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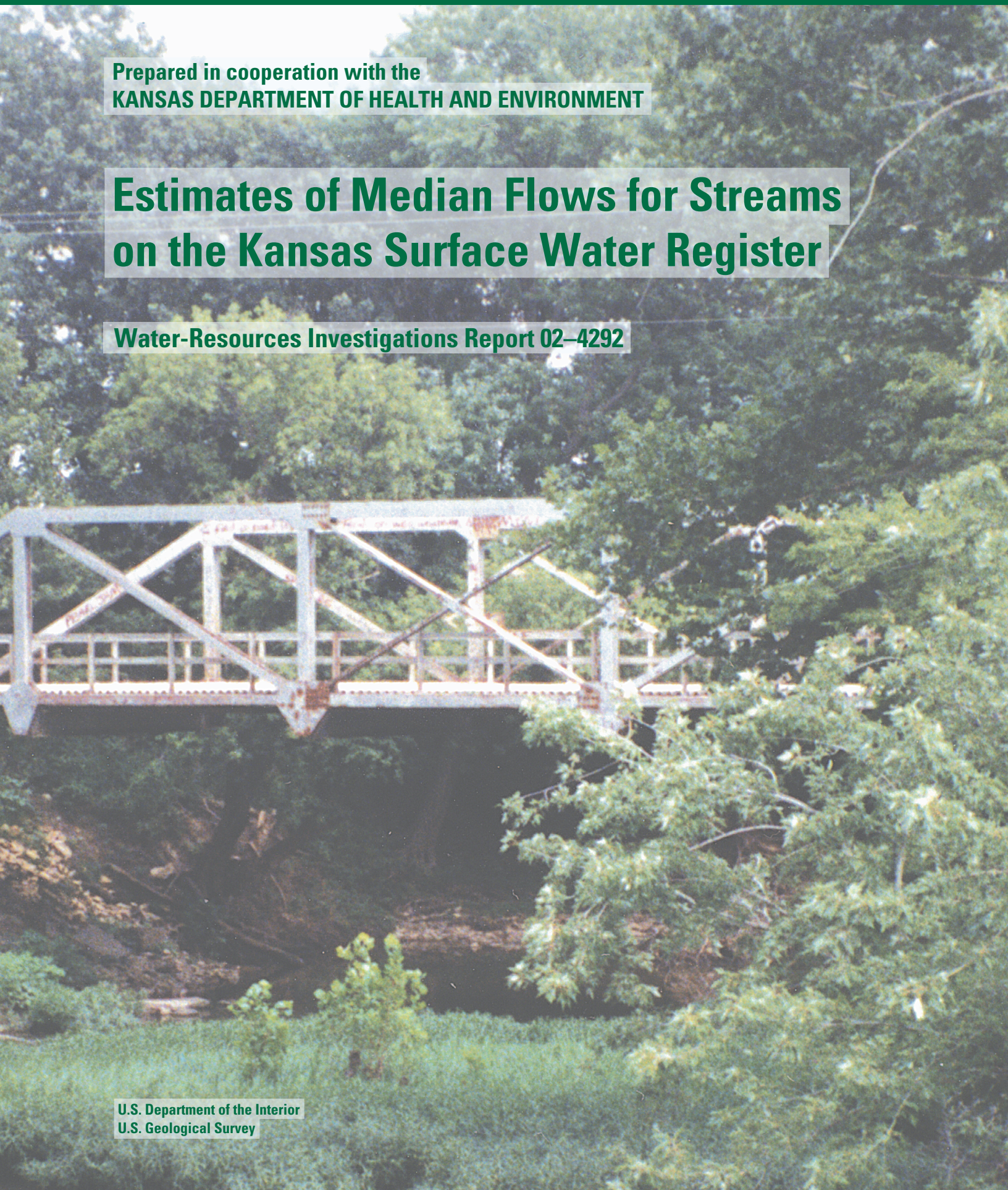
Estimates of Median Flows for Streams on the Kansas Surface Water Register

Water-Resources Investigations Report 02–4292



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Estimates of Median Flows for Streams on the Kansas Surface Water Register

By CHARLES A. PERRY, DAVID M. WOLOCK, and JOSHUA C. ARTMAN

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Lawrence, Kansas
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CONVERSION FACTORS AND ABBREVIATIONS

Multiply	By	To obtain
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/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)	25.40	millimeter per hour (mm/h)
meter per kilometer (m/km)	5.280	foot per mile (ft/mi)
meter (m)	3.281	foot (ft)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)

Datums

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

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

Definitions

Classified stream is a stream listed on the Kansas Surface Water Register that is regulated by the Kansas Department of Health and Environment.

Climatic year is the 12-month period January 1 through December 31.

Controlled stream segment is a stream segment affected by releases from large reservoirs.

Unclassified stream is a stream not listed on the Kansas Surface Water Register that is not regulated by the Kansas Department of Health and Environment.

Uncontrolled stream segment is a stream segment not affected by releases from large reservoirs.

Water year is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends. Thus, the year ending September 30, 2000, is called the “2000 water year.”

Estimates of Median Flows for Streams on the Kansas Surface Water Register

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

Abstract

The Kansas State Legislature, by enacting Kansas Statute KSA 82a–2001 et. seq., mandated the criteria for determining which Kansas stream segments would be subject to classification by the State. One criterion for the selection as a classified stream segment is based on the statistic of median flow being equal to or greater than 1 cubic foot per second. As specified by KSA 82a–2001 et. seq., median flows were determined from U.S. Geological Survey streamflow-gaging-station data by using the most-recent 10-years of gaged data (KSA) for each streamflow-gaging station. Median flows also were determined by using gaged data from the entire period of record (all-available hydrology, AAH).

Least-squares multiple regression techniques were used, along with Tobit analyses, to develop equations for estimating median flows for uncontrolled stream segments. The drainage area of the uncontrolled gaging stations used in the regression analyses ranged from 2.06 to 12,004 square miles. A logarithmic transformation of the data was needed to develop the best linear relation for computing median flows. In the regression analyses, the significant climatic and basin characteristics, in order of importance, were drainage area, mean annual precipitation, mean basin permeability, and mean basin slope. Tobit analyses of KSA data yielded a root mean square error of 0.285 logarithmic units, and the best equations using Tobit analyses of AAH data had a root mean square error of 0.247 logarithmic units.

These equations and an interpolation procedure were used to compute median flows for the uncontrolled stream segments on the Kansas Surface Water Register. Measured median flows from gaging stations were incorporated into the regression-estimated median flows along the stream segments where available. The segments that were uncontrolled were interpolated using gaged data weighted according to the drainage area and the bias between the regression-estimated and gaged flow information. On controlled reaches of Kansas streams, the median flow information was interpolated between gaging stations using only gaged data weighted by drainage area.

Of the 2,232 total stream segments on the Kansas Surface Water Register, 30 percent of the segments had an estimated median streamflow of less than 1 cubic foot per second when the KSA analysis was used. When the AAH analysis was used, 40 percent of the segments had an estimated median streamflow of less than 1 cubic foot per second.

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, and pollution control within the State. Kansas Statute KSA 82a–2001 et. seq. (see Appendix A) specifically mentions median streamflow as one criterion for classifying streams. Current water-quality regulations in Kansas apply numeric water-quality criteria to the 2,232 stream segments listed on the Kansas Surface Water Register. The

register is maintained by the Kansas Department of Health and Environment (KDHE) and is used to identify designated uses of stream segments. Numeric water-quality criteria for the stream segments are based on assigned designated uses.

KSA 82a–2001 et. seq. defines one criterion for a classified stream segment as having a median flow of 1 ft^3/s or greater. Other criteria include whether a stream segment contains a wastewater discharge, contains threatened or endangered species, or has a cost/benefit ratio less than 1 where median streamflows are 0 ft^3/s. Median flow statistics for stream segments are based on daily flow data collected by the U.S. Geological Survey (USGS) at 214 streamflow-gaging stations with 10 or more years of record located throughout Kansas and surrounding States (fig. 1). 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, a statistical model that is based on these relations can be used to estimate streamflow statistics for ungaged stream segments. Therefore, information on median flow characteristics is needed for streams in Kansas.

To address this need, a study of median flows for Kansas streams was conducted by the USGS in cooperation with KDHE. Streamflow data used in this study were collected by the USGS (Putnam and others, 2001) through other cooperative studies with various government agencies.

Purpose and Scope

The purpose of this report is to document the methods and results of a study designed to estimate the median flow (50-percent flow duration) for the downstream end of each stream segment listed on the Kansas Surface Water Register. Median flow for each stream segment was determined from gaged-location streamflow records or was estimated from statewide regression models. This report documents development of regression models to estimate median flow from climatic and basin characteristics. The report describes application of the drainage-area ratio method and the regression models to estimate the median flows for Kansas Surface Water Register stream segments, the interpolation of estimates for ungaged segments, and the Internet dissemination of results and a geographic-information-system (GIS) database.

Two different statistical analysis were performed on uncontrolled flows measured at 149 gaging stations. According to language in KSA 82a–2001 et. seq., only the most-recent 10 years of streamflow data for each gaging station were to be used for statistical analysis. This analysis was termed the KSA analysis. The entire period of record also was used for analysis of median flows, and this analysis was termed the all-available hydrology (AAH) analysis.

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 median streamflows. The methods described herein can be applied nationwide using USGS streamflow data that are available throughout the United States.

Previous Studies

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^2 for the period 1921–56. Maps were developed showing a variety of statewide low and mean streamflow maps. 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 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^2 basin was greater than 0.1 ft^3/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

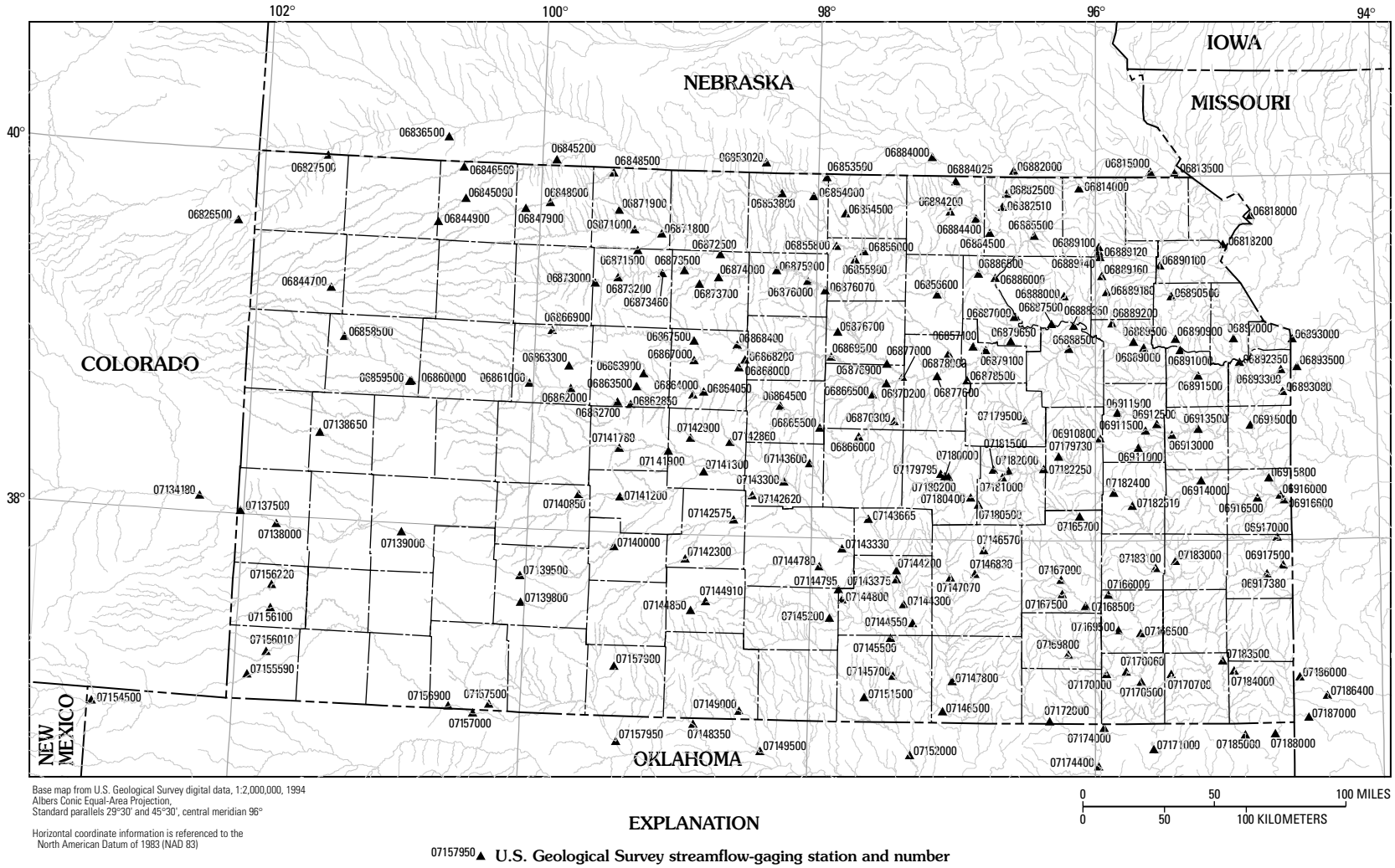


Figure 1. Location of U.S. Geological Survey streamflow-gaging stations in Kansas and parts of surrounding States with 10 or more years of record that were used to estimate median flows.

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^2.

Many studies have been conducted to evaluate low flow from regression equations that relate low 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 using GIS techniques. Ries and Friesz (2000) used the drainage-area ratio method to compute streamflow characteristics for stream segments that had between 0.5 and 1.5 times the drainage area of streamflow-gaging stations on the same stream. Many States have used regression analysis to regionalize low-flow frequency statistics including New Hampshire, Rhode Island, and Vermont (Johnson, 1970); Pennsylvania and New York (Ku and others, 1975); Maine (Parker, 1977); Massachusetts (Male and Ogawa, 1982; Vogel and Kroll, 1990; Risley, 1994; Ries and Friesz, 2000); Montana (Parrett and Hull, 1985); Indiana (Arihood and Glatfelter, 1991); and central New England (Wandle and Randall, 1994).

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 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. 2). The average land-surface slope for Kansas (fig. 3) using 30-m grid elevation data 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 basin. For example, with all other factors being equal the low-flow potential from watersheds with soils of low permeability (fig. 4) 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. 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 returns 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 various air masses of tropical and continental origin over the open, inland plains, and seasonal precipitation extremes are common. About 70 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.

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. 5). Mean annual precipitation at 149 streamflow-gaging stations used in the regression analyses for uncontrolled stream segments on the Kansas Surface Water Register is given in table 1.

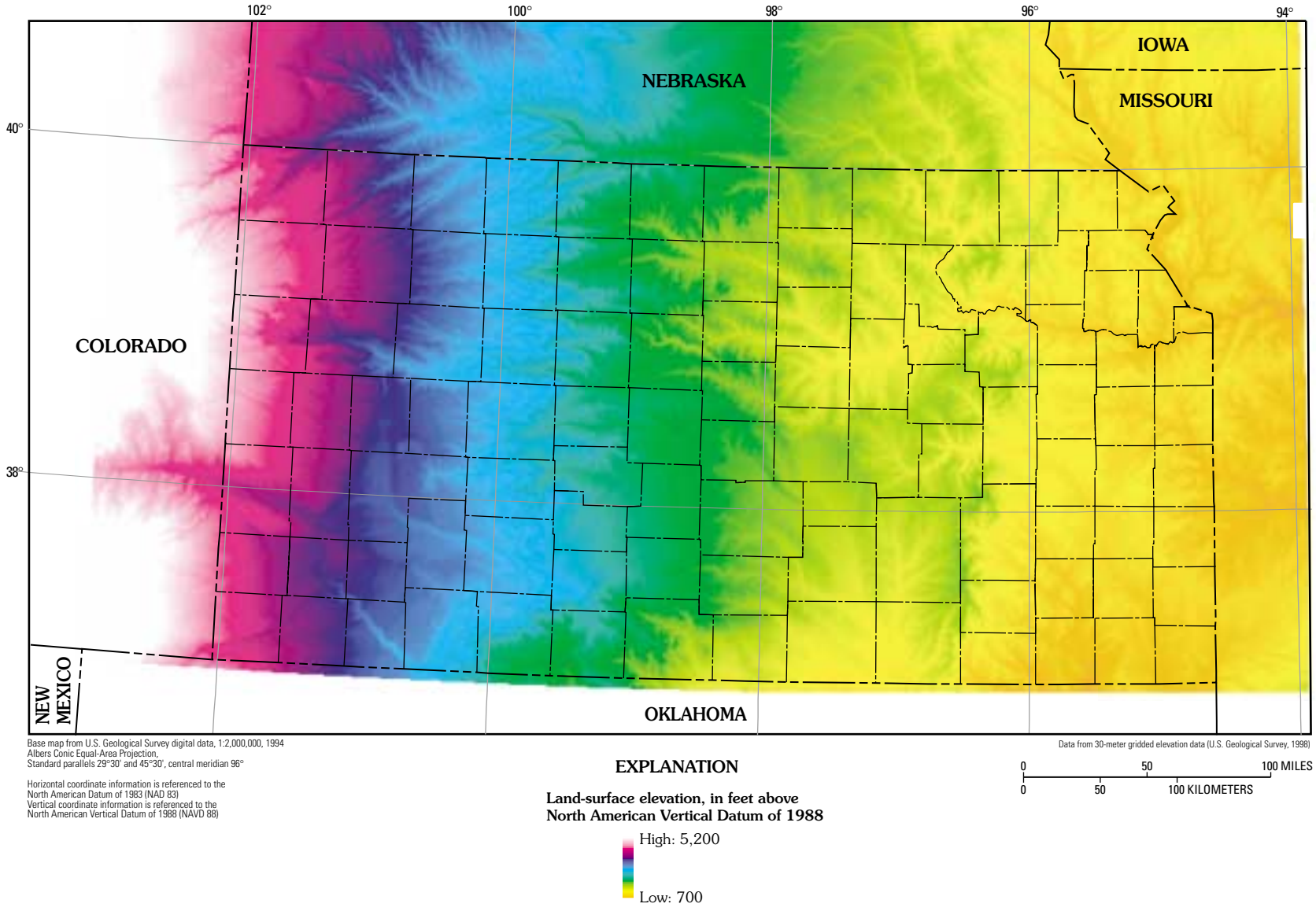


Figure 2. Land-surface elevation in Kansas and parts of surrounding States.

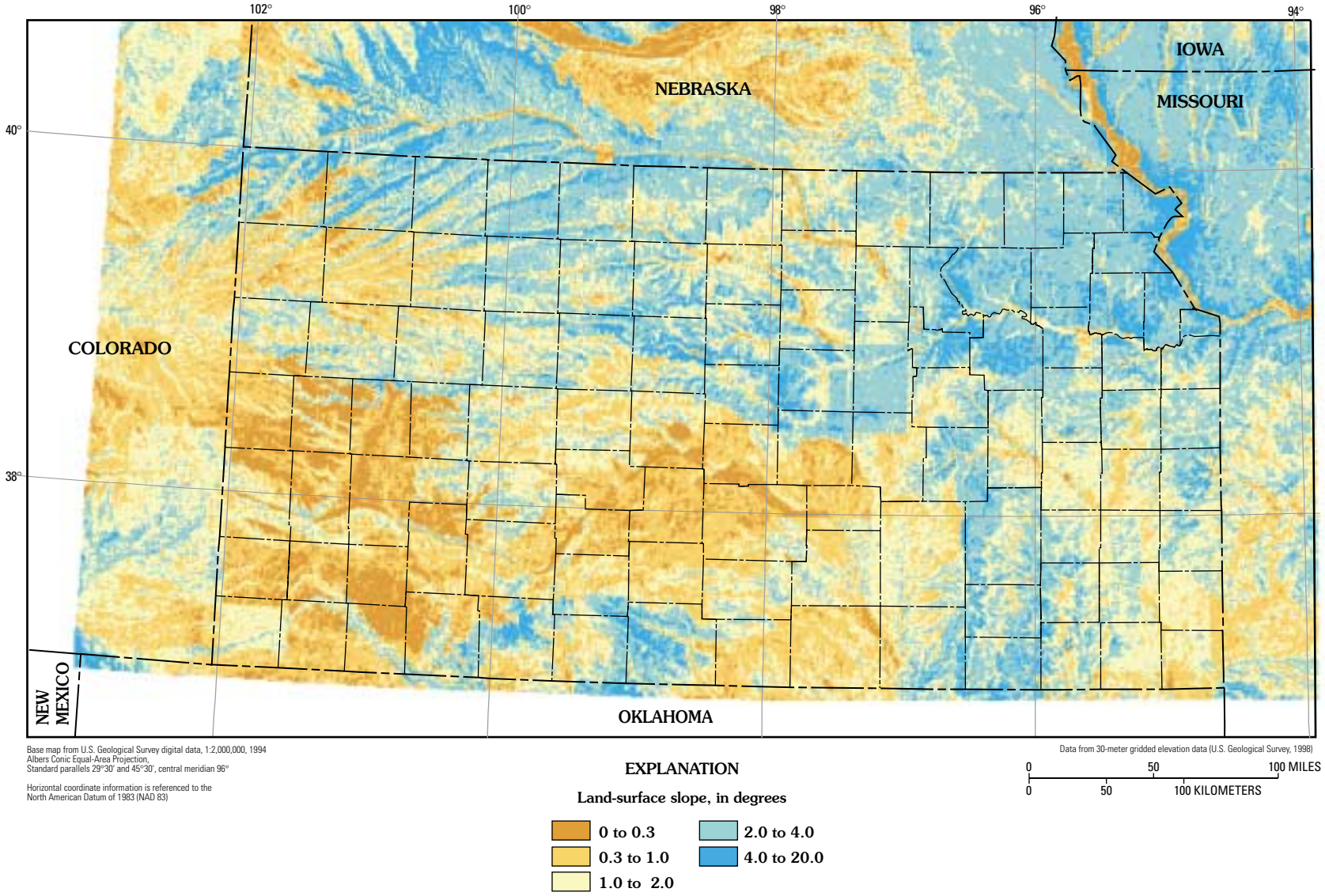


Figure 3. Average land-surface slope in Kansas and parts of surrounding States.

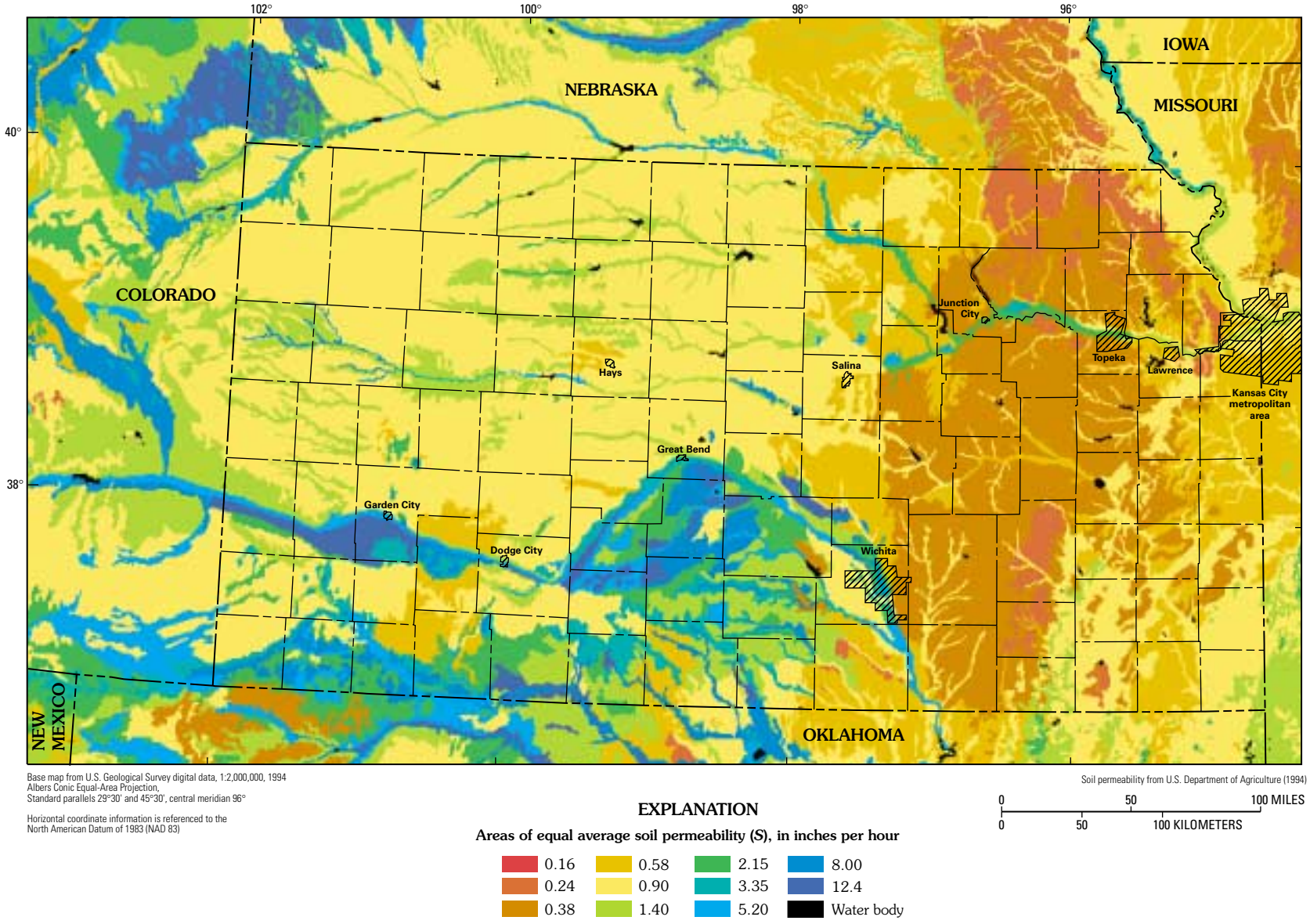


Figure 4. Areas of equal average soil permeability in Kansas and parts of surrounding States.

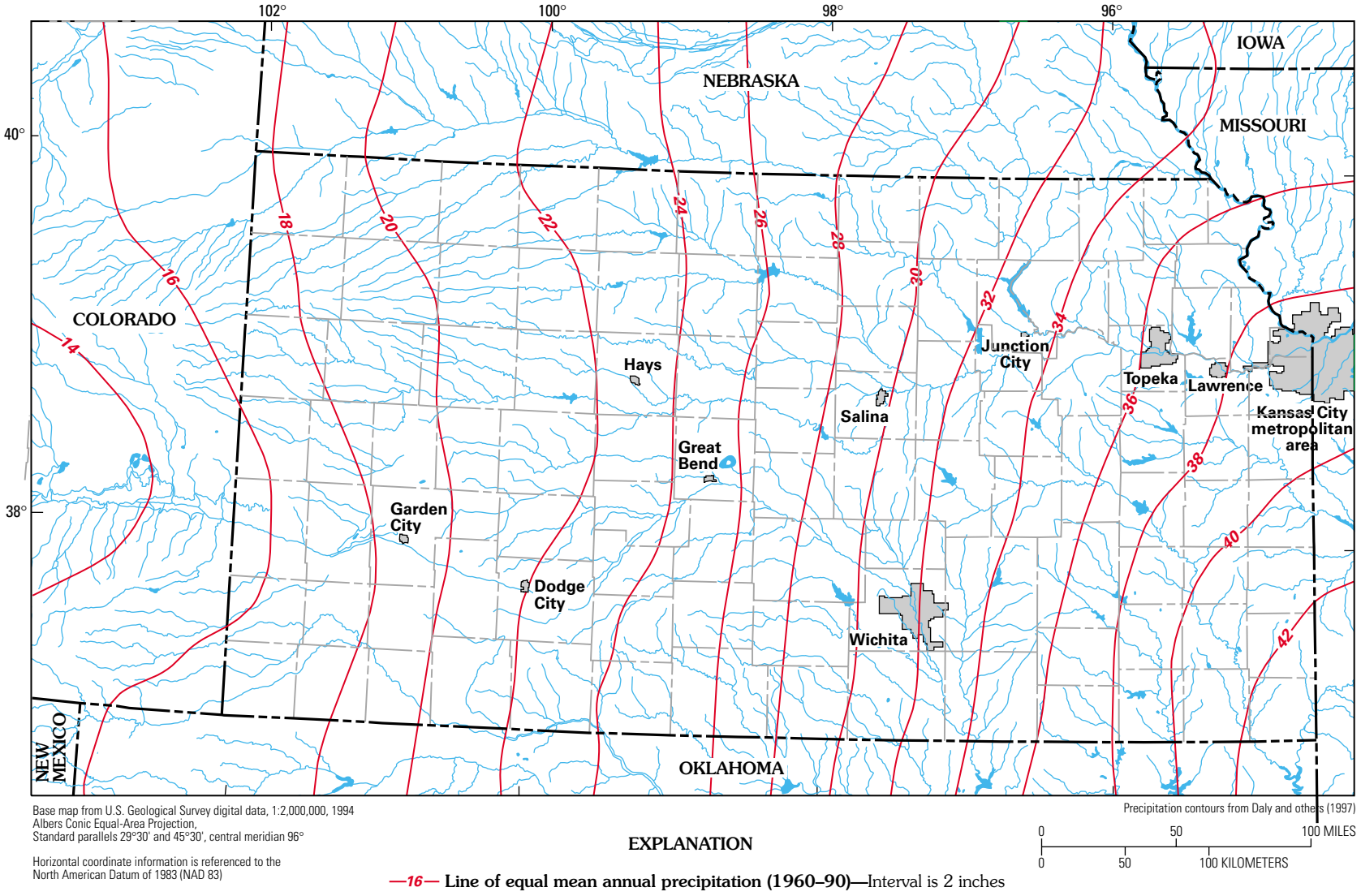


Figure 5. Mean annual precipitation in Kansas and parts of surrounding States.

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]

[ft^3/s, cubic feet per second; mi^2, square miles; in/h, inches per hour. Shaded areas show corrections to original printed report.]

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
06814000	Turkey Creek near Seneca, KS	1950–2000	51	129	22	30	276	32.35	0.467	3.1
06815000	Big Nemaha River at Falls City, NE	1944–2000	56	631	159	213	1,339	32.55	.510	2.8
06818200	Doniphan Creek at Doniphan, KS	1961–70	10	3.0	.87	.87	4.15	36.71	1.08	4.8
06836500	Driftwood Creek near McCook, NE	1977–86	10	9.5	4.8	5.0	361	20.94	1.30	2.9
06844700	South Fork Sappa Creek near Brewster, KS	1968–87	20	.23	0	0	71.3	18.40	1.30	.83
06844900	South Fork Sappa Creek near Achilles, KS	1960–2000	41	3.4	0	.28	412	19.20	1.30	1.4
06845000	Sappa Creek near Oberlin, KS	1930–2000	71	16	.70	1.9	1,086	19.82	1.32	1.5
06845200	Sappa Creek near Beaver City, NE	1938–72	35	38	5.0	4.5	1,500	20.57	1.36	1.9
06847900	Prairie Dog Creek above Keith Sebelius Lake, KS	1963–2000	38	9.0	2.1	6.1	590	20.65	1.36	1.7
06848000	Prairie Dog Creek at Norton, KS	1945–63	19	39	7.5	5.0	684	20.96	1.36	1.9
06848500	Prairie Dog Creek near Woodruff, KS	1930–63	34	57	10	5.0	1,007	21.56	1.37	2.1
06853800	White Rock Creek near Burr Oak, KS	1958–2000	43	29	6.0	12	227	26.49	1.30	2.5
06854000	White Rock Creek at Lovewell, KS	1947–56	10	68	5.7	5.7	354	27.07	1.31	2.6
06855800	Buffalo Creek near Jamestown, KS	1960–89	30	72	11	18	330	27.94	1.10	1.9
06855900	Wolf Creek near Concordia, KS	1963–81	19	11	1.0	1.6	56	28.76	1.01	2.5
06858500	North Fork Smoky Hill River near McAllaster, KS	1948–84	27	3.7	0	0	752	17.12	1.53	1.3
06859500	Ladder Creek below Chalk Creek near Scott City, KS	1952–79	28	8.0	1.9	1.3	1,432	17.65	1.40	1.0
06860000	Smoky Hill River at Elkader, KS	1940–2000	61	24	1.5	.57	3,555	17.67	1.53	1.3
06861000	Smoky Hill River near Arnold, KS	1951–2000	50	44	2.3	5.3	5,220	18.44	1.52	1.4
06863300	Big Creek near Ogallah, KS	1956–68	13	22	2.9	3.0	297	21.43	1.28	1.1
06863500	Big Creek near Hays, KS	1947–2000	54	33	7.9	19	594	21.80	1.18	1.4
06863900	North Fork Big Creek near Victoria, KS	1963–86	24	3.1	0	0	90.3	22.61	1.20	1.7
06864000	Smoky Hill River near Russell, KS	1940–49	10	184	40	40	6,965	19.48	1.46	1.4
06866000	Smoky Hill River near Lindsborg, KS	1906–47	42	244	57	86	8,110	20.60	1.46	1.5
06866500	Smoky Hill River near Mentor, KS	1925–47	23	329	116	197	8,358	20.84	1.45	1.6

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
06866900	Saline River near Wakeeney, KS	1956–2000	45	21	2.6	7.4	696	20.60	1.37	1.5
06867000	Saline River near Russell, KS	1946–2000	55	98	31	64	1,502	21.68	1.39	2.2
06868000	Saline River near Wilson, KS	1930–63	34	166	46	66	1,900	22.36	1.36	2.4
06868400	Wolf Creek near Lucas, KS	1960–71	12	16	2.2	1.8	163	25.02	1.20	2.6
06869500	Saline River at Tescott, KS	1920–63	44	247	70	111	2,820	23.69	1.31	2.5
06870300	Gypsum Creek near Gypsum, KS	1955–2000	46	26	7.0	9.0	120	30.88	.882	2.9
06871000	North Fork Solomon River at Glade, KS	1953–2000	48	28	8.4	26	849	21.31	1.34	2.5
06871500	Bow Creek near Stockton, KS	1952–2000	49	14	5.6	9.5	341	21.57	1.45	1.8
06871800	North Fork Solomon River at Kirwin, KS	1920–54	35	87	31	27	1,367	21.47	1.38	2.3
06871900	Deer Creek near Phillipsburg, KS	1967–81	15	4.0	.69	.63	65	23.00	1.37	3.0
06873000	South Fork Solomon River above Webster Reservoir, KS	1946–2000	55	54	14	34	1,040	20.87	1.46	2.1
06873500	South Fork Solomon River at Alton, KS	1920–57	38	104	30	18	1,720	21.64	1.41	2.1
06873700	Kill Creek near Bloomington, KS	1964–81	18	2.1	0	0	49.4	24.57	1.25	2.6
06876000	Solomon River at Beloit, KS	1930–54	25	457	93	98	5,530	23.06	1.33	2.2
06876700	Salt Creek near Ada, KS	1960–2000	41	70	12	19	384	26.98	1.11	2.6
06877000	Smoky Hill River at Solomon, KS	1919–34	16	931	404	420	8,830	22.1	1.39	1.9
06878000	Chapman Creek near Chapman, KS	1955–2000	46	93	24	37	300	30.89	1.02	2.2
06878500	Lyon Creek near Woodbine, KS	1955–74	20	108	33	32	230	34.13	.533	2.4
06879650	Kings Creek near Manhattan, KS	1980–2000	20	2.6	.19	.04	4.09	33.00	.458	5.9
06882000	Big Blue River near Barnestown, NE	1933–2000	78	867	280	401	4,447	28.54	.820	1.3
06882500	Big Blue River near Hull, KS	1931–40	10	470	217	169	4,685	28.66	.810	1.4
06882510	Big Blue River at Marysville, KS	1985–2000	16	1,190	467	469	4,777	28.67	.809	1.4
06884000	Little Blue River near Fairbury, NE	1911–2000	90	383	160	169	2,350	27.34	1.43	1.4
06884025	Little Blue River at Hollenberg, KS	1975–2000	26	535	211	220	2,752	27.64	1.37	1.6
06884200	Mill Creek at Washington, KS	1960–2000	41	108	19	26	344	30.62	.908	2.4

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
06884400	Little Blue River near Barnes, KS	1959–2000	42	704	268	304	3,324	28.23	1.28	1.7
06884500	Little Blue River at Waterville, KS	1923–57	35	619	200	243	3,509	28.23	1.28	1.7
06885500	Black Vermillion River near Frankfort, KS	1954–2000	47	174	29	43	410	33.31	.359	2.4
06886000	Big Blue River at Randolph, KS	1919–60	42	1,690	600	730	9,100	28.94	.946	1.7
06886500	Fancy Creek at Winkler, KS	1955–71	17	47	11	13	174	30.98	.731	2.5
06888000	Vermillion Creek near Wamego, KS	1937–71	35	87	17	27	243	34.94	.427	3.4
06888500	Mill Creek near Paxico, KS	1955–2000	46	194	56	59	316	34.67	.505	4.2
06889100	Soldier Creek near Goff, KS	1965–86	22	1.4	.08	.09	2.06	35.54	.318	2.6
06889120	Soldier Creek near Bancroft, KS	1965–87	23	6.9	.55	.88	10.5	35.16	.344	2.6
06889140	Soldier Creek near Soldier, KS	1965–98	34	11	1.2	1.5	16.9	35.16	.359	2.7
06889160	Soldier Creek near Circleville, KS	1965–2000	36	32	4.6	5.6	49.3	35.82	.381	2.8
06889180	Soldier Creek near St. Clere, KS	1965–80	16	51	10	12	80	35.53	.434	3.0
06889200	Soldier Creek near Delia, KS	1959–2000	42	99	21	22	157	35.63	.476	3.2
06889500	Soldier Creek near Topeka, KS	1930–2000	71	158	30	43	290	35.73	.557	3.3
06890100	Delaware River near Muscotah, KS	1970–2000	31	280	51	56	431	35.97	.398	3.1
06890500	Delaware River at Valley Falls, KS	1923–67	45	388	65	101	922	36.28	.432	3.1
06891500	Wakarusa River near Lawrence, KS	1930–76	47	195	23	64	425	36.61	.617	2.6
06892000	Stranger Creek near Tonganoxie, KS	1930–2000	71	247	40	52	406	37.89	.503	3.2
06893080	Blue River near Stanley, KS	1975–2000	26	36	5	5.6	46	39.35	.609	2.1
06910800	Marais des Cygnes River near Reading, KS	1970–2000	31	113	15	13	177	35.80	.399	2.2
06911000	Marais des Cygnes River at Melvern, KS	1940–64	25	196	23	33	351	36.61	.421	2.2
06911500	Salt Creek near Lyndon, KS	1940–99	60	66	5.1	6.4	111	36.60	.461	2.1
06911900	Dragoon Creek near Burlingame, KS	1961–2000	40	68	8.0	7.5	114	36.07	.443	2.7
06912500	Hundred and Ten Mile Creek near Quenemo, KS	1940–62	23	181	17	7.4	322	36.21	.465	2.3
06913000	Marais des Cygnes River near Pomona, KS	1923–62	40	303	26	25	1,040	36.54	.478	2.2
06913500	Marais des Cygnes River near Ottawa, KS	1903–62	60	627	70	168	1,250	36.70	.520	2.2

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
06914000	Pottawatomie Creek near Garnett, KS	1940–2000	61	235	21	20	334	38.31	0.545	1.3
06915000	Big Bull Creek near Hillsdale, KS	1959–80	22	104	14	21	147	39.25	.660	2.1
06916000	Marais des Cygnes River at Trading Post, KS	1929–58	30	1,690	209	202	2,880	38.14	.595	2.0
06916500	Big Sugar Creek at Farlinville, KS	1930–70	41	127	11	18	198	40.18	.657	2.2
06917000	Little Osage River at Fulton, KS	1950–2000	51	238	32	44	295	40.67	.728	2.0
06917380	Marmaton River near Marmaton, KS	1972–2000	29	302	43	42	292	41.34	.829	1.9
06917500	Marmaton River at Fort Scott, KS	1922–71	50	288	31	30	408	41.47	.827	1.9
07138650	White Woman Creek near Leoti, KS	1967–85	19	1.0	0	0	758	15.74	1.20	.57
07139800	Mulberry Creek near Dodge City, KS	1969–90	22	.64	0	0	217	21.70	1.23	.83
07140850	Pawnee River near Burdett, KS	1982–2000	19	11	0	1.5	1,252	20.49	1.11	1.1
07141200	Pawnee River at Rozel, KS	1925–2000	76	63	3.7	4.2	2,148	20.98	1.12	1.1
07141780	Walnut Creek at Nekoma, KS	1970–2000	31	25	1.0	13	1,192	21.02	1.17	1.1
07141900	Walnut Creek at Albert, KS	1959–2000	42	49	2.3	25	1,410	21.40	1.18	1.2
07142300	Rattlesnake Creek near Macksville, KS	1960–2000	41	26	15	13	784	24.14	5.57	.82
07142575	Rattlesnake Creek near Zenith, KS	1974–2000	27	50	29	29	1,047	24.41	5.90	.68
07142620	Rattlesnake Creek near Raymond, KS	1961–98	38	49	24	8.05	1,167	24.41	5.90	.68
07142860	Cow Creek near Claflin, KS	1967–81	15	7.0	.13	.15	43	25.85	1.04	1.3
07142900	Blood Creek near Boyd, KS	1963–80	18	7.1	.48	.79	61	24.45	1.07	1.5
07143300	Cow Creek near Lyons, KS	1939–2000	62	80	12	13	728	26.15	1.30	.87
07143600	Little Arkansas River near Little River, KS	1960–70	11	9.5	.80	.6	71	27.67	.856	1.3
07143665	Little Arkansas River at Alta Mills, KS	1974–2000	27	229	22	22	736	29.49	2.07	.759
07144200	Little Arkansas River at Valley Center, KS	1923–2000	78	312	60	73	1,327	30.34	2.02	.754
07144780	North Fork Ninnescah River above Cheney Reservoir, KS	1966–2000	35	147	76	79	787	26.87	5.48	.69
07144800	North Fork Ninnescah River near Cheney, KS	1951–64	14	160	85	84	930	27.47	4.96	.83
07144850	South Fork South Fork Ninnescah River near Pratt, KS	1962–80	19	2.6	0	0	23.1	25.58	2.02	.92
07145200	South Fork Ninnescah River near Murdock, KS	1951–2000	50	209	135	136	650	27.25	3.08	1.3

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
07145500	Ninnescah River near Peck, KS	1939–63	25	550	272	248	2,129	28.06	3.78	1.1
07145700	Slate Creek at Wellington, KS	1970–2000	31	73	8.0	8.8	154	30.73	.876	.81
07146570	Cole Creek near DeGraff, KS	1962–79	18	17	1.8	1.7	30	33.68	.448	1.1
07147070	Whitewater River at Towanda, KS	1962–2000	39	206	36	39	426	33.05	.468	1.2
07147800	Walnut River at Winfield, KS	1922–80	58	793	152	186	1,880	34.31	.488	1.4
07148350	Salt Fork Arkansas near Winchester, OK	1960–93	24	96	34	58	856	24.58	2.81	2.6
07149000	Medicine Lodge River near Kiowa, KS	1939–2000	62	154	85	109	903	25.47	2.56	2.7
07149500	Salt Fork Arkansas River near Cherokee, OK	1941–50	10	393	125	125	2,439	25.44	2.80	2.5
07151500	Chikaskia River near Corbin, KS	1951–2000	50	250	94	106	794	28.69	2.65	1.1
07152000	Chikaskia River near Blackwell, OK	1937–2000	64	585	144	221	1,859	32.94	.800	.95
07154500	Cimarron River near Kenton, OK	1951–2000	50	17	.91	.33	1,106	16.29	2.07	1.0
07155590	Cimarron River near Elkhart, KS	1972–2000	29	11	0	0	3,410	16.33	3.04	1.8
07156010	North Fork Cimarron River at Richfield, KS	1972–85	14	5.6	0	0	492	16.12	3.27	.97
07156100	Sand Arroyo Creek near Johnson, KS	1972–85	14	.25	0	0	751	15.90	3.12	.93
07156220	Bear Creek near Johnson, KS	1967–98	32	3.4	0	0	1,093	15.85	1.27	1.2
07156900	Cimarron River near Forgan, OK	1966–2000	35	58	45	38	8,536	16.85	3.16	1.1
07157000	Cimarron River near Mocane, OK	1943–65	13	100	60	60	8,670	17.07	3.32	1.2
07157500	Crooked Creek near Englewood, KS	1943–2000	58	31	12	8.7	1,157	20.51	1.67	.72
07157900	Cavalry Creek at Coldwater, KS	1967–81	15	3.4	1.5	1.6	39	24.81	2.73	1.1
07157950	Cimarron River near Buffalo, OK	1961–94	34	128	56	47	12,004	19.53	3.19	1.3
07165700	Verdigris River near Madison, KS	1956–76	21	123	28	33	181	36.14	.486	2.8
07166000	Verdigris River near Coyville, KS	1940–59	20	465	45	22	747	36.75	.541	2.4
07166500	Verdigris River near Altoona, KS	1940–59	20	691	71	35	1,138	37.51	.671	2.4
07167000	Fall River near Eureka, KS	1947–76	30	190	40	57	307	35.32	.515	3.1
07167500	Otter Creek at Climax, KS	1947–2000	54	82	10	10	129	36.19	.461	2.8
07168500	Fall River near Fall River, KS	1905–48	44	331	53	44	585	35.84	.518	2.8

Table 1. Streamflow-gaging stations and climatic and basin characteristics used in regression analyses of uncontrolled stream segments identified on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Years of record	Streamflow			Drainage area (mi^2)	Mean annual precipitation, 1960–90[2] (inches)	Mean basin permeability[3] (in/h)	Mean basin slope[4] (degrees)
				Mean (ft^3/s)	Median for period or record (ft^3/s)	Median for most-recent 10 years (ft^3/s)				
07169500	Fall River at Fredonia, KS	1939–48	10	506	75	75	827	36.26	0.616	2.7
07169800	Elk River at Elk Falls, KS	1967–2000	33	154	22	19	220	36.46	.447	2.5
07170000	Elk River near Elk City, KS	1939–69	31	308	26	44	575	37.41	.740	2.6
07170700	Big Hill Creek near Cherryvale, KS	1958–2000	43	27	1.3	.69	37	41.31	.834	2.3
07172000	Caney River near Elgin, KS	1940–2000	61	273	40	65	445	35.53	.556	3.2
07174000	Little Caney River near Copan, OK	1944–58	15	237	9.5	7.4	424	37.51	1.01	2.9
07174400	Caney River above Coon Creek near Bartlesville, OK	1986–2000	15	1,290	173	99	1,392	36.75	.970	3.1
07179500	Neosho River at Council Grove, KS	1939–63	25	123	16	17	250	33.77	.433	1.8
07180000	Cottonwood River near Marion, KS	1939–68	30	112	18	21	329	32.37	.662	1.5
07180500	Cedar Creek near Cedar Point, KS	1939–2000	62	58	16	18	110	33.33	.518	1.6
07181000	Cottonwood River at Elmdale, KS	1923–32	10	357	88	88	1,045	32.92	.566	1.6
07181500	Middle Creek near Elmdale, KS	1939–50	12	45	7	10	92	34.05	.456	2.2
07182000	Cottonwood River at Cottonwood Falls, KS	1933–67	35	511	108	185	1,740	33.09	.545	1.9
07182400	Neosho River at Strawn, KS	1949–62	14	1,390	285	227	2,933	34.11	.508	1.9
07183100	Owl Creek near Piqua, KS	1960–70	11	122	4	3.6	177	40.36	.609	1.7
07183500	Neosho River near Parsons, KS	1922–63	42	2,450	472	494	4,905	36.39	.579	1.7
07184000	Lightning Creek near McCune, KS	1939–2000	62	169	12	15	197	42.25	1.02	1.2
07186000	Spring River at Waco, MO	1925–2000	76	947	301	405	1,164	43.38	1.41	1.2
07186400	Center Creek near Carterville, MO	1963–91	29	204	97	134	232	42.92	1.46	1.6
07187000	Shoal Creek above Joplin, MO	1942–2000	59	427	237	290	427	43.21	1.48	2.7
07188000	Spring River near Quapaw, OK	1940–2000	61	2,200	850	1,050	2,510	43.18	1.43	1.4

[1]The Kansas Surface Water Register is maintained by the Kansas Department of Health and Environment (Topeka).
[2]Mean annual precipitation for each gaging station from Daly and others (1997).
[3]Mean basin permeability for each gaging station from U.S. Department of Agriculture (1994).
[4]Mean basin slope for each gaging station from U.S. Geological Survey (1998).

Basin Characteristics

Basin characteristics used in the 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 them. The basin characteristics considered in this report included drainage area, in square miles; mean basin elevation, in feet above NAVD 88; mean basin permeability, in inches; 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 the PRISM model (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 regression analyses for uncontrolled stream segments 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 determines the drainage-basin boundary at the gaging station or for the downstream end of a stream segment and creates a digital data layer of the basin boundary, then overlays the boundary on the other digital data layers to determine the other basin characteristics for the station or segment. The grid values then are averaged for the area within the drainage basin.

METHODS FOR ESTIMATING MEDIAN FLOWS

Climatic and basin characteristics were used in the analyses of median flows at gaged and ungaged sites on controlled and uncontrolled 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 drainage area, mean basin slope, and mean basin elevation, and (3) STATSGO soil-permeability data (U.S. Department of Agriculture, 1994).

The flow information was derived from 216 gaging stations in Kansas and the surrounding States with at least 10 years of streamflow record. Streamflow at 149 of the stations on uncontrolled stream segments were included in the regression analyses. The flows of uncontrolled stream segments are unaffected by storage and release from large upstream reservoirs. One hundred thirty-one streamflow-gaging stations in Kansas and 18 in surrounding States (four in Missouri, five in Nebraska, and nine in Oklahoma) measured uncontrolled flow. All available records through water year (October through September) 2000 were used to compute the streamflow statistics for these gaging stations. Names and descriptions of the streamflow-gaging stations used in measuring flow at uncontrolled sites are listed in table 1.

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 (station 06893300), was not used because it is affected by extensive urbanization. Two other stations, Beaver Creek at Cedar Bluffs (station 06846500) and Paradise Creek near Paradise (station 06867500), were not used because streamflow statistics were not consistent with the other stations statistics.

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 at http://water.usgs.gov/software/surface_water.html

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 at http://waterdata.usgs.gov/ks/nwis/

A flow-duration curve is a graphical representation of the percentage of time streamflows for a given time

step (usually daily) are equaled or exceeded over 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 of 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 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). Median-flow statistics in this report were determined using the Loaiciga (1989) approach.

Ungaged Stream Sites

Estimates of streamflow statistics often are needed for sites on streams where no data are available. The two 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 streamflows 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-flow statistics, and usually the recommendation 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 (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, the median flows at uncontrolled, ungaged locations are estimated by interpolation procedures using weighted drainage-area ratio from gaged sites and Tobit regression estimates at ungaged sites. No limit was placed on the ratios between the drainage area of the index station and the drainage area of the ungaged stream segment.

Multiple Linear-Regression Analyses

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:

$$Y_i = b_0 + b_1X_1 + b_2X_2 + ... + b_nX_n + \varepsilon_i, \quad (1)$$

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 ε_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 ε_i is constant and independent of the values of X_n, (3) the ε_i are normally distributed for a Tobit regression, and (4) the ε_i are independent of each other (Inman and Conover, 1983, p. 367). Tobit regression is discussed in the following paragraph. Regression analysis results must 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:

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

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

$$Y_i = 10^{b_o}(X_1^{b_1})(X_2^{b_2})\ldots(X_n^{b_n})10^{\varepsilon_i}, \text{ or} \quad (3)$$

$$Y_i = 10^{[b_o + b_1 \log X_1 + b_2 \log X_2 + \ldots b_n \log X_n + \varepsilon_i]}.$$

To include zero values in a logarithmic transformation regression analysis, the Tobit regression was used. Tobit regression is a widely accepted method for estimating a regression-like model when there are adjusted data (Tobin, 1958; Judge and others, 1985). Adjusted data are data that are either censored or have had a discrete value delta (δ) added to them. Censored data are values below a threshold and are raised to the censoring value (for example, all values below 0.7 are raised to 0.7). Discrete values of delta (δ) 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. 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 on both the KSA and AAH data sets, and the resulting plots of observed versus regression-estimated values of median flow from the KSA and AAH data sets are shown in figures 6*A* and 6*B*. The graphs show the observed median flow plotted with the regression-estimated median flow. All observed and regression-estimated median flows have the delta value added. The Chi^2 is a measure of the fit of the Tobit model. The delta value is varied until the Chi^2 is maximized. The drainage area (DA) 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 were balanced between greater than and less than zero. This removed the multi-collinearity problems that occur when using squared values. The addition of the squares of log drainage area and log mean annual precipitation to the regression equation improved both KSA and AAH models substantially. The equations for regression-estimated median flow and uncertainty measures for KSA and AAH methods are listed in table 2. Only the 149 gages on uncontrolled streams with at least 10 years of record were used in the regression analyses. The drainage area of these gages ranged from 2.06 to 12,004 mi^2.

KSA and AAH analyses provided regression estimates that were different. The KSA analysis used the most-recent 10 years of data. For many of the stations in this report this period was 1990 to 2000. However, more than 50 percent of the stations had their last data recorded before 1990 and more than 40 percent before 1980. Climate variability becomes a factor when 10 years of record from an earlier period is compared with a later period. Application of the KSA 82a–2001 criterion to use the most-recent 10 years of streamflow data may mean that a new analysis would be required every few years, and the resulting equation

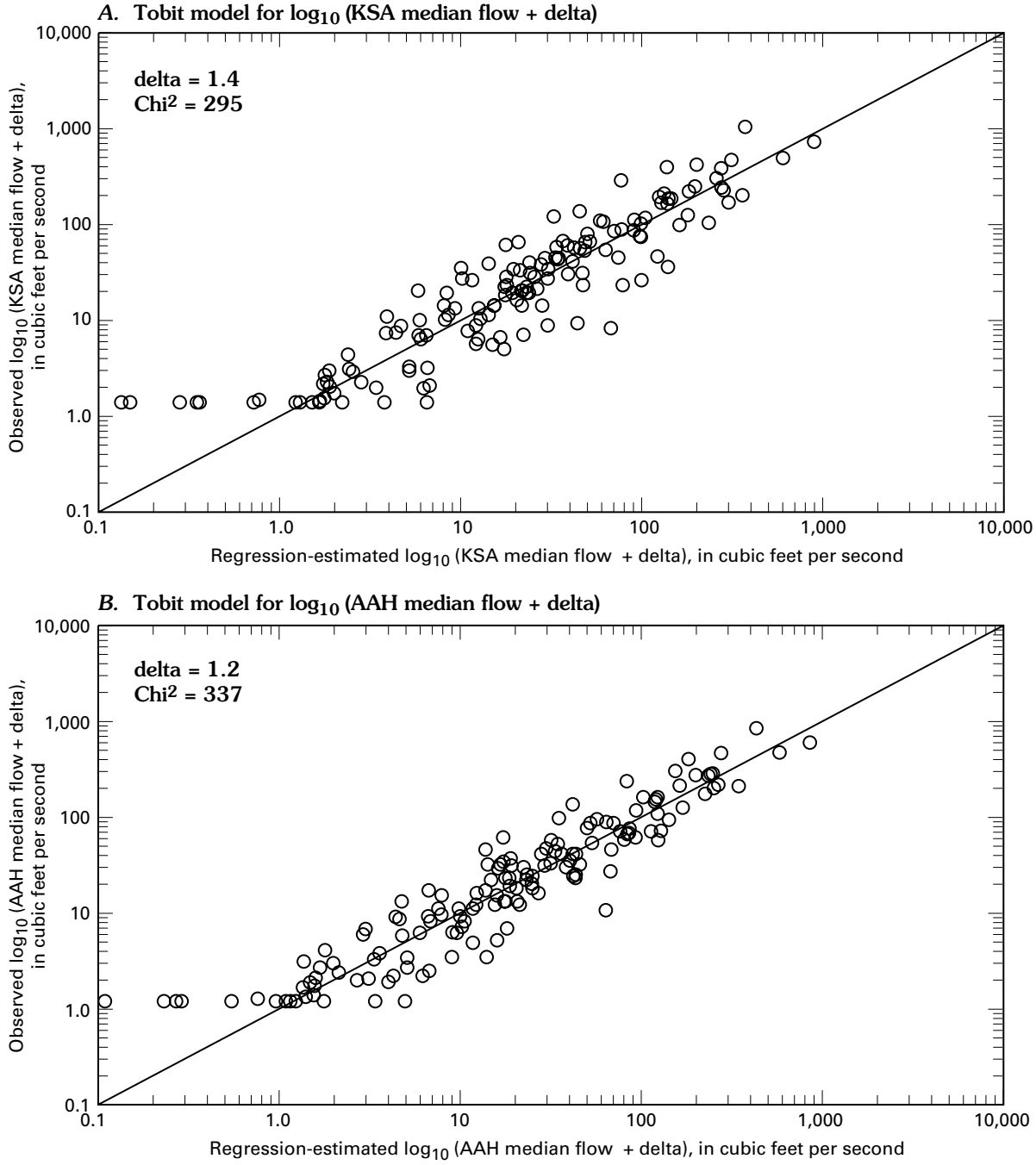


Figure 6. Comparison of observed and regression-estimated median flows for *(A)* most-recent 10 years of record (KSA) and *(B)* all-available hydrology (AAH) using Tobit analysis.

always would reflect short-term (less than10 years) climate variability.

The AAH analysis used all-available streamflow-data records that were from 10 to 90 years in length. Use of the entire period of record, which averaged 35 years for the 149 stations, incorporated all of the knowledge about streamflow at a particular site. The climate of Kansas has gone through periods of wet and dry conditions, some of which have lasted longer than 10 years. The AAH analysis with its longer period of record incorporates long-term climate variability.

Although both sets of median flow data (KSA and AAH) have some nonoverlapping time periods, the analyses are still valid statistically. The different time

Table 2. Regression equations used to estimate median flows for uncontrolled stream segments on the Kansas Surface Water Register[1]

[Chi^2, chi square statistical distribution; DA, drainage area in square miles; PREC, precipitation in inches; PERM, soil permeability in inches per hour; SLOPE, land-surface slope in degrees; $\log da = \log_{10}\left(\frac{DA}{1000}\right)$; $\log prec = \log_{10}\left(\frac{PREC}{28}\right)$; $\log perm = \log_{10} PERM$; $\log slope = \log_{10}\left(\frac{SLOPE}{2}\right)$]

Flow value	Equation	Chi^2	Standard error (log units)	Degrees of freedom
Median KSA (most-recent 10 years of record)	$Q_{KSA} = [10^{[1.74 + 1.088\log da + 4.867\log prec + 0.498\log perm + 0.513\log slope + 0.124(\log da)^2 - (16.154(\log prec)^2)]}] - 1.4$	295	0.285	143
Median AAH (entire period of record)	$Q_{AAH} = [10^{[1.689 + 1.127\log da + 5.298\log prec + 0.626\log perm + 0.515\log slope + 0.151(\log da)^2 + (-15.344(\log prec)^2)]}] - 1.2$	337	.247	143

[1]The Kansas Surface Water Register is maintained by the Kansas Department of Health and Environment (Topeka).

periods cover different streamflow regimes ranging from wet to dry. Had the most-recent 10 years been interpreted as the period 1991 to 2000, the analysis would have been biased toward trends or cyclicity in the climate during that period. By using the different time periods of streamflow data for AAH analysis, this bias is removed. The increased number of sampled days of flow in the AAH data set makes it more robust than the KSA data set, which has a reduced number of sampled days.

KANSAS SURFACE WATER REGISTER

In 1994, the Kansas Department of Health and Environment (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) by 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. 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 Association (NOAA). In addition to the RF2 segments, other segments have been added by KDHE to the Kansas Surface Water Register primarily for the protection of aquatic life and other water-quality issues. The original RF2 coverage has almost 30,000 subsegments in Kansas. By combining subsegments, the number of total segments for which median flows were determined in this report was reduced to 2,232, which equals the number of segments listed in the current (2002) Kansas Surface Water Register. This number is about 900 more segments than the RF1 coverage. The Kansas Surface Water Register of June 1, 1999, is a public document and can be obtained from the World Wide Web at http://www.kdhe.state.ks.us/pdf/befs/register99.pdf. In addition to the 2,232 classified segments, there are segments that are unregulated that include lakes, tribal streams, and irrigation ditches. These segments were included in this report to complete the stream drainage pattern for the State. Each segment on the Kansas Surface Water Register is identified by a unique CUSEGA number (Appendix C, table 6, at the end of this report). CUSEGA stands for catalog unit segment number alpha.

Because many of the stream basins in Kansas extend into the surrounding States, the data used for developing the Kansas Surface Water Register, 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 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 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 workstation.

A GIS database was used to manage and display the basin characteristics and estimated median flows for stream segments on the Kansas Surface Water Register. The relational database design facilitates identification and analysis of data unique to individual stream segments.

BASIN CHARACTERISTICS FOR STREAM SEGMENTS

Drainage basins for each stream segment on the Kansas Surface Water Register were determined in the GIS by converting the vector stream-segment 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.

Mean values for climatic and basin characteristics were calculated for stream-segment 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 drainage area, mean annual precipitation, mean basin

elevation, mean basin permeability, mean basin slope, a Base Flow Index (BFI), and the Gebert and PRISM flow model values. Output zonal statistics tables were relationally joined back to the original vector streams coverage so that each reach had an estimated value for each climatic and basin characteristic.

ESTIMATES OF MEDIAN FLOWS FOR STREAM SEGMENTS

Different procedures were used to estimate median flow for each stream segment on the Kansas Surface Water Register depending on whether the segment was controlled or uncontrolled and whether there was a streamflow-gaging station located either upstream or downstream from the segment. These interpolation procedures use the previously defined drainage-area ratio method and multiple linear-regression equations and are summarized in table 3. The interpolation procedures outlined in table 3 for an ungaged segment between two gaged segments selects the upstream gage segment (if there is more than one) that has the largest drainage area. These procedures were applied to flow statistics developed for KSA and AAH analyses for each stream segment on the Kansas Surface Water Register. Median-flow computations for controlled streamflow-gaging stations, used in the interpolation of the KSA and AAH analyses, are listed in table 4. Median-flow computations for the uncontrolled streamflow-gaging stations, used in the interpolation of the KSA and AAH analyses, are listed in table 5 (Appendix B). The AAH median flow at gages representing controlled stream segments (those with large reservoirs upstream) was computed from the controlled period of record only. These records had to be at least 10 years in length during the period 1960 to 2000. Use of the 1960 to 2000 time period maintains a degree of consistency for comparison and interpolation of median flows between gaging stations on controlled segments.

Figure 7 shows part of a stream network and some stream gages in central Kansas. The numbers next to the stream gages are the most-recent 10-year median flow values for those gages. Regression equations were developed in the section on "Multiple Linear-Regression Analyses." The numbers next to the stream segments are the median flow values estimated from those regression equations. A comparison of the stream-segment median flow values with the stream-gage median values shows substantial "local" differences between the stream-segment and stream-gage values. Figure 8 shows the effect of using the local stream-gage median values to develop estimated median streamflow values by KSA analysis for the stream segments as outlined in table 3 and used in this report rather than only using the regression-estimated values. The local differences in estimated median flow values noted in figure 7 (regression estimates) are not as large in figure 8 (estimates derived in this report) because of the use of local stream-gage data. As a result, the interpolation procedure used in this report to develop median flow estimates appears to develop more accurate estimates than those that result from using only the regression equations.

The median flow information from streamflow-gaging stations and the regression equations from the KSA and the AAH analyses were used with the described interpolation procedures to generate a table of median flow values for the downstream end of stream segments on the Kansas Surface Water Register. The estimated median flow values for the KSA analysis and the AAH analysis are listed with their respective CUSEGA segment number in table 6 in Appendix C. In addition, three maps are provided on plates 1–3 in the back of this report. Plate 1 shows the location of USGS streamflow-gaging stations used in the interpolation procedure and Kansas Surface Water Register stream segments. Plate 2 shows estimated median flow values for each stream segment using the KSA analysis, and plate 3 shows estimated median flow values for each stream segment using the AAH analysis.

Of the 2,232 stream segments on the Kansas Surface Water Register, 30 percent of the segments had an estimated median flow of less than 1 ft^3/s when the most-recent 10 years of data (KSA analysis) were used. When all-available data (AAH analysis) were used, which resulted in a regression equation with a lower level of uncertainty when compared to the KSA analysis, 40 percent of the stream segments had an estimated median flow of less than 1 ft^3/s.

The uncertainty of the estimated median streamflows varies depending on the analysis used to determine the estimate for that segment. The greatest uncertainties exist for streams where no stream-gage information was available and only the regression estimates were used. For these segments, the uncertainty of the median flow estimate is the root mean square error of the regression estimate, which for the KSA analysis was 0.285 log units. This means that there is a 95-percent probability that the actual median flow for an estimate of 1 ft^3/s is between 0.28 and 3.6 ft^3/s

Table 3. Summary of interpolation procedures used to estimate median flow information for stream segments on the Kansas Surface Water Register (KSWR)

[Q, median flow; DA, drainage area; B, bias equals measured gaging station Q minus regression equation Q; Subscripts: r, regression-equation estimate of median 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 that segment near[1] downstream end of segment	Use gaged value.	Use gaged value.
3	Gage on that segment not near[1] downstream end of segment	Estimate flow from gage data using ratio of gage drainage area to downstream end of KSWR segment drainage area. Ignore regression equations. $Q_s = \frac{Qu}{DA_u} DA_s$	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 downstream end of the KSWR segment drainage area. $B_s = \frac{B_d}{DA_d} * DA_s$ $Q_{sb} = Q_{sr} + B_s$
4	Gage on stream only upstream or downstream of that segment	Estimate flow from gage data using ratio of gage drainage area to downstream end of KSWR segment drainage area. Ignore regression equations. $Q_s = \frac{Q_u}{DA_u} * DA_s$ or $Q_s = \frac{Q_d}{DA_d} * DA_s$	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 downstream end of the KSWR segment drainage area. $B_s = \frac{B_u}{DA_u} * DA_s$ $Q_{sb} = Q_{sr} + B_s$
5	Gage on stream both upstream and downstream of that segment	Estimate the flow from upstream and downstream gage data using weighted average ratios of gage drainage areas to downstream end of KSWR segment drainage area. Ignore regression equations. $Q_s = \frac{Q_u(DA_d - DA_s) + Q_d(DA_s - DA_u)}{DA_d - DA_u}$	Use regression estimate adjusted by a weighted average bias between the two gages. $B_s = \frac{B_u(DA_d - DA_s) + B_a(DA_s - DA_u)}{DA_d - DA_u}$ $Q_{sb} = Q_{sr} + B_s$

[1]Near is defined as location on the stream segment that is downstream from any natural hydrologic break, such as a tributary stream.

Table 4. Streamflow-gaging stations and drainage areas used to interpolate median flows for controlled stream segments on the Kansas Surface Water Register[1]

[mi^2, square miles; ft^3/s, cubic feet per second; KSA, Kansas Statute KSA 82a–2001 analysis; AAH, all-available hydrology analysis]

Station number (fig. 1)	Station name	Period of record (water years)	Drainage area (mi^2)	Median flow (ft^3/s)	
				KSA	AAH
06813500	Missouri River at Rulo, NE	1961–2000	418,859	46,200	40,800
06818000	Missouri River at St. Joseph, MO	1961–2000	420,300	49,000	43,300
06826500	South Fork Republican River near Hale, CO	1961–86	1,825	6.0	6.2
06827500	South Fork Republican River near Benkelman, NE	1961–2000	2,740	16	16
06848000	Prairie Dog Creek at Norton, KS	1965–2000	684	.47	.10
06848500	Prairie Dog Creek near Woodruff, KS	1965–2000	1,007	7.4	2.0
06853020	Republican River at Guide Rock, NE	1985–2000	22,100	116	111
06853500	Republican River near Hardy, NE	1961–2000	22,401	164	167
06854000	White Rock Creek at Lovewell, KS	1961–2000	345	.15	.20
06854500	Republican River at Scandia, KS	1961–72	23,560	250	244
06856000	Republican River at Concordia, KS	1961–2000	23,560	269	284
06856600	Republican River at Clay Center, KS	1961–2000	24,542	407	396
06857100	Republican River below Milford Dam, KS	1968–2000	24,890	276	357
06862000	Smoky Hill River at Cedar Buff Dam, KS	1961–90	5,530	0	.28
06862700	Smoky Hill River near Schoenchen, KS	1965–2000	5,750	6.3	11
06862850	Smoky Hill River below Schoenchen, KS	1982–2000	5,810	7.7	1.8
06864000	Smoky Hill River near Russell, KS	1965–74	6,965	35	35
06864050	Smoky Hill River near Bunker Hill, KS	1961–2000	7,075	63	34
06864500	Smoky Hill River at Ellsworth, KS	1961–2000	7,580	94	65
06865500	Smoky Hill River near Langley, KS	1961–2000	7,857	121	78
06866500	Smoky Hill River near Mentor, KS	1961–2000	8,358	197	135
06868200	Saline River at Wilson Dam, KS	1965–2000	1,917	21	16
06869500	Saline River at Tescott, KS	1965–2000	2,820	105	45
06870200	Smoky Hill River at New Cambria, KS	1963–2000	11,730	400	224
06871800	North Fork Solomon River at Kirwin, KS	1961–2000	1,367	.04	.03
06872500	North Fork Solomon River at Portis, KS	1961–2000	2,315	80	34
06873200	South Fork Solomon River below Webster Reservoir, KS	1961–2000	1,150	.68	0
06873460	South Fork Solomon River at Woodston, KS	1979–2000	1,502	21	6.5

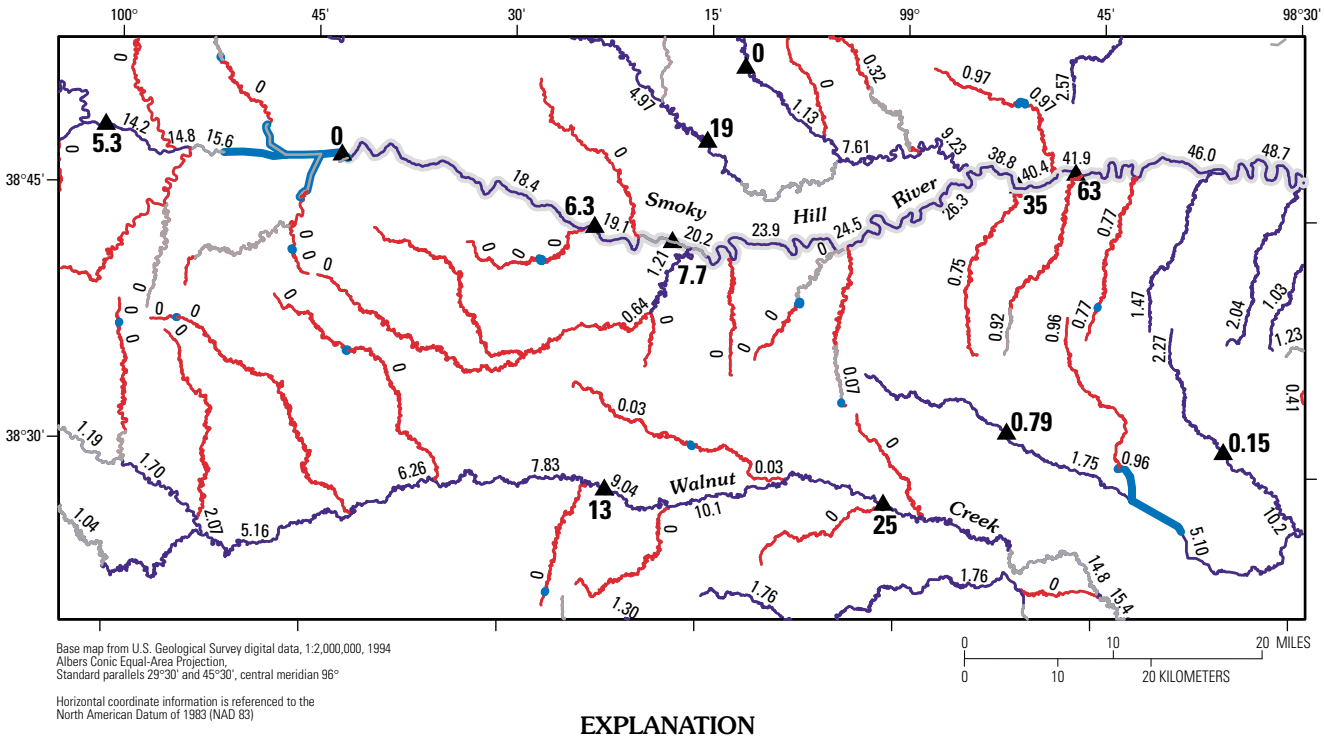
Table 4. Streamflow-gaging stations and drainage areas used to interpolate median flows for controlled stream segments on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Drainage area (mi^2)	Median flow (ft^3/s)	
				KSA	AAH
06874000	South Fork Solomon River at Osborne, KS	1961–2000	2,012	56	21
06875900	Solomon River near Glen Elder, KS	1968–2000	5,340	149	54
06876070	Solomon River near Simpson, KS	1991–2000	5,538	187	187
06876900	Solomon River at Niles, KS	1968–2000	6,770	320	174
06877600	Smoky Hill River at Enterprise, KS	1961–2000	19,260	1,000	595
06879100	Kansas River at Fort Riley, KS	1968–2000	44,870	1,680	1,350
06887000	Big Blue River near Manhattan, KS	1963–2000	9,640	1,170	974
06887500	Kansas River at Wamego, KS	1963–2000	55,280	3,470	2,720
06888350	Kansas River near Belvue, KS	1983–2000	55,870	3,640	3,480
06889000	Kansas River at Topeka, KS	1963–2000	56,720	3,820	3,020
06890900	Delaware River below Perry Dam, KS	1970–2000	1,117	103	100
06891000	Kansas River at Lecompton, KS	1963–2000	58,460	4,480	3,580
06891500	Wakarusa River near Lawrence, KS	1978–2000	425	24	29
06892350	Kansas River at De Soto, KS	1963–2000	59,756	4,860	4,000
06893000	Missouri River at Kansas City, MO	1961–2000	485,200	57,800	50,200
06911000	Marais des Cygnes River at Melvern, KS	1965–74	351	33	33
06912500	Hundred and Ten Mile Creek near Quenemo, KS	1965–2000	322	20	22
06913000	Marais des Cygnes River near Pomona, KS	1974–2000	1,040	102	106
06913500	Marais des Cygnes River near Ottawa, KS	1974–2000	1,250	143	146
06915000	Big Bull Creek near Hillsdale, KS	1981–2000	147	21	20
06915800	Marais des Cygnes River at La Cygne, KS	1985–2000	2,669	463	525
06916600	Marais des Cygnes River near Kansas-Missouri State line, KS	1974–2000	3,230	562	578
07134180	Arkansas River near Granada, CO	1981–2000	23,707	112	106
07137500	Arkansas River near Coolidge, KS	1961–2000	25,410	206	129
07138000	Arkansas River at Syracuse, KS	1961–2000	25,763	209	133
07139000	Arkansas River at Garden City, KS	1980–2000	27,071	55	32
07139500	Arkansas River at Dodge City, KS	1961–2000	30,600	0	8.7
07140000	Arkansas River near Kinsley, KS	1961–2000	33,066	3.7	32
07141300	Arkansas River at Great Bend, KS	1961–2000	34,356	68	41
07143330	Arkansas River near Hutchinson, KS	1961–2000	38,910	345	275

Table 4. Streamflow-gaging stations and drainage areas used to interpolate median flows for controlled stream segments on the Kansas Surface Water Register[1]—Continued

Station number (fig. 1)	Station name	Period of record (water years)	Drainage area (mi^2)	Median flow (ft^3/s)	
				KSA	AAH
07143375	Arkansas River near Maize, KS	1988–2000	39,110	362	303
07144300	Arkansas River at Wichita, KS	1961–2000	40,490	520	433
07144550	Arkansas River at Derby, KS	1969–2000	40,830	659	541
07144795	North Fork Ninnescah River at Cheney Dam, KS	1965–2000	901	.58	.48
07145500	Ninnescah River near Peck, KS	1965–2000	2,129	218	212
07146500	Arkansas River at Arkansas City, KS	1961–2000	43,713	1,170	1,030
07146830	Walnut River at Highway 54 east of El Dorado, KS	1982–98	350	20	24
07147800	Walnut River at Winfield, KS	1982–2000	1,880	228	262
07166000	Verdigris River near Coyville, KS	1961–98	747	32	74
07166500	Verdigris River near Altoona, KS	1961–2000	1,138	120	138
07168500	Fall River near Fall River, KS	1961–89	585	44	53
07169500	Fall River at Fredonia, KS	1961–2000	827	109	92
07170060	Elk River below Elk City Lake, KS	1966–2000	634	28	21
07170500	Verdigris River at Independence, KS	1961–2000	2,892	455	401
07170700	Big Hill Creek near Cherryvale, KS	1982–2000	37.0	.69	.88
07171000	Verdigris River near Lenopah, OK	1961–2000	3,639	644	570
07179500	Neosho River at Council Grove, KS	1965–2000	250	15	13
07179730	Neosho River near Americus, KS	1965–2000	622	67	70
07179795	North Cottonwood River below Marion Lake, KS	1969–2000	200	8.6	7.6
07180200	Cottonwood River at Marion, KS	1985–99	502	28	32
07180400	Cottonwood River near Florence, KS	1969–2000	754	87	88
07182250	Cottonwood River near Plymouth, KS	1969–2000	1,740	266	298
07182510	Neosho River at Burlington, KS	1964–2000	3,042	434	397
07183000	Neosho River near Iola, KS	1964–2000	3,818	619	581
07185000	Neosho River near Commerce, OK	1964–2000	5,876	1,310	1,140

[1]The Kansas Surface Water Register is maintained by the Kansas Department of Health and Environment (Topeka).



EXPLANATION

Estimated median flow, in cubic feet per second

- 0.03 — Less than 1.0
- 5.16 — Greater than or equal to 1.0

- 26.3 — **Controlled stream segment**
- **Hydro (lake) segment**—No median flow computed
- 25▲ **Streamflow-gaging station**—Number is estimated median flow for most-recent 10 years, in cubic feet per second

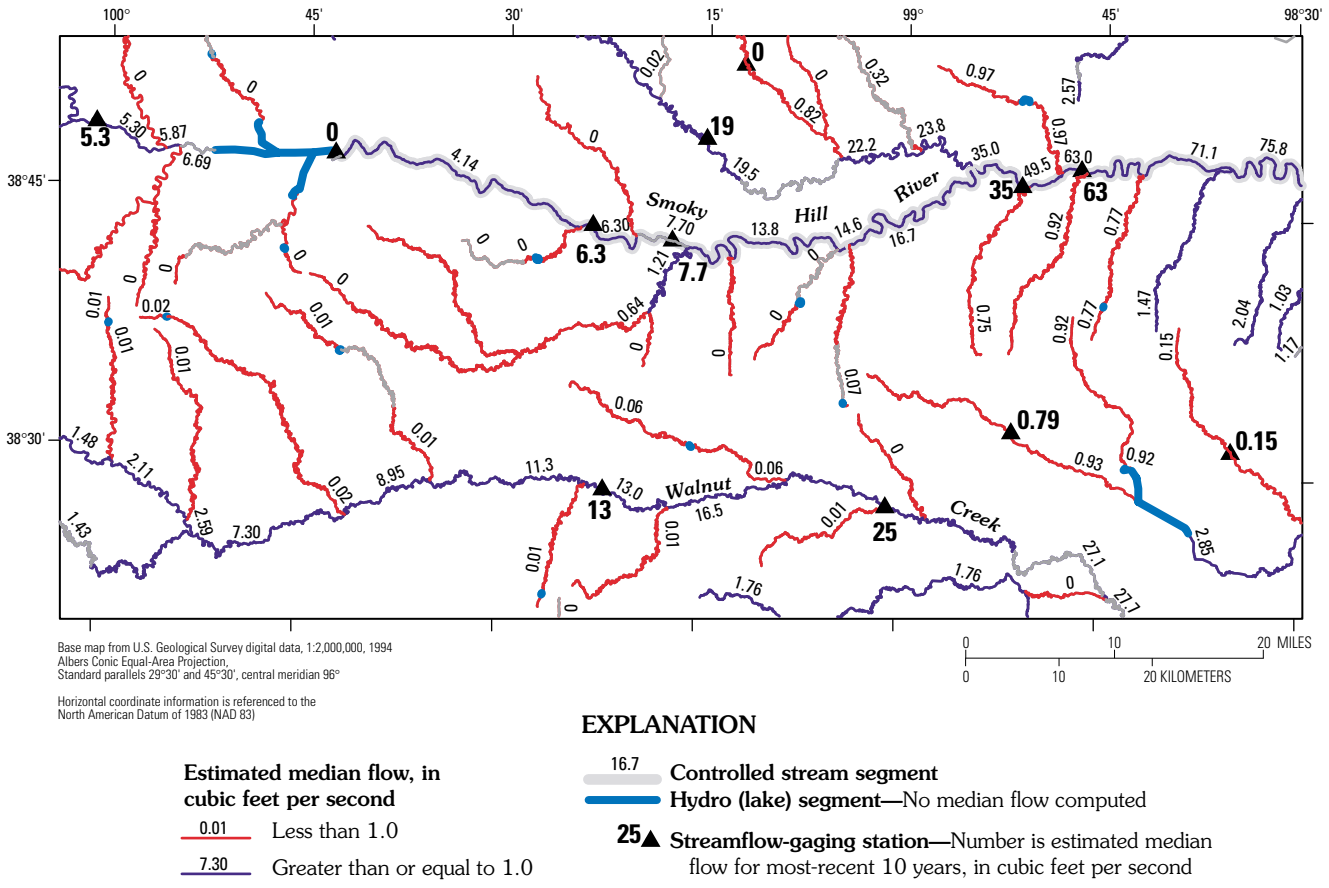
Note: Numbers next to the stream segments are median flow values estimated from regression equations. Estimated median flow values do not match those on plate 2.

Figure 7. Median flow values for stream segments in central Kansas estimated from regression equations and observed streamflow-gaging-station data for the most-recent 10 years of record (KSA) analysis.

(72 to 260 percent). For the AAH analysis, the root mean square error was 0.247 log units (table 2), which translates into a 95-percent probability that the actual median flow for an estimate of 1 ft^3/s is between 0.33 and 3.04 ft^3/s (67 to 204 percent). The lowest uncertainties exist for stream segments with gages near the downstream end of those segments. For these stream segments the uncertainty is a fraction of the uncertainty of the gaging-station flow measurement and rating process due to the central tendency of the median statistic. The average uncertainty for those segments with gages varies from 7.3 percent for the KSA data to 4.3 percent for the AAH data. The 95-percent confidence intervals for the gaged data used in the interpolation are listed in table 5 in Appendix B. Reporting estimated median values in table 6 and on plates 2 and 3 to three significant figures was done to conform with the intent of KSA 82a–2001 et. seq. and does not denote the level of accuracy of the estimates.

INTERNET DISSEMINATION OF RESULTS

This report and its associated figures, tables, appendices, plates, and the GIS database are available and can be downloaded from the World Wide Web at http://ks.water.usgs.gov/Kansas/strmstats. This web page is maintained by the USGS and has links to the GIS databbase described in this report in order to display the information on median flow by county for the State of Kansas. Estimated median flows from the KSA and AAH analyses are available for stream segments on the Kansas Surface Water Register. The county-map format includes county boundaries, State and Federal highways, and the stream segments for spatial reference. The estimated median flow values using the KSA and AAH analyses, indexed with their respective segment identifier number, are displayed as a pop-up window as the cursor is placed over a stream segment.



Note: Numbers next to the stream segments are median flow values estimated using procedures in table 3.

Figure 8. Estimated median flow values for stream segments in central Kansas using interpolation procedures outlined in table 3 and observed streamflow-gaging-station data for the most-recent 10 years of record (KSA) analysis.

SUMMARY

The Kansas State Legislature, by enacting Kansas Statute 82a–2001 et. seq. (KSA), has mandated the selection of Kansas streams for water-quality classification by the State. One criterion for selecting stream segments for classification is whether stream segments listed on the Kansas Surface Water Register have a median flow equal to or greater than 1 ft^3/s. Therefore, information on median flow characteristics is needed for streams in Kansas. Daily streamflow information available for 214 gaging stations within Kansas and in adjacent States were used by the USGS in cooperation with KDHE to compute these statistics at gaged sites and to estimate these statistics at ungaged sites.

Least-squares multiple-regression techniques, along with Tobit analyses, were used to develop equations for estimating median flow (dependent variable) for ungaged, uncontrolled stream segments. Median flows were determined from streamflow-gaging station data using the most-recent 10 years of gaged data as defined by KSA analysis, and from the entire period of record, which is defined in this report as the all-available hydrology (AAH) analysis. 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 drainage area, mean annual precipitation, mean basin permeability, and mean basin slope. Only the 149 gages on uncontrolled streams with at least 10 years of streamflow record were used in the regression analyses. The drainage area of these gages ranged from 2.06 to 12,004 mi^2.

A logarithmic transformation of the basin characteristics was needed to develop a linear relation for computing median flows. Because there were numerous zero values for median gaging-station flows, the Tobit regression was used to include those zero values in the regression. The resulting regression equations

and an interpolation procedure were used to estimate median flows for the uncontrolled stream segments on the Kansas Surface Water Register.

Streamflow-gaging-station data were used to improve the quality of the estimates along the streams that had gages. Median flows for the segments that were uncontrolled 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 median flow information was interpolated between gaging stations by using only gaged data weighted by drainage area.

Of the 2,232 stream segments on the Kansas Surface Water Register, 30 percent of the segments had an estimated median flow of less than 1 ft^3/s when the most-recent 10 years of data (KSA analysis) were used. When all-available data (AAH analysis) were used, which resulted in a regression equation with a lower level of uncertainty when compared to KSA analysis, 40 percent of the stream segments had an estimated median flow of less than 1 ft^3/s.

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APPENDIX A.—KANSAS STATUTE KSA 82a–2001 et. seq.

Dowloaded November 12, 2002 from the World Wide Web at URL:
http://www.kslegislature.org/cgi-bin/statutes/index.cgi

Kansas Statute No. 82a-2001
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2001. Classified stream segments defined; other definitions. As used in this act:

(a) (1) "Classified stream segments" shall include all stream segments that are waters of the state as defined in subsection (a) of K.S.A. 65-161, and amendments thereto, and waters described in subsection (d) of K.S.A. 65-171d, and amendments thereto, that:

(A) Are indicated on the federal environmental protection agency's reach file 1 (RF1) (1982) and have the most recent 10-year median flow of equal to or in excess of 1 cubic foot per second based on data collected and evaluated by the United States geological survey or in the absence of stream segment flow data, calculations of flow conducted by extrapolation methods provided by the United States Geological Survey;

(B) have the most recent 10-year median flow of equal to or in excess of 1 cubic foot per second based on data collected and evaluated by the United States geological survey or in the absence of stream segment flow data, calculations of flow conducted by extrapolation methods provided by the United States geological survey;

(C) are actually inhabited by threatened or endangered aquatic species listed in rules and regulations promulgated by the Kansas department of wildlife and parks or the United States fish and wildlife service;

(D) (i) scientific studies conducted by the department show that pooling of water during periods of zero flow provides important refuges for aquatic life and permits biological recolonization of intermittently flowing segments; and

(ii) a cost/benefit analysis conducted by the department and taking into account the economic and social impact of classifying the stream segment indicates that the benefits of classifying the stream segment outweigh the costs of classifying the stream segment, as consistent with the federal clean water act and federal regulations; or

(E) are at the point of discharge on the stream segment and downstream from such point where the department has issued a national pollutant discharge elimination system permit other than a permit for a confined feeding facility, as defined in K.S.A. 65-171d, and amendments thereto.

(2) Classified stream segments other than those described in subsection (a)(1)(E) shall not include ephemeral streams; grass, vegetative or other waterways; culverts; or ditches.

(3) Any definition of classified stream or "classified stream segment" in rules and regulations or law that is inconsistent with this definition is hereby declared null and void.

(b) "Department" means the department of health and environment.

(c) "Designated uses of classified stream segments" shall be defined as follows:

(1) "Agricultural water supply use" means the use of a classified stream segment for agricultural purposes, including the following:

(A) "Irrigation" means the withdrawal of water from a classified stream segment for application onto land; or

(B) "livestock watering" means the provision of water from a classified stream segment to livestock for consumption.

(2) "Aquatic life support use" means the use of a classified stream segment for the maintenance of the ecological integrity of streams, lakes and wetlands, including the sustained growth and propagation of native aquatic life; naturalized, important, recreational aquatic life; and indigenous or migratory semi aquatic or terrestrial wildlife directly or indirectly dependent on surface water for survival. Categories of aquatic life support use include:

(A) "Special aquatic life use waters" means classified stream segments that contain combinations of habitat types and indigenous biota not found commonly in the state, or classified stream segments that contain representative populations of threatened or endangered species, that are listed in rules and regulations promulgated by the Kansas department of wildlife and parks or the United States fish and wildlife service.

(B) "Expected aquatic life use waters" means classified stream segments containing habitat types and indigenous biota commonly found or expected in the state.

(C) "Restricted aquatic life use waters" means classified stream segments containing indigenous biota limited in abundance or diversity by the physical quality or availability of habitat, due to natural deficiencies or artificial modifications, compared to more suitable habitats in adjacent waters.

(3) "Domestic water supply" means the use of a classified stream segment, after appropriate treatment, for the production of potable water.

(4) "Food procurement use" means the use of a classified stream segment for the obtaining of edible forms of aquatic or semi aquatic life for human consumption.

(5) "Groundwater recharge use" means the use of a classified stream segment for the replenishing of fresh or usable groundwater resources. This use may involve the infiltration and percolation of surface water through sediments and soils or the direct injection of surface water into underground aquifers.

(6) "Industrial water supply use" means the use of a classified stream segment for nonpotable purposes by industry, including withdrawals for cooling or process water.

(7) (A) "Recreational use" means:

(i) Primary contact recreational use is use of a classified stream segment for recreation during the period from April 1 through October 31 of each year, provided such classified stream segment (a) by law or written permission of the landowner is open to and accessible by the public and (b) is capable of supporting the recreational activities of swimming, skin diving, water-skiing, wind surfing, boating or mussel harvesting where the body is intended to be immersed in surface water to the extent that some inadvertent ingestion of water is probable;

(ii) Secondary contact recreational use:

(a) is use of a classified stream segment for recreation, provided such classified stream segment (1) by law or by written permission of the landowner is open to and accessible by the public and (2) is capable of supporting the recreational activities of wading or fishing where the body is not intended to be immersed and where ingestion of surface water is not probable; or

(b) is use of a classified stream segment for recreation, provided such classified stream segment (1) is not open to and accessible by the public under Kansas law and (2) is capable of supporting the recreational activities of swimming, skin diving, water-skiing, wind surfing, boating, mussel harvesting, wading or fishing.

(B) If opposite sides of a classified stream segment would have different designated recreational uses due to differences in public access, the designated use of the entire classified stream segment may be the higher attainable use, notwithstanding that such designation does not grant the public access to both sides of such segment.

(C) Recreational use designations shall not apply to stream segments where the natural, ephemeral, intermittent or low flow conditions or water levels prevent recreational activities.

(d) "Ephemeral stream" means streams that flow only in response to precipitation and whose channel is at all times above the water table.

(e) "Secretary" means the secretary of health and environment.

History: L. 2001, ch. 100, § 1; Sept. 1

Kansas Statute No. 82a-2002

Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2002. Establishment of classified stream segments; use of such. Notwithstanding any other provisions of law and in addition to the powers of the secretary pursuant to K.S.A. 65-171d, and amendments thereto, the secretary shall establish classified stream segments in Kansas and, following such classification, designate use of such classified stream segments pursuant to K.S.A. 2001 Supp. 82a-2003 and 82a-2004, and amendments thereto.

History: L. 2001, ch. 100, § 2; Sept. 1.

Kansas Statute No. 82a-2003
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2003. Determination of which stream segments are listed as classified stream segments; duration of determination. (a) Prior to December 31, 2002, the department shall review all stream segments listed on the 1999 Kansas surface water register and determine whether such stream segments meet the definitions of classified stream segments pursuant to paragraph (a)(1)(A) or (a)(1)(B) of K.S.A. 2001 Supp. 82a-2001, and amendments thereto. The department shall begin the review with stream segments listed on the 1999 Kansas surface water register west of the 98th longitude line and consider stream flow data or methodologies of extrapolating flow from the United States geological survey.

(b) Prior to December 31, 2005, the department shall review all stream segments listed on the 1999 Kansas surface water register which do not meet the definitions of classified stream segments pursuant to paragraph (a)(1)(A) or (a)(1)(B) of K.S.A. 2001 Supp. 82a-2001, and amendments thereto, and determine whether such stream segments meet the definitions of classified stream segments pursuant to paragraph (a)(1)(C), (a)(1)(D) or (a)(1)(E) of K.S.A. 2001 Supp. 82a-2001, and amendments thereto. The department shall establish a procedure, adopted in rules and regulations, requiring that all of the reviews and findings have been met pursuant to paragraph (a)(1)(D) of K.S.A. 2001 Supp. 82a-2001, and amendments thereto.

(c) All current stream classifications shall remain in effect until December 31, 2005, or as deleted or changed through the procedures set forth above.

History: L. 2001, ch. 100, § 3; Sept. 1.

Kansas Statute No. 82a-2004
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2004. Listing of all currently classified stream segments; minimum action for unclassified stream segments; information available to public; duration of designation. (a) Prior to October 15, 2001, the department shall make publicly available a listing of all currently classified stream segments for which: (1) Designated use attainability analyses for recreational use have been completed; (2) recreational use has been determined not attainable; or (3) designated use attainability analyses for recreational use have not been completed. For such classified stream segments for which designated use attainability analyses for recreational use have not been completed, the department, at a minimum, shall complete a designated use attainability analysis for recreational use according to the following schedule:

(A) An aggregate of at least 25% of such classified stream segments shall have a designated use attainability analyses for recreational use completed prior to October 31, 2002.

(B) An aggregate of at least 50% of such classified stream segments shall have a designated use attainability analyses for recreational use completed prior to October 31, 2003.

(C) An aggregate of at least 75% of such classified stream segments shall have a designated use attainability analyses for recreational use completed prior to October 31, 2004.

(D) All of such classified stream segments shall have designated use attainability analyses for recreational use completed prior to October 31, 2005.

(b) Prior to October 15, 2002, the department shall make publicly available a listing of all currently classified stream segments for which: (1) Designated use attainability analyses for use other than recreational use have been completed; (2) use other than recreational use has been determined not attainable; or (3) designated use attainability analyses for use other than recreational use have not been completed. For such classified stream segments for which designated use attainability analyses for use other than recreational use have not been completed, the department, at a minimum, shall complete a designated use attainability analysis for use other than recreational use according to a schedule adopted before June 1, 2004, by rules and regulations of the secretary.

(c) Barring flooding or acts of God, which would prevent the department from completing designated use attainability analyses, the schedules provided for pursuant to subsections (a) and (b) shall be accelerated to allow for completion of designated use attainability analyses for all designated uses on or before December 31, 2007.

(d) All current designated uses of classified stream segments listed on the Kansas surface water register 1999 shall remain in effect until December 31, 2007, or until deleted or changed through the procedures set forth above.

History: L. 2001, ch. 100, § 4; Sept. 1.

Kansas Statute No. 82a-2005
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2005. Publication of attainability analysis protocols; review of use attainability analysis; updating of Kansas surface water register. (a) Prior to December 1, 2001, the secretary shall publish as guidance designated use attainability analysis protocols for the revision and adoption of designated uses of classified stream segments to protect the public health or welfare and to enhance the quality of classified stream segments. The secretary shall take into consideration the uses and values of such waters for public water supplies, propagation of fish and wildlife, navigation and recreational, agricultural, industrial and other purposes.

(b) The designated use attainability analysis protocols shall include, if applicable for the respective designated use, procedures for:

(1) Review of physical, chemical, biological and economic and social factors affecting attainment of a use or uses;

(2) review of naturally-occurring pollutant concentrations and conditions affecting attainment of a use or uses;

(3) review of natural, ephemeral, intermittent or low flow conditions or water levels affecting attainment of a use or uses;

(4) review of human conditions that prevent attainment of a use or uses, including state laws, and that cannot be remedied or that would cause more damage or an inproportionate cost to remedy than to leave in place;

(5) review of hydrologic modifications such as dams and diversions affecting attainment of a use or uses;

(6) review of physical conditions related to natural features such as lack of proper substrate, cover, flow, depth, pools, riffles and other stream morphology affecting attainment of a use or uses;

(7) identification and description of cost-effective and reasonable best management practices for non-point source pollutant control where such control would be needed to attain a use or uses; and

(8) qualified persons outside the department to conduct designated use attainability analyses.

(c) A use or uses shall not be designated unless it is demonstrated that such use or uses are actually existing and attainable, or unless it is demonstrated that the adverse social and economic impacts of designating a use or uses that are not actually existing are outweighed by the social and economic benefits resulting from the attainment of such use or uses.

(d) Within 60 days after receipt of submission of a use attainability analysis, the department shall review and provide a written determination of whether the documentation submitted is complete.

(e) Within 60 days after receipt of submission of a complete use attainability analysis, the department shall review and provide a written determination of whether revision of the designated use will be proposed as a rule and regulation. Any person aggrieved by such determination may make written request, within 30 days after receipt of such determination, for a meeting with the secretary or the secretary's designee to discuss the determination and exchange information.

(f) All proposed revisions to the surface water register shall be proposed for adoption in accordance with the rules and regulations filing act (K.S.A. 77-415, and amendments thereto).

(g) Following the promulgation of a revision of the surface water register as a rule and regulation pursuant to subsections (d) and (e), any person aggrieved by such promulgation, within 15 days after publication of the rule and regulation, may request a hearing by filing an application for an order under the Kansas administrative procedure act. Any action of the secretary in a proceeding pursuant to this subsection is subject to review in accordance with the act for judicial review and civil enforcement of agency actions.

(h) The Kansas surface water register shall be updated and published annually.

History: L. 2001, ch. 100, § 5; Sept. 1.

Kansas Statute No. 82a-2006
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2006. Reports to the governor and legislature. (a) Annually, on or before the first day of the legislative session, the secretary shall prepare and submit a report to the governor and the chairperson, vice-chairperson and ranking minority member of the standing committees of the house of representatives and the senate on environment and natural resources regarding the status of completing the classification of streams as required in K.S.A. 2001 Supp. 82a-2003, and amendments thereto, and designated use attainability analyses as required in K.S.A. 2001 Supp. 82a-2004, and amendments thereto.

(b) On or before February 15, 2003, the secretary shall report to the governor and the chairperson, vice-chairperson and ranking minority member of the standing committees of the house of representatives and the senate on environment and natural resources regarding the status of new methodologies of measuring stream flow, in particular that under development by the United States geological survey.

History: L. 2001, ch. 100, § 6; Sept. 1.

Kansas Statute No. 82a-2007
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2007. Additional employee authorized for state conservation commission. Subject to appropriations, there shall be an additional employee at the state conservation commission to work on total maximum daily load compliance and to coordinate with the department and other appropriate federal and state agencies to further implement voluntary incentive based conservation programs to protect water quality.

History: L. 2001, ch. 100, § 7; Sept. 1.

Kansas Statute No. 82a-2008
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2008. Limitations on secretary's actions. Nothing in this act shall be construed to:

(1) Require the secretary to designate the use of any classified stream as secondary contact recreational use pursuant to subsection (c)(7)(A)(ii)(b) of K.S.A. 2001 Supp. 82a-2001, and amendments thereto; or

(2) authorize public access to private property unless such public access is otherwise authorized by law or by written permission of the landowner.

History: L. 2001, ch. 100, § 8; Sept. 1.

Kansas Statute No. 82a-2009
Chapter 82a.--WATERS AND WATERCOURSES
Article 20.--CLASSIFIED STREAM SEGMENTS

82a-2009. Severability of act. If any provisions of this act or its application to any person or circumstances is held invalid, the invalidity does not affect other provisions or applications of the act that can be given effect without the invalid provisions or application. To this end the provisions of this act are severable.

History: L. 2001, ch. 100, § 9; Sept. 1.

APPENDIX B.—MEDIAN FLOW INFORMATION FOR STREAMFLOW-GAGING STATIONS USED IN THE INTERPOLATION PROCEDURE

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses

[ft^3/s, cubic feet per second]

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
06813500	46,200	45,300 –47,200	1991 – 2000	40,800	40,600 – 41,100	1961 – 2000
06814000	30	28 –32	1991 – 2000	22	21 – 23	1950 – 2000
06815000	213	202 –224	1991 – 2000	159	155 – 162	1946 – 2000
06818000	49,000	48,000 –50,100	1991 – 2000	43,300	43,000 – 43,600	1961 – 2000
06826500	6	5.9 –6.1	1977 – 86	6.2	6.2 – 6.4	1961 – 86
06827500	16	15 –17	1991 – 2000	16	15 – 16	1961 – 2000
06836500	5	4.9 –5.0	1991 – 2000	4.8	4.7 – 4.8	1947 – 2000
06844700	0	0 –0	1977 – 86	0	0 – 0	1968 – 87
06844900	.28	0.26 –0.29	1991 – 2000	0	0 – 0	1960 – 2000
06845000	.39	0.34 –0.47	1968 – 2000	.7	0.6 – 0.78	1930 – 2000
06845200	4.5	4.3 –4.7	1963 – 72	5	4.8 – 5.2	1938 – 72
06846500	.01	0 –0.04	1991 – 2000	.02	0 – 0.04	1947 – 2000
06847900	6.1	5.8 –6.3	1991 – 2000	2.1	2 – 2.2	1963 – 2000
06848000	.47	0.46 –0.48	1991 – 2000	.1	0.1 – 0.11	1965 – 2000
06848500	7.4	7.0 –7.8	1991 – 2000	2	1.9 – 2.1	1965 – 2000
06853020	116	112 –120	1991 – 2000	111	109 – 114	1985 – 2000
06853500	164	159 –169	1991 – 2000	167	165 – 170	1961 – 2000
06853800	12	11 –13	1991 – 2000	6	5.9 – 6.2	1958 – 2000
06854000	.15	0.14 –0.16	1991 – 2000	.2	0.2 – 0.2	1961 – 2000
06854500	250	241 –260	1963 – 72	244	238 – 252	1961 – 72
06855800	18	17 –19	1980 – 89	11	11 – 12	1960 – 89
06855900	1.6	1.4 –1.7	1972 – 81	1	0.91 – 1.1	1963 – 81
06856000	269	258 –279	1991 – 2000	284	280 – 289	1961 – 2000
06856600	407	393 –421	1991 – 2000	396	390 – 400	1961 – 2000
06857100	276	250 –295	1991 – 2000	357	340 – 368	1968 – 2000
06858500	0	0 –0	1975 – 84	0	0 – 0	1948 – 84
06859500	1.3	1.3 –1.4	1970 – 79	1.9	1.8 – 2.0	1952 – 79
06860000	.57	0.54 –0.63	1991 – 2000	1.5	1.4 – 1.5	1940 – 2000
06861000	5.3	4.5 –6.0	1991 – 2000	2.3	2.2 – 2.5	1951 – 2000
06862000	0	0 –0	1981 – 90	.28	0.26 – 0.3	1961 – 90
06862700	6.3	5.6 –7.2	1991 – 2000	11	11 – 12	1965 – 2000
06862850	7.7	7.2 –8.2	1991 – 2000	1.8	1.5 – 2.0	1982 – 2000
06863300	3	3.0 –3.1	1959 – 68	2.9	2.8 – 3.0	1956 – 68
06863500	19	19 –20	1991 – 2000	7.9	7.7 – 8.0	1947 – 2000
06863900	0	0 –0	1977 – 86	0	0 – 0	1963 – 86
06864000	35	34 –36	1965 – 74	35	34 – 36	1965 – 74

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
06864050	63	61 –66	1991 – 2000	34	34 – 35	1961 – 2000
06864500	94	90 –98	1991 – 2000	65	63 – 66	1961 – 2000
06865500	121	109 –134	1991 – 2000	78	76 – 79	1961 – 2000
06866500	197	188 –205	1991 – 2000	135	132 – 138	1961 – 2000
06866900	7.4	7.0 –7.9	1991 – 2000	2.6	2.3 – 2.9	1956 – 2000
06867000	64	62 –66	1991 – 2000	31	30 – 32	1946 – 2000
06867500	.03	0.03 –0.04	1965 – 74	.13	0.10 – 0.20	1947 – 74
06868200	21	20 –21	1991 – 2000	16	16 – 17	1965 – 2000
06868400	1.8	1.7 –1.9	1962 – 71	2.2	2.2 – 2.4	1960 – 71
06869500	105	97 –113	1991 – 2000	45	44 – 47	1965 – 2000
06870200	400	386 –415	1991 – 2000	224	220 – 229	1963 – 2000
06870300	9	8.6 –9.3	1962 – 71	7	6.6 – 7.4	1955 – 71
06871000	26	25 –27	1991 – 2000	8.4	8.0 – 8.8	1953 – 2000
06871500	9.5	9.4 –9.7	1991 – 2000	5.6	5.5 – 5.7	1952 – 2000
06871800	.04	0.04 –0.04	1991 – 2000	.03	0.03 – 0.03	1961 – 2000
06871900	.63	0.56 –0.70	1972 – 81	.69	0.63 – 0.72	1967 – 81
06872500	80	79 –82	1991 – 2000	34	33 – 35	1961 – 2000
06873000	34	32 –35	1991 – 2000	14	13 – 14	1946 – 2000
06873200	.68	0.56 –0.74	1991 – 2000	0	0 – 0.01	1961 – 2000
06873460	21	20 –22	1991 – 2000	6.5	6.0 – 7.0	1979 – 2000
06873700	0	0 –0	1972 – 81	0	0 – 0	1964 – 81
06874000	56	54 –58	1991 – 2000	21	20 – 21	1961 – 2000
06875900	149	140 –169	1991 – 2000	54	53 – 56	1968 – 2000
06876070	187	175 –200	1991 – 2000	187	175 – 200	1991 – 2000
06876700	19	18 –20	1991 – 2000	12	12 – 12	1960 – 2000
06876900	320	309 –338	1991 – 99	174	169 – 178	1968 – 2000
06877600	1,000	967 –1,040	1991 – 2000	595	582 – 611	1961 – 2000
06878000	37	36 –39	1991 – 2000	24	24 – 24	1955 – 2000
06878500	32	31 –33	1965 – 74	33	32 – 34	1955 – 74
06879100	1,680	1,600 –1,780	1991 – 2000	1,350	1,310 – 1,390	1968 – 2000
06882000	401	393 –415	1991 – 2000	280	276 – 283	1933 – 2000
06882500	169	164 –175	1931 – 40	217	210 – 222	1920 – 40
06882510	469	452 –484	1991 – 2000	467	456 – 476	1985 – 2000
06884000	169	165 –171	1991 – 2000	160	159 – 160	1911 – 2000
06884025	220	213 –226	1991 – 2000	211	208 – 216	1975 – 2000
06884200	26	25 –28	1991 – 2000	19	19 – 20	1960 – 2000
06884400	304	297 –316	1991 – 2000	268	263 – 272	1959 – 2000
06885500	43	40 –45	1991 – 2000	29	28 – 29	1954 – 2000
06886000	730	700 –751	1951 – 60	600	590 – 610	1919 – 60

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
06886500	13	13 –14	1962 – 71	11	11 – 12	1955 – 71
06887000	1,170	1,140 –1,280	1991 – 2000	974	959 – 994	1963 – 2000
06887500	3,470	3,390 –3,570	1991 – 2000	2,720	2,660 – 2,780	1963 – 2000
06888000	27	26 –28	1962 – 71	17	16 – 18	1937 – 71
06888350	3,640	3,500 –3,800	1991 – 2000	3,480	3,390 – 3,620	1983 – 2000
06888500	59	55 –63	1991 – 2000	56	54 – 58	1955 – 2000
06889000	3,820	3,690 –3,980	1991 – 2000	3,020	2,960 – 3090	1963 – 2000
06889100	.09	0.08 –0.09	1977 – 86	.08	0.07 – 0.08	1965 – 86
06889120	.88	0.82 –0.92	1978 – 87	.55	0.53 – 0.59	1965 – 87
06889140	1.5	1.4 –1.5	1989 – 98	1.2	1.2 – 1.3	1965 – 98
06889160	5.6	5.3 –5.8	1991 – 2000	4.6	4.5 – 4.7	1965 – 2000
06889180	12	11 –12	1971 – 80	10	10 – 11	1965 – 80
06889200	22	21 –23	1991 – 2000	21	20 – 22	1959 – 2000
06889500	43	40 –47	1991 – 2000	30	29 – 31	1930 – 2000
06890100	56	53 –60	1991 – 2000	51	50 – 53	1970 – 2000
06890500	101	95 –106	1958 – 67	65	62 – 66	1923 – 67
06890900	103	100 –115	1991 – 2000	100	100 – 103	1970 – 2000
06891000	4,480	4,220 –4,760	1991 – 2000	3,580	3,500 – 3,650	1963 – 2000
06891500	24	23 –25	1991 – 2000	29	27 – 30	1978 – 2000
06892000	52	47 –57	1991 – 2000	40	38 – 40	1930 – 2000
06892350	4,860	4,630 –5,170	1991 – 2000	4,000	3,890 – 4,080	1963 – 2000
06893000	57,800	56,800 –58,900	1991 – 2000	50,200	49,600 – 50,700	1961 – 2000
06893080	5.6	5 –6.2	1991 – 2000	5	4.7 – 5.4	1975 – 2000
06893300	18	18 –19	1991 – 2000	13	13 – 13	1964 – 2000
06893500	64	61 –67	1991 – 2000	46	44 – 46	1940 – 2000
06910800	13	11 –14	1991 – 2000	15	14 – 16	1970 – 2000
06911000	33	30 –36	1965 – 74	33	30 – 36	1965 – 74
06911500	7.7	6.8 –8.4	1981 – 99	5.1	5.0 – 5.4	1940 – 99
06911900	7.5	6.8 –8.3	1991 – 2000	8	7.6 – 8.5	1961 – 2000
06912500	20	20 –21	1991 – 2000	22	22 – 22	1965 – 2000
06913000	102	94 –117	1991 – 2000	106	99 – 113	1974 – 2000
06913500	143	134 –157	1991 – 2000	146	138 – 155	1974 – 2000
06914000	20	19 –23	1991 – 2000	21	20 – 22	1940 – 2000
06915000	21	21 –22	1990 – 99	20	19 – 21	1982 – 2000
06915800	463	415 –506	1991 – 2000	526	495 – 569	1985 – 2000
06916500	18	16 –20	1961 – 70	11	10 – 12	1930 – 70
06916600	562	495 –616	1991 – 2000	578	545 – 612	1974 – 2000
06917000	44	41 –47	1991 – 2000	32	30 – 33	1950 – 2000
06917380	42	38 –45	1991 – 2000	43	41 – 45	1972 – 2000

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
06917500	30	27 –32	1962 – 71	31	30 – 32	1922 – 71
07134180	112	108 –115	1991 – 2000	106	104 – 108	1981 – 2000
07137500	206	201 –210	1991 – 2000	129	127 – 132	1961 – 2000
07138000	209	203 –217	1991 – 2000	133	130 – 135	1961 – 2000
07138650	0	0 –0	1976 – 85	0	0 – 0	1967 – 85
07139000	55	37 –68	1991 – 2000	32	28 – 35	1961 – 2000
07139500	0	0 –0	1991 – 2000	8.7	7.2 – 10	1961 – 2000
07139800	0	0 –0	1981 – 90	0	0 – 0	1969 – 90
07140000	3.7	3.2 –4.8	1991 – 2000	32	30 – 34	1961 – 2000
07140850	1.5	1.3 –1.7	1991 – 2000	0	0 – 0	1982 – 2000
07141200	4.2	3.3 –4.7	1991 – 2000	3.7	3.4 – 4.0	1925 – 2000
07141300	68	57 –81	1991 – 2000	41	39 – 44	1961 – 2000
07141780	13	13 –14	1991 – 2000	1	0.87 – 1.2	1970 – 2000
07141900	25	24 –26	1991 – 2000	2.3	2.1 – 2.6	1959 – 2000
07142300	13	12 –14	1991 – 2000	15	15 – 16	1960 – 2000
07142575	29	27 –30	1991 – 2000	29	28 – 29	1974 – 2000
07142620	8.05	7.3 –9.0	1989 – 98	24	23 – 25	1961 – 1998
07142860	.15	0.12 –0.18	1972 – 81	.13	0.12 – 0.15	1967 – 81
07142900	.79	0.75 –0.81	1971 – 80	.48	0.46 – 0.50	1963 – 1980
07143300	13	12 –14	1991 – 2000	12	12 – 12	1939 – 2000
07143330	345	336 –354	1991 – 2000	275	270 – 280	1961 – 2000
07143375	362	350 –378	1991 – 2000	303	292 – 315	1988 – 2000
07143600	.6	0.55 –0.62	1962 – 71	.80	0.70 – 0.80	1960 – 70
07143665	22	21 –23	1991 – 2000	22	22 – 23	1974 – 2000
07144200	73	70 –77	1991 – 2000	60	59 – 60	1923 – 2000
07144300	520	505 –537	1991 – 2000	433	423 – 442	1961 – 2000
07144550	659	633 –678	1991 – 2000	541	530 – 550	1969 – 2000
07144780	79	76 –80	1991 – 2000	76	75 – 77	1966 – 2000
07144795	.58	0.55 –0.60	1991 – 2000	.48	0.47 – 0.49	1965 – 2000
07144850	0	0 –0	1971 – 80	0	0 – 0	1962 – 80
07144910	12	11 –12	1991 – 2000	11	11 – 11	1981 – 2000
07145200	136	134 –140	1991 – 2000	135	134 – 136	1951 – 2000
07145500	218	206 –227	1991 – 2000	212	207 – 218	1965 – 2000
07145700	8.8	8.3 –9.5	1991 – 2000	8.0	7.8 – 8.3	1970 – 2000
07146500	1,170	1,130 –1,220	1991 – 2000	1,030	1,010 – 1,050	1961 – 2000
07146570	1.7	1.5 –1.8	1970 – 79	1.8	1.7 – 1.9	1962 – 79
07146830	20	19 –21	1989 – 98	24	23 – 25	1982 – 98
07147070	39	37 –41	1991 – 2000	36	35 – 37	1962 – 2000
07147800	228	213 –248	1991 – 2000	262	247 – 280	1982 – 2000

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
07148350	58	55 –60	1984 – 93	34	33 – 35	1960 – 93
07149000	109	106 –111	1991 – 2000	85	85 – 86	1939 – 2000
07149500	125	120 –130	1941 – 50	125	120 – 130	1941 – 50
07151500	106	103 –111	1991 – 2000	94	92 – 95	1951 – 2000
07152000	221	208 –235	1991 – 2000	144	141 – 146	1937 – 2000
07154500	.33	0.29 –0.38	1991 – 2000	.91	0.90 – 0.97	1951 – 2000
07155590	0	0 –0	1991 – 2000	0	0 – 0	1972 – 2000
07156010	0	0 –0	1976 – 85	0	0 – 0	1972 – 85
07156100	0	0 –0	1976 – 85	0	0 – 0	1972 – 85
07156220	0	0 –0	1989 – 98	0	0 – 0	1967 – 98
07156900	38	37 –38	1991 – 2000	45	45 – 45	1966 – 2000
07157000	60	60 –60	1956 – 65	60	60 – 63	1943 – 65
07157500	8.7	8.6 –8.9	1991 – 2000	12	12 – 12	1943 – 2000
07157900	1.6	1.6 –1.7	1972 – 81	1.5	1.5 – 1.5	1967 – 81
07157950	47	43 50	1985 – 94	56	54 – 58	1961 – 94
07165700	33	31 –35	1967 – 76	28	27 – 30	1956 – 76
07166000	32	27 –38	1989 – 98	74	68 – 80	1961 – 98
07166500	120	107 –135	1991 – 2000	138	130 – 145	1961 – 2000
07167000	57	52 –61	1967 – 76	40	38 – 41	1947 – 76
07167500	10	9.3 –11	1991 – 2000	10	9.4 – 10	1947 – 2000
07168500	44	31 –58	1980 – 89	53	49 – 56	1961 – 89
07169500	109	96 –120	1991 – 2000	92	88 – 98	1961 – 2000
07169800	19	18 –21	1991 – 2000	22	21 – 23	1968 – 2000
07170060	28	24 –35	1991 – 2000	21	19 – 22	1966 – 2000
07170500	455	407 –490	1991 – 99	401	380 – 427	1961 – 2000
07170700	.69	0.57 0.80	1991 – 2000	.88	0.76 – 1.1	1982 – 2000
07171000	644	582 –696	1991 – 2000	570	539 – 598	1961 – 2000
07172000	65	61 –71	1991 – 2000	40	39 – 42	1940 – 2000
07174000	7.4	6.6 –8.5	1949 – 58	9.5	8.9 – 10	1944 – 58
07174400	99	85 –115	1991 – 2000	173	150 – 200	1986 – 2000
07179500	15	14 –17	1991 – 2000	13	13 – 14	1965 – 2000
07179730	67	61 –73	1991 – 2000	70	67 – 73	1965 – 2000
07179795	8.6	8.2 –8.9	1991 – 2000	7.6	7.5 – 7.8	1969 – 2000
07180200	28	26 –30	1990 – 99	32	31 – 34	1985 – 99
07180400	87	84 –91	1991 – 2000	88	86 – 90	1969 – 2000
07180500	18	17 –19	1991 – 2000	16	16 – 17	1939 – 2000
07181500	10	9.5 –10	1941 – 50	7.0	6.6 – 8.0	1939 – 50
07182250	266	252 –282	1991 – 2000	298	288 – 309	1969 – 2000
07182510	434	378 –461	1991 – 2000	397	381 – 419	1964 – 2000

Table 5. Estimated median flows with 95-percent confidence intervals computed at streamflow-gaging stations used in the interpolation procedure for most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Station number (fig. 1)	KSA analysis			AAH analysis		
	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)	Median flow (ft^3/s)	95-percent confidence interval (ft^3/s)	Period of record (water years)
07183000	619	557 –672	1991 – 2000	581	554 – 605	1964 – 2000
07183100	3.6	3.2 –4.0	1961 – 70	4.0	3.7 – 4.4	1960 – 70
07183500	950	862 –1,040	1991 – 2000	852	804 – 892	1964 – 2000
07184000	15	14 –17	1991 – 2000	12	11 – 12	1939 – 2000
07185000	1,310	1,180 –1,440	1991 – 2000	1,140	1,100 – 1,180	1961 – 2000
07186000	405	388 –423	1991 – 2000	301	294 – 306	1925 – 2000
07186400	134	129 –139	1982 – 91	97	94 – 100	1963 – 91
07187000	290	282 –300	1991 – 2000	237	234 – 241	1942 – 2000
07188000	1,050	1,010 –1,110	1991 – 2000	850	832 – 868	1940 – 2000

APPENDIX C.—ESTIMATED MEDIAN FLOWS AT DOWNSTREAM END OF STREAM SEGMENTS ON THE KANSAS SURFACE WATER REGISTER

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses

[Estimated median flows are rounded to three significant figures; ft^3/s, cubic feet per second. Reporting estimated median values to three signficant figures (median greater than or equal to 1 ft^3/s) or two significant figures (median less than 1 ft^3/s) was done to better conform with the intent of KSA 82a-2001 et. seq. Shaded areas show corrections to original printed report.]

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1	102400051	Missouri River	48,000	42,400
2	1024000519	Missouri River	47,600	42,000
3	102400052	Missouri River	47,800	42,200
4	1024000521	Missouri River	47,600	2,000
5	10240005240	Unnamed stream	4.11	3.66
6	10240005339	Mission Creek	3.75	3.70
7	1024000551	Cedar Creek	7.72	7.25
8	1024000552	Mill Creek	4.01	3.92
9	1024000553	Wolf River	41.5	37.4
10	1024000554	Wolf River	17.6	15.4
11	1024000555	Unnamed stream	3.91	3.64
12	1024000556	Wolf River	14.8	12.8
13	1024000557	Wolf River, South Fork	5.77	4.86
14	1024000565	Spring Creek	2.37	2.31
15	1024000566	Wolf River, North Fork	2.22	1.92
16	1024000567	Wolf River, Middle Fork	4.32	3.62
17	1024000568	Haling Creek	4.21	3.79
18	1024000569	Rittenhouse Branch	2.46	2.44
19	1024000570	Cold Ryan Branch	3.48	3.32
20	1024000571	Coon Creek	4.75	4.68
21	1024000572	Striker Branch	2.22	2.28
22	1024000573	Mosquito Creek	6.95	6.89
23	1024000712	Wolf Creek	3.14	2.00
24	1024000713	Wolf Creek	1.05	.45
25	10240007132	Clear Creek	2.69	1.66
26	1024000714	Manley Creek	1.11	.50
27	1024000715	Big Nemaha River, South Fork	20.5	15.2
28	1024000716	Big Nemaha River, South Fork	16.1	11.9
29	10240007166	Harris Creek	3.23	2.16
30	1024000718	Deer Creek	3.35	2.16
31	1024000720	Rock Creek	1.23	.60
32	10240007212	Unnamed stream	1.14	.64
33	1024000723	Wildcat Creek	2.02	1.09
34	1024000724	Burger Creek	.82	.39
35	1024000725	Wolf Pen Creek	1.01	.39
36	1024000726	Honey Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
37	1024000727	Rattlesnake Creek	1.00	0.61
38	1024000728	Fisher Creek	.86	.27
39	1024000729	Tennessee Creek	3.36	2.32
40	102400073	Big Nemaha River, South Fork	69.5	50.9
41	1024000730	Illinois Creek	1.70	1.05
42	102400074	Turkey Creek	32.1	23.6
43	102400075	Turkey Creek	20.4	14.9
44	10240008308	Terrapin Creek	2.72	1.71
45	1024000838	Pony Creek	5.64	4.28
46	1024000839	Walnut Creek	10.7	8.46
47	1024000840	Roys Creek	8.15	7.23
48	1024000841	Pedee Creek	1.71	1.27
49	1024000842	Noharts Creek	2.75	2.45
50	102400111	Missouri River	49,500	43,700
51	1024001111	Missouri River	49,100	43,300
52	1024001113	Missouri River	49,000	43,300
53	10240011142	Sorter Creek	2.43	2.61
54	1024001115	Missouri River	49,000	43,300
55	10240011157	Seven Mile Creek	5.97	5.75
56	10240011161	Nine Mile Creek	2.79	2.72
57	10240011175	Corral Creek	1.12	1.45
58	10240011176	Quarry Creek	1.43	1.76
59	1024001119	Missouri River	49,000	43,300
60	102400112	Missouri River	49,100	43,400
61	1024001120	Independence Creek	27.8	25.3
62	1024001121	Rock Creek	6.85	6.54
63	1024001122	Independence Creek	17.4	15.9
64	1024001123	Walnut Creek	5.29	5.01
65	10240011235	Whiskey Creek	1.82	1.88
66	1024001125	Walnut Creek	4.76	4.63
67	1024001126	Brush Creek	6.05	5.83
68	1024001127	Peters Creek	9.64	9.17
69	1024001128	Smith Creek	5.02	5.00
70	1024001129	Independence Creek, North Branch	5.58	5.25
71	1024001130	Jordan Creek	4.66	4.44
72	1024001131	White Clay Creek	3.46	3.22
73	1024001132	Deer Creek	5.86	5.26
74	1024001133	Owl Creek	4.75	4.52
75	1024001134	Salt Creek	6.96	6.45

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
76	1024001135	Fivemile Creek	3.36	3.39
77	1024001136	Threemile Creek	2.56	2.72
78	1024001137	Island Creek	5.09	5.02
79	1024001138	Jersey Creek	2.12	2.27
80	102400114	Missouri River	49,100	43,400
81	102400115	Missouri River	49,100	43,400
82	102400117	Missouri River	49,100	43,400
83	102400119	Missouri River	49,100	43,300
84	102400119031	White Clay Creek	3.67	3.41
85	102400119099	Missouri River	57,800	50,200
86	102400119235	Whiskey Creek	1.89	1.96
87	102500011	Arikaree River	.89	.47
88	102500032	Republican River, South Fork	16.0	16.0
89	102500033	Hackberry Creek	0	0
90	102500034	Republican River, South Fork	14.0	14.1
91	102500035	Cherry Creek	0	0
92	102500036	Republican River, South Fork	11.4	11.5
93	1025000360	Drury Creek	0	0
94	1025000361	Big Timber Creek	0	0
95	1025000366	Delay Creek	0	0
96	1025000367	Spring Creek	0	0
97	1025000368	Sand Creek	0	0
98	1025000369	Valley Creek	0	0
99	102500037	Republican River, South Fork	10.9	11.0
100	1025000370	Bluff Creek	0	0
101	1025000371	Battle Creek	0	0
102	1025000372	Crosby Creek	0	0
103	102500038	Cowpe Creek	0	0
104	102500039	Republican River, South Fork	9.12	9.25
105	1025000450	Jones Canyon	0	0
106	1025000459	Driftwood Creek	.21	.27
107	102500101	Sappa Creek, Middle Fork	1.05	.20
108	102500102	Sappa Creek, North Fork	0	0
109	102500103	Sappa Creek, Middle Fork	0	0
110	102500104	Sappa Creek, South Fork	.56	0
111	102500105	Unnamed Stream	.01	0
112	102500106	Sappa Creek, South Fork	.01	0
113	1025001110	Rock Branch	0	0
114	1025001111	Walnut Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
115	1025001112	Squaw Branch	0	0
116	1025001113	Boy Creek	0	0
117	1025001115	Cotton Creek	0	0
118	1025001116	Dutch Creek	0	0
119	1025001117	Jones Creek	0	0
120	1025001118	Maple Creek	0	0
121	1025001119	Sheep Creek	0	0
122	102500113	Sappa Creek	3.83	4.11
123	102500114	Sappa Creek	2.61	2.12
124	102500115	Sappa Creek, Long Branch	.12	0
125	102500117	Deer Creek	0	0
126	102500118	Dry Creek	0	0
127	102500119	Spring Branch	0	0
128	102500121	Beaver Creek	0	0
129	1025001210	Unnamed stream	0	0
130	1025001211	Beaver Creek, South	0	0
131	102500122	Beaver Creek, Middle	0	0
132	102500123	Beaver Creek, North Fork	0	0
133	102500128	Beaver Creek, Middle	0	0
134	102500129	Beaver Creek, South	0	0
135	102500131	Little Beaver Creek	0	0
136	102500132	Beaver Creek, North	0	0
137	102500133	Little Beaver Creek	0	0
138	102500134	Little Beaver Creek	0	0
139	102500137	Sand Creek	0	0
140	102500142	Beaver Creek	.01	.03
141	1025001510	Prairie Dog Creek	2.34	.33
142	1025001511	Prairie Dog Creek, North Fork	.06	0
143	1025001512	Prairie Dog Creek	.34	0
144	1025001513	Walnut Creek	0	0
145	1025001514	Plum Creek	.01	0
146	1025001515	Spring Creek	0	0
147	1025001516	Robinson Creek	0	0
148	1025001517	Prairie Dog Creek, North Fork	0	0
149	1025001518	Horse Creek	0	0
150	1025001519	Fancy Creek	0	0
151	102500152	Prairie Dog Creek	13.0	7.57
152	1025001520	Sand Creek	0	0
153	1025001521	Buffalo Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
154	1025001522	Jack Creek	0	0
155	1025001523	Dry Creek	0	0
156	1025001524	Battle Creek	0	0
157	1025001525	Walnut Creek	0	0
158	1025001526	Wildcat Creek	0	0
159	102500153	Elk Creek	.10	0
160	102500154	Prairie Dog Creek	4.12	1.1
161	102500158	Prairie Dog Creek	6.10	2.10
162	102500159	Big Timber Creek	.05	0
163	102500161	Republican River	250	244
164	102500161301	Big Timber Creek	1.73	1.14
165	102500162	Republican River	172	174
166	1025001639	Rebecca Creek	0	0
167	1025001640	Walnut Creek	.51	.02
168	1025001641	White Rock Creek	.64	.68
169	1025001645	White Rock Creek	16.7	9.87
170	1025001646	Walnut Creek	.87	.37
171	1025001647	White Rock Creek	9.63	5.07
172	1025001648	Burr Oak Creek	2.07	1.25
173	1025001649	White Rock Creek	7.14	3.91
174	1025001650	White Rock Creek	.73	.17
175	1025001651	Cora Creek	.86	.21
176	1025001652	Crow Creek	.12	0
177	1025001653	Lost Creek	0	0
178	1025001654	Unnamed stream Smith County	0	0
179	1025001656	Unnamed stream Smith County	0	0
180	1025001657	Unnamed stream Smith County	0	0
181	1025001659	Buffalo Creek	0	0
182	1025001660	White Rock Creek, North Branch	.93	.35
183	1025001661	Louisa Creek	0	0
184	1025001662	Unnamed stream Jewell County	0	0
185	1025001663	Cedar Creek	0	0
186	1025001664	Unnamed stream Jewell County	0	0
187	1025001665	Ash Creek	.75	.25
188	1025001666	Antelope Creek	.05	0
189	1025001667	Wolf Creek	0	0
190	1025001668	Long Branch	.28	0
191	1025001669	Unnamed stream Republic County	0	0
192	1025001670	Unnamed stream Republic County	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
193	1025001671	Spring Creek	0.46	0.12
194	1025001672	Korb Creek	.29	0
195	1025001673	Norway Creek	0	0
196	1025001674	Taylor Creek	.89	.43
197	1025001675	Oak Creek	.04	0
198	1025001676	Bean Creek	.89	.41
199	1025001677	Crosby Creek	.29	0
200	1025001678	Spring Creek	.45	.05
201	1025001679	Otter Creek	1.28	.64
202	1025001680	Dry Creek	2.10	1.48
203	1025001686	Unnamed stream, Washington County	.27	0
204	102500171	Republican River	278	358
205	1025001710	Peats Creek	8.14	6.27
206	1025001711	Republican River	357	356
207	1025001712	Parsons Creek	7.30	5.54
208	1025001713	Republican River	343	344
209	102500171354	Spring Creek	2.60	1.76
210	102500171369	Dry Creek	1.99	1.52
211	1025001714	Elk Creek	7.01	5.44
212	102500171477	Rush Creek	.77	.31
213	1025001715	Elk Creek	3.67	2.67
214	1025001716	Elk Creek, West Fork	2.11	1.41
215	1025001717	Republican River	323	328
216	1025001718	Republican River	312	319
217	1025001719	Salt Creek	15.0	12.0
218	1025001720	Salt Creek	9.54	7.45
219	1025001721	East Creek	4.24	3.21
220	1025001722	Salt Creek	5.50	4.14
221	1025001723	Salt Creek	2.46	1.67
222	1025001724	Riley Creek	2.02	1.3
223	1025001725	Salt Creek, West	4.53	3.27
224	1025001726	Republican River	281	294
225	1025001728	Republican River	254	251
226	1025001729	Buffalo Creek	21.6	14.0
227	1025001730	Salt Creek	7.48	5.06
228	1025001734	Salt Creek	6.74	4.54
229	1025001735	Marsh Creek	4.20	2.80
230	1025001736	Marsh Creek, West	1.96	1.15
231	1025001737	Buffalo Creek	8.20	5.59

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
232	1025001738	Wolf Creek	1.60	1.00
233	1025001739	Elm Creek	5.39	4.04
234	1025001740	Mulberry Creek	5.22	3.89
235	10250017413	Five Creek	7.34	5.66
236	1025001742	Marsh Creek, East	2.21	1.38
237	1025001743	Buffal Creek tributary	.26	0
238	1025001744	Buffal Creek tributary	.85	.31
239	1025001745	Beaver Creek	1.16	.47
240	1025001747	Coal Creek	1.36	.91
241	1025001748	Republican River tributary	.49	.03
242	1025001749	Hay Creek	1.61	1.10
243	1025001750	Cool Creek	.89	.54
244	1025001751	Turkey Creek	.46	.12
245	1025001752	Upton Creek	1.28	.73
246	1025001753	Spring Creek	1.39	.83
247	1025001754	Whites Creek	2.43	1.54
248	1025001755	Cheyenne Creek	1.75	.96
249	1025001756	Republican River tributary	.79	.28
250	1025001757	Republican River tributary	1.43	1.00
251	1025001758	Oak Creek	2.68	1.96
252	1025001759	Elm Creek, West Branch	.84	.36
253	102500176	Timber Creek	4.43	3.08
254	1025001760	Republican River tributary	.94	.46
255	1025001761	Beaver Creek	1.12	.61
256	1025001762	Elm Creek, East Branch	1.66	.99
257	1025001763	Mud Creek	.68	.23
258	1025001764	Finney Creek	1.67	1.09
259	1025001765	Lincoln Creek	3.29	2.38
260	1025001766	Otter Creek	4.74	3.50
261	1025001767	Fourmile Creek	1.74	1.21
262	1025001768	Buffalo Creek, East	1.49	.88
263	102500177	Republican River	348	378
264	102500178	Republican River	354	380
265	102500179	Republican River	372	367
266	102500179354	Huntress Creek	5.02	3.90
267	102600011	Smoky Hill River	.04	0
268	1026000110	Smoky Hill River	0	0
269	1026000117	Eagletail Creek	0	0
270	1026000118	Lake Creek, South Fork	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
271	1026000119	Rose Creek	0	0
272	102600012	Lake Creek	0	0
273	1026000120	Coon Creek	0	0
274	1026000121	Pond Creek	0	0
275	102600013	Smoky Hill River	0	0
276	10260001309	Depperschmidt Draw	0	0
277	10260001311	Capper Draw	0	0
278	102600014	Smoky Hill River	0	0
279	102600015	Goose Creek	0	0
280	102600016	Smoky Hill River	0	0
281	102600017	Willow Creek	0	0
282	102600018	Smoky Hill River	0	0
283	102600019	Unnamed stream	0	0
284	102600021	Smoky Hill River, North Fork	0	0
285	1026000215	Turtle Creek	0	0
286	102600022	Sand Creek	0	0
287	102600023	Smoky Hill River, North Fork	0	0
288	102600024	Sandy Creek	0	0
289	102600025	Smoky Hill River, North Fork	0	0
290	102600026	Smoky Hill River, North Fork	0	0
291	1026000310	Smoky Hill River	5.87	2.80
292	1026000311	Downer Creek	0	0
293	1026000312	Smoky Hill River	5.30	2.30
294	1026000313	Smoky Hill River	3.28	1.98
295	1026000314	Smoky Hill River	2.85	1.81
296	1026000315	Indian Creek	0	0
297	1026000316	Smoky Hill River	2.09	1.55
298	1026000317	Smoky Hill River	1.88	1.46
299	1026000318	Plum Creek	0	0
300	1026000319	Smoky Hill River	1.24	1.44
301	1026000320	Smoky Hill River	.80	1.49
302	1026000321	Smoky Hill River	.57	1.50
303	1026000322	Smoky Hill River	.09	.24
304	1026000323	Six Mile Creek	0	0
305	1026000324	Smoky Hill River	0	0
306	1026000325	Hell Creek	0	0
307	1026000326	Salt Creek	0	0
308	1026000327	Unnamed stream	0	0
309	1026000328	Wild Horse Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
310	1026000329	Sand Creek	0	0
311	1026000331	Page Creek	0	0
312	1026000333	Spring Creek, West	0	0
313	1026000334	Gibson Creek	0	0
314	1026000335	Salt Creek, East	0	0
315	1026000336	Cheyenne Creek	0	0
316	1026000337	Sand Creek	0	0
317	1026000338	Big Windy Creek	0	0
318	1026000339	Downer Creek, East Branch	0	0
319	1026000340	Sand Creek, East Branch	0	0
320	1026000341	Goat Canyon Creek	0	0
321	102600037	Indian Creek	0	0
322	102600039	Smoky Hill River	6.69	3.52
323	102600041	Ladder Creek	1.30	1.90
324	1026000410	Ladder Creek	0	.01
325	1026000411	Unnamed stream	0	0
326	1026000412	Ladder Creek, South	.03	.08
327	1026000413	Ladder Creek, Middle	0	0
328	1026000414	Ladder Creek, South	.01	.04
329	1026000415	Ladder Creek, Middle, South Fork	0	.01
330	1026000417	Ladder Creek, Middle, North Fork	0	0
331	102600042	Twin Butte Creek	.01	.03
332	102600043	Ladder Creek	.56	1.37
333	102600044	Chalk Creek	.01	.03
334	102600045	Ladder Creek	.32	.99
335	102600046	Unnamed Stream	0	0
336	102600047	Ladder Creek	.17	.54
337	102600048	Ladder Creek	.09	.29
338	102600049	Ladder Creek	.02	.05
339	102600051	Hackberry Creek	1.74	.78
340	102600052	Spring Creek	0	0
341	102600053	Hackberry Creek	.98	.21
342	102600054	Hackberry Creek, Middle Branch	0	0
343	102600055	Hackberry Creek, North Branch	0	0
344	102600056	Hackberry Creek, Middle Branch	0	0
345	102600057	Hackberry Creek, South Branch	0	0
346	102600058	Spring Creek, West	0	0
347	1026000610	Smoky Hill River	75.9	46.9
348	1026000611	Smoky Hill River	71.1	42.1

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
349	102600061190	Ash Creek	1.29	0.72
350	1026000612	Smoky Hill River	63.0	34.0
351	1026000613	Fossel Creek	.97	.31
352	1026000614	Smoky Hill River	49.5	34.5
353	1026000615	Smoky Hill River	35.0	35.0
354	1026000616	Smoky Hill River	16.7	12.7
355	1026000617	Smoky Hill River	14.6	10.2
356	1026000618	Smoky Hill River	13.8	9.25
357	1026000619	Smoky Hill River	7.70	1.80
358	1026000620	Unnamed stream	0	0
359	1026000621	Smoky Hill River	6.30	11.0
360	1026000622	Smoky Hill River	4.14	7.32
361	1026000623	Unnamed stream	0	0
362	1026000624	Big Timber Creek	1.21	.41
363	1026000625	Big Timber Creek	.64	0
364	1026000626	Timber Creek	0	0
365	1026000627	Big Timber Creek	0	0
366	1026000628	Unnamed stream	0	0
367	1026000629	Buck Creek	0	0
368	1026000630	Eagle Creek	.07	0
369	1026000631	Landon Creek	.75	.12
370	1026000632	Sellens Creek	.92	.27
371	1026000633	Beaver Creek	1.47	.74
372	1026000634	Coal Creek	2.04	1.20
373	1026000635	Blood Creek	1.03	.44
374	1026000636	Wolf Creek	1.30	.69
375	1026000637	Thompson Creek	2.50	1.66
376	1026000638	Cow Creek	1.36	.87
377	1026000639	Goose Creek	.77	.17
378	1026000640	Wilson Creek	2.10	1.41
379	1026000641	Spring Creek	0	0
380	1026000642	Clear Creek	3.19	2.36
381	1026000643	Shelter Creek	0	0
382	1026000644	Loss Creek	1.48	.84
383	1026000645	Oxide Creek	1.66	1.04
384	1026000646	Turkey Creek	1.60	.96
385	1026000647	Mud Creek	.36	0
386	1026000648	Skunk Creek	.37	0
387	102600065	Smoky Hill River	111	73.0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
388	102600066	Buffalo Creek	3.14	2.48
389	102600067	Smoky Hill River	88.5	59.5
390	102600068	Smoky Hill River	85.3	56.3
391	102600069	Smoky Hill River	81.4	52.4
392	102600071	Big Creek	23.8	11.7
393	102600072	Walker Creek	.32	0
394	102600073	Big Creek	22.2	10.4
395	102600074	Big Creek, North Fork	.82	.36
396	102600075	Big Creek	19.5	8.29
397	102600076	Ogallah Creek	.24	.08
398	102600077	Big Creek	4.99	3.52
399	102600078	Chetolah Creek	.02	.01
400	102600079	Mud Creek	0	0
401	102600081	Smoky Hill River	1,020	618
402	1026000810	Smoky Hill River	964	573
403	1026000811	Smoky Hill River	423	238
404	1026000812	Smoky Hill River	400	224
405	1026000813	Smoky Hill River	198	136
406	1026000814	Smoky Hill River	162	108
407	1026000815	Smoky Hill River	134	87.9
408	1026000816	Sharps Creek	5.99	4.46
409	1026000817	Kentucky Creek	4.18	3.16
410	1026000818	Gypsum Creek	24.6	19.7
411	1026000819	Stag Creek	2.48	1.85
412	102600082	Smoky Hill River	1,010	608
413	1026000820	Gypsum Creek	9.00	7.00
414	1026000821	Gypsum Creek	5.41	4.14
415	1026000822	Gypsum Creek	4.11	3.08
416	1026000823	Battle Creek	1.55	1.04
417	1026000824	Gypsum Creek, South	2.98	2.22
418	1026000825	Holland Creek	10.4	8.04
419	1026000826	Holland Creek, West	3.69	2.69
420	1026000827	Holland Creek, East	2.52	1.80
421	1026000828	Turkey Creek	16.0	12.2
422	1026000829	Turkey Creek, West Branch	3.59	2.47
423	102600083	Chapman Creek	37.0	24.0
424	1026000830	Turkey Creek	9.75	7.18
425	1026000831	Lyon Creek	34.1	34.6
426	1026000832	Unnamed stream	.71	.27

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
427	1026000834	Lyon Creek, West Branch	17.1	16.1
428	1026000835	Carry Creek	8.01	6.63
429	1026000836	Dry Creek	7.74	5.84
430	102600084	Chapman Creek	8.30	6.12
431	1026000840	Basket Creek	1.71	1.04
432	1026000841	Lone Tree Creek	4.02	3.19
433	1026000842	Otter Creek	1.18	.58
434	1026000843	Dry Creek, East	1.93	1.30
435	1026000844	Gypsum Creek, West Branch	3.34	2.49
436	1026000845	Spring Creek	3.08	2.27
437	1026000846	Sand Creek	2.82	2.46
438	1026000847	Wiley Creek	1.29	.87
439	1026000848	Hobbs Creek	3.29	2.38
440	1026000849	McAllister Creek	1.56	.87
441	102600085	Chapman Creek, West	5.45	3.97
442	1026000850	Turkey Creek, East	3.22	2.14
443	1026000851	Lime Creek	2.91	2.20
444	10260008515	Unnamed stream	0	0
445	1026000852	Paint Creek	1.62	1.02
446	1026000854	Kentucky Creek, West	1.10	.66
447	10260008540	Lyon Creek	6.13	4.96
448	10260008542	Unnamed stream	0	0
449	1026000856	Pewee Creek	1.38	.98
450	1026000857	Gypsum Creek, North	1.77	1.20
451	1026000858	Middle Branch	1.27	.66
452	102600086	Smoky Hill River	1,000	597
453	10260008618	Unnamed stream	0	0
454	10260008638	Unnamed stream	1.15	.66
455	102600088	Mud Creek	13.7	11.4
456	102600089	Smoky Hill River	972	578
457	1026000910	Spring Creek, East	.12	.02
458	102600091061	Unnamed stream	0	0
459	1026000911	Saline River	36.2	16.1
460	1026000912	Saline River	28.5	12.3
461	1026000913	Unnamed stream	.07	.03
462	1026000914	Saline River	16.6	6.77
463	1026000915	Saline River, North Fork	.27	.02
464	1026000916	Saline River	4.49	1.32
465	1026000917	Saline River, North Fork	.06	.01

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
466	1026000918	Saline River, South Fork	0.21	0.03
467	1026000919	Trego Creek	.37	.04
468	1026000920	Salt Creek	1.25	.49
469	1026000921	Spring Brook Creek	.02	0
470	1026000922	Plum Creek	.01	0
471	1026000923	Coyote Creek	.02	0
472	1026000924	Trego Creek	.04	.02
473	1026000925	Happy Creek	.04	.01
474	1026000926	Chalk Creek	.01	0
475	1026000927	Wild Horse Creek	.03	.01
476	1026000928	Tomcat Creek	.02	.01
477	1026000929	Sweetwater Creek	.32	.01
478	1026000930	Cedar Creek	2.57	1.61
479	102600094	Saline River	76.9	41.7
480	102600095	Paradise Creek	1.03	.91
481	102600096	Eagle Creek	.91	.31
482	102600097	Paradise Creek	.81	.37
483	102600098	Saline River	64.0	31.0
484	102600099	Saline River	57.1	27.1
485	102600101	Saline River	121	54.5
486	1026001010	Wolf Creek	7.04	6.34
487	1026001011	Wolf Creek, East Fork	2.09	1.20
488	1026001012	Wolf Creek, West Fork	1.80	2.20
489	1026001013	Saline River	21.0	16.0
490	1026001014	Bullfoot Creek	5.87	4.33
491	1026001015	Bullfoot Creek	2.44	1.62
492	1026001016	Spring Creek	2.65	1.80
493	1026001017	Elkhorn Creek	6.48	4.86
494	1026001018	Table Rock Creek	3.57	2.58
495	1026001019	Mulberry Creek	27.0	21.7
496	102600102	Saline River	109	47.7
497	1026001020	Mulberry Creek	25.0	20.0
498	1026001021	Mulberry Creek	11.9	9.31
499	1026001022	Mulberry Creek	7.07	5.40
500	1026001023	Eff Creek	3.43	2.49
501	1026001024	Spring Creek	12.4	9.66
502	1026001025	Spring Creek, West	5.07	3.82
503	1026001026	Spring Creek	5.07	3.78
504	1026001027	Spring Creek	2.21	1.50

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
505	1026001028	Ralston Creek	2.89	2.07
506	1026001029	Dry Creek	1.12	.57
507	102600103	Saline River	105	45.2
508	1026001030	Fourmile Creek	.51	.03
509	1026001031	Coon Creek	.21	0
510	1026001032	Trail Creek	.93	.34
511	1026001033	Blue Stem Creek	1.15	.52
512	1026001034	Lost Creek	.71	.26
513	1026001035	Yauger Creek	1.15	.61
514	1026001036	Twelvemile Creek	1.14	.63
515	1026001037	Twin Creek, West	2.02	1.27
516	1026001038	Elkhorn Creek, West	2.26	1.49
517	1026001039	Owl Creek	1.95	1.26
518	102600104	Saline River	86.5	38.6
519	1026001040	Table Rock Creek	1.79	1.17
520	1026001041	Shaw Creek	1.11	.62
521	102600105	Saline River	77.5	35.5
522	102600106	Spillman Creek	7.48	5.44
523	102600107	Bacon Creek	1.34	.63
524	102600108	Spillman Creek, North Branch	2.78	1.74
525	102600109	Saline River	56.5	28.3
526	1026001110	Game Creek	.04	0
527	1026001111	Solomon River, North Fork	9.29	2.57
528	1026001112	Elk Creek	.09	0
529	1026001113	Solomon River, North Fork	3.86	.61
530	1026001115	Bow Creek	9.50	5.60
531	1026001116	Bow Creek	.05	.03
532	1026001117	Bow Creek, South	.35	.19
533	1026001119	Spring Creek	.01	0
534	1026001120	Lost Creek	.01	0
535	1026001121	Scull Creek	.01	0
536	1026001122	Wolf Creek	.01	0
537	1026001123	Beaver Creek	.01	0
538	1026001124	Ash Creek	.01	0
539	1026001125	Elk Creek, East	.04	0
540	1026001126	Sand Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
541	1026001127	Game Creek	0	0
542	1026001128	Cactus Creek	.01	0
543	102600115	Solomon River, North Fork	26.0	8.4
544	102600116	Crooked Creek	.03	0
545	102600117	Solomon River, North Fork	16.9	5.20
546	102600118	Big Timber Creek	.01	0
547	102600119	Solomon River, North Fork	12.2	3.61
548	1026001210	Beaver Creek	4.67	3.17
549	1026001211	Beaver Creek, East Branch	.92	.28
550	1026001212	Beaver Creek, Middle	2.56	1.53
551	1026001213	Beaver Creek, Middle	1.22	.52
552	1026001214	Beaver Creek, West	.64	.06
553	1026001215	Solomon River, North Fork	66.8	28.4
554	1026001216	Cedar Creek	4.28	2.82
555	1026001217	Cedar Creek, East	.59	0
556	1026001218	Cedar Creek	2.74	1.64
557	1026001219	Cedar Creek, Middle	1.03	.34
558	102600122	Oak Creek	8.89	6.59
559	1026001220	Cedar Creek, West	.77	.13
560	1026001221	Solomon River, North Fork	59.9	25.4
561	1026001222	Solomon River, North Fork	56.6	24.0
562	1026001223	Deer Creek	6.41	5.16
563	1026001224	Plum Creek	.50	0
564	1026001225	Deer Creek	4.92	3.99
565	1026001226	Big Creek	.23	0
566	1026001227	Deer Creek	3.74	3.08
567	1026001228	Spring Creek	.12	0
568	1026001229	Deer Creek	2.68	2.26
569	102600123	Little Oak Creek	1.42	.72
570	1026001230	Plotner Creek	0	0
571	1026001231	Deer Creek	1.64	1.46
572	1026001233	Medicine Creek	.42	0
573	1026001234	Boughton Creek	0	0
574	1026001237	Cedar Creek, East	0	0
575	1026001238	Starvation Creek	0	.08
576	1026001239	Oak Creek, West	.62	.07
577	102600124	Oak Creek	6.67	4.83
578	1026001240	Oak Creek, East	1.36	.69

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
579	1026001241	Glen Rock Creek	0	0
580	1026001242	Dry Creek	0	0
581	1026001243	Buck Creek	.15	0
582	1026001244	Lawrence Creek	.86	.22
583	1026001245	Lindley Creek	0	0
584	102600125	Solomon River, North Fork	87.9	36.3
585	102600126	Twelvemile Creek	1.15	.46
586	102600127	Solomon River, North Fork	80.0	34.0
587	102600128	Spring Creek	.97	.31
588	102600129	Solomon River, North Fork	73.1	31.1
589	1026001310	Solomon River, South Fork	12.4	4.66
590	1026001311	Sand Creek	.02	.01
591	1026001312	Solomon River, South Fork	10.8	3.95
592	1026001313	Antelope Creek	.02	.01
593	1026001314	Solomon River, South Fork	7.33	2.39
594	1026001315	Sand Creek	.38	.12
595	1026001316	Solomon River, South Fork	1.94	.60
596	1026001317	Jackson Branch	0.53	.09
597	1026001318	Wildhorse Creek	.04	.01
598	1026001319	Foster Creek	0	0
599	1026001320	Storer Creek	0	0
600	1026001321	Youngs Creek	.01	0
601	1026001322	Rock Creek	.01	0
602	1026001323	Martin Creek, South	.02	.01
603	1026001324	Jackson Branch	.03	.01
604	1026001325	Slate Creek	0	0
605	1026001326	Skunk Creek	.01	0
606	1026001327	Sand Creek	.08	.02
607	102600134	Solomon River, South Fork	35.4	15.1
608	102600135	Spring Creek	.39	.05
609	102600136	Solomon River, South Fork	27.9	11.4
610	102600137	Solomon River, South Fork	21.8	8.76
611	102600138	Coon Creek	.05	.02
612	10260013817	Spring Creek	0	0
613	102600139	Solomon River, South Fork	17.7	6.93
614	102600141	Solomon River, South Fork	61.7	23.0
615	1026001410	Solomon River, South Fork	2.79	.67
616	1026001413	Lost Creek	.04	0
617	1026001414	Boxelder Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
618	1026001415	Elm Creek	0.08	0
619	1026001416	Medicine Creek	.97	.29
620	1026001417	Medicine Creek	.83	.19
621	1026001418	Kill Creek	1.48	1.14
622	1026001419	Covert Creek	2.38	1.42
623	102600142	Solomon River, South Fork	59.3	22.2
624	1026001420	Twin Creek	3.40	2.21
625	1026001421	Carr Creek	2.46	1.51
626	1026001422	Ash Creek	0	0
627	1026001423	Cocklebur Creek	0	0
628	1026001424	Robbers Roost Creek	0	0
629	1026001425	Jim Creek	0	0
630	1026001426	Lucky Creek	.20	0
631	1026001427	Crooked Creek	.17	0
632	1026001428	Kill Creek, East	.57	.02
633	1026001429	Twin Creek, East	.77	.19
634	102600143	Solomon River, South Fork	56.0	21.0
635	10260014363	Dibble Creek	0	0
636	10260014395	Sand Creek	0	0
637	102600144	Solomon River, South Fork	45.6	16.7
638	102600145	Solomon River, South Fork	36.1	12.7
639	102600146	Solomon River, South Fork	30.5	10.4
640	102600147	Solomon River, South Fork	16.3	4.98
641	10260014798	Solomon River, South Fork	.68	0
642	102600148	Solomon River, South Fork	11.8	3.56
643	102600149	Solomon River, South Fork	7.90	2.31
644	102600151	Solomon River	321	174
645	1026001510	Pipe Creek	4.60	3.36
646	1026001511	Pipe Creek, West	2.83	1.85
647	1026001512	Solomon River	210	185
648	1026001513	Plum Creek	2.87	1.84
649	1026001514	Solomon River	169	125
650	1026001515	Brown Creek	2.45	1.55
651	1026001516	Solomon River	154	70.8
652	1026001518	Limestone Creek	8.75	6.56
653	1026001519	Limestone Creek	3.28	2.26
654	102600152	Coal Creek	8.82	7.15
655	1026001520	Limestone Creek	3.79	2.62
656	1026001521	Limestone Creek, Middle	1.03	.45

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
657	1026001522	Limestone Creek, West	2.25	1.41
658	1026001523	Solomon River	144	52.6
659	1026001524	Granite Creek	.41	0
660	1026001526	Walnut Creek	.70	.13
661	1026001527	Salt Creek	21.9	14.3
662	1026001528	Cow Creek	2.27	1.42
663	1026001529	Salt Creek	15.3	9.91
664	102600153	Solomon River	303	176
665	1026001530	Salt Creek	6.15	4.04
666	1026001531	Rattlesnake Creek	4.18	2.77
667	1026001532	Rattlesnake Creek	1.79	1.00
668	1026001533	Battle Creek	2.09	1.25
669	1026001534	Solomon River tributary	0	0
670	1026001535	Limestone Creek tributary	.06	0
671	1026001536	Mulberry Creek	.57	.05
672	1026001537	Plum Creek tributary	1.03	.42
673	1026001538	Mill Creek	.01	0
674	1026001539	Solomon River tributary	.15	0
675	102600154	Sand Creek	4.54	3.60
676	1026001540	Solomon River tributary	0	0
677	1026001541	Leban Creek	.61	.06
678	1026001542	Solomon River tributary	.10	0
679	1026001543	Salt Creek tributary	0	0
680	1026001544	Salt Creek tributary	.77	.20
681	1026001545	Fifth Creek	.95	.35
682	1026001546	Solomon River tributary	.85	.29
683	1026001547	Elkhorn Creek, West	1.67	1.01
684	1026001548	Cris Creek	1.81	1.08
685	1026001549	Mortimer Creek	1.07	.47
686	102600155	Solomon River	293	177
687	1026001550	Solomon River tributary	1.64	.92
688	1026001551	Solomon River tributary	1.05	.49
689	1026001552	Solomon River tributary	.24	0
690	1026001553	Spring Creek	2.84	2.01
691	1026001554	Second Creek	1.08	.47
692	1026001555	Salt Creek tributary	1.04	.51
693	1026001556	Lost Creek	1.50	.83
694	1026001557	Battle Creek	1.51	.92
695	1026001558	Antelope Creek	1.03	.54

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
696	1026001559	Limestone Creek tributary	1.52	0.88
697	102600156	Solomon River	232	183
698	102600157	Lindsey Creek	2.73	1.78
699	102600158	Solomon River	226	183
700	102600159	Pipe Creek	8.31	6.17
701	102701011	Kansas River	1,780	1,420
702	1027010110	Humbolt Creek	6.35	4.69
703	1027010111	McDowell Creek	10.6	8.14
704	1027010112	Silver Creek	.99	.49
705	1027010113	Little Arkansas Creek	1.59	.91
706	1027010114	Kitten Creek	1.43	.92
707	1027010115	Threemile Creek	3.07	2.32
708	1027010116	Little Kitten Creek	.82	.45
709	1027010117	Swede Creek	2.35	1.60
710	1027010118	Davis Creek	2.81	1.87
711	1027010119	Dry Creek	3.13	2.14
712	102701012	Wildcat Creek	11.2	8.67
713	1027010120	Mulberry Creek	.91	.38
714	1027010121	Ralls Creek	1.07	.48
715	102701013	Kansas River	1,760	1,410
716	102701014	Kansas River	1,740	1,390
717	102701015	Sevenmile Creek	5.33	4.20
718	102701016	Kansas River	1,740	1,390
719	102701017	Kansas River	1,680	1,350
720	102701018	Clarks Creek	23.8	18.5
721	102701019	Clarks Creek	16.6	12.7
722	102701021	Kansas River	4,030	3,200
723	1027010210	Kansas River	3,820	3,020
724	10270102100	Vassar Creek	1.60	1.02
725	10270102101	Post Creek	1.68	1.13
726	10270102102	Blacksmith Creek	1.76	1.19
727	10270102103	Elm Creek	2.30	1.88
728	10270102104	Whetstone Creek	2.01	1.64
729	10270102105	Spring Creek	4.12	3.68
730	10270102106	Shunganunga Creek, South Branch	1.01	.49
731	10270102107	Tecumseh Creek	1.09	.74
732	1027010211	Kansas River	3,800	3,090
733	1027010212	Cross Creek	19.9	16.1
734	102701021223	Riley Creek	3.99	3.34

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
735	102701021229	Deep Creek	2.64	2.14
736	1027010213	Kansas River	3,740	3,210
737	102701021365	Indian Creek	2.18	1.59
738	102701021367	Unnamed stream	0	0
739	102701021389	Unnamed stream	.47	.29
740	1027010214	Kansas River	3,650	3,440
741	1027010215	Vermillion Creek	65.7	50.54
742	1027010216	Vermillion Creek	34.7	23.3
743	1027010217	Vermillion Creek	27.7	17.6
744	1027010218	Vermillion Creek	10.6	7.32
745	1027010219	French Creek	5.90	4.05
746	102701022	Muddy Creek	11.4	9.47
747	1027010220	Indian Creek	3.58	2.57
748	1027010221	Rock Creek	27.9	23.4
749	1027010222	Rock Creek, East Fork	8.53	6.29
750	1027010223	Pleasant Hill Run	8.23	6.34
751	1027010224	Kansas River	3,470	2,720
752	1027010225	Kansas River	3,450	2,700
753	1027010226	Deep Creek	9.75	7.59
754	1027010227	Mill Creek	69.5	64.8
755	1027010228	Mill Creek, West Branch	19.1	16.5
756	1027010229	Mill Creek, West Branch	8.37	6.82
757	102701023	Kansas River	3,990	3,160
758	1027010230	Illinois Creek	4.96	3.81
759	1027010231	Mill Creek, East Branch	15.0	12.7
760	1027010232	Mill Creek, South Branch	5.29	4.16
761	1027010233	Mill Creek, East Branch	8.39	6.83
762	1027010234	Mission Creek	12.9	10.3
763	1027010235	Ross Creek	.70	.35
764	1027010236	Mission Creek	8.38	6.64
765	1027010237	Mission Creek	5.59	4.36
766	1027010238	Mission Creek, South Branch	2.12	1.57
767	1027010239	Shunganunga Creek	6.33	4.93
768	10270102394	Stinson Creek	.52	.24
769	102701024	Kansas River	3,950	3,130
770	1027010240	Shunganunga Creek	3.91	2.88
771	1027010241	Deer Creek	1.11	.67
772	1027010242	Mulberry Creek	.71	.25
773	1027010243	Hise Creek	2.83	1.99

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
774	1027010244	Mud Creek	0.42	0.01
775	1027010245	Cow Creek	.99	.57
776	1027010246	Coal Creek	2.89	1.93
777	1027010247	Gilson Creek	.53	.08
778	1027010248	Spring Creek	1.55	.94
779	1027010249	Wolf Creek	1.21	.64
780	102701025	Soldier Creek	49.6	35.7
781	1027010250	Wilson Creek	2.62	1.71
782	1027010251	Darnells Creek	1.04	.53
783	1027010252	Jim Creek	3.43	2.46
784	1027010253	Adams Creek	2.63	1.74
785	1027010254	Spring Creek	.70	.30
786	1027010255	Bartlett Creek	2.73	1.89
787	1027010256	Mud Creek	3.00	1.98
788	1027010257	Brush Creek	2.42	1.56
789	1027010258	Elm Slough	6.16	6.86
790	1027010259	Pomeroy Creek	.70	.35
791	102701026	Little Soldier Creek	8.73	6.59
792	1027010260	Lost Creek	4.75	3.99
793	1027010261	Little Cross Creek	2.29	1.55
794	1027010262	Illinois Creek	.61	.24
795	1027010263	Bourbonais Creek	4.55	4.12
796	1027010264	Blackjack Creek	4.26	5.02
797	1027010265	Sand Creek	4.61	4.85
798	1027010266	Emmons Creek	1.29	.77
799	1027010267	Antelope Creek	3.83	3.26
800	1027010268	Wells Creek	2.37	1.74
801	1027010269	Doyle Creek	6.41	5.61
802	10270102693	Unnamed stream	2.60	1.92
803	102701027	Little Soldier Creek	6.81	5.09
804	1027010271	Turkey Creek	3.39	2.69
805	1027010272	Deep Creek, East Branch	1.91	1.33
806	1027010273	Hendricks Creek	2.45	1.82
807	1027010274	Pretty Creek	1.27	.83
808	1027010275	Paw Paw Creek	1.42	.95
809	1027010276	Spring Creek	.53	.23
810	1027010277	Mulberry Creek	1.20	.63
811	1027010278	Dog Creek	1.93	1.41
812	1027010279	Dry Creek	1.38	.86

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
813	102701028	Unnamed stream	0.78	0.45
814	1027010280	Loire Creek	3.34	2.50
815	1027010281	Nehring Creek	3.00	2.31
816	1027010282	Kuenzli Creek	4.26	3.31
817	1027010283	Mission Creek, North Branch	1.58	1.12
818	1027010284	Johnson Creek	1.36	.92
819	1027010285	Snokomo Creek	3.35	2.55
820	1027010287	James Creek	2.04	1.47
821	1027010288	Salt Creek	1.04	.59
822	1027010289	Sullivan Creek	1.09	.66
823	102701029	Soldier Creek	27.2	23.2
824	1027010290	Big Elm Creek	.65	.32
825	102701029009	Soldier Creek	5.6	4.6
826	1027010291	Walnut Creek	2.23	1.59
827	1027010292	Dutch Creek	1.60	1.11
828	1027010293	Muddy Creek, West Fork	2.90	2.20
829	1027010294	Coryell Creek	.76	.37
830	1027010295	Snake Creek	1.75	1.42
831	1027010296	Messhoss Creek	1.72	1.26
832	1027010297	Halfday Creek	3.95	3.09
833	1027010298	Elm Creek	.80	.47
834	1027010299	Little Muddy Creek	1.45	1.10
835	102701031	Delaware River	91.9	73.5
836	1027010312	Delaware River	101	70.8
837	1027010313	Delaware River	88.4	60.2
838	1027010314	Delaware River	67.7	54.4
839	1027010315	Delaware River	56.0	51.0
840	1027010316	Little Grasshopper Creek	5.01	3.75
841	1027010317	Delaware River	44.3	39.4
842	1027010318	Grasshopper Creek	10.2	8.11
843	1027010319	Clear Creek	2.07	1.30
844	1027010320	Grasshopper Creek	6.96	5.34
845	1027010321	Delaware River	31.0	26.7
846	1027010322	Delaware River	15.8	13.0
847	1027010323	Delaware River	4.64	3.40
848	1027010324	Gregg Creek	6.91	5.30
849	1027010325	Muddy Creek	11.3	8.87
850	1027010326	Muddy Creek	4.32	3.13
851	1027010327	Wolfley Creek	4.84	3.59

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
852	1027010328	Straight Creek	13.0	10.1
853	1027010329	Elk Creek	14.0	10.7
854	1027010330	Elk Creek	5.42	4.02
855	1027010331	Unnamed stream	.24	0
856	1027010332	Cedar Creek	10.6	8.41
857	1027010334	Rock Creek	6.84	5.51
858	1027010336	Plum Creek	1.49	.91
859	1027010337	Cedar Creek	.59	.11
860	1027010338	Squaw Creek	.36	0
861	1027010339	Barnes Creek	1.44	.89
862	1027010340	Mission Creek	1.12	.65
863	1027010341	Otter Creek	3.17	2.25
864	1027010342	Spring Creek	7.00	5.31
865	1027010343	Negro Creek	2.19	1.47
866	1027010344	Brush Creek	.03	0
867	1027010345	Banner Creek	3.09	2.22
868	1027010346	Cedar Creek, North	3.19	2.41
869	1027010347	Bills Creek	2.09	1.41
870	1027010348	Nebo Creek	1.46	.92
871	1027010349	Catamount Creek	1.40	.99
872	1027010350	Coal Creek	4.08	2.97
873	1027010351	Walnut Creek	2.92	2.18
874	1027010352	Tick Creek	2.17	1.64
875	1027010353	Rock Creek	2.26	1.85
876	1027010354	Brush Creek	1.12	.76
877	1027010355	Honey Creek	1.60	1.17
878	1027010356	Claywell Creek	1.45	1.08
879	1027010357	Little Wild Horse Creek	4.17	3.85
880	10270103602	Mosquito Creek	2.27	1.59
881	102701037	Slough Creek	7.19	6.19
882	102701038	Burr Oak Creek	1.15	.93
883	10270103805	Little Slough Creek	4.11	3.60
884	102701039	Slough Creek	4.04	3.31
885	102701039032	Cedar Creek, South	5.34	4.15
886	102701041	Kansas River	4,910	4,040
887	1027010410	Crooked Creek	6.91	5.16
888	102701041011	Mooney Creek	.80	.41
889	1027010411	Unnamed stream	1.53	.95
890	102701041154	Piper Creek	1.99	1.87

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
891	102701041164	Mission Creek, West	1.77	1.73
892	102701041175	Brenner Heights Creek	2.29	2.44
893	102701041178	Mattoon Creek	1.17	1.53
894	1027010412	Crooked Creek	3.29	2.32
895	1027010413	Scatter Creek	5.85	4.90
896	1027010414	Tonganoxie Creek	4.79	4.02
897	1027010415	Ninemile Creek	11.2	9.92
898	1027010416	Unnamed stream	1.85	1.60
899	1027010417	Ninemile Creek	3.96	3.55
900	1027010418	Kansas River	4,700	3,820
901	1027010419	Kansas River	4,680	3,800
902	102701042	Kansas River	4,880	4,020
903	1027010420	Mud Creek	9.64	8.89
904	1027010421	Kansas River	4,510	3,610
905	1027010422	Buck Creek	4.54	4.31
906	1027010423	Kansas River	4,490	3,590
907	1027010424	Wakarusa River	30.1	34.0
908	1027010425	Wakarusa River	19.6	23.7
909	102701043	Kansas River	4,870	4,010
910	1027010430	Wakarusa River	24.0	19.7
911	1027010431	Wakarusa River	14.3	11.4
912	1027010432	Burys Creek	2.49	1.82
913	1027010435	Rock Creek	3.88	3.25
914	1027010436	Washington Creek	7.97	7.07
915	1027010437	Kill Creek	7.28	6.33
916	10270104373	Barber Creek	3.67	3.83
917	10270104379	Tooley Creek	1.55	1.94
918	1027010438	Cedar Creek	8.02	7.08
919	10270104383	Clear Creek	2.94	2.63
920	1027010439	Mill Creek	11.9	10.8
921	102701044	Kansas River	4,860	4,000
922	10270104406	Hays Creek	2.10	2.21
923	1027010441	Camp Creek	3.43	2.76
924	1027010442	Hulls Branch	.36	.01
925	1027010443	Howard Creek	0	0
926	10270104437	Hanson Creek	.23	0
927	1027010444	Buttermilk Creek	1.18	.88
928	1027010445	Dawson Creek	1.53	1.25
929	10270104452	Unnamed stream	1.68	1.37

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
930	1027010446	Brush Creek, West	1.93	1.71
931	1027010447	Prairie Creek	1.14	.77
932	1027010448	Indian Creek	1.33	1.08
933	1027010449	Brush Creek	2.19	1.94
934	102701045	Stranger Creek	69.9	56.4
935	1027010450	Plum Creek	1.51	1.34
936	1027010451	Jarbalo Creek	2.33	1.91
937	1027010452	Fall Creek	3.13	2.56
938	1027010453	Wolf Creek	5.35	4.64
939	1027010454	Hog Creek	1.09	.62
940	1027010455	Muncie Creek	4.38	4.37
941	1027010456	Oakley Creek	3.31	3.06
942	1027010457	Stone House Creek	4.70	4.50
943	1027010458	Cow Creek	1.78	1.47
944	10270104583	Unnamed stream	1.32	.80
945	10270104584	Wakarusa River tributary	.64	.26
946	1027010459	Little Kaw Creek	2.32	1.83
947	102701046	Stranger Creek	59.3	46.7
948	1027010461	Mission Creek, East	3.79	3.62
949	1027010462	Little Turkey Creek	5.45	5.35
950	1027010463	Wakarusa River, South Branch	3.65	2.74
951	1027010464	Wakarusa River, Middle Branch	1.58	1.01
952	1027010465	Sixmile Creek	3.79	2.73
953	1027010466	Camp Creek	3.51	2.73
954	1027010467	Lynn Creek	1.73	1.21
955	1027010468	Elk Creek	2.38	1.82
956	1027010469	Baldwin Creek	3.21	2.95
957	102701047	Stranger Creek	52.0	40.0
958	1027010470	Yankee Tank Creek	2.43	2.20
959	10270104701	Deer Creek	3.74	3.15
960	1027010471	Little Wakarusa Creek	3.08	2.58
961	1027010472	Captain Creek	5.24	4.56
962	1027010473	Kent Creek	1.78	1.57
963	1027010474	Camp Creek	1.97	1.67
964	1027010475	Spoon Creek	1.94	1.59
965	1027010476	Little Cedar Creek	1.81	1.55
966	1027010477	Turkey Creek	6.66	6.43
967	1027010478	Little Mill Creek	3.65	3.46
968	1027010479	Chicken Creek	2.76	2.43

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
969	102701048	Stranger Creek	30.0	23.5
970	1027010480	Coal Creek	5.99	5.56
971	10270104830	Stone House Creek, West	1.47	1.43
972	10270104881	Little Stranger Creek	3.97	3.10
973	10270104883	Little Sandy Creek	.70	.33
974	102701049	Stranger Creek	10.7	8.25
975	10270104902	Rock Creek	.87	.55
976	102701049057	Stone House Creek, East	1.54	1.49
977	10270104959	Little Stranger Creek	2.58	1.70
978	102702051	Big Blue River	1,170	975
979	1027020510	Black Vermillion River	44.1	29.4
980	1027020511	Black Vermillion River	28.6	19.6
981	1027020512	Black Vermillion River, South Fork	4.18	2.76
982	1027020513	Black Vermillion River	18.7	12.9
983	1027020514	Black Vermillion River	5.49	3.85
984	1027020515	Black Vermillion River, North Fork	7.81	5.19
985	1027020516	Robidoux Creek	7.65	5.03
986	1027020517	Big Blue River	644	535
987	1027020518	Big Blue River	476	469
988	1027020519	Spring Creek	3.28	1.95
989	102702052	Big Blue River	1,170	974
990	1027020520	Big Blue River	469	467
991	1027020521	Big Blue River	229	267
992	1027020522	Mission Creek	2.35	1.29
993	1027020526	Horseshoe Creek	8.73	6.44
994	1027020529	Fancy Creek, West	19.7	16.4
995	1027020531	Mill Creek	4.12	2.9
996	1027020533	Raemer Creek	1.16	.54
997	1027020534	Meadow Creek	0	0
998	1027020535	Little Indian Creek	.40	0
999	1027020536	Deer Creek	1.44	.78
1000	1027020537	Indian Creek	1.03	.47
1001	1027020538	Scotch Creek	0	0
1002	1027020539	Lily Creek	0	0
1003	1027020540	Bommer Creek	0	0
1004	1027020541	Elm Creek, North	.91	.24
1005	1027020542	Murdock Creek	.08	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1006	1027020543	Hop Creek	0.96	0.41
1007	1027020544	Dutch Creek	.54	.12
1008	1027020545	Schell Creek	0	0
1009	1027020546	Elm Creek	1.59	.85
1010	1027020547	Perkins Creek	.50	.01
1011	1027020548	Little Timber Creek	1.44	.64
1012	1027020549	Ackerman Creek	2.24	1.23
1013	1027020550	Weyer Creek	1.54	.77
1014	1027020551	Johnson Fork	.24	0
1015	1027020552	Corndodger Creek	.80	.20
1016	1027020553	Dog Walk Creek	.01	.01
1017	1027020554	Game Fork	3.03	2.15
1018	1027020555	De Shazer Creek	1.33	.65
1019	1027020556	Cedar Creek	.44	.01
1020	10270205566	Bucksnort Creek	.73	.26
1021	1027020557	Jim Creek	.69	.16
1022	10270205573	Bluff Creek	3.34	2.24
1023	1027020558	Kearney Branch	1.13	.49
1024	1027020559	Carter Creek	1.22	.72
1025	1027020560	Deadman Creek	1.59	.99
1026	1027020561	Fancy Creek, North Fork	3.06	2.18
1027	1027020562	Otter Creek, North	3.74	2.62
1028	1027020563	School Branch	2.03	1.35
1029	1027020564	Timber Creek	2.14	1.52
1030	1027020565	Spring Creek	8.51	6.17
1031	1027020567	Otter Creek	3.08	2.10
1032	1027020568	Phiel Creek	1.32	.86
1033	102702057	Big Blue River	721	592
1034	102702058	Black Vermillion River	50.2	32.8
1035	102702059	Black Vermillion River, Clear Fork	4.28	2.87
1036	102702059029	Fancy Creek	19.9	16.5
1037	1027020641	Dry Creek	0	0
1038	102702071	Little Blue River	324	284
1039	1027020712	Rose Creek	4.48	3.19
1040	1027020713	Joy Creek	3.53	2.64
1041	1027020714	Mill Creek	33.2	25.1
1042	1027020715	Spring Creek	5.28	4.22
1043	1027020716	Mill Creek	26.0	19.0
1044	1027020717	Riddle Creek	2.85	2.05

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1045	1027020718	Mill Creek	19.5	14.4
1046	1027020719	Salt Creek	1.48	.94
1047	102702072	Little Blue River	310	272
1048	1027020720	Mill Creek	16.9	12.5
1049	1027020721	Bowman Creek	2.56	1.75
1050	1027020722	Mill Creek	11.2	8.29
1051	1027020723	Coon Creek	8.61	6.52
1052	1027020724	Humphrey Branch	.11	0
1053	1027020725	Cherry Creek	2.00	1.24
1054	1027020726	Myer Creek	2.48	1.66
1055	1027020727	Gray Branch	1.20	.67
1056	1027020728	Silver Creek	0	0
1057	1027020729	Jones Creek	.57	.20
1058	102702073	Little Blue River	226	215
1059	1027020730	Spring Creek	1.34	1.02
1060	1027020731	Mill Creek, South Fork	3.30	2.34
1061	1027020732	Buffalo Creek	.98	.66
1062	1027020733	Melvin Creek	.81	.54
1063	1027020734	Iowa Creek	2.64	2.03
1064	1027020735	Camp Creek	1.54	1.08
1065	1027020736	Ash Creek	2.00	1.32
1066	1027020737	Malone Creek	.13	0
1067	1027020738	Beaver Creek	1.51	.85
1068	1027020739	Lane Branch	1.54	1.03
1069	102702074	Little Blue River	220	211
1070	1027020740	Cedar Creek	1.11	.56
1071	1027020741	Walnut Creek	2.13	1.31
1072	1027020742	Bolling Creek	.77	.31
1073	1027020743	Mercer Creek	.18	0
1074	1027020744	Camp Creek	1.39	.76
1075	1027020745	Fawn Creek	2.84	1.95
1076	1027020749	School Creek	217	208
1077	102901011	Marais des Cygnes River	223	241
1078	1029010110	Marais des Cygnes River	182	192
1079	102901011072	Unnamed stream	.82	.44
1080	102901011083	Soldier Creek	2.31	1.74
1081	1029010111	Tauy Creek	11.8	10.5
1082	1029010112	Marais des Cygnes River	151	156
1083	1029010113	Eightmile Creek	8.30	7.30

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1084	1029010114	Marais des Cygnes River	128	132
1085	1029010115	Marais des Cygnes River	123	127
1086	102901011531	Long Creek	8.53	6.92
1087	102901011589	Mill Creek	0	0
1088	1029010116	Appanoose Creek	9.28	7.77
1089	1029010117	Marais des Cygnes River	108	112
1090	1029010118	Marais des Cygnes River	102	106
1091	1029010119	Marais des Cygnes River	99.2	103
1092	102901012	Plum Creek	2.50	2.16
1093	1029010120	Hundred and Ten Mile Creek	20.0	22.0
1094	1029010125	Hundred and Ten Mile Creek	5.52	4.24
1095	1029010127	Dragoon Creek	15.0	14.1
1096	1029010128	Marais des Cygnes River	69.5	71.6
1097	1029010129	Salt Creek	7.70	5.10
1098	102901013	Marais des Cygnes River	218	235
1099	1029010130	Marais des Cygnes River	56.2	57.6
1100	1029010131	Marais des Cygnes River	51.3	52.4
1101	1029010132	Marais des Cygnes River	45.4	46.1
1102	1029010133	Marais des Cygnes River	35.7	35.9
1103	1029010137	Marais des Cygnes River	16.1	17.5
1104	1029010138	Marais des Cygnes River	13.0	15.0
1105	1029010139	Elm Creek	7.86	7.46
1106	102901014	Turkey Creek	3.06	2.67
1107	1029010140	Hundred and Forty Two Mile Creek	5.02	4.43
1108	1029010141	Duck Creek	2.46	1.64
1109	1029010142	Frog Creek	4.02	3.11
1110	1029010143	Rock Creek	4.88	3.84
1111	1029010144	Tequa Creek	3.36	2.64
1112	1029010145	Tequa Creek, South Branch	.89	.54
1113	1029010146	Tequa Creek, East Branch	.83	.50
1114	1029010147	Hard Fish Creek	1.3	.92
1115	1029010148	Coal Creek	2.39	2.03
1116	1029010149	Mud Creek	2.71	2.43
1117	102901015	Unnamed stream	1.02	.86
1118	1029010150	Middle Creek	7.83	6.75
1119	1029010151	Pottawatomie Creek	43.1	42.2
1120	1029010152	Mosquito Creek	2.28	1.92
1121	1029010153	Pottawatomie Creek	37.8	37.3
1122	1029010154	Sac Branch	2.33	1.90

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1123	1029010155	Pottawatomie Creek	34.6	34.4
1124	1029010156	Pottawatomie Creek	22.8	23.5
1125	1029010157	Dry Creek	2.01	1.60
1126	1029010158	Pottawatomie Creek	20.0	21.0
1127	1029010159	Pottawatomie Creek	15.5	15.2
1128	102901016	Turkey Creek	1.70	1.45
1129	1029010160	Sac Creek	3.63	3.03
1130	1029010161	Pottawatomie Creek	12.4	11.7
1131	1029010162	Iantha Creek	2.73	2.22
1132	1029010163	Pottawatomie Creek	10.1	9.19
1133	1029010164	Kenoma Creek	2.36	1.74
1134	1029010165	Pottawatomie Creek, North Fork	7.68	6.86
1135	1029010166	Cedar Creek	5.48	4.68
1136	1029010167	Pottawatomie Creek, South Fork	10.4	9.04
1137	1029010169	Locust Creek	.62	.20
1138	102901017	Marais des Cygnes River	205	220
1139	1029010170	Chicken Creek	1.85	1.25
1140	1029010171	Hill Creek	1.48	.93
1141	1029010172	Thomas Creek	1.91	1.52
1142	1029010173	Little Rock Creek	.49	.17
1143	1029010174	Cherry Creek	1.45	1.27
1144	1029010175	Bradshaw Creek	1.45	1.00
1145	1029010176	Jersey Creek	1.01	.57
1146	1029010177	Smith Creek	1.25	.72
1147	1029010178	Mud Creek	.44	.06
1148	1029010179	Plum Creek	.75	.37
1149	102901018	Hickory Creek	3.06	2.58
1150	1029010180	Switzler Creek	3.44	2.49
1151	1029010181	Blue Creek	1.31	1.19
1152	1029010182	Sand Creek	1.44	1.34
1153	1029010183	Wilson Creek	.35	.11
1154	1029010184	Spring Creek	1.75	1.54
1155	1029010185	Tauy Creek, East Fork	4.81	4.23
1156	1029010186	Batch Creek	1.20	.75
1157	1029010187	Popcorn Creek	1.11	.62
1158	1029010188	Eightmile Creek, West Fork	1.13	.78
1159	1029010189	Appanoose Creek, East	2.00	1.54
1160	102901019	Marais des Cygnes River	199	213
1161	1029010190	Walnut Creek	3.87	3.18

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1162	102901019011	Ottawa Creek	15.6	13.8
1163	102901019054	Sac Branch, North Fork	1.88	1.49
1164	1029010191	Mud Creek	1.49	.96
1165	1029010192	Mute Creek	2.72	1.81
1166	1029010193	Chicken Creek	1.54	1.12
1167	1029010194	Willow Creek	1.18	.77
1168	1029010195	Dry Creek	1.30	.91
1169	1029010196	Wolf Creek	.99	.66
1170	1029010197	Rock Creek	1.61	1.11
1171	1029010210	Sugar Creek, North	4.43	3.98
1172	102901021029	Turkey Creek	2.23	2.13
1173	1029010211	Marais des Cygnes River	480	534
1174	1029010212	Middle Creek	11.3	10.2
1175	102901021244	Mine Creek	5.72	5.34
1176	1029010213	Middle Creek	4.55	4.05
1177	1029010214	Walnut Creek	1.43	1.28
1178	1029010215	Marais des Cygnes River	463	525
1179	1029010216	Marais des Cygnes River	432	489
1180	1029010218	Wea Creek, South	13.2	11.9
1181	1029010219	Wea Creek, South	11.6	10.4
1182	1029010220	Wea Creek, South	5.64	5.07
1183	1029010221	Wea Creek, North	5.36	4.72
1184	1029010222	Dorsey Creek	1.51	1.34
1185	1029010224	Bull Creek	57.3	61.5
1186	1029010225	Tenmile Creek	6.00	5.28
1187	1029010226	Bull Creek	3.77	3.28
1188	1029010227	Rock Creek	2.36	1.96
1189	1029010229	Marais des Cygnes River	343	383
1190	1029010230	Middle Creek	11.9	10.7
1191	1029010231	Big Sugar Creek	36.9	28.8
1192	1029010232	Big Sugar Creek	26.4	18.9
1193	1029010233	Little Sugar Creek	10.5	9.64
1194	1029010234	Walnut Creek	1.57	1.46
1195	1029010235	Mound Creek	3.11	2.72
1196	1029010236	Jordan Branch	1.14	1.02
1197	1029010237	Hushpuckney Creek	2.49	2.25
1198	1029010238	Davis Creek	2.89	2.59
1199	1029010239	Sugar Creek, North	5.79	4.82
1200	102901024	Marais des Cygnes River	562	578

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1201	1029010240	Elm Creek	4.00	3.65
1202	1029010241	Richland Creek	4.77	4.39
1203	1029010242	Sugar Creek	5.74	4.47
1204	1029010243	Little Sugar Creek, North Fork	.96	.76
1205	1029010244	Buck Creek	1.36	1.25
1206	1029010245	Turkey Creek	3.27	3.04
1207	1029010246	Muddy Creek	2.87	2.69
1208	1029010247	Smith Branch	1.39	1.21
1209	1029010248	Elm Branch	.38	.23
1210	1029010249	Sweetwater Creek	1.38	1.16
1211	102901025	Marais des Cygnes River	496	543
1212	1029010250	Spring Creek	3.4	2.98
1213	1029010251	Little Bull Creek	1.85	1.58
1214	1029010252	Walnut Creek	3.17	2.82
1215	1029010253	Elm Branch	2.10	1.90
1216	1029010254	Jake Branch	1.54	1.35
1217	102901026	Sugar Creek, North	9.25	8.35
1218	10290102754	Unnamed stream	.28	.17
1219	1029010299	Martin Creek	1.65	1.36
1220	1029010310	Lost Creek	3.45	3.05
1221	1029010311	Elk Creek	3.45	3.13
1222	1029010312	Indian Creek	3.30	3.11
1223	1029010313	Laberdie Creek, East	1.95	1.79
1224	10290103202	Irish Creek	1.75	1.43
1225	10290103220	Little Osage River, North Fork	2.45	2.08
1226	10290103249	Little Osage River, South Fork	3.08	2.73
1227	102901033	Little Osage River	50.8	38.7
1228	1029010336	Little Osage River, Middle Fork	3.46	3.05
1229	102901035	Limestone Creek	4.48	3.99
1230	102901036	Reagan Branch	2.14	2.24
1231	102901037	Clever Creek	.79	.62
1232	102901038	Fish Creek	1.83	1.68
1233	102901039	Owl Creek	1.27	1.15
1234	1029010411	Marmaton River	42.0	43.0
1235	1029010412	Marmaton River	20.3	20.0
1236	1029010413	Paint Creek	15.6	15.4
1237	1029010414	Paint Creek	8.13	7.64
1238	1029010415	Elm Creek	.70	.66
1239	1029010417	Drywood Creek, Moores Branch	2.87	2.79

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1240	1029010419	Drywood Creek, West Fork	11.3	11.5
1241	1029010430	Sweet Branch	.68	.61
1242	1029010431	Tennyson Creek	3.28	3.32
1243	10290104313	Pawnee Creek	7.09	7.13
1244	1029010432	Walnut Creek	1.08	.94
1245	10290104323	Drywood Creek, West Fork	4.99	5.26
1246	10290104324	Cox Creek	7.29	7.90
1247	1029010433	Turkey Creek	3.29	3.25
1248	1029010434	Little Mill Creek	1.76	1.63
1249	1029010435	Wolverine Creek	1.96	1.84
1250	1029010436	Shiloh Creek	1.95	1.95
1251	1029010437	Wolfpen Creek	2.11	2.07
1252	1029010438	Hinton Creek	2.54	2.49
1253	1029010439	Bunion Creek	.92	.74
1254	1029010440	Robinson Branch	.29	.15
1255	1029010441	Cedar Creek	1.25	1.11
1256	1029010442	Lath Branch	1.55	1.63
1257	1029010444	Prong Creek	.23	.14
1258	1029010445	Owl Creek	.65	.47
1259	1029010446	Buck Run	2.36	2.29
1260	1029010447	Walnut Creek	2.43	2.45
1261	102901045	Marmaton River	32.3	33.3
1262	102901046	Mill Creek	6.95	6.65
1263	102901047	Marmaton River	30.0	31.0
1264	102901048	Marmaton River	40.5	41.5
1265	102901049019	Bone Creek	4.04	4.16
1266	1029010848	Pony Creek	.78	.64
1267	103001011102	Wolf Creek	2.89	2.52
1268	1030010132	Indian Creek	21.1	15.8
1269	1030010133	Blue River	34.0	24.8
1270	1030010153	Tomahawk Creek	3.20	2.79
1271	1030010154	Brush Creek	2.41	2.36
1272	1030010155	Dyke Branch	.59	.58
1273	1030010156	Camp Branch	6.03	4.75
1274	1030010157	Coffee Creek	2.09	1.78
1275	1030010158	Negro Creek	1.97	1.60
1276	110300011	Arkansas River	55.0	32.0
1277	1103000110	James Draw	0	0
1278	1103000111	Mattox Draw	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1279	1103000113	Sand Creek	0	0
1280	1103000114	Sand Creek	0	0
1281	1103000118	Unnamed stream	0	0
1282	110300013	Arkansas River	91.3	55.8
1283	110300014	Shirley Creek	0	0
1284	110300015	Arkansas River	209	133
1285	110300016	Bridge Creek, East	0	0
1286	110300017	Arkansas River	208	132
1287	110300018	Bridge Creek, West	0	0
1288	110300019	Arkansas River	206	129
1289	110300021	Whitewoman Creek	0	0
1290	110300022	Whitewoman Creek	0	0
1291	110300023	Sand Creek	0	0
1292	110300031	Arkansas River	0	8.70
1293	110300041	Arkansas River	185	140
1294	1103000410	Arkansas River	3.7	32.0
1295	1103000411	Arkansas River	.46	11.6
1296	1103000412	Mulberry Creek	2.15	1.55
1297	1103000413	Pickerel Creek	2.01	1.44
1298	1103000414	Cow Creek	0	0
1299	1103000415	White Woman Creek	0	0
1300	110300042	Arkansas River	46.8	55.3
1301	110300043	Ash Creek	1.30	.62
1302	110300044	Arkansas River	60.4	39.9
1303	110300045	Arkansas River	57.0	39.5
1304	110300046	Arkansas River	12.5	33.2
1305	110300047	Coon Creek	5.00	3.65
1306	110300048	Little Coon Creek	.99	.28
1307	110300049	Coon Creek	1.65	.95
1308	110300049013	Dry Walnut Creek	1.76	.91
1309	110300051	Pawnee River	8.27	7.05
1310	1103000510	Cottonwood Creek	0	0
1311	1103000511	Sand Creek	0	0
1312	1103000512	Cocklebur Creek	0	0
1313	110300052	Pawnee River	5.53	4.79
1314	110300053	Pawnee River	1.50	0
1315	110300054	Hackberry Creek	0	0
1316	110300055	Pawnee River	.12	0
1317	110300056	Sawmill Creek	.95	.21

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1318	110300057	Plum Creek	0	0
1319	110300058	Cottonwood Creek	0	0
1320	110300059	Sand Creek	0	0
1321	110300061	Buckner Creek	4.24	2.77
1322	110300062	Buckner Creek	1.34	.46
1323	110300063	Saw Log Creek	2.04	1.05
1324	110300064	Saw Log Creek	.11	0
1325	110300065	Elm Creek	0	0
1326	110300066	Buckner Creek, South Fork	0	0
1327	110300067	Spring Creek	0	0
1328	110300068	Duck Creek	0	0
1329	110300069	Unnamed Stream	0	0
1330	110300071	Walnut Creek, North Fork	2.59	.31
1331	1103000710	Walnut Creek, South Fork	1.43	0
1332	1103000711	Wild Horse Creek	0	0
1333	1103000712	Darr Creek	.01	0
1334	110300072	Walnut Creek, Long Branch	.01	0
1335	110300073	Walnut Creek, North Fork	2.11	.17
1336	110300074	Wild Horse Creek	.01	0
1337	110300075	Walnut Creek, North Fork	1.48	0
1338	110300076	Walnut Creek, North Fork	.02	0
1339	110300077	Walnut Creek, Middle Fork	.11	0
1340	110300078	Walnut Creek, North Fork of Middle Fork	.01	0
1341	110300079	Walnut Creek, Middle Fork	.03	0
1342	110300081	Walnut Creek	27.7	4.51
1343	1103000810	Walnut Creek	7.30	.48
1344	1103000811	Sandy Creek	.01	0
1345	1103000812	Otter Creek	.01	0
1346	1103000813	Dry Walnut Creek	0	0
1347	1103000814	Dry Creek	.01	0
1348	1103000815	Boot Creek	0	0
1349	110300082	Walnut Creek	27.1	4.02
1350	110300083	Sand Creek	.06	0
1351	110300084	Walnut Creek	16.5	1.37
1352	110300085	Walnut Creek	13.0	1.00
1353	110300086	Walnut Creek	11.3	.76
1354	110300087	Alexander Dry Creek	.01	0
1355	110300088	Walnut Creek	8.95	.56
1356	110300089	Bazine Creek	.02	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1357	110300091	Rattlesnake Creek	8.05	24.0
1358	110300092	Wildhorse Creek	4.20	3.51
1359	110300093	Rattlesnake Creek	16.9	18.4
1360	110300094	Rattlesnake Creek	8.63	8.25
1361	110300095	Rattlesnake Creek, East Fork	1.33	.92
1362	110300096	Little Wild Horse Creek	0	0
1363	110300097	Spring Creek	0	0
1364	110300098	Bear Creek	0	0
1365	110300099	Rattlesnake Creek, South Branch	1.90	1.52
1366	110300101	Arkansas River	362	303
1367	110300103	Arkansas River	287	226
1368	110300104	Arkansas River	279	219
1369	110300105	Arkansas River	264	207
1370	110300106	Peace Creek	6.87	6.39
1371	110300107	Salt Creek	5.86	5.21
1372	110300108	Gar Creek	3.64	2.70
1373	110300109011	Big Slough	4.79	3.91
1374	110300109035	Big Slough, South Fork	1.25	.84
1375	110300111	Cow Creek	25.4	23.5
1376	1103001113	Deception Creek	.92	.31
1377	1103001115	Blood Creek	.93	.62
1378	1103001116	Calf Creek	.38	0
1379	1103001117	Lost Creek	.33	0
1380	110300111755	Cow Creek	1.49	1.28
1381	1103001118	Owl Creek	.08	0
1382	1103001119	Jarvis Creek	.29	0
1383	110300112	Little Cow Creek	1.23	.56
1384	1103001120	Spring Creek	1.36	.89
1385	1103001121	Salt Creek	0	0
1386	1103001122	Dry Creek	.87	.53
1387	110300113	Cow Creek	11.4	10.5
1388	110300114	Plum Creek	1.17	.49
1389	110300115	Cow Creek	6.26	5.63
1390	110300116	Cow Creek	.15	.13
1391	110300117	Little Cheyenne Creek	2.85	2.44
1392	110300121	Little Arkansas River	80.4	67.1
1393	1103001210	Little Arkansas River	27.7	25.7
1394	1103001211	Turkey Creek	4.44	2.80
1395	1103001212	Turkey Creek	2.49	1.53

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1396	1103001213	Dry Turkey Creek	2.30	1.30
1397	1103001214	Little Arkansas River	18.8	19.4
1398	1103001215	Kisiwa Creek	9.71	8.97
1399	1103001216	Mud Creek	.02	0
1400	110300121693	Chisholm Creek	2.44	1.70
1401	1103001217	Gooseberry Creek	.53	.16
1402	1103001218	Jester Creek, West Fork	.17	0
1403	1103001219	Horse Creek	.96	.53
1404	110300122	Jester Creek	4.94	3.92
1405	1103001220	Lone Tree Creek	2.20	1.27
1406	1103001221	Salt Creek	.23	0
1407	1103001222	Dry Creek	.06	0
1408	1103001223	Sand Creek	4.67	4.70
1409	1103001224	Bull Creek	.63	.07
1410	1103001225	Running Turkey Creek	1.20	.54
1411	1103001226	Beaver Creek	.25	0
1412	110300123	Little Arkansas River	63.4	52.3
1413	11030012368	Black Kettle Creek	2.47	1.60
1414	110300124	Sand Creek	4.42	3.06
1415	110300125	Little Arkansas River	52.4	44.1
1416	110300126	Emma Creek	7.14	5.38
1417	110300127	Emma Creek, Middle	2.31	1.46
1418	110300128	Emma Creek, West	3.75	2.74
1419	11030012817	Chisholm Creek, Middle Fork	1.19	.62
1420	110300129	Little Arkansas River	40.1	35.8
1421	110300131	Arkansas River	1,170	1,030
1422	1103001310	Cowskin Creek	5.53	4.92
1423	1103001311	Big Slough	3.46	3.33
1424	1103001312	Cowskin Creek	11.3	9.51
1425	1103001313	Cowskin Creek	8.95	7.54
1426	1103001314	Cowskin Creek	3.66	2.91
1427	1103001315	Dry Creek	3.08	2.49
1428	1103001316	Dry Creek	2.08	1.49
1429	1103001317	Slate Creek	17.4	15.1
1430	1103001318	Arkansas River	718	598
1431	1103001319	Spring Creek	.63	.32
1432	110300132	Arkansas River	1,100	964
1433	1103001320	Negro Creek	.51	.18
1434	1103001321	Spring Creek	1.85	1.64

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1435	1103001322	Salt Creek	1.33	0.82
1436	1103001323	Lost Creek	0	0
1437	1103001324	Hargis Creek	.81	.34
1438	1103001325	Antelope Creek	.78	.30
1439	1103001326	Oak Creek	.58	.15
1440	1103001327	Spring Creek	.47	.05
1441	1103001328	Bitter Creek	.26	0
1442	1103001329	Beaver Creek	.10	0
1443	110300133	Arkansas River	673	554
1444	1103001331	Badger Creek	.71	.23
1445	1103001332	Winser Creek	.86	.35
1446	1103001333	Beaver Creek	.95	.62
1447	1103001334	Spring Creek	2.10	1.77
1448	1103001337	Spring Creek	2.07	1.43
1449	110300134	Chisholm Creek	5.61	4.60
1450	110300135	Gypsum Creek	1.92	1.24
1451	11030013531	Dog Creek	1.82	1.39
1452	110300136	Chisholm Creek	3.45	2.94
1453	110300137	Chisholm Creek, East	.98	.51
1454	110300138	Chisholm Creek	.04	.08
1455	110300139	Arkansas River	520	433
1456	110300139001	Wichita-Valley Center Floodway	.94	1.13
1457	110300139010	Wichita-Valley Center Floodway	17.7	15.8
1458	110300139011	Wichita-Valley Center Floodway	6.09	5.90
1459	110300141	Ninnescah River, North Fork	14.4	13.9
1460	1103001410	Goose Creek	2.83	2.19
1461	1103001411	Crow Creek	2.70	2.03
1462	1103001412	Red Rock Creek	3.69	3.03
1463	1103001413	Rock Creek	1.28	.74
1464	1103001414	Spring Creek	2.06	1.50
1465	11030014289	Unnamed stream	1.84	1.74
1466	11030014411	Unnamed stream	.91	.67
1467	110300145	Ninnescah River, North Fork	84.4	81.3
1468	110300146	Ninnescah River, North Fork	25.8	24.9
1469	110300147	Silver Creek	20.4	19.0
1470	110300148	Dooleyville Creek	.39	.11
1471	110300149	Wolf Creek	2.24	2.07
1472	110300151	Ninnescah River, South Fork	159	157
1473	1103001510	Mead Creek	.30	.03

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1474	1103001511	Pat Creek	0.40	0.12
1475	1103001512	Petyt Creek	1.16	.85
1476	1103001513	Negro Creek	.63	.43
1477	1103001514	Hunter Creek	2.17	1.83
1478	1103001515	Nester Creek	2.59	2.19
1479	1103001516	Wild Run Creek	1.03	.81
1480	1103001517	Coon Creek	1.46	1.06
1481	1103001518	Sand Creek	2.24	1.94
1482	1103001519	Mod Creek	.27	0
1483	110300152	Smoots Creek	15.1	13.9
1484	11030015249	Unnamed stream	.01	.01
1485	11030015253	Unnamed stream	.44	.45
1486	11030015259	Unnamed stream	.60	.53
1487	11030015261	Unnamed stream	.26	.35
1488	11030015270	Unnamed stream	.59	.53
1489	11030015271	Unnamed stream	.56	.43
1490	110300153	Ninnescah River, South Fork	136	135
1491	11030015307	Natrona Creek	3.54	3.07
1492	110300154	Ninnescah River, South Fork	48.3	47.3
1493	11030015417	Unnamed stream	0	0
1494	110300155	Ninnescah River, West Branch of South Fork	6.66	6.18
1495	11030015514	Unnamed stream	1.12	.96
1496	11030015518	Unnamed stream	0	0
1497	11030015520	Unnamed stream	0	0
1498	11030015579	Unnamed stream	2.25	2.44
1499	110300156	Ninnescah River, South Fork	1.20	.77
1500	110300157	Painter Creek	3.95	3.28
1501	110300158	Spring Creek	3.18	2.57
1502	110300159	Coon Creek	.30	.05
1503	110300161	Ninnescah River	221	215
1504	1103001610	Elm Creek	.17	0
1505	1103001611	Garvey Creek	0	0
1506	1103001612	Silver Creek	.18	0
1507	1103001613	Turtle Creek	.04	0
1508	1103001614	Sand Creek	3.70	2.87
1509	11030016148	Afton Creek	1.17	.74
1510	1103001615	Spring Creek	1.64	1.18
1511	1103001616	Dry Creek	.63	.27
1512	11030016161	Clear Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1513	110300162	Spring Creek	3.59	2.78
1514	110300163	Ninnescah River	218	212
1515	110300164	Clearwater Creek	5.08	3.99
1516	1103001659	Polecat Creek	1.10	.67
1517	110300167	Clearwater Creek	2.81	2.08
1518	110300168	Ninnescah River	187	182
1519	1103001710	Satchel Creek	2.30	1.47
1520	1103001712	Durechen Creek	2.20	1.34
1521	1103001714	Walnut River	2.39	1.43
1522	1103001715	Cole Creek	2.39	2.33
1523	1103001716	Walnut River, West Branch	3.74	2.67
1524	1103001717	Whitewater River	45.0	40.9
1525	1103001718	Whitewater River	41.9	38.4
1526	1103001719	Whitewater River	15.7	13.4
1527	110300172	Walnut River	32.1	37.8
1528	1103001720	Fourmile Creek	1.37	.70
1529	1103001721	Whitewater River	9.32	7.53
1530	11030017213	Bird Creek	2.35	1.51
1531	1103001722	Whitewater River, East Branch	1.48	.77
1532	1103001723	Whitewater River	3.47	2.40
1533	1103001724	Whitewater River, West Branch	13.9	11.5
1534	1103001725	Whitewater River, West Branch	5.70	4.33
1535	1103001726	Wildcat Creek	2.45	1.62
1536	1103001727	Dry Creek	2.68	1.71
1537	1103001728	Wildcat Creek, West	.26	.01
1538	1103001729	Sand Creek	0	.01
1539	110300173	Walnut River	16.6	19.9
1540	1103001730	Gypsum Creek	.50	.03
1541	1103001731	Whitewater Creek, East Branch	.68	.14
1542	1103001732	Dry Creek	1.02	.41
1543	1103001733	Henry Creek	1.16	.51
1544	1103001734	Whitewater Creek	1.02	.42
1545	1103001735	Prairie Creek	.93	.36
1546	1103001736	Badger Creek	.62	.14
1547	1103001737	Rock Creek	1.46	.79
1548	1103001739	Gilmore Branch	.13	0
1549	1103001740	Sutton Creek	.56	.12
1550	1103001741	Constant Creek	.55	.10

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1551	1103001742	Lower Branch	2.56	1.70
1552	1103001743	Elm Creek	.78	.30
1553	1103001744	Walnut Creek	.01	.01
1554	1103001745	School Branch	.29	0
1555	110300178	Bemis Creek	3.40	2.33
1556	110300181	Walnut River	241	276
1557	1103001810	Walnut River	154	177
1558	1103001811	Little Walnut River	20.5	16.5
1559	1103001812	Hickory Creek	8.00	6.19
1560	1103001813	Little Walnut River	11.2	8.75
1561	1103001814	Walnut River	118	136
1562	1103001815	Walnut River	108	124
1563	1103001816	Fourmile Creek	3.89	2.72
1564	1103001817	Polecat Creek	2.09	1.22
1565	1103001818	Black Crook Creek	1.54	.94
1566	1103001819	Cedar Creek	1.47	.83
1567	110300182	Timber Creek	10.9	8.35
1568	1103001820	Lower Dutch Creek	0	0
1569	1103001821	Chigger Creek	.19	0
1570	1103001822	Swisher Branch	.01	0
1571	1103001823	Durham Creek	0	0
1572	1103001824	Stalter Branch	0	0
1573	1103001825	Richland Creek	.56	.09
1574	1103001826	Foos Creek	.64	.20
1575	1103001827	Little Dutch Creek	.66	.18
1576	1103001828	Stewart Creek	.74	.18
1577	1103001829	Sanford Creek	0	0
1578	110300183	Timber Creek	4.52	3.31
1579	1103001830	Eightmile Creek	3.06	2.10
1580	1103001831	Crooked Creek	.40	.05
1581	1103001832	Spring Branch	.12	0
1582	1103001833	Honey Creek	.89	.39
1583	1103001834	Little Walnut River, South Branch	3.37	2.4
1584	1103001835	Rock Creek, North Branch	1.67	1.03
1585	1103001836	Plum Creek	1.12	.64
1586	1103001837	Posey Creek	1.19	.71
1587	110300184	Dutch Creek	3.41	2.34
1588	110300185	Walnut River	205	236
1589	110300186	Rock Creek	9.38	7.17

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1590	110300187	Walnut River	174	201
1591	110300188	Walnut River	168	194
1592	110300189	Muddy Creek	3.53	2.54
1593	110300189012	Hickory Creek, North Branch	2.00	1.34
1594	110400021	Cimarron River	3.19	3.80
1595	110400031	Cimarron River, North Fork	5.90	7.52
1596	110400032	Cimarron River, North Fork	1.22	1.55
1597	110400033	Unnamed stream	.02	.02
1598	110400034	Cimarron River, North Fork	0	0
1599	110400041	Sand Arroyo Creek	.47	.60
1600	110400051	Bear Creek	0	0
1601	1104000510	Buffalo Creek	0	0
1602	1104000511	Bear Creek	0	0
1603	110400052	Wolf Creek	0	0
1604	110400055	Dry Creek	0	0
1605	110400056	Bear Creek, North	0	0
1606	110400057	Little Bear Creek	0	0
1607	110400058	Beaty Creek	0	0
1608	110400059	Bear Creek	0	0
1609	110400061	Cimarron River	43.2	48.5
1610	110400062	Cimarron River	35.8	42.5
1611	110400071	Crooked Creek	8.70	12.0
1612	110400071180	Unnamed stream	0	0
1613	110400071247	Stumpie Arroyo	.02	.06
1614	110400071253	Unnamed stream	0	0
1615	110400071259	Unnamed stream	0	.01
1616	110400072	Crooked Creek	3.08	4.15
1617	110400073	Spring Creek	.04	.17
1618	110400074	Unnamed stream	0	0
1619	110400081	Cimarron River	44.9	53.2
1620	1104000810	Unnamed stream	1.91	1.54
1621	1104000811	Cimarron River	43.2	47.2
1622	110400081173	Wiggins Creek	0	0
1623	110400081180	Kiowa Creek, West	4.57	3.47
1624	110400081182	Kiowa Creek, Middle	1.15	.61
1625	1104000812	Kiowa Creek	8.07	6.58
1626	1104000813	Bluff Creek	5.89	4.37
1627	1104000814	Indian Creek	.02	0
1628	1104000815	Twomile Creek	0	0

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1629	1104000816	Unnamed stream	0	0
1630	1104000817	Stink Creek	0	0
1631	1104000818	Bear Creek	1.77	1.10
1632	1104000819	Trout Creek	1.11	.77
1633	110400082	Bluff Creek	19.9	17.8
1634	1104000820	Day Creek	1.39	.74
1635	1104000821	Snake Creek	2.26	1.73
1636	1104000825	Gyp Creek	.32	0
1637	110400083	Cavalry Creek	13.0	11.8
1638	110400085	Cimarron River	42.0	48.4
1639	110400086	Big Sandy Creek	13.0	11.4
1640	11040008652	Little Sandy Creek	1.39	.72
1641	110400087	Big Sandy Creek	6.90	5.69
1642	110400088	Kiger Creek	.58	.15
1643	110400089	Big Sandy Creek	5.48	4.43
1644	1105000124	Unnamed stream	1.09	.76
1645	1105000139	West Creek	0	0
1646	1106000111	Little Beaver Creek	2.57	1.93
1647	1106000114	Arkansas River	1,240	1,090
1648	1106000115	Grouse Creek	40.4	33.0
1649	1106000116	Grouse Creek	28.6	23.1
1650	1106000117	Silver Creek	8.07	6.12
1651	1106000118	Arkansas River	1,230	1,080
1652	1106000119	Chilocco Creek	.85	.42
1653	1106000120	Otter Creek	1.62	1.12
1654	1106000121	Spring Creek	1.03	.62
1655	1106000122	Shellrock Creek	.74	.42
1656	1106000124	Myers Creek	.23	.06
1657	1106000125	Snake Creek	.99	.46
1658	1106000126	Pebble Creek	.79	.30
1659	1106000127	Turkey Creek	.83	.41
1660	1106000128	Bullington Creek	1.34	.83
1661	1106000129	Crabb Creek	4.01	2.95
1662	1106000130	Blue Branch	.83	.40
1663	1106000131	School Creek	.87	.46
1664	1106000132	Cedar Creek	3.56	2.64
1665	1106000133	Plum Creek	.17	0
1666	1106000134	Goose Creek	1.33	.84
1667	1106000135	Franklin Creek	.78	.35

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1668	1106000136	Wagoner Creek	0.74	0.37
1669	1106000137	Riley Creek	.35	.07
1670	1106000138	Ferguson Creek	.86	.48
1671	1106000139	Gardners Branch	1.38	.88
1672	110600019	Beaver Creek	2.95	2.17
1673	1106000210	Arkansas River, Salt Fork	17.3	12.4
1674	1106000211	Arkansas River, Salt Fork	13.6	10.0
1675	1106000212	Wildcat Creek	.52	.15
1676	1106000213	Arkansas River, Salt Fork	11.7	8.75
1677	1106000214	Nescatunga Creek	4.05	3.38
1678	1106000215	Arkansas River, Salt Fork	4.69	3.33
1679	1106000216	Red Creek	2.26	1.43
1680	1106000217	Yellowstone Creek	1.92	1.03
1681	1106000220	Ash Creek	0	0
1682	1106000221	Inman Creek	1.17	.68
1683	1106000222	Deadman Creek	.64	.15
1684	1106000223	Hackberry Creek	1.05	.37
1685	1106000224	Spring Creek	.79	.46
1686	1106000227	Nescatunga Creek, East Branch	.27	0
1687	1106000228	Cave Creek	.34	0
1688	1106000229	Dog Creek	0	0
1689	1106000230	Cottonwood Creek	.35	0
1690	1106000231	Mustang Creek	.38	0
1691	110600024	Arkansas River, Salt Fork	47.4	29.1
1692	110600025	Big Sandy Creek	3.28	2.21
1693	11060002503	Unnamed stream	1.27	.91
1694	110600026	Arkansas River, Salt Fork	40.9	25.9
1695	110600027	Mule Creek	11.1	8.12
1696	110600028	Arkansas River, Salt Fork	20.7	14.6
1697	110600029	Indian Creek	1.82	1.22
1698	1106000310	Elm Creek, South East Branch	.59	.19
1699	1106000311	Crooked Creek	.62	.35
1700	1106000312	Amber Creek	1.43	1.16
1701	1106000313	Bear Creek	1.92	1.28
1702	1106000314	Mulberry Creek	.88	.50
1703	1106000315	Puckett Creek	.13	.01
1704	1106000316	Cottonwood Creek	.22	.01
1705	1106000317	Sand Creek	.64	.24
1706	1106000318	Bitter Creek	.26	.01

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1707	1106000319	Little Bear Creek	1.15	0.57
1708	110600032	Medicine Lodge River	109	85.0
1709	1106000320	Cedar Creek	2.59	1.78
1710	1106000321	Dry Creek	.91	.35
1711	1106000322	Antelope Creek	.01	0
1712	1106000323	Wilson Slough	.36	.01
1713	1106000324	Medicine Lodge River, North Branch	.29	.02
1714	1106000325	Otter Creek	.51	.17
1715	1106000326	Thompson Creek	2.79	1.98
1716	1106000327	Soldier Creek	3.81	3.07
1717	1106000328	Stink Creek	0	0
1718	110600033	Elm Creek	13.0	10.9
1719	11060003370	Unnamed stream	1.30	.84
1720	110600034	Elm Creek, North	1.52	1.05
1721	11060003415	Unnamed stream	.19	0
1722	11060003452	Unnamed stream	0	0
1723	110600035	Elm Creek, South	3.37	2.52
1724	11060003559	Unnamed stream	.01	0
1725	110600036	Medicine Lodge River	55.6	43.2
1726	110600037	Turkey Creek	2.55	1.83
1727	110600038	Medicine Lodge River	18.9	14.7
1728	110600039	Little Mule Creek	5.06	3.64
1729	110600039005	Elm Creek, South West Branch	.97	.50
1730	11060003905	Driftwood Creek	.65	.12
1731	1106000418	Pond Creek	.22	0
1732	1106000424	Crooked Creek	.13	0
1733	1106000425	Unnamed stream	.13	0
1734	1106000437	Sandy Creek	12.9	12.0
1735	1106000439	Little Sandy Creek	12.8	12.2
1736	1106000440	Salty Creek	3.21	2.26
1737	1106000465	Little Sandy Creek, East Branch	2.94	2.53
1738	1106000466	Spring Creek	.87	.63
1739	1106000467	Sandy Creek, West	3.11	2.99
1740	1106000468	Camp Creek	1.14	.75
1741	1106000469	Rush Creek	0	0
1742	1106000470	Plum Creek	.60	.20
1743	1106000471	Cooper Creek	1.50	.93
1744	110600049039	Little Sandy Creek, West Branch	2.75	2.22
1745	1106000510	Chikaskia River	10.8	9.65

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1746	1106000511	Sand Creek	12.0	10.3
1747	1106000512	Sand Creek, East	6.85	5.84
1748	1106000514	Fall Creek	4.78	3.36
1749	1106000515	Bluff Creek	26.6	22.9
1750	1106000516	Bitter Creek, East	.30	0
1751	1106000517	Dry Creek	0	0
1752	1106000518	Spring Creek	.58	.13
1753	1106000519	Shoo Fly Creek, East	0	0
1754	1106000520	Meridian Creek	2.37	1.60
1755	1106000521	Spring Branch	.51	.02
1756	1106000522	Baehr Creek	1.53	.95
1757	1106000523	Rock Creek	2.10	1.45
1758	1106000524	Wildcat Creek	1.30	.81
1759	1106000525	Spring Creek	.77	.33
1760	1106000526	Rodgers Branch	0	0
1761	1106000527	Fall Creek, East Branch	.73	.19
1762	1106000528	Beaver Creek	.84	.31
1763	1106000529	Silver Creek	1.83	1.27
1764	1106000530	Sandy Creek	2.2	1.66
1765	1106000531	Spring Creek	3.33	2.65
1766	1106000532	Duck Creek	1.30	1.25
1767	1106000534	Big Spring Creek	2.34	2.20
1768	1106000535	Shore Creek	.72	.25
1769	1106000536	Chicken Creek	.85	.64
1770	1106000537	Chikaskia River, North Fork	1.77	1.44
1771	1106000538	Goose Creek	.58	.28
1772	1106000539	Skunk Creek	1.00	.73
1773	110600054	Bitter Creek	29.3	19.0
1774	1106000540	Allen Creek	1.25	.97
1775	1106000541	Wild Horse Creek	2.03	1.73
1776	1106000542	Copper Creek	0	0
1777	1106000543	Red Creek	2.73	2.33
1778	1106000544	Rose Bud Creek	.56	.37
1779	1106000545	Rush Creek	2.88	2.32
1780	1106000546	Beaver Creek	1.17	.63
1781	1106000547	Spring Creek	2.17	1.55
1782	1106000548	Blue Stem Creek	.20	.02
1783	1106000549	Kemp Creek	.58	.33
1784	11060005512	Prairie Creek	3.18	2.32

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1785	11060005516	Prairie Creek, East	3.00	2.16
1786	11060005527	Prairie Creek, West	1.62	1.06
1787	11060005529	Long Creek	0	0
1788	110600056	Shoo Fly Creek	6.3	4.71
1789	110600058	Chikaskia River	117	104
1790	110600059	Chikaskia River	67.4	60.4
1791	110600059006	Shoo Fly Creek, West	.96	.40
1792	110701011	Verdigris River	296	276
1793	1107010111	Verdigris River	64.7	55.8
1794	1107010112	Verdigris River	46.0	39.4
1795	1107010113	Verdigris River, North Branch	17.8	14.7
1796	1107010114	Rock Creek	1.95	1.36
1797	1107010115	Verdigris River, North Branch	11.9	9.60
1798	1107010116	Verdigris River, Bernard Branch	4.58	3.61
1799	1107010117	West Creek	10.6	8.31
1800	1107010119	Walnut Creek	16.7	13.5
1801	110701012	Buffalo Creek	17.0	16.0
1802	1107010120	Homer Creek	4.54	3.28
1803	1107010121	Bachelor Creek	5.37	3.89
1804	1107010122	Chetopa Creek	6.30	5.63
1805	1107010123	Onion Creek	.48	.05
1806	1107010124	Bernard Creek	.04	0
1807	1107010125	Slate Creek	2.91	1.99
1808	1107010126	Greenhall Creek	2.79	2.27
1809	1107010127	Dry Creek	4.43	4.03
1810	1107010128	Fancy Creek	2.67	2.33
1811	1107010129	Kuntz Branch	2.46	1.91
1812	110701013	Verdigris River	62.8	93.3
1813	1107010130	Miller Creek	2.49	2.10
1814	1107010131	Brazil Creek	3.51	3.22
1815	1107010132	Cedar Creek	1.91	1.77
1816	1107010133	Little Sandy Creek	3.24	3.12
1817	1107010134	Buffalo Creek, West	6.86	6.59
1818	1107010135	Ross Branch	5.71	5.22
1819	1107010136	Snake Creek	2.81	2.42
1820	1107010137	Elder Branch	4.34	4.15
1821	1107010138	Crooked Creek	3.70	3.58
1822	1107010139	Big Cedar Creek	4.25	3.82
1823	110701014	Sandy Creek	12.3	11.8

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1824	1107010140	Shaw Creek	1.58	1.06
1825	1107010141	Wolf Creek	1.68	1.13
1826	1107010142	Kelly Branch	.60	.25
1827	1107010143	Moon Branch	1.05	.57
1828	1107010144	Tate Branch Creek	1.78	1.23
1829	1107010145	Long Creek	1.66	1.19
1830	1107010146	Van Horn Creek	1.13	.63
1831	1107010147	Holderman Creek	.95	.46
1832	11070101471	Little Chetopa Creek	2.45	2.37
1833	110701015	Verdigris River	45.8	80.1
1834	110701019017	Willow Creek	3.43	2.37
1835	110701021	Fall River	120	102
1836	1107010211	Fall River, West Branch	13.9	10.3
1837	1107010212	Spring Creek	11.7	8.80
1838	1107010213	Otter Creek	12.9	12.3
1839	1107010214	Salt Creek	6.34	5.05
1840	1107010215	Indian Creek	7.69	6.73
1841	1107010217	Rainbow Creek, East	3.80	3.35
1842	1107010218	Battle Creek	.45	.11
1843	1107010219	Ivanpah Creek	3.17	2.33
1844	110701022	Fall River	73.1	70.5
1845	1107010220	Otis Creek	1.88	1.25
1846	1107010221	Oleson Creek	1.55	1.00
1847	1107010223	Watson Branch	1.86	1.33
1848	1107010224	Burnt Creek	2.71	1.92
1849	1107010225	Coon Creek	1.41	.98
1850	1107010226	Honey Creek	1.41	.81
1851	1107010227	Kitty Creek	.43	.11
1852	1107010228	Otter Creek, South Branch	3.33	2.69
1853	1107010229	Tadpole Creek	.66	.25
1854	110701023	Fall River	49.5	56.3
1855	1107010230	Plum Creek	.27	0
1856	1107010231	Snake Creek	.57	.16
1857	1107010232	Crain Creek	4.30	4.04
1858	1107010233	Silver Creek	5.67	5.80
1859	1107010234	Little Indian Creek	2.29	2.20
1860	1107010235	Little Salt Creek	1.72	1.39
1861	1107010236	Coon Creek	3.20	2.99
1862	1107010237	Clear Creek	3.36	3.16

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1863	1107010238	Salt Creek	2.40	1.96
1864	11070102635	Fall River, East Branch	9.12	6.74
1865	110701027	Fall River	73.5	54.0
1866	110701028	Fall River	57.6	40.5
1867	110701029	Fall River	29.7	21.4
1868	11070102989	Swing Creek	1.79	1.2
1869	1107010321	Big Creek	.40	.34
1870	1107010325	Snow Creek	3.87	3.65
1871	1107010327	Verdigris River	564	498
1872	1107010328	Pumpkin Creek	13.7	13.2
1873	1107010329	Verdigris River	528	466
1874	1107010330	Big Hill Creek	13.0	11.8
1875	1107010331	Potatoe Creek	2.06	2.01
1876	1107010332	Big Hill Creek	9.04	8.27
1877	1107010333	Verdigris River	493	435
1878	1107010334	Drum Creek	9.55	9.00
1879	1107010335	Verdigris River	465	410
1880	1107010336	Verdigris River	455	401
1881	1107010337	Dry Creek	4.85	4.77
1882	1107010338	Verdigris River	296	276
1883	1107010339	Onion Creek	17.5	16.5
1884	1107010349	Richland Creek	3.09	2.98
1885	1107010350	Claymore Creek	1.04	.92
1886	1107010351	Deer Creek	2.58	2.43
1887	1107010352	Sycamore Creek	1.74	1.63
1888	1107010353	Biscuit Creek	1.00	1.07
1889	1107010354	Bluff Run	2.24	2.36
1890	1107010355	Spring Creek	.86	.63
1891	1107010356	Fawn Creek	2.55	2.37
1892	1107010357	Deadman Creek	4.09	4.15
1893	1107010358	Rock Creek	4.07	3.66
1894	1107010359	Mud Creek	2.04	2.17
1895	1107010360	Wildcat Creek	2.44	2.62
1896	1107010361	Rock Creek	1.72	1.77
1897	1107010362	Prior Creek	2.43	2.62
1898	1107010363	Choteau Creek	3.44	3.47
1899	110701041	Elk River	42.4	33.8
1900	1107010410	Elk River	15.8	17.1
1901	1107010411	Pawpaw Creek	4.11	3.42

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1902	1107010412	Elk River	11.5	11.2
1903	1107010413	Rock Creek	2.81	2.18
1904	1107010414	Elk River	8.82	7.86
1905	1107010415	Elk River, Mound Branch	2.42	1.83
1906	1107010416	Wildcat Creek	3.32	2.46
1907	1107010417	Salt Creek	12.7	12.0
1908	1107010418	Chetopa Creek	.67	.35
1909	1107010419	Card Creek	3.35	3.33
1910	110701042	Elk River	60.1	60.1
1911	1107010420	Coffey Branch	3.34	3.43
1912	1107010421	Racket Creek	3.63	3.51
1913	1107010422	Sycamore Creek	5.97	5.69
1914	1107010423	Elm Branch	1.69	1.51
1915	1107010424	Little Duck Creek	2.09	2.02
1916	1107010425	Bachelor Creek	3.91	3.77
1917	1107010426	Bloody Run	2.35	2.41
1918	1107010427	Pan Creek	1.68	1.65
1919	1107010428	Hickory Creek	4.22	4.08
1920	1107010429	Salt Creek, South	2.43	2.39
1921	110701043	Duck Creek	8.56	7.79
1922	1107010430	Clear Creek	2.77	2.48
1923	1107010431	Skull Creek	0	0
1924	1107010432	Clear Creek	1.35	.88
1925	1107010433	Bull Creek	.58	.25
1926	1107010434	Snake Creek	1.28	.75
1927	1107010435	Hitchen Creek, East	.95	.77
1928	1107010436	Painterhood Creek, East	3.04	2.80
1929	1107010437	Little Hitchen Creek	3.17	3.19
1930	1107010438	Elk River, South Branch	1.61	1.16
1931	1107010439	Rowe Branch Elk River	1.49	1.02
1932	110701044	Elk River	51.5	52.0
1933	110701045	Painterhood Creek	7.71	7.09
1934	110701046	Elk River	34.1	35.6
1935	110701047	Hitchen Creek	8.50	7.59
1936	110701048	Elk River	26.2	28.3
1937	110701049	Elk River	19.0	22.0
1938	1107010610	Little Caney Creek	20.6	19.5
1939	1107010611	Caney Creek, North	16.9	16.1
1940	1107010612	Caney Creek, Middle	16.7	14.9

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1941	1107010619	Caney River	65.2	40.5
1942	1107010620	Caney River	17.8	12.4
1943	1107010621	Otter Creek	6.70	5.01
1944	1107010628	Rock Creek	8.96	6.83
1945	1107010629	Dry Creek	2.69	2.08
1946	1107010630	Cedar Creek	5.31	3.95
1947	1107010631	Sycamore Creek	5.07	4.15
1948	1107010632	Cedar Creek	7.62	7.40
1949	1107010633	Otter Creek	5.10	5.03
1950	1107010634	Lake Creek	7.59	7.2
1951	1107010635	Wolf Creek	4.83	4.81
1952	1107010636	Coon Creek	4.81	4.74
1953	1107010637	Cotton Creek, North Fork	0	0
1954	1107010638	Cotton Creek	1.60	1.40
1955	1107010639	Illinois Creek	4.11	4.06
1956	1107010640	Cheyenne Creek	5.32	4.89
1957	1107010641	Union Creek	2.51	1.83
1958	1107010642	Squaw Creek	1.10	.68
1959	1107010643	Pool Creek	3.32	2.7
1960	1107010644	Spring Creek	2.90	2.21
1961	1107010645	Turkey Creek	2.37	2.24
1962	1107010646	Fly Creek	5.08	5.17
1963	1107010647	Bachelor Creek	3.82	3.71
1964	1107010648	California Creek	4.40	4.44
1965	1107010649	Jim Creek	1.39	.90
1966	1107010650	Wolf Creek	1.58	1.02
1967	11070106509	Hafer Run	2.53	2.45
1968	1107010651	Corum Creek	.85	.35
1969	1107010652	Caney River, East Fork	1.85	1.29
1970	1107010653	Spring Creek	2.49	1.84
1971	1107010674	Possum Trot Creek	2.90	2.46
1972	110701068	Little Caney Creek	10.9	12.4
1973	110701069	Bee Creek	12.8	12.1
1974	110702011	Neosho River	429	394
1975	1107020110	Neosho River	37.6	37.7
1976	1107020111	Neosho River	15.0	13.0
1977	1107020118	Munkers Creek	4.70	3.33
1978	110702012	Neosho River	94.9	94.9
1979	1107020121	Lanos Creek	2.20	1.35

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
1980	1107020123	Neosho River	8.33	6.06
1981	1107020124	Four Mile Creek	5.15	3.69
1982	1107020125	Eagle Creek	7.61	5.94
1983	1107020126	Neosho River	412	384
1984	1107020127	Parkers Creek	.48	0
1985	1107020128	Neosho River, West Fork	.34	0
1986	1107020129	Haun Creek	.79	.24
1987	110702013	Allen Creek	6.84	5.09
1988	1107020130	Lairds Creek	1.63	.90
1989	1107020131	Munkers Creek, East Branch	.80	.29
1990	1107020132	Munkers Creek, Middle Branch	1.62	.93
1991	1107020133	Horse Creek	1.01	.49
1992	1107020134	Rock Creek, East Branch	1.09	.57
1993	1107020135	Crooked Creek	.80	.30
1994	1107020136	Elm Creek	2.98	1.96
1995	1107020137	Big John Creek	3.34	2.34
1996	1107020138	Wrights Creek	2.18	1.44
1997	1107020139	East Creek	.56	.13
1998	110702014	Dows Creek	2.49	1.63
1999	1107020140	Spring Creek	.49	.10
2000	1107020141	Wolf Creek	.69	.28
2001	1107020142	Walker Branch	1.04	.60
2002	1107020143	Kahola Creek	2.92	2.07
2003	1107020144	Stillman Creek	.13	0
2004	1107020145	Badger Creek	2.32	1.58
2005	1107020146	Taylor Creek	.22	0
2006	1107020147	Eagle Creek, South	.85	.41
2007	1107020148	Fourmile Creek	2.46	1.73
2008	1107020149	Plumb Creek	.52	.13
2009	110702015	Allen Creek	3.50	2.45
2010	1107020150	Plum Creek	2.36	1.69
2011	1107020151	Lebo Creek	2.82	2.05
2012	110702016	Neosho River	68.6	71.4
2013	110702017	Rock Creek	11.3	8.7
2014	110702018	Bluff Creek	3.48	2.50
2015	110702019	Rock Creek	7.24	5.43
2016	110702019023	Level Creek	.14	0
2017	11070201946	Unnamed stream	0	0
2018	110702021	Cottonwood River	95.8	98.4

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2019	1107020214	Cottonwood River, North	8.27	6.48
2020	1107020216	French Creek	2.19	1.34
2021	1107020217	Cottonwood River, South	6.46	4.81
2022	1107020218	Cottonwood River, South	4.47	3.26
2023	1107020219	Antelope Creek	1.04	.46
2024	110702022	Cottonwood River	65.4	67.5
2025	1107020220	Catlin Creek	1.35	.63
2026	1107020221	Doyle Creek	8.67	6.48
2027	1107020222	Cedar Creek	20.0	17.6
2028	1107020223	Perry Creek	.91	.43
2029	1107020224	Clear Creek, East Branch	.69	.14
2030	1107020225	Stony Brook	.63	.12
2031	1107020226	Spring Branch	.71	.16
2032	1107020227	Bruno Creek	3.02	2.00
2033	1107020228	Spring Creek	.80	.25
2034	1107020229	Spring Creek	2.46	1.61
2035	110702023	Cottonwood River	58.3	60.7
2036	1107020230	Bills Creek	1.91	1.28
2037	1107020231	Turkey Creek	2.31	1.68
2038	1107020232	Coon Creek	1.65	.93
2039	110702024	Clear Creek	9.44	6.95
2040	11070202401	Dry Creek	0	0
2041	11070202456	Unnamed stream	.11	0
2042	110702025	Clear Creek	4.6	3.16
2043	110702026	Mud Creek	4.43	3.09
2044	110702027	Cottonwood River	28.0	32.0
2045	110702028	Cottonwood River	8.60	7.60
2046	110702031	Cottonwood River	290	312
2047	1107020310	Cottonwood River, South Fork	1.37	.79
2048	1107020311	Little Cedar Creek	2.84	2.02
2049	1107020313	Mile-and-a-Half Creek	.34	0
2050	1107020314	Camp Creek	.09	0
2051	1107020315	Dodds Creek	.70	.19
2052	1107020316	School Creek	.93	.40
2053	1107020317	Schaffer Creek	1.22	.67
2054	1107020318	Pickett Creek	.62	.19
2055	1107020319	Fox Creek	4.04	2.98
2056	110702032	Cottonwood River	206	227

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2057	1107020320	Stribby Creek	2.32	1.46
2058	1107020321	Collett Creek	1.63	1.01
2059	1107020322	Mulvane Creek	.54	.16
2060	1107020323	Prather Creek	1.02	.54
2061	1107020324	Gannon Creek	1.48	.94
2062	1107020325	Peyton Creek	1.93	1.25
2063	1107020326	Bull Creek	.66	.25
2064	1107020327	Stout Run	1.00	.54
2065	1107020328	Jacob Creek	2.18	1.44
2066	1107020329	Beaver Creek	.96	.42
2067	110702033	Diamond Creek	12.1	9.08
2068	1107020330	Phenis Creek	1.55	.97
2069	1107020331	Moon Creek	.67	.20
2070	1107020332	French Creek	1.59	.92
2071	1107020333	Coyne Branch	1.25	.67
2072	1107020334	Silver Creek	2.03	1.33
2073	1107020335	Holmes Creek	1.07	.56
2074	1107020336	Gould Creek	.59	.20
2075	1107020337	Rock Creek	2.63	1.77
2076	1107020338	Sharpes Creek	4.28	3.16
2077	1107020339	Buck Creek	2.02	1.31
2078	110702034	Cottonwood River	159	172
2079	1107020340	Bloody Creek	3.27	2.40
2080	11070203403	Palmer Creek	.40	.06
2081	1107020341	Spring Creek	.86	.44
2082	1107020342	Dry Creek	1.44	.89
2083	1107020343	Coal Creek	1.99	1.29
2084	1107020344	Buckeye Creek	1.92	1.26
2085	1107020345	Little Cedar Creek	1.87	1.20
2086	11070203452	Six Mile Creek	2.63	1.61
2087	1107020346	Crocker Creek	.84	.34
2088	1107020347	Corn Creek	.58	.19
2089	1107020348	Kirk Creek	.42	.08
2090	110702035	Middle Creek	12.4	8.91
2091	110702036	Cottonwood River	139	149
2092	11070203716	Mercer Creek	1.35	.75
2093	11070203745	Cannonball Creek	.82	.40
2094	110702039	Cottonwood River, South Fork	20.3	15.9
2095	110702041	Neosho River	802	731

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2096	1107020410	Neosho River	572	534
2097	110702041050	Elm Creek	4.26	3.74
2098	1107020411	Neosho River	508	471
2099	1107020412	Long Creek	7.40	6.30
2100	1107020413	Neosho River	453	415
2101	1107020414	Big Creek	13.7	11.6
2102	1107020415	Rock Creek	1.49	.95
2103	1107020416	Big Creek, North	4.74	3.74
2104	1107020417	Big Creek, South	8.54	7.19
2105	1107020418	Turkey Creek	6.71	5.73
2106	1107020419	Owl Creek	4.96	5.27
2107	110702042	Big Creek	13.4	12.5
2108	1107020420	Cherry Creek	3.78	3.28
2109	1107020421	Owl Creek	6.23	5.89
2110	1107020422	Plum Creek	.32	.02
2111	1107020423	Rock Creek	.65	.30
2112	1107020424	Onion Creek	1.41	1.09
2113	1107020425	Bloody Run	1.08	.91
2114	1107020426	Mud Creek	.88	.60
2115	1107020427	Charles Branch	1.02	.74
2116	1107020428	Turkey Branch	1.96	1.98
2117	1107020429	Goose Creek	2.14	2.15
2118	110702043	Neosho River	759	696
2119	1107020430	Slack Creek	1.61	1.50
2120	1107020431	Mud Creek	1.33	1.21
2121	1107020432	Turkey Creek	2.78	2.42
2122	1107020433	Village Creek	4.38	3.89
2123	1107020434	Draw Creek	1.64	1.69
2124	1107020435	Sutton Creek	1.68	1.70
2125	1107020437	Wolf Creek	4.02	3.34
2126	1107020438	School Creek	.89	.64
2127	11070204397	Little Turkey Creek	.53	.36
2128	110702044	Coal Creek	6.54	5.89
2129	1107020440	Scott Creek	1.75	1.36
2130	1107020442	Badger Creek	0	0
2131	1107020443	Varvel Creek	.76	.40
2132	1107020444	Crooked Creek	3.02	2.46
2133	1107020445	Twiss Creek	1.07	.81
2134	1107020446	Spring Creek	.85	.57

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2135	1107020447	Carlyle Creek	0.92	0.70
2136	1107020448	Cottonwood Creek	.82	.72
2137	1107020449	Martin Creek	2.08	1.56
2138	110702045	Neosho River	697	645
2139	11070204552	Owl Creek, South	3.59	3.23
2140	110702046	Neosho River	627	588
2141	110702047	Rock Creek	8.24	7.15
2142	110702048	Neosho River	617	579
2143	11070204823	Dinner Creek	1.86	1.36
2144	110702049	Deer Creek	8.72	7.74
2145	11070204924	Indian Creek	2.98	2.37
2146	11070204939	Little Indian Creek	1.13	.83
2147	110702051	Fly Creek	5.06	5.13
2148	1107020510	Hickory Creek	5.96	5.98
2149	1107020511	Neosho River	950	852
2150	1107020512	Flat Rock Creek	12.2	11.5
2151	1107020513	Walnut Creek	6.42	5.93
2152	1107020514	Flat Rock Creek	4.61	4.38
2153	1107020515	Neosho River	884	798
2154	1107020516	Canville Creek	7.92	7.36
2155	1107020517	Neosho River	826	750
2156	1107020519	Elk Creek	5.85	5.57
2157	110702052	Neosho River	1,260	1,100
2158	1107020520	Labette Creek	38.2	37.0
2159	1107020521	Labette Creek	25.0	23.8
2160	1107020522	Labette Creek	9.06	8.55
2161	1107020523	Little Labette Creek	4.93	4.60
2162	1107020524	Lake Creek	10.1	9.62
2163	1107020525	Center Creek	1.48	1.49
2164	1107020526	Little Fly Creek	.80	.88
2165	1107020527	Deer Creek	4.42	4.21
2166	1107020528	Town Creek	2.32	2.31
2167	1107020529	Turkey Creek	2.46	2.34
2168	11070205298	Unnamed stream	.89	.80
2169	110702053	Neosho River	1,120	985
2170	1107020530	Spring Creek	1.89	1.79
2171	11070205303	Unnamed stream	.11	.06
2172	11070205304	Unnamed stream	0	0
2173	11070205305	Unnamed stream	.51	.43

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2174	1107020531	Denny Branch	2.04	2.09
2175	1107020532	Little Cherry Creek	3.38	3.43
2176	1107020533	Wolf Creek	2.18	2.24
2177	1107020534	Plum Creek	1.43	1.49
2178	1107020535	Mulberry Creek	2.67	2.59
2179	1107020536	Litup Creek	2.53	2.47
2180	1107020537	Stink Branch	1.49	1.52
2181	1107020538	Ogeese Creek	3.64	3.48
2182	1107020539	Tolen Creek	2.15	1.99
2183	11070205396	Bachelor Creek	4.05	3.84
2184	110702054	Cherry Creek	12.7	12.7
2185	1107020540	Bachelor Creek	2.53	2.41
2186	1107020541	Murphy Creek	1.52	1.45
2187	1107020542	Grindstone Creek	1.26	1.31
2188	1107020543	Elm Creek	1.72	1.76
2189	1107020544	Thunderbolt Creek	2.39	2.42
2190	1107020545	Pecan Creek	1.93	1.87
2191	1107020546	Little Walnut Creek	2.35	2.05
2192	11070205460	Hackberry Creek	2.40	2.23
2193	1107020547	Little Elk Creek	2.00	2.01
2194	1107020548	Rock Creek	2.25	2.17
2195	1107020549	Fourmile Creek	2.66	2.42
2196	110702055	Neosho River	1,070	952
2197	110702056	Lightning Creek	18.4	15.4
2198	110702057	Limestone Creek	4.94	4.79
2199	11070205731	Downey Creek	.76	.71
2200	110702058	Lightning Creek	9.16	8.45
2201	110702059	Neosho River	988	883
2202	1107020618	Fourmile Creek	1.83	1.99
2203	1107020619	Tar Creek	.45	.54
2204	110702071	Spring River	976	785
2205	1107020716	Cow Creek	27.9	25.9
2206	1107020717	Shawnee Creek	7.73	7.85
2207	1107020718	Turkey Creek	11.8	12.5
2208	1107020719	Spring River	617	472
2209	110702072	Shoal Creek	300	246
2210	1107020720	Willow Creek	2.61	2.81
2211	1107020721	Long Branch	.80	.80
2212	1107020722	Little Shawnee Creek	2.11	2.13

Table 6. Stream segments on the Kansas Surface Water Register, CUSEGA numbers, stream names, and estimated median flows at downstream end of CUSEGA segments using the most-recent 10 years of record (KSA) and all-available hydrology (AAH) analyses—Continued

Stream segment number (plate 1)	CUSEGA number	Stream name	Estimated median flows (ft^3/s)	
			KSA analysis	AAH analysis
2213	1107020723	Brush Creek	8.38	8.93
2214	1107020724	Cow Creek, East	3.9	3.87
2215	1107020725	Taylor Branch	2.54	2.51
2216	1107020726	Brush Creek	3.27	3.29
2217	1107020727	First Cow Creek	3.4	3.37
2218	1107020728	Clear Creek	2.13	2.20
2219	110702073	Spring River	684	529
2220	110702074	Spring River	652	502
2221	110702076	Spring River	499	373
2222	110702077	Spring River	406	302
2223	11070207881	Short Creek	3.36	4.06
2224	1024000722	Wildcat Creek	.65	.16
2225	1025000464	Elm Creek	0	0
2226	1029010867	Harless Creek	.27	.18
2227	1106000417	Osage Creek	0	0
2228	1106000513	Bluff Creek	33.1	28.3
2229	11030014999	Cable Lake	0	0
2230	11030013456	Wichita Floodway	18.0	16.0
2231	11070207886	Shoal Creek tributary	.81	1.31
2232	1105000122	Keno Creek	0	0