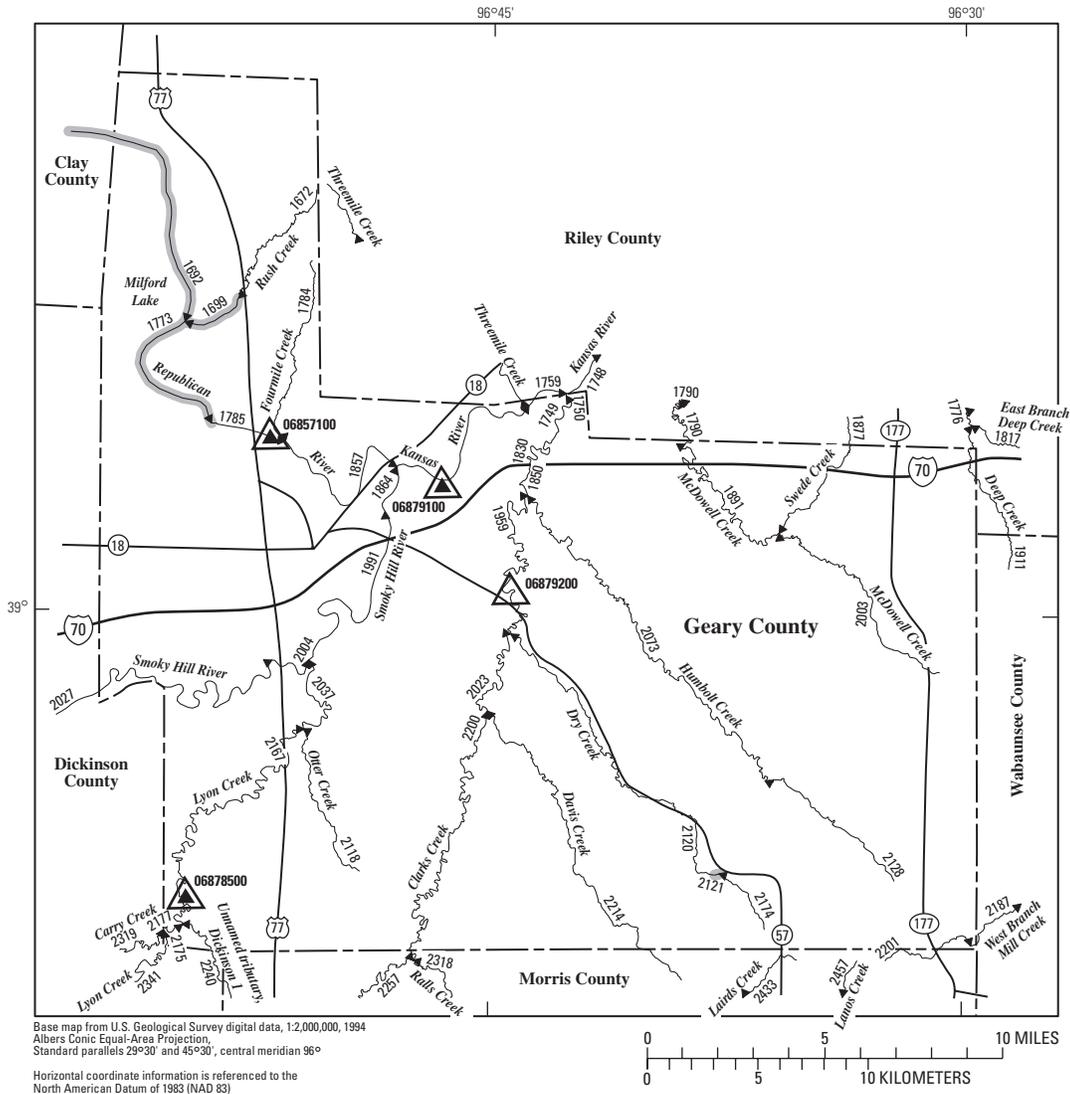
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 40)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2817	1029010197	FR						Rock Creek	27.7	0
2828	1029010147	FR				Hard Fish Creek	13.3	0	0	1.12	4.02	12.1
2834	HYDRO	FR				HYDRO	2.16	NA	NA	NA	NA	NA
2854	102901013	FR	MI			Marais des Cygnes River	1,600	45.8	66.4	235	1,120	3,420
2882	1029010148	FR				Coal Creek	15.9	0	.23	2.23	6.91	18.5
2887	102901011589	FR				Mill Creek	2.49	0	0	0	0	.44
2888	1029010146	FR	OS			East Branch Tequa Creek	10.6	0	0	.70	2.81	8.98
2899	1029010150	FR				Middle Creek	79.0	0	1.32	6.95	24.5	73.6
2902	1029010150	FR				Middle Creek	37.6	0	.31	2.98	10.6	31.5
2903	1029010150	FR				Middle Creek	13.5	0	.03	1.34	4.20	11.9
2905	HYDRO	FR				HYDRO	.61	NA	NA	NA	NA	NA
2909	1029010146	FR				East Branch Tequa Creek	6.12	0	0	.22	1.16	4.45
2924	HYDRO	FR				HYDRO	9.60	NA	NA	NA	NA	NA
2925	1029010151	FR	MI			Pottawatomie Creek	552	1.91	6.76	42.2	166	615
2926	1029010152	FR				Mosquito Creek	19.9	0	.06	2.12	7.44	21.5
2960	102901019054	FR				North Fork Sac Branch	8.60	0	0	.20	1.55	6.22
2972	102901019054	FR				North Fork Sac Branch	20.6	0	0	1.69	6.53	20.0
2974	1029010153	FR				Pottawatomie Creek	507	1.50	5.64	37.3	149	561
2981	1029010154	FR				Sac Branch	24.1	0	0	2.10	7.91	23.9
2998	1029010157	FR				Dry Creek	10.8	0	0	.34	2.18	8.22
3010	HYDRO	FR				HYDRO	11.3	NA	NA	NA	NA	NA
3014	1029010160	FR				Sac Creek	25.9	0	.11	2.21	7.76	23.2
3016	1029010157	FR				Dry Creek	13.5	0	0	.67	3.26	11.2
3020	HYDRO	FR				HYDRO	13.8	NA	NA	NA	NA	NA
3021	1029010157	FR				Dry Creek	13.8	0	0	.73	3.44	11.7
3042	HYDRO	FR				HYDRO	16.1	NA	NA	NA	NA	NA

**Table 36.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Franklin County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

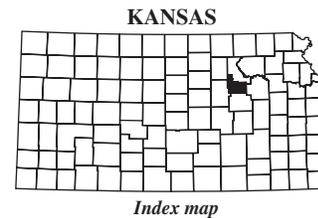
Determination site identification number (fig. 40)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2817	18.1	597	1,300	1,960	3,060	4,090	5,310
2828	9.91	1,510	3,180	4,620	6,800	8,600	10,700
2834	NA	NA	NA	NA	NA	NA	NA
2854	1,180	15,100	22,000	27,000	35,900	42,800	50,200
2882	13.5	1,750	3,660	5,310	7,790	9,850	12,200
2887	1.40	579	1,180	1,680	2,420	3,030	3,720
2888	7.84	1,340	2,810	4,070	5,960	7,520	9,310
2899	54.4	3,300	5,310	6,840	8,970	10,700	12,600
2902	25.3	2,930	5,650	7,940	11,300	14,100	17,200
2903	9.84	1,590	3,270	4,690	6,840	8,600	10,600
2905	NA	NA	NA	NA	NA	NA	NA
2909	4.43	979	2,030	2,910	4,240	5,340	6,580
2924	NA	NA	NA	NA	NA	NA	NA
2925	385	13,200	25,300	35,900	52,100	66,700	83,200
2926	16.6	2,170	4,480	6,450	9,420	11,900	14,600
2960	6.34	1,350	2,730	3,890	5,610	7,030	8,640
2972	16.3	2,240	4,620	6,650	9,700	12,200	15,100
2974	355	13,400	25,500	36,000	52,100	66,500	82,800
2981	19.1	2,460	5,080	7,310	10,700	13,500	16,600
2998	8.02	1,550	3,140	4,480	6,490	8,140	10,000
3010	NA	NA	NA	NA	NA	NA	NA
3014	18.5	2,370	5,000	7,250	10,700	13,500	16,700
3016	10.2	1,760	3,590	5,130	7,450	9,350	11,500
3020	NA	NA	NA	NA	NA	NA	NA
3021	10.5	1,790	3,650	5,220	7,580	9,520	11,700
3042	NA	NA	NA	NA	NA	NA	NA





**EXPLANATION**

- ← 2341 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06878500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06879200 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2121 Lake and determination site identification number



**Figure 41.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Geary County.

**Table 37.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Geary County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

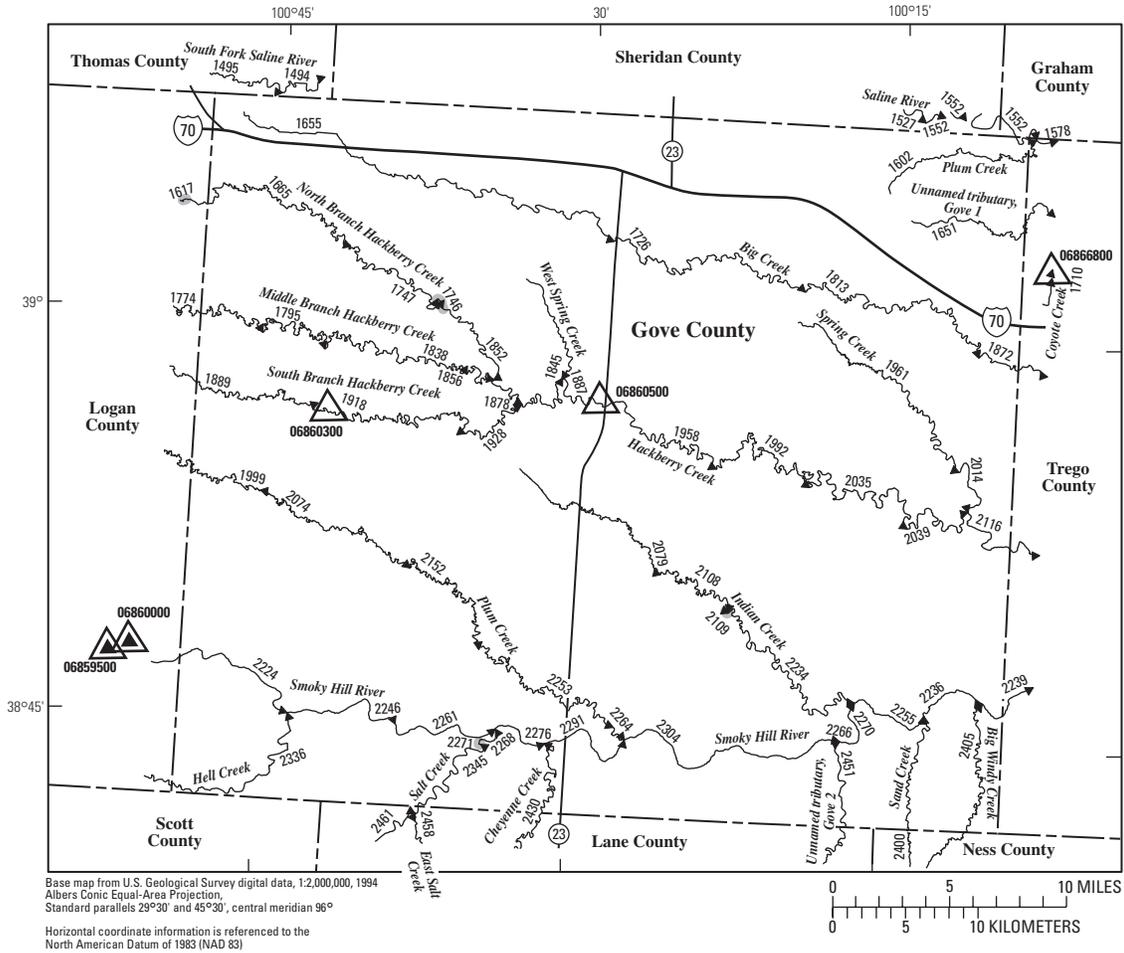
Determination site identification number (fig. 41)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1672	102500171477	GE						Rush Creek	10.9	0
1699	HYDRO	GE				HYDRO	14.2	NA	NA	NA	NA	NA
1773	HYDRO	GE				HYDRO	23,100	NA	NA	NA	NA	NA
1784	1025001767	GE				Fourmile Creek	13.8	0	.11	1.41	3.68	9.38
1785	102500171	GE				Republican River	23,100	57.0	126	357	1,020	2,400
1830	102701017	GE	RL			Kansas River	43,500	408	637	1,350	3,310	7,450
1850	102701018	GE	RL			Clarks Creek	260	.36	4.29	18.7	62.2	189
1857	102500171	GE				Republican River	23,100	57.5	127	358	1,020	2,410
1864	102600081	GE				Smoky Hill River	20,300	196	309	618	1,530	4,040
1877	1027010117	GE	RL			Swede Creek	17.5	0	0	1.80	5.71	15.6
1891	1027010111	GE	RL			McDowell Creek	69.5	0	1.00	6.09	20.4	58.6
1911	1027010226	GE	RL	WB		Deep Creek	22.7	0	.01	2.13	7.10	20.0
1959	102701019	GE				Clarks Creek	195	0	2.89	12.9	43.5	132
1991	102600081	GE				Smoky Hill River	20,300	196	309	618	1,530	4,040
2003	1027010111	GE				McDowell Creek	35.5	0	.20	2.99	10.3	29.6
2004	102600081	GE				Smoky Hill River	20,000	193	305	608	1,500	3,990
2023	102701019	GE				Clarks Creek	155	0	2.09	9.70	32.8	99.3
2037	1026000831	GE				Lyon Creek	312	3.52	17.4	34.6	70.3	152
2073	1027010110	GE				Humbolt Creek	57.1	0	.69	4.89	16.6	47.8
2118	1026000842	GE				Otter Creek	15.2	0	0	.78	2.97	9.36
2120	1027010119	GE				Dry Creek	29.5	0	.03	2.34	8.07	23.3
2121	HYDRO	GE				HYDRO	7.47	NA	NA	NA	NA	NA
2128	1027010110	GE				Humbolt Creek	22.6	0	0	1.39	5.26	16.3
2167	1026000831	GE				Lyon Creek	290	3.40	17.0	33.0	65.0	135
2174	1027010119	GE				Dry Creek	7.33	0	0	0	.18	2.48
2187	1027010229	GE	WB			West Branch Mill Creek	64.3	.16	1.53	7.01	22.2	58.6
2200	102701019	GE	MR			Clarks Creek	119	0	1.41	6.99	23.7	71.8
2201	1027010229	GE	MR			West Branch Mill Creek	10.2	0	.01	.04	.94	4.55
2214	1027010118	GE	MR			Davis Creek	28.7	0	0	2.07	7.17	20.9

**Table 37.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Geary County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

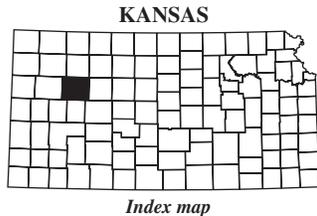
Determination site identification number (fig. 41)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1672	5.05	929	2,140	3,220	4,890	6,310	7,940
1699	NA	NA	NA	NA	NA	NA	NA
1773	NA	NA	NA	NA	NA	NA	NA
1784	7.35	1,080	2,490	3,760	5,720	7,390	9,300
1785	960	5,130	9,360	15,000	18,000	24,000	37,500
1830	3,010	19,100	31,100	44,000	73,000	102,000	140,000
1850	125	5,290	10,900	15,800	23,300	30,000	37,500
1857	963	5,150	9,390	15,000	18,100	24,100	37,600
1864	1,610	12,600	26,200	35,900	51,700	69,200	87,000
1877	11.5	1,370	3,100	4,640	7,020	9,020	11,300
1891	40.8	4,970	10,100	14,600	21,200	26,900	33,100
1911	14.9	1,660	3,740	5,590	8,440	10,800	13,600
1959	91.9	4,320	8,970	13,100	19,400	25,000	31,300
1991	1,610	12,600	26,200	35,900	51,700	69,100	87,000
2003	21.9	4,680	9,190	13,000	18,600	23,300	28,300
2004	1,590	12,500	26,100	35,700	51,400	68,700	86,200
2023	71.6	4,020	8,530	12,600	18,800	24,300	30,500
2037	118	6,620	18,400	31,000	53,200	74,900	101,000
2073	34.1	4,270	8,810	12,800	18,700	23,900	29,500
2118	8.13	1,220	2,770	4,150	6,290	8,100	10,200
2120	17.7	1,880	4,260	6,390	9,690	12,500	15,700
2121	NA	NA	NA	NA	NA	NA	NA
2128	13.5	1,740	3,870	5,760	8,660	11,100	13,900
2167	108	6,410	18,000	30,300	52,200	73,600	99,800
2174	3.50	882	1,930	2,840	4,220	5,380	6,700
2187	40.5	5,470	10,800	15,300	21,900	27,500	33,500
2200	54.0	3,560	7,710	11,500	17,300	22,400	28,100
2201	5.19	1,100	2,410	3,550	5,280	6,730	8,390
2214	16.3	1,800	4,120	6,190	9,410	12,100	15,300





**EXPLANATION**

- ← 2224 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07139500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07139800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2109 Lake and determination site identification number



**Figure 42.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Gove County.

**Table 38.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gove County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 42)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1602	1026000922	GO	GH			TR	Plum Creek	26.3	0	0
1651	102600091061	GO	TR		Unnamed tributary, Gove 1	24.2	0	0	0	.01	.01	
1655	102600077	GO			Big Creek	73.9	.01	.07	.14	.25	.49	
1665	102600055	GO	LG		North Branch Hackberry Creek	81.4	0	0	0	0	0	
1726	102600077	GO			Big Creek	130	.04	.22	.42	.76	1.52	
1746	HYDRO	GO			HYDRO	101	NA	NA	NA	NA	NA	
1747	102600055	GO			North Branch Hackberry Creek	98.8	0	0	0	0	0	
1774	102600056	GO	LG		Middle Branch Hackberry Creek	146	0	0	0	0	0	
1795	102600056	GO			Middle Branch Hackberry Creek	157	0	0	0	0	0	
1813	102600077	GO			Big Creek	164	.06	.35	.67	1.22	3.83	
1838	102600056	GO			Middle Branch Hackberry Creek	175	0	0	0	0	0	
1845	102600058	GO			West Spring Creek	23.0	0	0	0	0	0	
1852	102600055	GO			North Branch Hackberry Creek	111	0	0	0	0	0	
1856	102600056	GO			Middle Branch Hackberry Creek	176	0	0	0	0	0	
1872	102600077	GO	TR		Big Creek	186	.08	.45	.86	1.69	5.26	
1878	102600054	GO			Middle Branch Hackberry Creek	289	0	0	0	0	.82	
1887	102600053	GO			Hackberry Creek	389	0	0	0	.38	2.98	
1889	102600057	GO	LG		South Branch Hackberry Creek	59.5	0	0	0	0	0	
1918	102600057	GO			South Branch Hackberry Creek	87.6	0	0	0	0	0	
1928	102600057	GO			South Branch Hackberry Creek	94.3	0	0	0	0	0	
1958	102600053	GO			Hackberry Creek	446	0	0	0	1.13	4.83	
1961	102600052	GO			Spring Creek	40.2	0	0	0	0	0	
1992	102600053	GO			Hackberry Creek	477	0	0	.16	1.60	5.96	
1999	1026000318	GO	LG		Plum Creek	83.1	0	0	0	0	0	
2014	102600052	GO			Spring Creek	52.0	0	0	0	0	0	
2035	102600053	GO			Hackberry Creek	510	0	0	.35	2.12	7.25	
2039	102600053	GO			Hackberry Creek	520	0	0	.41	2.30	7.66	
2074	1026000318	GO			Plum Creek	123	0	0	0	0	0	
2079	1026000315	GO			Indian Creek	47.7	0	0	0	0	0	
2108	1026000315	GO			Indian Creek	66.5	0	0	0	0	0	
2109	HYDRO	GO			HYDRO	68.3	NA	NA	NA	NA	NA	
2116	102600051	GO	TR		Hackberry Creek	622	0	0	.95	3.83	11.5	
2152	1026000318	GO			Plum Creek	156	0	0	0	0	.14	
2224	1026000321	GO	LG		Smoky Hill River	3,770	0	.11	1.50	6.00	22.0	
2234	1026000315	GO			Indian Creek	105	0	0	0	0	0	
2236	1026000314	GO			Smoky Hill River	4,470	0	.05	1.73	10.1	33.2	
2239	1026000314	GO	TR		Smoky Hill River	4,500	0	.08	1.81	10.4	34.1	
2246	1026000320	GO			Smoky Hill River	3,850	0	.09	1.50	6.41	23.1	

**Table 38.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gove County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 42)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1602	0.61	568	1,700	2,870	4,860	6,660	8,820
1651	.36	543	1,620	2,730	4,620	6,340	8,380
1655	1.13	355	1,190	2,170	3,970	5,780	8,010
1665	.23	294	1,030	1,910	3,570	5,280	7,420
1726	4.74	571	1,880	3,400	6,220	9,090	12,600
1746	NA	NA	NA	NA	NA	NA	NA
1747	.73	326	1,140	2,120	3,980	5,910	8,360
1774	.87	295	1,120	2,190	4,320	6,620	9,670
1795	1.14	306	1,170	2,290	4,540	6,990	10,200
1813	7.71	724	2,360	4,260	7,790	11,400	15,900
1838	1.63	332	1,270	2,490	4,950	7,660	11,300
1845	0	403	1,280	2,220	3,860	5,380	7,210
1852	1.11	354	1,230	2,300	4,310	6,410	9,090
1856	1.68	334	1,280	2,510	4,990	7,720	11,400
1872	9.43	811	2,650	4,790	8,790	12,900	18,100
1878	3.98	433	1,760	3,580	7,500	12,000	18,300
1887	6.12	476	2,130	4,590	10,200	17,000	26,900
1889	0	269	868	1,550	2,800	4,050	5,580
1918	.63	397	1,190	2,050	3,590	5,110	6,970
1928	.87	412	1,250	2,170	3,830	5,500	7,570
1958	7.82	508	2,340	5,100	11,500	19,300	30,600
1961	.82	393	1,200	2,090	3,610	5,080	6,810
1992	8.84	546	2,450	5,290	11,800	19,800	31,200
1999	.55	313	1,060	1,930	3,520	5,100	7,030
2014	1.18	451	1,370	2,370	4,090	5,750	7,700
2035	9.95	578	2,550	5,450	12,100	20,200	31,800
2039	10.3	582	2,560	5,490	12,200	20,200	31,900
2074	1.82	403	1,320	2,380	4,290	6,180	8,480
2079	.44	380	1,180	2,060	3,580	5,060	6,800
2108	1.04	400	1,260	2,220	3,900	5,540	7,500
2109	NA	NA	NA	NA	NA	NA	NA
2116	13.6	715	2,940	6,120	13,200	21,700	33,900
2152	2.80	464	1,500	2,690	4,810	6,910	9,460
2224	23.9	1,510	6,400	13,000	26,900	42,200	62,500
2234	2.37	484	1,520	2,670	4,700	6,680	9,060
2236	33.4	1,870	7,030	13,700	27,400	42,300	62,100
2239	34.0	1,880	7,050	13,700	27,400	42,300	62,000
2246	24.9	1,550	6,470	13,100	27,000	42,200	62,400

**Table 38.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gove County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

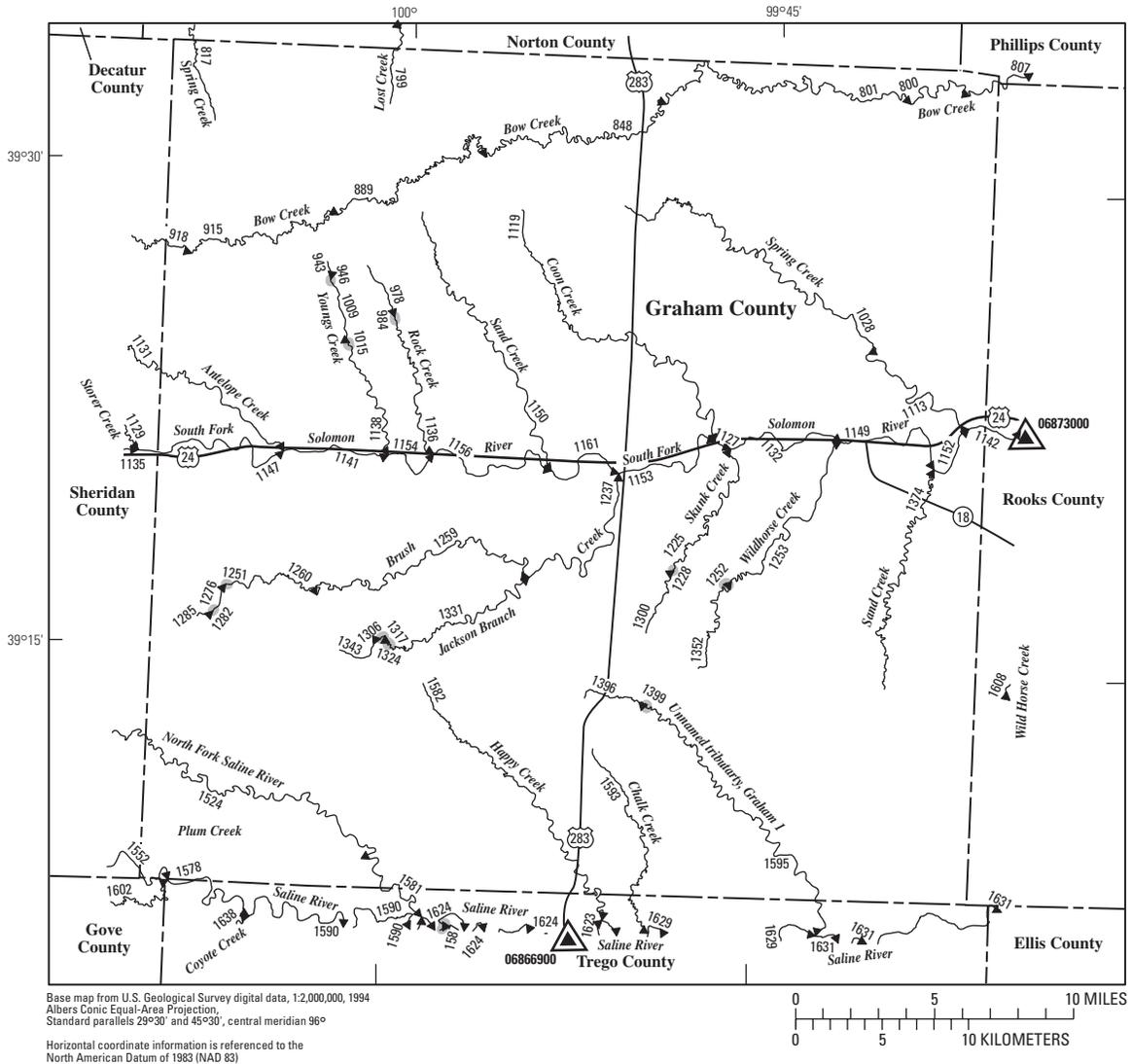
Determination site identification number (fig. 42)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2253	1026000318	GO						Plum Creek	185	0	0
2255	1026000314	GO				Smoky Hill River	4,440	0	.02	1.65	9.76	32.4	
2261	1026000320	GO				Smoky Hill River	3,860	0	.08	1.49	6.46	23.3	
2264	1026000318	GO				Plum Creek	186	0	0	0	0	1.12	
2266	1026000316	GO				Smoky Hill River	4,290	0	0	1.46	8.54	29.1	
2268	1026000326	GO				Salt Creek	121	0	0	0	0	0	
2270	1026000316	GO				Smoky Hill River	4,320	0	0	1.55	8.95	30.2	
2271	HYDRO	GO				HYDRO	120	NA	NA	NA	NA	NA	
2276	1026000319	GO				Smoky Hill River	3,990	0	.01	1.43	6.94	24.7	
2291	1026000319	GO				Smoky Hill River	4,050	0	.01	1.44	7.31	25.7	
2304	1026000317	GO				Smoky Hill River	4,290	0	0	1.46	8.54	29.1	
2336	1026000325	GO	LG			Hell Creek	54.7	0	0	0	0	0	
2345	1026000326	GO				Salt Creek	120	0	0	0	0	0	
2400	1026000337	GO	NS			Sand Creek	16.0	0	0	0	0	0	
2405	1026000338	GO	NS			Big Windy Creek	20.1	0	0	0	0	0	
2430	1026000336	GO	LE			Cheyenne Creek	50.8	0	0	0	0	0	
2451	1026000327	GO	LE			Unnamed tributary, Gove 2	34.2	0	0	0	0	0	
2458	1026000335	GO	LE			East Salt Creek	20.1	0	0	0	0	0	
2461	1026000326	GO	LE	SC		Salt Creek	87.3	0	0	0	0	0	

**Table 38.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gove County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

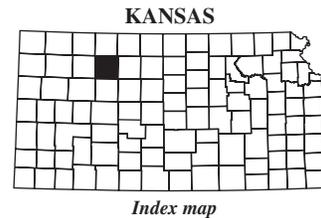
Determination site identification number (fig. 42)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2253	3.70	522	1,670	2,970	5,290	7,580	10,400
2255	32.8	1,850	7,010	13,700	27,400	42,300	62,100
2261	25.0	1,560	6,490	13,100	27,000	42,200	62,500
2264	3.73	522	1,670	2,970	5,290	7,580	10,400
2266	30.2	1,770	6,850	13,500	27,200	42,300	62,200
2268	2.02	592	1,800	3,120	5,420	7,650	10,300
2270	31.0	1,780	6,880	13,500	27,300	42,300	62,100
2271	NA	NA	NA	NA	NA	NA	NA
2276	26.4	1,630	6,620	13,300	27,100	42,300	62,500
2291	27.3	1,660	6,670	13,300	27,200	42,300	62,400
2304	30.2	1,770	6,860	13,500	27,300	42,300	62,200
2336	.53	408	1,250	2,170	3,760	5,300	7,100
2345	1.98	589	1,790	3,110	5,410	7,630	10,300
2400	0	359	1,110	1,890	3,240	4,470	5,940
2405	0	409	1,270	2,170	3,730	5,150	6,860
2430	.50	357	1,120	1,950	3,410	4,830	6,500
2451	.56	369	1,100	1,880	3,200	4,460	5,920
2458	0	353	1,140	1,980	3,440	4,790	6,420
2461	.96	499	1,540	2,690	4,690	6,640	8,950





**EXPLANATION**

- ◀ 1578 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06866900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06873000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1399 Lake and determination site identification number



**Figure 43.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Graham County.

**250 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 39.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Graham County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 43)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		799	1026001120	GH	NT					Lost Creek	24.6	0	0
800	1026001115	GH				Bow Creek	331	.23	1.03	2.44	4.45	8.43	
801	1026001115	GH	NT			Bow Creek	314	.21	.93	2.10	3.84	7.38	
807	1026001115	GH	PL	RO		Bow Creek	404	.34	1.74	4.12	7.40	13.5	
817	1026001119	GH	NT			Spring Creek	28.0	0	0	0	0	0	
848	1026001115	GH				Bow Creek	261	.14	.64	1.14	2.10	4.39	
889	1026001115	GH				Bow Creek	232	.11	.51	.68	1.24	2.89	
915	1026001115	GH				Bow Creek	210	.09	.42	.56	.70	1.97	
918	1026001115	GH	SD			Bow Creek	185	.07	.14	.21	.28	1.03	
943	1026001321	GH				Youngs Creek	2.12	0	0	0	0	0	
946	HYDRO	GH				HYDRO	2.21	NA	NA	NA	NA	NA	
978	1026001322	GH				Rock Creek	5.78	0	0	0	0	0	
984	HYDRO	GH				HYDRO	5.83	NA	NA	NA	NA	NA	
1009	1026001321	GH				Youngs Creek	10.6	0	0	0	0	0	
1015	HYDRO	GH				HYDRO	10.7	NA	NA	NA	NA	NA	
1028	102600135	GH				Spring Creek	66.3	0	0	.03	.09	.66	
1113	102600135	GH				Spring Creek	84.1	0	0	.05	.35	1.92	
1119	102600138	GH				Coon Creek	47.3	0	0	.02	.04	.08	
1127	102600137	GH				South Fork Solomon River	784	.02	.16	8.10	22.1	46.6	
1131	1026001313	GH	SD			Antelope Creek	28.7	0	0	.01	.02	.03	
1132	102600137	GH				South Fork Solomon River	816	.02	.28	8.83	23.9	50.4	
1136	1026001322	GH				Rock Creek	16.2	0	0	0	.01	.01	
1138	1026001321	GH				Youngs Creek	20.0	0	0	0	.01	.01	
1141	1026001312	GH				South Fork Solomon River	530	0	0	3.19	9.38	20.6	
1142	102600134	GH	RO			South Fork Solomon River	1,020	.03	1.00	14.0	37.0	77.0	
1147	1026001314	GH	SD			South Fork Solomon River	490	0	0	2.54	7.69	17.1	
1149	102600136	GH				South Fork Solomon River	862	.02	.44	9.92	26.7	55.9	
1150	1026001311	GH				Sand Creek	28.9	0	0	.01	.02	.03	
1152	102600136	GH				South Fork Solomon River	921	.02	.66	11.4	30.5	63.7	
1153	102600139	GH				South Fork Solomon River	736	0	.01	7.03	19.3	41.0	
1154	1026001312	GH				South Fork Solomon River	555	0	0	3.61	10.5	22.9	
1156	1026001312	GH				South Fork Solomon River	581	0	0	4.09	11.7	25.4	
1161	1026001310	GH				South Fork Solomon River	619	0	0	4.78	13.5	29.1	
1225	1026001326	GH				Skunk Creek	20.3	0	0	0	.01	.01	
1228	HYDRO	GH				HYDRO	8.89	NA	NA	NA	NA	NA	
1237	1026001317	GH				Brush Creek	110	0	0	.09	.55	2.36	
1251	HYDRO	GH				HYDRO	24.1	NA	NA	NA	NA	NA	
1252	HYDRO	GH				HYDRO	16.8	NA	NA	NA	NA	NA	

**Table 39.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Graham County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 43)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
799	0.05	452	1,410	2,430	4,190	5,800	7,740
800	8.29	694	2,280	4,140	7,610	11,200	15,600
801	7.66	670	2,210	4,000	7,350	10,800	15,000
807	11.2	817	2,650	4,790	8,820	13,000	18,200
817	.14	490	1,530	2,640	4,550	6,310	8,420
848	5.77	602	1,990	3,600	6,600	9,640	13,400
889	4.73	578	1,900	3,440	6,270	9,130	12,700
915	4.08	576	1,880	3,380	6,130	8,890	12,300
918	3.37	556	1,800	3,230	5,830	8,430	11,600
943	0	111	329	551	921	1,260	1,650
946	NA	NA	NA	NA	NA	NA	NA
978	0	200	603	1,020	1,720	2,360	3,120
984	NA	NA	NA	NA	NA	NA	NA
1009	0	283	866	1,470	2,510	3,460	4,580
1015	NA	NA	NA	NA	NA	NA	NA
1028	2.69	576	1,690	2,870	4,900	6,820	9,080
1113	3.76	650	1,890	3,210	5,450	7,590	10,100
1119	1.55	480	1,420	2,410	4,110	5,730	7,610
1127	34.8	2,010	6,070	10,700	19,200	27,800	38,800
1131	.23	493	1,550	2,670	4,610	6,400	8,540
1132	37.2	2,120	6,370	11,200	20,100	29,200	40,700
1136	0	362	1,120	1,910	3,270	4,510	6,000
1138	.01	407	1,260	2,160	3,710	5,140	6,840
1141	17.7	1,260	3,910	6,920	12,500	18,100	25,100
1142	53.8	2,800	8,330	14,600	26,300	38,300	53,600
1147	15.3	1,150	3,580	6,370	11,500	16,700	23,200
1149	40.7	2,260	6,780	11,900	21,400	31,100	43,400
1150	.37	511	1,590	2,740	4,710	6,520	8,700
1152	45.5	2,460	7,350	12,900	23,200	33,700	47,100
1153	31.2	1,870	5,650	9,930	17,800	25,900	36,000
1154	19.3	1,330	4,100	7,260	13,100	19,000	26,300
1156	20.9	1,410	4,340	7,660	13,800	20,000	27,700
1161	23.4	1,530	4,660	8,220	14,800	21,400	29,700
1225	.01	421	1,300	2,220	3,810	5,250	6,990
1228	NA	NA	NA	NA	NA	NA	NA
1237	4.17	640	1,910	3,290	5,670	7,970	10,700
1251	NA	NA	NA	NA	NA	NA	NA
1252	NA	NA	NA	NA	NA	NA	NA

**252 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 39.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Graham County.—Continued

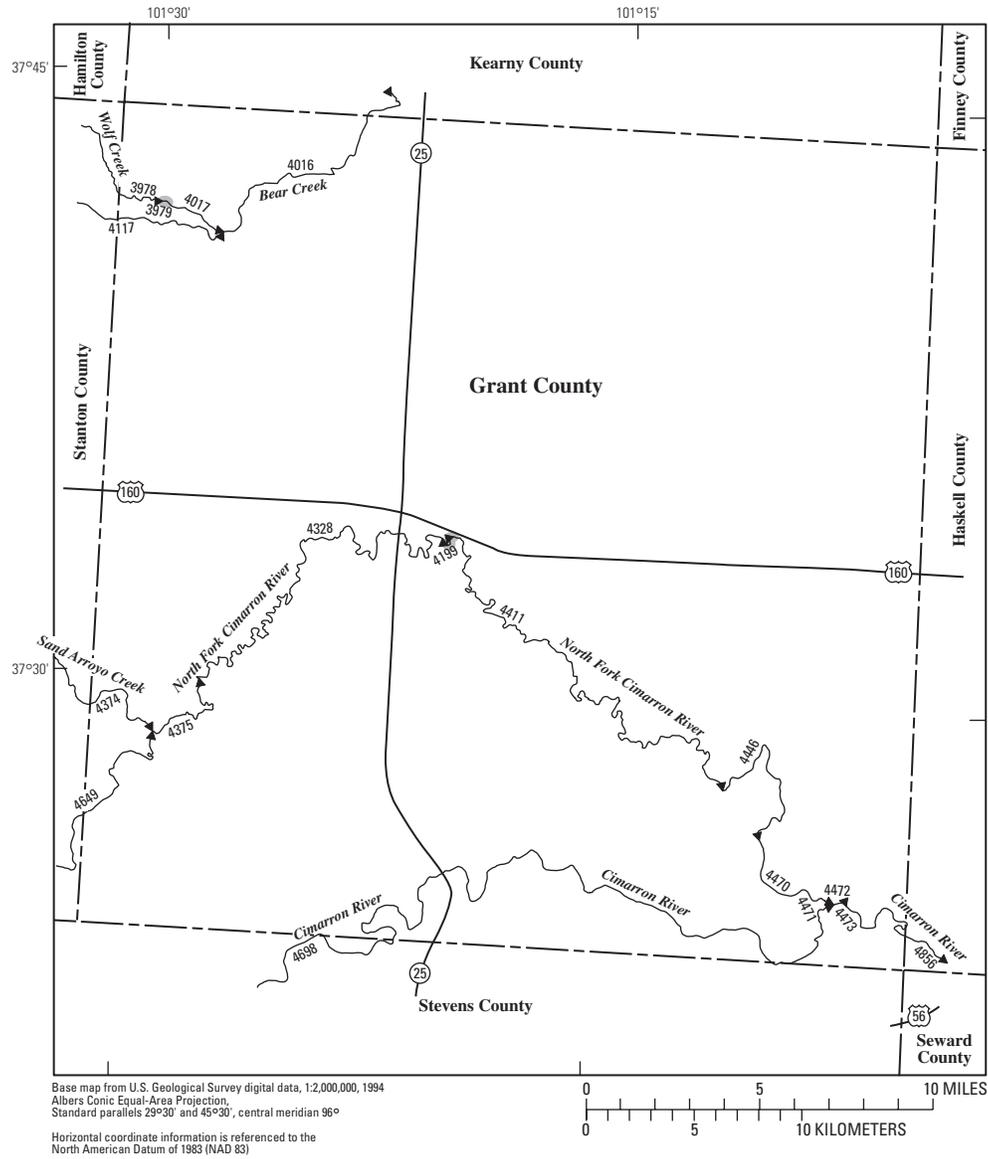
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 43)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1253	1026001318	GH						Wildhorse Creek	37.8	0
1259	1026001317	GH				Brush Creek	61.8	0	0	.03	.08	.13
1260	1026001317	GH				Brush Creek	37.4	0	0	.01	.03	.05
1276	1026001317	GH				Brush Creek	24.0	0	0	0	.01	.02
1282	HYDRO	GH				HYDRO	17.8	NA	NA	NA	NA	NA
1285	1026001317	GH				Brush Creek	17.5	0	0	0	.01	.01
1300	1026001326	GH				Skunk Creek	8.89	0	0	0	0	0
1306	HYDRO	GH				HYDRO	14.2	NA	NA	NA	NA	NA
1317	1026001324	GH				Jackson Branch	14.9	0	0	0	0	.01
1324	HYDRO	GH				HYDRO	14.9	NA	NA	NA	NA	NA
1331	1026001324	GH				Jackson Branch	32.0	0	0	.01	.02	.04
1343	1026001324	GH				Jackson Branch	13.8	0	0	0	0	.01
1352	1026001318	GH				Wildhorse Creek	16.4	0	0	0	.01	.01
1374	1026001327	GH				Sand Creek	54.5	0	0	.02	.06	.10
1396	1026000913	GH				Unnamed tributary, Graham 1	12.9	0	0	0	0	.01
1399	HYDRO	GH				HYDRO	12.9	NA	NA	NA	NA	NA
1524	1026000915	GH	SD			North Fork Saline River	122	0	0	.01	.18	1.71
1552	1026000916	GH	SD			Saline River	456	0	0	.42	3.83	8.32
1578	1026000916	GH	TR			Saline River	490	0	0	.73	4.92	10.5
1581	1026000915	GH	TR			North Fork Saline River	130	0	0	.01	.33	2.07
1582	1026000925	GH	TR			Happy Creek	43.5	0	.01	.01	.03	.06
1593	1026000926	GH	TR			Chalk Creek	21.5	0	0	0	.01	.02
1595	1026000913	GH	TR			Unnamed tributary, Graham 1	60.0	.01	.01	.03	.06	.11

**Table 39.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Graham County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

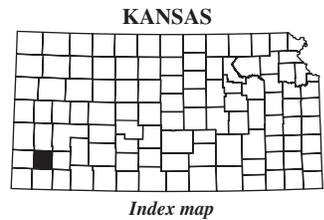
Determination site identification number (fig. 43)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1253	0.82	420	1,250	2,130	3,630	5,050	6,710
1259	1.85	438	1,350	2,360	4,120	5,820	7,840
1260	.60	353	1,100	1,920	3,340	4,710	6,330
1276	.01	451	1,410	2,420	4,160	5,750	7,680
1282	NA	NA	NA	NA	NA	NA	NA
1285	.01	375	1,160	1,990	3,410	4,710	6,260
1300	0	253	774	1,320	2,240	3,080	4,080
1306	NA	NA	NA	NA	NA	NA	NA
1317	0	334	1,040	1,770	3,040	4,200	5,600
1324	NA	NA	NA	NA	NA	NA	NA
1331	.30	344	1,060	1,840	3,200	4,500	6,030
1343	0	320	992	1,700	2,910	4,020	5,350
1352	0	364	1,120	1,920	3,290	4,540	6,030
1374	2.11	516	1,510	2,580	4,390	6,110	8,120
1396	0	303	940	1,610	2,760	3,820	5,080
1399	NA	NA	NA	NA	NA	NA	NA
1524	3.98	626	1,920	3,340	5,840	8,260	11,200
1552	9.79	1,440	4,460	7,820	14,000	20,000	27,500
1578	11.5	1,610	4,940	8,640	15,400	22,000	30,200
1581	4.29	650	1,990	3,450	6,040	8,550	11,600
1582	.55	347	1,100	1,920	3,380	4,800	6,480
1593	.01	398	1,260	2,170	3,750	5,200	6,950
1595	1.47	416	1,280	2,230	3,890	5,490	7,380





**EXPLANATION**

- ◀ 4698 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07139500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07139800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4199 Lake and determination site identification number



**Figure 44.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Grant County.

**Table 40.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Grant County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

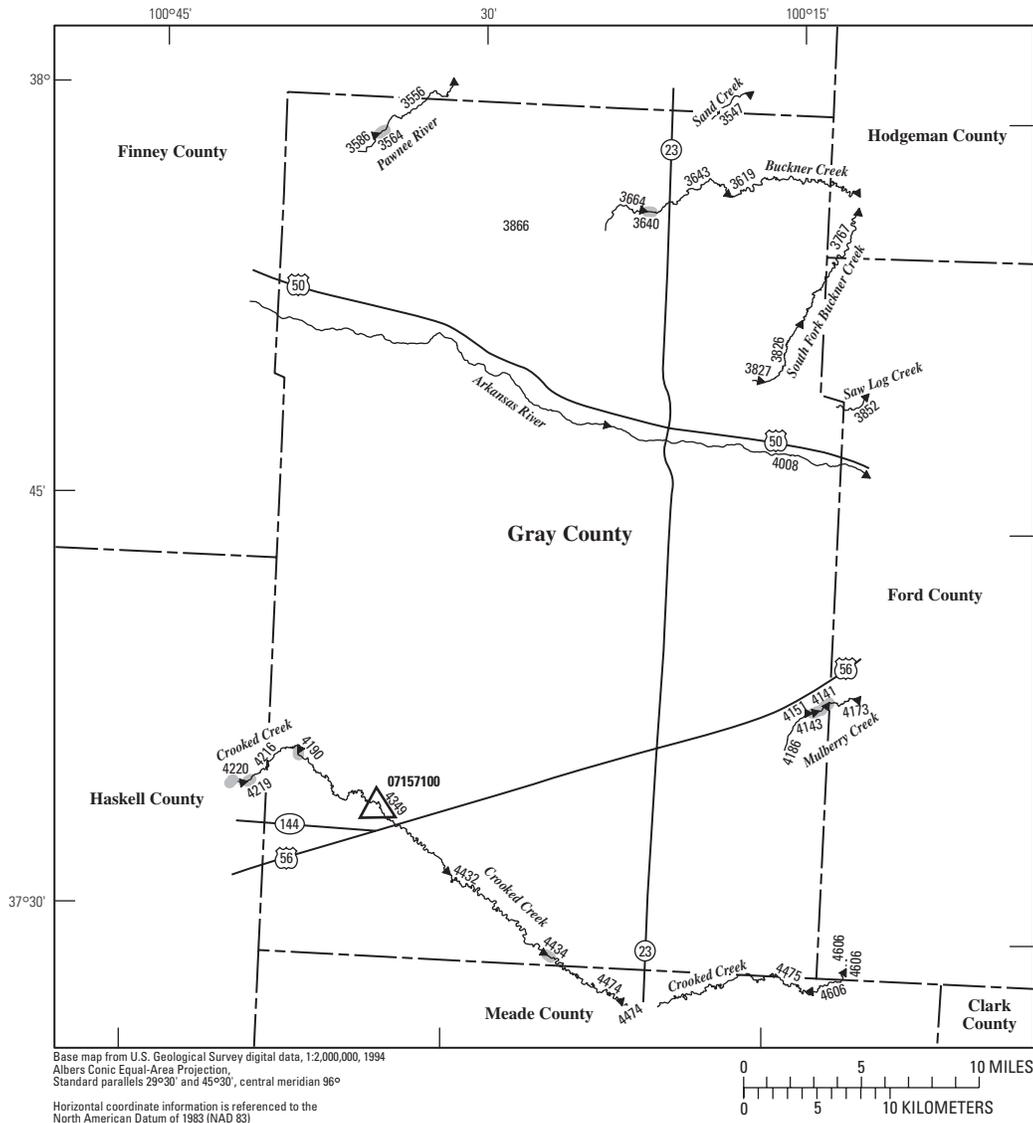
Determination site identification number (fig. 44)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3978	110400052	GT	HM			ST	Wolf Creek	87.0	0	0
3979	HYDRO	GT			HYDRO	87.1	NA	NA	NA	NA	NA	
4016	110400051	GT	KE		Bear Creek	1,420	0	0	0	0	.91	
4017	110400052	GT			Wolf Creek	90.5	0	0	0	0	0	
4117	110400051	GT	ST		Bear Creek	1,090	0	0	0	0	0	
4199	HYDRO	GT			HYDRO	1,720	NA	NA	NA	NA	NA	
4328	110400031	GT			North Fork Cimarron River	1,710	3.96	4.71	5.65	6.10	6.39	
4374	110400041	GT	ST		Sand Arroyo Creek	853	.42	.49	.59	.64	1.28	
4375	110400031	GT			North Fork Cimarron River	1,630	3.63	4.32	5.18	5.59	5.85	
4411	110400031	GT			North Fork Cimarron River	1,860	4.54	5.41	6.48	7.21	7.49	
4446	110400031	GT			North Fork Cimarron River	2,020	5.21	6.21	7.44	8.74	9.45	
4470	110400031	GT			North Fork Cimarron River	2,030	5.24	6.24	7.48	8.82	9.56	
4471	110400031	GT			North Fork Cimarron River	2,030	5.24	6.24	7.48	8.82	9.56	
4472	110400062	GT			Cimarron River	5,750	16.9	21.8	27.6	36.1	43.9	
4473	110400062	GT			Cimarron River	5,750	16.9	21.9	27.7	36.1	43.9	
4649	110400032	GT	MT	ST	SV	North Fork Cimarron River	768	1.08	1.29	1.54	1.67	3.34
4698	110400021	GT	SV			Cimarron River	3,720	2.20	2.97	3.80	5.13	7.88
4856	110400062	GT	HS	SW		Cimarron River	6,260	21.2	27.4	34.9	46.6	58.5

**Table 40.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Grant County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

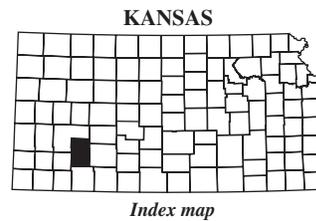
Determination site identification number (fig. 44)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3978	0	216	802	1,520	2,880	4,280	6,020
3979	NA	NA	NA	NA	NA	NA	NA
4016	5.36	807	3,180	6,140	11,800	17,400	24,300
4017	0	199	753	1,440	2,750	4,110	5,810
4117	3.35	724	3,020	5,940	11,600	17,300	24,400
4199	NA	NA	NA	NA	NA	NA	NA
4328	6.39	511	1,680	3,020	5,480	7,930	10,900
4374	.63	166	626	1,170	2,200	3,220	4,470
4375	5.85	525	1,700	3,040	5,470	7,870	10,800
4411	7.54	533	1,750	3,170	5,760	8,350	11,500
4446	9.16	619	2,000	3,590	6,490	9,380	12,900
4470	9.25	613	1,990	3,570	6,450	9,320	12,900
4471	9.25	613	1,990	3,560	6,450	9,310	12,900
4472	35.3	1,850	5,480	9,340	16,000	22,300	29,900
4473	35.3	1,850	5,480	9,340	16,000	22,300	29,900
4649	7.16	976	4,030	8,040	16,200	24,800	36,100
4698	14.6	1,350	4,080	6,940	11,900	16,400	21,800
4856	44.2	1,980	5,810	9,860	16,900	23,400	31,400





**EXPLANATION**

- ◀ 4432 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07139500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07157100 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4434 Lake and determination site identification number



**Figure 45.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Gray County.

**Table 41.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gray County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

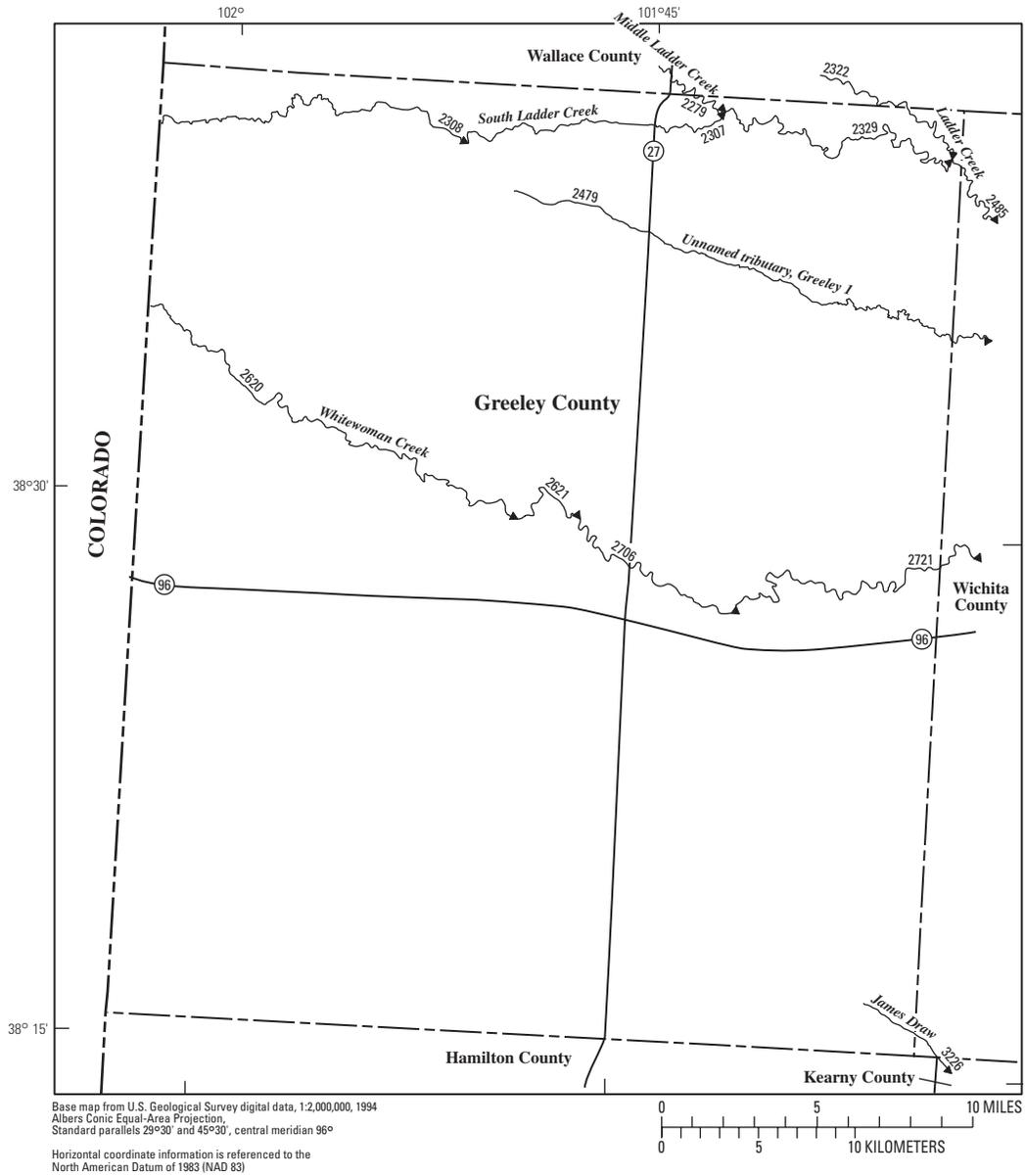
Determination site identification number (fig. 45)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3564	HYDRO	GY						HYDRO	54.8	NA	NA
3586	110300055	GY				Pawnee River	54.1	0	0	0	0	0	0
3619	110300062	GY	HG			Buckner Creek	94.9	0	0	0	0	0	0
3640	HYDRO	GY				HYDRO	48.5	NA	NA	NA	NA	NA	NA
3643	110300062	GY				Buckner Creek	71.5	0	0	0	0	0	0
3664	110300062	GY				Buckner Creek	47.8	0	0	0	0	0	0
3826	110300066	GY				South Fork Buckner Creek	27.2	0	0	0	0	0	0
3827	110300066	GY				South Fork Buckner Creek	12.9	0	0	0	0	0	0
4141	HYDRO	GY				HYDRO	97.6	NA	NA	NA	NA	NA	NA
4143	1103000412	GY				Mulberry Creek	95.8	0	0	0	0	0	0
4151	HYDRO	GY				HYDRO	95.8	NA	NA	NA	NA	NA	NA
4186	1103000412	GY				Mulberry Creek	94.8	0	0	0	0	0	0
4190	HYDRO	GY				HYDRO	378	NA	NA	NA	NA	NA	NA
4216	110400072	GY	HS			Crooked Creek	378	0	10	20	29	58	
4349	110400072	GY				Crooked Creek	489	24	58	66	74	2.41	
4432	110400072	GY				Crooked Creek	562	32	77	1.11	1.62	4.16	
4434	HYDRO	GY				HYDRO	562	NA	NA	NA	NA	NA	NA
4474	110400072	GY	ME			Crooked Creek	606	37	89	1.46	2.22	5.37	
4475	110400072	GY	ME			Crooked Creek	672	46	1.10	2.02	3.13	7.15	

**Table 41.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Gray County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

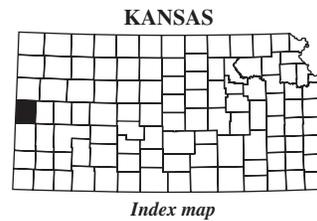
Determination site identification number (fig. 45)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3564	NA	NA	NA	NA	NA	NA	NA
3586	0	251	889	1,650	3,060	4,490	6,240
3619	1.11	511	1,660	2,980	5,370	7,730	10,600
3640	NA	NA	NA	NA	NA	NA	NA
3643	.35	460	1,510	2,720	4,900	7,070	9,700
3664	0	310	1,070	1,970	3,640	5,310	7,360
3826	0	545	1,650	2,810	4,780	6,580	8,740
3827	0	361	1,070	1,810	3,040	4,160	5,500
4141	NA	NA	NA	NA	NA	NA	NA
4143	.88	660	1,880	3,150	5,290	7,320	9,660
4151	NA	NA	NA	NA	NA	NA	NA
4186	.86	647	1,850	3,100	5,230	7,230	9,560
4190	NA	NA	NA	NA	NA	NA	NA
4216	3.72	802	2,390	4,060	6,880	9,520	12,500
4349	6.17	488	1,630	2,860	4,960	6,900	9,120
4432	7.93	458	1,640	2,960	5,290	7,500	10,100
4434	NA	NA	NA	NA	NA	NA	NA
4474	9.11	432	1,620	2,990	5,430	7,780	10,600
4475	10.8	447	1,730	3,220	5,920	8,560	11,700





**EXPLANATION**

- ◀ 2341 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06878500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06879200 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2121 Lake and determination site identification number



**Figure 46.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Greeley County.

**Table 42.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greeley County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

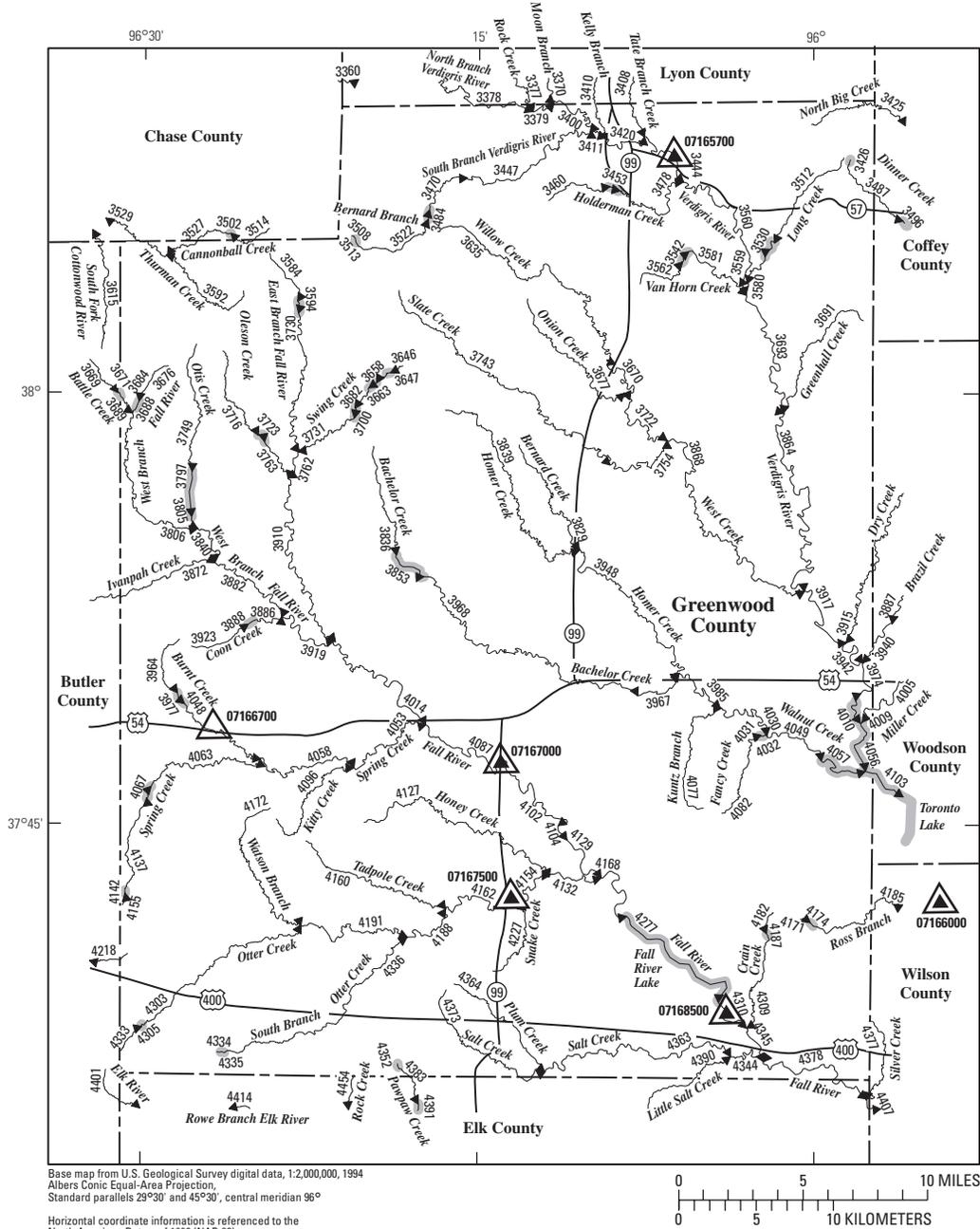
Determination site identification number (fig. 46)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2279	1026000413	GL	WA					Middle Ladder Creek	82.2	0
2322	102600049	GL	WA			Ladder Creek	269	0	.01	.04	.04	.04
2329	1026000412	GL	WA			South Ladder Creek	350	0	.02	.07	.08	.16
2479	1026000415	GL	WH			Unnamed tributary, Greeley 1	122	0	0	.01	.01	.01
2485	102600048	GL	WH			Ladder Creek	658	0	.06	.26	.27	.54
2721	110300022	GL	WH			Whitewoman Creek	759	0	0	0	0	0
2307	1026000414	GL				South Ladder Creek	244	0	.01	.04	.08	.16
2308	1026000414	GL				South Ladder Creek	220	0	.01	.03	.03	.03
2620	110300022	GL				Whitewoman Creek	517	0	0	0	0	0
2621	110300022	GL				Whitewoman Creek	543	0	0	0	0	0
2706	110300022	GL				Whitewoman Creek	647	0	0	0	0	0
3226	1103000110	GL	HM	KE	WH	James Draw	217	0	0	0	0	0

**Table 42.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greeley County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

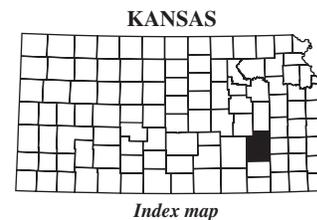
Determination site identification number (fig. 46)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2279	0	185	702	1,350	2,590	3,870	5,470
2307	.16	279	1,070	2,080	4,040	6,110	8,750
2308	0	254	990	1,930	3,760	5,690	8,150
2322	0	312	1,180	2,270	4,370	6,590	9,410
2329	.16	388	1,440	2,740	5,250	7,880	11,200
2479	0	244	917	1,750	3,360	5,020	7,110
2485	.80	472	1,790	3,460	6,790	10,400	15,100
2620	.13	299	1,370	2,920	6,300	10,200	15,400
2621	.14	291	1,370	2,950	6,440	10,500	16,000
2706	.44	273	1,410	3,160	7,170	11,900	18,400
2721	1.00	232	1,400	3,310	7,870	13,400	21,100
3226	0	305	1,140	2,180	4,180	6,260	8,880





**EXPLANATION**

- ◀ 4414 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07167500 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07166700 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4391 Lake and determination site identification number



**Figure 47.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Greenwood County.

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3377	1107010114	GW	LY					Rock Creek	20.7	0
3378	1107010115	GW	LY			North Branch Verdigris River	84.0	.08	1.71	9.77	29.6	80.0
3379	1107010113	GW	LY			North Branch Verdigris River	106	.12	2.24	12.6	37.3	100
3400	1107010113	GW	LY			North Branch Verdigris River	123	.17	2.62	14.8	43.5	117
3408	1107010144	GW	LY			Tate Branch Creek	18.6	0	.01	1.43	5.82	18.2
3410	1107010142	GW	LY			Kelly Branch	9.79	0	0	.45	2.30	8.04
3411	1107010112	GW				Verdigris River	158	.28	3.74	20.9	59.5	157
3420	1107010112	GW				Verdigris River	170	.32	4.09	23.0	65.0	171
3426	HYDRO	GW				HYDRO	1.25	NA	NA	NA	NA	NA
3444	1107010112	GW				Verdigris River	197	.50	4.90	28.0	78.0	204
3447	1107010116	GW				South Branch Verdigris River	34.9	.01	.40	3.81	12.5	34.8
3453	HYDRO	GW				HYDRO	9.47	NA	NA	NA	NA	NA
3460	1107010147	GW				Holderman Creek	8.77	0	0	0	1.01	5.31
3470	1107010116	GW				Bernard Branch	23.1	.01	.14	2.57	8.32	23.0
3478	1107010147	GW				Holderman Creek	17.3	0	0	.66	3.69	13.3
3484	HYDRO	GW				HYDRO	13.4	NA	NA	NA	NA	NA
3508	1107010116	GW				Bernard Branch	3.67	0	0	.31	.86	2.83
3512	1107010145	GW				Long Creek	13.9	0	0	.97	4.07	13.0
3513	HYDRO	GW				HYDRO	3.73	NA	NA	NA	NA	NA
3522	1107010116	GW				Bernard Branch	12.4	0	.01	1.42	4.50	12.4
3530	HYDRO	GW				HYDRO	15.1	NA	NA	NA	NA	NA
3542	HYDRO	GW				HYDRO	11.9	NA	NA	NA	NA	NA
3559	1107010145	GW				Long Creek	17.3	0	0	1.39	5.49	16.9
3560	1107010112	GW				Verdigris River	227	.68	5.37	30.1	86.0	231
3562	1107010146	GW				Van Horn Creek	10.8	0	0	.30	2.21	8.56
3580	1107010112	GW				Verdigris River	244	.79	5.67	31.5	91.1	248
3581	1107010146	GW				Van Horn Creek	17.3	0	0	.83	4.18	14.5
3584	11070102635	GW				East Branch Fall River	6.24	0	0	.48	1.53	4.76
3592	1107020311	GW				Thurman Creek	11.2	0	0	.83	2.83	8.48
3594	HYDRO	GW				HYDRO	7.93	NA	NA	NA	NA	NA
3635	110701019017	GW				Willow Creek	26.5	0	0	1.27	5.95	20.4
3646	11070102989	GW				Swing Creek	3.74	0	0	.08	.34	1.84
3647	HYDRO	GW				HYDRO	4.08	NA	NA	NA	NA	NA
3658	11070102989	GW				Swing Creek	6.29	0	0	.37	1.27	4.27
3663	HYDRO	GW				HYDRO	6.95	NA	NA	NA	NA	NA
3670	110701019017	GW				Willow Creek	33.5	0	0	1.63	7.47	25.4
3676	1107010211	GW				West Branch Fall River	4.88	0	0	.27	.90	3.18
3677	1107010123	GW				Onion Creek	12.6	0	0	.25	2.06	8.28

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3377	13.5	1,800	3,950	5,830	8,720	11,100	13,900
3378	53.0	5,510	11,500	16,700	24,600	31,500	39,100
3379	65.6	6,320	13,200	19,400	28,700	36,900	45,900
3400	75.6	6,660	14,200	21,000	31,300	40,400	50,600
3408	14.7	1,920	4,060	5,900	8,700	11,000	13,700
3410	7.30	1,300	2,710	3,920	5,740	7,250	8,960
3411	97.7	7,610	16,700	24,800	37,500	48,800	61,500
3420	106	7,830	17,400	26,000	39,500	51,500	65,200
3426	NA	NA	NA	NA	NA	NA	NA
3444	123	8,120	18,700	28,400	43,800	57,600	73,400
3447	25.1	4,210	8,350	11,900	17,000	21,400	26,100
3453	NA	NA	NA	NA	NA	NA	NA
3460	5.85	1,230	2,560	3,680	5,370	6,770	8,350
3470	16.8	1,880	4,160	6,160	9,240	11,800	14,800
3478	12.2	1,850	3,880	5,620	8,260	10,400	12,900
3484	NA	NA	NA	NA	NA	NA	NA
3508	2.65	636	1,350	1,950	2,870	3,620	4,480
3512	10.9	1,650	3,430	4,950	7,240	9,120	11,300
3513	NA	NA	NA	NA	NA	NA	NA
3522	9.38	1,290	2,810	4,130	6,160	7,840	9,770
3530	NA	NA	NA	NA	NA	NA	NA
3542	NA	NA	NA	NA	NA	NA	NA
3559	13.7	1,870	3,910	5,660	8,300	10,500	13,000
3560	141	8,440	19,400	29,400	45,400	59,600	76,000
3562	8.03	1,390	2,900	4,180	6,110	7,710	9,520
3580	152	8,980	20,300	30,700	47,100	61,800	78,600
3581	12.7	1,850	3,880	5,620	8,250	10,400	12,900
3584	4.23	830	1,800	2,630	3,910	4,970	6,170
3592	7.08	1,110	2,460	3,650	5,470	6,990	8,730
3594	NA	NA	NA	NA	NA	NA	NA
3635	17.6	2,240	4,800	7,030	10,400	13,300	16,500
3646	2.22	621	1,330	1,930	2,850	3,610	4,470
3647	NA	NA	NA	NA	NA	NA	NA
3658	4.04	838	1,810	2,660	3,940	5,010	6,220
3663	NA	NA	NA	NA	NA	NA	NA
3670	21.7	3,420	7,230	10,600	15,700	20,100	24,900
3676	3.06	677	1,480	2,180	3,240	4,120	5,130
3677	8.13	1,420	3,020	4,400	6,490	8,220	10,200

**270 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3682	11070102989	GW						Swing Creek	10.2	0
3684	HYDRO	GW				HYDRO	5.31	NA	NA	NA	NA	NA
3688	1107010211	GW				West Branch Fall River	5.72	0	0	.38	1.23	4.00
3689	1107010218	GW				Battle Creek	5.44	0	0	.31	1.04	3.53
3691	1107010126	GW				Greenhall Creek	22.2	0	.15	2.47	8.47	24.0
3693	1107010112	GW				Verdigris River	278	1.00	6.23	34.0	100	280
3700	HYDRO	GW				HYDRO	11.0	NA	NA	NA	NA	NA
3716	1107010221	GW				Oleson Creek	9.58	0	0	.79	2.56	7.49
3722	110701019017	GW				Willow Creek	50.9	0	0	2.57	11.2	37.7
3723	HYDRO	GW				HYDRO	10.4	NA	NA	NA	NA	NA
3730	11070102635	GW				East Branch Fall River	22.1	0	.06	2.09	6.75	18.6
3731	11070102989	GW				Swing Creek	15.7	0	0	1.40	4.59	12.9
3743	1107010125	GW				Slate Creek	31.4	0	0	1.73	7.12	23.0
3749	1107010220	GW				Otis Creek	12.7	0	0	1.05	3.45	9.88
3754	1107010125	GW				Slate Creek	38.4	0	0	2.19	8.83	28.5
3762	11070102635	GW				East Branch Fall River	39.4	0	.45	3.75	12.3	33.4
3763	1107010221	GW				Oleson Creek	13.7	0	0	1.20	3.91	11.1
3797	HYDRO	GW				HYDRO	16.5	NA	NA	NA	NA	NA
3805	1107010220	GW				Otis Creek	16.9	0	0	1.45	4.74	13.3
3806	1107010211	GW				West Branch Fall River	32.8	0	.34	3.35	10.8	29.1
3829	1107010124	GW				Bernard Creek	9.63	0	0	0	.73	4.50
3836	1107010121	GW				Bachelor Creek	19.6	0	0	.86	3.56	11.7
3839	1107010120	GW				Homer Creek	28.9	0	0	1.10	5.12	17.8
3840	1107010211	GW				West Branch Fall River	53.8	0	.77	5.31	17.4	46.7
3853	HYDRO	GW				HYDRO	26.6	NA	NA	NA	NA	NA
3864	1107010112	GW				Verdigris River	325	1.48	7.54	39.4	118	333
3868	1107010117	GW				West Creek	124	0	1.47	8.51	31.9	102
3882	1107010211	GW				West Branch Fall River	81.3	0	1.43	8.58	28.1	74.5
3886	1107010225	GW				Coon Creek	10.7	0	0	1.18	3.68	10.1
3888	HYDRO	GW				HYDRO	8.99	NA	NA	NA	NA	NA
3910	11070102635	GW				East Branch Fall River	72.9	0	1.11	6.93	22.9	61.4
3915	1107010127	GW	WO			Dry Creek	24.3	0	.91	4.23	12.5	31.8
3917	1107010111	GW				Verdigris River	457	2.33	9.80	49.3	153	452
3919	1107010211	GW				West Branch Fall River	98.3	0	1.77	10.5	34.5	91.0
3923	1107010225	GW				Coon Creek	8.34	0	0	.78	2.56	7.47
3940	1107010131	GW	WO			Brazil Creek	18.1	0	0.65	3.42	10.1	25.7
3942	1107010111	GW				Verdigris River	483	2.64	10.7	53.0	164	486
3948	1107010120	GW				Homer Creek	63.9	0	.22	3.48	13.7	44.6

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3682	6.57	1,100	2,420	3,570	5,330	6,800	8,490
3684	NA	NA	NA	NA	NA	NA	NA
3688	3.65	743	1,630	2,400	3,580	4,560	5,690
3689	3.34	706	1,550	2,290	3,420	4,370	5,450
3691	18.0	2,140	4,520	6,560	9,660	12,200	15,200
3693	171	9,240	20,900	31,600	48,500	63,600	80,900
3700	NA	NA	NA	NA	NA	NA	NA
3716	6.24	1,040	2,280	3,380	5,050	6,450	8,060
3722	31.4	4,030	8,480	12,500	18,500	23,700	29,400
3723	NA	NA	NA	NA	NA	NA	NA
3730	14.2	1,720	3,860	5,770	8,720	11,200	14,100
3731	10.2	1,400	3,120	4,640	6,980	8,950	11,200
3743	19.2	3,540	7,330	10,600	15,600	19,800	24,400
3749	8.02	1,200	2,670	3,970	5,980	7,660	9,590
3754	23.4	3,690	7,680	11,200	16,400	21,000	25,900
3762	24.3	3,620	7,520	10,900	16,100	20,500	25,300
3763	8.82	1,270	2,830	4,210	6,330	8,110	10,200
3797	NA	NA	NA	NA	NA	NA	NA
3805	10.5	1,420	3,190	4,760	7,190	9,230	11,600
3806	20.9	3,490	7,220	10,500	15,300	19,500	24,000
3829	5.37	1,170	2,490	3,630	5,360	6,800	8,430
3836	10.5	1,540	3,440	5,130	7,730	9,910	12,400
3839	16.0	2,120	4,670	6,920	10,400	13,300	16,600
3840	32.7	4,540	9,350	13,600	19,900	25,500	31,500
3853	NA	NA	NA	NA	NA	NA	NA
3864	201	9,110	20,800	31,500	48,500	63,800	81,300
3868	75.0	5,970	12,100	17,600	25,700	32,800	40,500
3882	49.9	5,390	11,300	16,600	24,700	31,900	39,800
3886	7.89	1,180	2,570	3,780	5,630	7,170	8,940
3888	NA	NA	NA	NA	NA	NA	NA
3910	42.9	4,340	9,380	13,900	21,000	27,300	34,300
3915	21.6	2,280	4,810	6,980	10,300	13,000	16,100
3917	273	11,400	24,800	37,100	56,400	73,700	93,400
3919	60.2	5,710	12,200	18,100	27,300	35,400	44,600
3923	6.11	1,020	2,210	3,240	4,800	6,100	7,590
3940	17.4	1,980	4,120	5,950	8,700	11,000	13,600
3942	291	11,500	25,000	37,400	56,800	74,100	94,000
3948	36.2	4,430	9,190	13,400	19,700	25,200	31,200

**272 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3964	1107010224	GW						Burnt Creek	12.1	0
3967	1107010121	GW				Bachelor Creek	74.6	0	.36	4.09	16.1	52.1
3968	1107010121	GW				Bachelor Creek	71.2	0	.26	3.73	14.8	48.4
3974	1107010111	GW				Verdigris River	504	2.87	11.3	55.8	173	514
3977	HYDRO	GW				HYDRO	13.7	NA	NA	NA	NA	NA
3985	1107010119	GW				Walnut Creek	143	0	1.41	8.16	31.0	101
4005	1107010130	GW	WO			Miller Creek	21.1	0	.16	2.30	7.73	21.9
4009	HYDRO	GW				HYDRO	21.1	NA	NA	NA	NA	NA
4010	HYDRO	GW				HYDRO	506	NA	NA	NA	NA	NA
4014	110701029	GW				Fall River	188	.05	3.34	21.5	71.5	181
4030	1107010119	GW				Walnut Creek	170	0	2.12	10.9	40.2	129
4031	1107010128	GW				Fancy Creek	15.3	0	.44	2.53	7.24	18.4
4032	HYDRO	GW				HYDRO	15.3	NA	NA	NA	NA	NA
4048	1107010224	GW				Burnt Creek	23.2	0	0	2.12	7.28	20.6
4049	1107010119	GW				Walnut Creek	193	.04	2.87	13.7	49.0	155
4053	1107010212	GW				Spring Creek	85.3	0	1.42	8.99	30.6	83.1
4056	HYDRO	GW				HYDRO	530	NA	NA	NA	NA	NA
4057	HYDRO	GW				HYDRO	200	NA	NA	NA	NA	NA
4058	1107010212	GW				Spring Creek	71.2	0	1.14	7.41	25.1	68.4
4063	1107010212	GW				Spring Creek	37.5	0	.54	4.27	14.1	38.2
4067	HYDRO	GW				HYDRO	23.7	NA	NA	NA	NA	NA
4077	1107010129	GW				Kuntz Branch	19.3	0	.02	2.11	7.25	20.6
4082	1107010128	GW				Fancy Creek	15.3	0	.44	2.52	7.21	18.3
4087	110701028	GW				Fall River	301	.70	5.20	40.0	134	324
4096	1107010227	GW				Kitty Creek	7.33	0	0	.31	1.58	5.69
4102	110701028	GW				Fall River	302	.70	5.22	40.1	134	325
4103	HYDRO	GW	WO			HYDRO	745	NA	NA	NA	NA	NA
4104	110701028	GW				Fall River	302	.70	5.22	40.1	134	325
4127	1107010226	GW				Honey Creek	22.9	0	0	1.01	4.96	17.3
4129	110701028	GW				Fall River	306	.75	5.33	40.5	136	329
4132	1107010213	GW				Otter Creek	153	0	1.52	12.3	53.1	152
4137	1107010212	GW				Spring Creek	21.4	0	.13	2.44	7.96	21.7
4142	HYDRO	GW				HYDRO	4.73	NA	NA	NA	NA	NA
4154	1107010213	GW				Otter Creek	127	0	1.19	10.8	47.2	132
4155	1107010212	GW				Spring Creek	4.62	0	0	.42	1.28	3.98
4160	1107010229	GW				Tadpole Creek	14.6	0	0	.44	2.82	10.3
4162	1107010213	GW				Otter Creek	113	0	1.00	9.95	44.0	121
4168	110701027	GW				Fall River	471	1.81	8.34	54.0	183	486

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 47)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3964	8.69	1,180	2,720	4,140	6,430	8,470	10,900
3967	41.6	4,920	10,200	14,800	21,700	27,700	34,300
3968	39.1	4,940	10,200	14,800	21,700	27,700	34,200
3974	305	11,500	25,100	37,500	57,000	74,300	94,300
3977	NA	NA	NA	NA	NA	NA	NA
3985	76.7	7,460	14,800	21,100	30,600	38,800	47,800
4005	16.8	2,150	4,490	6,500	9,530	12,000	14,900
4009	NA	NA	NA	NA	NA	NA	NA
4010	NA	NA	NA	NA	NA	NA	NA
4014	113	8,350	19,200	29,600	46,600	62,100	80,400
4030	94.1	7,970	15,700	22,300	32,300	40,800	50,100
4031	13.0	1,640	3,480	5,060	7,460	9,440	11,700
4032	NA	NA	NA	NA	NA	NA	NA
4048	15.7	1,630	4,100	6,570	10,800	14,800	19,600
4049	109	8,290	16,100	23,000	33,100	41,800	51,300
4053	56.4	6,230	14,100	21,700	34,100	45,500	58,900
4056	NA	NA	NA	NA	NA	NA	NA
4057	NA	NA	NA	NA	NA	NA	NA
4058	47.0	5,780	12,900	19,700	30,700	40,900	52,800
4063	26.7	4,410	8,760	12,500	18,000	22,700	27,700
4067	NA	NA	NA	NA	NA	NA	NA
4077	15.5	1,880	3,990	5,820	8,600	10,900	13,500
4082	13.0	1,640	3,470	5,050	7,440	9,410	11,700
4087	190	11,700	29,900	48,100	79,100	108,000	143,000
4096	5.32	1,030	2,180	3,150	4,630	5,850	7,250
4102	191	11,600	29,800	48,000	79,000	108,000	143,000
4103	NA	NA	NA	NA	NA	NA	NA
4104	191	11,600	29,800	48,000	79,000	108,000	143,000
4127	15.3	2,080	4,450	6,490	9,600	12,200	15,100
4129	193	11,500	29,600	47,700	78,700	107,000	142,000
4132	104	8,270	19,600	29,700	45,300	58,700	73,300
4137	15.8	1,780	3,940	5,850	8,790	11,300	14,100
4142	NA	NA	NA	NA	NA	NA	NA
4154	89.5	7,640	18,400	28,000	42,800	55,500	69,300
4155	3.49	735	1,560	2,270	3,330	4,220	5,220
4160	9.61	1,560	3,380	4,960	7,360	9,360	11,600
4162	82.0	7,480	18,000	27,400	41,800	54,200	67,600
4168	285	14,600	35,200	55,400	89,300	121,000	159,000

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued

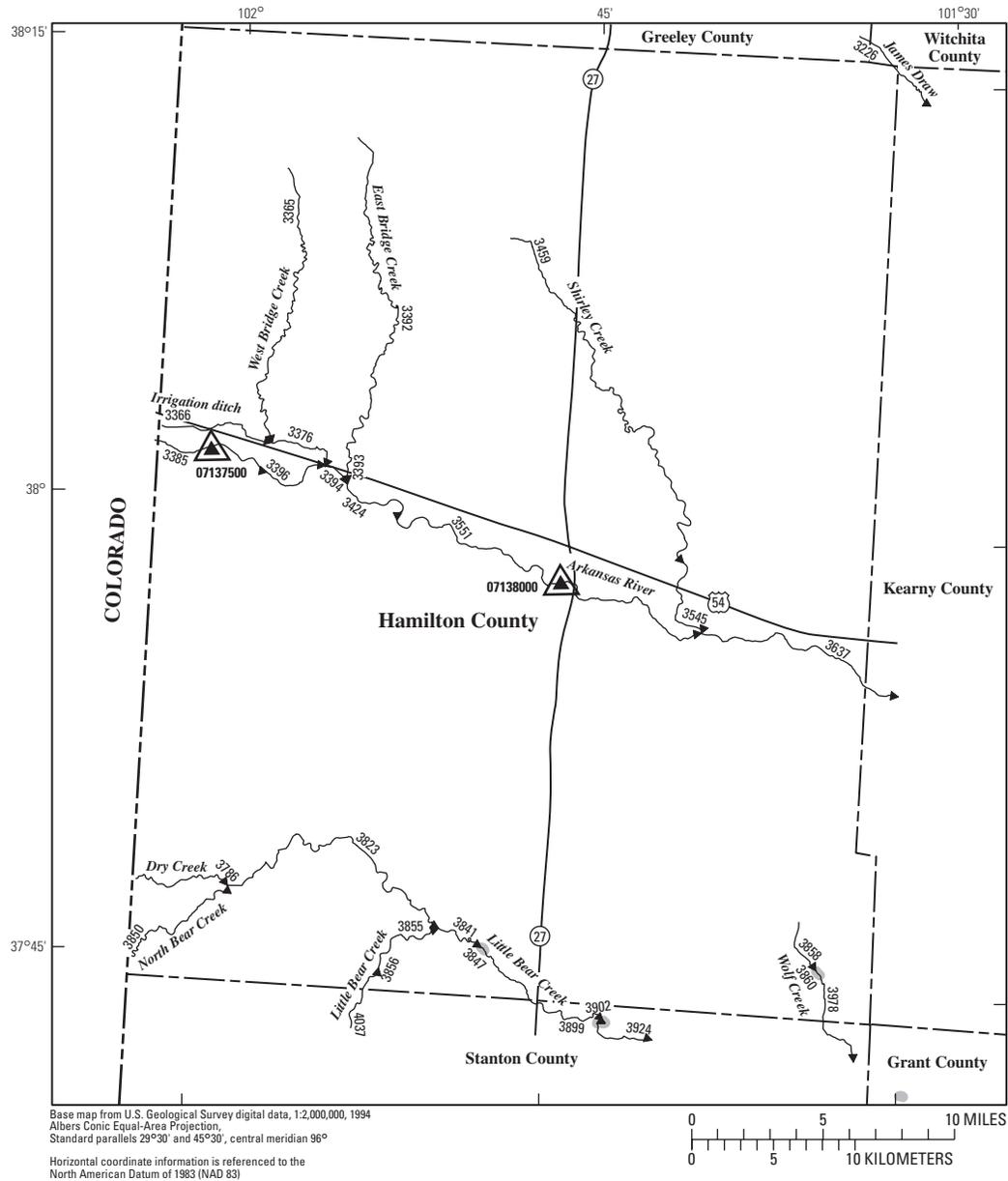
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NR Tribal, tribal stream]

Determination site identification number (fig. 47)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4171	1107010135	GW						Ross Branch	4.70	0
4172	1107010223	GW				Watson Branch	18.2	0	0	1.53	5.80	17.0
4174	HYDRO	GW				HYDRO	5.05	NA	NA	NA	NA	NA
4182	1107010232	GW				Crain Creek	9.92	0	.34	1.69	4.37	10.8
4185	1107010135	GW	WL			Ross Branch	28.4	0	1.37	5.42	15.2	37.4
4187	HYDRO	GW				HYDRO	9.93	NA	NA	NA	NA	NA
4188	1107010213	GW				Otter Creek	90.8	0	.96	8.43	35.2	97.2
4191	1107010213	GW				Otter Creek	56.1	0	.52	5.19	20.4	57.3
4227	1107010231	GW				Snake Creek	11.9	0	0	.36	2.22	8.35
4277	HYDRO	GW				HYDRO	491	NA	NA	NA	NA	NA
4303	1107010213	GW				Otter Creek	29.4	0	.20	3.13	11.2	31.2
4305	HYDRO	GW				HYDRO	4.43	NA	NA	NA	NA	NA
4309	1107010232	GW				Crain Creek	20.3	0	1.33	4.24	10.6	24.7
4310	110701023	GW				Fall River	493	5.90	13.0	53.0	270	1,060
4334	1107010228	GW				South Branch Otter Creek	3.61	0	0	0	.06	1.44
4335	HYDRO	GW				HYDRO	3.74	NA	NA	NA	NA	NA
4336	1107010228	GW				South Branch Otter Creek	30.6	0	.13	2.87	10.7	30.2
4344	1107010214	GW				Salt Creek	63.6	0	.86	5.25	18.2	54.1
4345	110701023	GW				Fall River	515	6.33	13.6	56.3	289	1,120
4352	HYDRO	GW				HYDRO	2.70	NA	NA	NA	NA	NA
4363	1107010214	GW				Salt Creek	50.0	0	.38	3.70	13.5	41.0
4364	1107010230	GW				Plum Creek	10.7	0	0	.09	1.39	6.25
4373	1107010214	GW				Salt Creek	17.2	0	0	.69	3.46	12.2

**Table 43.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Greenwood County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

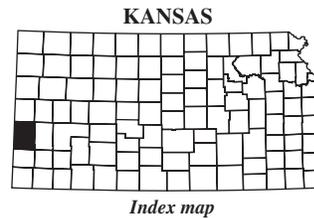
Determination site identification number (fig. 47)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4171	4.20	821	1,700	2,440	3,550	4,470	5,510
4172	13.3	1,700	3,760	5,560	8,320	10,600	13,300
4174	NA	NA	NA	NA	NA	NA	NA
4182	7.99	1,240	2,610	3,790	5,580	7,060	8,750
4185	24.4	2,360	5,050	7,390	11,000	13,900	17,300
4187	NA	NA	NA	NA	NA	NA	NA
4188	66.2	7,300	16,200	24,000	35,800	45,900	56,700
4191	40.5	5,860	12,100	17,500	25,600	32,400	39,700
4227	7.93	1,370	2,920	4,240	6,250	7,920	9,820
4277	NA	NA	NA	NA	NA	NA	NA
4303	22.4	2,210	5,080	7,620	11,500	14,800	18,600
4305	NA	NA	NA	NA	NA	NA	NA
4309	16.4	1,840	3,970	5,820	8,640	11,000	13,700
4310	361	3,980	6,910	8,730	10,800	12,100	13,300
4334	2.12	659	1,380	2,000	2,920	3,680	4,550
4335	NA	NA	NA	NA	NA	NA	NA
4336	22.5	4,110	8,320	11,900	17,200	21,600	26,400
4344	40.2	4,660	9,310	13,300	19,300	24,300	29,800
4345	377	4,470	7,760	9,830	12,200	13,700	15,100
4352	NA	NA	NA	NA	NA	NA	NA
4363	31.7	4,170	8,460	12,200	17,700	22,400	27,500
4364	6.58	1,290	2,720	3,960	5,830	7,380	9,150
4373	11.1	1,710	3,650	5,330	7,880	10,000	12,400





EXPLANATION

- ◀ 3850 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07137500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07138000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3847 Lake and determination site identification number



**Figure 48.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Hamilton County.

**Table 44.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hamilton County.

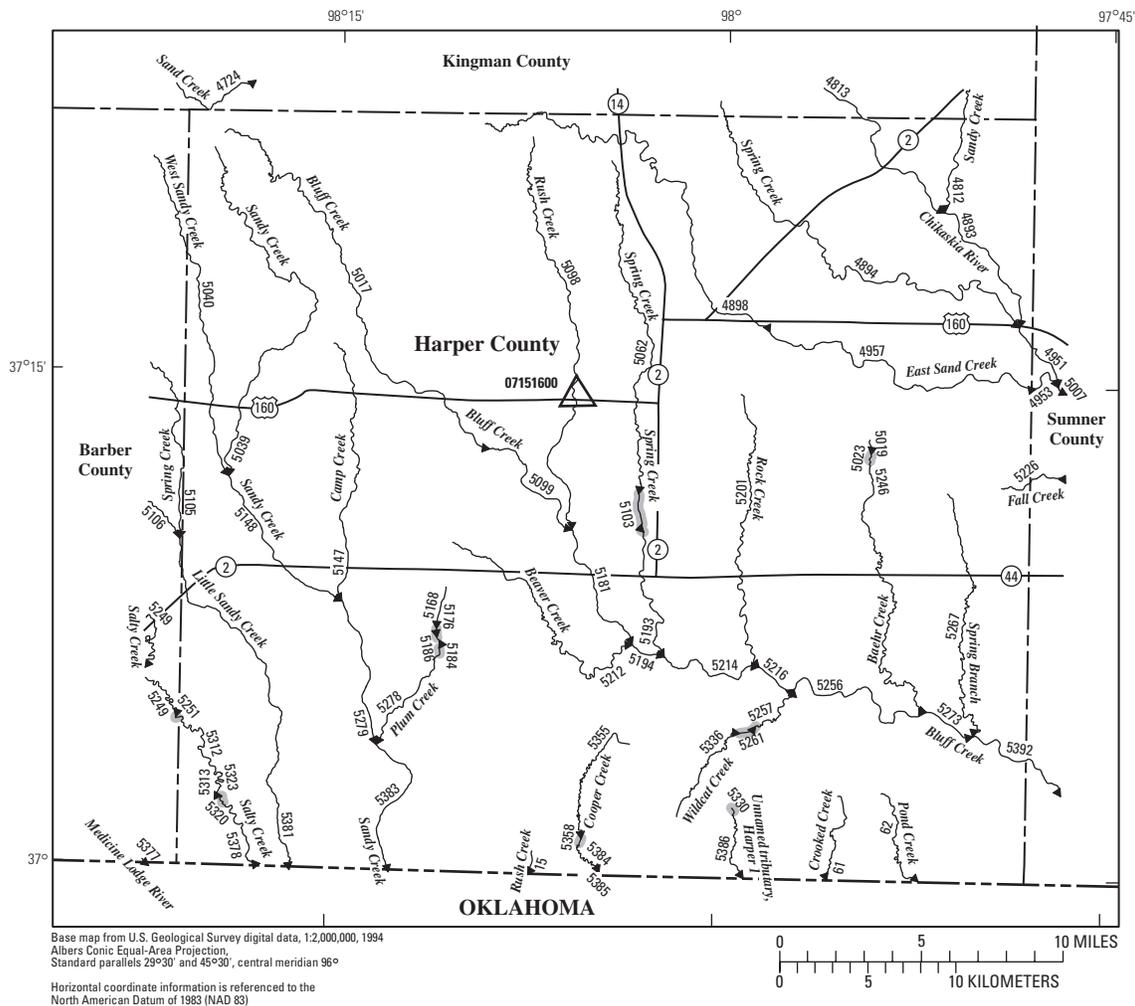
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 48)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3365	110300018	HM						West Bridge Creek	197	0	0
3366	NRDitch	HM				NRDitch	14.6	0	0	0	0	0	0
3376	NRDitch	HM				NRDitch	216	0	0	0	0	0	0
3385	110300019	HM				Arkansas River	25,000	9.30	47.0	129	242	482	
3392	110300016	HM				East Bridge Creek	174	0	0	0	0	0	0
3393	NRDitch	HM				NRDitch	174	0	0	0	0	0	0
3394	110300017	HM				Arkansas River	25,300	8.09	48.3	131	245	478	
3396	110300017	HM				Arkansas River	25,000	9.17	47.1	129	242	482	
3424	110300017	HM				Arkansas River	25,500	7.15	49.3	132	248	475	
3459	110300014	HM				Shirley Creek	206	0	0	0	0	0	0
3545	110300014	HM				Shirley Creek	213	0	0	0	0	0	0
3551	110300015	HM				Arkansas River	25,600	6.50	50.0	133	250	474	
3637	110300013	HM	KE			Arkansas River	25,900	4.96	38.4	109	229	436	
3786	110400055	HM				Dry Creek	67.0	0	0	0	0	0	0
3823	110400056	HM				North Bear Creek	233	0	0	0	0	0	0
3841	110400057	HM				Little Bear Creek	457	0	0	0	0	0	0
3847	HYDRO	HM				HYDRO	466	NA	NA	NA	NA	NA	NA
3850	110400056	HM				North Bear Creek	66.4	0	0	0	0	0	0
3855	110400057	HM				Little Bear Creek	208	0	0	0	0	0	0
3856	110400057	HM				Little Bear Creek	200	0	0	0	0	0	0
3858	110400052	HM				Wolf Creek	58.6	0	0	0	0	0	0
3860	HYDRO	HM				HYDRO	59.1	NA	NA	NA	NA	NA	NA
3899	110400057	HM	ST			Little Bear Creek	511	0	0	0	0	0	0
4037	110400057	HM	ST			Little Bear Creek	200	0	0	0	0	0	0

**Table 44.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hamilton County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

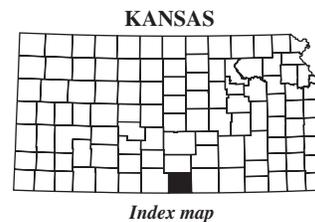
Determination site identification number (fig. 48)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3365	0	312	1,150	2,170	4,100	6,090	8,580
3366	0	138	530	994	1,850	2,690	3,720
3376	0	301	1,110	2,090	3,950	5,870	8,270
3385	237	2,380	6,750	13,200	29,800	53,500	94,000
3392	0	291	1,080	2,040	3,880	5,770	8,130
3393	0	291	1,080	2,040	3,880	5,770	8,130
3394	235	2,280	6,520	15,400	33,300	56,100	93,500
3396	236	2,370	6,720	13,400	30,200	53,800	93,900
3424	234	2,200	6,340	17,000	36,100	58,000	93,100
3459	0	318	1,170	2,220	4,210	6,260	8,840
3545	0	307	1,130	2,150	4,090	6,090	8,590
3551	233	2,140	6,210	18,200	38,000	59,400	92,800
3637	217	1,770	5,400	15,400	33,000	52,400	83,400
3786	0	173	671	1,300	2,510	3,770	5,340
3823	0	297	1,120	2,150	4,140	6,200	8,810
3841	.26	497	1,770	3,320	6,240	9,250	13,000
3847	NA	NA	NA	NA	NA	NA	NA
3850	0	151	602	1,180	2,300	3,480	4,970
3855	0	302	1,120	2,130	4,060	6,060	8,560
3856	0	304	1,130	2,140	4,080	6,090	8,600
3858	0	218	783	1,460	2,710	3,990	5,540
3860	NA	NA	NA	NA	NA	NA	NA
3899	.46	513	1,830	3,430	6,450	9,560	13,500
4037	0	304	1,130	2,140	4,080	6,090	8,600





**EXPLANATION**

- ← 5378 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07151600 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07151600 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5320 Lake and determination site identification number



**Figure 49.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Harper County.

**Table 45.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harper County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 49)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		15	1106000469	HP						Rush Creek	1.14	0	0
61	1106000424	HP				Crooked Creek	12.5	0	0	0	0	0	1.17
62	1106000418	HP				Pond Creek	15.5	0	0	.02	.28	2.08	
4812	1106000530	HP	KM			Sandy Creek	42.3	.06	.82	1.86	3.83	9.28	
4813	110600059	HP	KM			Chikaskia River	463	9.57	23.4	45.8	89.0	192	
4893	110600059	HP				Chikaskia River	526	11.2	27.2	53.4	105	228	
4894	1106000531	HP	KM			Spring Creek	47.8	.11	1.26	2.85	5.98	13.8	
4898	1106000512	HP	KM			East Sand Creek	55.7	.51	2.13	4.25	8.32	17.7	
4951	110600059	HP	SU			Chikaskia River	580	12.6	30.6	60.5	120	263	
4957	1106000512	HP	SU			East Sand Creek	86.9	.96	2.95	6.01	12.5	27.7	
5017	1106000515	HP				Bluff Creek	61.9	.34	1.74	3.57	7.10	15.5	
5019	1106000522	HP				Baehr Creek	5.45	0	0	0	0	0	
5023	HYDRO	HP				HYDRO	6.32	NA	NA	NA	NA	NA	
5039	1106000437	HP				Sandy Creek	31.4	.04	1.08	2.06	3.55	7.25	
5062	1106000547	HP				Spring Creek	33.2	0	.26	1.07	2.31	6.17	
5098	1106000545	HP				Rush Creek	47.3	.23	1.24	2.52	4.95	11.1	
5099	1106000515	HP				Bluff Creek	71.1	.62	2.18	4.29	8.48	18.3	
5103	HYDRO	HP				HYDRO	37.0	NA	NA	NA	NA	NA	
5147	1106000468	HP				Camp Creek	28.4	0	.38	.95	1.69	4.27	
5148	1106000437	HP				Sandy Creek	72.7	1.43	3.61	6.14	10.7	20.6	
5168	1106000470	HP				Plum Creek	6.53	0	0	0	0	0	
5176	HYDRO	HP				HYDRO	6.99	NA	NA	NA	NA	NA	
5181	1106000515	HP				Bluff Creek	127	1.43	3.76	7.58	15.6	34.5	
5184	1106000470	HP				Plum Creek	9.46	0	0	0	0	0	
5186	HYDRO	HP				HYDRO	9.54	NA	NA	NA	NA	NA	
5193	1106000547	HP				Spring Creek	46.9	0	.58	1.75	3.95	10.0	
5194	1106000515	HP				Bluff Creek	159	1.62	4.26	8.97	19.1	43.5	
5201	1106000523	HP				Rock Creek	39.7	0	.44	1.65	3.86	9.84	
5212	1106000546	HP				Beaver Creek	31.0	0	.01	.83	2.03	5.82	
5214	1106000515	HP				Bluff Creek	214	2.20	5.44	11.7	25.6	59.6	
5216	1106000515	HP				Bluff Creek	256	2.57	6.28	13.9	30.8	72.8	
5226	1106000514	HP	SU			Fall Creek	48.2	0	0	.93	3.23	10.7	
5246	1106000522	HP				Baehr Creek	36.1	0	.17	1.15	2.87	8.00	
5256	1106000515	HP				Bluff Creek	291	3.00	7.32	16.5	36.6	86.7	
5257	1106000524	HP				Wildcat Creek	20.9	0	.14	1.01	2.17	5.55	
5261	HYDRO	HP				HYDRO	15.9	NA	NA	NA	NA	NA	
5267	1106000521	HP				Spring Branch	28.7	0	0	.22	1.04	4.51	
5273	1106000515	HP				Bluff Creek	331	3.39	8.08	18.4	41.4	99.5	

**Table 45.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harper County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 49)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
15	0	181	430	654	1,000	1,300	1,640
61	2.58	781	1,920	2,970	4,640	6,070	7,730
62	3.44	908	2,220	3,440	5,370	7,030	8,960
4812	8.84	1,570	3,470	5,160	7,700	9,900	12,300
4813	115	4,290	9,510	14,100	21,000	26,900	33,400
4893	136	5,030	11,100	16,300	24,200	31,000	38,300
4894	11.6	1,320	3,050	4,650	7,090	9,240	11,600
4898	13.6	1,410	3,190	4,810	7,270	9,410	11,700
4951	156	5,630	12,400	18,300	27,000	34,500	42,600
4957	20.9	1,850	4,120	6,170	9,290	12,000	15,000
5017	12.7	1,510	3,390	5,110	7,720	9,990	12,500
5019	.21	473	1,150	1,760	2,730	3,570	4,520
5023	NA	NA	NA	NA	NA	NA	NA
5039	6.44	980	2,270	3,460	5,270	6,850	8,570
5062	6.61	1,080	2,570	3,950	6,100	8,000	10,100
5098	9.79	1,190	2,290	3,140	4,310	5,250	6,220
5099	14.6	1,550	3,480	5,240	7,920	10,200	12,800
5103	NA	NA	NA	NA	NA	NA	NA
5147	4.99	1,110	2,860	4,530	7,220	9,560	12,300
5148	15.1	1,430	3,150	4,700	7,030	9,030	11,200
5168	.54	495	1,220	1,890	2,960	3,870	4,930
5176	NA	NA	NA	NA	NA	NA	NA
5181	25.8	2,010	3,980	5,620	7,970	9,940	12,100
5184	1.27	614	1,530	2,380	3,730	4,900	6,250
5186	NA	NA	NA	NA	NA	NA	NA
5193	9.61	1,210	2,880	4,450	6,900	9,060	11,500
5194	32.2	2,370	4,750	6,740	9,650	12,100	14,800
5201	9.16	1,150	2,770	4,300	6,690	8,820	11,200
5212	6.36	855	2,160	3,420	5,440	7,260	9,310
5214	43.1	2,850	5,740	8,200	11,800	14,900	18,200
5216	51.8	3,230	6,520	9,330	13,500	17,000	20,900
5226	11.2	1,350	3,350	5,300	8,420	11,300	14,500
5246	8.16	1,050	2,570	4,020	6,310	8,350	10,600
5256	60.2	3,320	6,730	9,690	14,100	17,800	22,000
5257	5.44	1,020	2,550	3,980	6,270	8,240	10,500
5261	NA	NA	NA	NA	NA	NA	NA
5267	6.00	1,310	3,240	5,040	7,920	10,400	13,300
5273	68.6	3,630	7,370	10,600	15,400	19,600	24,200

**284 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 45.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harper County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

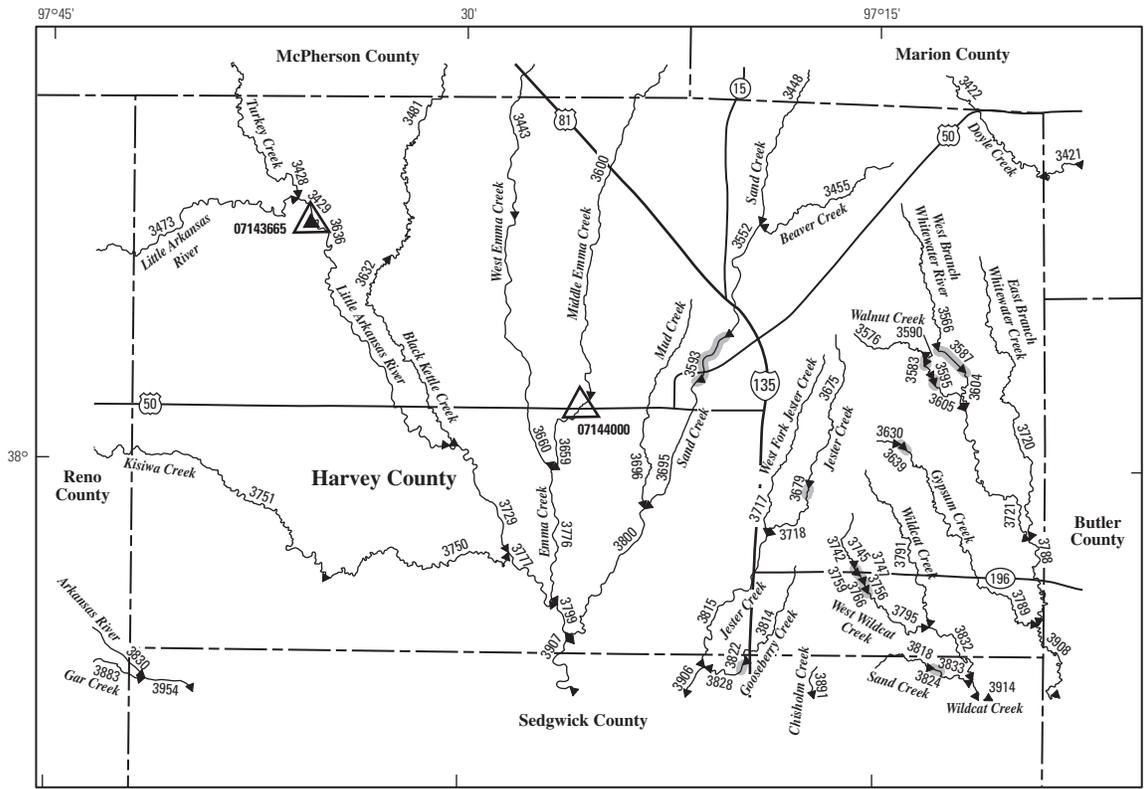
Determination site identification number (fig. 49)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5278	1106000470	HP						Plum Creek	21.5	0
5279	1106000437	HP				Sandy Creek	115	2.19	4.93	8.69	15.9	32.0
5313	HYDRO	HP				HYDRO	63.9	NA	NA	NA	NA	NA
5320	1106000440	HP				Salty Creek	64.7	0	.61	2.26	5.44	13.5
5323	HYDRO	HP				HYDRO	64.7	NA	NA	NA	NA	NA
5330'	HYDRO	HP				HYDRO	2.88	NA	NA	NA	NA	NA
5336	1106000524	HP				Wildcat Creek	14.6	0	0	.55	1.07	3.08
5355	1106000471	HP				Cooper Creek	20.6	0	.04	.85	1.87	4.94
5358	HYDRO	HP				HYDRO	20.9	NA	NA	NA	NA	NA
5378	1106000440	HP				Salty Creek	70.2	0	.71	2.46	5.93	14.8
5383	1106000437	HP				Sandy Creek	160	3.33	6.88	12.2	22.5	45.7
5384	1106000471	HP				Cooper Creek	25.3	0	.14	1.11	2.54	6.52
5385	1106000471	HP				Cooper Creek	25.7	0	.15	1.13	2.59	6.64
5386	1106000425	HP				Unnamed tributary, Harper 1	11.5	0	0	0	0	.85
5392	1106000515	HP	SU			Bluff Creek	411	4.05	9.48	22.3	51.6	128

**Table 45.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harper County.—Continued

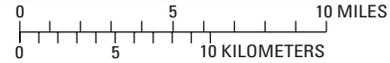
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 49)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5278	4.01	988	2,500	3,920	6,210	8,190	10,500
5279	22.9	1,860	4,040	5,990	8,910	11,400	14,200
5313	NA	NA	NA	NA	NA	NA	NA
5320	12.0	1,140	2,870	4,550	7,240	9,680	12,400
5323	NA	NA	NA	NA	NA	NA	NA
5330	NA	NA	NA	NA	NA	NA	NA
5336	3.61	822	2,040	3,180	4,990	6,560	8,370
5355	5.07	985	2,480	3,880	6,130	8,070	10,300
5358	NA	NA	NA	NA	NA	NA	NA
5378	12.9	1,160	2,910	4,620	7,370	9,860	12,700
5383	31.7	2,180	4,660	6,870	10,200	13,000	16,200
5384	6.27	1,110	2,800	4,400	6,960	9,180	11,800
5385	6.36	1,120	2,830	4,440	7,020	9,260	11,900
5386	2.24	729	1,800	2,790	4,360	5,710	7,270
5392	86.9	3,790	7,860	11,500	16,900	21,600	26,900



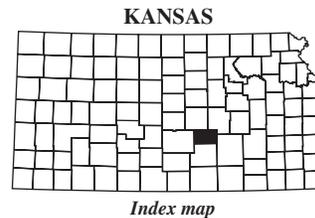


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 3954 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07143665 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07144000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3824 Lake and determination site identification number



Index map

**Figure 50.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Harvey County.

**Table 46.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harvey County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 50)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3422	1107020221	HV	MN					Doyle Creek	26.0	0
3428	1103001211	HV	MP			Turkey Creek	279	0	.48	2.97	14.0	70.1
3429	1103001211	HV				Turkey Creek	279	0	.48	2.97	14.0	70.1
3443	110300128	HV	MP			West Emma Creek	72.2	0	.19	1.62	5.30	17.4
3448	110300124	HV	MN			Sand Creek	29.3	0	0	.32	1.70	6.99
3455	1103001226	HV				Beaver Creek	17.9	0	0	0	.70	3.96
3473	1103001214	HV	RN			Little Arkansas River	441	4.46	9.52	19.4	43.4	182
3481	11030012368	HV	MP			Black Kettle Creek	63.0	0	0	1.13	3.87	13.3
3552	110300124	HV				Sand Creek	59.5	0	0	1.39	5.04	16.9
3566	1103001725	HV				West Branch Whitewater River	13.6	.01	.01	.10	.81	3.87
3576	1103001744	HV				Walnut Creek	6.49	0	0	0	0	.01
3583	HYDRO	HV				HYDRO	6.60	NA	NA	NA	NA	NA
3587	HYDRO	HV				HYDRO	14.8	NA	NA	NA	NA	NA
3590	1103001744	HV				Walnut Creek	7.49	0	0	0	.01	.41
3593	HYDRO	HV				HYDRO	62.8	NA	NA	NA	NA	NA
3595	HYDRO	HV				HYDRO	8.29	NA	NA	NA	NA	NA
3600	110300127	HV	MN	MP		Middle Emma Creek	68.4	0	.12	1.48	4.92	16.3
3604	1103001725	HV				West Branch Whitewater River	16.0	.01	.02	.25	1.24	4.98
3605	1103001744	HV				Walnut Creek	9.92	0	.01	.01	.01	1.78
3630	1103001730	HV				Gypsum Creek	2.97	0	0	0	0	0
3632	11030012368	HV				Black Kettle Creek	76.4	0	.34	1.80	5.53	17.5
3636	1103001210	HV				Little Arkansas River	755	4.90	9.20	22.0	62.0	325
3639	HYDRO	HV				HYDRO	3.40	NA	NA	NA	NA	NA
3659	110300127	HV				Middle Emma Creek	73.5	0	.20	1.66	5.43	17.8
3660	110300128	HV				West Emma Creek	94.2	.06	.90	2.94	8.41	25.2
3675	110300122	HV				Jester Creek	9.86	0	0	0	0	.43
3679	HYDRO	HV				HYDRO	10.3	NA	NA	NA	NA	NA
3695	110300124	HV				Sand Creek	73.3	0	.18	1.98	6.71	21.7
3696	1103001216	HV				Mud Creek	16.2	0	0	0	.04	1.96
3717	1103001218	HV				West Fork Jester Creek	14.3	0	0	.01	.34	2.49
3718	110300122	HV				Jester Creek	12.9	0	0	.01	.33	2.45
3720	1103001731	HV				East Branch Whitewater Creek	23.6	.02	.03	.34	1.86	7.45
3721	1103001725	HV				West Branch Whitewater River	33.5	.03	.06	1.22	4.07	12.7
3729	1103001210	HV				Little Arkansas River	840	6.90	11.9	25.7	68.2	341
3742	1103001728	HV				West Wildcat Creek	3.88	0	0	0	0	0
3745	HYDRO	HV				HYDRO	4.75	NA	NA	NA	NA	NA
3747	1103001728	HV				West Wildcat Creek	4.75	0	0	0	0	0
3750	1103001215	HV				Kisiwa Creek	119	2.75	4.93	9.17	18.6	42.6

**Table 46.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harvey County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 50)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3422	9.56	1,530	3,580	5,450	8,380	10,900	13,800
3428	62.4	2,740	6,840	10,900	17,600	23,800	31,000
3429	62.4	2,730	6,830	10,900	17,600	23,700	30,900
3443	17.5	1,850	4,380	6,780	10,600	14,000	17,800
3448	8.23	1,570	3,730	5,710	8,820	11,500	14,600
3455	5.32	1,190	2,790	4,240	6,510	8,440	10,700
3473	127	3,060	7,100	10,900	17,100	22,800	29,400
3481	14.1	1,400	3,480	5,510	8,790	11,800	15,100
3552	16.8	1,980	4,670	7,210	11,200	14,800	18,900
3566	4.80	1,030	2,410	3,640	5,570	7,200	9,080
3576	1.57	662	1,520	2,290	3,480	4,480	5,630
3583	NA	NA	NA	NA	NA	NA	NA
3587	NA	NA	NA	NA	NA	NA	NA
3590	2.06	721	1,660	2,500	3,800	4,910	6,170
3593	NA	NA	NA	NA	NA	NA	NA
3595	NA	NA	NA	NA	NA	NA	NA
3600	16.7	3,110	8,160	13,200	21,800	29,800	39,300
3604	5.72	1,140	2,650	4,020	6,160	7,970	10,100
3605	3.14	854	1,980	2,980	4,550	5,870	7,400
3630	.12	421	951	1,420	2,140	2,740	3,430
3632	17.4	1,400	3,480	5,520	8,800	11,800	15,200
3636	229	5,000	12,200	19,200	30,800	41,500	54,100
3639	NA	NA	NA	NA	NA	NA	NA
3659	18.0	3,400	8,990	14,600	24,200	33,200	43,800
3660	23.3	1,950	4,560	7,030	10,900	14,300	18,200
3675	2.28	834	1,940	2,930	4,480	5,790	7,290
3679	NA	NA	NA	NA	NA	NA	NA
3695	20.5	2,000	4,760	7,380	11,500	15,300	19,500
3696	3.75	1,060	2,520	3,850	5,940	7,720	9,780
3717	3.88	1,010	2,390	3,630	5,570	7,230	9,140
3718	3.74	972	2,270	3,450	5,280	6,840	8,630
3720	8.35	1,490	3,460	5,250	8,040	10,400	13,100
3721	12.2	1,410	3,420	5,350	8,400	11,100	14,200
3729	239	5,180	12,500	19,400	30,800	41,200	53,400
3742	.90	497	1,130	1,680	2,540	3,260	4,080
3745	NA	NA	NA	NA	NA	NA	NA
3747	1.38	559	1,270	1,910	2,880	3,700	4,640
3750	31.7	1,480	3,410	5,210	8,000	10,400	13,200

**Table 46.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harvey County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

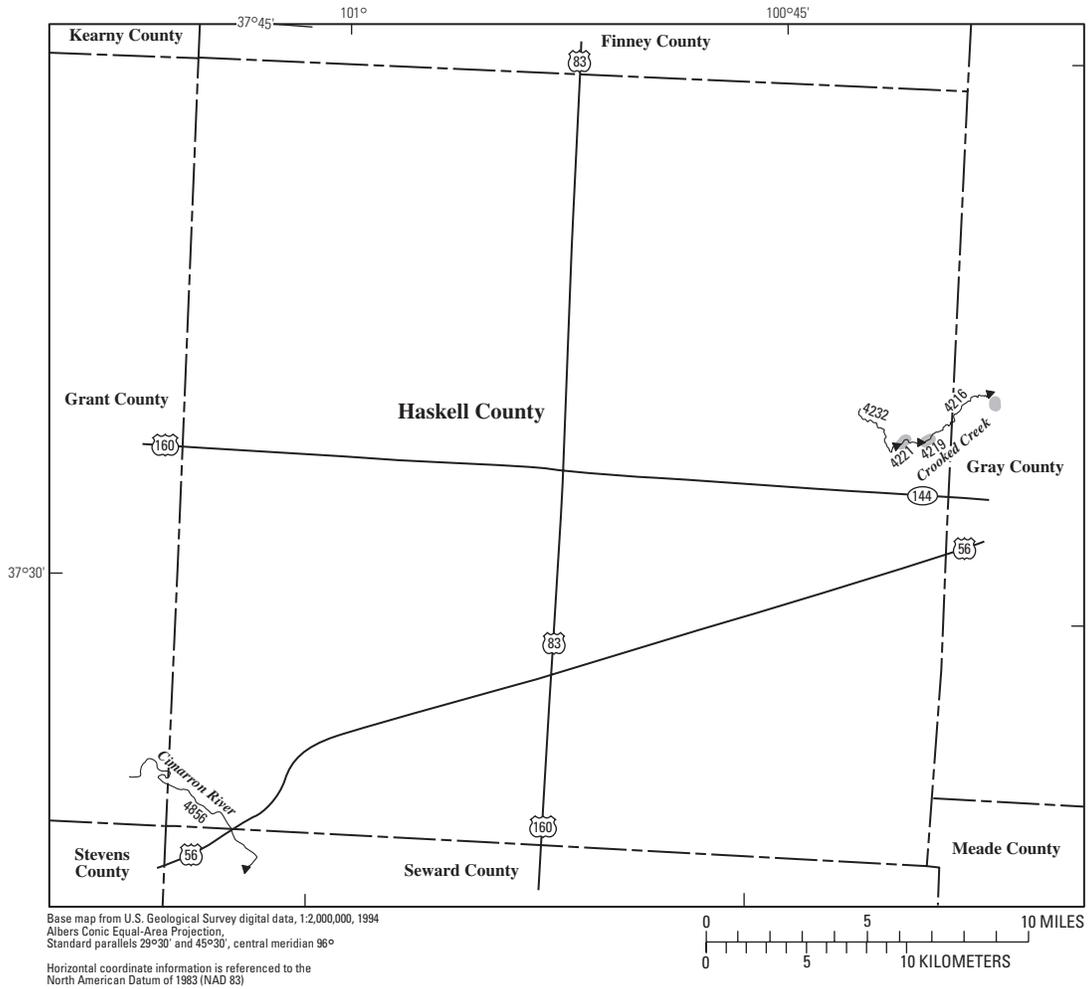
Determination site identification number (fig. 50)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3751	1103001215	HV	RN					Kisiwa Creek	92.1	1.95
3756	HYDRO	HV				HYDRO	5.13	NA	NA	NA	NA	NA
3759	1103001728	HV				West Wildcat Creek	5.49	0	0	0	0	.43
3766	HYDRO	HV				HYDRO	5.95	NA	NA	NA	NA	NA
3776	110300126	HV				Emma Creek	175	.71	2.03	5.58	16.2	50.0
3777	110300129	HV				Little Arkansas River	963	11.1	18.3	35.8	83.8	375
3789	1103001730	HV				Gypsum Creek	16.0	.01	.02	.23	1.28	5.22
3791	1103001726	HV				Wildcat Creek	9.10	0	0	.01	.24	2.12
3795	1103001728	HV				West Wildcat Creek	9.89	0	.01	.06	.59	3.05
3799	110300125	HV				Little Arkansas River	1,140	15.5	24.1	44.1	98.2	414
3800	110300124	HV				Sand Creek	104	0	.73	3.26	10.4	32.6
3814	1103001217	HV	SG			Gooseberry Creek	8.09	0	0	.09	.29	1.85
3815	110300122	HV	SG			Jester Creek	39.2	0	.50	2.09	5.52	14.9
3818	1103001729	HV	SG			Sand Creek	5.87	0	0	0	0	.17
3832	1103001726	HV	SG			Wildcat Creek	22.7	.02	.03	.87	2.97	9.38
3907	110300123	HV	SG			Little Arkansas River	1,260	18.7	29.0	52.3	113	453

**Table 46.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Harvey County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

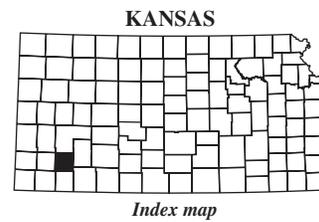
Determination site identification number (fig. 50)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3751	23.1	1,270	2,980	4,580	7,080	9,280	11,700
3756	NA	NA	NA	NA	NA	NA	NA
3759	1.76	608	1,390	2,080	3,150	4,060	5,090
3766	NA	NA	NA	NA	NA	NA	NA
3776	43.1	4,330	10,900	17,200	27,900	37,800	49,300
3777	255	5,390	12,700	19,400	30,200	40,000	51,100
3789	5.93	1,160	2,690	4,070	6,220	8,050	10,200
3791	3.18	822	1,890	2,850	4,340	5,590	7,040
3795	3.81	859	1,980	2,990	4,560	5,880	7,410
3799	277	5,860	13,300	20,000	30,400	39,500	49,700
3800	29.0	2,370	5,540	8,550	13,300	17,600	22,400
3814	2.76	752	1,740	2,620	3,980	5,140	6,470
3815	13.1	1,630	3,700	5,600	8,520	11,100	13,900
3818	1.71	644	1,470	2,190	3,320	4,270	5,350
3832	8.95	1,400	3,300	5,010	7,700	9,980	12,600
3907	296	6,170	13,800	20,400	30,400	39,000	48,500





**EXPLANATION**

- ← 4856 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07139500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07139800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4221 Lake and determination site identification number



**Figure 51.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Haskell County.

**Table 47.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Haskell County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

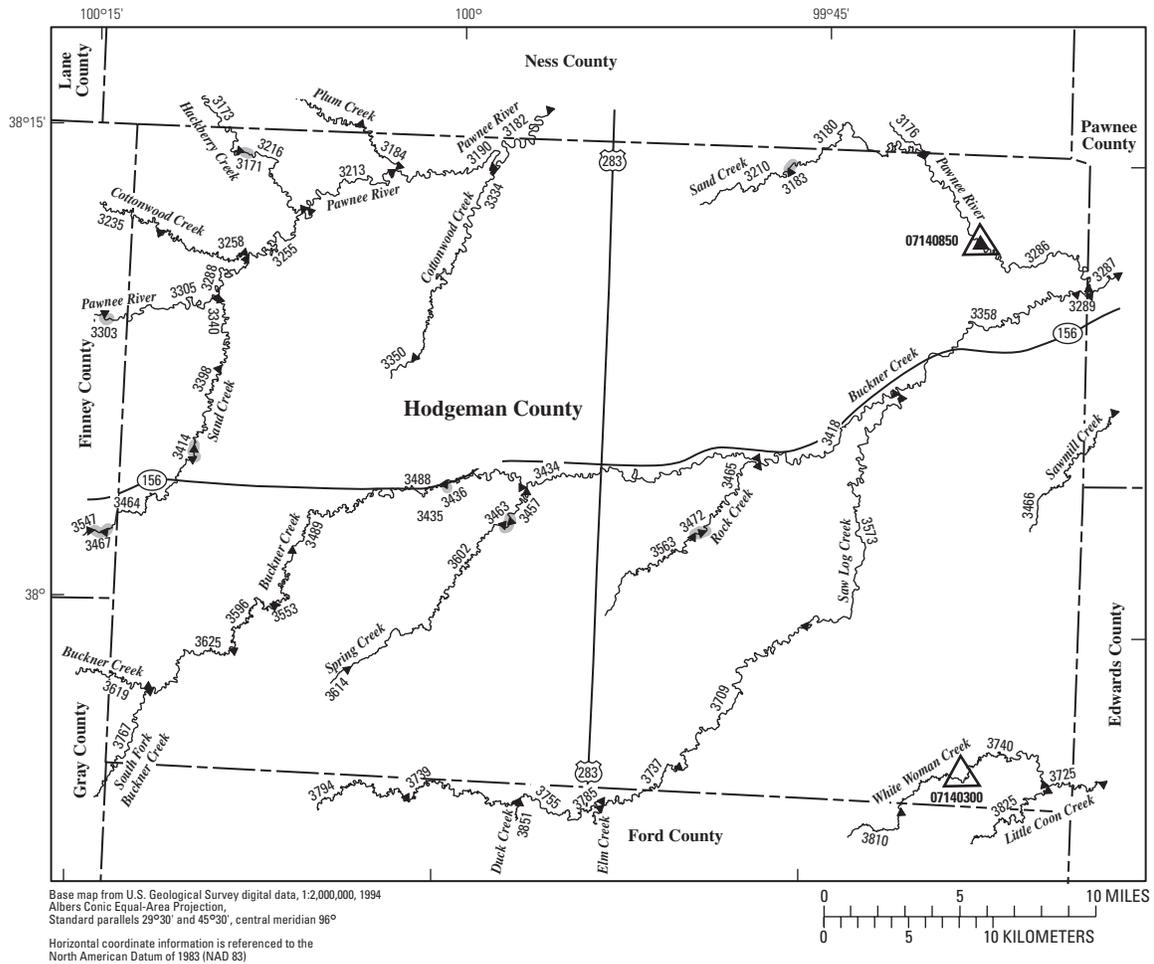
Determination site identification number (fig. 51)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4219	HYDRO	HS						HYDRO	310	NA	NA
4220	110400072	HS				Crooked Creek	307	0	0	0.10	0.19	0.38	
4221	HYDRO	HS				HYDRO	302	NA	NA	NA	NA	NA	NA
4232	110400072	HS				Crooked Creek	302	0	0	.10	.18	.36	

**Table 47.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Haskell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

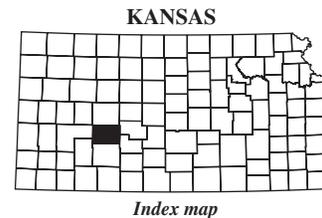
Determination site identification number (fig. 51)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4219	NA	NA	NA	NA	NA	NA	NA
4220	2.41	780	2,350	4,030	6,910	9,650	12,800
4221	NA	NA	NA	NA	NA	NA	NA
4232	2.33	791	2,370	4,060	6,950	9,690	12,900





**EXPLANATION**

- 
**3794** Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 
**07140850** U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 
**07140300** U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 
**3436** Lake and determination site identification number



**Figure 52.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Hodgeman County.

**Table 48.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hodgeman County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 52)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3171	HYDRO	HG						HYDRO	181	NA	NA
3173	110300054	HG	NS			Hackberry Creek	181	0	0	0	0	0	0.18
3176	110300053	HG	NS			Pawnee River	1,140	0	0	0	1.93	8.52	
3180	1103000511	HG	NS			Sand Creek	68.5	0	0	0	0	0	
3182	110300053	HG	NS			Pawnee River	1,030	0	0	0	1.54	7.25	
3183	HYDRO	HG				HYDRO	51.9	NA	NA	NA	NA	NA	NA
3184	110300057	HG	NS			Plum Creek	84.3	0	0	0	0	0	
3190	110300053	HG				Pawnee River	933	0	0	0	1.16	6.11	
3210	1103000511	HG				Sand Creek	51.8	0	0	0	0	0	
3213	110300053	HG				Pawnee River	839	0	0	0	79	5.02	
3216	110300054	HG				Hackberry Creek	188	0	0	0	0	37	
3255	110300055	HG				Pawnee River	641	0	0	0	28	3.43	
3258	110300058	HG				Cottonwood Creek	63.7	0	0	0	0	0	
3286	110300053	HG	PN			Pawnee River	1,250	0	0	0	2.40	10.0	
3288	110300055	HG				Pawnee River	564	0	0	0	0	2.26	
3289	110300061	HG	PN			Buckner Creek	783	0	48	2.94	9.62	29.2	
3334	1103000510	HG				Cottonwood Creek	66.0	0	0	0	0	0	
3340	110300059	HG				Sand Creek	114	0	0	0	0	0	
3350	1103000510	HG				Cottonwood Creek	17.0	0	0	0	0	0	
3358	110300061	HG				Buckner Creek	781	0	47	2.93	9.58	29.1	
3398	110300059	HG				Sand Creek	103	0	0	0	0	0	
3414	HYDRO	HG				HYDRO	85.5	NA	NA	NA	NA	NA	NA
3418	110300062	HG				Buckner Creek	422	0	0	65	3.15	11.1	
3434	110300062	HG				Buckner Creek	348	0	0	19	1.81	7.53	
3435	110300062	HG				Buckner Creek	237	0	0	0	10	2.94	
3436	HYDRO	HG				HYDRO	223	NA	NA	NA	NA	NA	NA
3457	110300067	HG				Spring Creek	57.2	0	0	0	0	0	
3463	HYDRO	HG				HYDRO	53.8	NA	NA	NA	NA	NA	NA
3465	110300069	HG				Rock Creek	47.4	0	0	0	0	0	
3466	110300056	HG	PN			Sawmill Creek	69.4	0	0	0	0	50	
3472	HYDRO	HG				HYDRO	37.7	NA	NA	NA	NA	NA	NA
3488	110300062	HG				Buckner Creek	223	0	0	0	0	2.22	
3489	110300062	HG				Buckner Creek	192	0	0	0	0	63	
3553	110300062	HG				Buckner Creek	192	0	0	0	0	63	
3563	110300069	HG				Rock Creek	36.8	0	0	0	0	0	
3573	110300063	HG				Saw Log Creek	321	0	0	1.25	4.19	12.3	
3596	110300062	HG				Buckner Creek	181	0	0	0	0	24	
3602	110300067	HG				Spring Creek	50.5	0	0	0	0	0	

**Table 48.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hodgeman County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 52)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3171	NA	NA	NA	NA	NA	NA	NA
3173	3.18	578	1,840	3,270	5,810	8,320	11,400
3176	10.5	553	1,720	2,990	5,290	7,530	10,300
3180	1.74	426	1,340	2,350	4,150	5,890	7,970
3182	9.77	591	1,870	3,310	5,900	8,450	11,600
3183	NA	NA	NA	NA	NA	NA	NA
3184	1.56	467	1,460	2,570	4,530	6,430	8,710
3190	9.08	627	2,010	3,570	6,400	9,200	12,600
3210	1.07	505	1,510	2,580	4,430	6,190	8,260
3213	8.35	646	2,090	3,740	6,730	9,720	13,400
3216	3.37	573	1,830	3,250	5,800	8,320	11,400
3255	7.06	646	2,130	3,850	6,990	10,100	14,000
3258	.58	361	1,170	2,090	3,730	5,340	7,270
3286	11.1	469	1,430	2,460	4,300	6,070	8,210
3288	6.07	645	2,130	3,860	7,020	10,200	14,100
3289	29.7	1,660	4,510	7,520	12,700	17,700	23,600
3334	1.23	425	1,340	2,360	4,160	5,920	8,020
3340	1.11	468	1,540	2,770	4,990	7,200	9,890
3350	0	349	1,100	1,890	3,250	4,500	6,000
3358	29.6	1,660	4,510	7,530	12,700	17,700	23,600
3398	.79	433	1,440	2,600	4,710	6,820	9,380
3414	NA	NA	NA	NA	NA	NA	NA
3418	14.0	1,140	3,350	5,770	10,000	14,200	19,200
3434	10.8	1,020	3,050	5,300	9,270	13,100	17,900
3435	6.41	799	2,490	4,380	7,780	11,100	15,200
3436	NA	NA	NA	NA	NA	NA	NA
3457	1.00	468	1,450	2,530	4,420	6,250	8,430
3463	NA	NA	NA	NA	NA	NA	NA
3465	1.21	460	1,390	2,400	4,130	5,800	7,750
3466	2.87	574	1,710	2,930	5,040	7,050	9,430
3472	NA	NA	NA	NA	NA	NA	NA
3488	5.75	763	2,390	4,240	7,540	10,800	14,800
3489	4.30	709	2,250	4,010	7,180	10,300	14,100
3553	4.30	709	2,250	4,010	7,180	10,300	14,100
3563	.61	457	1,360	2,320	3,980	5,550	7,390
3573	13.6	962	2,820	4,840	8,370	11,800	15,900
3596	3.90	710	2,250	4,000	7,160	10,300	14,100
3602	.59	428	1,340	2,350	4,130	5,860	7,910

**300 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 48.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hodgeman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

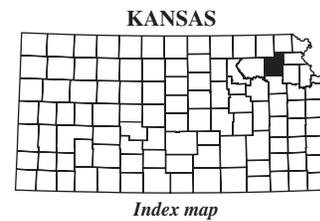
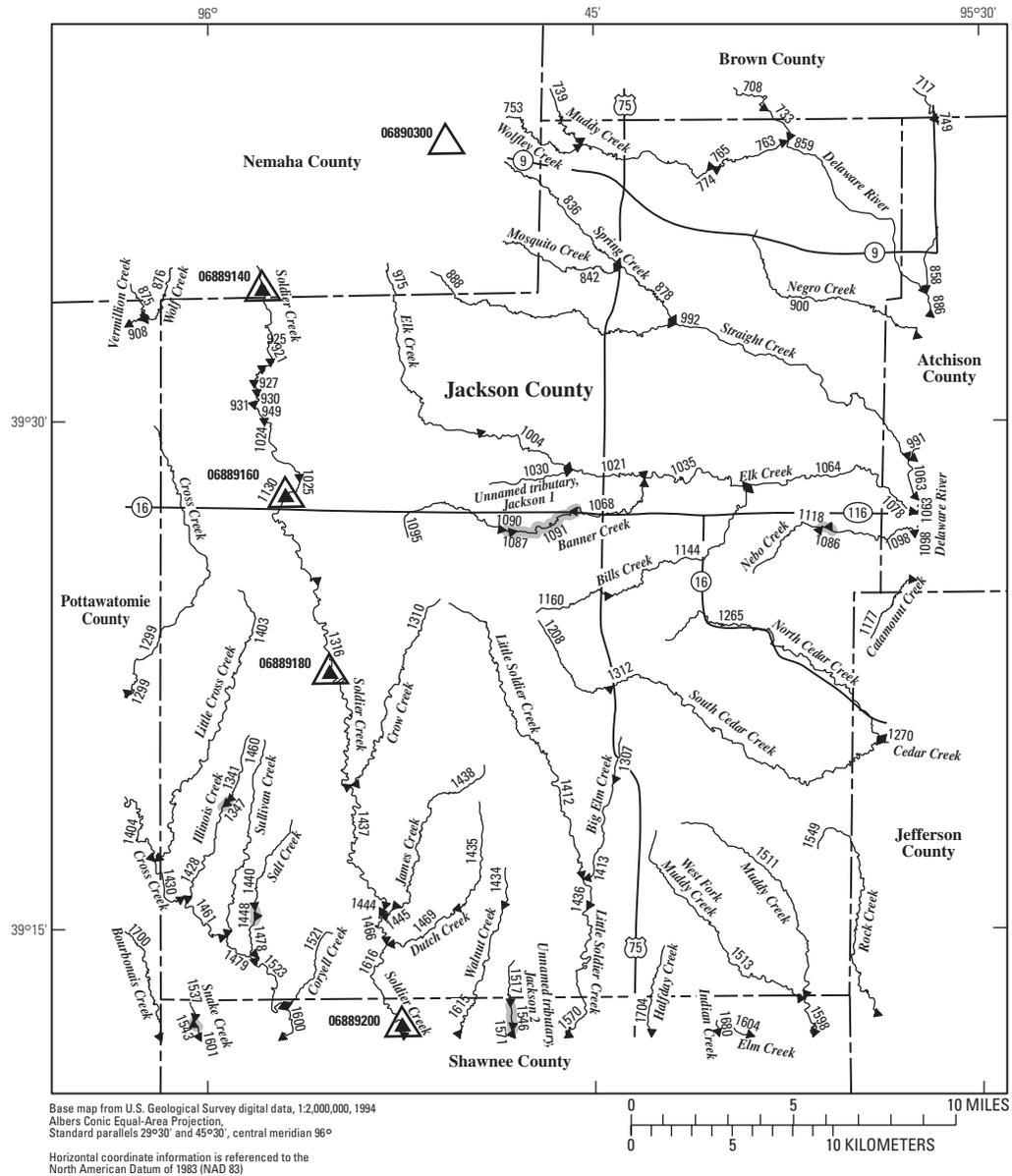
Determination site identification number (fig. 52)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90	75	50	25	10	
								percent	percent	percent	percent	percent	
3614	110300067	HG				Spring Creek	11.2	0	0	0	0	0	0
3625	110300062	HG				Buckner Creek	171	0	0	0	0	0	0
3709	110300063	HG				Saw Log Creek	268	0	0	75	2.85	8.92	

**Table 48.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Hodgeman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 52)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3614	0	289	888	1,510	2,580	3,550	4,720
3625	3.52	727	2,290	4,060	7,230	10,400	14,200
3709	10.8	892	2,640	4,540	7,850	11,100	14,900





**Figure 53.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Jackson County.

**304 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 49.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jackson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 53)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		753	1027010327	JA	NM					Wolfley Creek	43.7	0.04
763	1027010325	JA				Muddy Creek	108	.25	1.90	9.06	31.2	95.1
765	1027010325	JA				Muddy Creek	103	.23	1.74	8.53	29.5	89.9
774	1027010325	JA				Muddy Creek	102	.22	1.73	8.48	29.3	89.4
836	1027010342	JA	NM			Spring Creek	32.9	0	.22	3.24	11.4	32.8
842	10270103602	JA	NM			Mosquito Creek	18.0	0	0	1.79	6.47	18.9
876	1027010249	JA	NM	PT		Wolf Creek	14.5	0	0	.84	3.44	11.0
878	1027010342	JA				Spring Creek	58.1	.01	.77	5.51	19.4	56.7
888	1027010328	JA	NM			Straight Creek	28.4	0	0	2.49	9.32	27.9
921	102701029009	JA	NM			Soldier Creek	34.6	.21	.48	1.20	3.50	10.0
925	102701029009	JA				Soldier Creek	34.6	.21	.48	1.20	3.51	10.0
927	102701029009	JA				Soldier Creek	34.8	.21	.48	1.22	3.55	10.1
930	102701029009	JA				Soldier Creek	34.9	.21	.48	1.23	3.59	10.3
931	102701029009	JA				Soldier Creek	35.1	.21	.48	1.24	3.64	10.4
949	102701029009	JA				Soldier Creek	37.6	.27	.57	1.49	4.35	12.8
951	102701029009	JA				Soldier Creek	37.7	.27	.57	1.49	4.36	12.8
975	1027010330	JA	NM			Elk Creek	39.3	0	.21	3.40	12.5	37.4
1004	1027010330	JA				Elk Creek	49.4	0	.41	4.22	15.5	46.5
1021	1027010329	JA				Elk Creek	60.0	.01	.67	5.18	18.7	56.0
1024	102701029009	JA				Soldier Creek	49.3	.50	1.20	2.84	8.16	24.5
1025	102701029	JA				Soldier Creek	49.3	.50	1.20	2.84	8.16	24.5
1030	1027010331	JA				Unnamed tributary, Jackson 1	4.50	0	0	.19	.99	3.80
1035	1027010329	JA				Elk Creek	101	.02	1.44	8.30	29.9	91.0
1068	1027010345	JA				Banner Creek	28.6	0	0	2.42	9.13	27.5
1086	HYDRO	JA				HYDRO	9.16	NA	NA	NA	NA	NA
1087	1027010345	JA				Banner Creek	18.2	0	0	1.59	5.98	17.9
1090	HYDRO	JA				HYDRO	18.2	NA	NA	NA	NA	NA
1091	HYDRO	JA				HYDRO	22.9	NA	NA	NA	NA	NA
1095	1027010345	JA				Banner Creek	17.1	0	0	1.47	5.56	16.7
1118	1027010348	JA				Nebo Creek	8.39	0	0	.15	1.47	6.11
1130	102701029009	JA				Soldier Creek	63.1	.80	2.00	4.60	13.0	39.0
1144	1027010347	JA				Bills Creek	20.8	0	0	1.61	6.38	19.7
1160	NRTribal	JA				Bills Creek	7.73	0	0	.46	2.09	7.03
1208	NRTribal	JA				South Cedar Creek	8.70	0	0	.63	2.60	8.30
1265	1027010346	JA	JF			North Cedar Creek	26.7	0	.08	2.61	9.32	27.2
1299	1027010212	JA	PT			Cross Creek	46.0	0	.18	3.35	12.5	38.2
1307	1027010290	JA				Big Elm Creek	6.39	0	0	.52	2.02	6.38
1310	NRTribal	JA				Crow Creek	19.2	.04	.08	1.96	6.67	19.1

**Table 49.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jackson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 53)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
753	29.1	3,180	6,810	10,100	15,000	19,300	24,000
763	67.0	5,360	10,800	15,700	23,000	29,300	36,200
765	63.6	5,330	10,800	15,600	22,800	29,100	36,000
774	63.3	5,330	10,800	15,600	22,800	29,100	36,000
836	23.8	1,600	3,680	5,750	9,360	12,900	17,200
842	14.2	1,680	3,630	5,330	7,920	10,100	12,500
876	9.31	1,380	3,020	4,450	6,650	8,470	10,600
878	40.3	2,680	5,670	8,600	13,300	17,800	23,000
888	21.1	2,240	4,860	7,160	10,700	13,600	16,900
921	10.7	1,850	3,360	4,640	6,580	8,270	10,200
925	10.8	1,820	3,310	4,580	6,500	8,180	10,100
927	10.8	1,820	3,320	4,580	6,510	8,190	10,100
930	10.9	1,850	3,370	4,650	6,600	8,300	10,200
931	11.0	1,870	3,400	4,700	6,670	8,380	10,300
949	13.0	2,110	3,800	5,230	7,380	9,260	11,400
951	13.0	2,070	3,740	5,150	7,280	9,150	11,300
975	27.7	4,100	8,320	12,000	17,400	22,100	27,100
1004	34.2	4,460	9,040	13,000	18,900	24,000	29,500
1021	40.8	4,720	9,540	13,700	20,000	25,300	31,100
1024	21.8	3,040	5,300	7,180	9,970	12,400	15,100
1025	21.8	3,030	5,300	7,170	9,960	12,400	15,100
1030	3.59	786	1,630	2,350	3,420	4,310	5,310
1035	65.1	6,070	12,100	17,300	25,100	31,800	39,000
1068	21.0	2,270	4,910	7,220	10,700	13,700	17,000
1086	NA	NA	NA	NA	NA	NA	NA
1087	13.9	1,730	3,720	5,450	8,080	10,300	12,800
1090	NA	NA	NA	NA	NA	NA	NA
1091	NA	NA	NA	NA	NA	NA	NA
1095	13.1	1,670	3,580	5,240	7,760	9,860	12,300
1118	5.97	1,130	2,370	3,440	5,040	6,370	7,880
1130	32.4	4,030	6,850	9,140	12,500	15,400	18,700
1144	15.6	1,900	4,080	5,970	8,850	11,200	14,000
1160	6.10	1,070	2,250	3,260	4,790	6,050	7,480
1208	6.93	1,140	2,400	3,480	5,120	6,470	8,020
1265	20.3	2,210	4,750	6,970	10,400	13,200	16,400
1299	29.0	4,240	8,720	12,600	18,400	23,500	28,900
1307	5.28	936	1,970	2,860	4,190	5,290	6,540
1310	14.4	1,720	3,700	5,420	8,050	10,200	12,800

**Table 49.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jackson County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

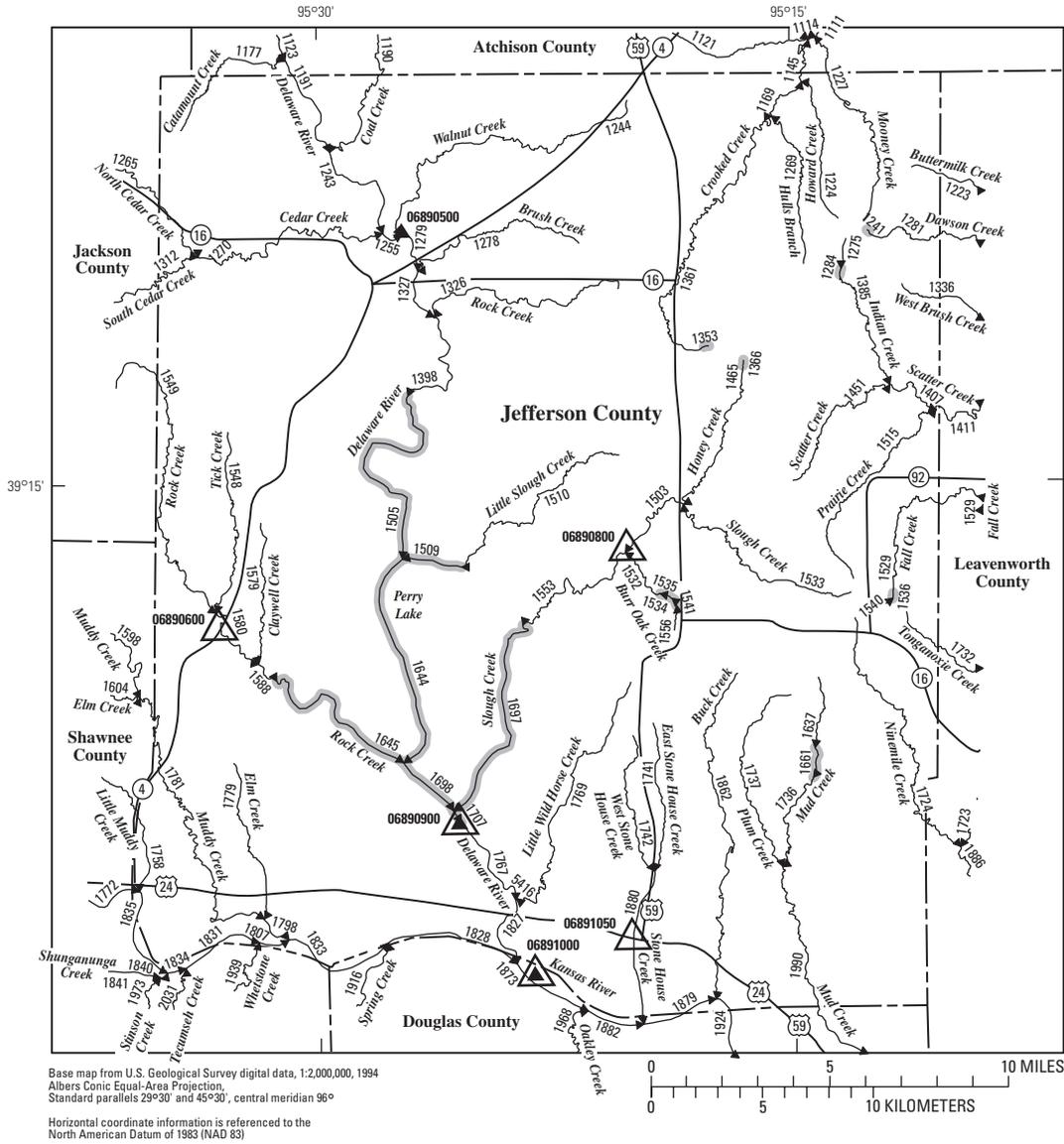
Determination site identification number (fig. 53)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1312	102701039032	JA	JF					South Cedar Creek	38.3	0
1316	NRTribal	JA				Soldier Creek	81.0	2.30	5.00	10.0	28.0	75.0
1341	1027010262	JA				Illinois Creek	2.96	0	0	0	.09	1.35
1347	HYDRO	JA				HYDRO	3.23	NA	NA	NA	NA	NA
1403	1027010261	JA	PT			Little Cross Creek	22.6	0	0	1.75	6.40	19.1
1412	NRTribal	JA				Little Soldier Creek	26.2	.01	.04	2.45	8.76	25.6
1413	NRTribal	JA				Big Elm Creek	11.7	0	.01	1.10	4.04	11.9
1428	1027010262	JA				Illinois Creek	7.55	0	0	.44	1.73	5.73
1430	1027010212	JA	PT			Cross Creek	102	0	1.33	7.79	27.9	84.9
1434	NRTribal	JA				Walnut Creek	4.30	0	0	.28	1.03	3.56
1435	NRTribal	JA				Dutch Creek	7.59	.01	.01	.79	2.66	7.77
1436	NRTribal	JA				Little Soldier Creek	40.0	.03	.36	3.72	13.2	38.6
1437	NRTribal	JA				Soldier Creek	110	2.53	6.28	14.1	39.1	104
1438	NRTribal	JA				James Creek	15.4	.03	.05	1.64	5.55	15.7
1440	1027010288	JA				Salt Creek	7.67	0	0	.52	2.04	6.54
1444	102701029	JA				Soldier Creek	110	2.53	6.29	14.1	39.2	104
1445	1027010287	JA				James Creek	15.7	.03	.06	1.67	5.63	15.9
1448	HYDRO	JA				HYDRO	8.66	NA	NA	NA	NA	NA
1460	1027010289	JA				Sullivan Creek	10.0	0	0	.86	2.97	8.81
1461	1027010212	JA				Cross Creek	112	0	1.56	8.67	30.8	93.7
1466	102701029	JA				Soldier Creek	127	2.66	7.00	16.5	45.6	121
1469	1027010292	JA				Dutch Creek	12.3	.02	.03	1.31	4.41	12.5
1478	1027010288	JA				Salt Creek	10.0	0	0	.79	2.89	8.77
1479	1027010212	JA				Cross Creek	124	0	1.82	9.71	34.3	104
1511	102701022	JA				Muddy Creek	20.2	0	.13	2.57	8.58	23.7
1513	1027010293	JA				West Fork Muddy Creek	18.7	0	.10	2.40	7.91	21.7
1517	102701028	JA	SN			Unnamed tributary, Jackson 2	3.92	0	0	.12	.60	2.61
1521	1027010294	JA	SN			Coryell Creek	7.86	0	0	.57	2.17	6.85
1523	1027010212	JA	SN			Cross Creek	139	0	2.14	11.0	38.4	117
1537	1027010295	JA	SN			Snake Creek	2.89	0	0	0	0	1.02
1549	1027010334	JA	JF			Rock Creek	20.5	.01	.15	2.64	8.93	24.8
1570	102701027	JA	SN			Little Soldier Creek	54.7	.05	.83	5.28	18.2	52.6
1598	102701022	JA	SN			Muddy Creek	45.9	0	.82	5.39	18.2	51.2
1615	1027010291	JA	SN			Walnut Creek	17.0	0	.01	1.79	6.00	16.9
1616	102701029	JA	SN			Soldier Creek	158	2.90	8.40	21.0	58.0	153
1704	1027010297	JA	SN			Halfday Creek	21.6	0	.17	2.66	8.76	24.1

**Table 49.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jackson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

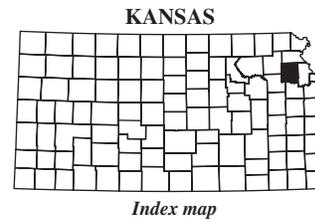
Determination site identification number (fig. 53)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1312	30.1	3,610	7,410	10,700	15,700	19,900	24,400
1316	51.2	4,440	7,220	9,250	12,000	14,200	16,400
1341	1.83	553	1,170	1,700	2,490	3,140	3,880
1347	NA	NA	NA	NA	NA	NA	NA
1403	15.0	1,810	3,980	5,890	8,820	11,300	14,100
1412	19.3	2,090	4,550	6,700	9,980	12,700	15,900
1413	9.35	1,320	2,820	4,110	6,070	7,700	9,560
1428	5.12	946	2,040	2,990	4,430	5,630	7,000
1430	60.4	5,790	11,700	17,000	24,800	31,500	38,900
1434	3.27	720	1,520	2,200	3,220	4,060	5,020
1435	6.14	998	2,120	3,090	4,550	5,760	7,140
1436	28.5	3,630	7,490	10,900	15,900	20,200	24,900
1437	69.3	4,520	7,500	9,770	13,000	15,600	18,400
1438	11.9	1,490	3,210	4,710	6,990	8,890	11,100
1440	5.58	969	2,090	3,050	4,510	5,730	7,120
1444	69.4	4,520	7,490	9,770	13,000	15,600	18,400
1445	12.0	1,500	3,230	4,740	7,040	8,960	11,200
1448	NA	NA	NA	NA	NA	NA	NA
1460	7.17	1,130	2,440	3,580	5,320	6,760	8,420
1461	66.1	5,920	12,000	17,400	25,400	32,300	39,900
1466	80.0	4,620	7,740	10,200	13,600	16,600	19,700
1469	9.57	1,300	2,800	4,100	6,080	7,720	9,600
1478	7.19	1,130	2,440	3,580	5,320	6,760	8,410
1479	72.8	6,170	12,500	18,000	26,400	33,600	41,400
1511	16.8	1,820	3,930	5,770	8,580	10,900	13,600
1513	15.4	1,710	3,700	5,430	8,080	10,300	12,800
1517	2.74	678	1,430	2,070	3,030	3,820	4,720
1521	5.77	987	2,120	3,100	4,590	5,830	7,240
1523	80.8	6,180	12,600	18,200	26,700	34,100	42,200
1537	1.66	544	1,150	1,670	2,440	3,080	3,810
1549	17.5	1,370	2,730	3,880	5,650	7,070	8,780
1570	37.8	3,690	7,720	11,300	16,600	21,200	26,300
1598	35.0	3,820	7,820	11,300	16,500	20,900	25,700
1615	12.7	1,580	3,420	5,040	7,500	9,540	11,900
1616	99.5	4,510	7,650	10,200	13,900	17,100	20,600
1704	17.2	1,840	4,010	5,910	8,810	11,200	14,000





**EXPLANATION**

- ← 1973 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06891000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06891050 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1645 Lake and determination site identification number



**Figure 54.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Jefferson County.

**310 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 50.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jefferson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 54)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1169	1027010412	JF						Crooked Creek	34.7	0
1223	1027010444	JF	LV			Buttermilk Creek	8.52	0	0	1.08	3.82	11.0
1224	1027010443	JF				Howard Creek	4.18	0	0	0	.38	2.83
1241	HYDRO	JF				HYDRO	.17	NA	NA	NA	NA	NA
1243	1027010313	JF				Delaware River	805	5.99	17.8	60.2	174	549
1244	1027010351	JF				Walnut Creek	26.7	0	0	2.38	8.97	27.0
1255	1027010312	JF				Delaware River	889	6.01	18.0	64.1	186	589
1269	1027010442	JF				Hulls Branch	8.33	0	0	.21	1.82	7.21
1270	1027010332	JF				Cedar Creek	83.8	.01	1.53	8.61	30.0	88.0
1275	1027010448	JF				Indian Creek	1.12	0	0	0	0	0
1278	1027010354	JF				Brush Creek	11.5	0	0	.96	3.74	11.5
1279	1027010312	JF				Delaware River	917	6.00	18.0	65.0	189	600
1281	1027010445	JF	LV			Dawson Creek	8.28	0	0	1.45	4.70	12.6
1284	HYDRO	JF				HYDRO	1.26	NA	NA	NA	NA	NA
1326	1027010353	JF				Rock Creek	15.3	0	.07	2.05	6.84	18.9
1327	1027010312	JF				Delaware River	932	7.24	18.4	66.8	212	691
1336	1027010446	JF	LV			West Brush Creek	9.27	0	.13	1.91	5.78	14.9
1353	HYDRO	JF				HYDRO	1.74	NA	NA	NA	NA	NA
1361	1027010412	JF				Crooked Creek	25.0	0	0	1.34	6.45	22.1
1366	HYDRO	JF				HYDRO	3.00	NA	NA	NA	NA	NA
1385	1027010448	JF				Indian Creek	7.99	0	0	1.28	4.14	11.3
1398	1027010312	JF				Delaware River	959	9.49	19.2	70.8	256	859
1407	1027010413	JF				Scatter Creek	2.6	0	.20	2.92	10.1	28.1
1411	1027010413	JF	LV			Scatter Creek	38.7	0	.67	5.10	18.0	51.2
1451	1027010413	JF				Scatter Creek	10.2	0	0	1.34	4.81	13.8
1465	1027010355	JF				Honey Creek	13.0	0	0	1.37	5.44	16.4
1503	102701039	JF				Slough Creek	29.0	.01	.23	3.51	13.1	38.4
1505	HYDRO	JF				HYDRO	977	NA	NA	NA	NA	NA
1509	HYDRO	JF				HYDRO	25.0	NA	NA	NA	NA	NA
1510	10270103805	JF				Little Slough Creek	22.0	.01	.54	3.79	12.3	32.7
1515	1027010447	JF				Prairie Creek	9.68	0	0	.97	4.05	12.4
1529	1027010452	JF	LV			Fall Creek	21.0	0	.12	2.76	9.86	28.0
1532	102701038	JF				Burr Oak Creek	7.10	0	0	1.13	3.90	10.9
1533	102701039	JF				Slough Creek	12.1	0	0	1.39	5.50	16.4
1534	HYDRO	JF				HYDRO	4.88	NA	NA	NA	NA	NA
1535	102701038	JF				Burr Oak Creek	4.48	0	0	0.40	1.72	5.62
1536	HYDRO	JF				HYDRO	.75	NA	NA	NA	NA	NA
1540	1027010452	JF				Fall Creek	.63	0	0	0	0	0

**Table 50.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jefferson County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 54)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1169	25.2	3,850	7,930	11,500	16,800	21,400	26,400
1223	8.31	1,260	2,590	3,720	5,400	6,780	8,340
1224	3.24	812	1,650	2,360	3,410	4,270	5,250
1241	NA	NA	NA	NA	NA	NA	NA
1243	357	10,300	16,000	22,500	29,300	35,100	39,200
1244	20.7	2,310	4,920	7,180	10,600	13,500	16,800
1255	381	9,830	15,300	22,300	29,400	35,500	39,400
1269	6.73	1,230	2,530	3,630	5,280	6,630	8,170
1270	60.3	5,290	10,600	15,200	22,000	27,800	34,200
1275	.25	390	767	1,080	1,530	1,900	2,310
1278	9.39	1,450	3,020	4,360	6,370	8,040	9,930
1279	388	9,620	15,000	22,200	29,300	35,500	39,300
1281	8.89	1,260	2,570	3,680	5,340	6,700	8,240
1284	NA	NA	NA	NA	NA	NA	NA
1326	13.7	1,740	3,630	5,250	7,680	9,700	12,000
1327	409	9,370	14,600	21,900	28,900	35,100	38,800
1336	10.1	1,370	2,790	3,990	5,780	7,250	8,920
1353	NA	NA	NA	NA	NA	NA	NA
1361	18.6	2,310	4,870	7,070	10,400	13,200	16,300
1366	NA	NA	NA	NA	NA	NA	NA
1385	8.19	1,230	2,510	3,590	5,210	6,540	8,040
1398	448	8,710	13,600	20,800	27,600	33,700	37,000
1407	19.7	2,150	4,460	6,440	9,420	11,900	14,700
1411	35.1	4,830	9,190	12,800	18,100	22,500	27,100
1451	10.2	1,450	2,960	4,240	6,150	7,720	9,500
1465	12.4	1,850	3,390	4,640	6,480	7,970	9,670
1503	26.9	3,670	5,510	6,850	8,670	10,100	11,700
1505	NA	NA	NA	NA	NA	NA	NA
1509	NA	NA	NA	NA	NA	NA	NA
1510	21.8	2,210	4,620	6,680	9,800	12,400	15,300
1515	9.60	1,410	2,870	4,100	5,950	7,460	9,180
1529	19.9	2,200	4,560	6,580	9,610	12,100	15,000
1532	7.86	1,210	2,430	3,460	4,990	6,230	7,650
1533	12.2	1,800	3,320	4,560	6,380	7,850	9,530
1534	NA	NA	NA	NA	NA	NA	NA
1535	4.64	926	1,850	2,610	3,740	4,670	5,710
1536	NA	NA	NA	NA	NA	NA	NA
1540	0	289	557	772	1,090	1,340	1,620

**312 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 50.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jefferson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

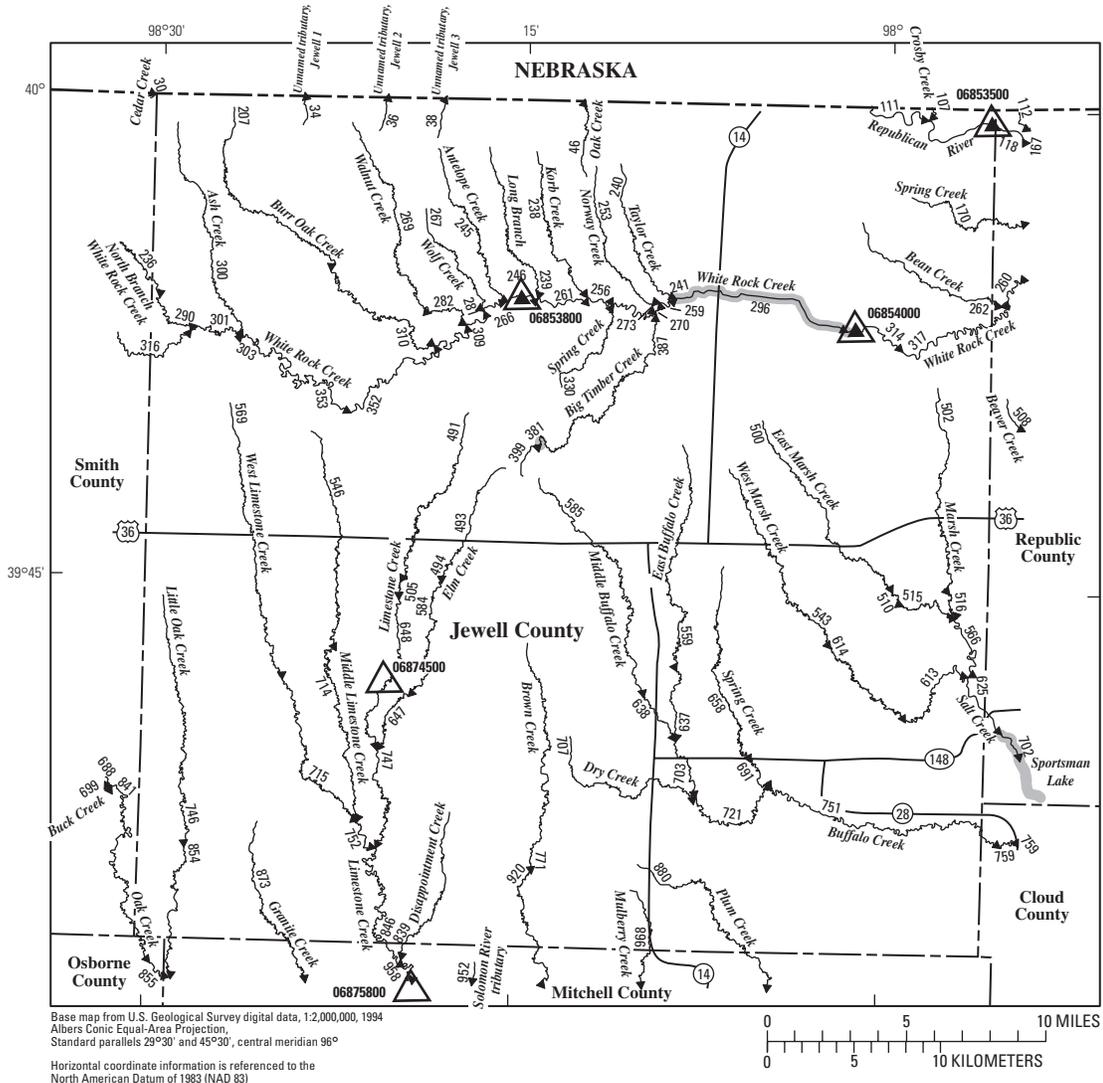
Determination site identification number (fig. 54)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1541	NA	NA	NA	NA	NA	NA	NA
1548	12.9	1,310	2,660	3,810	5,550	6,960	8,610
1553	42.6	5,800	9,100	11,700	15,000	17,800	20,500
1556	3.39	788	1,560	2,200	3,150	3,920	4,790
1579	8.84	1,270	2,660	3,860	5,650	7,130	8,820
1580	31.2	2,090	3,220	4,040	5,170	6,060	7,010
1588	39.5	2,710	4,310	5,560	7,250	8,610	10,000
1637	4.22	880	1,760	2,490	3,580	4,470	5,460
1644	NA	NA	NA	NA	NA	NA	NA
1645	NA	NA	NA	NA	NA	NA	NA
1661	NA	NA	NA	NA	NA	NA	NA
1697	NA	NA	NA	NA	NA	NA	NA
1698	NA	NA	NA	NA	NA	NA	NA
1707	NA	NA	NA	NA	NA	NA	NA
1724	19.4	2,010	4,150	5,970	8,720	11,000	13,600
1732	27.4	2,580	5,430	7,890	11,600	14,700	18,200
1736	13.6	1,630	3,350	4,800	6,970	8,760	10,800
1737	8.32	1,230	2,490	3,550	5,130	6,430	7,890
1741	7.00	1,030	2,100	2,990	4,320	5,420	6,650
1742	6.34	971	1,960	2,790	4,030	5,050	6,190
1758	8.00	1,210	2,580	3,760	5,560	7,050	8,740
1767	152	900	1,610	2,200	2,780	3,830	4,660
1769	19.6	2,030	4,200	6,040	8,810	11,100	13,700
1772	6,620	38,100	69,500	96,600	126,000	176,000	220,000
1779	12.3	1,570	3,340	4,860	7,170	9,090	11,300
1781	48.3	3,690	7,680	11,200	16,500	21,100	26,100
1798	58.5	4,170	8,570	12,500	18,300	23,300	28,800
1807	6,690	38,700	70,400	97,600	127,000	177,000	221,000
1831	6,680	38,600	70,300	97,500	127,000	177,000	221,000
1835	6,620	38,200	69,600	96,700	126,000	176,000	220,000
1862	19.8	2,010	4,150	5,970	8,700	10,900	13,500
1939	10.5	1,430	3,030	4,410	6,510	8,240	10,200
5416	19.6	2,030	4,200	6,040	8,810	11,100	13,700

**Table 50.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jefferson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

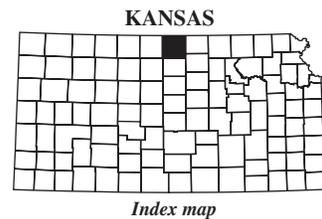
Determination site identification number (fig. 54)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1541	NA	NA	NA	NA	NA	NA	NA
1548	12.9	1,310	2,660	3,810	5,550	6,960	8,610
1553	42.6	5,800	9,100	11,700	15,000	17,800	20,500
1556	3.39	788	1,560	2,200	3,150	3,920	4,790
1579	8.84	1,270	2,660	3,860	5,650	7,130	8,820
1580	31.2	2,090	3,220	4,040	5,170	6,060	7,010
1588	39.5	2,710	4,310	5,560	7,250	8,610	10,000
1637	4.22	880	1,760	2,490	3,580	4,470	5,460
1644	NA	NA	NA	NA	NA	NA	NA
1645	NA	NA	NA	NA	NA	NA	NA
1661	NA	NA	NA	NA	NA	NA	NA
1697	NA	NA	NA	NA	NA	NA	NA
1698	NA	NA	NA	NA	NA	NA	NA
1707	NA	NA	NA	NA	NA	NA	NA
1724	19.4	2,010	4,150	5,970	8,720	11,000	13,600
1732	27.4	2,580	5,430	7,890	11,600	14,700	18,200
1736	13.6	1,630	3,350	4,800	6,970	8,760	10,800
1737	8.32	1,230	2,490	3,550	5,130	6,430	7,890
1741	7.00	1,030	2,100	2,990	4,320	5,420	6,650
1742	6.34	971	1,960	2,790	4,030	5,050	6,190
1758	8.00	1,210	2,580	3,760	5,560	7,050	8,740
1767	152	900	1,610	2,200	2,780	3,830	4,660
1769	19.6	2,030	4,200	6,040	8,810	11,100	13,700
1772	6,620	38,100	69,500	96,600	126,000	176,000	220,000
1779	12.3	1,570	3,340	4,860	7,170	9,090	11,300
1781	48.3	3,690	7,680	11,200	16,500	21,100	26,100
1798	58.5	4,170	8,570	12,500	18,300	23,300	28,800
1807	6,690	38,700	70,400	97,600	127,000	177,000	221,000
1831	6,680	38,600	70,300	97,500	127,000	177,000	221,000
1835	6,620	38,200	69,600	96,700	126,000	176,000	220,000
1862	19.8	2,010	4,150	5,970	8,700	10,900	13,500
1939	10.5	1,430	3,030	4,410	6,510	8,240	10,200
5416	19.6	2,030	4,200	6,040	8,810	11,100	13,700





**EXPLANATION**

- ← 746 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06853800 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06875800 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 926 Lake and determination site identification number



**Figure 55.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Jewell County.

**316 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 55)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
34	1025001664	JW				Unnamed tributary, Jewell 1	6.07	0	0	0	0	0	0
36	1025001669	JW				Unnamed tributary, Jewell 2	3.40	0	0	0	0	0	0
38	1025001670	JW				Unnamed tributary, Jewell 3	3.68	0	0	0	0	0	0
46	1025001675	JW				Oak Creek	7.00	0	0	0	0	0	0
107	1025001677	JW				Crosby Creek	11.0	0	0	.04	.08	.82	
111	102500162	JW				Republican River	20,600	59.1	106	163	298	709	
118	102500162	JW	RP			Republican River	20,600	63.0	110	167	307	728	
170	1025001678	JW	RP			Spring Creek	18.3	0	0	.25	.47	1.91	
207	1025001648	JW				Burr Oak Creek	26.0	0	0	.89	1.93	4.68	
236	1025001660	JW	SM			North Branch White Rock Creek	22.4	0	0	.41	.88	2.55	
238	1025001672	JW				Korb Creek	10.9	0	0	.02	.05	.66	
239	1025001668	JW				Long Branch	10.4	0	0	0	.01	.55	
240	1025001674	JW				Taylor Creek	17.1	0	0	.63	1.19	3.08	
241	HYDRO	JW				HYDRO	17.1	NA	NA	NA	NA	NA	
245	1025001666	JW				Antelope Creek	8.28	0	0	0	0	0	
246	1025001645	JW				White Rock Creek	221	.47	1.80	6.00	17.0	40.0	
253	1025001673	JW				Norway Creek	6.56	0	0	0	0	0	
256	1025001645	JW				White Rock Creek	247	.67	2.32	7.35	20.2	47.8	
259	1025001645	JW				White Rock Creek	288	1.02	3.27	9.87	26.2	62.2	
261	1025001645	JW				White Rock Creek	235	.58	2.09	6.75	18.8	44.3	
262	1025001676	JW	RP			Bean Creek	20.7	0	0	.61	1.27	3.49	
266	1025001645	JW				White Rock Creek	211	.37	1.75	5.81	16.3	38.3	
267	1025001667	JW				Wolf Creek	5.62	0	0	0	0	0	
269	1025001646	JW				Walnut Creek	17.2	0	0	.46	.87	2.40	
270	1025001645	JW				White Rock Creek	280	.96	3.12	9.47	25.2	59.9	
273	1025001645	JW				White Rock Creek	257	.76	2.58	8.02	21.8	51.6	
281	1025001645	JW				White Rock Creek	205	.30	1.70	5.63	15.8	37.1	
282	1025001646	JW				Walnut Creek	18.9	0	0	.57	1.10	2.90	
290	1025001660	JW				North Branch White Rock Creek	25.3	0	0	.55	1.22	3.31	
296	HYDRO	JW				HYDRO	335	NA	NA	NA	NA	NA	
300	1025001665	JW				Ash Creek	19.8	0	0	.44	.89	2.52	
301	1025001649	JW				White Rock Creek	101	.06	.63	2.73	7.13	16.7	
303	1025001649	JW				White Rock Creek	121	.08	.87	3.33	8.85	20.7	
309	1025001647	JW				White Rock Creek	184	.19	1.53	5.13	14.1	33.1	
310	1025001648	JW				Burr Oak Creek	36.4	.01	.21	1.44	3.27	7.60	
314	1025001641	JW				White Rock Creek	342	.06	.10	.20	.57	55.0	
316	1025001649	JW	SM			White Rock Creek	72.7	.03	.28	1.86	4.76	11.3	
317	1025001641	JW	RP			White Rock Creek	354	.13	.19	.34	.88	55.6	

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 55)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
34	0.39	396	1,020	1,610	2,560	3,380	4,340
36	0	286	727	1,140	1,790	2,360	3,020
38	0	304	771	1,210	1,900	2,500	3,200
46	.88	451	1,150	1,810	2,870	3,790	4,860
107	1.93	607	1,550	2,440	3,870	5,110	6,560
111	324	4,870	8,330	10,700	13,700	15,900	18,000
118	333	4,940	8,500	11,000	14,000	16,300	18,500
170	3.07	820	2,110	3,350	5,340	7,070	9,100
207	4.74	909	2,410	3,860	6,220	8,300	10,700
236	3.35	791	2,120	3,410	5,520	7,380	9,570
238	1.77	581	1,500	2,370	3,770	4,990	6,420
239	1.67	564	1,450	2,300	3,660	4,850	6,230
240	3.50	773	2,000	3,170	5,060	6,710	8,630
241	NA	NA	NA	NA	NA	NA	NA
245	1.06	489	1,260	1,980	3,150	4,170	5,350
246	28.6	1,520	3,040	4,430	6,680	8,760	11,200
253	.67	439	1,120	1,750	2,770	3,660	4,680
256	33.5	1,640	3,320	4,870	7,360	9,660	12,400
259	42.1	1,830	3,750	5,520	8,370	11,000	14,100
261	31.3	1,600	3,220	4,710	7,110	9,320	11,900
262	4.05	881	2,280	3,610	5,760	7,640	9,840
266	27.6	1,490	3,050	4,490	6,830	8,990	11,500
267	.45	389	994	1,560	2,470	3,260	4,180
269	3.06	731	1,910	3,050	4,890	6,500	8,390
270	40.7	1,800	3,680	5,420	8,210	10,800	13,800
273	35.8	1,660	3,380	4,950	7,510	9,860	12,600
281	26.9	1,470	3,040	4,500	6,870	9,070	11,600
282	3.41	773	2,030	3,230	5,190	6,900	8,910
290	3.91	851	2,280	3,670	5,950	7,960	10,300
296	NA	NA	NA	NA	NA	NA	NA
300	3.26	772	2,040	3,260	5,250	7,000	9,050
301	13.8	1,020	2,530	4,040	6,520	8,810	11,500
303	16.5	1,170	2,790	4,390	7,000	9,420	12,200
309	24.5	1,360	2,950	4,450	6,900	9,180	11,800
310	6.81	764	1,970	3,170	5,100	6,860	8,860
314	33.2	460	1,300	2,260	3,760	5,080	6,380
316	9.90	841	2,180	3,530	5,760	7,830	10,200
317	33.5	463	1,310	2,270	3,780	5,100	6,410

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 55)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
330	1025001671	JW				Spring Creek	9.14	0	0	0.14	0.28	0.88
352	1025001649	JW				White Rock Creek	145	.12	1.15	4.02	10.8	25.3
353	1025001649	JW				White Rock Creek	134	.10	1.05	3.76	10.1	23.5
381	HYDRO	JW				HYDRO	2.51	NA	NA	NA	NA	NA
387	102500161301	JW				Big Timber Creek	22.8	0	.27	1.34	2.73	6.15
399	102500161301	JW				Big Timber Creek	2.47	0	0	0	0	0
491	1026001519	JW				Limestone Creek	20.4	0	0	.56	1.15	3.18
493	1026001559	JW				Elm Creek	12.0	0	0	.22	.26	1.17
494	1026001559	JW				Elm Creek	12.1	0	0	.23	.29	1.22
500	1025001742	JW				East March Creek	32.6	0	.16	1.39	3.38	8.53
502	1025001735	JW				Marsh Creek	29.5	0	0	.73	1.99	5.87
505	1026001519	JW				Limestone Creek	21.4	0	0	.63	1.30	3.49
510	1025001742	JW				East March Creek	34.9	0	.18	1.46	3.58	9.09
515	1025001742	JW				East March Creek	38.3	0	.22	1.58	3.96	10.1
516	1025001735	JW				Marsh Creek	31.9	0	0	.82	2.27	6.60
543	1025001736	JW				West Marsh Creek	20.4	0	0	.59	1.36	3.89
546	1026001521	JW				Middle Limestone Creek	23.3	0	0	.47	1.00	2.92
559	1025001768	JW				East Buffalo Creek	22.5	0	.08	1.00	2.18	5.41
566	1025001735	JW				Marsh Creek	78.2	0	.72	2.99	8.31	22.2
569	1026001522	JW				West Limestone Creek	38.6	0	0	1.06	2.49	6.28
584	1026001559	JW				Elm Creek	25.5	0	.05	1.02	2.22	5.40
585	1025001737	JW				Middle Buffalo Creek	29.1	0	.24	1.41	3.22	7.87
613	1025001736	JW				West Marsh Creek	44.1	0	.09	1.34	3.63	9.96
614	1025001736	JW				West Marsh Creek	35.8	0	0	1.00	2.67	7.50
625	1025001734	JW	RP			Salt Creek	129	0	1.33	4.71	13.9	38.9
637	1025001768	JW				East Buffalo Creek	25.8	0	.08	1.08	2.46	6.19
638	1025001737	JW				Middle Buffalo Creek	32.0	0	.26	1.47	3.44	8.55
647	1026001559	JW				Elm Creek	29.5	0	.05	1.08	2.44	6.01
648	1026001519	JW				Limestone Creek	28.8	0	0	.84	1.90	4.92
658	1025001744	JW				Spring Creek	19.7	0	0	.39	.95	3.08
691	1025001744	JW				Spring Creek	22.9	0	0	.51	1.26	3.87
703	1025001737	JW				Buffalo Creek	61.1	0	.77	2.84	7.21	18.1
707	1025001743	JW				Dry Creek	14.8	0	0	.05	.12	1.22
714	1026001521	JW				Middle Limestone Creek	31.9	0	0	.65	1.55	4.29
715	1026001522	JW				West Limestone Creek	53.1	0	.23	1.61	3.84	9.32
721	1025001737	JW				Buffalo Creek	85.6	0	1.02	3.58	9.57	25.0
746	102600123	JW				Little Oak Creek	35.4	0	0	.73	1.77	4.70
747	1026001519	JW				Limestone Creek	64.7	0	.60	2.46	5.92	14.3

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 55)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
330	1.71	537	1,370	2,160	3,420	4,520	5,800
352	19.6	1,210	2,810	4,360	6,910	9,270	12,000
353	18.3	1,170	2,770	4,330	6,900	9,280	12,000
381	NA	NA	NA	NA	NA	NA	NA
387	5.44	931	2,410	3,830	6,110	8,110	10,500
399	0	258	638	988	1,540	2,010	2,560
491	3.77	653	1,560	2,390	3,710	4,840	6,140
493	2.18	640	1,630	2,570	4,080	5,390	6,910
494	2.22	644	1,640	2,590	4,110	5,430	6,960
500	7.35	1,210	2,890	4,470	6,930	9,110	11,500
502	5.95	1,090	2,830	4,500	7,200	9,560	12,300
505	3.99	657	1,560	2,380	3,680	4,800	6,090
510	7.81	1,220	2,920	4,530	7,030	9,260	11,700
515	8.53	1,130	2,760	4,320	6,790	9,010	11,500
516	6.49	711	1,900	3,090	5,060	6,860	8,930
543	4.22	867	2,240	3,560	5,680	7,540	9,710
546	3.69	830	2,210	3,540	5,710	7,620	9,860
559	5.08	925	2,390	3,800	6,060	8,040	10,400
566	16.8	1,570	3,790	5,910	9,290	12,300	15,800
569	6.24	961	2,380	3,740	5,890	7,830	10,000
584	5.24	941	2,460	3,910	6,280	8,340	10,800
585	6.82	1,090	2,830	4,490	7,180	9,520	12,300
613	8.85	1,010	2,560	4,070	6,510	8,730	11,200
614	7.10	972	2,450	3,880	6,180	8,260	10,600
625	26.9	1,790	4,300	6,730	10,600	14,200	18,300
637	5.72	998	2,590	4,120	6,590	8,750	11,300
638	7.36	993	2,440	3,830	6,010	7,980	10,200
647	5.79	1,000	2,640	4,210	6,770	9,020	11,700
648	5.16	608	1,320	1,940	2,880	3,680	4,580
658	3.75	841	2,180	3,460	5,530	7,340	9,450
691	4.36	913	2,380	3,780	6,050	8,030	10,400
703	13.8	1,380	3,320	5,170	8,090	10,700	13,700
707	2.40	697	1,810	2,860	4,570	6,060	7,810
714	4.88	638	1,690	2,750	4,490	6,080	7,900
715	8.49	913	2,290	3,640	5,820	7,790	10,000
721	18.3	1,480	3,590	5,610	8,850	11,800	15,100
746	5.11	786	2,060	3,310	5,350	7,210	9,310
747	12.0	659	1,250	1,750	2,460	3,100	3,730

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

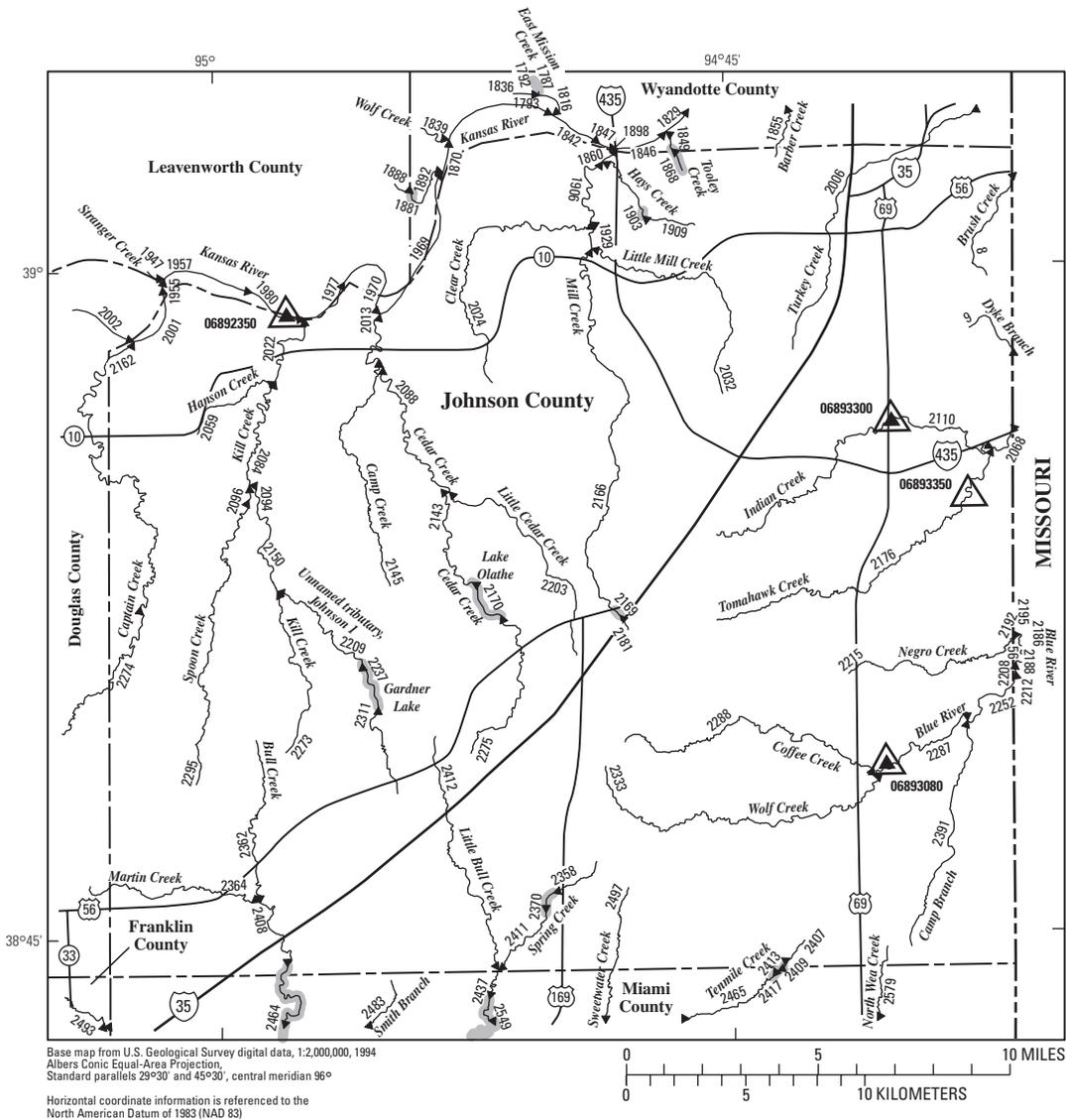
Determination site identification number (fig. 55)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		752	1026001520	JW						Limestone Creek	86.8	0
771	1026001515	JW				Brown Creek	34.0	0	.02	1.09	2.58	6.57
839	1026001535	JW	MC			Disappointment Creek	18.3	0	0	0	0	.51
841	102600124	JW	OB	SM		Oak Creek	175	0	1.58	4.98	12.4	30.0
846	1026001518	JW	MC			Limestone Creek	165	0	2.00	5.93	14.6	35.4
854	102600123	JW	MC			Little Oak Creek	45.8	0	0	.92	2.33	6.18
873	1026001524	JW	MC			Granite Creek	28.7	0	0	.11	.44	2.10
880	1026001513	JW	MC			Plum Creek	32.3	0	0	.32	1.00	3.63
920	1026001515	JW	MC			Brown Creek	58.8	0	.19	1.57	4.02	10.4
968	1026001536	JW	MC			Mulberry Creek	30.3	0	0	.20	.68	2.83

**Table 51.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Jewell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

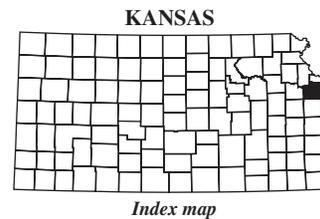
Determination site identification number (fig. 55)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
752	13.9	1,190	2,830	4,390	6,870	9,100	11,600
771	6.40	891	2,260	3,600	5,750	7,690	9,880
839	2.11	692	1,850	2,970	4,810	6,430	8,320
841	23.6	1,590	4,050	6,490	10,500	14,100	18,300
846	27.0	1,090	2,010	2,770	3,870	4,810	5,800
854	6.42	823	2,180	3,540	5,760	7,790	10,100
873	3.45	866	2,370	3,850	6,300	8,460	11,000
880	4.84	729	1,940	3,150	5,140	6,960	9,030
920	9.77	1,070	2,740	4,380	7,040	9,460	12,200
968	4.18	767	2,010	3,240	5,240	7,070	9,140





**EXPLANATION**

- ← 2493 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 06893080 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 06893350 △ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 2483 **Lake and determination site identification number**



**Figure 56.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Johnson County.

**324 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 52.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Johnson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydro-logic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 56)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
8	1030010154	JO				Brush Creek	12.0	0	0.54	2.56	7.15	17.6
9	1030010155	JO				Dyke Branch	4.13	0	.05	.78	2.00	5.25
56	1030010133	JO				Blue River	83.9	3.07	11.2	31.1	88.0	234
1855	10270104373	JO	WY			Barber Creek	10.0	0	1.33	4.03	9.66	20.8
1860	1027010439	JO	WY			Mill Creek	74.2	0	2.29	11.0	36.6	102
1868	HYDRO	JO	WY			HYDRO	2.32	NA	NA	NA	NA	NA
1898	10270104406	JO				Hays Creek	5.90	0	.78	2.41	5.60	12.1
1903	HYDRO	JO				HYDRO	4.19	NA	NA	NA	NA	NA
1906	1027010439	JO				Mill Creek	68.1	0	1.99	9.82	32.9	91.7
1909	10270104406	JO				Hays Creek	4.16	.04	.61	1.67	3.65	7.87
1929	1027010439	JO				Mill Creek	47.3	0	1.38	7.29	24.3	66.8
1969	102701042	JO	LV	WY		Kansas River	58,500	1,260	2,110	4,010	9,620	21,600
1970	102701042	JO	LV			Kansas River	58,400	1,250	2,110	4,010	9,610	21,600
2001	1027010418	JO	LV			Kansas River	57,800	1,200	2,020	3,820	9,070	20,500
2006	1027010477	JO	WY			Turkey Creek	31.4	0	1.61	6.63	19.4	48.5
2013	1027010438	JO				Cedar Creek	55.4	0	1.28	7.28	25.3	72.2
2022	1027010437	JO	LV			Kill Creek	62.1	0	1.12	6.53	23.2	68.4
2024	10270104383	JO				Clear Creek	18.2	0	.38	2.83	8.91	23.7
2032	1027010478	JO				Little Mill Creek	17.2	0	.70	3.66	10.9	27.4
2059	10270104437	JO				Hanson Creek	6.65	0	0	.17	1.46	5.85
2068	1030010132	JO				Indian Creek	54.6	1.30	5.35	15.8	32.1	86.5
2084	1027010437	JO				Kill Creek	52.3	0	.92	5.61	19.8	57.8
2088	1027010438	JO				Cedar Creek	39.0	0	.84	5.41	18.7	52.5
2094	1027010475	JO				Spoon Creek	18.3	0	0	1.79	6.50	19.1
2096	1027010475	JO				Spoon Creek	18.2	0	0	1.77	6.45	19.0
2110	1030010132	JO				Indian Creek	27.5	1.30	4.70	13.0	22.0	56.0
2143	1027010438	JO				Cedar Creek	19.4	0	.10	2.43	8.57	24.4
2145	1027010474	JO				Camp Creek	13.8	0	0	1.87	6.40	17.8
2150	1027010437	JO				Kill Creek	29.5	0	.38	3.41	11.9	34.0
2166	1027010439	JO				Mill Creek	29.8	0	.64	4.46	15.1	41.7
2169	HYDRO	JO				HYDRO	4.33	NA	NA	NA	NA	NA
2170	HYDRO	JO				HYDRO	15.0	NA	NA	NA	NA	NA
2176	1030010153	JO				Tomahawk Creek	25.2	0	.24	2.99	10.6	30.4
2181	1027010439	JO				Mill Creek	3.48	0	0	0	.32	2.22
2186	1030010158	JO				Negro Creek	11.6	.06	.18	1.92	6.28	17.4
2188	1030010133	JO				Blue River	84.7	3.15	11.5	31.8	89.8	239
2192	1030010133	JO				Blue River	84.7	3.15	11.5	31.8	89.8	239
2195	1030010133	JO				Blue River	84.7	3.15	11.5	31.8	89.8	239

**Table 52.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Johnson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 56)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
8	12.2	1,650	3,360	4,800	6,950	8,720	10,700
9	4.15	899	1,780	2,520	3,600	4,480	5,470
56	147	6,610	11,700	15,900	22,200	27,600	33,600
1855	12.3	1,450	2,950	4,220	6,120	7,680	9,440
1860	65.9	8,060	14,100	19,000	25,800	31,400	37,300
1868	NA	NA	NA	NA	NA	NA	NA
1898	7.40	1,070	2,150	3,060	4,410	5,510	6,760
1903	NA	NA	NA	NA	NA	NA	NA
1906	60.3	7,770	13,600	18,400	25,000	30,500	36,100
1909	5.03	877	1,750	2,480	3,560	4,430	5,430
1929	44.4	6,710	11,800	15,900	21,700	26,400	31,300
1969	8,470	50,100	88,900	119,000	148,000	200,000	240,000
1970	8,460	50,100	88,900	119,000	148,000	200,000	240,000
2001	8,070	47,800	85,100	115,000	144,000	196,000	236,000
2006	31.1	5,020	8,850	11,900	16,100	19,500	23,100
2013	49.1	6,240	11,400	15,600	21,700	26,700	31,900
2022	49.0	6,720	12,200	16,700	23,200	28,500	34,200
2024	16.9	2,030	4,200	6,050	8,840	11,100	13,700
2032	18.2	2,040	4,180	5,990	8,710	10,900	13,500
2059	5.59	1,140	2,300	3,270	4,730	5,910	7,260
2068	55.7	6,680	10,700	13,700	17,800	21,200	24,500
2084	41.8	6,470	11,700	15,900	22,000	27,000	32,200
2088	36.2	5,400	9,900	13,600	18,800	23,100	27,700
2094	15.2	2,080	4,280	6,150	8,960	11,300	13,900
2096	15.1	2,070	4,260	6,120	8,920	11,200	13,900
2110	34.6	4,060	6,210	7,770	9,890	11,600	13,300
2143	18.0	2,210	4,520	6,480	9,430	11,800	14,600
2145	13.2	1,770	3,620	5,190	7,530	9,450	11,600
2150	25.2	2,780	5,750	8,300	12,100	15,300	18,900
2166	28.7	2,830	5,850	8,430	12,300	15,500	19,200
2169	NA	NA	NA	NA	NA	NA	NA
2170	NA	NA	NA	NA	NA	NA	NA
2176	22.6	2,630	4,890	6,760	9,520	11,900	14,500
2181	2.75	829	1,630	2,290	3,270	4,060	4,950
2186	12.8	1,650	3,340	4,760	6,870	8,610	10,600
2188	150	6,560	11,700	15,900	22,200	27,600	33,500
2192	150	6,580	11,700	15,900	22,200	27,600	33,600
2195	150	6,590	11,700	15,900	22,200	27,600	33,600

**Table 52.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Johnson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

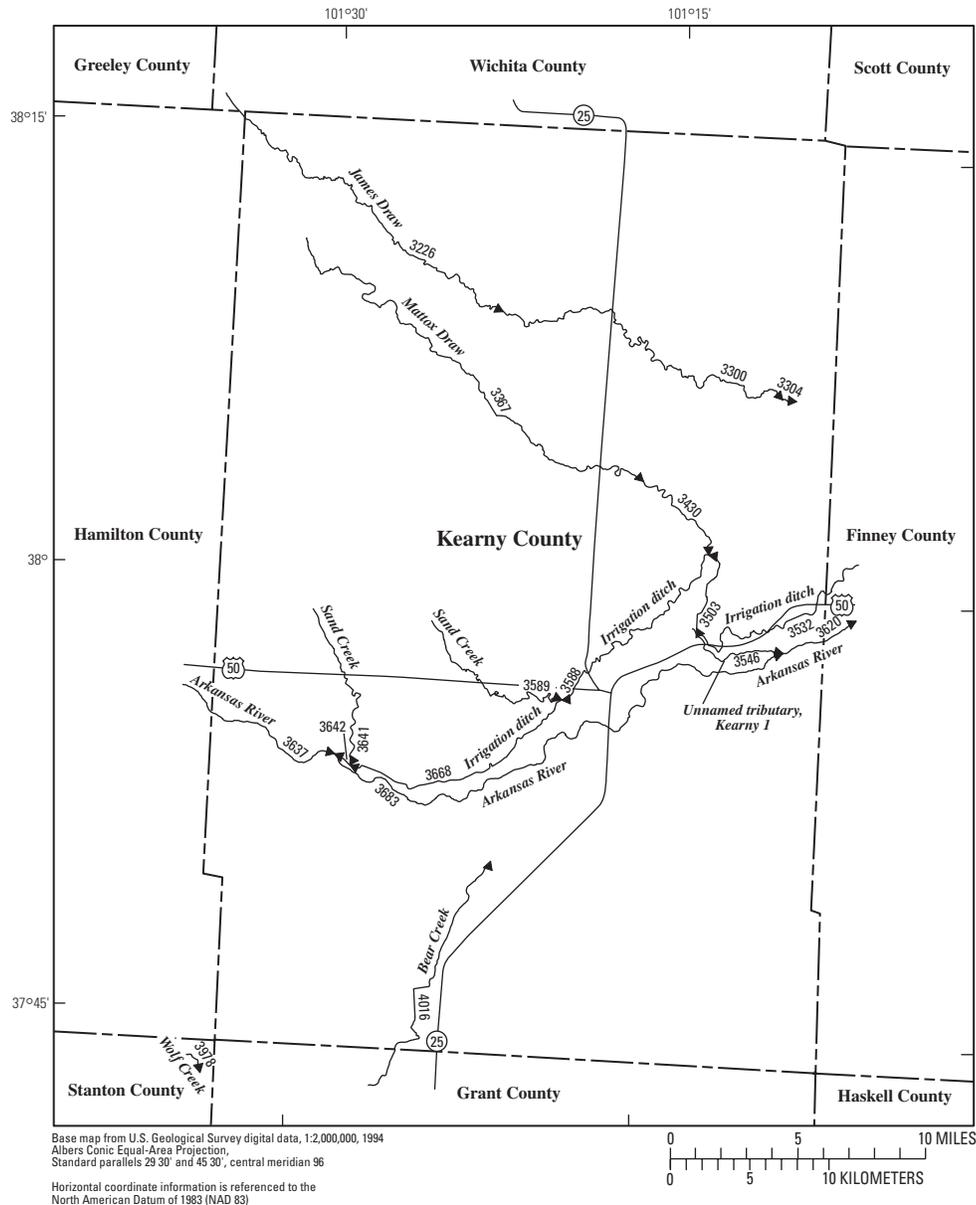
Determination site identification number (fig. 56)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
2203	1027010476	JO				Little Cedar Creek	12.5	0	0	1.75	6.02	16.8
2208	1030010133	JO				Blue River	80.6	2.83	10.4	29.0	82.2	219
2209	10270104452	JO				Unnamed tributary, Johnson 1	16.1	0	0	1.57	5.84	17.3
2212	1030010133	JO				Blue River	80.6	2.83	10.4	29.0	82.2	219
2215	1030010158	JO				Negro Creek	11.6	.06	.18	1.92	6.28	17.4
2237	HYDRO	JO				HYDRO	10.9	NA	NA	NA	NA	NA
2252	1030010133	JO				Blue River	80.4	2.75	10.1	28.4	80.7	215
2273	1027010437	JO				Kill Creek	8.34	0	0	1.04	3.39	9.57
2275	1027010438	JO				Cedar Creek	11.5	0	0	.94	3.75	11.6
2287	1030010133	JO				Blue River	46.4	.07	.69	5.00	19.0	57.0
2288	1030010157	JO				Coffee Creek	18.2	0	0	1.95	7.27	21.4
2295	1027010475	JO				Spoon Creek	18.2	0	0	1.77	6.45	19.0
2311	10270104452	JO				Unnamed tributary, Johnson 1	7.94	0	0	.23	1.51	5.89
2333	103001011102	JO				Wolf Creek	23.9	.02	.13	2.66	9.88	29.0
2358	1029010250	JO				Spring Creek	4.71	0	0	.42	1.60	5.13
2362	1029010226	JO				Bull Creek	9.70	0	0	.98	3.42	10.1
2370	HYDRO	JO				HYDRO	5.69	NA	NA	NA	NA	NA
2391	1030010156	JO				Camp Branch	28.3	.32	1.32	5.65	17.7	48.4
2407	1029010225	JO				Tenmile Creek	6.01	0	0	.35	1.63	5.64
2408	1029010226	JO				Bull Creek	33.0	0	.42	3.48	12.2	35.3
2409	HYDRO	JO				HYDRO	6.30	NA	NA	NA	NA	NA
2411	1029010250	JO				Spring Creek	9.26	0	0	1.25	4.26	12.0
2412	1029010251	JO				Little Bull Creek	16.6	0	0	1.78	6.33	18.3
2413	1029010225	JO				Tenmile Creek	6.63	0	0	.42	1.88	6.35
2417	HYDRO	JO	MI			HYDRO	7.10	NA	NA	NA	NA	NA
2437	1029010250	JO	MI			Spring Creek	27.7	0	.31	3.18	11.2	32.2
2464	HYDRO	JO	MI			HYDRO	39.0	NA	NA	NA	NA	NA
2497	1029010249	JO	MI			Sweetwater Creek	12.6	0	0	1.36	4.97	14.6
2579	1029010221	JO	MI			North Wea Creek	26.5	0	.12	2.74	10.2	30.2

**Table 52.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Johnson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

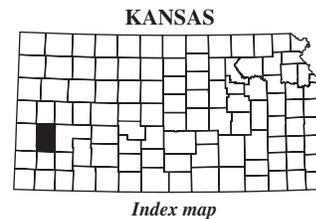
Determination site identification number (fig. 56)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2203	12.5	1,720	3,480	4,970	7,200	9,020	11,100
2208	138	6,490	11,500	15,700	21,900	27,200	33,100
2209	13.8	1,970	4,030	5,760	8,370	10,500	13,000
2212	138	6,530	11,600	15,700	21,900	27,300	33,200
2215	12.8	1,650	3,340	4,760	6,870	8,610	10,600
2237	NA	NA	NA	NA	NA	NA	NA
2252	135	6,570	11,600	15,800	22,000	27,400	33,300
2273	7.65	1,330	2,690	3,830	5,520	6,910	8,490
2275	9.82	1,640	3,310	4,720	6,820	8,540	10,500
2287	36.0	4,820	8,610	11,700	16,400	20,500	25,000
2288	15.7	2,060	4,150	5,920	8,630	10,900	13,500
2295	15.1	2,070	4,260	6,120	8,920	11,200	13,900
2311	5.98	1,310	2,640	3,750	5,410	6,760	8,290
2333	20.3	2,350	4,750	6,790	9,930	12,600	15,600
2358	4.50	989	1,960	2,760	3,940	4,910	6,000
2362	8.35	1,460	2,950	4,210	6,080	7,620	9,360
2370	NA	NA	NA	NA	NA	NA	NA
2391	33.6	2,780	5,720	8,230	12,000	15,100	18,700
2407	5.24	1,140	2,260	3,200	4,590	5,720	7,000
2408	26.6	4,280	8,090	11,200	15,800	19,500	23,500
2409	NA	NA	NA	NA	NA	NA	NA
2411	9.19	1,460	2,940	4,170	6,010	7,510	9,210
2412	14.4	2,030	4,140	5,920	8,590	10,800	13,300
2413	5.79	1,200	2,400	3,400	4,880	6,080	7,450
2417	NA	NA	NA	NA	NA	NA	NA
2437	24.1	2,750	5,650	8,130	11,900	14,900	18,400
2464	NA	NA	NA	NA	NA	NA	NA
2497	11.6	1,770	3,560	5,070	7,320	9,170	11,300
2579	23.1	2,710	5,560	7,970	11,600	14,600	18,000





**EXPLANATION**

- ◀ 4016 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06853800 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06875800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 926 Lake and determination site identification number



**Figure 57.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Kearny County.

**Table 53.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kearny County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

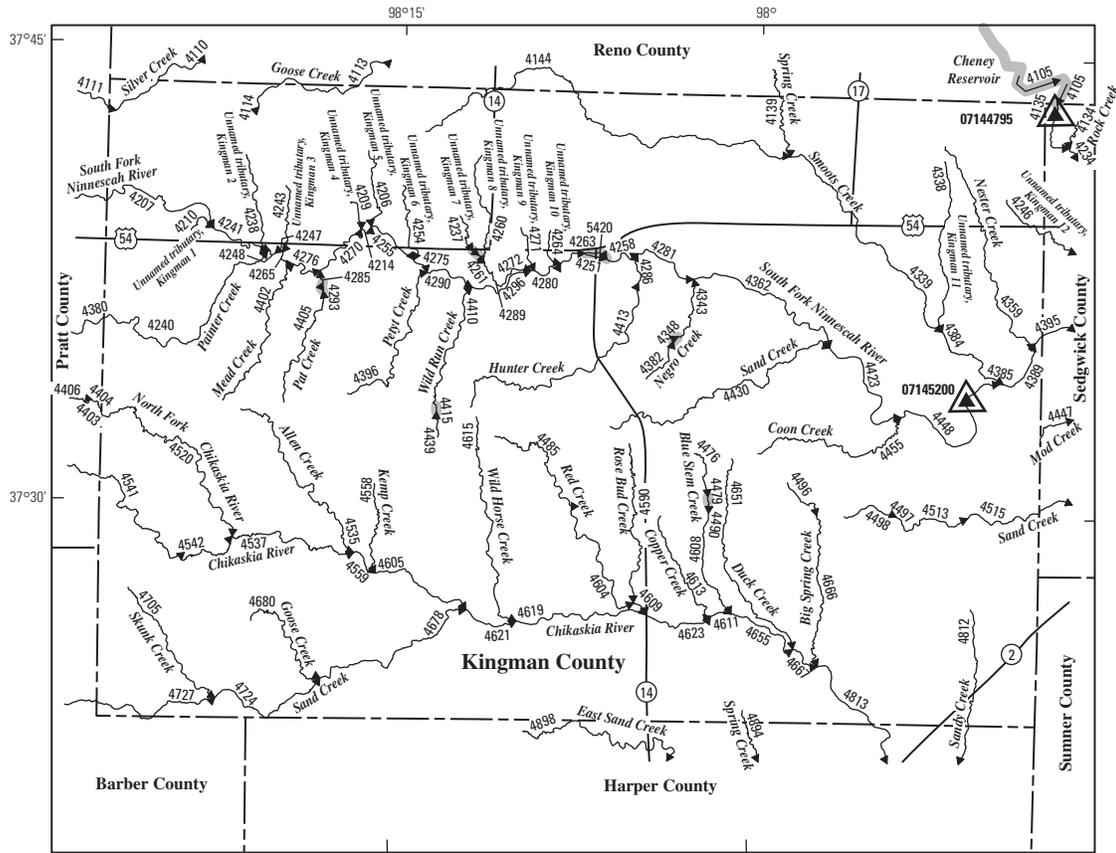
Determination site identification number (fig. 57)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3300	1103000110	KE						James Draw	326	0	0
3304	1103000110	KE				James Draw	372	0	0	0	0	0	0
3367	1103000111	KE				Mattox Draw	155	0	0	0	0	0	0
3430	1103000111	KE				Mattox Draw	175	0	0	0	0	0	0
3503	1103000111	KE				Mattox Draw	192	0	0	0	0	0	0
3546	1103000118	KE				Unnamed tributary, Kearny 1	3.15	0	0	0	0	0	0
3588	NRDitch	KE				NRDitch	396	0	0	0	0	0	0
3589	1103000113	KE				Sand Creek	46.0	0	0	0	0	0	0
3641	1103000114	KE				Sand Creek	67.2	0	0	0	0	0	0
3642	NRDitch	KE				NRDitch	524	0	0	0	0	0	0
3668	NRDitch	KE				NRDitch	456	0	0	0	0	0	0
3683	110300013	KE				Arkansas River	26,600	1.53	12.6	55.8	182	352	

**Table 53.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kearny County.—Continued

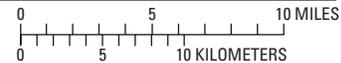
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 57)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3300	0.17	416	1,510	2,840	5,380	7,990	11,300
3304	.49	473	1,680	3,160	5,930	8,780	12,400
3367	0	270	1,010	1,920	3,670	5,480	7,750
3430	0	297	1,100	2,090	3,960	5,900	8,340
3503	.35	275	1,020	1,960	3,740	5,600	7,940
3546	0	76	263	471	840	1,190	1,610
3588	1.41	505	1,750	3,250	6,030	8,870	12,400
3589	0	170	634	1,200	2,270	3,360	4,710
3641	0	211	778	1,470	2,770	4,100	5,750
3642	2.20	472	1,690	3,170	5,990	8,890	12,500
3668	1.88	448	1,600	3,000	5,660	8,390	11,800
3683	180	955	3,590	9,250	21,900	36,900	62,400



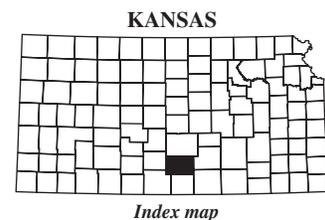


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 4727 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07145200 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07144795 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4105 Lake and determination site identification number



**Figure 58.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Kingman County.

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 58)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4110	110300147	KM	RN					Silver Creek	93.6	1.34
4111	110300147	KM	PR			Silver Creek	67.8	.79	1.73	2.59	4.24	8.36
4113	1103001410	KM	RN			Goose Creek	55.5	.08	1.08	2.39	4.93	11.5
4114	1103001410	KM				Goose Creek	2.22	0	0	0	0	0
4139	110300158	KM	RN			Spring Creek	46.2	.15	1.24	2.77	5.72	13.1
4144	110300152	KM	RN			Smoots Creek	76.4	1.50	3.03	5.20	9.69	20.3
4206	11030015259	KM				Unnamed tributary, Kingman 5	7.47	0	.10	.20	.24	.48
4207	110300154	KM	PR			South Fork Ninescah River	308	24.0	34.7	45.9	63.0	92.3
4209	11030015261	KM				Unnamed tributary, Kingman 4	2.91	0	0	0	0	0
4210	11030015417	KM				Unnamed tributary, Kingman 1	3.36	0	0	0	0	0
4214	110300153	KM				South Fork Ninescah River	431	38.8	56.1	75.4	106	159
4237	11030015518	KM				Unnamed tributary, Kingman 7	3.17	0	0	0	0	0
4238	11030015271	KM				Unnamed tributary, Kingman 2	8.86	0	.10	.20	.23	.27
4240	110300153	KM				South Fork Ninescah River	381	32.6	47.0	62.6	87.0	129
4241	110300154	KM				South Fork Ninescah River	314	24.8	35.7	47.3	65.1	95.5
4243	11030015270	KM				Unnamed tributary, Kingman 3	6.99	0	0	.05	.10	.20
4246	11030014411	KM	SG			Unnamed tributary, Kingman 12	10.6	.02	.49	.87	1.16	2.53
4247	110300153	KM				South Fork Ninescah River	390	33.7	48.6	65.0	90.4	134
4248	HYDRO	KM				HYDRO	3.41	NA	NA	NA	NA	NA
4251	110300153	KM				South Fork Ninescah River	516	49.5	71.9	97.7	138	211
4254	11030015253	KM				Unnamed tributary, Kingman 6	5.83	0	0	0	.01	.01
4255	110300153	KM				South Fork Ninescah River	440	40.0	57.8	77.9	109	165
4258	110300153	KM				South Fork Ninescah River	521	50.2	72.9	99.2	140	215
4260	11030015514	KM				Unnamed tributary, Kingman 8	11.0	0	0	0	.03	.06
4261	11030015518	KM				Unnamed tributary, Kingman 7	3.62	0	0	0	0	.01
4263	110300153	KM				South Fork Ninescah River	515	49.4	71.7	97.5	138	211
4264	11030015249	KM				Unnamed tributary, Kingman 10	5.20	0	0	0	.01	.01
4265	110300153	KM				South Fork Ninescah River	398	34.7	50.1	67.0	93.4	139
4270	110300153	KM				South Fork Ninescah River	427	38.3	55.3	74.3	104	156
4271	11030015520	KM				Unnamed tributary, Kingman 9	3.32	0	0	0	0	0
4272	110300153	KM				South Fork Ninescah River	502	47.7	69.2	93.9	133	202
4275	110300153	KM				South Fork Ninescah River	447	40.9	59.1	79.7	112	169
4276	110300153	KM				South Fork Ninescah River	411	36.3	52.4	70.2	98.1	147
4280	110300153	KM				South Fork Ninescah River	509	48.6	70.5	95.8	136	207
4281	110300153	KM				South Fork Ninescah River	554	54.3	79.0	108	153	236
4285	1103001511	KM				Pat Creek	12.1	.02	.06	.10	.21	.88
4286	1103001514	KM				Hunter Creek	24.9	.31	1.19	2.03	3.30	6.58
4289	11030015514	KM				Unnamed tributary, Kingman 8	16.1	.81	1.03	1.16	1.29	2.44

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 58)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4110	12.7	982	2,430	3,840	6,110	8,170	10,500
4111	8.23	832	2,060	3,240	5,130	6,820	8,740
4113	10.6	1,130	2,720	4,240	6,630	8,770	11,200
4114	0	246	605	935	1,450	1,900	2,410
4139	11.1	1,420	3,200	4,820	7,290	9,440	11,800
4144	16.0	1,370	3,090	4,670	7,070	9,150	11,400
4206	1.15	518	1,290	2,010	3,160	4,150	5,300
4207	70.7	2,960	6,340	9,200	13,400	16,900	20,700
4209	0	299	733	1,130	1,760	2,290	2,910
4210	0	296	743	1,160	1,820	2,390	3,050
4214	116	4,030	8,700	12,600	18,500	23,400	28,700
4237	0	322	785	1,210	1,880	2,450	3,110
4238	1.32	548	1,390	2,170	3,430	4,520	5,790
4240	96.5	3,620	7,800	11,300	16,500	20,900	25,700
4241	73.0	3,000	6,440	9,340	13,600	17,200	21,000
4243	1.02	489	1,220	1,910	3,000	3,940	5,040
4246	2.87	724	1,760	2,720	4,230	5,530	7,030
4247	100	3,700	7,970	11,600	16,900	21,400	26,200
4248	NA	NA	NA	NA	NA	NA	NA
4251	151	4,730	10,200	14,800	21,700	27,400	33,700
4254	.66	455	1,130	1,750	2,730	3,580	4,560
4255	120	4,110	8,850	12,900	18,800	23,800	29,200
4258	153	4,770	10,300	15,000	21,800	27,700	34,000
4260	1.54	671	1,670	2,610	4,100	5,390	6,890
4261	0	348	850	1,310	2,040	2,660	3,380
4263	151	4,720	10,200	14,800	21,600	27,400	33,600
4264	.32	436	1,070	1,650	2,570	3,370	4,280
4265	103	3,770	8,120	11,800	17,200	21,800	26,700
4270	115	4,000	8,640	12,600	18,300	23,200	28,500
4271	0	335	815	1,250	1,940	2,540	3,220
4272	145	4,640	10,000	14,500	21,200	26,900	33,000
4275	123	4,150	8,960	13,000	19,000	24,100	29,600
4276	108	3,890	8,370	12,200	17,700	22,500	27,600
4280	148	4,670	10,100	14,700	21,400	27,100	33,300
4281	167	5,080	10,900	15,900	23,200	29,400	36,100
4285	2.06	677	1,710	2,680	4,240	5,590	7,160
4286	5.93	1,080	2,740	4,310	6,820	9,010	11,600
4289	3.09	833	2,100	3,280	5,180	6,820	8,740

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 58)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4290	110300153	KM						South Fork Ninescah River	468	43.4
4293	HYDRO	KM				HYDRO	11.9	NA	NA	NA	NA	NA
4296	110300153	KM				South Fork Ninescah River	485	45.6	66.1	89.6	126	192
4338	11030015579	KM				Unnamed tributary, Kingman 11	12.1	2.38	2.51	2.64	2.85	4.02
4339	110300152	KM				Smoots Creek	154	2.55	5.89	11.7	23.5	50.6
4343	1103001513	KM				Negro Creek	10.1	.19	.48	.50	.53	1.15
4348	HYDRO	KM				HYDRO	4.95	NA	NA	NA	NA	NA
4359	1103001515	KM				Nester Creek	25.8	.23	1.26	2.39	4.30	8.90
4362	110300153	KM				South Fork Ninescah River	585	58.3	85.1	117	167	259
4380	110300157	KM	PR			Painter Creek	67.6	.62	1.95	3.48	6.15	12.4
4382	1103001513	KM				Negro Creek	4.38	0	0	0	0	.01
4384	110300152	KM				Smoots Creek	172	3.16	7.13	14.1	27.7	59.1
4385	110300153	KM				South Fork Ninescah River	647	66.0	97.0	135	194	304
4389	110300151	KM				South Fork Ninescah River	823	69.8	105	152	226	376
4395	110300151	KM	SG			South Fork Ninescah River	859	70.5	106	156	233	393
4396	1103001512	KM				Petyt Creek	18.6	.05	.57	1.05	1.52	3.28
4402	1103001510	KM				Mead Creek	11.8	0	0	0	.04	.49
4405	1103001511	KM				Pat Creek	11.4	0	0	.02	.05	.57
4410	1103001516	KM				Wild Run Creek	13.8	.27	.74	1.01	1.18	2.31
4413	1103001514	KM				Hunter Creek	23.9	.27	1.11	1.90	3.07	6.15
4415	HYDRO	KM				HYDRO	5.30	NA	NA	NA	NA	NA
4423	110300153	KM				South Fork Ninescah River	618	62.4	91.4	126	181	282
4430	1103001518	KM				Sand Creek	22.4	.38	1.32	2.14	3.38	6.53
4439	1103001516	KM				Wild Run Creek	5.22	0	0	.01	.01	.01
4447	1103001519	KM	SG			Mod Creek	14.7	0	0	.08	.29	1.91
4448	110300153	KM				South Fork Ninescah River	647	66.0	97.0	135	194	304
4455	1103001517	KM				Coon Creek	14.7	.03	.47	1.26	2.15	4.56
4476	1106000548	KM				Blue Stem Creek	4.35	0	0	0	0	0
4479	HYDRO	KM				HYDRO	4.53	NA	NA	NA	NA	NA
4485	1106000543	KM				Red Creek	11.9	.05	.42	.67	.70	1.60
4490	1106000548	KM				Blue Stem Creek	5.14	0	0	0	0	.01
4496	1106000534	KM				Big Spring Creek	5.74	0	0	0	0	.01
4497	1103001614	KM				Sand Creek	.00	0	0	0	0	0
4498	1103001614	KM				Sand Creek	6.09	0	0	0	0	0
4513	1103001614	KM				Sand Creek	17.5	0	.34	.85	1.35	3.26
4515	1103001614	KM	SG			Sand Creek	63.2	0	1.18	3.07	7.02	17.0
4520	1106000537	KM	PR			North Fork Chikaskia River	27.7	.22	1.05	1.64	2.42	4.69
4535	1106000540	KM				Allen Creek	16.2	.07	.75	1.17	1.55	3.00

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 58)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4290	131	4,330	9,350	13,600	19,800	25,100	30,900
4293	NA	NA	NA	NA	NA	NA	NA
4296	138	4,480	9,660	14,000	20,500	26,000	31,900
4338	3.33	759	1,870	2,890	4,510	5,910	7,530
4339	35.3	2,150	4,720	7,050	10,600	13,700	17,100
4343	2.02	644	1,600	2,490	3,900	5,120	6,530
4348	NA	NA	NA	NA	NA	NA	NA
4359	7.32	1,190	2,970	4,630	7,280	9,580	12,300
4362	181	5,310	11,400	16,600	24,300	30,700	37,700
4380	11.1	967	2,400	3,780	5,970	7,930	10,100
4382	0	396	968	1,490	2,320	3,030	3,850
4384	40.0	2,220	4,850	7,230	10,800	14,000	17,400
4385	209	5,850	12,600	18,300	26,700	33,800	41,500
4389	246	6,680	14,200	20,600	29,900	37,900	46,500
4395	255	6,830	14,500	21,000	30,600	38,700	47,500
4396	3.77	880	2,240	3,520	5,580	7,370	9,450
4402	1.80	645	1,640	2,590	4,100	5,410	6,940
4405	1.84	652	1,650	2,580	4,080	5,370	6,880
4410	2.85	750	1,890	2,960	4,670	6,150	7,880
4413	5.65	1,050	2,670	4,200	6,650	8,780	11,300
4415	NA	NA	NA	NA	NA	NA	NA
4423	195	5,600	12,100	17,500	25,600	32,400	39,700
4430	5.68	1,030	2,600	4,070	6,440	8,490	10,900
4439	.24	423	1,050	1,620	2,540	3,320	4,230
4447	3.16	841	2,080	3,240	5,070	6,660	8,500
4448	209	5,850	12,600	18,300	26,700	33,800	41,500
4455	4.19	813	2,030	3,170	4,980	6,550	8,370
4476	.09	396	967	1,490	2,310	3,020	3,840
4479	NA	NA	NA	NA	NA	NA	NA
4485	2.39	700	1,750	2,730	4,290	5,650	7,220
4490	.32	437	1,070	1,650	2,570	3,360	4,270
4496	0.90	469	1,150	1,770	2,760	3,610	4,590
4497	0	18	35	49	68	83	100
4498	.91	484	1,190	1,840	2,860	3,740	4,760
4513	3.79	888	2,230	3,490	5,510	7,250	9,280
4515	14.4	1,530	3,550	5,430	8,330	10,900	13,700
4520	4.69	985	2,600	4,160	6,700	8,930	11,500
4535	3.29	785	2,010	3,170	5,030	6,650	8,540

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.—Continued

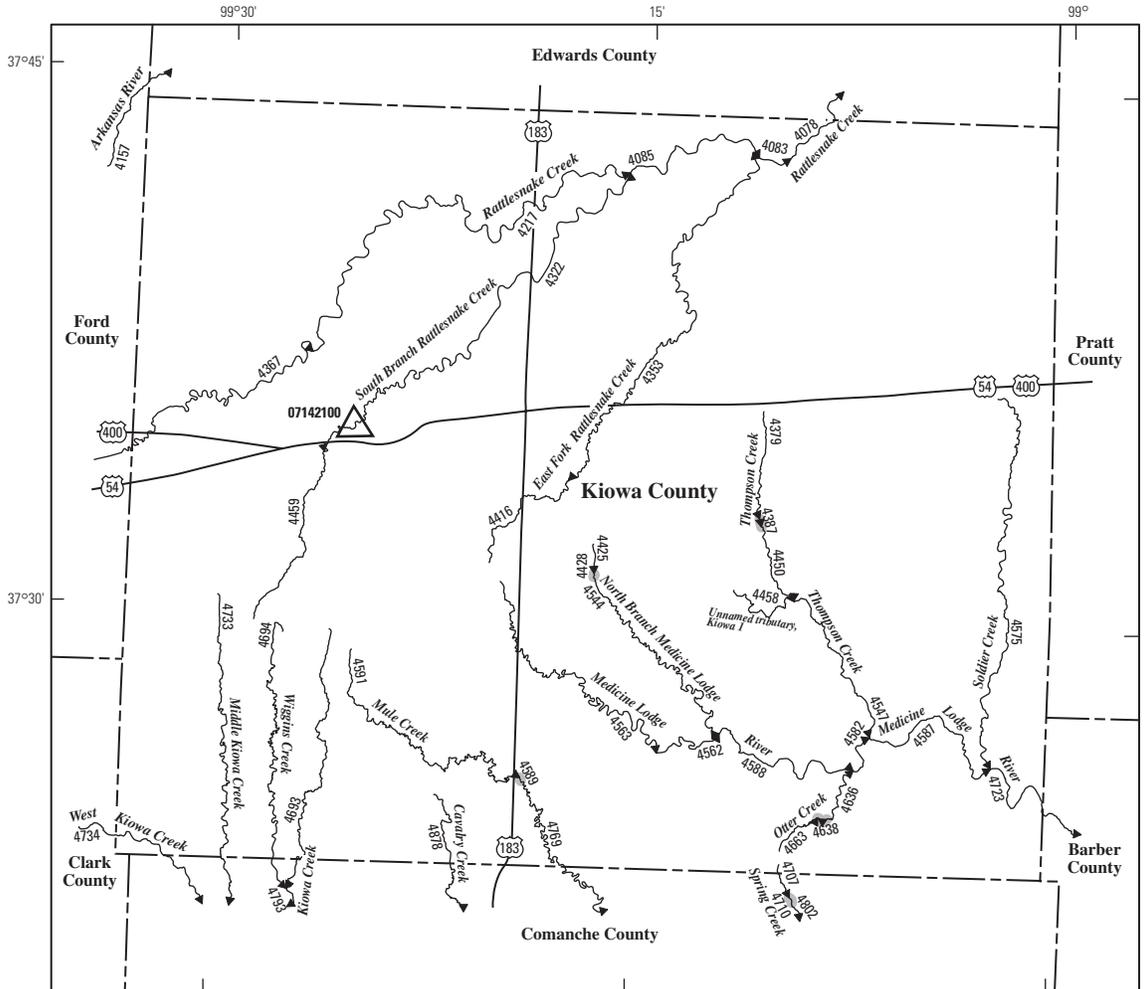
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 58)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4537	1106000510	KM						Chikaskia River	84.1	1.33
4541	1106000510	KM	PR			Chikaskia River	40.7	.76	1.78	2.51	3.76	6.99
4542	1106000510	KM				Chikaskia River	46.5	.80	2.10	3.14	4.94	9.22
4558	1106000549	KM				Kemp Creek	10.9	0	.10	.20	.44	1.10
4559	1106000510	KM				Chikaskia River	103	1.62	4.44	7.95	14.5	28.8
4590	1106000544	KM				Rose Bud Creek	10.8	0	.15	.30	.41	1.00
4604	1106000543	KM				Red Creek	21.0	.31	1.03	1.63	2.50	5.00
4605	1106000510	KM				Chikaskia River	123	1.95	5.33	9.85	18.4	36.9
4608	1106000548	KM				Blue Stem Creek	8.78	0	0	0	.01	.02
4609	1106000543	KM				Red Creek	32.5	.44	1.46	2.53	4.38	8.92
4611	110600059	KM				Chikaskia River	384	6.90	17.3	34.1	67.0	144
4613	1106000542	KM				Copper Creek	6.31	0	0	0	0	.01
4615	1106000541	KM				Wild Horse Creek	20.0	.28	1.21	1.93	2.95	5.57
4619	110600059	KM				Chikaskia River	336	5.65	14.4	28.1	55.1	118
4621	110600059	KM				Chikaskia River	302	4.74	12.1	23.5	46.3	98.9
4623	110600059	KM				Chikaskia River	377	6.71	16.9	33.3	65.4	141
4651	1106000532	KM				Duck Creek	13.8	.70	1.20	1.45	1.50	2.45
4655	110600059	KM				Chikaskia River	397	7.26	18.2	35.7	70.3	152
4666	1106000534	KM				Big Spring Creek	21.6	1.08	1.86	2.40	3.37	6.02
4667	110600059	KM				Chikaskia River	413	7.78	19.3	38.0	74.6	161
4678	1106000511	KM				Sand Creek	174	1.93	5.46	10.5	20.9	44.8
4680	1106000538	KM				Goose Creek	14.1	0	.16	.48	.49	1.36
4705	1106000539	KM				Skunk Creek	19.7	.13	.64	.93	1.10	2.23
4724	1106000511	KM				Sand Creek	137	1.22	3.65	6.85	13.6	29.2
5420	HYDRO	KM				HYDRO	2.70	NA	NA	NA	NA	NA

**Table 54.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kingman County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

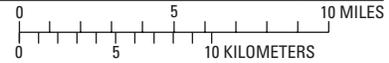
Determination site identification number (fig. 58)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4537	15.8	1,140	2,680	4,110	6,320	8,260	10,400
4541	6.33	684	1,660	2,580	4,010	5,270	6,660
4542	7.77	755	1,820	2,830	4,390	5,760	7,270
4558	2.01	637	1,610	2,520	3,980	5,240	6,700
4559	20.4	1,350	3,130	4,780	7,320	9,540	12,000
4590	2.00	667	1,660	2,590	4,060	5,340	6,820
4604	4.76	973	2,460	3,870	6,120	8,070	10,400
4605	25.4	1,580	3,620	5,490	8,360	10,900	13,600
4608	1.29	596	1,480	2,290	3,590	4,700	6,000
4609	7.57	990	2,280	3,450	5,240	6,800	8,490
4611	89.0	3,480	7,830	11,700	17,600	22,700	28,400
4613	.59	490	1,210	1,870	2,910	3,810	4,850
4615	4.88	932	2,360	3,720	5,890	7,770	9,970
4619	74.0	2,980	6,780	10,200	15,500	20,000	25,000
4621	63.4	2,650	6,090	9,220	14,000	18,200	22,900
4623	86.9	3,410	7,680	11,500	17,300	22,300	27,900
4651	2.84	777	1,940	3,030	4,760	6,260	8,000
4655	93.2	3,640	8,160	12,200	18,300	23,500	29,300
4666	5.20	1,010	2,540	3,990	6,300	8,300	10,600
4667	98.3	3,790	8,470	12,600	18,900	24,300	30,300
4678	31.6	1,630	3,900	6,040	9,380	12,300	15,700
4680	2.36	705	1,810	2,850	4,540	6,000	7,710
4705	3.02	817	2,140	3,400	5,450	7,240	9,340
4724	22.1	1,210	3,010	4,740	7,480	9,930	12,700
5420	NA	NA	NA	NA	NA	NA	NA





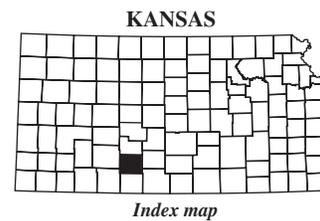
Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°

Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 746 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06853800 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06875800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 926 Lake and determination site identification number



**Figure 59.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Kiowa County.

**Table 55.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kiowa County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup> square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

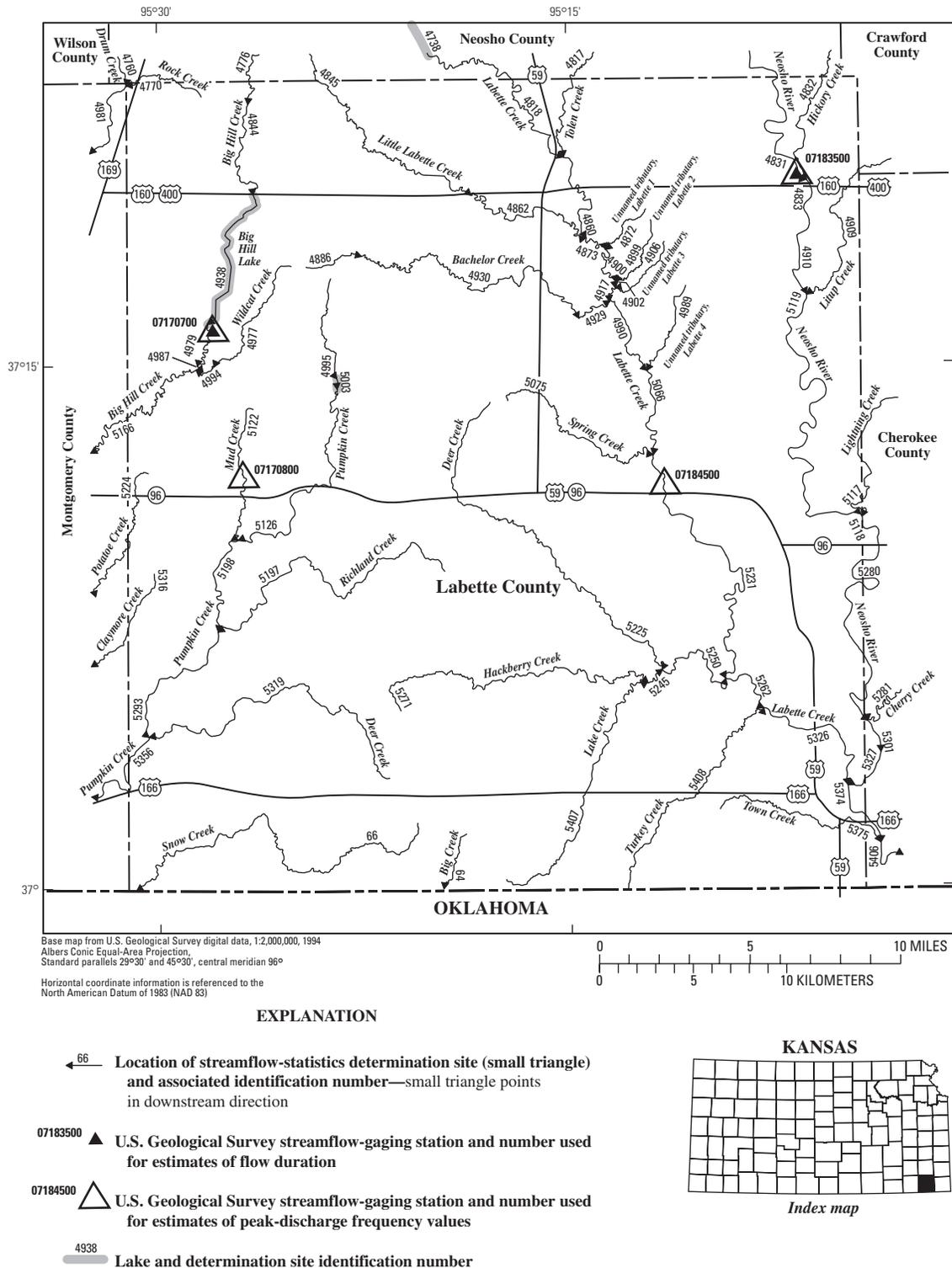
Determination site identification number (fig. 59)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4083	110300093	KW						Rattlesnake Creek	461	0.79
4085	110300094	KW				Rattlesnake Creek	373	.88	4.04	8.40	16.3	28.7
4217	110300094	KW				Rattlesnake Creek	264	.56	2.93	5.96	11.6	21.6
4322	110300099	KW				South Branch Rattlesnake Creek	73.4	0	.96	1.72	2.63	4.67
4353	110300095	KW				East Fork Rattlesnake Creek	78.1	0	.46	1.12	1.83	3.65
4379	1106000326	KW				Thompson Creek	37.7	0	0	.02	.05	.39
4387	HYDRO	KW				HYDRO	38.5	NA	NA	NA	NA	NA
4416	110300095	KW				East Fork Rattlesnake Creek	23.3	0	0	0	0	0
4425	1106000324	KW				North Branch Medicine Lodge River	7.56	0	0	0	0	0
4428	HYDRO	KW				HYDRO	7.72	NA	NA	NA	NA	NA
4450	1106000326	KW				Thompson Creek	46.1	.01	.05	.48	.65	1.69
4458	11060003559	KW				Unnamed tributary, Kiowa 1	10.8	0	0	0	0	.01
4459	110300099	KW				South Branch Rattlesnake Creek	25.3	0	0	0	0	0
4544	1106000324	KW				North Branch Medicine Lodge River	26.3	0	0	0	.02	.52
4547	1106000326	KW				Thompson Creek	79.2	.02	.83	2.17	4.05	8.13
4562	110600038	KW				Medicine Lodge River	38.4	.01	.04	.64	1.14	2.65
4563	110600038	KW				Medicine Lodge River	31.7	0	.03	.28	.43	1.33
4575	1106000327	KW				Soldier Creek	84.4	.04	1.82	3.27	5.49	10.2
4582	110600038	KW				Medicine Lodge River	95.4	.04	.93	2.92	6.06	12.6
4587	110600038	KW				Medicine Lodge River	189	.14	3.12	6.89	13.7	27.7
4588	110600038	KW				Medicine Lodge River	77.0	.02	.46	1.94	4.08	8.75
4589	HYDRO	KW				HYDRO	26.9	NA	NA	NA	NA	NA
4591	110600027	KW				Mule Creek	26.7	0	.01	.03	.08	.16
4636	1106000325	KW				Otter Creek	15.0	0	.01	.09	.18	.26
4638	HYDRO	KW				HYDRO	6.34	NA	NA	NA	NA	NA
4663	1106000325	KW				Otter Creek	5.89	0	0	0	0	0

**Table 55.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Kiowa County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 59)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4083	23.8	501	1,550	2,730	4,930	7,180	10,100
4085	21.9	513	1,540	2,670	4,720	6,780	9,360
4217	17.6	700	1,960	3,290	5,560	7,710	10,300
4322	5.19	416	1,090	1,730	2,750	3,650	4,670
4353	4.80	446	1,250	2,090	3,480	4,770	6,280
4379	2.22	705	1,760	2,770	4,350	5,760	7,330
4387	NA	NA	NA	NA	NA	NA	NA
4416	.56	600	1,740	2,890	4,820	6,560	8,630
4425	0	315	890	1,460	2,410	3,250	4,240
4428	NA	NA	NA	NA	NA	NA	NA
4450	3.17	803	1,980	3,100	4,850	6,410	8,130
4458	.19	398	1,120	1,850	3,050	4,120	5,380
4459	1.03	664	1,890	3,120	5,180	7,020	9,200
4544	1.97	660	1,900	3,160	5,270	7,160	9,410
4547	7.54	1,020	2,510	3,930	6,170	8,190	10,400
4562	3.52	539	1,470	2,400	3,940	5,350	6,960
4563	2.61	466	1,290	2,140	3,530	4,820	6,290
4575	8.79	1,020	2,430	3,760	5,820	7,640	9,650
4582	10.5	956	2,480	3,990	6,450	8,710	11,300
4587	20.6	1,420	3,500	5,520	8,740	11,700	15,000
4588	7.95	841	2,220	3,590	5,830	7,890	10,200
4589	NA	NA	NA	NA	NA	NA	NA
4591	1.58	689	1,970	3,260	5,420	7,360	9,660
4636	1.33	505	1,420	2,330	3,840	5,190	6,780
4638	NA	NA	NA	NA	NA	NA	NA
4663	0	293	807	1,310	2,140	2,880	3,740





**Figure 60.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Labette County.

**346 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 56.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Labette County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 60)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		64	1107010321	LB						Big Creek	9.02	0
66	1107010325	LB				Snow Creek	39.0	0	.40	3.85	14.7	44.2
4770	1107010361	LB	NO			Rock Creek	9.13	0	.23	1.97	6.00	15.3
4776	1107010332	LB	NO			Big Hill Creek	15.6	0	.09	2.14	7.47	20.9
4817	1107020539	LB	NO			Tolen Creek	21.4	0	.09	2.19	7.93	23.2
4818	1107020522	LB	NO			Labette Creek	54.5	0	1.20	6.52	22.9	66.1
4831	1107020511	LB	NO			Neosho River	4,770	54.0	182	852	3,560	9,760
4832	1107020510	LB	NO			Hickory Creek	53.7	0	1.24	6.18	21.4	61.4
4833	110702059	LB				Neosho River	4,770	59.0	140	547	1,570	5,300
4844	1107010332	LB				Big Hill Creek	27.6	0	.43	3.68	13.1	37.2
4845	1107020523	LB	NO			Little Labette Creek	35.4	0	.48	3.91	14.3	41.7
4860	1107020522	LB				Labette Creek	81.8	0	1.73	8.75	31.3	92.9
4862	1107020523	LB				Little Labette Creek	44.4	0	.71	4.80	17.5	51.4
4872	11070205305	LB				Unnamed tributary, Labette 1	7.73	0	0	.63	2.54	8.02
4873	1107020521	LB				Labette Creek	127	.18	2.68	12.9	46.8	142
4886	11070205396	LB				Bachelor Creek	5.54	0	0	.95	3.04	8.25
4899	11070205304	LB				Unnamed tributary, Labette 2	2.87	0	0	0	.15	1.65
4900	1107020521	LB				Labette Creek	136	.25	2.85	13.6	49.5	151
4902	1107020521	LB				Labette Creek	139	.27	2.90	13.8	50.3	154
4906	11070205303	LB				Unnamed tributary, Labette 3	5.05	0	0	.26	1.29	4.64
4910	110702059	LB				Neosho River	4,840	55.3	188	868	3,610	9,870
4917	1107020521	LB				Labette Creek	144	.32	2.99	14.3	51.9	159
4929	11070205396	LB				Bachelor Creek	33.4	0	.48	4.04	14.8	42.9
4930	11070205396	LB				Bachelor Creek	31.7	0	.45	3.90	14.3	41.2
4938	HYDRO	LB				HYDRO	45.5	NA	NA	NA	NA	NA
4977	1107010360	LB				Wildcat Creek	9.19	0	.36	2.59	8.00	19.8
4979	1107010332	LB				Big Hill Creek	47.5	0	.02	.88	18.0	69.0
4987	1107010332	LB				Big Hill Creek	47.6	0	.02	.88	18.0	69.0
4989	11070205298	LB				Unnamed tributary, Labette 4	11.2	0	0	1.00	3.97	12.1
4990	1107020521	LB				Labette Creek	182	.62	3.82	18.0	65.9	204
4994	1107010360	LB				Wildcat Creek	10.6	0	.39	2.82	8.92	22.3
4995	1107010328	LB				Pumpkin Creek	11.1	0	.05	2.03	7.06	19.1
5003	HYDRO	LB				HYDRO	12.1	NA	NA	NA	NA	NA
5066	1107020521	LB				Labette Creek	202	.77	4.19	19.7	72.2	226
5075	1107020530	LB				Spring Creek	18.7	0	0	1.99	7.61	22.5
5118	110702055	LB				Neosho River	4,890	56.4	193	883	3,650	9,970
5119	110702059	LB				Neosho River	4,890	56.4	193	883	3,650	9,970
5122	1107010359	LB				Mud Creek	12.8	0	.13	2.37	8.33	22.5

**Table 56.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Labette County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 60)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
64	7.93	1,700	3,270	4,570	6,480	8,020	9,760
66	34.2	6,090	10,700	14,300	19,400	23,600	27,900
4770	10.8	1,620	3,160	4,440	6,320	7,850	9,590
4776	15.7	2,190	4,340	6,130	8,790	11,000	13,400
4817	18.5	2,590	5,170	7,330	10,500	13,200	16,200
4818	47.5	4,240	8,010	11,100	15,700	19,400	23,500
4831	3,120	29,400	42,100	50,400	60,000	86,000	121,000
4832	45.5	4,510	8,330	11,500	16,000	19,700	23,600
4833	2,470	28,700	53,900	75,900	109,000	138,000	170,000
4844	27.1	3,100	6,180	8,780	12,700	15,800	19,400
4845	31.4	3,460	6,700	9,420	13,400	16,700	20,200
4860	66.7	5,210	9,610	13,200	18,500	22,800	27,400
4862	38.4	3,700	7,150	10,100	14,300	17,800	21,600
4872	7.11	1,460	2,840	3,980	5,670	7,030	8,580
4873	99.7	6,770	12,000	16,100	22,100	26,900	32,100
4886	6.37	1,250	2,400	3,330	4,710	5,820	7,070
4899	2.32	826	1,580	2,180	3,070	3,790	4,600
4900	106	6,870	12,100	16,300	22,200	27,000	32,200
4902	108	6,970	12,200	16,400	22,400	27,200	32,300
4906	4.58	1,150	2,220	3,090	4,380	5,420	6,590
4910	3,170	29,900	43,000	51,500	62,600	89,000	124,000
4917	111	7,080	12,400	16,600	22,500	27,400	32,500
4929	31.7	3,480	6,690	9,380	13,300	16,500	20,000
4930	30.5	3,500	6,690	9,370	13,200	16,400	19,800
4938	NA	NA	NA	NA	NA	NA	NA
4977	12.9	1,770	3,390	4,720	6,670	8,250	10,000
4979	29.3	605	1,550	2,340	3,410	4,230	5,040
4987	29.3	605	1,550	2,340	3,410	4,230	5,040
4989	10.3	1,850	3,610	5,070	7,230	8,980	11,000
4990	140	7,920	13,400	17,600	23,400	28,100	33,100
4994	14.7	1,940	3,710	5,170	7,320	9,050	11,000
4995	13.6	1,950	3,760	5,250	7,450	9,230	11,200
5003	NA	NA	NA	NA	NA	NA	NA
5066	154	7,830	13,100	17,000	22,500	26,800	31,400
5075	17.9	2,570	5,020	7,060	10,100	12,500	15,300
5118	3,220	30,300	43,800	52,400	64,800	91,600	127,000
5119	3,220	30,300	43,800	52,400	64,800	91,600	127,000
5122	16.0	1,270	2,180	2,870	3,840	4,630	5,460

**Table 56.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Labette County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

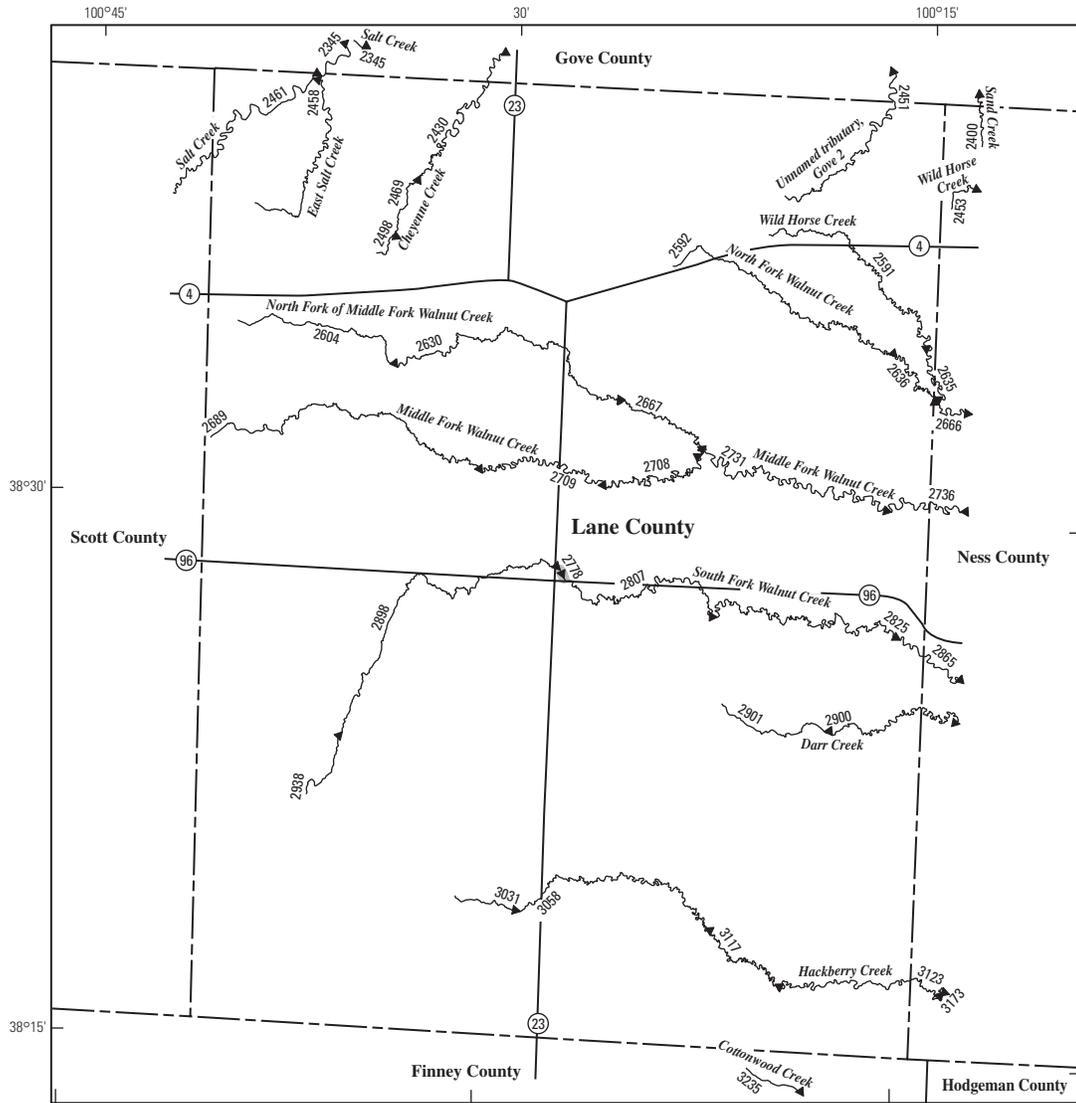
Determination site identification number (fig. 60)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5126	1107010328	LB						Pumpkin Creek	31.7	0
5166	1107010332	LB	MG			Big Hill Creek	90.7	.42	1.28	7.79	50.4	170
5197	1107010349	LB				Richland Creek	30.2	0	.17	3.18	12.6	37.9
5198	1107010328	LB				Pumpkin Creek	51.2	0	.95	6.54	25.0	73.6
5224	1107010331	LB	MG			Potatoe Creek	19.8	0	0	2.21	8.59	25.3
5225	1107020527	LB				Deer Creek	43.4	0	.50	4.41	17.1	51.5
5231	1107020521	LB				Labette Creek	248	1.16	5.15	24.0	88.4	279
5245	1107020524	LB				Lake Creek	63.9	0	.78	5.38	20.9	65.0
5250	1107020524	LB				Lake Creek	113	0	1.81	9.82	38.0	120
5262	1107020520	LB				Labette Creek	364	2.11	7.36	34.1	126	408
5271	11070205460	LB				Hackberry Creek	32.3	0	.01	2.43	10.0	31.5
5293	1107010328	LB				Pumpkin Creek	90.3	0	1.66	9.83	38.3	117
5316	1107010350	LB	MG			Claymore Creek	18.3	0	0	1.12	5.03	16.4
5319	1107010351	LB				Deer Creek	31.6	0	.06	2.63	10.6	33.0
5326	1107020520	LB				Labette Creek	399	2.42	8.06	37.2	138	447
5356	1107010328	LB	MG			Pumpkin Creek	137	.03	2.49	13.4	52.3	165
5407	1107020524	LB				Lake Creek	30.1	0	.24	2.98	11.2	33.4
5408	1107020529	LB				Turkey Creek	26.6	0	.08	2.54	9.86	29.7

**Table 56.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Labette County.—Continued

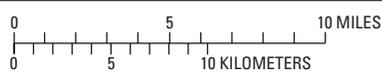
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 60)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5126	33.6	4,010	7,490	10,400	14,500	17,900	21,500
5166	61.4	958	2,110	3,050	4,310	5,280	6,230
5197	29.3	5,390	9,490	12,800	17,300	21,100	24,900
5198	52.2	4,220	7,410	10,000	13,600	16,600	19,600
5224	19.8	2,790	5,410	7,590	10,800	13,400	16,400
5225	39.2	4,820	8,910	12,300	17,100	21,100	25,300
5231	188	8,330	13,200	16,600	21,200	24,700	28,300
5245	50.9	6,180	11,100	15,200	21,000	25,700	30,700
5250	88.9	8,200	14,600	19,800	27,200	33,400	39,900
5262	268	11,000	17,600	22,400	29,000	34,200	39,600
5271	26.5	4,090	7,640	10,600	14,800	18,200	21,900
5293	83.3	6,120	10,600	14,300	19,500	23,800	28,200
5316	14.8	2,580	5,040	7,080	10,100	12,600	15,400
5319	27.0	6,330	10,800	14,400	19,300	23,200	27,300
5326	292	11,300	18,200	23,200	30,300	35,800	41,600
5356	116	7,490	13,000	17,600	24,100	29,400	35,100
5407	26.4	4,860	8,660	11,700	16,000	19,500	23,100
5408	23.8	3,200	6,300	8,890	12,700	15,900	19,400



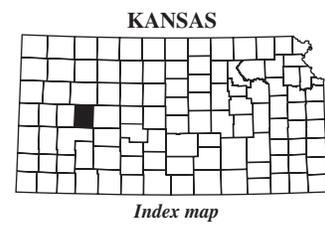


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 3031 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 06853800 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 06875800 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2778 Lake and determination site identification number



**Figure 61.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Lane County.

**352 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 57.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lane County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

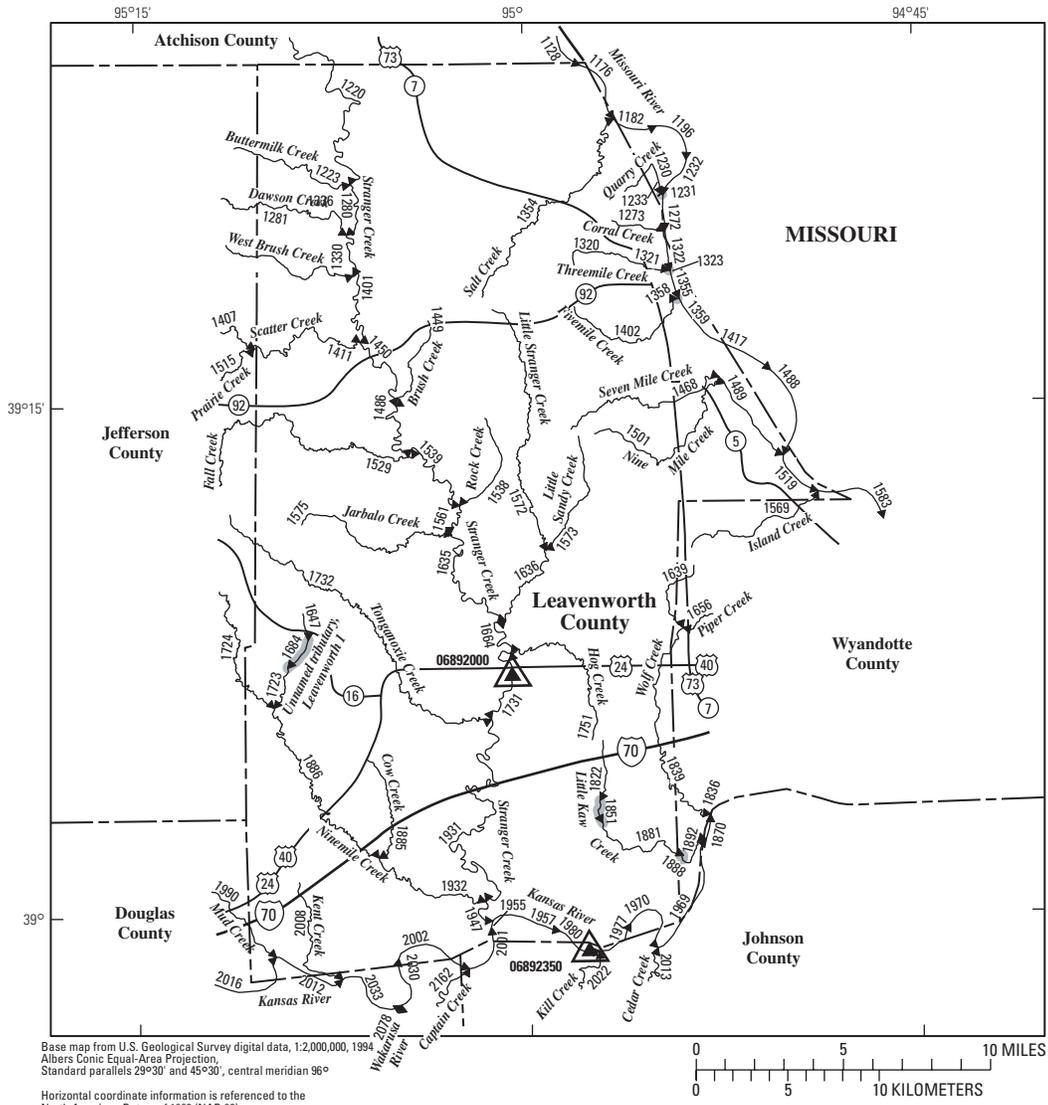
Determination site identification number (fig. 61)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2469	1026000336	LE						Cheyenne Creek	15.3	0	0
2498	1026000336	LE				Cheyenne Creek	7.87	0	0	0	0	0	0
2591	1103000711	LE				Wild Horse Creek	23.5	0	0	0	0	0	0
2592	110300076	LE				North Fork Walnut Creek	47.8	0	0	0	0	0	0
2604	110300078	LE				North Fork of Middle Fork Walnut Creek	24.8	0	0	0	0	0	0
2630	110300078	LE				North Fork of Middle Fork Walnut Creek	60.3	0	0	0	0	0	0
2635	1103000711	LE	NS			Wild Horse Creek	25.9	0	0	0	0	0	0
2636	110300076	LE	NS			North Fork Walnut Creek	52.5	0	0	0	0	0	0
2667	110300078	LE				North Fork of Middle Fork Walnut Creek	73.3	0	0	0	0	0	0
2689	110300079	LE				Middle Fork Walnut Creek	94.6	0	0	0	0	0	0
2708	110300079	LE				Middle Fork Walnut Creek	117	0	0	0	0	0	0
2709	110300079	LE				Middle Fork Walnut Creek	107	0	0	0	0	0	0
2731	110300077	LE				Middle Fork Walnut Creek	217	0	0	0	0	0	.07
2736	110300077	LE	NS			Middle Fork Walnut Creek	224	0	0	0	0	0	.42
2778	HYDRO	LE				HYDRO	210	NA	NA	NA	NA	NA	NA
2807	1103000710	LE				South Fork Walnut Creek	241	0	0	0	0	0	0
2825	1103000710	LE				South Fork Walnut Creek	264	0	0	0	0	0	.18
2865	1103000710	LE	NS			South Fork Walnut Creek	272	0	0	0	0	0	.45
2898	1103000710	LE				South Fork Walnut Creek	209	0	0	0	0	0	0
2900	1103000712	LE	NS			Darr Creek	55.8	0	0	0	0	0	0
2901	1103000712	LE				Darr Creek	32.3	0	0	0	0	0	0
2938	1103000710	LE				South Fork Walnut Creek	138	0	0	0	0	0	0
3031	110300054	LE				Hackberry Creek	57.7	0	0	0	0	0	0
3058	110300054	LE				Hackberry Creek	119	0	0	0	0	0	0
3117	110300054	LE				Hackberry Creek	135	0	0	0	0	0	0
3123	110300054	LE	NS			Hackberry Creek	163	0	0	0	0	0	0

**Table 57.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lane County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

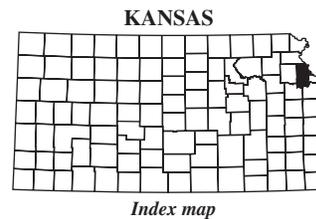
Determination site identification number (fig. 61)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2469	0	305	972	1,680	2,920	4,060	5,420
2498	0	207	652	1,120	1,930	2,670	3,560
2591	0	454	1,410	2,410	4,130	5,710	7,610
2592	.62	342	1,090	1,930	3,410	4,850	6,570
2604	0	398	1,280	2,240	3,900	5,450	7,310
2630	0	300	1,010	1,840	3,350	4,840	6,670
2635	0	480	1,490	2,560	4,390	6,080	8,100
2636	.85	347	1,110	1,970	3,490	4,970	6,750
2667	.34	348	1,160	2,090	3,770	5,440	7,470
2689	.41	403	1,330	2,380	4,290	6,180	8,480
2708	1.05	383	1,290	2,350	4,280	6,200	8,570
2709	.76	387	1,290	2,340	4,260	6,160	8,490
2731	3.39	548	1,780	3,200	5,780	8,330	11,500
2736	3.70	569	1,840	3,300	5,940	8,550	11,800
2778	NA	NA	NA	NA	NA	NA	NA
2807	2.82	613	1,930	3,410	6,060	8,660	11,800
2825	3.56	637	2,000	3,540	6,280	8,970	12,200
2865	3.81	653	2,040	3,610	6,390	9,130	12,500
2898	2.03	539	1,720	3,070	5,480	7,860	10,800
2900	.41	362	1,160	2,070	3,670	5,250	7,130
2901	0	297	959	1,700	3,020	4,300	5,830
2938	.90	402	1,320	2,370	4,260	6,130	8,400
3031	0	505	1,540	2,650	4,590	6,450	8,640
3058	1.44	526	1,660	2,940	5,200	7,420	10,100
3117	1.89	517	1,650	2,940	5,240	7,490	10,200
3123	2.73	567	1,800	3,190	5,660	8,100	11,000





**EXPLANATION**

- ◀ 2016 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06892000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06892350 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1851 Lake and determination site identification number



**Figure 62.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Leavenworth County.

**356 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 58.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Leavenworth County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 62)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1176	102400114	LV						Missouri River	421,000	23,600
1182	102400114	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1196	102400112	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1230	10240011176	LV				Quarry Creek	3.20	.66	1.06	1.96	3.74	7.26
1231	HYDRO	LV				HYDRO	3.20	NA	NA	NA	NA	NA
1232	102400112	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1233	10240011176	LV				Quarry Creek	3.20	.66	1.06	1.96	3.74	7.26
1272	102400112	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1273	10240011175	LV				Corral Creek	2.62	.82	.98	1.65	3.02	5.83
1280	102701048	LV				Stranger Creek	229	.38	4.36	20.4	70.9	222
1320	1024001136	LV				Threemile Creek	7.45	0	.75	2.92	7.60	17.1
1321	HYDRO	LV				HYDRO	7.45	NA	NA	NA	NA	NA
1322	102400112	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1323	1024001136	LV				Threemile Creek	7.45	0	.75	2.92	7.60	17.1
1330	102701048	LV				Stranger Creek	240	.48	4.66	21.7	75.2	235
1354	1024001134	LV				Salt Creek	29.9	0	1.24	6.65	21.2	54.7
1355	102400112	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1358	1024001135	LV				Fivemile Creek	11.6	0	.75	3.59	10.2	24.3
1359	HYDRO	LV				HYDRO	11.6	NA	NA	NA	NA	NA
1401	102701048	LV				Stranger Creek	254	.62	5.12	23.6	81.5	254
1402	1024001135	LV				Fivemile Creek	11.6	0	.75	3.58	10.2	24.3
1417	102400111	LV				Missouri River	421,000	23,600	34,500	43,400	57,700	75,200
1449	1027010449	LV				Brush Creek	10.1	0	.12	2.14	6.81	17.7
1450	102701047	LV				Stranger Creek	297	.98	6.19	28.2	96.7	303
1468	10240011157	LV				Seven Mile Creek	10.1	0	.48	2.62	7.47	18.2
1486	102701047	LV				Stranger Creek	310	1.11	6.58	29.9	102	320
1488	102400111	LV				Missouri River	424,000	23,800	34,700	43,700	58,200	76,100
1489	10240011157	LV				Seven Mile Creek	27.5	0	1.34	5.95	17.8	44.7
1501	10240011161	LV				Nine Mile Creek	11.8	0	.60	2.92	8.22	20.0
1519	102400111	LV				Missouri River	424,000	23,800	34,700	43,700	58,200	76,100
1538	10270104902	LV				Rock Creek	7.85	0	0	.75	3.31	10.4
1539	102701047	LV				Stranger Creek	336	1.33	7.19	32.5	111	348
1561	102701047	LV				Stranger Creek	344	1.38	7.35	33.3	113	357
1569	1024001137	LV	WY			Island Creek	17.5	0	1.43	5.22	13.9	32.0
1572	10270104881	LV				Little Stranger Creek	17.7	0	0	2.02	8.00	23.9
1573	10270104883	LV				Little Sandy Creek	10.1	0	0	.53	3.06	10.7
1575	1027010451	LV				Jarbalo Creek	14.4	0	0	2.11	7.27	20.2
1635	102701047	LV				Stranger Creek	368	1.58	7.92	35.5	120	381

**Table 58.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Leavenworth County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 62)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1176	48,200	109,000	147,000	175,000	200,000	234,000	262,000
1182	48,200	109,000	147,000	175,000	200,000	234,000	262,000
1196	48,200	109,000	147,000	175,000	200,000	234,000	262,000
1230	4.31	797	1,560	2,190	3,120	3,870	4,710
1231	NA	NA	NA	NA	NA	NA	NA
1232	48,200	109,000	148,000	175,000	200,000	234,000	262,000
1233	4.31	797	1,560	2,190	3,120	3,870	4,710
1272	48,200	109,000	148,000	175,000	200,000	234,000	263,000
1273	3.53	728	1,410	1,970	2,790	3,460	4,200
1280	141	5,710	11,500	16,600	24,200	30,900	38,300
1320	10.4	1,350	2,670	3,770	5,390	6,710	8,200
1321	NA	NA	NA	NA	NA	NA	NA
1322	48,200	109,000	148,000	175,000	200,000	234,000	263,000
1323	10.4	1,350	2,670	3,770	5,390	6,710	8,200
1330	147	5,820	11,600	16,700	24,400	31,100	38,500
1354	34.0	2,870	5,900	8,500	12,400	15,600	19,300
1355	48,200	109,000	148,000	175,000	200,000	234,000	263,000
1358	15.1	1,740	3,470	4,920	7,080	8,840	10,800
1359	NA	NA	NA	NA	NA	NA	NA
1401	157	5,780	11,500	16,500	24,100	30,600	37,900
1402	15.1	1,740	3,470	4,920	7,070	8,830	10,800
1417	48,200	109,000	148,000	175,000	200,000	234,000	263,000
1449	11.8	1,490	3,020	4,310	6,230	7,800	9,590
1450	182	6,040	11,800	16,700	24,200	30,600	37,800
1468	11.9	1,550	3,110	4,420	6,370	7,960	9,760
1486	191	6,050	11,700	16,600	24,000	30,300	37,300
1488	48,600	111,000	150,000	178,000	204,000	239,000	268,000
1489	28.7	2,720	5,600	8,050	11,700	14,800	18,300
1501	13.2	1,650	3,350	4,780	6,920	8,670	10,700
1519	48,600	111,000	150,000	178,000	204,000	239,000	268,000
1538	8.12	1,270	2,560	3,650	5,270	6,600	8,110
1539	205	6,140	11,800	16,600	23,700	29,900	36,700
1561	210	6,120	11,700	16,400	23,500	29,600	36,400
1569	19.4	1,970	4,080	5,870	8,580	10,800	13,300
1572	17.6	2,100	4,280	6,130	8,900	11,200	13,800
1573	9.17	1,460	2,980	4,250	6,160	7,730	9,500
1575	14.3	1,740	3,600	5,180	7,550	9,500	11,700
1635	221	6,190	11,700	16,300	23,100	29,000	35,600

**Table 58.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Leavenworth County.—Continued

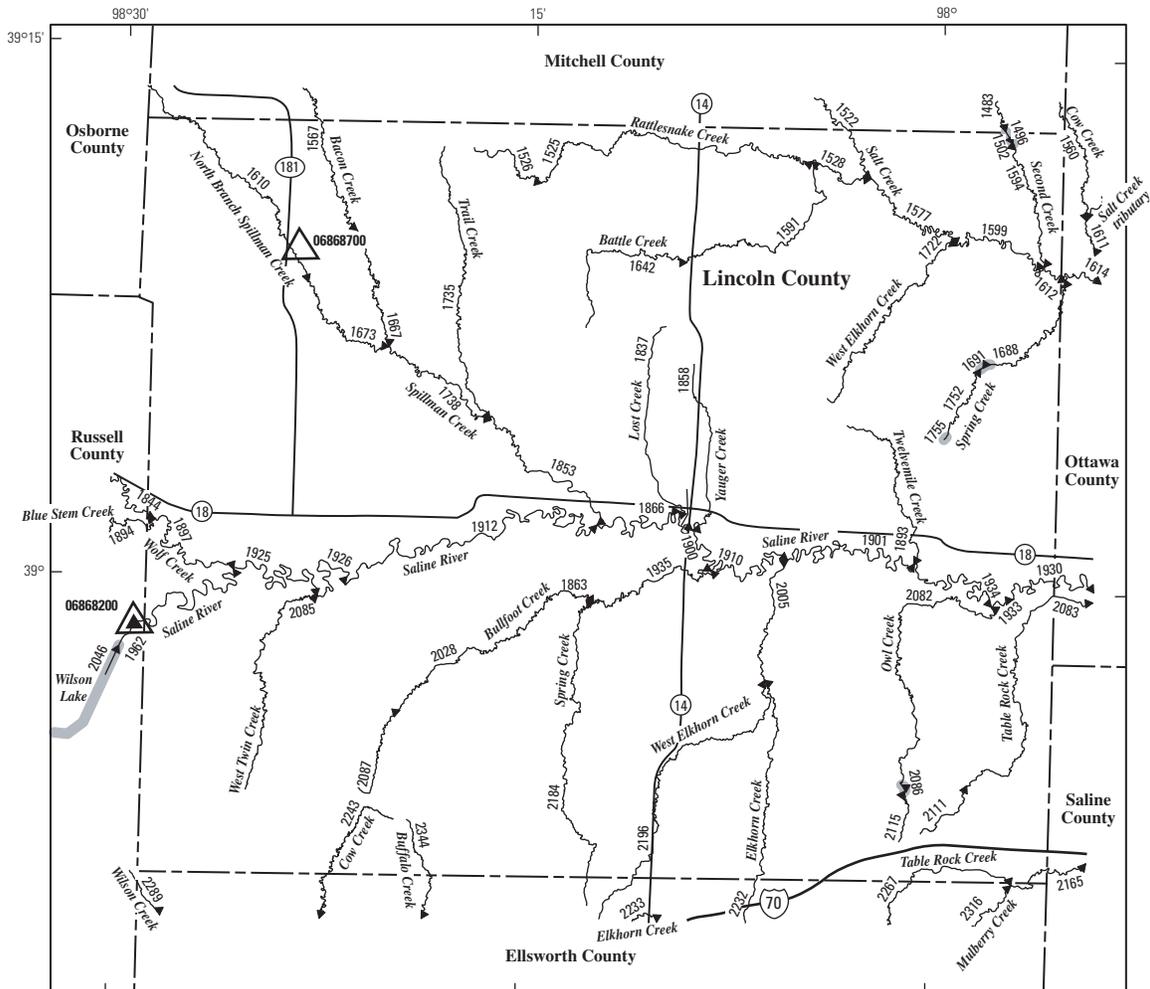
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NR Tribal, tribal stream]

Determination site identification number (fig. 62)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1636	10270104881	LV						Little Stranger Creek	34.7	0
1639	1027010453	LV	WY			Wolf Creek	8.68	0	0	.42	2.36	8.34
1647	1027010416	LV				Unnamed tributary, Leavenworth 1	2.84	0	0	.23	.85	3.03
1664	102701047	LV				Stranger Creek	404	1.83	8.60	38.5	130	416
1684	HYDRO	LV				HYDRO	6.60	NA	NA	NA	NA	NA
1723	1027010416	LV				Unnamed tributary, Leavenworth 1	9.17	0	.07	1.80	5.56	14.5
1731	102701047	LV				Stranger Creek	424	2.00	9.00	40.0	135	433
1751	1027010454	LV				Hog Creek	14.6	0	0	.82	3.97	13.4
1822	1027010459	LV				Little Kaw Creek	5.42	0	0	.09	1.01	4.36
1851	HYDRO	LV				HYDRO	7.79	NA	NA	NA	NA	NA
1839	1027010453	LV	WY			Wolf Creek	34.5	0	.82	4.84	15.8	43.3
1881	1027010459	LV	WY			Little Kaw Creek	16.8	0	0	1.60	6.19	18.6
1885	1027010458	LV				Cow Creek	10.8	0	0	1.67	5.38	14.5
1886	1027010415	LV				Ninemile Creek	47.0	0	1.51	8.01	26.3	71.2
1931	102701046	LV				Stranger Creek	475	2.45	10.4	46.7	157	502
1932	1027010415	LV				Ninemile Creek	64.9	0	1.99	10.1	33.6	92.8
1947	102701045	LV				Stranger Creek	541	3.06	12.5	56.4	189	602
1955	102701044	LV				Kansas River	57,800	1,200	2,020	3,820	9,070	20,500
1957	102701044	LV				Kansas River	58,400	1,250	2,100	4,000	9,600	21,500
1977	102701043	LV				Kansas River	58,400	1,250	2,110	4,010	9,610	21,600
1980	102701043	LV				Kansas River	58,400	1,250	2,100	4,000	9,610	21,600
2002	1027010418	LV				Kansas River	57,800	1,200	2,010	3,810	9,030	20,400
2008	1027010473	LV				Kent Creek	10.5	0	.10	1.77	5.49	14.5

**Table 58.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Leavenworth County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

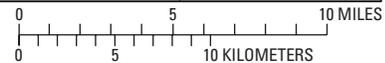
Determination site identification number (fig. 62)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1636	30.3	4,460	8,760	12,400	17,800	22,300	27,100
1639	7.37	1,290	2,640	3,790	5,500	6,900	8,490
1647	2.72	678	1,360	1,920	2,750	3,430	4,190
1664	239	6,300	11,600	16,100	22,600	28,200	34,400
1684	NA	NA	NA	NA	NA	NA	NA
1723	9.95	1,340	2,750	3,940	5,710	7,170	8,830
1731	247	6,170	11,300	15,500	21,700	27,000	32,900
1751	11.5	1,680	3,510	5,070	7,420	9,360	11,600
1822	4.34	947	1,940	2,770	4,020	5,040	6,200
1839	29.9	4,090	7,850	11,000	15,500	19,300	23,300
1851	NA	NA	NA	NA	NA	NA	NA
1881	14.4	1,850	3,850	5,570	8,170	10,300	12,800
1885	10.5	1,440	2,980	4,280	6,240	7,860	9,690
1886	45.4	4,780	9,090	12,700	17,900	22,200	26,900
1931	283	6,430	11,800	16,300	22,800	28,500	34,800
1932	59.2	5,130	9,840	13,800	19,600	24,500	29,700
1947	333	7,230	13,200	18,200	25,500	31,800	38,700
1955	8,070	47,800	85,100	115,000	144,000	196,000	236,000
1957	8,450	50,100	88,900	119,000	148,000	200,000	240,000
1977	8,460	50,100	88,900	119,000	148,000	200,000	240,000
1980	8,460	50,100	88,900	119,000	148,000	200,000	240,000
2002	8,040	47,600	84,800	114,000	143,000	195,000	236,000
2008	10.5	1,480	3,030	4,330	6,290	7,890	9,710





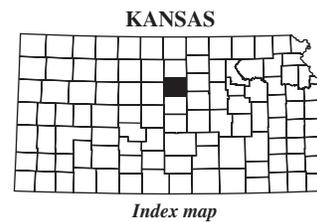
Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 46°30', central meridian 96°

Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 2243 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06868200 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06868700 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2046 Lake and determination site identification number



**Figure 63.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Lincoln County.

**362 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 59.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lincoln County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 63)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1496	HYDRO	LC	MC					HYDRO	19.0	NA
1502	1026001554	LC				Second Creek	19.1	0	0	0.31	0.68	2.26
1522	1026001530	LC	MC			Salt Creek	147	.03	1.18	4.22	10.8	30.2
1525	1026001532	LC	MC			Rattlesnake Creek	43.1	0	0	1.19	2.95	7.78
1526	1026001532	LC				Rattlesnake Creek	11.6	0	0	0	0	0
1528	1026001531	LC				Rattlesnake Creek	89.1	.01	.71	2.96	7.44	19.4
1567	102600107	LC	MC			Bacon Creek	36.3	0	0	.44	1.30	4.06
1577	1026001529	LC				Salt Creek	246	.14	2.17	6.80	17.4	53.4
1591	1026001533	LC				Battle Creek	43.9	0	.11	1.45	3.54	9.07
1594	1026001554	LC				Second Creek	27.1	0	0	.67	1.61	4.42
1599	1026001529	LC				Salt Creek	280	.39	2.58	7.93	20.2	63.3
1610	102600108	LC	MC	OB		North Branch Spillman Creek	51.6	0	0	.88	2.43	6.67
1612	1026001529	LC	OT			Salt Creek	308	.58	2.80	8.53	21.7	69.9
1642	1026001533	LC				Battle Creek	23.7	0	0	.45	1.11	3.44
1667	102600107	LC				Bacon Creek	45.3	0	0	.83	2.23	6.19
1673	102600108	LC				North Branch Spillman Creek	77.0	0	.26	1.94	5.05	12.8
1688	1026001553	LC	OT			Spring Creek	36.5	0	.59	2.20	4.84	11.0
1691	HYDRO	LC				HYDRO	16.9	NA	NA	NA	NA	NA
1722	1026001547	LC				West Elkhorn Creek	26.1	0	.08	1.21	2.64	6.25
1735	1026001032	LC				Trail Creek	31.8	0	0	.54	1.44	4.30
1738	102600106	LC				Spillman Creek	135	0	1.09	3.94	10.1	25.2
1752	1026001553	LC				Spring Creek	15.2	0	0	.74	1.38	3.33
1755	HYDRO	LC				HYDRO	3.30	NA	NA	NA	NA	NA
1837	1026001034	LC				Lost Creek	17.2	0	0	.46	.86	2.43
1844	1026001010	LC	RS			Wolf Creek	247	.70	2.05	4.56	12.7	32.4
1853	102600106	LC				Spillman Creek	180	0	1.80	5.64	14.4	35.6
1858	1026001035	LC				Yauger Creek	19.9	0	0	.81	1.66	4.02
1863	102600105	LC				Saline River	2,530	11.5	18.6	34.8	89.2	385
1866	102600105	LC				Saline River	2,510	11.3	18.3	34.2	87.0	379
1893	1026001036	LC				Twelvemile Creek	17.3	0	.01	.83	1.61	3.81
1894	1026001033	LC	RS			Blue Stem Creek	31.9	0	0	.72	1.75	4.60
1897	1026001010	LC				Wolf Creek	293	.70	2.75	6.34	17.0	43.1
1900	102600105	LC				Saline River	2,550	11.8	19.0	35.5	91.6	392
1901	102600103	LC				Saline River	2,750	14.0	22.4	42.0	115	459
1910	102600104	LC				Saline River	2,640	12.8	20.6	38.6	103	424
1912	102600109	LC				Saline River	2,320	9.28	15.2	28.3	65.4	317
1925	102600109	LC				Saline River	2,250	8.45	13.9	25.8	56.6	292
1926	102600109	LC				Saline River	2,290	8.93	14.6	27.2	61.6	306

**Table 59.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lincoln County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 63)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1496	NA	NA	NA	NA	NA	NA	NA
1502	3.10	743	1,980	3,170	5,120	6,830	8,840
1522	23.4	1,440	3,730	6,020	9,800	13,300	17,400
1525	7.35	827	2,180	3,540	5,760	7,790	10,100
1526	.98	554	1,460	2,330	3,750	4,980	6,430
1528	15.7	1,240	3,170	5,100	8,230	11,100	14,400
1567	4.93	793	2,100	3,410	5,550	7,510	9,750
1577	38.8	1,680	4,370	7,090	11,600	15,900	21,000
1591	8.14	1,030	2,610	4,150	6,620	8,870	11,400
1594	4.73	916	2,450	3,940	6,380	8,530	11,100
1599	44.9	1,610	4,270	7,000	11,600	16,000	21,200
1610	6.95	342	1,100	1,960	3,600	5,260	7,360
1612	49.1	1,630	4,350	7,130	11,900	16,400	21,800
1642	4.09	869	2,300	3,690	5,960	7,940	10,300
1667	6.54	846	2,240	3,640	5,930	8,040	10,500
1673	11.4	569	1,650	2,810	4,950	7,050	9,670
1688	8.79	1,080	2,620	4,090	6,400	8,460	10,800
1691	NA	NA	NA	NA	NA	NA	NA
1722	5.60	933	2,470	3,960	6,380	8,510	11,000
1735	4.99	871	2,230	3,570	5,720	7,660	9,860
1738	20.3	983	2,630	4,340	7,360	10,300	13,800
1752	3.45	725	1,870	2,960	4,720	6,250	8,030
1755	NA	NA	NA	NA	NA	NA	NA
1837	3.11	739	1,940	3,090	4,950	6,580	8,480
1844	26.1	1,910	4,480	6,900	10,800	14,400	18,400
1853	27.6	1,120	2,990	4,930	8,330	11,600	15,600
1858	4.09	807	2,120	3,380	5,420	7,210	9,310
1863	170	1,900	3,830	5,180	6,820	7,960	9,060
1866	167	1,870	3,760	5,080	6,700	7,810	8,890
1893	3.84	772	2,000	3,180	5,070	6,730	8,670
1894	4.90	751	1,980	3,200	5,180	7,000	9,060
1897	33.0	2,010	4,750	7,330	11,500	15,400	19,700
1900	173	1,950	3,910	5,280	6,960	8,130	9,250
1901	199	2,350	4,680	6,320	8,340	9,750	11,100
1910	185	2,140	4,270	5,770	7,620	8,900	10,100
1912	142	1,500	3,060	4,130	5,430	6,310	7,160
1925	132	1,350	2,770	3,750	4,920	5,700	6,450
1926	138	1,430	2,930	3,970	5,210	6,050	6,860

**Table 59.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lincoln County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

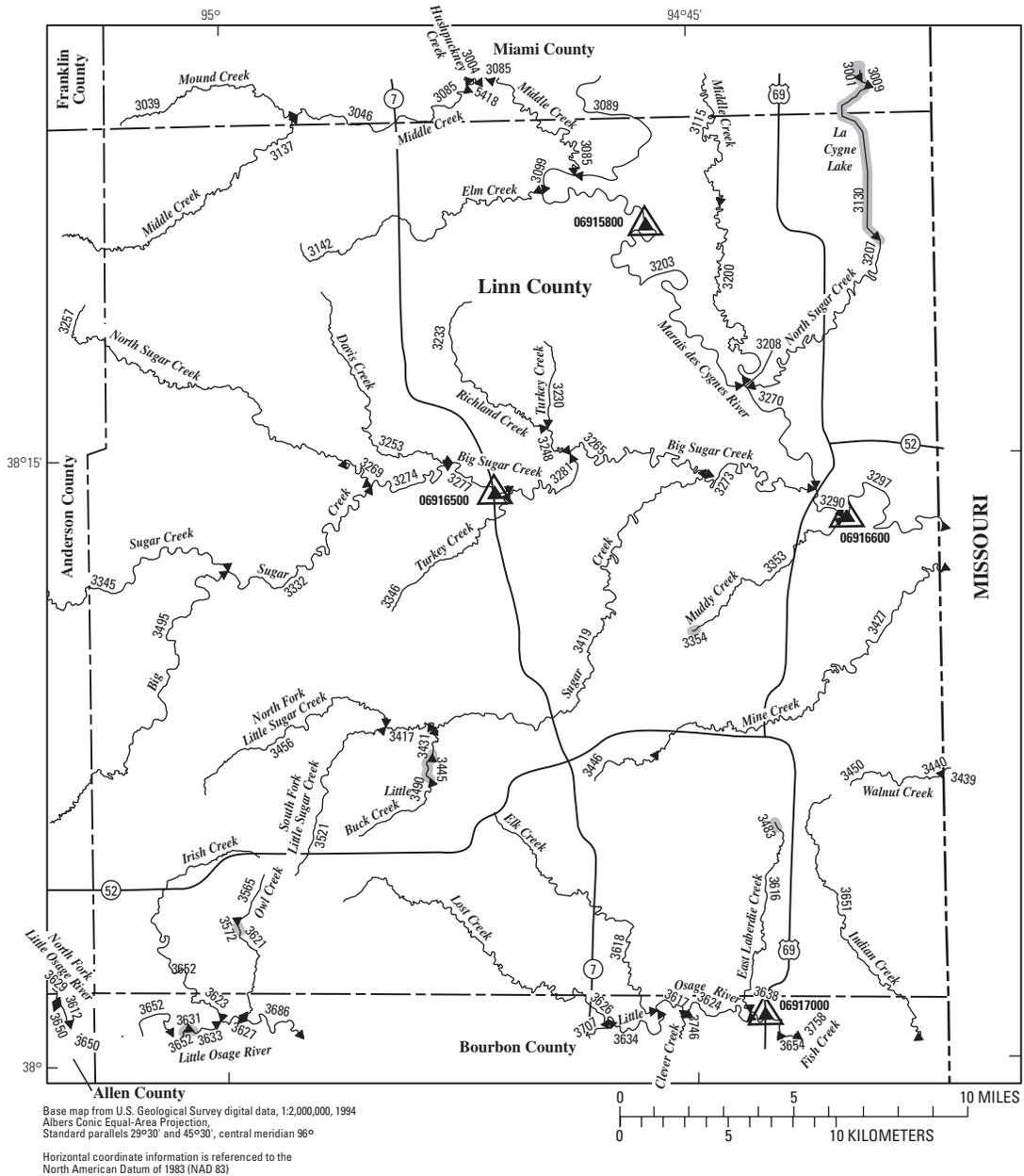
Determination site identification number (fig. 63)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1930	102600103	LC	OT					Saline River	2,840	15.0
1933	102600103	LC				Saline River	2,810	14.6	23.4	43.9	122	478
1934	102600103	LC				Saline River	2,770	14.2	22.8	42.8	118	467
1935	1026001014	LC				Bullfoot Creek	89.1	0	1.36	4.53	11.0	25.8
1962	1026001013	LC	RS			Saline River	1,950	5.10	8.70	16.0	21.0	191
2005	1026001017	LC				Elkhorn Creek	92.9	0	1.59	5.06	12.2	28.6
2028	1026001015	LC				Bullfoot Creek	38.4	0	.32	1.82	4.21	9.86
2082	1026001039	LC				Owl Creek	33.7	0	.24	1.46	3.34	8.13
2083	1026001018	LC	OT			Table Rock Creek	44.1	0	.75	2.78	6.51	15.1
2085	1026001037	LC				West Twin Creek	34.4	0	.19	1.47	3.35	7.89
2086	HYDRO	LC				HYDRO	6.40	NA	NA	NA	NA	NA
2087	1026001015	LC				Bullfoot Creek	13.0	0	0	.43	.74	2.01
2111	1026001018	LC				Table Rock Creek	4.76	0	0	0	0	0
2115	1026001039	LC				Owl Creek	5.88	0	0	0	0	0
2165	1026001022	LC	SA			Mulberry Creek	80.1	0	1.76	5.60	13.3	30.5

**Table 59.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lincoln County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

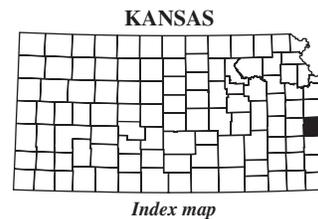
Determination site identification number (fig. 63)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1930	212	2,530	5,030	6,790	8,970	10,500	12,000
1933	207	2,460	4,900	6,610	8,730	10,200	11,700
1934	203	2,390	4,770	6,430	8,500	9,940	11,400
1935	19.2	1,670	4,020	6,260	9,800	13,000	16,600
1962	91.6	744	1,610	2,190	2,840	3,250	3,610
2005	21.0	1,880	4,430	6,820	10,600	13,900	17,600
2028	8.29	1,080	2,670	4,200	6,620	8,790	11,200
2082	7.35	909	2,290	3,620	5,760	7,680	9,840
2083	11.7	997	2,520	4,010	6,400	8,560	11,000
2085	6.95	997	2,480	3,900	6,160	8,180	10,400
2086	NA	NA	NA	NA	NA	NA	NA
2087	2.58	634	1,650	2,610	4,170	5,530	7,120
2111	.55	384	958	1,490	2,340	3,070	3,910
2115	.95	431	1,080	1,690	2,660	3,490	4,460
2165	21.3	1,490	3,550	5,490	8,560	11,300	14,400





**EXPLANATION**

- ◀ 3652 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 06917000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 06916500 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3445 Lake and determination site identification number



**Figure 64.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Linn County.

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**Table 60.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Linn County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 64)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3046	1029010230	LN	MI					Middle Creek	67.9	0
3085	1029010230	LN	MI			Middle Creek	92.1	0	2.16	10.9	38.3	112
3089	1029010216	LN	MI			Marais des Cygnes River	2,590	62.5	111	489	2,050	5,840
3099	1029010215	LN				Marais des Cygnes River	2,680	64.1	115	513	2,130	6,070
3115	1029010212	LN	MI			Middle Creek	80.6	0	1.65	9.31	34.1	101
3130	HYDRO	LN	MI			HYDRO	53.9	NA	NA	NA	NA	NA
3142	1029010240	LN				Elm Creek	24.6	0	.49	3.85	13.2	36.2
3200	1029010212	LN				Middle Creek	92.7	0	1.89	10.4	38.1	114
3203	1029010215	LN				Marais des Cygnes River	2,730	64.9	117	526	2,180	6,190
3207	102901026	LN				North Sugar Creek	81.2	0	1.47	8.55	31.8	96.4
3208	1029010211	LN				Marais des Cygnes River	2,820	60.8	116	535	2,200	6,230
3230	102901021029	LN				Turkey Creek	9.53	0	.20	2.33	7.39	18.9
3233	1029010241	LN				Richland Creek	15.9	0	.18	2.69	9.27	25.3
3248	1029010241	LN				Richland Creek	26.5	0	.61	4.59	15.9	43.5
3253	1029010238	LN				Davis Creek	17.7	0	.22	2.79	9.75	26.6
3265	1029010232	LN				Big Sugar Creek	240	.48	2.80	18.9	89.6	275
3269	1029010239	LN				North Sugar Creek	46.7	0	.64	5.00	19.5	56.4
3270	102901025	LN				Marais des Cygnes River	2,910	56.9	114	543	2,220	6,270
3273	1029010231	LN				Big Sugar Creek	325	1.12	4.76	28.8	126	394
3274	1029010232	LN				Big Sugar Creek	160	0	1.19	10.1	53.3	162
3277	1029010232	LN				Big Sugar Creek	181	0	1.20	11.0	61.0	185
3281	1029010232	LN				Big Sugar Creek	204	.18	1.83	14.2	72.5	221
3290	102901024	LN				Marais des Cygnes River	3,240	42.5	110	575	2,300	6,420
3297	102901024	LN				Marais des Cygnes River	3,270	41.0	109	579	2,310	6,440
3332	1029010232	LN				Big Sugar Creek	110	0	1.08	7.96	37.3	113
3346	1029010245	LN				Turkey Creek	18.5	0	.29	3.24	11.3	30.9
3353	1029010246	LN				Muddy Creek	18.6	0	.22	2.89	10.1	28.1
3354	HYDRO	LN				HYDRO	2.75	NA	NA	NA	NA	NA
3417	1029010233	LN				Little Sugar Creek	32.4	0	.25	3.68	14.2	42.3
3419	1029010233	LN				Little Sugar Creek	77.8	0	1.65	9.84	36.7	109
3427	102901021244	LN				Mine Creek	43.8	0	.83	5.54	20.1	58.2
3431	1029010244	LN				Buck Creek	9.60	0	0	1.45	5.22	14.7
3439	1029010234	LN				Walnut Creek	14.7	0	0	1.66	6.11	17.8
3440	1029010234	LN				Walnut Creek	14.7	0	0	1.66	6.11	17.8
3445	HYDRO	LN				HYDRO	8.65	NA	NA	NA	NA	NA
3446	102901021244	LN				Mine Creek	11.1	0	.06	2.05	7.00	18.8
3450	1029010234	LN				Walnut Creek	13.8	0	0	1.55	5.74	16.7
3456	1029010233	LN				North Fork Little Sugar Creek	20.0	0	0	2.36	9.04	26.6

**Table 60.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Linn County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 64)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3046	56.5	6,260	11,500	15,900	22,100	27,300	32,700
3085	76.1	6,250	11,700	16,400	23,000	28,600	34,600
3089	2,130	22,900	29,000	35,800	56,100	73,600	93,800
3099	70.0	6,540	12,100	16,700	23,400	29,000	35,000
3115	NA	NA	NA	NA	NA	NA	NA
3130	2,220	23,600	29,700	36,600	58,000	76,500	97,900
3142	25.1	2,660	5,410	7,740	11,200	14,100	17,400
3200	78.9	5,970	11,300	15,900	22,600	28,200	34,200
3203	2,270	24,000	30,000	37,000	59,000	78,000	100,000
3207	68.4	5,980	11,300	15,700	22,200	27,600	33,400
3208	2,290	24,000	31,000	38,200	58,200	75,200	94,700
3230	12.4	1,590	3,140	4,420	6,340	7,890	9,660
3233	17.7	2,120	4,250	6,030	8,700	10,900	13,300
3248	29.2	2,860	5,780	8,250	12,000	15,000	18,400
3253	18.7	2,200	4,450	6,340	9,180	11,500	14,200
3265	178	6,610	13,600	20,200	30,700	40,500	52,000
3269	40.6	5,440	10,100	13,900	19,500	24,200	29,100
3270	2,310	24,000	32,000	39,400	57,400	72,500	89,600
3273	246	7,960	16,000	23,500	35,400	46,300	59,100
3274	113	7,170	13,900	19,900	29,400	38,000	47,900
3277	127	6,490	13,100	19,200	29,000	38,100	48,800
3281	148	6,650	13,500	19,800	30,000	39,400	50,400
3290	2,370	23,900	35,700	43,700	54,600	62,800	71,000
3297	2,380	23,900	36,100	44,200	54,300	61,700	69,000
3332	81.5	7,300	13,600	19,000	27,100	34,200	42,000
3346	21.3	2,390	4,770	6,760	9,720	12,100	14,900
3353	20.0	2,410	4,800	6,800	9,780	12,200	15,000
3354	NA	NA	NA	NA	NA	NA	NA
3417	31.2	5,640	10,200	13,800	19,000	23,300	27,700
3419	73.9	7,020	12,800	17,500	24,400	30,000	36,000
3427	41.4	4,140	7,930	11,100	15,800	19,600	23,700
3431	10.9	1,660	3,250	4,560	6,510	8,090	9,880
3439	14.1	2,130	4,210	5,940	8,510	10,600	13,000
3440	14.1	2,130	4,210	5,940	8,510	10,600	13,000
3445	NA	NA	NA	NA	NA	NA	NA
3446	13.3	1,810	3,550	5,000	7,140	8,880	10,800
3450	13.3	2,060	4,060	5,720	8,190	10,200	12,500
3456	20.0	2,470	4,950	7,030	10,100	12,700	15,600

**370 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 60.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Linn County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

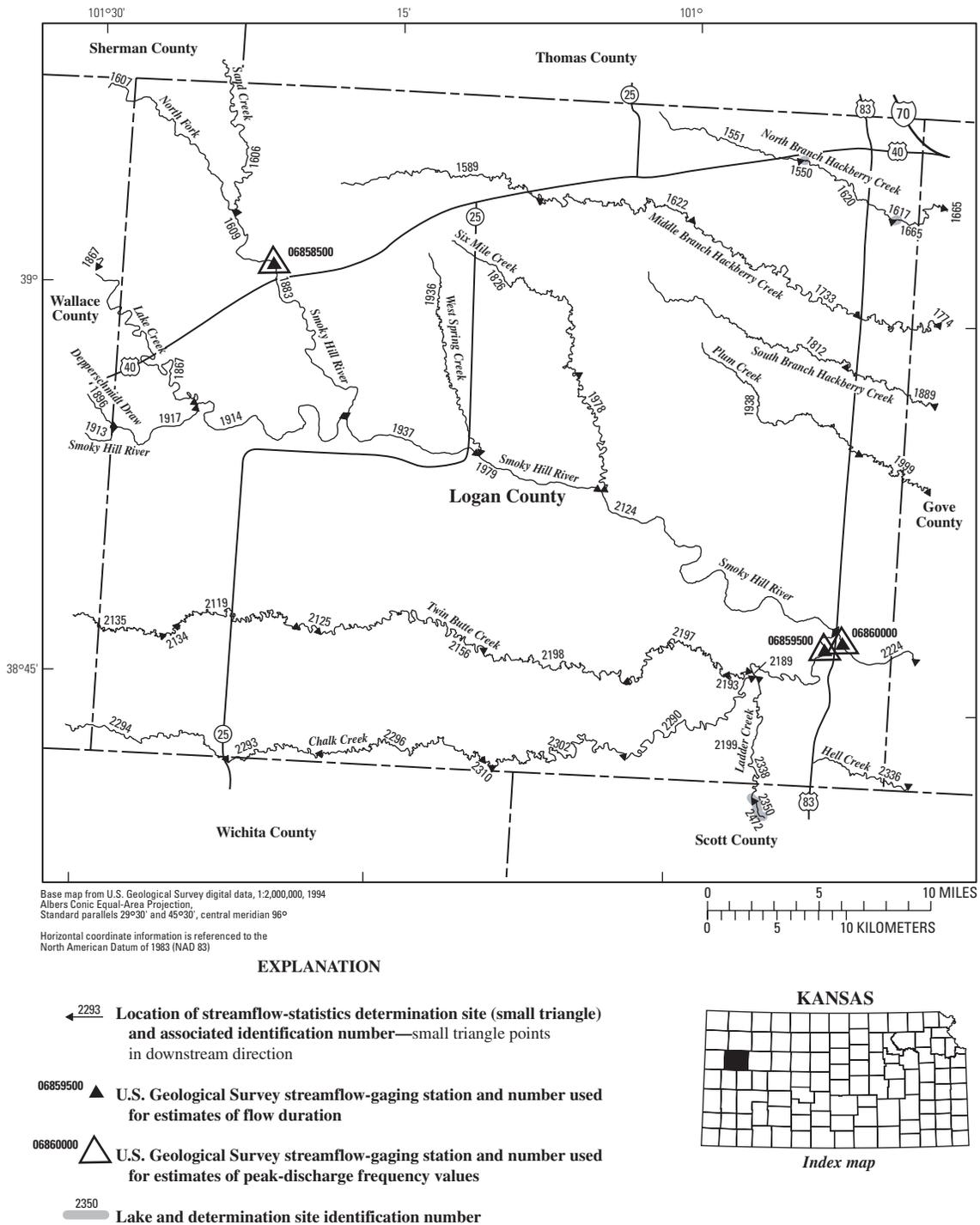
Determination site identification number (fig. 64)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3483	HYDRO	LN						HYDRO	3.64	NA	NA
3490	1029010244	LN				Buck Creek	7.19	0	0	0.83	3.21	9.54	
3521	1029010243	LN				South Fork Little Sugar Creek	10.2	0	0	.96	4.17	13.0	
3565	102901039	LN				Owl Creek	3.25	0	0	.04	.61	2.89	
3572	HYDRO	LN				HYDRO	3.52	NA	NA	NA	NA	NA	

**Table 60.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Linn County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 64)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3483	NA	NA	NA	NA	NA	NA	NA
3490	7.68	1,400	2,730	3,820	5,440	6,740	8,220
3521	10.5	1,700	3,340	4,710	6,720	8,360	10,200
3565	3.06	864	1,660	2,320	3,270	4,050	4,920
3572	NA	NA	NA	NA	NA	NA	NA





**Figure 65.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Logan County.

**374 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 61.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Logan County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 65)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1550	HYDRO	LG						HYDRO	27.5	NA	NA
1551	102600055	LG				North Branch Hackberry Creek	27.4	0	0	0	0	0	0
1589	102600056	LG				Middle Branch Hackberry Creek	63.9	0	0	0	0	0	0
1606	102600022	LG	SH			Sand Creek	95.8	0	0	0	.02	.04	
1607	102600023	LG	SH	WA		North Fork Smoky Hill River	600	0	0	0	.64	1.50	
1609	102600023	LG				North Fork Smoky Hill River	696	0	0	0	.86	2.02	
1617	HYDRO	LG				HYDRO	49.7	NA	NA	NA	NA	NA	
1620	102600055	LG				North Branch Hackberry Creek	49.5	0	0	0	0	0	
1622	102600056	LG				Middle Branch Hackberry Creek	94.4	0	0	0	0	0	
1733	102600056	LG				Middle Branch Hackberry Creek	126	0	0	0	0	0	
1812	102600057	LG				South Branch Hackberry Creek	34.2	0	0	0	0	0	
1826	1026000323	LG				Six Mile Creek	43.2	0	0	0	0	0	
1867	102600012	LG	WA			Lake Creek	210	0	0	0	0	0	
1883	102600021	LG				North Fork Smoky Hill River	752	0	0	0	1.00	3.00	
1896	10260001309	LG	WA			Depperschmidt Draw	39.0	0	0	0	0	0	
1913	102600013	LG	WA			Smoky Hill River	788	0	0	0	0	.90	
1914	102600011	LG				Smoky Hill River	1,100	0	0	0	.95	4.62	
1917	102600013	LG				Smoky Hill River	846	0	0	0	0	1.60	
1936	1026000333	LG				West Spring Creek	42.9	0	0	0	0	0	
1937	1026000324	LG				Smoky Hill River	1,880	0	0	0	2.17	8.96	
1938	1026000318	LG				Plum Creek	52.1	0	0	0	0	0	
1978	1026000323	LG				Six Mile Creek	67.4	0	0	0	0	0	
1979	1026000324	LG				Smoky Hill River	1,950	0	0	.07	2.45	9.74	
2119	102600042	LG				Twin Butte Creek	93.1	0	0	.01	.01	.02	
2124	1026000322	LG				Smoky Hill River	2,090	0	0	.35	3.16	11.7	
2125	102600042	LG				Twin Butte Creek	99.1	0	0	.01	.01	.01	
2134	102600042	LG				Twin Butte Creek	50.5	0	0	0	0	0	
2135	102600042	LG	WA			Twin Butte Creek	44.0	0	0	0	0	0	
2156	102600042	LG				Twin Butte Creek	153	0	0	.01	.01	.01	
2189	102600043	LG				Ladder Creek	1,420	0	.29	1.22	2.16	6.10	
2193	102600042	LG				Twin Butte Creek	206	0	.01	.03	.06	.12	
2197	102600042	LG				Twin Butte Creek	205	0	.01	.03	.06	.12	
2198	102600042	LG				Twin Butte Creek	186	0	.01	.02	.02	.02	
2199	102600041	LG				Ladder Creek	1,640	0	.39	1.90	4.00	10.0	
2290	102600044	LG				Chalk Creek	210	0	.01	.03	.06	.12	
2293	102600044	LG				Chalk Creek	94.7	0	0	.01	.01	.01	
2294	102600044	LG	WA			Chalk Creek	76.3	0	0	0	0	0	
2296	102600044	LG				Chalk Creek	136	0	0	.01	.01	.01	

**Table 61.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Logan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 65)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1550	NA	NA	NA	NA	NA	NA	NA
1551	0	360	1,210	2,160	3,830	5,400	7,320
1589	0	197	735	1,400	2,680	4,020	5,700
1606	.04	311	1,080	1,980	3,660	5,370	7,470
1607	2.01	298	1,610	3,670	8,490	14,300	22,400
1609	3.05	312	1,800	4,220	10,000	17,100	27,100
1617	NA	NA	NA	NA	NA	NA	NA
1620	0	241	839	1,550	2,850	4,170	5,800
1622	0	214	822	1,600	3,120	4,730	6,820
1733	.42	266	1,010	1,970	3,870	5,910	8,570
1812	0	178	618	1,140	2,100	3,070	4,260
1826	0	231	798	1,460	2,670	3,890	5,350
1867	1.46	437	1,470	2,660	4,850	7,040	9,720
1883	3.68	327	1,930	4,580	11,000	18,900	30,100
1896	0	246	822	1,480	2,660	3,830	5,220
1913	4.44	934	3,050	5,500	10,000	14,600	20,200
1914	8.03	1,190	3,830	6,870	12,500	18,100	25,100
1917	5.14	985	3,200	5,770	10,500	15,200	21,100
1936	0	244	832	1,510	2,740	3,960	5,430
1937	11.0	935	4,080	8,530	18,300	29,500	44,700
1938	0	248	857	1,570	2,870	4,180	5,760
1978	0	289	986	1,800	3,280	4,770	6,570
1979	11.7	984	4,240	8,810	18,800	30,200	45,700
2119	.03	270	956	1,780	3,300	4,840	6,750
2124	13.5	1,090	4,560	9,390	19,800	31,600	47,600
2125	.12	276	977	1,820	3,370	4,950	6,900
2134	0	212	757	1,410	2,610	3,830	5,320
2135	0	194	697	1,300	2,420	3,550	4,930
2156	.97	329	1,140	2,110	3,900	5,710	7,950
2189	5.89	632	2,490	5,010	10,400	16,500	25,000
2193	1.93	375	1,280	2,350	4,320	6,320	8,790
2197	1.91	377	1,290	2,360	4,340	6,350	8,830
2198	1.53	369	1,260	2,320	4,260	6,230	8,660
2199	8.00	646	2,590	5,270	11,100	17,900	27,500
2290	1.49	454	1,520	2,770	5,040	7,330	10,200
2293	0	291	1,020	1,890	3,500	5,130	7,140
2294	0	255	906	1,680	3,120	4,590	6,380
2296	.14	351	1,220	2,250	4,150	6,080	8,470

**Table 61.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Logan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

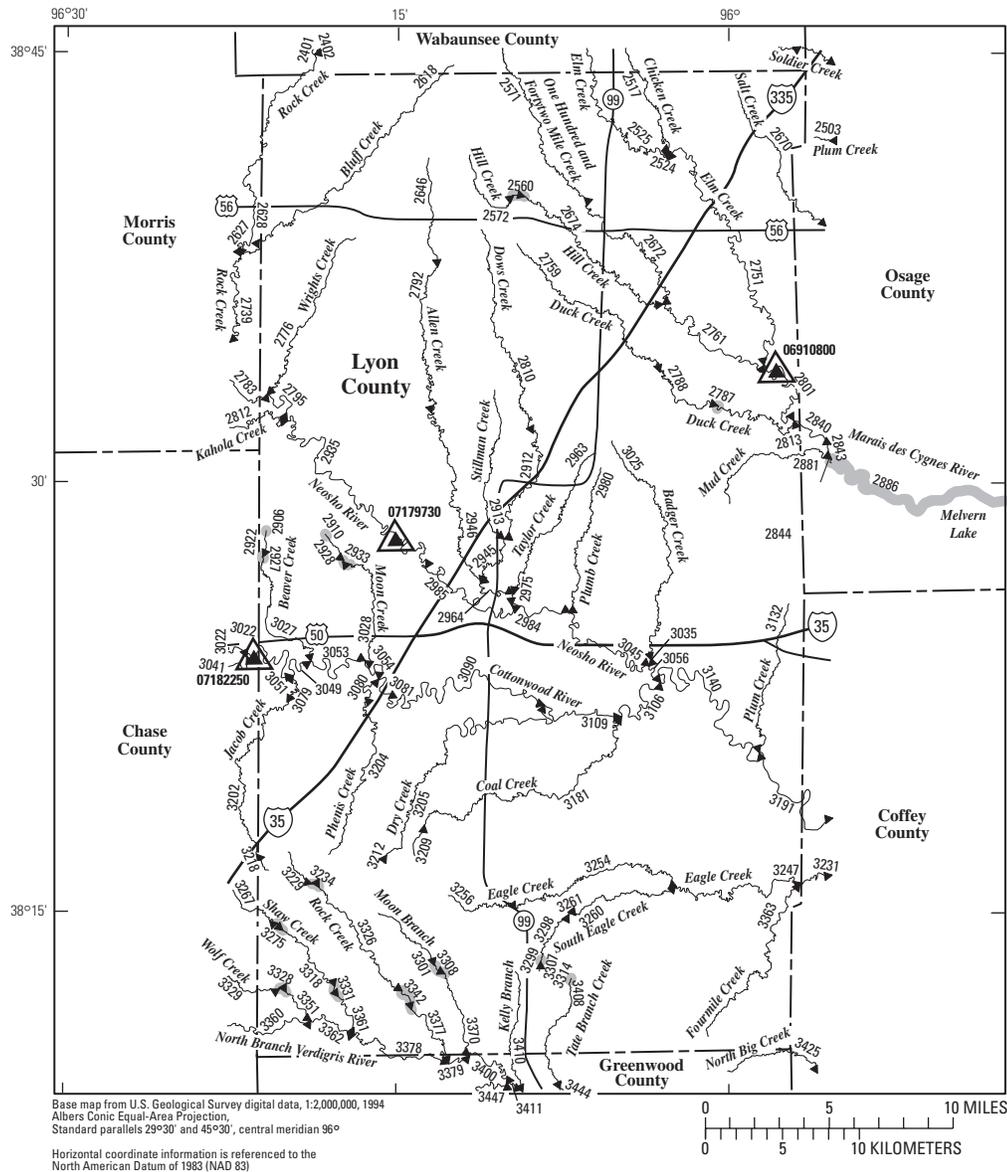
Determination site identification number (fig. 65)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2302	102600044	LG						Chalk Creek	183	0
2310	102600044	LG				Chalk Creek	146	0	0	.01	.01	.01
2338	102600045	LG	SC			Ladder Creek	1,210	0	.21	.88	.89	3.29

**Table 61.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Logan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 65)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2302	0.90	409	1,390	2,560	4,700	6,860	9,530
2310	.26	366	1,270	2,340	4,320	6,320	8,800
2338	4.28	594	2,320	4,630	9,430	14,800	22,200

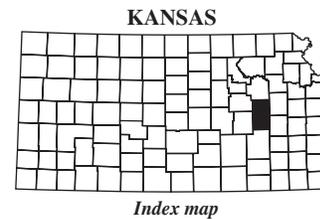




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ◀ 3330 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07179730 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07182250 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3342 Lake and determination site identification number



**Figure 66.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Lyon County.

**380 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 66)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2517	1029010170	LY	WB					Chicken Creek	21.7	0
2524	1029010139	LY				Elm Creek	42.4	.01	.09	3.12	11.8	36.0
2525	1029010139	LY	WB			Elm Creek	42.1	.01	.09	3.10	11.7	35.8
2560	HYDRO	LY				HYDRO	10.4	NA	NA	NA	NA	NA
2571	1029010140	LY	WB			One Hundred and Fortytwo Mile Creek	24.0	0	0	1.25	5.19	16.9
2572	1029010171	LY				Hill Creek	9.26	0	0	.24	1.47	5.76
2618	110702018	LY	MR	WB		Bluff Creek	33.9	0	.09	2.54	8.95	26.5
2628	110702019	LY	MR	WB		Rock Creek	78.3	0	.97	5.63	19.1	56.1
2646	110702015	LY				Allen Creek	12.5	0	0	.57	2.54	8.65
2670	1029010129	LY	OS			Salt Creek	43.3	0	0	2.44	9.86	31.2
2672	1029010140	LY				One Hundred and Fortytwo Mile Creek	36.7	.01	.01	2.19	8.72	27.7
2674	1029010171	LY				Hill Creek	21.4	0	0	1.12	4.78	15.7
2751	1029010139	LY				Elm Creek	94.0	.06	1.02	7.59	28.3	87.3
2759	1029010141	LY				Duck Creek	21.4	0	0	.73	3.65	13.0
2761	1029010140	LY				One Hundred and Fortytwo Mile Creek	68.5	.03	.38	4.60	17.7	55.6
2776	1107020138	LY				Wrights Creek	26.0	0	0	1.64	6.10	18.7
2783	110702016	LY	MR			Neosho River	546	10.0	17.7	57.2	202	807
2787	HYDRO	LY				HYDRO	30.7	NA	NA	NA	NA	NA
2788	1029010141	LY				Duck Creek	30.7	0	0	1.30	5.78	19.7
2792	110702015	LY				Allen Creek	34.9	0	0	1.72	7.01	22.8
2795	110702016	LY				Neosho River	574	10.7	18.8	61.4	215	850
2801	1029010138	LY				Marais des Cygnes River	170	.18	2.30	15.0	56.0	174
2810	110702014	LY				Dows Creek	23.0	0	0	.80	3.89	13.7
2812	1107020143	LY	MR			Kahola Creek	28.3	0	.09	2.27	7.59	21.8
2813	1029010141	LY				Duck Creek	36.4	0	0	1.84	7.66	25.2
2840	1029010137	LY	OS			Marais des Cygnes River	212	.18	2.91	17.5	65.2	205
2881	1029010191	LY	OS			Mud Creek	20.2	0	0	1.16	4.98	16.3
2906	HYDRO	LY				HYDRO	4.76	NA	NA	NA	NA	NA
2910	HYDRO	LY				HYDRO	2.58	NA	NA	NA	NA	NA
2912	110702014	LY				Dows Creek	31.0	0	0	1.20	5.41	18.6
2913	1107020144	LY				Stillman Creek	10.5	0	0	0	.89	4.80
2922	1107020329	LY				Beaver Creek	8.52	0	0	0	.70	3.78
2927	HYDRO	LY				HYDRO	8.72	NA	NA	NA	NA	NA
2928	1107020331	LY				Moon Creek	5.10	0	0	0	0	1.08
2933	HYDRO	LY				HYDRO	6.84	NA	NA	NA	NA	NA
2935	110702016	LY				Neosho River	631	12.0	21.0	70.0	240	937
2945	110702014	LY				Dows Creek	43.6	0	0	1.83	7.69	25.9
2946	110702015	LY				Allen Creek	51.4	0	.06	2.65	10.3	32.9

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 66)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2517	14.6	1,850	4,070	6,030	9,040	11,600	14,500
2524	27.1	3,370	7,330	10,900	16,400	21,200	26,600
2525	26.9	3,400	7,370	11,000	16,500	21,300	26,700
2560	NA	NA	NA	NA	NA	NA	NA
2571	14.2	1,910	4,240	6,310	9,500	12,200	15,300
2572	5.68	1,090	2,360	3,460	5,140	6,540	8,140
2618	20.6	3,180	6,660	9,720	14,300	18,300	22,500
2628	41.3	4,310	9,010	13,200	19,500	24,900	30,900
2646	7.85	1,300	2,820	4,140	6,150	7,830	9,740
2670	25.6	3,010	6,480	9,580	14,300	18,400	22,800
2672	22.2	3,270	7,060	10,500	15,700	20,200	25,300
2674	13.3	1,830	4,020	5,940	8,910	11,400	14,300
2751	60.7	4,780	10,800	16,400	25,300	33,300	42,500
2759	12.2	1,840	4,000	5,890	8,770	11,200	13,900
2761	41.5	4,700	10,100	15,000	22,600	29,300	36,800
2776	15.4	1,920	4,260	6,340	9,530	12,200	15,300
2783	294	6,160	9,680	22,200	35,900	49,700	66,100
2787	NA	NA	NA	NA	NA	NA	NA
2788	17.5	2,840	6,120	9,060	13,500	17,400	21,700
2792	19.5	3,200	6,800	9,980	14,800	19,000	23,500
2795	310	6,570	10,300	23,900	38,900	53,900	71,800
2801	113	7,860	18,200	28,100	44,200	59,100	76,500
2810	12.8	1,880	4,110	6,070	9,070	11,600	14,500
2812	16.8	1,920	4,320	6,450	9,760	12,500	15,700
2813	21.5	2,990	6,450	9,550	14,300	18,400	22,900
2840	134	8,530	19,500	30,000	47,000	62,700	81,000
2881	13.9	1,940	4,120	6,010	8,870	11,200	14,000
2906	NA	NA	NA	NA	NA	NA	NA
2910	NA	NA	NA	NA	NA	NA	NA
2912	16.8	2,320	5,220	7,870	12,000	15,600	19,600
2913	5.60	1,200	2,580	3,770	5,590	7,100	8,820
2922	4.40	966	2,120	3,120	4,650	5,930	7,390
2927	NA	NA	NA	NA	NA	NA	NA
2928	2.31	729	1,570	2,300	3,410	4,330	5,380
2933	NA	NA	NA	NA	NA	NA	NA
2935	341	7,400	11,600	27,500	45,000	62,500	83,500
2945	22.8	2,640	5,910	8,910	13,600	17,700	22,200
2946	27.4	3,080	6,730	10,000	15,100	19,600	24,500

**382 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 66)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
2963	1107020146	LY				Taylor Creek	10.4	0	0	0.08	1.19	5.47
2964	110702013	LY				Allen Creek	96.0	0	.62	4.77	18.3	59.6
2975	110702013	LY				Allen Creek	106	0	.76	5.29	20.2	66.2
2980	1107020149	LY				Plumb Creek	12.6	0	0	.33	2.20	8.49
2984	110702012	LY				Neosho River	751	12.8	23.4	86.9	311	1,170
2985	110702016	LY				Neosho River	641	12.1	21.2	71.4	246	956
3025	1107020145	LY				Badger Creek	33.6	0	0	1.77	7.69	25.6
3027	1107020329	LY				Beaver Creek	20.4	0	0	.62	2.89	10.2
3028	1107020331	LY				Moon Creek	17.2	0	0	.40	2.25	8.60
3035	1107020145	LY				Badger Creek	33.7	0	0	1.78	7.73	25.8
3045	110702012	LY				Neosho River	774	13.0	23.8	90.1	325	1,210
3049	110702031	LY				Cottonwood River	1,710	47.6	104	300	812	2,150
3053	110702031	LY				Cottonwood River	1,730	47.2	103	302	828	2,220
3054	110702031	LY				Cottonwood River	1,750	46.9	103	304	840	2,270
3056	110702012	LY				Neosho River	808	13.2	24.5	94.9	345	1,280
3079	1107020328	LY				Jacob Creek	26.8	0	0	1.64	5.91	17.9
3080	1107020330	LY				Phenis Creek	21.0	0	0	1.17	4.51	14.3
3081	110702031	LY				Cottonwood River	1,780	46.5	102	305	854	2,330
3090	110702031	LY				Cottonwood River	1,790	46.3	102	307	865	2,370
3106	110702031	LY				Cottonwood River	1,860	45.2	99.6	312	910	2,550
3109	110702031	LY				Cottonwood River	1,820	45.8	101	309	883	2,440
3132	1107020150	LY				Plum Creek	34.4	0	0	1.89	8.26	27.6
3140	1107020126	LY				Neosho River	2,690	32.2	75.0	376	1,450	4,720
3181	1107020343	LY				Coal Creek	35.3	0	0	1.49	6.71	23.1
3204	1107020330	LY				Phenis Creek	20.1	0	0	1.10	4.31	13.7
3205	1107020342	LY				Dry Creek	22.0	0	0	1.09	4.54	14.9
3209	1107020343	LY				Coal Creek	3.36	0	0	0	0	0
3212	1107020342	LY				Dry Creek	2.42	0	0	0	0	0
3229	1107010114	LY				Rock Creek	4.95	0	0	.01	.23	1.98
3234	HYDRO	LY				HYDRO	5.33	NA	NA	NA	NA	NA
3247	1107020125	LY				Eagle Creek	67.5	0	.16	3.33	13.7	46.1
3254	1107020125	LY				Eagle Creek	33.5	0	0	1.37	6.34	22.0
3256	1107020125	LY				Eagle Creek	11.1	0	0	.06	1.29	5.98
3260	1107020147	LY				South Eagle Creek	17.1	0	0	.61	3.29	11.9
3261	1107020147	LY				South Eagle Creek	5.53	0	0	0	.08	2.30
3275	HYDRO	LY				HYDRO	7.37	NA	NA	NA	NA	NA
3298	1107020147	LY				South Eagle Creek	5.23	0	0	0	0	2.07
3299	HYDRO	LY				HYDRO	1.41	NA	NA	NA	NA	NA

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 66)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2963	6.00	1,250	2,650	3,860	5,680	7,200	8,930
2964	48.1	4,480	9,530	14,100	21,000	27,100	33,800
2975	53.1	4,780	10,100	14,900	22,200	28,600	35,600
2980	8.28	1,470	3,100	4,500	6,620	8,370	10,400
2984	410	7,580	11,700	26,900	44,700	62,900	85,600
2985	347	7,420	11,600	27,500	45,000	62,500	83,700
3025	21.8	3,460	7,190	10,500	15,400	19,600	24,200
3027	9.92	1,600	3,570	5,310	8,000	10,200	12,800
3028	8.71	1,520	3,340	4,930	7,380	9,430	11,800
3035	21.9	3,420	7,130	10,400	15,300	19,500	24,100
3045	423	7,620	11,800	26,800	44,700	63,000	86,100
3049	965	14,400	25,200	33,100	52,700	74,900	105,000
3053	979	14,400	24,900	32,800	52,500	74,800	106,000
3054	990	14,300	24,800	32,500	52,300	74,800	106,000
3056	442	7,670	11,800	26,600	44,600	63,100	86,700
3079	14.9	1,890	4,230	6,300	9,510	12,200	15,300
3080	12.3	1,740	3,830	5,660	8,470	10,800	13,500
3081	1,000	14,200	24,600	32,200	52,000	74,700	106,000
3090	1,010	14,200	24,400	32,000	51,900	74,700	107,000
3106	1,050	14,000	23,800	31,000	51,200	74,400	108,000
3109	1,030	14,100	24,200	31,600	51,600	74,600	107,000
3132	23.4	4,760	9,240	13,000	18,500	23,200	28,200
3140	1,510	11,700	16,500	19,700	42,700	71,800	121,000
3181	20.6	3,230	6,830	10,000	14,800	19,000	23,500
3204	11.9	1,700	3,720	5,500	8,220	10,500	13,100
3205	13.2	1,910	4,130	6,070	9,030	11,500	14,300
3209	1.37	645	1,340	1,930	2,810	3,540	4,360
3212	.83	524	1,090	1,560	2,270	2,850	3,510
3229	2.66	739	1,580	2,310	3,410	4,330	5,370
3234	NA	NA	NA	NA	NA	NA	NA
3247	38.7	3,770	8,040	11,900	17,800	22,900	28,500
3254	19.9	2,750	5,980	8,890	13,300	17,200	21,500
3256	6.53	1,320	2,800	4,070	6,000	7,590	9,410
3260	11.2	1,810	3,800	5,520	8,120	10,300	12,700
3261	3.32	921	1,900	2,730	3,980	5,000	6,160
3275	NA	NA	NA	NA	NA	NA	NA
3298	3.12	892	1,840	2,640	3,840	4,830	5,950
3299	NA	NA	NA	NA	NA	NA	NA

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

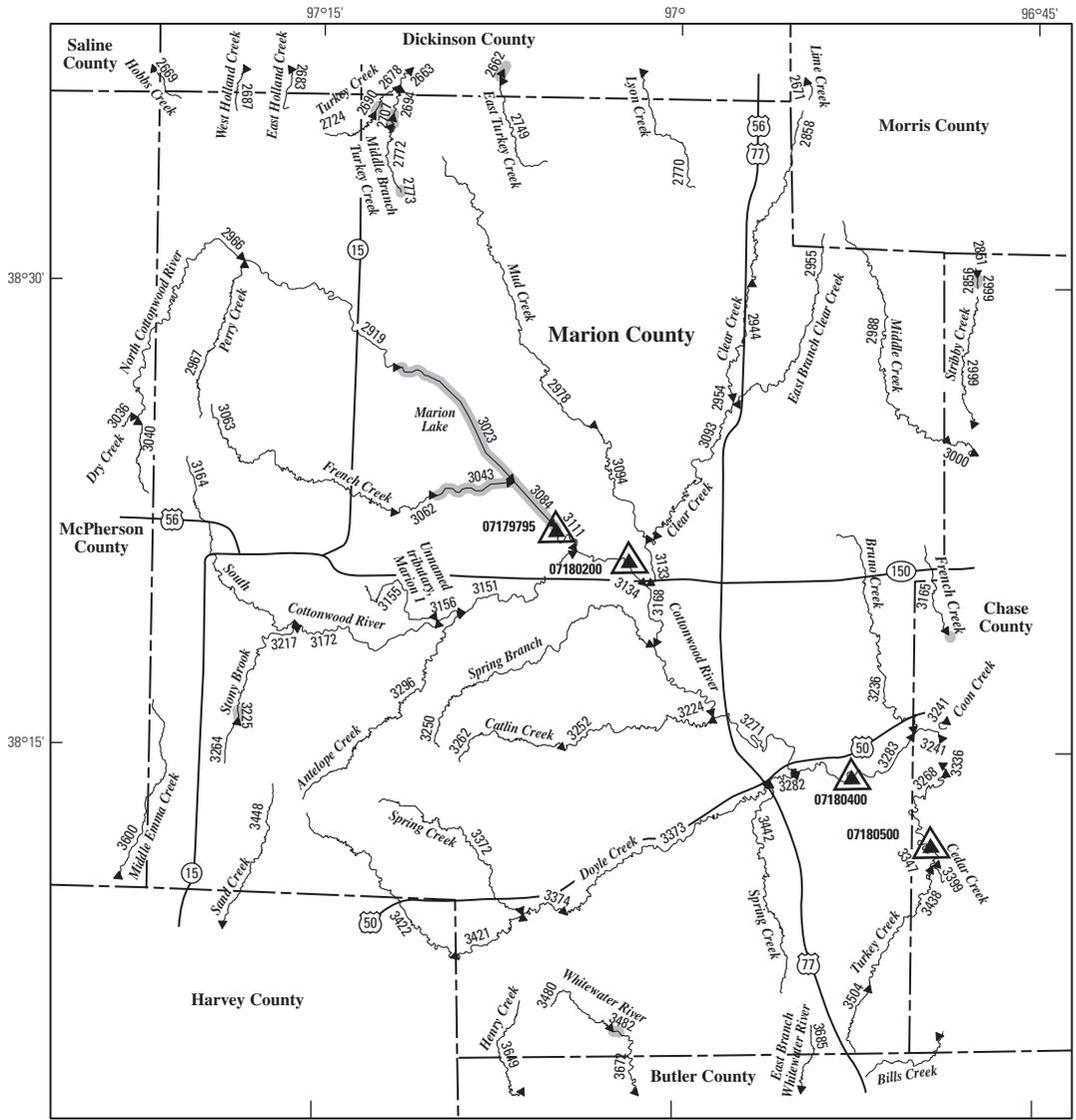
Determination site identification number (fig. 66)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
3301	1107010143	LY				Moon Branch	8.00	0	0	0.02	0.90	4.43
3307	1107020147	LY				South Eagle Creek	1.11	0	0	0	0	0
3308	HYDRO	LY				HYDRO	9.66	NA	NA	NA	NA	NA
3314	HYDRO	LY				HYDRO	3.99	NA	NA	NA	NA	NA
3318	1107010140	LY				Shaw Creek	13.5	0	.01	.96	3.31	9.98
3326	1107010114	LY				Rock Creek	15.8	0	.01	1.02	3.76	11.6
3328	HYDRO	LY				HYDRO	13.8	NA	NA	NA	NA	NA
3331	HYDRO	LY				HYDRO	14.0	NA	NA	NA	NA	NA
3342	HYDRO	LY				HYDRO	17.6	NA	NA	NA	NA	NA
3351	1107010141	LY				Wolf Creek	15.3	0	.01	1.33	4.37	12.5
3361	1107010140	LY				Shaw Creek	16.1	0	.01	1.26	4.28	12.6
3362	1107010115	LY				North Branch Verdigris River	57.8	.04	1.06	6.63	20.5	55.4
3363	1107020148	LY				Fourmile Creek	36.6	0	0	1.93	8.34	27.9
3370	1107010143	LY				Moon Branch	15.2	0	.01	.77	3.47	11.7

**Table 62.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Lyon County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

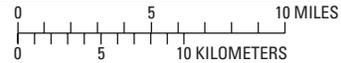
Determination site identification number (fig. 66)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3301	4.91	1,070	2,270	3,300	4,860	6,150	7,610
3307	0	367	731	1,030	1,470	1,830	2,240
3308	NA	NA	NA	NA	NA	NA	NA
3314	NA	NA	NA	NA	NA	NA	NA
3318	8.48	1,320	2,910	4,300	6,430	8,210	10,200
3326	9.98	1,510	3,310	4,870	7,270	9,270	11,600
3328	NA	NA	NA	NA	NA	NA	NA
3331	NA	NA	NA	NA	NA	NA	NA
3342	NA	NA	NA	NA	NA	NA	NA
3351	9.97	1,390	3,080	4,570	6,860	8,770	11,000
3361	10.3	1,480	3,270	4,830	7,230	9,230	11,500
3362	37.6	4,730	9,700	14,000	20,500	26,000	32,100
3363	23.8	3,710	7,620	11,000	16,100	20,500	25,200
3370	10.3	1,590	3,400	4,970	7,360	9,340	11,600





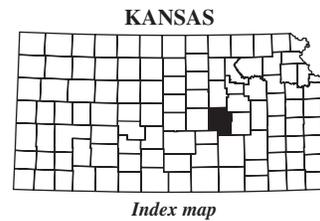
Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection  
 Standard parallels 29°30' and 45°30', central meridian 96°

Horizontal coordinate information is referred to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 3422 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07180400 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07180500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3043 Lake and determination site identification number



**Figure 67.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Marion County.

**Table 63.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marion County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 67)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2690	HYDRO	MN						HYDRO	11.0	NA	NA
2707	HYDRO	MN				HYDRO	13.5	NA	NA	NA	NA	NA	NA
2724	1026000830	MN				Turkey Creek	10.4	0	0	0.89	2.39	6.48	
2772	1026000858	MN				Middle Branch Turkey Creek	13.2	0	0	.68	2.43	7.59	
2773	HYDRO	MN				HYDRO	5.74	NA	NA	NA	NA	NA	
2858	110702025	MN	MR			Clear Creek	22.0	0	0	.24	1.86	7.94	
2919	1107020214	MN				North Cottonwood River	99.8	0	1.88	6.68	19.0	51.2	
2944	110702025	MN				Clear Creek	42.8	0	0	1.14	4.89	17.1	
2954	110702025	MN				Clear Creek	42.9	0	0	1.14	4.90	17.1	
2955	1107020224	MN	MR			East Branch Clear Creek	22.9	0	0	.34	2.18	8.78	
2966	1107020214	MN	MP			North Cottonwood River	48.0	0	.99	3.58	9.40	24.0	
2967	1107020223	MN				Perry Creek	15.1	0	0	.63	1.96	6.12	
2978	110702026	MN				Mud Creek	60.8	0	.18	2.59	9.07	28.0	
3023	HYDRO	MN				HYDRO	120	NA	NA	NA	NA	NA	
3043	HYDRO	MN				HYDRO	48.7	NA	NA	NA	NA	NA	
3062	1107020216	MN				French Creek	40.9	0	0	1.54	5.46	17.1	
3063	1107020216	MN				French Creek	35.0	0	0	1.33	4.75	14.9	
3084	HYDRO	MN				HYDRO	175	NA	NA	NA	NA	NA	
3093	110702025	MN				Clear Creek	91.5	0	.38	3.36	12.3	39.9	
3094	110702026	MN				Mud Creek	73.2	0	.45	3.29	11.1	33.8	
3111	110702028	MN				Cottonwood River	178	1.90	3.90	7.65	14.0	110	
3133	110702024	MN				Clear Creek	170	0	1.58	7.15	24.6	77.5	
3134	110702027	MN				Cottonwood River	293	8.70	13.0	32.0	107	576	
3151	1107020217	MN				South Cottonwood River	110	0	1.20	5.01	15.7	46.1	
3155	11070202456	MN				Unnamed tributary, Marion 1	11.9	0	0	0	.30	2.43	
3156	1107020218	MN				South Cottonwood River	75.3	0	.71	3.46	10.7	31.1	
3164	1107020218	MN				South Cottonwood River	29.2	0	.02	1.39	4.21	12.2	
3168	110702023	MN				Cottonwood River	470	17.3	27.9	55.8	154	645	
3172	1107020218	MN				South Cottonwood River	62.1	0	.48	2.86	8.92	26.0	
3217	1107020225	MN				Stony Brook	21.0	0	0	.32	1.60	6.25	
3224	110702023	MN				Cottonwood River	507	19.1	31.0	60.7	163	659	
3225	HYDRO	MN				HYDRO	9.07	NA	NA	NA	NA	NA	
3250	1107020226	MN				Spring Branch	26.0	0	0	.36	1.97	7.81	
3252	1107020220	MN				Catlin Creek	36.1	0	0	.83	3.60	12.7	
3262	1107020220	MN				Catlin Creek	15.7	0	0	0	.22	3.13	
3264	1107020225	MN				Stony Brook	8.46	0	0	0	0	.26	
3271	110702022	MN				Cottonwood River	557	21.6	35.2	67.5	177	678	
3282	1107020221	MN				Doyle Creek	139	0	1.59	6.68	21.6	64.6	

**Table 63.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marion County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 67)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2690	NA	NA	NA	NA	NA	NA	NA
2707	NA	NA	NA	NA	NA	NA	NA
2724	5.45	866	1,960	2,920	4,410	5,660	7,100
2772	6.70	978	2,200	3,280	4,950	6,340	7,940
2773	NA	NA	NA	NA	NA	NA	NA
2858	8.76	1,570	3,560	5,340	8,090	10,400	13,100
2919	37.9	2,510	5,710	8,680	13,300	17,400	22,000
2944	16.4	2,020	4,770	7,360	11,500	15,100	19,300
2954	16.5	2,010	4,750	7,350	11,400	15,100	19,200
2955	9.36	1,610	3,650	5,480	8,310	10,700	13,400
2966	18.5	1,690	3,890	5,930	9,100	11,900	15,000
2967	6.01	1,100	2,550	3,870	5,920	7,670	9,680
2978	23.8	1,930	4,660	7,290	11,500	15,200	19,500
3023	NA	NA	NA	NA	NA	NA	NA
3043	NA	NA	NA	NA	NA	NA	NA
3062	15.4	2,130	4,870	7,410	11,400	14,900	18,700
3063	13.5	2,060	4,700	7,130	10,900	14,200	17,900
3084	NA	NA	NA	NA	NA	NA	NA
3093	34.4	2,940	6,750	10,300	16,000	21,000	26,700
3094	28.1	1,980	4,780	7,480	11,800	15,700	20,200
3111	77.8	1,090	2,320	3,140	4,070	4,660	5,170
3133	61.5	4,050	9,080	13,800	21,100	27,700	35,100
3134	214	7,180	15,300	24,000	37,500	52,000	70,000
3151	37.4	2,900	6,570	9,980	15,300	20,000	25,400
3155	3.76	1,000	2,300	3,460	5,250	6,770	8,510
3156	26.0	2,600	5,830	8,810	13,400	17,500	22,000
3164	11.0	1,620	3,820	5,820	8,970	11,600	14,800
3168	271	7,790	16,600	25,900	41,800	58,700	80,400
3172	21.9	2,400	5,410	8,180	12,500	16,200	20,400
3217	7.00	1,330	3,110	4,730	7,260	9,420	11,900
3224	283	7,910	16,800	26,300	42,700	60,100	82,500
3225	NA	NA	NA	NA	NA	NA	NA
3250	8.67	1,560	3,640	5,530	8,480	11,000	13,900
3252	12.7	1,870	4,420	6,810	10,600	13,900	17,700
3262	4.85	1,170	2,690	4,070	6,200	8,010	10,100
3264	2.06	773	1,790	2,690	4,100	5,290	6,660
3271	299	8,090	17,200	26,800	43,900	61,900	85,400
3282	50.4	3,330	7,550	11,500	17,700	23,200	29,400

**Table 63.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marion County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

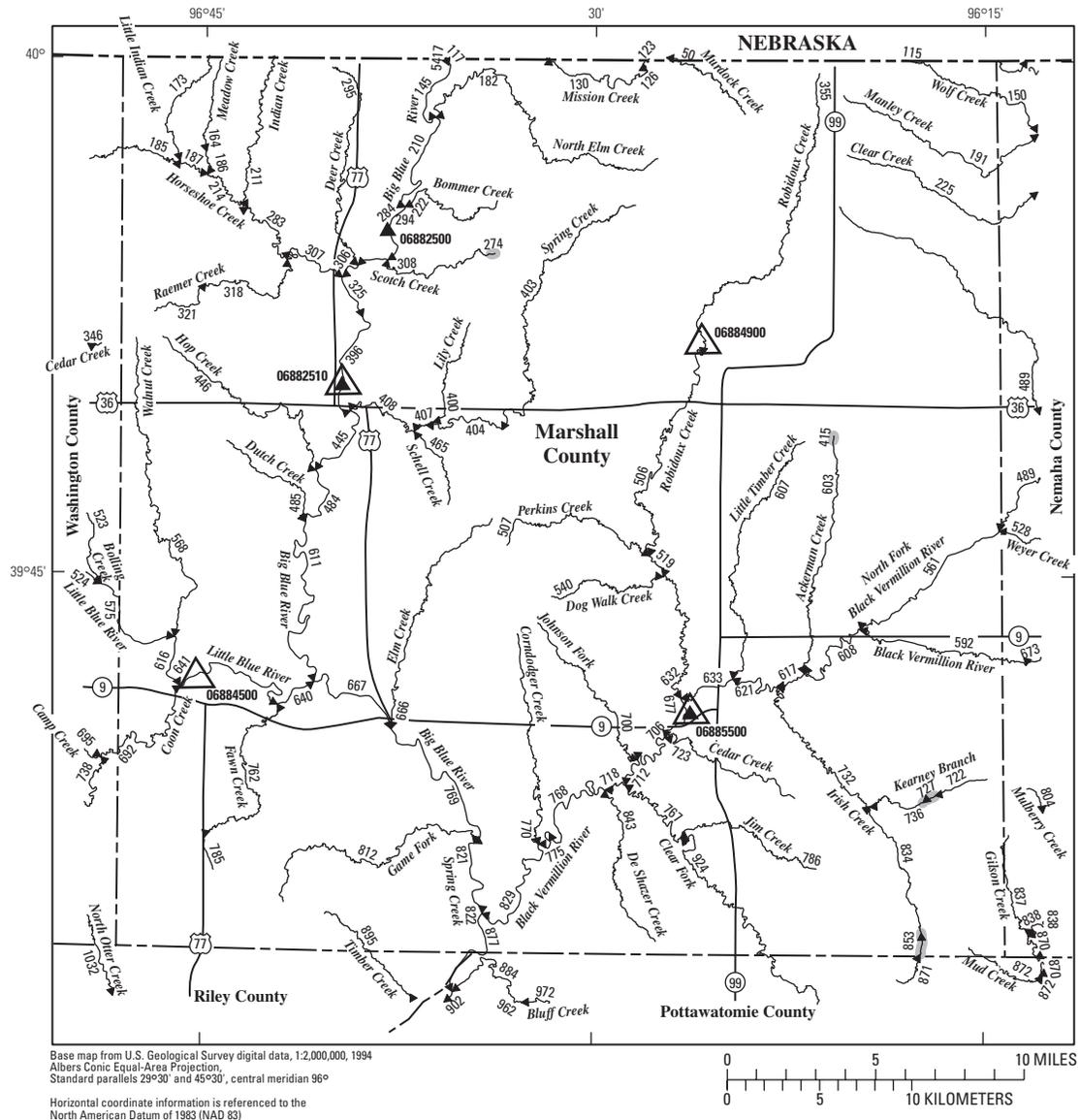
Determination site identification number (fig. 67)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3296	1107020219	MN						Antelope Creek	22.3	0
3372	1107020228	MN				Spring Creek	23.8	0	0	.45	2.08	7.75
3373	1107020221	MN				Doyle Creek	99.0	0	.93	4.55	14.8	44.1
3374	1107020221	MN				Doyle Creek	61.7	0	.15	2.28	7.89	24.5
3421	1107020221	MN				Doyle Creek	33.1	0	0	1.09	3.97	12.8
3442	1107020229	MN				Spring Creek	38.6	0	.01	1.81	6.13	18.5
3480	1103001723	MN				Whitewater River	13.5	.01	.01	.01	.02	2.18
3482	HYDRO	MN				HYDRO	13.5	NA	NA	NA	NA	NA
3504	1107020231	MN				Turkey Creek	6.65	.01	.02	.05	.09	1.61

**Table 63.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marion County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

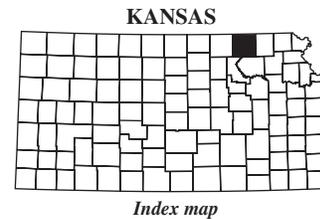
Determination site identification number (fig. 67)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3296	8.56	1,410	3,300	5,000	7,670	9,930	12,500
3372	8.30	1,470	3,440	5,220	8,000	10,400	13,100
3373	35.8	2,670	6,160	9,450	14,600	19,200	24,500
3374	21.6	2,240	5,210	8,010	12,400	16,300	20,700
3421	12.1	1,560	3,730	5,790	9,040	11,900	15,200
3442	16.0	2,490	5,480	8,160	12,300	15,800	19,700
3480	4.13	1,100	2,510	3,770	5,730	7,380	9,280
3482	NA	NA	NA	NA	NA	NA	NA
3504	2.71	766	1,700	2,520	3,780	4,830	6,030





**EXPLANATION**

- ← 1032 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 06885500 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 06884500 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 727 Lake and determination site identification number



**Figure 68.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Marshall County.

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 68)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		37	1027020522	MS						Mission Creek	47.9	0
50	1027020542	MS				Murdock Creek	12.1	0	0	0	.34	3.03
115	1024000713	MS				Wolf Creek	2.29	0	0	0	0	0
117	1027020521	MS				Big Blue River	4,590	123	206	397	845	2,380
123	1027020522	MS				Mission Creek	37.2	0	0	1.03	4.31	14.5
126	1027020522	MS				Mission Creek	37.6	0	0	1.05	4.36	14.7
130	1027020522	MS				Mission Creek	47.5	0	0	1.48	5.86	19.2
145	1027020521	MS				Big Blue River	4,640	103	163	295	572	1,540
150	1024000713	MS	NM			Wolf Creek	13.8	0	.01	.65	2.48	7.89
164	1027020534	MS				Meadow Creek	5.83	0	0	0	0	.48
173	1027020535	MS				Little Indian Creek	11.3	0	0	.17	.75	3.18
182	1027020541	MS				North Elm Creek	25.1	0	0	.44	2.29	8.57
185	1027020526	MS	WS			Horseshoe Creek	61.1	.02	.44	2.90	8.89	25.2
186	1027020534	MS				Meadow Creek	6.48	0	0	0	0	.80
187	1027020526	MS				Horseshoe Creek	74.2	.03	.66	3.59	11.0	31.1
191	1024000714	MS	NM			Manley Creek	14.0	0	.01	.70	2.63	8.28
210	1027020521	MS				Big Blue River	4,670	92.2	139	239	423	1,070
211	1027020537	MS				Indian Creek	17.3	0	0	.67	2.14	6.62
214	1027020526	MS				Horseshoe Creek	84.0	.04	.85	4.13	12.6	35.5
222	1027020540	MS				Bommer Creek	8.66	0	0	0	0	1.64
225	10240007132	MS	NM			Clear Creek	31.2	.02	.03	1.86	6.57	19.6
274	HYDRO	MS				HYDRO	1.53	NA	NA	NA	NA	NA
283	1027020526	MS				Horseshoe Creek	106	.07	1.29	5.39	16.2	45.8
284	1027020521	MS				Big Blue River	4,690	88.0	130	217	365	895
294	1027020521	MS				Big Blue River	4,700	94.4	139	231	397	992
295	1027020536	MS				Deer Creek	24.2	0	0	.98	3.14	9.41
306	1027020521	MS				Big Blue River	4,720	110	161	267	477	1,230
307	1027020526	MS				Horseshoe Creek	128	.10	1.70	6.64	19.9	56.2
308	1027020538	MS				Scotch Creek	9.26	0	0	0	0	1.57
318	1027020533	MS				Raemer Creek	19.8	0	0	.74	2.43	7.48
321	1027020533	MS				Raemer Creek	1.6	0	0	.18	.74	3.05
325	1027020520	MS				Big Blue River	4,850	194	278	454	895	2,500
355	1027020516	MS				Robidoux Creek	45.1	.04	.08	1.61	6.27	20.6
396	1027020520	MS				Big Blue River	4,860	200	286	467	924	2,590
400	1027020539	MS				Lily Creek	9.42	0	0	0	0	1.52
403	1027020519	MS				Spring Creek	39.6	0	0	.94	4.19	14.6
404	1027020519	MS				Spring Creek	42.8	0	0	1.11	4.77	16.3
407	1027020519	MS				Spring Creek	52.7	0	0	1.47	6.01	20.1

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 68)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
37	17.3	2,790	6,320	9,580	14,600	19,100	24,100
50	4.19	945	2,200	3,330	5,100	6,600	8,320
115	.39	374	835	1,240	1,850	2,370	2,950
117	1,190	17,900	31,300	41,400	55,500	66,700	78,700
123	13.5	3,120	6,790	10,100	15,100	19,400	24,200
126	13.7	3,110	6,780	10,100	15,100	19,400	24,200
130	17.2	2,810	6,350	9,610	14,700	19,200	24,100
145	782	18,300	31,800	42,000	56,100	67,300	79,200
150	6.93	1,070	2,480	3,740	5,700	7,360	9,270
164	1.67	577	1,350	2,040	3,120	4,030	5,080
173	3.81	839	1,990	3,040	4,680	6,080	7,690
182	8.75	1,390	3,330	5,100	7,880	10,300	13,000
185	20.4	2,390	5,450	8,290	12,700	16,600	21,000
186	1.93	613	1,440	2,180	3,330	4,310	5,430
187	24.7	2,640	6,000	9,100	13,900	18,200	23,000
191	7.17	1,080	2,500	3,780	5,760	7,430	9,370
210	557	18,300	31,900	42,000	56,100	67,200	79,000
211	6.33	1,090	2,590	3,970	6,130	7,980	10,100
214	27.9	2,720	6,190	9,410	14,400	18,900	23,900
222	2.85	741	1,740	2,630	4,030	5,220	6,590
225	15.5	2,810	6,120	9,070	13,600	17,500	21,700
274	NA	NA	NA	NA	NA	NA	NA
283	35.0	2,990	6,780	10,300	15,800	20,700	26,100
284	470	18,300	31,800	42,000	56,000	67,100	78,800
294	511	18,400	31,900	42,000	56,000	67,000	78,800
295	8.64	1,320	3,180	4,880	7,570	9,870	12,500
306	613	18,500	32,000	42,100	56,100	67,100	78,800
307	42.1	3,170	7,210	11,000	16,900	22,100	28,000
308	2.91	766	1,800	2,730	4,190	5,430	6,860
318	7.05	1,150	2,770	4,260	6,600	8,610	10,900
321	3.60	795	1,890	2,890	4,450	5,790	7,330
325	1,150	19,100	32,800	43,000	56,800	67,700	79,000
355	18.1	1,850	3,930	5,780	8,700	11,300	14,300
396	1,190	19,100	32,800	42,900	56,700	67,500	78,800
400	2.90	772	1,820	2,760	4,230	5,480	6,930
403	13.8	1,950	4,690	7,310	11,500	15,200	19,500
404	15.1	2,090	4,990	7,750	12,100	16,100	20,500
407	18.2	2,370	5,610	8,690	13,600	17,900	22,900

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRtribal, tribal stream]

Determination site identification number (fig. 68)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		408	1027020519	MS						Spring Creek	65.6	0
415	HYDRO	MS				HYDRO	11.3	NA	NA	NA	NA	NA
445	1027020518	MS				Big Blue River	4,930	200	286	467	928	2,610
446	1027020543	MS				Hop Creek	16.6	0	0	.61	1.97	6.12
465	1027020545	MS				Schell Creek	8.07	0	0	0	0	1.19
484	1027020518	MS				Big Blue River	4,950	201	287	468	930	2,610
485	1027020544	MS				Dutch Creek	10.6	0	0	.32	.99	3.50
489	1027020515	MS	NM			North Fork Black Vermillion River	63.8	.09	.17	2.68	9.92	32.1
506	1027020516	MS				Robidoux Creek	72.8	.12	.40	3.41	11.7	36.2
507	1027020547	MS				Perkins Creek	14.4	0	.01	.15	1.31	5.58
519	1027020516	MS				Robidoux Creek	88.2	.17	.68	4.20	14.2	43.9
528	1027020550	MS	NM			Weyer Creek	25.5	.01	.03	.97	4.27	14.6
540	1027020553	MS				Dog Walk Creek	9.64	0	0	.01	.14	2.47
561	1027020515	MS				North Fork Black Vermillion River	107	.25	1.04	5.37	18.4	58.4
568	1027020741	MS				Walnut Creek	29.5	0	0	1.51	4.61	13.0
575	102702072	MS	WS			Little Blue River	3,280	129	171	270	530	1,350
592	1027020514	MS	NM			Black Vermillion River	59.7	.08	.53	4.04	14.0	42.2
603	1027020549	MS				Ackerman Creek	34.0	.03	.05	1.42	5.62	18.2
607	1027020548	MS				Little Timber Creek	26.1	.01	.03	.84	3.68	12.6
608	1027020513	MS				Black Vermillion River	173	.65	2.90	10.6	33.7	105
611	1027020518	MS				Big Blue River	4,980	201	287	469	934	2,620
616	102702072	MS				Little Blue River	3,310	129	172	272	536	1,370
617	1027020513	MS				Black Vermillion River	208	.94	3.87	13.0	40.3	127
621	1027020511	MS				Black Vermillion River	259	1.46	5.61	17.4	52.3	164
632	1027020516	MS				Robidoux Creek	107	.25	1.07	5.21	17.1	53.0
633	1027020511	MS				Black Vermillion River	288	1.85	6.60	19.6	57.7	181
640	102702071	MS				Little Blue River	3,460	132	178	284	562	1,440
641	102702071	MS				Little Blue River	3,430	132	176	281	555	1,420
666	1027020546	MS				Elm Creek	24.1	0	0	1.05	3.70	11.3
667	1027020517	MS				Big Blue River	8,450	255	352	529	1,070	2,910
677	1027020510	MS				Black Vermillion River	396	4.00	11.0	29.0	79.0	246
692	1027020723	MS	WS			Coon Creek	108	.02	1.82	6.72	19.3	51.8
700	1027020551	MS				Johnson Fork	13.0	0	0	0	.79	4.31
706	1027020510	MS				Black Vermillion River	409	4.24	11.3	29.3	80.5	251
712	1027020510	MS				Black Vermillion River	423	4.47	11.5	29.4	81.6	255
718	102702058	MS				Black Vermillion River	478	5.45	12.5	31.1	89.8	284
722	1027020558	MS				Kearney Branch	10.1	0	0	.29	1.64	6.13
723	1027020556	MS				Cedar Creek	10.5	0	0	.21	1.14	4.56

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 68)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
408	22.7	2,620	6,160	9,490	14,800	19,500	24,800
415	NA	NA	NA	NA	NA	NA	NA
445	1,200	19,300	33,100	43,400	57,500	68,500	80,100
446	5.96	1,050	2,500	3,840	5,940	7,730	9,810
465	2.54	713	1,670	2,530	3,860	5,000	6,310
484	1,210	19,300	33,200	43,500	57,600	68,700	80,400
485	3.85	819	1,930	2,950	4,530	5,880	7,430
489	27.1	3,300	7,440	11,300	17,300	22,600	28,600
506	29.5	2,140	4,740	7,140	11,000	14,600	18,700
507	5.93	1,060	2,470	3,750	5,740	7,430	9,380
519	35.3	2,460	5,490	8,310	12,900	17,100	22,000
528	13.1	1,750	3,970	5,940	9,010	11,600	14,600
540	3.62	858	1,970	2,970	4,520	5,830	7,340
561	46.5	4,180	9,320	14,100	21,500	28,200	35,700
568	11.0	1,460	3,540	5,460	8,500	11,100	14,100
575	711	12,800	21,600	28,500	38,300	46,500	55,400
592	32.3	2,820	6,380	9,690	14,900	19,500	24,600
603	15.6	2,530	5,740	8,690	13,300	17,300	21,800
607	11.5	1,560	3,650	5,550	8,510	11,000	14,000
608	78.9	5,140	11,300	17,100	26,200	34,400	43,800
611	1,210	19,100	32,900	43,100	57,100	68,100	79,700
616	719	12,500	22,100	29,900	41,500	51,600	62,800
617	93.5	5,430	12,000	18,200	28,100	37,200	47,500
621	118	5,680	12,700	19,400	30,300	40,300	51,900
632	42.2	2,520	5,760	8,850	13,900	18,600	24,200
633	130	5,520	12,600	19,400	30,600	41,000	53,300
640	755	11,700	24,200	35,700	54,100	71,100	90,900
641	746	11,600	24,000	35,400	53,700	70,600	90,300
666	9.92	1,390	3,300	5,040	7,780	10,100	12,800
667	1,480	23,400	40,900	54,500	73,500	88,900	105,000
677	174	7,030	15,700	24,100	38,000	51,200	66,900
692	38.1	2,540	5,850	8,960	13,800	18,200	23,100
700	5.14	1,040	2,390	3,600	5,480	7,080	8,910
706	178	6,830	15,400	23,700	37,600	50,700	66,400
712	182	6,870	15,500	23,900	37,900	51,200	67,100
718	203	7,570	16,800	25,800	40,700	54,700	71,500
722	5.82	1,020	2,260	3,360	5,040	6,450	8,060
723	4.83	959	2,180	3,260	4,930	6,350	7,970

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.—Continued

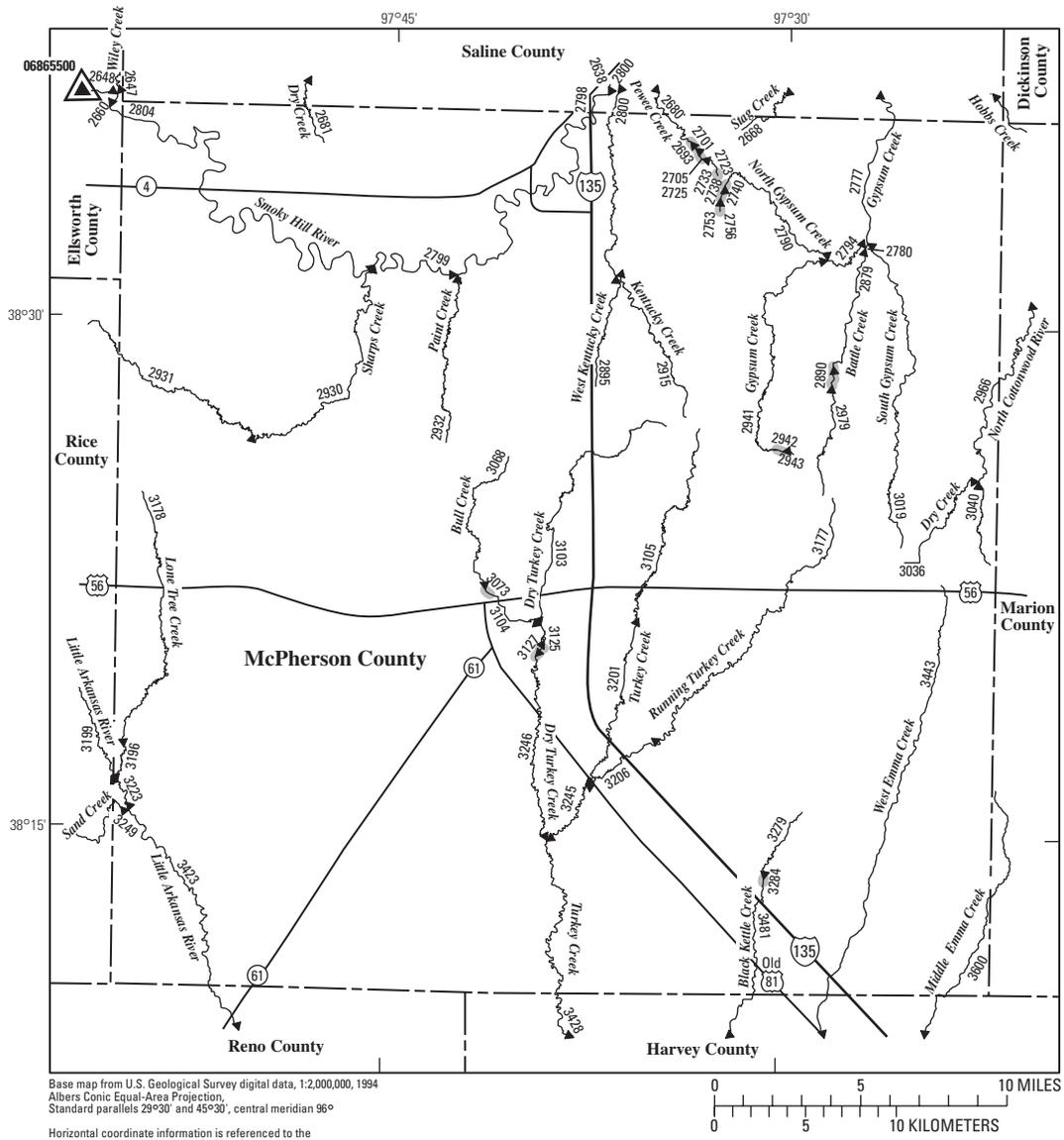
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 68)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		727	HYDRO	MS						HYDRO	11.6	NA
732	1027020512	MS				Irish Creek	48.9	0.05	0.17	2.95	10.6	32.5
736	1027020558	MS				Kearney Branch	16.2	.01	.01	.69	3.08	10.4
762	1027020745	MS				Fawn Creek	29.5	0	.21	2.15	6.25	16.7
767	102702059	MS				Clear Fork	55.1	0	.13	3.07	11.4	35.4
768	102702058	MS				Black Vermillion River	503	5.90	13.1	31.9	93.3	297
769	1027020517	MS				Big Blue River	8,490	255	354	531	1,080	2,930
770	1027020552	MS				Corndodger Creek	19.6	0	0	.40	2.10	7.81
775	102702058	MS				Black Vermillion River	503	5.90	13.1	31.9	93.4	297
785	1027020745	MS				Fawn Creek	12.9	0	0	.36	1.33	4.70
786	1027020557	MS				Jim Creek	14.2	0	0	.36	1.95	7.24
812	1027020554	MS				Game Fork	29.4	0	.30	2.35	6.72	17.8
821	1027020517	MS				Big Blue River	8,520	256	355	535	1,090	2,950
822	102702057	MS				Big Blue River	8,520	256	355	535	1,090	2,950
829	102702058	MS				Black Vermillion River	531	6.42	13.6	32.8	97.1	309
834	1027020512	MS				Irish Creek	21.2	.01	.02	.94	4.08	13.6
837	1027010247	MS	NM			Gilson Creek	9.33	0	0	.28	1.58	5.87
843	1027020555	MS				De Shazer Creek	19.4	0	0	.85	3.46	11.2
853	HYDRO	MS				HYDRO	7.78	NA	NA	NA	NA	NA
871	1027020512	MS	PT			Irish Creek	6.68	0	0	0	.42	3.00
872	1027010244	MS	PT			Mud Creek	7.48	0	0	.21	1.31	5.04
877	102702057	MS	RL			Big Blue River	9,060	267	372	577	1,190	3,270
884	1027020565	MS	PT	RL		Spring Creek	88.2	.01	1.02	6.37	22.1	65.8
895	1027020564	MS	RL			Timber Creek	15.5	0	.19	1.72	4.53	11.3
924	102702059	MS	PT			Clear Fork	36.9	0	0	2.19	8.22	25.3
5417	1027020521	MS				Big Blue River	4,590	123	206	397	845	2,380

**Table 64.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Marshall County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

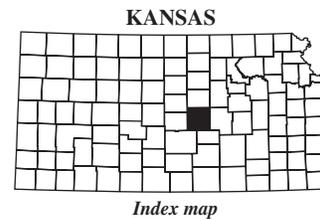
Determination site identification number (fig. 68)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
727	NA	NA	NA	NA	NA	NA	NA
732	25.7	2,860	6,430	9,710	14,800	19,300	24,400
736	9.15	1,320	2,980	4,460	6,730	8,640	10,800
762	13.1	1,570	3,740	5,720	8,850	11,500	14,600
767	27.9	3,250	7,190	10,800	16,300	21,200	26,600
768	211	7,200	16,300	25,200	39,900	53,900	70,700
769	1,490	23,300	40,800	54,300	73,300	88,700	105,000
770	7.87	1,300	3,030	4,600	7,040	9,110	11,500
775	212	7,060	16,100	24,900	39,500	53,500	70,100
785	4.95	969	2,270	3,450	5,280	6,840	8,640
786	7.03	1,180	2,680	4,010	6,060	7,790	9,780
812	13.7	1,610	3,800	5,810	8,950	11,600	14,700
821	1,490	23,300	40,800	54,400	73,400	88,800	106,000
822	1,490	23,300	40,800	54,400	73,400	88,800	106,000
829	220	6,870	15,800	24,600	39,200	53,200	69,900
834	11.8	1,570	3,540	5,300	8,010	10,300	12,900
837	5.56	1,010	2,210	3,270	4,880	6,230	7,770
843	9.84	1,400	3,200	4,800	7,300	9,410	11,800
853	NA	NA	NA	NA	NA	NA	NA
871	3.59	820	1,800	2,650	3,950	5,030	6,270
872	4.78	904	1,970	2,900	4,310	5,490	6,830
877	1,630	24,800	43,500	58,200	78,900	95,900	114,000
884	46.9	6,230	12,400	17,800	25,700	32,600	40,000
895	8.49	1,140	2,650	4,000	6,110	7,900	9,960
924	20.1	2,880	6,330	9,450	14,200	18,400	23,000
5417	1,190	17,900	31,300	41,400	55,500	66,800	78,700





**EXPLANATION**

- ← 3423 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06865500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06865500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3284 Lake and determination site identification number



**Figure 69.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for McPherson County.

**402 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 65.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for McPherson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 69)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2668	1026000819	MP	SA					Stag Creek	19.7	0
2680	1026000856	MP	SA			Pewee Creek	10.8	0	.35	1.18	2.16	4.70
2681	1026000836	MP	SA			Dry Creek	50.5	0	1.03	3.71	8.95	20.8
2693	HYDRO	MP				HYDRO	3.44	NA	NA	NA	NA	NA
2701	1026000856	MP				Pewee Creek	2.94	0	0	0	0	0
2705	HYDRO	MP				HYDRO	2.62	NA	NA	NA	NA	NA
2723	1026000856	MP				Pewee Creek	1.25	0	0	0	0	0
2725	HYDRO	MP				HYDRO	.31	NA	NA	NA	NA	NA
2733	HYDRO	MP				HYDRO	6.41	NA	NA	NA	NA	NA
2738	1026000857	MP				North Gypsum Creek	6.39	0	.22	.65	.81	1.81
2740	HYDRO	MP				HYDRO	5.99	NA	NA	NA	NA	NA
2753	1026000857	MP				North Gypsum Creek	5.50	0	.20	.53	.53	1.22
2756	HYDRO	MP				HYDRO	4.87	NA	NA	NA	NA	NA
2777	1026000820	MP	SA			Gypsum Creek	117	0	1.00	7.00	15.0	34.3
2780	1026000821	MP				Gypsum Creek	60.3	0	.96	4.29	9.84	22.7
2790	1026000857	MP				North Gypsum Creek	16.8	0	.19	1.39	3.08	7.21
2794	1026000822	MP				Gypsum Creek	43.1	0	.72	3.25	7.55	17.5
2798	1026000814	MP	SA			Smoky Hill River	8,310	31.2	57.1	108	259	819
2799	1026000814	MP				Smoky Hill River	8,240	28.2	52.4	100	241	779
2800	1026000817	MP	SA			Kentucky Creek	44.6	0	.96	3.36	8.20	19.6
2879	1026000823	MP				Battle Creek	17.2	0	.18	1.23	2.72	6.60
2890	HYDRO	MP				HYDRO	9.79	NA	NA	NA	NA	NA
2895	1026000854	MP				West Kentucky Creek	14.5	0	.06	.86	1.80	4.61
2915	1026000817	MP				Kentucky Creek	15.0	0	.32	1.31	2.68	6.17
2930	1026000816	MP				Sharps Creek	89.5	0	1.42	4.66	11.7	28.5
2931	1026000816	MP	RC			Sharps Creek	52.6	0	.77	2.90	6.89	16.1
2932	1026000852	MP				Paint Creek	24.0	0	.12	1.22	2.95	7.64
2941	1026000822	MP				Gypsum Creek	24.8	0	.39	1.89	4.24	9.86
2942	HYDRO	MP				HYDRO	2.08	NA	NA	NA	NA	NA
2943	1026000822	MP				Gypsum Creek	1.52	0	0	0	0	0
2979	1026000823	MP				Battle Creek	8.55	0	0	.14	.18	1.25
3019	1026000824	MP				South Gypsum Creek	30.4	0	.50	2.41	5.80	14.0
3036	11070202401	MP				Dry Creek	9.33	0	0	0	0	.82
3040	1107020214	MP				North Cottonwood River	6.50	0	0	0	0	.45
3068	1103001224	MP				Bull Creek	32.9	0	0	.01	.64	4.15
3073	HYDRO	MP				HYDRO	40.6	NA	NA	NA	NA	NA
3103	1103001213	MP				Dry Turkey Creek	24.8	0	0	0	.04	2.36
3104	1103001224	MP				Bull Creek	48.3	0	0	.26	1.51	7.08

**Table 65.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for McPherson County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 69)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2668	7.99	1,110	2,690	4,160	6,460	8,440	10,700
2680	3.98	745	1,810	2,780	4,320	5,640	7,170
2681	15.2	1,590	3,730	5,720	8,830	11,600	14,600
2693	NA	NA	NA	NA	NA	NA	NA
2701	.51	352	830	1,260	1,930	2,490	3,140
2705	NA	NA	NA	NA	NA	NA	NA
2723	0	215	498	748	1,130	1,460	1,830
2725	NA	NA	NA	NA	NA	NA	NA
2733	NA	NA	NA	NA	NA	NA	NA
2738	2.05	552	1,320	2,020	3,110	4,050	5,120
2740	NA	NA	NA	NA	NA	NA	NA
2753	1.66	506	1,210	1,840	2,830	3,680	4,660
2756	NA	NA	NA	NA	NA	NA	NA
2777	25.9	2,290	4,310	5,960	8,400	10,500	12,700
2780	17.1	2,120	4,490	6,570	9,720	12,500	15,400
2790	5.97	966	2,340	3,600	5,600	7,320	9,310
2794	13.3	1,730	3,820	5,700	8,570	11,100	13,800
2798	328	3,320	6,430	8,070	13,200	18,700	26,000
2799	311	2,990	5,980	7,840	12,700	17,700	24,200
2800	14.8	1,450	3,420	5,260	8,130	10,700	13,500
2879	5.85	1,020	2,440	3,750	5,810	7,580	9,620
2890	NA	NA	NA	NA	NA	NA	NA
2895	4.47	872	2,130	3,300	5,150	6,740	8,580
2915	5.24	902	2,200	3,400	5,300	6,930	8,820
2930	21.6	1,810	4,290	6,650	10,400	13,700	17,400
2931	12.6	1,410	3,380	5,240	8,160	10,800	13,700
2932	6.95	1,140	2,840	4,440	6,970	9,160	11,700
2941	8.08	1,210	2,930	4,530	7,060	9,230	11,800
2942	NA	NA	NA	NA	NA	NA	NA
2943	0	248	572	859	1,300	1,670	2,100
2979	2.26	678	1,610	2,460	3,800	4,930	6,240
3019	11.2	1,780	3,870	5,730	8,540	11,000	13,600
3036	2.35	789	1,840	2,790	4,270	5,530	6,970
3040	1.77	658	1,520	2,280	3,460	4,470	5,610
3068	6.09	721	1,960	3,240	5,350	7,310	9,580
3073	NA	NA	NA	NA	NA	NA	NA
3103	4.46	1,190	2,950	4,590	7,200	9,450	12,100
3104	8.96	858	2,320	3,830	6,320	8,640	11,300

**Table 65.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for McPherson County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

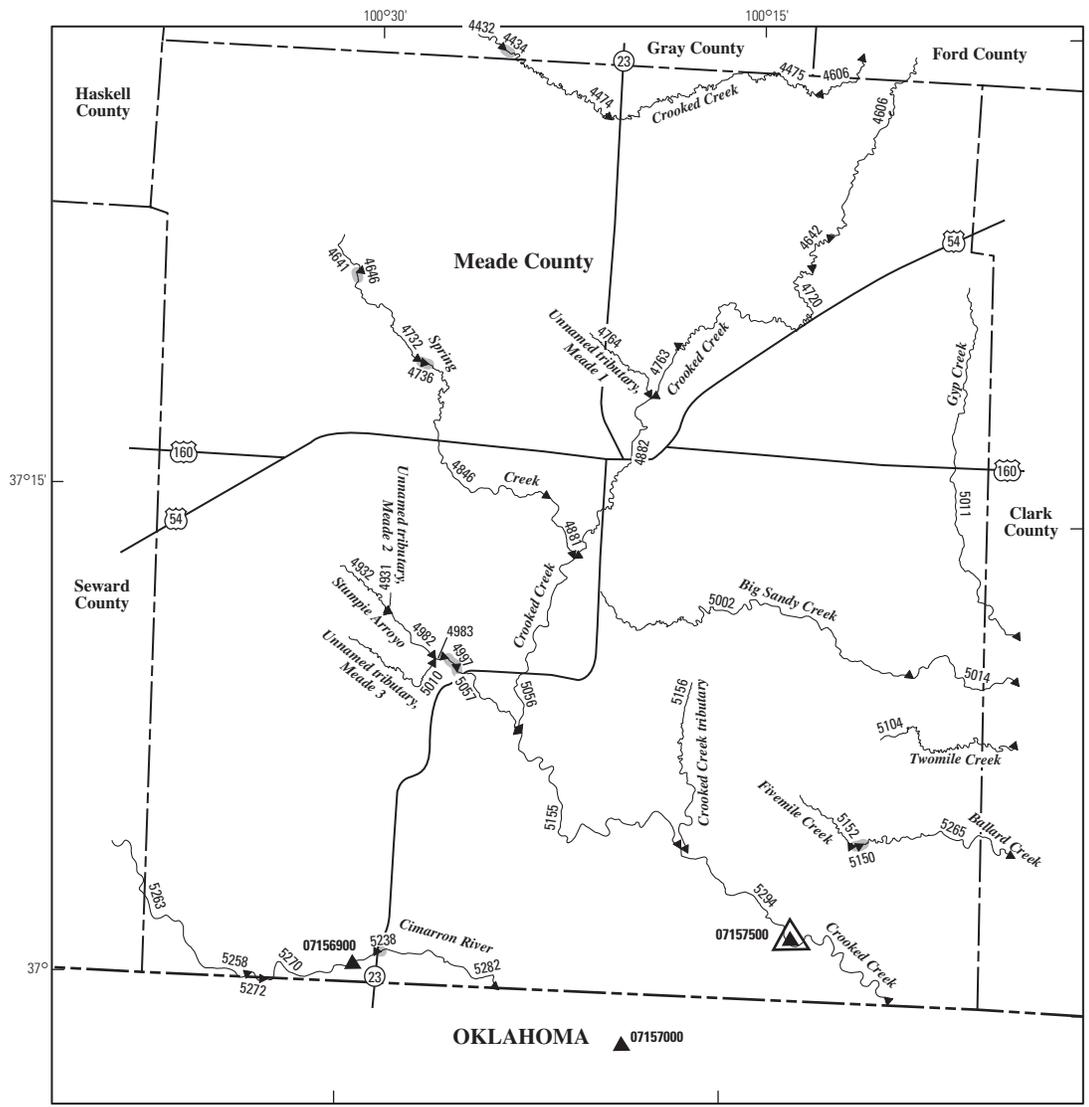
Determination site identification number (fig. 69)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3105	1103001212	MP						Turkey Creek	25.1	0
3125	1103001213	MP				Dry Turkey Creek	75.7	0	0	.79	3.25	13.2
3127	HYDRO	MP				HYDRO	75.9	NA	NA	NA	NA	NA
3177	1103001225	MP				Running Turkey Creek	47.4	0	0	.57	2.29	9.02
3178	1103001220	MP				Lone Tree Creek	65.7	0	0	1.39	4.54	15.0
3196	1103001220	MP				Lone Tree Creek	69.4	0	.02	1.47	4.80	15.8
3199	1103001214	MP	RC			Little Arkansas River	151	0	0	.65	3.87	26.3
3201	1103001212	MP				Turkey Creek	37.9	0	0	.39	1.70	6.91
3206	1103001225	MP				Running Turkey Creek	55.2	0	0	.74	2.87	10.9
3223	1103001214	MP				Little Arkansas River	223	0	0	.38	6.76	55.1
3245	1103001212	MP				Turkey Creek	99.7	0	.17	1.72	6.14	22.6
3246	1103001213	MP				Dry Turkey Creek	124	0	.06	1.50	5.93	24.4
3249	1103001223	MP	RC			Sand Creek	47.3	2.58	3.83	4.90	7.27	13.5
3279	11030012368	MP				Black Kettle Creek	22.2	0	0	0	.05	2.27
3284	HYDRO	MP				HYDRO	22.3	NA	NA	NA	NA	NA
3423	1103001214	MP	RN			Little Arkansas River	376	2.47	5.94	12.7	31.4	142

**Table 65.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for McPherson County.—Continued

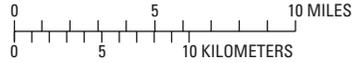
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 69)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3105	5.19	1,220	3,020	4,680	7,340	9,630	12,300
3125	14.5	1,350	3,460	5,560	8,980	12,100	15,700
3127	NA	NA	NA	NA	NA	NA	NA
3177	10.3	1,220	3,070	4,870	7,770	10,400	13,400
3178	14.4	1,610	3,950	6,200	9,790	13,000	16,700
3196	15.1	1,610	3,970	6,240	9,890	13,200	16,900
3199	25.1	1,640	3,530	5,270	8,060	10,600	13,500
3201	8.23	835	2,230	3,640	5,970	8,110	10,600
3206	12.1	1,300	3,260	5,170	8,260	11,100	14,300
3223	48.1	2,370	5,390	8,240	12,900	17,100	22,000
3245	22.1	1,550	3,940	6,310	10,200	13,700	17,800
3246	24.4	1,570	4,060	6,570	10,700	14,500	19,000
3249	10.4	958	2,140	3,200	4,790	6,150	7,630
3279	4.37	1,210	2,930	4,520	7,030	9,180	11,700
3284	NA	NA	NA	NA	NA	NA	NA
3423	103	2,920	6,650	10,100	15,800	20,900	26,800



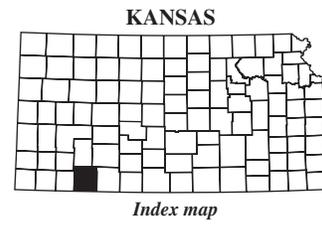


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 5258 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07157000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07157500 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5238 Lake and determination site identification number



**Figure 70.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Meade County.

**Table 66.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Meade County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

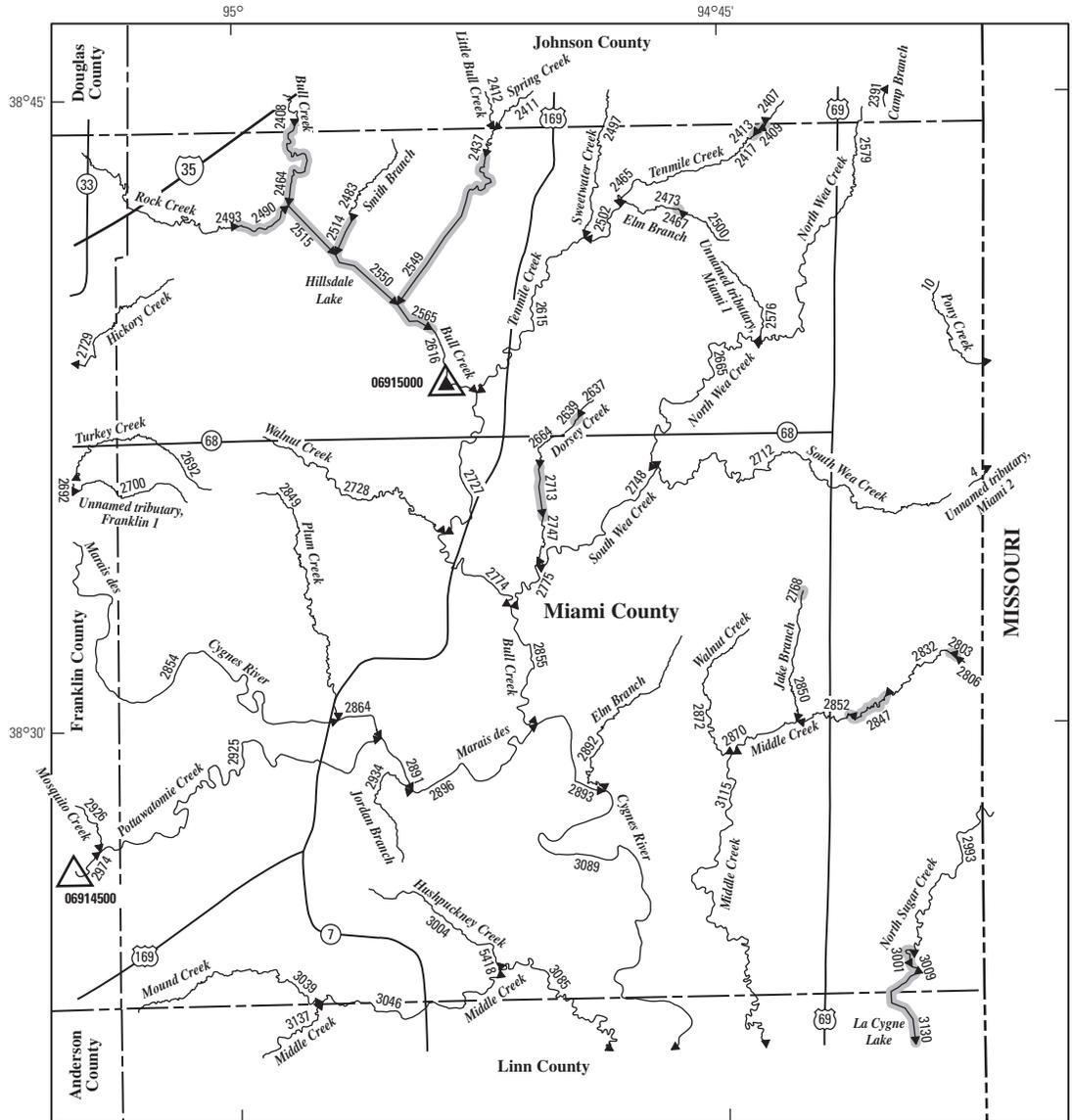
Determination site identification number (fig. 70)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4641	110400073	ME						Spring Creek	117	0
4642	110400072	ME				Crooked Creek	764	.59	1.42	2.99	4.64	9.78
4646	HYDRO	ME				HYDRO	117	NA	NA	NA	NA	NA
4720	110400072	ME				Crooked Creek	814	67	1.64	3.44	5.28	11.0
4732	110400073	ME				Spring Creek	168	0	0	.05	.06	12
4736	HYDRO	ME				HYDRO	169	NA	NA	NA	NA	NA
4763	110400072	ME				Crooked Creek	821	68	1.68	3.51	5.38	11.1
4764	110400071180	ME				Unnamed tributary, Meade 1	30.3	0	0	0	0	0
4846	110400073	ME				Spring Creek	217	0	0	0	.09	.13
4881	110400073	ME				Spring Creek	221	0	0	.05	.10	.36
4882	110400072	ME				Crooked Creek	880	.78	2.15	4.26	6.66	13.6
4931	110400071253	ME				Unnamed tributary, Meade 2	5.03	0	0	0	0	0
4932	110400071247	ME				Stumpie Arroyo	59.2	0	.01	.02	.04	.08
4982	110400071247	ME				Stumpie Arroyo	68.7	0	0	0	.01	.02
4983	110400071247	ME				Stumpie Arroyo	123	0	0	0	.03	.06
4997	HYDRO	ME				HYDRO	124	NA	NA	NA	NA	NA
5002	110400089	ME				Big Sandy Creek	66.8	0	0	0	.01	.21
5010	110400071259	ME				Unnamed tributary, Meade 3	52.0	0	.01	.02	.04	.08
5056	110400071	ME				Crooked Creek	1,120	1.27	3.85	6.87	10.2	19.6
5057	110400071247	ME				Stumpie Arroyo	132	0	0	0	.03	.33
5150	HYDRO	ME				HYDRO	19.2	NA	NA	NA	NA	NA
5152	1104000810	ME				Fivemile Creek	19.1	0	0	0	0	0
5155	110400071	ME				Crooked Creek	1,300	1.83	5.89	10.0	14.8	27.4
5156	110400074	ME				Crooked Creek tributary	26.2	0	0	0	0	0
5238	HYDRO	ME				HYDRO	6,890	NA	NA	NA	NA	NA
5258	110400061	ME				Cimarron River	6,750	25.6	33.2	42.5	58.1	75.9
5263	110400062	ME	SW			Cimarron River	6,750	25.6	33.2	42.5	58.1	75.9
5270	110400061	ME				Cimarron River	6,890	27.0	35.0	45.0	62.0	82.0
5272	110400061	ME				Cimarron River	6,750	25.6	33.2	42.6	58.2	75.9
5282	110400061	ME				Cimarron River	6,930	27.5	38.0	51.0	73.7	109
5294	110400071	ME				Crooked Creek	1,370	2.40	7.10	12.0	18.0	33.0

**Table 66.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Meade County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 70)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4641	0.50	318	1,170	2,210	4,190	6,240	8,810
4642	13.0	474	1,850	3,470	6,400	9,300	12,700
4646	NA	NA	NA	NA	NA	NA	NA
4720	14.1	474	1,900	3,590	6,690	9,780	13,500
4732	1.51	664	2,160	3,870	6,970	10,100	13,800
4736	NA	NA	NA	NA	NA	NA	NA
4763	14.3	470	1,900	3,600	6,710	9,810	13,500
4764	.04	449	1,340	2,290	3,920	5,480	7,290
4846	3.67	991	2,970	5,120	8,880	12,500	16,900
4881	3.85	1,040	3,070	5,270	9,080	12,800	17,100
4882	16.3	501	2,030	3,860	7,220	10,600	14,600
4931	0	182	549	928	1,570	2,150	2,840
4932	.08	711	2,070	3,510	5,970	8,310	11,000
4982	.58	742	2,130	3,590	6,060	8,410	11,100
4983	2.51	919	2,440	3,950	6,430	8,720	11,300
4997	NA	NA	NA	NA	NA	NA	NA
5002	2.30	577	1,660	2,790	4,710	6,510	8,610
5010	.55	499	1,340	2,160	3,510	4,730	6,100
5056	21.6	697	2,750	5,210	9,770	14,400	19,900
5057	2.87	868	2,340	3,820	6,270	8,540	11,100
5150	NA	NA	NA	NA	NA	NA	NA
5152	0	414	1,270	2,160	3,690	5,090	6,760
5155	27.0	873	3,280	6,140	11,400	16,700	23,000
5156	.24	487	1,510	2,590	4,450	6,150	8,190
5238	NA	NA	NA	NA	NA	NA	NA
5258	54.7	2,100	6,100	10,300	17,600	24,400	32,600
5263	54.7	2,100	6,100	10,300	17,600	24,400	32,600
5270	58.4	2,170	6,260	10,600	18,000	24,900	33,300
5272	54.7	2,100	6,100	10,300	17,600	24,400	32,600
5282	80.2	2,170	6,270	10,600	18,000	24,900	33,300
5294	30.5	992	3,600	6,650	12,200	17,800	24,400



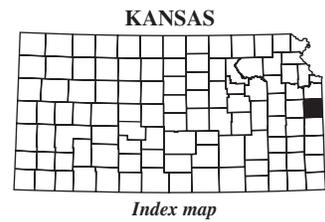


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 3039 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 06915000 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 06914500 △ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 3130 **Lake and determination site identification number**



**Figure 71.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Miami County.

## 412 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 67.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Miami County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 71)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4	1029010867	MI						Unnamed tributary, Miami 2	4.13	0
10	1029010848	MI				Pony Creek	7.27	0	0	.84	3.00	8.79
2465	1029010225	MI				Tenmile Creek	17.0	0	0	1.61	6.09	18.2
2467	HYDRO	MI				HYDRO	4.23	NA	NA	NA	NA	NA
2473	1029010248	MI				Elm Branch	6.27	0	0	.43	1.92	6.37
2483	1029010247	MI				Smith Branch	10.1	0	0	1.41	4.79	13.3
2490	HYDRO	MI				HYDRO	26.5	NA	NA	NA	NA	NA
2500	1029010248	MI				Elm Branch	4.21	0	0	.12	.86	3.59
2502	1029010225	MI				Tenmile Creek	27.2	0	.10	2.65	9.93	29.6
2514	HYDRO	MI				HYDRO	11.0	NA	NA	NA	NA	NA
2515	HYDRO	MI				HYDRO	68.0	NA	NA	NA	NA	NA
2549	HYDRO	MI				HYDRO	39.1	NA	NA	NA	NA	NA
2550	HYDRO	MI				HYDRO	86.2	NA	NA	NA	NA	NA
2565	HYDRO	MI				HYDRO	129	NA	NA	NA	NA	NA
2576	10290102754	MI				Unnamed tributary, Miami 1	4.83	0	0	.37	1.53	5.09
2615	1029010225	MI				Tenmile Creek	54.1	0	.80	5.48	20.2	60.4
2616	1029010224	MI				Bull Creek	135	4.30	6.50	20.0	71.0	375
2637	1029010222	MI				Dorsey Creek	4.40	0	0	.40	1.57	5.06
2639	HYDRO	MI				HYDRO	4.86	NA	NA	NA	NA	NA
2664	1029010222	MI				Dorsey Creek	8.72	0	0	.94	3.58	10.7
2665	1029010221	MI				North Wea Creek	45.2	0	.67	4.92	18.0	53.1
2712	1029010220	MI				South Wea Creek	39.2	0	.76	5.27	18.8	53.5
2713	HYDRO	MI				HYDRO	11.2	NA	NA	NA	NA	NA
2727	1029010224	MI				Bull Creek	198	5.77	9.18	32.3	122	516
2728	1029010252	MI				Walnut Creek	22.5	0	.25	3.02	10.7	30.0
2747	1029010222	MI				Dorsey Creek	12.9	0	0	1.54	5.65	16.3
2748	1029010219	MI				South Wea Creek	94.4	0	1.96	10.6	38.6	116
2768	HYDRO	MI				HYDRO	4.44	NA	NA	NA	NA	NA
2774	1029010224	MI				Bull Creek	228	6.47	10.5	38.1	147	583
2775	1029010218	MI				South Wea Creek	110	0	2.29	12.1	44.2	133
2803	HYDRO	MI				HYDRO	2.25	NA	NA	NA	NA	NA
2806	1029010213	MI				Middle Creek	1.81	0	0	0	0	.86
2832	1029010213	MI				Middle Creek	11.9	0	0	1.39	5.12	14.9
2847	HYDRO	MI				HYDRO	16.6	NA	NA	NA	NA	NA
2849	102901012	MI				Plum Creek	19.5	0	.12	2.36	8.21	23.2
2850	1029010254	MI				Jake Branch	11.9	0	0	1.55	5.54	15.8
2852	1029010213	MI				Middle Creek	21.4	0	.10	2.54	9.28	26.8
2855	1029010224	MI				Bull Creek	348	9.27	15.6	61.5	244	852

**Table 67.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Miami County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 71)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4	3.98	927	1,820	2,560	3,660	4,550	5,550
10	7.11	1,290	2,560	3,620	5,200	6,490	7,940
2465	14.6	2,080	4,230	6,050	8,770	11,000	13,500
2467	NA	NA	NA	NA	NA	NA	NA
2473	5.70	1,180	2,350	3,310	4,750	5,910	7,230
2483	10.1	1,540	3,100	4,410	6,360	7,950	9,750
2490	NA	NA	NA	NA	NA	NA	NA
2500	3.68	939	1,850	2,600	3,710	4,610	5,620
2502	23.0	2,760	5,640	8,100	11,800	14,800	18,300
2514	NA	NA	NA	NA	NA	NA	NA
2515	NA	NA	NA	NA	NA	NA	NA
2549	NA	NA	NA	NA	NA	NA	NA
2550	NA	NA	NA	NA	NA	NA	NA
2565	NA	NA	NA	NA	NA	NA	NA
2576	4.57	1,020	2,020	2,840	4,050	5,040	6,150
2615	44.4	6,010	11,000	15,200	21,100	26,100	31,300
2616	116	986	2,140	3,040	4,230	5,130	6,020
2637	4.44	1,010	1,970	2,750	3,910	4,850	5,910
2639	NA	NA	NA	NA	NA	NA	NA
2664	8.66	1,510	2,980	4,190	6,000	7,470	9,130
2665	38.7	4,720	8,970	12,500	17,700	22,000	26,600
2712	37.3	5,170	9,530	13,100	18,200	22,400	26,900
2713	NA	NA	NA	NA	NA	NA	NA
2727	168	1,540	2,820	3,860	5,560	6,900	8,300
2728	21.8	2,510	5,100	7,300	10,600	13,300	16,400
2747	12.7	1,900	3,770	5,340	7,670	9,560	11,700
2748	79.4	7,320	13,400	18,500	25,800	31,900	38,300
2768	NA	NA	NA	NA	NA	NA	NA
2774	193	1,810	3,140	4,260	6,190	7,740	9,390
2775	91.1	7,810	14,300	19,700	27,400	33,900	40,800
2803	NA	NA	NA	NA	NA	NA	NA
2806	1.42	592	1,140	1,580	2,230	2,750	3,330
2832	11.6	1,760	3,520	5,000	7,190	8,980	11,000
2847	NA	NA	NA	NA	NA	NA	NA
2849	17.5	2,200	4,510	6,470	9,420	11,800	14,600
2850	12.0	1,760	3,520	4,990	7,170	8,960	11,000
2852	20.2	2,480	5,020	7,160	10,400	13,000	16,000
2855	293	2,880	4,430	5,830	8,730	11,100	13,700

**Table 67.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Miami County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

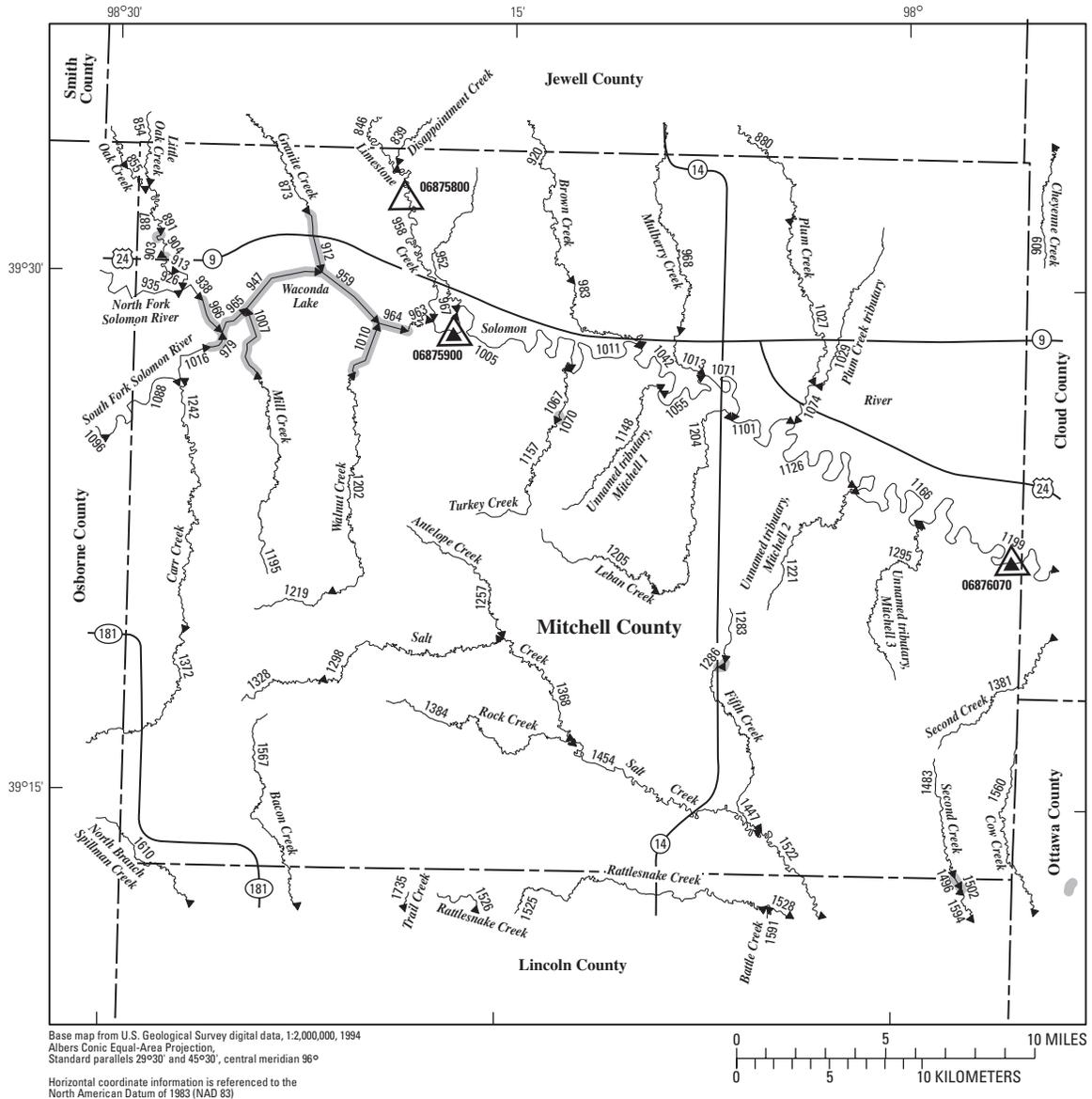
Determination site identification number (fig. 71)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2864	102901011	MI						Marais des Cygnes River	1,620	46.2
2870	1029010213	MI				Middle Creek	37.4	0	.49	4.25	15.6	45.7
2872	1029010214	MI				Walnut Creek	10.1	0	0	1.48	5.13	14.3
2891	1029010229	MI				Marais des Cygnes River	2,180	55.6	92.3	383	1,660	4,840
2892	1029010253	MI				Elm Branch	14.2	0	.07	2.10	7.21	19.9
2893	1029010216	MI				Marais des Cygnes River	2,550	61.8	109	478	2,010	5,740
2896	1029010216	MI				Marais des Cygnes River	2,190	55.9	93.0	388	1,680	4,880
2934	1029010236	MI				Jordan Branch	6.50	0	0	1.22	3.67	9.65
2993	1029010210	MI				North Sugar Creek	28.9	0	.35	3.58	13.0	37.5
3001	HYDRO	MI				HYDRO	31.2	NA	NA	NA	NA	NA
3004	1029010237	MI				Hushpuckney Creek	15.5	0	.23	2.45	7.96	21.4
3009	1029010210	MI				North Sugar Creek	33.5	0	.48	4.18	15.2	43.8
3039	1029010235	MI				Mound Creek	23.5	0	.28	2.92	10.0	28.2
5418	1029010230	MI				Middle Creek	83.4	0	1.89	9.72	34.2	100.0

**Table 67.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Miami County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

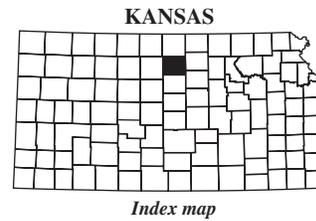
Determination site identification number (fig. 71)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2864	1,210	15,300	22,200	27,300	36,400	43,600	51,300
2870	33.5	5,410	9,870	13,500	18,700	22,900	27,400
2872	10.7	1,610	3,210	4,540	6,510	8,130	9,950
2891	1,740	19,700	26,100	32,100	47,700	60,800	75,700
2892	14.6	1,950	3,920	5,560	8,020	10,000	12,300
2893	2,090	22,600	28,700	35,400	55,200	72,300	91,900
2896	1,750	19,800	26,200	32,300	48,100	61,300	76,400
2934	7.01	1,150	2,320	3,290	4,730	5,910	7,250
2993	27.3	2,980	6,050	8,650	12,600	15,800	19,400
3001	NA	NA	NA	NA	NA	NA	NA
3004	15.4	1,950	3,970	5,670	8,230	10,300	12,700
3009	31.6	5,270	9,570	13,100	18,000	22,100	26,300
3039	20.8	2,450	5,040	7,240	10,600	13,300	16,400
5418	68.6	7,130	13,000	17,800	24,700	30,400	36,400





**EXPLANATION**

- ◀ 1610 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 06875900 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 06875800 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1286 Lake and determination site identification number



**Figure 72.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Mitchell County.

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**Table 68.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Mitchell County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 72)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		855	102600124	MC	OB					Oak Creek	177	0
887	102600122	MC				Oak Creek	229	0	2.26	6.66	16.6	40.5
891	HYDRO	MC				HYDRO	229	NA	NA	NA	NA	NA
903	102600122	MC				Oak Creek	231	0	2.28	6.70	16.7	40.8
904	HYDRO	MC				HYDRO	231	NA	NA	NA	NA	NA
912	HYDRO	MC				HYDRO	33.0	NA	NA	NA	NA	NA
913	102600122	MC				Oak Creek	232	0	2.30	6.74	16.8	40.9
926	102600122	MC				Oak Creek	234	0	2.32	6.79	16.9	41.3
935	102600125	MC	OB			North Fork Solomon River	2,620	12.1	20.0	34.6	78.4	178
938	102600125	MC				North Fork Solomon River	2,860	12.2	20.1	36.3	87.7	223
947	HYDRO	MC				HYDRO	5,080	NA	NA	NA	NA	NA
952	1026001534	MC				Solomon River tributary	12.3	0	0	0	0	0
958	1026001518	MC				Limestone Creek	193	0	2.33	6.76	16.7	40.7
959	HYDRO	MC				HYDRO	5,120	NA	NA	NA	NA	NA
963	1026001523	MC				Solomon River	5,160	13.9	20.9	52.6	178	663
964	HYDRO	MC				HYDRO	5,160	NA	NA	NA	NA	NA
965	HYDRO	MC				HYDRO	5,050	NA	NA	NA	NA	NA
966	HYDRO	MC				HYDRO	2,860	NA	NA	NA	NA	NA
967	1026001516	MC				Solomon River	5,360	14.0	21.0	54.0	186	700
979	HYDRO	MC				HYDRO	2,190	NA	NA	NA	NA	NA
983	1026001515	MC				Brown Creek	65.2	0	.27	1.75	4.46	11.5
1005	1026001516	MC				Solomon River	5,380	15.0	23.7	62.6	208	780
1007	HYDRO	MC				HYDRO	24.0	NA	NA	NA	NA	NA
1010	HYDRO	MC				HYDRO	37.8	NA	NA	NA	NA	NA
1011	1026001516	MC				Solomon River	5,410	16.0	26.3	70.8	230	857
1013	1026001536	MC				Mulberry Creek	32.6	0	0	.25	.82	3.18
1016	102600141	MC				South Fork Solomon River	2,190	6.49	11.6	23.0	65.8	206
1027	1026001513	MC				Plum Creek	45.7	0	0	.78	2.16	6.37
1029	1026001537	MC				Plum Creek tributary	36.5	0	0	.62	1.69	5.09
1042	1026001514	MC				Solomon River	5,470	18.8	33.6	93.9	289	1,070
1055	1026001514	MC				Solomon River	5,490	19.4	35.1	98.7	302	1,120
1067	1026001539	MC				Turkey Creek	20.3	0	0	0	0	.91
1070	HYDRO	MC				HYDRO	17.2	NA	NA	NA	NA	NA
1071	1026001514	MC				Solomon River	5,530	21.0	39.2	112	336	1,240
1074	1026001513	MC				Plum Creek	84.7	0	.37	2.04	5.44	14.5
1088	102600141	MC	OB			South Fork Solomon River	2,110	6.30	11.4	22.2	62.7	193
1101	1026001514	MC				Solomon River	5,560	22.6	43.5	125	371	1,360
1126	1026001512	MC				Solomon River	5,660	26.4	53.7	157	454	1,660

**Table 68.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Mitchell County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 72)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
855	23.9	1,570	4,000	6,430	10,400	14,000	18,200
887	30.9	1,820	4,610	7,380	11,900	16,000	20,800
891	NA	NA	NA	NA	NA	NA	NA
903	31.1	1,810	4,580	7,340	11,800	16,000	20,700
904	NA	NA	NA	NA	NA	NA	NA
912	NA	NA	NA	NA	NA	NA	NA
913	31.2	1,790	4,550	7,290	11,800	15,900	20,600
926	31.4	1,790	4,560	7,310	11,800	15,900	20,700
935	103	2,830	6,300	9,480	14,600	19,200	24,500
938	116	2,730	6,070	9,110	14,000	18,300	23,300
947	NA	NA	NA	NA	NA	NA	NA
952	1.00	553	1,470	2,360	3,810	5,080	6,570
958	30.7	1,060	1,910	2,600	3,590	4,430	5,340
959	NA	NA	NA	NA	NA	NA	NA
963	243	1,800	3,820	5,480	7,870	9,800	11,900
964	NA	NA	NA	NA	NA	NA	NA
965	NA	NA	NA	NA	NA	NA	NA
966	NA	NA	NA	NA	NA	NA	NA
967	254	1,720	3,630	5,170	7,350	9,080	10,900
979	NA	NA	NA	NA	NA	NA	NA
983	10.7	1,060	2,740	4,410	7,110	9,580	12,400
1005	273	1,810	3,790	5,350	7,540	9,260	11,000
1007	NA	NA	NA	NA	NA	NA	NA
1010	NA	NA	NA	NA	NA	NA	NA
1011	292	1,890	3,940	5,530	7,720	9,420	11,200
1013	4.50	769	2,030	3,280	5,320	7,180	9,300
1016	101	1,420	4,780	9,060	18,000	28,300	42,300
1027	7.01	789	2,120	3,460	5,670	7,720	10,100
1029	5.82	1,210	2,950	4,580	7,150	9,450	12,000
1042	346	2,130	4,360	6,020	8,230	9,900	11,600
1055	357	2,180	4,440	6,120	8,340	9,990	11,600
1067	2.45	743	2,000	3,220	5,210	6,970	9,040
1070	NA	NA	NA	NA	NA	NA	NA
1071	387	2,320	4,680	6,400	8,630	10,300	11,900
1074	13.4	1,160	3,020	4,880	7,910	10,700	13,900
1088	97.3	1,410	4,800	9,160	18,300	28,700	43,100
1101	418	2,460	4,920	6,680	8,920	10,500	12,100
1126	492	2,790	5,510	7,370	9,640	11,200	12,600

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**Table 68.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Mitchell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

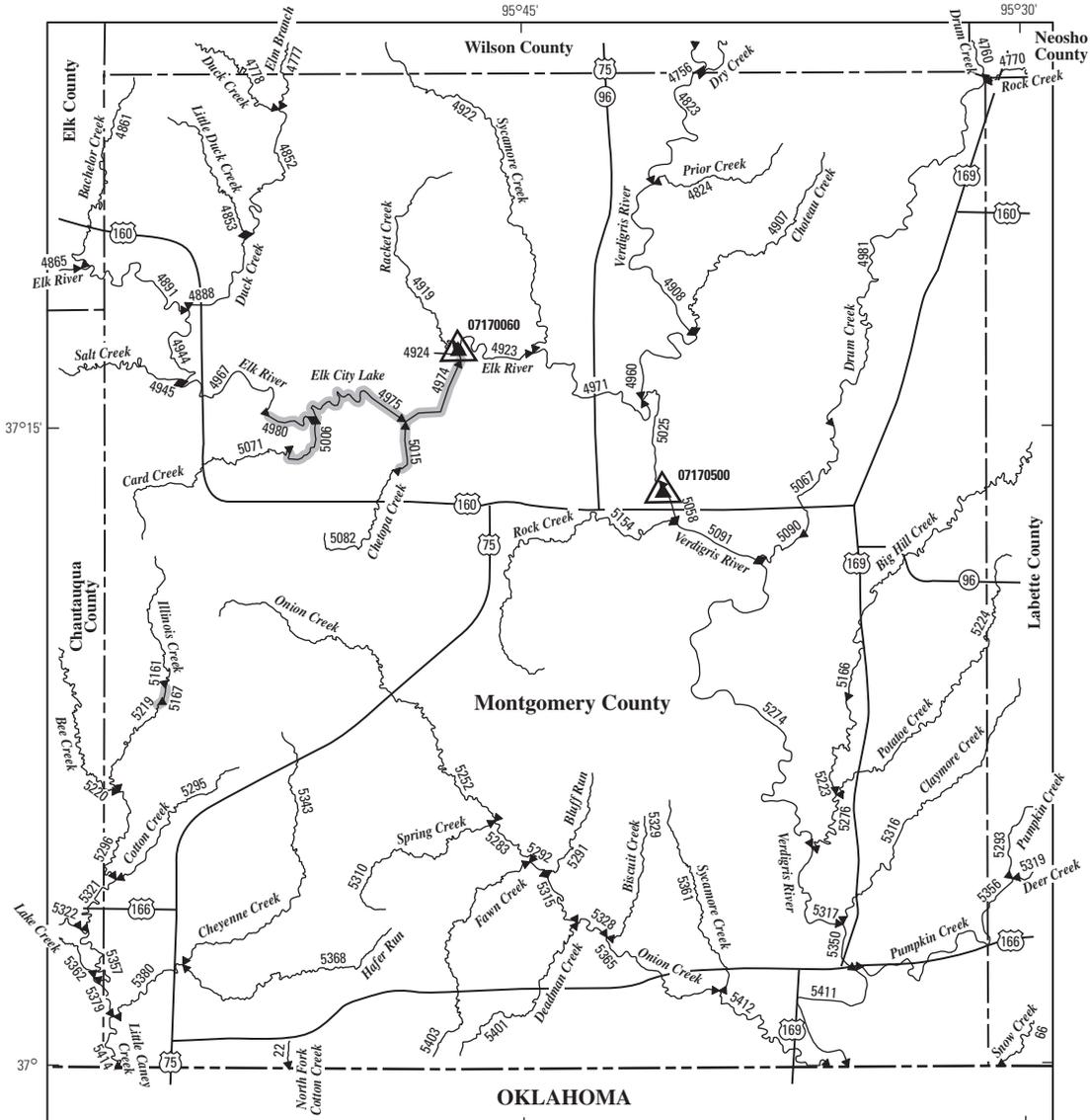
Determination site identification number (fig. 72)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1148	1026001540	MC						Unnamed tributary, Mitchell 1	12.4	0	0
1157	1026001539	MC				Turkey Creek	17.1	0	0	0	0	0	.15
1166	1026001512	MC				Solomon River	5,690	27.5	56.5	166	478	1,750	
1195	1026001538	MC				Mill Creek	19.4	0	0	0	0	0	.28
1202	1026001526	MC				Walnut Creek	33.1	0	0	.33	.99	3.32	
1204	1026001541	MC				Leban Creek	34.8	0	0	.26	.89	3.38	
1205	1026001541	MC				Leban Creek	16.7	0	0	0	0	0	
1219	1026001526	MC				Walnut Creek	8.45	0	0	0	0	0	
1221	1026001542	MC				Unnamed tributary, Mitchell 2	16.9	0	0	0	0	0	.64
1242	1026001421	MC				Carr Creek	77.1	0	.20	1.71	4.32	10.7	
1257	1026001543	MC				Antelope Creek	15.5	0	0	0	0	0	.12
1283	1026001545	MC				Fifth Creek	5.35	0	0	0	0	0	
1286	HYDRO	MC				HYDRO	6.86	NA	NA	NA	NA	NA	NA
1295	1026001546	MC				Unnamed tributary, Mitchell 3	26.9	0	0	.49	1.24	3.72	
1298	1026001530	MC				Salt Creek	24.4	0	0	.44	1.02	2.99	
1328	1026001530	MC				Salt Creek	9.50	0	0	0	0	0	
1368	1026001530	MC				Salt Creek	53.0	0	.02	1.33	3.39	9.04	
1372	1026001421	MC	OB			Carr Creek	49.8	0	0	.93	2.38	6.18	
1384	1026001544	MC				Rock Creek	28.1	0	0	.40	1.04	3.38	
1447	1026001545	MC				Fifth Creek	30.3	0	0	.55	1.40	4.20	
1454	1026001530	MC				Salt Creek	104	.02	.71	3.02	7.72	20.7	
1483	1026001554	MC				Second Creek	18.5	0	0	.27	.59	2.07	
1560	1026001528	MC	OT			Cow Creek	16.5	0	0	.45	.89	2.58	

**Table 68.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Mitchell County.—Continued

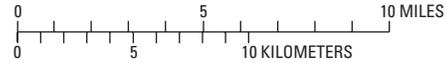
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 72)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1148	1.18	575	1,520	2,430	3,900	5,190	6,700
1157	1.86	671	1,800	2,890	4,680	6,250	8,100
1166	513	2,890	5,670	7,560	9,850	11,400	12,800
1195	1.97	684	1,860	3,010	4,910	6,580	8,560
1202	4.36	673	1,830	2,990	4,920	6,700	8,730
1204	4.68	621	1,720	2,850	4,720	6,470	8,480
1205	1.70	682	1,810	2,910	4,690	6,250	8,090
1219	52	425	1,130	1,820	2,940	3,920	5,060
1221	2.18	702	1,860	2,970	4,780	6,370	8,240
1242	9.90	872	2,360	3,880	6,400	8,740	11,400
1257	1.74	630	1,690	2,710	4,380	5,860	7,590
1283	0	357	924	1,460	2,320	3,080	3,950
1286	NA	NA	NA	NA	NA	NA	NA
1295	4.42	926	2,470	3,960	6,410	8,560	11,100
1298	3.65	800	2,180	3,520	5,740	7,700	10,000
1328	92	455	1,220	1,960	3,160	4,220	5,460
1368	8.38	1,090	2,760	4,410	7,060	9,470	12,200
1372	6.36	840	2,230	3,630	5,910	8,010	10,400
1384	4.18	896	2,420	3,920	6,370	8,540	11,100
1447	4.80	778	2,030	3,270	5,280	7,110	9,180
1454	16.7	1,280	3,310	5,330	8,640	11,700	15,200
1483	2.96	729	1,940	3,110	5,020	6,690	8,660
1560	3.15	724	1,890	3,020	4,830	6,420	8,280



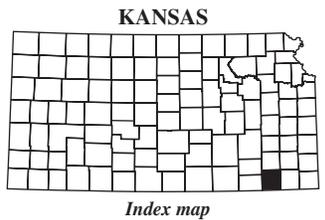


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 5368 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07170500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07170060 ▴ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5167 Lake and determination site identification number



**Figure 73.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Montgomery County.

**Table 69.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Montgomery County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 73)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		22	1107010637	MG						North Fork Cotton Creek	0.32	0	0
4777	1107010423	MG	WL			Elm Branch	14.1	0	.13	1.71	5.37	14.8	
4778	110701043	MG	WL			Duck Creek	21.0	0	.46	3.24	10.3	27.6	
4823	1107010336	MG	WL			Verdigris River	2,060	21.0	52.0	282	1,530	4,890	
4824	1107010362	MG				Prior Creek	8.91	0	.75	2.82	7.43	17.1	
4852	110701043	MG				Duck Creek	45.9	0	1.15	5.74	18.7	51.9	
4853	1107010424	MG				Little Duck Creek	9.05	0	.47	2.22	5.95	14.3	
4888	110701043	MG				Duck Creek	62.2	0	1.75	7.99	26.0	72.2	
4907	1107010363	MG				Choteau Creek	18.0	0	.68	3.67	11.4	29.2	
4908	1107010336	MG				Verdigris River	2,080	21.2	52.6	285	1,540	4,940	
4919	1107010421	MG				Racket Creek	20.7	0	.73	3.71	11.3	29.2	
4922	1107010422	MG	WL			Sycamore Creek	40.5	0	1.26	5.89	18.8	50.8	
4923	110701041	MG				Elk River	657	3.30	7.84	25.2	343	1,590	
4924	110701041	MG				Elk River	633	3.00	7.10	21.0	324	1,530	
4944	110701042	MG				Elk River	507	3.91	12.1	60.1	210	627	
4960	1107010336	MG				Verdigris River	2,110	21.5	53.4	289	1,570	5,000	
4967	110701041	MG				Elk River	583	4.95	15.2	72.8	247	736	
4971	110701041	MG				Elk River	707	3.91	9.39	33.8	384	1,710	
4974	HYDRO	MG				HYDRO	632	NA	NA	NA	NA	NA	
4975	HYDRO	MG				HYDRO	610	NA	NA	NA	NA	NA	
4980	HYDRO	MG				HYDRO	584	NA	NA	NA	NA	NA	
4981	1107010334	MG	NO			Drum Creek	68.2	0	1.38	7.69	28.1	83.1	
5006	HYDRO	MG				HYDRO	17.9	NA	NA	NA	NA	NA	
5015	HYDRO	MG				HYDRO	16.9	NA	NA	NA	NA	NA	
5025	1107010336	MG				Verdigris River	2,820	30.0	74.9	401	2,130	6,780	
5058	1107010335	MG				Verdigris River	2,830	30.0	75.0	401	2,130	6,780	
5067	1107010334	MG				Drum Creek	80.0	0	1.63	8.96	33.0	98.5	
5071	1107010419	MG				Card Creek	14.5	0	.93	3.53	9.48	22.5	
5082	1107010418	MG				Chetopa Creek	13.2	0	0	.55	3.15	11.3	
5090	1107010334	MG				Drum Creek	82.2	0	1.68	9.20	33.9	101	
5091	1107010335	MG				Verdigris River	2,870	30.3	76.5	410	2,160	6,870	
5154	1107010358	MG				Rock Creek	35.9	0	.42	3.86	14.3	42.1	
5161	1107010639	MG				Illinois Creek	10.6	0	.91	3.08	7.79	17.9	
5167	HYDRO	MG				HYDRO	11.8	NA	NA	NA	NA	NA	
5219	1107010639	MG				Illinois Creek	16.5	0	1.19	4.35	11.6	27.3	
5223	1107010332	MG				Big Hill Creek	94.4	.45	1.37	8.27	52.7	177	
5252	1107010339	MG				Onion Creek	34.2	0	.34	3.35	12.1	35.8	
5274	1107010333	MG				Verdigris River	2,980	31.0	80.8	435	2,240	7,110	

**Table 69.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Montgomery County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 73)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
22	0	188	361	499	699	862	1,040
4777	11.6	1,770	3,630	5,210	7,580	9,520	11,700
4778	19.4	2,200	4,560	6,580	9,630	12,100	15,000
4823	1,510	17,900	24,200	30,300	41,100	49,600	55,200
4824	11.0	1,530	3,020	4,250	6,090	7,580	9,260
4852	36.8	4,160	7,970	11,200	15,800	19,700	23,800
4853	9.64	1,360	2,770	3,960	5,730	7,190	8,840
4888	49.7	4,770	9,080	12,700	17,900	22,300	26,900
4907	19.9	2,360	4,700	6,660	9,580	12,000	14,700
4908	1,520	18,100	24,300	30,400	41,300	50,000	55,600
4919	20.3	2,370	4,810	6,880	9,990	12,500	15,400
4922	35.5	4,930	8,900	12,100	16,700	20,400	24,300
4923	478	4,940	7,400	8,890	10,600	11,800	12,800
4924	460	4,740	7,170	8,600	10,200	11,200	12,100
4944	346	11,700	25,900	39,500	61,900	82,600	107,000
4960	1,540	18,200	24,400	30,600	41,700	50,500	56,200
4967	400	12,500	27,100	41,100	64,000	85,100	110,000
4971	515	5,350	7,870	9,510	11,600	13,000	14,100
4974	NA	NA	NA	NA	NA	NA	NA
4975	NA	NA	NA	NA	NA	NA	NA
4980	NA	NA	NA	NA	NA	NA	NA
4981	59.5	6,950	12,300	16,700	22,900	28,000	33,300
5006	NA	NA	NA	NA	NA	NA	NA
5015	NA	NA	NA	NA	NA	NA	NA
5025	2,080	22,900	28,000	35,500	51,000	64,000	72,000
5058	2,080	22,900	28,000	35,500	51,000	64,000	72,000
5067	69.6	7,110	12,700	17,300	23,900	29,300	35,000
5071	14.9	1,820	3,730	5,340	7,770	9,760	12,000
5082	10.5	1,800	3,630	5,180	7,490	9,380	11,500
5090	71.5	7,010	12,600	17,200	23,800	29,200	34,900
5091	2,120	23,300	29,000	36,800	52,400	65,400	73,600
5154	31.5	3,360	6,680	9,510	13,700	17,200	20,900
5161	11.5	1,490	3,040	4,350	6,310	7,920	9,760
5167	NA	NA	NA	NA	NA	NA	NA
5219	17.4	1,910	3,940	5,670	8,280	10,400	12,900
5223	63.6	983	2,150	3,100	4,370	5,350	6,310
5252	27.4	3,320	6,620	9,440	13,600	17,100	20,900
5274	2,200	24,300	32,000	40,600	56,300	69,300	78,200

**Table 69.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Montgomery County.—Continued

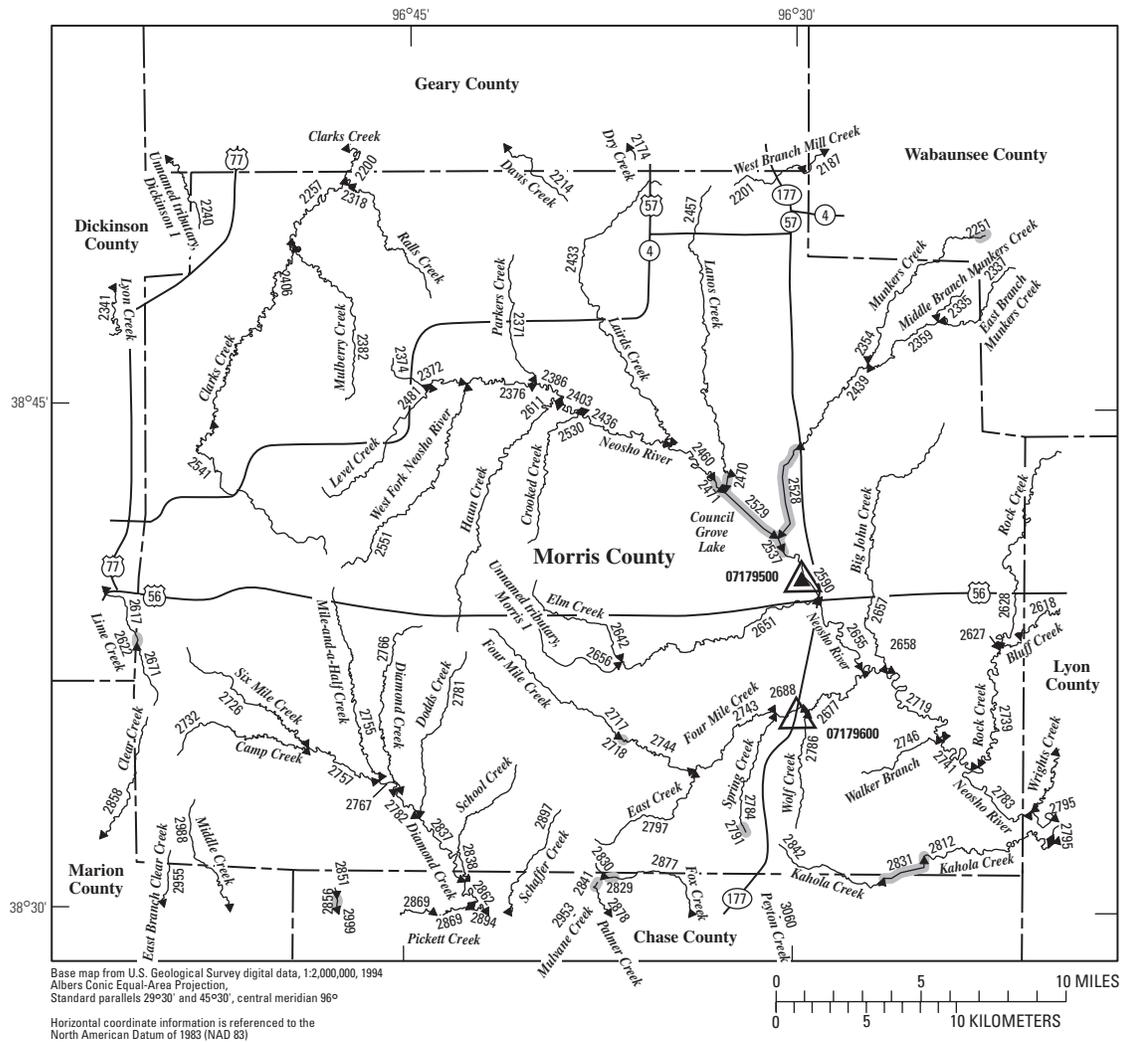
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 73)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5276	1107010330	MG						Big Hill Creek	116	0.67
5283	1107010339	MG				Onion Creek	47.1	0	.63	4.48	16.2	48.2
5291	1107010354	MG				Bluff Run	10.1	0	.62	2.56	6.95	16.6
5292	1107010339	MG				Onion Creek	65.0	0	1.24	6.60	23.1	67.7
5295	1107010638	MG				Cotton Creek	12.4	0	.14	1.65	5.02	13.6
5296	110701069	MG				Bee Creek	62.7	.20	3.29	12.8	37.6	97.4
5310	1107010355	MG				Spring Creek	10.9	0	0	.83	3.32	10.4
5315	1107010339	MG				Onion Creek	77.3	0	1.77	8.50	29.1	84.5
5317	1107010329	MG				Verdigris River	3,100	31.8	85.4	462	2,330	7,370
5328	1107010339	MG				Onion Creek	99.6	.19	2.73	11.9	39.4	112
5329	1107010353	MG				Biscuit Creek	5.81	0	.24	1.27	3.33	8.25
5343	1107010640	MG				Cheyenne Creek	23.6	0	.38	2.80	9.14	25.6
5350	1107010329	MG				Verdigris River	3,120	31.9	86.2	466	2,350	7,420
5361	1107010352	MG				Sycamore Creek	13.8	0	.05	1.83	6.24	17.4
5365	1107010339	MG				Onion Creek	119	.42	3.35	14.3	47.5	136
5368	11070106509	MG				Hafer Run	14.9	0	.70	2.72	7.35	18.2
5380	1107010640	MG				Cheyenne Creek	42.5	0	1.27	5.62	17.7	48.6
5401	1107010357	MG				Deadman Creek	21.2	0	1.22	4.35	12.0	29.2
5403	1107010356	MG				Fawn Creek	17.7	0	.42	2.57	7.84	20.7
5411	1107010327	MG				Verdigris River	3,270	32.9	91.7	498	2,450	7,730
5412	1107010339	MG				Onion Creek	144	.63	3.88	16.7	55.9	163
5414	110701068	MG				Little Caney Creek	460	4.63	16.9	76.8	263	875

**Table 69.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Montgomery County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

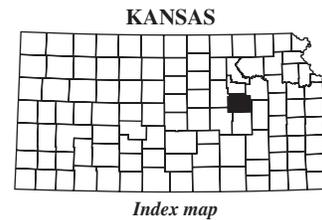
Determination site identification number (fig. 73)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5276	80.1	1,160	2,440	3,460	4,840	5,880	6,920
5283	36.4	3,760	7,480	10,700	15,400	19,400	23,700
5291	11.3	1,620	3,210	4,540	6,520	8,130	9,950
5292	49.4	4,470	8,720	12,400	17,700	22,200	27,000
5295	10.5	1,590	3,280	4,720	6,880	8,650	10,700
5296	60.2	3,920	7,580	10,700	15,200	18,900	23,000
5310	9.00	1,560	3,170	4,520	6,540	8,200	10,100
5315	59.8	4,890	9,430	13,300	18,900	23,700	28,800
5317	2,300	25,300	35,200	44,600	60,600	73,500	83,200
5328	76.7	5,510	10,400	14,600	20,700	25,800	31,200
5329	6.15	1,170	2,290	3,230	4,600	5,720	6,990
5343	19.4	2,340	4,880	7,050	10,300	13,000	16,100
5350	2,310	25,500	35,700	45,300	61,300	74,200	84,000
5361	13.4	1,980	3,940	5,580	8,020	10,000	12,300
5365	91.5	5,890	11,100	15,600	22,100	27,500	33,300
5368	13.1	1,760	3,650	5,250	7,670	9,670	11,900
5380	34.6	3,930	7,490	10,500	14,700	18,300	22,100
5401	19.9	2,350	4,810	6,890	10,000	12,600	15,500
5403	15.4	2,050	4,210	6,040	8,800	11,100	13,600
5411	2,430	26,800	39,500	50,100	66,300	79,200	89,800
5412	109	6,500	12,200	17,100	24,100	30,000	36,400
5414	538	11,800	21,400	29,500	41,300	51,200	62,000





**EXPLANATION**

- ← 2955 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07179500 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07179600 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2529 Lake and determination site identification number



**Figure 74.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Morris County.

**430 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 70.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morris County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NRtribal, tribal stream; NA, not applicable; NRDitch, irrigation ditch]

Determination site identification number (fig. 74)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2257	102701019	MR						Clarks Creek	79.1	0
2318	1027010121	MR				Ralls Creek	19.3	0	0	.68	2.90	9.82
2335	1107020132	MR				Middle Branch Munkers Creek	2.22	0	0	0	0	0
2337	1107020131	MR	WB			East Branch Munkers Creek	14.8	0	0	.49	2.27	7.99
2354	1107020118	MR	WB			Munkers Creek	26.7	0	0	.94	4.11	14.0
2359	1107020132	MR				Middle Branch Munkers Creek	22.9	0	0	1.13	4.38	13.9
2371	1107020127	MR				Parkers Creek	15.0	0	0	.20	1.48	6.20
2372	1107020123	MR				Neosho River	20.0	0	0	.24	1.78	7.47
2374	1107020123	MR				Neosho River	4.13	0	0	0	0	0
2376	1107020123	MR				Neosho River	40.4	0	0	1.17	5.00	17.3
2382	1027010120	MR				Mulberry Creek	17.9	0	0	.58	2.47	8.55
2386	1107020123	MR				Neosho River	57.4	0	0	2.06	8.01	26.4
2403	1107020123	MR				Neosho River	76.0	0	.22	3.00	11.2	36.2
2406	102701019	MR				Clarks Creek	52.2	0	.23	2.70	9.42	28.8
2433	1107020130	MR				Lairds Creek	28.5	0	0	1.10	4.48	14.8
2436	1107020123	MR				Neosho River	98.0	0	.64	4.41	15.8	50.0
2439	1107020118	MR				Munkers Creek	63.9	0	.37	3.53	12.6	38.6
2457	1107020121	MR				Lanos Creek	35.1	0	0	1.55	5.98	19.1
2460	1107020123	MR				Neosho River	132	0	1.17	6.26	22.1	69.5
2470	HYDRO	MR				HYDRO	35.4	NA	NA	NA	NA	NA
2471	HYDRO	MR				HYDRO	135	NA	NA	NA	NA	NA
2481	110702019023	MR				Level Creek	13.7	0	0	0	.70	4.29
2528	HYDRO	MR				HYDRO	71.1	NA	NA	NA	NA	NA
2529	HYDRO	MR				HYDRO	176	NA	NA	NA	NA	NA
2530	1107020135	MR				Crooked Creek	13.8	0	0	.50	2.09	7.17
2537	HYDRO	MR				HYDRO	248	NA	NA	NA	NA	NA
2541	102701019	MR				Clarks Creek	27.9	0	0	1.05	4.16	13.8
2551	1107020128	MR				West Fork Neosho River	16.6	0	0	.06	1.18	5.69
2590	1107020111	MR				Neosho River	253	3.20	6.30	13.0	73.0	358
2611	1107020129	MR				Haun Creek	17.6	0	0	.44	2.18	7.97
2622	HYDRO	MR	DK			HYDRO	7.23	NA	NA	NA	NA	NA
2627	110702018	MR				Bluff Creek	35.5	0	.14	2.70	9.48	28.0
2642	1107020136	MR				Elm Creek	14.2	0	0	.21	1.36	5.61
2651	1107020136	MR				Elm Creek	41.6	0	.01	2.16	7.58	23.0
2655	1107020110	MR				Neosho River	299	4.27	8.09	19.9	93.3	428
2656	11070201946	MR				Unnamed tributary, Morris 1	4.91	0	0	0	0	.01
2657	1107020137	MR				Big John Creek	35.4	0	.14	2.54	8.58	24.9
2658	1107020110	MR				Neosho River	361	5.71	10.5	29.3	121	523

**Table 70.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morris County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 74)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2257	35.3	2,920	6,450	9,680	14,700	19,100	24,000
2318	9.18	1,420	3,230	4,840	7,330	9,430	11,900
2335	.42	429	922	1,340	1,980	2,510	3,110
2337	7.61	1,270	2,850	4,240	6,390	8,200	10,300
2354	13.0	1,850	4,160	6,220	9,390	12,100	15,200
2359	12.0	1,640	3,710	5,550	8,400	10,800	13,600
2371	6.67	1,240	2,810	4,190	6,340	8,150	10,200
2372	8.17	1,480	3,350	5,020	7,610	9,790	12,300
2374	1.06	588	1,290	1,900	2,840	3,620	4,510
2376	16.3	2,460	5,570	8,440	12,900	16,800	21,200
2382	8.30	1,380	3,120	4,670	7,060	9,070	11,400
2386	23.4	2,940	6,580	9,920	15,100	19,700	24,800
2403	30.8	3,420	7,570	11,400	17,300	22,500	28,300
2406	24.0	2,300	5,210	7,900	12,100	15,800	19,900
2433	13.4	1,840	4,180	6,280	9,540	12,300	15,500
2436	40.5	3,840	8,450	12,700	19,200	24,900	31,400
2439	30.8	4,150	8,680	12,700	18,700	24,000	29,700
2457	16.7	3,210	6,790	9,960	14,700	18,800	23,300
2460	54.4	4,410	9,630	14,400	21,800	28,300	35,600
2470	NA	NA	NA	NA	NA	NA	NA
2471	NA	NA	NA	NA	NA	NA	NA
2481	5.47	1,190	2,670	3,990	6,020	7,720	9,680
2528	NA	NA	NA	NA	NA	NA	NA
2529	NA	NA	NA	NA	NA	NA	NA
2530	6.80	1,160	2,620	3,930	5,940	7,640	9,590
2537	NA	NA	NA	NA	NA	NA	NA
2541	12.8	1,870	4,200	6,280	9,500	12,200	15,300
2551	6.63	1,300	2,950	4,430	6,700	8,620	10,800
2590	132	1,870	3,060	3,820	4,740	5,370	5,960
2611	7.91	1,330	3,040	4,560	6,910	8,900	11,200
2622	NA	NA	NA	NA	NA	NA	NA
2627	21.6	3,130	6,600	9,660	14,300	18,200	22,500
2642	6.07	1,160	2,640	3,960	6,000	7,730	9,710
2651	19.0	2,990	6,470	9,580	14,300	18,400	22,900
2655	158	2,540	4,100	6,700	9,640	12,300	15,400
2656	1.56	625	1,390	2,060	3,090	3,960	4,940
2657	19.3	3,150	6,640	9,700	14,300	18,300	22,600
2658	192	3,450	5,500	10,600	16,200	21,700	28,100

432 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 70.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morris County.—Continued

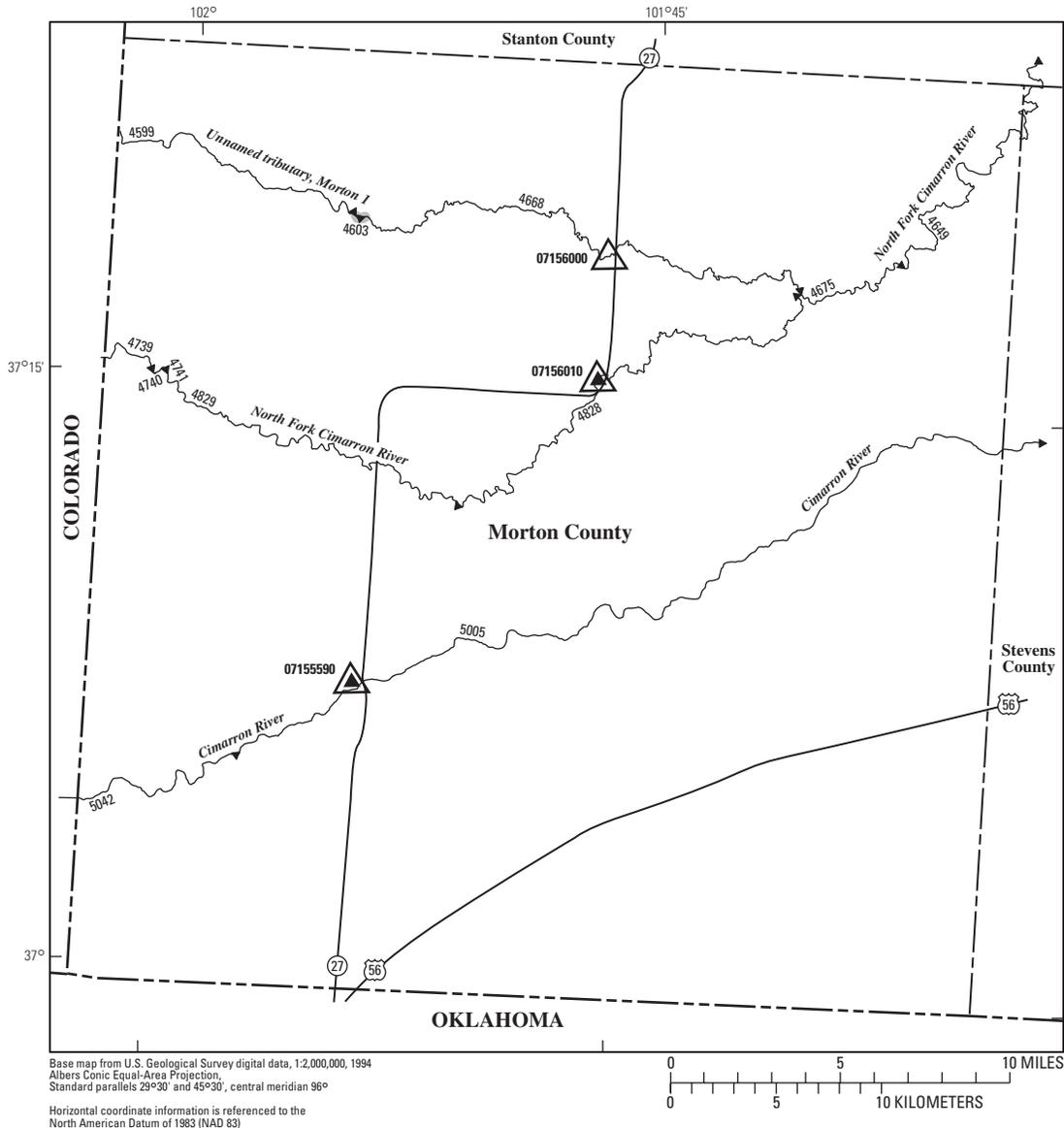
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NRtribal, tribal stream; NA, not applicable; NRDitch, irrigation ditch]

Determination site identification number (fig. 74)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2671	1026000851	MR						Lime Creek	7.08	0
2677	1107020124	MR				Four Mile Creek	62.5	0	.51	3.89	13.2	39.2
2688	1107020124	MR				Four Mile Creek	49.0	0	.17	2.72	9.49	28.6
2717	1107020124	MR				Four Mile Creek	14.2	0	0	.19	1.29	5.41
2718	HYDRO	MR				HYDRO	14.2	NA	NA	NA	NA	NA
2719	1107020110	MR				Neosho River	405	6.74	12.2	35.9	140	591
2726	11070203452	MR				Six Mile Creek	18.2	0	0	.14	1.47	6.60
2732	1107020314	MR				Camp Creek	12.5	0	0	0	.53	3.73
2739	110702017	MR				Rock Creek	124	0	1.81	8.90	30.2	90.5
2741	1107020110	MR				Neosho River	417	7.02	12.7	37.7	145	609
2743	1107020124	MR				Four Mile Creek	38.9	0	0	2.01	7.15	21.8
2744	1107020124	MR				Four Mile Creek	20.8	0	0	.63	2.72	9.39
2746	1107020142	MR				Walker Branch	9.54	0	0	.80	2.62	7.69
2755	1107020313	MR				Mile-and-a-Half Creek	15.1	0	0	.08	1.08	5.13
2757	11070203452	MR				Six Mile Creek	38.4	0	0	1.15	4.84	16.5
2766	110702033	MR				Diamond Creek	11.1	0	0	0	.64	3.53
2767	11070203452	MR				Six Mile Creek	53.8	0	0	1.81	7.12	23.6
2781	1107020315	MR				Dodds Creek	13.0	0	0	.39	1.67	5.87
2782	110702033	MR				Diamond Creek	67.6	0	.08	2.52	9.43	30.5
2784	1107020140	MR				Spring Creek	8.60	0	0	.30	1.29	4.70
2786	1107020141	MR				Wolf Creek	8.37	0	0	.48	1.73	5.59
2791	HYDRO	MR				HYDRO	2.45	NA	NA	NA	NA	NA
2797	1107020139	MR				East Creek	10.1	0	0	.33	1.45	5.24
2829	HYDRO	MR				HYDRO	1.43	NA	NA	NA	NA	NA
2830	1107020319	MR				Fox Creek	1.29	0	0	0	0	0
2831	HYDRO	MR				HYDRO	15.8	NA	NA	NA	NA	NA

**Table 70.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morris County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

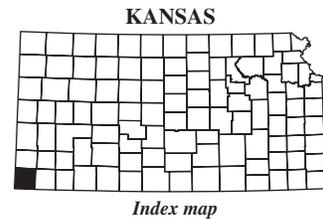
Determination site identification number (fig. 74)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2671	3.49	851	1,870	2,760	4,110	5,250	6,540
2677	30.2	5,690	12,000	17,700	26,900	35,300	45,000
2688	23.0	5,370	11,300	16,700	25,400	33,400	42,600
2717	5.91	1,300	2,940	4,410	6,730	8,720	11,000
2718	NA	NA	NA	NA	NA	NA	NA
2719	216	4,090	6,490	13,300	20,900	28,300	37,100
2726	7.46	1,410	3,190	4,770	7,210	9,270	11,600
2732	4.91	1,090	2,470	3,700	5,590	7,190	9,020
2739	64.5	5,180	10,800	15,800	23,300	29,900	37,100
2741	223	4,270	6,770	14,100	22,200	30,200	39,600
2743	18.1	4,160	8,870	13,200	20,000	26,200	33,300
2744	9.04	1,820	4,080	6,130	9,390	12,200	15,600
2746	6.33	1,020	2,250	3,320	4,970	6,340	7,910
2755	5.97	1,190	2,720	4,090	6,200	7,990	10,000
2757	15.5	2,390	5,430	8,220	12,600	16,400	20,700
2766	4.35	952	2,180	3,280	4,990	6,430	8,090
2767	21.2	2,880	6,460	9,740	14,800	19,300	24,300
2781	5.78	1,030	2,380	3,590	5,480	7,070	8,910
2782	26.4	3,150	7,040	10,600	16,200	21,100	26,500
2784	4.65	982	2,170	3,220	4,850	6,230	7,820
2786	5.03	913	2,020	2,990	4,480	5,730	7,160
2791	NA	NA	NA	NA	NA	NA	NA
2797	5.19	1,070	2,380	3,540	5,360	6,900	8,680
2829	NA	NA	NA	NA	NA	NA	NA
2830	0	292	631	920	1,360	1,720	2,130
2831	NA	NA	NA	NA	NA	NA	NA





**EXPLANATION**

- ← 5042 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07155590 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07156000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4603 Lake and determination site identification number



**Figure 75.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Morton County.

**Table 71.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morton County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

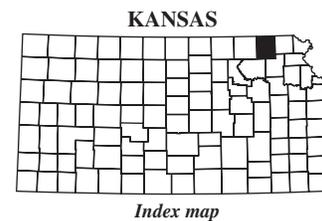
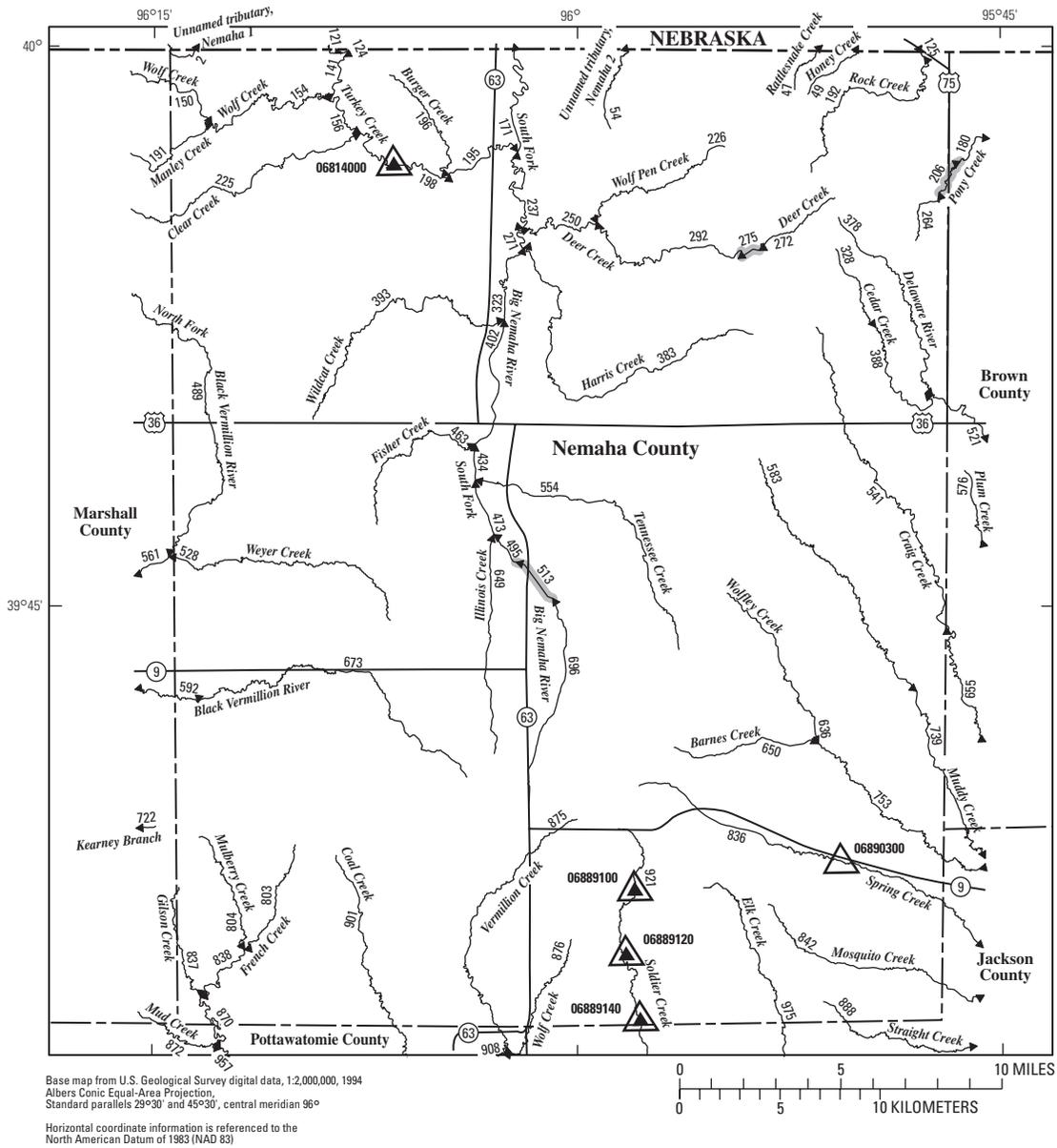
Determination site identification number (fig. 75)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4599	110400033	MT						Unnamed tributary, Morton 1	57.9	0	0
4603	HYDRO	MT				HYDRO	58.9	NA	NA	NA	NA	NA	NA
4668	110400033	MT				Unnamed tributary, Morton 1	167	.01	.02	.02	.02	.02	.02
4675	110400032	MT				North Fork Cimarron River	672	.70	.84	1.00	1.08	2.16	
4739	110400034	MT				North Fork Cimarron River	357	0	0	0	0	.06	
4740	110400034	MT				North Fork Cimarron River	360	0	0	0	0	.06	
4741	110400034	MT				North Fork Cimarron River	360	0	0	0	0	.06	
4828	110400034	MT				North Fork Cimarron River	494	0	0	0	0	.12	
4829	110400034	MT				North Fork Cimarron River	434	0	0	0	0	.09	
5005	110400021	MT	SV			Cimarron River	3,420	0	0	0	0	1.50	
5042	110400021	MT				Cimarron River	2,940	0	0	0	.11	2.21	

**Table 71.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Morton County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 75)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4599	0	206	728	1,340	2,470	3,610	5,000
4603	NA	NA	NA	NA	NA	NA	NA
4668	0.01	791	2,420	4,100	6,930	9,510	12,500
4675	6.69	981	4,010	7,980	16,000	24,500	35,600
4739	2.56	604	2,400	4,710	9,310	14,200	20,400
4740	2.61	612	2,430	4,770	9,430	14,400	20,700
4741	2.61	611	2,430	4,770	9,430	14,400	20,700
4828	5.60	870	3,650	7,320	14,800	22,800	33,200
4829	4.16	761	3,100	6,160	12,300	18,900	27,400
5005	10.7	1,330	4,000	6,800	11,600	16,000	21,300
5042	12.5	1,310	4,010	6,910	12,000	16,700	22,500





**Figure 76.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Nemaha County.

**440 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 72.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Nemaha County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 76)	KSWR CUSEGA number	Stream segment by county (table 111)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2	1024000722	NM	MS					Unnamed tributary, Nemaha 1	10.0	0
47	1024000727	NM				Rattlesnake Creek	9.02	0	0	.82	2.27	6.29
49	1024000726	NM				Honey Creek	2.36	0	0	0	0	0
54	10240007212	NM				Unnamed tributary, Nemaha 2	12.1	0	.01	.85	2.62	7.61
121	102400075	NM				Turkey Creek	209	.90	4.56	14.8	46.6	136
124	102400075	NM				Turkey Creek	209	.90	4.58	14.8	46.8	137
125	1024000720	NM				Rock Creek	17.2	.01	.01	.81	3.44	11.3
141	102400075	NM				Turkey Creek	211	.92	4.65	15.0	47.3	138
154	1024000712	NM				Wolf Creek	35.8	.03	.05	2.20	7.63	22.5
156	102400074	NM				Turkey Creek	248	1.39	5.86	18.1	57.1	167
171	102400073	NM				South Fork Big Nemaha River	536	13.4	29.0	74.7	212	621
192	1024000720	NM				Rock Creek	16.4	.01	.01	.76	3.25	10.8
195	102400074	NM				Turkey Creek	303	2.71	8.58	24.8	76.4	224
196	1024000724	NM				Burger Creek	9.83	0	0	.60	1.78	5.38
198	102400074	NM				Turkey Creek	290	2.10	7.40	22.0	69.0	203
226	1024000725	NM				Wolf Pen Creek	17.1	.01	.01	.60	2.91	10.1
237	1024000715	NM				South Fork Big Nemaha River	224	1.19	5.01	18.2	59.7	184
250	1024000718	NM				Deer Creek	42.0	.04	.07	2.46	9.22	28.7
264	1024000838	NM				Pony Creek	7.37	0	0	.03	.88	4.18
271	1024000716	NM				South Fork Big Nemaha River	178	.75	3.54	13.9	46.2	142
272	1024000718	NM				Deer Creek	7.67	0	0	.01	.67	3.72
275	HYDRO	NM				HYDRO	8.87	NA	NA	NA	NA	NA
292	1024000718	NM				Deer Creek	21.7	.01	.02	1.20	4.78	15.2
323	1024000716	NM				South Fork Big Nemaha River	142	.48	2.47	10.5	35.7	109
328	1027010337	NM				Cedar Creek	4.98	0	0	0	0	1.28
378	1027010323	NM				Delaware River	14.1	0	.01	.48	2.58	9.30
383	10240007166	NM				Harris Creek	35.0	.03	.05	2.42	8.71	26.2
388	1027010337	NM				Cedar Creek	11.0	0	.01	.31	1.89	7.10
393	1024000723	NM				Wildcat Creek	34.6	.03	.05	1.35	5.58	18.5
402	1024000716	NM				South Fork Big Nemaha River	103	.25	1.64	8.03	27.6	83.4
434	1024000716	NM				South Fork Big Nemaha River	77.7	.14	1.13	6.39	22.1	65.9
463	1024000728	NM				Fisher Creek	17.1	.01	.01	.48	2.58	9.41
473	1024000716	NM				South Fork Big Nemaha River	44.4	.05	.35	3.61	12.7	37.5
495	1024000716	NM				South Fork Big Nemaha River	24.4	.01	.02	1.94	6.95	20.6
513	HYDRO	NM				HYDRO	23.2	NA	NA	NA	NA	NA
554	1024000729	NM				Tennessee Creek	32.3	.02	.06	2.58	9.14	27.0
583	1027010326	NM				Muddy Creek	31.7	.02	.05	2.33	8.57	26.0
636	1027010327	NM				Wolfley Creek	17.3	.01	.01	1.35	4.97	14.9

**Table 72.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Nemaha County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 76)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2	4.94	888	2,040	3,070	4,660	6,000	7,550
47	5.31	925	2,070	3,070	4,620	5,910	7,400
49	.83	431	934	1,370	2,020	2,570	3,180
54	6.52	1,060	2,400	3,590	5,430	6,990	8,770
121	90.5	5,090	11,000	16,300	24,600	32,000	40,200
124	90.8	5,070	11,000	16,300	24,600	31,900	40,200
125	9.82	1,390	3,130	4,660	7,040	9,030	11,300
141	91.5	4,960	10,800	16,000	24,200	31,500	39,700
154	17.5	2,760	6,080	9,070	13,600	17,700	22,100
156	109	5,490	11,800	17,500	26,300	34,200	43,100
171	379	9,040	18,700	27,300	40,700	52,500	65,800
192	9.38	1,350	3,040	4,530	6,830	8,760	11,000
195	142	5,900	12,700	18,700	28,100	36,500	45,900
196	4.91	898	2,050	3,070	4,660	6,000	7,540
198	129	5,820	12,500	18,400	27,700	36,000	45,300
226	9.17	1,350	3,050	4,570	6,910	8,880	11,100
237	125	6,900	14,400	21,200	31,600	40,800	51,000
250	22.8	3,350	7,240	10,700	16,000	20,700	25,800
264	4.39	892	1,950	2,860	4,260	5,420	6,750
271	98.3	6,470	13,500	19,800	29,300	37,700	47,000
272	4.18	889	1,950	2,880	4,300	5,490	6,840
275	NA	NA	NA	NA	NA	NA	NA
292	12.6	1,600	3,610	5,390	8,150	10,500	13,100
323	77.4	5,770	12,100	17,800	26,400	34,000	42,400
328	2.40	711	1,540	2,250	3,340	4,240	5,260
378	8.51	1,330	2,920	4,320	6,450	8,230	10,300
383	20.4	2,900	6,300	9,350	14,000	18,000	22,500
388	6.70	1,140	2,500	3,680	5,490	7,010	8,740
393	16.1	2,470	5,630	8,550	13,100	17,100	21,600
402	59.5	5,220	10,900	15,900	23,500	30,200	37,400
434	47.2	4,840	10,000	14,600	21,500	27,400	33,900
463	8.87	1,370	3,090	4,610	6,970	8,950	11,200
473	27.8	3,490	7,400	10,900	16,100	20,700	25,700
495	15.9	1,800	4,020	5,990	9,020	11,600	14,500
513	NA	NA	NA	NA	NA	NA	NA
554	20.5	3,300	6,930	10,100	14,900	19,000	23,500
583	20.2	2,720	5,920	8,790	13,200	17,000	21,200
636	11.8	1,530	3,350	4,940	7,380	9,430	11,800

**Table 72.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Nemaha County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

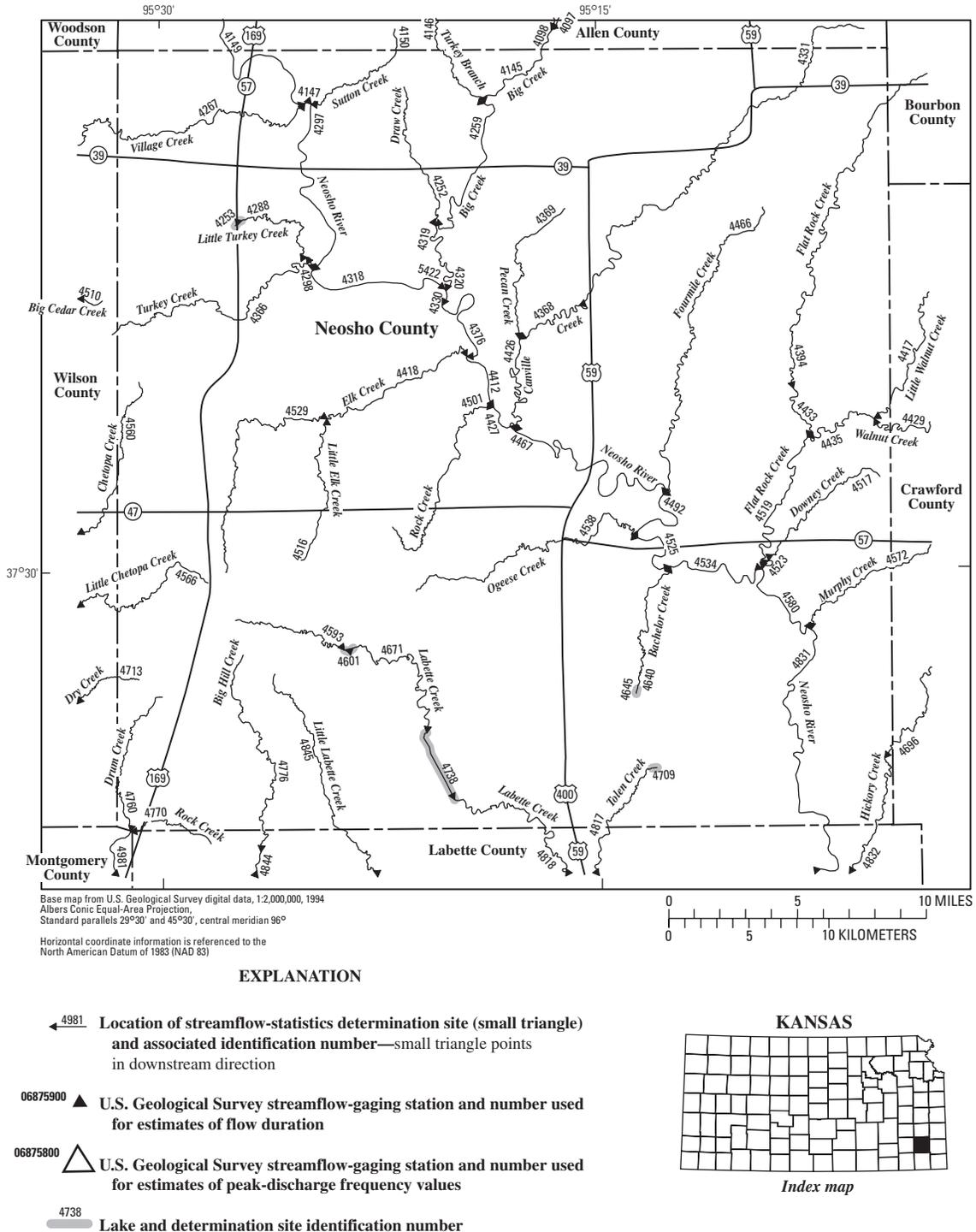
Determination site identification number (fig. 76)	KSWR CUSEGA number	Stream segment by county (table 111)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		649	1024000730	NM						Illinois Creek	16.4	0.01
650	1027010339	NM				Barnes Creek	13.3	0	.01	1.09	4.00	12.0
673	1027020514	NM				Black Vermillion River	41.1	.04	.10	2.68	9.66	29.5
696	1024000716	NM				South Fork Big Nemaha River	19.3	.01	.02	1.55	5.59	16.6
803	1027010219	NM				French Creek	13.4	0	0	.80	3.13	9.79
804	1027010242	NM				Mulberry Creek	10.6	0	0	.44	1.99	6.83
838	1027010219	NM				French Creek	27.9	0	0	1.83	6.70	20.1
870	1027010219	NM	PT			French Creek	40.3	0	0	2.61	9.48	28.3
875	1027010218	NM	PT			Vermillion Creek	25.8	0	0	1.94	7.04	20.8
901	1027010246	NM	PT			Coal Creek	28.5	0	0	2.13	7.66	22.5

**Table 72.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Nemaha County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 76)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
649	11.0	1,430	3,160	4,690	7,030	9,000	11,300
650	9.56	1,320	2,880	4,240	6,320	8,060	10,000
673	23.3	2,630	5,880	8,860	13,500	17,500	22,100
696	12.9	1,580	3,500	5,200	7,800	9,990	12,500
803	8.29	1,260	2,770	4,110	6,150	7,860	9,820
804	6.26	1,080	2,390	3,540	5,290	6,760	8,440
838	16.0	1,910	4,290	6,390	9,650	12,400	15,500
870	22.1	3,040	6,590	9,780	14,600	18,900	23,500
875	16.2	1,890	4,210	6,250	9,390	12,000	15,000
901	17.4	1,980	4,430	6,590	9,920	12,700	15,900





**Figure 77.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Neosho County.

**Table 73.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Neosho County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 77)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4147	110702043	NO						Neosho River	4,140	46.4
4252	1107020434	NO				Draw Creek	10.5	0	.17	1.89	6.01	15.8
4253	HYDRO	NO				HYDRO	5.28	NA	NA	NA	NA	NA
4259	110702042	NO				Big Creek	114	0	2.12	11.0	41.3	127
4267	1107020433	NO	WL			Village Creek	49.2	0	.32	4.09	16.7	52.9
4288	11070204397	NO				Little Turkey Creek	9.54	0	0	.56	3.13	10.7
4297	110702043	NO				Neosho River	4,160	46.6	143	685	2,850	8,250
4298	1107020432	NO				Turkey Creek	30.4	0	0	2.62	11.3	35.7
4318	110702043	NO				Neosho River	4,200	47.1	146	696	2,900	8,350
4319	110702042	NO				Big Creek	128	.05	2.52	12.7	47.3	146
4320	110702041	NO				Neosho River	4,200	47.1	146	696	2,900	8,350
4330	110702041	NO				Neosho River	4,330	48.6	154	731	3,050	8,660
4366	1107020432	NO	WL			Turkey Creek	20.8	0	0	1.89	8.14	25.5
4368	1107020516	NO				Canville Creek	55.4	0	.71	5.54	21.6	66.0
4369	1107020545	NO				Pecan Creek	13.4	0	.06	2.07	7.24	20.0
4376	1107020517	NO				Neosho River	4,330	48.7	154	732	3,050	8,670
4412	1107020517	NO				Neosho River	4,380	49.3	157	745	3,110	8,790
4418	1107020519	NO				Elk Creek	47.8	0	.92	5.77	20.9	60.7
4426	1107020516	NO				Canville Creek	73.7	0	1.20	7.56	29.0	88.6
4427	1107020517	NO				Neosho River	4,400	49.5	158	750	3,130	8,840
4433	1107020514	NO				Flat Rock Creek	45.2	0	.58	4.58	17.4	52.4
4435	1107020513	NO				Walnut Creek	75.4	0	.80	6.13	25.1	80.4
4466	1107020549	NO				Fourmile Creek	31.2	0	.03	2.62	10.7	33.2
4467	1107020515	NO				Neosho River	4,490	50.5	164	774	3,230	9,050
4492	1107020515	NO				Neosho River	4,520	51.0	166	783	3,270	9,130
4501	1107020548	NO				Rock Creek	16.7	0	.15	2.37	8.31	23.1
4516	1107020547	NO				Little Elk Creek	13.6	0	.22	2.21	7.23	19.3
4517	11070205731	NO				Downey Creek	9.78	0	0	.91	3.70	11.3
4519	1107020512	NO				Flat Rock Creek	129	0	1.93	10.8	43.0	138
4523	1107020512	NO				Flat Rock Creek	139	0	2.13	11.7	46.2	149
4525	1107020515	NO				Neosho River	4,550	51.3	168	790	3,300	9,200
4529	1107020519	NO				Elk Creek	21.4	0	.10	2.49	9.25	26.9
4534	1107020515	NO				Neosho River	4,580	51.6	169	798	3,330	9,270
4538	1107020538	NO				Ogeese Creek	25.7	0	.44	3.68	13.0	36.4
4560	1107010122	NO	WL			Chetopa Creek	28.8	0	0	2.00	9.00	29.5
4566	11070101471	NO	WL			Little Chetopa Creek	16.0	0	.25	2.57	8.58	23.2
4580	1107020511	NO				Neosho River	4,720	53.3	179	837	3,500	9,620
4593	1107020522	NO				Labette Creek	8.73	0	.01	1.39	4.52	12.2

**Table 73.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Neosho County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 77)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4147	2,540	24,700	35,200	39,800	59,700	86,000	122,000
4252	11.6	1,790	3,500	4,910	6,990	8,680	10,600
4253	NA	NA	NA	NA	NA	NA	NA
4259	90.9	7,380	13,500	18,600	26,000	32,200	38,800
4267	41.4	4,060	8,020	11,400	16,400	20,600	25,200
4288	9.44	1,740	3,360	4,700	6,670	8,270	10,100
4297	2,560	24,800	35,500	40,200	59,700	86,000	122,000
4298	28.3	3,930	7,600	10,700	15,200	19,000	23,000
4318	2,600	25,100	35,900	40,900	59,700	86,000	122,000
4319	102	7,630	14,000	19,300	26,900	33,200	40,100
4320	2,600	25,100	35,900	40,900	59,700	86,000	122,000
4330	2,720	26,100	37,300	43,000	59,800	86,000	122,000
4366	20.3	2,710	5,340	7,530	10,800	13,400	16,500
4368	49.1	5,220	9,790	13,600	19,100	23,700	28,600
4369	14.7	2,070	4,050	5,690	8,130	10,100	12,300
4376	2,720	26,100	37,300	43,100	59,800	86,000	122,000
4412	2,760	26,500	37,900	43,900	59,800	86,000	122,000
4418	43.9	4,840	8,970	12,400	17,300	21,300	25,600
4426	64.3	5,510	10,400	14,500	20,500	25,500	30,800
4427	2,780	26,600	38,000	44,200	59,800	86,000	121,000
4433	39.9	5,550	10,000	13,600	18,700	22,900	27,400
4435	62.0	4,790	9,340	13,200	19,000	23,800	29,100
4466	26.9	4,320	8,040	11,100	15,500	19,100	23,000
4467	2,860	27,300	39,000	45,600	59,900	86,000	121,000
4492	2,890	27,500	39,400	46,200	59,900	86,000	121,000
4501	17.2	2,340	4,610	6,500	9,310	11,600	14,200
4516	14.3	2,060	4,050	5,700	8,150	10,100	12,400
4517	9.61	1,790	3,450	4,820	6,830	8,470	10,300
4519	102	9,530	16,800	22,700	31,100	38,100	45,500
4523	109	9,790	17,200	23,300	32,000	39,100	46,800
4525	2,910	27,700	39,600	46,600	59,900	86,000	121,000
4529	20.6	2,700	5,340	7,560	10,900	13,500	16,600
4534	2,940	27,900	39,900	47,100	59,900	86,000	121,000
4538	26.2	2,990	5,940	8,430	12,100	15,200	18,600
4560	24.5	3,130	6,270	8,920	12,900	16,100	19,800
4566	16.8	2,210	4,380	6,200	8,900	11,100	13,600
4580	3,070	29,000	41,500	49,500	60,000	86,000	121,000
4593	9.32	1,580	3,080	4,320	6,150	7,630	9,310

**448 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 73.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Neosho County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

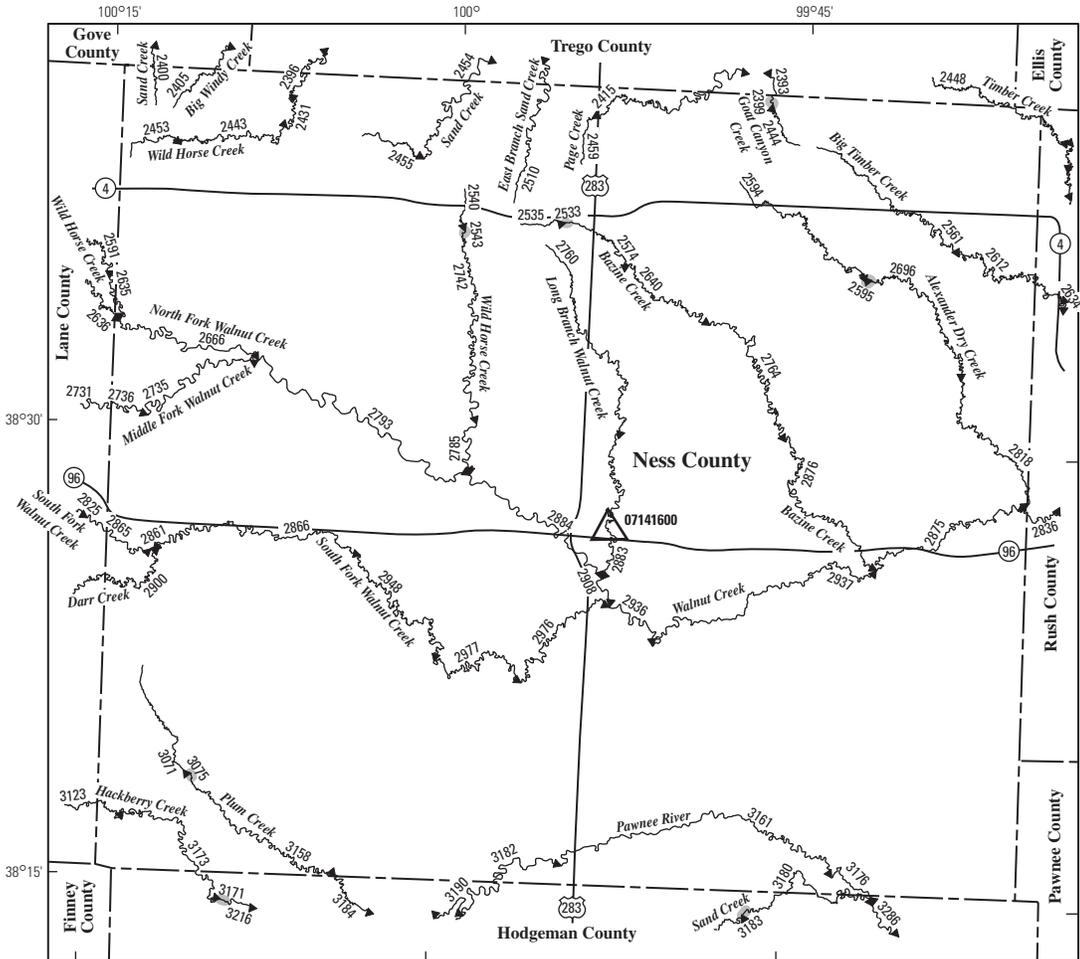
Determination site identification number (fig. 77)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4601	HYDRO	NO						HYDRO	9.53	NA	NA
4640	1107020540	NO				Bachelor Creek	21.9	0	0.19	2.61	9.33	26.7	
4645	HYDRO	NO				HYDRO	8.11	NA	NA	NA	NA	NA	
4671	1107020522	NO				Labette Creek	26.2	0	.48	3.58	12.4	34.6	
4709	HYDRO	NO				HYDRO	6.10	NA	NA	NA	NA	NA	
4713	1107010337	NO	WL			Dry Creek	24.1	0	.76	4.01	12.8	33.7	
4738	HYDRO	NO				HYDRO	34.0	NA	NA	NA	NA	NA	
4760	1107010334	NO	WL			Drum Creek	12.1	0	.33	2.35	7.23	18.6	
5422	110702041	NO				Neosho River	4,330	48.6	154	731	3,050	8,660	

**Table 73.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Neosho County.—Continued

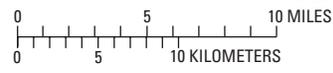
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 77)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4601	NA	NA	NA	NA	NA	NA	NA
4640	20.5	2,710	5,390	7,620	11,000	13,700	16,800
4645	NA	NA	NA	NA	NA	NA	NA
4671	25.3	2,970	5,900	8,370	12,000	15,000	18,500
4709	NA	NA	NA	NA	NA	NA	NA
4713	23.8	2,760	5,540	7,890	11,400	14,300	17,500
4738	NA	NA	NA	NA	NA	NA	NA
4760	13.2	1,880	3,710	5,230	7,490	9,320	11,400
5422	2,720	26,100	37,300	43,000	59,800	86,000	122,000



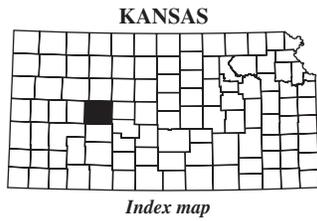


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 3116 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07141600 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07141600 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3171 Lake and determination site identification number



**Figure 78.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Ness County.

**452 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 74.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ness County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 78)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2396	1026000328	NS	TR					Wild Horse Creek	66.1	0	0
2399	HYDRO	NS	TR			HYDRO	7.00	NA	NA	NA	NA	NA	NA
2415	1026000331	NS	TR			Page Creek	41.6	0	0	0	0	0	0
2431	1026000328	NS				Wild Horse Creek	42.5	0	0	0	0	0	0
2443	1026000328	NS				Wild Horse Creek	38.9	0	0	0	0	0	0
2444	1026000341	NS				Goat Canyon Creek	6.22	0	0	0	0	0	0
2453	1026000328	NS				Wild Horse Creek	13.7	0	0	0	0	0	0
2454	1026000329	NS	TR			Sand Creek	47.1	0	0	0	0	0	0
2455	1026000329	NS				Sand Creek	19.4	0	0	0	0	0	0
2459	1026000331	NS				Page Creek	9.01	0	0	0	0	0	0
2510	1026000340	NS	TR			East Branch Sand Creek	19.8	0	0	0	0	0	0
2533	HYDRO	NS				HYDRO	4.41	NA	NA	NA	NA	NA	NA
2535	110300089	NS				Bazine Creek	4.32	0	0	0	0	0	0
2540	110300074	NS				Wild Horse Creek	8.13	0	0	0	0	0	0
2543	HYDRO	NS				HYDRO	8.26	NA	NA	NA	NA	NA	NA
2561	1026000627	NS				Big Timber Creek	28.2	0	0	0	0	0	0
2574	110300089	NS				Bazine Creek	14.3	0	0	0	0	0	0
2594	110300087	NS				Alexander Dry Creek	34.1	0	0	0	0	0	0
2595	HYDRO	NS				HYDRO	34.3	NA	NA	NA	NA	NA	NA
2612	1026000627	NS	RH			Big Timber Creek	45.5	0	0	0	0	0	0
2640	110300089	NS				Bazine Creek	31.2	0	0	0	0	0	0
2666	110300076	NS				North Fork Walnut Creek	105	0	0	0	0	0	.59
2696	110300087	NS				Alexander Dry Creek	55.9	0	0	0	0	0	0
2735	110300077	NS				Middle Fork Walnut Creek	241	0	0	0	0	0	1.21
2742	110300074	NS				Wild Horse Creek	47.3	0	0	0	0	0	0
2760	110300072	NS				Long Branch Walnut Creek	34.4	0	0	0	0	0	0
2764	110300089	NS				Bazine Creek	62.4	0	0	0	0	0	0
2785	110300074	NS				Wild Horse Creek	52.9	0	0	0	0	0	0
2793	110300075	NS				North Fork Walnut Creek	395	0	0	.15	2.13	6.89	
2818	110300087	NS	RH			Alexander Dry Creek	84.7	0	0	0	0	0	0
2836	110300086	NS	RH			Walnut Creek	1,340	0	0	.73	10.9	25.6	
2861	1103000710	NS				South Fork Walnut Creek	327	0	0	0	0	0	1.75
2866	1103000710	NS				South Fork Walnut Creek	373	0	0	0	.77	3.56	
2875	110300088	NS				Walnut Creek	1,210	0	0	.62	9.25	22.1	
2876	110300089	NS				Bazine Creek	91.7	0	0	0	0	0	0
2883	110300072	NS				Long Branch Walnut Creek	58.6	0	0	0	0	0	0
2884	110300073	NS				North Fork Walnut Creek	471	0	0	.35	3.02	8.98	
2908	110300071	NS				North Fork Walnut Creek	531	0	0	.48	3.67	10.5	

**Table 74.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ness County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 78)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2396	1.71	446	1,380	2,410	4,220	5,970	8,050
2399	NA	NA	NA	NA	NA	NA	NA
2415	.26	302	983	1,750	3,120	4,460	6,060
2431	.63	334	1,060	1,880	3,330	4,730	6,410
2443	.45	328	1,040	1,840	3,250	4,620	6,250
2444	0	198	605	1,030	1,750	2,410	3,190
2453	0	341	1,040	1,760	3,000	4,130	5,480
2454	.63	384	1,200	2,090	3,660	5,170	6,960
2455	0	395	1,230	2,110	3,620	5,000	6,670
2459	0	237	738	1,260	2,160	2,990	3,980
2510	0	378	1,190	2,060	3,550	4,920	6,580
2533	NA	NA	NA	NA	NA	NA	NA
2535	0	153	470	799	1,360	1,870	2,480
2540	0	228	705	1,200	2,050	2,830	3,760
2543	NA	NA	NA	NA	NA	NA	NA
2561	.04	503	1,570	2,690	4,630	6,410	8,550
2574	0	308	969	1,670	2,870	3,980	5,310
2594	.11	251	836	1,510	2,720	3,910	5,350
2595	NA	NA	NA	NA	NA	NA	NA
2612	.79	315	1,020	1,810	3,220	4,590	6,240
2640	0	252	839	1,510	2,710	3,890	5,320
2666	3.04	539	1,660	2,900	5,070	7,170	9,690
2696	1.04	367	1,180	2,080	3,700	5,280	7,170
2735	4.41	603	1,930	3,450	6,180	8,890	12,200
2742	.46	297	977	1,750	3,140	4,500	6,140
2760	0	185	672	1,280	2,460	3,700	5,270
2764	.89	364	1,180	2,110	3,760	5,390	7,350
2785	.64	304	1,000	1,800	3,230	4,640	6,350
2793	9.37	885	2,680	4,660	8,160	11,600	15,700
2818	2.22	462	1,450	2,560	4,530	6,450	8,750
2836	22.5	993	2,430	3,820	6,100	8,190	10,600
2861	5.10	747	2,300	4,030	7,100	10,100	13,800
2866	6.65	820	2,490	4,340	7,610	10,800	14,700
2875	20.5	952	2,390	3,820	6,210	8,450	11,100
2876	1.94	426	1,370	2,450	4,370	6,270	8,560
2883	.71	75	433	1,000	2,310	3,840	5,950
2884	11.2	973	2,900	5,010	8,730	12,300	16,700
2908	12.4	679	1,970	3,420	6,100	8,820	12,200

**Table 74.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ness County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

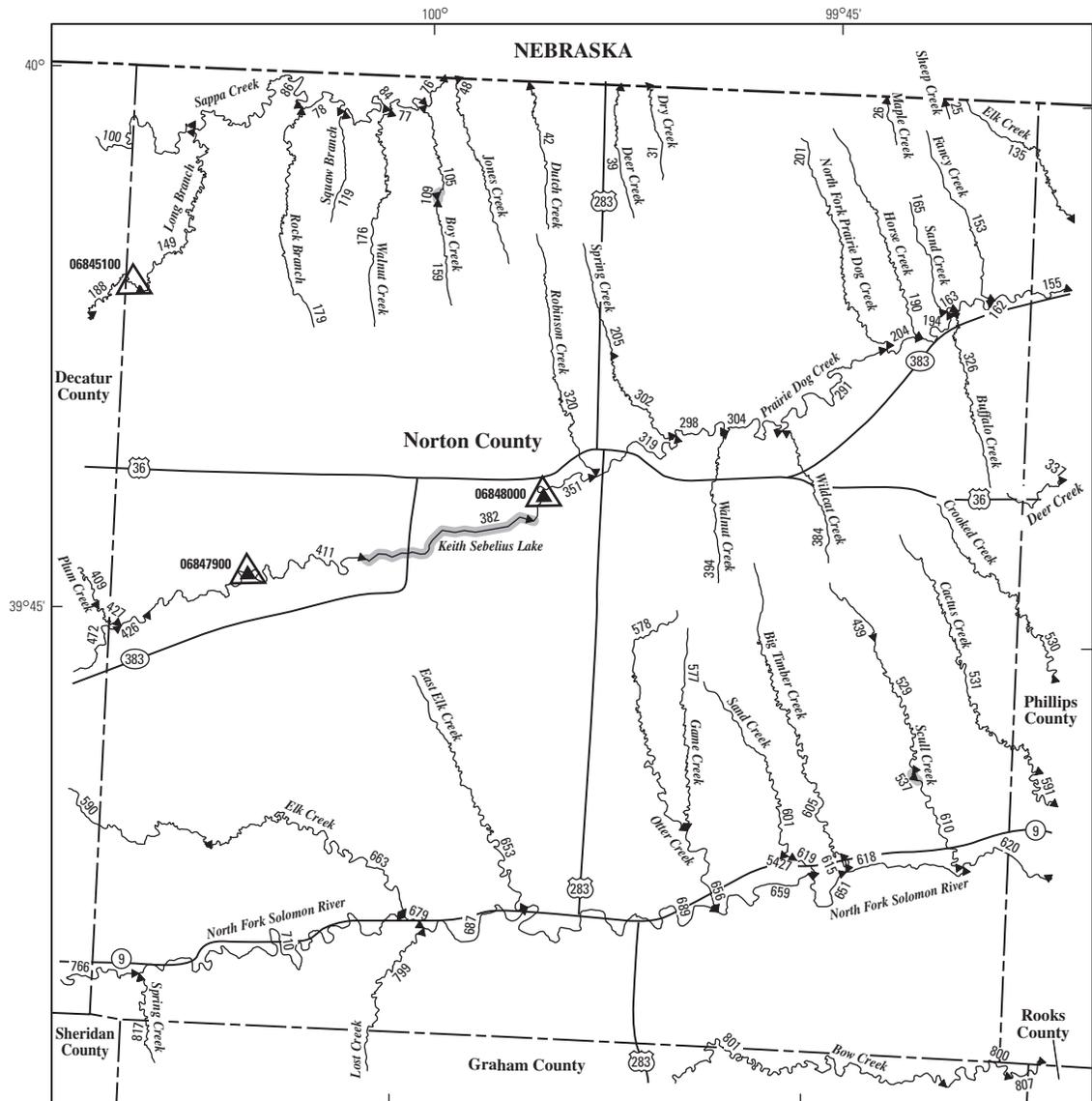
Determination site identification number (fig. 78)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2936	1103000810	NS						Walnut Creek	1,000	0
2937	1103000810	NS				Walnut Creek	1,070	0	0	.57	7.80	19.1
2948	1103000710	NS				South Fork Walnut Creek	405	0	0	0	1.14	4.42
2976	1103000710	NS				South Fork Walnut Creek	461	0	0	0	1.71	5.73
2977	1103000710	NS				South Fork Walnut Creek	439	0	0	0	1.50	5.25
3071	110300057	NS				Plum Creek	37.7	0	0	0	0	0
3075	HYDRO	NS				HYDRO	38.8	NA	NA	NA	NA	NA
3158	110300057	NS				Plum Creek	76.6	0	0	0	0	0
3161	110300053	NS				Pawnee River	1,110	0	0	0	1.80	8.08

**Table 74.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ness County.—Continued

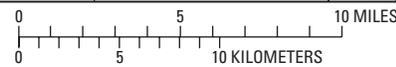
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 78)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2936	17.6	929	2,410	3,930	6,540	9,050	12,100
2937	18.7	923	2,370	3,840	6,350	8,740	11,600
2948	7.44	842	2,550	4,450	7,790	11,000	15,000
2976	8.65	859	2,600	4,530	7,940	11,300	15,300
2977	8.20	861	2,600	4,530	7,940	11,300	15,300
3071	.13	406	1,240	2,130	3,680	5,170	6,910
3075	NA	NA	NA	NA	NA	NA	NA
3158	1.31	457	1,430	2,510	4,410	6,260	8,460
3161	10.2	565	1,770	3,090	5,480	7,820	10,700



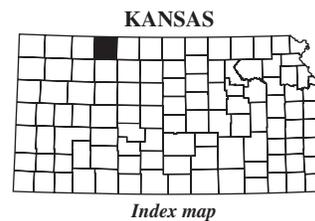


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 766 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06847900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06845100 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 382 Lake and determination site identification number



**Figure 79.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Norton County.

**458 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 75.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Norton County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 79)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		25	1025001119	NT						Sheep Creek	1.36	0	0
26	1025001118	NT				Maple Creek	3.86	0	0	0	0	0	0
31	1025001118	NT				Dry Creek	14.8	0	0	0	0	0	0
39	1025001117	NT				Deer Creek	15.1	0	0	0	0	0	0
42	1025001116	NT				Dutch Creek	10.8	0	0	0	0	0	0
48	1025001117	NT				Jones Creek	11.8	0	0	0	0	0	0
76	1025001113	NT				Sappa Creek	1,490	0	3.55	11.3	34.1	101	
77	1025001113	NT				Sappa Creek	1,480	0	3.35	10.7	32.5	96.6	
78	1025001113	NT				Sappa Creek	1,440	0	2.98	9.56	29.5	88.1	
84	1025001113	NT				Sappa Creek	1,450	0	3.09	9.89	30.4	90.6	
86	1025001113	NT				Sappa Creek	1,410	0	2.61	8.46	26.5	79.5	
105	1025001113	NT				Boy Creek	17.6	0	0	0	0	.01	
109	HYDRO	NT				HYDRO	14.0	NA	NA	NA	NA	NA	
119	1025001112	NT				Squaw Branch	6.02	0	0	0	0	0	
135	102500153	NT	PL			Elk Creek	32.2	0	0	0	0	0	
149	102500115	NT				Long Branch	77.8	0	0	.01	.11	1.53	
153	1025001519	NT				Fancy Creek	11.2	0	0	0	0	0	
155	102500152	NT	PL			Prairie Dog Creek	850	0	.01	1.45	5.47	12.3	
159	1025001113	NT				Boy Creek	13.6	0	0	0	0	0	
162	102500152	NT				Prairie Dog Creek	824	0	.01	1.27	4.81	11.1	
163	102500152	NT				Prairie Dog Creek	805	0	.01	1.14	4.33	10.2	
165	1025001520	NT				Sand Creek	5.58	0	0	0	0	0	
176	1025001111	NT				Walnut Creek	22.1	0	0	0	0	.01	
179	1025001110	NT				Rock Branch	32.9	0	0	0	.01	.03	
190	1025001518	NT				Horse Creek	12.0	0	0	0	0	0	
194	102500154	NT				Prairie Dog Creek	799	0	.01	1.10	4.18	9.90	
201	1025001517	NT				North Fork Prairie Dog Creek	30.0	0	0	0	0	0	
204	102500154	NT				Prairie Dog Creek	786	0	.01	1.01	3.85	9.29	
205	1025001515	NT				Spring Creek	14.0	0	0	0	0	0	
291	102500154	NT				Prairie Dog Creek	753	0	.01	.79	3.01	7.76	
298	102500154	NT				Prairie Dog Creek	708	0	.02	.48	1.87	5.66	
302	1025001515	NT				Spring Creek	21.0	0	0	0	0	0	
304	102500154	NT				Prairie Dog Creek	726	0	.01	.60	2.32	6.50	
319	102500154	NT				Prairie Dog Creek	681	0	.02	.29	1.18	4.40	
320	1025001516	NT				Robinson Creek	20.2	0	0	0	0	0	
326	1025001521	NT				Buffalo Creek	17.0	0	0	0	0	0	
337	1026001231	NT	PL			Deer Creek	6.62	0	0	.01	.01	.02	
351	102500154	NT				Prairie Dog Creek	653	0	.02	.10	.47	3.10	

**Table 75.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Norton County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 79)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
25	0	106	294	479	782	1,050	1,360
26	0	193	550	906	1,500	2,020	2,640
31	.11	415	1,220	2,040	3,430	4,680	6,160
39	.09	417	1,230	2,060	3,460	4,720	6,220
42	0	344	1,010	1,680	2,810	3,830	5,040
48	0	363	1,060	1,780	2,970	4,060	5,340
76	73.8	1,200	3,510	6,090	10,800	15,600	21,500
77	70.7	1,170	3,450	6,000	10,700	15,400	21,200
78	64.9	1,140	3,370	5,860	10,400	15,100	20,800
84	66.6	1,140	3,380	5,890	10,500	15,100	20,900
86	59.0	1,090	3,250	5,680	10,100	14,700	20,300
105	.32	454	1,340	2,250	3,790	5,180	6,840
109	NA	NA	NA	NA	NA	NA	NA
119	0	239	696	1,160	1,930	2,620	3,440
135	1.54	415	1,230	2,090	3,560	4,950	6,570
149	3.44	331	808	1,270	2,050	2,760	3,600
153	0	357	1,040	1,740	2,900	3,950	5,200
155	9.48	488	1,190	1,710	2,350	2,780	3,170
159	0	391	1,150	1,920	3,230	4,410	5,810
162	8.95	435	1,050	1,510	2,060	2,440	2,780
163	8.57	396	953	1,360	1,850	2,190	2,490
165	0	236	679	1,130	1,870	2,530	3,320
176	.66	514	1,530	2,580	4,360	5,970	7,890
179	1.15	431	1,270	2,160	3,680	5,110	6,780
190	0	367	1,070	1,790	3,000	4,100	5,390
194	8.45	383	922	1,310	1,790	2,110	2,400
201	1.24	619	1,850	3,130	5,290	7,260	9,610
204	8.18	357	854	1,210	1,650	1,940	2,210
205	0	398	1,170	1,970	3,300	4,500	5,940
291	7.52	289	680	956	1,290	1,510	1,710
298	6.61	197	444	607	795	920	1,030
302	.49	503	1,490	2,510	4,240	5,800	7,660
304	6.97	234	538	747	991	1,160	1,300
319	6.07	141	302	397	500	566	623
320	.38	498	1,470	2,480	4,170	5,700	7,520
326	.25	439	1,300	2,190	3,690	5,040	6,660
337	.02	259	754	1,260	2,100	2,860	3,760
351	5.50	84	155	180	194	199	201

**Table 75.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Norton County.—Continued

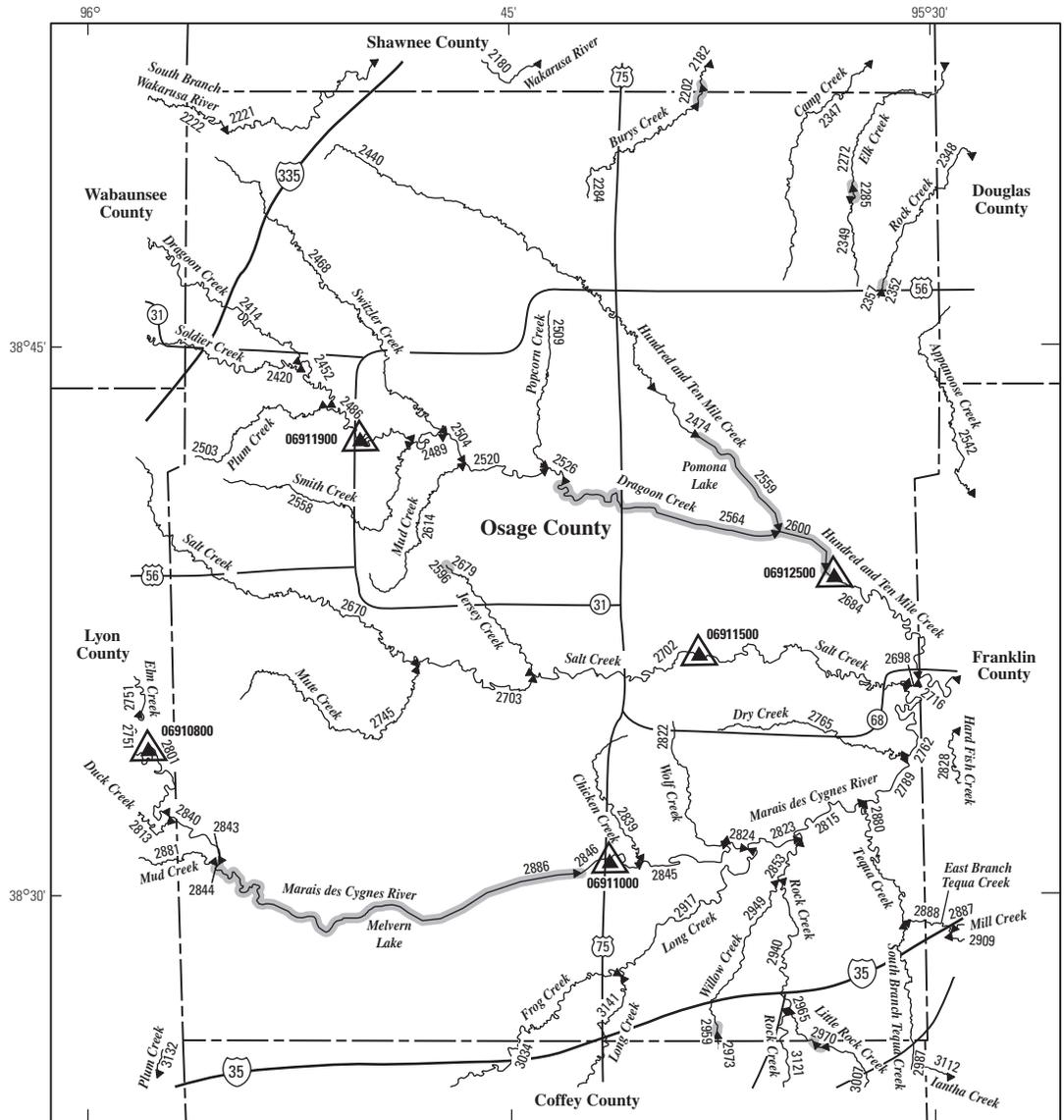
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 79)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		382	HYDRO	NT						HYDRO	640	NA
384	1025001526	NT				Wildcat Creek	12.9	0	0	0	0	0
394	1025001525	NT				Walnut Creek	12.7	0	0	0	0	0
411	102500158	NT				Prairie Dog Creek	610	0	.16	2.10	5.80	11.0
426	102500158	NT				Prairie Dog Creek	556	0	0	1.56	4.56	8.83
439	1026001121	NT				Scull Creek	7.34	0	0	0	0	0
529	1026001121	NT				Scull Creek	20.0	0	0	0	0	0
530	102600116	NT	PL			Crooked Creek	23.4	0	0	0	0	0
531	1026001128	NT	PL			Cactus Creek	23.5	0	0	0	0	0
537	HYDRO	NT				HYDRO	21.1	NA	NA	NA	NA	NA
577	1026001127	NT				Game Creek	10.3	0	0	0	0	0
578	1026001110	NT				Game Creek	35.9	0	0	0	0	0
601	1026001126	NT				Sand Creek	12.1	0	0	0	0	0
605	102600118	NT				Big Timber Creek	25.1	0	0	0	0	0
610	1026001121	NT				Scull Creek	27.7	0	0	0	0	0
615	102600118	NT				Big Timber Creek	25.6	0	0	0	0	0
618	102600117	NT				North Fork Solomon River	711	0	0	4.22	11.8	26.6
619	1026001126	NT				Sand Creek	13.0	0	0	0	0	0
620	102600117	NT	PL			North Fork Solomon River	756	0	0	4.83	13.4	29.8
651	102600119	NT				North Fork Solomon River	671	0	0	3.71	10.6	24.0
653	1026001125	NT				East Elk Creek	50.0	0	0	0	0	.06
656	1026001110	NT				Otter Creek	51.4	0	0	0	0	.14
659	102600119	NT				North Fork Solomon River	648	0	0	3.42	9.84	22.4
663	1026001112	NT				Elk Creek	77.4	0	0	0	0	.38
679	1026001111	NT				North Fork Solomon River	473	0	0	1.43	4.74	11.6
687	1026001111	NT				North Fork Solomon River	508	0	0	1.77	5.63	13.5
689	1026001111	NT				North Fork Solomon River	588	0	0	2.70	8.01	18.5
710	1026001113	NT				North Fork Solomon River	395	0	0	.78	3.02	7.90
5427	1026001126	NT				Sand Creek	12.3	0	0	0	0	0

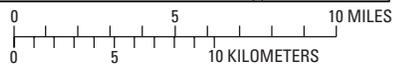
**Table 75.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Norton County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 79)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
382	NA	NA	NA	NA	NA	NA	NA
384	0	362	1,080	1,810	3,050	4,170	5,500
394	0	364	1,080	1,810	3,040	4,160	5,490
411	9.05	599	1,680	2,820	4,820	6,760	9,100
426	8.04	610	1,760	3,000	5,190	7,320	9,900
439	0	254	752	1,260	2,110	2,890	3,800
529	.23	445	1,350	2,290	3,900	5,360	7,110
530	.53	505	1,530	2,580	4,390	6,030	7,990
531	.53	496	1,510	2,560	4,350	5,980	7,940
537	NA	NA	NA	NA	NA	NA	NA
577	0	298	896	1,510	2,560	3,510	4,640
578	1.23	399	1,200	2,070	3,560	4,980	6,650
601	0	320	970	1,640	2,790	3,840	5,080
605	.48	500	1,530	2,610	4,460	6,140	8,160
610	.71	532	1,630	2,780	4,760	6,560	8,720
615	.52	506	1,550	2,640	4,520	6,220	8,270
618	18.5	1,270	3,890	6,800	12,000	17,200	23,500
619	0	333	1,010	1,720	2,920	4,010	5,320
620	20.0	1,320	4,050	7,070	12,500	17,800	24,400
651	17.2	1,230	3,770	6,580	11,600	16,600	22,700
653	2.03	510	1,500	2,560	4,360	6,060	8,060
656	2.11	492	1,460	2,500	4,270	5,970	7,950
659	16.5	1,200	3,690	6,450	11,400	16,300	22,300
663	2.53	514	1,560	2,710	4,700	6,610	8,880
679	10.6	945	2,960	5,230	9,290	13,300	18,200
687	11.6	993	3,100	5,460	9,700	13,900	19,000
689	14.5	1,120	3,460	6,070	10,700	15,300	21,000
710	8.28	825	2,620	4,640	8,270	11,900	16,300
5427	0	323	980	1,660	2,820	3,870	5,130



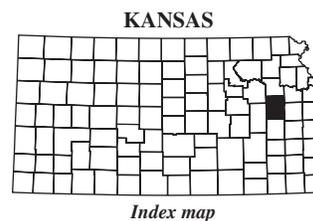


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 3034 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06910800 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06911000 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2886 Lake and determination site identification number



**Figure 80.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Osage County.

**Table 76.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osage County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 80)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2202	HYDRO	OS	SN				HYDRO	25.7	NA	NA
2221	1027010463	OS	SN		South Branch Wakarusa River	32.7	0	0.21	2.94	10.2	29.7	
2222	1027010463	OS	WB		South Branch Wakarusa River	17.9	0	0	1.06	4.35	14.0	
2284	1027010432	OS			Burys Creek	24.3	0	0	1.48	5.77	18.2	
2285	HYDRO	OS			HYDRO	8.06	NA	NA	NA	NA	NA	
2347	1027010466	OS	SN		Camp Creek	34.3	0	.25	2.93	10.2	30.0	
2349	1027010468	OS			Elk Creek	7.14	0	0	.09	.88	4.00	
2352	HYDRO	OS			HYDRO	3.46	NA	NA	NA	NA	NA	
2357	1027010435	OS			Rock Creek	3.05	0	0	0	0	.41	
2414	1029010127	OS	WB		Dragoon Creek	53.6	0	.51	4.73	17.7	51.1	
2420	102901011083	OS	WB		Soldier Creek	25.3	0	0	1.93	7.44	22.3	
2440	1029010125	OS			Hundred and Ten Mile Creek	53.0	0	.33	3.63	13.5	41.7	
2452	1029010127	OS			Dragoon Creek	81.8	0	.83	6.82	26.7	77.6	
2468	1029010180	OS			Switzler Creek	38.4	0	.04	2.69	10.2	31.6	
2474	1029010125	OS			Hundred and Ten Mile Creek	61.2	0	.55	4.44	16.2	49.5	
2486	1029010127	OS			Dragoon Creek	97.2	0	1.00	8.00	32.0	93.0	
2489	1029010127	OS			Dragoon Creek	115	0	1.24	9.11	36.3	108	
2503	1029010179	OS			Plum Creek	10.4	0	0	.57	2.58	8.59	
2504	1029010127	OS			Dragoon Creek	156	0	1.87	11.8	46.2	140	
2509	1029010187	OS			Popcorn Creek	16.9	0	0	.82	3.69	12.4	
2520	1029010127	OS			Dragoon Creek	171	0	2.14	13.0	50.4	154	
2526	1029010127	OS			Dragoon Creek	190	0	2.42	14.1	54.7	169	
2558	1029010177	OS			Smith Creek	17.2	0	0	.92	4.12	13.7	
2559	HYDRO	OS			HYDRO	78.3	NA	NA	NA	NA	NA	
2564	HYDRO	OS			HYDRO	217	NA	NA	NA	NA	NA	
2596	HYDRO	OS			HYDRO	1.39	NA	NA	NA	NA	NA	
2600	HYDRO	OS			HYDRO	303	NA	NA	NA	NA	NA	
2614	1029010178	OS			Mud Creek	10.0	0	0	.26	1.81	7.06	
2679	1029010176	OS			Jersey Creek	14.3	0	0	.77	3.38	11.2	
2698	1029010128	OS			Marais des Cygnes River	695	21.3	32.0	71.6	423	1,420	
2702	1029010129	OS			Salt Creek	143	0	.54	5.10	24.0	82.0	
2703	1029010129	OS			Salt Creek	93.2	0	.30	4.04	17.9	59.7	
2745	1029010192	OS			Mute Creek	37.1	0	0	2.00	8.64	28.2	
2765	1029010195	OS			Dry Creek	14.0	0	0	1.11	3.91	11.8	
2789	1029010130	OS			Marais des Cygnes River	535	13.6	24.7	55.9	291	999	
2815	1029010131	OS			Marais des Cygnes River	499	11.9	23.0	52.4	262	904	
2822	1029010196	OS			Wolf Creek	10.4	0	0	.86	3.04	9.17	
2823	1029010132	OS			Marais des Cygnes River	435	8.85	20.1	46.1	209	734	

**Table 76.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osage County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 80)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2202	NA	NA	NA	NA	NA	NA	NA
2221	22.3	3,190	6,620	9,620	14,100	17,900	22,100
2222	11.8	1,640	3,560	5,240	7,800	9,930	12,400
2284	15.4	2,040	4,420	6,490	9,660	12,300	15,300
2285	NA	NA	NA	NA	NA	NA	NA
2347	23.1	4,510	8,660	12,100	17,100	21,300	25,800
2349	4.44	1,030	2,160	3,120	4,570	5,760	7,120
2352	NA	NA	NA	NA	NA	NA	NA
2357	1.54	625	1,290	1,850	2,680	3,370	4,140
2414	37.8	3,800	7,560	10,800	15,500	19,500	23,900
2420	17.7	2,030	4,350	6,360	9,420	12,000	14,900
2440	32.6	3,560	7,510	11,000	16,300	20,900	26,000
2452	57.3	4,800	9,020	12,500	17,500	21,700	26,300
2468	24.9	2,890	6,250	9,280	13,900	17,900	22,300
2474	37.8	3,900	8,140	11,900	17,600	22,500	27,800
2486	68.4	4,780	8,780	12,000	16,600	20,500	24,700
2489	78.6	5,180	9,590	13,200	18,400	22,800	27,600
2503	7.55	1,250	2,640	3,830	5,640	7,130	8,830
2504	101	6,170	11,500	15,900	22,300	27,700	33,700
2509	11.1	1,670	3,580	5,230	7,740	9,830	12,200
2520	110	6,130	11,500	16,000	22,500	28,200	34,300
2526	119	6,510	12,200	17,000	24,000	30,100	36,700
2558	11.8	1,700	3,640	5,320	7,870	9,990	12,400
2559	NA	NA	NA	NA	NA	NA	NA
2564	NA	NA	NA	NA	NA	NA	NA
2596	NA	NA	NA	NA	NA	NA	NA
2600	NA	NA	NA	NA	NA	NA	NA
2614	6.83	1,260	2,650	3,840	5,650	7,140	8,840
2679	9.84	1,540	3,270	4,760	7,020	8,890	11,000
2698	488	8,980	17,600	25,000	36,200	45,900	57,000
2702	66.0	4,270	9,170	13,400	19,800	25,200	31,200
2703	48.5	4,330	9,140	13,300	19,700	25,200	31,200
2745	23.4	3,920	8,010	11,600	16,800	21,300	26,200
2765	9.82	1,510	3,220	4,690	6,920	8,770	10,900
2789	374	8,190	17,500	25,900	39,300	51,300	65,100
2815	348	8,020	17,400	26,100	40,000	52,500	66,900
2822	7.73	1,290	2,720	3,950	5,810	7,340	9,090
2823	303	7,700	17,400	26,500	41,200	54,600	70,200

**Table 76.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osage County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

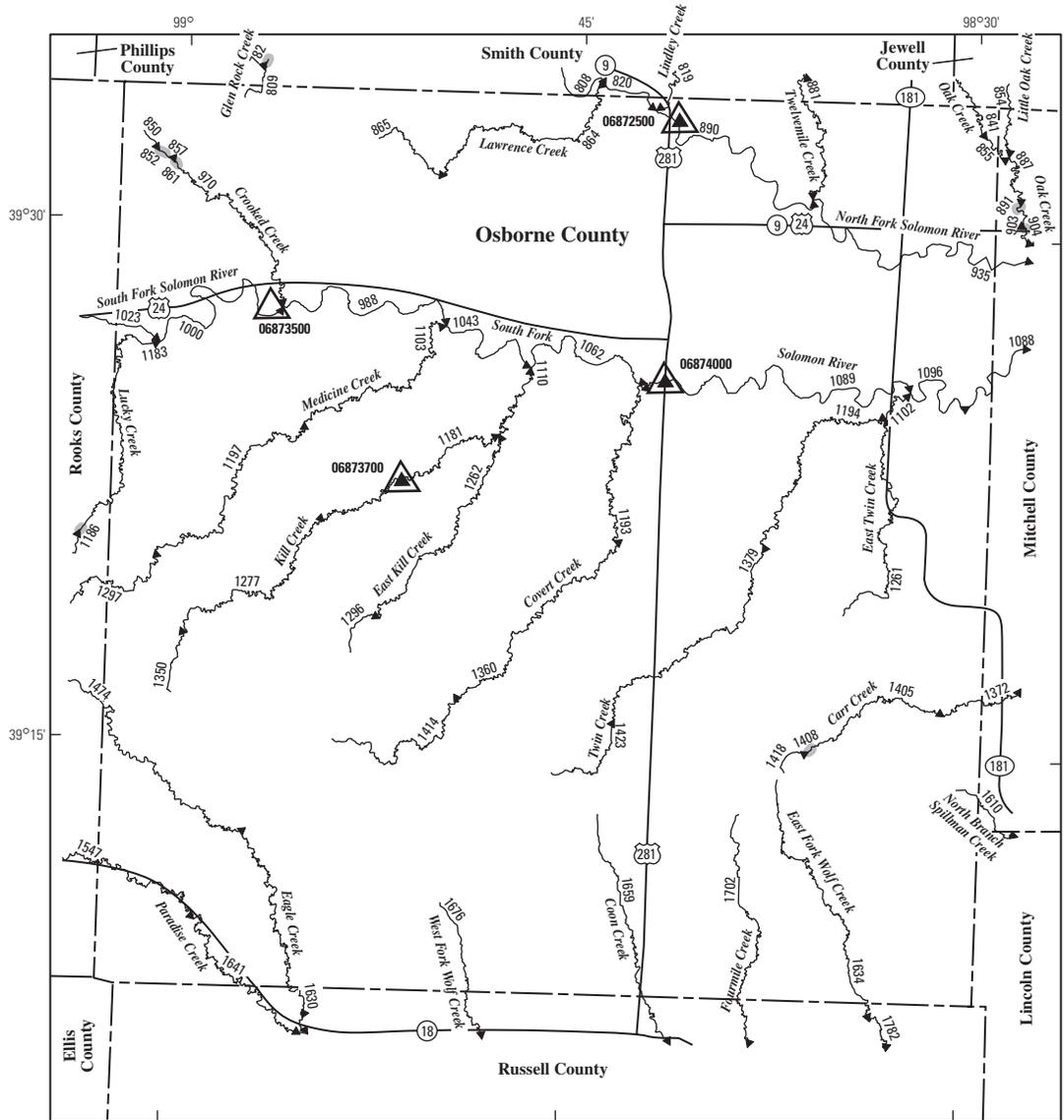
Determination site identification number (fig. 80)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2824	1029010133	OS						Marais des Cygnes River	331	3.89
2839	1029010193	OS				Chicken Creek	15.0	0	0	1.32	4.64	13.7
2843	HYDRO	OS				HYDRO	212	NA	NA	NA	NA	NA
2844	HYDRO	OS				HYDRO	20.2	NA	NA	NA	NA	NA
2845	1029010133	OS				Marais des Cygnes River	320	3.36	14.8	34.8	114	430
2846	1029010133	OS				Marais des Cygnes River	302	2.50	14.0	33.0	99.0	382
2853	1029010143	OS				Rock Creek	58.5	0	.51	4.04	14.8	45.5
2880	1029010144	OS				Tequa Creek	31.7	0	.20	2.84	10.0	29.5
2886	HYDRO	OS				HYDRO	298	NA	NA	NA	NA	NA
2917	102901011531	OS				Long Creek	101	0	1.26	7.12	26.2	82.2
2940	1029010143	OS				Rock Creek	41.0	0	.16	2.74	10.1	31.3
2949	1029010194	OS				Willow Creek	15.4	0	0	.97	3.84	12.2
2959	HYDRO	OS				HYDRO	5.67	NA	NA	NA	NA	NA
2965	1029010173	OS				Little Rock Creek	11.1	0	0	.37	1.92	7.08
2970	HYDRO	OS				HYDRO	9.35	NA	NA	NA	NA	NA

**Table 76.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osage County.—Continued

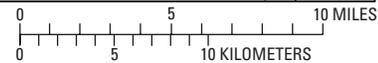
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 80)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2824	228	7,190	17,300	27,100	43,200	58,000	75,400
2839	11.1	1,600	3,400	4,940	7,290	9,240	11,500
2843	NA	NA	NA	NA	NA	NA	NA
2844	NA	NA	NA	NA	NA	NA	NA
2845	220	7,140	17,300	27,200	43,500	58,400	76,000
2846	208	7,050	17,300	27,300	43,800	59,000	76,900
2853	35.8	5,270	10,200	14,400	20,500	25,700	31,300
2880	22.6	3,520	7,060	10,100	14,500	18,300	22,400
2886	NA	NA	NA	NA	NA	NA	NA
2917	62.0	5,600	11,200	16,000	23,200	29,400	36,100
2940	25.4	4,360	8,550	12,100	17,300	21,700	26,400
2949	10.6	1,650	3,490	5,080	7,480	9,480	11,800
2959	NA	NA	NA	NA	NA	NA	NA
2965	7.02	1,360	2,860	4,140	6,090	7,700	9,530
2970	NA	NA	NA	NA	NA	NA	NA



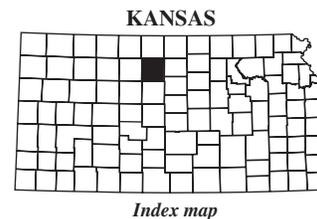


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 1641 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06873700 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06873500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1408 Lake and determination site identification number



**Figure 81.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Osborne County.

**470 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 77.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osborne County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 81)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		809	1026001241	OB	SM					Glen Rock Creek	12.9	0	0
819	1026001245	OB	SM			Lindley Creek	20.9	0	0	0	0	0	0
820	102600127	OB	SM			North Fork Solomon River	2,480	11.8	19.6	33.3	73.5	159	
850	1026001427	OB				Crooked Creek	13.1	0	0	0	0	0	0
852	HYDRO	OB				HYDRO	14.8	NA	NA	NA	NA	NA	NA
857	1026001427	OB				Crooked Creek	15.9	0	0	0	0	0	0
861	HYDRO	OB				HYDRO	16.4	NA	NA	NA	NA	NA	NA
864	1026001244	OB	SM			Lawrence Creek	52.4	0	0	.42	1.30	3.97	
865	1026001244	OB				Lawrence Creek	21.7	0	0	0	0	0	0
881	102600126	OB	SM			Twelvemile Creek	55.0	0	0	.66	1.84	5.19	
890	102600127	OB				North Fork Solomon River	2,530	12.0	20.0	34.0	75.0	162	
970	1026001427	OB				Crooked Creek	38.4	0	0	0	0	1.11	
988	102600146	OB				South Fork Solomon River	1,680	1.94	3.92	10.4	36.9	119	
1000	102600146	OB				South Fork Solomon River	1,620	1.12	2.49	8.29	32.6	108	
1023	102600146	OB	RO			South Fork Solomon River	1,570	.43	1.30	6.50	29.0	99.0	
1043	102600145	OB				South Fork Solomon River	1,750	2.82	5.47	12.7	41.5	131	
1062	102600144	OB				South Fork Solomon River	1,860	4.35	8.12	16.7	49.4	151	
1089	102600143	OB				South Fork Solomon River	1,990	6.00	11.0	21.0	58.0	174	
1096	102600142	OB				South Fork Solomon River	2,100	6.28	11.4	22.2	62.5	192	
1102	1026001420	OB				Twin Creek	109	0	.45	2.41	6.13	14.9	
1103	1026001417	OB				Medicine Creek	56.4	0	0	.39	1.27	4.04	
1110	1026001418	OB				Kill Creek	90.9	0	.13	1.14	2.86	8.34	
1181	1026001418	OB				Kill Creek	49.4	0	0	0	0	1.80	
1183	1026001426	OB	RO			Lucky Creek	31.5	0	0	0	.01	.94	
1193	1026001419	OB				Covert Creek	87.0	0	.10	1.62	4.17	10.2	
1194	1026001420	OB				Twin Creek	74.0	0	.01	1.35	3.46	8.65	
1197	1026001417	OB				Medicine Creek	39.8	0	0	0	.03	1.29	
1261	1026001429	OB				East Twin Creek	33.7	0	0	.39	1.07	3.24	
1262	1026001428	OB				East Kill Creek	34.7	0	0	.22	.68	2.37	
1277	1026001418	OB				Kill Creek	32.5	0	0	0	0	.20	
1296	1026001428	OB				East Kill Creek	9.89	0	0	0	0	0	
1297	1026001417	OB	RO			Medicine Creek	15.1	0	0	0	0	0	
1350	1026001418	OB				Kill Creek	11.5	0	0	0	0	0	
1360	1026001419	OB				Covert Creek	67.0	0	0	1.06	2.79	7.08	
1379	1026001420	OB				Twin Creek	54.6	0	0	.89	2.31	5.93	
1405	1026001421	OB				Carr Creek	27.7	0	0	.30	.75	2.39	
1408	HYDRO	OB				HYDRO	7.75	NA	NA	NA	NA	NA	
1414	1026001419	OB				Covert Creek	35.1	0	0	.06	.35	1.76	

**Table 77.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osborne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 81)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
809	0.18	444	1,260	2,070	3,410	4,620	6,040
819	1.33	578	1,660	2,750	4,570	6,210	8,150
820	96.3	2,800	6,250	9,420	14,500	19,100	24,400
850	.05	431	1,230	2,040	3,370	4,570	5,990
852	NA	NA	NA	NA	NA	NA	NA
857	.35	485	1,390	2,300	3,820	5,190	6,800
861	NA	NA	NA	NA	NA	NA	NA
864	4.97	815	2,200	3,590	5,890	8,020	10,500
865	1.44	621	1,760	2,910	4,810	6,520	8,540
881	5.90	743	2,040	3,360	5,570	7,610	9,980
890	98.4	2,860	6,380	9,620	14,800	19,500	24,900
970	2.85	610	1,700	2,810	4,670	6,400	8,390
988	62.3	3,230	11,000	21,000	41,700	64,900	96,500
1000	56.4	3,600	12,300	23,400	46,300	72,000	107,000
1023	51.5	554	2,000	3,610	6,370	8,900	11,800
1043	68.6	2,830	9,690	18,500	36,600	57,100	85,100
1062	79.4	2,150	7,370	14,100	28,100	43,900	65,500
1089	91.2	1,400	4,850	9,310	18,700	29,500	44,300
1096	96.9	1,410	4,810	9,170	18,300	28,800	43,100
1102	12.9	1,060	2,850	4,660	7,650	10,400	13,600
1103	5.22	736	2,030	3,360	5,580	7,660	10,000
1110	7.02	458	1,850	4,020	9,300	16,100	26,300
1181	2.09	182	1,150	2,890	7,480	13,600	23,100
1183	2.46	566	1,580	2,610	4,340	5,940	7,770
1193	9.53	890	2,420	4,000	6,610	9,050	11,900
1194	8.36	826	2,250	3,720	6,140	8,400	11,000
1197	3.07	580	1,640	2,740	4,590	6,320	8,330
1261	4.10	832	2,160	3,470	5,590	7,530	9,700
1262	3.51	709	1,900	3,100	5,050	6,850	8,900
1277	1.47	361	1,300	2,600	5,520	9,080	14,300
1296	0	395	1,100	1,800	2,960	3,980	5,190
1297	.36	483	1,370	2,270	3,750	5,080	6,650
1350	0	396	1,150	1,950	3,360	4,750	6,520
1360	7.14	856	2,310	3,790	6,230	8,490	11,100
1379	6.18	873	2,310	3,750	6,110	8,270	10,700
1405	3.33	782	2,180	3,580	5,890	7,950	10,400
1408	NA	NA	NA	NA	NA	NA	NA
1414	3.14	688	1,860	3,050	4,990	6,790	8,840

**Table 77.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osborne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

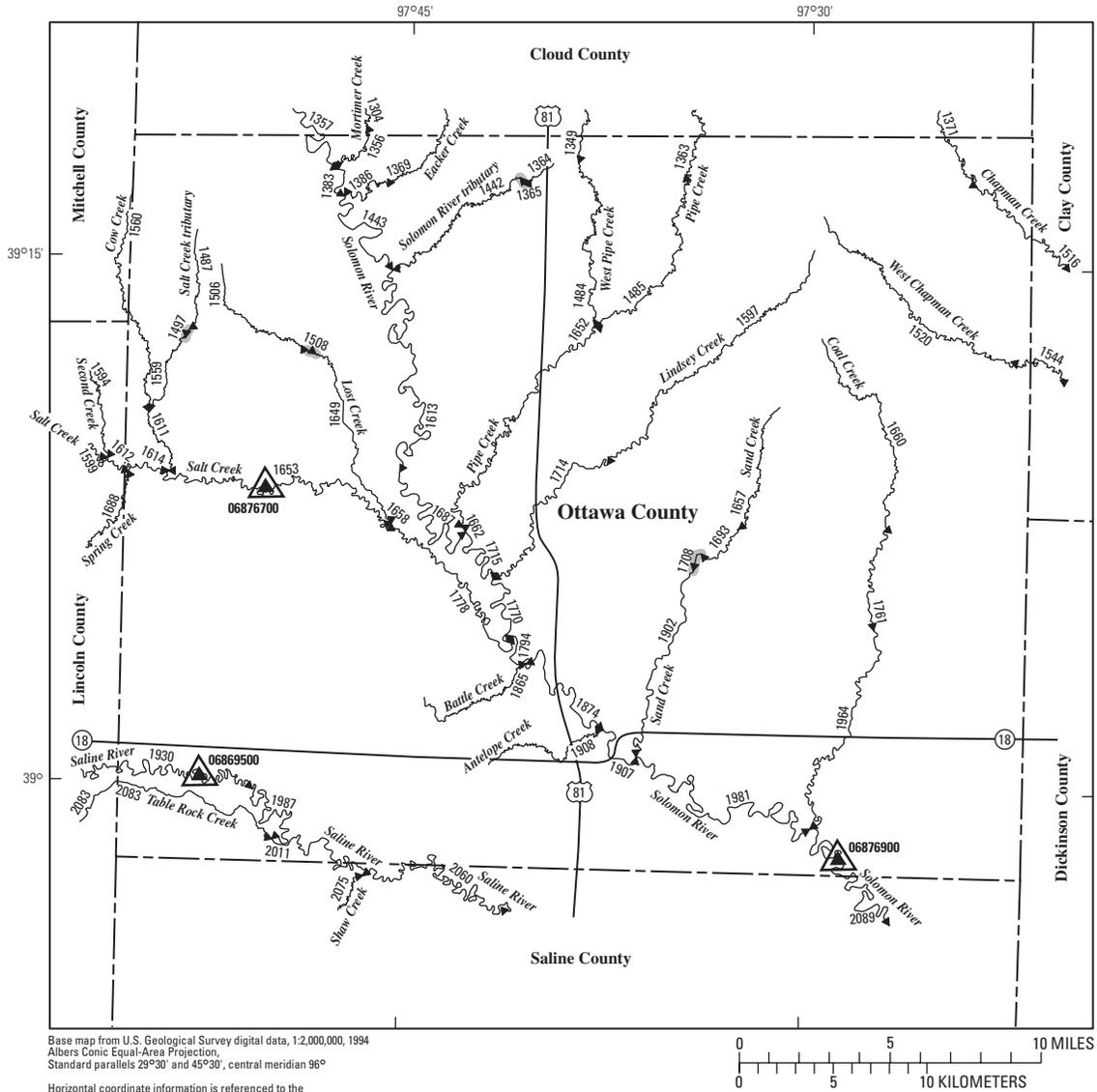
Determination site identification number (fig. 81)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1418	1026001421	OB						Carr Creek	7.64	0	0
1423	1026001420	OB				Twin Creek	18.8	0	0	0	0	0	.14
1474	102600096	OB	RO			Eagle Creek	36.7	0	0	0	.08	1.54	
1547	102600097	OB	RO			Paradise Creek	122	0	0	.37	2.14	9.85	
1630	102600096	OB	RS			Eagle Creek	63.1	0	0	.47	1.59	5.46	
1634	1026001011	OB	RS			East Fork Wolf Creek	37.3	0	0	.36	1.04	3.31	
1641	102600097	OB	RS			Paradise Creek	148	0	0	.49	2.84	13.3	
1659	1026001031	OB	RS			Coon Creek	34.7	0	0	0	.19	1.49	
1676	1026001012	OB	RS			West Fork Wolf Creek	58.3	0	0	.46	1.49	4.45	
1702	1026001030	OB	RS			Fourmile Creek	33.5	0	0	.22	.69	2.44	

**Table 77.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Osborne County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 81)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1418	0.20	366	997	1,610	2,620	3,510	4,560
1423	1.62	582	1,640	2,700	4,450	6,020	7,870
1474	2.98	546	1,560	2,620	4,410	6,090	8,050
1547	9.23	735	2,240	3,920	6,920	9,850	13,400
1630	5.89	732	2,060	3,440	5,780	7,990	10,600
1634	4.32	829	2,170	3,500	5,650	7,620	9,850
1641	11.6	809	2,500	4,390	7,810	11,200	15,400
1659	3.06	690	1,850	3,010	4,910	6,670	8,670
1676	5.47	1,010	2,590	4,130	6,630	8,910	11,500
1702	3.59	733	1,930	3,130	5,070	6,850	8,870

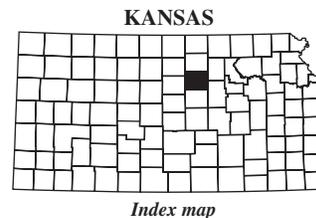




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ◀ 1987 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06869500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06876900 ◻ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1708 Lake and determination site identification number



Index map

**Figure 82.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Ottawa County.

476 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 78.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ottawa County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 82)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1364	1026001552	OT						Solomon River tributary	4.01	0	0
1365	HYDRO	OT				HYDRO	4.32	NA	NA	NA	NA	NA	NA
1383	1026001512	OT				Solomon River	5,850	32.5	65.1	186	524	1,890	
1386	1026001550	OT				Eacker Creek	32.6	0	0	1.12	3.04	8.32	
1442	1026001552	OT				Solomon River tributary	20.4	0	0	0	.29	2.22	
1443	1026001512	OT				Solomon River	5,900	33.5	65.9	185	521	1,870	
1484	1026001511	OT				West Pipe Creek	49.2	0	.28	2.05	5.60	14.8	
1485	1026001510	OT				Pipe Creek	60.0	0	.91	3.56	9.30	23.4	
1487	1026001555	OT				Salt Creek tributary	11.7	0	0	.51	.86	2.18	
1497	HYDRO	OT				HYDRO	12.0	NA	NA	NA	NA	NA	
1506	1026001556	OT				Lost Creek	16.6	0	0	.73	1.51	3.79	
1508	HYDRO	OT				HYDRO	17.8	NA	NA	NA	NA	NA	
1520	102600085	OT				West Chapman Creek	40.7	.10	.81	2.90	7.06	17.3	
1559	1026001555	OT				Salt Creek tributary	18.2	0	0	.71	1.52	3.95	
1597	102600157	OT				Lindsey Creek	34.3	0	.21	1.58	4.00	10.3	
1611	1026001528	OT				Cow Creek	38.4	0	.20	1.62	3.91	9.74	
1613	1026001512	OT				Solomon River	5,940	34.5	66.7	185	519	1,850	
1614	1026001529	OT				Salt Creek	345	.93	3.32	9.98	25.1	82.4	
1649	1026001556	OT				Lost Creek	29.2	0	0	1.03	2.58	6.74	
1652	102600159	OT				Pipe Creek	134	0	1.88	6.37	17.2	45.0	
1653	1026001527	OT				Salt Creek	424	1.60	4.00	12.0	30.0	106	
1657	102600154	OT				Sand Creek	20.0	0	.47	1.50	2.97	6.74	
1658	1026001527	OT				Salt Creek	424	1.60	4.01	12.0	30.1	106	
1660	102600152	OT				Coal Creek	31.8	0	.77	2.64	6.04	14.0	
1662	102600159	OT				Pipe Creek	134	0	1.88	6.37	17.3	45.0	
1687	1026001512	OT				Solomon River	5,940	34.6	66.8	185	518	1,850	
1693	102600154	OT				Sand Creek	27.2	0	.69	2.05	4.31	9.72	
1708	HYDRO	OT				HYDRO	31.2	NA	NA	NA	NA	NA	
1714	102600157	OT				Lindsey Creek	52.2	0	.31	1.98	5.34	14.2	
1715	102600158	OT				Solomon River	6,080	37.8	69.4	183	510	1,780	
1761	102600152	OT				Coal Creek	51.2	0	1.29	4.10	9.78	22.9	
1770	102600156	OT				Solomon River	6,130	39.1	70.5	183	506	1,760	
1778	1026001527	OT				Salt Creek	468	1.92	4.82	14.3	35.8	121	
1794	102600155	OT				Solomon River	6,600	50.2	79.4	177	476	1,540	
1865	1026001557	OT				Battle Creek	25.3	0	.11	1.12	2.53	6.38	
1874	102600155	OT				Solomon River	6,640	51.0	80.1	177	473	1,520	
1902	102600154	OT				Sand Creek	57.8	0	1.47	3.80	8.42	19.3	
1907	102600155	OT				Solomon River	6,660	51.5	80.5	177	472	1,510	

**Table 78.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ottawa County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 82)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1364	0.03	374	914	1,410	2,190	2,860	3,630
1365	NA	NA	NA	NA	NA	NA	NA
1383	561	3,300	6,470	8,970	12,000	14,300	16,600
1386	7.84	1,100	2,730	4,300	6,800	9,050	11,600
1442	3.68	928	2,360	3,720	5,910	7,810	10,000
1443	561	3,370	6,630	9,340	12,600	15,300	18,000
1484	12.6	1,410	3,430	5,380	8,470	11,200	14,400
1485	18.0	478	1,270	2,090	3,530	4,910	6,600
1487	2.59	621	1,600	2,520	4,000	5,300	6,800
1497	NA	NA	NA	NA	NA	NA	NA
1506	3.86	775	1,990	3,150	5,020	6,650	8,550
1508	NA	NA	NA	NA	NA	NA	NA
1520	13.7	1,450	3,390	5,220	8,070	10,600	13,400
1559	4.05	801	2,080	3,300	5,260	6,980	8,990
1597	9.08	993	2,500	3,960	6,310	8,420	10,800
1611	8.36	1,090	2,710	4,260	6,740	8,980	11,500
1613	561	3,450	6,800	9,730	13,300	16,300	19,400
1614	56.4	1,640	4,400	7,240	12,100	16,800	22,500
1649	6.42	1,080	2,810	4,470	7,150	9,500	12,300
1652	33.7	890	2,330	3,840	6,410	8,860	11,800
1653	70.4	1,430	4,030	6,800	11,700	16,600	22,500
1657	5.86	1,010	2,510	3,910	6,150	8,080	10,300
1658	70.6	1,430	4,030	6,810	11,700	16,600	22,500
1660	10.7	1,470	3,340	5,060	7,680	9,980	12,500
1662	33.8	885	2,320	3,820	6,390	8,840	11,800
1687	561	3,460	6,810	9,770	13,300	16,400	19,500
1693	7.96	1,190	3,000	4,690	7,410	9,760	12,500
1708	NA	NA	NA	NA	NA	NA	NA
1714	12.4	1,160	2,930	4,670	7,480	10,000	12,900
1715	561	3,710	7,340	11,000	15,400	19,600	24,000
1761	16.7	1,680	3,850	5,860	8,960	11,700	14,700
1770	561	3,810	7,560	11,500	16,300	20,900	25,800
1778	79.4	1,390	3,980	6,780	11,800	16,700	22,800
1794	562	4,660	9,370	15,700	23,500	31,800	41,200
1865	6.05	1,060	2,700	4,260	6,770	8,950	11,500
1874	562	4,730	9,510	16,000	24,100	32,700	42,400
1902	15.0	1,310	3,110	4,810	7,460	9,810	12,400
1907	562	4,760	9,590	16,200	24,400	33,100	43,000

**478 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 78.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ottawa County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

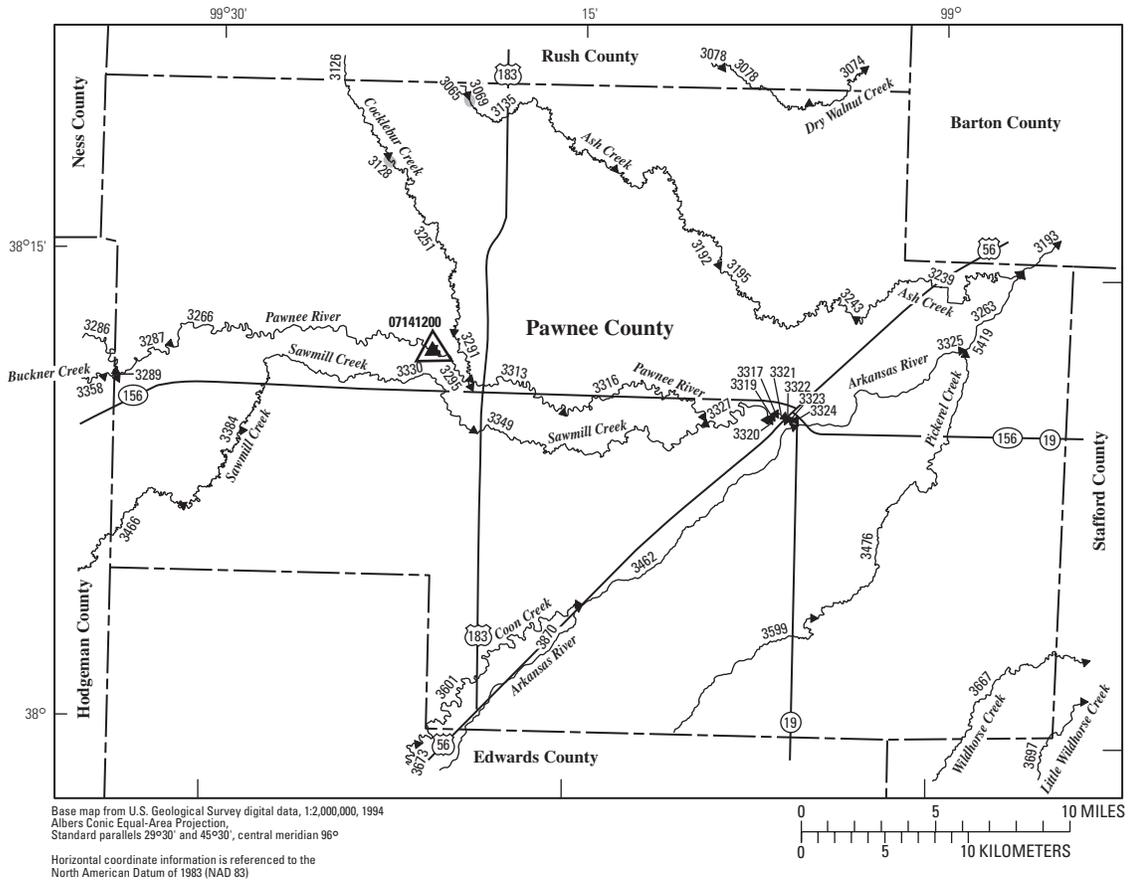
Determination site identification number (fig. 82)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1908	1026001558	OT						Antelope Creek	16.4	0
1964	102600152	OT				Coal Creek	97.7	.21	2.68	7.35	17.4	40.7
1981	102600153	OT				Solomon River	6,750	53.6	82.2	176	466	1,470
1987	102600103	OT				Saline River	2,850	15.1	24.1	45.2	126	491
2011	102600102	OT	SA			Saline River	2,910	15.4	24.7	46.3	129	500
2060	102600102	OT	SA			Saline River	2,950	15.7	25.1	47.2	131	506
2089	102600151	OT	SA			Solomon River	6,890	57.0	85.0	174	457	1,400

**Table 78.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Ottawa County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

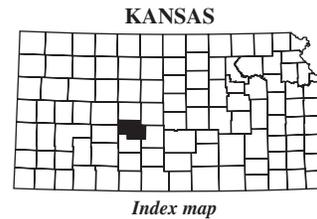
Determination site identification number (fig. 82)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1908	4.23	840	2,120	3,320	5,240	6,900	8,840
1964	28.7	1,820	4,250	6,530	10,100	13,300	16,800
1981	562	4,930	9,940	17,000	25,800	35,200	46,000
1987	212	2,530	5,040	6,800	8,990	10,500	12,000
2011	215	2,560	5,080	6,850	9,080	10,700	12,200
2060	218	2,570	5,110	6,900	9,150	10,800	12,400
2089	562	5,190	10,500	18,300	28,000	38,600	50,700





**EXPLANATION**

- ← 3601 **Location of streamflow-statistics determination site (small triangle) and associated identification number**—small triangle points in downstream direction
- 07141200 ▲ **U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration**
- 07141200 △ **U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values**
- 3069 **Lake and determination site identification number**



**Figure 83.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Pawnee County.

**482 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 79.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pawnee County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

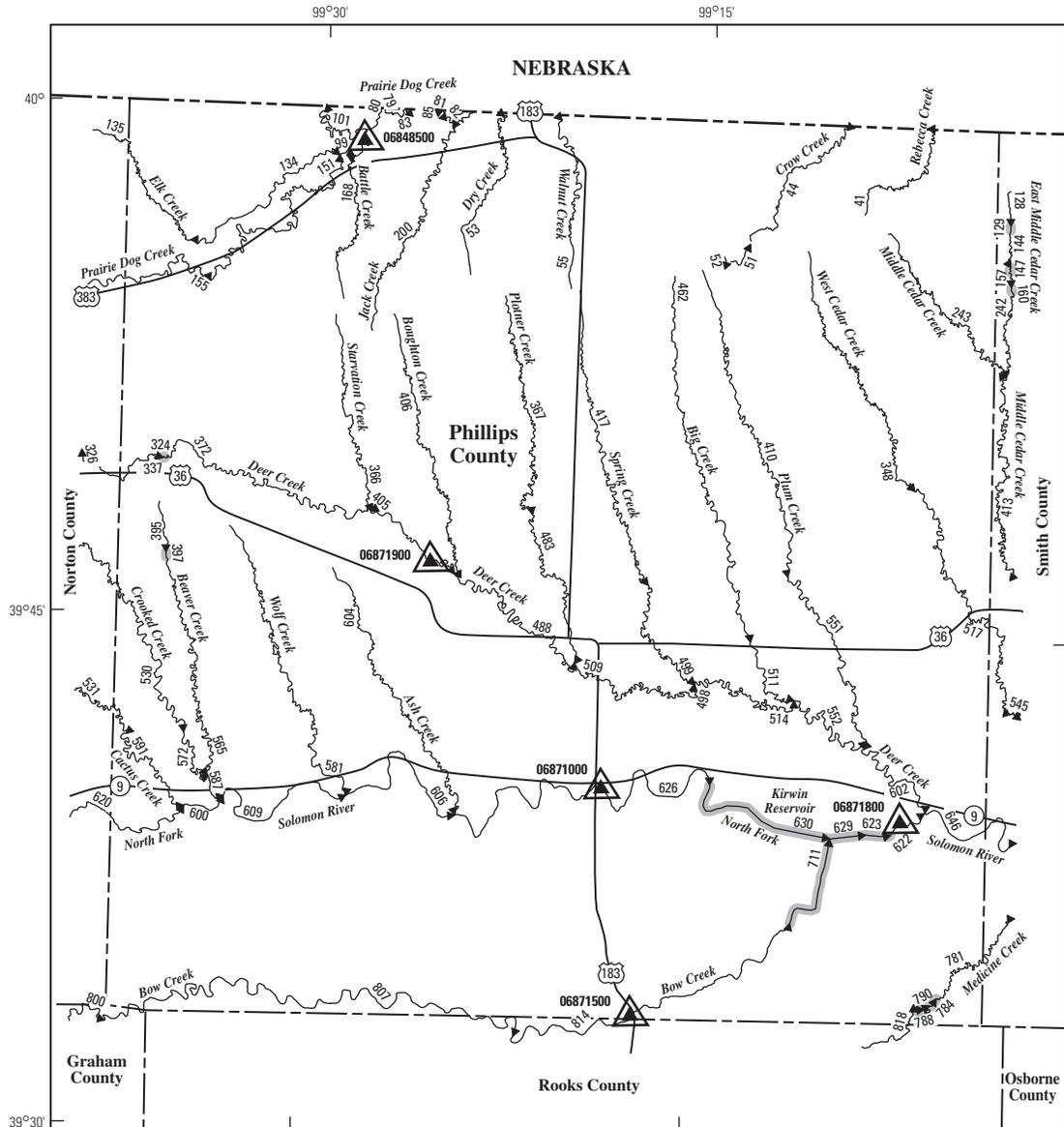
Determination site identification number (fig. 83)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3065	110300043	PN	RH					Ash Creek	5.58	0	0
3069	HYDRO	PN				HYDRO	5.74	NA	NA	NA	NA	NA	NA
3078	110300049013	PN	RH			Dry Walnut Creek	49.3	0	0	0	0	0	.69
3126	1103000512	PN	RH			Cocklebur Creek	23.4	0	0	0	0	0	0
3128	HYDRO	PN				HYDRO	23.4	NA	NA	NA	NA	NA	NA
3135	110300043	PN				Ash Creek	36.9	0	0	0	0	0	0
3192	110300043	PN				Ash Creek	75.4	0	0	0	0	0	1.27
3195	110300043	PN				Ash Creek	77.3	0	0	0	0	0	1.40
3243	110300043	PN				Ash Creek	104	0	0	.03	.60	3.10	
3251	1103000512	PN				Cocklebur Creek	62.0	0	0	0	0	0	0
3266	110300052	PN				Pawnee River	2,100	0	0	3.70	15.0	59.0	
3287	110300052	PN				Pawnee River	2,040	0	0	3.43	14.1	55.5	
3291	1103000512	PN				Cocklebur Creek	64.4	0	0	0	0	0	
3295	110300052	PN				Pawnee River	2,100	0	0	3.71	15.0	59.1	
3313	110300052	PN				Pawnee River	2,180	.23	.41	4.53	17.1	64.4	
3316	110300052	PN				Pawnee River	2,200	.30	.54	4.79	17.7	66.1	
3317	110300051	PN				Pawnee River	2,410	.93	1.67	7.01	23.0	80.3	
3319	110300051	PN				Pawnee River	2,410	.93	1.67	7.01	23.0	80.3	
3320	110300051	PN				Pawnee River	2,410	.93	1.67	7.01	23.0	80.3	
3321	110300051	PN				Pawnee River	2,410	.95	1.69	7.05	23.1	80.5	
3322	110300051	PN				Pawnee River	2,410	.95	1.69	7.05	23.1	80.5	
3323	110300051	PN				Pawnee River	2,410	.95	1.69	7.05	23.1	80.5	
3324	110300051	PN				Pawnee River	2,410	.95	1.69	7.05	23.1	80.5	
3325	110300045	PN				Arkansas River	31,100	2.28	6.16	39.5	142	329	
3327	110300051	PN				Pawnee River	2,410	.93	1.67	7.01	23.0	80.3	
3330	110300056	PN				Sawmill Creek	164	0	0	.14	1.14	4.70	
3349	110300056	PN				Sawmill Creek	195	0	0	.41	1.82	6.43	
3384	110300056	PN				Sawmill Creek	115	0	0	0	.49	2.87	
3462	110300046	PN				Arkansas River	28,600	.97	3.19	33.2	110	223	
3476	1103000413	PN				Pickerel Creek	167	.15	.88	1.64	3.21	7.75	
3599	1103000413	PN				Pickerel Creek	88.4	0	.10	.47	.74	2.32	
3667	110300092	PN	SF			Wildhorse Creek	125	.05	.85	1.62	2.90	6.27	
3697	110300096	PN	SF			Little Wild Horse Creek	35.0	0	0	0	0	0	
5419	1103000413	PN				Pickerel Creek	167	.15	.88	1.64	3.21	7.75	

**Table 79.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pawnee County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 83)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3065	0	231	669	1,110	1,850	2,510	3,290
3069	NA	NA	NA	NA	NA	NA	NA
3078	2.81	580	1,680	2,830	4,790	6,650	8,810
3126	.03	501	1,510	2,570	4,360	6,000	7,950
3128	NA	NA	NA	NA	NA	NA	NA
3135	1.24	344	1,080	1,900	3,330	4,710	6,370
3192	3.70	503	1,540	2,690	4,680	6,610	8,920
3195	3.82	514	1,570	2,730	4,760	6,720	9,060
3243	5.41	532	1,630	2,840	4,970	7,030	9,500
3251	2.25	411	1,300	2,290	4,030	5,730	7,770
3266	63.2	2,250	4,530	6,530	9,620	12,300	15,400
3287	59.5	2,190	4,480	6,500	9,640	12,400	15,500
3291	2.38	413	1,310	2,300	4,070	5,780	7,850
3295	63.2	2,240	4,500	6,480	9,550	12,200	15,300
3313	66.9	2,290	4,640	6,710	9,940	12,700	16,000
3316	68.1	2,270	4,590	6,640	9,840	12,600	15,900
3317	77.6	2,430	5,020	7,340	11,000	14,200	18,000
3319	77.6	2,430	5,020	7,340	11,000	14,200	18,000
3320	77.6	2,430	5,020	7,340	11,000	14,200	18,000
3321	77.7	2,430	5,020	7,340	11,000	14,200	17,900
3322	77.7	2,430	5,020	7,340	11,000	14,200	17,900
3323	77.7	2,430	5,020	7,340	11,000	14,200	17,900
3324	77.7	2,430	5,020	7,340	11,000	14,200	17,900
3325	160	2,560	6,800	13,900	21,400	28,800	37,300
3327	77.6	2,430	5,020	7,340	11,000	14,200	18,000
3330	7.10	666	2,050	3,590	6,300	8,950	12,100
3349	8.72	637	1,990	3,520	6,240	8,910	12,200
3384	5.16	662	1,990	3,430	5,930	8,350	11,200
3462	110	927	3,700	9,390	16,900	26,000	38,700
3476	9.22	660	1,830	3,050	5,080	6,980	9,190
3599	4.44	508	1,410	2,340	3,880	5,310	6,970
3667	7.50	626	1,700	2,790	4,600	6,260	8,200
3697	1.37	330	953	1,610	2,710	3,730	4,920
5419	9.22	661	1,830	3,050	5,090	6,980	9,200



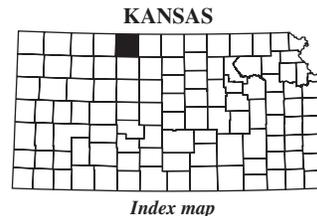


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 800 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06871900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06871000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 630 Lake and determination site identification number



**Figure 84.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Phillips County.

**Table 80.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Phillips County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 84)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
41	1025001639	PL				Rebecca Creek	14.4	0	0	0	0	0	0
44	1025001652	PL				Crow Creek	28.0	0	0	0	0	0	.44
51	1025001652	PL				Crow Creek	5.49	0	0	0	0	0	0
52	1025001652	PL				Crow Creek	3.12	0	0	0	0	0	0
53	1025001523	PL				Dry Creek	15.5	0	0	0	0	0	0
55	1025001513	PL				Walnut Creek	22.9	0	0	0	0	0	0
79	102500152	PL				Prairie Dog Creek	949	0	2.57	7.44	19.0	42.5	
80	102500152	PL				Prairie Dog Creek	949	0	2.57	7.44	19.0	42.5	
81	102500152	PL				Prairie Dog Creek	957	0	2.63	7.57	19.3	43.3	
82	102500152	PL				Prairie Dog Creek	957	0	2.63	7.57	19.3	43.3	
83	102500152	PL				Prairie Dog Creek	951	0	2.58	7.47	19.0	42.7	
85	102500152	PL				Prairie Dog Creek	15.2	0	0	0	0	0	
99	102500152	PL				Prairie Dog Creek	910	0	0	1.86	6.99	15.1	
101	102500152	PL				Prairie Dog Creek	930	0	0	2.00	7.50	16.0	
134	102500153	PL				Elk Creek	44.8	0	0	0	0	0	.72
151	102500152	PL				Prairie Dog Creek	865	0	0	1.55	5.85	13.0	
168	1025001524	PL				Battle Creek	9.22	0	0	0	0	0	
200	1025001522	PL				Jack Creek	14.9	0	0	0	0	0	
243	1026001219	PL	SM			Middle Cedar Creek	19.5	0	0	0	0	0	
324	HYDRO	PL				HYDRO	6.67	NA	NA	NA	NA	NA	
348	1026001220	PL				West Cedar Creek	35.8	0	0	0	.04	1.03	
366	1026001238	PL				Starvation Creek	21.8	0	0	.06	.08	.16	
367	1026001230	PL				Plotner Creek	23.7	0	0	0	0	0	
372	1026001231	PL				Deer Creek	34.0	0	0	.14	.20	.40	
395	1026001123	PL				Beaver Creek	5.31	0	0	0	0	0	
397	HYDRO	PL				HYDRO	5.41	NA	NA	NA	NA	NA	
405	1026001231	PL				Deer Creek	62.9	0	0	.69	1.50	2.70	
406	1026001234	PL				Boughton Creek	23.7	0	0	0	0	0	
410	1026001224	PL				Plum Creek	30.8	0	0	0	0	.45	
417	1026001228	PL				Spring Creek	29.0	0	0	0	0	0	
462	1026001226	PL				Big Creek	36.1	0	0	0	0	.73	
483	1026001230	PL				Plotner Creek	35.6	0	0	0	0	.28	
488	1026001231	PL				Deer Creek	105	0	0	1.46	3.44	7.07	
498	1026001229	PL				Spring Creek	152	0	.11	2.26	5.47	11.8	
499	1026001228	PL				Spring Creek	37.9	0	0	0	0	.76	
509	1026001229	PL				Deer Creek	152	0	.11	2.26	5.47	11.8	
511	1026001226	PL				Big Creek	40.4	0	0	0	.09	1.18	
514	1026001227	PL				Deer Creek	197	0	.47	3.08	7.54	16.7	

**Table 80.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Phillips County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 84)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
41	0.59	460	1,310	2,170	3,600	4,880	6,390
44	1.99	657	1,920	3,200	5,360	7,310	9,630
51	0	253	714	1,170	1,930	2,610	3,410
52	0	181	506	826	1,350	1,820	2,370
53	.46	443	1,290	2,150	3,600	4,910	6,450
55	1.27	562	1,650	2,760	4,630	6,310	8,320
79	30.7	1,110	2,980	4,920	8,260	11,400	15,300
80	30.7	1,110	2,980	4,920	8,260	11,400	15,300
81	31.2	1,110	3,000	4,950	8,310	11,500	15,400
82	31.2	1,110	2,990	4,950	8,300	11,500	15,300
83	30.8	1,110	2,980	4,920	8,260	11,400	15,300
85	.37	436	1,270	2,120	3,550	4,840	6,370
99	10.7	611	1,500	2,170	3,000	3,570	4,080
101	11.1	652	1,610	2,330	3,220	3,830	4,380
134	2.54	417	1,250	2,160	3,720	5,200	6,950
151	9.78	519	1,270	1,830	2,510	2,980	3,400
168	0	327	943	1,570	2,600	3,540	4,640
200	.34	431	1,260	2,100	3,510	4,790	6,300
243	1.08	543	1,540	2,540	4,210	5,710	7,490
324	NA	NA	NA	NA	NA	NA	NA
348	2.59	511	1,460	2,460	4,130	5,710	7,530
366	.83	601	1,760	2,960	4,990	6,830	9,060
367	1.12	570	1,680	2,810	4,710	6,440	8,490
372	1.65	606	1,760	2,970	5,060	7,030	9,400
395	0	218	635	1,060	1,760	2,400	3,150
397	NA	NA	NA	NA	NA	NA	NA
405	4.04	1,210	3,430	5,760	9,790	13,600	18,300
406	1.09	564	1,660	2,790	4,690	6,400	8,450
410	2.08	493	1,410	2,360	3,960	5,460	7,190
417	1.71	650	1,910	3,210	5,390	7,360	9,710
462	2.41	528	1,500	2,520	4,230	5,840	7,690
483	2.11	439	1,290	2,200	3,750	5,220	6,930
488	7.48	1,360	3,830	6,440	10,900	15,200	20,400
498	11.2	1,490	4,210	7,060	12,000	16,700	22,400
499	2.46	474	1,380	2,340	3,970	5,500	7,290
509	11.2	1,490	4,210	7,060	12,000	16,700	22,400
511	2.78	534	1,530	2,570	4,330	5,980	7,890
514	14.8	1,610	4,520	7,580	12,900	17,900	24,000

**Table 80.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Phillips County.—Continued

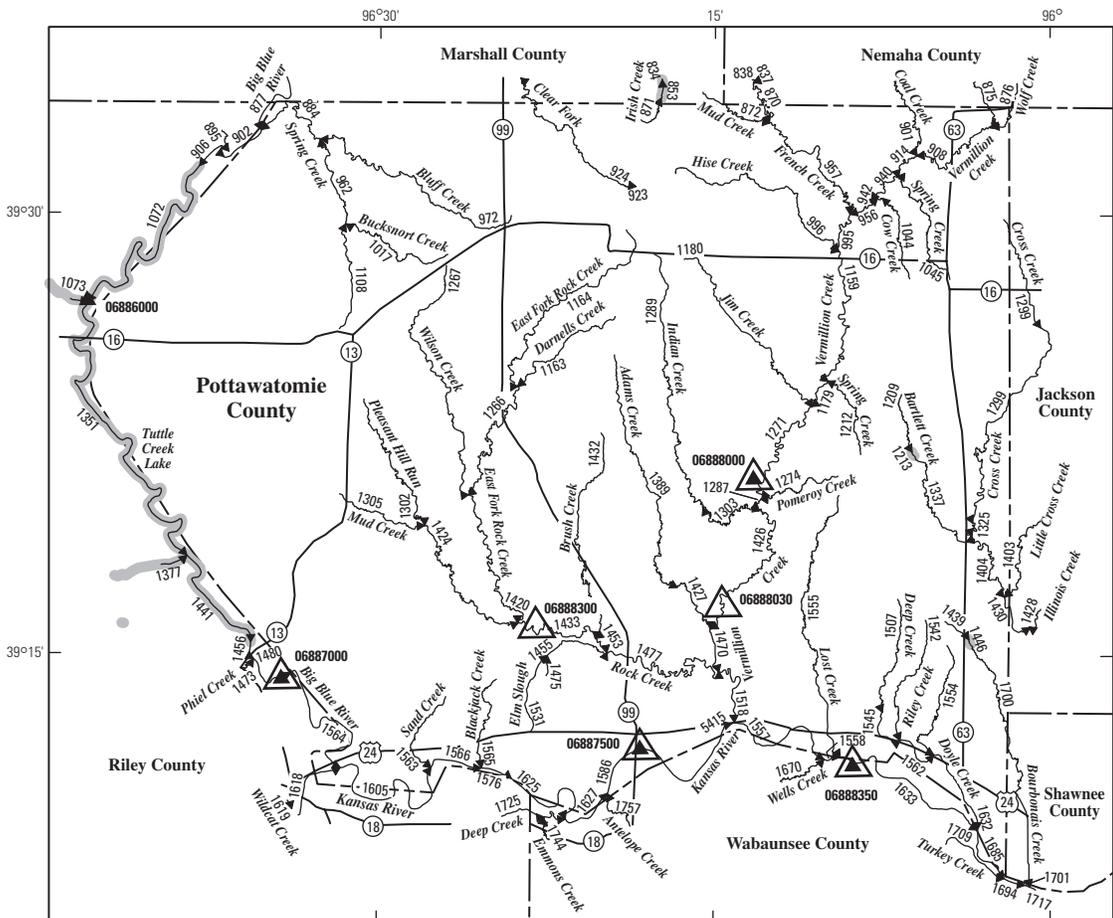
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 84)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		517	1026001220	PL	SM					West Cedar Creek	65.5	0
551	1026001224	PL				Plum Creek	51.6	0	0	.13	.63	2.40
552	1026001225	PL				Deer Creek	244	0	.86	3.99	9.82	22.0
565	1026001123	PL				Beaver Creek	21.0	0	0	0	0	0
572	102600116	PL				Crooked Creek	25.3	0	0	0	0	0
581	1026001122	PL				Wolf Creek	28.0	0	0	0	0	0
587	102600116	PL				Crooked Creek	46.8	0	0	0	0	.23
591	1026001128	PL				Cactus Creek	29.4	0	0	0	0	0
600	102600117	PL				North Fork Solomon River	788	0	0	5.27	14.5	32.1
602	1026001223	PL				Deer Creek	305	0	1.35	5.16	12.7	29.0
604	1026001124	PL				Ash Creek	29.6	0	0	0	0	0
606	102600115	PL				North Fork Solomon River	898	0	0	6.91	18.4	40.5
609	102600115	PL				North Fork Solomon River	856	0	0	6.25	16.8	37.1
622	1026001222	PL				North Fork Solomon River	1,470	0	0	.03	.12	.50
623	HYDRO	PL				HYDRO	1,470	NA	NA	NA	NA	NA
626	102600115	PL				North Fork Solomon River	979	0	.20	8.40	22.0	48.0
629	HYDRO	PL				HYDRO	1,470	NA	NA	NA	NA	NA
630	HYDRO	PL				HYDRO	996	NA	NA	NA	NA	NA
646	1026001222	PL	SM			North Fork Solomon River	1,790	8.48	14.1	24.0	53.0	115
711	HYDRO	PL				HYDRO	468	NA	NA	NA	NA	NA
781	1026001233	PL	SM			Medicine Creek	56.3	0	0	.07	.49	2.26
784	HYDRO	PL				HYDRO	30.0	NA	NA	NA	NA	NA
788	HYDRO	PL				HYDRO	28.1	NA	NA	NA	NA	NA
790	1026001233	PL				Medicine Creek	29.9	0	0	0	0	0
814	1026001115	PL	RO			Bow Creek	457	.44	2.60	5.60	10.0	18.0
818	1026001233	PL	RO			Medicine Creek	27.7	0	0	0	0	0

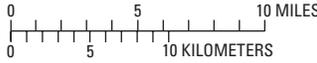
**Table 80.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Phillips County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 84)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
517	4.81	634	1,820	3,070	5,190	7,200	9,550
551	3.79	603	1,720	2,880	4,850	6,700	8,850
552	18.7	1,740	4,850	8,120	13,800	19,100	25,600
565	.35	475	1,430	2,420	4,100	5,630	7,460
572	.65	527	1,600	2,710	4,600	6,330	8,390
581	.98	571	1,720	2,920	4,960	6,810	9,030
587	2.14	478	1,420	2,420	4,130	5,760	7,670
591	.88	562	1,720	2,920	4,980	6,870	9,130
600	21.0	1,360	4,160	7,250	12,800	18,300	25,100
602	23.6	1,890	5,250	8,770	14,800	20,500	27,500
604	1.40	625	1,860	3,140	5,300	7,260	9,610
606	24.6	1,490	4,520	7,870	13,900	19,900	27,200
609	23.2	1,440	4,390	7,640	13,500	19,300	26,400
622	8.76	18	188	606	2,010	4,240	8,180
623	NA	NA	NA	NA	NA	NA	NA
626	27.9	1,580	4,790	8,320	14,700	21,000	28,800
629	NA	NA	NA	NA	NA	NA	NA
630	NA	NA	NA	NA	NA	NA	NA
646	69.5	2,020	4,510	6,800	10,500	13,800	17,600
711	NA	NA	NA	NA	NA	NA	NA
781	3.88	666	1,870	3,110	5,200	7,150	9,410
784	NA	NA	NA	NA	NA	NA	NA
788	NA	NA	NA	NA	NA	NA	NA
790	1.36	677	1,980	3,310	5,560	7,580	10,000
814	13.7	926	2,960	5,320	9,790	14,400	20,200
818	1.18	648	1,890	3,160	5,300	7,230	9,530



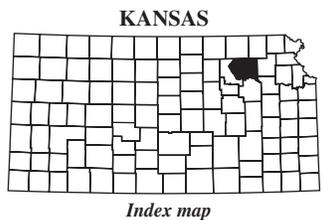


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 1618 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06887000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06888300 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1441 Lake and determination site identification number



Index map

**Figure 85.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Pottawatomie County.

**492 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 85)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
908	1027010218	PT				Vermillion Creek	48.1	0.01	0.22	3.50	12.5	36.9
914	1027010218	PT				Vermillion Creek	78.7	.02	.68	5.56	19.4	56.8
923	102702059	PT				Clear Fork	2.32	0	0	0	0	0
940	1027010218	PT				Vermillion Creek	95.1	.03	.90	6.71	23.3	67.9
942	1027010245	PT				Cow Creek	8.86	0	0	.77	2.68	7.97
956	1027010218	PT				Vermillion Creek	105	.03	1.07	7.49	25.8	74.8
957	1027010219	PT				French Creek	60.2	.01	.41	4.24	14.9	43.4
962	1027020565	PT				Spring Creek	49.3	0	.24	3.40	12.1	35.7
972	10270205573	PT				Bluff Creek	34.0	0	0	2.44	8.76	26.0
995	1027010217	PT				Vermillion Creek	167	.08	1.67	11.1	36.8	105
996	1027010243	PT				Hise Creek	23.9	0	.01	2.18	7.37	20.8
1017	10270205566	PT				Bucksnort Creek	9.37	0	0	.46	1.91	6.36
1044	1027010245	PT				Cow Creek	8.72	0	0	.75	2.63	7.83
1045	1027010248	PT				Spring Creek	14.4	0	0	1.14	4.27	12.8
1072	HYDRO	PT	RL			HYDRO	9,220	NA	NA	NA	NA	NA
1108	1027020565	PT				Spring Creek	31.7	0	0	1.90	6.98	21.2
1159	1027010217	PT				Vermillion Creek	207	.12	2.12	13.9	44.8	124
1163	1027010251	PT				Darnells Creek	10.0	0	0	.73	2.70	8.25
1164	1027010222	PT				East Fork Rock Creek	24.6	0	0	1.86	6.69	19.8
1179	1027010217	PT				Vermillion Creek	216	.13	2.18	14.5	46.3	128
1180	1027010252	PT				Jim Creek	26.2	0	.14	2.66	8.84	24.5
1209	1027010255	PT				Bartlett Creek	11.8	0	0	.95	3.51	10.6
1212	1027010254	PT				Spring Creek	7.58	0	0	.50	1.91	6.13
1213	HYDRO	PT				HYDRO	12.4	NA	NA	NA	NA	NA
1266	1027010222	PT				East Fork Rock Creek	46.6	0	.32	3.67	12.9	38.0
1267	1027010250	PT				Wilson Creek	27.1	0	0	1.91	6.83	20.3
1271	1027010217	PT				Vermillion Creek	253	.40	2.50	17.0	53.0	143
1274	1027010259	PT				Pomeroy Creek	5.54	0	0	.55	1.75	5.22
1287	1027010217	PT				Vermillion Creek	258	.43	2.63	17.6	54.9	149
1289	1027010220	PT				Indian Creek	26.7	0	0	2.30	7.99	23.1
1302	1027010223	PT				Pleasant Hill Run	23.6	0	0	1.46	5.34	16.1
1303	1027010220	PT				Indian Creek	31.7	0	.15	2.77	9.49	27.3
1305	1027010256	PT				Mud Creek	27.9	0	0	2.18	7.41	21.2
1325	1027010212	PT				Cross Creek	46.7	0	.21	3.44	12.8	38.8
1337	1027010255	PT				Bartlett Creek	25.1	0	0	2.09	7.49	22.1
1351	HYDRO	PT	RL			HYDRO	9,550	NA	NA	NA	NA	NA
1389	1027010253	PT				Adams Creek	22.7	0	0	1.61	5.92	17.8
1404	1027010212	PT				Cross Creek	76.4	0	.84	5.85	21.1	64.0

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 85)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
908	27.7	3,160	6,860	10,200	15,200	19,700	24,500
914	41.2	4,150	8,800	12,900	19,200	24,600	30,600
923	.88	449	961	1,400	2,060	2,600	3,220
940	48.4	4,540	9,560	14,000	20,700	26,600	33,000
942	6.47	1,050	2,270	3,320	4,920	6,260	7,780
956	52.6	4,690	9,860	14,400	21,300	27,300	33,900
957	32.2	3,420	7,420	11,000	16,500	21,300	26,600
962	26.8	5,030	10,100	14,400	20,900	26,400	32,300
972	19.9	4,000	8,160	11,800	17,100	21,700	26,600
995	70.3	5,940	12,200	17,600	25,700	32,600	40,200
996	15.7	1,820	4,030	5,970	8,970	11,500	14,400
1017	5.65	963	2,140	3,180	4,780	6,110	7,640
1044	6.37	1,040	2,240	3,290	4,870	6,190	7,690
1045	10.2	1,390	3,030	4,460	6,640	8,460	10,500
1072	NA	NA	NA	NA	NA	NA	NA
1108	16.9	4,620	9,160	13,000	18,600	23,400	28,400
1159	80.0	6,290	12,800	18,300	26,500	33,500	41,100
1163	6.75	1,040	2,280	3,370	5,050	6,440	8,040
1164	15.3	1,750	3,890	5,780	8,700	11,200	14,000
1179	81.6	6,380	13,000	18,500	26,700	33,700	41,400
1180	17.8	1,910	4,240	6,310	9,480	12,100	15,200
1209	8.48	1,230	2,670	3,930	5,850	7,460	9,290
1212	5.28	933	2,020	2,960	4,400	5,590	6,960
1213	NA	NA	NA	NA	NA	NA	NA
1266	27.9	3,740	7,700	11,200	16,400	20,900	25,700
1267	15.9	1,790	4,020	6,000	9,070	11,600	14,600
1271	87.4	6,190	12,600	17,900	25,800	32,400	39,700
1274	4.23	769	1,660	2,430	3,590	4,560	5,670
1287	90.7	6,250	12,300	17,300	24,700	30,900	37,700
1289	17.4	1,890	4,190	6,220	9,360	12,000	15,000
1302	13.0	1,590	3,600	5,390	8,160	10,500	13,200
1303	20.3	3,190	6,630	9,630	14,100	18,000	22,100
1305	16.0	1,720	3,900	5,860	8,900	11,500	14,400
1325	29.4	4,140	8,530	12,400	18,100	23,100	28,500
1337	16.9	1,890	4,190	6,220	9,340	12,000	15,000
1351	NA	NA	NA	NA	NA	NA	NA
1389	14.0	1,670	3,750	5,590	8,450	10,800	13,600
1404	46.4	5,040	10,300	14,900	21,900	27,900	34,400

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 85)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
1420	1027010222	PT				East Fork Rock Creek	86.3	0	1.06	6.49	22.5	66.9
1424	1027010223	PT				Pleasant Hill Run	70.0	0	1.38	6.54	20.1	54.7
1426	1027010216	PT				Vermillion Creek	302	.71	3.46	21.1	66.7	186
1427	1027010253	PT				Adams Creek	27.0	0	0	1.94	7.00	20.9
1432	1027010257	PT				Brush Creek	26.3	0	0	1.76	6.42	19.3
1433	1027010221	PT				Rock Creek	160	0	3.00	13.4	43.3	126
1439	1027010263	PT				Bourbonais Creek	3.30	0	0	0	.20	1.64
1441	HYDRO	PT	RL			HYDRO	9,620	NA	NA	NA	NA	NA
1446	HYDRO	PT				HYDRO	3.47	NA	NA	NA	NA	NA
1453	1027010221	PT				Rock Creek	187	0	3.40	15.1	49.4	145
1455	1027010258	PT				Elm Slough	15.0	2.29	4.48	7.06	11.3	19.1
1470	1027010216	PT				Vermillion Creek	331	.88	3.98	23.3	73.9	210
1475	1027010258	PT				Elm Slough	2.58	.40	.80	1.50	2.28	2.43
1477	1027010221	PT				Rock Creek	215	1.11	6.33	23.6	68.2	184
1480	102702052	PT	RL			Big Blue River	9,630	178	444	974	2,450	6,500
1507	102701021229	PT				Deep Creek	14.1	0	0	1.38	4.56	12.9
1518	1027010215	PT				Vermillion Creek	551	3.36	11.2	50.5	150	423
1531	1027010258	PT				Elm Slough	8.40	2.48	3.85	5.01	7.12	11.1
1542	102701021223	PT				Riley Creek	6.14	0	0	.80	2.13	5.76
1545	102701021229	PT				Deep Creek	16.2	0	.42	2.34	6.37	16.0
1554	1027010269	PT				Doyle Creek	7.17	0	0	.96	2.55	6.71
1555	1027010260	PT				Lost Creek	29.3	0	1.03	4.19	11.5	28.5
1557	1027010214	PT	WB			Kansas River	54,400	949	1,750	3,400	7,650	18,200
1558	1027010214	PT	WB			Kansas River	54,400	952	1,760	3,430	7,700	18,400
1562	102701021223	PT	WB			Riley Creek	23.7	0	.81	3.54	9.67	24.0
1563	1027010265	PT				Sand Creek	13.6	1.37	3.05	5.05	8.45	15.0
1564	102702051	PT	RL			Big Blue River	9,650	178	444	975	2,450	6,500
1565	1027010264	PT				Blackjack Creek	8.17	2.79	4.17	5.22	7.18	10.9
1566	1027010225	PT				Kansas River	53,700	840	1,350	2,700	6,290	13,500
1576	1027010225	PT				Kansas River	53,700	841	1,350	2,700	6,300	13,500
1586	1027010224	PT	WB			Kansas River	53,900	846	1,360	2,720	6,340	13,600
1605	1027010225	PT	RL			Kansas River	53,700	839	1,350	2,700	6,290	13,500
1618	102701011	PT	RL			Kansas River	44,000	431	676	1,420	3,470	7,780
1625	1027010224	PT	WB			Kansas River	53,700	841	1,350	2,700	6,300	13,500
1627	1027010224	PT	WB			Kansas River	53,800	844	1,360	2,710	6,320	13,500
1632	1027010269	PT				Doyle Creek	36.6	0	1.65	5.81	15.4	37.5
1633	1027010214	PT	WB			Kansas River	54,500	960	1,790	3,480	7,800	18,700
1685	1027010214	PT	WB			Kansas River	54,500	961	1,790	3,460	7,760	18,600

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 85)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1420	47.7	4,600	9,100	13,000	18,800	23,800	29,300
1424	37.8	3,720	7,440	10,700	15,500	19,600	24,000
1426	113	6,610	9,650	11,800	14,600	16,800	19,100
1427	16.3	1,840	4,160	6,220	9,420	12,100	15,200
1432	15.3	1,790	4,050	6,070	9,190	11,800	14,900
1433	83.4	5,880	10,100	13,400	18,100	21,900	26,100
1439	2.05	581	1,240	1,800	2,640	3,340	4,130
1441	NA	NA	NA	NA	NA	NA	NA
1446	NA	NA	NA	NA	NA	NA	NA
1453	96.0	6,460	11,200	15,000	20,500	24,900	29,800
1455	10.8	1,280	2,880	4,290	6,460	8,280	10,400
1470	126	6,910	10,300	12,700	15,900	18,500	21,300
1475	1.52	463	1,000	1,460	2,160	2,740	3,400
1477	113	5,650	9,510	12,500	16,600	19,900	23,500
1480	2,490	16,600	25,500	36,300	42,000	46,800	49,600
1507	9.92	1,330	2,930	4,320	6,460	8,250	10,300
1518	235	8,560	13,200	16,600	21,400	25,200	29,300
1531	6.30	917	2,030	3,010	4,500	5,750	7,180
1542	4.58	831	1,790	2,620	3,880	4,920	6,110
1545	11.5	1,440	3,180	4,710	7,050	9,010	11,300
1554	5.26	910	1,970	2,880	4,270	5,430	6,750
1555	19.6	2,010	4,490	6,700	10,100	13,000	16,300
1557	7,030	33,300	59,300	81,700	116,000	149,000	185,000
1558	7,080	33,500	59,400	81,900	116,000	149,000	184,000
1562	16.6	1,800	4,010	5,950	8,950	11,500	14,400
1563	9.03	1,160	2,620	3,920	5,920	7,610	9,550
1564	2,490	16,600	25,500	36,300	42,000	46,900	49,700
1565	6.10	894	1,980	2,940	4,400	5,620	7,020
1566	5,620	28,500	54,200	77,900	108,000	155,000	201,000
1576	5,620	28,500	54,200	78,000	108,000	155,000	201,000
1586	5,650	28,600	54,500	78,400	108,000	156,000	202,000
1605	5,610	28,500	54,200	77,900	107,000	155,000	201,000
1618	3,150	19,600	32,400	45,800	74,900	105,000	143,000
1625	5,620	28,500	54,200	78,000	108,000	155,000	201,000
1627	5,640	28,600	54,400	78,300	108,000	156,000	202,000
1632	24.8	2,980	5,960	8,490	12,200	15,300	18,600
1633	7,180	33,800	59,800	82,100	117,000	148,000	183,000
1685	7,140	33,900	60,100	82,600	117,000	149,000	185,000

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

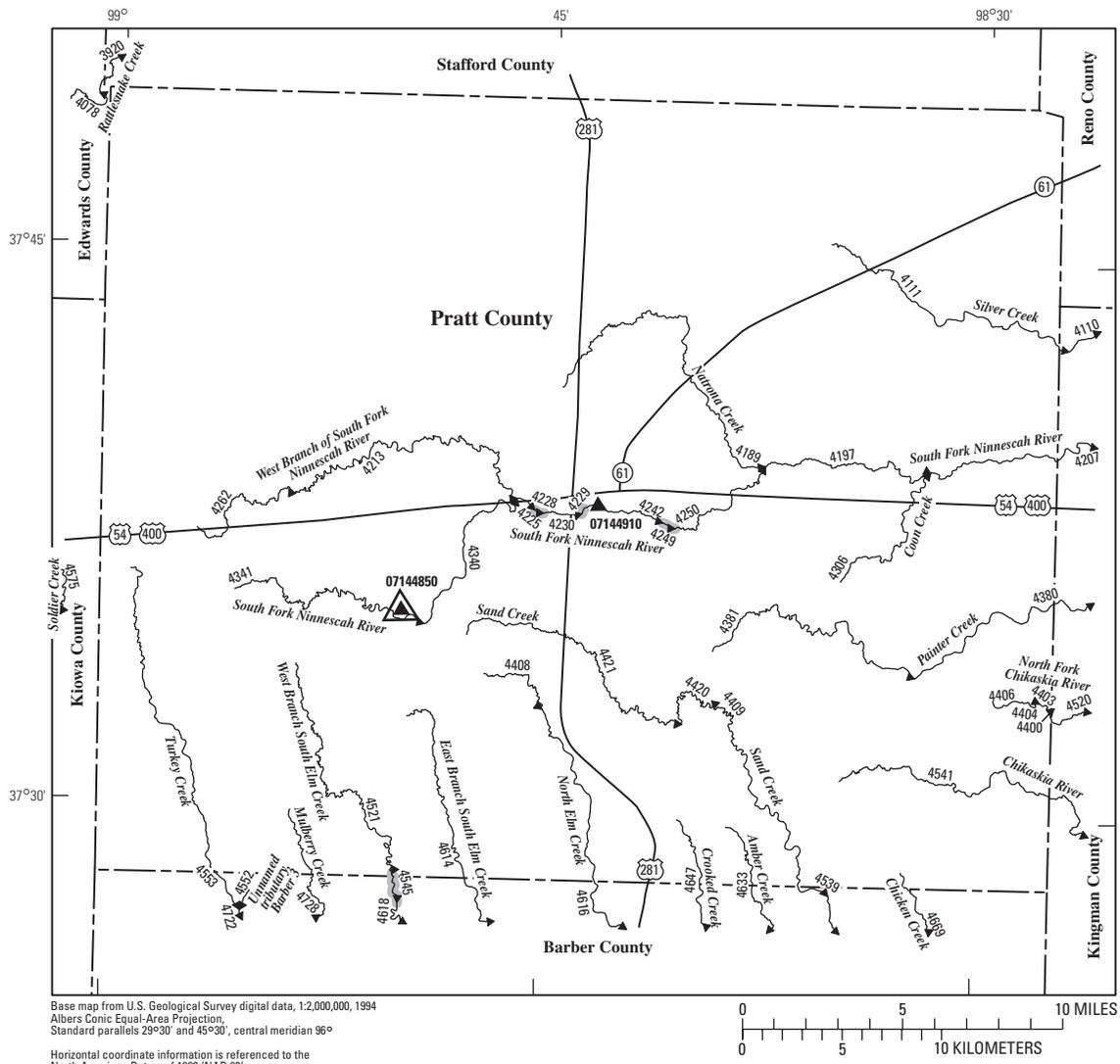
Determination site identification number (fig. 85)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1694	1027010214	PT	SN					Kansas River	54,500	961
1700	1027010263	PT	SN			Bourbonais Creek	22.9	0	1.36	4.32	10.7	24.7
1709	1027010271	PT	WB			Turkey Creek	25.8	0	.49	2.89	8.49	22.4
1757	1027010267	PT	WB			Antelope Creek	21.8	0	.97	3.46	8.71	20.7
5415	1027010224	PT				Kansas River	53,900	846	1,360	2,720	6,340	13,600

**Table 81.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pottawatomie County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

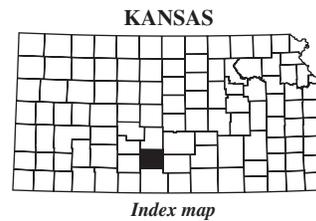
Determination site identification number (fig. 85)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1694	7,120	34,000	60,400	83,000	117,000	150,000	186,000
1700	16.5	1,800	3,980	5,900	8,860	11,300	14,200
1709	16.5	1,880	4,190	6,230	9,390	12,000	15,100
1757	14.2	1,620	3,650	5,450	8,220	10,600	13,300
5415	5,650	28,600	54,500	78,400	108,000	156,000	202,000





**EXPLANATION**

- ← 4614 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07144910 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07144850 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4545 Lake and determination site identification number



**Figure 86.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Pratt County.

**500 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 82.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pratt County.

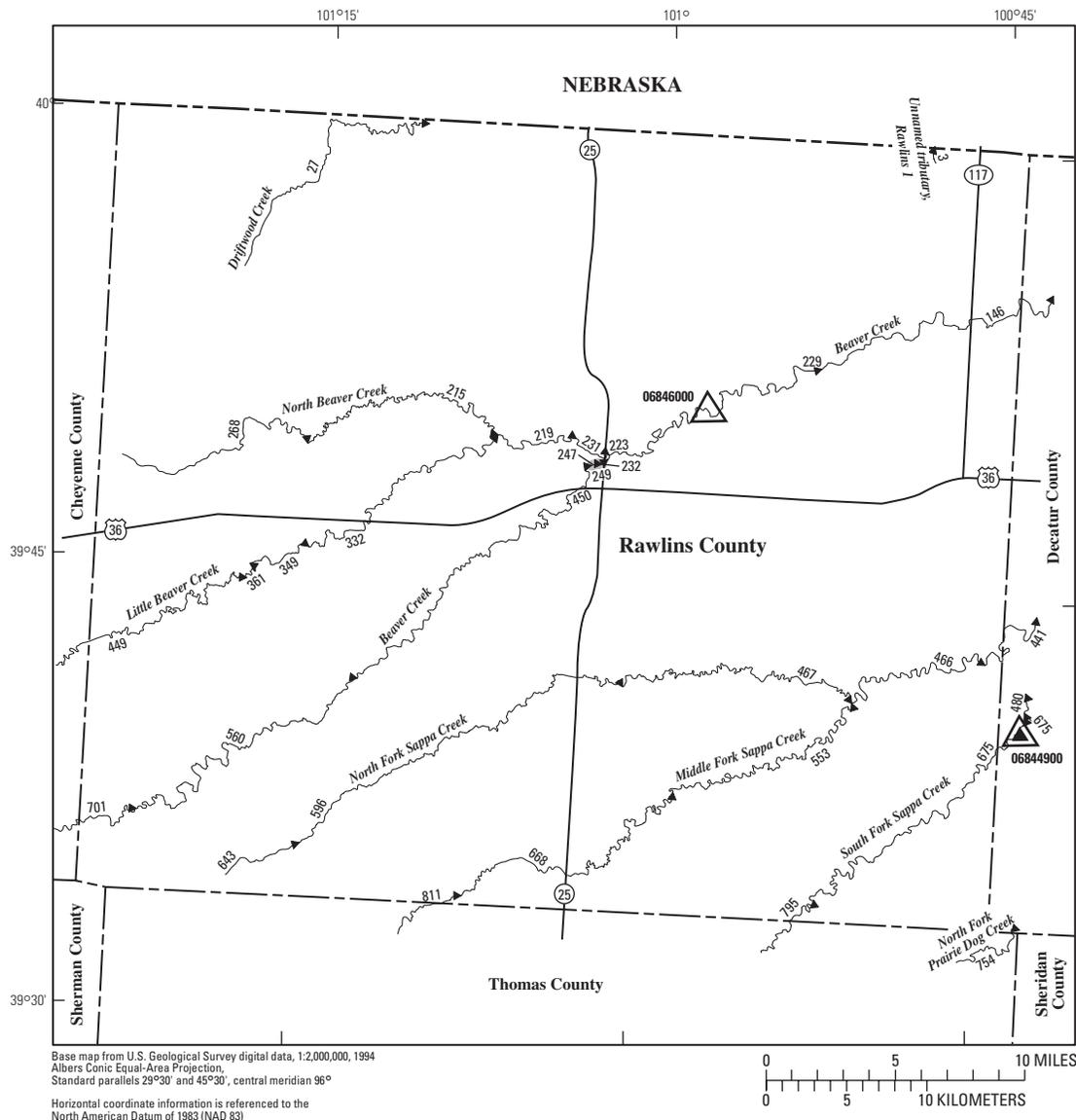
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 86)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
4189	11030015307	PR				Natrona Creek	71.4	0.91	2.17	3.27	5.07	9.25
4197	110300154	PR				South Fork Ninnescah River	261	18.3	26.2	34.3	46.5	67.3
4213	110300155	PR				West Branch of South Fork Ninnescah River	103	3.36	5.11	6.30	7.93	11.5
4225	110300154	PR				South Fork Ninnescah River	141	5.37	7.67	9.64	12.1	16.9
4228	HYDRO	PR				HYDRO	142	NA	NA	NA	NA	NA
4229	HYDRO	PR				HYDRO	146	NA	NA	NA	NA	NA
4230	110300154	PR				South Fork Ninnescah River	145	5.53	7.90	9.98	12.6	17.7
4242	110300154	PR				South Fork Ninnescah River	157	6.00	8.60	11.0	14.0	20.0
4249	HYDRO	PR				HYDRO	159	NA	NA	NA	NA	NA
4250	110300154	PR				South Fork Ninnescah River	170	7.54	10.9	14.1	18.4	26.5
4262	110300155	PR				West Branch of South Fork Ninnescah River	39.7	.92	1.00	1.20	1.46	1.93
4306	110300159	PR				Coon Creek	15.3	.03	.04	.05	.06	.09
4340	110300156	PR				South Fork Ninnescah River	36.5	.40	.42	.95	1.12	2.28
4341	110300156	PR				South Fork Ninnescah River	23.1	0	0	0	0	0
4381	110300157	PR				Painter Creek	27.6	.10	.14	.45	.51	1.52
4400	1106000537	PR				North Fork Chikaskia River	6.36	0	0	0	0	.01
4403	1106000537	PR				North Fork Chikaskia River	6.38	0	0	0	0	.01
4404	1106000537	PR				North Fork Chikaskia River	6.38	0	0	0	0	.01
4406	1106000537	PR				North Fork Chikaskia River	6.36	0	0	0	0	.01
4408	110600034	PR				North Elm Creek	7.13	0	0	0	0	0
4409	1106000511	PR				Sand Creek	28.4	.01	.02	.04	.09	.27
4420	1106000511	PR				Sand Creek	28.3	.01	.02	.04	.09	.27
4421	1106000511	PR				Sand Creek	23.4	.01	.02	.03	.06	.13
4521	110600039005	PR				West Branch South Elm Creek	25.4	0	.02	.02	.02	.21

**Table 82.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Pratt County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

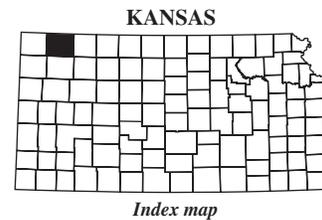
Determination site identification number (fig. 86)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4189	8.88	927	2,250	3,500	5,450	7,190	9,120
4197	53.5	2,600	5,540	8,010	11,600	14,700	17,900
4213	11.4	873	2,110	3,260	5,070	6,650	8,420
4225	16.9	1,520	3,110	4,430	6,300	7,890	9,510
4228	NA	NA	NA	NA	NA	NA	NA
4229	NA	NA	NA	NA	NA	NA	NA
4230	17.6	1,570	3,230	4,610	6,560	8,210	9,910
4242	19.3	1,690	3,500	5,000	7,150	8,970	10,900
4249	NA	NA	NA	NA	NA	NA	NA
4250	23.9	1,790	3,740	5,360	7,690	9,660	11,700
4262	3.27	417	1,070	1,710	2,720	3,620	4,630
4306	1.58	635	1,690	2,720	4,390	5,850	7,580
4340	4.67	575	1,050	1,440	1,960	2,430	2,860
4341	2.63	712	1,500	2,190	3,240	4,150	5,160
4381	3.00	871	2,370	3,830	6,240	8,380	10,900
4400	.01	404	1,040	1,650	2,620	3,470	4,460
4403	.01	405	1,050	1,650	2,630	3,480	4,470
4404	.01	405	1,050	1,650	2,630	3,480	4,470
4406	.01	404	1,040	1,650	2,620	3,470	4,460
4408	0	380	1,010	1,630	2,620	3,500	4,520
4409	2.28	858	2,350	3,820	6,250	8,390	10,900
4420	2.28	857	2,350	3,820	6,240	8,390	10,900
4421	1.68	765	2,090	3,390	5,530	7,430	9,660
4521	2.07	776	2,140	3,490	5,710	7,680	10,000





**EXPLANATION**

- ← 701 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06844900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06846000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 249 Lake and determination site identification number



**Figure 86.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Rawlins County.

**504 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

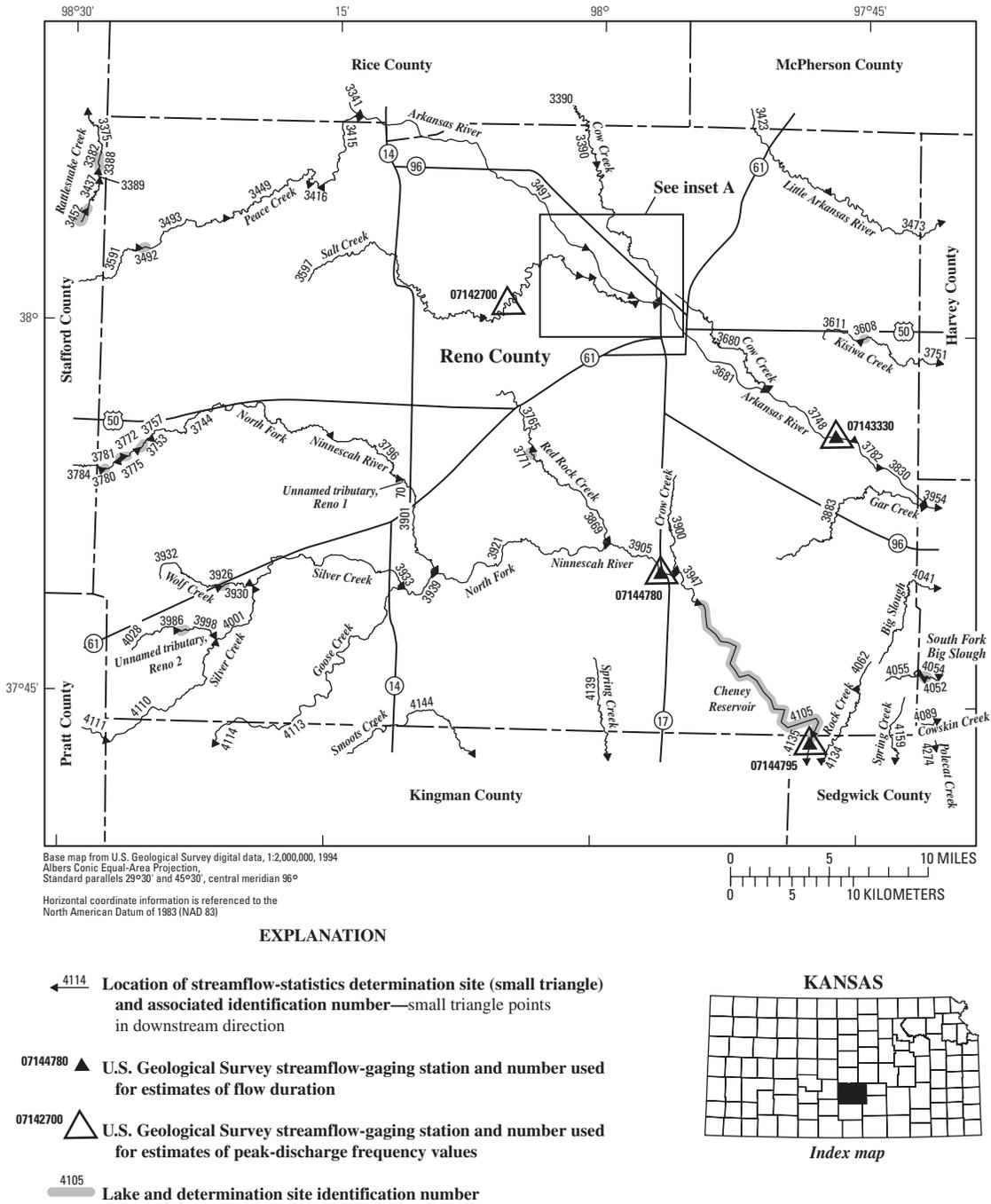
**Table 83.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rawlins County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

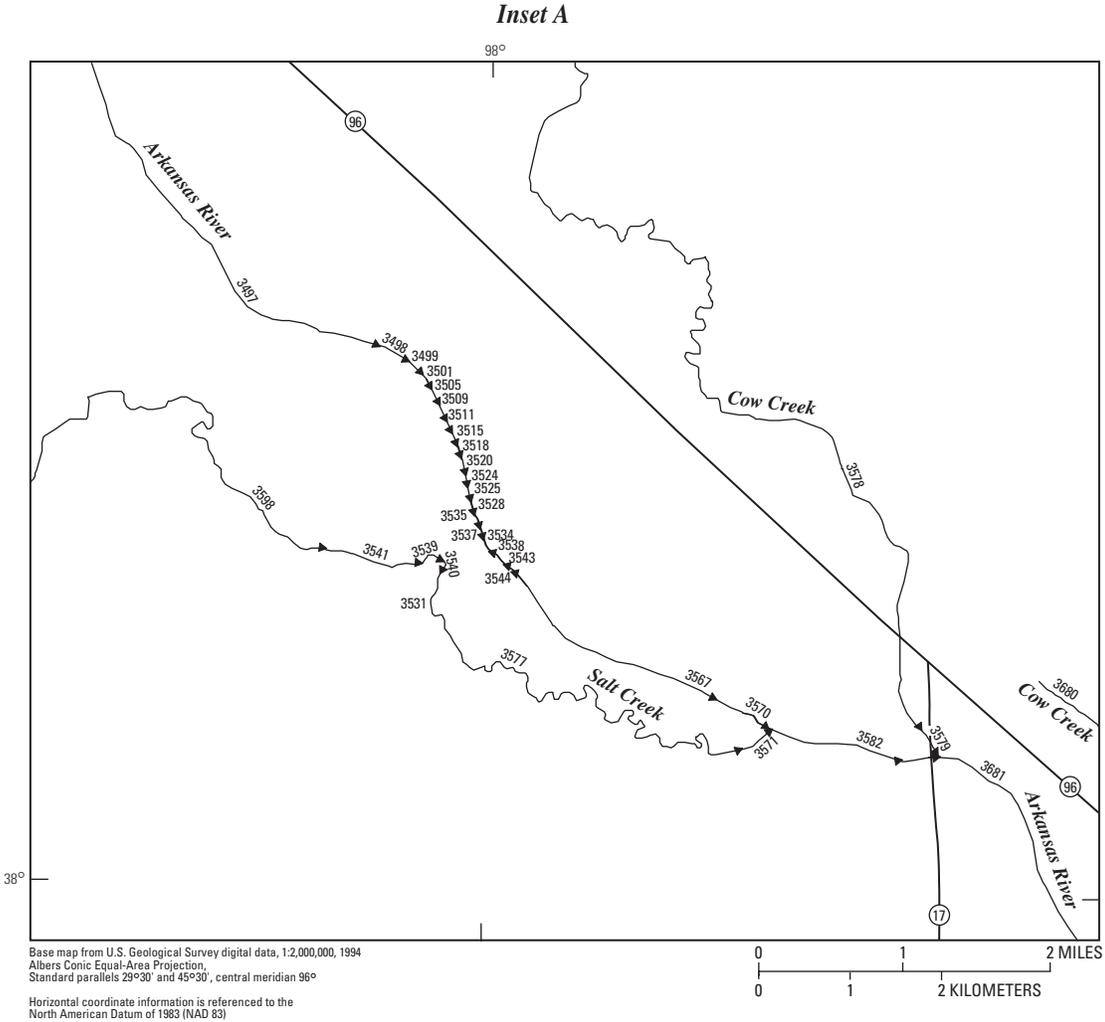
Determination site identification number (fig. 87)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3	1025000464	RA						Unnamed tributary, Rawlins 1	8.00	0	0
27	1025000459	RA				Driftwood Creek	96.3	.02	.16	.38	.52	.86	
215	102500132	RA				North Beaver Creek	146	0	0	0	0	1.50	
219	102500131	RA				Little Beaver Creek	687	0	0	0	.87	5.34	
223	102500131	RA				Little Beaver Creek	690	0	0	0	.92	5.45	
229	102500142	RA				Beaver Creek	1,470	0	0	0	2.65	14.2	
231	102500131	RA				Little Beaver Creek	690	0	0	0	.92	5.45	
232	102500121	RA				Beaver Creek	682	0	0	0	0	1.68	
247	102500121	RA				Beaver Creek	682	0	0	0	0	1.67	
249	HYDRO	RA				HYDRO	681	NA	NA	NA	NA	NA	
268	102500132	RA				North Beaver Creek	83.5	0	0	0	0	0	
332	102500133	RA				Little Beaver Creek	522	0	0	0	0	0.73	
349	102500133	RA				Little Beaver Creek	491	0	0	0	0	0	
361	102500133	RA				Little Beaver Creek	479	0	0	0	0	0	
450	102500121	RA				Beaver Creek	681	0	0	0	0	1.63	
466	102500101	RA				Middle Fork Sappa Creek	543	0	0	0	1.41	6.04	
467	102500102	RA				North Fork Sappa Creek	157	0	0	0	0	.96	
553	102500103	RA				Middle Fork Sappa Creek	348	0	0	0	0	.69	
560	102500121	RA				Beaver Creek	621	0	0	0	0	0	
596	102500102	RA				North Fork Sappa Creek	98.4	0	0	0	0	0	
643	102500102	RA				North Fork Sappa Creek	26.6	0	0	0	0	0	
668	102500103	RA				Middle Fork Sappa Creek	311	0	0	0	0	0	
795	102500104	RA	TH			South Fork Sappa Creek	352	0	0	0	0	.35	
811	102500103	RA	TH			Middle Fork Sappa Creek	251	0	0	0	0	0	

**Table 83.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rawlins County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 87)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3	0	236	721	1,230	2,080	2,870	3,800
27	2.96	535	1,650	2,870	5,010	7,080	9,550
215	3.94	768	2,250	3,850	6,580	9,210	12,300
219	6.96	775	2,390	4,210	7,470	10,700	14,600
223	7.04	781	2,410	4,230	7,500	10,700	14,700
229	9.18	440	1,110	1,780	2,920	4,000	5,300
231	7.04	781	2,410	4,230	7,500	10,700	14,700
232	3.66	542	1,810	3,310	6,080	8,890	12,400
247	3.66	542	1,810	3,310	6,070	8,880	12,400
249	NA	NA	NA	NA	NA	NA	NA
268	1.30	641	1,880	3,200	5,450	7,590	10,100
332	3.29	579	1,910	3,460	6,300	9,150	12,700
349	2.49	519	1,750	3,210	5,890	8,620	12,000
361	2.20	501	1,700	3,130	5,770	8,450	11,800
450	3.63	541	1,810	3,300	6,070	8,870	12,400
466	8.44	804	2,540	4,520	8,110	11,700	16,100
467	3.58	632	1,940	3,390	5,930	8,410	11,400
553	3.83	587	1,940	3,510	6,390	9,290	12,900
560	2.19	476	1,650	3,050	5,690	8,380	11,800
596	1.26	470	1,490	2,620	4,630	6,600	8,950
643	0	360	1,200	2,130	3,780	5,310	7,180
668	2.75	526	1,770	3,230	5,910	8,610	11,900
795	2.06	273	1,030	2,020	4,080	6,360	9,410
811	1.41	425	1,470	2,720	5,040	7,400	10,300



**Figure 88.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Reno County.



**EXPLANATION**

- ← 3577 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction

**Figure 88.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Reno County.—Continued

**508 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 88)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		70	11030014999	RN						Unnamed tributary, Reno 1	0.25	0	0
3390	110300111	RN	RC			Cow Creek	849	5.74	10.9	20.6	47.1	173	
3415	110300106	RN	RC			Peace Creek	174	3.10	4.69	6.59	11.2	22.4	
3416	110300106	RN				Peace Creek	160	2.90	4.31	5.91	9.88	19.6	
3449	110300106	RN				Peace Creek	157	2.84	4.21	5.75	9.58	19.0	
3492	HYDRO	RN				HYDRO	93.9	NA	NA	NA	NA	NA	NA
3493	110300106	RN				Peace Creek	128	1.88	2.88	3.92	6.51	13.1	
3497	110300104	RN	RC			Arkansas River	35,200	72.9	118	219	425	941	
3498	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3499	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3501	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3505	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3509	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3511	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3515	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3518	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3520	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3524	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3525	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3528	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3531	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3534	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3535	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3537	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3538	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3539	110300107	RN				Salt Creek	114	2.04	2.98	4.69	8.93	19.9	
3540	110300107	RN				Salt Creek	114	2.04	2.98	4.69	8.93	19.9	
3541	110300107	RN				Salt Creek	114	2.04	2.98	4.69	8.93	19.9	
3543	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3544	110300104	RN				Arkansas River	35,200	72.9	118	219	425	941	
3567	110300104	RN				Arkansas River	35,200	73.0	118	219	426	941	
3570	110300103	RN				Arkansas River	35,200	73.0	118	219	426	941	
3571	110300107	RN				Salt Creek	130	2.24	3.34	5.41	10.5	23.6	
3577	110300107	RN				Salt Creek	130	2.24	3.34	5.41	10.5	23.6	
3578	110300111	RN				Cow Creek	886	6.67	12.5	23.5	52.7	185	
3579	110300101	RN				Arkansas River	35,300	75.6	122	226	436	963	
3582	110300103	RN				Arkansas River	35,300	75.6	122	226	436	963	
3591	110300106	RN	SF			Peace Creek	93.1	.69	1.34	1.95	3.24	7.00	

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 88)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
70	0	60	145	222	342	445	562
3390	103	2,150	5,090	7,960	12,700	17,200	22,700
3415	18.7	902	2,260	3,580	5,700	7,600	9,770
3416	16.7	854	2,140	3,400	5,410	7,210	9,270
3449	16.2	849	2,130	3,380	5,370	7,160	9,190
3492	NA	NA	NA	NA	NA	NA	NA
3493	12.1	735	1,880	3,010	4,820	6,460	8,320
3497	453	4,020	8,460	15,400	22,100	28,700	35,800
3498	453	4,020	8,460	15,400	22,100	28,700	35,800
3499	453	4,020	8,460	15,400	22,100	28,700	35,800
3501	453	4,020	8,460	15,400	22,100	28,700	35,800
3505	453	4,020	8,460	15,400	22,100	28,700	35,800
3509	453	4,020	8,460	15,400	22,100	28,700	35,800
3511	453	4,020	8,460	15,400	22,100	28,700	35,800
3515	453	4,020	8,460	15,400	22,100	28,700	35,800
3518	453	4,020	8,460	15,400	22,100	28,700	35,800
3520	453	4,020	8,460	15,400	22,100	28,700	35,800
3524	453	4,020	8,460	15,400	22,100	28,700	35,800
3525	453	4,020	8,460	15,400	22,100	28,700	35,800
3528	453	4,020	8,460	15,400	22,100	28,700	35,800
3531	453	4,020	8,460	15,400	22,100	28,700	35,800
3534	453	4,020	8,460	15,400	22,100	28,700	35,800
3535	453	4,020	8,460	15,400	22,100	28,700	35,800
3537	453	4,020	8,460	15,400	22,100	28,700	35,800
3538	453	4,020	8,460	15,400	22,100	28,700	35,800
3539	17.5	1,150	2,170	2,960	4,090	5,000	5,970
3540	17.5	1,150	2,170	2,960	4,090	5,000	5,970
3541	17.5	1,150	2,170	2,960	4,090	5,000	5,980
3543	453	4,020	8,460	15,400	22,100	28,700	35,800
3544	453	4,020	8,460	15,400	22,100	28,700	35,800
3567	453	4,020	8,460	15,400	22,100	28,700	35,800
3570	453	4,020	8,460	15,400	22,100	28,700	35,800
3571	20.3	1,230	2,350	3,250	4,540	5,610	6,760
3577	20.3	1,230	2,350	3,250	4,540	5,610	6,760
3578	110	2,210	5,200	8,100	12,900	17,400	22,800
3579	463	4,060	8,490	15,400	22,100	28,700	35,800
3582	463	4,060	8,490	15,400	22,100	28,700	35,800
3591	7.79	566	1,520	2,480	4,050	5,490	7,140

**510 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 88)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3597	110300107	RN						Salt Creek	85.3	1.73
3598	110300107	RN				Salt Creek	114	2.03	2.96	4.66	8.87	19.8
3608	HYDRO	RN				HYDRO	23.9	NA	NA	NA	NA	NA
3611	1103001215	RN				Kisiwa Creek	23.9	1.72	1.84	2.16	3.08	5.98
3680	110300111755	RN				Cow Creek	30.3	1.12	1.13	1.48	2.31	5.24
3681	110300101	RN				Arkansas River	36,200	93.8	151	272	507	1,120
3744	110300146	RN				North Fork Ninescah River	304	7.68	13.4	19.6	31.6	55.1
3748	110300101	RN				Arkansas River	36,300	95.0	153	275	512	1,130
3753	110300146	RN				North Fork Ninescah River	221	4.52	7.88	11.2	18.3	32.2
3757	HYDRO	RN				HYDRO	218	NA	NA	NA	NA	NA
3765	1103001412	RN				Red Rock Creek	37.7	.15	.34	.85	1.65	4.73
3771	HYDRO	RN				HYDRO	41.1	NA	NA	NA	NA	NA
3772	110300146	RN				North Fork Ninescah River	215	4.32	7.53	10.7	17.4	30.8
3775	HYDRO	RN				HYDRO	211	NA	NA	NA	NA	NA
3780	HYDRO	RN				HYDRO	203	NA	NA	NA	NA	NA
3781	110300146	RN				North Fork Ninescah River	209	4.10	7.18	10.2	16.6	29.3
3782	110300101	RN				Arkansas River	36,300	94.3	153	276	514	1,130
3784	110300146	RN	SF			North Fork Ninescah River	203	3.91	6.83	9.69	15.8	28.0
3796	110300146	RN				North Fork Ninescah River	334	8.60	15.1	22.4	36.5	64.2
3830	110300101	RN	SG			Arkansas River	36,300	92.8	152	277	518	1,130
3869	1103001412	RN				Red Rock Creek	67.9	.62	1.64	3.22	6.65	15.4
3883	110300108	RN	SG			Gar Creek	52.4	0	.82	2.90	7.39	18.9
3900	1103001411	RN				Crow Creek	38.4	0	.76	2.23	4.97	11.9
3901	110300146	RN				North Fork Ninescah River	356	9.35	16.6	25.0	40.9	72.2
3905	110300145	RN				North Fork Ninescah River	760	24.0	47.0	76.0	126	222
3921	110300145	RN				North Fork Ninescah River	681	20.7	40.0	64.0	106	186
3926	HYDRO	RN				HYDRO	32.6	NA	NA	NA	NA	NA
3930	110300149	RN				Wolf Creek	36.6	1.30	1.91	2.27	3.06	5.46
3932	110300149	RN				Wolf Creek	32.3	1.35	1.83	2.03	2.54	4.40
3933	110300147	RN				Silver Creek	213	4.63	8.72	14.0	24.4	46.6
3939	110300147	RN				Silver Creek	276	5.86	11.4	19.1	34.3	66.4
3947	110300145	RN				North Fork Ninescah River	807	24.9	49.3	81.3	136	244
3986	HYDRO	RN				HYDRO	26.7	NA	NA	NA	NA	NA
3998	11030014289	RN				Unnamed tributary, Reno 2	29.8	1.55	1.90	1.94	2.25	3.73
4001	110300147	RN				Silver Creek	136	2.58	4.85	7.49	13.0	25.0
4028	11030014289	RN				Unnamed tributary, Reno 2	26.1	1.50	1.55	1.64	1.73	2.76
4041	110300109011	RN	SG			Big Slough	32.4	0	.62	2.02	4.73	11.7
4055	110300109035	RN	SG			South Fork Big Slough	4.17	0	0	0	0	0

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 88)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3597	12.7	1,080	2,220	3,190	4,620	5,830	7,130
3598	17.4	1,150	2,160	2,950	4,070	4,980	5,950
3608	NA	NA	NA	NA	NA	NA	NA
3611	5.70	1,200	2,940	4,560	7,130	9,350	11,900
3680	5.83	496	1,270	2,030	3,240	4,320	5,540
3681	536	4,330	8,730	15,500	22,000	28,500	35,500
3744	40.5	1,690	4,460	7,350	12,400	17,400	23,500
3748	541	4,350	8,740	15,500	22,000	28,500	35,500
3753	25.5	1,300	3,380	5,510	9,140	12,600	16,800
3757	NA	NA	NA	NA	NA	NA	NA
3765	6.10	956	2,290	3,550	5,520	7,260	9,200
3771	NA	NA	NA	NA	NA	NA	NA
3772	24.5	1,300	3,360	5,460	9,020	12,400	16,500
3775	NA	NA	NA	NA	NA	NA	NA
3780	NA	NA	NA	NA	NA	NA	NA
3781	23.5	1,230	3,210	5,230	8,660	11,900	15,900
3782	546	4,440	9,030	15,700	22,300	28,900	36,000
3784	22.6	1,220	3,170	5,150	8,500	11,700	15,500
3796	46.6	1,850	4,910	8,130	13,800	19,500	26,400
3830	555	4,630	9,610	16,100	22,900	29,700	36,900
3869	13.7	1,460	3,380	5,160	7,920	10,400	13,100
3883	15.5	1,310	3,170	4,950	7,780	10,300	13,200
3900	10.1	1,250	2,920	4,480	6,890	9,010	11,400
3901	51.8	1,950	5,230	8,710	14,900	21,000	28,700
3905	147	3,990	12,300	21,900	40,400	59,900	85,200
3921	125	3,530	10,600	18,800	34,200	50,500	71,400
3926	NA	NA	NA	NA	NA	NA	NA
3930	5.47	760	1,770	2,700	4,120	5,360	6,720
3932	4.65	704	1,640	2,500	3,800	4,940	6,180
3933	34.4	1,680	4,140	6,570	10,600	14,500	19,000
3939	47.7	2,150	5,320	8,510	13,900	19,100	25,300
3947	159	4,240	12,800	22,600	41,400	61,100	86,700
3986	NA	NA	NA	NA	NA	NA	NA
3998	4.14	1,010	2,690	4,320	6,990	9,330	12,100
4001	19.9	1,240	3,040	4,790	7,640	10,300	13,300
4028	3.43	929	2,470	3,960	6,390	8,530	11,100
4041	10.1	1,150	2,720	4,190	6,480	8,510	10,700
4055	.58	450	1,060	1,600	2,450	3,180	4,010

**512 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

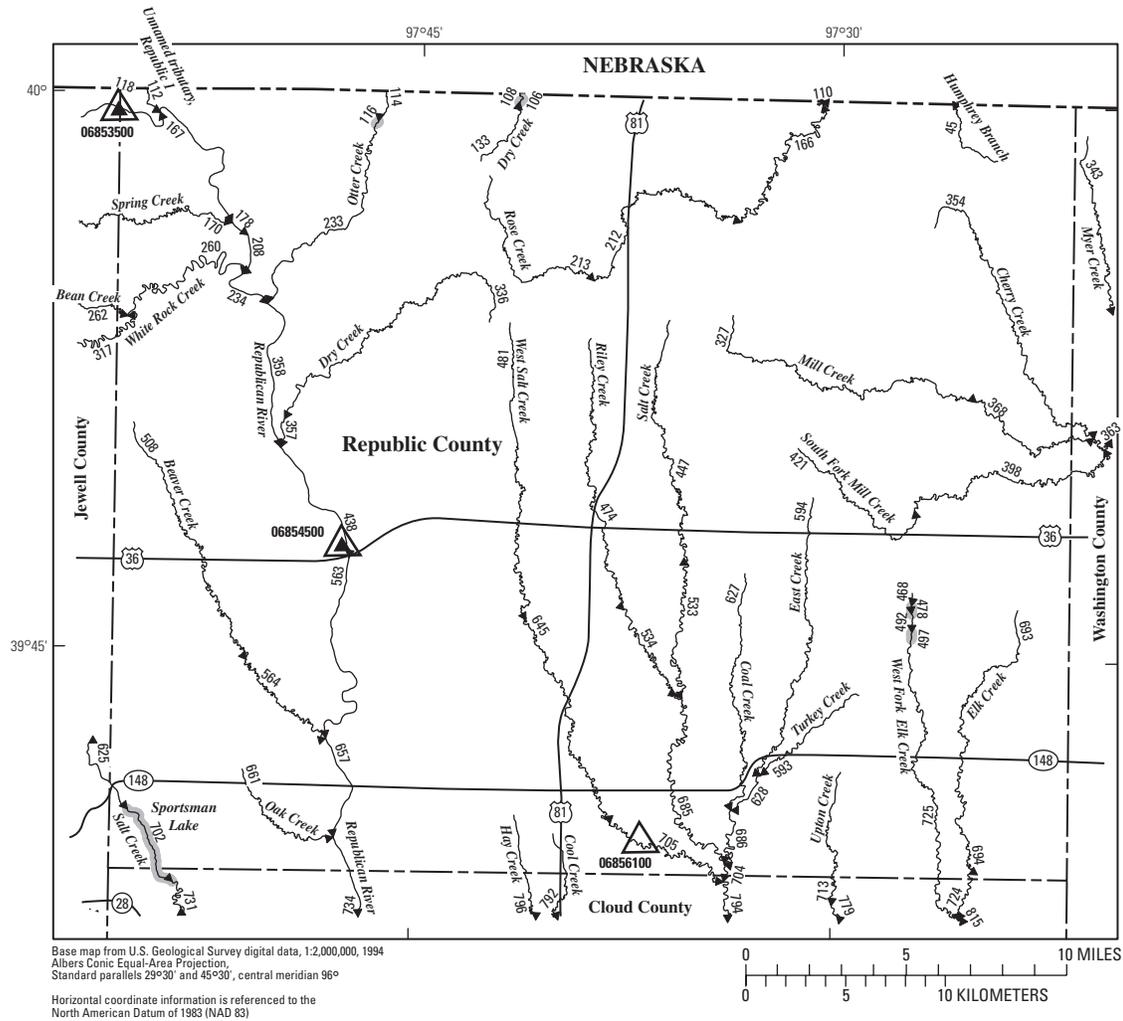
Determination site identification number (fig. 88)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90	75	50	25	10
								percent	percent	percent	percent	percent
4062	1103001413	RN				Rock Creek	11.2	0	0	0	0.25	2.15
4105	HYDRO	RN				HYDRO	858	NA	NA	NA	NA	NA
4134	1103001413	RN	SG			Rock Creek	19.7	0	0	.94	2.40	6.59
4135	110300141	RN	SG			North Fork Ninnescah River	863	.16	.24	.48	75.0	381
4159	1103001414	RN	SG			Spring Creek	12.1	0	.02	.55	1.01	2.88

**Table 84.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Reno County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

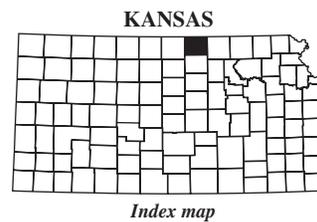
Determination site identification number (fig. 88)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4062	3.20	786	1,890	2,910	4,500	5,860	7,440
4105	NA	NA	NA	NA	NA	NA	NA
4134	6.23	1,080	2,640	4,090	6,380	8,340	10,600
4135	121	1,080	2,080	2,750	3,560	4,110	4,620
4159	3.40	809	1,960	3,010	4,680	6,100	7,760





**EXPLANATION**

- ← 731 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06854500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06856100 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 702 Lake and determination site identification number



**Figure 89.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Republic County.

**516 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 85.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Republic County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 89)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		45	1027020724	RP						Humphrey Branch	11.6	0	0
106	1027020641	RP				Dry Creek	12.9	0	0	0		.01	.14
108	HYDRO	RP				HYDRO	10.4	NA	NA	NA	NA	NA	NA
110	1027020712	RP				Rose Creek	74.6	.06	.86	3.39	9.19	24.2	
112	1025001686	RP				Unnamed tributary, Republic 1	10.8	0	0	.03	.07	.82	
114	1025001679	RP				Otter Creek	12.7	0	0	0	0		.18
116	HYDRO	RP				HYDRO	14.3	NA	NA	NA	NA	NA	NA
133	1027020641	RP				Dry Creek	10.4	0	0	0	0		.01
166	1027020712	RP				Rose Creek	68.0	.05	.72	3.02	8.20	21.7	
167	102500162	RP				Republican River	20,600	66.0	112	171	319	748	
178	102500162	RP				Republican River	20,600	68.1	114	174	328	762	
208	102500161	RP				Republican River	20,600	68.2	114	174	328	762	
212	1027020712	RP				Rose Creek	43.1	.02	.18	1.64	4.51	12.3	
213	1027020712	RP				Rose Creek	15.2	0	0	.01	.24	1.93	
233	1025001679	RP				Otter Creek	36.0	0	0	.84	2.34	6.91	
234	102500161	RP				Republican River	21,000	109	147	230	494	1,030	
260	1025001641	RP				White Rock Creek	383	.30	.41	.68	1.63	57.1	
327	1027020722	RP				Mill Creek	37.6	.01	.12	1.56	4.45	12.5	
336	1025001680	RP				Dry Creek	29.5	0	.39	1.56	3.43	8.26	
354	1027020725	RP	WS			Cherry Creek	34.8	.01	.10	1.44	3.99	11.2	
357	1025001680	RP				Dry Creek	30.4	0	.48	1.68	3.64	8.60	
358	102500161	RP				Republican River	21,100	115	151	237	515	1,070	
368	1027020722	RP	WS			Mill Creek	43.2	.01	.33	2.04	5.66	15.4	
398	1027020731	RP	WS			South Fork Mill Creek	39.8	.01	.57	2.54	6.61	16.9	
421	1027020731	RP				South Fork Mill Creek	16.2	0	0	.25	.82	3.34	
438	102500161	RP				Republican River	21,100	120	155	244	537	1,100	
447	1025001723	RP				Salt Creek	24.8	0	.04	1.25	3.32	8.94	
468	1025001716	RP				West Fork Elk Creek	4.10	0	0	0	0	0	
474	1025001724	RP				Riley Creek	23.1	0	0	.96	2.63	7.47	
478	HYDRO	RP				HYDRO	5.00	NA	NA	NA	NA	NA	
481	1025001725	RP				West Salt Creek	36.4	0	0	1.03	3.07	9.13	
492	1025001716	RP				West Fork Elk Creek	6.53	0	0	.20	.21	1.09	
497	HYDRO	RP				HYDRO	6.82	NA	NA	NA	NA	NA	
508	1025001745	RP				Beaver Creek	36.4	0	0	.20	1.02	4.39	
533	1025001723	RP				Salt Creek	31.5	0	.28	1.87	4.91	12.7	
534	1025001724	RP				Riley Creek	29.6	0	.13	1.50	4.02	10.7	
563	1025001728	RP				Republican River	21,200	120	156	246	539	1,110	
564	1025001745	RP				Beaver Creek	46.5	0	0	.67	2.25	7.39	

**Table 85.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Republic County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 89)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
45	2.59	748	1,830	2,830	4,420	5,780	7,360
106	2.03	750	1,870	2,910	4,580	6,010	7,680
108	NA	NA	NA	NA	NA	NA	NA
110	19.7	1,350	3,410	5,440	8,720	11,700	15,100
112	1.92	601	1,540	2,420	3,830	5,060	6,500
114	1.94	704	1,780	2,790	4,400	5,800	7,420
116	NA	NA	NA	NA	NA	NA	NA
133	1.41	659	1,640	2,550	3,990	5,240	6,680
166	17.9	1,270	3,230	5,160	8,300	11,200	14,400
167	341	5,020	8,620	11,700	15,200	17,900	20,600
178	346	5,080	8,700	12,200	16,000	19,100	22,100
208	346	5,080	8,700	12,300	16,000	19,100	22,200
212	11.1	1,010	2,590	4,160	6,710	9,030	11,700
213	3.24	851	2,110	3,280	5,150	6,760	8,630
233	7.27	1,190	2,920	4,560	7,170	9,500	12,100
234	456	6,170	10,300	22,200	31,900	41,500	51,500
260	34.1	472	1,320	2,300	3,820	5,160	6,480
327	10.9	1,400	3,330	5,160	8,040	10,600	13,500
336	7.39	1,200	3,040	4,790	7,600	10,000	12,900
354	9.92	1,350	3,210	4,960	7,710	10,200	12,900
357	7.60	965	2,350	3,670	5,730	7,570	9,610
358	469	6,310	10,500	23,500	33,900	44,300	55,200
368	12.8	1,380	3,320	5,160	8,070	10,700	13,600
398	13.3	1,380	3,270	5,040	7,830	10,300	13,100
421	4.23	958	2,330	3,590	5,600	7,310	9,310
438	484	6,450	10,700	24,800	36,000	47,200	59,000
447	7.98	1,240	3,040	4,710	7,360	9,630	12,300
468	.70	428	1,010	1,540	2,370	3,070	3,880
474	7.09	1,190	2,910	4,510	7,040	9,220	11,800
478	NA	NA	NA	NA	NA	NA	NA
481	9.02	1,110	2,740	4,350	7,010	9,500	12,400
492	1.86	556	1,330	2,030	3,140	4,080	5,170
497	NA	NA	NA	NA	NA	NA	NA
508	5.94	839	2,240	3,640	5,960	8,090	10,500
533	10.5	1,110	2,740	4,300	6,790	9,010	11,500
534	9.35	1,370	3,360	5,230	8,190	10,700	13,700
563	488	6,460	10,700	24,400	35,500	46,500	58,200
564	8.25	832	2,250	3,710	6,120	8,360	11,000

**518 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 85.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Republic County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

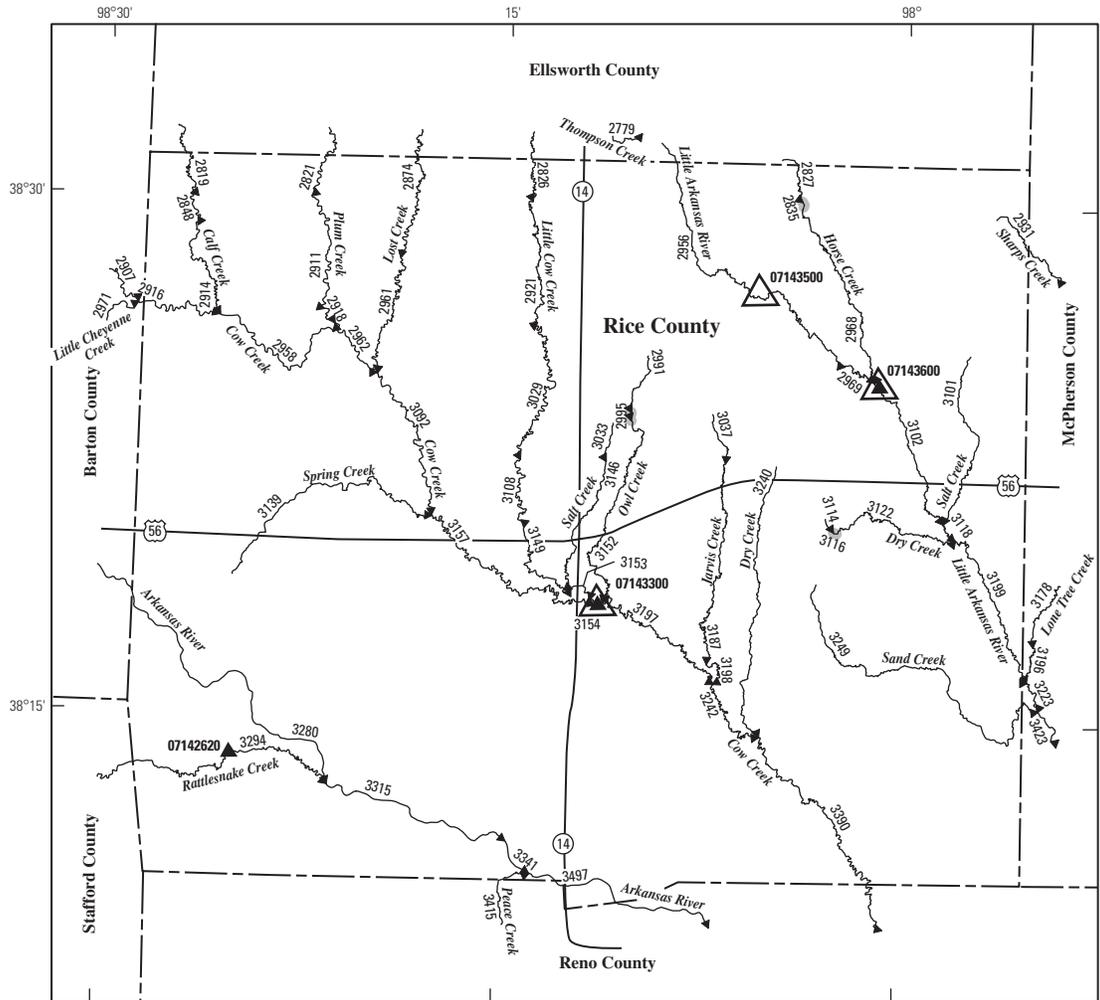
Determination site identification number (fig. 89)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		593	1025001751	RP						Turkey Creek	7.73	0
594	1025001721	RP				East Creek	18.7	0	.05	1.11	2.68	6.94
627	1025001747	RP				Coal Creek	14.6	0	.22	1.11	2.27	5.42
628	1025001721	RP				East Creek	28.3	0	.36	1.89	4.66	11.5
645	1025001725	RP				West Salt Creek	61.9	0	.53	2.65	7.34	19.6
657	1025001728	RP				Republican River	21,200	119	157	250	542	1,120
661	1025001748	RP				Oak Creek	16.7	0	0	.23	.65	2.55
685	1025001722	RP				Salt Creek	71.2	0	1.23	4.34	11.4	28.9
686	1025001721	RP				East Creek	46.6	0	1.00	3.41	8.34	20.0
693	1025001715	RP				Elk Creek	40.8	0	.54	2.54	6.61	16.7
694	1025001715	RP				Elk Creek	40.8	0	.55	2.55	6.62	16.8
704	1025001720	RP				Salt Creek	118	.02	2.44	7.65	19.9	50.2

**Table 85.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Republic County.—Continued

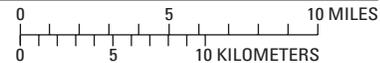
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 89)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
593	2.31	612	1,480	2,260	3,500	4,570	5,790
594	6.19	1,030	2,530	3,910	6,110	8,000	10,200
627	4.87	891	2,170	3,360	5,230	6,840	8,700
628	9.41	1,300	3,220	5,010	7,870	10,300	13,200
645	16.4	890	2,330	3,890	6,740	9,640	13,400
657	496	6,490	10,800	23,600	34,300	45,000	56,400
661	3.47	818	2,080	3,280	5,190	6,860	8,800
685	22.0	1,550	3,760	5,880	9,250	12,300	15,700
686	15.2	1,560	3,630	5,560	8,540	11,200	14,100
693	13.3	1,160	2,780	4,310	6,740	8,940	11,400
694	13.3	1,160	2,770	4,300	6,720	8,920	11,400
704	35.9	2,080	4,900	7,590	11,800	15,600	19,900



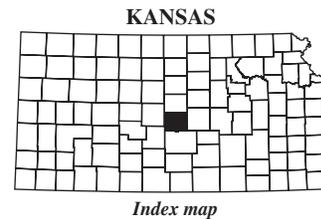


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 3294 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07142620 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07143300 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2995 Lake and determination site identification number



**Figure 90.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Rice County.

**522 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 86.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rice County.

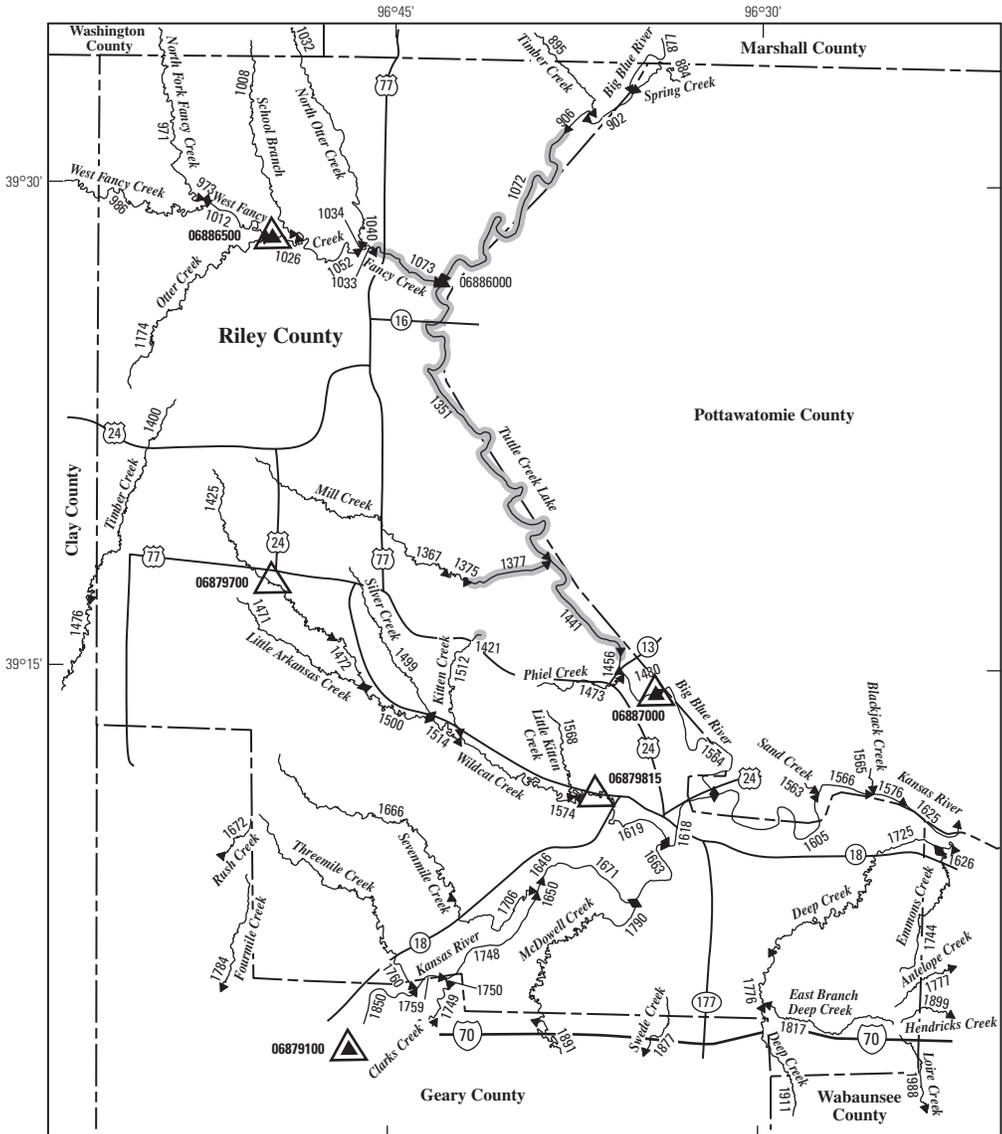
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 90)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2835	HYDRO	RC						HYDRO	23.8	NA
2848	1103001116	RC				Calf Creek	40.7	0	0	0	0.19	2.21
2911	110300114	RC				Plum Creek	66.1	0	0	.68	2.11	7.25
2914	1103001116	RC				Calf Creek	49.1	0	0	.06	.54	3.18
2918	110300114	RC				Plum Creek	66.7	0	0	.68	2.14	7.34
2921	110300112	RC				Little Cow Creek	37.7	0	0	0	.29	2.61
2958	110300115	RC				Cow Creek	417	.90	3.01	5.63	14.4	66.1
2961	1103001117	RC				Lost Creek	44.4	0	0	.04	.50	3.19
2962	110300113	RC				Cow Creek	487	1.33	3.70	6.94	17.9	81.7
2968	1103001219	RC				Horse Creek	46.7	0	0	.68	1.77	5.46
2969	1103001214	RC				Little Arkansas River	42.1	0	0	.48	1.40	4.76
2991	1103001118	RC				Owl Creek	11.6	0	0	0	0	0
2995	HYDRO	RC				HYDRO	11.8	NA	NA	NA	NA	NA
3029	110300112	RC				Little Cow Creek	53.4	0	0	.34	1.25	5.20
3033	1103001121	RC				Salt Creek	3.43	0	0	0	0	0
3037	1103001119	RC				Jarvis Creek	9.57	0	0	0	0	0
3092	110300113	RC				Cow Creek	547	1.74	4.29	8.04	20.7	95.0
3101	1103001221	RC				Salt Creek	21.6	0	0	0	.31	2.44
3102	1103001214	RC				Little Arkansas River	101	0	.20	.80	1.90	6.90
3108	110300112	RC				Little Cow Creek	60.2	0	0	.50	1.68	6.39
3114	1103001222	RC				Dry Creek	3.29	0	0	0	0	0
3116	HYDRO	RC				HYDRO	3.72	NA	NA	NA	NA	NA
3118	1103001214	RC				Little Arkansas River	123	0	.04	.65	2.61	15.1
3122	1103001222	RC				Dry Creek	15.7	0	0	0	0	1.16
3139	1103001120	RC				Spring Creek	47.8	0	.43	1.09	2.05	5.33
3146	1103001121	RC				Salt Creek	8.99	0	0	0	0	.01
3149	110300112	RC				Little Cow Creek	63.0	0	0	.55	1.81	6.80
3152	1103001118	RC				Owl Creek	25.0	0	0	0	0	1.36
3153	110300112	RC				Little Cow Creek	72.4	0	0	.76	2.40	8.45
3154	110300111	RC				Cow Creek	703	3.20	6.50	12.0	30.0	133
3157	110300113	RC				Cow Creek	630	2.65	5.68	10.5	26.1	116
3187	1103001119	RC				Jarvis Creek	23.8	0	0	.02	.26	2.03
3197	110300111	RC				Cow Creek	744	3.55	7.09	13.3	33.0	141
3198	1103001119	RC				Jarvis Creek	24.6	0	0	.04	.33	2.18
3240	1103001122	RC				Dry Creek	21.4	0	.29	.73	1.09	2.76
3242	110300111	RC				Cow Creek	781	3.89	7.68	14.6	36.1	149
3294	110300091	RC	SF			Rattlesnake Creek	1,270	2.20	4.20	24.0	59.0	104
3315	110300105	RC				Arkansas River	34,900	68.0	110	207	406	900
3341	110300104	RC				Arkansas River	34,900	68.1	110	207	406	901

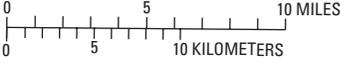
**Table 86.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rice County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 90)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2835	NA	NA	NA	NA	NA	NA	NA
2848	4.06	697	1,910	3,140	5,190	7,090	9,280
2911	8.20	834	1,730	2,530	3,810	4,960	6,290
2914	4.96	646	1,820	3,030	5,080	7,000	9,240
2918	8.27	815	1,690	2,480	3,730	4,870	6,180
2921	4.59	583	1,640	2,730	4,570	6,280	8,280
2958	42.5	1,470	3,630	5,750	9,280	12,600	16,600
2961	5.13	600	1,690	2,840	4,770	6,570	8,690
2962	51.3	1,610	3,960	6,290	10,200	13,900	18,300
2968	6.54	942	2,280	3,580	5,650	7,540	9,670
2969	6.04	926	1,370	1,660	2,030	2,300	2,560
2991	.72	613	1,580	2,490	3,960	5,230	6,720
2995	NA	NA	NA	NA	NA	NA	NA
3029	6.83	601	1,720	2,890	4,890	6,770	8,990
3033	0	302	757	1,180	1,850	2,430	3,110
3037	.59	560	1,430	2,240	3,550	4,690	6,020
3092	58.9	1,690	4,160	6,620	10,700	14,700	19,400
3101	3.87	938	2,410	3,800	6,050	8,010	10,300
3102	9.46	1,200	2,360	3,360	4,900	6,240	7,760
3108	7.84	644	1,830	3,080	5,190	7,190	9,530
3114	0	312	771	1,190	1,860	2,440	3,110
3116	NA	NA	NA	NA	NA	NA	NA
3118	16.2	1,460	3,030	4,440	6,640	8,600	10,800
3122	2.69	780	1,990	3,130	4,970	6,560	8,420
3139	6.06	801	2,010	3,170	5,020	6,670	8,530
3146	.45	529	1,350	2,130	3,380	4,470	5,730
3149	8.20	671	1,900	3,190	5,370	7,430	9,840
3152	3.27	962	2,510	4,000	6,400	8,510	11,000
3153	9.58	745	2,080	3,480	5,850	8,070	10,700
3154	79.6	1,940	4,690	7,420	12,000	16,400	21,700
3157	69.9	1,800	4,370	6,930	11,200	15,300	20,200
3187	3.62	953	2,470	3,930	6,280	8,330	10,700
3197	85.1	1,980	4,790	7,590	12,300	16,800	22,300
3198	3.76	974	2,530	4,010	6,420	8,520	11,000
3240	3.63	915	2,360	3,730	5,950	7,880	10,100
3242	90.4	2,070	5,010	7,930	12,800	17,500	23,200
3294	49.1	631	1,850	3,350	6,440	9,950	14,800
3315	433	3,940	8,400	15,400	22,100	28,800	35,900
3341	433	3,940	8,400	15,400	22,100	28,800	35,900



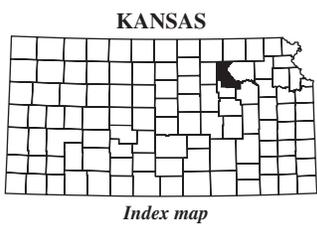


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 1672 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06887000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06879700 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1441 Lake and determination site identification number



**Figure 91.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Riley County.

526 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 87.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Riley County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 91)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		902	102702057	RL						Big Blue River	9,150	269
906	102702057	RL				Big Blue River	9,170	269	377	592	1,220	3,360
971	1027020561	RL	WS			North Fork Fancy Creek	35.2	0	.31	2.37	6.30	16.4
973	102702059029	RL				Fancy Creek	140	0	1.74	8.40	18.6	47.4
1008	1027020563	RL	WS			School Branch	20.6	0	.08	1.55	4.28	11.3
1012	102702059029	RL				Fancy Creek	143	0	1.78	8.65	19.2	48.8
1026	102702059029	RL				Fancy Creek	182	0	2.00	11.0	23.0	59.0
1032	1027020562	RL	WS			North Otter Creek	39.6	0	.38	2.82	8.42	22.7
1033	1027020529	RL				West Fancy Creek	256	.48	3.49	16.4	38.8	104
1034	1027020529	RL				West Fancy Creek	216	.22	2.72	13.6	30.5	80.3
1040	102702059029	RL				Fancy Creek	257	.48	3.51	16.5	39.1	105
1052	102702059029	RL				Fancy Creek	216	.22	2.72	13.6	30.5	80.3
1073	HYDRO	RL				HYDRO	263	NA	NA	NA	NA	NA
1174	1027020567	RL				Otter Creek	37.3	0	.15	2.29	6.65	18.2
1367	1027020531	RL				Mill Creek	40.8	0	.33	2.83	8.75	24.1
1375	1027020531	RL				Mill Creek	42.8	0	.41	3.10	9.53	26.1
1377	HYDRO	RL				HYDRO	48.1	NA	NA	NA	NA	NA
1421	HYDRO	RL				HYDRO	2.81	NA	NA	NA	NA	NA
1425	102701012	RL				Wildcat Creek	21.8	0	0	.97	3.25	9.87
1456	102702052	RL				Big Blue River	9,620	178	443	973	2,450	6,490
1471	1027010113	RL				Little Arkansas Creek	22.9	0	0	1.11	3.69	11.0
1472	102701012	RL				Wildcat Creek	24.2	0	0	1.17	3.85	11.5
1473	1027020568	RL				Phiel Creek	8.86	0	0	1.06	2.64	6.64
1499	1027010112	RL				Silver Creek	12.8	0	0	.69	2.19	6.62
1500	102701012	RL				Wildcat Creek	54.4	0	.44	3.21	10.2	29.0
1512	1027010114	RL				Kitten Creek	11.6	0	0	1.12	3.03	7.97
1514	102701012	RL				Wildcat Creek	69.7	0	.78	4.34	13.7	38.7
1568	1027010116	RL				Little Kitten Creek	6.98	0	0	.65	1.63	4.51
1574	102701012	RL				Wildcat Creek	95.3	0	1.54	6.95	21.4	59.6
1619	102701012	RL				Wildcat Creek	111	0	2.17	8.87	26.6	72.6
1646	102701014	RL				Kansas River	43,800	422	660	1,390	3,410	7,650
1650	102701016	RL				Kansas River	43,800	422	660	1,390	3,410	7,650
1663	102701013	RL				Kansas River	43,900	427	668	1,410	3,440	7,710
1666	102701015	RL				Sevenmile Creek	37.3	0	.37	2.86	8.75	24.0
1671	102701013	RL				Kansas River	43,800	422	661	1,400	3,410	7,650
1706	102701015	RL				Sevenmile Creek	44.2	0	1.10	4.40	12.0	30.5
1725	1027010226	RL	WB			Deep Creek	63.9	0	1.34	6.79	21.3	58.2
1744	1027010266	RL	WB			Emmons Creek	12.0	0	0	.97	3.26	9.50

**Table 87.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Riley County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 91)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
902	1,660	25,100	44,000	58,900	80,000	97,100	116,000
906	1,670	25,100	44,100	59,000	80,100	97,300	116,000
971	13.3	1,940	4,330	6,490	9,810	12,700	15,900
973	38.1	4,270	8,360	11,800	17,100	21,500	26,400
1008	9.09	1,260	2,980	4,550	7,010	9,120	11,600
1012	39.0	4,270	8,340	11,800	17,000	21,400	26,300
1026	47.4	5,690	10,600	14,600	20,500	25,400	30,700
1032	17.3	2,780	5,980	8,810	13,100	16,800	20,800
1033	75.0	6,760	12,800	17,700	25,100	31,300	38,000
1034	60.4	6,220	11,700	16,200	22,800	28,300	34,300
1040	75.5	6,680	12,600	17,500	24,900	31,000	37,700
1052	60.4	6,220	11,700	16,200	22,800	28,300	34,300
1073	NA	NA	NA	NA	NA	NA	NA
1174	14.8	2,340	5,150	7,670	11,500	14,900	18,600
1367	18.5	2,630	5,760	8,570	12,900	16,600	20,700
1375	19.6	2,660	5,830	8,680	13,000	16,800	20,900
1377	NA	NA	NA	NA	NA	NA	NA
1421	NA	NA	NA	NA	NA	NA	NA
1425	8.90	936	2,020	2,980	4,450	5,740	7,190
1456	2,490	16,600	25,500	36,300	41,900	46,700	49,500
1471	9.71	1,370	3,170	4,790	7,320	9,460	11,900
1472	10.0	1,010	2,190	3,220	4,820	6,210	7,780
1473	5.13	827	1,890	2,840	4,310	5,560	6,980
1499	5.99	1,010	2,310	3,480	5,300	6,830	8,600
1500	22.7	1,550	3,130	4,540	6,680	8,610	10,700
1512	6.34	963	2,200	3,310	5,020	6,470	8,130
1514	29.3	1,890	3,680	5,220	7,530	9,560	11,800
1568	3.89	740	1,670	2,490	3,750	4,810	6,030
1574	42.3	2,360	4,360	6,000	8,410	10,500	12,700
1619	50.0	2,470	4,380	5,880	8,030	9,800	11,700
1646	3,100	19,400	31,900	45,100	74,100	104,000	142,000
1650	3,100	19,400	31,900	45,100	74,100	104,000	142,000
1663	3,120	19,500	32,100	45,500	74,500	104,000	143,000
1666	18.2	2,680	5,770	8,530	12,700	16,300	20,200
1671	3,100	19,400	31,900	45,100	74,200	104,000	142,000
1706	21.8	2,480	5,320	7,850	11,700	15,000	18,600
1725	39.2	4,090	8,430	12,200	17,900	22,800	28,100
1744	7.68	1,140	2,530	3,760	5,650	7,230	9,040

**Table 87.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Riley County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

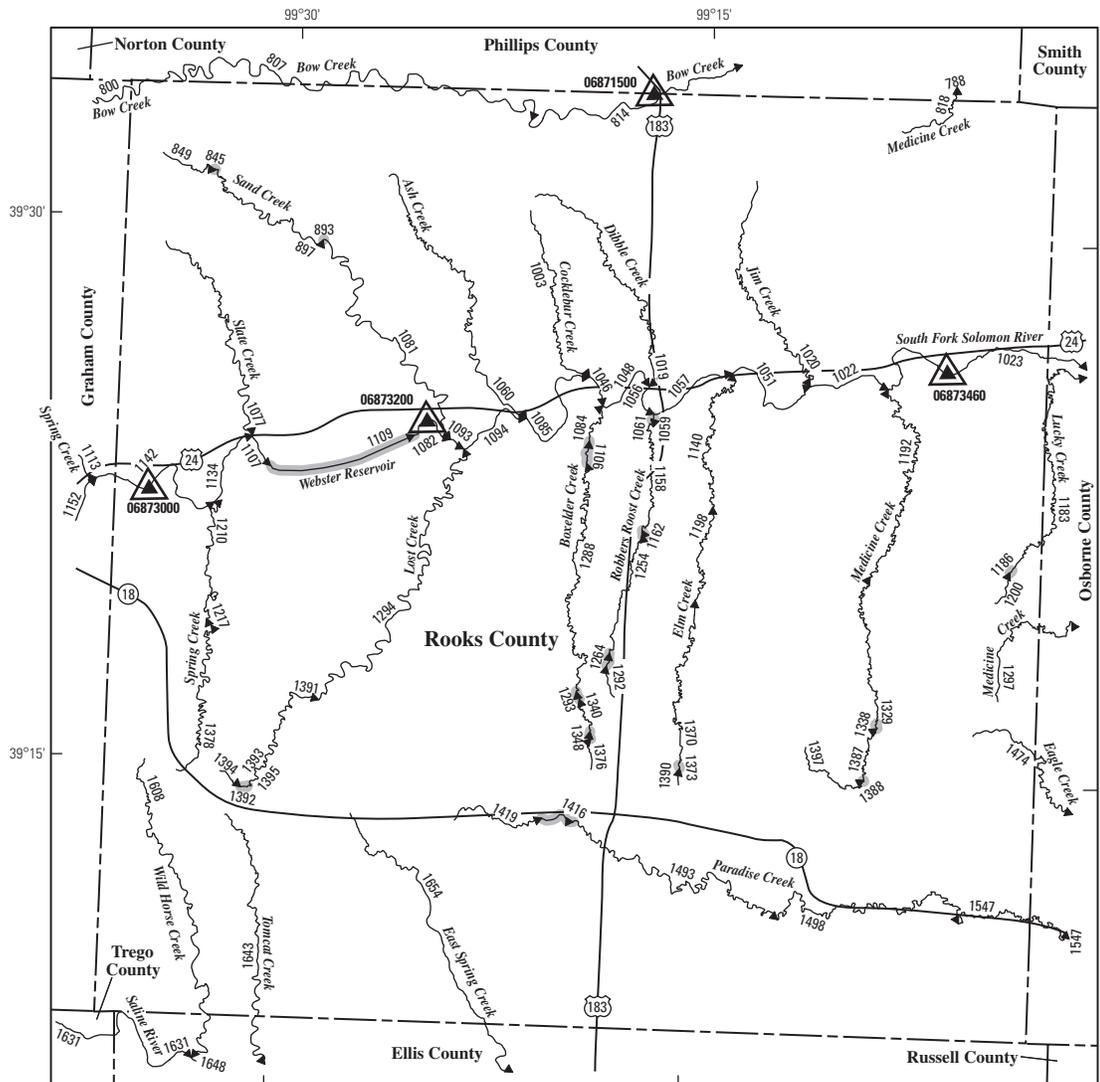
Determination site identification number (fig. 91)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1748	102701016	RL						Kansas River	43,800	420
1749	102701018	RL				Clarks Creek	260	.36	4.29	18.7	62.2	189
1750	102701018	RL				Clarks Creek	260	.36	4.29	18.7	62.2	189
1759	102701016	RL				Kansas River	43,500	409	639	1,350	3,320	7,460
1760	1027010115	RL				Threemile Creek	22.9	0	.45	2.52	6.80	17.1
1776	1027010226	RL				Deep Creek	41.0	0	.56	4.23	13.8	38.1
1777	1027010267	RL	WB			Antelope Creek	7.45	0	0	.61	1.89	5.65
1790	1027010111	RL				McDowell Creek	88.1	0	1.66	8.34	26.9	75.8
1817	1027010272	RL				East Branch Deep Creek	12.0	0	0	1.53	4.61	12.3
1899	1027010273	RL	WB			Hendricks Creek	17.0	.01	.13	2.02	6.08	15.9
1988	1027010280	RL	WB			Loire Creek	24.1	.02	.25	2.70	8.50	22.6

**Table 87.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Riley County.—Continued

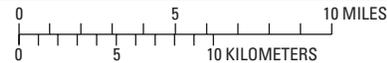
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 91)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1748	3,090	19,400	31,800	45,000	74,000	104,000	142,000
1749	125	5,300	10,900	15,800	23,400	30,000	37,500
1750	125	5,290	10,900	15,800	23,300	30,000	37,500
1759	3,020	19,100	31,200	44,100	73,100	102,000	140,000
1760	12.5	1,480	3,440	5,200	7,940	10,300	13,000
1776	26.6	5,550	10,600	14,800	20,800	25,900	31,200
1777	4.84	876	1,920	2,840	4,230	5,400	6,730
1790	51.0	4,080	8,670	12,800	19,100	24,500	30,500
1817	8.86	1,150	2,550	3,790	5,680	7,270	9,090
1899	11.7	1,430	3,190	4,740	7,130	9,130	11,400
1988	16.3	1,770	3,960	5,900	8,900	11,400	14,300



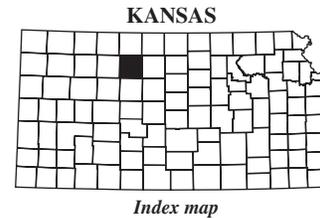


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- 1643** Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06873200** U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06873460** U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1416** Lake and determination site identification number



**Figure 92.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Rooks County.

532 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 88.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rooks County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 92)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		845	HYDRO	RO					HYDRO	9.06	NA	NA
849	10260014395	RO			Sand Creek	9.05	0	0	0	0	0	
893	HYDRO	RO			HYDRO	23.6	NA	NA	NA	NA	NA	
897	10260014395	RO			Sand Creek	23.6	0	0	0	0	0	
1003	1026001423	RO			Cocklebur Creek	14.4	0	0	0	0	0	
1019	10260014363	RO			Dibble Creek	24.0	0	0	0	0	0	
1020	1026001425	RO			Jim Creek	36.7	0	0	0	0	.25	
1022	102600147	RO			South Fork Solomon River	1,470	.33	1.00	4.98	27.4	105	
1046	102600149	RO			South Fork Solomon River	1,280	.15	.46	2.31	24.5	114	
1048	102600148	RO			South Fork Solomon River	1,320	.19	.58	2.88	25.1	112	
1051	102600147	RO			South Fork Solomon River	1,420	.29	.88	4.38	26.7	107	
1056	102600148	RO			South Fork Solomon River	1,350	.21	.65	3.24	25.5	111	
1057	102600148	RO			South Fork Solomon River	1,370	.24	.71	3.56	25.8	110	
1059	1026001424	RO			Robbers Roost Creek	17.8	0	0	0	0	0	
1060	1026001422	RO			Ash Creek	28.5	0	0	0	0	0	
1061	HYDRO	RO			HYDRO	17.8	NA	NA	NA	NA	NA	
1077	1026001325	RO			Slate Creek	41.2	0	0	0	0	0	
1081	10260014395	RO			Sand Creek	46.5	0	0	0	0	0	
1082	10260014798	RO			South Fork Solomon River	1,120	0	0	0	22.0	123	
1084	1026001414	RO			Boxelder Creek	38.0	0	0	0	0	0	
1085	102600149	RO			South Fork Solomon River	1,270	.14	.42	2.09	24.3	115	
1093	1026001410	RO			South Fork Solomon River	1,170	.04	.13	.67	22.7	121	
1094	102600149	RO			South Fork Solomon River	1,230	.11	.32	1.59	23.7	117	
1106	HYDRO	RO			HYDRO	36.6	NA	NA	NA	NA	NA	
1107	102600134	RO			South Fork Solomon River	1,100	.03	1.51	15.1	39.7	83.6	
1109	HYDRO	RO			HYDRO	1,120	NA	NA	NA	NA	NA	
1134	102600134	RO			South Fork Solomon River	1,060	.03	1.24	14.5	38.2	80.0	
1140	1026001415	RO			Elm Creek	48.0	0	0	0	0	.88	
1158	1026001424	RO			Robbers Roost Creek	17.7	0	0	0	0	0	
1162	HYDRO	RO			HYDRO	10.9	NA	NA	NA	NA	NA	
1186	HYDRO	RO			HYDRO	5.83	NA	NA	NA	NA	NA	
1192	1026001416	RO			Medicine Creek	72.7	0	0	.49	1.55	4.55	
1198	1026001415	RO			Elm Creek	37.6	0	0	0	0	0	
1200	1026001426	RO			Lucky Creek	5.65	0	0	0	0	0	
1210	10260013817	RO			Spring Creek	34.6	0	0	0	0	0	
1217	10260013817	RO			Spring Creek	18.0	0	0	0	0	0	
1254	1026001424	RO			Robbers Roost Creek	10.6	0	0	0	0	0	
1264	HYDRO	RO			HYDRO	3.13	NA	NA	NA	NA	NA	

**Table 88.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rooks County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 92)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
845	NA	NA	NA	NA	NA	NA	NA
849	0	290	858	1,440	2,420	3,310	4,360
893	NA	NA	NA	NA	NA	NA	NA
897	.47	514	1,550	2,620	4,440	6,100	8,080
1003	0	411	1,210	2,020	3,380	4,610	6,070
1019	.85	562	1,660	2,790	4,690	6,420	8,470
1020	2.11	537	1,530	2,550	4,270	5,880	7,740
1022	47.4	478	1,690	3,020	5,260	7,310	9,630
1046	40.2	346	1,150	1,980	3,320	4,510	5,820
1048	41.7	374	1,260	2,200	3,740	5,110	6,640
1051	45.8	448	1,570	2,780	4,820	6,680	8,770
1056	42.7	392	1,340	2,340	4,000	5,490	7,150
1057	43.5	408	1,400	2,470	4,230	5,820	7,600
1059	.28	475	1,390	2,330	3,910	5,330	7,020
1060	.97	602	1,800	3,040	5,140	7,040	9,320
1061	NA	NA	NA	NA	NA	NA	NA
1077	1.70	601	1,680	2,800	4,650	6,390	8,370
1081	2.07	519	1,510	2,550	4,320	5,990	7,930
1082	33.9	231	677	1,080	1,640	2,090	2,530
1084	1.70	454	1,340	2,290	3,900	5,430	7,220
1085	39.6	335	1,100	1,900	3,160	4,280	5,520
1093	35.7	265	814	1,340	2,130	2,800	3,490
1094	38.2	310	1,000	1,700	2,800	3,760	4,800
1106	NA	NA	NA	NA	NA	NA	NA
1107	58.3	2,950	8,700	15,200	27,200	39,500	55,200
1109	NA	NA	NA	NA	NA	NA	NA
1134	55.9	2,870	8,510	14,900	26,800	38,900	54,400
1140	2.78	494	1,460	2,480	4,240	5,900	7,860
1158	.28	475	1,390	2,330	3,900	5,320	7,010
1162	NA	NA	NA	NA	NA	NA	NA
1186	NA	NA	NA	NA	NA	NA	NA
1192	5.60	719	2,020	3,380	5,670	7,820	10,300
1198	1.82	429	1,280	2,200	3,770	5,260	7,010
1200	0	267	748	1,220	2,010	2,710	3,530
1210	1.12	435	1,280	2,190	3,720	5,170	6,870
1217	0	443	1,320	2,230	3,770	5,160	6,830
1254	0	353	1,020	1,700	2,830	3,850	5,060
1264	NA	NA	NA	NA	NA	NA	NA

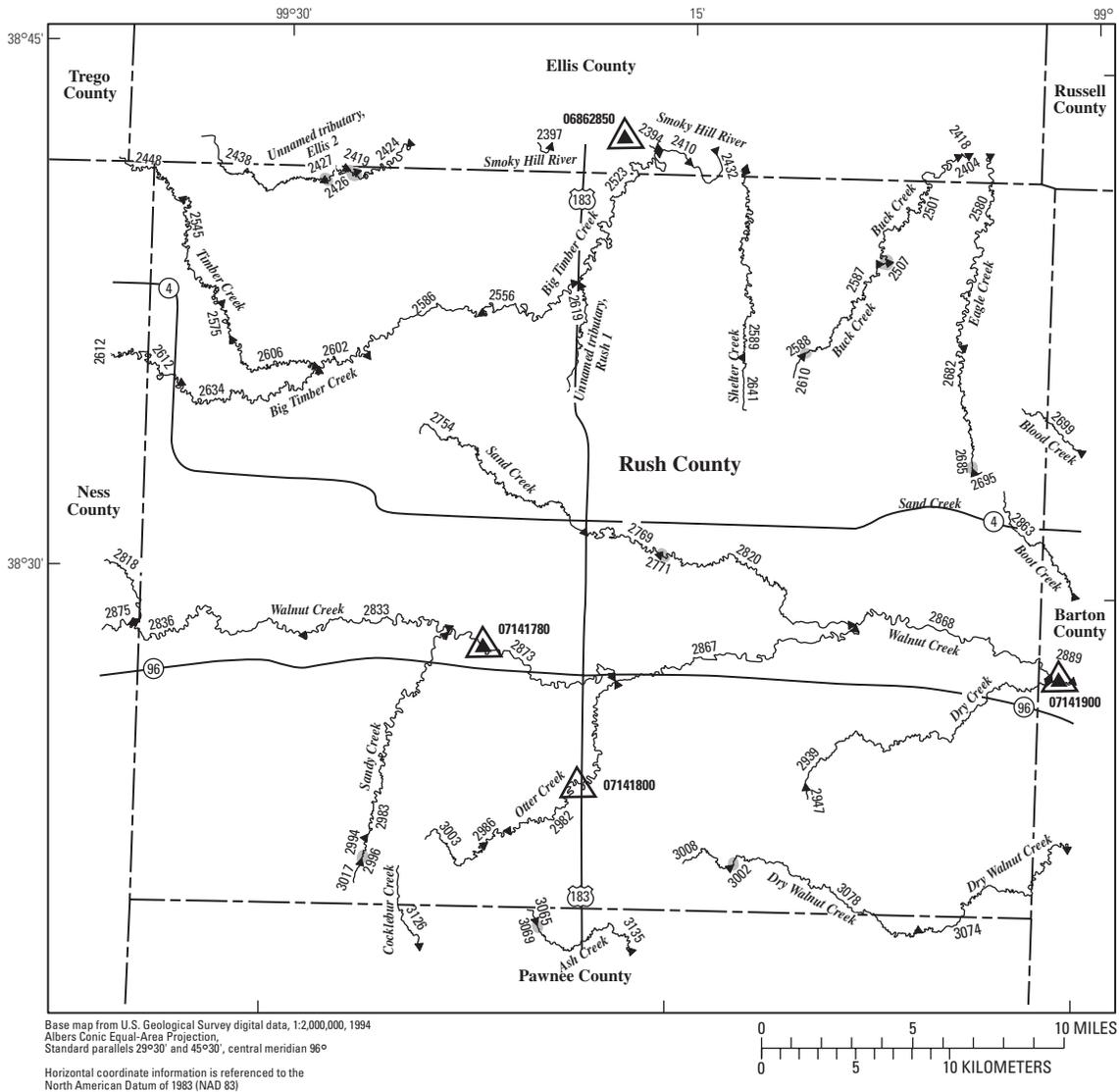
**Table 88.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rooks County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 92)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1288	1026001414	RO						Boxelder Creek	35.3	0	0
1292	1026001424	RO				Robbers Roost Creek	2.56	0	0	0	0	0	0
1293	HYDRO	RO				HYDRO	11.6	NA	NA	NA	NA	NA	NA
1294	1026001413	RO				Lost Creek	61.6	0	0	0	0	0	.87
1329	1026001416	RO				Medicine Creek	46.0	0	0	0	0	0	1.16
1338	HYDRO	RO				HYDRO	24.3	NA	NA	NA	NA	NA	NA
1340	1026001414	RO				Boxelder Creek	9.44	0	0	0	0	0	0
1348	HYDRO	RO				HYDRO	5.95	NA	NA	NA	NA	NA	NA
1370	1026001415	RO				Elm Creek	25.3	0	0	0	0	0	0
1373	HYDRO	RO				HYDRO	6.50	NA	NA	NA	NA	NA	NA
1376	1026001414	RO				Boxelder Creek	5.56	0	0	0	0	0	0
1378	10260013817	RO				Spring Creek	17.8	0	0	0	0	0	0
1387	1026001416	RO				Medicine Creek	23.5	0	0	0	0	0	0
1388	HYDRO	RO				HYDRO	18.6	NA	NA	NA	NA	NA	NA
1390	1026001415	RO				Elm Creek	5.88	0	0	0	0	0	0
1391	1026001413	RO				Lost Creek	13.9	0	0	0	0	0	0
1392	1026001413	RO				Lost Creek	1.92	0	0	0	0	0	0
1393	HYDRO	RO				HYDRO	1.92	NA	NA	NA	NA	NA	NA
1394	1026001413	RO				Lost Creek	1.79	0	0	0	0	0	0
1395	HYDRO	RO				HYDRO	1.99	NA	NA	NA	NA	NA	NA
1397	1026001416	RO				Medicine Creek	17.6	0	0	0	0	0	0
1416	HYDRO	RO				HYDRO	22.5	NA	NA	NA	NA	NA	NA
1419	102600097	RO				Paradise Creek	20.3	0	0	0	0	0	0
1493	102600097	RO				Paradise Creek	60.5	0	0	0	0	0	1.18
1498	102600097	RO				Paradise Creek	95.8	0	0	.05	1.05	5.95	

**Table 88.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rooks County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

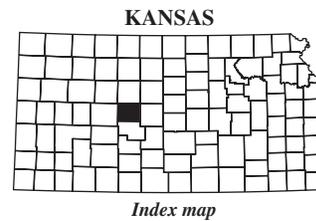
Determination site identification number (fig. 92)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1288	1.45	431	1,280	2,190	3,750	5,230	6,960
1292	0	155	436	714	1,170	1,580	2,060
1293	NA	NA	NA	NA	NA	NA	NA
1294	2.93	528	1,560	2,660	4,540	6,330	8,440
1329	2.98	626	1,760	2,930	4,890	6,730	8,850
1338	NA	NA	NA	NA	NA	NA	NA
1340	0	328	950	1,580	2,630	3,570	4,690
1348	NA	NA	NA	NA	NA	NA	NA
1370	.81	590	1,740	2,910	4,900	6,690	8,830
1373	NA	NA	NA	NA	NA	NA	NA
1376	0	243	694	1,150	1,900	2,570	3,360
1378	0	440	1,310	2,210	3,740	5,130	6,780
1387	.88	592	1,720	2,870	4,800	6,530	8,600
1388	NA	NA	NA	NA	NA	NA	NA
1390	0	254	725	1,200	1,980	2,680	3,500
1391	0	373	1,110	1,880	3,170	4,340	5,730
1392	0	115	332	550	911	1,230	1,610
1393	NA	NA	NA	NA	NA	NA	NA
1394	0	111	319	527	872	1,180	1,540
1395	NA	NA	NA	NA	NA	NA	NA
1397	.30	499	1,440	2,400	4,000	5,440	7,150
1416	NA	NA	NA	NA	NA	NA	NA
1419	.07	497	1,470	2,480	4,180	5,730	7,570
1493	3.13	476	1,470	2,560	4,480	6,330	8,560
1498	6.58	652	1,980	3,430	6,010	8,520	11,500





**EXPLANATION**

- ← 3126 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07141900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07141800 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3002 Lake and determination site identification number



**Figure 93.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Rush County.

**Table 89.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rush County.

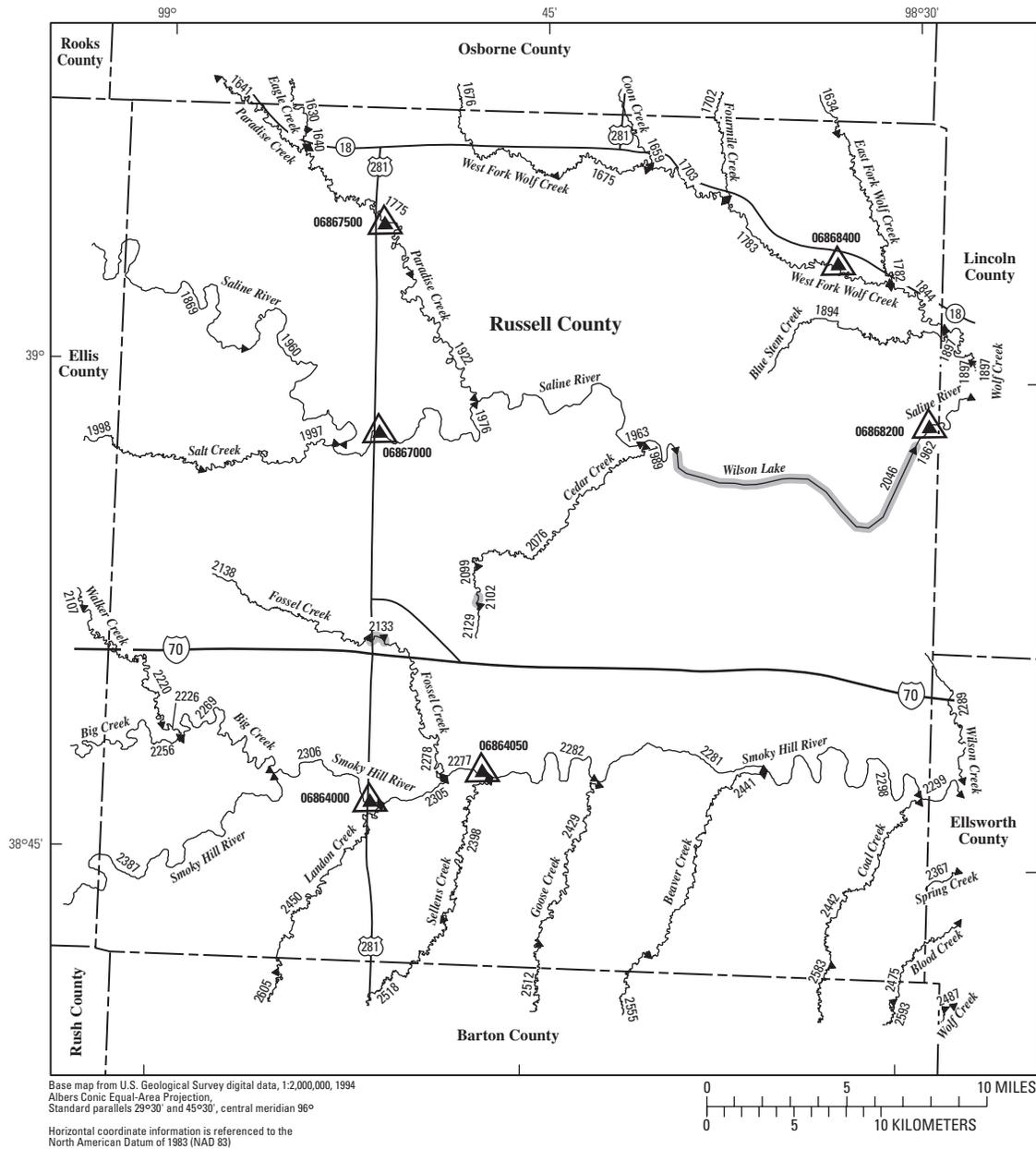
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 93)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2426	HYDRO	RH					HYDRO	24.2	NA	NA
2507	HYDRO	RH			HYDRO	25.2	NA	NA	NA	NA	NA	
2545	1026000626	RH			Timber Creek	55.5	0	0	0	0	0	
2556	1026000625	RH			Big Timber Creek	177	0	0	.17	1.20	4.58	
2575	1026000626	RH			Timber Creek	59.1	0	0	0	0	0	
2586	1026000625	RH			Big Timber Creek	165	0	0	.06	.90	3.85	
2587	1026000629	RH			Buck Creek	24.0	0	0	0	0	0	
2588	HYDRO	RH			HYDRO	8.66	NA	NA	NA	NA	NA	
2602	1026000625	RH			Big Timber Creek	145	0	0	0	.49	2.84	
2606	1026000626	RH			Timber Creek	65.9	0	0	0	0	0	
2610	1026000629	RH			Buck Creek	8.64	0	0	0	0	0	
2619	1026000628	RH			Unnamed tributary, Rush 1	21.0	0	0	0	0	0	
2634	1026000627	RH			Big Timber Creek	72.3	0	0	0	0	0	
2641	1026000643	RH			Shelter Creek	18.4	0	0	0	0	0	
2682	1026000630	RH			Eagle Creek	23.8	0	0	0	0	0	
2685	HYDRO	RH			HYDRO	7.82	NA	NA	NA	NA	NA	
2695	1026000630	RH			Eagle Creek	7.47	0	0	0	0	0	
2754	110300083	RH			Sand Creek	41.4	0	0	0	0	0	
2769	110300083	RH			Sand Creek	54.4	0	0	0	0	0	
2771	HYDRO	RH			HYDRO	55.3	NA	NA	NA	NA	NA	
2820	110300083	RH			Sand Creek	82.3	0	0	0	0	1.41	
2833	110300086	RH			Walnut Creek	1,360	0	0	.79	11.3	26.5	
2867	110300084	RH			Walnut Creek	1,530	0	0	1.37	15.9	39.1	
2873	110300085	RH			Walnut Creek	1,460	0	0	1.00	13.0	30.0	
2947	1103000814	RH			Dry Creek	5.67	0	0	0	0	0	
2982	1103000812	RH			Otter Creek	38.5	0	0	0	0	0	
2983	1103000811	RH			Sandy Creek	75.9	0	0	0	0	.10	
2986	1103000812	RH			Otter Creek	13.7	0	0	0	0	0	
2994	1103000811	RH			Sandy Creek	45.4	0	0	0	0	0	
2996	HYDRO	RH			HYDRO	39.9	NA	NA	NA	NA	NA	
3002	HYDRO	RH			HYDRO	16.3	NA	NA	NA	NA	NA	
3003	1103000812	RH			Otter Creek	9.98	0	0	0	0	0	
3008	110300049013	RH			Dry Walnut Creek	16.3	0	0	0	0	0	
3017	1103000811	RH			Sandy Creek	39.7	0	0	0	0	0	

**Table 89.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Rush County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

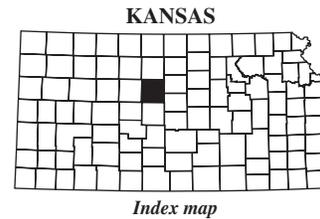
Determination site identification number (fig. 93)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2426	NA	NA	NA	NA	NA	NA	NA
2507	NA	NA	NA	NA	NA	NA	NA
2545	1.43	376	1,190	2,100	3,710	5,270	7,130
2556	6.79	611	1,910	3,370	5,960	8,500	11,600
2575	1.59	383	1,220	2,150	3,790	5,390	7,310
2586	6.14	604	1,890	3,320	5,860	8,350	11,400
2587	.69	621	1,790	2,980	4,960	6,740	8,860
2588	NA	NA	NA	NA	NA	NA	NA
2602	5.20	569	1,780	3,140	5,550	7,900	10,700
2606	1.87	385	1,230	2,180	3,870	5,520	7,500
2610	0	337	956	1,570	2,600	3,520	4,600
2619	.27	530	1,550	2,600	4,360	5,950	7,840
2634	1.96	382	1,230	2,190	3,910	5,600	7,630
2641	.15	515	1,490	2,470	4,130	5,610	7,370
2682	.72	613	1,770	2,940	4,910	6,680	8,790
2685	NA	NA	NA	NA	NA	NA	NA
2695	0	310	877	1,440	2,380	3,210	4,190
2754	1.06	389	1,200	2,100	3,660	5,170	6,950
2769	1.90	436	1,340	2,340	4,080	5,770	7,770
2771	NA	NA	NA	NA	NA	NA	NA
2820	3.82	520	1,590	2,760	4,810	6,780	9,140
2833	22.9	978	2,380	3,740	5,950	7,970	10,300
2867	31.8	1,070	2,470	3,760	5,800	7,610	9,670
2873	24.8	1,000	2,390	3,700	5,790	7,670	9,830
2947	0	255	723	1,190	1,960	2,650	3,460
2982	1.44	394	955	1,470	2,280	2,990	3,790
2983	2.59	550	1,660	2,870	4,960	6,970	9,360
2986	0	377	1,090	1,800	3,000	4,070	5,340
2994	.99	661	1,860	3,100	5,170	7,120	9,350
2996	NA	NA	NA	NA	NA	NA	NA
3002	NA	NA	NA	NA	NA	NA	NA
3003	0	313	908	1,510	2,510	3,410	4,480
3008	.09	458	1,340	2,230	3,730	5,080	6,680
3017	.69	710	1,950	3,210	5,300	7,240	9,450





**EXPLANATION**

- ← 2387 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06864000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06864050 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2102 Lake and determination site identification number



**Figure 94.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Russell County.

**Table 90.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Russell County.[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

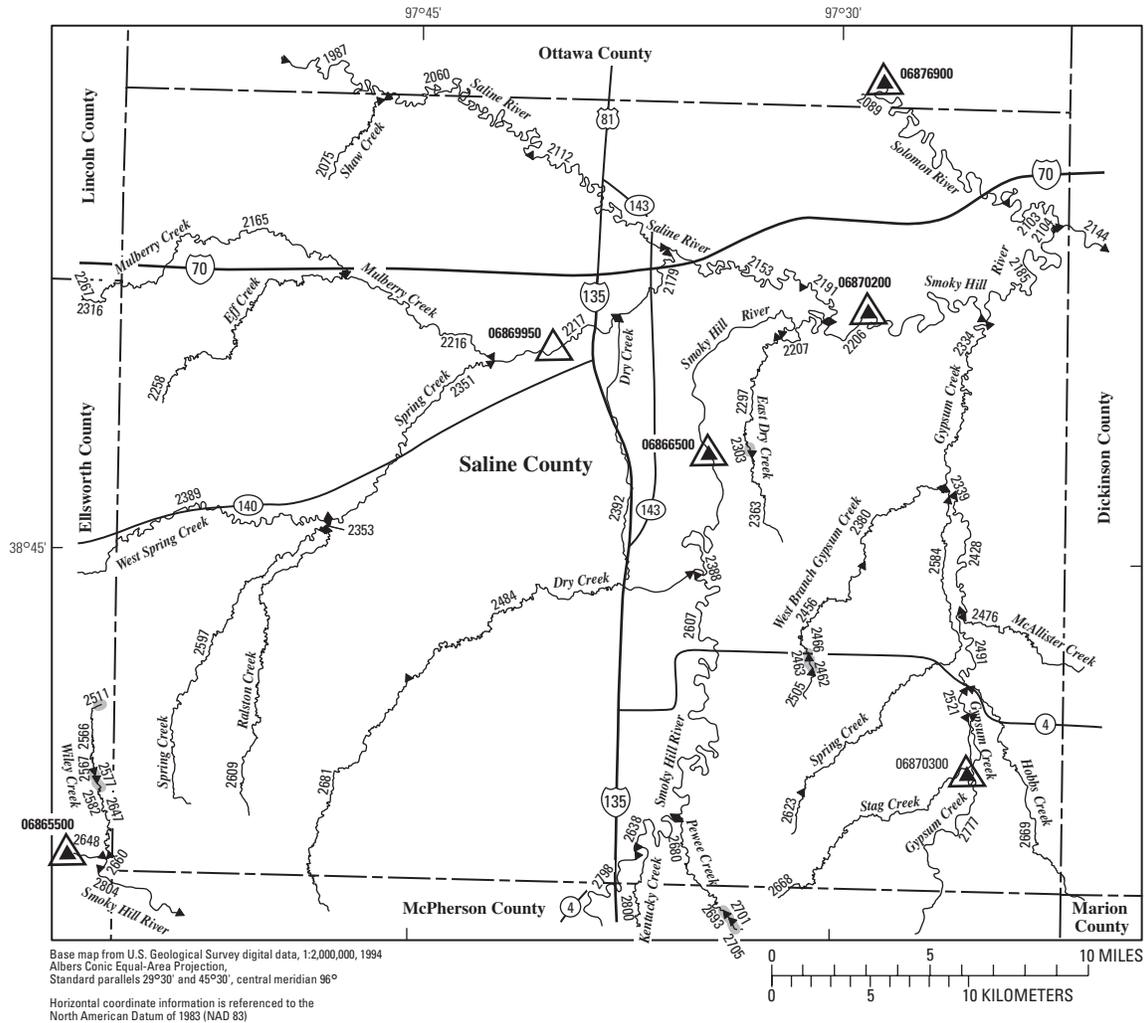
Determination site identification number (fig. 94)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1640	102600096	RS						Eagle Creek	64.1	0
1675	1026001012	RS				West Fork Wolf Creek	71.3	0	0	.76	2.30	6.32
1703	1026001012	RS				West Fork Wolf Creek	116	.32	.35	1.41	4.26	11.3
1775	102600095	RS				Paradise Creek	240	0	0	.13	4.00	26.0
1782	1026001011	RS				East Fork Wolf Creek	67.6	0	.03	1.40	3.67	9.40
1783	1026001012	RS				West Fork Wolf Creek	172	.70	1.10	2.20	6.80	18.0
1922	102600095	RS				Paradise Creek	263	0	.32	.91	5.91	30.5
1960	102600099	RS				Saline River	1,420	4.07	10.4	27.1	64.6	145
1963	102600094	RS				Saline River	1,800	6.21	15.5	39.2	91.6	210
1976	102600098	RS				Saline River	1,500	4.80	12.0	31.0	73.0	165
1989	102600094	RS				Saline River	1,870	6.63	16.6	41.7	97.3	224
1997	1026000920	RS				Salt Creek	52.3	0	.01	.69	1.96	5.33
2046	HYDRO	RS				HYDRO	1,930	NA	NA	NA	NA	NA
2076	1026000930	RS				Cedar Creek	57.7	0	.20	1.81	4.51	10.9
2099	1026000930	RS				Cedar Creek	16.3	0	0	0	0	0
2102	HYDRO	RS				HYDRO	12.2	NA	NA	NA	NA	NA
2129	1026000930	RS				Cedar Creek	11.9	0	0	0	0	0
2133	HYDRO	RS				HYDRO	41.7	NA	NA	NA	NA	NA
2138	1026000613	RS				Fossil Creek	37.3	0	0	0	0	1.39
2226	102600072	RS				Walker Creek	59.7	0	0	0	.36	2.22
2269	102600071	RS				Big Creek	862	1.94	5.27	11.7	28.4	61.9
2277	1026000612	RS				Smoky Hill River	7,250	8.50	17.0	34.0	77.0	198
2278	1026000613	RS				Fossil Creek	59.3	0	0	.51	1.62	5.26
2281	1026000611	RS				Smoky Hill River	7,400	11.3	21.5	42.1	93.0	240
2282	1026000611	RS				Smoky Hill River	7,320	9.83	19.2	37.9	84.7	218
2298	1026000610	RS				Smoky Hill River	7,490	12.9	24.1	46.9	102	264
2305	1026000614	RS				Smoky Hill River	7,190	12.1	19.4	34.5	76.0	202
2306	1026000615	RS				Smoky Hill River	7,120	16.0	22.0	35.0	75.0	206
2398	1026000632	RS				Sellens Creek	53.5	0	0	.47	1.48	4.75
2429	1026000639	RS				Goose Creek	42.2	0	0	.37	1.16	3.87
2441	1026000633	RS				Beaver Creek	52.3	0	0	.94	2.49	6.79
2442	1026000634	RS				Coal Creek	53.6	0	.07	1.40	3.57	9.10

**Table 90.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Russell County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

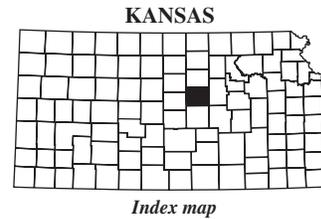
Determination site identification number (fig. 94)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1640	5.99	731	2,060	3,440	5,790	8,010	10,600
1675	6.94	998	2,570	4,120	6,650	8,980	11,600
1703	11.0	1,310	3,210	5,050	8,040	10,800	13,900
1775	19.4	947	3,160	5,780	10,800	15,900	22,400
1782	8.95	1,000	2,630	4,270	6,940	9,400	12,200
1783	16.2	1,570	3,660	5,600	8,730	11,600	14,800
1922	22.3	1,020	3,350	6,080	11,300	16,600	23,300
1960	87.8	2,280	6,720	11,700	20,800	30,200	42,000
1963	125	2,800	7,860	13,400	23,500	33,700	46,500
1976	98.4	2,270	6,630	11,500	20,500	29,700	41,400
1989	133	2,950	8,210	13,900	24,300	34,700	47,900
1997	5.74	827	2,240	3,660	6,020	8,200	10,700
2046	NA	NA	NA	NA	NA	NA	NA
2076	9.43	1,230	3,070	4,860	7,710	10,300	13,200
2099	1.46	645	1,730	2,790	4,510	6,030	7,820
2102	NA	NA	NA	NA	NA	NA	NA
2129	.76	539	1,440	2,300	3,710	4,950	6,410
2133	NA	NA	NA	NA	NA	NA	NA
2138	3.35	558	1,590	2,660	4,470	6,170	8,140
2226	4.11	543	1,600	2,720	4,660	6,490	8,660
2269	50.7	1,760	4,440	7,030	11,200	15,000	19,300
2277	128	4,010	9,850	14,800	22,100	27,900	33,900
2278	6.51	810	2,210	3,630	6,000	8,200	10,700
2281	153	5,280	11,500	17,400	25,000	31,400	37,600
2282	140	4,620	10,700	16,100	23,500	29,600	35,700
2298	167	6,020	12,500	18,900	26,600	33,500	39,800
2305	138	5,610	12,000	17,300	24,900	31,000	37,400
2306	148	7,340	14,400	19,900	27,900	34,300	41,100
2398	5.86	707	1,970	3,270	5,460	7,500	9,870
2429	5.01	758	2,040	3,340	5,480	7,450	9,710
2441	7.10	915	2,400	3,890	6,310	8,530	11,100
2442	8.52	982	2,550	4,100	6,620	8,930	11,600





**EXPLANATION**

- ← 2804 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06865500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06869950 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2701 Lake and determination site identification number



**Figure 95.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Saline County.

**546 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 91.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Saline County.

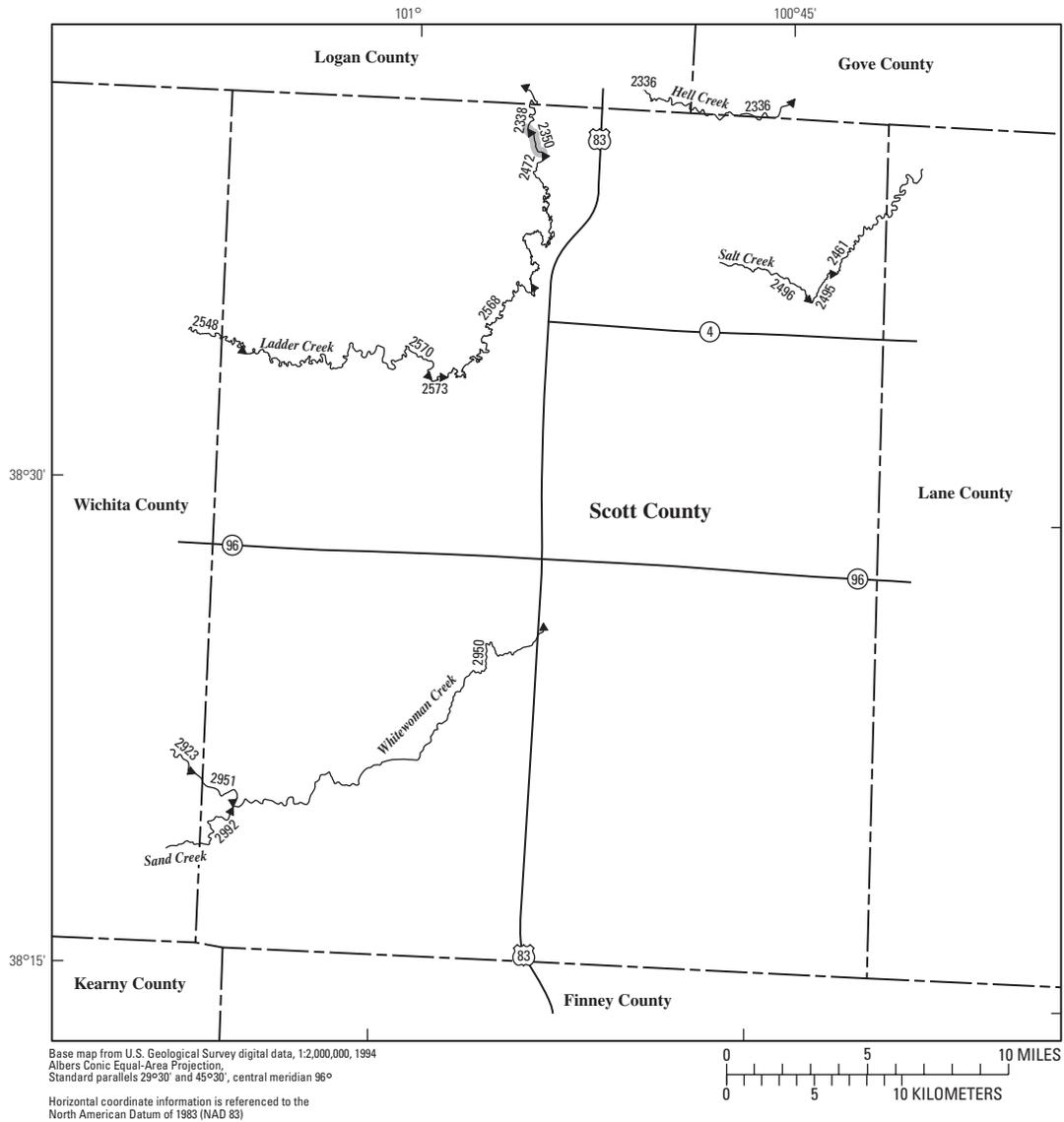
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 95)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2075	1026001041	SA						Shaw Creek	13.6	0
2103	102600151	SA				Solomon River	6,910	57.1	85.2	174	458	1,400
2104	1026000810	SA				Smoky Hill River	12,200	66.7	133	264	520	1,290
2112	102600102	SA				Saline River	2,980	15.8	25.4	47.7	132	510
2153	102600101	SA				Saline River	3,320	17.9	28.9	54.4	149	562
2179	1026001019	SA				Mulberry Creek	321	1.38	7.22	21.9	54.0	132
2185	1026000811	SA				Smoky Hill River	12,200	75.1	123	238	592	1,950
2191	102600101	SA				Saline River	3,320	18.0	28.9	54.5	149	563
2206	1026000812	SA				Smoky Hill River	11,900	70.5	116	224	557	1,870
2207	1026000813	SA				Smoky Hill River	8,550	41.2	72.3	136	317	954
2216	1026001021	SA				Mulberry Creek	137	0	3.10	9.51	23.2	54.5
2217	1026001020	SA				Mulberry Creek	292	1.14	6.65	20.2	49.7	120
2258	1026001023	SA				Eff Creek	35.0	0	.71	2.69	6.09	13.6
2297	1026000843	SA				East Dry Creek	19.6	0	.23	1.50	3.49	8.39
2303	HYDRO	SA				HYDRO	11.5	NA	NA	NA	NA	NA
2334	1026000818	SA				Gypsum Creek	284	1.27	4.84	19.7	50.0	129
2339	1026000818	SA				Gypsum Creek	232	.83	3.60	15.8	39.5	101
2351	1026001024	SA				Spring Creek	140	0	3.19	9.86	24.1	56.4
2353	1026001026	SA				Spring Creek	55.1	0	1.16	3.98	9.30	20.9
2363	1026000843	SA				East Dry Creek	11.5	0	.11	.93	1.86	4.43
2380	1026000844	SA				West Branch Gypsum Creek	30.4	0	.70	2.69	6.43	15.1
2388	1026000813	SA				Smoky Hill River	8,520	41.0	72.0	135	315	948
2392	1026001029	SA				Dry Creek	24.3	0	0	.77	2.05	6.01
2428	1026000818	SA				Gypsum Creek	203	.58	2.89	13.5	33.5	85.1
2456	1026000844	SA				West Branch Gypsum Creek	18.1	0	.44	1.76	3.81	8.67
2462	HYDRO	SA				HYDRO	6.53	NA	NA	NA	NA	NA
2463	1026000844	SA				West Branch Gypsum Creek	5.72	0	.15	.52	.58	1.42
2466	HYDRO	SA				HYDRO	5.72	NA	NA	NA	NA	NA
2484	1026000836	SA				Dry Creek	99.7	0	1.79	6.04	15.6	38.6
2491	1026000818	SA				Gypsum Creek	171	.42	2.34	11.4	27.1	66.5
2505	1026000844	SA				West Branch Gypsum Creek	5.67	0	.15	.51	.56	1.38
2521	1026000818	SA				Gypsum Creek	139	.19	1.61	8.86	19.8	46.5
2584	1026000845	SA				Spring Creek	28.6	0	.59	2.47	6.05	14.5
2597	1026001027	SA				Spring Creek	25.9	0	.33	1.70	3.69	8.25
2607	1026000813	SA				Smoky Hill River	8,400	35.6	63.7	120	284	876
2609	1026001028	SA				Ralston Creek	29.2	0	.56	2.27	4.99	11.0
2623	1026000845	SA				Spring Creek	5.74	0	.02	.16	.35	1.10
2638	1026000813	SA				Smoky Hill River	8,360	33.6	60.7	115	272	851

**Table 91.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Saline County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

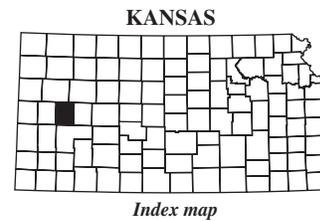
Determination site identification number (fig. 95)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2075	3.74	739	1,860	2,920	4,600	6,070	7,770
2103	563	5,200	10,500	18,300	28,000	38,600	50,700
2104	615	8,240	21,200	35,100	60,000	84,800	116,000
2112	219	2,580	5,130	6,920	9,200	10,900	12,500
2153	237	2,720	5,380	7,250	9,760	11,700	13,800
2179	82.1	2,500	4,930	6,980	10,000	12,600	15,400
2185	722	6,300	12,200	16,300	25,000	35,300	47,000
2191	237	2,720	5,380	7,250	9,770	11,700	13,800
2206	688	6,050	11,600	15,500	24,000	34,000	45,500
2207	383	4,370	7,910	8,840	15,100	22,100	32,100
2216	36.3	1,910	4,350	6,630	10,200	13,300	16,900
2217	74.7	2,310	4,530	6,380	9,100	11,400	13,900
2258	10.1	921	2,310	3,670	5,820	7,770	9,960
2297	6.86	1,040	2,560	3,970	6,220	8,150	10,400
2303	NA	NA	NA	NA	NA	NA	NA
2334	82.8	3,180	6,410	9,260	13,700	17,600	21,900
2339	66.4	3,220	6,360	9,090	13,200	16,900	20,900
2351	37.2	1,820	4,190	6,400	9,880	13,000	16,500
2353	15.0	1,240	3,020	4,710	7,400	9,810	12,500
2363	4.00	764	1,860	2,870	4,460	5,830	7,420
2380	11.3	1,210	2,890	4,470	6,930	9,120	11,500
2388	381	4,360	7,890	8,800	15,000	22,000	32,000
2392	6.22	1,150	2,860	4,460	7,010	9,220	11,800
2428	57.1	2,970	5,860	8,340	12,100	15,400	19,100
2456	6.80	1,020	2,480	3,840	5,990	7,840	9,990
2462	NA	NA	NA	NA	NA	NA	NA
2463	1.81	523	1,250	1,900	2,930	3,810	4,820
2466	NA	NA	NA	NA	NA	NA	NA
2484	27.9	1,720	4,190	6,580	10,400	13,800	17,800
2491	45.6	2,860	5,520	7,760	11,100	14,100	17,200
2505	1.78	520	1,240	1,890	2,920	3,790	4,800
2521	33.3	2,530	4,810	6,690	9,490	11,900	14,500
2584	11.0	1,380	3,380	5,230	8,160	10,700	13,600
2597	6.71	994	2,580	4,100	6,550	8,700	11,200
2607	351	3,780	7,080	8,390	14,000	20,200	28,700
2609	8.33	1,100	2,840	4,500	7,180	9,510	12,300
2623	1.69	523	1,250	1,910	2,940	3,820	4,830
2638	341	3,570	6,790	8,250	13,700	19,500	27,500





**EXPLANATION**

- 
**2992** Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 
**06844900** U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 
**06846000** U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 
**2350** Lake and determination site identification number



**Figure 96.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Scott County.

**550 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 92.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Scott County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

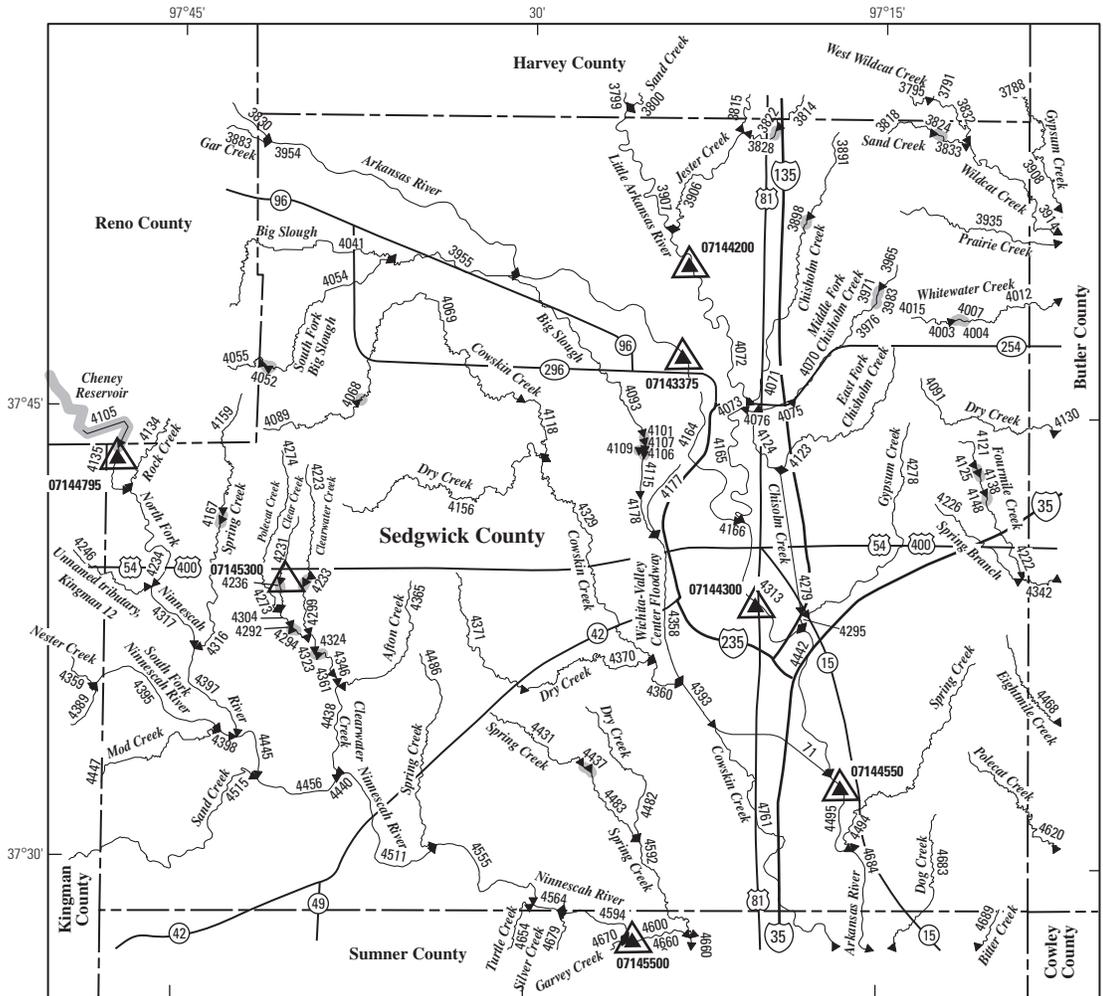
Determination site identification number (fig. 96)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2350	HYDRO	SC						HYDRO	1,190	NA
2472	102600045	SC				Ladder Creek	1,190	0	0.21	0.85	0.86	2.87
2495	1026000326	SC				Salt Creek	58.7	0	0	0	0	0
2496	1026000326	SC				Salt Creek	52.5	0	0	0	0	0
2548	102600045	SC	WH			Ladder Creek	1,020	0	.15	.63	.63	1.26
2568	102600045	SC				Ladder Creek	1,150	0	.19	.81	.82	2.30
2570	102600045	SC				Ladder Creek	1,090	0	.17	.72	.73	1.40
2573	102600045	SC				Ladder Creek	1,100	0	.18	.73	.74	1.54
2950	110300021	SC				Whitewoman Creek	1,480	0	0	0	0	2.23
2951	110300022	SC	WH			Whitewoman Creek	941	0	0	0	0	0
2992	110300023	SC	WH			Sand Creek	228	0	0	0	0	0

**Table 92.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Scott County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 96)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2350	NA	NA	NA	NA	NA	NA	NA
2472	3.97	594	2,320	4,610	9,370	14,700	22,000
2495	0	421	1,330	2,330	4,090	5,810	7,850
2496	0	378	1,210	2,130	3,770	5,380	7,280
2548	2.27	557	2,160	4,250	8,550	13,300	19,700
2568	3.56	592	2,300	4,560	9,240	14,500	21,600
2570	2.87	570	2,220	4,390	8,870	13,900	20,700
2573	2.99	576	2,240	4,430	8,960	14,000	20,900
2950	7.01	707	2,830	5,810	12,200	19,600	29,600
2951	2.14	307	1,640	3,750	8,680	14,600	22,800
2992	.22	385	1,370	2,560	4,800	7,100	9,960

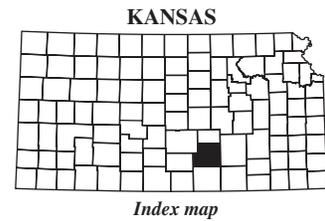




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ◀ 4511 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07144550 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07145300 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4437 Lake and determination site identification number



**Figure 97.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Sedgwick County.

554 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 97)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		71	11030013456	SG						Wichita-Valley Center Floodway	199	3.10
3822	HYDRO	SG				HYDRO	8.21	NA	NA	NA	NA	NA
3824	HYDRO	SG				HYDRO	6.22	NA	NA	NA	NA	NA
3828	1103001217	SG				Gooseberry Creek	11.4	0	0	.36	1.03	3.66
3833	1103001729	SG				Sand Creek	8.10	0	0	.01	.01	1.45
3891	110300121693	SG				Chisholm Creek	13.3	0	0	.45	1.34	4.52
3898	HYDRO	SG				HYDRO	13.4	NA	NA	NA	NA	NA
3906	110300122	SG				Jester Creek	63.7	0	1.34	4.12	10.7	27.8
3954	110300101	SG				Arkansas River	36,400	77.7	142	291	561	1,200
3955	110300109011	SG				Big Slough	59.2	.17	1.60	4.11	9.60	23.1
3965	11030012817	SG				Middle Fork Chisholm Creek	6.56	0	0	0	0	.82
3971	HYDRO	SG				HYDRO	6.73	NA	NA	NA	NA	NA
3976	11030012817	SG				Middle Fork Chisholm Creek	7.31	0	0	0	0	1.21
3983	HYDRO	SG				HYDRO	7.37	NA	NA	NA	NA	NA
4003	HYDRO	SG				HYDRO	6.76	NA	NA	NA	NA	NA
4004	1103001734	SG				Whitewater Creek	6.76	0	0	0	.01	.54
4007	HYDRO	SG				HYDRO	6.87	NA	NA	NA	NA	NA
4015	1103001734	SG				Whitewater Creek	5.34	0	0	0	0	0
4052	HYDRO	SG				HYDRO	4.75	NA	NA	NA	NA	NA
4054	110300109035	SG				South Fork Big Slough	18.8	0	.22	1.04	2.25	5.84
4068	HYDRO	SG				HYDRO	10.5	NA	NA	NA	NA	NA
4069	1103001314	SG				Cowskin Creek	45.2	0	.94	2.60	6.11	15.2
4070	11030012817	SG				Middle Fork Chisholm Creek	19.1	0	0	.69	2.39	7.66
4071	110300121693	SG				Chisholm Creek	32.2	0	.24	1.90	5.42	14.9
4072	110300121	SG				Little Arkansas River	1,350	21.0	33.0	60.0	127	488
4073	110300121	SG				Little Arkansas River	1,380	21.5	34.2	63.6	135	510
4075	11030012817	SG				Middle Fork Chisholm Creek	20.5	0	0	.80	2.68	8.39
4076	11030012817	SG				Middle Fork Chisholm Creek	20.7	0	0	.82	2.73	8.48
4089	1103001314	SG				Cowskin Creek	10.4	0	0	.19	.28	1.52
4093	1103001311	SG				Big Slough	20.5	1.53	2.01	2.66	4.08	7.78
4101	HYDRO	SG				HYDRO	20.7	NA	NA	NA	NA	NA
4107	1103001311	SG				Big Slough	20.9	1.55	2.06	2.74	4.22	8.03
4108	HYDRO	SG				HYDRO	21.0	NA	NA	NA	NA	NA
4109	HYDRO	SG				HYDRO	1.36	NA	NA	NA	NA	NA
4115	HYDRO	SG				HYDRO	22.5	NA	NA	NA	NA	NA
4118	1103001314	SG				Cowskin Creek	52.3	.06	1.18	3.11	7.31	18.0
4121	1103001816	SG				Fourmile Creek	3.34	0	0	0	0	0
4123	110300137	SG				East Fork Chisholm Creek	16.6	0	0	.71	2.09	6.38

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 97)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
71	56.0	2,290	5,140	7,770	11,800	15,400	19,400
3822	NA	NA	NA	NA	NA	NA	NA
3824	NA	NA	NA	NA	NA	NA	NA
3828	4.16	918	2,140	3,230	4,940	6,380	8,050
3833	2.76	781	1,790	2,680	4,070	5,240	6,590
3891	4.91	1,020	2,370	3,580	5,480	7,080	8,930
3898	NA	NA	NA	NA	NA	NA	NA
3906	22.0	1,960	4,420	6,680	10,200	13,200	16,600
3954	646	6,540	15,500	20,200	29,000	37,600	46,500
3955	18.1	1,410	3,310	5,080	7,850	10,300	13,000
3965	2.13	693	1,580	2,360	3,570	4,600	5,770
3971	NA	NA	NA	NA	NA	NA	NA
3976	2.45	737	1,680	2,520	3,820	4,920	6,170
3983	NA	NA	NA	NA	NA	NA	NA
4003	NA	NA	NA	NA	NA	NA	NA
4004	2.13	720	1,630	2,440	3,690	4,740	5,940
4007	NA	NA	NA	NA	NA	NA	NA
4015	1.44	627	1,410	2,110	3,180	4,080	5,100
4052	NA	NA	NA	NA	NA	NA	NA
4054	5.73	1,090	2,640	4,070	6,320	8,240	10,500
4068	NA	NA	NA	NA	NA	NA	NA
4069	13.0	1,110	2,690	4,200	6,570	8,670	11,000
4070	7.44	1,260	2,950	4,480	6,880	8,910	11,300
4071	12.5	1,590	3,670	5,590	8,560	11,200	14,100
4072	312	6,290	13,900	20,400	30,100	38,300	47,200
4073	323	6,440	14,200	20,800	30,700	39,100	48,200
4075	7.98	1,310	3,080	4,670	7,180	9,300	11,800
4076	8.03	1,320	3,090	4,690	7,210	9,340	11,800
4089	2.60	759	1,820	2,790	4,310	5,610	7,120
4093	6.48	1,190	2,860	4,390	6,800	8,860	11,200
4101	NA	NA	NA	NA	NA	NA	NA
4107	6.64	1,210	2,890	4,440	6,890	8,970	11,400
4108	NA	NA	NA	NA	NA	NA	NA
4109	NA	NA	NA	NA	NA	NA	NA
4115	NA	NA	NA	NA	NA	NA	NA
4118	15.0	1,190	2,870	4,460	6,960	9,190	11,700
4121	.67	483	1,080	1,590	2,390	3,050	3,810
4123	6.27	1,140	2,670	4,060	6,220	8,070	10,200

556 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 97)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		4124	110300138	SG						Chisholm Creek	2.47	0	0
4125	HYDRO	SG				HYDRO	3.91	NA	NA	NA	NA	NA	NA
4138	1103001816	SG				Fourmile Creek	6.40	0	0	0	0	0	.88
4148	HYDRO	SG				HYDRO	6.58	NA	NA	NA	NA	NA	NA
4156	1103001315	SG				Dry Creek	31.5	0	1.07	2.69	5.69	12.9	
4164	110300101	SG				Arkansas River	36,500	64.0	134	303	600	1,260	
4165	110300121	SG				Little Arkansas River	1,400	22.0	35.5	67.1	143	529	
4166	110300139	SG				Arkansas River	36,500	92.5	124	159	289	647	
4167	HYDRO	SG				HYDRO	12.6	NA	NA	NA	NA	NA	NA
4177	110300139001	SG				Wichita-Valley Center Floodway	4.12	0	.30	.50	.70	1.40	
4178	1103001311	SG				Big Slough	28.2	1.41	2.34	3.53	5.92	11.5	
4222	1103001816	SG				Fourmile Creek	13.9	0	0	.12	1.20	5.40	
4223	110300167	SG				Clearwater Creek	9.42	0	0	.29	.41	1.60	
4226	1103001832	SG				Spring Branch	11.9	0	0	0	.50	3.44	
4231	11030016161	SG				Clear Creek	2.28	0	0	0	0	0	
4233	HYDRO	SG				HYDRO	9.74	NA	NA	NA	NA	NA	NA
4234	110300141	SG				North Fork Ninnescah River	892	2.00	3.26	5.60	84.9	399	
4236	HYDRO	SG				HYDRO	2.36	NA	NA	NA	NA	NA	NA
4273	11030016161	SG				Clear Creek	2.89	0	0	0	0	0	
4274	1103001659	SG				Polecat Creek	10.2	0	0	.33	.52	1.86	
4278	110300135	SG				Gypsum Creek	29.9	0	.05	1.44	4.29	12.3	
4279	110300136	SG				Chisholm Creek	30.5	.15	1.33	3.14	6.72	15.2	
4292	1103001659	SG				Polecat Creek	14.3	0	.03	.68	1.38	3.77	
4294	HYDRO	SG				HYDRO	15.7	NA	NA	NA	NA	NA	NA
4295	110300134	SG				Chisholm Creek	60.8	.07	1.66	4.80	11.9	29.5	
4299	110300167	SG				Clearwater Creek	12.4	0	.02	.61	1.16	3.21	
4304	1103001659	SG				Polecat Creek	16.6	0	.10	.87	1.85	4.85	
4313	110300139	SG				Arkansas River	37,900	126	226	433	858	2,220	
4316	1103001414	SG				Spring Creek	23.8	0	.49	1.70	3.72	8.83	
4317	110300141	SG				North Fork Ninnescah River	907	2.96	4.82	8.24	90.0	409	
4323	110300167	SG				Clearwater Creek	31.3	0	.52	1.96	4.60	11.3	
4324	HYDRO	SG				HYDRO	32.1	NA	NA	NA	NA	NA	NA
4329	1103001313	SG				Cowskin Creek	108	.82	3.14	7.74	18.1	43.0	
4346	110300167	SG				Clearwater Creek	35.0	0	.64	2.28	5.39	13.2	
4358	110300139011	SG				Wichita-Valley Center Floodway	45.8	1.86	3.70	6.10	10.6	20.5	
4360	1103001312	SG				Cowskin Creek	142	1.11	3.86	9.71	23.1	55.9	
4361	110300164	SG				Clearwater Creek	35.2	0	.65	2.30	5.44	13.3	
4365	11030016148	SG				Afton Creek	16.5	0	.14	.94	1.98	5.09	

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 97)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4124	0.08	351	805	1,210	1,830	2,350	2,940
4125	NA	NA	NA	NA	NA	NA	NA
4138	2.28	720	1,620	2,410	3,630	4,650	5,820
4148	NA	NA	NA	NA	NA	NA	NA
4156	10.2	1,050	2,480	3,820	5,900	7,720	9,750
4164	730	8,270	20,800	24,000	34,500	44,800	55,200
4165	332	6,400	14,100	20,800	30,700	39,100	48,200
4166	348	7,380	17,400	27,400	44,100	59,700	78,500
4167	NA	NA	NA	NA	NA	NA	NA
4177	.92	435	1,030	1,560	2,400	3,110	3,930
4178	8.98	1,410	3,410	5,270	8,200	10,700	13,600
4222	6.04	1,180	2,670	3,990	6,030	7,740	9,710
4223	2.48	702	1,690	2,590	4,010	5,230	6,630
4226	4.53	1,020	2,330	3,490	5,290	6,820	8,570
4231	0	612	1,060	1,380	1,800	2,120	2,430
4233	NA	NA	NA	NA	NA	NA	NA
4234	131	1,330	2,550	3,330	4,300	5,010	5,650
4236	NA	NA	NA	NA	NA	NA	NA
4273	.05	657	1,170	1,550	2,060	2,460	2,870
4274	2.68	728	1,760	2,700	4,190	5,470	6,940
4278	11.0	1,600	3,800	5,810	8,970	11,700	14,800
4279	11.7	993	2,350	3,620	5,600	7,340	9,270
4292	4.08	1,190	2,490	3,620	5,310	6,740	8,330
4294	NA	NA	NA	NA	NA	NA	NA
4295	22.3	1,650	3,810	5,810	8,920	11,700	14,700
4299	3.60	820	1,990	3,060	4,750	6,200	7,870
4304	4.86	1,270	2,700	3,930	5,820	7,400	9,190
4313	1,050	9,740	18,600	24,000	34,500	44,800	55,200
4316	7.52	1,190	2,920	4,530	7,100	9,310	11,900
4317	136	1,460	2,800	3,640	4,680	5,470	6,190
4323	9.55	1,580	3,320	4,850	7,140	9,130	11,300
4324	NA	NA	NA	NA	NA	NA	NA
4329	31.4	1,680	3,940	6,090	9,460	12,400	15,800
4346	10.8	1,700	3,570	5,210	7,660	9,790	12,100
4358	14.5	816	1,940	2,990	4,620	6,050	7,640
4360	40.1	1,970	4,590	7,070	11,000	14,400	18,300
4361	10.9	1,710	3,580	5,230	7,700	9,830	12,100
4365	4.97	962	2,350	3,630	5,650	7,390	9,410

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

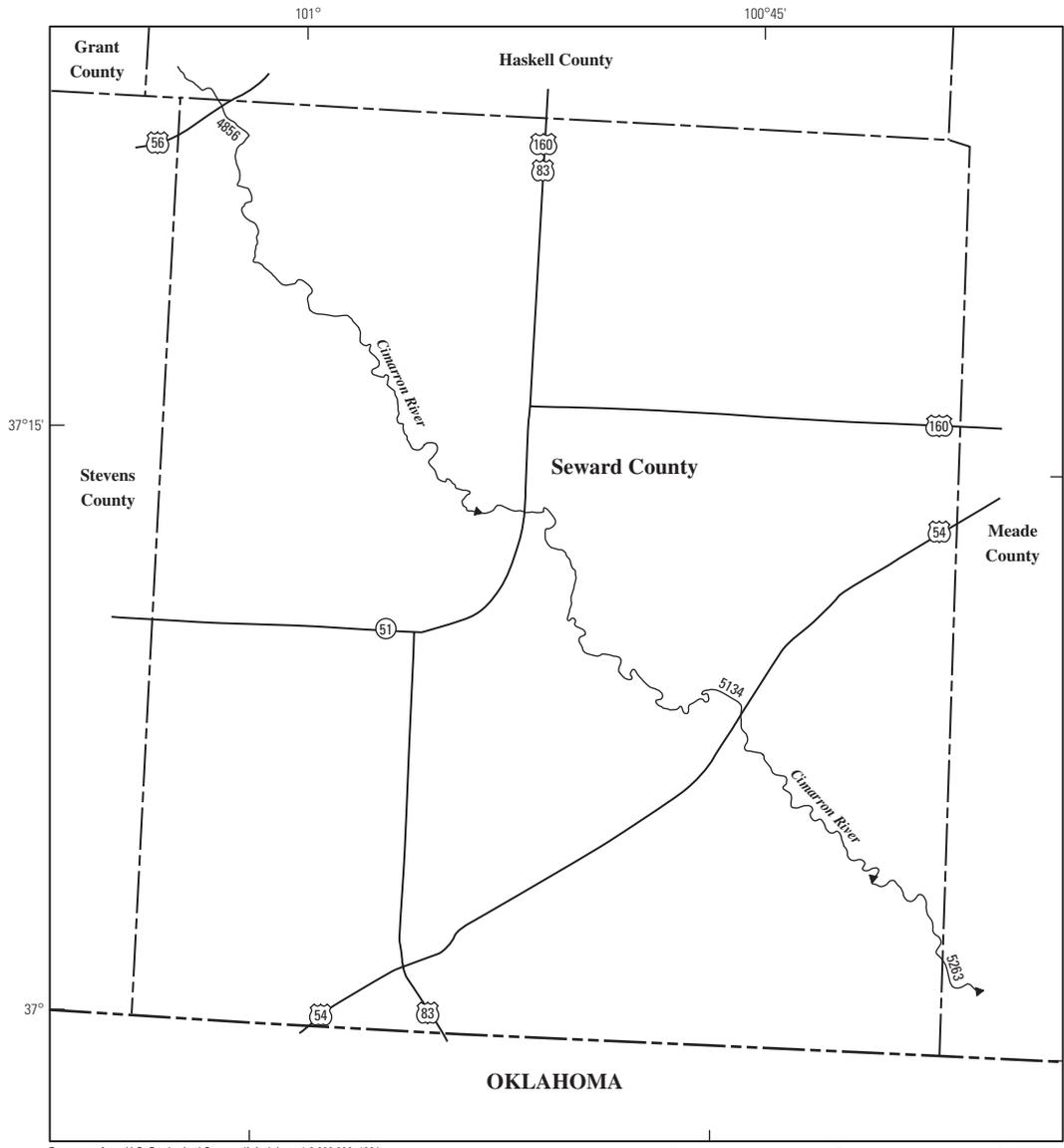
Determination site identification number (fig. 97)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4370	1103001316	SG						Dry Creek	30.8	0
4371	1103001316	SG				Dry Creek	19.8	0	.13	.96	2.15	5.68
4393	110300139010	SG				Wichita-Valley Center Floodway	195	2.65	6.86	16.0	35.3	82.0
4397	110300141	SG				North Fork Ninnescah River	939	4.99	8.15	13.9	101	428
4398	110300151	SG				South Fork Ninnescah River	874	70.7	107	157	236	399
4431	110300162	SG				Spring Creek	15.5	0	.02	.66	1.41	4.04
4437	HYDRO	SG				HYDRO	16.0	NA	NA	NA	NA	NA
4438	110300164	SG				Clearwater Creek	60.9	0	1.42	4.19	10.1	24.3
4440	110300168	SG				Ninnescah River	1,890	48.6	100	191	329	675
4442	110300133	SG				Arkansas River	38,000	187	298	533	1,090	2,560
4445	110300168	SG				Ninnescah River	1,820	60.9	99.6	169	400	974
4456	110300168	SG				Ninnescah River	1,890	65.7	107	182	425	1,020
4482	1103001616	SG				Dry Creek	16.0	0	0	.47	1.05	3.45
4483	110300162	SG				Spring Creek	24.4	0	.30	1.37	3.19	8.21
4486	1103001615	SG				Spring Creek	19.9	0	.42	1.38	2.87	6.87
4494	1103001337	SG				Spring Creek	29.4	0	.18	1.63	4.60	12.8
4495	110300133	SG				Arkansas River	38,000	192	304	541	1,110	2,590
4511	110300163	SG				Ninnescah River	1,980	71.1	116	197	455	1,070
4555	110300163	SG				Ninnescah River	2,020	73.6	120	204	468	1,100
4564	110300163	SG				Ninnescah River	2,030	74.4	122	206	472	1,110
4592	110300162	SG	SU			Spring Creek	54.0	0	1.01	2.98	7.35	18.7
4594	110300163	SG	SU			Ninnescah River	2,050	75.8	124	210	480	1,120
4654	1103001613	SG	SU			Turtle Creek	10.5	0	0	0	0	1.22
4679	1103001612	SG	SU			Silver Creek	16.9	0	0	0	.35	2.65
4683	11030013531	SG	SU			Dog Creek	20.5	0	.46	1.59	3.65	9.11
4684	110300133	SG	SU			Arkansas River	38,000	194	307	547	1,120	2,610
4689	1103001328	SG	SU			Bitter Creek	18.0	0	0	0	.85	4.66
4761	1103001310	SG	SU			Cowskin Creek	51.6	.78	2.27	4.60	9.37	20.5

**Table 93.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sedgwick County.—Continued

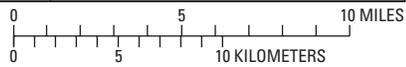
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 97)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4370	8.73	947	2,320	3,640	5,720	7,580	9,660
4371	5.65	1,070	2,630	4,070	6,350	8,320	10,600
4393	55.1	2,290	5,180	7,860	12,000	15,700	19,800
4397	146	1,740	3,320	4,280	5,490	6,470	7,330
4398	258	6,900	14,600	21,200	30,900	39,000	47,900
4431	4.46	967	2,330	3,590	5,570	7,260	9,230
4437	NA	NA	NA	NA	NA	NA	NA
4438	18.6	2,260	4,720	6,890	10,100	12,900	15,900
4440	364	7,530	19,100	31,600	54,400	77,600	107,000
4442	1,200	13,900	23,600	27,000	36,800	46,100	55,200
4445	432	9,380	17,700	22,000	27,800	33,700	38,600
4456	456	10,000	18,900	23,500	29,700	36,100	41,300
4482	4.26	996	2,400	3,680	5,710	7,450	9,460
4483	7.54	1,270	3,090	4,770	7,430	9,710	12,400
4486	6.20	1,090	2,660	4,120	6,420	8,400	10,700
4494	11.2	1,620	3,820	5,820	8,970	11,700	14,800
4495	1,210	14,200	24,000	27,200	37,000	46,200	55,200
4511	484	10,800	20,300	25,200	31,900	38,700	44,300
4555	497	11,100	21,000	26,000	32,900	39,900	45,700
4564	501	11,200	21,200	26,300	33,200	40,300	46,200
4592	15.7	1,380	3,280	5,060	7,850	10,300	13,100
4594	508	11,400	21,600	26,700	33,800	41,000	47,000
4654	2.61	786	1,870	2,860	4,410	5,740	7,270
4679	4.14	1,040	2,500	3,840	5,950	7,760	9,850
4683	7.92	1,300	3,060	4,650	7,140	9,260	11,700
4684	1,220	14,300	24,200	27,400	37,300	46,600	55,800
4689	5.93	1,240	2,880	4,370	6,680	8,650	10,900
4761	15.6	888	2,180	3,420	5,390	7,140	9,110



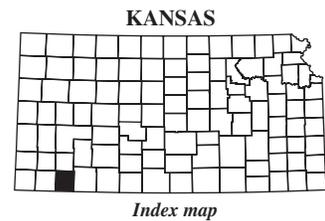


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 5263 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06844900 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06846000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2350 Lake and determination site identification number



**Figure 98.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Seward County.

**562 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 94.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Seward County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

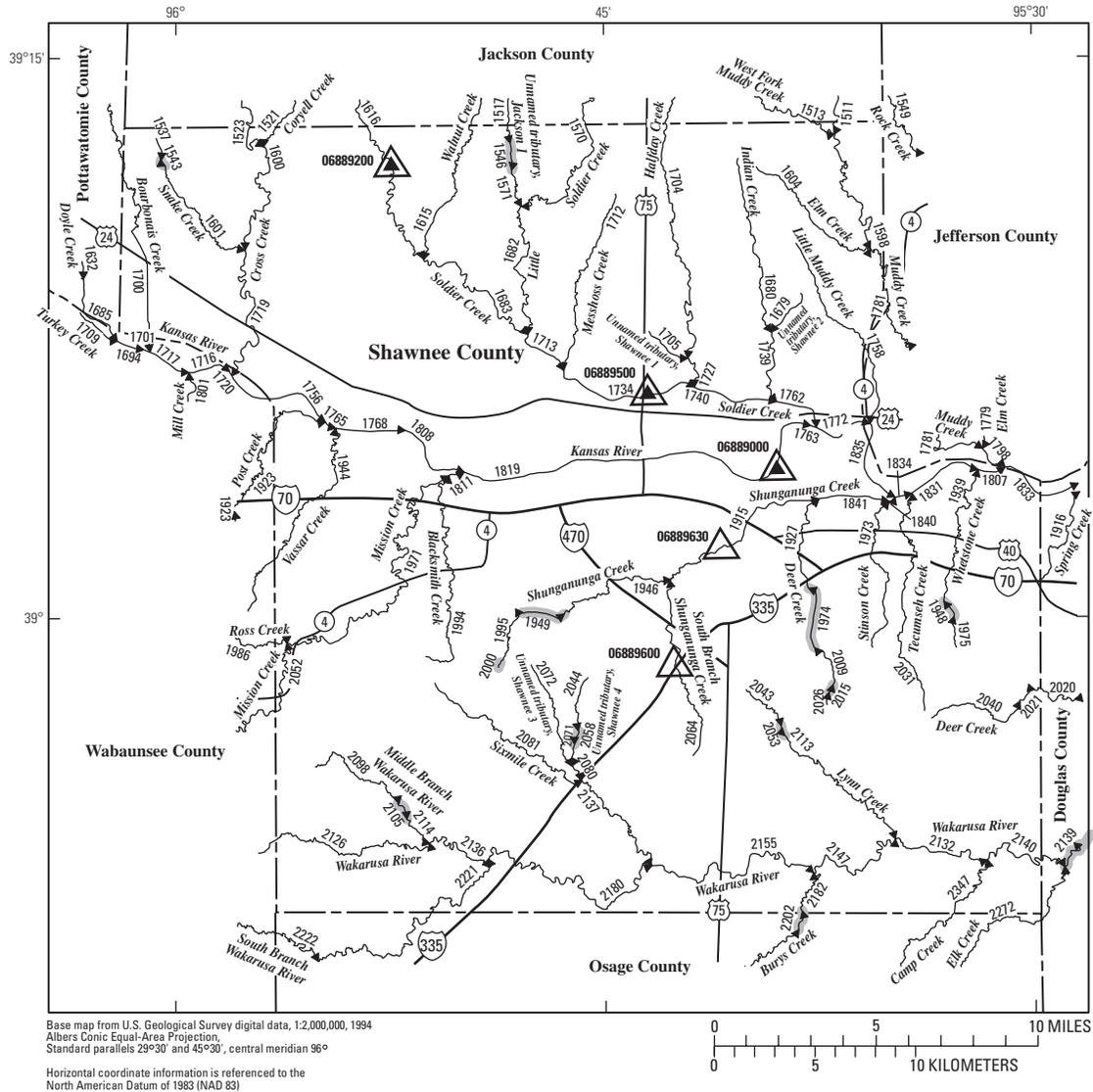
Determination site identification number (fig. 98)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5134	110400062	SW						Cimarron River	6,660	24.8

**Table 94.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Seward County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 98)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5134	52.3	2,080	6,060	10,300	17,500	24,300	32,500

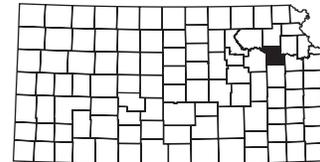




**EXPLANATION**

- ← 2222 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06889000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06889600 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2105 Lake and determination site identification number

**KANSAS**



*Index map*

**Figure 99.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Shawnee County.

**Table 95.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Shawnee County.[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NR Tribal, tribal stream]

Determination site identification number (fig. 99)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1543	HYDRO	SN					HYDRO	3.68	NA	NA
1546	HYDRO	SN			HYDRO	5.20	NA	NA	NA	NA	NA	
1571	102701028	SN			Unnamed tributary, Jackson 2	6.93	0	0	.65	2.15	6.40	
1600	1027010212	SN			Cross Creek	156	0	2.51	12.5	43.5	133	
1601	1027010295	SN			Snake Creek	10.1	0	.26	1.62	4.20	10.4	
1604	1027010298	SN			Elm Creek	6.65	0	0	.67	2.30	6.84	
1679	102701021367	SN			Unnamed tributary, Shawnee 2	1.78	0	0	0	0	.11	
1680	102701021365	SN			Indian Creek	11.3	0	0	1.22	4.20	12.0	
1682	102701026	SN			Little Soldier Creek	68.0	.07	1.31	6.78	22.8	64.9	
1683	102701029	SN			Soldier Creek	188	2.61	8.65	23.2	65.7	175	
1701	1027010213	SN			Kansas River	54,500	961	1,780	3,440	7,740	18,500	
1705	102701021389	SN			Unnamed tributary, Shawnee 1	4.00	0	0	.49	1.19	3.46	
1712	1027010296	SN			Messhoss Creek	11.9	0	.01	1.46	4.55	12.4	
1713	102701025	SN			Soldier Creek	260	2.14	8.87	27.5	81.9	225	
1716	1027010213	SN	WB		Kansas River	55,000	968	1,700	3,210	7,370	17,000	
1717	1027010213	SN	WB		Kansas River	54,600	961	1,780	3,430	7,720	18,400	
1719	1027010212	SN			Cross Creek	179	.15	3.67	16.3	53.9	159	
1720	1027010211	SN			Kansas River	55,000	968	1,700	3,210	7,370	17,000	
1727	1027010297	SN			Halfday Creek	26.6	0	.36	3.29	10.7	29.2	
1734	102701025	SN			Soldier Creek	281	2.20	9.40	30.0	89.0	243	
1739	102701021365	SN			Indian Creek	16.7	0	0	1.79	6.04	17.1	
1740	102701025	SN			Soldier Creek	312	2.49	10.3	33.7	100	277	
1756	1027010211	SN			Kansas River	55,200	971	1,660	3,110	7,200	16,300	
1762	102701025	SN			Soldier Creek	331	2.65	10.8	35.7	107	297	
1763	102701024	SN			Kansas River	55,300	974	1,630	3,020	7,060	15,800	
1765	1027010211	SN			Kansas River	55,200	971	1,660	3,100	7,190	16,300	
1768	1027010211	SN			Kansas River	55,200	971	1,660	3,090	7,170	16,200	
1808	1027010210	SN			Kansas River	55,200	971	1,650	3,090	7,170	16,200	
1811	1027010234	SN			Mission Creek	99.5	0	2.11	10.5	35.0	100	
1819	1027010210	SN			Kansas River	55,300	974	1,630	3,020	7,060	15,800	
1834	102701023	SN			Kansas River	55,700	1,010	1,700	3,160	7,370	16,500	
1840	1027010239	SN			Shunganunga Creek	76.4	0	.87	5.13	17.9	54.4	
1841	1027010239	SN			Shunganunga Creek	69.2	0	.71	4.55	16.0	48.5	
1915	1027010240	SN			Shunganunga Creek	49.9	0	.24	3.08	11.3	34.8	
1923	10270102101	SN	WB		Post Creek	14.0	0	0	1.33	4.58	13.2	
1927	1027010241	SN			Deer Creek	16.8	0	0	.87	3.39	11.0	
1944	10270102100	SN	WB		Vassar Creek	14.2	0	0	1.22	4.49	13.4	
1946	1027010240	SN			Shunganunga Creek	19.0	0	0	1.40	5.20	15.8	

**Table 95.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Shawnee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 99)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1543	NA	NA	NA	NA	NA	NA	NA
1546	NA	NA	NA	NA	NA	NA	NA
1571	5.30	941	2,010	2,920	4,300	5,450	6,760
1600	90.5	6,120	12,600	18,300	27,000	34,500	42,800
1601	7.61	1,130	2,450	3,590	5,330	6,790	8,450
1604	5.49	946	2,000	2,900	4,270	5,400	6,680
1679	.90	436	899	1,290	1,870	2,350	2,880
1680	9.16	1,270	2,730	4,000	5,910	7,500	9,320
1682	45.9	3,840	8,030	11,700	17,300	22,100	27,400
1683	114	4,900	8,710	11,800	16,400	20,200	24,400
1701	7,120	34,000	60,400	83,000	117,000	150,000	186,000
1705	3.03	690	1,450	2,100	3,070	3,880	4,790
1712	9.32	1,300	2,790	4,090	6,060	7,690	9,560
1713	148	6,070	11,700	16,300	23,100	28,700	34,800
1716	6,720	35,400	64,000	88,800	120,000	162,000	203,000
1717	7,100	34,100	60,600	83,300	118,000	151,000	187,000
1719	105	5,950	12,200	17,700	26,100	33,400	41,400
1720	6,720	35,400	64,000	88,800	120,000	162,000	203,000
1727	20.6	2,070	4,540	6,700	10,000	12,800	16,000
1734	158	5,970	11,700	16,400	23,300	29,000	35,200
1739	12.8	1,590	3,440	5,050	7,500	9,540	11,900
1740	177	6,350	12,400	17,300	24,600	30,700	37,200
1756	6,550	36,000	65,600	91,300	122,000	168,000	210,000
1762	188	6,580	12,800	18,000	25,500	31,800	38,700
1763	6,400	36,600	67,000	93,600	123,000	173,000	217,000
1765	6,540	36,100	65,700	91,500	122,000	168,000	211,000
1768	6,520	36,100	65,800	91,800	122,000	169,000	212,000
1808	6,510	36,200	65,900	91,900	122,000	169,000	212,000
1811	66.0	4,720	9,760	14,200	21,000	26,800	33,200
1819	6,400	36,600	67,000	93,600	123,000	173,000	217,000
1834	6,680	38,500	70,200	97,300	127,000	177,000	220,000
1840	42.0	3,060	4,590	5,720	7,240	8,450	9,710
1841	37.9	2,800	4,100	5,030	6,260	7,230	8,230
1915	28.0	2,150	2,910	3,390	3,970	4,390	4,790
1923	10.2	1,370	2,990	4,410	6,560	8,360	10,400
1927	9.92	1,590	3,450	5,060	7,530	9,580	11,900
1944	10.5	1,390	3,030	4,450	6,630	8,450	10,500
1946	12.8	1,460	2,990	4,290	6,270	7,890	9,780

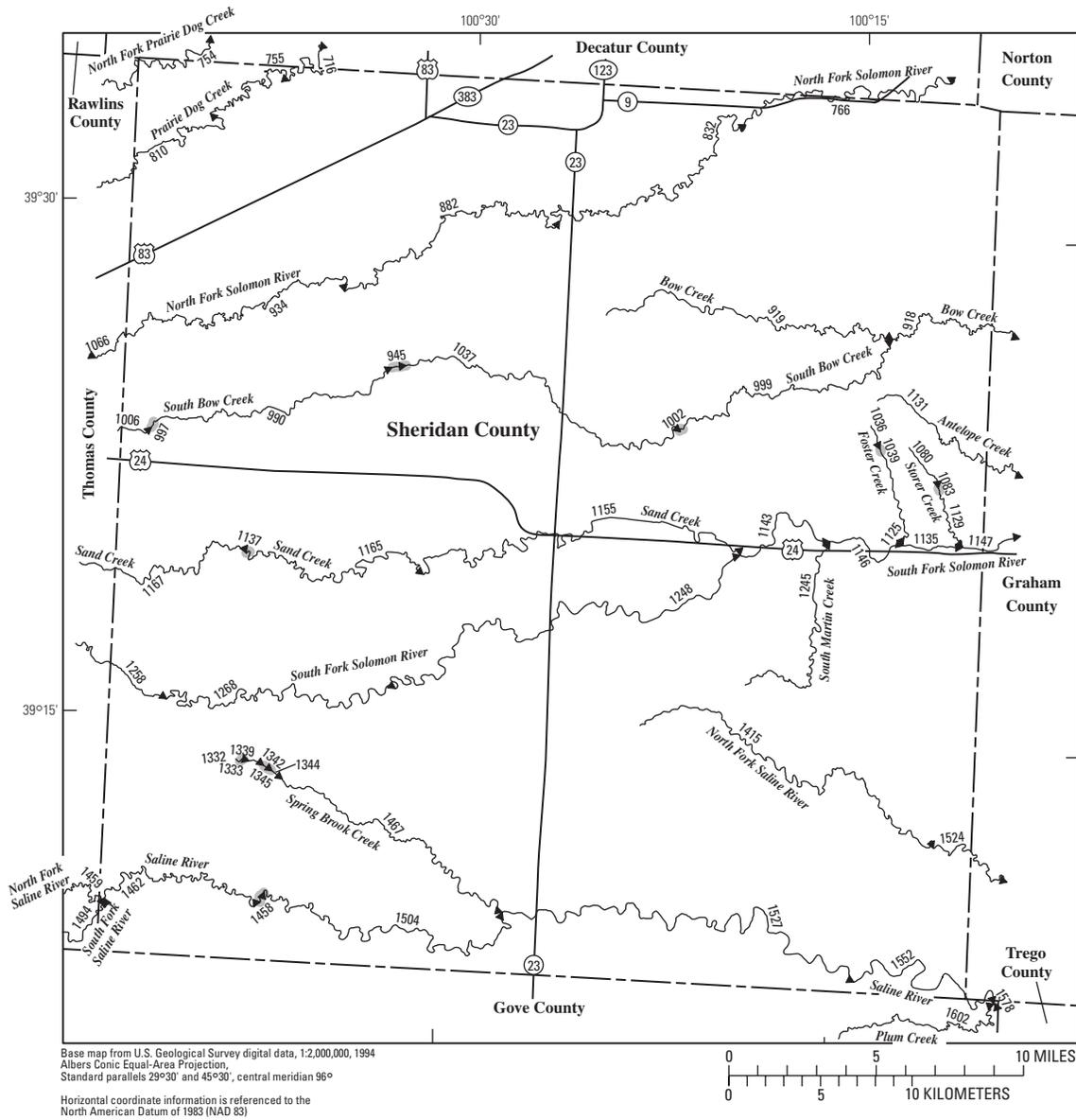
**Table 95.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Shawnee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 99)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
1948	HYDRO	SN			HYDRO	5.33	NA	NA	NA	NA	NA	
1949	HYDRO	SN			HYDRO	8.36	NA	NA	NA	NA	NA	
1971	1027010234	SN			Mission Creek	86.3	0	1.87	9.37	30.8	87.2	
1973	10270102394	SN			Stinson Creek	7.18	0	0	.44	1.60	5.29	
1974	HYDRO	SN			HYDRO	11.8	NA	NA	NA	NA	NA	
1975	10270102104	SN			Whetstone Creek	3.56	0	0	0	0	1.47	
1986	1027010235	SN	WB		Ross Creek	6.88	0	0	.55	1.91	5.91	
1994	10270102102	SN			Blacksmith Creek	12.9	0	0	1.39	4.79	13.7	
1995	1027010240	SN			Shunganunga Creek	5.31	0	0	.24	1.11	4.07	
2000	HYDRO	SN			HYDRO	1.29	NA	NA	NA	NA	NA	
2009	1027010241	SN			Deer Creek	6.18	0	0	0	.59	3.22	
2015	HYDRO	SN			HYDRO	3.10	NA	NA	NA	NA	NA	
2021	10270104701	SN			Deer Creek	14.5	0	0	1.59	5.27	14.9	
2026	1027010241	SN			Deer Creek	2.60	0	0	0	0	0	
2031	10270102107	SN			Tecumseh Creek	10.2	0	0	.94	3.15	9.23	
2040	10270104701	SN			Deer Creek	12.0	0	0	1.19	4.09	11.9	
2043	1027010467	SN			Lynn Creek	6.05	0	0	0	0	1.56	
2044	10270104584	SN			Unnamed tributary, Shawnee 4	5.05	0	0	.23	1.07	3.94	
2052	1027010236	SN	WB		Mission Creek	60.8	0	1.24	6.84	22.4	62.6	
2053	HYDRO	SN			HYDRO	7.02	NA	NA	NA	NA	NA	
2058	HYDRO	SN			HYDRO	6.86	NA	NA	NA	NA	NA	
2064	10270102106	SN			South Branch Shunganunga Creek	19.3	0	0	.69	3.31	11.6	
2071	10270104584	SN			Unnamed tributary, Shawnee 4	7.43	0	0	.46	1.91	6.30	
2072	10270104583	SN			Unnamed tributary, Shawnee 3	4.30	0	0	.21	.91	3.39	
2080	10270104583	SN			Unnamed tributary, Shawnee 3	12.1	0	0	1.00	3.75	11.3	
2081	1027010465	SN			Sixmile Creek	15.4	0	0	1.31	4.79	14.2	
2098	1027010464	SN			Middle Branch Wakarusa River	12.6	0	0	.92	3.51	10.8	
2105	HYDRO	SN			HYDRO	13.9	NA	NA	NA	NA	NA	
2113	1027010467	SN			Lynn Creek	20.2	0	0	1.41	5.11	15.5	
2114	1027010464	SN			Middle Branch Wakarusa River	14.8	0	0	1.21	4.40	13.1	
2126	1027010431	SN	WB		Wakarusa River	16.1	0	0	1.53	5.17	14.8	
2132	1027010430	SN			Wakarusa River	199	.20	3.59	16.4	56.3	172	
2136	1027010431	SN			Wakarusa River	34.5	0	.33	3.32	11.2	32.0	
2137	1027010465	SN			Sixmile Creek	36.3	0	.12	2.93	10.7	31.9	
2147	1027010430	SN			Wakarusa River	172	0	3.06	14.3	49.2	150	
2155	1027010431	SN			Wakarusa River	138	0	2.38	11.6	40.1	121	
2180	1027010431	SN			Wakarusa River	87.0	0	1.42	7.65	26.3	77.4	
2182	1027010432	SN			Burys Creek	27.9	0	0	2.02	7.36	22.3	

**Table 95.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Shawnee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 99)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1948	NA	NA	NA	NA	NA	NA	NA
1949	NA	NA	NA	NA	NA	NA	NA
1971	57.8	4,310	8,970	13,100	19,300	24,700	30,600
1973	4.90	981	2,080	3,030	4,460	5,640	6,990
1974	NA	NA	NA	NA	NA	NA	NA
1975	2.24	694	1,430	2,050	2,980	3,740	4,600
1986	5.02	907	1,950	2,850	4,210	5,340	6,630
1994	10.2	1,320	2,870	4,210	6,260	7,980	9,930
1995	3.80	772	1,630	2,370	3,480	4,400	5,440
2000	NA	NA	NA	NA	NA	NA	NA
2009	3.76	912	1,920	2,790	4,090	5,170	6,390
2015	NA	NA	NA	NA	NA	NA	NA
2021	11.5	1,580	3,350	4,870	7,170	9,080	11,300
2026	1.06	555	1,150	1,650	2,390	3,010	3,700
2031	7.56	1,220	2,610	3,790	5,590	7,090	8,790
2040	9.45	1,420	2,990	4,350	6,390	8,080	10,000
2043	2.90	880	1,870	2,710	3,980	5,040	6,240
2044	3.69	775	1,650	2,390	3,520	4,450	5,510
2052	42.2	4,200	8,590	12,400	18,100	23,000	28,300
2053	NA	NA	NA	NA	NA	NA	NA
2058	NA	NA	NA	NA	NA	NA	NA
2064	10.9	758	1,450	2,040	2,950	3,740	4,640
2071	5.46	968	2,070	3,020	4,470	5,670	7,030
2072	3.18	701	1,490	2,160	3,170	4,010	4,960
2080	9.02	1,280	2,770	4,070	6,050	7,690	9,580
2081	11.1	1,450	3,160	4,660	6,960	8,880	11,100
2098	8.84	1,290	2,800	4,120	6,140	7,820	9,740
2105	NA	NA	NA	NA	NA	NA	NA
2113	13.0	1,810	3,920	5,750	8,550	10,900	13,600
2114	10.4	1,420	3,090	4,560	6,800	8,660	10,800
2126	11.5	1,510	3,280	4,830	7,200	9,180	11,400
2132	116	8,020	15,700	22,300	32,200	40,700	49,900
2136	23.4	3,080	6,450	9,420	13,900	17,700	21,800
2137	24.1	3,660	7,560	11,000	16,000	20,400	25,100
2147	102	7,600	14,900	21,200	30,600	38,600	47,400
2155	82.8	6,710	13,300	19,000	27,600	34,900	42,900
2180	54.5	5,420	10,800	15,500	22,500	28,500	34,900
2182	18.0	2,210	4,800	7,060	10,500	13,400	16,700





**Figure 100.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Sheridan County.

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**Table 96.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sheridan County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 100)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		810	1025001512	SD	TH					Prairie Dog Creek	178	0
832	1026001113	SD				North Fork Solomon River	274	0	0	0	.25	1.98
882	1026001113	SD				North Fork Solomon River	223	0	0	0	0	0
919	1026001116	SD				Bow Creek	45.9	0	0	.01	.02	.04
934	1026001113	SD	TH			North Fork Solomon River	176	0	0	0	0	0
945	HYDRO	SD				HYDRO	50.5	NA	NA	NA	NA	NA
990	1026001117	SD				South Bow Creek	49.4	0	0	0	.02	.04
997	HYDRO	SD				HYDRO	12.2	NA	NA	NA	NA	NA
999	1026001117	SD				South Bow Creek	117	.03	.05	.08	.11	.22
1002	HYDRO	SD				HYDRO	94.6	NA	NA	NA	NA	NA
1006	1026001117	SD	TH			South Bow Creek	11.7	0	0	0	0	0
1036	1026001319	SD				Foster Creek	3.77	0	0	0	0	0
1037	1026001117	SD				South Bow Creek	94.3	0	.02	.05	.07	.14
1039	HYDRO	SD				HYDRO	3.86	NA	NA	NA	NA	NA
1080	1026001320	SD				Storer Creek	2.70	0	0	0	0	0
1083	HYDRO	SD				HYDRO	2.75	NA	NA	NA	NA	NA
1125	1026001319	SD				Foster Creek	9.34	0	0	0	0	0
1129	1026001320	SD				Storer Creek	5.89	0	0	0	0	0
1135	1026001314	SD				South Fork Solomon River	465	0	0	2.13	6.62	14.9
1137	HYDRO	SD				HYDRO	54.7	NA	NA	NA	NA	NA
1143	1026001314	SD				South Fork Solomon River	414	0	0	1.39	4.65	10.9
1146	1026001314	SD				South Fork Solomon River	449	0	0	1.89	5.98	13.6
1155	1026001315	SD				Sand Creek	123	0	0	.11	.30	.52
1165	1026001315	SD				Sand Creek	85.5	0	0	.05	.14	.25
1167	1026001315	SD	TH			Sand Creek	54.6	0	0	.02	.06	.10
1245	1026001323	SD				South Martin Creek	26.4	0	0	.01	.01	.02
1248	1026001316	SD				South Fork Solomon River	279	0	0	.59	1.52	4.05
1258	1026001316	SD	TH			South Fork Solomon River	194	0	0	.28	.74	1.29
1268	1026001316	SD				South Fork Solomon River	225	0	0	.38	.99	1.73
1332	HYDRO	SD				HYDRO	5.84	NA	NA	NA	NA	NA
1333	1026000921	SD				Spring Brook Creek	5.35	0	0	0	0	0
1339	1026000921	SD				Spring Brook Creek	7.26	0	0	0	0	0
1342	HYDRO	SD				HYDRO	7.73	NA	NA	NA	NA	NA
1344	1026000921	SD				Spring Brook Creek	7.75	0	0	0	0	0
1345	HYDRO	SD				HYDRO	8.27	NA	NA	NA	NA	NA
1415	1026000915	SD				North Fork Saline River	69.2	0	0	0	.05	.05
1458	HYDRO	SD				HYDRO	277	NA	NA	NA	NA	NA
1459	1026000917	SD	TH			North Fork Saline River	86.4	0	0	0	.07	.07

**Table 96.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sheridan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 100)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
810	1.12	381	1,290	2,360	4,330	6,300	8,730
832	4.19	597	1,960	3,530	6,390	9,230	12,700
882	2.58	511	1,700	3,090	5,620	8,140	11,200
919	.26	300	980	1,750	3,130	4,480	6,110
934	1.36	415	1,420	2,600	4,760	6,940	9,630
945	NA	NA	NA	NA	NA	NA	NA
990	.04	283	945	1,710	3,080	4,430	6,070
997	NA	NA	NA	NA	NA	NA	NA
999	1.59	425	1,400	2,510	4,530	6,540	8,980
1002	NA	NA	NA	NA	NA	NA	NA
1006	0	236	766	1,340	2,340	3,260	4,380
1036	0	148	448	757	1,280	1,760	2,320
1037	.88	389	1,280	2,300	4,150	5,980	8,200
1039	NA	NA	NA	NA	NA	NA	NA
1080	0	123	369	622	1,050	1,430	1,890
1083	NA	NA	NA	NA	NA	NA	NA
1125	0	250	773	1,320	2,260	3,110	4,130
1129	0	194	590	1,000	1,700	2,340	3,100
1135	13.8	1,070	3,360	5,990	10,800	15,700	21,900
1137	NA	NA	NA	NA	NA	NA	NA
1143	10.9	924	2,950	5,290	9,620	14,000	19,500
1146	12.9	1,020	3,230	5,770	10,400	15,200	21,100
1155	2.15	458	1,480	2,650	4,760	6,840	9,380
1165	.61	338	1,130	2,060	3,740	5,430	7,480
1167	.06	260	891	1,630	2,970	4,320	5,950
1245	.09	463	1,460	2,510	4,340	6,020	8,040
1248	5.77	633	2,080	3,770	6,890	10,000	14,000
1258	2.48	434	1,490	2,750	5,090	7,470	10,500
1268	3.48	501	1,690	3,100	5,720	8,390	11,700
1332	NA	NA	NA	NA	NA	NA	NA
1333	0	157	496	854	1,470	2,040	2,720
1339	0	187	596	1,030	1,780	2,470	3,300
1342	NA	NA	NA	NA	NA	NA	NA
1344	0	195	621	1,070	1,860	2,580	3,440
1345	NA	NA	NA	NA	NA	NA	NA
1415	1.68	413	1,310	2,300	4,070	5,790	7,860
1458	NA	NA	NA	NA	NA	NA	NA
1459	.10	333	1,130	2,050	3,750	5,440	7,520

**Table 96.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sheridan County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

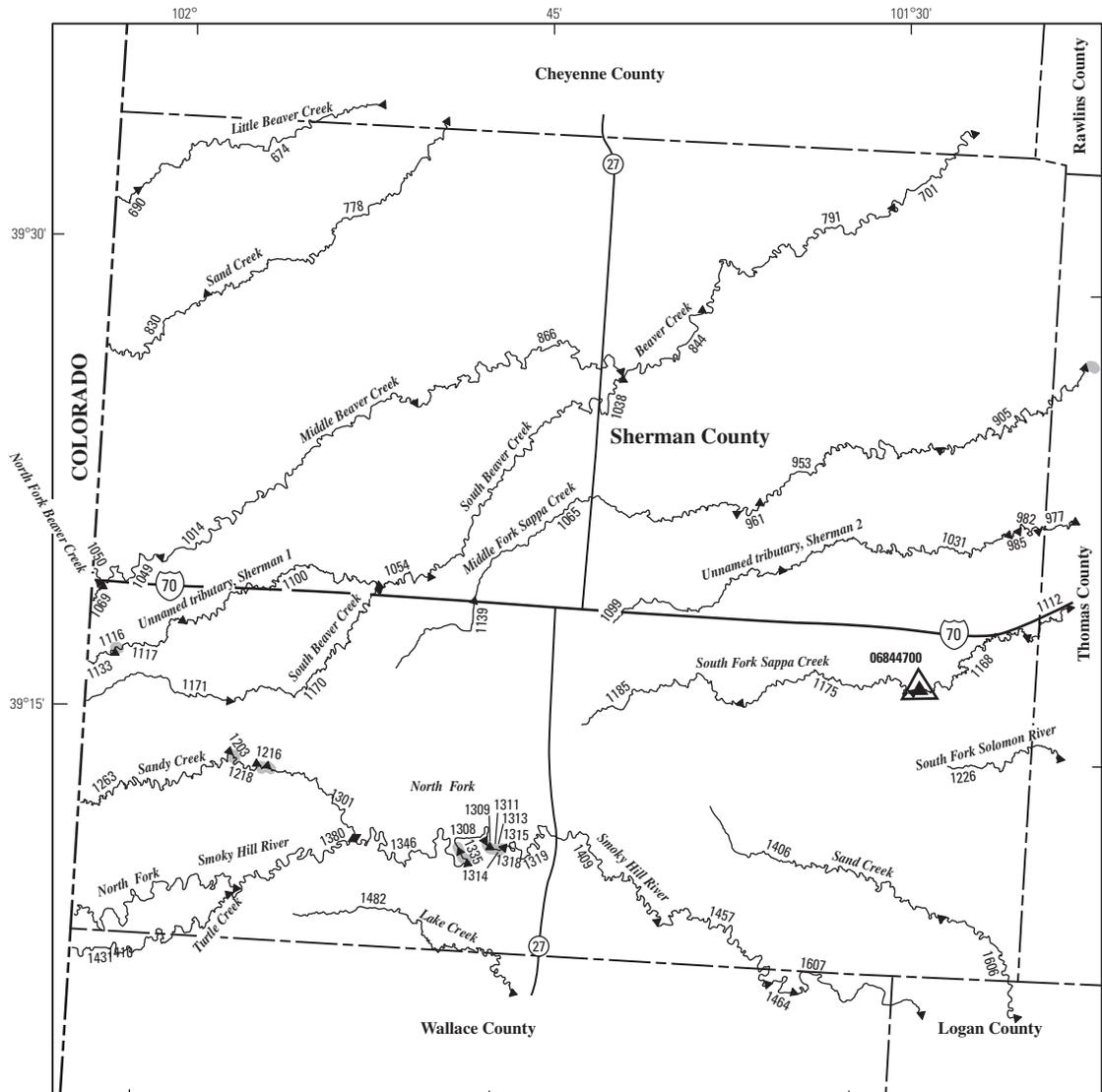
Determination site identification number (fig. 100)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1462	1026000916	SD						Saline River	277	0
1467	1026000921	SD				Spring Brook Creek	47.9	0	0	0	.02	.02
1494	1026000918	SD	TH			South Fork Saline River	162	0	0	.02	.26	.56
1504	1026000916	SD				Saline River	319	0	0	.06	.99	2.14
1527	1026000916	SD				Saline River	439	0	0	.27	3.30	7.28

**Table 96.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sheridan County.—Continued

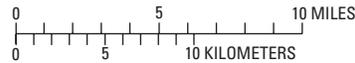
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 100)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1462	3.42	735	2,400	4,320	7,850	11,400	15,800
1467	.05	340	1,090	1,920	3,400	4,840	6,560
1494	1.25	425	1,450	2,660	4,910	7,180	10,000
1504	4.72	876	2,820	5,040	9,110	13,200	18,200
1527	8.97	1,360	4,230	7,440	13,300	19,100	26,200



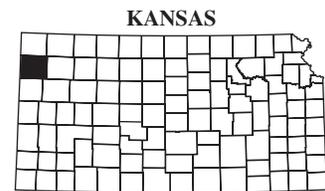


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 1431 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06844700 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06844700 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1216 Lake and determination site identification number



Index map

**Figure 101.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Sherman County.

**578 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 97.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sherman County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 101)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		690	102500134	SH						Little Beaver Creek	55.9	0	0
791	102500121	SH				Beaver Creek	508	0	0	0	0	0	0
830	102500137	SH				Sand Creek	81.2	0	0	0	0	0	0
844	102500121	SH				Beaver Creek	446	0	0	0	0	0	0
866	102500122	SH				Middle Beaver Creek	311	0	0	0	0	0	0
905	102500103	SH	TH			Middle Fork Sappa Creek	154	0	0	0	0	0	0
953	102500103	SH				Middle Fork Sappa Creek	113	0	0	0	0	0	0
961	102500103	SH				Middle Fork Sappa Creek	70.5	0	0	0	0	0	0
977	102500105	SH	TH			Unnamed tributary, Sherman 2	89.3	0	0	0	0	0	0
982	102500105	SH				Unnamed tributary, Sherman 2	67.5	0	0	0	0	0	0
985	102500105	SH				Unnamed tributary, Sherman 2	63.4	0	0	0	0	0	0
1014	102500122	SH				Middle Beaver Creek	263	0	0	0	0	0	0
1031	102500105	SH				Unnamed tributary, Sherman 2	62.4	0	0	0	0	0	0
1038	102500129	SH				South Beaver Creek	114	0	0	0	0	0	0
1049	102500122	SH				Middle Beaver Creek	203	0	0	0	0	0	0
1050	102500123	SH				North Fork Beaver Creek	151	0	0	0	0	0	0
1054	102500129	SH				South Beaver Creek	81.0	0	0	0	0	0	0
1065	102500103	SH				Middle Fork Sappa Creek	68.6	0	0	0	0	0	0
1069	102500128	SH				Middle Beaver Creek	41.2	0	0	0	0	0	0
1099	102500105	SH				Unnamed tributary, Sherman 2	30.0	0	0	0	0	0	0
1100	1025001210	SH				Unnamed tributary, Sherman 1	33.7	0	0	0	0	0	0
1112	102500106	SH	TH			South Fork Sappa Creek	114	0	0	0	0	0	0
1116	HYDRO	SH				HYDRO	3.69	NA	NA	NA	NA	NA	NA
1117	1025001210	SH				Unnamed tributary, Sherman 1	9.59	0	0	0	0	0	0
1133	1025001210	SH				Unnamed tributary, Sherman 1	3.27	0	0	0	0	0	0
1139	102500103	SH				Middle Fork Sappa Creek	28.3	0	0	0	0	0	0
1168	102500106	SH				South Fork Sappa Creek	89.7	0	0	0	0	0	0
1170	1025001211	SH				South Beaver Creek	41.1	0	0	0	0	0	0
1171	1025001211	SH				South Beaver Creek	19.2	0	0	0	0	0	0
1175	102500106	SH				South Fork Sappa Creek	71.3	0	0	0	0	0	0
1185	102500106	SH				South Fork Sappa Creek	36.6	0	0	0	0	0	0
1203	HYDRO	SH				HYDRO	90.9	NA	NA	NA	NA	NA	NA
1216	HYDRO	SH				HYDRO	95.2	NA	NA	NA	NA	NA	NA
1218	102600024	SH				Sandy Creek	94.3	0	0	0	.02	.04	
1226	1026001316	SH	TH			South Fork Solomon River	30.6	0	0	.01	.02	.03	
1263	102600024	SH				Sandy Creek	90.9	0	0	0	.01	.03	
1301	102600024	SH				Sandy Creek	109	0	0	0	.02	.05	
1308	102600023	SH				North Fork Smoky Hill River	486	0	0	0	.42	.99	

**Table 97.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sherman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 101)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
690	0	135	533	1,040	2,020	3,050	4,340
791	.91	433	1,540	2,880	5,420	8,030	11,300
830	0	175	676	1,310	2,520	3,780	5,350
844	.50	414	1,480	2,790	5,250	7,800	11,000
866	0	335	1,240	2,360	4,500	6,720	9,510
905	.16	298	1,070	2,020	3,790	5,600	7,860
953	0	256	931	1,750	3,300	4,880	6,840
961	0	197	730	1,380	2,610	3,880	5,450
977	0	236	853	1,600	3,010	4,440	6,230
982	0	196	721	1,360	2,580	3,820	5,360
985	0	190	700	1,320	2,500	3,710	5,210
1014	0	296	1,120	2,140	4,110	6,160	8,760
1031	0	189	697	1,320	2,490	3,690	5,180
1038	0	233	865	1,640	3,120	4,640	6,540
1049	0	248	957	1,850	3,590	5,410	7,710
1050	0	209	819	1,600	3,110	4,700	6,720
1054	0	194	730	1,390	2,660	3,960	5,590
1065	0	194	719	1,360	2,580	3,820	5,370
1069	0	119	473	925	1,800	2,710	3,860
1099	0	328	1,140	2,060	3,710	5,270	7,180
1100	0	112	440	857	1,660	2,500	3,540
1112	.15	78	466	1,140	2,830	4,960	8,090
1116	NA	NA	NA	NA	NA	NA	NA
1117	0	138	493	898	1,630	2,320	3,170
1133	0	72	253	457	821	1,170	1,580
1139	0	310	1,090	1,970	3,540	5,040	6,860
1168	.23	52	382	996	2,600	4,670	7,740
1170	0	132	513	989	1,900	2,850	4,030
1171	0	206	749	1,370	2,510	3,600	4,930
1175	.14	109	511	1,130	2,560	4,290	6,740
1185	.04	117	472	945	1,910	2,970	4,370
1203	NA	NA	NA	NA	NA	NA	NA
1216	NA	NA	NA	NA	NA	NA	NA
1218	0	171	682	1,340	2,640	4,030	5,790
1226	.02	149	547	1,030	1,930	2,850	3,980
1263	0	167	669	1,320	2,590	3,950	5,680
1301	0	196	770	1,510	2,960	4,490	6,450
1308	.72	277	1,390	3,080	6,910	11,400	17,700

**Table 97.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sherman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

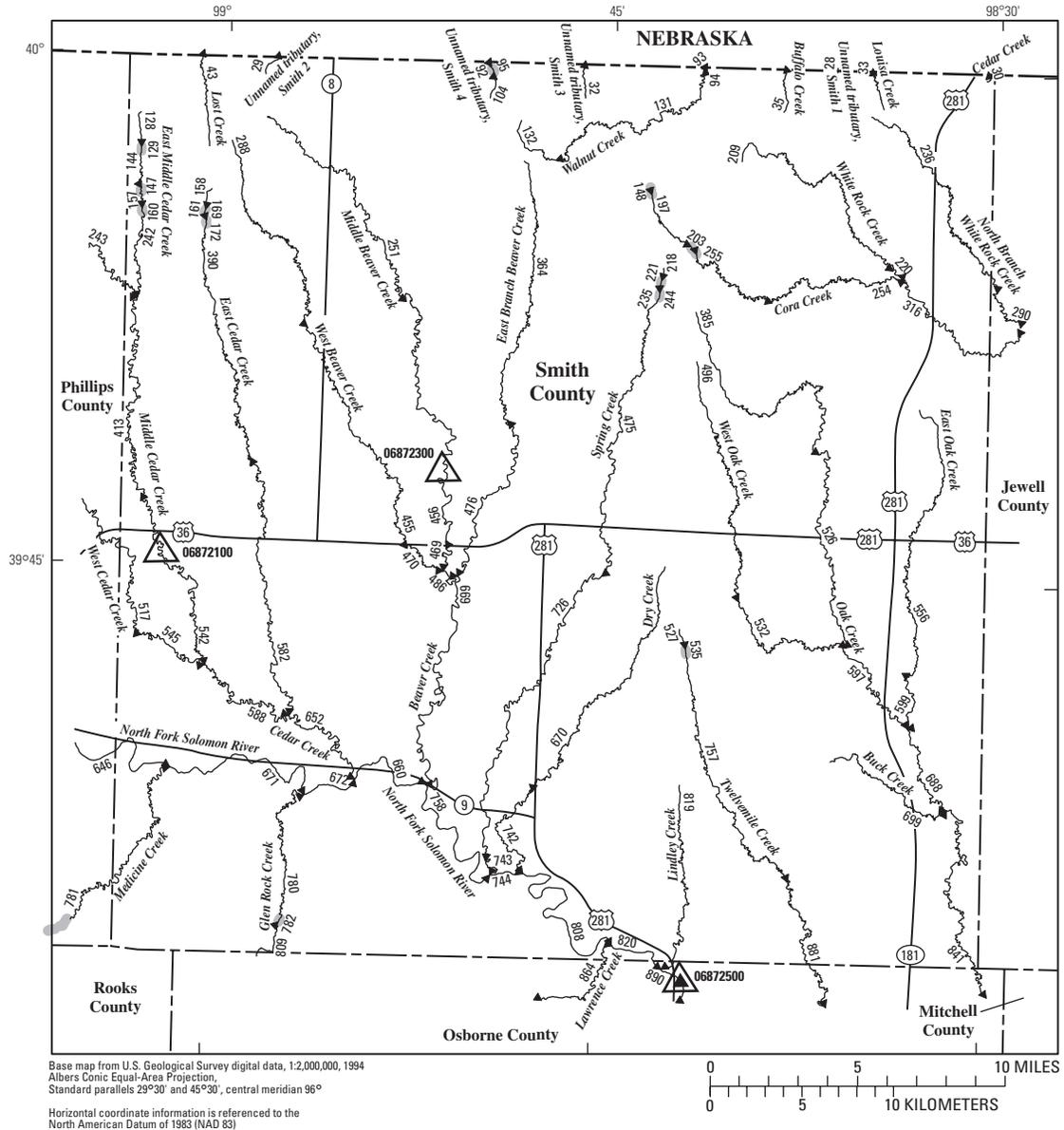
Determination site identification number (fig. 101)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1309	HYDRO	SH						HYDRO	486	NA	NA
1311	102600023	SH				North Fork Smoky Hill River	486	0	0	0	0.42	0.99	
1313	102600023	SH				North Fork Smoky Hill River	487	0	0	0	.42	.99	
1314	HYDRO	SH				HYDRO	487	NA	NA	NA	NA	NA	
1315	HYDRO	SH				HYDRO	487	NA	NA	NA	NA	NA	
1318	102600023	SH				North Fork Smoky Hill River	487	0	0	0	.42	.99	
1319	HYDRO	SH				HYDRO	487	NA	NA	NA	NA	NA	
1335	HYDRO	SH				HYDRO	479	NA	NA	NA	NA	NA	
1346	102600023	SH				North Fork Smoky Hill River	478	0	0	0	.40	.95	
1380	102600025	SH				North Fork Smoky Hill River	350	0	0	0	.22	.51	
1406	102600022	SH				Sand Creek	53.0	0	0	0	0	.01	
1409	102600023	SH				North Fork Smoky Hill River	526	0	0	0	.49	1.15	
1410	102600026	SH				North Fork Smoky Hill River	281	0	0	0	.14	.33	
1431	1026000215	SH	WA			Turtle Creek	55.9	0	0	0	.01	.01	
1457	102600023	SH	WA			North Fork Smoky Hill River	549	0	0	0	.53	1.26	
1464	102600023	SH	WA			North Fork Smoky Hill River	553	0	0	0	.54	1.28	
1482	102600012	SH	WA			Lake Creek	45.2	0	0	0	0	0	

**Table 97.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sherman County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

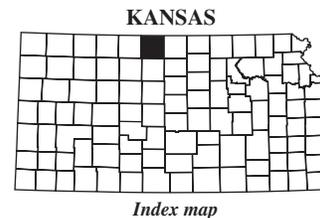
Determination site identification number (fig. 101)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1309	NA	NA	NA	NA	NA	NA	NA
1311	0.72	277	1,390	3,080	6,910	11,400	17,700
1313	.72	276	1,390	3,080	6,920	11,400	17,700
1314	NA	NA	NA	NA	NA	NA	NA
1315	NA	NA	NA	NA	NA	NA	NA
1318	.72	276	1,390	3,080	6,920	11,500	17,700
1319	NA	NA	NA	NA	NA	NA	NA
1335	NA	NA	NA	NA	NA	NA	NA
1346	.65	277	1,380	3,050	6,820	11,300	17,400
1380	0	253	1,150	2,430	5,210	8,390	12,700
1406	0	210	753	1,410	2,620	3,860	5,390
1409	1.12	286	1,470	3,290	7,480	12,500	19,400
1410	0	228	1,000	2,090	4,380	6,960	10,400
1431	0	131	522	1,020	2,000	3,020	4,310
1457	1.38	287	1,510	3,400	7,780	13,000	20,300
1464	1.43	288	1,520	3,420	7,840	13,100	20,500
1482	0	192	689	1,280	2,390	3,510	4,880





**EXPLANATION**

- ← 865 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06872500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06872500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 782 Lake and determination site identification number



**Figure 102.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Smith County.

**584 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRtribal, tribal stream]

Determination site identification number (fig. 102)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		28	1025001662	SM						Unnamed tributary, Smith 1	1.65	0	0
29	1025001654	SM				Unnamed tributary, Smith 2	6.14	0	0	0	0	0	0
30	1025001663	SM				Cedar Creek	3.91	0	0	0	0	0	0
32	1025001657	SM				Unnamed tributary, Smith 3	4.77	0	0	0	0	0	0
33	1025001661	SM				Louisa Creek	3.62	0	0	0	0	0	0
35	1025001659	SM				Buffalo Creek	5.55	0	0	0	0	0	0
43	1025001653	SM				Lost Creek	9.33	0	0	0	0	0	0
92	1025001656	SM				Unnamed tributary, Smith 4	11.7	0	0	0	0	0	0
93	1025001640	SM				Walnut Creek	24.3	0	0	.22	.49	1.71	
94	1025001640	SM				Walnut Creek	22.7	0	0	.15	.32	1.37	
95	HYDRO	SM				HYDRO	8.75	NA	NA	NA	NA	NA	NA
104	1025001656	SM				Unnamed tributary, Smith 4	8.66	0	0	0	0	0	0
128	1026001237	SM				East Middle Cedar Creek	7.20	0	0	0	0	0	0
129	HYDRO	SM				HYDRO	7.33	NA	NA	NA	NA	NA	NA
131	1025001640	SM				Walnut Creek	22.7	0	0	.15	.32	1.37	
132	1025001640	SM				Walnut Creek	5.61	0	0	0	0	0	0
144	1026001237	SM				East Cedar Creek	11.6	0	0	0	0	0	0
147	HYDRO	SM				HYDRO	11.8	NA	NA	NA	NA	NA	NA
148	HYDRO	SM				HYDRO	3.40	NA	NA	NA	NA	NA	NA
157	1026001237	SM				East Cedar Creek	13.1	0	0	0	0	0	0
158	1026001217	SM				East Cedar Creek	2.15	0	0	0	0	0	0
160	HYDRO	SM				HYDRO	13.3	NA	NA	NA	NA	NA	NA
161	HYDRO	SM				HYDRO	2.55	NA	NA	NA	NA	NA	NA
169	1026001217	SM				East Cedar Creek	3.13	0	0	0	0	0	0
172	HYDRO	SM				HYDRO	3.23	NA	NA	NA	NA	NA	NA
197	1025001651	SM				Cora Creek	10.3	0	0	0	0	0	0
203	HYDRO	SM				HYDRO	11.3	NA	NA	NA	NA	NA	NA
209	1025001650	SM				White Rock Creek	23.5	0	0	.33	.73	2.16	
218	102600128	SM				Spring Creek	2.06	0	0	0	0	0	0
220	1025001650	SM				White Rock Creek	24.4	0	0	.37	.83	2.39	
221	HYDRO	SM				HYDRO	3.09	NA	NA	NA	NA	NA	NA
235	102600128	SM				Spring Creek	3.36	0	0	0	0	0	0
242	1026001237	SM				East Middle Cedar Creek	18.7	0	0	0	0	0	0
244	HYDRO	SM				HYDRO	3.54	NA	NA	NA	NA	NA	NA
251	1026001213	SM				Middle Beaver Creek	35.4	0	0	.27	.77	2.50	
254	1025001651	SM				Cora Creek	32.6	0	0	.41	1.05	3.09	
255	1025001651	SM				Cora Creek	19.9	0	0	0	0	.35	
288	1026001214	SM				West Beaver Creek	18.7	0	0	0	0	0	0

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 102)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
28	0	168	432	679	1,070	1,420	1,810
29	0	301	831	1,350	2,200	2,960	3,850
30	0	289	749	1,180	1,880	2,490	3,200
32	0	283	760	1,220	1,970	2,630	3,400
33	0	269	699	1,110	1,770	2,340	3,000
35	0	318	851	1,370	2,200	2,940	3,800
43	.14	371	1,040	1,710	2,810	3,790	4,940
92	.73	457	1,260	2,060	3,370	4,540	5,910
93	2.79	724	2,010	3,300	5,420	7,310	9,540
94	2.53	696	1,930	3,160	5,200	7,010	9,150
95	NA	NA	NA	NA	NA	NA	NA
104	.24	384	1,060	1,710	2,800	3,760	4,880
128	0	315	879	1,440	2,360	3,170	4,140
129	NA	NA	NA	NA	NA	NA	NA
131	2.53	696	1,930	3,160	5,200	7,010	9,150
132	0	302	821	1,330	2,150	2,880	3,730
144	.35	413	1,160	1,900	3,140	4,240	5,540
147	NA	NA	NA	NA	NA	NA	NA
148	NA	NA	NA	NA	NA	NA	NA
157	.53	443	1,250	2,050	3,380	4,560	5,970
158	0	158	430	693	1,120	1,500	1,940
160	NA	NA	NA	NA	NA	NA	NA
161	NA	NA	NA	NA	NA	NA	NA
169	0	196	538	872	1,420	1,900	2,470
172	NA	NA	NA	NA	NA	NA	NA
197	.46	443	1,210	1,950	3,180	4,260	5,540
203	NA	NA	NA	NA	NA	NA	NA
209	3.06	753	2,050	3,330	5,440	7,310	9,520
218	0	172	455	725	1,160	1,540	1,990
220	3.23	771	2,100	3,420	5,580	7,490	9,750
221	NA	NA	NA	NA	NA	NA	NA
235	0	228	610	978	1,580	2,100	2,710
242	1.14	542	1,530	2,510	4,160	5,630	7,370
244	NA	NA	NA	NA	NA	NA	NA
251	3.57	636	1,490	2,300	3,590	4,760	6,080
254	3.97	516	1,440	2,390	3,990	5,480	7,210
255	1.91	655	1,800	2,930	4,800	6,450	8,410
288	1.20	563	1,600	2,630	4,360	5,900	7,720

**586 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 102)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		364	1026001211	SM						East Branch Beaver Creek	35.9	0
385	102600124	SM				Oak Creek	23.4	0	0	.23	.54	1.98
390	1026001217	SM				East Cedar Creek	27.8	0	0	0	0	.20
413	1026001219	SM				Middle Cedar Creek	59.2	0	0	.38	1.24	3.81
455	1026001214	SM				West Beaver Creek	47.1	0	0	.20	.74	2.68
456	1026001213	SM				Middle Beaver Creek	57.6	0	0	.71	1.90	5.13
469	1026001213	SM				Middle Beaver Creek	58.1	0	0	.72	1.93	5.20
470	1026001214	SM				West Beaver Creek	50.6	0	0	.26	.89	3.04
475	102600128	SM				Spring Creek	35.8	0	0	.06	.34	1.75
476	1026001211	SM				East Branch Beaver Creek	51.5	0	0	.48	1.39	4.06
486	1026001212	SM				Middle Beaver Creek	109	0	.14	1.73	4.57	11.4
496	1026001239	SM				West Oak Creek	22.9	0	0	0	0	.53
526	102600124	SM				Oak Creek	42.3	0	0	.84	2.08	5.51
527	102600126	SM				Twelvemile Creek	2.20	0	0	0	0	0
532	1026001239	SM				West Oak Creek	35.9	0	0	.27	.80	2.74
535	HYDRO	SM				HYDRO	2.29	NA	NA	NA	NA	NA
542	1026001219	SM				Middle Cedar Creek	72.1	0	0	.54	1.67	4.91
545	1026001220	SM				West Cedar Creek	70.6	0	0	.33	1.20	3.91
556	1026001240	SM				East Oak Creek	38.1	0	0	.75	1.85	5.06
582	1026001217	SM				East Cedar Creek	59.6	0	0	.20	.85	3.13
588	1026001218	SM				Cedar Creek	150	0	.15	1.84	5.04	12.9
597	102600124	SM				Oak Creek	84.8	0	.34	2.01	5.04	12.4
599	1026001240	SM				East Oak Creek	41.5	0	0	.89	2.20	5.80
652	1026001216	SM				Cedar Creek	216	0	.68	3.02	8.06	20.2
660	1026001215	SM				North Fork Solomon River	2,120	10.0	16.7	28.4	62.7	135
669	1026001210	SM				Beaver Creek	184	0	.85	3.37	8.68	21.2
670	1026001242	SM				Dry Creek	27.4	0	0	0	0	0
671	1026001221	SM				North Fork Solomon River	1,860	8.80	14.7	25.0	55.0	119
672	1026001221	SM				North Fork Solomon River	1,900	8.98	15.0	25.4	56.1	121
688	102600124	SM				Oak Creek	133	0	1.05	3.68	9.18	22.3
699	1026001243	SM				Buck Creek	18.9	0	0	0	0	.49
726	102600128	SM				Spring Creek	61.2	0	0	.50	1.50	4.44
742	1026001242	SM				Dry Creek	32.7	0	0	0	0	.32
743	102600128	SM				Spring Creek	61.6	0	0	.51	1.51	4.47
744	102600127	SM				North Fork Solomon River	2,380	11.3	18.8	31.9	70.4	152
757	102600126	SM				Twelvemile Creek	29.6	0	0	0	0	.73
758	102600129	SM				North Fork Solomon River	2,320	11.0	18.3	31.1	68.6	148
780	1026001241	SM				Glen Rock Creek	32.3	0	0	0	0	.42

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 102)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
364	3.67	684	1,850	3,020	4,940	6,710	8,730
385	3.06	773	2,110	3,410	5,560	7,460	9,700
390	1.95	687	1,980	3,290	5,480	7,450	9,800
413	4.94	561	1,400	2,240	3,670	5,020	6,630
455	4.03	649	1,810	3,000	4,990	6,850	8,990
456	5.76	765	1,390	1,880	2,590	3,170	3,790
469	5.81	751	1,360	1,830	2,530	3,090	3,690
470	4.34	669	1,860	3,090	5,140	7,050	9,260
475	3.19	630	1,730	2,850	4,700	6,420	8,390
476	4.98	700	1,930	3,200	5,300	7,260	9,520
486	10.7	1,060	2,140	3,100	4,570	5,860	7,310
496	2.13	694	1,930	3,170	5,210	7,020	9,170
526	5.88	843	2,200	3,550	5,730	7,720	9,980
527	0	167	450	723	1,170	1,560	2,010
532	3.90	669	1,810	2,970	4,880	6,640	8,650
535	NA	NA	NA	NA	NA	NA	NA
542	5.92	577	1,350	2,100	3,390	4,610	6,100
545	5.23	647	1,860	3,140	5,320	7,380	9,790
556	5.55	909	2,320	3,700	5,920	7,940	10,200
582	4.61	692	1,940	3,230	5,410	7,440	9,800
588	12.3	879	2,160	3,430	5,590	7,640	10,100
597	11.2	1,170	3,020	4,840	7,800	10,500	13,600
599	6.09	896	2,310	3,690	5,930	7,970	10,300
652	17.9	1,090	2,710	4,320	7,070	9,650	12,800
660	82.2	2,390	5,330	8,040	12,400	16,300	20,800
669	18.0	1,300	2,780	4,150	6,310	8,250	10,500
670	1.72	688	1,980	3,280	5,460	7,420	9,750
671	72.2	2,100	4,680	7,060	10,900	14,300	18,300
672	73.6	2,140	4,770	7,200	11,100	14,600	18,600
688	18.2	1,540	3,870	6,150	9,850	13,200	17,100
699	1.94	638	1,760	2,870	4,690	6,310	8,220
726	5.48	679	1,910	3,180	5,320	7,330	9,660
742	2.20	499	1,430	2,400	4,030	5,560	7,340
743	5.50	676	1,900	3,170	5,310	7,310	9,640
744	92.3	2,680	5,990	9,030	13,900	18,300	23,400
757	2.45	766	2,170	3,580	5,930	8,040	10,500
758	89.9	2,610	5,830	8,790	13,500	17,800	22,800
780	2.26	589	1,640	2,720	4,510	6,180	8,100

**588 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

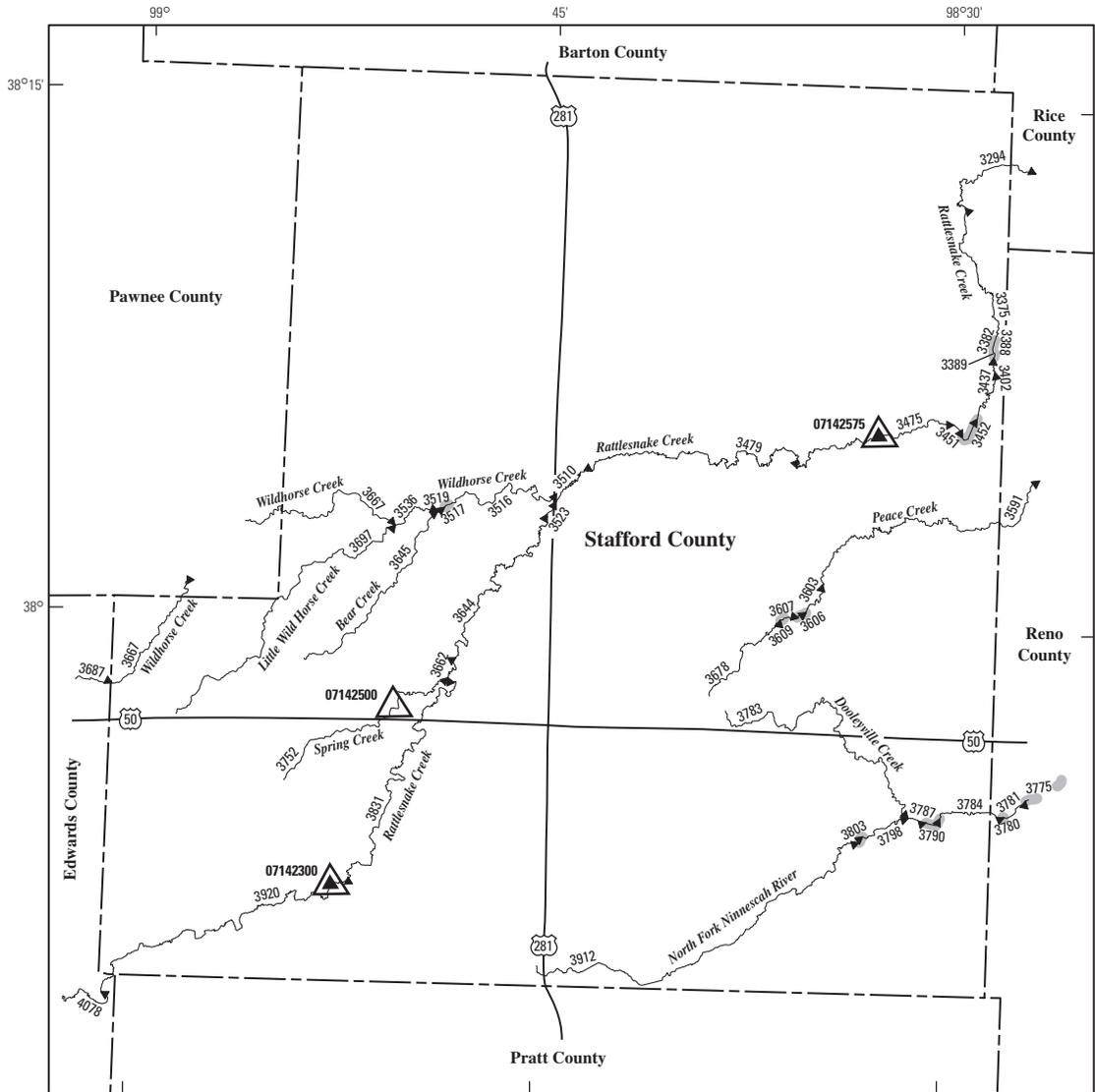
Determination site identification number (fig. 102)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		782	HYDRO	SM						HYDRO	13.1	NA	NA
808	102600127	SM				North Fork Solomon River	2,430	11.5	19.2	32.6	71.8	155	

**Table 98.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Smith County.—Continued

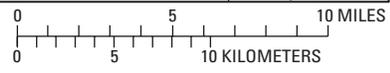
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 102)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
782	NA	NA	NA	NA	NA	NA	NA
808	94.2	2,740	6,110	9,210	14,200	18,700	23,800



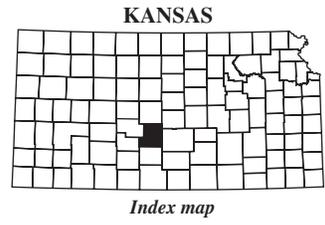


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 3920 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07142300 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07142500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3803 Lake and determination site identification number



**Figure 103.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Stafford County.

592 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations

**Table 99.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stafford County.

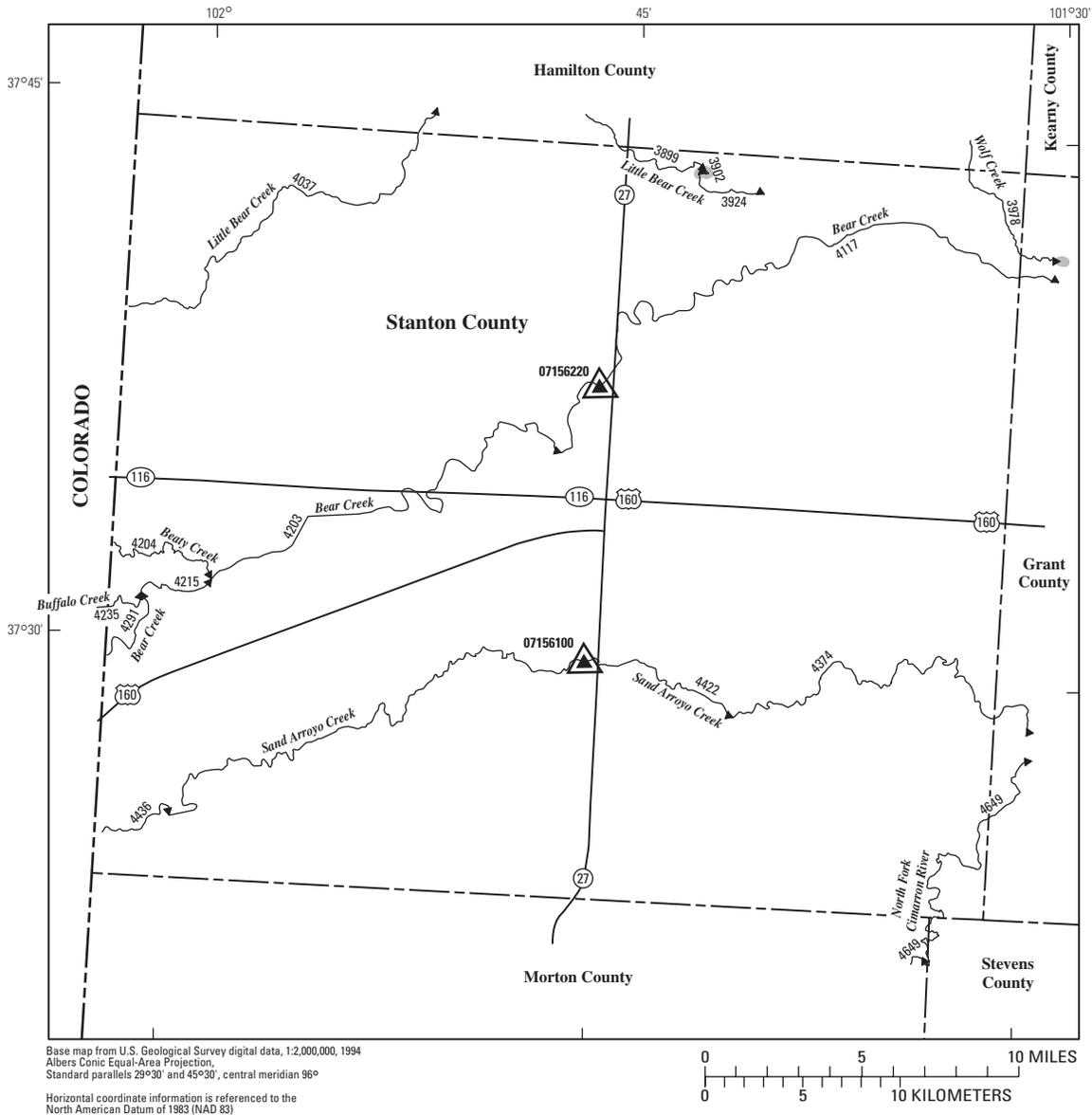
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 103)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		3375	110300091	SF						Rattlesnake Creek	1,210	3.56
3382	HYDRO	SF				HYDRO	1,170	NA	NA	NA	NA	NA
3388	110300091	SF				Rattlesnake Creek	1,170	4.38	11.2	28.5	51.1	84.9
3389	HYDRO	SF				HYDRO	1,170	NA	NA	NA	NA	NA
3402	110300091	SF				Rattlesnake Creek	1,170	4.40	11.2	28.6	51.0	84.7
3437	110300091	SF				Rattlesnake Creek	1,170	4.41	11.3	28.6	50.9	84.5
3451	110300091	SF				Rattlesnake Creek	1,160	4.61	12.0	29.0	50.0	82.4
3452	HYDRO	SF				HYDRO	1,160	NA	NA	NA	NA	NA
3475	110300091	SF				Rattlesnake Creek	1,160	4.60	12.0	29.0	50.0	82.3
3479	110300091	SF				Rattlesnake Creek	1,130	4.25	11.4	27.8	48.2	79.1
3510	110300091	SF				Rattlesnake Creek	1,030	2.98	9.35	23.6	42.1	67.9
3516	110300092	SF				Wildhorse Creek	216	.80	2.11	3.70	6.96	14.2
3517	HYDRO	SF				HYDRO	182	NA	NA	NA	NA	NA
3519	110300092	SF				Wildhorse Creek	181	.29	1.29	2.49	4.82	10.3
3523	110300093	SF				Rattlesnake Creek	811	2.05	7.89	18.4	33.5	50.4
3536	110300092	SF				Wildhorse Creek	164	.24	1.17	2.21	4.19	8.95
3603	110300106	SF				Peace Creek	43.0	.04	.28	.48	.68	1.45
3606	HYDRO	SF				HYDRO	36.9	NA	NA	NA	NA	NA
3607	110300106	SF				Peace Creek	35.7	.03	.30	.38	.42	.78
3609	HYDRO	SF				HYDRO	33.7	NA	NA	NA	NA	NA
3644	110300093	SF				Rattlesnake Creek	811	2.04	7.88	18.4	33.4	50.3
3645	110300098	SF				Bear Creek	16.8	0	0	0	0	0
3662	110300093	SF				Rattlesnake Creek	780	1.82	7.54	17.5	32.0	47.5
3678	110300106	SF				Peace Creek	33.7	0	.05	.20	.30	.63
3752	110300097	SF				Spring Creek	24.6	0	0	0	0	0
3783	110300148	SF				Dooleyville Creek	47.9	.03	.08	.22	.24	1.36
3787	110300146	SF				North Fork Ninescaw River	185	3.40	5.99	8.45	13.7	24.4
3790	HYDRO	SF				HYDRO	192	NA	NA	NA	NA	NA
3798	110300146	SF				North Fork Ninescaw River	136	2.97	5.13	6.87	10.6	18.2
3803	HYDRO	SF				HYDRO	132	NA	NA	NA	NA	NA
3831	110300093	SF				Rattlesnake Creek	755	1.73	7.38	16.9	31.0	45.4
3912	110300146	SF				North Fork Ninescaw River	131	2.84	4.92	6.56	10.0	17.3

**Table 99.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stafford County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

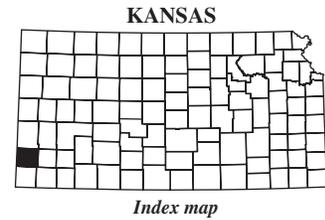
Determination site identification number (fig. 103)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3375	49.6	545	1,670	3,080	6,050	9,440	14,200
3382	NA	NA	NA	NA	NA	NA	NA
3388	50.4	495	1,570	2,940	5,830	9,170	13,900
3389	NA	NA	NA	NA	NA	NA	NA
3402	50.4	498	1,570	2,940	5,840	9,180	13,900
3437	50.4	502	1,580	2,950	5,860	9,200	13,900
3451	50.5	498	1,570	2,940	5,840	9,180	13,900
3452	NA	NA	NA	NA	NA	NA	NA
3475	50.5	501	1,580	2,950	5,850	9,190	13,900
3479	48.8	518	1,620	3,000	5,900	9,220	13,900
3510	42.8	517	1,630	3,000	5,850	9,050	13,500
3516	13.6	883	2,310	3,750	6,120	8,300	10,800
3517	NA	NA	NA	NA	NA	NA	NA
3519	10.9	820	2,180	3,550	5,820	7,910	10,300
3523	32.1	441	1,430	2,650	5,110	7,790	11,400
3536	9.81	759	2,020	3,310	5,430	7,380	9,660
3603	3.03	371	1,000	1,630	2,660	3,590	4,650
3606	NA	NA	NA	NA	NA	NA	NA
3607	2.40	324	874	1,430	2,320	3,130	4,040
3609	NA	NA	NA	NA	NA	NA	NA
3644	32.0	442	1,440	2,660	5,110	7,800	11,400
3645	.27	538	1,520	2,490	4,110	5,560	7,280
3662	30.3	439	1,430	2,630	5,040	7,670	11,200
3678	2.24	308	833	1,360	2,210	2,980	3,850
3752	.97	305	1,170	2,260	4,400	6,650	9,530
3783	3.50	494	1,370	2,260	3,750	5,130	6,740
3787	20.1	1,160	2,990	4,840	7,950	10,900	14,400
3790	NA	NA	NA	NA	NA	NA	NA
3798	15.0	922	2,340	3,740	6,050	8,190	10,700
3803	NA	NA	NA	NA	NA	NA	NA
3831	29.0	427	1,400	2,580	4,930	7,490	10,900
3912	14.3	892	2,260	3,620	5,850	7,920	10,300





**EXPLANATION**

- ← 4436 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07156100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07156220 ▽ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3902 Lake and determination site identification number



**Figure 104.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Stanton County.

**Table 100.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stanton County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

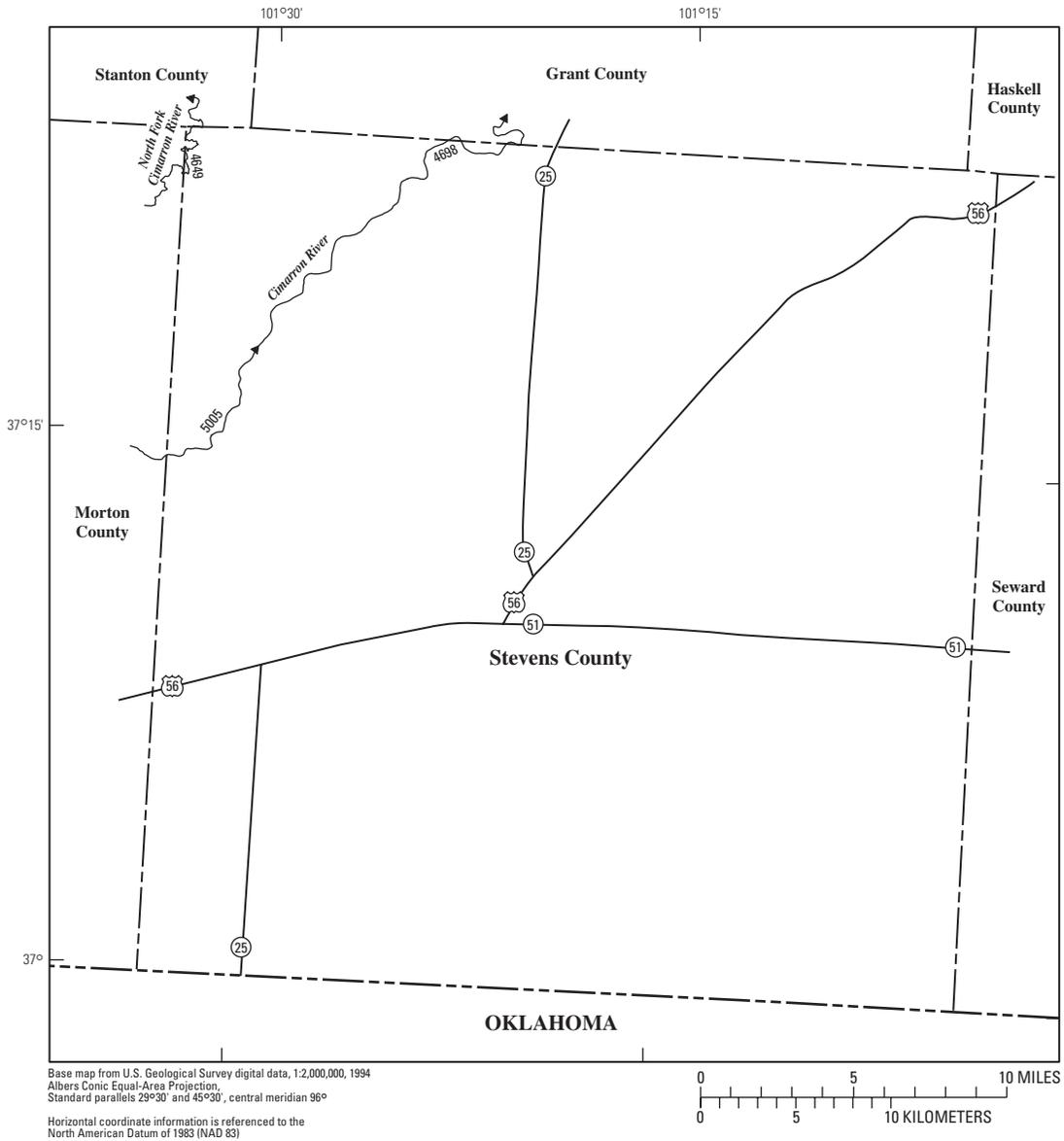
Determination site identification number (fig. 104)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		3902	HYDRO	ST						HYDRO	511	NA	NA
3924	110400057	ST				Little Bear Creek	527	0	0	0	0	0	0
4203	110400051	ST				Bear Creek	930	0	0	0	0	0	0
4204	110400058	ST				Beaty Creek	49.8	0	0	0	0	0	0
4215	110400059	ST				Bear Creek	797	0	0	0	0	0	0
4235	1104000510	ST				Buffalo Creek	87.0	0	0	0	0	0	0
4291	1104000511	ST				Bear Creek	702	0	0	0	0	0	0
4422	110400041	ST				Sand Arroyo Creek	752	0	0	0	0	0	0
4436	110400041	ST				Sand Arroyo Creek	584	0	0	0	0	0	0

**Table 100.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stanton County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

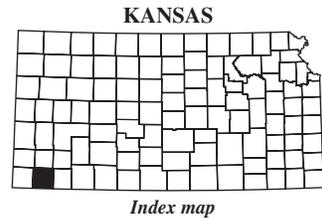
Determination site identification number (fig. 104)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3902	NA	NA	NA	NA	NA	NA	NA
3924	0.51	510	1,820	3,430	6,450	9,580	13,500
4203	2.64	723	2,860	5,540	10,700	15,900	22,300
4204	0	134	536	1,050	2,050	3,090	4,410
4215	1.98	689	2,660	5,110	9,780	14,500	20,400
4235	0	205	787	1,510	2,910	4,350	6,160
4291	1.50	632	2,420	4,640	8,880	13,200	18,600
4422	.25	146	541	1,000	1,850	2,680	3,680
4436	.15	242	835	1,520	2,770	4,000	5,490





**EXPLANATION**

- ← 5005 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07156100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07156220 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 3902 Lake and determination site identification number



**Figure 105.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Stevens County.

**600 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 101.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stevens County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NRTribal, tribal stream; NA, not applicable; NRDitch, irrigation ditch]

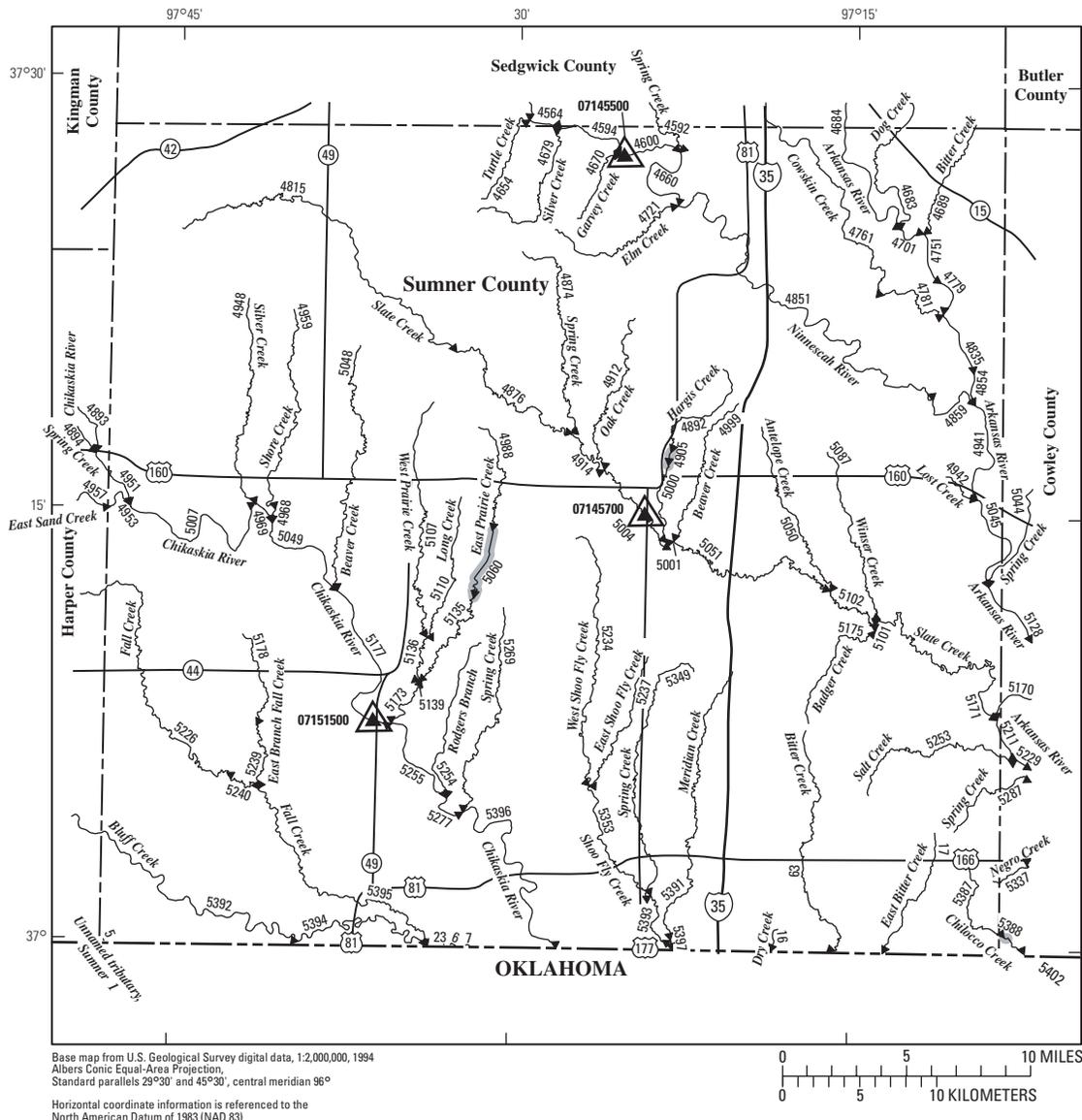
Determination site identification number (fig. 105)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4649	110400032	GT	MT			ST	SV	North Fork Cimarron River	768	1.08
4698	110400021	GT	SV			Cimarron River	3,720	2.20	2.97	3.80	5.13	7.88
5005	110400021	MT	SV			Cimarron River	3,420	0	0	0	0	1.50

**Table 101.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Stevens County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

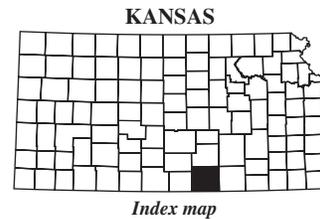
Determination site identification number (fig. 105)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4649	7.16	976	4,030	8,040	16,200	24,800	36,100
4698	14.6	1,350	4,080	6,940	11,900	16,400	21,800
5005	10.7	1,330	4,000	6,800	11,600	16,000	21,300





**EXPLANATION**

- ← 5394 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07145700 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07151500 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 5388 Lake and determination site identification number



**Figure 106.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Sumner County.

**604 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 102.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sumner County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 106)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		5	1106000417	SU						Unnamed tributary, Sumner 1	2.00	0	0
6	1106000513	SU				Bluff Creek	540	5.11	11.6	28.5	67.9	175	
7	1106000513	SU				Bluff Creek	540	5.11	11.6	28.5	67.9	175	
16	1106000517	SU				Dry Creek	.62	0	0	0	0	0	
17	1106000516	SU				East Bitter Creek	9.14	0	0	.20	.72	3.06	
23	1106000513	SU				Bluff Creek	540	5.11	11.6	28.5	67.9	175	
63	110600054	SU				Bitter Creek	34.0	2.95	8.45	19.7	45.6	127	
4600	110300163	SU				Ninnescah River	2,060	76.4	125	212	483	1,130	
4660	110300161	SU				Ninnescah River	2,120	76.9	126	213	485	1,130	
4670	1103001611	SU				Garvey Creek	6.40	0	0	0	0	0	
4701	110300133	SU				Arkansas River	38,100	196	309	551	1,130	2,630	
4721	1103001610	SU				Elm Creek	13.5	0	0	.01	.29	2.25	
4751	110300133	SU				Arkansas River	38,100	197	311	554	1,130	2,640	
4779	1103001318	SU				Arkansas River	38,100	197	312	555	1,140	2,640	
4781	1103001310	SU				Cowskin Creek	56.8	.93	2.53	5.12	10.4	22.8	
4815	1103001317	SU				Slate Creek	80.8	.19	1.13	3.24	8.38	27.2	
4835	1103001318	SU				Arkansas River	38,400	213	333	598	1,210	2,800	
4851	110300161	SU				Ninnescah River	2,190	77.4	126	215	488	1,140	
4854	110300132	SU				Arkansas River	38,400	213	334	598	1,210	2,800	
4859	110300161	SU				Ninnescah River	2,190	77.4	126	215	488	1,140	
4874	1103001327	SU				Spring Creek	22.2	.01	.03	.23	1.11	5.05	
4876	1103001317	SU				Slate Creek	97.3	.27	1.60	4.29	11.2	36.6	
4892	1103001324	SU				Hargis Creek	16.4	0	0	.27	1.03	4.12	
4905	HYDRO	SU				HYDRO	17.5	NA	NA	NA	NA	NA	
4912	1103001326	SU				Oak Creek	21.1	.01	.03	.34	1.34	5.49	
4914	1103001317	SU				Slate Creek	123	.46	2.30	5.83	15.3	51.8	
4941	110300132	SU				Arkansas River	40,600	345	519	955	1,860	4,160	
4942	1103001323	SU				Lost Creek	8.75	0	0	0	0	.61	
4948	1106000529	SU				Silver Creek	36.9	.01	.40	1.47	3.44	9.12	
4953	1106000512	SU				East Sand Creek	87.7	.97	2.95	6.04	12.6	27.9	
4959	1106000535	SU				Shore Creek	21.6	0	.02	.39	1.17	4.25	
4968	1106000535	SU				Shore Creek	22.6	.01	.02	.45	1.31	4.57	
4969	110600058	SU				Chikaskia River	725	16.7	40.9	81.3	163	364	
4988	11060005516	SU				East Prairie Creek	13.3	0	0	0	.08	1.93	
4999	1103001329	SU				Beaver Creek	11.5	0	0	0	.21	2.12	
5000	1103001324	SU				Hargis Creek	20.9	0	0	.54	1.80	6.11	
5001	1103001317	SU				Slate Creek	175	1.08	3.65	8.96	23.8	81.3	
5004	1103001317	SU				Slate Creek	154	.91	3.30	8.00	21.0	73.2	

**Table 102.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sumner County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 106)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5	0	278	652	986	1,500	1,950	2,450
6	117	3,850	8,710	13,300	20,500	26,900	34,200
7	117	3,850	8,710	13,300	20,500	26,900	34,200
16	0	182	392	570	837	1,060	1,310
17	3.76	917	2,060	3,060	4,610	5,910	7,410
23	117	3,850	8,710	13,300	20,500	26,900	34,200
63	87.5	1,790	4,060	6,140	9,330	12,100	15,200
4600	511	11,500	21,700	26,900	34,000	41,300	47,300
4660	514	11,500	21,700	26,900	34,000	41,400	47,400
4670	.98	610	1,430	2,160	3,300	4,280	5,390
4701	1,230	14,300	24,300	27,600	37,500	46,900	56,100
4721	3.59	948	2,250	3,430	5,280	6,850	8,680
4751	1,230	14,400	24,500	27,700	37,700	47,100	56,400
4779	1,230	14,400	24,500	27,700	37,800	47,200	56,500
4781	17.2	927	2,270	3,550	5,590	7,390	9,440
4815	27.7	2,050	4,630	6,930	10,400	13,500	16,800
4835	1,310	14,900	25,900	29,200	40,000	50,100	60,300
4851	516	11,500	21,800	27,000	34,100	41,400	47,500
4854	1,310	14,900	25,900	29,200	40,000	50,100	60,300
4859	516	11,500	21,800	27,000	34,100	41,400	47,500
4874	6.51	1,280	3,060	4,670	7,210	9,380	11,900
4876	36.6	2,270	5,070	7,550	11,300	14,500	18,100
4892	5.06	1,120	2,630	4,000	6,150	7,970	10,100
4905	NA	NA	NA	NA	NA	NA	NA
4912	6.68	1,290	3,040	4,630	7,120	9,240	11,700
4914	51.8	2,910	6,320	9,250	13,600	17,200	21,200
4941	1,950	19,600	38,000	41,800	59,000	74,800	92,300
4942	2.20	785	1,820	2,740	4,180	5,390	6,790
4948	8.87	1,560	3,500	5,250	7,920	10,200	12,800
4953	21.1	1,850	4,130	6,190	9,320	12,000	15,000
4959	5.23	1,130	2,780	4,300	6,730	8,810	11,200
4968	5.48	1,160	2,850	4,420	6,910	9,050	11,500
4969	213	7,410	16,200	23,800	35,100	44,700	55,000
4988	3.48	963	2,270	3,460	5,310	6,890	8,710
4999	3.43	924	2,150	3,250	4,960	6,410	8,080
5000	6.67	1,290	3,050	4,650	7,160	9,300	11,800
5001	79.1	3,900	8,240	11,900	17,100	21,500	26,200
5004	73.2	3,620	7,650	11,000	15,800	19,800	24,100

**606 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 102.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sumner County.—Continued

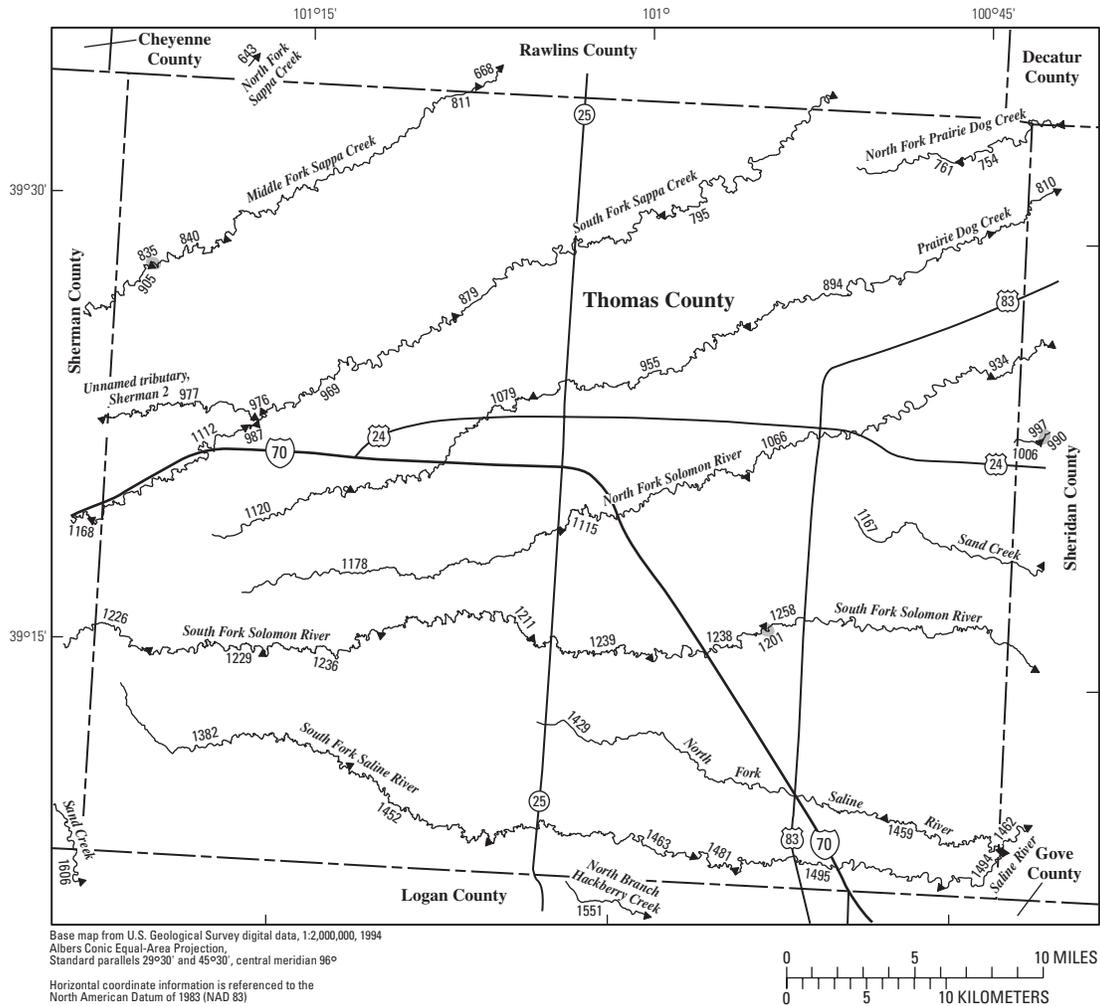
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 106)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		5007	110600058	SU						Chikaskia River	688	15.6
5048	1106000528	SU				Beaver Creek	27.8	.01	.02	.51	1.71	5.95
5049	110600058	SU				Chikaskia River	757	17.5	43.2	86.1	173	389
5050	1103001325	SU				Antelope Creek	18.6	0	0	.50	1.76	6.05
5051	1103001317	SU				Slate Creek	207	1.32	4.18	1.5	28.4	94.7
5060	HYDRO	SU				HYDRO	19.3	NA	NA	NA	NA	NA
5087	1103001332	SU				Winsor Creek	24.6	0	0	.55	2.05	7.16
5101	1103001317	SU				Slate Creek	246	1.61	4.83	12.5	34.2	112
5102	1103001317	SU				Slate Creek	228	1.48	4.54	11.6	31.5	104
5107	11060005527	SU				West Prairie Creek	24.2	0	0	.66	1.76	5.57
5110	11060005529	SU				Long Creek	8.44	0	0	0	0	.45
5135	11060005516	SU				East Prairie Creek	23.5	0	0	.64	2.01	6.57
5136	11060005527	SU				West Prairie Creek	34.9	0	.19	1.26	3.32	9.47
5139	11060005516	SU				East Prairie Creek	58.5	0	.58	2.36	6.52	18.2
5171	1103001317	SU				Slate Creek	292	2.09	5.78	15.1	41.4	133
5173	11060005512	SU				Prairie Creek	60.9	0	.65	2.52	6.91	19.1
5175	1103001331	SU				Badger Creek	17.7	0	0	.43	1.70	6.08
5177	110600058	SU				Chikaskia River	808	19.0	47.0	94.0	190	430
5178	1106000527	SU				East Branch Fall Creek	22.0	0	0	0	.49	3.28
5234	110600059006	SU				West Shoo Fly Creek	35.4	0	0	.60	2.36	8.54
5237	1106000519	SU				East Shoo Fly Creek	9.76	0	0	0	0	.38
5239	1106000527	SU				East Branch Fall Creek	29.3	0	0	.39	1.63	6.20
5240	1106000514	SU				Fall Creek	51.4	0	0	1.08	3.66	11.8
5254	1106000526	SU				Rodgers Branch	8.54	0	0	0	0	.19
5255	110600058	SU				Chikaskia River	878	20.1	49.0	99.3	202	462
5269	1106000525	SU				Spring Creek	23.6	0	0	.53	1.64	5.67
5277	110600058	SU				Chikaskia River	893	20.3	49.4	100	204	469
5349	1106000518	SU				Spring Creek	19.9	0	0	.33	1.35	5.23
5353	110600056	SU				Shoo Fly Creek	58.8	0	.14	1.72	5.56	17.3
5391	1106000520	SU				Meridian Creek	38.3	0	.16	1.80	5.51	16.0
5393	110600056	SU				Shoo Fly Creek	83.2	0	.53	2.73	8.60	26.1
5394	1106000515	SU				Bluff Creek	420	4.14	9.71	23.1	53.3	132
5395	1106000514	SU				Fall Creek	115	0	.85	3.56	10.9	32.2
5396	110600058	SU				Chikaskia River	944	21.0	50.9	104	213	493
5397	110600056	SU				Shoo Fly Creek	123	0	1.31	4.91	15.0	44.3

**Table 102.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Sumner County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

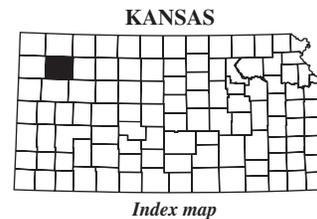
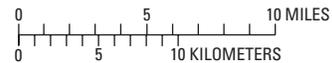
Determination site identification number (fig. 106)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
5007	198	6,920	15,200	22,300	32,900	41,900	51,600
5048	6.85	1,350	3,290	5,100	7,970	10,400	13,300
5049	227	7,830	17,200	25,200	37,100	47,100	58,000
5050	6.45	1,230	2,880	4,370	6,710	8,700	11,000
5051	88.7	4,100	8,710	12,600	18,200	23,000	28,200
5060	NA	NA	NA	NA	NA	NA	NA
5087	7.78	1,450	3,410	5,200	8,000	10,400	13,200
5101	101	4,470	9,500	13,800	20,000	25,300	31,200
5102	95.0	4,260	9,060	13,100	19,100	24,100	29,600
5107	6.29	1,280	3,100	4,780	7,440	9,720	12,400
5110	1.96	721	1,690	2,570	3,940	5,110	6,450
5135	7.06	1,340	3,190	4,880	7,550	9,830	12,500
5136	9.40	1,230	2,920	4,510	6,990	9,190	11,600
5139	16.3	1,550	3,680	5,700	8,870	11,700	14,900
5171	115	4,590	9,790	14,300	20,800	26,400	32,600
5173	17.0	1,560	3,700	5,730	8,930	11,800	15,000
5175	6.50	1,230	2,870	4,340	6,640	8,590	10,800
5177	250	8,530	18,700	27,400	40,300	51,200	63,000
5178	4.97	1,200	2,900	4,470	6,960	9,090	11,600
5234	9.62	1,540	3,630	5,590	8,660	11,400	14,400
5237	2.28	840	1,950	2,940	4,480	5,790	7,290
5239	7.30	1,420	3,460	5,350	8,340	10,900	13,900
5240	12.1	1,380	3,420	5,420	8,620	11,500	14,800
5254	1.81	733	1,720	2,610	3,990	5,170	6,520
5255	268	9,010	19,600	28,700	42,100	53,500	65,900
5269	6.57	1,350	3,220	4,930	7,610	9,900	12,600
5277	272	9,100	19,800	28,900	42,500	54,000	66,400
5349	6.16	1,270	2,990	4,560	7,000	9,080	11,500
5353	16.7	2,090	4,790	7,290	11,200	14,600	18,500
5391	14.1	1,970	4,440	6,690	10,200	13,200	16,500
5393	23.7	2,590	5,830	8,820	13,500	17,600	22,100
5394	89.6	3,630	7,600	11,100	16,500	21,200	26,400
5395	28.3	2,180	5,220	8,150	12,800	17,000	21,800
5396	285	9,300	20,200	29,500	43,400	55,200	67,900
5397	37.0	3,360	7,390	11,100	16,800	21,800	27,400





**EXPLANATION**

- ← 1382 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07156100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07156220 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1201 Lake and determination site identification number



**Figure 107.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Thomas County.

**610 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 103.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Thomas County.

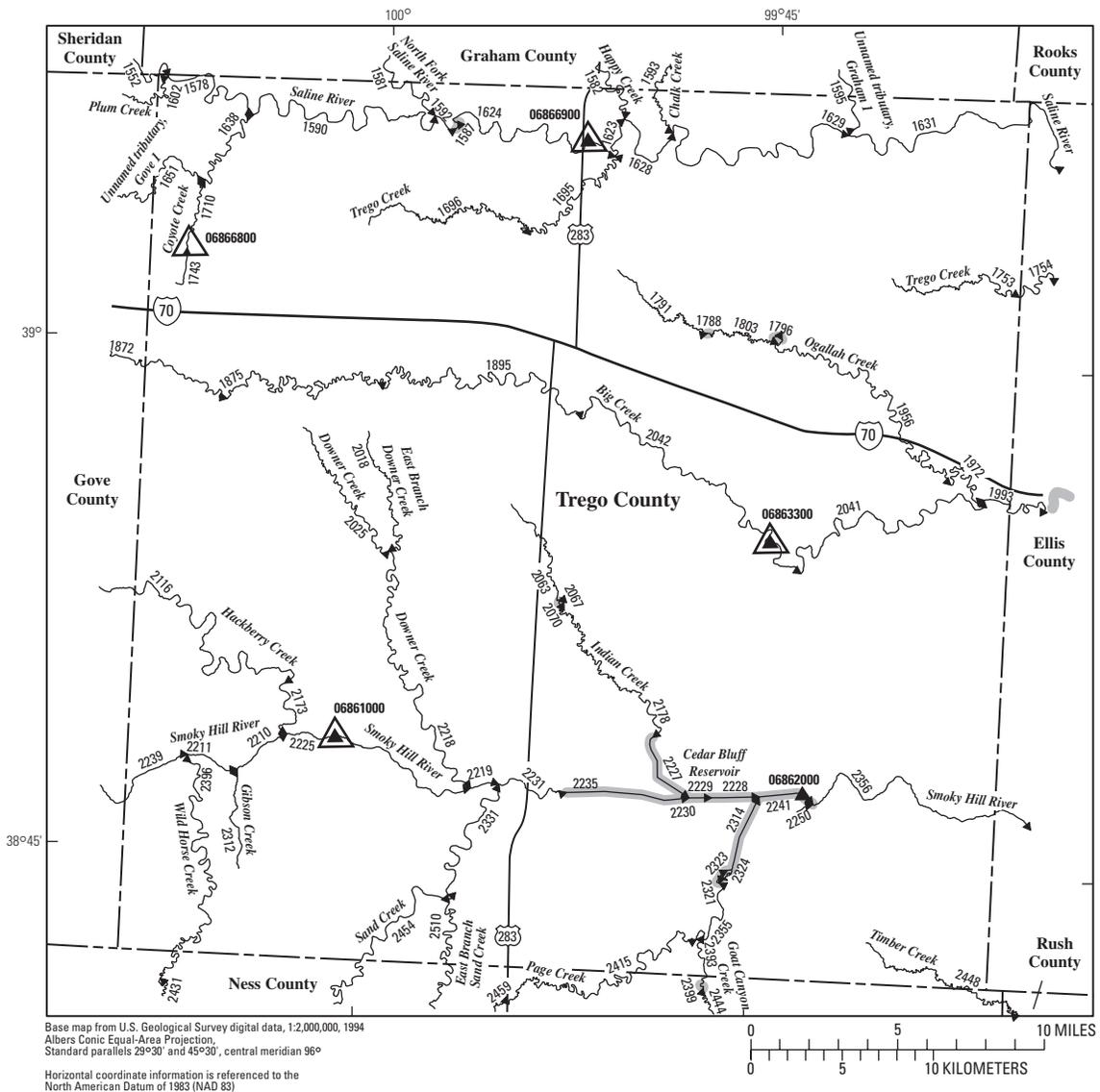
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 107)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		761	1025001511	TH						North Fork Prairie Dog Creek	21.8	0	0
835	HYDRO	TH				HYDRO	154	NA	NA	NA	NA	NA	NA
840	102500103	TH				Middle Fork Sappa Creek	177	0	0	0	0	0	0
879	102500104	TH				South Fork Sappa Creek	309	0	0	0	0	0	0
894	1025001512	TH				Prairie Dog Creek	153	0	0	0	0	0	0
955	1025001512	TH				Prairie Dog Creek	103	0	0	0	0	0	0
969	102500104	TH				South Fork Sappa Creek	252	0	0	0	0	0	0
976	102500104	TH				South Fork Sappa Creek	206	0	0	0	0	0	0
987	102500106	TH				South Fork Sappa Creek	115	0	0	0	0	0	0
1066	1026001113	TH				North Fork Solomon River	134	0	0	0	0	0	0
1079	1025001512	TH				Prairie Dog Creek	59.3	0	0	0	0	0	0
1115	1026001113	TH				North Fork Solomon River	85.8	0	0	0	0	0	0
1120	1025001512	TH				Prairie Dog Creek	24.3	0	0	0	0	0	0
1178	1026001113	TH				North Fork Solomon River	43.0	0	0	0	0	0	0
1201	HYDRO	TH				HYDRO	133	NA	NA	NA	NA	NA	NA
1211	1026001316	TH				South Fork Solomon River	86.9	0	0	.06	.15	.26	
1229	1026001316	TH				South Fork Solomon River	46.0	0	0	.02	.04	.07	
1236	1026001316	TH				South Fork Solomon River	65.0	0	0	.03	.08	.14	
1238	1026001316	TH				South Fork Solomon River	132	0	0	.13	.34	.60	
1239	1026001316	TH				South Fork Solomon River	106	0	0	.08	.22	.39	
1382	1026000918	TH				South Fork Saline River	58.9	0	0	0	.03	.03	
1429	1026000917	TH				North Fork Saline River	69.1	0	0	0	.05	.05	
1452	1026000918	TH				South Fork Saline River	99.1	0	0	.01	.10	.20	
1463	1026000918	TH				South Fork Saline River	127	0	0	.01	.16	.32	
1481	1026000918	TH				South Fork Saline River	132	0	0	.01	.17	.17	
1495	1026000918	TH				South Fork Saline River	155	0	0	.01	.23	.23	

**Table 103.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Thomas County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

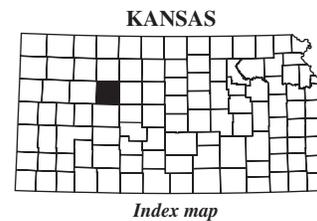
Determination site identification number (fig. 107)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
761	0	348	1,140	1,990	3,490	4,880	6,560
835	NA	NA	NA	NA	NA	NA	NA
840	.41	325	1,160	2,180	4,080	6,020	8,440
879	1.37	240	941	1,890	3,910	6,190	9,300
894	.78	348	1,200	2,200	4,040	5,900	8,180
955	.08	271	957	1,780	3,300	4,850	6,760
969	.82	197	823	1,710	3,670	5,960	9,120
976	.48	165	731	1,570	3,480	5,760	8,960
987	.18	81	474	1,150	2,850	5,000	8,130
1066	.55	345	1,200	2,200	4,060	5,940	8,260
1079	0	202	729	1,370	2,550	3,760	5,250
1115	0	266	939	1,740	3,230	4,730	6,590
1120	0	327	1,100	1,960	3,480	4,910	6,640
1178	0	186	670	1,250	2,330	3,420	4,770
1201	NA	NA	NA	NA	NA	NA	NA
1211	.14	242	872	1,640	3,070	4,540	6,360
1229	.04	181	659	1,240	2,320	3,430	4,790
1236	.08	208	756	1,420	2,670	3,950	5,530
1238	1.01	320	1,130	2,100	3,930	5,780	8,100
1239	.49	278	991	1,850	3,470	5,110	7,160
1382	.01	217	778	1,450	2,710	3,980	5,560
1429	.02	293	1,000	1,830	3,340	4,850	6,700
1452	.05	280	993	1,850	3,450	5,080	7,110
1463	.52	338	1,180	2,190	4,060	5,970	8,330
1481	.61	348	1,210	2,240	4,160	6,110	8,530
1495	1.11	408	1,400	2,570	4,750	6,950	9,680





**EXPLANATION**

- ← 2431 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06862000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06861000 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2235 Lake and determination site identification number



**Figure 108.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Trego County.

**614 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 104.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Trego County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 108)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1587	HYDRO	TR					HYDRO	693	NA	NA
1590	1026000916	TR			Saline River	561	0	0	1.39	7.29	15.2	
1592	1026000914	TR			Saline River	692	0	0	2.44	11.4	22.9	
1623	1026000914	TR			Saline River	757	.21	.62	3.99	15.0	30.8	
1624	1026000914	TR			Saline River	709	0	.03	2.60	12.0	24.0	
1628	1026000914	TR			Saline River	805	.42	1.16	5.28	17.7	37.1	
1629	1026000914	TR			Saline River	857	.64	1.79	6.77	20.9	44.3	
1638	1026000923	TR			Coyote Creek	51.2	0	0	0	.03	.06	
1695	1026000924	TR			Trego Creek	47.0	0	.01	.02	.03	.07	
1696	1026000924	TR			Trego Creek	35.1	0	0	.01	.02	.04	
1710	1026000923	TR			Coyote Creek	18.1	0	0	0	0	0	
1743	1026000923	TR			Coyote Creek	11.3	0	0	0	0	0	
1753	1026000919	TR			Trego Creek	30.1	0	0	.01	.01	.03	
1788	HYDRO	TR			HYDRO	21.5	NA	NA	NA	NA	NA	
1791	102600076	TR			Ogallah Creek	21.5	0	0	.01	.01	.02	
1796	HYDRO	TR			HYDRO	36.1	NA	NA	NA	NA	NA	
1803	102600076	TR			Ogallah Creek	32.6	.01	.01	.02	.03	.04	
1875	102600077	TR			Big Creek	209	.10	.57	1.09	2.47	6.98	
1895	102600077	TR			Big Creek	244	.13	.78	1.66	3.95	10.2	
1956	102600076	TR			Ogallah Creek	68.1	.03	.04	.06	.13	.18	
1972	102600076	TR			Ogallah Creek	75.8	.03	.05	.08	.16	.33	
2018	1026000339	TR			East Branch Downer Creek	14.9	0	0	0	0	0	
2025	1026000311	TR			Downer Creek	21.2	0	0	0	0	0	
2041	102600077	TR			Big Creek	339	.41	1.40	3.52	8.14	18.6	
2042	102600077	TR			Big Creek	303	.20	1.20	2.90	6.60	16.0	
2063	102600037	TR			Indian Creek	25.2	0	0	0	0	0	
2067	HYDRO	TR			HYDRO	26.5	NA	NA	NA	NA	NA	
2070	102600037	TR			Indian Creek	26.5	0	0	0	0	0	
2173	102600051	TR			Hackberry Creek	625	0	0	.97	3.89	11.6	
2178	102600037	TR			Indian Creek	63.3	0	0	0	0	0	
2210	1026000313	TR			Smoky Hill River	4,590	0	.15	1.98	11.3	36.3	
2211	1026000313	TR			Smoky Hill River	4,570	0	.14	1.94	11.1	35.8	
2218	1026000311	TR			Downer Creek	68.5	0	0	0	0	0	
2219	1026000310	TR			Smoky Hill River	5,300	.16	.44	2.80	16.2	49.9	
2225	1026000312	TR			Smoky Hill River	5,230	.01	.17	2.30	15.0	47.0	
2227	HYDRO	TR			HYDRO	68.0	NA	NA	NA	NA	NA	
2228	HYDRO	TR			HYDRO	5,480	NA	NA	NA	NA	NA	
2229	HYDRO	TR			HYDRO	5,480	NA	NA	NA	NA	NA	

**Table 104.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Trego County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 108)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1587	NA	NA	NA	NA	NA	NA	NA
1590	15.0	2,130	6,520	11,400	20,200	29,000	39,800
1592	20.5	2,660	8,020	13,900	24,600	35,200	48,100
1623	25.1	2,700	8,120	14,100	24,900	35,600	48,800
1624	21.3	2,720	8,200	14,200	25,100	35,900	49,100
1628	28.6	2,660	8,020	13,900	24,600	35,300	48,300
1629	32.5	2,610	7,870	13,700	24,200	34,700	47,700
1638	1.81	355	1,090	1,940	3,510	5,140	7,100
1695	1.33	378	1,180	2,060	3,590	5,080	6,850
1696	.62	332	1,040	1,830	3,210	4,550	6,130
1710	0	161	565	1,050	1,980	2,930	4,130
1743	0	219	685	1,190	2,080	2,930	3,960
1753	.51	323	1,000	1,740	3,030	4,270	5,730
1788	NA	NA	NA	NA	NA	NA	NA
1791	.01	449	1,380	2,340	4,000	5,510	7,330
1796	NA	NA	NA	NA	NA	NA	NA
1803	.39	267	870	1,550	2,760	3,950	5,360
1875	11.4	887	2,920	5,300	9,770	14,400	20,300
1895	15.1	1,040	3,430	6,250	11,600	17,200	24,200
1956	2.28	409	1,280	2,260	3,980	5,650	7,660
1972	2.72	433	1,350	2,380	4,180	5,930	8,030
2018	0	339	1,050	1,790	3,070	4,240	5,640
2025	0	388	1,230	2,130	3,680	5,110	6,830
2041	23.1	1,340	4,290	7,730	14,200	21,100	29,700
2042	21.7	1,340	4,430	8,090	15,100	22,500	31,900
2063	0	467	1,460	2,500	4,300	5,950	7,930
2067	NA	NA	NA	NA	NA	NA	NA
2070	0	480	1,500	2,570	4,430	6,130	8,180
2173	13.7	719	2,950	6,140	13,300	21,800	33,900
2178	1.28	454	1,390	2,400	4,170	5,870	7,870
2210	35.7	1,930	7,150	13,800	27,500	42,400	62,000
2211	35.4	1,920	7,130	13,800	27,500	42,400	62,000
2218	1.15	433	1,350	2,370	4,160	5,900	7,970
2219	45.9	2,270	7,770	14,600	28,100	42,700	61,900
2225	44.0	2,230	7,660	14,400	27,800	42,300	61,400
2227	NA	NA	NA	NA	NA	NA	NA
2228	NA	NA	NA	NA	NA	NA	NA
2229	NA	NA	NA	NA	NA	NA	NA

**Table 104.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Trego County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

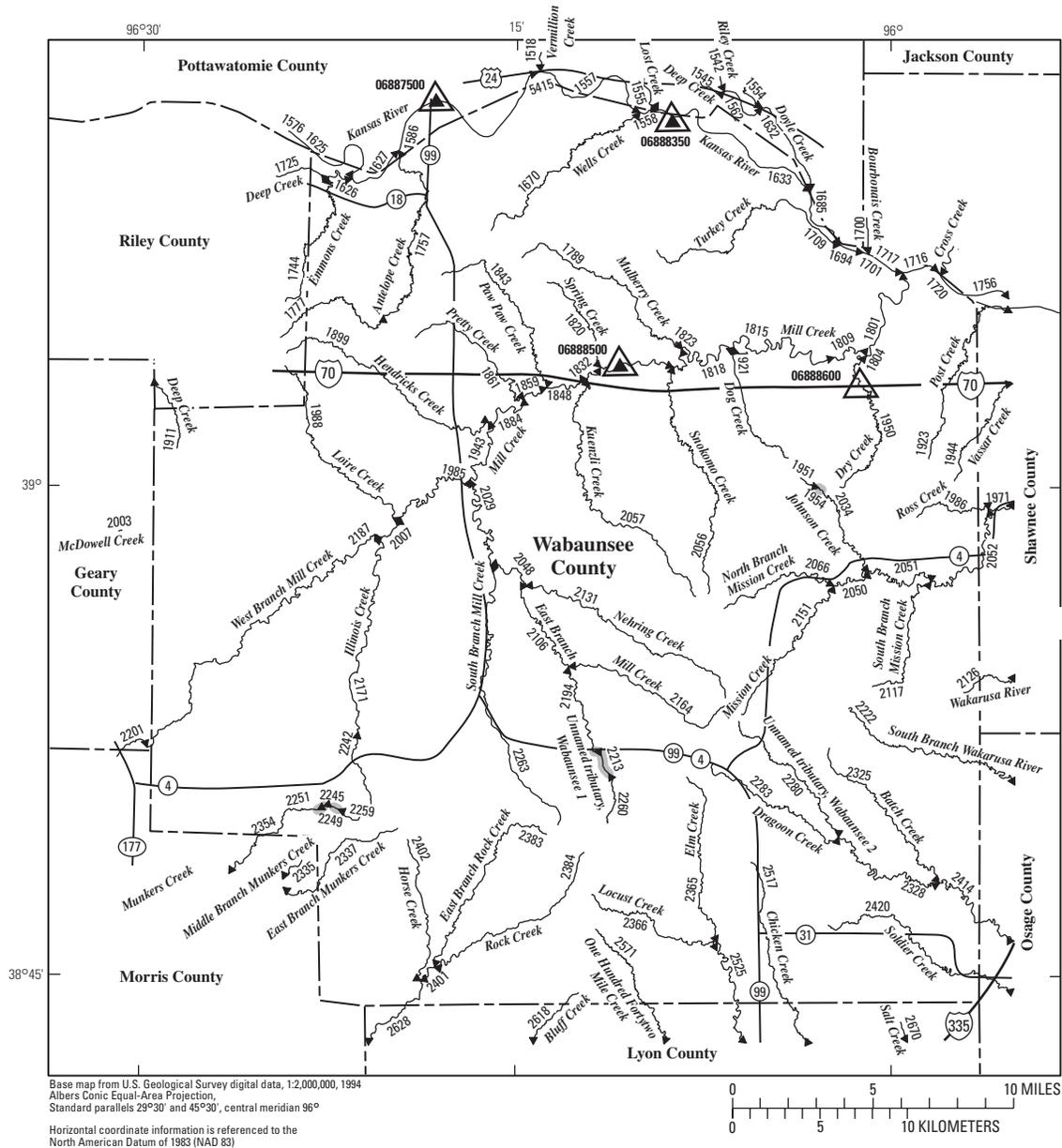
Determination site identification number (fig. 108)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		2230	HYDRO	TR						HYDRO	68.0	NA	NA
2231	102600039	TR				Smoky Hill River	5,390	.36	.83	3.52	17.9	54.1	
2235	HYDRO	TR				HYDRO	5,410	NA	NA	NA	NA	NA	NA
2241	HYDRO	TR				HYDRO	5,560	NA	NA	NA	NA	NA	NA
2250	1026000622	TR				Smoky Hill River	3.63	0	0	0	0	0	0
2312	1026000334	TR				Gibson Creek	13.7	0	0	0	0	0	0
2314	HYDRO	TR				HYDRO	69.8	NA	NA	NA	NA	NA	NA
2321	HYDRO	TR				HYDRO	64.3	NA	NA	NA	NA	NA	NA
2323	1026000331	TR				Page Creek	1.98	0	0	0	0	0	0
2324	HYDRO	TR				HYDRO	63.0	NA	NA	NA	NA	NA	NA
2331	1026000329	TR				Sand Creek	78.5	0	0	0	0	0	0
2355	1026000331	TR				Page Creek	59.3	0	0	0	0	0	0
2393	1026000341	TR				Goat Canyon Creek	10.4	0	0	0	0	0	0

**Table 104.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Trego County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

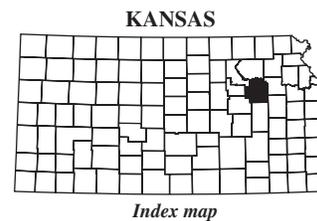
Determination site identification number (fig. 108)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2230	NA	NA	NA	NA	NA	NA	NA
2231	48.5	2,340	7,930	14,800	28,500	43,200	62,600
2235	NA	NA	NA	NA	NA	NA	NA
2241	NA	NA	NA	NA	NA	NA	NA
2250	0	140	426	723	1,230	1,690	2,230
2312	0	312	971	1,670	2,860	3,950	5,260
2314	NA	NA	NA	NA	NA	NA	NA
2321	NA	NA	NA	NA	NA	NA	NA
2323	0	99	298	501	845	1,160	1,520
2324	NA	NA	NA	NA	NA	NA	NA
2331	1.86	515	1,560	2,700	4,680	6,580	8,830
2355	1.06	398	1,260	2,210	3,890	5,530	7,480
2393	0	265	821	1,400	2,400	3,320	4,410





**EXPLANATION**

- ← 2628 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06888500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06888600 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2213 Lake and determination site identification number



**Figure 109.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Wabaunsee County.

**620 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 105.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wabaunsee County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 109)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		1626	1027010226	WB						Deep Creek	76.3	0
1670	1027010268	WB				Wells Creek	20.1	0	.14	1.94	5.90	16.1
1789	1027010277	WB				Mulberry Creek	15.2	0	0	.83	3.34	10.7
1801	1027010227	WB				Mill Creek	400	5.47	21.1	64.8	184	426
1804	1027010227	WB				Mill Creek	377	5.27	20.5	62.3	176	402
1809	1027010227	WB				Mill Creek	379	5.29	20.5	62.6	177	404
1815	1027010227	WB				Mill Creek	377	5.26	20.5	62.3	176	402
1818	1027010227	WB				Mill Creek	353	5.07	19.9	59.7	168	377
1820	1027010276	WB				Spring Creek	6.34	0	0	.43	1.29	4.08
1823	1027010227	WB				Mill Creek	334	4.96	19.5	58.3	163	362
1825	1027010227	WB				Mill Creek	312	4.80	19.0	56.0	156	339
1832	1027010227	WB				Mill Creek	302	4.48	18.0	53.4	150	327
1843	1027010275	WB				Paw Paw Creek	11.8	.01	.02	1.15	3.53	9.77
1848	1027010227	WB				Mill Creek	274	3.64	15.3	46.3	131	292
1859	1027010227	WB				Mill Creek	261	3.27	14.2	43.4	123	278
1861	1027010274	WB				Pretty Creek	10.6	0	.02	1.03	3.09	8.51
1884	1027010227	WB				Mill Creek	249	2.94	13.2	40.7	116	265
1921	1027010278	WB				Dog Creek	11.6	0	.02	1.61	4.81	12.7
1943	1027010227	WB				Mill Creek	230	2.43	11.5	36.4	105	242
1950	1027010279	WB				Dry Creek	13.0	0	0	1.06	3.81	11.4
1951	1027010284	WB				Johnson Creek	3.68	0	0	.33	.86	2.79
1954	HYDRO	WB				HYDRO	3.69	NA	NA	NA	NA	NA
1985	1027010228	WB				West Branch Mill Creek	131	.68	4.67	16.7	50.5	126
2007	1027010228	WB				West Branch Mill Creek	101	.41	3.10	12.1	37.3	95.5
2029	1027010231	WB				East Branch Mill Creek	94.4	.35	3.25	12.9	39.4	100
2034	1027010284	WB				Johnson Creek	9.89	0	0	1.12	3.52	9.76
2048	1027010233	WB				East Branch Mill Creek	54.2	.12	1.46	7.02	22.0	57.4
2050	1027010237	WB				Mission Creek	25.9	0	.34	3.18	10.2	27.8
2051	1027010237	WB				Mission Creek	39.9	0	.68	4.56	14.9	41.1
2056	1027010285	WB				Snokomo Creek	21.0	0	.28	2.75	8.45	22.4
2057	1027010282	WB				Kuenzli Creek	27.6	.03	.50	3.51	10.8	28.2
2066	1027010283	WB				North Branch Mission Creek	10.7	0	0	1.32	4.05	11.0
2106	1027010233	WB				East Branch Mill Creek	34.0	.05	.70	4.36	13.8	36.2
2117	1027010238	WB				South Branch Mission Creek	12.5	0	.01	1.77	5.51	14.7
2131	1027010281	WB				Nehring Creek	17.7	.01	.24	2.51	7.61	19.7
2151	1027010237	WB				Mission Creek	13.2	0	.01	1.78	5.56	14.9
2164	1027010233	WB				East Branch Mill Creek	11.3	0	.02	1.61	4.84	12.7
2171	1027010230	WB				Illinois Creek	35.2	.05	.56	4.00	12.8	34.3

**Table 105.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wabaunsee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 109)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1626	45.7	4,400	9,050	13,100	19,200	24,500	30,200
1670	12.4	1,570	3,520	5,240	7,890	10,100	12,700
1789	9.18	1,350	2,990	4,440	6,660	8,530	10,700
1801	241	10,700	21,800	31,200	45,300	57,300	70,500
1804	229	10,900	22,200	31,600	45,700	57,600	70,900
1809	230	10,600	21,700	31,000	44,900	56,700	69,800
1815	229	10,900	22,200	31,600	45,700	57,700	70,900
1818	215	11,400	22,900	32,400	46,600	58,500	71,700
1820	3.85	807	1,760	2,590	3,850	4,900	6,100
1823	206	11,800	23,400	33,000	47,100	59,100	72,200
1825	194	11,600	23,000	32,400	46,300	58,000	70,800
1832	188	11,900	23,400	32,900	46,800	58,500	71,300
1843	7.74	1,150	2,560	3,780	5,670	7,240	9,050
1848	170	11,200	22,000	30,900	44,000	55,100	67,200
1859	162	11,200	21,800	30,600	43,600	54,500	66,300
1861	6.86	1,080	2,390	3,530	5,280	6,750	8,420
1884	156	11,000	21,400	30,000	42,700	53,400	65,000
1921	9.11	1,200	2,620	3,860	5,760	7,340	9,150
1943	144	10,900	21,000	29,400	41,800	52,200	63,400
1950	9.11	1,670	3,080	4,280	6,110	7,730	9,560
1951	2.60	624	1,330	1,930	2,830	3,580	4,440
1954	NA	NA	NA	NA	NA	NA	NA
1985	80.5	7,690	15,000	21,300	30,400	38,200	46,600
2007	63.0	7,210	14,000	19,700	28,100	35,200	42,800
2029	63.5	6,270	12,300	17,500	25,100	31,600	38,500
2034	7.49	1,110	2,410	3,540	5,250	6,690	8,320
2048	38.1	5,270	10,300	14,500	20,700	25,900	31,500
2050	19.5	1,960	4,340	6,430	9,640	12,300	15,400
2051	28.5	3,890	7,840	11,200	16,300	20,600	25,200
2056	15.6	1,670	3,700	5,500	8,260	10,600	13,200
2057	19.5	1,930	4,330	6,460	9,750	12,500	15,700
2066	8.23	1,160	2,530	3,720	5,520	7,030	8,750
2106	24.8	4,230	8,340	11,800	16,900	21,200	25,700
2117	10.4	1,300	2,820	4,140	6,150	7,830	9,740
2131	13.7	1,540	3,390	5,010	7,500	9,590	12,000
2151	10.7	1,340	2,910	4,280	6,360	8,100	10,100
2164	9.10	1,200	2,620	3,840	5,720	7,280	9,060
2171	23.9	4,230	8,430	12,000	17,200	21,700	26,400

**622 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 105.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wabaunsee County.—Continued

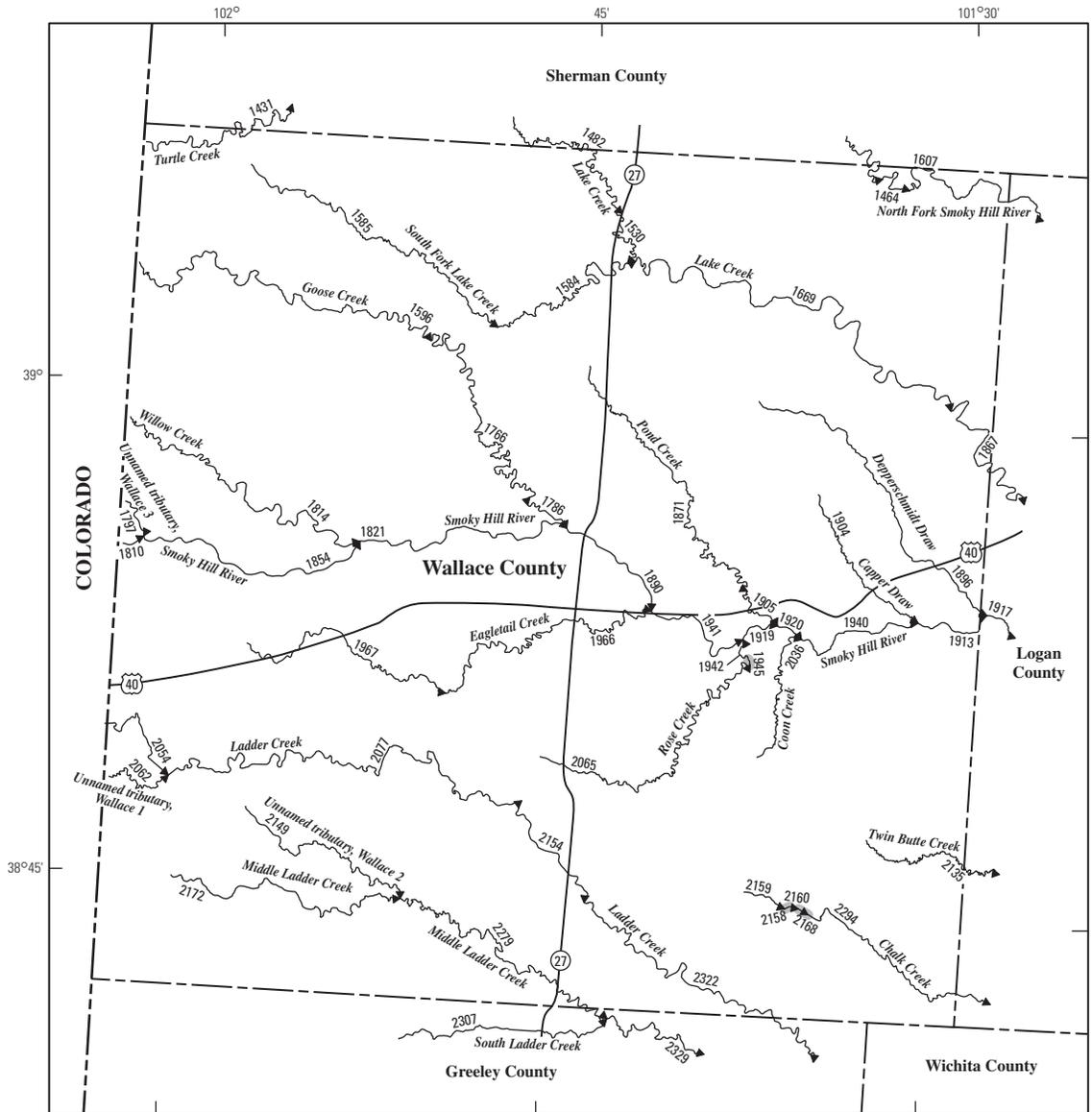
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 109)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2194	10270102693	WB						Unnamed tributary, Wabaunsee 1	17.3	0.01
2213	HYDRO	WB				HYDRO	9.73	NA	NA	NA	NA	NA
2242	1027010230	WB				Illinois Creek	10.4	0	.01	.87	2.92	8.48
2245	1107020118	WB				Munkers Creek	2.10	0	0	0	0	0
2249	HYDRO	WB				HYDRO	1.38	NA	NA	NA	NA	NA
2251	HYDRO	WB				HYDRO	2.91	NA	NA	NA	NA	NA
2259	1107020118	WB				Munkers Creek	1.26	0	0	0	0	0
2260	10270102693	WB				Unnamed tributary, Wabaunsee 1	7.26	0	.01	.71	2.34	6.80
2263	1027010232	WB				South Branch Mill Creek	31.6	.04	.72	4.36	13.4	34.4
2280	102901011072	WB				Unnamed tributary, Wabaunsee 2	8.45	0	0	.64	2.49	7.73
2283	1029010127	WB				Dragoon Creek	10.1	0	0	.71	2.86	8.96
2325	1029010186	WB				Batch Creek	13.8	0	0	.94	3.82	11.9
2328	1029010127	WB				Dragoon Creek	25.1	0	0	2.23	8.30	24.2
2365	1029010139	WB				Elm Creek	15.2	0	0	1.14	4.32	13.2
2366	1029010169	WB				Locust Creek	10.2	0	0	.40	1.94	6.85
2383	1107020134	WB				East Branch Rock Creek	13.8	0	0	.77	2.87	9.03
2384	110702019	WB				Rock Creek	16.9	0	0	1.09	3.94	12.0
2401	110702019	WB				Rock Creek	31.2	0	0	2.13	7.46	22.1
2402	1107020133	WB				Horse Creek	14.2	0	0	.69	2.64	8.51

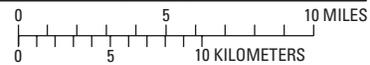
**Table 105.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wabaunsee County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 109)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2194	13.0	1,510	3,340	4,940	7,390	9,450	11,800
2213	NA	NA	NA	NA	NA	NA	NA
2242	6.88	1,060	2,350	3,480	5,210	6,650	8,310
2245	.10	422	901	1,310	1,930	2,440	3,020
2249	NA	NA	NA	NA	NA	NA	NA
2251	NA	NA	NA	NA	NA	NA	NA
2259	0	312	660	955	1,400	1,760	2,180
2260	5.46	916	1,980	2,900	4,300	5,470	6,800
2263	23.1	4,010	7,950	11,300	16,100	20,200	24,600
2280	6.43	1,050	2,250	3,280	4,830	6,120	7,600
2283	7.48	1,160	2,490	3,640	5,380	6,820	8,470
2325	9.91	1,420	3,050	4,450	6,570	8,340	10,400
2328	18.4	1,980	4,260	6,240	9,260	11,800	14,700
2365	10.6	1,460	3,190	4,710	7,040	9,000	11,200
2366	6.32	1,120	2,440	3,590	5,360	6,830	8,520
2383	7.89	1,240	2,760	4,100	6,170	7,900	9,900
2384	9.99	1,420	3,160	4,690	7,060	9,050	11,300
2401	17.5	3,340	6,910	10,000	14,600	18,600	22,800
2402	7.63	1,220	2,740	4,090	6,170	7,910	9,920



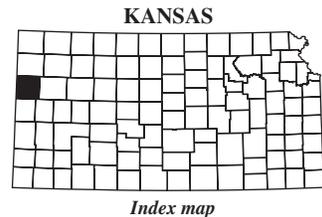


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 2172 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07156100 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07156220 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2160 Lake and determination site identification number



**Figure 110.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Wallace County.

**626 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 106.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wallace County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

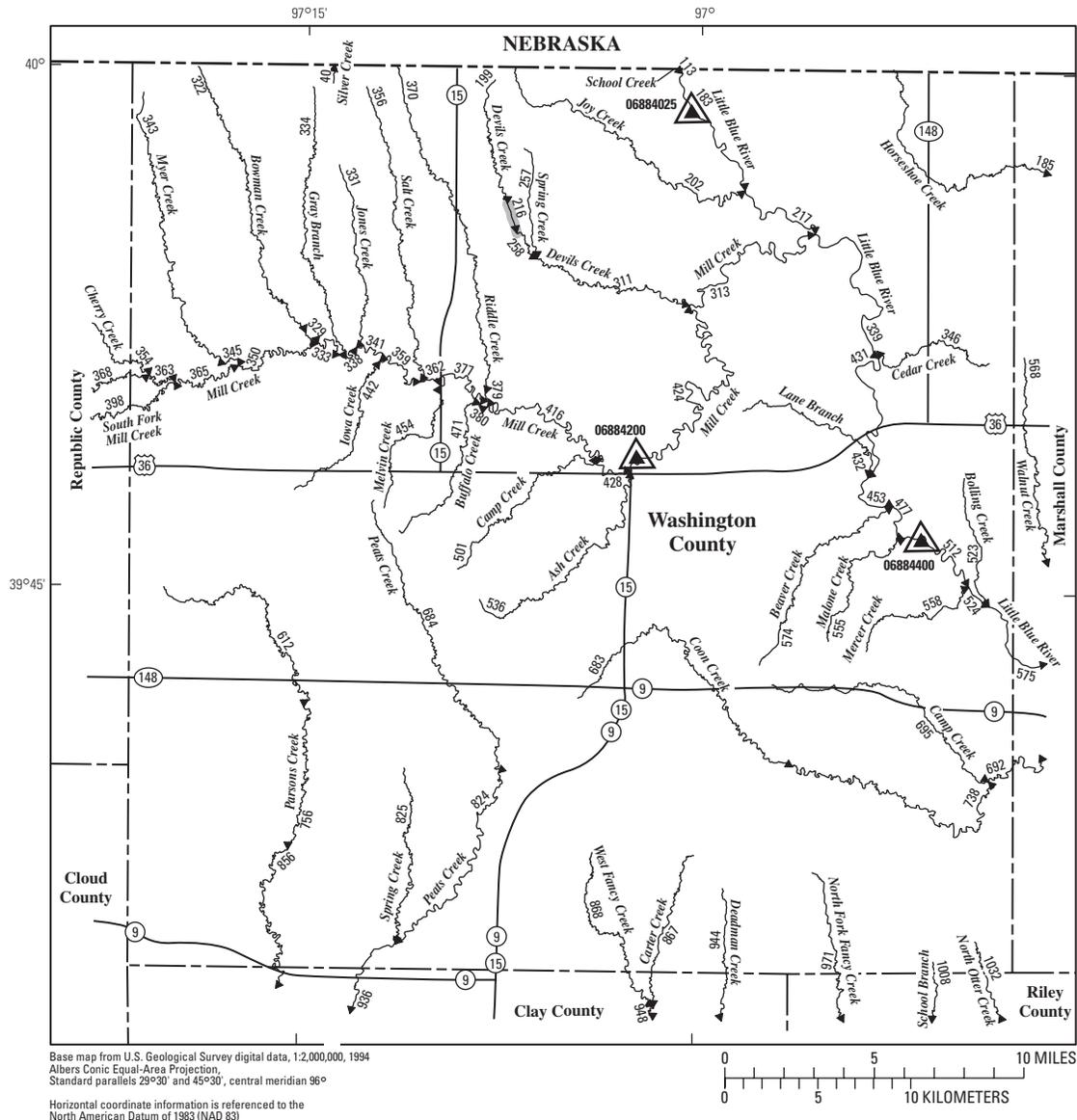
Determination site identification number (fig. 110)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		1530	102600012	WA						Lake Creek	49.9	0	0
1584	1026000118	WA				South Fork Lake Creek	56.1	0	0	0	0	0	0
1585	1026000118	WA				South Fork Lake Creek	38.0	0	0	0	0	0	0
1596	102600015	WA				Goose Creek	74.3	0	0	0	0	0	0
1669	102600012	WA				Lake Creek	169	0	0	0	0	0	0
1766	102600015	WA				Goose Creek	103	0	0	0	0	0	0
1786	102600015	WA				Goose Creek	106	0	0	0	0	0	0
1797	102600019	WA				Unnamed tributary, Wallace 3	20.8	0	0	0	0	0	0
1810	1026000110	WA				Smoky Hill River	319	0	0	0	0	0	0
1814	102600017	WA				Willow Creek	56.4	0	0	0	0	0	0
1821	102600016	WA				Smoky Hill River	443	0	0	0	0	0	0
1854	102600018	WA				Smoky Hill River	362	0	0	0	0	0	0
1871	1026000121	WA				Pond Creek	44.3	0	0	0	0	0	0
1890	102600014	WA				Smoky Hill River	560	0	0	0	0	0	0
1904	10260001311	WA				Capper Draw	17.7	0	0	0	0	0	0
1905	1026000121	WA				Pond Creek	47.3	0	0	0	0	0	0
1919	102600013	WA				Smoky Hill River	674	0	0	0	0	0	0
1920	102600013	WA				Smoky Hill River	723	0	0	0	0	0	.09
1940	102600013	WA				Smoky Hill River	758	0	0	0	0	0	.55
1941	102600013	WA				Smoky Hill River	632	0	0	0	0	0	0
1942	1026000119	WA				Rose Creek	40.8	0	0	0	0	0	0
1945	HYDRO	WA				HYDRO	40.2	NA	NA	NA	NA	NA	NA
1966	1026000117	WA				Eagletail Creek	64.0	0	0	0	0	0	0
1967	1026000117	WA				Eagletail Creek	32.4	0	0	0	0	0	0
2036	1026000120	WA				Coon Creek	20.6	0	0	0	0	0	0
2054	1026000410	WA				Ladder Creek	134	0	0	.01	.01	.01	.01
2062	1026000411	WA				Unnamed tributary, Wallace 1	45.0	0	0	0	0	0	0
2065	1026000119	WA				Rose Creek	40.0	0	0	0	0	0	0
2077	102600049	WA				Ladder Creek	223	0	.01	.03	.03	.03	.03
2149	1026000417	WA				Unnamed tributary, Wallace 2	18.3	0	0	0	0	0	0
2154	102600049	WA				Ladder Creek	237	0	.01	.03	.03	.03	.03
2158	HYDRO	WA				HYDRO	15.2	NA	NA	NA	NA	NA	NA
2159	102600044	WA				Chalk Creek	14.9	0	0	0	0	0	0
2160	102600044	WA				Chalk Creek	16.4	0	0	0	0	0	0
2168	HYDRO	WA				HYDRO	17.2	NA	NA	NA	NA	NA	NA
2172	1026000413	WA				Middle Ladder Creek	37.4	0	0	0	0	0	0

**Table 106.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wallace County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

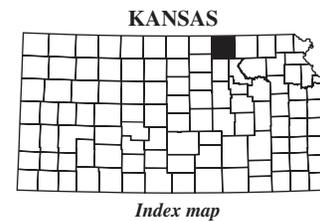
Determination site identification number (fig. 110)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1530	0	194	700	1,310	2,440	3,590	5,000
1584	0	217	773	1,440	2,660	3,900	5,420
1585	0	172	625	1,170	2,180	3,210	4,460
1596	0	256	907	1,680	3,120	4,580	6,370
1669	.89	416	1,400	2,550	4,650	6,750	9,320
1766	0	275	969	1,790	3,320	4,870	6,760
1786	0	273	960	1,780	3,290	4,820	6,690
1797	0	204	753	1,390	2,560	3,680	5,060
1810	0	370	1,370	2,620	5,000	7,470	10,600
1814	0	213	767	1,430	2,670	3,930	5,470
1821	.62	532	1,870	3,470	6,480	9,570	13,400
1854	0	419	1,530	2,880	5,460	8,130	11,500
1871	0	223	757	1,370	2,490	3,600	4,930
1890	1.71	673	2,280	4,190	7,720	11,300	15,800
1904	0	255	869	1,550	2,760	3,890	5,270
1905	0	210	721	1,310	2,390	3,460	4,760
1919	3.00	818	2,710	4,930	9,000	13,100	18,200
1920	3.62	877	2,880	5,210	9,490	13,800	19,200
1940	4.08	906	2,960	5,360	9,750	14,200	19,700
1941	2.51	763	2,550	4,640	8,510	12,400	17,300
1942	0	219	765	1,410	2,580	3,760	5,190
1945	NA	NA	NA	NA	NA	NA	NA
1966	0	290	985	1,790	3,260	4,720	6,490
1967	0	187	659	1,220	2,240	3,270	4,520
2036	0	278	950	1,700	3,030	4,280	5,800
2054	0	190	753	1,480	2,890	4,380	6,280
2062	0	107	438	869	1,720	2,610	3,750
2065	0	217	758	1,390	2,560	3,730	5,140
2077	0	271	1,040	2,010	3,890	5,880	8,400
2149	0	220	780	1,420	2,560	3,650	4,990
2154	0	285	1,090	2,100	4,060	6,120	8,740
2158	NA	NA	NA	NA	NA	NA	NA
2159	0	213	737	1,320	2,370	3,360	4,560
2160	0	226	783	1,410	2,520	3,570	4,860
2168	NA	NA	NA	NA	NA	NA	NA
2172	0	116	457	890	1,720	2,590	3,680





**EXPLANATION**

- ◀ 869 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06884200 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06856320 ▴ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 216 Lake and determination site identification number



**Figure 111.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Washington County.

**630 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 107.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Washington County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 111)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded					
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent	
		40	1027020728	WS						Silver Creek	1.49	0	0
113	1027020749	WS				School Creek	2,660	109	143	215	384	904	
183	102702074	WS				Little Blue River	2,680	109	141	211	377	885	
199	1027020715	WS				Devils Creek	10.3	0	.29	1.13	2.16	4.88	
202	1027020713	WS				Joy Creek	30.9	.01	.71	2.84	7.05	16.9	
216	HYDRO	WS				HYDRO	11.6	NA	NA	NA	NA	NA	
217	102702073	WS				Little Blue River	2,710	110	143	215	388	917	
257	1027020730	WS				Spring Creek	7.91	0	.48	1.22	2.06	4.26	
258	1027020715	WS				Devils Creek	13.2	0	.43	1.53	3.14	7.00	
311	1027020715	WS				Devils Creek	40.3	.01	1.39	4.42	10.6	24.3	
313	1027020714	WS				Mill Creek	442	5.40	10.6	25.1	70.1	217	
322	1027020721	WS				Bowman Creek	28.6	.01	.30	1.92	4.95	12.6	
329	1027020721	WS				Bowman Creek	28.9	.01	.31	1.95	5.03	12.8	
331	1027020729	WS				Jones Creek	9.19	0	0	.40	.81	2.56	
333	1027020720	WS				Mill Creek	195	.68	3.46	9.95	28.3	82.2	
334	1027020727	WS				Gray Branch	17.0	0	0	.86	2.20	6.08	
338	1027020720	WS				Mill Creek	213	.86	3.77	10.7	30.6	89.9	
339	102702072	WS				Little Blue River	3,170	125	166	260	505	1,280	
341	1027020720	WS				Mill Creek	223	.97	3.95	11.1	31.9	94.5	
343	1027020726	WS				Myer Creek	32.2	.01	.25	1.79	4.74	12.5	
345	1027020726	WS				Myer Creek	33.1	.01	.28	1.86	4.94	13.0	
346	1027020740	WS				Cedar Creek	14.7	0	0	.76	2.12	6.01	
350	1027020722	WS				Mill Creek	166	.39	2.87	8.45	23.9	68.1	
356	1027020719	WS				Salt Creek	16.6	0	.07	1.13	2.76	7.13	
359	1027020720	WS				Mill Creek	246	1.29	4.57	12.6	36.1	107	
362	1027020718	WS				Mill Creek	263	1.48	4.91	13.4	38.4	115	
363	1027020722	WS				Mill Creek	79.0	.04	.97	3.65	10.3	28.4	
365	1027020722	WS				Mill Creek	125	.10	2.05	6.39	17.9	49.9	
370	1027020717	WS				Riddle Creek	28.1	.01	.45	2.23	5.67	14.1	
377	1027020718	WS				Mill Creek	272	1.61	5.15	14.0	40.0	120	
379	1027020717	WS				Riddle Creek	28.2	.01	.45	2.25	5.70	14.2	
380	1027020718	WS				Mill Creek	281	1.75	5.38	14.5	41.5	125	
416	1027020716	WS				Mill Creek	323	2.29	6.25	16.5	47.6	147	
424	1027020716	WS				Mill Creek	389	3.20	7.50	19.0	56.0	181	
428	1027020716	WS				Mill Creek	338	2.51	6.59	17.3	50.0	156	
431	102702072	WS				Little Blue River	3,200	126	167	263	511	1,300	
432	1027020739	WS				Lane Branch	15.2	0	.15	1.23	2.84	7.05	
442	1027020734	WS				Iowa Creek	20.6	0	.68	2.23	4.85	11.0	

**Table 107.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Washington County.—Continued

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 111)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
40	0	242	560	842	1,280	1,640	2,060
113	547	11,200	20,900	29,200	42,000	53,300	66,200
183	535	11,200	21,000	29,300	42,100	53,400	66,300
199	4.13	768	1,830	2,810	4,330	5,640	7,140
202	12.5	1,470	3,400	5,180	7,930	10,300	13,000
216	NA	NA	NA	NA	NA	NA	NA
217	547	11,300	21,000	29,100	41,600	52,500	65,000
257	3.44	672	1,590	2,420	3,720	4,820	6,090
258	5.50	891	2,140	3,270	5,070	6,600	8,370
311	16.9	1,720	3,870	5,820	8,820	11,400	14,300
313	128	4,960	8,410	11,000	14,400	17,200	20,100
322	10.1	1,350	3,300	5,110	7,980	10,500	13,300
329	10.2	1,360	3,320	5,140	8,040	10,500	13,400
331	2.98	710	1,700	2,590	4,000	5,210	6,600
333	55.3	3,380	6,990	10,200	15,100	19,300	24,000
334	5.68	1,000	2,430	3,750	5,820	7,600	9,670
338	59.9	3,590	7,300	10,500	15,500	19,700	24,500
339	680	13,100	21,600	28,100	37,100	44,400	52,200
341	62.5	3,660	7,370	10,600	15,500	19,800	24,500
343	10.4	1,320	3,130	4,830	7,500	9,870	12,500
345	10.7	1,310	3,130	4,830	7,500	9,880	12,500
346	5.51	944	2,270	3,490	5,410	7,050	8,950
350	47.0	3,020	6,410	9,460	14,100	18,300	22,800
356	6.17	1,020	2,450	3,760	5,840	7,610	9,660
359	69.3	3,830	7,560	10,800	15,500	19,700	24,200
362	73.9	4,040	7,830	11,100	15,800	19,900	24,400
363	22.2	1,980	4,550	6,960	10,700	14,100	17,800
365	35.9	2,600	5,710	8,570	13,000	16,900	21,200
370	10.9	1,400	3,380	5,210	8,110	10,600	13,500
377	76.6	4,040	7,770	10,900	15,600	19,500	23,900
379	10.9	1,400	3,390	5,220	8,130	10,600	13,500
380	79.3	4,170	7,930	11,100	15,700	19,600	23,900
416	90.8	4,350	7,930	10,800	15,000	18,400	22,100
424	108	4,830	8,160	10,600	13,900	16,500	19,200
428	95.3	4,460	8,000	10,800	14,800	18,000	21,600
431	688	13,100	21,400	27,700	36,500	43,500	51,000
432	5.96	982	2,350	3,610	5,580	7,270	9,220
442	8.21	1,140	2,760	4,260	6,620	8,650	11,000

**632 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 107.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Washington County.—Continued

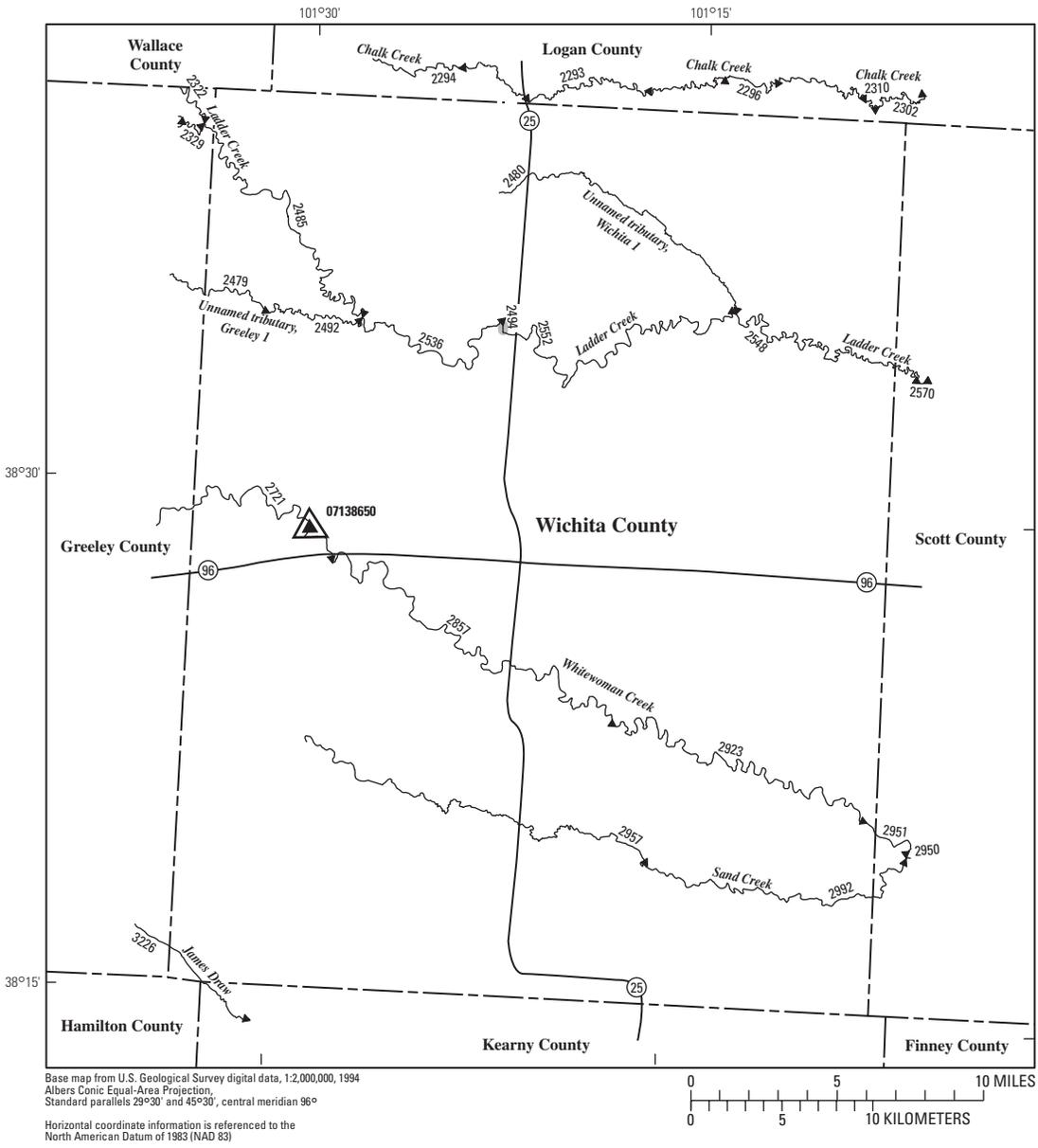
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 111)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		453	102702072	WS						Little Blue River	3,220	127
454	1027020733	WS				Melvin Creek	7.15	0	.25	.74	1.12	2.64
471	1027020732	WS				Buffalo Creek	9.26	0	.21	.86	1.55	3.74
477	102702072	WS				Little Blue River	3,240	128	169	267	522	1,330
501	1027020735	WS				Camp Creek	14.3	0	.27	1.28	2.82	6.85
512	102702072	WS				Little Blue River	3,250	128	170	268	525	1,340
523	1027020742	WS				Bolling Creek	11.0	0	0	.51	1.35	4.06
524	102702072	WS				Little Blue River	3,260	128	170	269	527	1,340
536	1027020736	WS				Ash Creek	26.2	0	.14	1.51	4.16	11.3
555	1027020737	WS				Malone Creek	7.99	0	0	0	.11	1.53
558	1027020743	WS				Mercer Creek	9.41	0	0	0	.26	2.00
574	1027020738	WS				Beaver Creek	21.3	0	0	1.05	3.16	9.05
612	1025001712	WS				Parsons Creek	48.2	0	.86	3.37	8.72	21.7
683	1027020723	WS				Coon Creek	46.3	0	.28	2.03	5.96	16.8
684	1025001710	WS				Peats Creek	34.6	0	.47	2.28	5.95	15.2
695	1027020744	WS				Camp Creek	21.6	0	0	.96	2.94	8.65
738	1027020723	WS				Coon Creek	75.8	.01	1.15	4.58	13.0	34.7
756	1025001712	WS				Parsons Creek	72.2	0	1.20	4.45	11.9	30.7
824	1025001710	WS				Peats Creek	62.2	0	.99	3.87	10.5	27.0
825	1025001753	WS				Spring Creek	19.9	0	0	1.03	2.65	7.19

**Table 107.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Washington County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 111)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
453	694	13,100	21,400	27,600	36,200	43,000	50,200
454	2.68	641	1,510	2,290	3,510	4,550	5,740
471	3.54	752	1,770	2,700	4,140	5,370	6,790
477	701	13,200	21,400	27,500	35,800	42,500	49,500
501	5.76	980	2,320	3,540	5,460	7,090	8,970
512	704	13,100	21,200	27,200	35,400	41,900	48,700
523	4.05	803	1,920	2,930	4,530	5,890	7,470
524	706	13,000	21,300	27,600	36,300	43,400	50,800
536	9.62	1,400	3,350	5,140	7,960	10,400	13,200
555	2.49	678	1,600	2,440	3,740	4,860	6,140
558	2.95	752	1,780	2,710	4,170	5,410	6,840
574	7.99	1,210	2,910	4,470	6,930	9,040	11,500
612	16.6	1,810	4,140	6,290	9,620	12,600	15,800
683	14.6	1,740	4,070	6,240	9,620	12,600	16,000
684	12.2	1,300	3,110	4,830	7,510	9,900	12,600
695	7.91	1,240	2,970	4,560	7,060	9,200	11,700
738	26.5	2,050	4,800	7,380	11,500	15,100	19,100
756	23.2	1,890	4,440	6,840	10,600	14,000	17,700
824	20.8	1,570	3,790	5,910	9,270	12,300	15,700
825	6.60	1,110	2,690	4,150	6,470	8,460	10,800

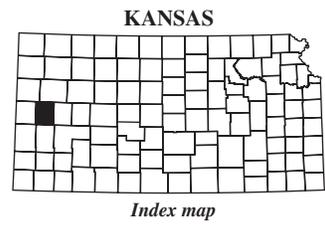




Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)

**EXPLANATION**

- ← 3226 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07138650 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07138650 △ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 2494 Lake and determination site identification number



**Figure 112.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Wichita County.

**Table 108.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wichita County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

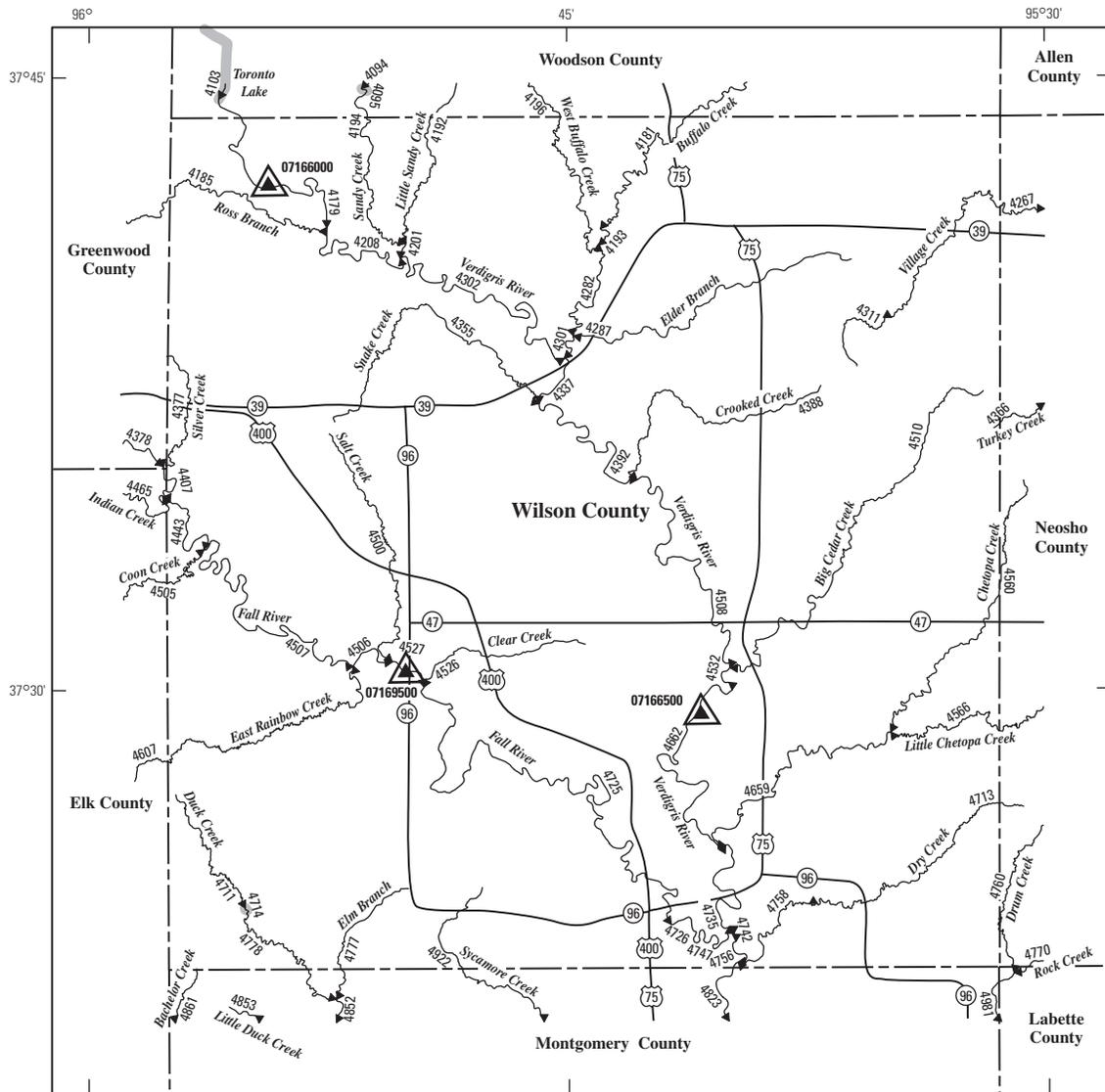
Determination site identification number (fig. 112)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		2480	102600046	WH						Unnamed tributary, Wichita 1	54.2	0
2492	1026000415	WH				Unnamed tributary, Greeley 1	131	0	0	.01	.01	.01
2494	HYDRO	WH				HYDRO	826	NA	NA	NA	NA	NA
2536	102600047	WH				Ladder Creek	826	0	.10	.41	.42	.84
2552	102600047	WH				Ladder Creek	890	0	.12	.48	.49	.98
2857	110300022	WH				Whitewoman Creek	844	0	0	0	0	0
2923	110300022	WH				Whitewoman Creek	935	0	0	0	0	0
2957	110300023	WH				Sand Creek	122	0	0	0	0	0

**Table 108.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wichita County.—Continued

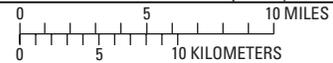
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 112)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
2480	0	210	759	1,420	2,650	3,910	5,460
2492	0	253	951	1,820	3,470	5,200	7,360
2494	NA	NA	NA	NA	NA	NA	NA
2536	1.28	523	1,990	3,890	7,700	11,900	17,400
2552	1.57	533	2,040	4,000	7,970	12,300	18,100
2857	1.46	260	1,490	3,490	8,200	13,900	21,800
2923	2.09	308	1,650	3,760	8,690	14,600	22,800
2957	0	250	928	1,770	3,360	5,000	7,050



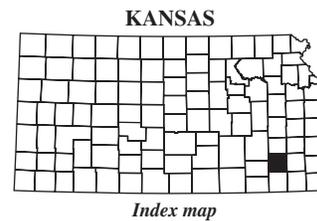


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ← 4853 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 07169500 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 07166500 ▴ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4103 Lake and determination site identification number



**Figure 113.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Wilson County.

**640 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 109.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wilson County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

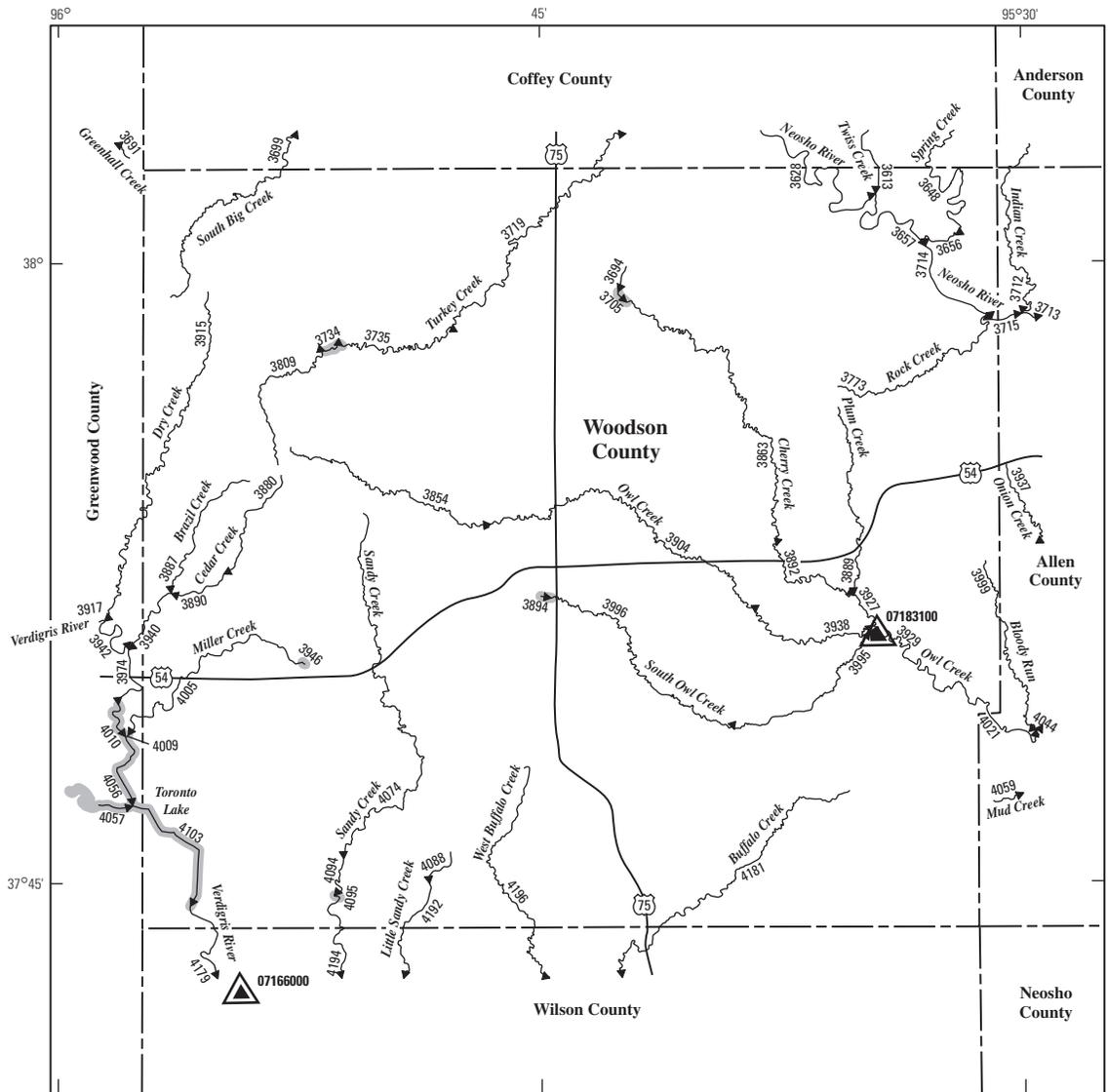
Determination site identification number (fig. 113)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
		4179	110701015	WL	WO					Verdigris River	757	6.20
4181	110701012	WL	WO			Buffalo Creek	52.9	0	1.17	6.55	23.0	65.9
4192	1107010133	WL	WO			Little Sandy Creek	15.7	0	.82	3.32	9.07	22.0
4193	110701012	WL				Buffalo Creek	54.1	0	1.22	6.72	23.5	67.4
4194	110701014	WL	WO			Sandy Creek	52.0	.15	2.61	9.84	28.5	71.9
4196	1107010134	WL	WO			West Buffalo Creek	35.7	0	1.45	6.79	21.3	55.4
4201	110701014	WL				Sandy Creek	67.9	.29	3.12	12.0	35.4	91.3
4208	110701015	WL				Verdigris River	793	6.56	13.1	80.1	501	1,840
4282	110701012	WL				Buffalo Creek	94.3	0	2.70	12.7	43.4	124
4287	1107010137	WL				Elder Branch	30.7	0	.82	4.35	14.2	38.4
4301	110701012	WL				Buffalo Creek	126	.34	3.54	16.2	55.3	160
4302	110701013	WL				Verdigris River	872	7.35	15.6	93.3	569	2,010
4311	1107020433	WL				Village Creek	7.53	0	0	.88	3.23	9.47
4337	110701011	WL				Verdigris River	999	8.61	19.6	115	680	2,290
4355	1107010136	WL				Snake Creek	25.6	0	.30	2.62	8.71	24.7
4388	1107010138	WL				Crooked Creek	21.2	0	.73	3.78	11.7	30.3
4392	110701011	WL				Verdigris River	1,040	9.01	20.9	121	714	2,370
4443	110701021	WL				Fall River	668	9.32	17.7	79.2	419	1,520
4500	1107010238	WL				Salt Creek	28.4	0	.06	2.16	7.90	24.0
4506	110701021	WL				Fall River	725	10.4	19.2	87.7	467	1,660
4507	110701021	WL				Fall River	700	9.94	18.6	83.9	446	1,600
4508	110701011	WL				Verdigris River	1,080	9.43	22.2	128	751	2,470
4510	1107010139	WL				Big Cedar Creek	40.5	0	.42	4.02	15.3	45.9
4526	1107010237	WL				Clear Creek	22.2	0	.66	3.36	10.2	26.7
4527	110701021	WL				Fall River	754	11.0	20.0	92.0	492	1,740
4532	110701011	WL				Verdigris River	1,120	9.85	23.5	135	787	2,560
4659	1107010122	WL				Chetopa Creek	62.0	0	.79	5.83	22.6	69.6
4662	110701011	WL				Verdigris River	1,140	10.0	24.0	138	800	2,590
4711	110701043	WL				Duck Creek	13.2	0	.14	2.00	6.30	16.9
4714	HYDRO	WL				HYDRO	13.2	NA	NA	NA	NA	NA
4725	110701021	WL				Fall River	817	11.6	21.7	101	542	1,890
4726	110701021	WL				Fall River	818	5.89	19.7	101	323	914
4735	110701011	WL				Verdigris River	1,200	10.8	26.0	148	852	2,750
4742	110701011	WL				Verdigris River	2,030	20.5	50.8	276	1,500	4,790
4747	110701021	WL				Fall River	821	11.6	21.8	102	545	1,900
4756	1107010338	WL				Verdigris River	2,030	20.5	50.8	276	1,500	4,790
4758	1107010337	WL				Dry Creek	30.4	0	1.02	4.97	15.9	42.1

**Table 109.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wilson County.—Continued

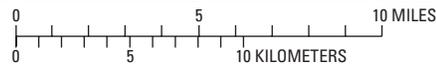
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 113)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
4179	520	5,290	7,490	8,500	9,400	9,860	10,200
4181	46.6	4,570	8,690	12,100	17,100	21,300	25,800
4192	14.9	1,840	3,800	5,470	7,980	10,100	12,400
4193	47.6	4,580	8,710	12,200	17,200	21,400	25,900
4194	45.9	4,010	7,570	10,500	14,800	18,300	22,000
4196	36.1	5,020	8,980	12,200	16,600	20,300	24,100
4201	57.9	4,700	8,790	12,200	17,100	21,100	25,400
4208	547	5,910	8,620	9,960	11,300	12,000	12,500
4282	81.9	5,880	11,000	15,300	21,600	26,800	32,300
4287	27.6	5,160	9,070	12,200	16,500	20,000	23,600
4301	105	6,890	12,700	17,600	24,700	30,600	36,900
4302	607	7,290	11,100	13,200	15,300	16,600	17,600
4311	7.72	1,440	2,810	3,940	5,600	6,950	8,480
4337	703	9,490	15,100	18,300	21,800	24,000	25,800
4355	19.2	2,420	5,070	7,340	10,800	13,600	16,900
4388	21.0	2,430	4,920	7,040	10,200	12,800	15,800
4392	733	10,200	16,400	20,000	23,900	26,300	28,400
4443	488	7,850	13,700	17,500	22,000	25,100	28,000
4500	19.8	2,600	5,440	7,880	11,600	14,600	18,100
4506	529	9,110	15,900	20,300	25,600	29,300	32,800
4507	511	8,560	14,900	19,100	24,000	27,500	30,700
4508	765	10,900	17,700	21,700	26,100	28,800	31,100
4510	34.9	4,680	8,790	12,200	17,100	21,200	25,600
4526	19.3	2,340	4,830	6,950	10,100	12,800	15,800
4527	550	9,750	17,000	21,800	27,500	31,500	35,200
4532	797	11,600	19,000	23,400	28,200	31,200	33,800
4659	51.8	5,470	10,300	14,400	20,300	25,300	30,600
4662	808	11,900	19,500	24,000	29,000	32,100	34,800
4711	12.3	1,660	3,430	4,930	7,170	9,020	11,100
4714	NA	NA	NA	NA	NA	NA	NA
4725	597	10,100	17,300	22,200	28,200	32,500	36,300
4726	502	15,200	36,400	57,300	92,500	125,000	164,000
4735	858	12,300	19,800	24,400	29,900	33,300	36,300
4742	1,480	17,700	24,000	30,000	40,600	48,900	54,400
4747	600	10,200	17,400	22,200	28,300	32,600	36,400
4756	1,480	17,700	24,000	30,000	40,600	48,900	54,400
4758	29.3	4,280	7,740	10,500	14,500	17,700	21,000



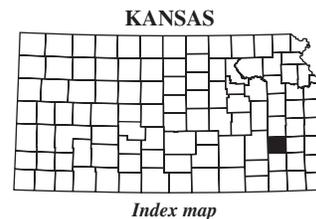


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 4179 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- ▲ 07166000 U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- △ 07183100 U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 4103 Lake and determination site identification number



Index map

**Figure 114.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Woodson County.

**Table 110.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Woodson County.[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

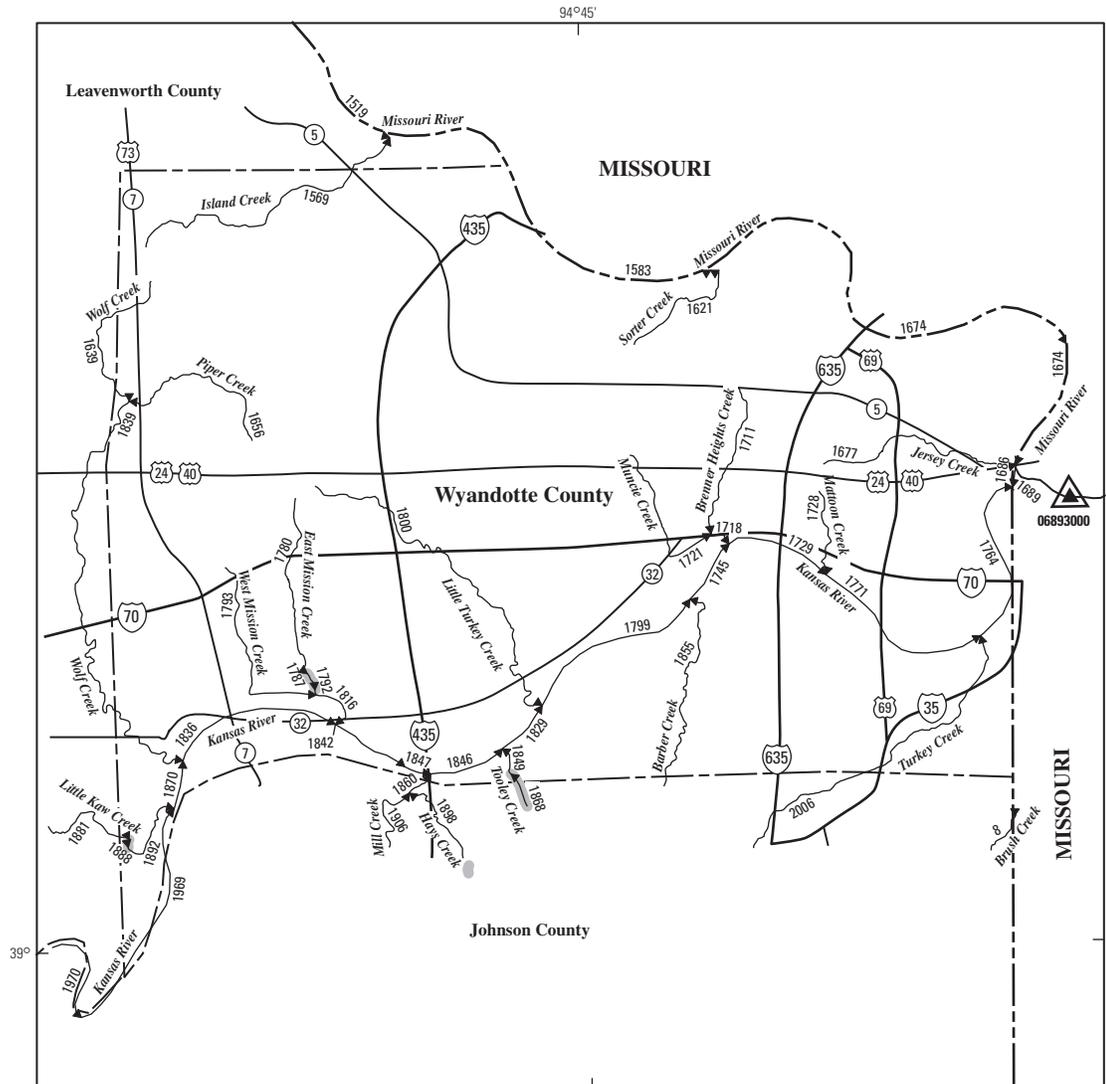
Determination site identification number (fig. 114)	KSWR CUSEGA number	Stream segment by county (table 112)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
3656	1107020446	WO				Spring Creek	15.9	0	0	0.77	3.74	12.8
3657	1107020410	WO				Neosho River	3,440	36.2	97.5	505	2,080	6,520
3694	1107020420	WO				Cherry Creek	6.77	0	0	.52	2.08	6.69
3705	HYDRO	WO				HYDRO	10.1	NA	NA	NA	NA	NA
3714	1107020410	WO				Neosho River	3,460	36.6	98.9	510	2,100	6,570
3734	HYDRO	WO				HYDRO	13.4	NA	NA	NA	NA	NA
3735	1107020418	WO				Turkey Creek	29.1	0	.03	2.54	9.71	29.5
3773	1107020423	WO				Rock Creek	17.3	0	0	.50	3.45	13.2
3809	1107020418	WO				Turkey Creek	10.7	0	0	1.16	3.91	11.2
3854	1107020421	WO				Owl Creek	18.1	0	0	1.58	6.25	19.3
3863	1107020420	WO				Cherry Creek	43.3	0	.18	3.17	12.8	41.9
3880	1107010132	WO				Cedar Creek	7.31	0	.35	1.81	4.77	11.5
3887	1107010131	WO				Brazil Creek	6.26	0	.42	1.68	4.11	9.60
3889	1107020422	WO				Plum Creek	14.3	0	0	.22	2.42	10.3
3890	1107010132	WO				Cedar Creek	9.47	0	.31	1.97	5.55	13.8
3892	1107020420	WO				Cherry Creek	48.0	0	.26	3.38	13.6	45.1
3894	HYDRO	WO				HYDRO	6.67	NA	NA	NA	NA	NA
3904	1107020421	WO				Owl Creek	51.0	0	.59	4.61	17.5	55.2
3927	1107020420	WO				Cherry Creek	64.0	0	.24	3.46	14.8	53.2
3929	1107020421	WO				Owl Creek	100	0	.93	6.03	24.6	90.1
3938	1107020421	WO				Owl Creek	56.9	0	.66	4.86	18.5	59.2
3946	HYDRO	WO				HYDRO	3.95	NA	NA	NA	NA	NA
3995	11070204552	WO				South Owl Creek	43.5	0	.23	3.42	13.8	44.9
3996	11070204552	WO				South Owl Creek	32.6	0	.12	2.97	11.8	37.0
4074	110701014	WO				Sandy Creek	40.2	0	2.03	7.78	22.5	56.6
4088	1107010133	WO				Little Sandy Creek	3.60	.68	.91	1.62	3.01	6.05
4094	110701014	WO				Sandy Creek	43.4	.03	2.20	8.35	24.2	60.8
4095	HYDRO	WO				HYDRO	43.4	NA	NA	NA	NA	NA

**Table 110.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Woodson County.—Continued

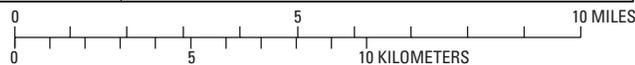
[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 114)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
3656	11.9	2,040	4,130	5,880	8,500	10,600	13,100
3657	1,990	17,400	24,200	26,400	51,400	79,800	123,000
3694	6.03	1,280	2,540	3,590	5,160	6,440	7,890
3705	NA	NA	NA	NA	NA	NA	NA
3714	2,000	17,700	24,600	26,900	51,900	80,200	123,000
3734	NA	NA	NA	NA	NA	NA	NA
3735	23.1	2,690	5,610	8,110	11,900	15,000	18,600
3773	12.8	2,180	4,390	6,250	9,040	11,300	13,900
3809	9.04	1,470	3,010	4,320	6,270	7,880	9,710
3854	15.8	2,160	4,400	6,290	9,130	11,500	14,100
3863	35.0	5,390	10,800	15,400	22,500	28,600	35,400
3880	7.84	1,190	2,420	3,450	4,990	6,260	7,690
3887	6.56	1,060	2,160	3,090	4,470	5,600	6,880
3889	10.7	2,100	4,220	6,010	8,700	10,900	13,500
3890	9.64	1,380	2,810	4,030	5,850	7,340	9,030
3892	38.1	5,350	11,000	15,800	23,300	29,900	37,200
3894	NA	NA	NA	NA	NA	NA	NA
3904	43.7	4,670	8,920	12,500	17,700	22,100	26,800
3927	47.4	6,940	14,400	20,900	31,200	40,200	50,500
3929	77.9	6,830	12,700	17,700	24,900	30,900	37,400
3938	47.6	4,640	8,930	12,600	17,900	22,300	27,100
3946	NA	NA	NA	NA	NA	NA	NA
3995	37.0	4,400	8,450	11,900	16,900	21,000	25,500
3996	29.6	4,020	7,710	10,800	15,300	19,000	23,000
4074	36.7	4,140	7,630	10,500	14,500	17,900	21,400
4088	3.98	799	1,590	2,250	3,230	4,030	4,930
4094	39.2	4,130	7,660	10,600	14,700	18,100	21,600
4095	NA	NA	NA	NA	NA	NA	NA



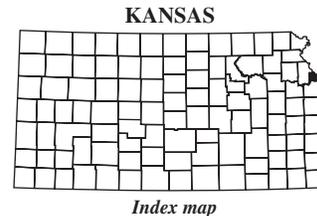


Base map from U.S. Geological Survey digital data, 1:2,000,000, 1994  
 Albers Conic Equal-Area Projection,  
 Standard parallels 29°30' and 45°30', central meridian 96°  
 Horizontal coordinate information is referenced to the  
 North American Datum of 1983 (NAD 83)



**EXPLANATION**

- ◀ 1969 Location of streamflow-statistics determination site (small triangle) and associated identification number—small triangle points in downstream direction
- 06893000 ▲ U.S. Geological Survey streamflow-gaging station and number used for estimates of flow duration
- 06893000 ▴ U.S. Geological Survey streamflow-gaging station and number used for estimates of peak-discharge frequency values
- 1868 Lake and determination site identification number



**Figure 115.** Location of streamflow-statistics determination sites, associated identification numbers, and U.S. Geological Survey streamflow-gaging stations used in the flow-duration and peak-discharge frequency analyses for Wyandotte County.

**648 Estimates of Flow Duration, Mean Flow, and Peak-Discharge Frequency Values for Kansas Stream Locations**

**Table 111.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wyandotte County.

[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 115)	KSWR CUSEGA number	Stream segment by county (table 111)				Stream name	Contributing drainage area (mi <sup>2</sup> )	Estimated flow-duration values (ft <sup>3</sup> /s) for indicated percentage of time flow equaled or exceeded				
		1st	2nd	3rd	4th			90 percent	75 percent	50 percent	25 percent	10 percent
1583	102400111	WY				Missouri River	424,000	23,800	34,700	43,700	58,200	76,200
1621	10240011142	WY				Sorter Creek	5.74	.05	1.09	2.81	6.10	12.5
1656	102701041154	WY				Piper Creek	9.71	0	.40	2.07	5.61	13.7
1674	102400111	WY				Missouri River	424,000	23,800	34,700	43,700	58,300	76,200
1677	1024001138	WY				Jersey Creek	6.77	.08	.91	2.47	5.57	12.0
1686	102400111	WY				Missouri River	424,000	23,800	34,700	43,700	58,300	76,200
1689	102400119099	WY				Missouri River	483,000	26,600	38,500	50,200	69,600	96,400
1711	102701041175	WY				Brenner Heights Creek	5.82	.01	.99	2.64	5.83	12.2
1718	1027010455	WY				Muncie Creek	14.6	0	1.33	4.57	11.7	26.5
1721	1027010455	WY				Muncie Creek	8.64	0	.95	2.89	6.87	15.1
1728	102701041178	WY				Mattoon Creek	2.20	1.00	1.37	1.73	2.64	4.59
1729	102701041	WY				Kansas River	58,700	1,270	2,130	4,040	9,650	21,600
1745	102701041	WY				Kansas River	58,700	1,270	2,130	4,030	9,650	21,600
1764	102701041	WY				Kansas River	58,700	1,270	2,130	4,040	9,660	21,600
1771	102701041	WY				Kansas River	58,700	1,270	2,130	4,040	9,650	21,600
1780	1027010461	WY				East Mission Creek	5.26	0	.45	1.72	4.09	9.25
1787	HYDRO	WY				HYDRO	5.51	NA	NA	NA	NA	NA
1792	1027010461	WY				East Mission Creek	5.51	0	.50	1.84	4.39	9.87
1793	102701041164	WY				West Mission Creek	6.08	0	.51	1.93	4.65	10.5
1799	102701041	WY				Kansas River	58,700	1,270	2,130	4,030	9,650	21,600
1800	1027010462	WY				Little Turkey Creek	19.9	0	1.56	5.55	14.6	33.9
1816	1027010461	WY				East Mission Creek	13.5	0	.95	3.82	10.2	23.7
1829	102701041	WY				Kansas River	58,600	1,270	2,120	4,030	9,650	21,600
1836	102701042	WY				Kansas River	58,500	1,260	2,120	4,020	9,630	21,600
1842	102701042	WY				Kansas River	58,600	1,260	2,120	4,020	9,630	21,600
1846	102701041	WY				Kansas River	58,600	1,270	2,120	4,030	9,640	21,600
1847	102701041	WY				Kansas River	58,600	1,260	2,120	4,020	9,630	21,600
1849	10270104379	WY				Tooley Creek	2.55	1.01	1.42	2.14	3.59	6.36
1870	102701042	WY				Kansas River	58,500	1,260	2,110	4,020	9,630	21,600
1888	HYDRO	WY				HYDRO	16.9	NA	NA	NA	NA	NA
1892	1027010459	WY				Little Kaw Creek	18.1	0	0	2.03	7.24	20.9

**Table 111.** Estimated flow-duration values, mean flow values, and peak-discharge frequency values for controlled and uncontrolled flow stream segments on the 1999 Kansas Surface Water Register for Wyandotte County.—Continued[KSWR, Kansas Surface Water Register; CUSEGA, catalog unit segment number alpha; mi<sup>2</sup>, square miles; ft<sup>3</sup>/s, cubic feet per second; HYDRO, lake or other hydrologic structure; NA, not applicable; NRDitch, irrigation ditch; NRTribal, tribal stream]

Determination site identification number (fig. 115)	Estimated mean flow (ft <sup>3</sup> /s)	Estimated peak discharge (ft <sup>3</sup> /s) for indicated peak-discharge frequency					
		2-year	5-year	10-year	25-year	50-year	100-year
1583	48,600	111,000	150,000	178,000	204,000	239,000	269,000
1621	7.31	1,020	2,070	2,950	4,260	5,340	6,550
1656	9.56	1,370	2,820	4,040	5,870	7,380	9,100
1674	48,700	111,000	150,000	178,000	204,000	240,000	269,000
1677	7.63	1,150	2,320	3,300	4,770	5,980	7,340
1686	48,700	111,000	150,000	178,000	204,000	240,000	269,000
1689	57,900	142,000	201,000	245,000	289,000	351,000	401,000
1711	7.25	1,030	2,100	2,980	4,310	5,400	6,620
1718	16.2	1,760	3,630	5,230	7,620	9,600	11,800
1721	9.56	1,300	2,650	3,790	5,500	6,900	8,490
1728	2.68	598	1,180	1,660	2,370	2,950	3,600
1729	8,500	50,200	89,000	119,000	148,000	200,000	240,000
1745	8,490	50,200	89,000	119,000	148,000	200,000	240,000
1764	8,500	50,200	89,000	119,000	148,000	200,000	240,000
1771	8,500	50,200	89,000	119,000	148,000	200,000	240,000
1780	5.99	948	1,930	2,750	3,980	4,990	6,130
1787	NA	NA	NA	NA	NA	NA	NA
1792	6.33	974	1,980	2,830	4,100	5,140	6,310
1793	6.81	1,030	2,100	3,000	4,350	5,450	6,710
1799	8,490	50,200	89,000	119,000	148,000	200,000	240,000
1800	20.8	2,080	4,340	6,270	9,190	11,600	14,400
1816	14.8	1,640	3,400	4,900	7,160	9,020	11,100
1829	8,490	50,200	89,000	119,000	148,000	200,000	240,000
1836	8,480	50,100	88,900	119,000	148,000	200,000	240,000
1842	8,480	50,100	89,000	119,000	148,000	200,000	240,000
1846	8,490	50,200	89,000	119,000	148,000	200,000	240,000
1847	8,480	50,100	89,000	119,000	148,000	200,000	240,000
1849	3.49	655	1,300	1,830	2,610	3,250	3,960
1870	8,470	50,100	88,900	119,000	148,000	200,000	240,000
1888	NA	NA	NA	NA	NA	NA	NA
1892	15.6	1,930	4,030	5,840	8,560	10,800	13,400

**Table 112.** County abbreviations for Kansas.

County abbreviation used in table 6	County name	County abbreviation used in table 6	County name
AL	Allen	HS	Haskell
AN	Anderson	HV	Harvey
AT	Atchison	JA	Jackson
BA	Barber	JF	Jefferson
BB	Bourbon	JO	Johnson
BR	Brown	JW	Jewell
BT	Barton	KE	Kearny
BU	Butler	KM	Kingman
CA	Clark	KW	Kiowa
CD	Cloud	LB	Labette
CF	Coffey	LC	Lincoln
CK	Cherokee	LE	Lane
CL	Cowley	LG	Logan
CM	Comanche	LN	Linn
CN	Cheyenne	LV	Leavenworth
CQ	Chautauqua	LY	Lyon
CR	Crawford	MC	Mitchell
CS	Chase	ME	Meade
CY	Clay	MG	Montgomery
DC	Decatur	MI	Miami
DG	Douglas	MN	Marion
DK	Dickinson	MP	McPherson
DP	Doniphan	MR	Morris
ED	Edwards	MS	Marshall
EK	Elk	MT	Morton
EL	Ellis	NM	Nemaha
EW	Ellsworth	NO	Neosho
FI	Finney	NS	Ness
FO	Ford	NT	Norton
FR	Franklin	OB	Osborne
GE	Geary	OS	Osage
GH	Graham	OT	Ottawa
GL	Greeley	PL	Phillips
GO	Gove	PN	Pawnee
GT	Grant	PR	Pratt
GW	Greenwood	PT	Pottawatomie
GY	Gray	RA	Rawlins
HG	Hodgeman	RC	Rice
HM	Hamilton	RH	Rush
HP	Harper	RL	Riley

**Table 112.** County abbreviations for Kansas.—Continued

County abbreviation used in table 6	County name
RN	Reno
RO	Rooks
RP	Republic
RS	Russell
SA	Saline
SC	Scott
SD	Sheridan
SF	Stafford
SG	Sedgwick
SH	Sherman
SM	Smith
SN	Shawnee
ST	Stanton
SU	Sumner
SV	Stevens
SW	Seward
TH	Thomas
TR	Trego
WA	Wallace
WB	Wabaunsee
WH	Wichita
WL	Wilson
WO	Woodson
WS	Washington
WY	Wyandotte