

# Water Resources Data Kansas Water Year 2003



Water-Data Report KS-03-1



# CALENDAR FOR WATER YEAR 2003

## 2002

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OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	7	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

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## 2003

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JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28		23	24	25	26	27	28	29
														30	31					

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APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4					1	2	3	1	2	3	4	5	6	7
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
27	28	29	30				25	26	27	28	29	30	31	29	30					

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JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4						1	2		1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31			24	25	26	27	28	29	30	28	29	30				

31

# **Water Resources Data Kansas Water Year 2003**

By J.E. Putnam and D.R. Schneider

Prepared in cooperation with the State of Kansas and with other agencies

Water-Data Report KS-03-1

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

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**2004**



## PREFACE

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

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

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## CONTENTS

	Page
Preface .....	III
Illustrations and tables .....	VII
List of surface-water stations, in downstream order, for which records are published .....	VIII-XII
List of discontinued streamflow-gaging stations .....	XIII-XVI
List of discontinued water-quality streamflow-gaging stations .....	XVII-XIX
Introduction .....	1-2
Cooperation .....	2
Summary of hydrologic conditions .....	7-18
Surface water .....	7-17
Streamflow .....	7-15
Surface-water quality .....	16-17
Ground water .....	17-18
Downstream order and station number .....	19
Numbering system for wells and miscellaneous sites .....	19
Special networks and programs .....	20-21
Explanation of stage- and water-discharge records .....	22-28
Data collection and computation .....	22-23
Data presentation .....	23-27
Station manuscript .....	23-24
Peak discharge greater than base discharge .....	24
Data table of daily mean values .....	25
Statistics of monthly mean data .....	25
Summary statistics .....	25-27
Identifying estimated daily discharge .....	27
Accuracy of field data and computed results .....	27-28
Other data records available .....	28
Explanation of water-quality records .....	28-29
Collection and examination of data .....	28
Water analysis .....	28-29
Surface-water-quality records .....	29-32
Classification of records .....	29
Accuracy of the records .....	29
Arrangement of records .....	30
Onsite measurements and sample collection .....	30
Water temperature .....	30
Sediment .....	30-31
Laboratory measurements .....	31
Data presentation .....	31-32
Remark codes .....	32
Explanation of ground-water-level records .....	32-34
Site identification numbers .....	32
Data collection and computation .....	33
Data presentation .....	33-34
Water-level tables .....	34
Hydrographs .....	34
Access to USGS water data .....	35
Definition of terms .....	36-54
Techniques of water-resources investigations of the U.S. Geological Survey .....	55-59

References .....	59
Surface-water records .....	61-588
Discharge at partial-record stations.....	589-593
Miscellaneous surface-water stations.....	594-616
Ground-water records .....	617-626
Ground-water levels, measured quarterly or annually .....	617-618
Ground-water levels, measured daily.....	619-626
Chemical quality of precipitation.....	627-633
Index.....	635-641

## ILLUSTRATIONS

Figure	1. Map of Kansas showing location of complete-record surface-water stations, 2003 water year .....	3
	2. Map of Kansas showing location of complete-record water-quality stations and suspended-sediment sample stations, 2003 water year .....	4
	3. Map of Kansas showing location of high-flow partial-record streamflow-gaging stations, 2003 water year .....	5
	4. Map of Kansas showing number of ground-water-level observation wells per county, 2003 water year .....	6
	5. Map of Kansas showing reporting areas of the National Weather Service.....	7
	6. Graph showing precipitation for water years 2001-03 and normal precipitation for nine National Weather Service reporting areas in Kansas. ....	8
	7. Graphs showing mean daily streamflow for 2003 water year for selected streamflow-gaging stations in Kansas compared with normal range.....	10
	8. Graphs showing comparison of 2003 water year monthly and annual mean streamflow to long-term mean of monthly and annual mean streamflow at selected streamflow-gaging stations .....	12-13
	9. Graph showing lowest annual daily mean streamflow for Republican River at Concordia, 1947 to 2003 .....	14
	10. Graphs showing water levels in selected water-level observation wells .....	18

## TABLES

Table	1. Precipitation during 2003 water year and departure from normal .....	8
	2. Record low streamflows at selected streamflow-gaging stations in Kansas, 2003 water year .....	11
	3. Number of days of streamflow less than Kansas minimum desirable streamflow at selected streamflow-gaging stations, 2003 water year .....	14
	4. Conversion of degrees Celsius to degrees Fahrenheit.....	16
	5. Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter .....	16
	6. Days when median daily pH and mean daily dissolved oxygen exceeded Kansas water-quality standards at selected streamflow-gaging stations, 2003 water year .....	17

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN  
THIS VOLUME

[ Letters in parentheses ( ) after station name designate type of data: (d) discharge, (c) chemical, (t) temperature, (e) elevation, and (s) sediment]

MISSOURI RIVER BASIN

## MISSOURI RIVER:

## BIG NEMAHA RIVER BASIN

## Big Nemaha River:

Turkey Creek near Seneca (d) .....	06814000	61-62
------------------------------------	----------	-------

## KANSAS RIVER BASIN

## Republican River:

South Fork Republican River at Colorado-Kansas State line (d).....	06827000	63-64
--	----------	-------

South Fork Sappa Creek near Achilles (d).....	06844900	65-66
---	----------	-------

Sappa Creek near Oberlin (d).....	06845000	67-68
-----------------------------------	----------	-------

Sappa Creek near Lyle (d).....	06845110	69-70
--------------------------------	----------	-------

Beaver Creek at Ludell (d).....	06846000	71-72
---------------------------------	----------	-------

Beaver Creek at Cedar Bluffs (d).....	06846500	73-74
---------------------------------------	----------	-------

Prairie Dog Creek above Keith Sebelius Lake (d) .....	06847900	75-76
---	----------	-------

Keith Sebelius Lake near Norton (e).....	06847950	77-78
--	----------	-------

Prairie Dog Creek near Woodruff (d).....	06848500	79-80
--	----------	-------

Republican River near Hardy, NE (d).....	06853500	81-82
--	----------	-------

White Rock Creek near Burr Oak (d).....	06853800	83-84
---	----------	-------

Lovewell Reservoir near Lovewell (e).....	06853900	85-86
---	----------	-------

Republican River at Concordia (d) .....	06856000	87-88
---	----------	-------

Republican River at Clay Center (d).....	06856600	89-90
--	----------	-------

Milford Lake near Junction City (e) .....	06857050	91-92
---	----------	-------

Republican River below Milford Dam (d).....	06857100	93-94
---	----------	-------

## Smoky Hill River:

Smoky Hill River at Elkader (d).....	06860000	95-96
--------------------------------------	----------	-------

Smoky Hill River near Arnold (d).....	06861000	97-98
---------------------------------------	----------	-------

Cedar Bluff Reservoir near Ellis (e).....	06861500	99-100
---	----------	--------

Smoky Hill River near Schoenchen (d).....	06862700	101-102
---	----------	---------

Smoky Hill River below Schoenchen (d).....	06862850	103-104
--	----------	---------

Big Creek near Hays (d) .....	06863500	105-106
-------------------------------	----------	---------

Smoky Hill River near Bunker Hill (d).....	06864050	107-108
--	----------	---------

Smoky Hill River at Ellsworth (d) .....	06864500	109-110
---	----------	---------

Kanopolis Lake near Kanopolis (e).....	06865000	111-112
--	----------	---------

Smoky Hill River near Langley (d).....	06865500	113-114
--	----------	---------

Smoky Hill River near Mentor (d) .....	06866500	115-116
--	----------	---------

Saline River near WaKeeney (d).....	06866900	117-118
-------------------------------------	----------	---------

Saline River near Russell (d).....	06867000	119-120
------------------------------------	----------	---------

Wilson Lake near Wilson (e).....	06868100	121-122
----------------------------------	----------	---------

Saline River at Wilson Dam (d) .....	06868200	123-124
--------------------------------------	----------	---------

Saline River at Tescott (d).....	06869500	125-126
----------------------------------	----------	---------

Mulberry Creek near Salina (d).....	06869950	127-128
-------------------------------------	----------	---------

MISSOURI RIVER BASIN

## MISSOURI RIVER--Continued

## KANSAS RIVER BASIN--Continued

## Smoky Hill River--Continued

Smoky Hill River at New Cambria (d).....	06870200	129-130
Gypsum Creek near Gypsum (d).....	06870300	131-132
North Fork Solomon River at Glade (d).....	06871000	133-134
Bow Creek near Stockton (d).....	06871500	135-136
North Fork Solomon River at Portis (d).....	06872500	137-138
South Fork Solomon River above Webster Reservoir (d).....	06873000	139-140
South Fork Solomon River at Woodston (d).....	06873460	141-142
South Fork Solomon River at Osborne (d).....	06874000	143-144
Solomon River:		
Solomon River near Glen Elder (d).....	06875900	145-146
Solomon River near Simpson (d).....	06876070	147-148
Salt Creek near Ada (d).....	06876700	149-150
Solomon River at Niles (ds).....	06876900	151-153
Smoky Hill River at Enterprise (ds).....	06877600	154-156
Chapman Creek near Chapman (d).....	06878000	157-158

## Kansas River:

Kansas River at Fort Riley (d).....	06879100	159-160
Kings Creek near Manhattan (d).....	06879650	161-162
Big Blue River:		
Big Blue River at Marysville (d).....	06882510	163-164
Little Blue River:		
Mill Creek at Washington (d).....	06884200	165-166
Little Blue River near Barnes (d).....	06884400	167-168
Black Vermillion River near Frankfort (ds).....	06885500	169-171
Tuttle Creek Lake near Manhattan (e).....	06886900	172-173
Big Blue River near Manhattan (d).....	06887000	174-175
Kansas River at Wamego (dct).....	06887500	176-192
Vermillion Creek near Wamego (d).....	06888000	193-194
Kansas River near Belvue (d).....	06888350	195-196
Mill Creek near Paxico (d).....	06888500	197-198
Kansas River at Topeka (dct).....	06889000	199-215
Soldier Creek near Holton (d).....	06889170	216-217
Soldier Creek near Delia (d).....	06889200	218-219
Soldier Creek near Topeka (d).....	06889500	220-221
Delaware River near Muscotah (ds).....	06890100	222-224
Perry Lake near Perry (e).....	06890898	225-226
Delaware River below Perry Dam (d).....	06890900	227-228
Kansas River at Lecompton (d).....	06891000	229-230
Wakarusa River near Richland (d).....	06891260	231-232
Clinton Lake near Lawrence (e).....	06891478	233-234
Wakarusa River near Lawrence (d).....	06891500	235-236
Stranger Creek near Tonganoxie (d).....	06892000	237-238
Kansas River at DeSoto (dct).....	06892350	239-255
Cedar Creek at Highway 56 at Olathe (dct).....	06892440	256-272
Olathe Lake near Olathe (ect).....	06892450	273-289

	Station number	Page
<u>MISSOURI RIVER BASIN</u>		
MISSOURI RIVER--Continued		
KANSAS RIVER BASIN--Continued		
Kansas River--Continued		
Cedar Creek below Olathe Lake near Olathe (d) .....	06892460	290-291
Cedar Creek near DeSoto (dct) .....	06892495	292-308
Mill Creek at Johnson Drive, Shawnee (dct) .....	06892513	309-325
BLUE RIVER BASIN		
Blue River:		
Blue River near Stanley (d).....	06893080	326-327
Indian Creek at Overland Park (d) .....	06893300	328-329
OSAGE RIVER BASIN		
Marais des Cygnes River:		
Marais des Cygnes River near Reading (d) .....	06910800	330-331
Melvern Lake near Melvern (e) .....	06910997	332-333
Salt Creek at Lyndon (d) .....	06911490	334-335
Hundred and Ten Mile Creek:		
Dragoon Creek near Burlingame (ds).....	06911900	336-338
Pomona Lake near Quenemo (e) .....	06912490	339-340
Hundred and Ten Mile Creek near Quenemo (d).....	06912500	341-342
Marais des Cygnes River near Pomona (d).....	06913000	343-344
Marais des Cygnes River near Ottawa (d) .....	06913500	345-346
Pottawatomie Creek near Scipio (d).....	06914100	347-348
Big Bull Creek near Edgerton (d).....	06914950	349-350
Little Bull Creek near Spring Hill (d) .....	06914990	351-352
Hillsdale Lake near Hillsdale (e).....	06914995	353-354
Big Bull Creek near Hillsdale (d).....	06915000	355-356
Marais des Cygnes River at La Cygne (d).....	06915800	357-358
Marais des Cygnes River near Kansas-Missouri State line (ds).....	06916600	359-361
Osage River:		
Little Osage River at Fulton (d) .....	06917000	362-363
Marmaton River at Uniontown (d).....	06917240	364-365
Marmaton River near Marmaton (d) .....	06917380	366-367

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#### LOWER MISSISSIPPI RIVER BASIN

##### MISSISSIPPI RIVER:

###### ARKANSAS RIVER BASIN

###### Arkansas River:

Frontier Ditch near Coolidge (d).....	07137000	368
Arkansas River near Coolidge (dct).....	07137500	369-376
Arkansas River at Syracuse (d).....	07138000	377-378
Arkansas River at Kendall (d).....	07138020	379-380
Arkansas River at Deerfield (d) .....	07138070	381-382
Arkansas River at Garden City (d).....	07139000	383-384
Arkansas River at Dodge City (d).....	07139500	385-386
Arkansas River near Kinsley (d).....	07140000	387-388



LOWER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER--Continued

ARKANSAS RIVER BASIN--Continued

Arkansas River--Continued

Pawnee River:

Pawnee River near Burdett (d) .....	07140850	389-390
Buckner Creek near Burdett (d) .....	07141175	391-392
Pawnee River at Rozel (d).....	07141200	393-394
Arkansas River near Larned (d).....	07141220	395-396
Arkansas River at Great Bend (d).....	07141300	397-398
Wet Walnut Watershed Structure No. 39 near Bazine (e) .....	07141750	399-400
Walnut Creek near Alexander (d) .....	07141770	401-402
Wet Walnut Watershed Structure No. 17 near Nekoma (e).....	07141778	403-404
Walnut Creek at Nekoma (d).....	07141780	405-406
Wet Walnut Watershed Structure No. 2 near Otis (e).....	07141890	407-408
Walnut Creek at Albert (ds) .....	07141900	409-411
Walnut Creek below Cheyenne Bottoms Diversion near Great Bend (d).....	07142020	412-413
Rattlesnake Creek near Macksville (d) .....	07142300	414-415
Rattlesnake Creek near Zenith (dct).....	07142575	416-432
Arkansas River near Nickerson (d).....	07142680	433-434
Cow Creek near Lyons (d) .....	07143300	435-436
Arkansas River near Hutchinson (d).....	07143330	437-438
Arkansas River near Maize (d) .....	07143375	439-440
Little Arkansas River at Alta Mills (d).....	07143665	441-442
Little Arkansas River at Highway 50 near Halstead (dct).....	07143672	443-459
Little Arkansas River near Sedgwick (dct) .....	07144100	460-476
Little Arkansas River at Valley Center (d).....	07144200	477-478
Arkansas River at Wichita (d).....	07144300	479-480
Cowskin Creek at 119th Street at Wichita (d).....	07144480	481-482
Arkansas River at Derby (d) .....	07144550	483-484
Ninnescah River:		
North Fork Ninnescah River above Cheney Reservoir (dct) .....	07144780	485-501
Cheney Reservoir near Cheney (ect).....	07144790	502-518
North Fork Ninnescah River at Cheney Dam (d).....	07144795	519-520
South Fork Ninnescah River:		
South Fork Ninnescah River near Pratt (d) .....	07144910	521-522
South Fork Ninnescah River near Murdock (d) .....	07145200	523-524
Ninnescah River near Peck (d).....	07145500	525-526
Slate Creek at Wellington (d).....	07145700	527-528
Arkansas River at Arkansas City (ds).....	07146500	529-531
Walnut River:		
Rock Creek near Potwin (d) .....	07146995	532-535
Whitewater River at Towanda (d) .....	07147070	536-537
Walnut River at Winfield (ds) .....	07147800	538-540
South Fork Arkansas River:		
Medicine Lodge River near Kiowa (d).....	07149000	541-542
Chikaskia River near Corbin (d).....	07151500	543-544
Cimarron River near Elkhart (d) .....	07155590	545-546
Crooked Creek near Englewood (d).....	07157500	547-548

LOWER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER--Continued

ARKANSAS RIVER BASIN--Continued

Arkansas River--Continued

Bluff Creek near Buttermilk (d) .....	07157940	549-550
Verdigris River:		
Verdigris River near Altoona (d).....	07166500	551-552
Otter Creek at Climax (d) .....	07167500	553-554
Fall River at Fredonia (d) .....	07169500	555-556
Elk River at Elk Falls (ds) .....	07169800	557-559
Verdigris River at Independence (d) .....	07170500	560-561
Big Hill Creek near Cherryvale (d) .....	07170700	562-563
Verdigris River at Coffeyville (d) .....	07170990	564-565
Caney River near Elgin (d).....	07172000	566-567
Neosho River:		
Neosho River at Council Grove (d).....	07179500	568-569
Neosho River near Americus (d).....	07179730	570-571
North Cottonwood River below Marion Lake (d).....	07179795	572-573
Cottonwood River near Florence (d).....	07180400	574-575
Cedar Creek near Cedar Point (d) .....	07180500	576-577
Cottonwood River near Plymouth (d) .....	07182250	578-579
Neosho River at Burlington (d) .....	07182510	580-581
Neosho River near Iola (d) .....	07183000	582-583
Neosho River near Parsons (ds) .....	07183500	584-586
Lightning Creek near McCune (d) .....	07184000	587-588

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Discharge at partial-record stations.....	589-593
Miscellaneous surface-water stations.....	594-616
Ground-water records .....	617-626
Chemical quality of precipitation.....	627-633
Index.....	635-641

## DISCONTINUED STREAMFLOW-GAGING STATIONS

The following complete-record streamflow-gaging stations in Kansas have been discontinued, converted to partial-record streamflow-gaging stations, or are now operated by other Federal agencies prior to the 2003 water year. Daily streamflow or stage records were collected and published for the period of record shown for each station.

[Letters in parentheses () after station name designates type of data: (d) discharge. mi<sup>2</sup>, square miles]

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Wolf River Basin			
06815600	Wolf River near Hiawatha, KS (d)	41.00	1961-70
06818200	Doniphan Creek at Doniphan, KS (d)	4.15	1960-70
Kansas River Basin			
06844700	South Fork Sappa Creek near Brewster, KS (d)	74.00	1968-87
06846300	Beaver Creek at Herndon, KS (d)	1,535.00	1963-69
06848000	Prairie Dog Creek at Norton, KS (d)	684.00	1943-02
06854500	Republican River at Scandia, KS (d)	22,903.00	1919-25 1928-44 1951-72
06855000	West Buffalo Creek near Jewell, KS (d)	15.20	1934-38
06855500	West Buffalo Creek at Jewell, KS (d)	16.80	1935-38
06855800	Buffalo Creek near Jamestown, KS (d)	330.00	1959-90
06855900	Wolf Creek near Concordia, KS (d)	56.00	1962-81
06857000	Republican River at Milford, KS (d)	24,900.00	1895-05 1951-64
06858000	Rose Creek near Wallace, KS (d)	28.50	1946-53
06858500	North Fork Smoky Hill River near McAllaster, KS (d)	670.00	1947-53 1959-84
06859500	Ladder Creek below Chalk Creek near Scott City, KS (d)	1,460.00	1951-79
06860500	Hackberry Creek near Gove, KS (d)	426.00	1947-53
06862000	Smoky Hill River at Cedar Bluff Dam, KS (d)	5,530.00	1952-90
06862500	Smoky Hill River near Ellis, KS (d)	5,630.00	1942-52
06863000	Smoky Hill River at Pfeifer, KS (d)	6,033.00	1929-32
06863300	Big Creek near Ogallah, KS (d)	297.00	1956-68
06863900	North Fork Big Creek near Victoria, KS (d)	54.00	1962-87
06863990	Big Creek near Russell, KS (d)	824.00	1963-64
06864000	Smoky Hill River near Russell, KS (d)	6,965.00	1940-74
06866000	Smoky Hill River at Lindsborg, KS (d)	8,110.00	1930-65
06867500	Paradise Creek near Paradise, KS (d)	212.00	1946-53 1963-74
06868000	Saline River near Wilson, KS (d)	1,900.00	1929-63
06868400	Wolf Creek near Lucas, KS (d)	163.00	1959-71
06868500	Wolf Creek near Sylvan Grove, KS (d)	261.00	1946-53
06868700	North Branch Spillman Creek near Ash Grove, KS (d)	26.10	1962-71
06870500	Smoky Hill River near New Cambria, KS (d)	1,980.00	1949-53
06871800	North Fork Solomon River at Kirwin, KS (d)	1,367.00	1919-25 1928-32 1941-02
06871900	Deer Creek near Phillipsburg, KS (d)	65.00	1967-81
06872300	Middle Beaver Creek near Smith Center, KS (d)	71.00	1961-70
06873200	South Fork Solomon River below Webster Reservoir, KS (d)	1,150.00	1956-02
06873500	South Fork Solomon River at Alton, KS (d)	1,720.00	1919-25 1928-32 1942-57
06873700	Kill Creek near Bloomington, KS (d)	52.00	1963-81
06874500	East Limestone Creek near Ionia, KS (d)	25.60	1934-38
06875000	Elm Creek near Ionia, KS (d)	22.70	1934-38

## DISCONTINUED STREAMFLOW-GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Kansas River Basin--Continued			
06875500	East Limestone Creek at Ionia, KS (d)	51.60	1934-35
06875800	Limestone Creek near Glen Elder, KS (d)	210.00	1965-71
06876000	Solomon River at Beloit, KS (d)	5,530.00	1929-65
06876440	Solomon River near Minneapolis, KS (d)	6,060.00	1978-83
06877000	Smoky Hill River at Solomon, KS (d)	8,830.00	1919-21 1923-34
06877500	Turkey Creek near Abilene, KS (d)	143.00	1959-65
06878500	Lyon Creek near Woodbine, KS (d)	230.00	1954-74
06879000	Smoky Hill River at Junction City, KS (d)	19,900.00	1952-57
06879200	Clark Creek near Junction City, KS (d)	200.00	1958-65
06879500	Kansas River at Ogden, KS (d)	45,240.00	1917-26 1927-51
06882500	Big Blue River at Hull, KS (d)	4,540.00	1919-25 1928-40
06884500	Little Blue River at Waterville, KS (d)	3,509.00	1922-25 1928-58
06885000	Snipe Creek near Beattie, KS (d)	18.00	1954-58
06886000	Big Blue River at Randolph, KS (d)	9,100.00	1918-60
06886500	Fancy Creek at Winkler, KS (d)	174.00	1954-71
06888300	Rock Creek near Louisville, KS (d)	128.00	1959-65
06888925	Unnamed Creek near Kansas Museum of History, Topeka, KS (d)	3.56	1995-98
06889100	Soldier Creek near Goff, KS (d)	2.06	1964-87
06889120	Soldier Creek near Bancroft, KS (d)	10.50	1964-88
06889140	Soldier Creek near Soldier, KS (d)	16.90	1964-98
06889160	Soldier Creek near Circleville, KS (d)	49.30	1964-01
06889180	Soldier Creek near St. Clere, KS (d)	80.00	1964-81
06889580	Shunganunga Creek at Southwest 29th Street, Topeka, KS (d)	14.10	1979-81 1994-96
06889610	South Branch Shunganunga Creek at Southwest 37th Street, Topeka, KS (d)	11.60	1979-81 1994-96
06889700	Shunganunga Creek at Rice Road, Topeka, KS (d)	60.30	1979-83 1993-96
06890000	Little Delaware River near Horton, KS (d)	19.00	1954-61 1962-65 1977-78
06890400	Delaware River near Arrington, KS (d)	738.00	1965-69
06890500	Delaware River at Valley Falls, KS (d)	922.00	1922-67
06890600	Rock Creek near Meriden, KS (d)	22.00	1963-70
06891483	Wakarusa River below Clinton Dam, KS (d)	412.00	1973-80
06891486	West Branch Yankee Tank Creek near Lawrence, KS (d)	1.85	1969-73
06891488	East Branch Yankee Tank Creek near Lawrence, KS (d)	1.35	1969-73
06891490	Yankee Tank Creek near Lawrence, KS (d)	3.90	1969-73
06892490	Cedar Creek near Cedar Junction, KS (d)	38.90	1965-68
06892500	Kansas River at Bonner Springs, KS (d)	59,928.00	1917-73
06893350	Tomahawk Creek near Overland Park, KS (d)	23.90	1974-82

## DISCONTINUED STREAMFLOW-GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Osage River Basin			
06911000	Marais des Cygnes River at Melvern, KS (d)	351.00	1940-74
06912000	Switzler Creek at Burlingame, KS (d)	26.30	1954-61
06914000	Pottawatomie Creek near Garnett, KS (d)	334.00	1939-01
06914500	Pottawatomie Creek at Lane, KS (d)	513.00	1929-32
06914960	Rock Creek near Wellsville, KS (d)	15.90	1993-96
06915977	North Sugar Creek below La Cygne Lake, KS (d)	56.67	1979-82
06915988	North Sugar Creek near Trading Post, KS (d)	72.13	1981-81
06916000	Marais des Cygnes River at Trading Post, KS (d)	2,880.00	1929-58
06916500	Big Sugar Creek at Farlinville, KS (d)	198.00	1929-32 1949-58 1959-70
06917500	Marmaton River near Fort Scott, KS (d)	408.00	1921-25 1929-71
Arkansas River Basin			
07138062	Arkansas River below Amazon Diversion, KS (d)	26,099.00	1978-83
07138065	Arkansas River at Lakin, KS (d)	27,838.00	1978-83
07138650	White Woman Creek near Leoti, KS (d)	750.00	1967-86
07138660	White Woman Creek 4.2 miles south of Leoti, KS (d)	834.00	1979-80
07139800	Mulberry Creek near Dodge City, KS (d)	73.80	1968-90
07140500	Arkansas River at Larned, KS (d)	31,750.00	1922-40
07140700	Guzzlers Gulch near Ness City, KS (d)	58.20	1961-81
07142015	Walnut Creek near Heizer, KS (d)	1,486.00	1974-78
07142620	Rattlesnake Creek near Raymond, KS (d)	1,167.00	1960-98
07142800	Arkansas River at Hutchinson, KS (d)	37,869.00	1895-05
07142860	Cow Creek near Claflin, KS (d)	43.00	1967-81
07142900	Blood Creek near Boyd, KS (d)	61.00	1962-80
07143400	Arkansas River near Wichita, KS (d)	39,072.00	1922-35
07143600	Little Arkansas River near Little River, KS (d)	71.00	1960-72
07144000	East Emma Creek near Halstead, KS (d)	58.00	1963-71
07144601	North Fork Ninnescah River at Arlington, KS (d)	322.00	1996-00
07144660	Silver Creek near Arlington, KS (d)	194.00	1996-00
07144680	Goose Creek near Arlington, KS (d)	46.60	1996-00
07144730	Red Rock Creek near Pretty Prairie, KS (d)	53.20	1996-00
07144800	North Fork Ninnescah River near Cheney, KS (d)	930.00	1951-64
07144850	South Fork South Fork Ninnescah River near Pratt, KS (d)	21.00	1961-80
07146570	Cole Creek near DeGraff, KS (d)	30.00	1961-80
07146623	Walnut River below El Dorado Lake, KS (d)	247.00	1981-90
07146830	Walnut River at Highway 54 east of El Dorado, KS (d)	350.00	1981-98
07146895	Walnut River at Augusta, KS (d)	452.00	1982-85
07146990	Whitewater River 3 miles south of Potwin, KS (d)	162.00	1968-69
07146995	Rock River near Potwin, KS (d)	12.50	2002-03
07147050	West Branch Whitewater River near Furley, KS (d)	88.00	1968-69
07147060	West Branch Whitewater River near Benton, KS (d)	177.00	1968-69
07147100	Whitewater River at Augusta, KS (d)	456.00	1951-55
07147600	Timber Creek near Wilmot, KS (d)	63.00	1962-68
07156010	North Fork Cimarron River at Richfield, KS (d)	463.00	1971-86
07156100	Sand Arroyo Creek near Johnson, KS (d)	619.00	1971-86
07156220	Bear Creek near Johnson, KS (d)	835.00	1966-98
07156225	Bear Creek 9 miles north of Johnson, KS (d)	879.00	1979-80

## DISCONTINUED STREAMFLOW-GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Arkansas River Basin--Continued			
07156500	Cimarron River near Satanta, KS (d)	7,345.00	1942-46
07156800	Cimarron River near Liberal, KS (d)	8,254.00	1896-96 1938-42
07157740	Cimarron River near Buttermilk, KS (d)	11,120.00	1973-79
07157900	Cavalry Creek at Coldwater, KS (d)	39.00	1967-82
07165700	Verdigris River near Madison, KS (d)	181.00	1956-76
07165750	Verdigris River near Virgil, KS (d)	312.00	1989-98
07166000	Verdigris River near Coyville, KS (d)	747.00	1939-98
07167000	Fall River near Eureka, KS (d)	307.00	1947-76
07168500	Fall River near Fall River, KS (d)	585.00	1939-90
07170000	Elk River near Elk City, KS (d)	575.00	1939-69
07171600	Caney River near Cedar Vale, KS (d)	208.00	1989-98
07173300	Middle Caney Creek at Sedan, KS (d)	119.00	1989-98
07173500	Bee Creek near Havana, KS (d)	11.00	1955-58
07179600	Four Mile Creek near Council Grove, KS (d)	55.00	1963-72
07179710	Neosho River near Dunlap, KS (d)	528.00	1985
07180000	Cottonwood River near Marion, KS (d)	329.00	1939-68
07180200	Cottonwood River at Marion, KS (d)	502.00	1984-99
07181000	Cottonwood River at Elmdale, KS (d)	1,045.00	1923-32
07181500	Middle Creek near Elmdale, KS (d)	92.00	1939-50
07182000	Cottonwood River at Cottonwood Falls, KS (d)	1,327.00	1932-71
07182400	Neosho River at Strawn, KS (d)	2,933.00	1949-63
07183100	Owl Creek near Piqua, KS (d)	177.00	1959-70
07183200	Neosho River near Chanute, KS (d)	4,195.00	1963-75
07184300	Cherry Creek near Hallowell, KS (d)	90.00	1976-82
07184500	Labette Creek near Oswego, KS (d)	211.00	1939-45
07186040	Cow Creek near Weir, KS (d)	170.00	1976-S82

## DISCONTINUED WATER-QUALITY STREAMFLOW-GAGING STATIONS

The following complete-record water-quality streamflow-gaging stations in Kansas have been discontinued prior to the 2003 water year. Records of specific conductance, pH, temperature, dissolved oxygen, or sediment were collected and published for the record shown for each station. Discontinued stations for which periodic records of water quality are available from the U.S. Geological Survey office in Lawrence, Kansas, are not included in this list.

[mi<sup>2</sup>, square miles]

Station number	Station name	Drainage area (mi <sup>2</sup> )	Type of record <sup>1</sup>	Period of record
Kansas River Basin				
06827000	South Fork Republican River near Colorado-Kansas State line, KS	1,860.00	Sed.	1948-49
06845000	Sappa Creek near Oberlin, KS	1,063.00	Sed.	1962-64 1967-69
06846500	Beaver Creek at Cedar Bluffs, KS	1,618.00	Temp., Sed.	1961-69
06847900	Prairie Dog Creek above Keith Sebelius Lake, KS	590.00	Sed.	1964-70 2000-02
06847950	Keith Sebelius Lake near Norton, KS	683.00	Temp., S.C., pH, D.O.	1970-82
06848000	Prairie Dog Creek at Norton, KS	684.00	Temp., Sed.	1947-52
06853500	Republican River near Hardy, NE	22,401.00	S.C.	1956-57
06854000	White Rock Creek at Lovewell, KS	345.00	Temp.	1950-54
06854500	Republican River at Scandia, KS	22,903.00	Temp., S.C., Sed.	1957-58 1968-70
06856600	Republican River at Clay Center, KS	24,542.00	NASQAN	1973-93
06857000	Republican River at Milford, KS	249.00	Temp., S.C.	1955-58
06861500	Cedar Bluff Reservoir near Ellis, KS	5,530.00	Temp., S.C., pH, D.O.	1962-82
06862500	Smoky Hill River near Ellis, KS	5,630.00	Sed.	1947-50
06862700	Smoky Hill River near Schoenchen, KS	5,750.00	S.C.	1965-70
06863300	Big Creek near Ogallah, KS	297.00	Temp., S.C., Sed.	1955-62
06866900	Saline River near WaKeeney, KS	696.00	Temp., S.C., Sed.	1955-59
06867000	Saline River near Russell, KS	1,502.00	Temp., S.C., Sed.	1946-51 1964-70
06867500	Paradise Creek near Paradise, KS	212.00	Temp., S.C., Sed.	1948-51 1964-66
06868000	Saline River near Wilson, KS	1,900.00	Temp., S.C.	1948-51
06868500	Wolf Creek near Sylvan Grove, KS	261.00	Temp., Sed.	1947-50
06869500	Saline River at Tescott, KS	2,820.00	Temp., S.C., Sed.	1949-53 1958-75
06870200	Smoky Hill River at New Cambria, KS	1,730.00	Temp., S.C., Cl., Sed.	1962-68 1973-82
06871800	North Fork Solomon River at Kirwin, KS	1,367.00	Temp., Sed.	1950-52
06872500	North Fork Solomon River at Portis, KS	2,315.00	MRB	1962-96
06873500	South Fork Solomon River at Alton, KS	1,720.00	Temp., Sed.	1946-52
06874000	South Fork Solomon River at Osborne, KS	2,012.00	NASQAN	1962-94
06876000	Solomon River at Beloit, KS	5,530.00	Temp., S.C., Sed.	1948-52 1957-58
06876440	Solomon River near Minneapolis, KS	6,060.00	Temp., S.C., pH, D.O.	1978-83
06876900	Solomon River at Niles, KS	6,770.00	Temp., S.C., Cl., Sed.	1957-82 2000-03
06877500	Turkey Creek near Abilene, KS	143.00	Sed.	1958-59
06877600	Smoky Hill River at Enterprise, KS	19,260.00	Temp., S.C., Cl., Sed.	1957-82 2000-03
06878000	Chapman Creek near Chapman, KS	300.00	NASQAN Sed.	1956-95 1958-59
06878500	Lyon Creek near Woodbine, KS	230.00	Sed.	1958-59
06879200	Clark Creek near Junction City, KS	200.00	Sed.	1958-59
06879650	Kings Creek near Manhattan, KS	4.09	Benchmark	1980-96

## DISCONTINUED WATER-QUALITY STREAMFLOW-GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Type of record <sup>1</sup>	Period of record
Kansas River Basin--Continued				
06884400	Little Blue River near Barnes, KS	3,324.00	Temp., S.C., pH, D.O.	1976-90
06885500	Black Vermillion River near Frankfort, KS	410.00	Sed.	1976-90 2000-03
06887000	Big Blue River near Manhattan, KS	9,640.00	NASQAN	1956-58 1962-86
06887500	Kansas River at Wamego, KS	5,280.00	Temp., S.C., Sed.	1956-75
06888000	Vermillion Creek near Wamego, KS	243.00	Temp.	1958-63
06889000	Kansas River at Topeka, KS	56,720.00	Temp., S.C.	1955-58
06889610	South Branch Shunganunga Creek at Southwest 37th St, Topeka, KS	11.60	D.O.	1980-81
06889700	Shunganunga Creek at Rice Road, Topeka, KS	58.70	D.O.	1980-81
06890000	Little Delaware River near Horton, KS	19.00	Temp., S.C.	1977-78
06890100	Delaware River near Muscotah, KS	431.00	Sed.	1977-91 2000-03
06890500	Delaware River at Valley Falls, KS	922.00	Sed.	1957-59
06891490	Yankee Tank Creek near Lawrence, KS	3.90	Temp., S.C.	1970-73
06891500	Wakarusa River near Lawrence, KS	425.00	Sed.	1958-59
06892000	Stranger Creek near Tonganoxie, KS	406.00	Sed.	1957-59
06892350	Kansas River at DeSoto, KS	59,756.00	NASQAN	1975-86
06892500	Kansas River at Bonner Springs, KS	59,928.00	Temp., S.C.	1961-63
Osage River Basin				
06911900	Dragoon Creek near Burlingame, KS	114.00	Sed.	1976-90 2000-03
06913500	Marais des Cygnes River near Ottawa, KS	1,250.00	Temp., S.C.	1961-68
06915988	North Sugar Creek near Trading Post, KS	72.13	Temp., S.C.	1980-81
06916600	Marais des Cygnes River near Kansas-Missouri State line	3,230.00	Sed	2000-03
Arkansas River Basin				
07137500	Arkansas River near Coolidge, KS	25,410.00	NASQAN	1964-68 1970-73 1975-95
07139500	Arkansas River at Dodge City, KS	30,600.00	NASQAN	1974-77
07140000	Arkansas River near Kinsley, KS	31,066.00	Temp., Sed.	1960-75
07141900	Walnut Creek at Albert, KS	1,410.00	Temp., Sed.	1963-75 2000-03
07142620	Rattlesnake Creek near Raymond, KS	1,167.00	S.C.	1969-70
07143330	Arkansas River near Hutchinson, KS	38,910.00	Temp., S.C., Sed.	1960-76
07144200	Little Arkansas River at Valley Center, KS	1,327.00	Temp., Sed.	1957-61
07144550	Arkansas River at Derby, KS	40,830.00	Temp., S.C.	1969-76
07144800	North Fork Ninnescah River near Cheney, KS	930.00	Temp.	1950-51
07145200	South Fork Ninnescah River near Murdock, KS	650.00	Temp., S.C.	1950-73
07145500	Ninnescah River near Peck, KS	2,129.00	Temp.	1951
07146500	Arkansas River at Arkansas City, KS	43,713.00	NASQAN, Sed.	1952-88 2000-03
07146990	Whitewater River 3 miles south of Potwin, KS	162.00	S.C.	1967-69
07147050	West Branch Whitewater River near Furley, KS	88.00	S.C.	1967-69
07147060	West Branch Whitewater River near Benton, KS	177.00	S.C.	1967-69



## DISCONTINUED WATER-QUALITY STREAMFLOW-GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Type of record <sup>1</sup>	Period of record
Arkansas River Basin--Continued				
07147070	Whitewater River at Towanda, KS	426.00	Temp., S.C.	1961-69
07147800	Walnut River at Winfield, KS	1,880.00	Temp., S.C., Sed.	1961-75 2000-03
07148600	Medicine Lodge River at Sun City, KS	335.00	Temp., S.C., Cl.	1954-79 1987-99
07149000	Medicine Lodge River near Kiowa, KS	903.00	Temp., S.C., Cl.	1954-55 1973-79
07151300	Chikaskia River near Spivey, KS	315.00	Temp., S.C., Cl.	1988-99
07151500	Chikaskia River near Corbin, KS	794.00	Temp., Sed.	1962-65
07157500	Crooked Creek near Nye, KS	1,157.00	Temp.	1946-47
07157740	Cimarron River near Buttermilk, KS	1,120.00	Temp., S.C., Cl.	1973-79
07157940	Bluff Creek near Buttermilk, KS	657.00	Temp., Cl.	1973-79
07169800	Elk River at Elk Falls, KS	220.00	Sed.	1967-80 2000-03
07170500	Verdigris River at Independence, KS	2,892.00	Temp., S.C.	1961-68
07183500	Neosho River near Parsons, KS	4,905.00	NASQAN,Sed	1962-94 2000-03
07184070	Deer Creek near Hallowell, KS	7.00	Temp., S.C.	1977-79
07184100	Lightning Creek near Oswego, KS	250.00	Temp., S.C.	1977-79
07184220	Cherry Creek near West Mineral, KS	27.00	Temp., S.C.	1977
07184240	Little Cherry Creek near West Mineral, KS	34.00	Temp., S.C.	1977
07184300	Cherry Creek near Hallowell, KS	90.00	Temp., S.C.	1977-79
07186010	Second Cow Creek at Pittsburg, KS	60.00	Temp., S.C.	1977-79
07186040	Cow Creek near Weir, KS	170.00	Temp., S.C.	1977-80
07186050	Brush Creek near Weir, KS	30.00	Temp., S.C.	1977-79

<sup>1</sup>Type of record: Sed. (sediment), Temp. (temperature), S.C. (specific conductance), D.O. (dissolved oxygen), Cl. (chloride), Benchmark, MRB (Missouri River Basin), NASQAN (National Stream Quality Accounting Network).



## INTRODUCTION

The U.S. Geological Survey, in cooperation with local, State, and Federal agencies, collects a large amount of data pertaining to the water resources of Kansas each water year (October 1 to September 30). These data, accumulated during many water years, constitute a valuable database for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Kansas." Historic and current streamflow, water-quality, and ground-water data also are available on the World Wide Web at: <http://ks.water.usgs.gov/> and <http://ks.waterdata.usgs.gov/nwis/>.

This report contains records for water discharge at 148 complete-record streamflow-gaging stations; complete records of elevation and contents at 17 lakes and reservoirs; water-quality records at 2 precipitation stations; water levels at 12 observation wells; and records of specific conductance, pH, water temperature, dissolved oxygen, and turbidity at 11 gaging stations (includes one gaging station with specific conductance and water temperature only) and 2 lakes with water-quality monitors. Also included are discharge data for 27 high-flow partial-record streamflow-gaging stations, miscellaneous onsite water-quality data for 138 stations, and suspended-sediment concentration for 11 stations. Locations of complete-record surface-water stations, 2003 water year, are shown in figure 1. Locations of complete-record water-quality stations and suspended-sediment sample stations, 2003 water year, are shown in figure 2. Locations of high-flow partial-record streamflow-gaging stations, 2003 water year, are shown in figure 3. The number of ground-water-level observation wells per county, 2003 water year, are shown in figure 4.

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

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Kansas were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir elevation and contents, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 6 and 7." For the 1961 through 1970 water years, the data were published in two 5-year reports, 1961-65 and 1966-70. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above-mentioned Water-Supply Papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Information Services, Federal Center, Box 25286, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report KS-03-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (785) 842-9909.

### **COOPERATION**

The U.S. Geological Survey and agencies of the State of Kansas have had cooperative agreements for the collection of water-resources records since 1895. Organizations that helped support this program through cooperative funding agreements with the Survey are: Kansas Water Office; Kansas Department of Transportation; Kansas Department of Agriculture, Division of Water Resources; city of Wichita; Kansas Department of Health and Environment; Arkansas River Compact Administration; Groundwater Management District No. 5; city of Hays; Johnson County Department of Public Works; Johnson County stormwater Program; city of Olathe; city of Hutchinson; city of Augusta, and city of Arkansas City.

The following Federal agencies assisted in the data-collection program by providing funds: U.S. Army Corps of Engineers and U.S. Department of the Interior, Bureau of Reclamation.

The U.S. Geological Survey, the Kansas Water Office, using State Water Plan Funds, and the U.S. Army Corps of Engineers provide the largest share of funds for operation of data-collection stations.

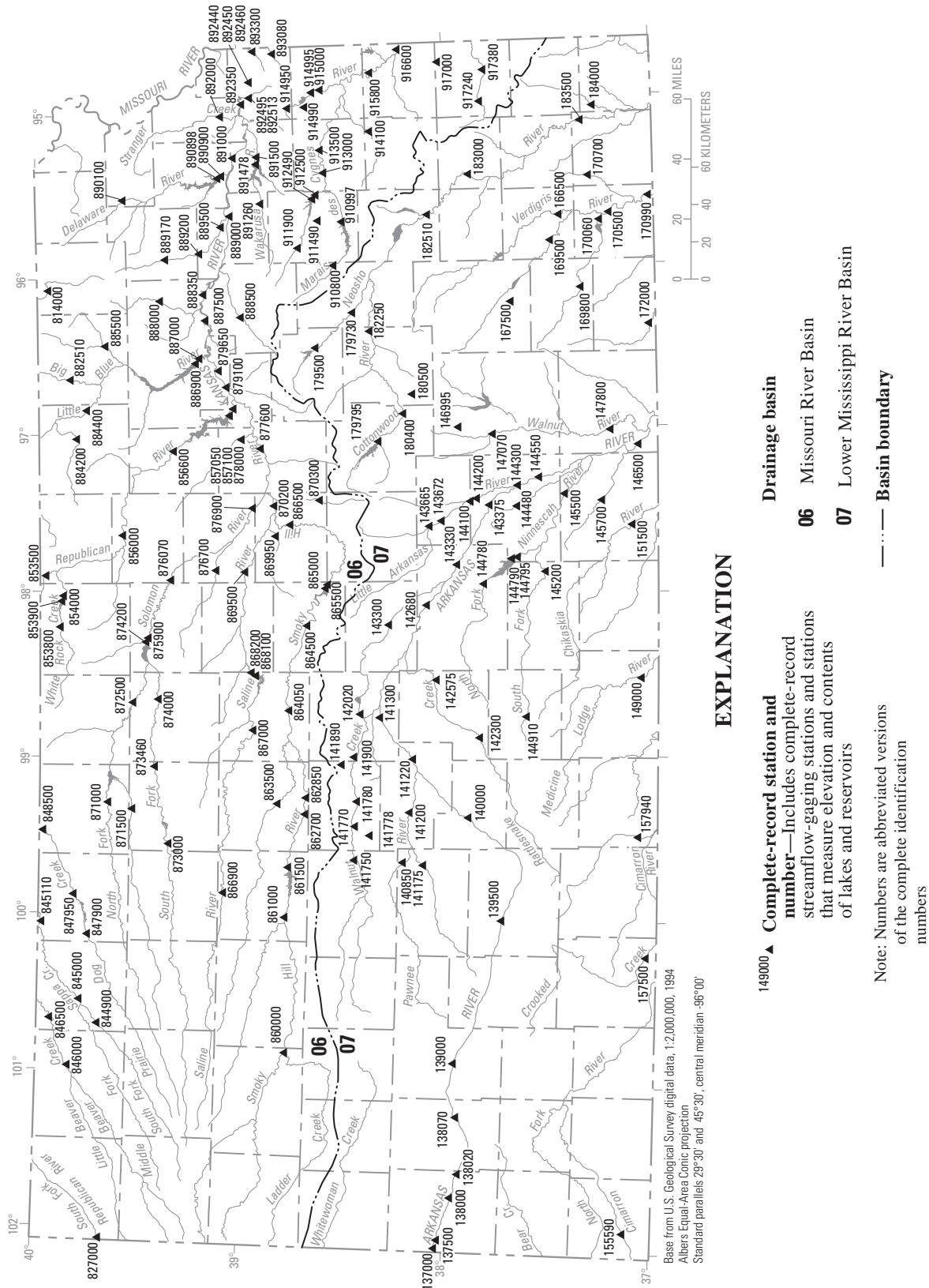
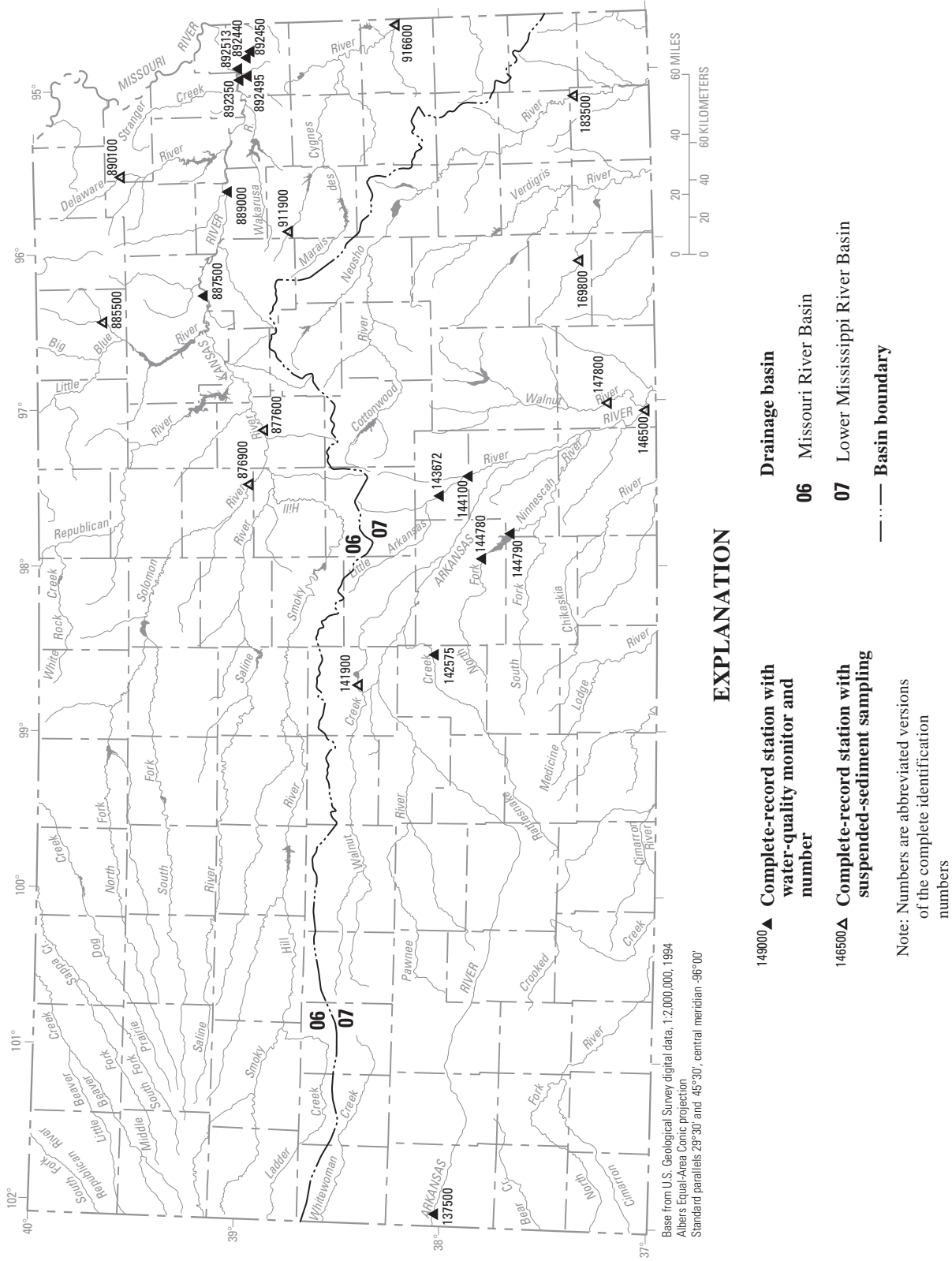


Figure 1. Location of complete-record surface-water stations, 2003 water year.



**Figure 2.** Location of complete-record water-quality stations and suspended-sediment sample stations, 2003 water year.

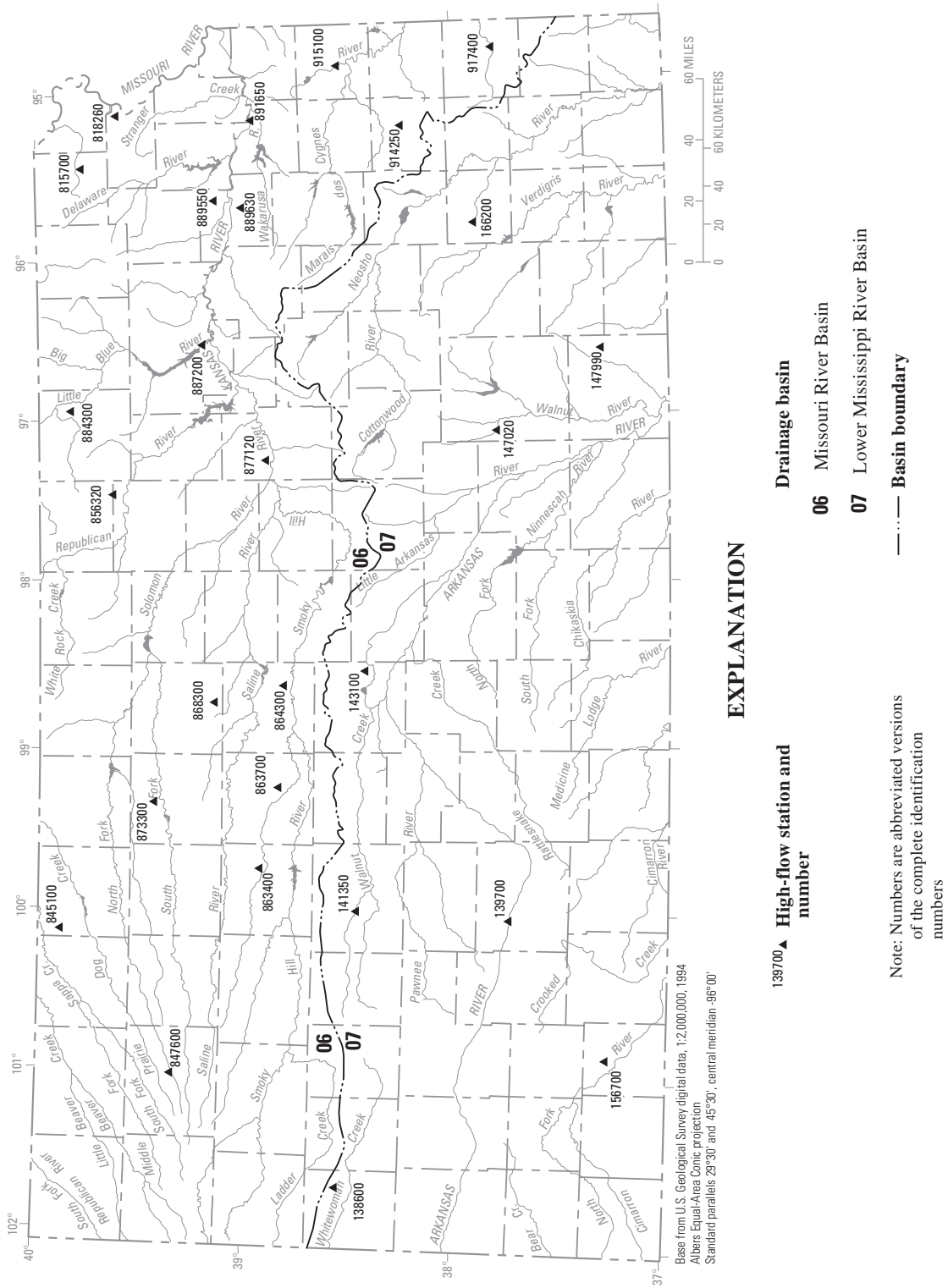


Figure 3. Location of high-flow partial-record streamflow-gaging stations, 2003 water year.

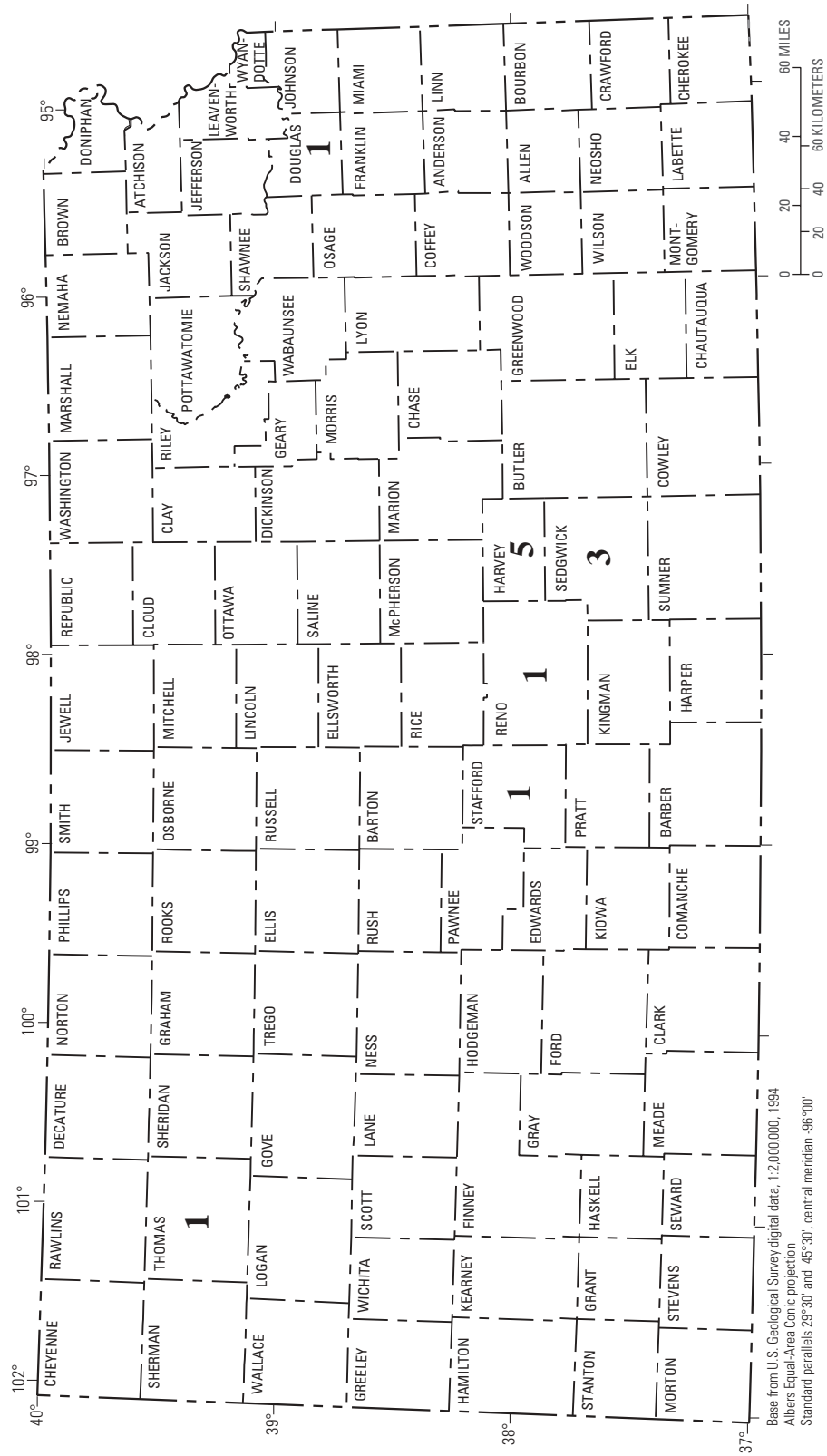


Figure 4. Number of ground-water-level observation wells per county, 2003 water year.



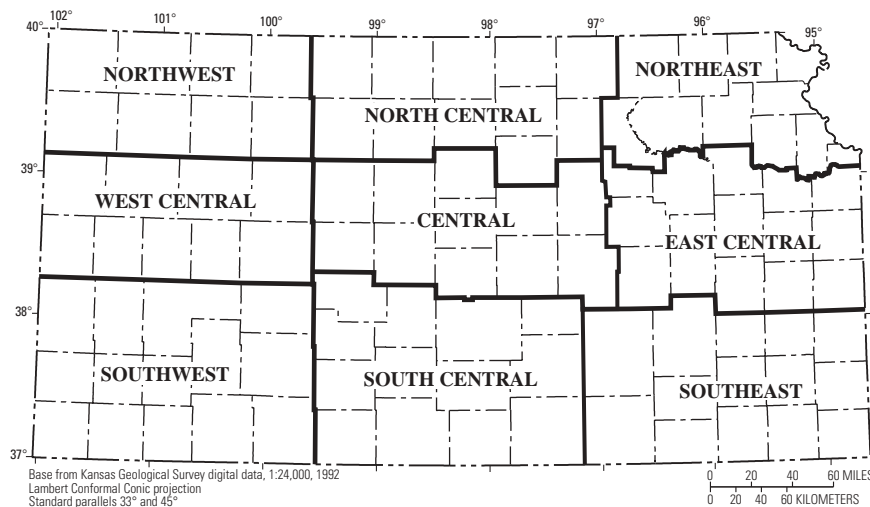
## SUMMARY OF HYDROLOGIC CONDITIONS

### Surface Water

#### Streamflow

Large spatial and temporal variations in streamflow characterize hydrologic conditions in Kansas. In the extreme southeastern part of the State, mean annual precipitation exceeds 40 in., and mean annual runoff exceeds 10 in. In the east, stream channels are deeply incised in wide, alluvial flood plains, and streamflow generally is perennial. In the extreme western part of the State, mean annual precipitation is less than 20 in., and mean annual runoff is less than 0.1 in (Busby, 1963; NOAA, 1979). In western Kansas, streams generally have shallow, ill-defined channels, and streamflow generally is ephemeral.

Precipitation data from monthly reports of the National Weather Service (NOAA, 2002, 2003) for reporting areas in Kansas (fig. 5) are summarized in table 1. Precipitation during the 2003 water year was below normal in northwest, northeast, and east-central Kansas. The remainder of the State had above-normal precipitation largely due to precipitation events in October, June, and August. The largest quarterly departure below normal (-4.38 in.) occurred in northwest Kansas during the fourth quarter (July-September). The largest quarterly departure above normal (3.64 in.) occurred in south-central Kansas during the first quarter (October-December). Wichita received 5.35 in. of rain October 2-3, 2002. Precipitation totals for the 2003 water year ranged from 81 percent of normal in northeast Kansas to 122 percent of normal in south-central Kansas. Figure 6 shows a comparison of precipitation for water years 2001-03 with normal precipitation for the period 1961-90.



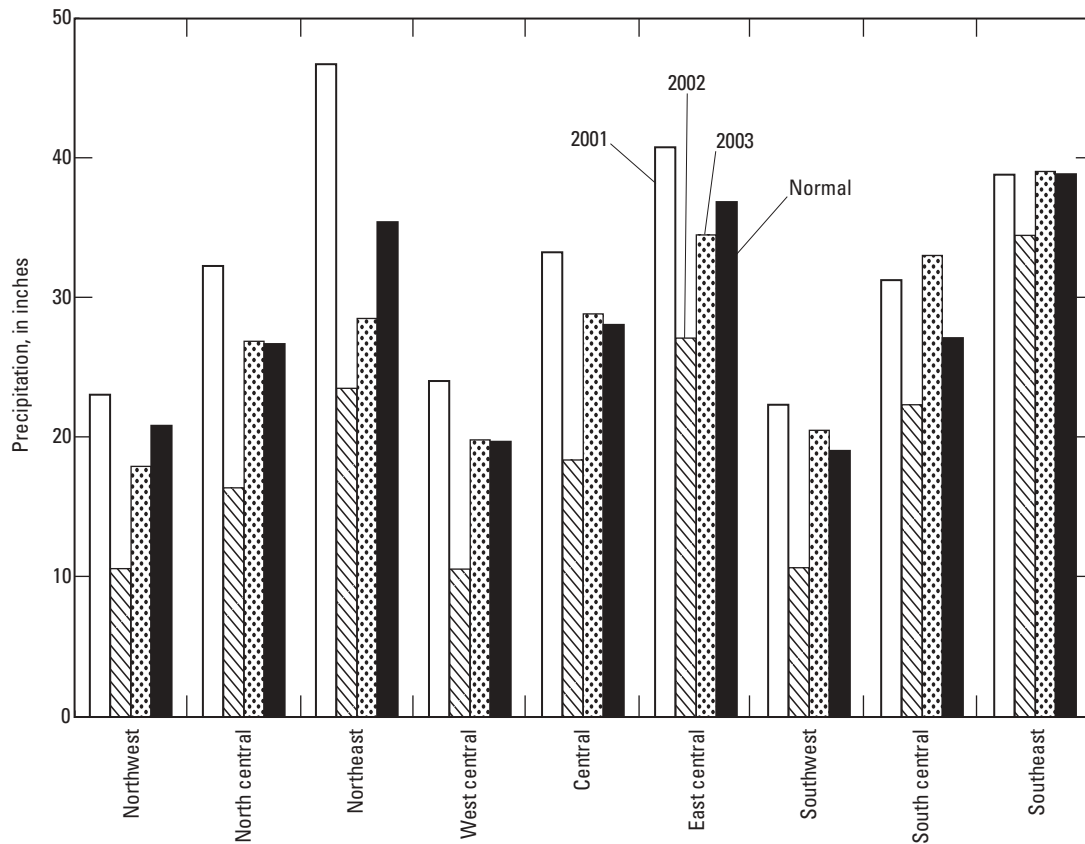
**Figure 5.** Reporting areas of the National Weather Service.

Drought conditions persisted during the 2003 water year and affected much of the State. The U.S. Drought Monitor reports drought information on the Internet at <http://www.drought.unl.edu/dm/index.html>. The U.S. Department of Agriculture, the National Drought Mitigation Center (University of Nebraska-Lincoln), U.S. Department of Commerce (National Oceanic and Atmospheric Administration), and the U.S. Geological Survey contribute data and support for this information. According to the U.S. Drought Monitor (Drought Monitor, 2004), moderate drought conditions persisted throughout most of the

**Table 1.** Precipitation during 2003 water year and departure from normal

[All values are in inches. Period of record for normal, 1961-90. Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service published reports]

Reporting area of State	First quarter (October-December)		Second quarter (January-March)		Third quarter (April-June)		Fourth quarter (July-September)		Water-year totals	
	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal
Northwest	2.74	0.27	2.30	-0.04	10.10	1.25	2.80	-4.38	17.94	-2.90
North central	4.70	1.00	2.83	-.42	11.18	.98	8.17	-1.39	26.88	.17
Northeast	5.12	-.98	2.69	-1.45	12.72	-.25	8.00	-4.20	28.53	-6.88
West central	3.31	.89	2.28	-.03	9.79	1.97	4.46	-2.70	19.84	.13
Central	5.88	1.46	4.14	.62	10.76	.18	8.06	-1.50	28.84	.76
East central	6.09	-.69	3.79	-.99	12.99	-.55	11.63	-1.12	34.50	-2.35
Southwest	3.32	1.00	2.15	0	8.90	1.35	6.16	-.88	20.53	1.47
South central	8.09	3.64	4.93	1.42	10.08	-.08	9.93	.94	33.03	5.92
Southeast	6.05	-1.85	6.06	.46	15.13	1.46	11.80	.10	39.04	.17



**Figure 6.** Precipitation for water years 2001-03 and normal precipitation (1961-90) for nine National Weather Service reporting areas in Kansas (NOAA, 2002, 2003).

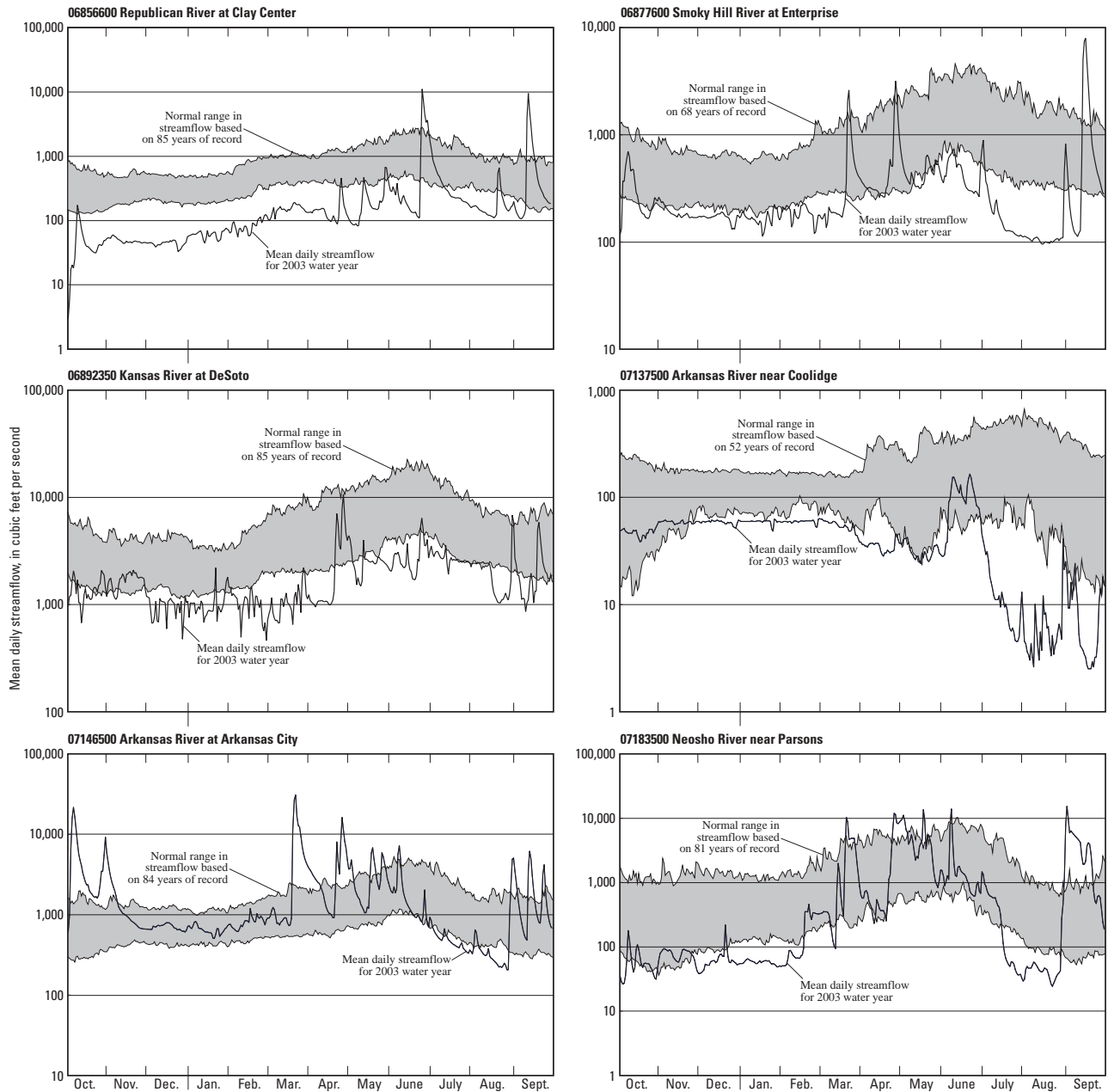
State during the first quarter of the year (October-December) except in parts of southwest and southeast Kansas that reported more normal conditions. Above-normal precipitation in February improved drought conditions in the southern one-third of the State. By the end of March drought conditions were rated as dry in the southwest and southeast and moderate to severe in the northwest, west-central, and north-central parts of the State. Above-normal precipitation in April and June during the third quarter (April-June) of the year improved drought conditions, and by the end of June only areas in northwest and north-central Kansas were rated abnormally dry. Fourth quarter (July-September) drought conditions worsened because of very high temperatures and lack of significant precipitation. Precipitation across the State in July ranged from 1.9 to 2.8 in. below normal in north-central and southeast Kansas, respectively. Dry conditions continued into August, and by the end of the month drought conditions were rated severe across most of the State with extreme conditions in central and northeast Kansas. Moderate precipitation in September improved drought conditions somewhat, and by the end of the month the drought was rated as moderate to severe in western Kansas and abnormally dry in eastern Kansas except for parts of northeast Kansas that were rated severe to extreme.

Below-normal precipitation and drought conditions throughout the State during the 2003 water year resulted in most streamflow-gaging stations flowing below normal for much of the year. Figure 7 shows daily streamflow for six of the larger rivers in the State compared with the long-term normal daily streamflow range computed using historic records. All stations flowed below the normal range for most of the year except the Arkansas River at Arkansas City and the Neosho River near Parsons, which are located in south-central and southeast Kansas, respectively, and are areas of the State that received above-normal precipitation throughout the year. Streamflow at both of these stations fell below normal during July and August, the driest times of the year.

Monthly and annual mean streamflow during water year 2003 at 10 index streamflow-gaging stations are compared to long-term (reference period through previous water year) monthly and annual streamflow in figure 8. Annual mean streamflow during the 2003 water year was less than the long-term annual streamflow at all of the 10 index stations except Medicine Lodge River near Kiowa and Little Arkansas River at Valley Center. Both of these stations are located in south-central Kansas where precipitation was nearly 6 in. above normal (122 percent of normal) for the year.

Drought conditions during the 2002 water year persisted into the 2003 water year, resulting in the monthly streamflow during 2003 water year being less than the long-term monthly streamflows with some exceptions. For example, monthly streamflows at station 07144200, Little Arkansas River at Valley Center, were greater than the long-term monthly streamflows in 5 months during the year (October, March to May, and September), months that generally had above-normal precipitation. Streamflows at station 07149000, Medicine Lodge River near Kiowa, indicated monthly streamflows greater than long-term monthly streamflow in 6 months during the year.

The dry conditions resulted in several record low streamflows during the 2003 water year. Table 2 shows record low streamflows at streamflow-gaging stations with greater than 10 years of record compared with previous record low streamflow. The record low flows at station 06856000, Republican River at Concordia, were lower than those recorded in 2002. Prior to 2002, the instantaneous low flow at this station was 8 ft<sup>3</sup>/s, recorded in 1953. Figure 9 shows lowest daily mean streamflows for Concordia for the period 1947 to 2003. The lowest daily streamflow recorded has decreased steadily since 1994. The lowest recorded streamflow during the 2003 water year at station 06879100, Kansas River at Fort Riley (100 ft<sup>3</sup>/s) equaled that recorded in December 1966.



**Figure 7.** Mean daily streamflow for 2003 water year for selected streamflow-gaging stations in Kansas compared with normal range (daily discharge within 25- to 75-percentile range for period of record, station locations in figure 1).

**Table 2.** Record low streamflows at selected streamflow-gaging stations in Kansas, 2003 water year

[Streamflow values are given in cubic feet per second]

Station identification number and name	Period of record (water years)	Type of streamflow record	2003 water year	Previous low record (water year)
06856000 Republican River at Concordia	1946-2003	lowest daily mean	7.0	7.1 (2002)
		instantaneous low	4.6	6.5 (2002)
06857100 Republican River below Milford Dam	1968-2003	lowest annual mean	81.9	229 (1991)
06879100 Kansas River at Fort Riley	1965-2003	lowest annual mean	515	625 (1991)
		lowest daily mean	114	130 (1967)
		annual seven-day minimum	124	152 (1992)
		instantaneous low	100	100 (1967)
06888350 Kansas River near Belvue	1983-2003	lowest annual mean	1,385	1,798 (1991)
06889200 Soldier Creek near Delia	1959-2003	lowest annual mean	19.2	23.1 (2000)
06890100 Delaware River near Muscotah	1970-2003	lowest annual mean	18.3	38.4 (2000)
		annual seven-day minimum	0	.02 (1989)
06890900 Delaware River below Perry Dam	1970-2003	lowest annual mean	41.8	74.5 (1989)
06891500 Wakarusa River near Lawrence	1978-2003	lowest annual mean	20.5	20.8 (1989)
06914950 Big Bull Creek near Edgerton	1994-2003	lowest annual mean	4.29	8.99 (2000)
		annual seven-day minimum	0	.08 (1994)
06914990 Little Bull Creek near Spring Hill	1994-2003	lowest annual mean	2.14	2.21 (2000)
07144100 Little Arkansas River near Sedgwick	1994-2003	lowest daily mean	2.9	4.8 (2002)
		annual seven-day minimum	3.7	7.1 (2002)
		instantaneous low	2.8	3.5 (1998)

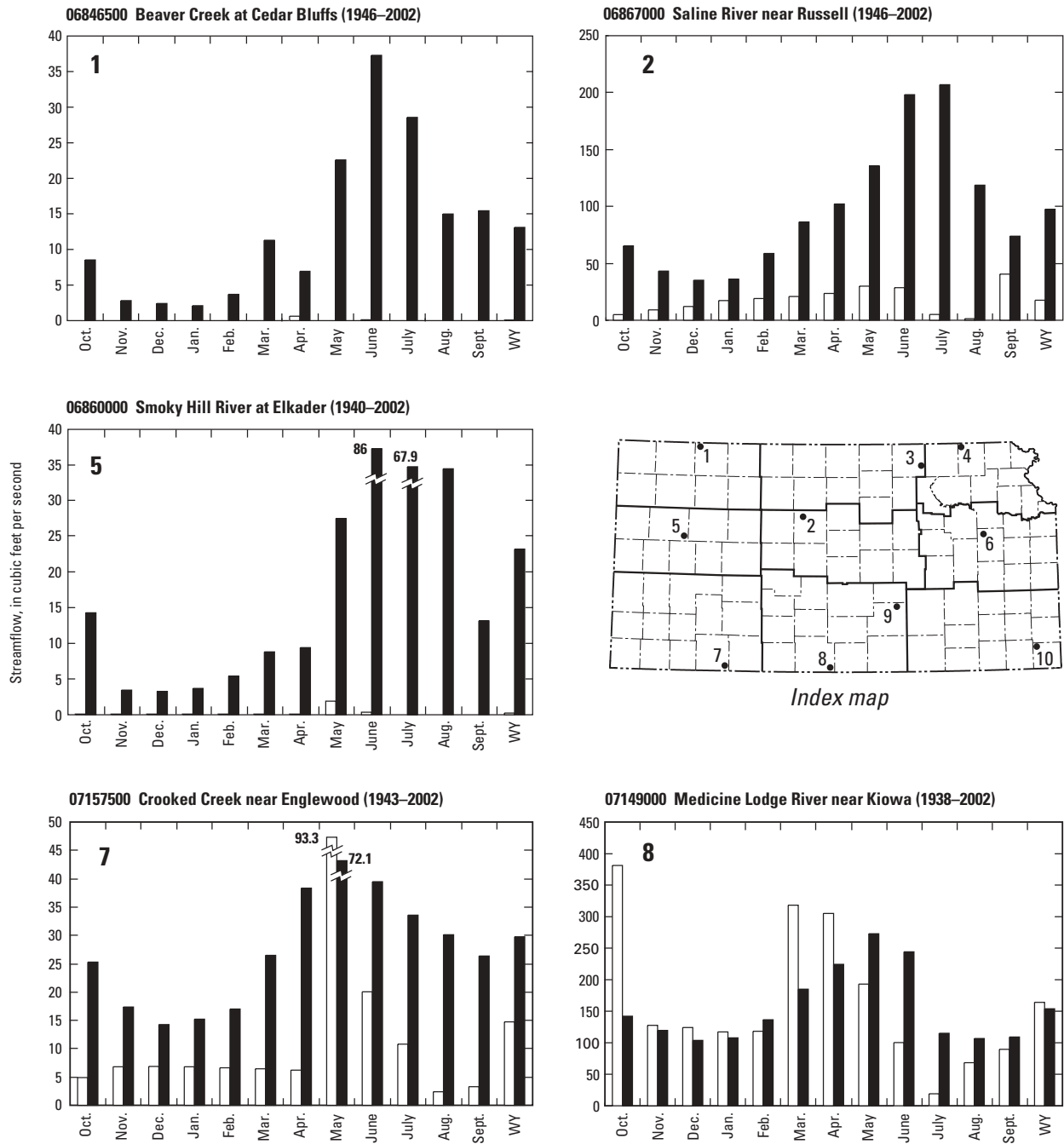
Kansas has established minimum desirable streamflow for many streams in the State. Table 3 lists the number of days that streamflow was less than the minimum desirable streamflow for selected stations. Streamflow conditions in 2003 improved for the Republican River. In 2002, streamflows in the Republican River at Concordia and Clay Center were below minimum desirable streamflow most of the period between July to September. In 2003, streamflow was below minimum desirable streamflow at Concordia 49 percent of the period July to September. Streamflow conditions also improved from 2002 for the Little Arkansas River stations. When streamflow is less than the State minimum desirable streamflow for 7 consecutive days, the Division of Water Resources, Kansas Department of Agriculture, begins administrative processes to curtail surface-water diversions for those with junior water rights.

Two substantial high-flow events occurred in the 2003 water year. Station 06876070, Solomon River near Simpson, recorded a new record high flow, 14,700 ft<sup>3</sup>/s, on September 11. The previous maximum flow was 10,700 ft<sup>3</sup>/s recorded on July 8, 1993. The partial-record station 07156700, Cimarron River tributary near Satanta, recorded a new peak of record, 2,700 ft<sup>3</sup>/s, on May 16. The previous record streamflow at this station, 2,040 ft<sup>3</sup>/s, occurred September 23, 1962.

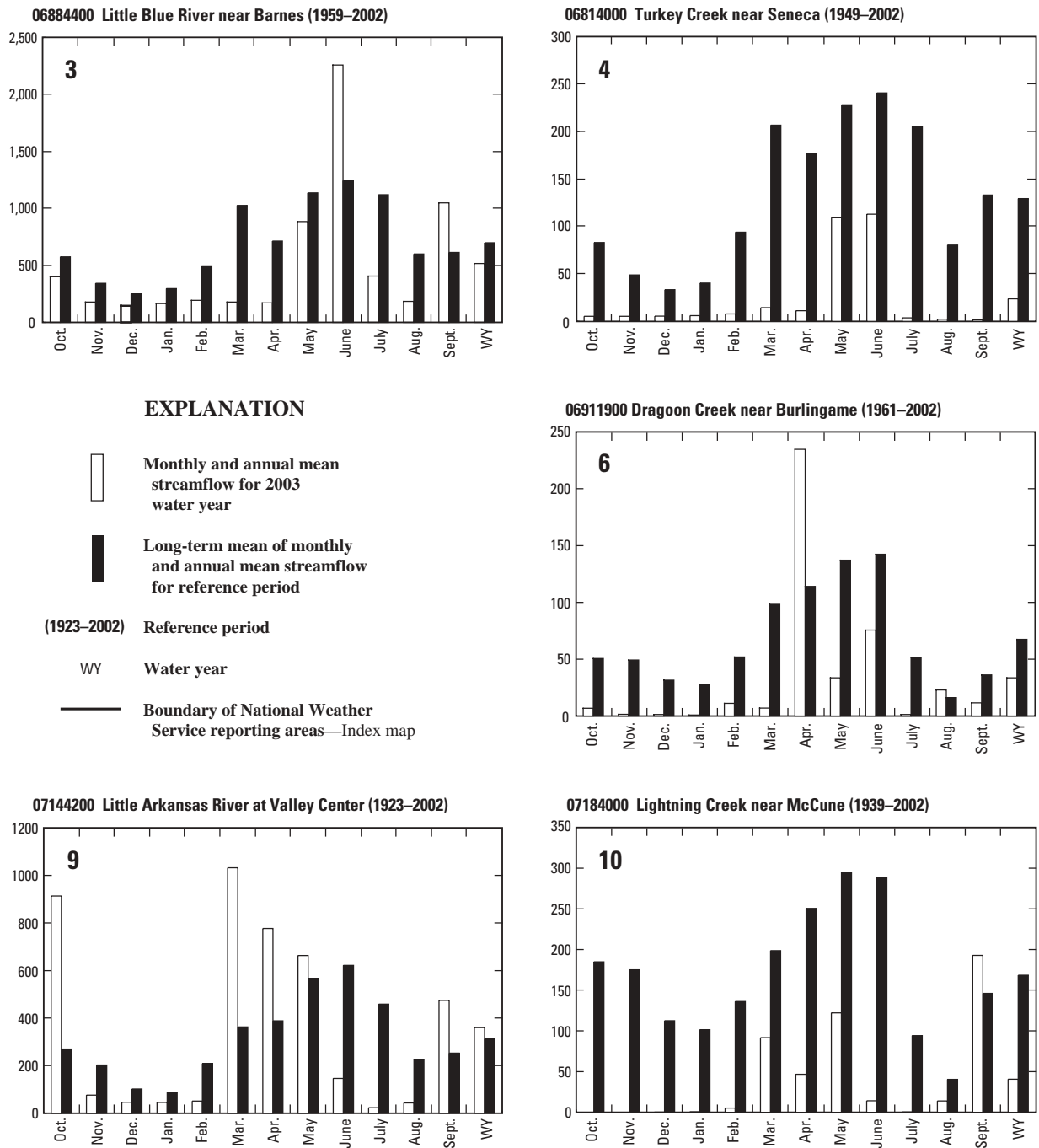
Water levels in most Federal reservoirs in the State were at or above conservation-pool or irrigation-pool elevation by the end of the 2003 water year except at station 06861500, Cedar Bluff Reservoir near Ellis, and station 06890898, Perry Lake near Perry, that were 6 and 4 ft, respectively, below top of conservation pool on September 30. A new record low elevation was recorded on January 27 at station 06857050, Milford Lake near Junction City. The new record elevation, 1,136.90 ft, was about 0.3 ft lower than that recorded on February 26, 1988. The minimum elevation recorded at Perry Lake on April 14 was 1.0 ft below the lowest elevation that occurred on September 30, 2002. The lake elevation at station 06891478, Clinton Lake near Lawrence, dipped to within 0.2 ft of the record low elevation that occurred in 1989.

Data from the surface-water network, as well as information about selected stations, are available on the World Wide Web at:

<http://ks.water.usgs.gov/>



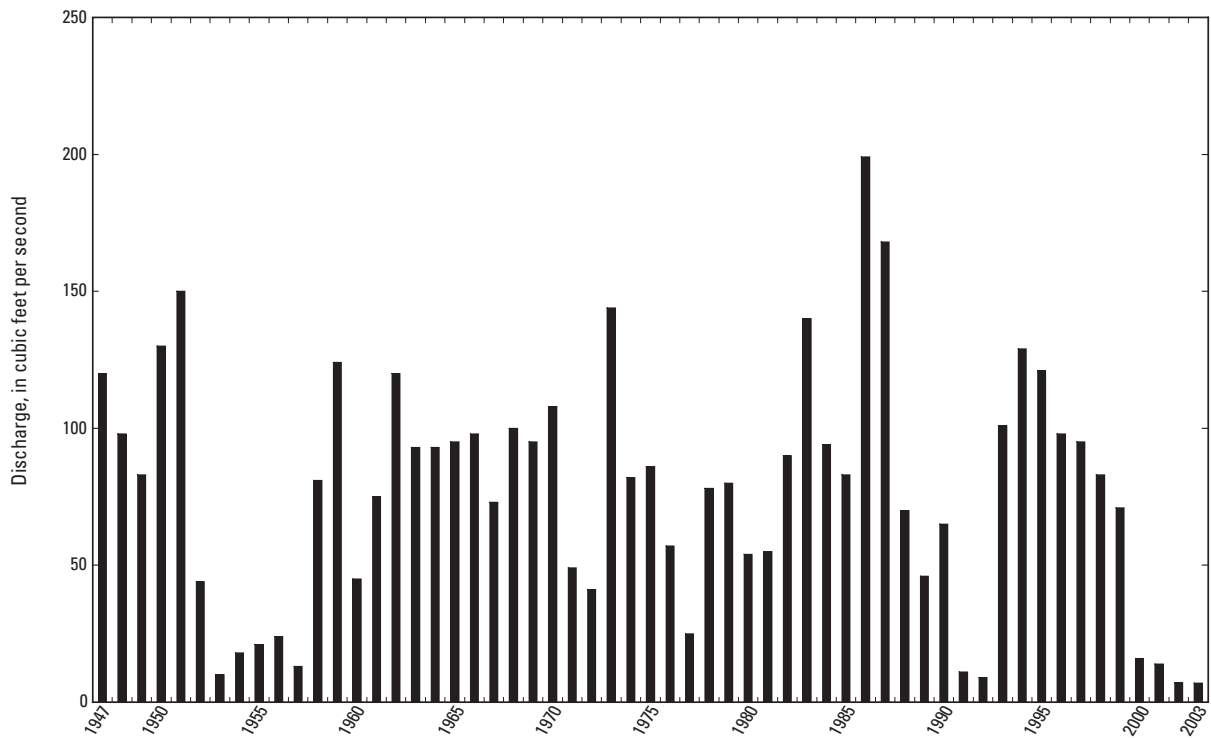
**Figure 8.** Comparison of 2003 water year monthly and annual mean streamflow to long-term mean of monthly and annual mean streamflow at selected streamflow-gaging stations.



**Figure 8.** Comparison of 2003 water year monthly and annual mean streamflow to long-term mean of monthly and annual mean streamflow at selected streamflow-gaging stations--Continued.

**Table 3.** Number of days of streamflow less than Kansas minimum desirable streamflow at selected streamflow-gaging stations, 2003 water year

Station identification number and name	Number of days less than Kansas minimum desirable streamflow						
	March	April	May	June	July	August	September
06856000 Republican River at Concordia	18	28	18	14	11	25	9
06856600 Republican River at Clay Center	31	27	24	18	6	26	0
06864500 Smoky Hill River at Ellsworth	0	0	0	0	25	27	5
06878000 Chapman Creek near Chapman	21	18	3	12	29	30	28
06882510 Big Blue River at Marysville	0	0	0	0	6	8	0
07140000 Arkansas River near Kinsley	31	30	31	30	31	31	30
07141300 Arkansas River at Great Bend	9	0	30	30	31	31	26
07142300 Rattlesnake Creek near Macksville	29	30	23	19	31	31	30
07143665 Little Arkansas River at Alta Mills	0	0	0	0	14	30	3
07144200 Little Arkansas River at Valley Center	0	0	0	0	16	30	0
07144910 South Fork Ninnescah River near Pratt	15	0	0	5	1	19	0
07147070 Whitewater River at Towanda	0	0	0	0	0	5	0
07183500 Neosho River near Parsons	0	0	0	0	7	24	0



**Figure 9.** Lowest annual daily mean streamflow for Republican River at Concordia, 1947 to 2003.





New streamflow-gaging station established on Wakarusa River near Richland (station 06891260), October 25, 2002. Photograph courtesy of J.R. Barnard.

## Surface-Water Quality

Surface-water-quality data contained in this report include continuous records of specific conductance, pH, water temperature, dissolved oxygen, and turbidity collected at 13 stations (fig. 2) and suspended-sediment concentration data collected at 11 stations (fig. 2). Stream specific conductance and water temperature data are shown on pages 594 to 616 for miscellaneous stations. Conversion of degrees Celsius to degrees Fahrenheit is shown in table 4, and factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter are shown in table 5.

**Table 4.** Conversion of degrees Celsius ( $^{\circ}\text{C}$ ) to degrees Fahrenheit ( $^{\circ}\text{F}$ )<sup>1</sup>

[Temperature reported to nearest 0.5 $^{\circ}\text{C}$ ]									
$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
0.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32) \text{ or } ^{\circ}\text{F} = 9/5 (^{\circ}\text{C}) + 32.$$

**Table 5.** Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Ammonia ( $\text{NH}_4^{+1}$ ) .....	0.05544	Nitrate ( $\text{NO}_3^{-1}$ ) .....	0.01613
Calcium ( $\text{Ca}^{+2}$ ) .....	.04990	Phosphate ( $\text{PO}_4^{-3}$ ) .....	.03159
Carbonate ( $\text{CO}_3^{-2}$ ) .....	.03333	Potassium ( $\text{K}^{+1}$ ) .....	.02557
Chloride ( $\text{Cl}^{-2}$ ) .....	.02821	Sodium ( $\text{Na}^{+1}$ ) .....	.04350
Hydrogen ( $\text{H}^{+1}$ ) .....	.99209	Sulfate ( $\text{SO}_4^{-2}$ ) .....	.02082
Magnesium ( $\text{Mg}^{+2}$ ) .....	.08226		

NOTE: Nitrate (N) x 4.427 = Nitrate ( $\text{NO}_3$ )  
 Phosphorus (P) x 3.066 = Phosphate ( $\text{PO}_4$ )

Included in this report are water-quality data recorded at 13 complete-record water-quality monitoring stations--Kansas River at Wamego (see pages 178-192), Kansas River at Topeka (see pages 201-215), Kansas River at DeSoto (see pages 241-255), Cedar Creek at Highway 56 at Olathe (see pages 258-272), Olathe Lake near Olathe (see pages 275-289), Cedar Creek near DeSoto (see pages 294-308), Mill Creek at Johnson Drive, Shawnee (see pages 311-325), Arkansas River near Coolidge (see pages 371-376), Rattlesnake Creek near Zenith (see pages 418-432), Little Arkansas River at Highway 50 near Halstead (see pages 445-459), Little Arkansas River near Sedgwick (see pages 462-476), North Fork Ninescah River above Cheney Reservoir (see pages 487-501), and Cheney Reservoir near Cheney (see pages 504-518). Complete records of specific conductance, pH, water temperature, dissolved oxygen, and turbidity

are published except for the station on the Arkansas River near Coolidge where only specific conductance and water temperature data were collected during the 2003 water year. Maximum, minimum, and mean values for each sensor are published for these stations. The median daily value is published for pH because mean daily pH has been found to bias the results toward lower pH. Data for days when water-quality sensors were fouled by debris or accumulation of deposits are not published. If enough data were available, a mean daily value is estimated. Kansas water-quality standards established by the Kansas Department of Health and Environment (KDHE, 2004) have been established for pH (not less than 6.5 and not greater than 9.0) and for dissolved oxygen (not less than 5 mg/L). Table 6 shows days when the median daily pH or daily mean dissolved oxygen exceeded these standards. Data for water-quality stations, as well as information about surface-water stations, are available on the World Wide Web at:

<http://ks.water.usgs.gov/Kansas/rtqw>

**Table 6.** Days when median daily pH and mean daily dissolved oxygen exceeded Kansas water-quality standards at selected streamflow-gaging stations, 2003 water year

[mg/L, milligrams per liter]

Station identification number and name	Median daily pH greater than or equal to 9.0 or less than 6.5 standard units	Mean daily dissolved oxygen less than or equal to 5.0 mg/L
06887500 Kansas River at Wamego	Feb. 13, 18-23, Mar. 8, 9, 17, 18, 20-22, Aug. 13-25, 27, Sept. 5-10	none
06889000 Kansas River at Topeka	Oct. 10, July 15, 16, 21, Aug. 7-25, Sept. 6, 7	July 9, Aug. 23-29
06892350 Kansas River at DeSoto	Oct. 8-10, Mar. 3-11, 23, 24, Apr. 4, 5, 10-13, May 18, June 5-9, 17-20, July 10, 15, 17-20, 25-27, July 29-31, Aug. 1-15, 22, 23, 26, 28, 29, Sept. 5-12, 15-18	Apr. 19, June 13, 19, 20, 23, Aug. 26
06892440 Cedar Creek at Highway 56 at Olathe	none	Oct. 3, Nov. 9-16, 18-20, 23, Apr. 8, 17, May 15, 16, 19, 20, 25, June 9, 10, 13-19, 22, 23, 25, 29, July 4-6, 11-15, Sept. 3, 11-15
06892450 Olathe Lake near Olathe	none	Oct. 5, 6, 10, 12, 16, 17, 21, 22, 24-30, Nov. 2-7, May 18-20, June 3, 12-21, 23, 25, 30, Sept. 1-9, 12-14, 19, 21-30
06892495 Cedar Creek near DeSoto	Aug. 6, 7	June 10, 15-20, July 3-7, 11-27, Aug. 1-4
06892513 Mill Creek at Johnson Drive, Shawnee	July 17, 18	June 15-19, July 10-13, 20-24, 29-31, Aug. 1, 2, 8, 10, 12, 13, 28, 30
07142575 Rattlesnake Creek near Zenith	July 16-25, 27-31, Aug. 1-17, 20, 27, 29, Sept. 5, 14, 15	May 24, 25, July 4-8, 10-14, 17-31, Aug. 1-29, Sept. 3-7
07143672 Little Arkansas River at Highway 50 near Halstead	none	July 9-11, 15, 20, Aug. 5, 21-28,
07144100 Little Arkansas River near Sedgwick	July 11	July 4, 10, Aug. 2, 5, 6, 30, 31, Sept. 11, 12
07144780 North Fork Ninnescah River above Cheney Reservoir	Aug. 1, 2	none
07144790 Cheney Reservoir near Cheney	June 18	July 21-24, Aug. 1-5, 7-22, 24, 25, 27-30, Sept. 7, 8

## Ground Water

Ground-water levels in Harvey County and Douglas County observation wells did not change substantially during the 2003 water year (fig. 10). The ground-water elevation at the Thomas County well (fig. 10) recorded in September 2003 was about 0.80 ft below that recorded in September 2002 and a new record low. Lack of significant precipitation and continual drought conditions in northwest Kansas during the previous water year and prior to the September 2003 measurement and the effects of regional ground-water pumpage, which has been occurring since the 1960s, contributed to the decrease in water level. Ground-water elevations are published for wells in the *Equus* Beds Ground Water Recharge Demonstration Project in Wichita and are shown beginning on page 617. Data for the project, as well as information about selected surface-water stations, are available on the World Wide Web at:

<http://ks.water.usgs.gov/Kansas/studies/equus>

WATER RESOURCES DATA - KANSAS, 2003

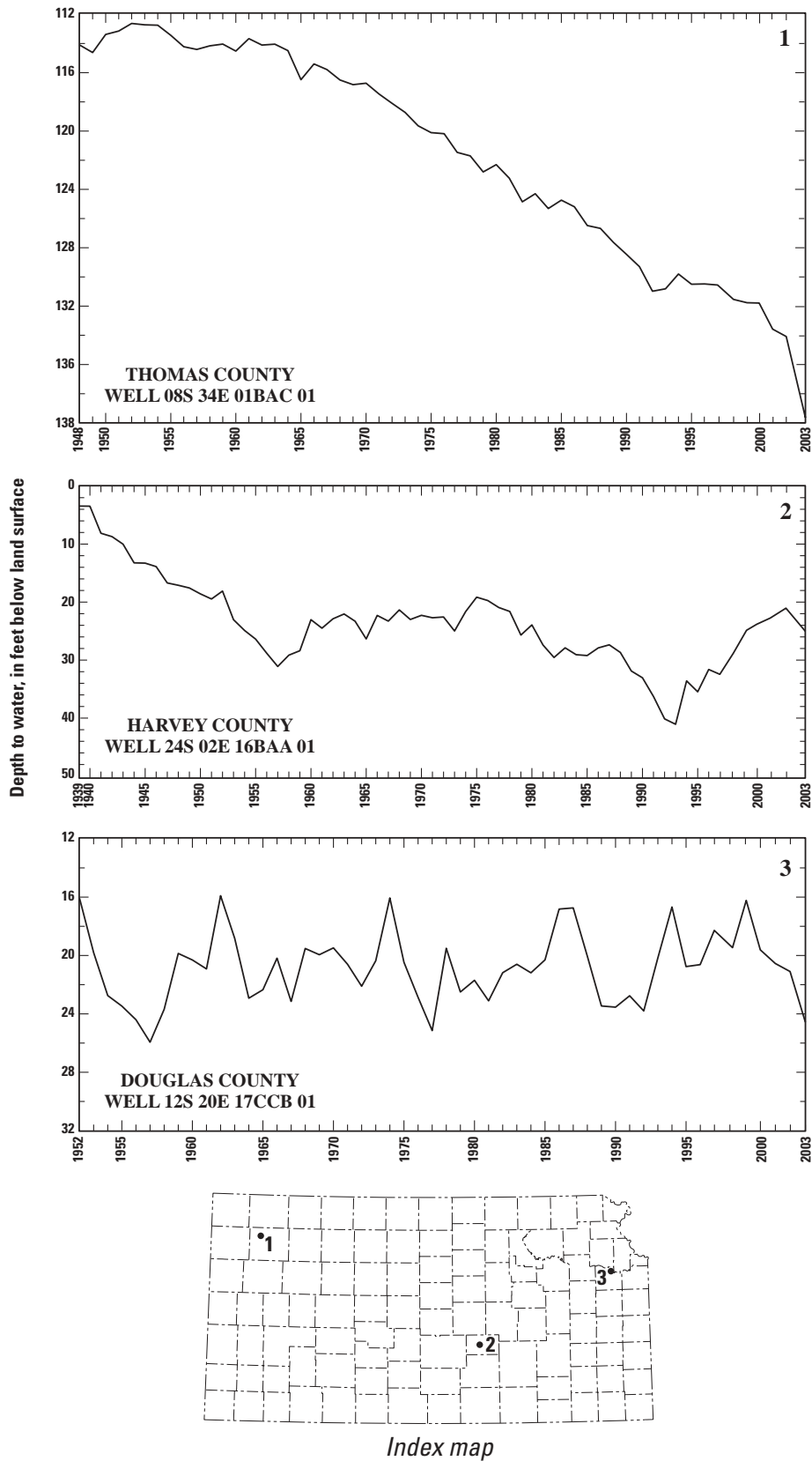


Figure 10. Water levels in selected water-level observation wells.

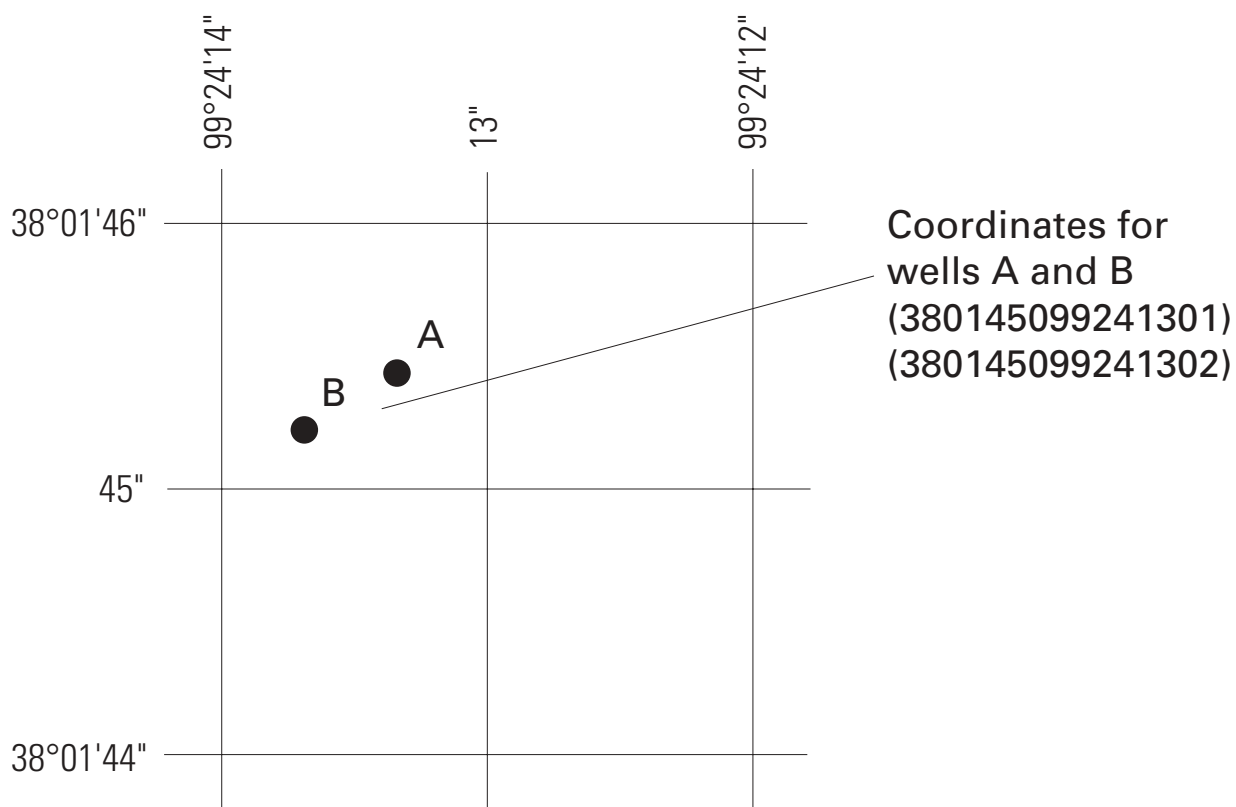
## **DOWNSTREAM ORDER AND STATION NUMBER**

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

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number "09" plus the 6-digit (or 8-digit) downstream order number "004100." In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

## **NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES**

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see figure below). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.



### SPECIAL NETWORKS AND PROGRAMS

**Hydrologic Benchmark Network** is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from <http://water.usgs.gov/hbn/>.

**National Stream-Quality Accounting Network (NASQAN)** is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans

and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from <http://water.usgs.gov/nasqan/>.

**The National Atmospheric Deposition Program/National Trends Network (NADP/NTN)** is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from <http://bqs.usgs.gov/acidrain/>.

**The USGS National Water-Quality Assessment (NAWQA) Program** is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from <http://water.usgs.gov/nawqa/>.

**The USGS National Streamflow Information Program (NSIP)** is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from <http://water.usgs.gov/nsip/>.

## EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

### Data Collection and Computation

The base data collected at gaging stations (fig.1) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

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



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

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

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

## Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

### Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

**LOCATION.**—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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

**PERIOD OF RECORD.**—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

**REVISED RECORDS.**—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

**GAGE.**—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

**REMARKS.**—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

**COOPERATION.**—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

**EXTREMES OUTSIDE PERIOD OF RECORD.**—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

**REVISIONS.**—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (<http://water.usgs.gov/nwis>). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

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

### **Peak Discharge Greater than Base Discharge**

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

## Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

## Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS \_\_\_-\_\_\_, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

## Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS \_\_\_-\_\_\_, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

**ANNUAL TOTAL.**—The sum of the daily mean values of discharge for the year.

**ANNUAL MEAN.**—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

**HIGHEST ANNUAL MEAN.**—The maximum annual mean discharge occurring for the designated period.

**LOWEST ANNUAL MEAN.**—The minimum annual mean discharge occurring for the designated period.

**HIGHEST DAILY MEAN.**—The maximum daily mean discharge for the year or for the designated period.

**LOWEST DAILY MEAN.**—The minimum daily mean discharge for the year or for the designated period.

**ANNUAL 7-DAY MINIMUM.**—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

**MAXIMUM PEAK FLOW.**—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

**MAXIMUM PEAK STAGE.**—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

**INSTANTANEOUS LOW FLOW.**—The minimum instantaneous discharge occurring for the water year or for the designated period.

**ANNUAL RUNOFF.**—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

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

Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a special reason are called measurements at miscellaneous sites.

### **Identifying Estimated Daily Discharge**

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e—Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

### **Accuracy of Field Data and Computed Results**

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

The degree of accuracy of the records is stated in the REMARKS in the station description. “Excellent” indicates that about 95 percent of the daily discharges are within 5 percent of the true value; “good” within 10 percent; and “fair,” within 15 percent. “Poor” indicates that daily discharges have less than “fair” accuracy. Different accuracies may be attributed to different parts of a given record.

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

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

those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

### **Other Data Records Available**

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

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

## **EXPLANATION OF WATER-QUALITY RECORDS**

### **Collection and Examination of Data**

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

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

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

### **Water Analysis**

Most of the methods used for collecting and analyzing water samples are described in the TWRI's. A list of TWRI's is provided in this report.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based

on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

## SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

### Classification of Records

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

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 2.

### Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; , plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ 0.2°C	> 0.2 to 0.5°C	> 0.5 to 0.8°C	> 0.8°C
Specific conductance	≤ 3%	> 3 to 10%	> 10 to 15%	> 15%
Dissolved oxygen	≤ 0.3 mg/L	> 0.3 to 0.5 mg/L	> 0.5 to 0.8 mg/L	> 0.8 mg/L
pH	≤ 0.2 unit	> 0.2 to 0.5 unit	> 0.5 to 0.8 unit	> 0.8 unit
Turbidity	≤ 5%	> 5 to 10%	> 10 to 15%	> 15%

## **Arrangement of Records**

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

## **Onsite Measurements and Sample Collection**

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI's Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRI's are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

## **Water Temperature**

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

## **Sediment**

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

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



discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

### **Laboratory Measurements**

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

### **Data Presentation**

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

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

**LOCATION.**—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

**DRAINAGE AREA.**—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

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

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

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

**COOPERATION.**—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

**EXTREMES.**—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

**REVISIONS.**—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (<http://waterdata.usgs.gov/nwis>). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

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

### Remark Codes

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

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

### EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

### Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES in this report for a detailed explanation).

## Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRI's referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of groundwater samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI's Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

## Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 4.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

**LOCATION.**—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

**AQUIFER.**—This entry designates by name and geologic age the aquifer that the well taps.

**WELL CHARACTERISTICS.**—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

**INSTRUMENTATION.**—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

**DATUM.**—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

**REMARKS.**—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

**PERIOD OF RECORD.**—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

**EXTREMES FOR PERIOD OF RECORD.**—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

### **Water-Level Tables**

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

### **Hydrographs**

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

### **ACCESS TO USGS WATER DATA**

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from <http://water.usgs.gov>.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

## DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from <http://water.usgs.gov/glossaries.html>.

**Acid neutralizing capacity (ANC)** is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

**Acre-foot (AC-FT, acre-ft)** is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

**Adenosine triphosphate (ATP)** is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

**Adjusted discharge** is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

**Algal growth potential (AGP)** is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also “Biomass” and “Dry weight”)

**Alkalinity** is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

**Annual runoff** is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

**Annual 7-day minimum** is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

**Aroclor** is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

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

**Ash mass** is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter ( $\text{g/m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g/m}^2$ ). (See also “Biomass” and “Dry mass”)

**Aspect** is the direction toward which a slope faces with respect to the compass.

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

**Bankfull stage**, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

**Base discharge** (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also “Peak flow”)

**Base flow** is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

**Bed material** is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

**Bedload** is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

**Bedload discharge** (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also “Bedload,” “Dry weight,” “Sediment,” and “Suspended-sediment discharge”)

**Benthic organisms** are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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

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

**Biomass pigment ratio** is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

**Blue-green algae** (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/ $\text{cm}^2$ ) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Bottom material** (See “Bed material”)

**Bulk electrical conductivity** is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

**Canadian Geodetic Vertical Datum 1928** is a geodetic datum derived from a general adjustment of Canada’s first order level network in 1928.

**Cell volume** (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume ( $\mu\text{m}^3$ ) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } \frac{4}{3} \pi r^3 \quad \text{cone } \frac{1}{3} \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi ( $\pi$ ) is the ratio of the circumference to the diameter of a circle;  $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ( $\mu\text{m}^3/\text{mL}$ ) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

**Cells/volume** refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

**Cfs-day** (See “Cubic foot per second-day”)

**Channel bars**, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

**Chemical oxygen demand** (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also “Biochemical oxygen demand (BOD)”]

***Clostridium perfringens*** (*C. perfringens*) is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

**Coliphages** are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

**Color unit** is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

**Confined aquifer** is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.



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

**Continuous-record station** is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

**Control** designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

**Cubic foot per second** (CFS,  $\text{ft}^3/\text{s}$ ) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

**Cubic foot per second-day** (CFS-DAY, Cfs-day,  $[(\text{ft}^3/\text{s})/\text{d}]$ ) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

**Cubic foot per second per square mile** [CFSM,  $(\text{ft}^3/\text{s})/\text{mi}^2$ ] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

**Daily mean suspended-sediment concentration** is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

**Daily record station** is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

**Data collection platform** (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

**Data logger** is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

**Datum** is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

**Diatoms** (*Bacillariophyta*) are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/ $\text{cm}^2$ ) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Diel** is of or pertaining to a 24-hour period of time; a regular daily cycle.

**Discharge, or flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

**Dissolved** refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

**Dissolved oxygen (DO)** is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved solids concentration** in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the “residue-on-evaporation” method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L CaCO<sub>3</sub>) can be converted to carbonate concentration by multiplying by 0.60.

**Diversity index (H)** (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

**Drainage area** of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

**Drainage basin** is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

**Dry mass** refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also “Ash mass,” “Biomass,” and “Wet mass”)

**Dry weight** refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

**Embeddedness** is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

**Enterococcus bacteria** commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink

to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants. (See also “Bacteria”)

**EPT Index** is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

***Escherichia coli* (*E. coli*)** are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Estimated (E) value** of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

**Euglenoids (*Euglenophyta*)** are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

**Extractable organic halides (EOX)** are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

**Fecal coliform bacteria** are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Fecal streptococcal bacteria** are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Fire algae (*Pyrrhophyta*)** are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

**Flow-duration percentiles** are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

**Gage datum** is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained

independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

**Gage height** (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

**Gage values** are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

**Gas chromatography/flame ionization detector** (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

**Geomorphic channel units**, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

**Green algae** (*Chlorophyta*) are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating “moss” in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm<sup>2</sup>) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Habitat**, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

**Habitat quality index** is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

**Hardness** of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate (CaCO<sub>3</sub>).

**High tide** is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA Web site: <http://www.co-ops.nos.noaa.gov/tideglos.html>

**Hilsenhoff’s Biotic Index** (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = \frac{\sum (n)(a)}{N},$$

where  $n$  is the number of individuals of each taxon,  $a$  is the tolerance value of each taxon, and  $N$  is the total number of organisms in the sample.

**Horizontal datum** (See “Datum”)

**Hydrologic index stations** referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

**Inch** (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also “Annual runoff”)

**Instantaneous discharge** is the discharge at a particular instant of time. (See also “Discharge”)

**International Boundary Commission Survey Datum** refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

**Island**, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

**Laboratory reporting level (LRL)** generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a “less than” (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term ‘non-detection value’ (NDV).

**Land-surface datum (lsd)** is a datum plane that is approximately at land surface at each ground-water observation well.

**Latent heat flux** (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

**Light-attenuation coefficient**, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where  $I_o$  is the source light intensity,  $I$  is the light intensity at length  $L$  (in meters) from the source,  $\lambda$  is the light-attenuation coefficient, and  $e$  is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o}.$$

**Lipid** is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

**Long-term method detection level (LT-MDL)** is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

**Low tide** is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA Web site:*  
<http://www.co-ops.nos.noaa.gov/tideglos.html>

**Macrophytes** are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

**Mean concentration of suspended sediment** (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

**Mean discharge** (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

**Mean high or low tide** is the average of all high or low tides, respectively, over a specific period.

**Mean sea level** is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

**Measuring point** (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

**Megahertz** is a unit of frequency. One megahertz equals one million cycles per second.

**Membrane filter** is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

**Metamorphic stage** refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

**Method detection limit** (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

**Method of Cubatures** is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

**Methylene blue active substances** (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

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

**Micrograms per kilogram** (UG/KG,  $\mu\text{g/kg}$ ) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

**Micrograms per liter** (UG/L,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

**Microsiemens per centimeter** (US/CM,  $\mu\text{S/cm}$ ) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

**Milligrams per liter** (MG/L,  $\text{mg/L}$ ) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

**Minimum reporting level** (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

**Miscellaneous site**, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

**Most probable number** (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

**Multiple-plate samplers** are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

**Nanograms per liter** (NG/L,  $\text{ng/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

**National Geodetic Vertical Datum of 1929** (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>* (See "North American Vertical Datum of 1988")

**Natural substrate** refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

**Nekton** are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

**Nephelometric turbidity unit** (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

**North American Datum of 1927** (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

**North American Datum of 1983** (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

**North American Vertical Datum of 1988** (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

**Open or screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

**Organic carbon** (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

**Organic mass** or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

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

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

**Organochlorine compounds** are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

**Parameter code** is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

**Partial-record station** is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

**Particle size** is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

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

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

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



**Peak flow (peak stage)** is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

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

**Percent shading** is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

**Periodic-record station** is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

**Periphyton** is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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

**pH** of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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

**Picocurie (PC, pCi)** is one-trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

**Plankton** is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

**Polychlorinated biphenyls (PCBs)** are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

**Polychlorinated naphthalenes (PCNs)** are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

**Pool**, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

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

**Primary productivity (carbon method)** is expressed as milligrams of carbon per area per unit time [ $\text{mg C}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg C}/(\text{m}^3/\text{time})$ ] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

**Primary productivity (oxygen method)** is expressed as milligrams of oxygen per area per unit time [ $\text{mg O}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg O}/(\text{m}^3/\text{time})$ ] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

**Radioisotopes** are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

**Reach**, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

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

**Recurrence interval**, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ( $7Q_{10}$ ) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the  $7Q_{10}$  occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the  $7Q_{10}$ .

**Replicate samples** are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

**Return period** (See “Recurrence interval”)

**Riffle**, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

**River mileage** is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

**Run**, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

**Runoff** is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Run-off data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

**Sea level**, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

**Sediment** is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

**Sensible heat flux** (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

**Seven-day, 10-year low flow** ( $7Q_{10}$ ) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the  $7Q_{10}$  is 10 years; the chance that the annual 7-day minimum flow will be less than the  $7Q_{10}$  is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

**Shelves**, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

**Sodium adsorption ratio** (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

**Soil heat flux** (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

**Soil-water content** is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

**Specific electrical conductance (conductivity)** is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to

75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

**Stable isotope ratio** (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

**Stage** (See “Gage height”)

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

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

**Substrate** is the physical surface upon which an organism lives.

**Substrate embeddedness class** is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

**Surface area of a lake** is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

**Surficial bed material** is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

**Surrogate** is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

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

**Suspended, recoverable** is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and, thus, the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of “suspended, recoverable” constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

**Suspended sediment** is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

**Suspended-sediment concentration** is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

**Suspended-sediment discharge** (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft<sup>3</sup>/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

**Suspended-sediment load** is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

**Suspended solids, total residue at 105 °C concentration** is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

**Suspended, total** is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as “suspended, total.” Determinations of “suspended, total” constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

**Synoptic studies** are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

**Taxa (Species) richness** is the number of species (taxa) present in a defined area or sampling unit.

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

Kingdom:	Animal
Phylum:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	<i>Hexagenia</i>
Species:	<i>Hexagenia limbata</i>

**Thalweg** is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

**Thermograph** is an instrument that continuously records variations of temperature on a chart. The more general term “temperature recorder” is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

**Time-weighted average** is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

**Tons per acre-foot** (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

**Tons per day** (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

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

**Total coliform bacteria** are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

**Total discharge** is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

**Total in bottom material** is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

**Total length** (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

**Total load** refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

**Total organism count** is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

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

**Total sediment discharge** is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

**Total sediment load** or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

**Transect**, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

**Turbidity** is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

**Ultraviolet (UV) absorbance (absorption)** at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

**Unconfined aquifer** is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

**Vertical datum** (See “Datum”)

**Volatile organic compounds (VOCs)** are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

**Water table** is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

**Water-table aquifer** is an unconfined aquifer within which the water table is found.

**Water year** in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

**Watershed** (See “Drainage basin”)

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

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

**Wet mass** is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

**Wet weight** refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

**WSP** is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

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



## Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at <http://water.usgs.gov/pubs/twri/>. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Products can then be ordered by telephone, or online at <http://www.usgs.gov/sales.html>, or by FAX to (303)236-469 of an order form available online at <http://mac.usgs.gov/isb/pubs/forms/>. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

### Book 1. Collection of Water Data by Direct Measurement

#### Section D. Water Quality

1–D1. *Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. D1. 1975. 65 p.

1–D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

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2–D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.

2–D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

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3–A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.

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### Section A. Statistical Analysis

4–A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.

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4–D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

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## Section C. Sediment Analysis

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7–C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.

7–C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.

7–C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

## Book 8. Instrumentation

### Section A. Instruments for Measurement of Water Level

8–A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8–A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

### Section B. Instruments for Measurement of Discharge

8–B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

## Book 9. Handbooks for Water-Resources Investigations

### Section A. National Field Manual for the Collection of Water-Quality Data

- 9–A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
- 9–A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
- 9–A3. *National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
- 9–A4. *National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
- 9–A5. *National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
- 9–A6. *National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
- 9–A7. *National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
- 9–A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
- 9–A9. *National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

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Control tower at Milford Lake near Junction City, July 16, 2003. Lake elevation near conservation pool, 1,144.84 feet. Photograph courtesy of D.D. Wilmes.

MISSOURI RIVER BASIN

BIG NEMAHA RIVER BASIN

06814000 TURKEY CREEK NEAR SENECA, KS

LOCATION.--Lat 39°56'52", long 96°06'30", in SW 1/4 NW 1/4 SW 1/4 sec.20, T.1 S., R.12 E., Nemaha County, Hydrologic Unit 10240007, on left bank at downstream side of county highway bridge, 2.0 mi downstream from Clear Creek, 5.0 mi upstream from Big Nemaha River, and 8.0 mi northwest of Seneca.

DRAINAGE AREA.--276 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1948 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 1,037.53 ft above NGVD of 1929. Prior to Oct. 19, 1956, water-stage recorder (occasional operation only) and nonrecording gage on former channel 400 ft south of present site at present datum. Oct. 19, 1956, to June 15, 1957, nonrecording gage at highway bridge 1.2 mi upstream at different datum. June 16, 1957, to Mar. 27, 1958, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 9	0400	*3,680	*14.93	Jun 13	0359	3,110	13.76

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.57	24	5.5	6.4	e7.1	10	4.8	13	7.6	11	1.1	6.0
2	1.7	8.7	5.0	5.7	e6.3	9.7	4.5	11	11	9.1	1.6	5.2
3	5.8	6.1	4.2	6.4	e5.8	8.4	4.4	9.3	14	7.8	1.3	3.3
4	11	5.0	4.9	6.6	e5.4	9.7	5.1	8.6	12	6.9	1.2	2.1
5	7.2	5.0	5.8	6.6	e5.2	12	5.3	8.1	10	6.0	1.1	1.1
6	2.8	5.1	5.4	5.5	e5.0	11	7.5	8.4	34	5.4	0.96	0.58
7	1.0	4.9	4.8	5.6	e4.9	9.2	12	9.1	15	4.8	0.71	0.57
8	0.80	4.5	5.6	5.6	e5.3	9.2	13	368	11	4.4	0.57	0.98
9	0.69	4.2	6.1	5.2	e6.3	9.3	9.8	1,840	9.6	4.2	0.45	0.54
10	0.69	4.0	5.7	5.5	e7.2	8.7	6.5	288	444	4.5	0.28	4.4
11	0.63	3.8	5.3	6.3	e7.3	8.4	5.4	140	192	4.8	0.54	6.5
12	0.66	3.9	5.3	6.1	e7.0	8.9	4.6	71	227	4.1	0.46	4.9
13	0.54	3.4	5.9	6.1	e6.6	8.4	4.2	47	1,480	3.6	1.3	3.6
14	0.59	3.9	5.9	5.9	e6.6	8.3	3.9	38	224	3.4	0.82	2.0
15	0.56	4.2	5.5	5.8	e7.9	7.3	3.8	48	105	3.2	0.22	1.2
16	0.67	4.4	5.2	e5.0	e9.6	6.6	4.9	25	65	2.9	0.16	0.67
17	0.71	4.6	5.3	e5.1	e12	7.8	6.0	21	41	2.3	e0.12	0.40
18	1.0	4.3	5.1	e5.1	e13	12	5.7	18	29	2.1	e0.10	0.67
19	0.87	4.1	4.9	e5.0	e14	29	8.2	17	25	1.8	e0.11	e0.67
20	0.80	4.0	4.8	e5.0	e13	88	15	187	19	1.8	e11	0.67
21	0.75	4.0	5.6	e5.1	13	69	8.2	63	14	2.7	15	0.65
22	0.74	3.9	5.5	e5.0	9.9	27	5.5	30	13	3.7	5.9	0.77
23	0.92	4.3	5.5	e5.5	8.7	14	5.0	21	135	3.0	2.6	0.64
24	2.0	4.2	5.8	e6.2	e3.9	10	42	17	123	2.2	0.97	0.38
25	4.6	4.3	6.1	e7.0	e4.8	8.0	51	16	47	1.8	0.28	0.22
26	5.7	4.4	6.1	e7.1	8.9	7.1	26	14	26	1.4	0.19	0.16
27	4.5	4.6	6.1	e6.6	8.0	6.6	15	12	17	1.2	0.35	e0.14
28	3.5	5.2	6.3	e6.6	8.8	6.4	11	11	13	1.1	1.6	e0.11
29	3.0	5.0	6.0	e7.0	---	6.1	16	9.9	12	1.0	10	e0.10
30	20	6.9	5.7	e7.6	---	5.7	26	9.0	12	0.89	5.3	e0.11
31	79	---	6.8	e7.4	---	5.2	---	8.3	---	0.99	5.6	---
MEAN	5.29	5.30	5.54	5.99	7.91	14.4	11.3	109	113	3.68	2.32	1.64
MAX	79	24	6.8	7.6	14	88	51	1,840	1,480	11	15	6.5
MIN	0.54	3.4	4.2	5.0	3.9	5.2	3.8	8.1	7.6	0.89	0.10	0.10
AC-FT	325	315	341	368	439	887	675	6,720	6,720	226	143	98

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

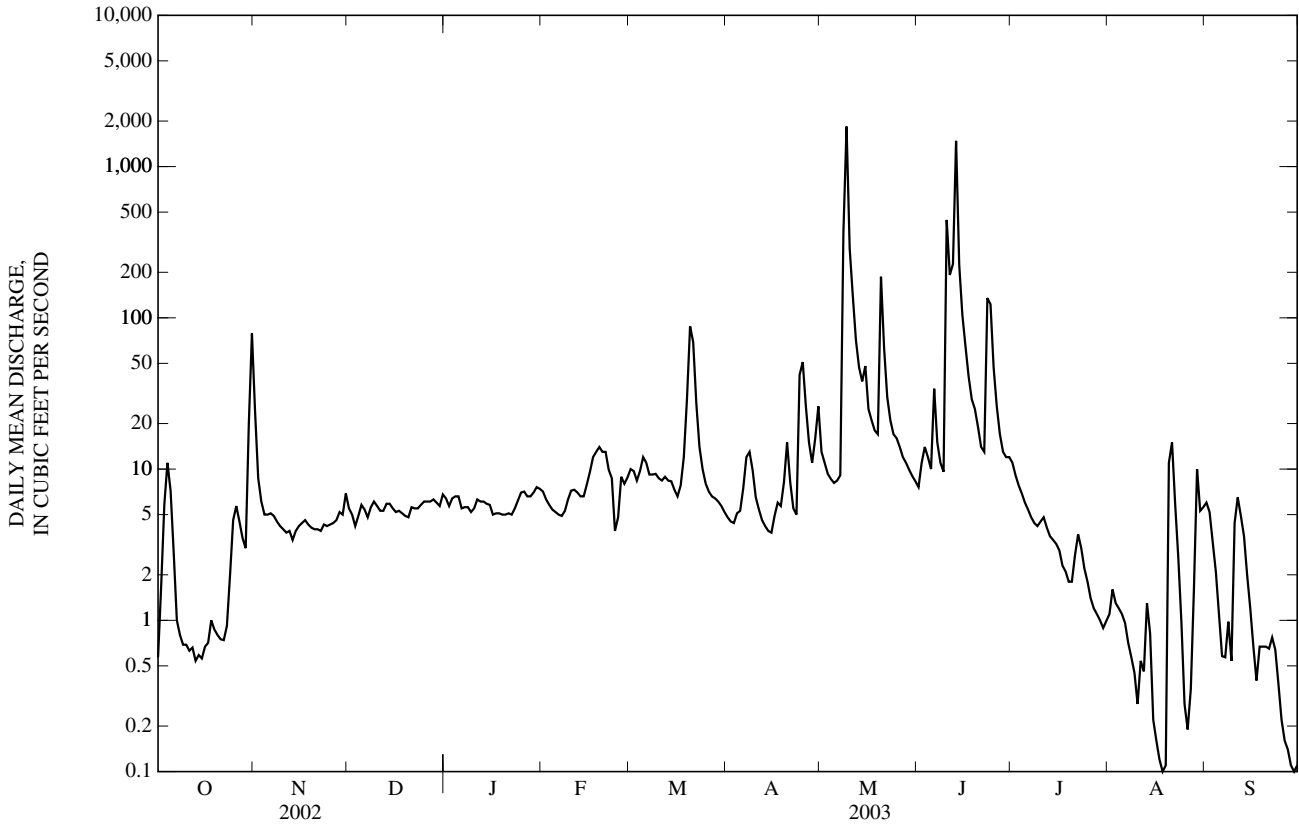
MEAN	81.6	48.2	33.0	39.8	92.1	203	174	226	238	202	79.0	131
MAX	1,050	419	206	310	372	1,297	1,079	1,354	2,067	3,193	914	1,057
(WY)	(1974)	(1999)	(1974)	(1962)	(1982)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1958)
MIN	0.000	0.000	0.000	0.000	0.018	0.065	0.28	2.43	2.75	0.92	1.48	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1989)	(1977)	(1989)	(1988)	(1956)

MISSOURI RIVER BASIN

BIG NEMAHA RIVER BASIN—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1949 - 2003	
ANNUAL MEAN	31.6		23.8		127	
HIGHEST ANNUAL MEAN					547	
LOWEST ANNUAL MEAN					3.24	
HIGHEST DAILY MEAN	1,390	May 12	1,840	May 9	16,700	Oct 11, 1973
LOWEST DAILY MEAN	0.52	Sep 24	0.10	Aug 18	0.00	Jul 28, 1956
ANNUAL SEVEN-DAY MINIMUM	0.59	Sep 23	0.17	Sep 24	0.00	Aug 21, 1956
MAXIMUM PEAK FLOW			3,680	May 9	21,400	Oct 11, 1973
MAXIMUM PEAK STAGE			14.93	May 9	24.77	Oct 11, 1973
INSTANTANEOUS LOW FLOW			0.10	Aug 16	0.00	Jul 28, 1956
ANNUAL RUNOFF (AC-FT)	22,840		17,250		92,340	
10 PERCENT EXCEEDS	49		24		200	
50 PERCENT EXCEEDS	11		5.6		21	
90 PERCENT EXCEEDS	0.82		0.67		2.0	

e Estimated





## 06827000 SOUTH FORK REPUBLICAN RIVER NEAR COLORADO-KANSAS STATE LINE, KS

LOCATION.--Lat 39°40'20", long 102°00'40", in NE 1/4 SE 1/4 SE 1/4 sec.27, T.4 S., R.42 W., Cheyenne County, Hydrologic Unit 10250003, on left bank near downstream wingwall of bridge on county road, 2 mi downstream from CO-KS State line, 0.3 mi downstream from Cowpe Creek, 5 mi downstream from Beaver Creek and 15 mi southwest of St. Francis and at mile 41.7.

DRAINAGE AREA.--1,860 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1945 to September 1956. June 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3467.10 ft above NGVD of 1929. June 6, 1945, to Sept. 30, 1956, stilling well gage at same location, gage datum 3,469.98 ft above NGVD of 1929.

REMARKS.--Records fair. Natural flow affected by Bonny Lake (about 10 mi upstream), ground-water withdrawals, and diversions from Hale Ponds (about 5 mi upstream). Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	7.6	8.1	9.7	9.1	8.8	9.5	11	6.8	8.8	2.4	0.00
2	3.7	7.6	8.1	9.6	9.4	8.8	9.8	11	7.0	7.5	2.6	0.00
3	4.3	7.6	8.1	9.6	9.7	9.4	9.6	10	7.5	6.9	2.5	0.00
4	4.3	7.6	8.1	9.6	9.5	9.1	9.4	10	8.0	6.6	2.3	0.00
5	4.3	7.8	8.0	9.4	9.3	8.9	9.6	9.9	8.1	6.1	2.2	0.00
6	4.4	7.8	8.2	9.3	9.1	9.2	10	10	7.8	5.6	1.9	0.00
7	4.3	7.8	8.2	9.3	8.4	9.0	9.8	10	8.1	5.3	1.8	0.00
8	4.3	7.8	8.2	9.4	9.0	8.7	9.4	9.8	7.4	4.9	1.8	0.00
9	4.6	7.6	8.3	9.4	9.4	8.4	9.5	9.8	6.6	5.2	1.8	0.01
10	4.5	7.6	8.3	9.3	9.1	8.4	9.4	11	6.1	4.8	1.7	0.08
11	4.1	7.6	8.4	9.4	9.1	8.7	9.1	11	7.2	4.4	1.7	0.17
12	3.9	7.3	8.5	9.4	9.1	8.7	9.1	11	6.7	4.1	1.6	0.21
13	3.9	7.3	8.4	9.4	9.2	8.8	9.1	11	7.7	4.0	1.5	0.24
14	4.1	7.6	8.5	9.2	9.2	8.9	9.4	10	8.2	3.4	1.3	0.40
15	4.3	7.6	8.7	9.2	9.0	9.2	9.5	11	7.8	2.9	1.1	0.59
16	4.3	7.6	8.6	8.4	9.1	9.1	10	12	7.0	3.6	0.99	0.59
17	4.7	7.6	8.6	9.3	9.0	9.2	9.8	11	6.8	2.8	0.78	0.52
18	4.7	7.6	8.6	9.6	8.9	10	9.6	11	20	2.4	0.72	0.46
19	4.9	7.4	8.4	9.4	9.2	12	9.3	10	9.5	2.3	0.91	0.51
20	5.1	7.4	8.5	9.4	9.2	11	9.2	9.9	8.4	2.3	0.62	0.68
21	5.3	7.4	8.6	9.4	9.0	11	9.0	9.5	7.7	2.5	0.38	0.83
22	5.8	7.6	8.6	9.3	9.0	10	8.9	9.1	7.4	2.4	0.23	0.93
23	6.0	7.8	8.6	8.8	9.1	10	9.3	9.2	7.4	2.5	0.08	1.6
24	6.1	7.8	8.8	e8.8	8.4	10	10	9.2	6.9	2.2	0.00	1.4
25	6.8	7.9	8.7	9.6	8.3	9.9	10	8.9	6.5	1.9	0.00	1.2
26	7.1	7.9	8.6	9.4	e7.8	9.9	9.7	9.0	6.3	1.9	0.00	1.6
27	8.0	8.1	e8.2	9.5	8.7	9.8	9.3	8.9	6.0	2.1	0.00	1.3
28	7.8	8.2	e8.3	9.4	8.6	9.6	9.3	8.3	7.3	2.4	0.00	1.2
29	8.7	8.1	e8.4	9.3	---	9.5	11	7.6	11	2.6	0.00	1.4
30	8.1	8.0	9.4	9.3	---	9.5	11	6.9	12	3.1	0.00	1.5
31	7.9	---	9.3	9.2	---	9.3	---	6.8	---	2.9	0.00	---
MEAN	5.27	7.69	8.46	9.33	9.00	9.45	9.59	9.80	8.04	3.88	1.06	0.58
MAX	8.7	8.2	9.4	9.7	9.7	12	11	12	20	8.8	2.6	1.6
MIN	3.2	7.3	8.0	8.4	7.8	8.4	8.9	6.8	6.0	1.9	0.00	0.00
AC-FT	324	457	520	574	500	581	570	603	478	239	65	35

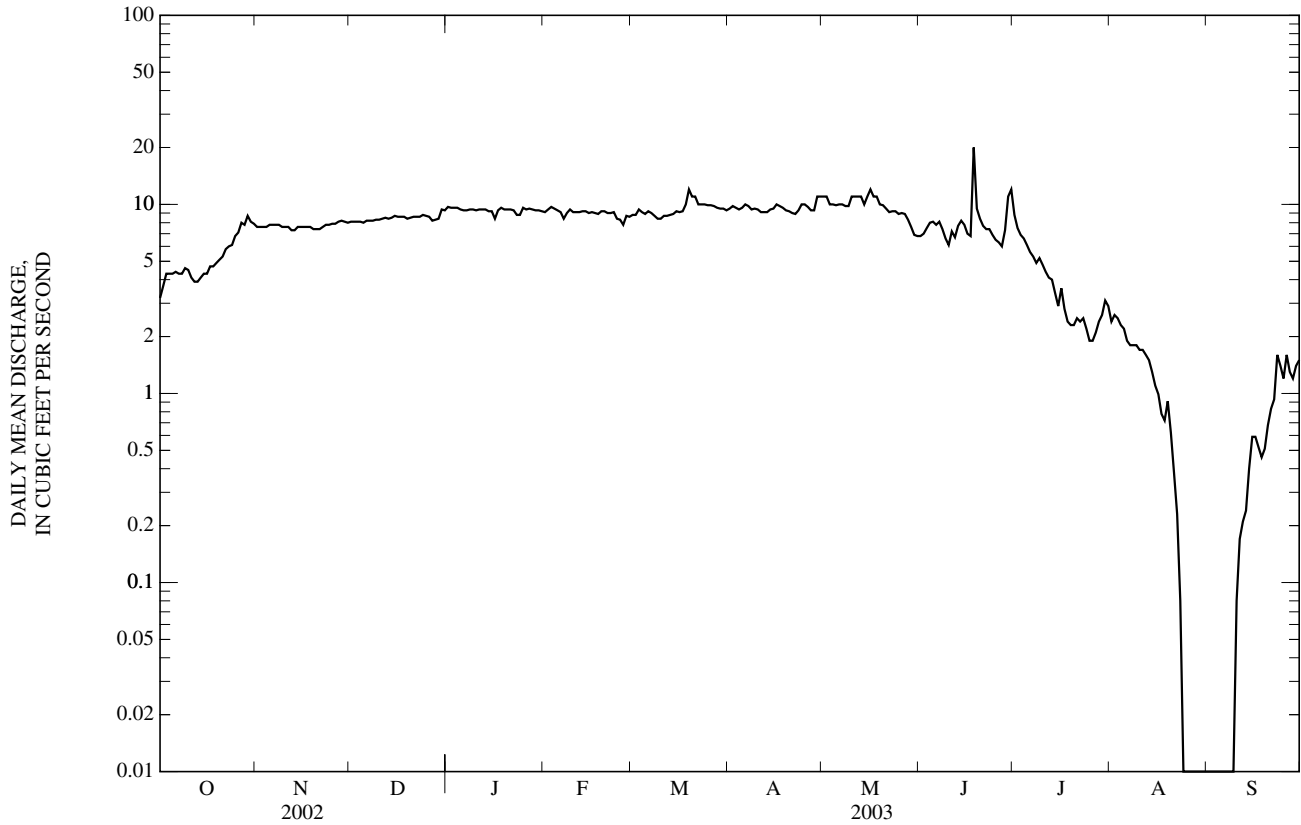
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	24.8	31.4	27.4	29.6	35.7	38.3	47.4	49.2	48.0	31.4	21.9	12.6
MAX	50.0	54.2	52.7	58.1	76.5	78.0	107	123	163	124	114	50.5
(WY)	(1956)	(1947)	(1949)	(1947)	(1948)	(1951)	(1952)	(1947)	(1955)	(1946)	(1949)	(1949)
MIN	5.27	7.69	8.46	9.33	9.00	9.45	9.59	9.80	4.85	1.60	1.06	0.58
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(1952)	(2003)	(2003)

06827000 SOUTH FORK REPUBLICAN RIVER NEAR COLORADO-KANSAS STATE LINE, KS—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	6.83		33.8	
HIGHEST ANNUAL MEAN			60.6	1949
LOWEST ANNUAL MEAN			6.83	2003
HIGHEST DAILY MEAN	20	Jun 18	2,000	Jul 19, 1946
LOWEST DAILY MEAN	0.00	Aug 24	0.00	Aug 28, 1947
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 24	0.00	Aug 7, 1949
MAXIMUM PEAK FLOW	166	Jun 18	166	Jun 18, 2003
MAXIMUM PEAK STAGE	5.51	Jun 18	5.51	Jun 18, 4005
INSTANTANEOUS LOW FLOW	0.00	Aug 24	0.00	Aug 24, 2003
ANNUAL RUNOFF (AC-FT)	4,950		24,500	
10 PERCENT EXCEEDS	9.8		66	
50 PERCENT EXCEEDS	8.1		20	
90 PERCENT EXCEEDS	0.92		3.7	

e Estimated



06844900 SOUTH FORK SAPPA CREEK NEAR ACHILLES, KS

LOCATION.--Lat 39°40'37", long 100°43'18", in SW ¼ SW ¼ NW ¼ sec.29, T.4 S., R.30 W., Decatur County, Hydrologic Unit 10250010, on right bank at downstream side of county highway bridge, 5.5 mi southeast of Achilles, 14 mi southwest of Oberlin, and 18.5 mi upstream from confluence with North Fork.

DRAINAGE AREA.--446 mi<sup>2</sup>, of which 68 mi<sup>2</sup> is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 2,722.42 ft above NGVD of 1929.

REMARKS.--Records good. Natural flow affected by ground-water withdrawals. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 29	0030	*0.12	*4.99				

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

MEAN	0.92	0.20	0.19	0.30	0.92	7.12	1.42	3.90	11.6	6.72	3.48	1.61
MAX	37.9	3.78	2.48	2.78	16.4	243	20.0	31.9	200	116	36.9	33.2
(WY)	(1966)	(1966)	(1966)	(1993)	(1963)	(1960)	(1971)	(1981)	(1975)	(1982)	(1975)	(1965)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1960)	(1960)	(1960)	(1960)	(1961)	(1961)	(1961)	(1964)	(1980)	(1961)	(1961)	(1960)

## KANSAS RIVER BASIN

06844900 SOUTH FORK SAPPA CREEK NEAR ACHILLES, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL MEAN	0.002		0.000		3.21	
HIGHEST ANNUAL MEAN					27.8	1960
LOWEST ANNUAL MEAN					0.000	2003
HIGHEST DAILY MEAN	0.04	Feb 11	0.01	Jun 29	3,060	Jun 19, 1975
LOWEST DAILY MEAN	0.00	Jan 2	0.00	Oct 1	0.00	Oct 1, 1959
ANNUAL SEVEN-DAY MINIMUM	0.00	Mar 15	0.00	Oct 1	0.00	Oct 1, 1959
MAXIMUM PEAK FLOW			0.12	Jun 29	5,310	Jun 19, 1975
MAXIMUM PEAK STAGE			4.99	Jun 29	11.90	Jun 15, 1996
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many days
ANNUAL RUNOFF (AC-FT)	1.6		0.02		2,330	
10 PERCENT EXCEEDS	0.01		0.00		2.0	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

06845000 SAPPA CREEK NEAR OBERLIN, KS

LOCATION.--Lat 39°48'45", long 100°32'00", in NW ¼ NW ¼ NW ¼ sec.12, T.3 S., R.29 W., Decatur County, Hydrologic Unit 10250011, on left bank at downstream side of State Highway 83 bridge, 1.1 mi south of intersection of Highways 36 and 83, 3.0 mi downstream from confluence of North and South Forks, and at mile 133.6.

DRAINAGE AREA.--1,086 mi<sup>2</sup>, of which 163 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1928 to September 1932. June 1944 to September 1972. October 1995 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1340: 1929(M), 1931, 1944(M), 1947(M), 1949, 1951(M), 1953(M).

GAGE.--Water-stage recorder. Elevation of gage 2,540 ft above NGVD of 1929, from topographic map. Mar. 18, 1929, to June 30, 1932, staff gage at site 3.3 mi downstream at datum 2,522.98 ft above NGVD of 1929, June 22, 1944, to June 15, 1945, wire-weight gage 150 ft downstream of previous site at datum 2.20 ft lower. Jan. 16, 1945, to Sept. 30, 1955, water-stage recorder and concrete control 100 ft above previous wire-weight gage site at datum 2,522.50 ft above NGVD of 1929. Oct. 1, 1955, to May 21, 1958, and Jan. 5 to May 15, 1959, wire-weight gage at present site at different datum. May 20, 1959, to Sept. 30, 1972, water-stage recorder at site 3.7 mi upstream at datum 2,562.07 ft above NGVD of 1929.

REMARKS.--Records poor. Natural flow affected by ground-water withdrawals. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft<sup>3</sup>/s, July 16, 1944 (gage height 15.28 ft, site and datum then in use, from floodmark), from rating curve extended above 4,200 ft<sup>3</sup>/s on basis of peak flow over dam; no flow at times.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 29	1500	*164	*10.48	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.8	0.50	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.01	0.00	0.00	2.6	0.11	0.00	0.00	0.00
3	0.03	0.00	0.00	0.00	0.00	e0.00	0.00	0.89	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.24	0.00	0.00	0.01	0.00
5	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.11	0.00	0.01	0.02	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.09	0.04	0.00
7	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.09	0.00	0.02	0.06	0.00
8	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.07	0.00	0.00	0.06	0.00
9	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.07	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.6	0.01	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.06	5.3	0.06	0.03	0.00
13	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.06	0.20	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.04	0.01	0.00	0.08	0.00
15	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	1.6	0.02	0.00	0.00
18	0.00	0.00	0.00	0.00	e0.00	0.04	0.00	0.04	0.31	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	e0.00	0.03	0.00	0.04	0.60	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
22	0.59	0.00	0.00	0.00	e0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.00
23	0.02	0.00	0.00	0.00	e0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.00	0.00
27	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.07	0.00
29	0.00	0.00	0.00	0.01	---	0.00	81	0.00	0.78	0.00	0.00	0.00
30	0.00	0.00	0.00	0.01	---	0.00	21	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.01	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.022	0.000	0.000	0.001	0.000	0.002	3.40	0.36	0.40	0.008	0.012	0.000
MAX	0.59	0.00	0.00	0.01	0.01	0.04	81	5.8	5.3	0.09	0.08	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	1.3	0.00	0.00	0.06	0.02	0.1	202	22	24	0.5	0.7	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

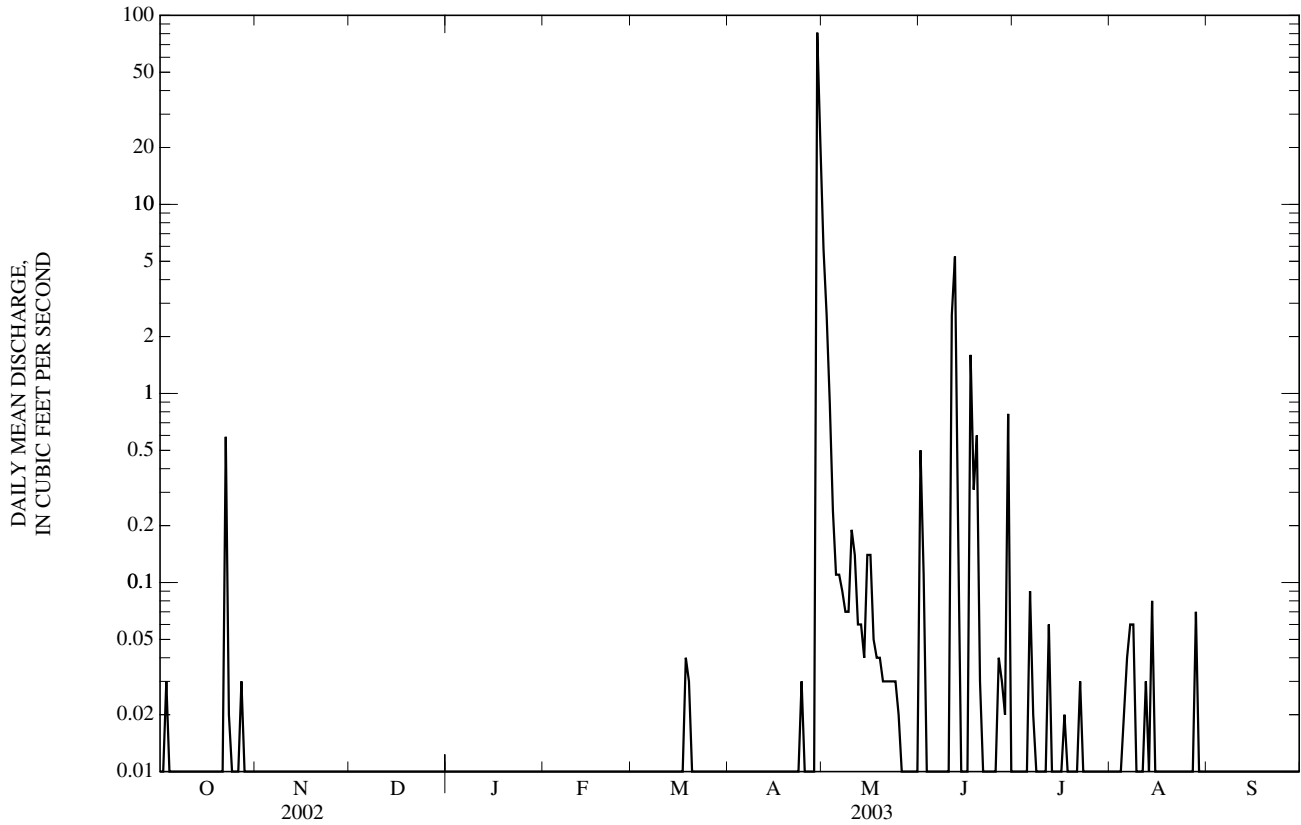
MEAN	15.8	2.78	2.15	1.66	4.96	14.3	5.43	20.0	37.1	43.6	19.1	11.9
MAX	356	33.5	16.8	9.68	31.7	403	28.3	189	235	594	148	197
(WY)	(1947)	(1947)	(1947)	(1931)	(1949)	(1960)	(1931)	(1957)	(1957)	(1944)	(1949)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000
(WY)	(1954)	(1955)	(1956)	(1955)	(1956)	(1956)	(1956)	(1956)	(1956)	(2002)	(1963)	(1953)

KANSAS RIVER BASIN

06845000 SAPPA CREEK NEAR OBERLIN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1929 - 2003	
ANNUAL MEAN	0.030	0.35	13.9	
HIGHEST ANNUAL MEAN			84.2	1951
LOWEST ANNUAL MEAN			0.036	2002
HIGHEST DAILY MEAN	2.6 Jun 15	81 Apr 29	5,100	Mar 21, 1960
LOWEST DAILY MEAN	0.00 May 10	0.00 Oct 1	0.00	Aug 29, 1947
ANNUAL SEVEN-DAY MINIMUM	0.00 Jul 15	0.00 Oct 4	0.00	Jan 31, 1949
MAXIMUM PEAK FLOW		164 Apr 29	1,850	Jun 15, 1996
MAXIMUM PEAK STAGE		10.48 Apr 29	18.16	Jun 15, 1996
INSTANTANEOUS LOW FLOW		0.00 Oct 1	0.00	some days
ANNUAL RUNOFF (AC-FT)	22	251	10,090	
10 PERCENT EXCEEDS	0.05	0.04	16	
50 PERCENT EXCEEDS	0.00	0.00	0.40	
90 PERCENT EXCEEDS	0.00	0.00	0.00	

e Estimated



KANSAS RIVER BASIN

06845110 SAPPA CREEK NEAR LYLE, KS

LOCATION.--Lat 40°00'00", long 99°59'35", in NE ¼ NE ¼ NW ¼ sec.2, T.01 S., R.24 W., Norton County, Hydrologic Unit 10250011, on right bank at upstream side of county highway bridge, 11.5 mi north and 5.5 mi west of Norton, on Kansas-Nebraska State line, and at mile 66.4.

DRAINAGE AREA.--1,488 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,240 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 18	0300	*28	*6.10	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.11	0.63	e1.3	1.8	3.2	e2.5	2.5	4.2	3.2	4.6	0.07	0.17
2	0.16	0.49	e1.2	e1.9	3.7	e2.0	2.5	4.0	4.6	4.8	0.07	0.19
3	0.74	0.40	e1.3	e1.8	e3.0	e2.3	2.5	4.1	4.5	4.5	0.08	0.19
4	3.0	0.49	1.3	e2.0	e2.5	e2.8	2.3	5.1	4.6	3.8	0.09	0.09
5	6.5	0.60	e1.1	e2.0	e2.3	e3.2	2.4	19	4.7	2.8	0.16	0.05
6	5.7	0.53	e1.0	e2.1	e2.1	e2.6	2.8	12	5.2	2.3	0.09	0.04
7	1.8	0.52	e1.2	e2.3	e2.1	e2.6	3.1	8.6	4.5	1.5	0.03	0.03
8	0.96	0.60	e1.3	e2.3	e2.1	e3.0	3.0	8.6	4.2	2.2	0.02	0.05
9	0.62	0.59	e1.3	e2.2	2.2	e3.0	3.0	6.6	4.0	2.9	0.03	0.08
10	0.53	0.56	e1.3	e2.3	e1.8	e2.3	2.8	5.2	3.9	1.9	0.24	0.07
11	0.34	0.53	e1.3	e1.9	e2.0	e2.5	2.7	4.6	5.5	1.4	0.62	0.04
12	0.20	0.47	e1.4	e1.7	e2.2	e3.2	2.6	4.0	7.8	1.5	0.13	0.03
13	0.18	0.58	e1.4	e1.6	e2.5	e3.7	2.4	3.7	5.7	0.88	0.05	0.03
14	0.17	0.55	e1.3	e1.6	2.9	e3.4	2.4	3.5	6.5	0.68	0.05	0.03
15	0.15	0.55	e1.1	e1.5	e2.5	3.2	2.2	3.3	6.4	0.50	0.05	0.03
16	0.14	0.61	e1.1	e1.6	e2.5	2.9	2.7	3.6	5.4	0.42	0.04	0.04
17	0.14	0.65	e1.1	e1.7	e2.8	2.6	3.5	3.7	6.6	0.25	0.04	0.04
18	0.14	0.70	e1.3	e1.9	e2.5	2.8	3.4	3.7	25	0.17	0.04	0.02
19	0.12	0.70	e1.5	e2.0	e2.4	4.2	3.0	4.0	19	0.20	0.06	0.02
20	0.12	0.74	e1.2	e1.8	e2.2	4.7	3.0	4.2	15	0.28	0.06	0.03
21	0.11	0.74	e1.1	e1.7	e2.4	4.2	2.7	3.6	10	0.21	0.05	0.04
22	0.33	0.81	e1.0	e1.6	e2.5	3.7	2.6	3.3	7.1	0.21	0.05	0.04
23	1.2	0.81	e1.3	e1.5	e2.8	3.2	3.1	3.4	5.7	0.19	0.05	0.04
24	1.5	0.68	e1.6	e1.5	e2.4	2.8	4.3	3.6	4.1	0.24	0.04	0.05
25	0.98	0.78	e1.7	e1.7	e2.4	2.6	5.4	7.8	11	0.19	0.04	0.03
26	1.6	e0.80	e2.0	e1.8	e2.8	2.6	4.4	6.6	8.7	0.10	0.05	0.05
27	2.1	0.85	e2.1	e1.9	e3.2	2.6	4.1	4.3	6.4	0.11	0.05	0.03
28	1.6	e0.70	e1.8	e1.9	e3.3	2.5	3.5	3.2	4.5	0.12	0.05	0.04
29	1.1	0.98	e1.5	2.1	---	2.4	4.0	2.8	5.2	0.11	0.06	0.04
30	0.96	e1.0	e1.6	e1.8	---	2.5	4.4	2.6	6.6	0.09	0.14	0.04
31	0.77	---	e1.7	e2.5	---	2.4	---	3.0	---	0.09	0.18	---
MEAN	1.10	0.65	1.37	1.87	2.55	2.94	3.11	5.16	7.19	1.27	0.090	0.056
MAX	6.5	1.0	2.1	2.5	3.7	4.7	5.4	19	25	4.8	0.62	0.19
MIN	0.11	0.40	1.0	1.5	1.8	2.0	2.2	2.6	3.2	0.09	0.02	0.02
AC-FT	68	39	84	115	141	180	185	317	428	78	5.5	3.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

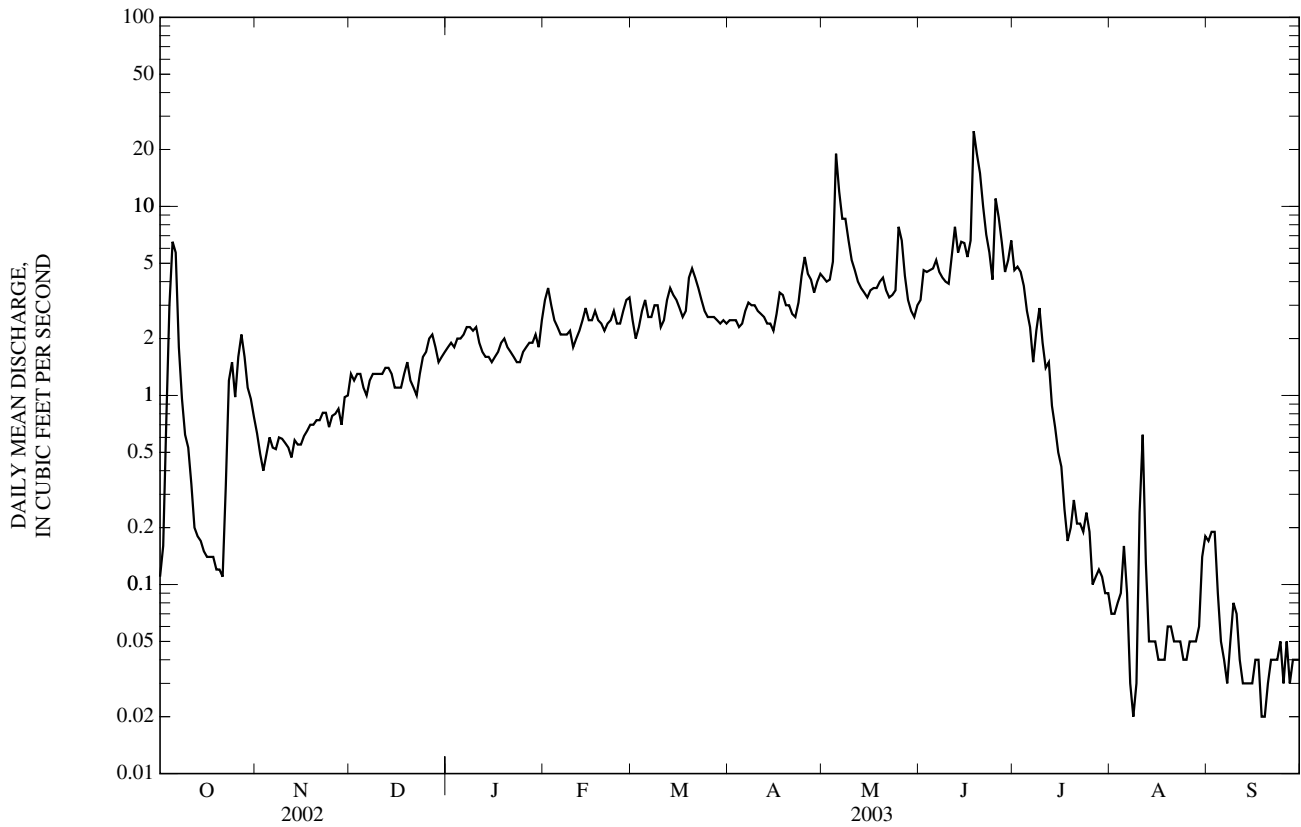
	5.71	8.79	9.17	9.87	12.3	13.5	13.0	13.8	29.0	13.7	18.9	6.82
MEAN	21.1	26.8	28.8	28.0	29.3	28.7	27.9	24.6	153	53.7	77.9	34.2
(WY)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1996)	(1996)	(1996)	(1996)
MIN	1.04	0.65	0.73	1.87	2.55	2.94	3.11	2.77	2.12	0.43	0.090	0.056
(WY)	(2002)	(2003)	(2001)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2003)	(2003)

KANSAS RIVER BASIN

06845110 SAPPA CREEK NEAR LYLE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1996 - 2003
ANNUAL MEAN	2.44	2.27	12.9
HIGHEST ANNUAL MEAN			33.2
LOWEST ANNUAL MEAN			2.27
HIGHEST DAILY MEAN	7.3 Mar 3	25 Jun 18	642 Jun 23, 1996
LOWEST DAILY MEAN	0.08 Sep 7	0.02 Aug 8	0.02 Aug 8, 2003
ANNUAL SEVEN-DAY MINIMUM	0.09 Sep 2	0.03 Sep 13	0.03 Sep 13, 2003
MAXIMUM PEAK FLOW		28 Jun 18	786 Jun 23, 1996
MAXIMUM PEAK STAGE		6.10 Jun 18	17.46 Jun 23, 1996
INSTANTANEOUS LOW FLOW		0.01 Sep 18	0.01 Sep 18, 2003
ANNUAL RUNOFF (AC-FT)	1,760	1,640	9,320
10 PERCENT EXCEEDS	6.3	4.6	27
50 PERCENT EXCEEDS	1.6	1.8	7.3
90 PERCENT EXCEEDS	0.12	0.05	0.70

e Estimated





## 06846000 BEAVER CREEK AT LUDELL, KS

LOCATION.--Lat 39°50'53", long 100°57'40", in SE ¼ NW ¼ SW ¼ sec.30, T.2 S., R.32 W., Rawlins County, Hydrologic Unit 10250014 on left bank at downstream side of bridge on county highway, 0.5 mi south of Ludell, and 10.5 mi downstream from Little Beaver Creek, and at mile 147.8.

DRAINAGE AREA.--1,411 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1929 to June 1932, September 1945 to September 1953, annual maximum, 1961-1988. Monthly discharge only for some periods, published in WSP 1310. October 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,753.93 ft above NGVD of 1929. March 1929 to June 1932 staff gage at railroad bridge 120 ft upstream from present site at datum 1.7 ft higher. September 1945 to October 1946 wire-weight gage on bridge 35 ft upstream from present site at same datum, and October 1946 to September 1953 water-stage recorder at same site and datum. August 1961 to September 1988 crest-stage gage at same site and datum.

REMARKS.--Records good. Natural flow affected by Atwood City Lake, ground-water withdrawals, diversions upstream for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 29	0100	*14	*4.68	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	2.5	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.086	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.1	0.00	0.00	0.00

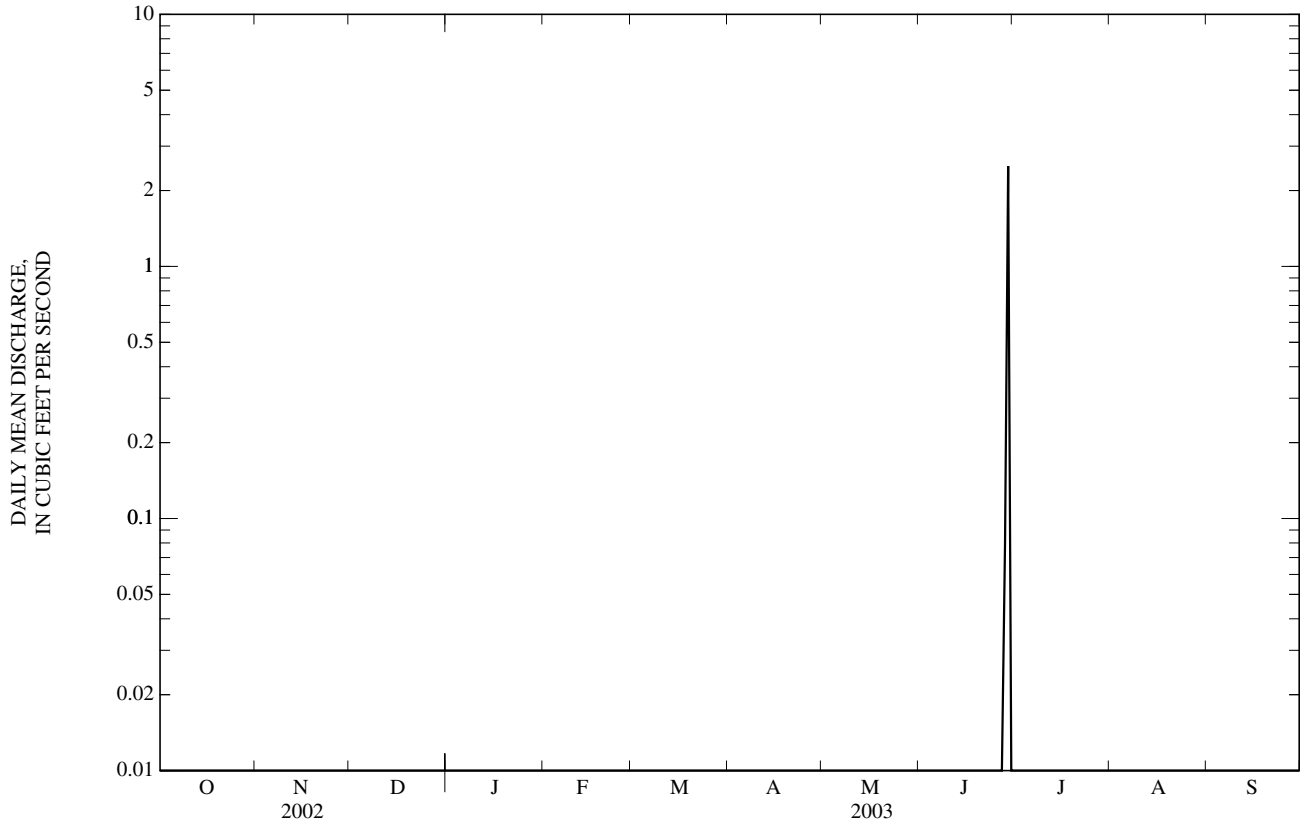
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	5.14	3.43	2.93	2.84	5.25	7.42	8.38	13.5	34.6	28.7	19.2	21.4
MAX	45.3	19.5	13.7	13.2	17.1	23.8	32.0	53.0	344	321	93.1	212
(WY)	(1947)	(1947)	(1947)	(1952)	(1952)	(1949)	(1949)	(1949)	(1951)	(1951)	(1996)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1999)	(1996)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2002)	(2000)	(1953)

KANSAS RIVER BASIN

06846000 BEAVER CREEK AT LUDELL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL MEAN	1.96		0.007		12.9	
HIGHEST ANNUAL MEAN					84.6	1951
LOWEST ANNUAL MEAN					0.007	2003
HIGHEST DAILY MEAN	454	Aug 27	2.5	Jun 29	2,000	Jul 13, 1951
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Nov 11, 1945
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Nov 11, 1945
MAXIMUM PEAK FLOW			14	Jun 29	3,800	May 24, 1965
MAXIMUM PEAK STAGE			4.68	Jun 29	11.37	May 24, 1965
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	1,420		5.1		9,350	
10 PERCENT EXCEEDS	0.00		0.00		20	
50 PERCENT EXCEEDS	0.00		0.00		2.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



06846500 BEAVER CREEK AT CEDAR BLUFFS, KS

LOCATION.--Lat 39°59'06", long 100°33'35", in NW ¼ NE ¼ sec.10, T.1 S., R.29 W., Decatur County, Hydrologic Unit 10250014, on right bank at downstream side of bridge on U.S. Highway 83, 0.2 mi north of Cedar Bluffs, 1.0 mi south of Kansas-Nebraska State line, and at mile 107.4.

DRAINAGE AREA.--1,618 mi<sup>2</sup>, of which 294 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1510: 1947, 1950-51.

GAGE.--Water-stage recorder. Datum of gage is 2,520.33 ft above NGVD of 1929. Prior to Aug. 19, 1971, at site 0.1 mi upstream at same datum. Aug. 19, 1971, to July 12, 1972, at site 0.8 mi downstream at datum 5.00 ft lower.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1944 reached a stage of 18.16 ft, from floodmark.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 29	0800	*52	*4.85	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	9.9	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	2.6	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	5.9	0.00	0.00	0.00	0.00	0.00
30	e0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	e0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.63	0.000	0.13	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	9.9	0.00	3.4	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	37	0.00	8.0	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

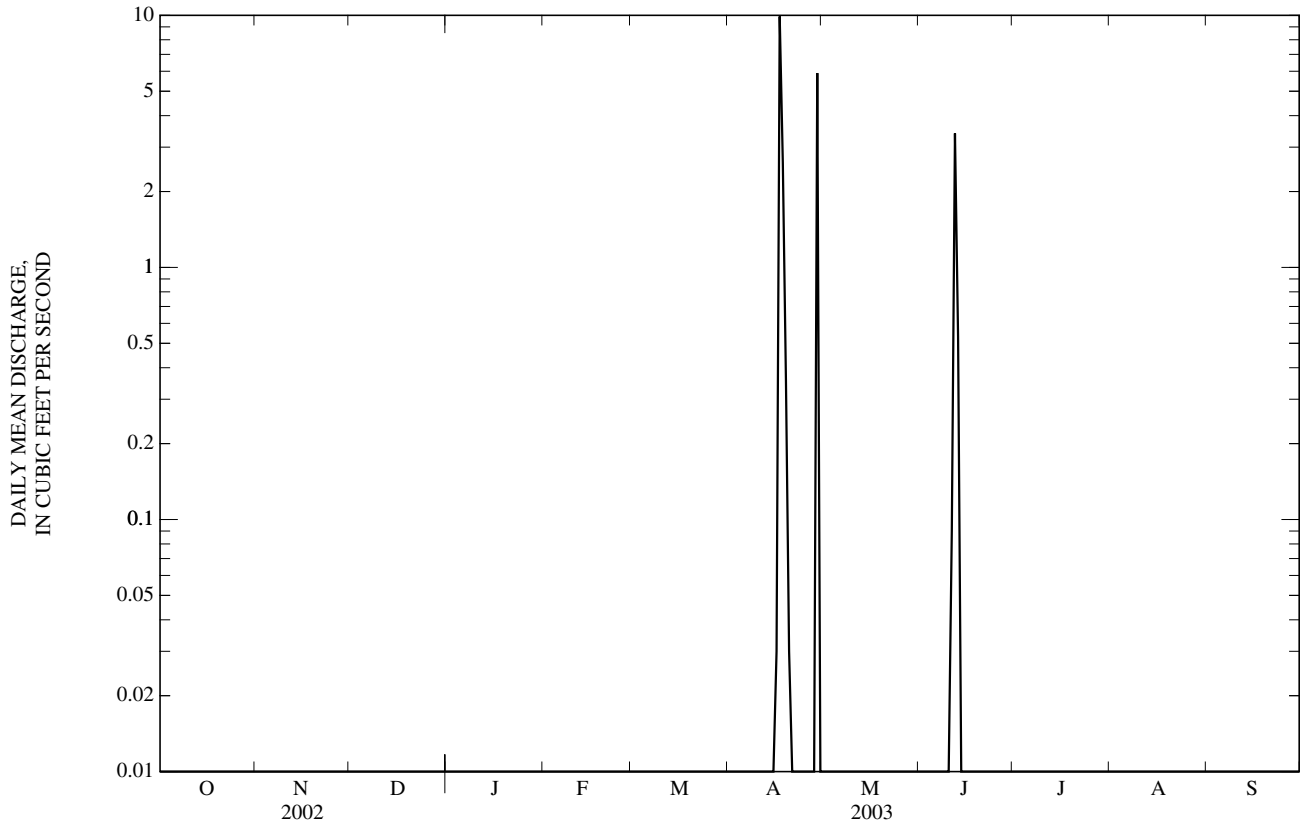
MEAN	8.37	2.76	2.37	2.06	3.63	11.1	6.82	22.2	36.6	28.1	14.7	15.2
MAX	231	39.6	30.4	28.4	28.1	369	61.7	432	278	391	146	421
(WY)	(1947)	(1966)	(1966)	(1966)	(1966)	(1960)	(1960)	(1957)	(1960)	(1951)	(1962)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1954)	(1955)	(1955)	(1955)	(1956)	(1955)	(1955)	(1955)	(1979)	(1980)	(1955)	(1953)

KANSAS RIVER BASIN

06846500 BEAVER CREEK AT CEDAR BLUFFS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	0.002		0.063		12.9	
HIGHEST ANNUAL MEAN					106	1951
LOWEST ANNUAL MEAN					0.000	1991
HIGHEST DAILY MEAN	0.43	Jul 26	9.9	Apr 17	4,560	Jun 11, 1960
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Sep 3, 1946
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Sep 23, 1947
MAXIMUM PEAK FLOW			52	Apr 29	7,940	Jun 11, 1960
MAXIMUM PEAK STAGE			4.85	Apr 29	18.71	Jun 11, 1960
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	1.5		45		9,330	
10 PERCENT EXCEEDS	0.00		0.00		21	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



06847900 PRAIRIE DOG CREEK ABOVE KEITH SEBELIUS LAKE, KS

LOCATION.--Lat 39°46'13", long 100°06'00", in SE ¼ SE ¼ sec.23, T.3 S., R.25 W., Norton County, Hydrologic Unit 10250015, on right bank 50 ft downstream from county highway bridge, 4.0 mi east of Clayton, and at mile 90.4.

DRAINAGE AREA.--590 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1962 to current year. Prior to Dec. 28, 1980, published as Prairie Dog Creek above Norton Reservoir.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,334.94 ft above NGVD of 1929. Prior to Sept. 30, 1974, at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions for irrigation upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum known flood since at least 1944, 65,500 ft<sup>3</sup>/s May 28, 1953, at site 9.4 mi downstream, based on contracted-opening measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 23	2200	*8.3	*3.82	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.08	0.22	0.99	2.8	e2.1	3.0	3.7	1.9	0.91	0.00	0.00
2	0.00	e0.08	0.22	0.95	3.3	e2.2	3.0	3.8	2.3	0.69	0.00	0.00
3	0.00	e0.10	0.20	1.1	2.0	e2.3	3.0	3.6	2.2	0.54	0.00	0.00
4	0.35	e0.12	0.22	1.1	2.0	e2.3	2.9	3.7	2.2	0.46	0.00	0.00
5	0.00	0.16	0.22	1.2	1.8	e2.1	2.8	3.6	2.1	0.27	0.00	0.00
6	0.00	0.09	0.24	1.3	e1.7	e2.2	3.2	3.6	2.1	0.18	0.00	0.00
7	0.00	0.13	0.24	1.3	e1.7	e2.3	3.4	3.6	2.1	0.15	0.00	0.00
8	0.00	0.14	0.23	1.4	2.0	e2.3	3.2	3.5	2.0	0.15	0.00	0.00
9	0.00	0.14	0.25	1.2	1.9	2.3	3.0	3.4	1.9	0.10	0.00	0.00
10	0.00	0.12	0.31	1.0	2.3	2.6	2.9	3.3	1.7	0.06	0.00	0.00
11	0.00	0.11	0.35	1.1	2.9	3.2	2.9	3.4	1.5	0.05	0.00	0.00
12	0.00	0.11	0.46	1.1	2.6	3.2	2.9	3.3	2.2	0.02	0.00	0.00
13	0.00	0.13	0.49	1.5	2.5	2.9	2.8	3.3	1.9	0.01	0.00	0.00
14	0.00	0.17	0.49	1.5	3.1	2.9	2.9	3.1	1.8	0.00	0.00	0.00
15	0.00	0.15	0.55	1.1	2.1	3.5	2.9	2.9	1.7	0.00	0.00	0.00
16	0.00	0.15	0.85	e1.2	2.4	3.5	4.2	3.5	1.5	0.00	0.00	0.00
17	0.00	0.16	0.79	e1.6	2.0	3.7	4.4	3.4	1.6	0.00	0.00	0.00
18	0.00	0.16	0.71	1.8	2.7	3.7	3.7	3.2	1.9	0.00	0.00	0.00
19	0.00	0.15	0.69	2.1	2.5	4.0	3.4	3.4	1.7	0.00	0.00	0.00
20	0.00	0.16	0.57	2.2	2.5	3.6	3.2	3.2	2.0	0.00	0.00	0.00
21	0.00	0.16	0.49	2.1	2.7	3.2	3.1	3.0	2.0	0.85	0.00	0.00
22	0.00	0.23	0.53	2.1	2.7	2.9	3.0	3.0	1.7	0.01	0.00	0.00
23	0.15	0.30	0.50	e2.0	2.0	2.9	4.4	3.0	1.4	0.00	0.00	0.00
24	0.05	0.16	0.40	e2.3	e1.9	2.9	6.3	3.0	1.1	0.00	0.00	0.00
25	0.02	0.16	0.35	2.8	e1.8	2.9	4.6	2.8	1.0	0.00	0.00	0.00
26	0.00	0.18	0.43	3.1	e1.9	2.9	4.0	2.6	0.91	0.00	0.00	0.00
27	0.06	0.21	0.59	3.5	e1.9	3.1	3.8	2.5	0.75	0.00	0.00	0.00
28	0.12	0.21	0.78	3.2	e2.0	3.0	3.6	2.4	0.65	0.00	0.00	0.00
29	0.07	0.22	0.82	3.4	---	2.7	3.8	2.2	0.85	0.00	0.00	0.00
30	0.10	0.21	0.93	2.7	---	2.7	3.7	2.1	2.3	0.00	0.00	0.00
31	e0.08	---	0.97	3.0	---	2.9	---	1.9	---	0.00	0.00	---
MEAN	0.032	0.15	0.49	1.84	2.27	2.87	3.47	3.13	1.70	0.14	0.000	0.000
MAX	0.35	0.30	0.97	3.5	3.3	4.0	6.3	3.8	2.3	0.91	0.00	0.00
MIN	0.00	0.08	0.20	0.95	1.7	2.1	2.8	1.9	0.65	0.00	0.00	0.00
AC-FT	2.0	9.2	30	113	126	177	206	192	101	8.8	0.00	0.00

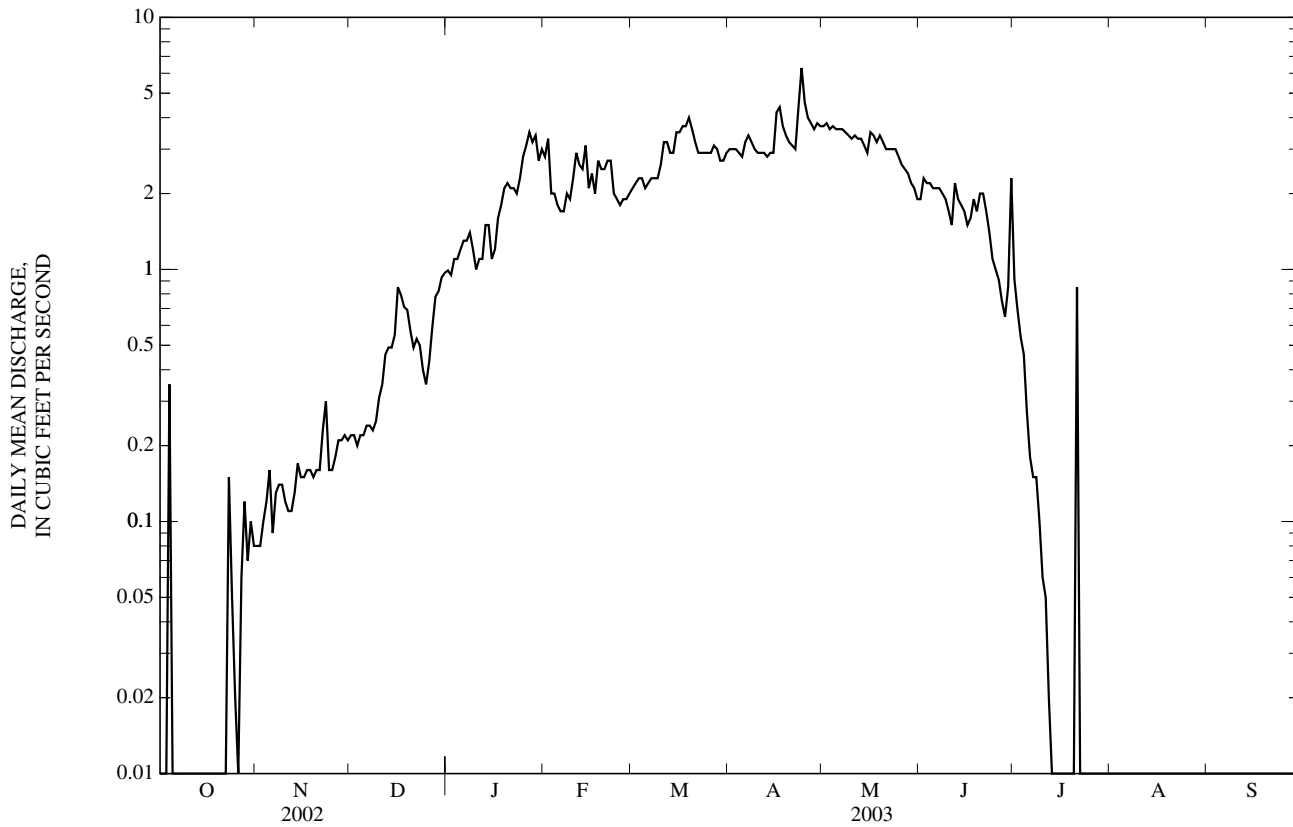
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	4.42	2.32	2.52	2.76	5.17	8.78	6.06	9.38	25.6	15.3	10.7	11.1
MAX	106	14.8	12.2	10.4	19.8	129	31.8	33.0	280	81.0	83.0	163
(WY)	(1966)	(1966)	(1997)	(1997)	(1966)	(1993)	(1971)	(1977)	(1996)	(1965)	(1992)	(1965)
MIN	0.000	0.000	0.000	0.000	0.000	0.058	0.076	0.69	0.48	0.000	0.000	0.000
(WY)	(1965)	(1965)	(1981)	(1981)	(1981)	(1982)	(1982)	(1992)	(1992)	(1991)	(1980)	(1964)

06847900 PRAIRIE DOG CREEK ABOVE KEITH SEBELIUS LAKE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL MEAN	2.08		1.33		8.67	
HIGHEST ANNUAL MEAN					42.1	1965
LOWEST ANNUAL MEAN					0.27	1981
HIGHEST DAILY MEAN	6.1	Mar 6	6.3	Apr 24	3,150	Jun 24, 1996
LOWEST DAILY MEAN	0.00	Jul 17	0.00	Oct 1	0.00	Jun 26, 1963
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 17	0.00	Oct 5	0.00	Jun 26, 1963
MAXIMUM PEAK FLOW			8.3	Apr 23	8,880	Sep 6, 1972
MAXIMUM PEAK STAGE			3.82	Apr 23	14.81	Sep 6, 1972
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	1,510		966		6,280	
10 PERCENT EXCEEDS	5.1		3.3		11	
50 PERCENT EXCEEDS	0.57		0.85		2.1	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



06847950 KEITH SEBELIUS LAKE NEAR NORTON, KS

LOCATION.--Lat 39°48'27", long 99°56'04", in SW ¼ NE ¼ sec.8, T.3 S., R.23 W., Norton County, Hydrologic Unit 10250015, in control tower near left end of Norton Dam on Prairie Dog Creek, 3.0 mi southwest of Norton, and at mile 74.9.

DRAINAGE AREA.--683 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1964 to current year. Prior to Dec. 28, 1980, published as "Norton Reservoir near Norton."

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation).

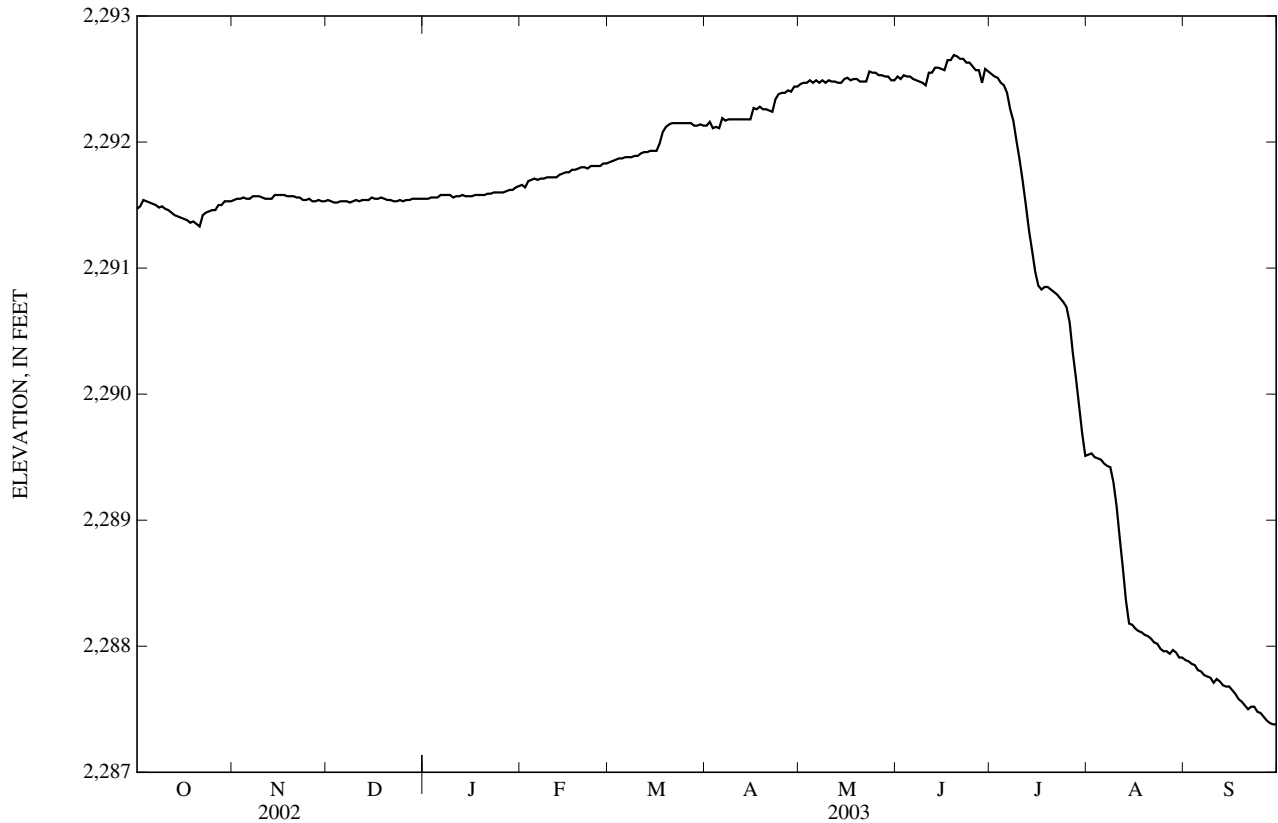
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Oct. 6, 1964. Total capacity, 193,023 acre-ft, consisting of the following: Sedimentation, 2,920 acre-ft below elevation 2,275.5 ft; conservation pool, 33,010 acre-ft, between elevations 2,275.5 ft and 2,304.3 ft; flood-control pool, 98,800 acre-ft, between elevations 2,304.3 ft and 2,331.4 ft; and surcharge pool, 58,280 acre-ft, between elevations 2,331.4 ft and 2,341.0 ft. Reservoir is used for flood control and irrigation in Almena Unit, Missouri River Basin project. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,306.58 ft, Feb. 25, 1997, contents, 41,160 acre-ft; minimum elevation since conservation pool was first filled, 2,275.82 ft, Nov. 27, 28, 1981, Jan. 24, 30, 31, 1982 contents, 3,050 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2,292.75 ft, June 21, contents, 14,860 acre-ft; minimum elevation 2,287.33 ft, Sept. 30, contents, 9,058 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
 (Based on field survey of Bureau of Reclamation in 2000)  
 (Effective date October 1, 2001)

Elevation	Contents	Elevation	Contents	Elevation	Contents
2,287	8,770	2,292	13,930	2,294	16,500
2,290	11,640				



## KANSAS RIVER BASIN

06847950 KEITH SEBELIUS LAKE NEAR NORTON, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,291.47	2,291.54	2,291.54	2,291.55	2,291.66	2,291.84	2,292.13	2,292.46	2,292.52	2,292.54	2,289.52	2,287.89
2	2,291.49	2,291.55	2,291.53	2,291.55	2,291.64	2,291.85	2,292.16	2,292.47	2,292.50	2,292.52	2,289.53	2,287.88
3	2,291.54	2,291.55	2,291.52	2,291.56	2,291.69	2,291.86	2,292.11	2,292.47	2,292.53	2,292.51	2,289.50	2,287.86
4	2,291.53	2,291.56	2,291.52	2,291.56	2,291.70	2,291.87	2,292.12	2,292.49	2,292.52	2,292.47	2,289.49	2,287.85
5	2,291.52	2,291.55	2,291.53	2,291.56	2,291.71	2,291.87	2,292.11	2,292.47	2,292.52	2,292.45	2,289.48	2,287.81
6	2,291.51	2,291.55	2,291.53	2,291.58	2,291.70	2,291.88	2,292.19	2,292.49	2,292.50	2,292.39	2,289.45	2,287.80
7	2,291.50	2,291.57	2,291.53	2,291.58	2,291.71	2,291.88	2,292.17	2,292.47	2,292.49	2,292.26	2,289.43	2,287.77
8	2,291.48	2,291.57	2,291.52	2,291.58	2,291.71	2,291.88	2,292.18	2,292.49	2,292.48	2,292.17	2,289.42	2,287.76
9	2,291.49	2,291.57	2,291.53	2,291.58	2,291.72	2,291.89	2,292.18	2,292.47	2,292.47	2,292.01	2,289.30	2,287.75
10	2,291.47	2,291.56	2,291.54	2,291.56	2,291.72	2,291.89	2,292.18	2,292.49	2,292.45	2,291.86	2,289.11	2,287.71
11	2,291.46	2,291.55	2,291.53	2,291.57	2,291.72	2,291.91	2,292.18	2,292.48	2,292.55	2,291.69	2,288.86	2,287.74
12	2,291.44	2,291.55	2,291.54	2,291.57	2,291.72	2,291.92	2,292.18	2,292.48	2,292.55	2,291.50	2,288.62	2,287.72
13	2,291.42	2,291.55	2,291.54	2,291.58	2,291.74	2,291.92	2,292.18	2,292.47	2,292.59	2,291.30	2,288.36	2,287.69
14	2,291.41	2,291.58	2,291.54	2,291.57	2,291.75	2,291.93	2,292.18	2,292.47	2,292.59	2,291.14	2,288.18	2,287.68
15	2,291.40	2,291.58	2,291.56	2,291.57	2,291.76	2,291.93	2,292.18	2,292.50	2,292.58	2,290.97	2,288.17	2,287.68
16	2,291.39	2,291.58	2,291.55	2,291.57	2,291.76	2,291.93	2,292.27	2,292.51	2,292.57	2,290.86	2,288.14	2,287.65
17	2,291.38	2,291.58	2,291.55	2,291.58	2,291.78	2,291.99	2,292.26	2,292.49	2,292.65	2,290.83	2,288.12	2,287.62
18	2,291.36	2,291.57	2,291.56	2,291.58	2,291.78	2,292.08	2,292.28	2,292.50	2,292.65	2,290.85	2,288.11	2,287.58
19	2,291.37	2,291.57	2,291.55	2,291.58	2,291.79	2,292.12	2,292.26	2,292.50	2,292.69	2,290.85	2,288.09	2,287.56
20	2,291.35	2,291.57	2,291.54	2,291.58	2,291.80	2,292.14	2,292.26	2,292.48	2,292.68	2,290.83	2,288.08	2,287.53
21	2,291.33	2,291.56	2,291.54	2,291.59	2,291.80	2,292.15	2,292.25	2,292.48	2,292.66	2,290.81	2,288.06	2,287.50
22	2,291.42	2,291.56	2,291.53	2,291.59	2,291.79	2,292.15	2,292.24	2,292.48	2,292.66	2,290.79	2,288.03	2,287.52
23	2,291.44	2,291.54	2,291.53	2,291.60	2,291.81	2,292.15	2,292.34	2,292.56	2,292.63	2,290.76	2,288.02	2,287.52
24	2,291.45	2,291.54	2,291.54	2,291.60	2,291.81	2,292.15	2,292.38	2,292.55	2,292.63	2,290.73	2,287.98	2,287.48
25	2,291.46	2,291.55	2,291.53	2,291.60	2,291.81	2,292.15	2,292.39	2,292.55	2,292.60	2,290.69	2,287.96	2,287.47
26	2,291.46	2,291.53	2,291.54	2,291.60	2,291.81	2,292.15	2,292.39	2,292.53	2,292.57	2,290.57	2,287.96	2,287.44
27	2,291.50	2,291.53	2,291.54	2,291.61	2,291.83	2,292.15	2,292.41	2,292.53	2,292.57	2,290.33	2,287.94	2,287.41
28	2,291.50	2,291.54	2,291.55	2,291.62	2,291.83	2,292.13	2,292.40	2,292.52	2,292.47	2,290.13	2,287.97	2,287.39
29	2,291.53	2,291.53	2,291.55	2,291.62	---	2,292.13	2,292.44	2,292.52	2,292.58	2,289.91	2,287.95	2,287.38
30	2,291.53	2,291.53	2,291.55	2,291.64	---	2,292.14	2,292.44	2,292.49	2,292.56	2,289.69	2,287.91	2,287.38
31	2,291.53	---	2,291.55	2,291.65	---	2,292.13	---	2,292.49	---	2,289.51	2,287.91	---
MEAN	2,291.46	2,291.55	2,291.54	2,291.59	2,291.75	2,292.01	2,292.25	2,292.49	2,292.57	2,291.22	2,288.54	2,287.63
MAX	2,291.54	2,291.58	2,291.56	2,291.65	2,291.83	2,292.15	2,292.44	2,292.56	2,292.69	2,292.54	2,289.53	2,287.89
MIN	2,291.33	2,291.53	2,291.52	2,291.55	2,291.64	2,291.84	2,292.11	2,292.46	2,292.45	2,289.51	2,287.91	2,287.38
(+)	13,370	13,370	13,390	13,510	13,720	14,090	14,470	14,530	14,620	11,130	9,580	9,100
(#)	+140	0	+20	+120	+210	+370	+380	+60	+90	-3,490	-1,550	-480
CAL YR	2002	.....	(#)	-7,160								
WTR YR	2003	.....	(#)	-4,130								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.



## 06848500 PRAIRIE DOG CREEK NEAR WOODRUFF, KS

LOCATION.--Lat 39°59'09", long 99°28'39", in NW ¼ NW ¼ sec.9, T.1 S., R.19 W., Phillips County, Hydrologic Unit 10250015, on left bank at downstream side of bridge on U.S. Highway 383, 1.0 mi south of Kansas-Nebraska State line, 2.5 mi west of Woodruff, and at mile 26.5.

DRAINAGE AREA.--1,007 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to September 1932, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 2,016.20 ft above NGVD of 1929. See WSP 1919 for history of changes prior to Oct. 7, 1955.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated to some extent since 1964 by Keith Sebelius Lake (station 06847950), 48.4 mi upstream, and by irrigation development upstream from station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.42	e2.4	e3.1	e3.5	1.6	2.9	1.2	1.0	3.3	0.00
2	0.01	0.00	0.52	e2.3	e2.8	e3.5	1.5	2.5	2.5	0.60	1.2	0.00
3	0.02	0.00	0.64	e2.5	e2.5	e3.5	1.4	2.3	2.5	1.2	0.16	0.00
4	0.00	0.00	0.68	e2.5	e2.2	e3.1	3.3	2.3	1.7	0.99	0.00	0.00
5	0.00	0.00	0.60	e2.1	e2.2	e2.6	4.3	2.2	1.3	0.51	0.00	0.00
6	0.00	0.00	0.74	e1.9	e3.3	e2.7	3.9	2.2	1.5	0.37	0.00	0.00
7	0.00	0.00	0.90	e1.9	e3.4	e3.1	3.6	1.9	2.1	0.25	0.00	0.00
8	0.00	0.00	0.93	e2.0	e4.5	e3.6	3.2	1.8	2.1	0.21	0.00	0.00
9	0.00	0.00	e1.0	e2.0	e4.7	e3.6	3.0	2.0	2.1	4.5	0.00	0.00
10	0.00	0.00	e1.1	e1.8	e4.6	e3.1	2.5	2.1	2.0	20	0.00	0.00
11	0.00	0.00	e1.2	e1.6	e4.3	e3.6	2.3	2.0	1.9	9.6	0.00	0.04
12	0.00	0.00	e1.2	e2.5	e3.7	e4.3	2.0	2.0	2.4	5.6	1.4	0.00
13	0.00	0.00	e1.3	e2.5	e3.8	e4.0	1.8	2.0	2.2	3.1	1.5	0.00
14	0.00	0.00	e1.3	e2.3	e4.3	e3.8	1.7	1.7	1.4	4.9	2.3	0.00
15	0.00	0.00	e1.4	e2.0	e3.7	3.8	1.9	1.8	0.98	1.2	2.0	0.00
16	0.00	0.00	1.5	e1.6	e3.0	3.5	2.4	1.9	0.81	1.1	0.92	0.00
17	0.00	0.00	1.7	e1.4	e2.8	3.4	2.4	1.7	0.76	0.78	0.09	0.00
18	0.00	0.00	e1.9	e1.8	e2.8	4.3	2.4	1.4	0.95	0.62	0.00	0.00
19	0.00	0.00	e2.0	e2.6	e3.2	4.1	2.3	1.6	1.4	0.20	0.00	0.00
20	0.00	0.00	e1.7	e2.5	e3.4	3.9	2.8	1.5	1.4	0.16	0.00	0.00
21	0.00	0.00	e1.7	e1.8	e3.6	3.5	2.9	1.3	1.0	0.22	0.00	0.00
22	0.16	0.00	e1.6	e1.4	e3.2	3.9	2.6	1.2	1.0	0.31	0.00	0.00
23	0.00	0.00	e1.4	e1.3	e2.2	6.4	2.7	1.2	0.90	0.17	0.00	0.00
24	0.00	0.00	e1.7	e1.5	e1.7	7.8	3.2	9.0	0.80	0.13	0.00	0.00
25	0.00	0.00	e1.6	e2.2	e1.8	5.6	3.2	4.5	1.4	0.12	0.00	0.00
26	0.00	0.42	e1.5	e2.6	e2.9	4.2	3.4	2.0	1.2	0.06	0.00	0.00
27	0.00	e0.60	e1.8	e2.9	e3.2	3.5	3.8	1.4	1.1	0.17	0.00	0.00
28	0.00	0.47	e2.8	e3.0	e3.4	3.0	4.0	1.3	0.87	0.18	0.00	0.00
29	0.02	0.30	e2.8	e3.0	---	2.6	3.9	1.3	1.4	2.7	0.00	0.00
30	0.00	0.25	e2.9	e3.0	---	2.3	3.5	1.1	1.5	3.9	0.00	0.00
31	0.00	---	e2.8	e2.9	---	1.9	---	1.0	---	3.4	0.00	---
MEAN	0.007	0.068	1.46	2.19	3.23	3.73	2.78	2.10	1.48	2.20	0.42	0.001
MAX	0.16	0.60	2.9	3.0	4.7	7.8	4.3	9.0	2.5	20	3.3	0.04
MIN	0.00	0.00	0.42	1.3	1.7	1.9	1.4	1.0	0.76	0.06	0.00	0.00
AC-FT	0.4	4.0	90	134	179	229	166	129	88	135	26	0.08

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

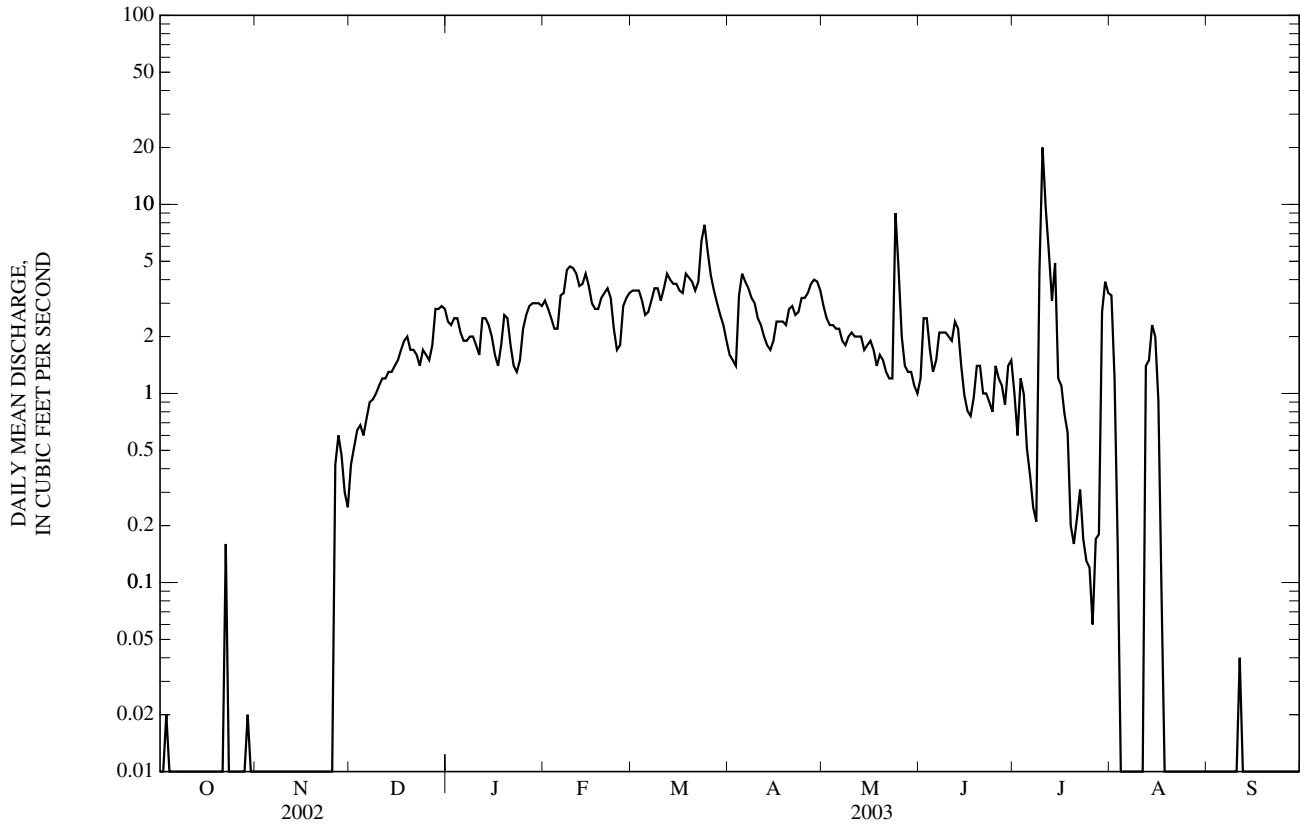
MEAN	18.7	6.46	5.40	5.45	15.8	17.5	10.1	41.8	84.2	60.3	33.6	22.3
MAX	429	56.5	26.0	22.5	230	240	36.6	422	1,041	1,070	430	402
(WY)	(1947)	(1931)	(1947)	(1931)	(1932)	(1960)	(1952)	(1949)	(1947)	(1951)	(1950)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1955)	(1956)	(1956)	(1956)	(1957)	(1957)	(1985)	(1992)	(1984)	(1984)	(1959)	(1960)

KANSAS RIVER BASIN

06848500 PRAIRIE DOG CREEK NEAR WOODRUFF, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL MEAN	3.88		1.63		26.1	
HIGHEST ANNUAL MEAN					208	1951
LOWEST ANNUAL MEAN					0.051	1991
HIGHEST DAILY MEAN	14	Mar 5	20	Jul 10	9,700	Jun 23, 1947
LOWEST DAILY MEAN	0.00	Jul 17	0.00	Oct 1	0.00	Oct 29, 1945
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 29	0.00	Oct 4	0.00	Oct 5, 1948
MAXIMUM PEAK FLOW			25	Jul 10	15,000	Jun 23, 1947
MAXIMUM PEAK STAGE			3.58	Jul 10	21.04	Jun 23, 1947
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	2,810		1,180		18,910	
10 PERCENT EXCEEDS	9.8		3.6		27	
50 PERCENT EXCEEDS	2.8		1.4		4.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



## 06853500 REPUBLICAN RIVER NEAR HARDY, NE

LOCATION.--Lat 39°59'33", long 97°55'53", in NE ¼ NE ¼ SE ¼ sec.1, T.1 S., R.6 W., in Kansas, Republic County, Hydrologic Unit 10250016, on right bank at upstream side of county highway bridge, 1.2 mi southwest of Hardy, NE, and at mile 141.2.

DRAINAGE AREA.--22,401 mi<sup>2</sup>, of which about 7,500 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--June 1904 to September 1915 (no winter records), April 1931 to current year. Prior to May 1932, published as "at Bostwick." Records for June 1896 to November 1903 published as "near Superior" in 18th to 22nd Ann. Repts., inclusive, Pt. 4, and WSP 75, 84, and 99, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 806: Drainage area. WSP 1006: 1941. WSP 1340: 1905(M), 1907-09, 1912, 1914-15, 1931. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,501.46 ft above NGVD of 1929. Prior to May 19, 1932, nonrecording gage at site at Bostwick, 20 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by irrigation development upstream from station and by storage in reservoirs in Colorado, Kansas, and Nebraska. Considerable regulation since 1952 by Harlan County Lake (station 06849000). Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1895, that of June 2, 1935, and 17.00 ft June 24, 1947, discharge, 100,000 ft<sup>3</sup>/s, based on records for upstream stations.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	34	20	23	e30	e81	89	60	83	96	26	23
2	61	32	20	23	e31	e85	89	49	90	76	30	21
3	46	29	20	23	32	e90	89	43	92	62	32	19
4	163	26	21	22	e31	e91	89	41	87	57	46	19
5	114	23	22	23	30	e93	89	40	89	56	47	18
6	59	21	21	22	30	e96	94	40	260	65	35	15
7	34	21	20	23	e31	96	99	40	197	62	28	13
8	30	21	20	23	e31	e95	95	147	122	55	24	13
9	27	21	20	23	e32	e93	62	365	99	47	25	19
10	26	21	20	e23	e32	92	52	159	87	51	28	34
11	25	21	20	e23	32	97	48	108	76	56	25	950
12	25	21	20	e23	31	95	45	84	69	45	22	819
13	24	21	20	e24	31	97	44	72	98	42	25	267
14	25	23	20	e23	33	93	42	78	103	40	25	106
15	24	23	20	e22	37	92	41	83	75	40	25	69
16	24	23	20	e21	79	91	42	79	61	39	19	55
17	25	23	20	e21	87	93	42	76	57	37	12	46
18	25	23	20	e22	94	100	41	86	59	36	21	41
19	24	22	20	e22	103	109	40	100	58	32	132	37
20	24	23	19	e22	104	116	38	114	57	31	67	34
21	24	22	19	e21	104	110	38	130	56	34	46	33
22	25	22	e18	e21	101	103	38	124	66	49	35	30
23	30	23	e18	e21	97	99	42	120	2,120	50	30	29
24	32	23	e18	e21	85	96	52	260	839	41	27	27
25	30	23	e18	e22	77	94	49	1,050	838	32	25	25
26	28	24	e18	e23	e76	92	44	596	422	21	20	25
27	29	24	e19	e25	e77	91	41	281	262	20	18	22
28	29	24	e21	e26	e78	91	40	189	180	23	17	21
29	30	24	e22	e28	---	88	41	145	136	27	21	21
30	41	20	e23	e29	---	87	49	115	112	27	17	24
31	39	---	24	e30	---	88	---	95	---	25	22	---
MEAN	37.3	23.4	20.0	23.2	58.4	94.6	56.8	160	232	44.3	31.4	95.8
MAX	163	34	24	30	104	116	99	1,050	2,120	96	132	950
MIN	15	20	18	21	30	81	38	40	56	20	12	13
AC-FT	2,290	1,390	1,230	1,420	3,250	5,820	3,380	9,860	13,790	2,730	1,930	5,700

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

MEAN	268	223	194	185	290	407	429	475	480	500	304	306
MAX	1,970	1,308	928	636	968	1,584	2,415	2,523	2,031	3,210	1,800	1,455
(WY)	(1966)	(1994)	(1994)	(1966)	(1966)	(1993)	(1960)	(1960)	(1960)	(1993)	(1962)	(1973)
MIN	17.2	22.3	20.0	23.2	27.0	66.5	39.1	29.6	46.5	44.3	30.5	15.3
(WY)	(1992)	(1992)	(2003)	(2003)	(1992)	(1991)	(1991)	(1992)	(1992)	(2003)	(2002)	(1991)

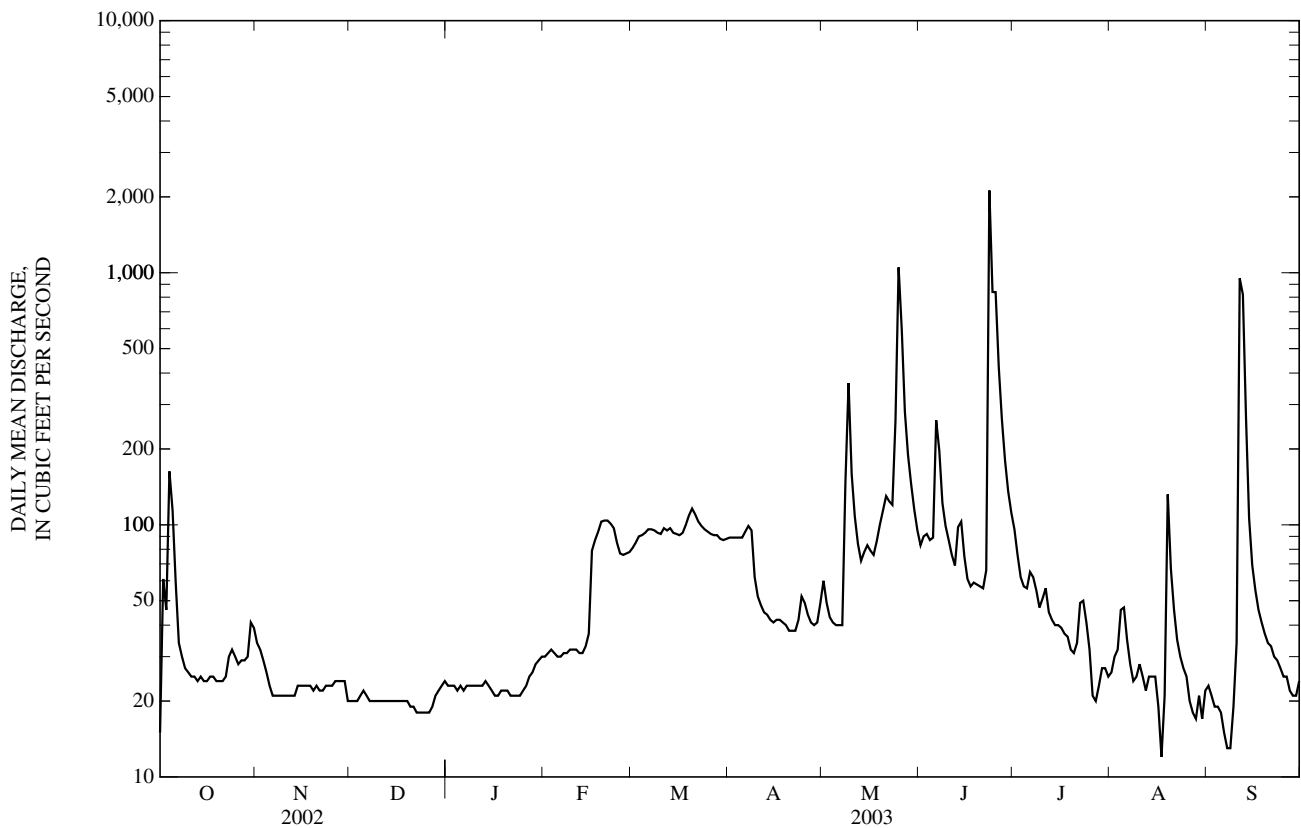
KANSAS RIVER BASIN

06853500 REPUBLICAN RIVER NEAR HARDY, NE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL MEAN	69.9		72.9		339	
HIGHEST ANNUAL MEAN					800	1960
LOWEST ANNUAL MEAN					72.5	1991
HIGHEST DAILY MEAN	238	May 30	2,120	Jun 23	15,000	Oct 1, 1983
LOWEST DAILY MEAN	13	Aug 8	12	Aug 17	4.8	Aug 3, 1991
ANNUAL SEVEN-DAY MINIMUM	15	Sep 5	17	Sep 3	9.0	Jun 26, 1992
MAXIMUM PEAK FLOW			3,380	Jun 23	a225,000	Jun 2, 1935
MAXIMUM PEAK STAGE			8.31	Jun 23	a19.40	Jun 2, 1935
INSTANTANEOUS LOW FLOW			10	Aug 17	0.00	Aug 9, 1934
ANNUAL RUNOFF (AC-FT)	50,610		52,780		245,400	
10 PERCENT EXCEEDS	160		105		755	
50 PERCENT EXCEEDS	44		34		164	
90 PERCENT EXCEEDS	18		20		54	

e Estimated

a Maximum peak flow and stage recorded outside period of record and prior to Harlan County Lake filling.



06853800 WHITE ROCK CREEK NEAR BURR OAK, KS

LOCATION.--Lat 39°53'55", long 98°15'05", in SE ¼ NE ¼ NE ¼ sec.7, T.2 S., R.8 W., Jewell County, Hydrologic Unit 10250016, on left bank at upstream side of county highway bridge, 3.5 mi northeast of Burr Oak, and at mile 35.4.

DRAINAGE AREA.--227 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1955-57, October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,601.5 ft above NGVD of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum known stage since at least 1869, 32.6 ft July 9, 1950, from floodmark 300 ft downstream and information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 24	1800	*101	*3.83	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.04	0.42	0.42	e0.79	1.3	1.6	2.0	5.3	2.3	0.19	0.00	0.00
2	0.19	0.38	0.47	e0.80	1.7	1.7	2.0	8.2	3.1	0.17	0.00	0.00
3	0.85	0.32	0.46	e0.83	1.7	1.7	2.0	8.4	3.3	0.15	0.00	0.00
4	50	0.28	e0.46	0.92	1.7	1.8	2.0	5.5	3.1	0.13	0.00	0.00
5	30	0.29	0.47	0.96	e1.5	1.9	2.1	4.6	2.7	0.10	0.00	0.00
6	9.0	0.29	0.46	1.0	e1.5	2.1	2.7	4.0	3.2	0.07	0.00	0.00
7	2.6	0.30	0.49	1.1	e1.5	2.4	3.2	3.8	4.3	0.04	0.00	0.00
8	0.69	0.31	0.50	1.1	1.5	2.7	3.2	16	3.4	0.02	0.00	0.00
9	0.45	0.31	0.49	1.2	1.5	2.6	3.4	70	2.5	0.01	0.00	0.02
10	0.27	0.28	0.53	1.1	1.6	2.5	3.8	34	2.1	0.00	0.00	8.2
11	0.23	0.27	0.58	e1.0	1.7	2.8	3.6	19	1.9	0.00	0.00	33
12	0.17	0.29	0.62	e1.0	1.6	3.1	3.3	12	2.1	0.00	0.00	18
13	0.16	0.31	0.62	e1.0	1.7	3.1	2.9	8.1	2.0	0.00	0.00	4.0
14	0.15	0.40	0.62	1.0	e1.9	3.4	2.8	6.2	2.0	0.00	0.00	1.7
15	0.15	0.46	0.62	0.99	e1.9	3.8	2.8	5.0	1.6	0.00	0.00	0.33
16	e0.14	0.52	0.64	0.94	2.1	4.1	3.1	4.3	1.4	0.00	0.00	0.16
17	e0.12	0.59	0.65	e0.86	2.2	4.7	3.2	4.0	1.4	0.00	0.00	0.09
18	0.10	0.50	0.65	e0.80	2.4	5.1	3.4	3.6	1.6	0.00	0.00	0.04
19	0.09	0.48	0.64	e0.78	2.5	4.9	3.5	3.9	3.2	0.00	0.18	0.03
20	0.09	0.50	0.60	e0.78	2.4	5.5	3.3	4.2	1.9	0.00	0.83	0.02
21	0.07	0.50	0.56	e0.68	e2.3	6.0	3.0	4.6	1.4	0.00	2.2	0.00
22	0.10	0.44	0.51	e0.64	e2.2	6.0	2.8	4.1	1.3	0.00	4.4	0.00
23	0.16	0.38	0.42	e0.64	e2.1	5.7	3.3	5.1	45	0.00	1.7	0.00
24	0.20	0.46	0.49	e0.65	e2.0	4.7	6.5	34	14	0.00	0.70	0.00
25	0.20	0.44	0.51	e0.69	e2.0	3.8	18	20	7.4	0.00	0.30	0.00
26	0.22	0.42	0.52	e0.70	1.9	3.2	16	14	2.3	0.00	0.20	0.00
27	0.26	0.40	0.59	0.72	1.6	2.9	12	8.8	0.73	0.00	0.11	0.00
28	0.26	0.47	0.67	0.81	1.5	2.6	7.8	7.3	0.32	0.00	0.33	0.00
29	0.28	0.46	0.77	0.96	---	2.3	6.3	5.1	0.24	0.00	0.17	0.00
30	0.48	0.43	0.84	0.99	---	2.1	6.6	3.6	0.22	0.00	0.05	0.01
31	0.47	---	0.79	1.3	---	2.1	---	2.8	---	0.00	0.01	---
MEAN	3.17	0.40	0.57	0.89	1.84	3.32	4.69	11.0	4.07	0.028	0.36	2.19
MAX	50	0.59	0.84	1.3	2.5	6.0	18	70	45	0.19	4.4	33
MIN	0.04	0.27	0.42	0.64	1.3	1.6	2.0	2.8	0.22	0.00	0.00	0.00
AC-FT	195	24	35	55	102	204	279	673	242	1.7	22	130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

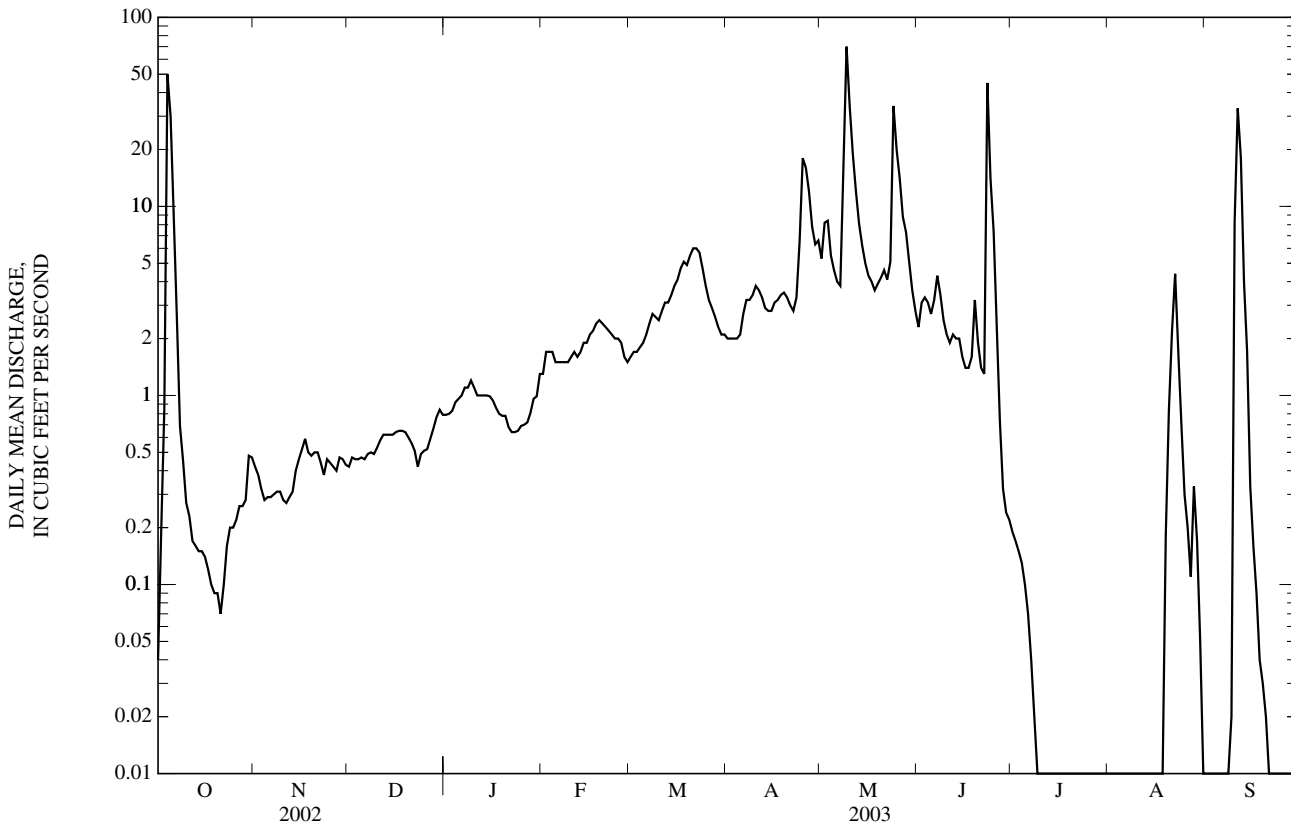
MEAN	17.2	11.2	8.09	12.2	22.1	37.8	30.2	43.3	49.0	49.0	20.2	31.6
MAX	319	120	43.5	125	143	318	236	174	257	658	166	519
(WY)	(1974)	(1997)	(1994)	(1962)	(1993)	(1993)	(1987)	(1985)	(1961)	(1993)	(1993)	(1973)
MIN	0.000	0.084	0.21	0.32	0.94	0.75	0.89	0.91	2.11	0.028	0.007	0.000
(WY)	(1967)	(1969)	(1969)	(1969)	(1972)	(1968)	(1967)	(1968)	(2000)	(2003)	(1959)	(1991)

KANSAS RIVER BASIN

06853800 WHITE ROCK CREEK NEAR BURR OAK, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL MEAN	6.60		2.71		27.7	
HIGHEST ANNUAL MEAN					136	1993
LOWEST ANNUAL MEAN					2.71	2003
HIGHEST DAILY MEAN	127	May 28	70	May 9	6,000	Sep 3, 1973
LOWEST DAILY MEAN	0.00	Sep 2	0.00	Jul 10	0.00	Oct 4, 1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 2	0.00	Jul 10	0.00	Oct 16, 1957
MAXIMUM PEAK FLOW			101	May 24	15,800	Sep 3, 1973
MAXIMUM PEAK STAGE			3.83	May 24	25.06	Sep 3, 1973
INSTANTANEOUS LOW FLOW			0.00	Jul 9	0.00	many years
ANNUAL RUNOFF (AC-FT)	4,780		1,960		20,040	
10 PERCENT EXCEEDS	14		5.2		39	
50 PERCENT EXCEEDS	0.95		0.79		5.8	
90 PERCENT EXCEEDS	0.05		0.00		0.40	

e Estimated



06853900 LOVEWELL RESERVOIR NEAR LOVEWELL, KS

LOCATION.--Lat 39°53'04", long 98°01'41", in NW ¼ NE ¼ NE ¼ sec.18, T.2 S., R.6 W., Jewell County, Hydrologic Unit 10250016, at south end of Lovewell Dam on White Rock Creek, 3 mi northwest of Lovewell, and at mile 19.3.

DRAINAGE AREA.--345 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1957 to current year. Monthly records only, May to September 1957.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation). From June 15, 1960, to May 6, 1975, water-stage recorder at north end of dam at same datum.

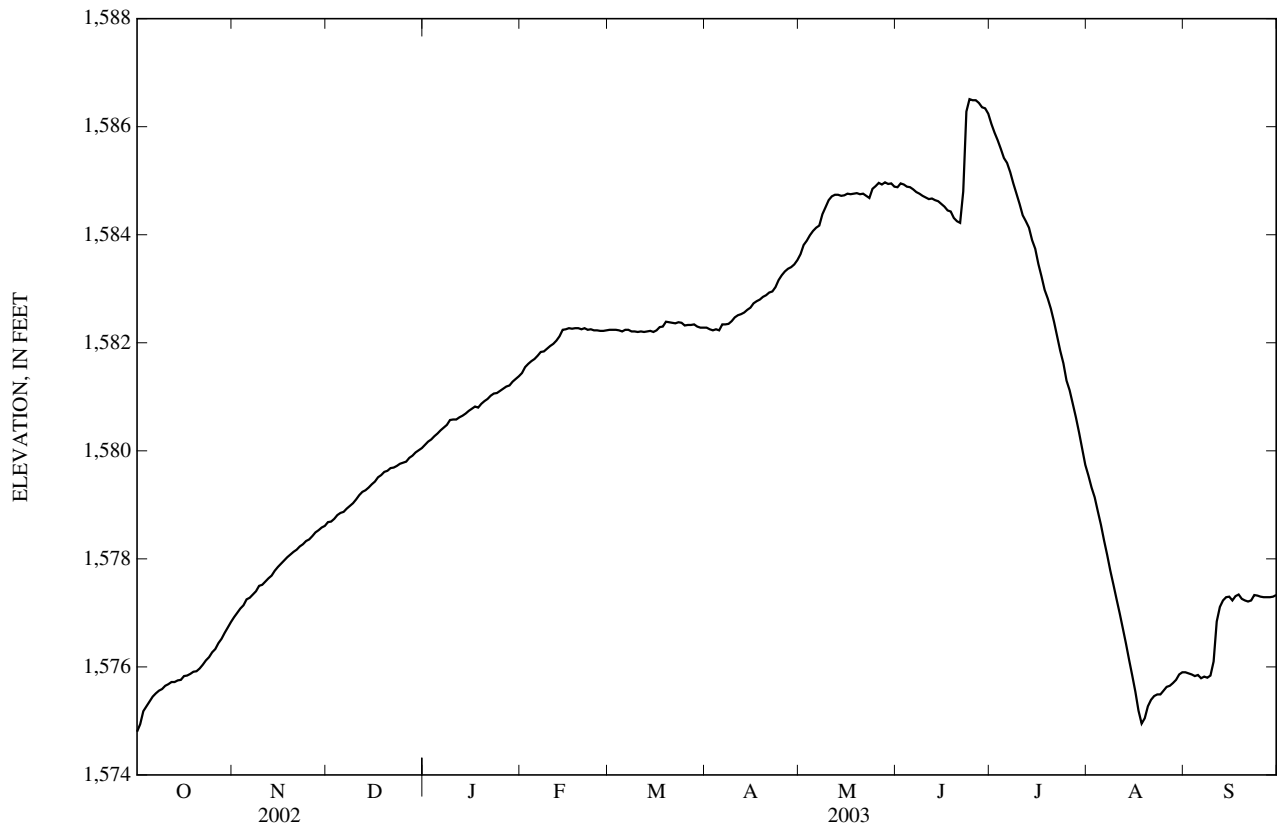
REMARKS.--Reservoir is formed by earthfill dam. Closure was made May 29, 1957. Irrigation pool elevation was first reached on May 19, 1958. Total capacity of 180,300 acre-ft consists of the following: Dead storage, 1,660 acre-ft below elevation 1,562.07 ft; irrigation pool, 34,010 acre-ft between elevations 1,562.07 ft and 1,582.6 ft; flood-control pool, 50,460 acre-ft between elevations 1,582.6 ft and 1,595.3 ft; and surcharge pool, 94,170 acre-ft between elevations 1,595.3 ft and 1,610.3 ft. Storage in reservoir is derived from White Rock Creek and diversion from the Republican River through upper Courtland Canal. Releases are made into White Rock Creek and for irrigation of 30,000 acres through lower Courtland Canal. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,595.38 ft, July 22, 1993, contents, 92,560 acre-ft; minimum elevation since irrigation pool was first reached, 1,570.21 ft, Aug. 21, 1991, contents 14,330 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,586.55 ft, June 25, contents, 48,650 acre-ft; minimum elevation, 1,574.66 ft, Aug. 18, contents, 16,560 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Computed by Bureau of Reclamation on basis of resurvey made in 1995)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,574	15,370	1,580	28,410	1,586	40,700
1,576	19,150	1,582	33,900	1,588	54,000
1,578	23,500	1,584	40,000		



## KANSAS RIVER BASIN

06853900 LOVEWELL RESERVOIR NEAR LOVEWELL, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,574.80	1,576.92	1,578.68	1,580.11	1,581.44	1,582.24	1,582.28	1,583.64	1,584.88	1,586.05	1,579.54	1,575.90
2	1,574.94	1,577.00	1,578.69	1,580.17	1,581.55	1,582.24	1,582.25	1,583.81	1,584.95	1,585.89	1,579.32	1,575.88
3	1,575.18	1,577.08	1,578.74	1,580.21	1,581.61	1,582.24	1,582.23	1,583.89	1,584.93	1,585.75	1,579.14	1,575.86
4	1,575.27	1,577.14	1,578.81	1,580.27	1,581.66	1,582.23	1,582.25	1,583.99	1,584.89	1,585.59	1,578.88	1,575.83
5	1,575.36	1,577.25	1,578.85	1,580.32	1,581.70	1,582.21	1,582.23	1,584.07	1,584.88	1,585.42	1,578.63	1,575.85
6	1,575.45	1,577.28	1,578.87	1,580.38	1,581.76	1,582.24	1,582.34	1,584.13	1,584.84	1,585.33	1,578.34	1,575.79
7	1,575.51	1,577.34	1,578.93	1,580.43	1,581.83	1,582.24	1,582.34	1,584.17	1,584.79	1,585.16	1,578.07	1,575.82
8	1,575.56	1,577.40	1,578.98	1,580.48	1,581.84	1,582.21	1,582.35	1,584.38	1,584.76	1,584.95	1,577.78	1,575.80
9	1,575.59	1,577.50	1,579.03	1,580.57	1,581.89	1,582.21	1,582.40	1,584.51	1,584.72	1,584.76	1,577.52	1,575.84
10	1,575.65	1,577.52	1,579.10	1,580.58	1,581.94	1,582.20	1,582.47	1,584.64	1,584.69	1,584.57	1,577.25	1,576.10
11	1,575.68	1,577.58	1,579.18	1,580.58	1,581.98	1,582.21	1,582.51	1,584.71	1,584.66	1,584.36	1,576.99	1,576.84
12	1,575.72	1,577.64	1,579.24	1,580.62	1,582.04	1,582.20	1,582.53	1,584.74	1,584.67	1,584.25	1,576.71	1,577.11
13	1,575.72	1,577.69	1,579.27	1,580.65	1,582.12	1,582.21	1,582.56	1,584.74	1,584.64	1,584.13	1,576.43	1,577.23
14	1,575.75	1,577.78	1,579.32	1,580.69	1,582.24	1,582.22	1,582.61	1,584.72	1,584.62	1,583.90	1,576.13	1,577.29
15	1,575.76	1,577.85	1,579.38	1,580.74	1,582.25	1,582.20	1,582.65	1,584.73	1,584.57	1,583.74	1,575.84	1,577.30
16	1,575.83	1,577.91	1,579.43	1,580.78	1,582.27	1,582.23	1,582.73	1,584.76	1,584.52	1,583.46	1,575.54	1,577.23
17	1,575.84	1,577.97	1,579.51	1,580.82	1,582.26	1,582.29	1,582.77	1,584.75	1,584.45	1,583.23	1,575.19	1,577.31
18	1,575.87	1,578.03	1,579.55	1,580.80	1,582.27	1,582.30	1,582.80	1,584.76	1,584.43	1,582.98	1,574.95	1,577.34
19	1,575.91	1,578.08	1,579.61	1,580.87	1,582.27	1,582.39	1,582.85	1,584.77	1,584.31	1,582.82	1,575.05	1,577.26
20	1,575.92	1,578.13	1,579.63	1,580.92	1,582.25	1,582.38	1,582.88	1,584.75	1,584.25	1,582.63	1,575.27	1,577.23
21	1,575.97	1,578.17	1,579.68	1,580.96	1,582.27	1,582.37	1,582.93	1,584.76	1,584.22	1,582.39	1,575.39	1,577.21
22	1,576.04	1,578.23	1,579.69	1,581.02	1,582.24	1,582.36	1,582.95	1,584.72	1,584.80	1,582.12	1,575.46	1,577.23
23	1,576.12	1,578.27	1,579.72	1,581.06	1,582.25	1,582.38	1,583.03	1,584.68	1,586.28	1,581.85	1,575.49	1,577.33
24	1,576.18	1,578.33	1,579.76	1,581.07	1,582.23	1,582.37	1,583.16	1,584.85	1,586.51	1,581.62	1,575.49	1,577.32
25	1,576.27	1,578.36	1,579.78	1,581.11	1,582.23	1,582.32	1,583.25	1,584.90	1,586.49	1,581.30	1,575.56	1,577.30
26	1,576.33	1,578.42	1,579.80	1,581.15	1,582.22	1,582.33	1,583.32	1,584.96	1,586.49	1,581.12	1,575.63	1,577.29
27	1,576.44	1,578.49	1,579.87	1,581.19	1,582.22	1,582.33	1,583.37	1,584.93	1,586.44	1,580.87	1,575.65	1,577.29
28	1,576.52	1,578.53	1,579.91	1,581.21	1,582.23	1,582.34	1,583.40	1,584.97	1,586.36	1,580.62	1,575.70	1,577.29
29	1,576.63	1,578.58	1,579.97	1,581.28	---	1,582.30	1,583.45	1,584.94	1,586.34	1,580.34	1,575.76	1,577.30
30	1,576.73	1,578.61	1,580.01	1,581.33	---	1,582.28	1,583.53	1,584.95	1,586.24	1,580.04	1,575.86	1,577.33
31	1,576.83	---	1,580.05	1,581.38	---	1,582.28	---	1,584.89	---	1,579.74	1,575.90	---
MEAN	1,575.85	1,577.84	1,579.39	1,580.77	1,582.04	1,582.28	1,582.75	1,584.59	1,585.12	1,583.26	1,576.60	1,576.79
MAX	1,576.83	1,578.61	1,580.05	1,581.38	1,582.27	1,582.39	1,583.53	1,584.97	1,586.51	1,586.05	1,579.54	1,577.34
MIN	1,574.80	1,576.92	1,578.68	1,580.11	1,581.44	1,582.20	1,582.23	1,583.64	1,584.22	1,579.74	1,574.95	1,575.79
(+)	20,890	24,940	28,540	32,130	34,570	34,720	38,510	42,900	47,540	27,740	18,950	21,980
(#)	+4,110	+4,050	+3,600	+3,590	+2,440	+150	+3,790	+4,390	+4,640	-19,800	-8,790	+3,030
CAL YR	2001	.....	(#)	-1,560								
WTR YR	2002	.....	(#)	+5,200								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.

# CHANGE IN CONTENTS, IN ACRE-FEET.



## 06856000 REPUBLICAN RIVER AT CONCORDIA, KS

LOCATION.--Lat 39°35'18", long 97°39'30", in SW ¼ SW ¼ NE ¼ sec.28, T.5 S., R.3 W., Cloud County, Hydrologic Unit 10250017, on right bank at upstream side of bridge on U.S. Highway 81, 1.0 mi north of Concordia, 4.9 mi downstream from Buffalo Creek, and at mile 98.5.

DRAINAGE AREA.--23,560 mi<sup>2</sup>, of which about 7,500 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310. Gage-height records collected at nearby sites since 1951 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1340: 1946-47.

GAGE.--Water-stage recorder. Datum of gage is 1,328.62 ft above NGVD of 1929. Apr. 25, 1946, to Mar. 3, 1983, at site about 100 ft downstream, datum 5.0 ft higher. Apr. 11, 1983, to Sept. 30, 1987, at present site, at datum 5.0 ft higher. June 22, 1998, gage moved for bridge construction to right bank on downstream side of bridge, at same datum.

REMARKS.--Records good except those for low-flow periods and estimated daily discharges, which are poor. Natural flow affected by irrigation development upstream from station and by storage in seven reservoirs in Colorado, Nebraska, and Kansas. Considerable regulation since 1952 by Harlan County Lake (station 06849000). Flow was affected by bridge construction May 1998 to June 1999. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1895, about 23 ft, June 2, 1935, present site and datum, from information by U.S. Weather Bureau, discharge, about 207,000 ft<sup>3</sup>/s, on basis of records for stations upstream. Flood of June 21, 1915, reached a stage of 19.1 ft, present site and datum, from information by U.S. Weather Bureau, discharge, about 60,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	82	46	44	e57	125	122	68	152	718	128	99
2	25	70	46	50	e48	127	118	72	184	553	139	59
3	43	64	46	52	e40	158	118	79	187	517	126	43
4	221	61	44	52	e38	185	120	71	161	464	117	29
5	578	57	43	e45	e39	199	115	67	161	414	123	18
6	322	53	43	e45	e36	162	132	66	140	365	115	13
7	203	50	48	46	e33	189	141	67	143	317	112	10
8	120	49	51	52	e39	181	151	80	280	283	109	8.6
9	80	49	48	52	e40	149	151	578	214	257	110	7.0
10	62	48	48	45	e38	143	136	745	163	240	106	8.9
11	51	46	51	e44	e41	140	108	450	143	229	102	5,570
12	43	45	49	e49	e43	132	94	282	134	211	92	8,130
13	39	45	48	e48	e42	129	83	196	127	194	86	4,190
14	35	46	48	e45	e42	129	76	143	116	178	81	2,370
15	33	47	47	e44	e43	128	71	119	123	173	79	1,390
16	35	51	49	e36	e41	125	70	117	123	160	79	1,020
17	34	50	49	e39	71	127	67	112	106	154	76	763
18	32	49	49	e38	110	162	77	102	99	155	83	483
19	31	48	47	e41	122	162	70	120	102	154	430	364
20	30	47	44	e41	121	168	67	138	91	145	1,370	290
21	29	47	43	e38	126	180	64	140	93	148	426	261
22	30	45	e44	e32	123	191	60	145	100	151	227	254
23	39	45	e38	e30	119	174	72	150	4,060	144	159	199
24	48	45	e42	e34	e86	157	100	175	15,800	147	109	168
25	49	44	43	e38	e90	146	105	474	5,070	146	83	136
26	47	43	e43	e46	122	137	100	1,050	3,480	143	65	120
27	55	46	52	e49	120	132	88	854	2,500	134	52	107
28	53	47	64	e56	122	131	79	516	1,680	129	57	95
29	55	48	52	e61	---	128	72	339	1,240	116	51	e97
30	62	47	e47	e60	---	127	70	246	1,060	111	111	e97
31	68	---	e46	e61	---	130	---	188	---	114	215	---
MEAN	82.7	50.5	47.0	45.6	71.1	150	96.6	256	1,268	238	168	880
MAX	578	82	64	61	126	199	151	1,050	15,800	718	1,370	8,130
MIN	12	43	38	30	33	125	60	66	91	111	51	7.0
AC-FT	5,090	3,000	2,890	2,800	3,950	9,230	5,750	15,770	75,440	14,610	10,350	52,360

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	527	354	279	274	457	694	681	846	1,196	1,182	620	633
MAX	5,033	1,725	1,229	1,003	1,354	2,766	4,009	3,458	8,464	10,740	3,521	4,143
(WY)	(1974)	(1947)	(1994)	(1974)	(1949)	(1993)	(1987)	(1949)	(1947)	(1993)	(1950)	(1951)
MIN	14.5	34.0	26.7	37.8	59.9	94.2	75.9	49.5	139	42.6	52.2	23.9
(WY)	(1992)	(1992)	(2001)	(1957)	(2001)	(1992)	(1991)	(1956)	(2002)	(1954)	(1955)	(2002)

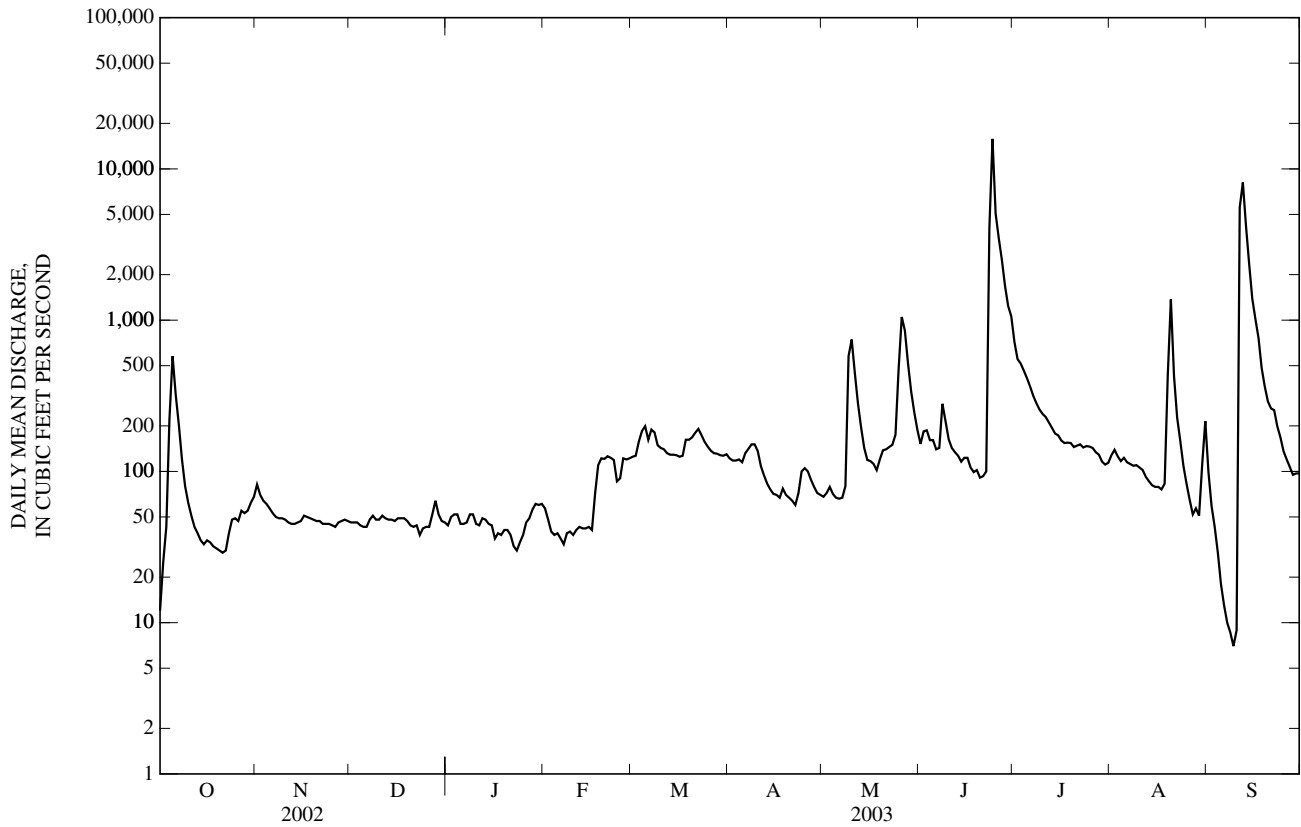
KANSAS RIVER BASIN

06856000 REPUBLICAN RIVER AT CONCORDIA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	133		278		642	
HIGHEST ANNUAL MEAN					2,339	1951
LOWEST ANNUAL MEAN					117	1991
HIGHEST DAILY MEAN	928	May 26	15,800	Jun 24	55,200	Jun 25, 1947
LOWEST DAILY MEAN	7.1	Sep 11	7.0	Sep 9	7.0	Sep 9, 2003
ANNUAL SEVEN-DAY MINIMUM	8.9	Sep 6	14	Sep 4	8.9	Sep 6, 2002
MAXIMUM PEAK FLOW			19,700	Jun 24	75,000	Jun 25, 1947
MAXIMUM PEAK STAGE			16.95	Jun 24	14.90	Jun 25, 1947
INSTANTANEOUS LOW FLOW			4.6	Sep 10	4.6	Sep 10, 2003
ANNUAL RUNOFF (AC-FT)	96,560		201,200		465,200	
10 PERCENT EXCEEDS	248		319		1,380	
50 PERCENT EXCEEDS	92		93		282	
90 PERCENT EXCEEDS	37		40		85	

e Estimated

a Maximum gage height for period, 16.95, June 24, 2003, present datum.



## 06856600 REPUBLICAN RIVER AT CLAY CENTER, KS

LOCATION.--Lat 39°21'20", long 97°07'34", in SW ¼ NW ¼ sec.17, T.8 S., R.3 E., Clay County, Hydrologic Unit 10250017, on right bank at downstream side of bridge on Kansas Highway 15, 1.0 mi south of Clay Center, 4.0 mi downstream from Five Creeks, and at mile 38.2.

DRAINAGE AREA.--24,542 mi<sup>2</sup>, of which about 7,500 mi<sup>2</sup> is noncontributing.

PERIOD OF RECORD.--June 1917 to current year. Monthly discharge only for some periods, published in WSP 1310. Prior to February 1934, published as "at Wakefield." Gage-height records collected in this vicinity August 1904 to October 1917 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 806: Drainage area. WSP 1006: 1941. WSP 1310: 1922. WSP 1340: 1929, 1933-34.

GAGE.--Water-stage recorder. Datum of gage is 1,159.21 ft above NGVD of 1929. See WSP 1919 for history of changes prior to Sept. 23, 1949. Sept. 23, 1949 to July 21, 1987, at site 200 ft downstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by irrigation development upstream from station and by reservoirs in Colorado, Nebraska, and Kansas. Flow moderately regulated since 1952 by Harlan County Lake (station 06849000). Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1895, 26.2 ft, June 21, 1915, site and datum then in use, from information by U.S. Weather Bureau. Flood of May 29, 1903, reached a stage of 24.8 ft, site and datum then in use, from information by U.S. Weather Bureau.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	53	44	58	65	101	132	101	286	1,660	155	167
2	e5.7	52	45	59	89	100	134	93	276	1,210	163	194
3	e17	57	44	61	95	110	129	88	331	858	164	157
4	e20	59	43	60	80	131	142	84	282	740	169	132
5	18	56	41	60	68	158	144	84	246	642	164	121
6	25	55	38	62	e54	103	148	88	375	561	155	110
7	64	52	40	64	73	136	144	82	246	502	145	105
8	171	50	42	67	75	146	145	81	196	473	141	105
9	133	49	41	68	66	152	146	115	178	418	138	112
10	102	47	42	60	67	162	151	130	219	375	133	123
11	74	45	45	48	80	146	153	242	242	339	133	148
12	59	43	45	44	81	148	149	463	e206	320	129	3,930
13	49	44	45	51	73	149	128	351	186	300	122	9,320
14	42	47	46	69	e57	141	111	281	168	288	119	4,910
15	39	45	46	56	e57	135	103	236	155	267	118	3,000
16	39	45	45	56	e63	147	100	200	141	244	116	1,700
17	37	46	48	61	90	142	94	171	133	230	113	1,140
18	35	44	46	63	88	151	102	157	131	230	108	846
19	33	46	49	65	83	165	e117	150	130	225	113	622
20	32	47	49	65	81	185	104	151	134	222	124	450
21	31	47	48	e52	101	188	93	148	117	221	543	363
22	31	46	42	e46	107	175	87	145	111	223	654	319
23	e35	46	32	e48	112	174	e108	152	108	220	354	286
24	e41	46	34	e50	e91	176	e304	e200	1,390	218	245	261
25	42	44	e35	67	102	170	452	188	10,900	201	207	228
26	e40	44	e39	67	118	159	253	200	7,010	195	176	217
27	e42	45	e41	70	122	153	169	243	4,380	193	156	202
28	48	45	43	75	115	146	146	667	3,300	191	144	190
29	48	44	45	72	---	e136	124	651	3,580	184	138	183
30	51	44	55	70	---	e132	112	474	2,370	176	145	182
31	53	---	57	63	---	131	---	355	---	164	161	---
MEAN	47.1	47.8	43.7	60.5	84.0	147	147	218	1,251	396	182	994
MAX	171	59	57	75	122	188	452	667	10,900	1,660	654	9,320
MIN	2.9	43	32	44	54	100	87	81	108	164	108	105
AC-FT	2,900	2,840	2,690	3,720	4,670	9,020	8,780	13,430	74,430	24,380	11,200	59,150

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2003, BY WATER YEAR (WY)

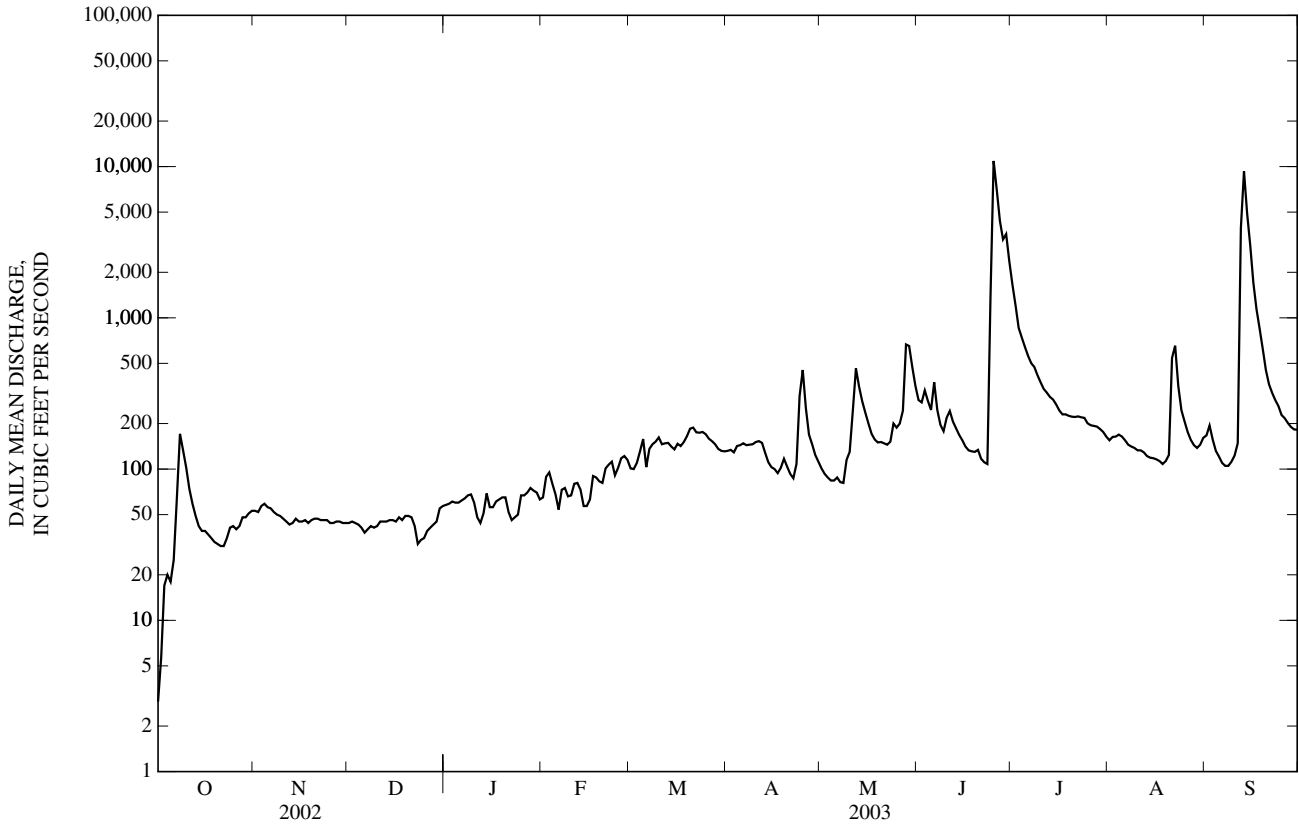
MEAN	657	465	385	386	656	954	1,035	1,389	2,118	1,637	908	939
MAX	7,749	2,293	1,583	1,615	2,688	4,795	5,797	7,170	11,320	21,590	4,594	4,920
(WY)	(1974)	(1947)	(1994)	(1974)	(1993)	(1987)	(1987)	(1945)	(1935)	(1993)	(1993)	(1951)
MIN	7.64	39.0	37.1	28.0	73.4	79.0	92.1	51.6	138	42.5	13.4	11.9
(WY)	(1992)	(1992)	(2001)	(1957)	(1992)	(1992)	(1954)	(1992)	(1988)	(1954)	(1934)	(2002)

KANSAS RIVER BASIN

06856600 REPUBLICAN RIVER AT CLAY CENTER, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1918 - 2003	
ANNUAL MEAN	155		300		961	
HIGHEST ANNUAL MEAN					3,724	1993
LOWEST ANNUAL MEAN					191	1991
HIGHEST DAILY MEAN	1,620	May 29	10,900	Jun 25	103,000	Jun 3, 1935
LOWEST DAILY MEAN	2.9	Sep 30	2.9	Oct 1	1.0	Aug 9, 1934
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 25	22	Oct 1	1.9	Aug 7, 1934
MAXIMUM PEAK FLOW			12,400	Jun 25	195,000	Jun 3, 1935
MAXIMUM PEAK STAGE			17.79	Jun 25	25.74	Jun 3, 1935
INSTANTANEOUS LOW FLOW			2.7	Oct 1	0.00	Aug 10, 1934
ANNUAL RUNOFF (AC-FT)	112,400		217,200		696,300	
10 PERCENT EXCEEDS	315		354		1,990	
50 PERCENT EXCEEDS	85		118		456	
90 PERCENT EXCEEDS	22		44		123	

e Estimated



06857050 MILFORD LAKE NEAR JUNCTION CITY, KS

LOCATION.--Lat 39°04'40", long 96°53'30", in SE 1/4 sec.20, T.11 S., R.5 E., Geary County, Hydrologic Unit 10250017, in control tower of dam on Republican River, 5.0 mi northwest of Junction City, and at mile 7.7.

DRAINAGE AREA.--24,880 mi<sup>2</sup>, of which a large area is noncontributing.

PERIOD OF RECORD.--December 1966 to current year. Prior to October 1971, published as "Milford Reservoir."

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

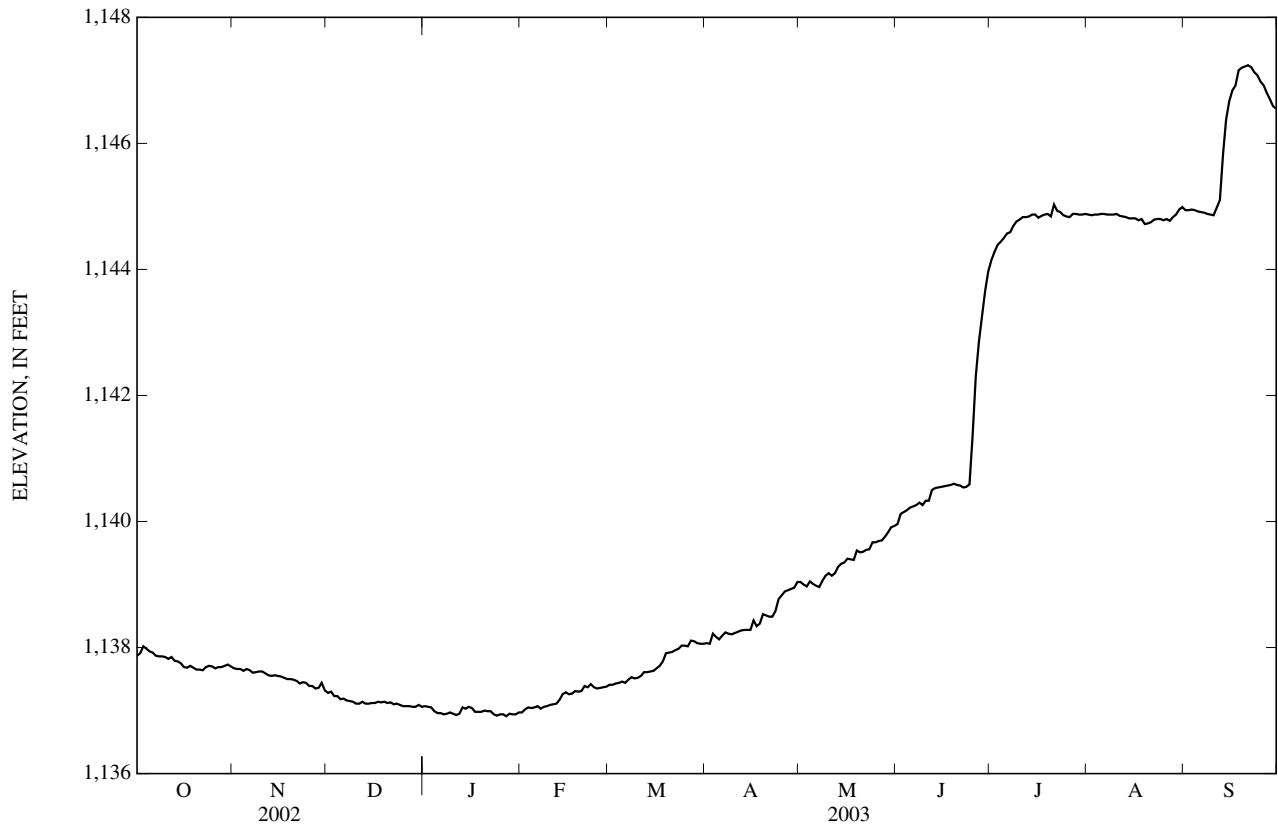
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Jan. 16, 1967. Conservation pool elevation was reached July 15, 1967. Total capacity, 1,380,000 acre-ft below elevation 1,182.0 ft. Crest of uncontrolled spillway is at elevation 1,176.2 ft. Storage capacity of 673,600 acre-ft above elevation 1,144.4 ft is provided for flood control. Storage capacity of 415,400 acre-ft below elevation 1,144.4 ft is provided for conservation and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,181.94 ft, July 25, 1993, contents, 1,346,000 acre-ft; minimum elevation since conservation pool first filled, 1,136.90 ft, Jan. 27, 2003, contents, 283,100 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,147.28 ft, Sept. 21, contents, 436,700 acre-ft; minimum elevation, 1,136.90 ft, Jan. 27, contents, 283,100 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Computed by U.S. Army Corps of Engineers in 1982 from topographic maps)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,135	259,400	1,145	398,400	1,150	485,500
1,140	324,400				



## KANSAS RIVER BASIN

06857050 MILFORD LAKE NEAR JUNCTION CITY, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,137.87	1,137.67	1,137.28	1,137.07	1,136.97	1,137.41	1,138.07	1,139.04	1,139.96	1,144.15	1,144.87	1,144.94
2	e1,137.91	1,137.66	1,137.30	1,137.06	1,137.02	1,137.41	1,138.06	1,139.00	1,140.12	1,144.28	1,144.86	1,144.94
3	1,138.02	1,137.66	1,137.23	1,137.05	1,137.05	1,137.43	1,138.22	1,138.97	1,140.15	1,144.39	1,144.87	1,144.95
4	1,137.98	1,137.63	1,137.23	1,136.99	1,137.04	e1,137.44	1,138.17	1,139.05	1,140.18	1,144.44	1,144.87	1,144.94
5	1,137.94	1,137.66	1,137.18	1,136.96	1,137.05	e1,137.46	1,138.13	1,139.01	1,140.22	1,144.50	1,144.88	1,144.92
6	1,137.92	1,137.64	1,137.19	1,136.96	1,137.07	1,137.44	1,138.19	1,138.98	1,140.24	1,144.57	1,144.88	1,144.91
7	1,137.87	1,137.60	1,137.16	1,136.94	1,137.03	1,137.49	1,138.24	1,138.96	1,140.26	1,144.59	1,144.87	1,144.90
8	1,137.86	1,137.61	1,137.15	1,136.95	1,137.06	1,137.53	1,138.22	1,139.06	1,140.30	1,144.69	1,144.87	1,144.88
9	1,137.86	1,137.62	1,137.14	1,136.97	1,137.07	1,137.51	1,138.21	1,139.14	1,140.26	1,144.76	1,144.87	1,144.87
10	1,137.85	1,137.62	1,137.11	1,136.95	1,137.09	1,137.52	1,138.23	1,139.18	1,140.33	1,144.79	1,144.88	1,144.86
11	1,137.82	1,137.59	1,137.11	1,136.93	1,137.10	1,137.55	1,138.25	1,139.14	1,140.33	1,144.83	1,144.85	1,144.98
12	1,137.85	1,137.56	1,137.14	e1,136.95	1,137.11	1,137.61	1,138.27	1,139.18	1,140.50	1,144.83	1,144.84	1,145.10
13	1,137.79	e1,137.55	1,137.11	1,137.05	1,137.17	1,137.61	1,138.28	1,139.28	1,140.53	1,144.84	1,144.83	1,145.82
14	1,137.78	e1,137.56	1,137.11	1,137.03	1,137.26	1,137.62	1,138.28	1,139.33	1,140.54	1,144.87	1,144.81	1,146.38
15	1,137.75	1,137.55	1,137.12	1,137.06	1,137.29	1,137.63	1,138.28	1,139.35	1,140.55	1,144.87	1,144.81	1,146.67
16	1,137.69	1,137.54	1,137.12	1,137.04	1,137.26	1,137.67	1,138.43	1,139.41	1,140.56	1,144.82	1,144.81	1,146.84
17	1,137.68	1,137.52	1,137.14	1,136.98	1,137.27	1,137.71	1,138.34	1,139.40	1,140.57	1,144.85	1,144.78	1,146.92
18	1,137.71	1,137.50	1,137.13	1,136.98	1,137.31	1,137.78	1,138.38	1,139.39	1,140.58	1,144.87	1,144.80	1,147.16
19	1,137.68	1,137.50	1,137.14	1,136.98	1,137.30	1,137.91	1,138.53	1,139.54	1,140.60	1,144.88	1,144.72	e1,147.20
20	1,137.65	1,137.49	1,137.12	1,137.00	1,137.31	1,137.92	1,138.51	1,139.51	1,140.58	1,144.84	1,144.73	1,147.22
21	1,137.65	1,137.47	1,137.13	1,136.99	1,137.39	1,137.93	1,138.49	1,139.52	1,140.57	1,145.03	1,144.75	1,147.24
22	1,137.64	1,137.43	1,137.10	1,136.99	1,137.37	1,137.96	1,138.49	1,139.55	1,140.54	1,144.93	1,144.79	1,147.21
23	1,137.69	1,137.45	1,137.11	1,136.94	1,137.42	1,137.98	1,138.58	1,139.56	1,140.55	1,144.91	1,144.80	1,147.13
24	1,137.71	1,137.44	1,137.09	1,136.92	1,137.37	1,138.03	1,138.77	1,139.67	1,140.59	1,144.86	1,144.80	1,147.08
25	1,137.70	1,137.39	1,137.07	1,136.94	1,137.35	1,138.03	1,138.83	1,139.67	1,141.37	1,144.84	1,144.78	1,146.98
26	1,137.67	1,137.39	1,137.07	1,136.94	1,137.36	1,138.02	1,138.89	1,139.69	1,142.30	1,144.83	1,144.80	1,146.92
27	1,137.69	1,137.35	1,137.07	1,136.91	1,137.37	1,138.11	1,138.91	1,139.70	1,142.85	1,144.88	1,144.77	1,146.80
28	1,137.69	1,137.36	e1,137.06	1,136.95	1,137.38	1,138.10	1,138.93	1,139.76	1,143.26	1,144.88	1,144.83	1,146.70
29	1,137.71	1,137.44	1,137.06	1,136.94	---	1,138.07	1,138.95	1,139.83	1,143.66	1,144.87	1,144.87	1,146.59
30	1,137.73	1,137.32	1,137.09	1,136.94	---	1,138.06	1,139.04	1,139.91	1,143.97	1,144.87	1,144.95	1,146.55
31	1,137.70	---	1,137.06	1,136.97	---	1,138.06	---	1,139.93	---	1,144.88	1,144.99	---
MEAN	1,137.78	1,137.53	1,137.13	1,136.98	1,137.21	1,137.74	1,138.44	1,139.38	1,140.90	1,144.76	1,144.83	1,146.09
MAX	1,138.02	1,137.67	1,137.30	1,137.07	1,137.42	1,138.11	1,139.04	1,139.93	1,143.97	1,145.03	1,144.99	1,147.24
MIN	1,137.64	1,137.32	1,137.06	1,136.91	1,136.97	1,137.41	1,138.06	1,138.96	1,139.96	1,144.15	1,144.72	1,144.86
(+)	293,400	288,500	285,100	283,900	289,300	298,100	311,300	323,500	382,100	392,100	393,200	424,100
(#)	-3,400	-4,900	-3,400	-1,200	+5,400	+8,800	+13,200	+12,200	+58,600	+10,000	+1,100	+30,900
CAL YR	2002	..... (#) -105,800										
WTR YR	2003	..... (#) +127,300										
+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.												
# CHANGE IN CONTENTS, IN ACRE-FEET.												

e Estimated

## 06857100 REPUBLICAN RIVER BELOW MILFORD DAM, KS

LOCATION.--Lat 39°04'15", long 96°52'00", Geary County, Hydrologic Unit 10250017, Fort Riley Military Reservation, on right bank at downstream side of bridge on U.S. Highway 77, 1.7 mi downstream from Milford Dam, 2.5 mi northwest of Junction City, and at mile 6.0.

DRAINAGE AREA.--24,890 mi<sup>2</sup>, of which a large area is noncontributing.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,045.70 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 20, 1997, at datum 6.8 ft higher. Gage temporarily moved on Nov. 20, 1997, 2.2 mi downstream during replacement of U.S. Highway 77 bridge.

REMARKS.--Records good except those for estimated daily discharge, which are poor. Flow completely regulated since 1967 by Milford Lake (station 06857050), 1.7 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	265	112	114	68	21	18	28	41	29	42	27	163
2	268	112	113	68	20	18	29	42	52	43	28	115
3	206	111	114	68	19	e18	29	42	11	42	31	33
4	181	111	114	67	18	e18	29	44	9.9	22	30	31
5	123	111	114	67	18	e17	29	43	10	20	31	30
6	119	111	116	66	18	e17	32	46	11	21	31	30
7	118	112	116	70	20	17	30	42	11	22	32	30
8	117	112	116	71	17	17	29	43	12	27	30	30
9	116	112	113	70	e16	17	30	41	11	22	20	32
10	115	111	115	71	e15	17	30	41	12	21	20	31
11	114	112	140	71	e15	17	30	40	12	22	22	40
12	112	113	127	71	e15	17	29	41	19	23	23	33
13	113	113	111	70	e16	21	29	43	41	23	22	33
14	113	114	88	70	25	21	29	44	41	24	23	33
15	111	113	80	71	19	22	28	45	42	23	28	33
16	112	113	76	72	18	22	29	48	39	23	18	34
17	111	113	76	e67	e16	22	27	46	34	23	17	35
18	112	113	76	69	e14	25	30	48	29	23	18	37
19	111	113	75	70	e12	30	39	60	18	24	18	36
20	111	113	74	69	10	28	35	46	33	23	57	37
21	110	112	74	69	10	25	29	44	34	23	196	151
22	111	112	73	e67	9.9	25	29	35	35	24	244	410
23	116	111	73	e66	12	25	43	27	38	60	248	567
24	116	112	72	e68	e12	25	45	38	34	72	254	1,080
25	113	112	72	e69	e15	25	31	28	49	26	253	1,080
26	112	112	72	71	e18	25	28	27	49	21	254	1,060
27	116	112	71	66	18	25	28	27	51	22	254	1,040
28	114	113	70	44	18	26	29	30	50	23	263	1,030
29	114	113	70	36	---	26	30	28	50	24	263	1,030
30	114	112	69	28	---	27	39	28	42	25	279	1,030
31	112	---	68	27	---	28	---	28	---	26	223	---
MEAN	129	112	92.0	64.4	16.2	22.0	31.0	39.5	30.3	27.7	105	312
MAX	268	114	140	72	25	30	45	60	52	72	279	1,080
MIN	110	111	68	27	9.9	17	27	27	9.9	20	17	30
AC-FT	7,930	6,680	5,660	3,960	902	1,350	1,850	2,430	1,800	1,700	6,460	18,550

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

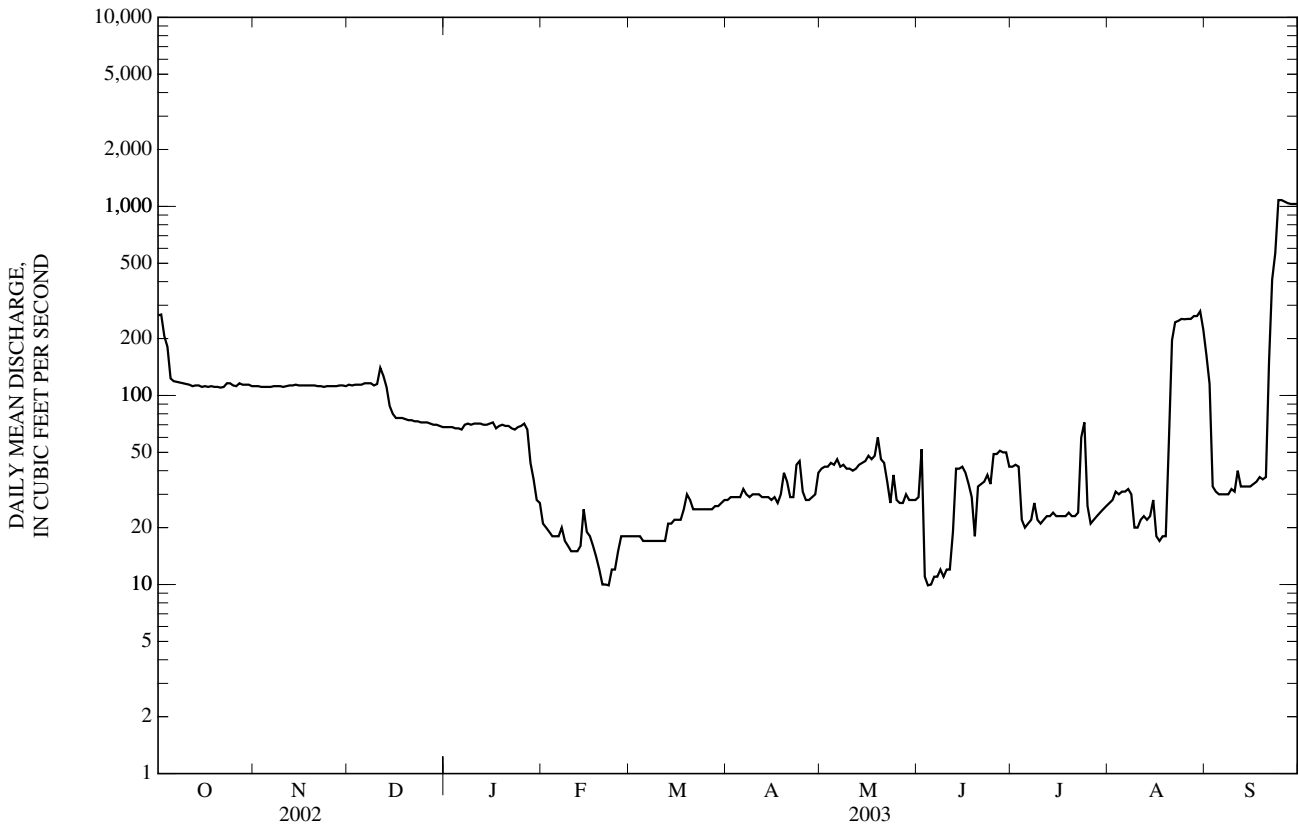
MEAN	777	711	775	381	582	874	997	1,270	1,222	1,400	1,151	730
MAX	5,272	7,732	2,315	1,492	2,617	3,324	6,071	8,283	7,770	9,746	15,420	7,785
(WY)	(1974)	(1974)	(1974)	(1974)	(1974)	(1973)	(1987)	(1987)	(1995)	(1993)	(1993)	(1993)
MIN	30.2	20.3	9.63	43.8	15.1	22.0	30.8	28.6	30.3	27.7	101	59.7
(WY)	(1996)	(1995)	(1995)	(1997)	(1997)	(2003)	(1992)	(1992)	(2003)	(2003)	(2000)	(1984)

KANSAS RIVER BASIN

06857100 REPUBLICAN RIVER BELOW MILFORD DAM, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL MEAN	268		81.9		908	
HIGHEST ANNUAL MEAN					4,027	1993
LOWEST ANNUAL MEAN					81.9	2003
HIGHEST DAILY MEAN	1,830	Jul 7	1,080	Sep 24	33,300	Jul 26, 1993
LOWEST DAILY MEAN	43	May 15	9.9	Feb 22	3.2	Sep 18, 1985
ANNUAL SEVEN-DAY MINIMUM	43	May 15	11	Jun 3	8.9	Jan 21, 1997
MAXIMUM PEAK FLOW			1,090	Sep 24	33,700	Jul 26, 1993
MAXIMUM PEAK STAGE			6.64	Sep 24	22.10	Jun 22, 1964
INSTANTANEOUS LOW FLOW			9.7	Feb 21	2.7	Sep 18, 1985
ANNUAL RUNOFF (AC-FT)	194,200		59,270		657,800	
10 PERCENT EXCEEDS	406		116		2,250	
50 PERCENT EXCEEDS	175		40		315	
90 PERCENT EXCEEDS	69		18		49	

e Estimated





06860000 SMOKY HILL RIVER AT ELKADER, KS

LOCATION.--Lat 38°47'33", long 100°51'19", in NE ¼ SE ¼ sec.34, T.14 S., R.32 W., Logan County, Hydrologic Unit 10260003, on right bank at downstream side of bridge on U.S. Highway 83, 22.3 mi south of Oakley, 0.1 mi downstream from Ladder Creek, and at mile 409.9.

DRAINAGE AREA.--3,555 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1310: 1941(M), 1947(M), 1949(M). WSP 1510: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,622.62 ft above NGVD of 1929. Prior to Oct. 1, 1986, water-stage recorder at site 100 ft downstream and at datum 2.00 ft higher and Oct. 1, 1986, to Sept. 30, 1995, water-stage recorder at site 100 ft downstream at same datum.

REMARKS.--Records poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1937, 15.2 ft, May 30, 1938, from floodmark, discharge, 71,000 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow, present datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 24	1500	*43	*5.39				
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.09	0.07	0.07	0.07	e0.07	0.03	0.12	0.02	0.56	0.00	0.00
2	0.21	0.09	0.07	0.07	0.09	e0.07	0.02	0.13	0.01	0.11	0.00	0.00
3	0.13	0.09	0.07	0.07	0.09	e0.08	0.02	0.09	0.00	0.03	0.00	0.00
4	0.29	0.07	0.07	0.07	0.08	e0.08	0.02	0.12	0.02	0.00	0.00	0.00
5	0.22	0.09	0.06	0.07	0.09	0.09	0.01	0.10	0.02	0.00	0.00	0.00
6	0.05	0.07	0.05	0.07	0.09	0.09	0.05	0.10	0.01	0.00	0.00	0.00
7	0.02	0.07	0.05	0.07	0.09	0.08	0.05	0.11	0.03	0.00	0.00	0.00
8	0.03	0.07	0.06	0.07	0.09	0.08	0.03	0.20	0.00	0.00	0.00	0.00
9	0.04	0.08	0.07	0.07	0.09	0.07	0.04	0.16	0.00	0.00	0.00	0.00
10	0.04	0.07	0.06	0.06	0.10	0.07	0.04	0.10	0.04	0.00	0.00	0.00
11	0.04	0.07	0.07	0.07	0.11	0.07	0.03	0.05	0.02	0.00	0.00	0.00
12	0.05	0.07	0.06	0.07	0.11	0.07	0.02	0.07	0.00	0.00	0.00	0.00
13	0.03	0.07	0.06	0.07	0.11	0.07	0.02	0.09	0.00	0.00	0.00	0.00
14	0.03	0.08	0.07	0.07	0.11	0.05	0.02	0.04	0.00	0.00	0.00	0.00
15	0.03	0.05	0.07	0.07	0.08	0.05	0.02	0.04	0.00	0.00	0.00	0.00
16	0.03	0.07	0.07	e0.07	0.08	0.04	0.09	0.23	0.00	0.00	0.00	0.00
17	0.02	0.08	0.05	0.08	0.09	0.04	0.01	0.12	0.00	0.00	0.00	0.00
18	0.03	0.07	0.05	0.08	0.08	0.08	0.04	1.1	0.00	0.00	0.00	0.00
19	0.04	0.07	0.05	0.08	0.09	0.25	0.09	3.3	0.00	0.00	0.00	0.00
20	0.03	0.07	0.04	0.08	0.08	0.12	0.13	2.0	0.19	0.00	0.00	0.00
21	0.03	0.07	0.05	e0.08	0.09	0.09	0.09	1.2	0.05	0.00	0.00	0.00
22	0.05	0.07	0.04	e0.08	0.09	0.09	0.08	1.1	0.01	0.00	0.00	0.00
23	0.07	0.07	0.05	e0.08	e0.07	0.06	0.16	0.83	0.00	0.00	0.00	0.00
24	0.07	0.03	0.07	e0.08	e0.06	0.06	0.17	12	0.00	0.00	0.00	0.00
25	0.06	0.04	0.06	e0.08	0.07	0.06	0.12	22	0.00	0.00	0.00	0.00
26	0.05	0.05	0.07	e0.08	0.07	0.05	0.10	10	0.00	0.00	0.00	0.00
27	0.08	0.07	0.07	0.09	e0.07	0.04	0.13	2.8	0.08	0.00	0.00	0.00
28	0.07	0.07	0.07	0.10	e0.07	0.02	0.16	0.63	7.8	0.00	0.00	0.00
29	0.10	0.07	0.07	0.09	---	0.02	0.11	0.19	1.4	0.00	0.00	0.00
30	0.13	0.07	0.07	0.10	---	0.02	0.12	0.06	0.65	0.00	0.00	0.00
31	0.11	---	0.07	0.07	---	0.03	---	0.04	---	0.00	0.00	---
MEAN	0.071	0.070	0.062	0.076	0.086	0.070	0.067	1.91	0.34	0.023	0.000	0.000
MAX	0.29	0.09	0.07	0.10	0.11	0.25	0.17	22	7.8	0.56	0.00	0.00
MIN	0.01	0.03	0.04	0.06	0.06	0.02	0.01	0.04	0.00	0.00	0.00	0.00
AC-FT	4.3	4.2	3.8	4.7	4.8	4.3	4.0	117	21	1.4	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

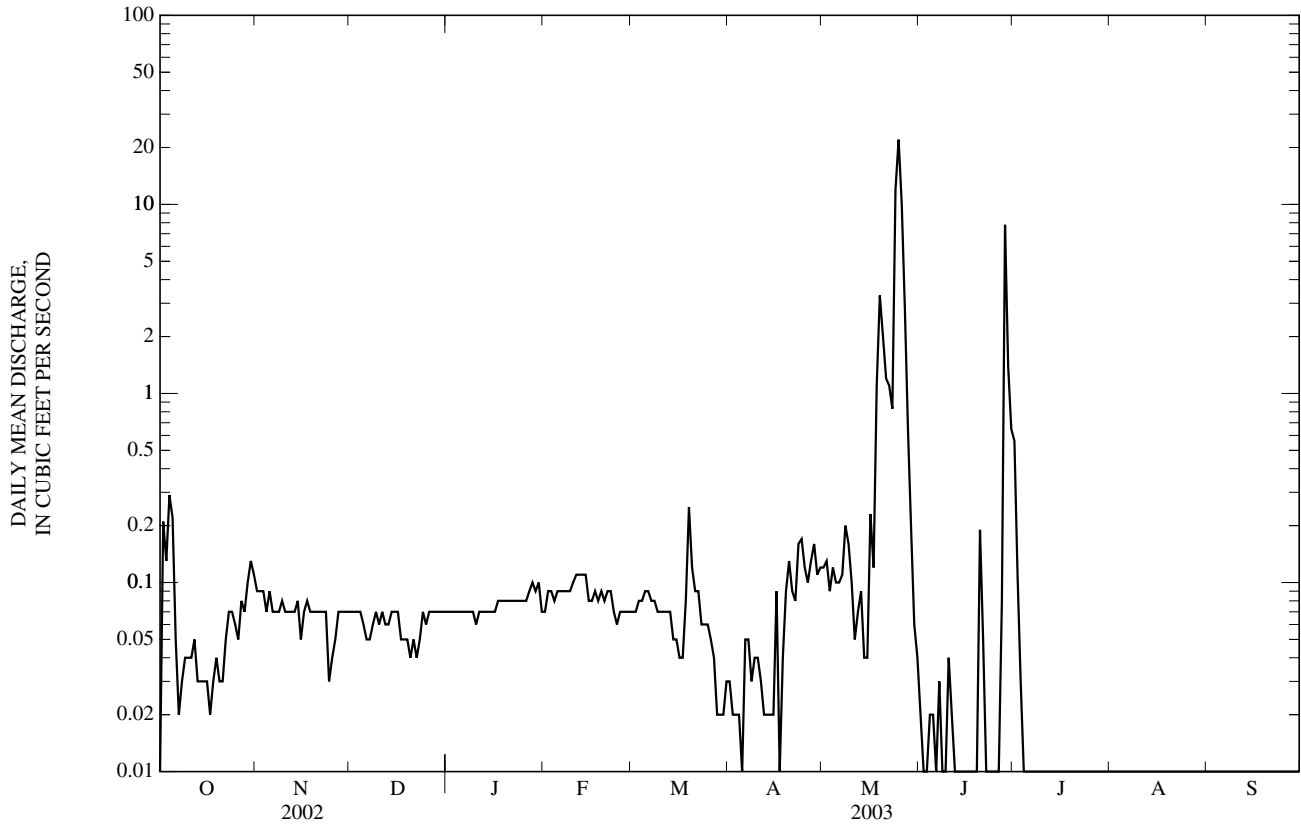
MEAN	14.1	3.43	3.20	3.64	5.31	8.66	9.29	27.1	84.7	66.9	34.0	12.9
MAX	624	34.3	25.6	30.1	25.4	158	111	387	2,410	992	580	158
(WY)	(1947)	(1952)	(1952)	(1952)	(1942)	(1960)	(1942)	(1957)	(1951)	(1957)	(1950)	(1949)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1986)	(1986)	(1986)	(1986)	(1986)	(1954)	(1970)	(1943)

KANSAS RIVER BASIN

06860000 SMOKY HILL RIVER AT ELKADER, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL MEAN	0.51		0.23		22.8	
HIGHEST ANNUAL MEAN					290	1951
LOWEST ANNUAL MEAN					0.000	1986
HIGHEST DAILY MEAN	9.0	May 24	22	May 25	13,700	Jun 11, 1951
LOWEST DAILY MEAN	0.00	Jun 30	0.00	Jun 3	0.00	Oct 1, 1939
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 8	0.00	Jun 12	0.00	Oct 1, 1939
MAXIMUM PEAK FLOW			43	May 24	22,300	Aug 23, 1969
MAXIMUM PEAK STAGE			5.39	May 24	11.02	Jun 17, 1955
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	372		169		16,550	
10 PERCENT EXCEEDS	1.5		0.12		21	
50 PERCENT EXCEEDS	0.08		0.06		1.3	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



06861000 SMOKY HILL RIVER NEAR ARNOLD, KS

LOCATION.--Lat 38°48'31", long 100°01'13", in SW ¼ NW ¼ sec.29, T.14 S., R.24 W., Trego County, Hydrologic Unit 10260003, on left bank near downstream side of county highway bridge, 7.0 mi upstream from headwaters of Cedar Bluff Reservoir, 12 mi north of Arnold, and at mile 356.2.

DRAINAGE AREA.--5,220 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--February 1950 to current year. Prior to October 1950, published as "near Ransom."

GAGE.--Water-stage recorder. Datum of gage is 2,196.13 ft above NGVD of 1929. See WSP 1919 for history of changes prior to Sept. 30, 1961.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1938, reached a stage of about 19 ft, present site and datum, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 19	2115	*216	*2.99	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.35	1.0	0.56	0.87	0.88	1.1	1.5	0.84	0.37	1.5	0.24	1.2
2	0.66	0.82	0.55	0.84	0.91	1.3	1.5	0.79	0.37	1.4	0.23	0.62
3	0.57	0.76	0.54	0.84	e0.86	e1.2	1.3	0.74	0.32	1.3	0.20	0.43
4	4.6	0.73	0.61	0.92	0.85	e1.1	1.3	0.88	0.36	1.3	0.19	0.37
5	2.8	0.69	0.60	0.86	e0.82	1.1	1.2	0.79	0.51	1.3	0.20	0.34
6	0.75	0.67	0.60	0.86	e0.80	1.0	1.8	1.3	0.41	1.2	0.16	0.30
7	0.47	0.67	0.60	0.83	0.79	e0.90	1.9	13	8.3	1.2	0.14	17
8	0.40	0.65	0.60	0.89	0.76	e0.90	1.8	4.5	7.9	1.1	0.14	1.1
9	0.37	0.66	0.61	0.89	0.88	0.90	1.5	1.2	1.7	0.96	0.15	0.57
10	0.36	0.62	0.64	0.82	0.98	0.85	1.4	0.96	1.5	0.88	0.23	0.49
11	0.36	0.60	0.68	0.81	0.99	0.88	1.4	0.74	3.0	0.76	0.14	0.81
12	0.37	0.60	0.65	0.87	0.96	0.98	1.3	0.54	87	0.63	0.11	0.39
13	0.34	0.58	0.62	0.91	1.0	0.92	1.1	0.45	32	0.57	0.11	0.35
14	0.33	0.61	0.66	0.95	e0.96	0.92	0.89	0.40	24	0.53	0.12	0.31
15	0.33	0.59	0.66	0.92	e0.90	0.97	0.79	0.66	82	0.49	0.12	0.30
16	0.37	0.60	0.67	0.88	0.81	0.94	4.4	53	14	0.44	0.12	0.28
17	0.35	0.60	0.67	0.83	0.77	1.1	6.8	36	4.3	0.42	0.11	0.27
18	0.35	0.60	0.70	0.95	e0.78	2.2	2.6	2.8	3.6	0.40	0.11	0.20
19	0.34	0.60	0.67	1.1	e0.78	16	1.8	1.2	136	0.38	0.90	0.23
20	0.38	0.60	0.67	1.1	0.81	8.3	1.5	0.76	67	0.39	41	0.24
21	0.37	0.59	0.70	1.1	0.85	4.4	1.3	0.62	24	0.44	4.3	0.23
22	0.40	0.63	0.67	0.93	0.83	2.9	1.1	0.59	9.1	0.46	0.94	0.20
23	0.60	0.53	e0.64	e0.86	e0.70	2.1	1.3	0.55	6.4	0.38	0.49	0.18
24	0.55	e0.54	e0.66	e0.85	0.67	1.8	1.9	14	4.1	0.31	0.34	0.17
25	0.50	e0.54	0.71	0.84	0.77	1.6	2.2	57	2.9	0.26	0.28	0.14
26	0.47	e0.54	0.72	0.94	0.80	1.4	2.4	15	2.4	0.25	0.22	0.14
27	0.56	0.56	0.71	1.1	0.85	1.7	1.6	6.0	2.1	0.24	0.23	0.11
28	0.51	0.57	0.76	1.2	0.94	1.6	1.5	1.8	1.8	0.21	4.0	0.11
29	0.78	0.58	0.81	1.4	---	1.4	1.2	0.77	1.7	0.24	0.93	0.10
30	21	0.55	0.87	1.2	---	1.4	0.99	0.45	1.6	0.24	33	0.10
31	3.0	---	0.82	0.86	---	1.5	---	0.39	---	0.22	14	---
MEAN	1.41	0.63	0.67	0.94	0.85	2.11	1.78	7.06	17.7	0.66	3.34	0.91
MAX	21	1.0	0.87	1.4	1.0	16	6.8	57	136	1.5	41	17
MIN	0.33	0.53	0.54	0.81	0.67	0.85	0.79	0.39	0.32	0.21	0.11	0.10
AC-FT	86	37	41	58	47	130	106	434	1,050	40	205	54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

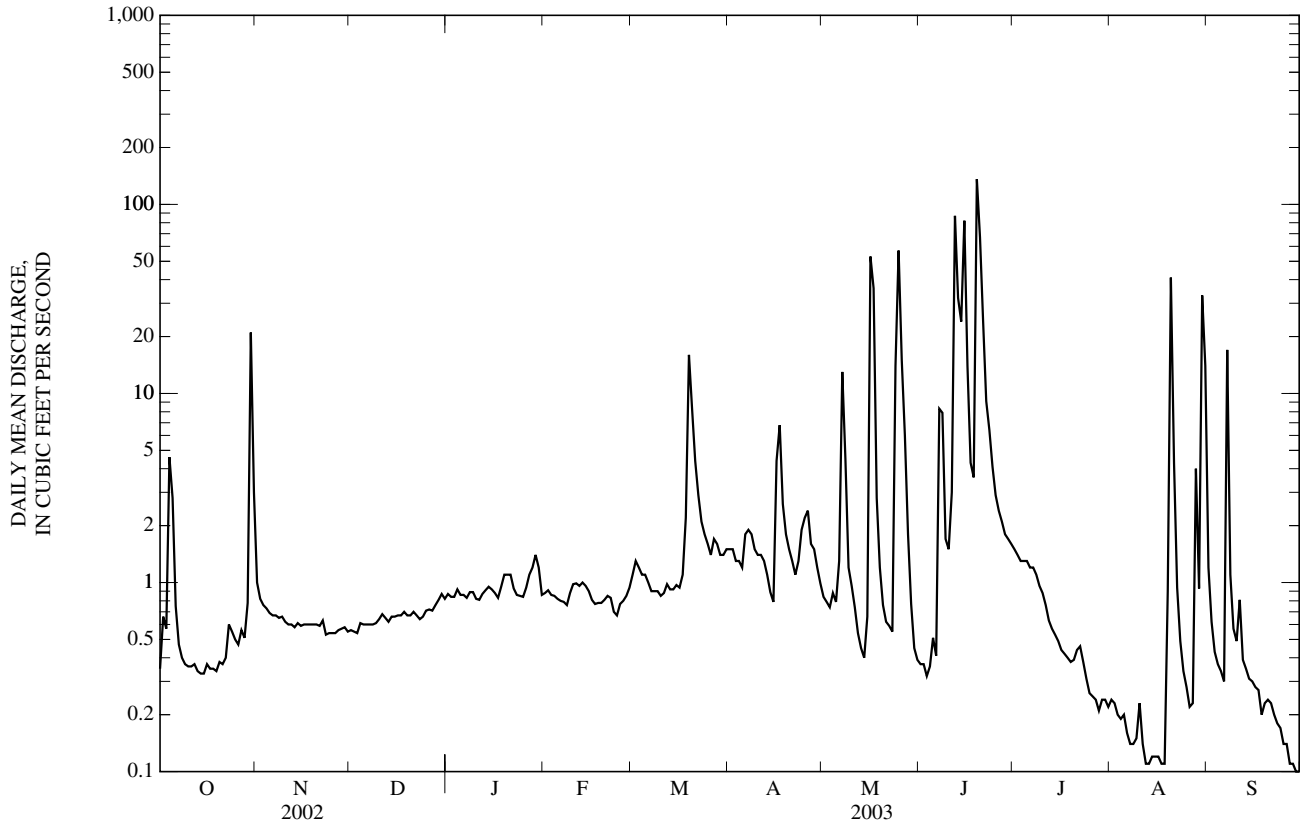
MEAN	16.7	7.37	5.79	6.23	10.1	21.4	16.7	65.6	171	97.5	51.9	31.2
MAX	317	55.0	42.5	57.4	99.2	584	116	934	4,331	965	452	353
(WY)	(1966)	(1997)	(1951)	(1952)	(1966)	(1960)	(1958)	(1957)	(1951)	(1951)	(1960)	(1957)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.013	0.048	0.060	0.030
(WY)	(1989)	(1990)	(1989)	(1989)	(1989)	(1989)	(1989)	(1968)	(1985)	(1988)	(1978)	(1956)

KANSAS RIVER BASIN

06861000 SMOKY HILL RIVER NEAR ARNOLD, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL MEAN	2.62		3.17		41.9	
HIGHEST ANNUAL MEAN					550	1951
LOWEST ANNUAL MEAN					0.33	1988
HIGHEST DAILY MEAN	94	Aug 28	136	Jun 19	14,200	Jun 12, 1951
LOWEST DAILY MEAN	0.26	Jul 27	0.10	Sep 29	0.00	Jul 30, 1952
ANNUAL SEVEN-DAY MINIMUM	0.30	Jul 15	0.11	Aug 12	0.00	Sep 9, 1952
MAXIMUM PEAK FLOW			216	Jun 19	23,800	Jun 11, 1951
MAXIMUM PEAK STAGE			2.99	Jun 19	12.57	Jun 11, 1951
INSTANTANEOUS LOW FLOW			0.08	Aug 13	0.00	most years
ANNUAL RUNOFF (AC-FT)	1,900		2,290		30,350	
10 PERCENT EXCEEDS	4.5		3.2		45	
50 PERCENT EXCEEDS	1.0		0.79		2.3	
90 PERCENT EXCEEDS	0.40		0.24		0.01	

e Estimated



06861500 CEDAR BLUFF RESERVOIR NEAR ELLIS, KS

LOCATION.--Lat 38°47'24", long 99°43'13", in NE 1/4 SW 1/4 sec.36, T.14 S., R.22 W., Trego County, Hydrologic Unit 10260003, in control house structure of outlet works conduit at dam on Smoky Hill River, 18 mi southwest of Ellis, and at mile 333.7.

DRAINAGE AREA.--5,530 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--November 1950 to current year (monthly records only prior to August 1960).

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation). Prior to Aug. 20, 1960, nonrecording mercury-column gage at same site and datum.

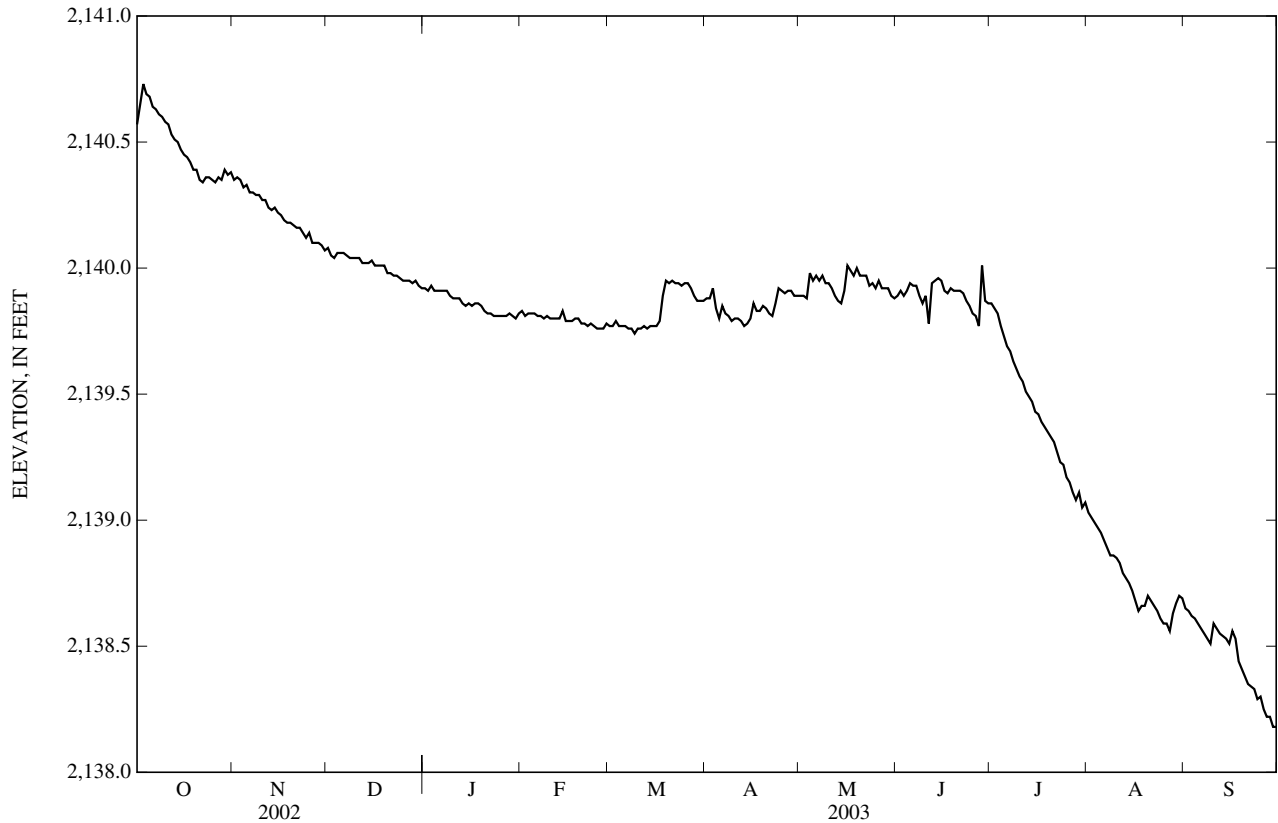
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Nov. 13, 1950. Dam was completed in 1951. Total capacity, 870,400 acre-ft, consisting of the following: Dead storage, 8,260 acre-ft below elevation 2,090 ft, sill of trashrack structure; irrigation pool, 176,800 acre-ft between elevations 2,090 ft and 2,144 ft; flood-control pool, 191,900 acre-ft between elevations 2,144 ft and 2,166 ft, crest of uncontrolled spillway and uncontrolled storage, 493,400 acre-ft between elevations 2,166 ft and 2,200 ft. Reservoir is used to store water for flood control, irrigation of 6,600 acres, and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,154.90 ft, July 2, 1951, July 4, 5, 1957, contents, 269,400 acre-ft; minimum elevation since irrigation pool was first filled, 2,092.20 ft, Sept. 28, 1992, contents, 10,450 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2,140.76 ft, Oct. 3, contents, 151,000 acre-ft; minimum elevation, 2,138.15 ft, Sept. 30, contents, 135,100 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Capacity table placed in use October 1951)

Elevation	Contents	Elevation	Contents	Elevation	Contents
2,138	134,200	2,140	146,300	2,141	152,600
2,139	140,100				



## KANSAS RIVER BASIN

## 06861500 CEDAR BLUFF RESERVOIR NEAR ELLIS, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,140.57	2,140.35	2,140.08	2,139.92	2,139.83	2,139.77	2,139.88	2,139.89	2,139.89	2,139.86	2,139.03	2,138.65
2	2,140.65	2,140.36	2,140.05	2,139.91	2,139.81	2,139.77	2,139.88	2,139.89	2,139.91	2,139.84	2,139.01	2,138.64
3	2,140.73	2,140.35	2,140.04	2,139.93	2,139.82	2,139.79	2,139.92	2,139.88	2,139.89	2,139.82	2,138.99	2,138.62
4	2,140.69	2,140.32	2,140.06	2,139.91	2,139.82	2,139.77	2,139.84	2,139.98	2,139.91	2,139.77	2,138.97	2,138.61
5	2,140.68	2,140.33	2,140.06	2,139.91	2,139.82	2,139.77	2,139.80	2,139.95	2,139.94	2,139.73	2,138.95	2,138.59
6	2,140.64	2,140.30	2,140.06	2,139.91	2,139.81	2,139.77	2,139.85	2,139.97	2,139.93	2,139.69	2,138.92	2,138.57
7	2,140.63	2,140.30	2,140.05	2,139.91	2,139.81	2,139.76	2,139.82	2,139.95	2,139.93	2,139.67	2,138.89	2,138.55
8	2,140.61	2,140.29	2,140.04	2,139.91	2,139.80	2,139.76	2,139.81	2,139.97	2,139.89	2,139.63	2,138.86	2,138.53
9	2,140.60	2,140.29	2,140.04	2,139.89	2,139.81	2,139.74	2,139.79	2,139.94	2,139.86	2,139.60	2,138.86	2,138.51
10	2,140.58	2,140.27	2,140.04	2,139.88	2,139.80	2,139.76	2,139.80	2,139.94	2,139.89	2,139.57	2,138.85	e2,138.59
11	2,140.57	2,140.27	2,140.04	2,139.88	2,139.80	2,139.76	2,139.80	2,139.92	2,139.78	2,139.55	2,138.83	e2,138.57
12	2,140.53	2,140.24	2,140.02	2,139.88	2,139.80	2,139.77	2,139.79	2,139.89	2,139.94	2,139.51	2,138.79	e2,138.55
13	2,140.51	2,140.23	2,140.02	2,139.86	2,139.80	2,139.76	2,139.77	2,139.87	2,139.95	2,139.49	2,138.77	e2,138.54
14	2,140.50	2,140.24	2,140.02	2,139.85	2,139.83	2,139.77	2,139.78	2,139.86	2,139.96	2,139.47	2,138.75	e2,138.53
15	2,140.47	2,140.22	2,140.03	2,139.86	2,139.79	2,139.77	2,139.80	2,139.91	2,139.95	e2,139.43	2,138.72	2,138.51
16	2,140.45	2,140.21	2,140.01	2,139.85	2,139.79	2,139.77	2,139.86	2,140.01	2,139.91	e2,139.42	2,138.68	e2,138.56
17	2,140.44	2,140.19	2,140.01	2,139.86	2,139.79	2,139.79	2,139.83	2,139.99	2,139.90	e2,139.39	2,138.64	2,138.53
18	2,140.42	2,140.18	2,140.01	2,139.86	2,139.80	2,139.89	2,139.83	2,139.97	2,139.92	e2,139.37	2,138.66	2,138.44
19	2,140.39	2,140.18	2,140.01	2,139.85	2,139.80	2,139.95	2,139.85	2,140.00	2,139.91	e2,139.35	2,138.66	2,138.41
20	2,140.39	2,140.17	2,139.98	2,139.83	2,139.78	2,139.94	2,139.84	2,139.97	2,139.91	e2,139.33	2,138.70	2,138.38
21	2,140.35	2,140.16	2,139.98	2,139.82	2,139.78	2,139.95	2,139.82	2,139.97	2,139.91	e2,139.31	2,138.68	2,138.35
22	2,140.34	2,140.16	2,139.97	2,139.82	2,139.77	2,139.94	2,139.81	2,139.97	2,139.90	2,139.27	2,138.66	2,138.34
23	2,140.36	2,140.14	2,139.97	2,139.81	2,139.78	2,139.94	2,139.86	2,139.93	2,139.87	2,139.23	2,138.64	2,138.33
24	2,140.36	2,140.12	2,139.96	2,139.81	2,139.77	2,139.93	2,139.92	2,139.94	2,139.85	2,139.22	2,138.61	2,138.29
25	2,140.35	2,140.14	2,139.95	2,139.81	2,139.76	2,139.94	2,139.91	2,139.92	2,139.82	2,139.17	2,138.59	2,138.30
26	2,140.34	2,140.10	2,139.95	2,139.81	2,139.76	2,139.94	2,139.90	2,139.95	2,139.81	2,139.15	2,138.59	2,138.25
27	2,140.36	2,140.10	2,139.95	2,139.81	2,139.76	2,139.92	2,139.91	2,139.92	2,139.77	2,139.11	2,138.56	2,138.22
28	2,140.35	2,140.10	2,139.94	2,139.82	2,139.78	2,139.89	2,139.91	2,139.92	2,140.01	2,139.08	2,138.63	2,138.22
29	2,140.39	2,140.09	2,139.95	2,139.81	---	2,139.87	2,139.89	2,139.92	2,139.87	2,139.11	2,138.67	2,138.18
30	2,140.37	2,140.07	2,139.93	2,139.80	---	2,139.87	2,139.89	2,139.89	2,139.86	2,139.05	2,138.70	2,138.18
31	2,140.38	---	2,139.92	2,139.82	---	2,139.87	---	2,139.88	---	2,139.07	2,138.69	---
MEAN	2,140.48	2,140.22	2,140.01	2,139.86	2,139.80	2,139.84	2,139.84	2,139.93	2,139.89	2,139.43	2,138.76	2,138.45
MAX	2,140.73	2,140.36	2,140.08	2,139.93	2,139.83	2,139.95	2,139.92	2,140.01	2,140.01	2,139.86	2,139.03	2,138.65
MIN	2,140.34	2,140.07	2,139.92	2,139.80	2,139.76	2,139.74	2,139.77	2,139.86	2,139.77	2,139.05	2,138.56	2,138.18
(+)	148,600	146,700	145,800	145,100	144,900	145,500	145,600	145,500	145,400	140,600	138,300	135,300
(#)	-1,500	-1,900	-900	-700	-200	+600	+100	-100	-100	-4,800	-2,300	-3,000
CAL YR	2002	.....	(#)	-36,000								
WTR YR	2003	.....	(#)	-14,800								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
# CHANGE IN CONTENTS, IN ACRE-FEET.

e Estimated

## 06862700 SMOKY HILL RIVER NEAR SCHOENCHEN, KS

LOCATION.--Lat 38°42'44", long 99°22'53", in SE ¼ SW ¼ SE ¼ sec.25, T.15 S., R.19 W., Ellis County, Hydrologic Unit 10260006, on right bank, 2.25 mi west of Schoenchen, and at mile 311.1.

DRAINAGE AREA.--5,750 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,922.48 ft above NGVD of 1929. July 1964 to February 1985, water-stage recorder at site 1.2 mi upstream at different datum.

REMARKS.--Records poor. Flow mostly regulated since 1950 by Cedar Bluff Reservoir (station 06861500), 21.4 mi upstream. Natural flow also affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.24	e4.7	e6.0	e6.2	e7.0	e6.9	e6.5	e6.3	e4.6	e1.4	e0.00	e0.00
2	0.59	e4.5	e6.0	e6.3	e7.2	e7.1	e6.3	e5.7	e6.7	e1.1	e0.00	e0.00
3	0.94	e4.5	e5.4	e6.0	e7.3	e7.3	e5.7	e5.6	e5.9	e0.88	e0.00	e0.00
4	1.4	e4.6	e5.5	e6.9	e6.6	e7.2	e5.4	e4.5	e5.4	e0.80	e0.00	e0.00
5	1.3	e4.0	e5.6	e6.2	e7.2	e5.6	e5.1	e4.3	e5.5	e0.54	e0.00	e0.00
6	1.2	e3.5	e5.9	e5.7	e6.9	e5.9	e6.2	e4.7	e6.0	e0.37	e0.00	e0.00
7	1.2	e3.7	e6.3	e6.3	e5.3	e6.7	e6.1	e4.1	e6.0	e0.22	e0.00	e0.00
8	1.0	e3.7	e6.2	e6.8	e5.8	e6.2	e6.0	e4.8	e5.4	e0.18	e0.00	e0.00
9	0.91	e3.8	e6.3	e6.6	e7.3	e5.6	e6.2	e5.0	e5.0	e0.11	e0.00	e0.00
10	e0.90	e3.5	e6.5	e5.6	e6.8	e5.4	e5.9	e5.9	e4.4	e0.08	e0.00	e41
11	e0.88	e3.6	e6.8	e5.6	e7.2	e5.4	e5.4	e5.5	e3.9	e0.06	e0.00	e1,530
12	e0.93	e3.1	e6.8	e5.0	e7.1	e5.6	e5.0	e4.8	e6.5	e0.04	e0.00	e146
13	e0.73	e3.1	e7.0	e4.6	e7.1	e5.6	e5.0	e4.7	e5.3	e0.03	e0.00	e31
14	e0.73	e3.4	e7.4	e4.4	e7.4	e5.5	e4.9	e4.4	e9.5	e0.02	e0.00	e16
15	e0.84	e3.5	e8.0	e4.2	e6.5	e5.6	e4.9	e5.0	e7.3	e0.01	e0.00	e11
16	e0.81	e4.1	e8.1	e4.0	e5.8	e5.6	e7.5	e8.3	e5.3	e0.01	e0.00	e7.6
17	e0.75	e4.4	e8.0	e4.7	e6.5	e5.8	e8.8	e9.2	e4.2	e0.00	e0.00	e6.0
18	e0.87	e4.7	e7.7	e6.0	e6.5	e7.6	e10	e8.1	e4.0	e0.00	e0.00	e4.9
19	e0.78	e4.5	e7.2	e6.5	e6.4	e20	e10	e7.2	e4.0	e0.00	e0.00	e4.8
20	e0.85	e4.8	e7.3	e5.6	e6.5	e23	e11	e5.8	e4.5	e0.00	e0.00	e4.1
21	e1.2	e5.0	e7.2	e5.2	e6.5	e17	e9.9	e5.2	e4.3	e0.00	e0.00	e3.7
22	e1.2	e5.2	e5.6	e4.9	e6.1	e13	e9.3	e4.1	e4.1	e0.00	e0.00	e3.2
23	e2.2	e5.6	e5.4	e4.8	e5.5	e11	e17	e4.7	e3.8	e0.00	e0.00	e2.7
24	e3.0	e5.8	e5.3	e4.9	e4.3	e9.7	e36	e5.9	e3.5	e0.00	e0.00	e2.3
25	e3.3	e6.1	e5.2	e5.0	e5.2	e8.9	e28	e5.3	e3.1	e0.00	e0.00	e2.2
26	e3.3	e6.1	e5.6	e5.2	e5.9	e8.3	e14	e5.1	e2.7	e0.00	e0.00	e1.6
27	e4.4	e5.9	e5.7	e5.5	e6.9	e8.2	e13	e4.6	e2.4	e0.00	e0.00	e1.5
28	e5.2	e6.6	e6.0	e5.9	e6.7	e7.0	e12	e4.7	e2.1	e0.00	e0.00	e1.3
29	e5.1	e6.8	e6.0	e6.3	---	e6.5	e9.5	e5.9	e1.8	e0.00	e0.00	e1.3
30	e5.1	e6.1	e6.1	e6.7	---	e6.3	e7.7	e5.5	e1.5	e0.00	e0.00	e1.3
31	e5.1	---	e6.2	e6.8	---	e6.3	---	e4.8	---	e0.00	e0.00	---
MEAN	1.84	4.63	6.40	5.63	6.48	8.25	9.61	5.47	4.62	0.19	0.000	60.8
MAX	5.2	6.8	8.1	6.9	7.4	23	36	9.2	9.5	1.4	0.00	1,530
MIN	0.24	3.1	5.2	4.0	4.3	5.4	4.9	4.1	1.5	0.00	0.00	0.00
AC-FT	113	276	393	346	360	507	572	337	275	12	0.00	3,620

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

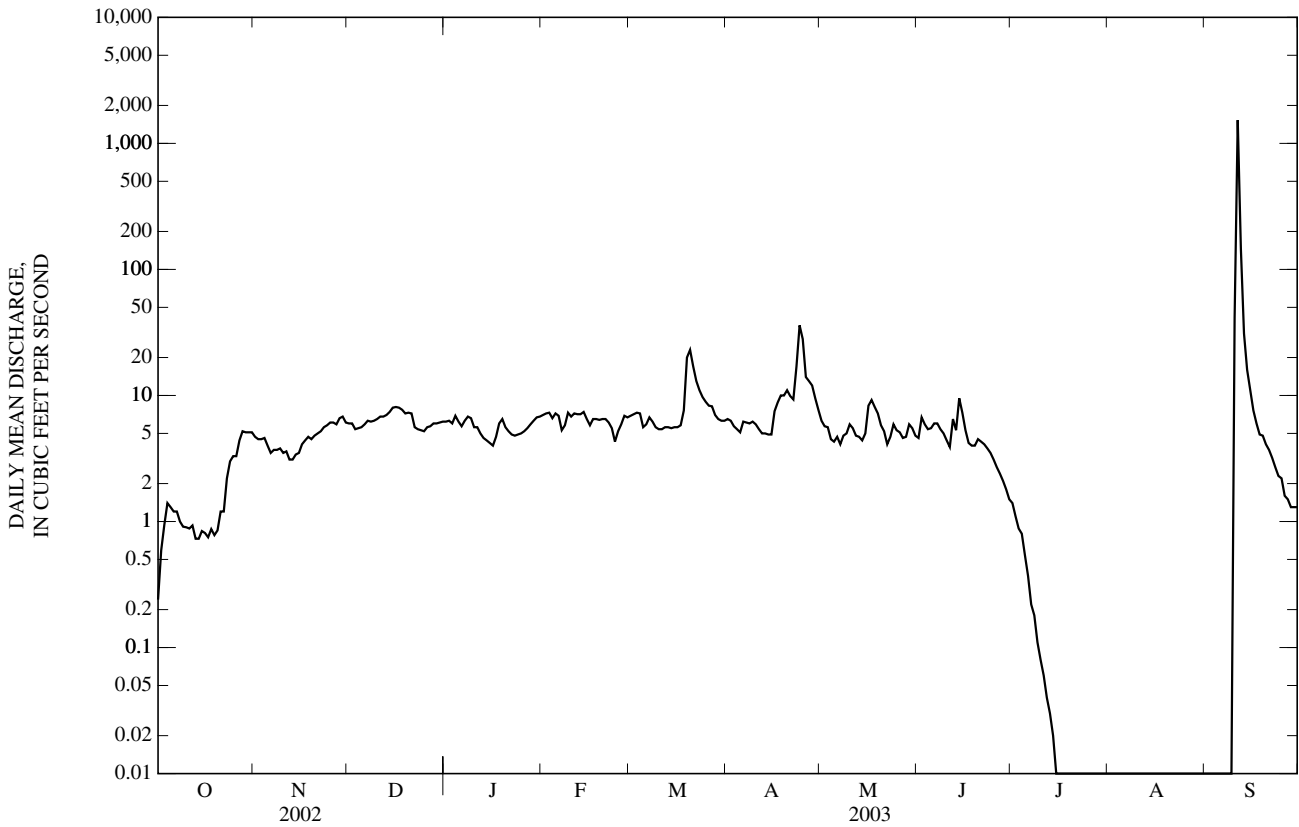
MEAN	10.8	15.2	10.2	10.7	16.2	26.5	26.3	21.4	40.3	50.5	31.6	15.3
MAX	70.9	122	39.8	53.2	71.0	226	188	102	495	710	332	97.3
(WY)	(1974)	(1966)	(1974)	(1974)	(1966)	(1979)	(1998)	(1999)	(1970)	(1993)	(1998)	(2001)
MIN	0.000	0.000	0.000	0.11	0.39	0.38	0.094	0.31	0.45	0.11	0.000	0.000
(WY)	(1992)	(1984)	(1992)	(1992)	(1992)	(1992)	(1989)	(1989)	(1991)	(1983)	(1983)	(1983)

KANSAS RIVER BASIN

06862700 SMOKY HILL RIVER NEAR SCHOENCHEN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL MEAN	5.76		9.40		23.0	
HIGHEST ANNUAL MEAN					83.5	1993
LOWEST ANNUAL MEAN					0.49	1991
HIGHEST DAILY MEAN	30	Aug 9	1,530	Sep 11	11,000	Jul 21, 1993
LOWEST DAILY MEAN	0.00	Jul 10	0.00	Jul 17	0.00	Jul 4, 1983
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 10	0.00	Jul 17	0.00	Jul 4, 1983
MAXIMUM PEAK FLOW			2,500	Sep 11	20,400	Jun 14, 1970
MAXIMUM PEAK STAGE			10.85	Sep 11	16.55	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.00	Jul 17	0.00	at times
ANNUAL RUNOFF (AC-FT)	4,170		6,810		16,630	
10 PERCENT EXCEEDS	11		7.7		28	
50 PERCENT EXCEEDS	5.5		5.1		11	
90 PERCENT EXCEEDS	0.33		0.00		0.36	

e Estimated





## 06862850 SMOKY HILL RIVER BELOW SCHOENCHEN, KS

LOCATION.--Lat 38°42'46", long 99°17'30", in SW ¼ SW ¼ SE ¼ sec.26, T.15 S., R.18 W., Ellis County, Hydrologic Unit 10260006, on right bank, 1.5 mi upstream from Big Timber Creek, 2.1 mi east of Schoenchen, and at mile 304.9.

DRAINAGE AREA.--5,810 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,885.17 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow mostly regulated since 1950 by Cedar Bluff Reservoir (station 06861500), 28.8 mi upstream. Natural flow also affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.23	4.8	e4.8	5.4	6.8	6.5	9.5	3.5	0.92	0.00	0.00
2	0.02	1.2	4.7	4.8	5.5	6.8	6.3	8.7	4.7	0.88	0.00	0.00
3	0.03	1.8	4.2	5.0	5.5	7.1	6.1	8.4	4.6	0.78	0.00	0.00
4	0.02	1.6	4.4	5.5	e5.3	e6.2	5.8	8.4	5.0	0.58	0.00	0.00
5	0.00	1.8	4.6	5.3	5.2	e6.0	5.1	7.6	5.0	0.33	0.00	0.00
6	0.00	1.7	4.3	4.8	e5.0	e6.0	5.6	7.9	5.3	0.22	0.00	0.00
7	0.00	2.2	4.3	4.9	e5.0	e6.3	5.5	8.0	5.4	0.12	0.00	0.00
8	0.00	2.9	4.7	e4.8	e5.3	6.6	5.7	7.8	5.5	0.08	0.00	0.00
9	0.00	2.5	5.2	4.8	5.6	6.1	5.8	7.2	4.9	0.06	0.00	0.00
10	0.00	2.0	5.6	4.1	e5.6	5.9	5.7	6.7	4.4	0.04	0.00	0.00
11	0.00	2.1	5.7	3.8	5.8	6.1	5.5	6.4	3.9	0.02	0.00	1,250
12	0.00	2.2	5.6	e3.7	6.3	6.0	5.1	6.0	4.5	0.02	0.00	322
13	0.00	2.2	5.5	e3.5	5.9	5.5	5.0	5.7	4.6	0.01	0.00	77
14	0.00	2.2	5.6	e3.4	6.5	5.6	5.1	5.3	3.9	0.01	0.00	34
15	0.00	2.3	6.2	e3.3	6.0	5.6	5.6	5.1	5.4	0.01	0.00	19
16	0.00	2.5	6.0	e3.2	e5.4	5.4	7.7	7.5	4.7	0.00	0.00	12
17	0.00	2.8	6.0	3.1	5.6	5.8	7.2	8.0	4.3	0.00	0.00	7.5
18	0.00	2.5	5.4	3.8	5.8	6.6	8.0	7.8	4.1	0.00	0.00	4.6
19	0.00	2.5	4.9	4.7	5.7	12	8.4	7.4	4.0	0.00	0.00	3.5
20	0.00	2.5	4.8	e4.2	5.6	16	10	6.7	3.7	0.00	0.00	2.9
21	0.00	2.6	5.2	e3.9	5.8	14	9.6	6.6	3.7	0.00	0.00	e2.7
22	0.00	2.7	4.3	e3.9	5.7	12	8.8	6.2	3.5	0.00	0.00	e2.5
23	0.00	2.7	4.1	e3.9	e5.4	11	11	5.3	3.0	0.00	0.00	e2.4
24	0.00	2.9	4.2	e4.0	e5.2	9.8	27	5.1	2.5	0.00	0.00	e2.3
25	0.00	3.3	3.8	e4.0	e5.2	8.7	29	4.8	2.0	0.00	0.00	e2.0
26	0.00	3.5	3.9	e4.1	e5.4	8.3	21	4.2	1.7	0.00	0.00	e1.9
27	0.02	3.7	4.0	e4.2	5.6	7.7	16	3.6	1.3	0.00	0.00	e1.8
28	0.01	3.6	4.9	e4.4	5.9	6.6	14	3.2	1.2	0.00	0.00	e1.6
29	0.0	4.0	e4.9	e4.7	---	5.9	13	3.4	1.2	0.00	0.00	e1.4
30	0.0	4.2	e4.9	e5.0	---	5.9	11	3.2	0.97	0.00	0.00	e1.1
31	0.00	---	4.9	5.5	---	6.6	---	3.3	---	0.00	0.00	---
MEAN	0.003	2.50	4.89	4.29	5.58	7.58	9.54	6.29	3.75	0.13	0.000	58.4
MAX	0.03	4.2	6.2	5.5	6.5	16	29	9.5	5.5	0.92	0.00	1,250
MIN	0.00	0.23	3.8	3.1	5.0	5.4	5.0	3.2	0.97	0.00	0.00	0.00
AC-FT	0.2	149	301	264	310	466	567	387	223	8.1	0.00	3,480

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

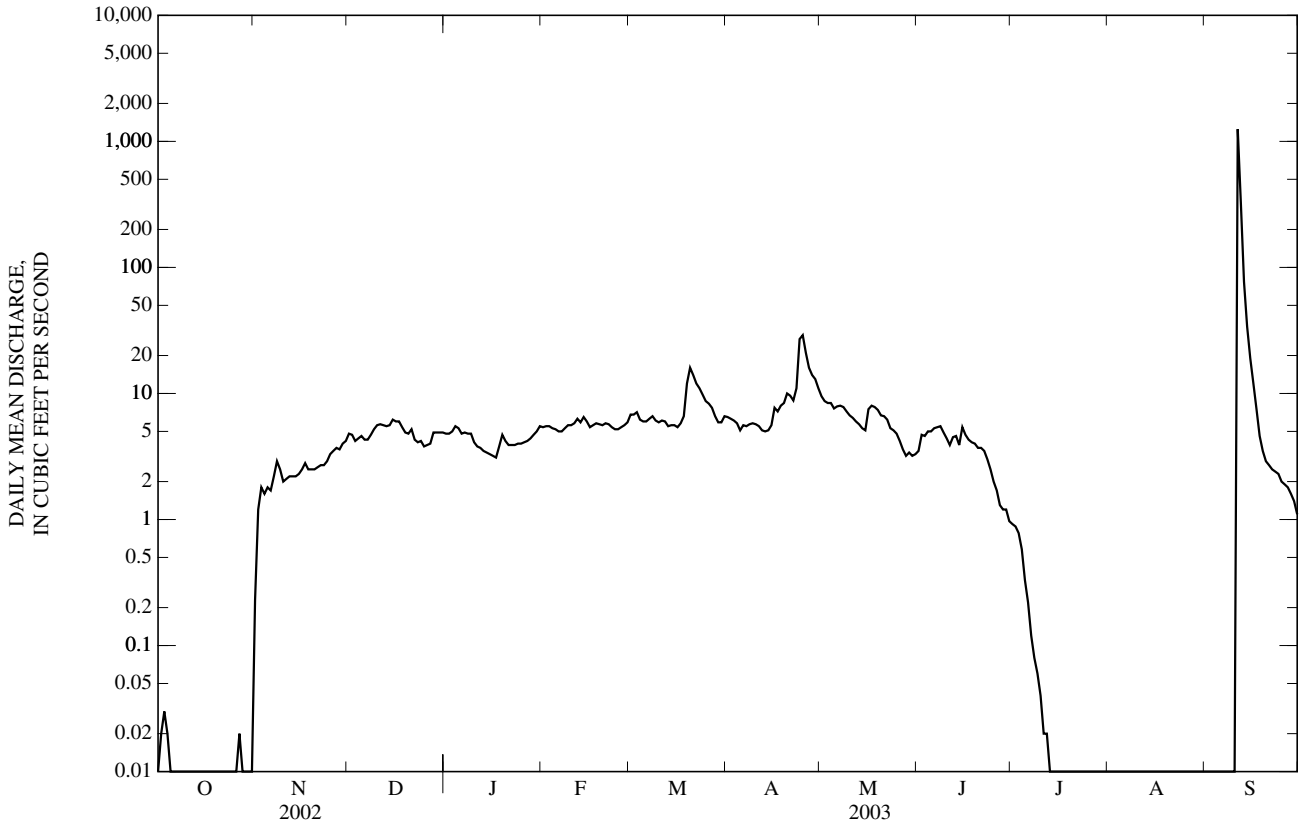
MEAN	3.61	7.97	5.20	5.03	9.49	18.1	30.6	22.9	19.3	52.4	37.4	15.2
MAX	20.8	83.9	17.4	18.7	44.0	118	234	107	140	784	266	122
(WY)	(1994)	(1997)	(1999)	(1999)	(1999)	(1993)	(1987)	(1999)	(1996)	(1993)	(1998)	(2001)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1982)	(1984)	(1984)	(1984)	(1984)	(1985)	(1985)	(1985)	(1985)	(1988)	(1983)	(1983)

KANSAS RIVER BASIN

06862850 SMOKY HILL RIVER BELOW SCHOENCHEN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL MEAN	5.22		8.50		19.0	
HIGHEST ANNUAL MEAN					94.4	1993
LOWEST ANNUAL MEAN					0.001	1991
HIGHEST DAILY MEAN	25	Aug 10	1,250	Sep 11	12,000	Jul 21, 1993
LOWEST DAILY MEAN	0.00	Jul 10	0.00	Oct 1	0.00	Oct 1, 1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 10	0.00	Oct 5	0.00	Oct 1, 1981
MAXIMUM PEAK FLOW			2,490	Sep 11	20,500	Jul 21, 1993
MAXIMUM PEAK STAGE			10.51	Sep 11	17.60	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	3,780		6,150		13,770	
10 PERCENT EXCEEDS	11		7.7		24	
50 PERCENT EXCEEDS	4.4		4.1		2.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



06863500 BIG CREEK NEAR HAYS, KS

LOCATION.--Lat 38°51'08", long 99°19'05", in NE ¼ SE ¼ NE ¼ sec.9, T.14 S., R.18 W., Ellis County, Hydrologic Unit 10260007, on right bank near downstream side of U. S. Highway 183 bridge, 0.6 mi south of intersection with Highway 183 alternate (bypass) in Hays, and at mile 44.9.

DRAINAGE AREA.--549 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1946 to current year.

REVISED RECORDS.--WSP 1340: 1947-48(P).

GAGE.--Water-stage recorder. Elevation of gage is 1,953.88 ft above NGVD of 1929. Prior to Nov. 20, 1947, nonrecording gage, and Nov. 20, 1947, to Aug. 22, 1965, water-stage recorder and concrete control at site 0.7 mi downstream at datum 1,955.13 ft above NGVD of 1929. From Aug. 23, 1965, to Sept. 30, 1998, at site 13.2 mi downstream at datum 1,915 ft above mean NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, many small diversions upstream from station, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 11	0415	*1,850	*18.90	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.91	2.1	3.2	4.5	6.3	e7.0	4.0	12	13	8.5	0.02	1.1
2	6.3	2.3	e3.0	4.8	6.5	7.1	3.8	11	85	13	0.02	0.78
3	8.3	2.6	e3.0	e4.9	e6.2	e7.2	3.9	11	14	20	0.00	0.55
4	3.5	2.1	3.1	4.8	e5.9	e7.2	3.8	12	16	14	0.00	0.28
5	1.7	2.1	3.1	4.9	5.7	e7.2	3.8	11	8.9	e9.3	0.00	0.14
6	1.5	4.4	3.2	5.0	e5.8	e7.4	4.6	14	7.2	e7.0	0.00	0.14
7	1.1	3.5	3.2	4.9	e6.0	7.8	4.4	13	7.6	e5.4	0.00	0.78
8	1.1	2.2	3.2	4.7	e6.2	e7.3	4.3	11	6.5	e5.0	0.00	1.3
9	1.2	2.5	3.2	4.5	6.6	e6.8	4.5	11	6.2	e3.6	0.00	0.10
10	1.1	2.2	3.4	e4.6	e6.2	e6.6	4.5	11	6.3	2.9	0.00	195
11	1.1	2.0	3.5	e4.9	6.1	7.1	4.0	10	6.1	2.5	0.00	867
12	1.2	3.4	3.6	e5.0	6.8	7.1	3.9	9.5	15	2.0	0.00	75
13	0.95	3.2	3.4	e5.0	6.7	7.0	3.8	13	7.8	e1.8	0.00	21
14	0.92	2.6	4.1	e4.9	e6.8	7.4	3.7	8.9	8.3	e1.6	0.00	7.7
15	0.96	3.3	4.2	e4.8	7.0	6.4	5.1	9.5	8.8	1.4	0.00	4.3
16	1.0	3.0	3.5	e5.0	e6.4	6.0	30	32	7.8	1.1	0.00	3.1
17	1.5	3.1	3.7	e5.1	e6.4	8.4	7.7	10	e8.1	1.0	0.00	2.1
18	1.1	5.3	3.6	e5.4	e6.4	13	16	11	e8.2	0.82	0.26	1.9
19	1.1	3.6	3.7	e6.0	6.3	28	12	12	8.7	0.72	1.7	1.3
20	1.1	2.7	3.5	e6.4	7.7	11	9.6	9.8	9.4	0.63	2.0	1.2
21	1.2	2.6	3.2	e6.4	7.6	8.0	8.7	9.5	7.8	0.53	0.02	1.2
22	2.7	2.8	e3.2	e6.5	7.3	7.2	8.3	9.2	7.6	0.39	0.00	2.5
23	9.0	3.7	3.3	e6.8	7.4	6.0	49	9.1	8.4	0.38	0.00	1.0
24	3.6	3.1	3.4	e7.2	e6.2	5.2	49	16	9.9	0.31	0.00	1.2
25	2.3	2.8	e3.2	e7.4	e6.2	5.1	23	9.5	8.5	0.21	0.00	0.94
26	2.4	3.0	e3.2	e7.7	e6.2	5.1	17	8.8	7.0	0.16	9.5	0.97
27	8.3	2.9	e3.5	e8.0	e6.4	5.0	16	8.5	5.9	0.12	1.3	0.75
28	3.2	3.0	3.9	e7.9	e6.6	5.2	15	7.9	e5.8	0.10	0.04	0.61
29	4.7	3.2	4.3	7.8	---	5.8	16	7.4	e5.8	0.09	11	0.50
30	4.7	3.1	4.8	9.8	---	4.6	14	7.0	e5.8	0.06	16	0.56
31	2.6	---	5.3	6.4	---	4.4	---	6.4	---	0.03	3.0	---
MEAN	2.66	2.95	3.54	5.87	6.50	7.57	11.8	11.0	11.0	3.38	1.45	39.8
MAX	9.0	5.3	5.3	9.8	7.7	28	49	32	85	20	16	867
MIN	0.91	2.0	3.0	4.5	5.7	4.4	3.7	6.4	5.8	0.03	0.00	0.10
AC-FT	163	175	218	361	361	465	701	678	657	208	89	2,370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

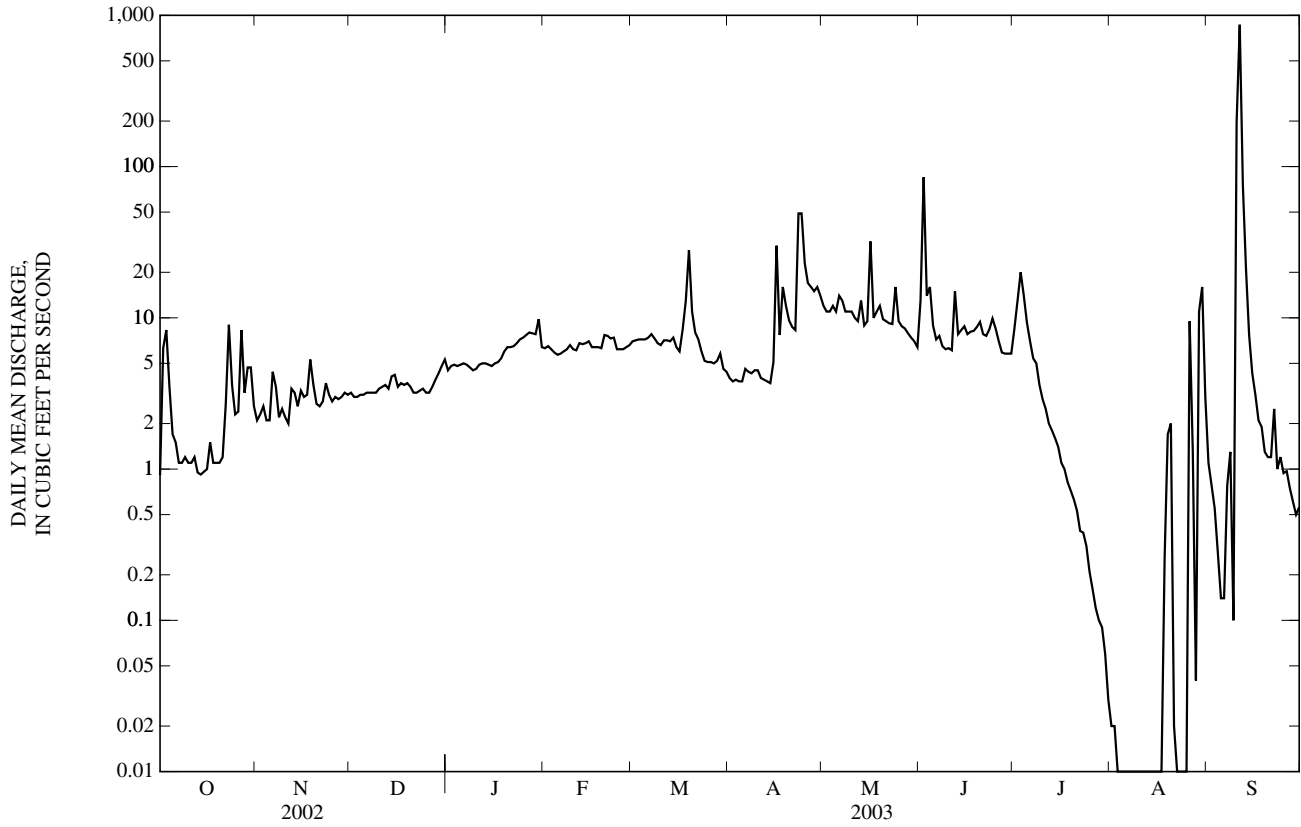
MEAN	21.7	12.4	9.52	10.1	14.9	23.2	26.6	47.1	96.8	63.2	43.3	22.8
MAX	465	115	36.7	59.7	113	173	298	520	1,805	606	266	189
(WY)	(1947)	(1997)	(1998)	(1974)	(1949)	(1960)	(1987)	(1995)	(1951)	(1993)	(1950)	(1957)
MIN	0.55	1.33	0.36	1.21	1.46	1.26	2.10	2.05	1.74	1.04	0.97	0.52
(WY)	(1948)	(1957)	(1957)	(1957)	(1955)	(1957)	(1954)	(1956)	(1956)	(1980)	(1955)	(1953)

KANSAS RIVER BASIN

06863500 BIG CREEK NEAR HAYS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL MEAN	10.3		8.90		32.7	
HIGHEST ANNUAL MEAN					238	1951
LOWEST ANNUAL MEAN					3.05	1991
HIGHEST DAILY MEAN	55	Aug 13	867	Sep 11	10,600	Jun 17, 1957
LOWEST DAILY MEAN	0.12	Aug 8	0.00	Aug 3	0.00	Feb 12, 1948
ANNUAL SEVEN-DAY MINIMUM	0.35	Sep 3	0.00	Aug 3	0.00	Feb 12, 1948
MAXIMUM PEAK FLOW			1,850	Sep 11	22,400	Jun 17, 1957
MAXIMUM PEAK STAGE			18.90	Sep 11	29.00	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.00	Aug 3	0.00	at times
ANNUAL RUNOFF (AC-FT)	7,480		6,450		23,680	
10 PERCENT EXCEEDS	21		11		37	
50 PERCENT EXCEEDS	6.5		4.8		8.0	
90 PERCENT EXCEEDS	0.94		0.35		1.9	

e Estimated



## 06864050 SMOKY HILL RIVER NEAR BUNKER HILL, KS

LOCATION.--Lat 38°47'38", long 98°46'50", in NW ¼ SW ¼ NW ¼ sec.33, T.14 S., R.13 W., Russell County, Hydrologic Unit 10260006, on left bank at downstream side of county highway bridge, 0.5 mi upstream from Sellens Creek, 6.5 mi southwest of Bunker Hill, and at mile 261.6.

DRAINAGE AREA.--7,075 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1974, published as "near Russell."

REVISED RECORDS.--WSP 1340: 1941-42(M), 1944-45(M), 1950(P).

GAGE.--Water-stage recorder. Datum of gage is 1,670.05 ft above NGVD of 1929. Prior to Sept. 11, 1940, nonrecording gage and Sept. 11, 1940, to Sept. 30, 1974, water-stage recorder at site 4.7 mi upstream at datum 1,689.05 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1950 by Cedar Bluff Reservoir (station 06861500), 72.1 mi upstream. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1938, reached a stage of about 29.0 ft, from floodmarks, discharge, about 70,000 ft<sup>3</sup>/s, from rating curve extended above 37,500 ft<sup>3</sup>/s, site and datum of 1939-74.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	15	13	20	24	e20	25	43	21	27	4.5	8.6
2	9.5	12	13	20	25	e20	25	41	75	26	3.7	13
3	31	15	13	19	25	e23	24	38	150	20	3.2	10
4	399	13	12	20	22	e20	23	36	330	18	3.2	8.2
5	45	11	12	19	e21	e16	23	34	438	16	3.3	6.8
6	21	10	12	20	e20	e25	24	40	400	19	2.7	5.8
7	17	9.7	13	20	e18	29	24	45	229	19	2.6	5.2
8	12	10	14	20	e20	30	24	36	130	16	2.6	5.1
9	9.5	9.9	15	20	e22	28	24	34	82	14	2.7	4.7
10	8.1	9.4	15	17	24	26	23	32	61	12	2.6	5.0
11	7.0	10	15	18	25	25	23	30	48	11	2.4	14
12	6.5	13	17	21	24	26	22	28	98	9.7	2.4	2,640
13	6.0	11	16	20	25	25	22	28	82	9.2	2.4	1,870
14	5.8	10	16	18	27	24	22	28	77	8.5	2.3	576
15	5.2	10	16	17	25	23	22	45	71	7.7	2.3	329
16	5.1	10	17	17	21	23	34	75	54	6.8	2.1	204
17	5.1	10	17	e17	23	25	29	70	46	5.9	1.9	135
18	5.3	12	18	e18	23	33	33	51	44	5.6	2.0	92
19	4.9	10	18	e21	25	54	40	54	131	5.4	3.1	69
20	4.9	10	18	e20	24	179	33	37	59	5.5	3.8	57
21	4.6	11	18	e16	23	112	34	32	42	5.5	3.0	49
22	4.8	11	16	e13	23	66	33	30	36	5.4	2.7	44
23	10	14	e16	e13	21	50	37	60	38	5.4	2.5	39
24	13	13	e17	e15	e18	41	51	167	39	5.2	2.5	35
25	11	12	e15	e19	e15	37	108	123	32	5.0	2.7	31
26	11	12	e15	e20	e17	35	134	70	28	4.6	3.3	29
27	18	11	e19	e20	e18	32	100	50	26	4.4	3.7	26
28	19	12	e23	e22	e20	29	68	37	23	4.4	3.8	24
29	15	12	20	e23	---	28	56	30	82	4.3	4.8	23
30	16	13	21	24	---	27	47	26	48	4.1	9.4	22
31	19	---	20	25	---	26	---	23	---	3.6	9.8	---
MEAN	24.3	11.4	16.1	19.1	22.1	37.3	39.6	47.5	101	10.1	3.35	213
MAX	399	15	23	25	27	179	134	167	438	27	9.8	2,640
MIN	4.4	9.4	12	13	15	16	22	23	21	3.6	1.9	4.7
AC-FT	1,490	678	992	1,170	1,230	2,290	2,350	2,920	5,990	623	206	12,660

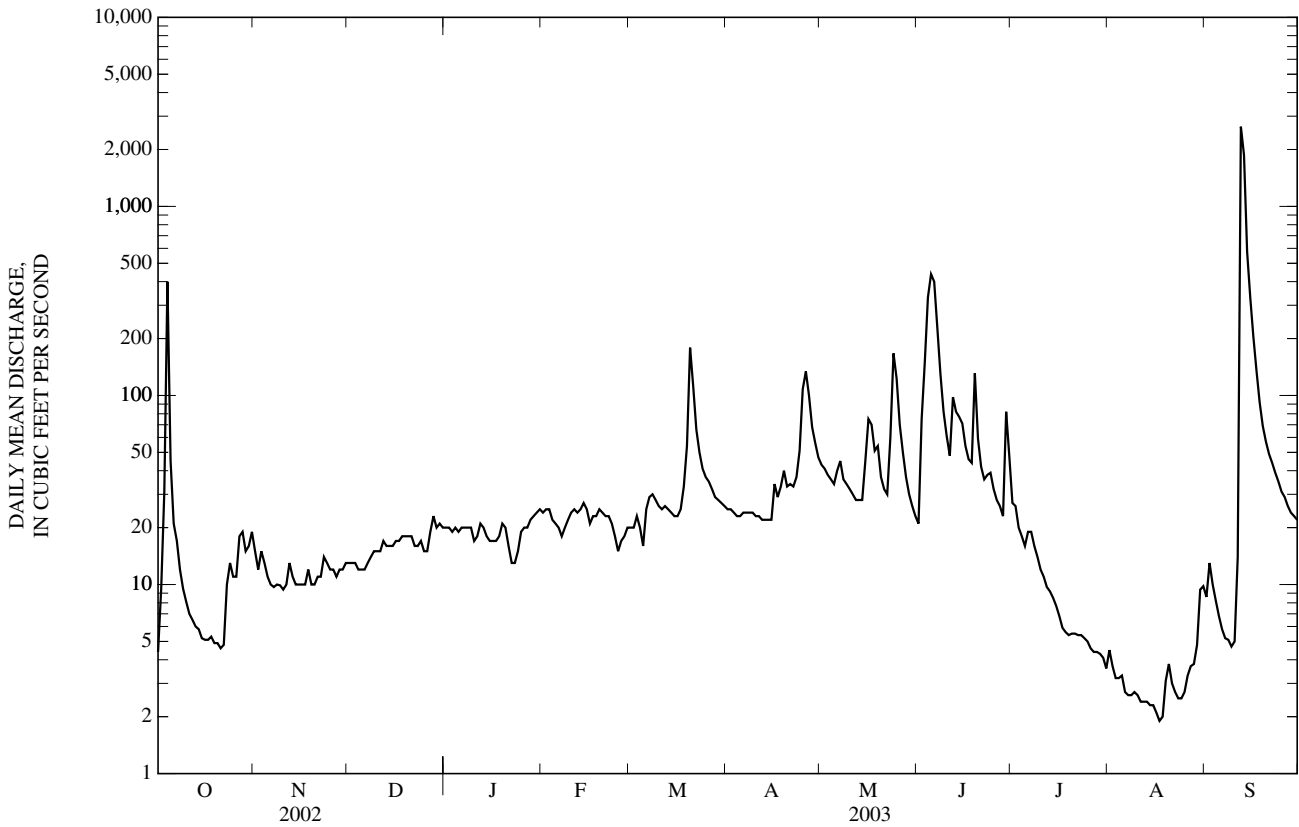
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	99.0	53.4	37.6	38.0	72.1	137	165	213	375	354	237	174
MAX	1,774	455	276	349	716	1,094	1,970	1,624	4,415	3,716	3,157	1,519
(WY)	(1947)	(1997)	(1974)	(1974)	(1949)	(1979)	(1987)	(1951)	(1951)	(1993)	(1950)	(1951)
MIN	0.78	2.27	2.00	1.65	4.83	8.83	5.50	5.29	10.3	1.85	0.57	0.34
(WY)	(1984)	(1940)	(1940)	(1940)	(1940)	(1992)	(1940)	(1989)	(1983)	(1983)	(1983)	(1983)

06864050 SMOKY HILL RIVER NEAR BUNKER HILL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL MEAN	33.4		45.0		163	
HIGHEST ANNUAL MEAN					1,004	1951
LOWEST ANNUAL MEAN					11.4	1983
HIGHEST DAILY MEAN	399	Oct 4	2,640	Sep 12	28,400	Jul 22, 1993
LOWEST DAILY MEAN	2.2	Aug 8	1.9	Aug 17	0.00	Jan 29, 1940
ANNUAL SEVEN-DAY MINIMUM	4.2	Jul 15	2.2	Aug 12	0.00	Sep 11, 1955
MAXIMUM PEAK FLOW			4,570	Sep 12	39,500	May 23, 1951
MAXIMUM PEAK STAGE			11.62	Sep 12	27.14	Jul 22, 1993
INSTANTANEOUS LOW FLOW			1.2	Aug 18	0.00	at times
ANNUAL RUNOFF (AC-FT)	24,160		32,610		118,300	
10 PERCENT EXCEEDS	55		60		267	
50 PERCENT EXCEEDS	22		20		36	
90 PERCENT EXCEEDS	5.4		4.7		7.5	

e Estimated



## 06864500 SMOKY HILL RIVER AT ELLSWORTH, KS

LOCATION.--Lat 38°43'36", long 98°14'00", in SW ¼ SW ¼ SE ¼ sec.20, T.15 S., R.8 W., Ellsworth County, Hydrologic Unit 10260006, on left bank at downstream side of bridge on Kansas Highway 14 in Ellsworth, 2.0 mi downstream from Turkey Creek, and at mile 213.7.

DRAINAGE AREA.--7,580 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--April 1895 to October 1905, July 1918 to July 1925, August 1928 to current year.

REVISED RECORDS.--WSP 796-B: 1903. WSP 806: Drainage area. WSP 1176: 1923. WSP 1440: 1895-1905, 1919, 1921, 1929-30(M), 1936-37(M).

GAGE.--Water-stage recorder. Datum of gage is 1,509.02 ft above NGVD of 1929. Prior to Oct. 31, 1905, nonrecording gage at present site at datum 1.61 ft higher. July 23, 1918, to July 4, 1925, and Aug. 1, 1928, to Nov. 29, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1950 by Cedar Bluff Reservoir (station 06861500), 120 mi upstream. Natural flow also affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1927 reached a stage of 25.7 ft, from floodmarks, discharge, 44,800 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	26	24	34	47	e31	48	79	59	152	8.7	17
2	29	28	25	33	43	e33	46	70	75	78	8.4	17
3	150	26	24	30	43	e40	44	64	86	56	8.3	16
4	713	25	25	35	38	e36	43	61	121	46	8.2	15
5	385	25	25	34	e35	e34	42	58	205	39	8.2	15
6	229	24	23	33	e34	e52	42	60	609	33	7.7	14
7	97	23	26	33	e33	51	41	65	489	31	7.3	13
8	71	22	26	35	e32	47	40	62	343	30	7.1	11
9	107	21	26	34	e32	42	39	57	241	29	7.1	11
10	42	20	26	30	e37	42	39	51	168	27	6.8	10
11	32	20	27	26	44	41	38	49	125	25	6.5	48
12	28	20	28	29	41	40	38	47	115	23	6.2	28
13	25	20	27	35	41	39	37	53	109	22	5.9	1,920
14	24	22	28	35	45	39	36	49	139	21	5.7	1,170
15	23	22	28	28	44	38	36	47	107	19	5.6	515
16	21	21	28	21	40	37	109	193	106	18	5.5	289
17	21	20	29	e22	e38	40	68	441	89	16	5.1	190
18	20	20	30	e24	38	65	53	269	78	15	5.1	134
19	19	20	29	39	37	247	50	145	405	15	8.4	103
20	18	20	29	46	36	601	55	102	283	15	12	82
21	18	20	29	34	36	449	53	82	170	14	12	70
22	18	20	26	28	36	314	48	68	101	15	8.6	68
23	27	20	22	e27	33	175	56	64	76	13	7.8	61
24	33	20	e21	e26	29	116	116	604	64	12	6.3	52
25	28	22	e22	e30	e27	89	158	567	60	11	5.6	46
26	25	23	e23	e34	e27	76	125	308	55	11	7.4	44
27	31	23	e24	e38	e30	67	142	176	50	10	7.6	40
28	34	23	e26	e42	e32	60	142	121	45	10	27	38
29	33	24	34	e46	---	54	111	93	279	9.8	15	36
30	32	25	38	e49	---	52	91	77	328	9.3	29	36
31	28	---	35	e50	---	50	---	66	---	11	20	---
MEAN	76.5	22.2	26.9	33.5	36.7	99.9	66.2	137	173	27.0	9.36	170
MAX	713	28	38	50	47	601	158	604	609	152	29	1,920
MIN	11	20	21	21	27	31	36	47	45	9.3	5.1	10
AC-FT	4,700	1,320	1,650	2,060	2,040	6,140	3,940	8,430	10,270	1,660	575	10,130

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 2003, BY WATER YEAR (WY)

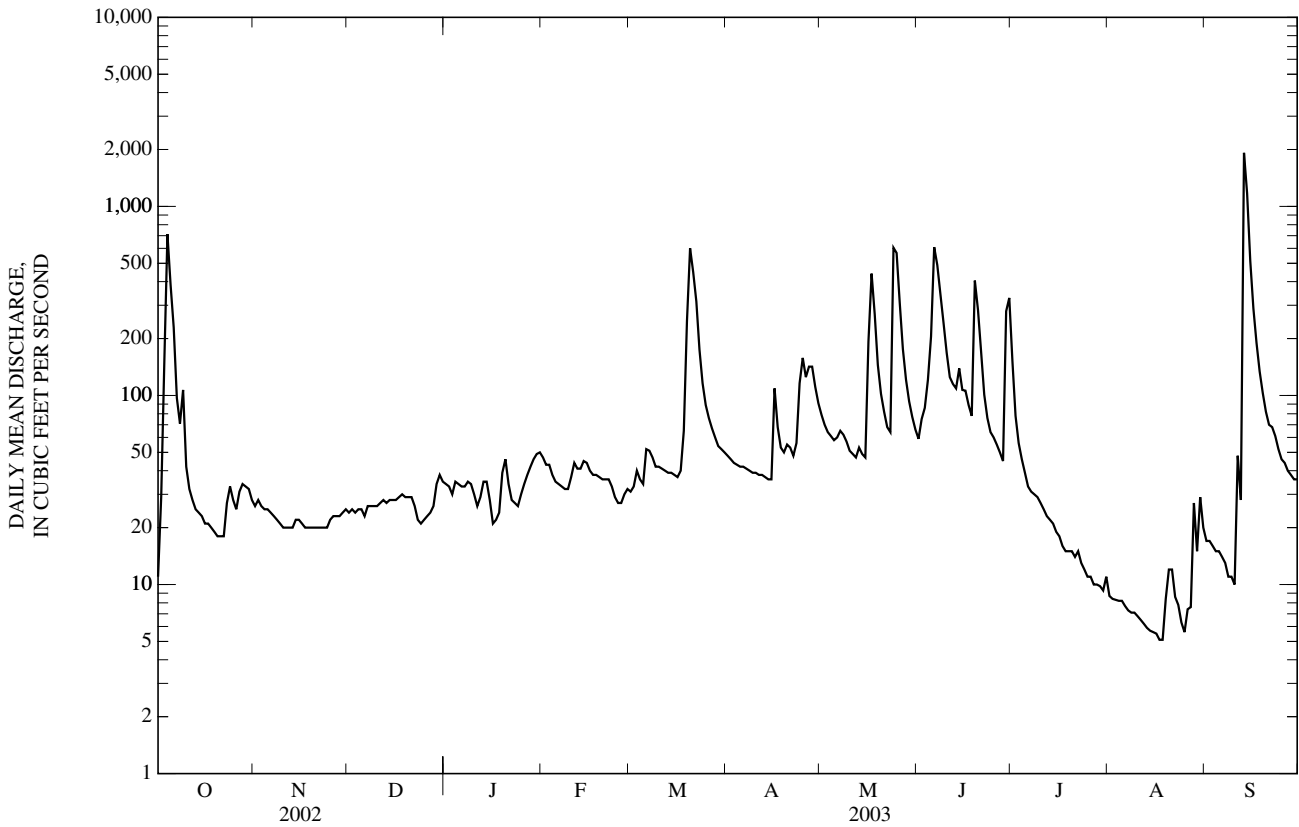
MEAN	151	85.8	58.1	56.9	91.4	177	227	385	565	474	312	259
MAX	1,769	662	598	662	1,099	2,039	2,709	2,700	6,270	5,846	3,300	2,144
(WY)	(1947)	(1997)	(1974)	(1974)	(1993)	(1973)	(1987)	(1903)	(1951)	(1993)	(1950)	(1951)
MIN	5.06	9.30	7.94	4.32	5.29	16.4	11.0	11.4	24.2	5.10	4.16	1.68
(WY)	(1922)	(1989)	(1899)	(1937)	(1899)	(1935)	(1923)	(1899)	(1988)	(1901)	(1983)	(1956)

KANSAS RIVER BASIN

06864500 SMOKY HILL RIVER AT ELLSWORTH, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1896 - 2003	
ANNUAL MEAN	60.9		73.1		238	
HIGHEST ANNUAL MEAN					1,377	1951
LOWEST ANNUAL MEAN					29.1	1983
HIGHEST DAILY MEAN	713	Oct 4	1,920	Sep 13	41,800	Jun 1, 1938
LOWEST DAILY MEAN	5.1	Sep 11	5.1	Aug 17	0.60	Sep 28, 1956
ANNUAL SEVEN-DAY MINIMUM	5.9	Sep 6	5.6	Aug 12	1.0	Sep 25, 1956
MAXIMUM PEAK FLOW			3,570	Sep 13	61,000	Jun 1, 1938
MAXIMUM PEAK STAGE			9.64	Sep 13	27.20	Jun 1, 1938
INSTANTANEOUS LOW FLOW			4.4	Aug 18	0.00	Sep 28, 1956
ANNUAL RUNOFF (AC-FT)	44,090		52,930		172,200	
10 PERCENT EXCEEDS	94		142		412	
50 PERCENT EXCEEDS	49		34		60	
90 PERCENT EXCEEDS	14		12		16	

e Estimated





06865000 KANOPOLIS LAKE NEAR KANOPOLIS, KS

LOCATION.--Lat 38°36'25", long 97°58'02", in SE ¼ NW ¼ NE ¼ sec.3, T.17 S., R.6 W., Ellsworth County, Hydrologic Unit 10260006, in control tower at dam on Smoky Hill River, 12 mi southeast of Kanopolis, 25 mi southwest of Salina, and at mile 183.7.

DRAINAGE AREA.--7,857 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1948 to current year (monthly records only prior to October 1956). Prior to October 1971, published as "Kanopolis Reservoir."

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

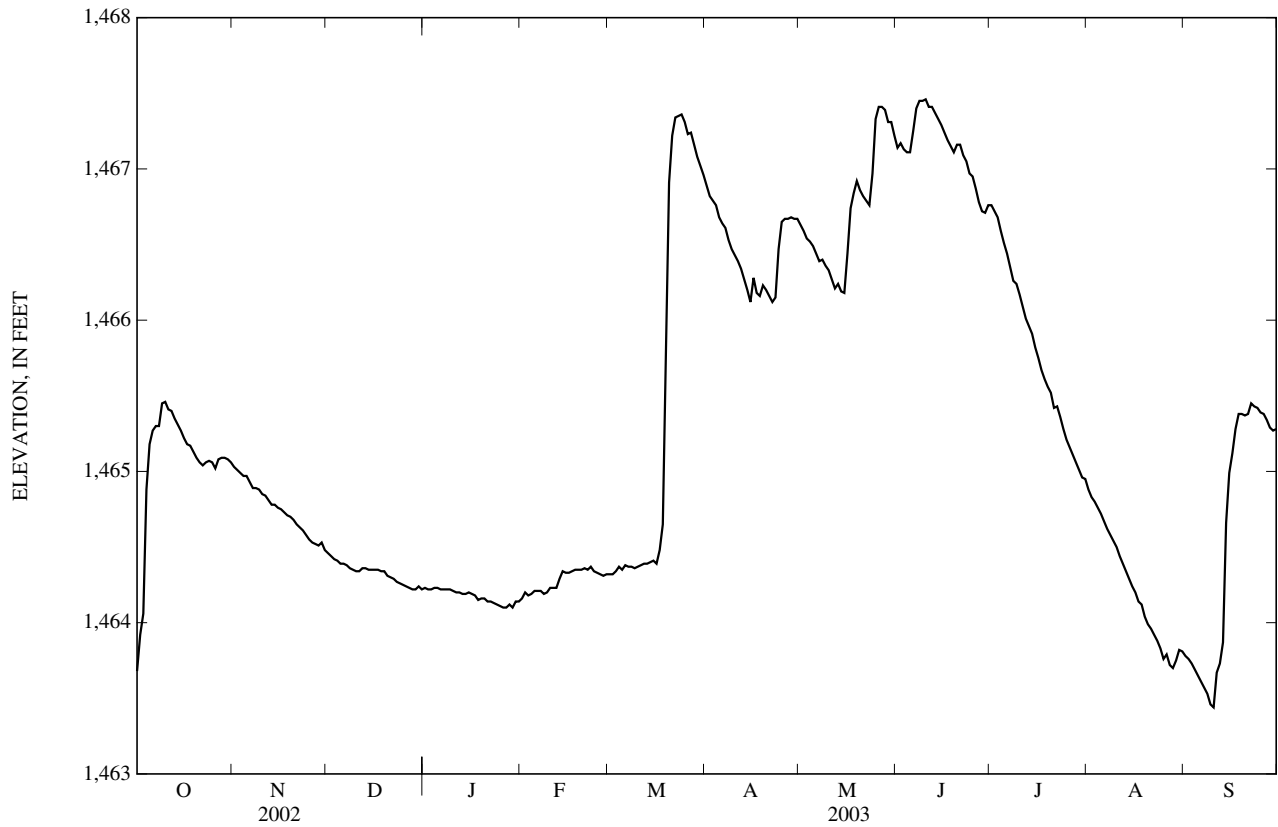
REMARKS.--Reservoir is formed by earthfill dam. Storage began Feb. 17, 1948, and dam was completed in same year. Current conservation pool elevation first reached July 1948. Capacity, 425,700 acre-ft between elevations 1,415 ft, sill of outlet gage, and 1,508 ft. Crest of uncontrolled spillway is at elevation 1,507 ft. Storage capacity of 356,700 acre-ft above elevation 1,463 ft is provided for flood control. Storage capacity of 55,200 acre-ft below elevation 1,463 ft is provided for conservation and recreation. Inflow partly regulated by Cedar Bluff Reservoir (station 06861500). Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,506.98 ft, July 14, 1951, contents, 435,100 acre-ft; minimum elevation since conservation pool was first filled, 1,453.50 ft, Sept. 30, 1988, contents, 29,870 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,467.52 ft, June 10, contents, 73,940 acre-ft; minimum elevation, 1,463.38 ft, Sept. 10, contents, 57,140 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey made in 1971 by U.S. Army Corps of Engineers and revised in 1982)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,460	45,990	1,465	63,280	1,470	85,690



## KANSAS RIVER BASIN

## 06865000 KANOPOLIS LAKE NEAR KANOPOLIS, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,463.68	1,465.03	1,464.46	1,464.23	1,464.16	1,464.32	1,466.89	1,466.63	1,467.14	1,466.76	1,464.88	1,463.78
2	e1,463.92	1,465.01	1,464.44	1,464.22	1,464.20	1,464.32	1,466.82	1,466.59	1,467.17	1,466.72	1,464.83	1,463.76
3	e1,464.06	1,464.99	1,464.42	1,464.22	1,464.18	1,464.34	1,466.79	1,466.54	1,467.13	1,466.68	1,464.80	1,463.73
4	1,464.88	1,464.97	1,464.41	1,464.23	1,464.19	1,464.37	1,466.76	1,466.52	1,467.11	1,466.59	1,464.76	1,463.69
5	1,465.18	1,464.97	1,464.39	1,464.23	1,464.21	1,464.35	1,466.68	1,466.49	1,467.11	1,466.51	1,464.72	1,463.65
6	1,465.27	1,464.93	1,464.39	1,464.22	1,464.21	1,464.38	1,466.64	1,466.44	1,467.25	1,466.44	1,464.67	1,463.61
7	e1,465.30	1,464.89	1,464.38	1,464.22	1,464.21	1,464.37	1,466.61	1,466.39	1,467.40	1,466.35	1,464.62	1,463.57
8	e1,465.30	1,464.89	1,464.36	1,464.22	1,464.19	1,464.37	1,466.53	1,466.40	1,467.45	1,466.26	1,464.58	1,463.53
9	1,465.45	1,464.88	1,464.35	1,464.22	1,464.20	1,464.36	1,466.47	1,466.36	1,467.45	1,466.24	1,464.54	1,463.46
10	1,465.46	1,464.85	1,464.34	1,464.21	1,464.23	1,464.37	1,466.43	1,466.33	1,467.46	1,466.17	1,464.50	1,463.44
11	1,465.41	1,464.84	1,464.34	1,464.20	1,464.23	1,464.38	1,466.39	1,466.27	1,467.41	1,466.09	1,464.44	1,463.67
12	1,465.40	1,464.81	1,464.36	1,464.20	1,464.23	1,464.39	1,466.34	1,466.21	1,467.41	1,466.01	1,464.39	1,463.73
13	1,465.35	1,464.78	1,464.36	1,464.19	1,464.29	1,464.39	1,466.27	1,466.24	1,467.37	1,465.96	1,464.34	1,463.87
14	1,465.31	1,464.78	1,464.35	1,464.19	1,464.34	1,464.40	1,466.20	1,466.19	1,467.33	1,465.91	1,464.29	1,464.66
15	1,465.27	1,464.76	1,464.35	1,464.20	1,464.33	1,464.41	1,466.12	1,466.18	1,467.29	1,465.82	1,464.24	1,464.99
16	1,465.22	1,464.75	1,464.35	1,464.19	1,464.33	1,464.39	1,466.28	1,466.44	1,467.24	1,465.75	1,464.20	1,465.12
17	1,465.18	1,464.73	1,464.35	1,464.18	1,464.34	1,464.48	1,466.18	1,466.74	1,467.19	1,465.67	1,464.14	1,465.28
18	1,465.17	1,464.71	1,464.34	1,464.15	1,464.35	1,464.65	1,466.16	1,466.84	1,467.15	1,465.61	1,464.12	1,465.38
19	1,465.13	1,464.70	1,464.34	1,464.16	1,464.35	1,465.80	1,466.23	1,466.92	1,467.11	1,465.56	1,464.04	1,465.38
20	1,465.09	1,464.68	1,464.31	1,464.16	1,464.35	1,466.91	1,466.20	1,466.86	1,467.16	1,465.52	1,463.99	1,465.37
21	1,465.06	1,464.65	1,464.30	1,464.14	1,464.36	1,467.22	1,466.16	1,466.82	1,467.16	1,465.42	1,463.96	1,465.38
22	1,465.04	1,464.63	1,464.29	1,464.14	1,464.35	1,467.34	1,466.12	1,466.79	1,467.09	1,465.43	1,463.92	1,465.45
23	1,465.06	1,464.61	1,464.27	1,464.13	1,464.37	1,467.35	1,466.15	1,466.76	1,467.05	1,465.36	1,463.88	1,465.43
24	1,465.07	1,464.58	1,464.26	1,464.12	1,464.34	1,467.36	1,466.47	1,466.97	1,466.97	1,465.28	1,463.83	1,465.42
25	1,465.06	1,464.55	1,464.25	1,464.11	1,464.33	1,467.31	1,466.65	1,467.33	1,466.95	1,465.21	1,463.76	1,465.39
26	1,465.02	1,464.53	1,464.24	1,464.10	1,464.32	1,467.23	1,466.67	1,467.41	1,466.87	1,465.16	1,463.79	1,465.38
27	1,465.08	1,464.52	1,464.23	1,464.10	1,464.31	1,467.24	1,466.67	1,467.41	1,466.78	1,465.11	1,463.72	1,465.34
28	1,465.09	1,464.51	1,464.22	1,464.12	1,464.32	1,467.16	1,466.68	1,467.39	1,466.72	1,465.06	1,463.70	1,465.29
29	1,465.09	1,464.53	1,464.22	1,464.10	---	1,467.08	1,466.67	1,467.31	1,466.71	1,465.01	1,463.75	1,465.27
30	1,465.08	1,464.48	1,464.24	1,464.14	---	1,467.02	1,466.67	1,467.31	1,466.76	1,464.96	1,463.82	1,465.28
31	1,465.06	---	1,464.22	1,464.14	---	1,466.96	---	1,467.22	---	1,464.95	1,463.81	---
MEAN	1,465.06	1,464.75	1,464.33	1,464.17	1,464.28	1,465.52	1,466.46	1,466.72	1,467.15	1,465.79	1,464.23	1,464.58
MAX	1,465.46	1,465.03	1,464.46	1,464.23	1,464.37	1,467.36	1,466.89	1,467.41	1,467.46	1,466.76	1,464.88	1,465.45
MIN	1,463.68	1,464.48	1,464.22	1,464.10	1,464.16	1,464.32	1,466.12	1,466.18	1,466.71	1,464.95	1,463.70	1,463.44
(+)	63,520	61,250	60,260	59,950	60,640	71,460	70,200	72,610	70,590	63,080	58,720	64,400
(#)	+5,280	-2,270	-990	-310	+690	+10,820	-1,260	+2,410	-2,020	-7,510	-4,360	+5,680
CAL YR	2002	..... (#)	+3,550									
WTR YR	2003	..... (#)	+6,160									

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

e Estimated

## 06865500 SMOKY HILL RIVER NEAR LANGLEY, KS

LOCATION.--Lat 38°36'38", long 97°57'04", in SW 1/4 SW 1/4 SE 1/4 sec.35, T.16 S., R.6 W., Ellsworth County, Hydrologic Unit 10260008, on left bank at downstream side of county highway bridge, 0.8 mi downstream from Kanopolis Dam, 5.0 mi north of Langley, and at mile 182.9.

DRAINAGE AREA.--7,857 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1310: 1942(M).

GAGE.--Water-stage recorder. Datum of gage is 1,395.66 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Apr. 1, 1952, water-stage recorder at datum 7.00 ft higher. Apr. 1, 1952, to Oct. 1, 1973, water-stage recorder at datum 5.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow completely regulated since 1948 by Kanopolis Lake (station 06865000), 0.8 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1938 reached a stage of 33.9 ft, present datum, from information by U.S. Army Corps of Engineers, discharge, about 45,000 ft<sup>3</sup>/s by extension of subsequent rating curve above 16,000 ft<sup>3</sup>/s and correlation of peak flow at adjacent stations.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	65	41	33	32	38	134	131	161	153	59	50
2	28	63	41	33	32	38	131	128	163	151	58	49
3	27	62	40	33	33	39	129	123	162	148	56	48
4	42	61	39	33	33	39	127	120	160	143	54	47
5	66	60	39	34	33	39	125	117	160	139	53	46
6	76	58	38	34	33	39	123	113	165	134	51	49
7	79	57	37	34	33	39	121	109	177	130	49	50
8	79	57	37	34	32	39	118	109	185	125	53	49
9	82	56	36	33	33	40	116	106	188	120	60	48
10	86	56	36	33	33	40	114	106	190	118	57	47
11	85	55	36	33	33	40	113	103	191	114	56	53
12	84	54	36	33	33	40	112	99	191	110	54	54
13	82	53	37	33	34	41	112	98	189	107	52	55
14	80	52	37	32	37	41	113	99	186	103	50	60
15	78	52	37	32	37	41	114	98	184	100	49	70
16	76	51	37	32	37	41	120	103	180	96	47	72
17	75	51	37	e32	38	41	119	120	176	93	50	77
18	73	50	37	31	38	50	120	130	173	91	49	82
19	71	50	37	31	39	91	122	136	170	87	50	82
20	70	49	36	31	39	144	125	135	175	85	54	82
21	68	48	36	31	39	153	122	134	176	82	53	82
22	67	47	35	31	39	159	119	131	175	82	51	86
23	68	47	35	e31	39	162	117	132	172	79	50	86
24	68	47	34	e30	39	161	131	134	169	75	49	85
25	67	46	34	29	39	160	157	159	167	72	48	83
26	66	45	34	29	38	156	151	174	163	70	47	83
27	66	44	33	30	38	154	145	176	158	68	47	82
28	66	43	33	30	37	150	141	175	152	66	47	80
29	66	43	33	30	---	145	137	174	149	65	47	78
30	67	42	33	30	---	141	135	171	151	e63	50	79
31	66	---	33	30	---	137	---	166	---	e61	50	---
MEAN	68.0	52.1	36.3	31.8	35.7	85.1	125	129	172	101	51.6	66.5
MAX	86	65	41	34	39	162	157	176	191	153	60	86
MIN	27	42	33	29	32	38	112	98	149	61	47	46
AC-FT	4,180	3,100	2,230	1,950	1,980	5,230	7,460	7,950	10,230	6,210	3,170	3,960

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

MEAN	289	161	133	74.6	142	185	310	358	547	476	484	384
MAX	3,004	2,139	1,682	428	1,254	1,341	2,310	2,639	2,932	3,660	3,716	3,376
(WY)	(1952)	(1974)	(1974)	(1974)	(1993)	(1973)	(1960)	(1987)	(1995)	(1951)	(1993)	(1951)
MIN	15.1	12.8	8.62	7.65	6.96	5.84	8.47	8.79	14.7	21.9	29.8	16.4
(WY)	(1981)	(1992)	(1992)	(1992)	(1992)	(1989)	(1989)	(1989)	(1989)	(1989)	(1980)	(1980)

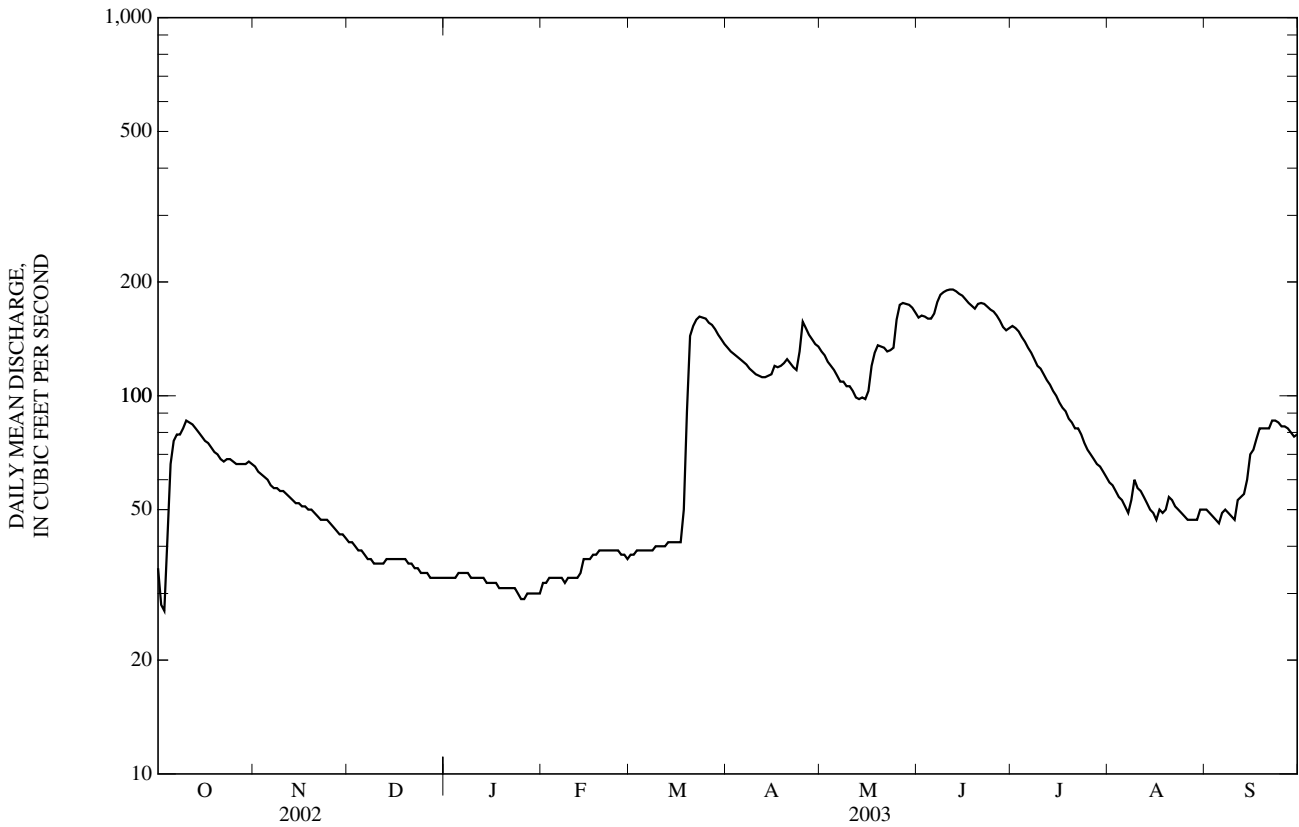
KANSAS RIVER BASIN

06865500 SMOKY HILL RIVER NEAR LANGLEY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1949 - 2003	
ANNUAL MEAN	58.6		79.7		296	
HIGHEST ANNUAL MEAN					1,392	1951
LOWEST ANNUAL MEAN					23.6	1989
HIGHEST DAILY MEAN	115	Jun 18	191	Jun 11	6,720	Jul 26, 1993
LOWEST DAILY MEAN	18	Jan 30	27	Oct 3	1.0	Oct 19, 1966
ANNUAL SEVEN-DAY MINIMUM	19	Jan 30	30	Jan 24	4.6	Mar 20, 1989
MAXIMUM PEAK FLOW			194	Jun 12	28,000	May 24, 1951
MAXIMUM PEAK STAGE			4.48	Jun 12	a28.90	Jun , 1938
INSTANTANEOUS LOW FLOW			25	Oct 2	0.40	Jan 23, 1948
ANNUAL RUNOFF (AC-FT)	42,450		57,670		214,300	
10 PERCENT EXCEEDS	82		159		778	
50 PERCENT EXCEEDS	56		60		78	
90 PERCENT EXCEEDS	36		33		25	

e Estimated

a Maximum peak stage recorded outside period of record at datum then in use and prior to Kanopolis Lake filling.



## 06866500 SMOKY HILL RIVER NEAR MENTOR, KS

LOCATION.--Lat 38°42'39", long 97°34'16", in NW ¼ NE ¼ NW ¼ sec.32, T.15 S., R.2 W., Saline County, Hydrologic Unit 10260008, on right bank at upstream side of State highway bridge, 2.0 mi southeast of Mentor, and at mile 114.0.

DRAINAGE AREA.--8,340 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1923 to October 1930, May 1931 to June 1932, October 1947 to current year. Published as "near Salina" 1948-49.

REVISED RECORDS.--WSP 1440: 1924, 1927-28, 1929(M), 1932(M). WSP 1919: 1960.

GAGE.--Water-stage recorder. Elevation of gage is 1,269.00 ft above NGVD of 1929, from topographic map. Prior to June 30, 1932, nonrecording gage at site 10 mi upstream at datum 20.9 ft higher. Oct. 1, 1947, to Sept. 18, 1948, nonrecording gage, and Sept. 19, 1948, to June 26, 1959, water-stage recorder at site 0.3 mi west on former channel, at present datum. June 27, 1959, to Sept. 8, 1959, nonrecording gage at present site and datum. Sept. 9, 1959, to Mar. 6, 2002, water-stage recorder at site 11.8 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable regulation since 1948 by Kanopolis Lake (station 06865000), 82.0 mi upstream. Diversions upstream from station for irrigation. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest known flood at Salina, 7.5 mi downstream occurred in 1844; second greatest known flood, May 29, 1903, reached a stage of 26.5 ft near Mentor, from floodmarks, site and datum of 1923-32.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	66	57	48	67	74	177	181	182	139	37	111
2	53	66	56	47	66	89	173	174	211	133	39	69
3	66	65	57	54	55	77	171	169	347	131	38	52
4	81	65	56	49	53	67	168	165	226	128	38	46
5	211	64	54	49	49	53	165	162	195	122	37	44
6	180	64	e45	49	50	55	165	161	187	118	35	41
7	102	62	48	52	46	65	163	163	182	116	36	40
8	81	63	49	48	38	78	161	166	179	113	30	38
9	81	63	48	49	52	63	158	160	182	109	27	40
10	87	62	47	e46	83	56	154	155	185	115	26	39
11	79	61	46	e44	67	57	151	154	186	105	29	101
12	79	60	46	46	58	58	149	150	223	92	31	325
13	77	60	49	75	53	59	147	153	243	86	31	134
14	78	64	50	57	59	57	148	157	201	85	24	69
15	78	68	48	61	63	58	145	162	181	78	22	54
16	75	64	48	46	56	58	146	162	174	76	29	51
17	75	64	49	35	55	59	145	444	172	70	30	55
18	76	64	48	44	56	68	143	508	166	62	26	58
19	75	62	48	47	56	329	156	244	164	57	24	63
20	70	61	48	56	56	1,920	285	200	164	58	27	66
21	69	63	47	52	55	1,250	226	189	162	60	23	68
22	68	62	e45	38	54	539	185	184	159	54	21	71
23	71	61	e43	e34	55	297	170	174	157	59	25	85
24	77	61	e41	e36	51	241	760	226	156	60	27	87
25	81	59	e38	52	41	221	1,400	192	156	52	29	73
26	76	57	37	55	43	211	933	341	154	49	28	72
27	74	57	41	55	54	202	418	247	150	44	31	70
28	74	58	49	55	65	194	252	206	147	43	36	67
29	75	59	66	56	---	189	213	196	147	37	39	67
30	78	59	68	59	---	184	194	190	143	38	86	69
31	73	---	53	66	---	182	---	186	---	34	126	---
MEAN	82.8	62.1	49.2	50.3	55.6	229	267	204	183	81.4	35.1	74.2
MAX	211	68	68	75	83	1,920	1,400	508	347	139	126	325
MIN	46	57	37	34	38	53	143	150	143	34	21	38
AC-FT	5,090	3,700	3,020	3,090	3,090	14,100	15,910	12,540	10,870	5,000	2,160	4,410

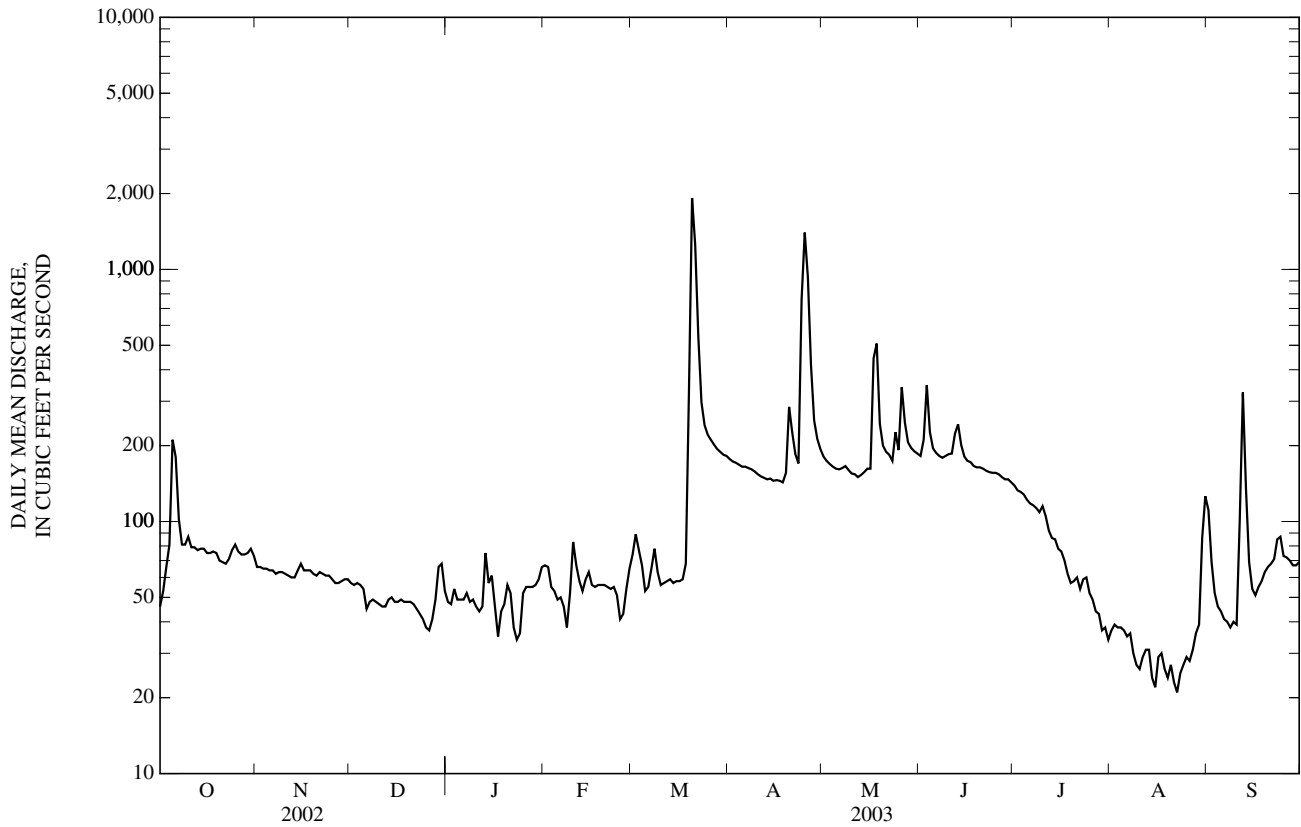
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

MEAN	353	218	169	122	202	313	394	502	703	587	601	447
MAX	3,093	2,063	1,942	621	1,459	2,671	2,756	2,873	3,590	5,417	4,226	3,414
(WY)	(1952)	(1974)	(1974)	(1974)	(1993)	(1973)	(1973)	(1987)	(1995)	(1951)	(1993)	(1951)
MIN	20.5	22.1	13.0	14.3	20.3	16.0	17.1	22.2	52.5	27.9	12.6	35.5
(WY)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1989)	(1992)	(1988)	(1968)	(1989)	(1991)

06866500 SMOKY HILL RIVER NEAR MENTOR, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL MEAN	86.2		115		390	
HIGHEST ANNUAL MEAN					1,781	1993
LOWEST ANNUAL MEAN					35.6	1989
HIGHEST DAILY MEAN	886	Apr 21	1,920	Mar 20	18,500	Jul 13, 1951
LOWEST DAILY MEAN	20	Aug 7	21	Aug 22	1.4	Aug 10, 1989
ANNUAL SEVEN-DAY MINIMUM	23	Aug 3	25	Aug 18	2.3	Aug 8, 1989
MAXIMUM PEAK FLOW			2,270	Mar 20	25,500	Aug 17, 1927
MAXIMUM PEAK STAGE			12.64	Mar 20	26.20	Aug 17, 1927
INSTANTANEOUS LOW FLOW			19	Aug 22	1.0	Aug 10, 1989
ANNUAL RUNOFF (AC-FT)	62,400		82,990		282,300	
10 PERCENT EXCEEDS	176		194		997	
50 PERCENT EXCEEDS	69		66		129	
90 PERCENT EXCEEDS	41		38		40	

e Estimated



## 06866900 SALINE RIVER NEAR WAKEENEY, KS

LOCATION.--Lat 39°06'22", long 99°52'10", in NW ¼ SW ¼ SW ¼ sec.10, T.11 S., R.23 W., Trego County, Hydrologic Unit 10260009, on left bank at downstream side of bridge on U.S. Highway 283, 1 mi upstream from Trego Creek, and 5 mi north of WaKeeney.

DRAINAGE AREA.--696 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1955 to September 1966, October 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,217.46 ft above NGVD of 1929. Oct. 1, 1955, to May 22, 1958, wire-weight and crest-stage gages and May 23, 1958, to Sept. 30, 1966, water-stage recorder at same site and datum.

REMARKS.--Records poor. Natural flow affected by ground-water withdrawals, diversion for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1879, about 27 ft in July 1950, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.11	0.29	0.21	0.32	0.50	e0.70	0.80	2.7	0.54	0.26	0.00	0.00
2	0.49	0.26	0.24	0.33	0.55	0.80	0.76	2.4	0.93	0.12	0.00	0.00
3	0.25	0.25	0.17	0.35	0.61	0.82	0.80	2.1	0.85	0.03	0.00	0.00
4	0.10	0.24	0.21	0.34	0.62	e0.80	0.94	1.9	0.82	0.01	0.00	0.00
5	0.06	0.22	0.24	0.32	0.60	0.85	1.0	1.7	0.94	0.01	0.00	0.00
6	0.02	0.17	0.26	0.31	0.58	e0.76	1.5	2.2	0.84	0.00	0.00	0.00
7	0.02	0.17	0.26	0.33	e0.57	e0.77	1.5	2.1	0.92	0.00	0.00	0.00
8	0.01	0.15	0.27	0.34	0.60	0.77	1.6	2.2	0.84	0.00	0.00	0.00
9	0.02	0.14	0.28	0.38	0.62	0.73	1.6	1.8	0.76	0.00	0.00	0.00
10	0.02	0.13	0.24	0.38	0.68	0.71	1.6	2.1	0.77	0.00	0.00	0.00
11	0.02	0.14	0.24	0.39	0.61	0.70	1.7	1.9	0.82	0.00	0.00	0.00
12	0.01	0.10	0.26	0.41	0.61	0.70	1.4	1.9	0.83	0.00	0.00	0.00
13	0.01	0.11	0.25	0.43	0.61	0.75	1.3	1.5	1.2	0.00	0.00	0.00
14	0.01	0.13	0.25	0.41	0.70	0.82	1.3	1.2	0.82	0.00	0.00	0.00
15	0.05	0.14	0.25	e0.41	0.72	0.84	1.4	1.2	0.72	0.00	0.00	0.00
16	0.05	0.15	0.26	e0.40	0.67	0.83	2.4	2.4	0.54	0.00	0.00	0.00
17	0.06	0.14	0.27	0.40	0.64	0.69	2.5	2.3	0.44	0.00	0.00	0.00
18	0.05	0.15	0.27	0.40	0.64	0.80	2.1	2.4	0.38	0.00	0.00	0.00
19	0.06	0.15	0.27	0.44	0.69	1.3	2.3	2.2	0.41	0.00	0.00	0.00
20	0.06	0.14	0.24	0.47	0.65	1.2	2.8	1.7	0.41	0.00	0.00	0.00
21	0.07	0.14	0.26	0.48	0.67	1.3	2.8	1.6	0.70	0.00	0.00	0.00
22	0.09	0.18	0.25	0.46	0.69	1.3	2.4	1.5	0.24	0.00	0.00	0.00
23	0.23	0.17	0.22	e0.43	e0.65	1.3	2.5	1.3	0.16	0.00	0.00	0.00
24	0.24	0.18	0.24	e0.40	e0.62	1.2	3.0	1.2	0.16	0.00	0.00	0.00
25	0.25	0.18	0.23	e0.40	e0.60	1.2	3.5	1.1	0.12	0.00	0.00	0.00
26	0.23	0.18	0.24	e0.40	e0.60	1.1	3.3	0.95	0.09	0.00	0.00	0.00
27	0.30	0.19	0.25	e0.40	e0.60	1.1	3.4	0.84	0.06	0.00	0.00	0.00
28	0.28	0.20	0.30	e0.41	e0.62	0.95	3.4	0.77	0.04	0.00	0.00	0.00
29	0.34	0.21	0.33	e0.45	---	0.89	3.1	0.62	3.6	0.00	0.00	0.00
30	0.37	0.21	0.35	e0.48	---	0.79	2.8	0.53	0.68	0.00	0.00	0.00
31	0.31	---	0.34	0.51	---	0.87	---	0.38	---	0.00	0.00	---
MEAN	0.14	0.17	0.26	0.40	0.63	0.91	2.05	1.64	0.69	0.014	0.000	0.000
MAX	0.49	0.29	0.35	0.51	0.72	1.3	3.5	2.7	3.6	0.26	0.00	0.00
MIN	0.01	0.10	0.17	0.31	0.50	0.69	0.76	0.38	0.04	0.00	0.00	0.00
AC-FT	8.3	10	16	25	35	56	122	101	41	0.9	0.00	0.00

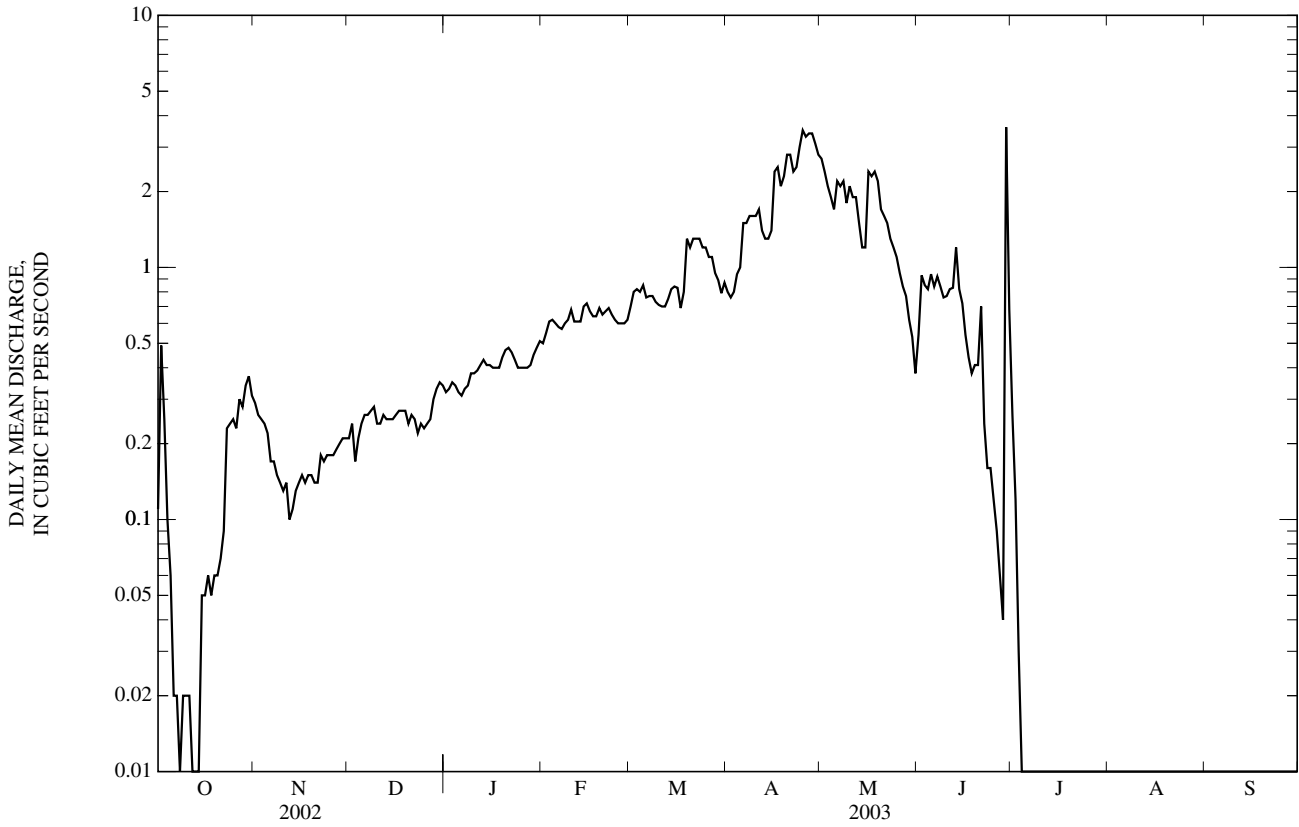
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2003, BY WATER YEAR (WY)

MEAN	10.4	4.70	4.60	5.13	9.58	18.6	11.7	40.3	41.1	48.5	27.1	15.1
MAX	180	22.6	18.6	20.1	92.1	335	53.7	359	680	441	303	104
(WY)	(1966)	(1994)	(1994)	(1962)	(1966)	(1960)	(1998)	(1995)	(1957)	(1993)	(1961)	(1993)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1991)	(1991)	(1991)	(1991)	(1966)	(1991)	(1956)

06866900 SALINE RIVER NEAR WAKEENEY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1956 - 2003	
ANNUAL MEAN	3.51		0.57		19.8	
HIGHEST ANNUAL MEAN					98.8	1957
LOWEST ANNUAL MEAN					0.000	1991
HIGHEST DAILY MEAN	11	Apr 9	3.6	Jun 29	8,010	Jun 17, 1957
LOWEST DAILY MEAN	0.00	Jul 11	0.00	Jul 6	0.00	Oct 28, 1955
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 31	0.00	Jul 6	0.00	Aug 23, 1956
MAXIMUM PEAK FLOW			14	Jun 29	13,000	Jun 17, 1957
MAXIMUM PEAK STAGE			2.78	Jun 29	19.40	Jun 17, 1957
INSTANTANEOUS LOW FLOW			0.00	Oct 7	0.00	most years
ANNUAL RUNOFF (AC-FT)	2,540		414		14,370	
10 PERCENT EXCEEDS	9.1		1.6		23	
50 PERCENT EXCEEDS	0.33		0.30		2.4	
90 PERCENT EXCEEDS	0.02		0.00		0.00	

e Estimated





06867000 SALINE RIVER NEAR RUSSELL, KS

LOCATION.--Lat 38°58'00", long 98°51'20", in SW 1/4 SW 1/4 NW 1/4 sec.35, T.12 S., R.14 W., Russell County, Hydrologic Unit 10260009, on left bank at downstream side of bridge on U.S. Highway 281, 2.0 mi downstream from Salt Creek, 5.0 mi north of Russell, and at mile 190.6.

DRAINAGE AREA.--1,502 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1945 to September 1953, June 1959 to current year.

REVISED RECORDS.--WSP 1919: 1960. WDR KS-92-1: 1988-89 (M), 1990-91 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,551.59 ft above NGVD of 1929. Prior to Jan. 22, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Low flow partially regulated at times by irrigation. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 11	2200	*1,340	*10.28	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	9.5	11	e15	22	22	18	30	18	17	1.6	5.3
2	5.4	11	11	15	20	e22	17	29	40	13	1.6	3.7
3	5.8	10	11	e15	19	22	17	27	46	11	1.5	3.0
4	7.8	10	11	16	e18	e22	16	26	39	9.3	1.6	e2.4
5	5.7	9.0	11	17	e17	e22	16	79	53	8.4	1.5	e2.2
6	4.8	7.5	e11	16	e17	22	18	76	44	7.6	1.3	e1.9
7	4.4	7.9	e11	15	e19	22	18	39	34	7.1	1.2	e1.8
8	4.2	8.1	12	16	20	21	17	31	29	6.8	1.4	e1.6
9	4.2	7.9	e12	16	22	e21	17	29	25	6.2	1.3	e1.4
10	4.1	7.8	13	e16	e22	20	17	28	24	5.9	1.2	e1.2
11	4.0	7.7	13	e16	e22	19	17	26	22	5.2	1.1	338
12	3.9	8.6	13	e16	22	18	17	24	40	4.9	1.1	490
13	3.6	9.0	12	17	21	18	17	23	60	4.8	0.99	118
14	3.5	9.8	12	17	22	18	16	22	57	4.4	0.96	49
15	3.5	9.3	12	e14	20	17	17	23	35	4.0	0.95	31
16	3.3	9.1	12	e15	e19	17	20	27	29	3.7	0.90	23
17	3.3	9.0	13	16	e19	18	19	28	25	3.5	0.76	18
18	3.4	9.1	13	e15	19	21	21	28	23	3.1	0.94	15
19	3.2	8.8	13	e15	19	24	22	26	22	3.2	1.9	13
20	3.1	8.8	12	e15	18	26	23	25	23	3.2	1.8	11
21	3.2	8.8	e11	e15	18	25	23	24	21	3.1	1.2	10
22	3.9	8.9	e10	e16	17	25	23	22	18	3.5	0.99	13
23	6.4	9.2	e10	e18	15	24	27	25	16	3.1	0.82	11
24	7.1	9.0	e10	20	17	23	30	29	15	2.6	0.74	8.9
25	6.1	9.2	10	21	17	22	52	45	13	2.2	0.70	7.9
26	5.7	e9.2	11	22	17	21	49	33	12	2.0	0.70	7.6
27	7.5	e9.3	13	e21	18	20	38	26	11	2.0	0.80	7.1
28	7.8	e9.5	16	e21	19	19	37	23	10	2.0	1.1	6.7
29	7.0	9.7	e15	22	---	19	34	21	21	1.9	1.7	6.4
30	7.0	10	e15	e22	---	18	32	19	33	1.8	2.5	6.8
31	7.7	---	e15	22	---	18	---	18	---	1.8	3.2	---
MEAN	4.94	9.02	12.1	17.2	19.1	20.8	23.5	30.0	28.6	5.11	1.29	40.5
MAX	7.8	11	16	22	22	26	52	79	60	17	3.2	490
MIN	2.4	7.5	10	14	15	17	16	18	10	1.8	0.70	1.2
AC-FT	303	537	744	1,060	1,060	1,280	1,400	1,850	1,700	314	79	2,410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

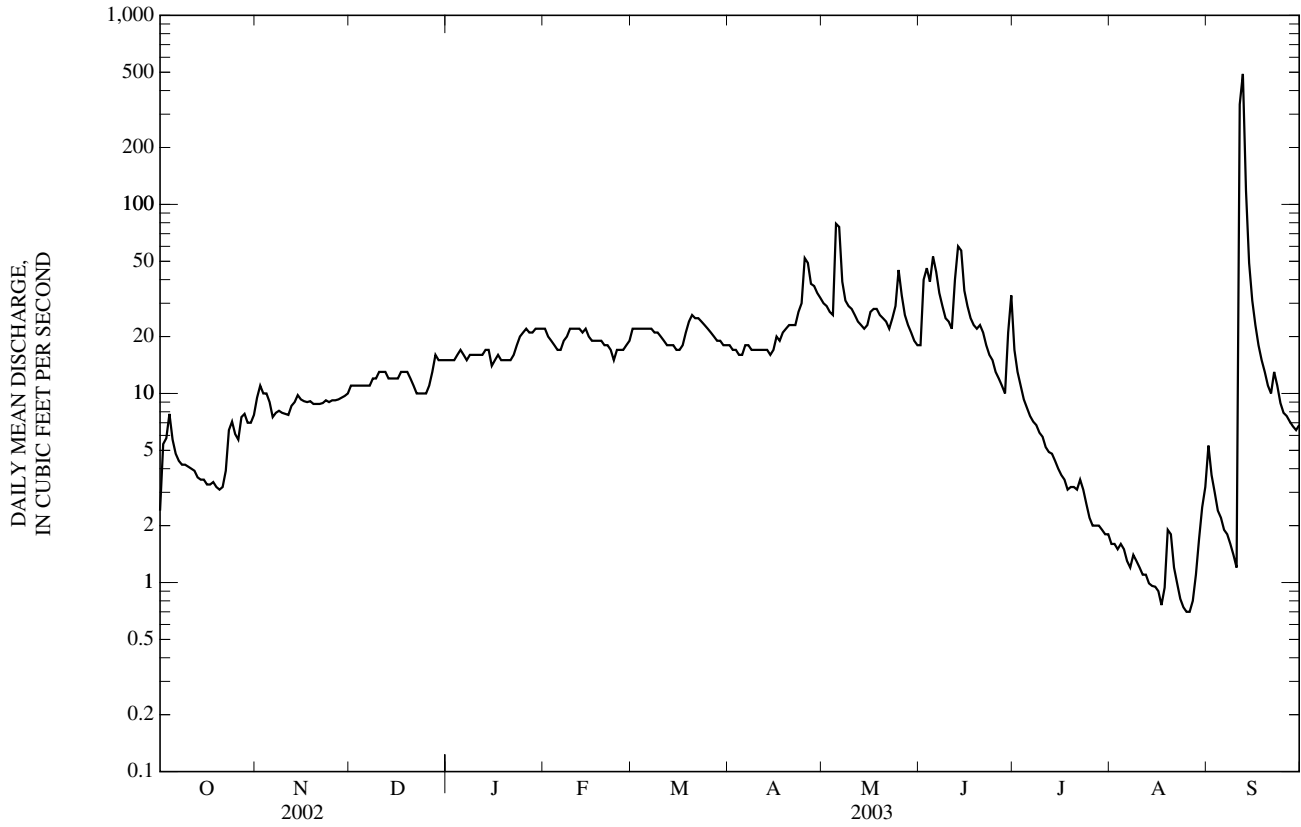
MEAN	64.1	42.5	34.7	35.7	57.7	85.1	101	133	195	203	116	73.2
MAX	1,077	238	174	206	453	561	969	1,617	3,011	3,737	1,257	778
(WY)	(1947)	(1997)	(1974)	(1974)	(1949)	(1960)	(1987)	(1995)	(1951)	(1993)	(1950)	(1951)
MIN	1.05	0.96	1.92	2.28	1.97	2.49	3.29	4.06	8.82	1.69	1.29	0.94
(WY)	(1992)	(1991)	(1991)	(1992)	(1992)	(1992)	(1992)	(1992)	(1989)	(1991)	(2003)	(1991)

KANSAS RIVER BASIN

06867000 SALINE RIVER NEAR RUSSELL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	22.8		17.6		95.9	
HIGHEST ANNUAL MEAN					561	1951
LOWEST ANNUAL MEAN					5.25	1991
HIGHEST DAILY MEAN	58	Feb 9	490	Sep 12	23,400	Jul 22, 1993
LOWEST DAILY MEAN	1.8	Sep 8	0.70	Aug 25	0.10	Aug 11, 1964
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 6	0.84	Aug 22	0.27	Aug 7, 1964
MAXIMUM PEAK FLOW			1,340	Sep 11	41,500	Jul 21, 1993
MAXIMUM PEAK STAGE			10.28	Sep 11	25.73	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.62	Aug 24	0.00	Aug 11, 1964
ANNUAL RUNOFF (AC-FT)	16,540		12,740		69,510	
10 PERCENT EXCEEDS	47		28		160	
50 PERCENT EXCEEDS	13		15		31	
90 PERCENT EXCEEDS	3.2		1.9		4.6	

e Estimated



06868100 WILSON LAKE NEAR WILSON, KS

LOCATION.--Lat 38°58'00", long 98°29'35", in NE 1/4 NW 1/4 SE 1/4 sec.36, T.12 S., R.11 W., Russell County, Hydrologic Unit 10260009, in the control tower near right end of Wilson Dam on the Saline River, 10 mi north of Wilson, and at mile 153.9.

DRAINAGE AREA.--1,917 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1964 to current year. Prior to October 1971, published as "Wilson Reservoir."

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

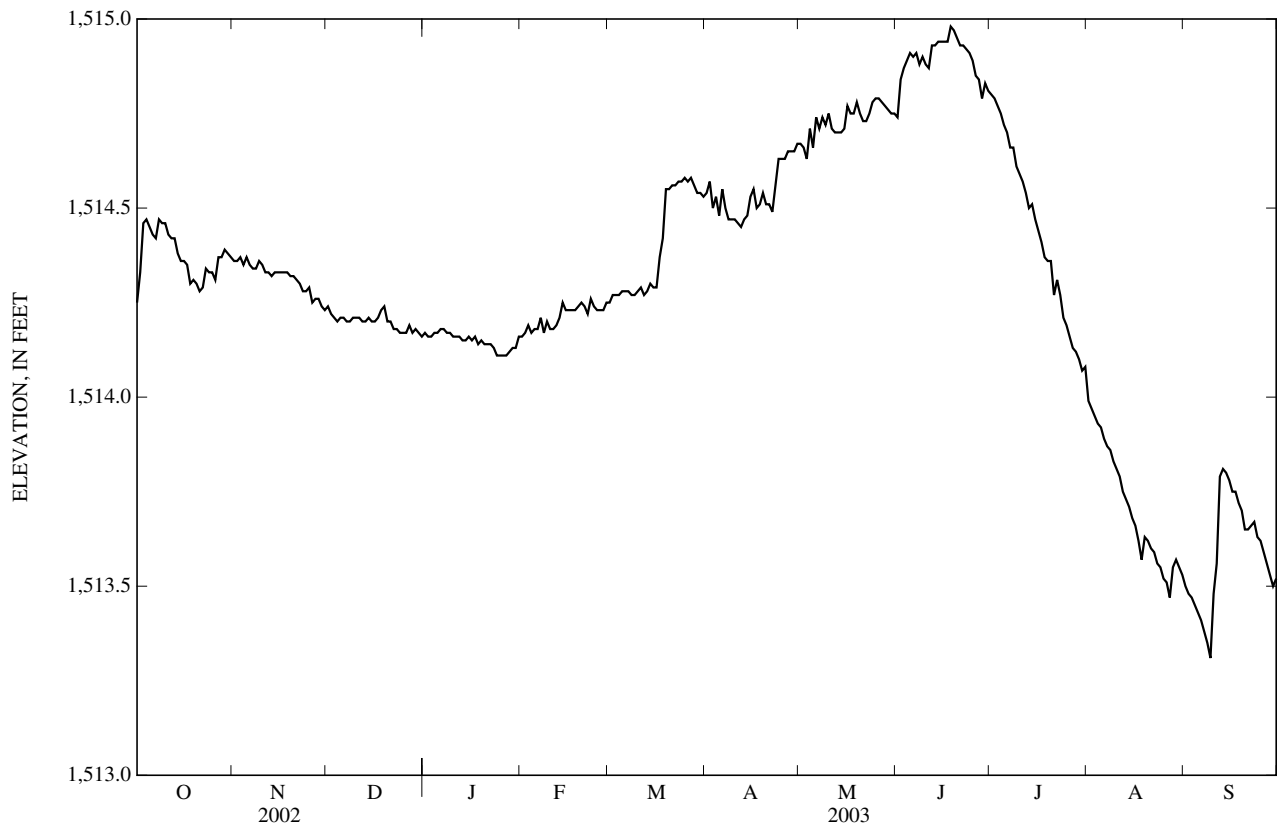
REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 29, 1964. Total capacity, 1,667,000 acre-ft below elevation 1,587.5 ft, consisting of 1,420 acre-ft of dead storage below elevation 1,450 ft; conservation pool, 241,100 acre-ft between elevations 1,450 ft and 1,516 ft; flood-control pool, 1,245,000 acre-ft between 1,516 ft and 1,582 ft, crest of spillway; and surcharge capacity of 179,500 acre-ft between 1,582 ft and 1,587.5 ft. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,548.23 ft, Aug. 6, 1993, contents, 663,600 acre-ft; minimum elevation since conservation pool first filled, 1,493.59 ft, Dec. 26, 1966, contents, 91,500 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,514.99 ft, June 18, contents, 233,500 acre-ft; minimum elevation, 1,513.31 ft, Sept. 9, contents, 219,000 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by U.S. Army Corps of Engineers during July 1984)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,513	216,600	1,514	224,900	1,515	233,600



## KANSAS RIVER BASIN

06868100 WILSON LAKE NEAR WILSON, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,514.25	1,514.36	1,514.24	1,514.17	1,514.16	1,514.25	1,514.54	1,514.67	1,514.74	1,514.80	1,513.99	1,513.50
2	1,514.33	1,514.36	1,514.22	1,514.16	1,514.17	1,514.27	1,514.57	1,514.66	1,514.84	1,514.79	1,513.97	1,513.48
3	1,514.46	1,514.37	1,514.21	1,514.16	1,514.19	1,514.27	1,514.50	1,514.63	1,514.87	1,514.77	1,513.95	1,513.47
4	1,514.47	1,514.35	1,514.20	1,514.17	1,514.17	1,514.27	1,514.53	1,514.71	1,514.89	1,514.75	1,513.93	1,513.45
5	1,514.45	1,514.37	1,514.21	1,514.17	1,514.18	1,514.28	1,514.48	1,514.66	1,514.91	1,514.72	1,513.92	1,513.43
6	1,514.43	1,514.35	1,514.21	1,514.18	1,514.18	1,514.28	1,514.55	1,514.74	1,514.90	1,514.70	1,513.89	1,513.41
7	1,514.42	1,514.34	1,514.20	1,514.18	1,514.21	1,514.28	1,514.50	1,514.71	1,514.91	1,514.66	1,513.87	1,513.38
8	1,514.47	1,514.34	1,514.20	1,514.17	1,514.17	1,514.27	1,514.47	1,514.74	1,514.88	1,514.66	1,513.86	1,513.35
9	1,514.46	1,514.36	1,514.21	1,514.17	1,514.20	1,514.27	1,514.47	1,514.72	1,514.90	1,514.61	1,513.83	1,513.31
10	1,514.46	1,514.35	1,514.21	1,514.16	1,514.18	1,514.28	1,514.47	1,514.75	1,514.88	1,514.59	1,513.81	1,513.48
11	1,514.43	1,514.33	1,514.21	1,514.16	1,514.18	1,514.29	1,514.46	1,514.71	1,514.87	1,514.57	1,513.79	1,513.56
12	1,514.42	1,514.33	1,514.20	1,514.16	1,514.19	1,514.27	1,514.45	1,514.70	1,514.93	1,514.54	1,513.75	1,513.79
13	1,514.42	1,514.32	1,514.20	1,514.15	1,514.21	1,514.28	1,514.47	1,514.70	1,514.93	1,514.50	1,513.73	1,513.81
14	1,514.38	1,514.33	1,514.21	1,514.15	1,514.25	1,514.30	1,514.48	1,514.70	1,514.94	1,514.51	1,513.71	1,513.80
15	1,514.36	1,514.33	1,514.20	1,514.16	1,514.23	1,514.29	1,514.53	1,514.71	1,514.94	1,514.47	1,513.68	1,513.78
16	1,514.36	1,514.33	1,514.20	1,514.15	1,514.23	1,514.29	1,514.55	1,514.77	1,514.94	1,514.44	1,513.66	1,513.75
17	1,514.35	1,514.33	1,514.21	1,514.16	1,514.23	1,514.37	1,514.50	1,514.75	1,514.94	1,514.41	1,513.62	1,513.75
18	1,514.30	1,514.33	1,514.23	1,514.14	1,514.23	1,514.42	1,514.51	1,514.75	1,514.98	1,514.37	1,513.57	1,513.72
19	1,514.31	1,514.32	1,514.24	1,514.15	1,514.24	1,514.55	1,514.54	1,514.78	1,514.97	1,514.36	1,513.63	1,513.70
20	1,514.30	1,514.32	1,514.20	1,514.14	1,514.25	1,514.55	1,514.51	1,514.75	1,514.95	1,514.36	1,513.62	1,513.65
21	1,514.28	1,514.31	1,514.20	1,514.14	1,514.24	1,514.56	1,514.51	1,514.73	1,514.93	1,514.27	1,513.60	1,513.65
22	1,514.29	1,514.30	1,514.18	1,514.14	1,514.22	1,514.56	1,514.49	1,514.73	1,514.93	1,514.31	1,513.59	1,513.66
23	1,514.34	1,514.28	1,514.18	1,514.13	1,514.26	1,514.57	1,514.56	1,514.75	1,514.92	1,514.27	1,513.56	1,513.67
24	1,514.33	1,514.28	1,514.17	e1,514.11	1,514.24	1,514.57	1,514.63	1,514.78	1,514.91	1,514.21	1,513.55	1,513.63
25	1,514.33	1,514.29	1,514.17	e1,514.11	1,514.23	1,514.58	1,514.63	1,514.79	1,514.89	1,514.19	1,513.52	1,513.62
26	1,514.31	1,514.25	1,514.17	e1,514.11	e1,514.23	1,514.57	1,514.63	1,514.79	1,514.85	1,514.16	1,513.51	1,513.59
27	1,514.37	1,514.26	1,514.19	e1,514.11	e1,514.23	1,514.58	1,514.65	1,514.78	1,514.84	1,514.13	1,513.47	1,513.56
28	1,514.37	1,514.26	1,514.17	1,514.12	e1,514.25	1,514.56	1,514.65	1,514.77	1,514.79	1,514.12	1,513.55	1,513.53
29	1,514.39	1,514.24	1,514.18	1,514.13	---	1,514.54	1,514.65	1,514.76	1,514.83	1,514.10	1,513.57	1,513.50
30	1,514.38	1,514.23	1,514.17	1,514.13	---	1,514.54	1,514.67	1,514.75	1,514.81	1,514.07	1,513.55	1,513.52
31	1,514.37	---	1,514.16	1,514.16	---	1,514.53	---	1,514.75	---	1,514.08	1,513.53	---
MEAN	1,514.37	1,514.32	1,514.20	1,514.15	1,514.21	1,514.40	1,514.54	1,514.73	1,514.89	1,514.43	1,513.70	1,513.58
MAX	1,514.47	1,514.37	1,514.24	1,514.18	1,514.26	1,514.58	1,514.67	1,514.79	1,514.98	1,514.80	1,513.99	1,513.81
MIN	1,514.25	1,514.23	1,514.16	1,514.11	1,514.16	1,514.25	1,514.45	1,514.63	1,514.74	1,514.07	1,513.47	1,513.31
(+)	228,100	226,800	226,200	226,200	227,000	229,400	230,700	231,400	231,900	225,500	220,800	220,700
(#)	+700	-1,300	-600	0	+800	+2,400	+1,300	+700	+500	-6,400	-4,700	-100
CAL YR	2002	.....	(#)	-17,500								
WTR YR	2003	.....	(#)	-6,700								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

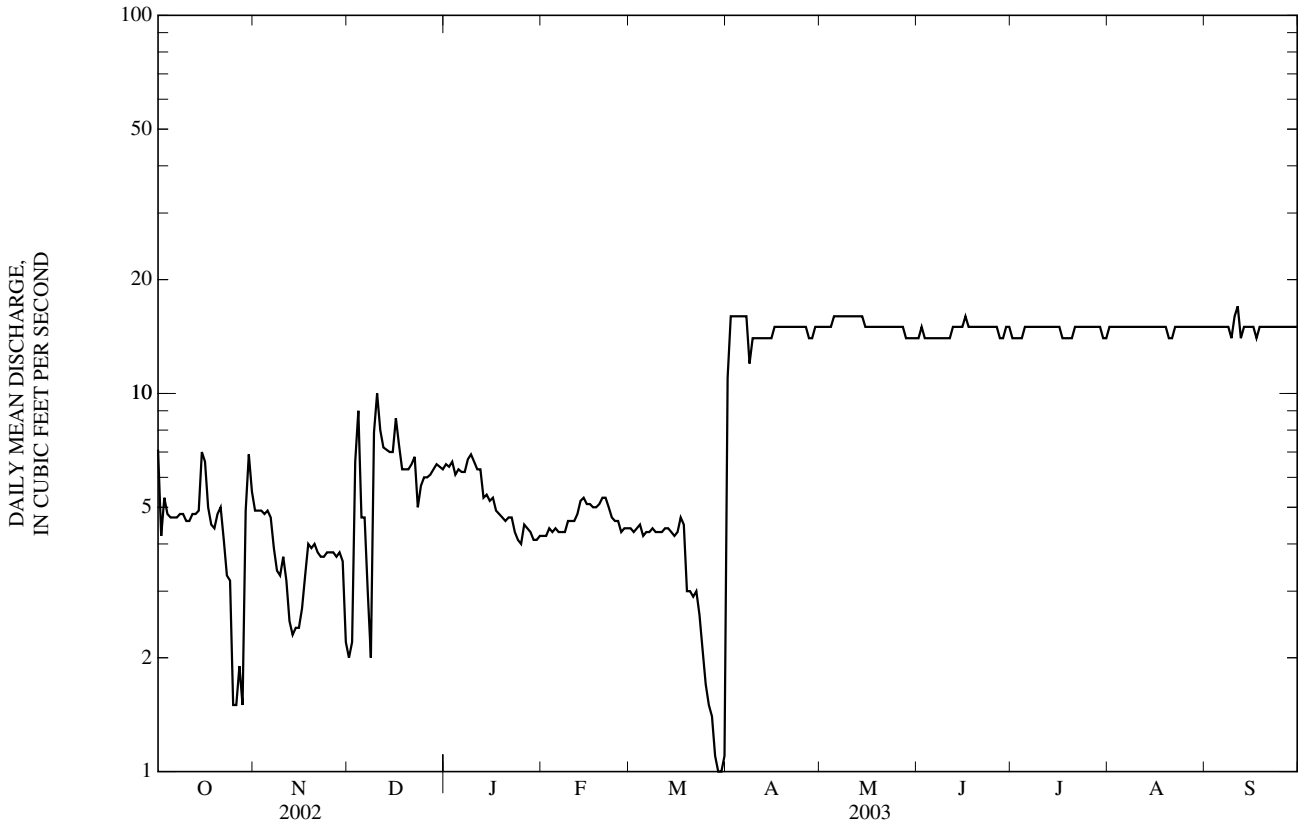
e Estimated



06868200 SALINE RIVER AT WILSON DAM, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL MEAN	25.8		9.75		87.4	
HIGHEST ANNUAL MEAN					641	1994
LOWEST ANNUAL MEAN					5.36	1967
HIGHEST DAILY MEAN	196	Feb 9	17	Sep 11	2,920	Apr 14, 1973
LOWEST DAILY MEAN	1.5	Oct 25	1.0	Mar 29	1.0	Aug 3, 1964
ANNUAL SEVEN-DAY MINIMUM	2.4	Oct 22	1.3	Mar 25	1.2	Jun 1, 1968
MAXIMUM PEAK FLOW			34	Sep 10	3,320	Apr 6, 1973
MAXIMUM PEAK STAGE			3.34	Sep 10	18.84	Apr 6, 1973
INSTANTANEOUS LOW FLOW			0.48	Apr 8	0.00	Nov 8, 1978
ANNUAL RUNOFF (AC-FT)	18,650		7,060		63,300	
10 PERCENT EXCEEDS	48		15		182	
50 PERCENT EXCEEDS	12		11		16	
90 PERCENT EXCEEDS	4.3		3.7		5.1	

e Estimated



## 06869500 SALINE RIVER AT TESCOTT, KS

LOCATION.--Lat 39°00'15", long 97°52'26", in NE ¼ SE ¼ sec.16, T.12 S., R.5 W., Ottawa County, Hydrologic Unit 10260010, on right bank at downstream side of county highway bridge, 0.5 mi south of Tescott, 0.5 mi upstream from Dry Creek, and at mile 68.5.

DRAINAGE AREA.--2,820 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1919 to current year.

REVISED RECORDS.--WSP 806: Drainage area. WSP 856: 1931. WSP 1310: 1926-28(M), 1935(M), 1945(M), 1947-48(M). WSP 1919: 1922, 1960.

GAGE.--Water-stage recorders. Datum of gage is 1,265.34 ft above NGVD of 1929. Prior to Nov. 23, 1934, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some diurnal fluctuation caused by power plants upstream from station. Diversions upstream from station for irrigation. Flow moderately regulated since 1964 by Wilson Lake (station 06868100), 85.4 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 13, 1951, was greatest known since at least 1903 and exceeded the flood of May-June 1903 by about 1.0 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	21	20	25	29	25	22	39	29	26	14	19
2	17	19	21	24	27	26	22	39	34	21	13	16
3	19	18	21	27	27	26	22	37	89	21	13	15
4	80	19	21	25	26	26	21	36	90	20	13	15
5	233	20	20	23	25	28	21	35	113	19	14	15
6	109	19	20	23	25	27	27	36	276	19	15	14
7	375	18	20	23	e23	28	29	35	115	18	14	14
8	167	18	21	23	24	26	30	37	59	18	14	14
9	57	19	23	23	26	26	30	37	42	18	14	14
10	87	19	22	23	26	26	30	36	36	18	13	14
11	37	19	22	23	26	25	29	34	32	18	13	63
12	25	19	22	23	25	24	28	33	32	17	13	285
13	20	19	21	24	27	24	28	33	33	17	13	1,880
14	19	19	23	23	27	24	28	33	30	17	13	1,850
15	18	19	24	23	27	25	28	33	29	17	12	677
16	17	19	23	e22	27	25	28	34	30	17	12	262
17	16	20	23	e21	27	24	29	36	36	16	12	114
18	16	20	23	24	26	27	33	47	31	15	12	64
19	17	19	23	26	26	31	35	48	28	15	14	45
20	17	19	23	24	25	214	34	39	27	16	14	35
21	16	19	23	24	25	229	32	36	26	16	14	29
22	16	19	e22	23	25	97	31	35	27	16	14	26
23	18	20	e21	e22	25	56	31	35	26	16	13	24
24	19	20	23	e21	25	46	34	39	24	17	13	23
25	26	20	e21	26	28	38	65	64	22	16	12	21
26	25	20	22	27	26	35	90	75	21	16	13	20
27	23	20	24	27	25	32	71	51	21	15	13	19
28	29	20	23	28	24	28	51	39	20	14	13	18
29	30	20	23	29	---	25	44	34	21	14	13	17
30	23	20	24	27	---	24	40	32	26	14	15	18
31	21	---	27	30	---	23	---	30	---	14	18	---
MEAN	51.8	19.3	22.2	24.4	25.9	43.2	34.8	38.9	47.5	17.1	13.4	188
MAX	375	21	27	30	29	229	90	75	276	26	18	1,880
MIN	15	18	20	21	23	23	21	30	20	14	12	14
AC-FT	3,190	1,150	1,370	1,500	1,440	2,660	2,070	2,390	2,830	1,050	825	11,190

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

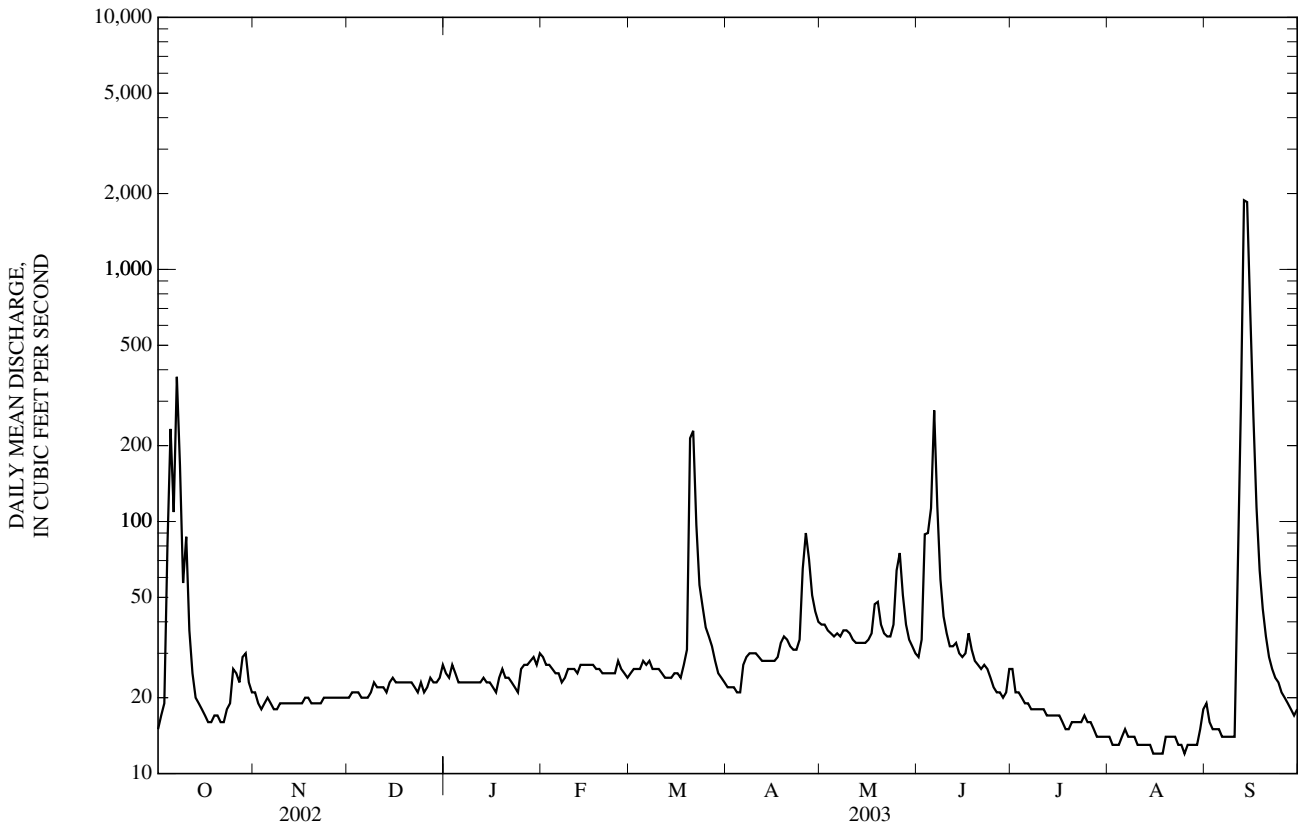
MEAN	143	100	94.0	89.8	114	162	228	359	501	421	254	227
MAX	1,650	1,639	1,736	1,540	984	1,698	2,445	2,054	6,756	6,589	2,363	2,131
(WY)	(1994)	(1994)	(1994)	(1994)	(1974)	(1960)	(1973)	(1961)	(1951)	(1951)	(1928)	(1951)
MIN	4.77	5.60	6.16	2.32	12.5	8.74	10.5	8.44	12.2	11.6	7.13	5.83
(WY)	(1925)	(1925)	(1935)	(1925)	(1938)	(1935)	(1968)	(1967)	(1966)	(1966)	(1924)	(1924)

KANSAS RIVER BASIN

06869500 SALINE RIVER AT TESCOTT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL MEAN	56.1		43.7		222	
HIGHEST ANNUAL MEAN					1,590	1951
LOWEST ANNUAL MEAN					19.8	1966
HIGHEST DAILY MEAN	375	Oct 7	1,880	Sep 13	47,600	Jul 13, 1951
LOWEST DAILY MEAN	14	Sep 6	12	Aug 15	0.00	Jan 22, 1935
ANNUAL SEVEN-DAY MINIMUM	14	Sep 6	12	Aug 12	1.9	Dec 5, 1934
MAXIMUM PEAK FLOW			2,110	Sep 13	61,400	Jul 13, 1951
MAXIMUM PEAK STAGE			17.54	Sep 13	30.14	Jul 23, 1993
INSTANTANEOUS LOW FLOW			12	Aug 14	0.00	1935,1936
ANNUAL RUNOFF (AC-FT)	40,630		31,650		160,800	
10 PERCENT EXCEEDS	96		44		427	
50 PERCENT EXCEEDS	37		24		58	
90 PERCENT EXCEEDS	16		14		15	

e Estimated







06869950 MULBERRY CREEK NEAR SALINA, KS—Continued

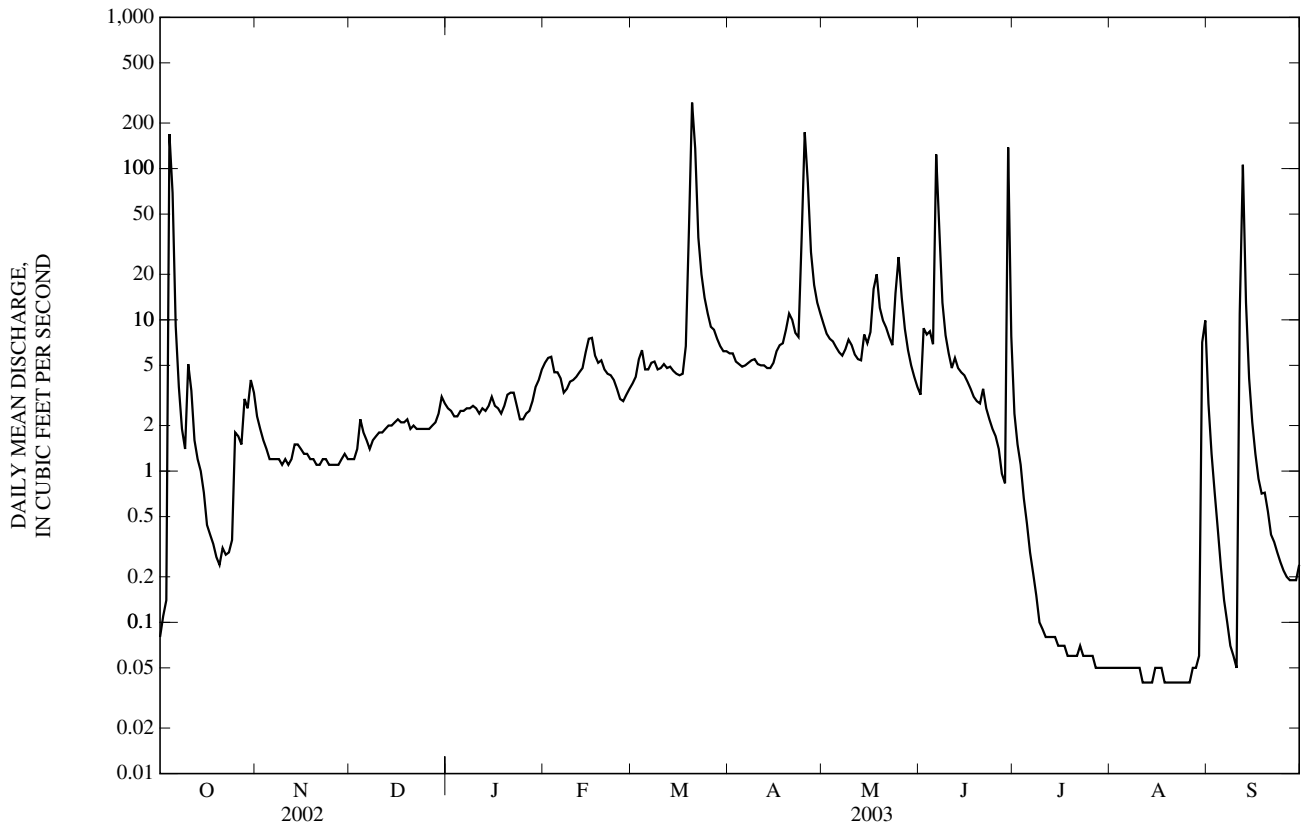
SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL MEAN	5.52		7.24	
HIGHEST ANNUAL MEAN			7.24	2003
LOWEST ANNUAL MEAN			7.24	2003
HIGHEST DAILY MEAN	273	Mar 20	273	Mar 20, 2003
LOWEST DAILY MEAN	0.04	Aug 11	0.04	Aug 11, 2003
ANNUAL SEVEN-DAY MINIMUM	0.04	Aug 18	0.04	Aug 18, 2003
MAXIMUM PEAK FLOW	389	Mar 20	a389	Mar 20, 2003
MAXIMUM PEAK STAGE	7.59	Mar 20	a7.59	Mar 20, 2003
INSTANTANEOUS LOW FLOW	0.04	Aug 10,	0.04	Aug 10, 2003
ANNUAL RUNOFF (AC-FT)	5,240		5,240	
10 PERCENT EXCEEDS	9.65		8.9	
50 PERCENT EXCEEDS	2.57		2.5	
90 PERCENT EXCEEDS	0.07		0.06	

a Partial-record gage (maximum stage and flow only) operated 1961-2002, peak of record occurred on May 28, 1995, stage 27.14, flow 8,440 cubic feet per second.



## 06870200 SMOKY HILL RIVER AT NEW CAMBRIA, KS

LOCATION.--Lat 38°51'49", long 97°28'58", in NE ¼ NE ¼ SE ¼ sec.1, T.14 S., R.2 W., Saline County, Hydrologic Unit 10260008, on left bank at downstream side of county highway bridge, 1.0 mi southeast of New Cambria, 10.1 mi upstream from Gypsum Creek, about 18.1 mi upstream from Solomon River, and at mile 86.6.

DRAINAGE AREA.--11,730 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,160.19 ft above NGVD of 1929. Prior to Mar. 27, 1963, nonrecording gage and Mar. 27, 1963, to July 5, 1977, water-stage recorder at site 2.7 mi downstream at datum 2.23 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow moderately regulated since 1948 by Kanopolis Lake (station 06865000), 97.7 mi upstream, and slightly regulated since 1964 by Wilson Lake (station 06868100) and by numerous diversions upstream from station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	124	82	84	98	84	212	257	212	335	46	215
2	65	113	80	79	107	88	200	236	245	189	46	145
3	98	108	77	74	104	103	192	225	317	169	49	105
4	117	105	77	77	94	99	189	216	317	159	47	86
5	227	107	77	78	86	99	188	208	273	148	49	73
6	328	104	73	80	91	100	189	203	316	140	47	60
7	348	100	77	75	78	89	188	202	401	135	44	54
8	227	96	80	74	e70	94	183	210	479	132	44	51
9	346	97	79	73	75	101	186	206	343	128	42	50
10	255	95	76	75	73	95	187	195	268	127	38	50
11	174	90	78	58	91	90	182	190	240	128	36	86
12	159	89	78	65	98	87	177	187	298	121	34	273
13	146	87	83	68	95	88	172	184	323	114	36	365
14	119	89	81	75	111	90	171	186	281	109	38	415
15	110	95	83	69	113	85	167	186	239	106	34	1,730
16	106	94	80	e65	102	89	166	209	217	102	31	1,290
17	101	93	78	e55	98	90	166	226	207	99	33	662
18	100	91	83	e66	93	111	165	462	198	93	34	353
19	99	91	80	77	93	137	178	399	200	84	31	258
20	97	87	78	70	92	1,060	253	322	200	82	28	180
21	91	83	78	61	90	2,230	326	265	197	79	26	153
22	91	87	70	e50	85	1,110	264	240	191	82	29	144
23	100	85	62	e40	83	620	224	223	183	76	27	135
24	109	81	63	e60	86	409	402	235	181	77	28	133
25	117	83	e58	93	101	319	1,670	314	177	76	28	128
26	119	79	e54	85	83	280	1,890	273	174	67	33	116
27	115	81	e60	92	73	257	781	364	167	64	34	112
28	122	79	69	95	73	245	459	297	162	59	38	109
29	121	81	67	92	---	237	347	264	601	55	48	107
30	120	80	98	82	---	228	287	233	703	51	104	110
31	124	---	98	89	---	219	---	220	---	48	226	---
MEAN	145	92.5	76.0	73.4	90.6	291	345	246	277	111	45.4	258
MAX	348	124	98	95	113	2,230	1,890	462	703	335	226	1,730
MIN	50	79	54	40	70	84	165	184	162	48	26	50
AC-FT	8,930	5,500	4,680	4,510	5,030	17,920	20,550	15,150	16,480	6,810	2,790	15,370

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

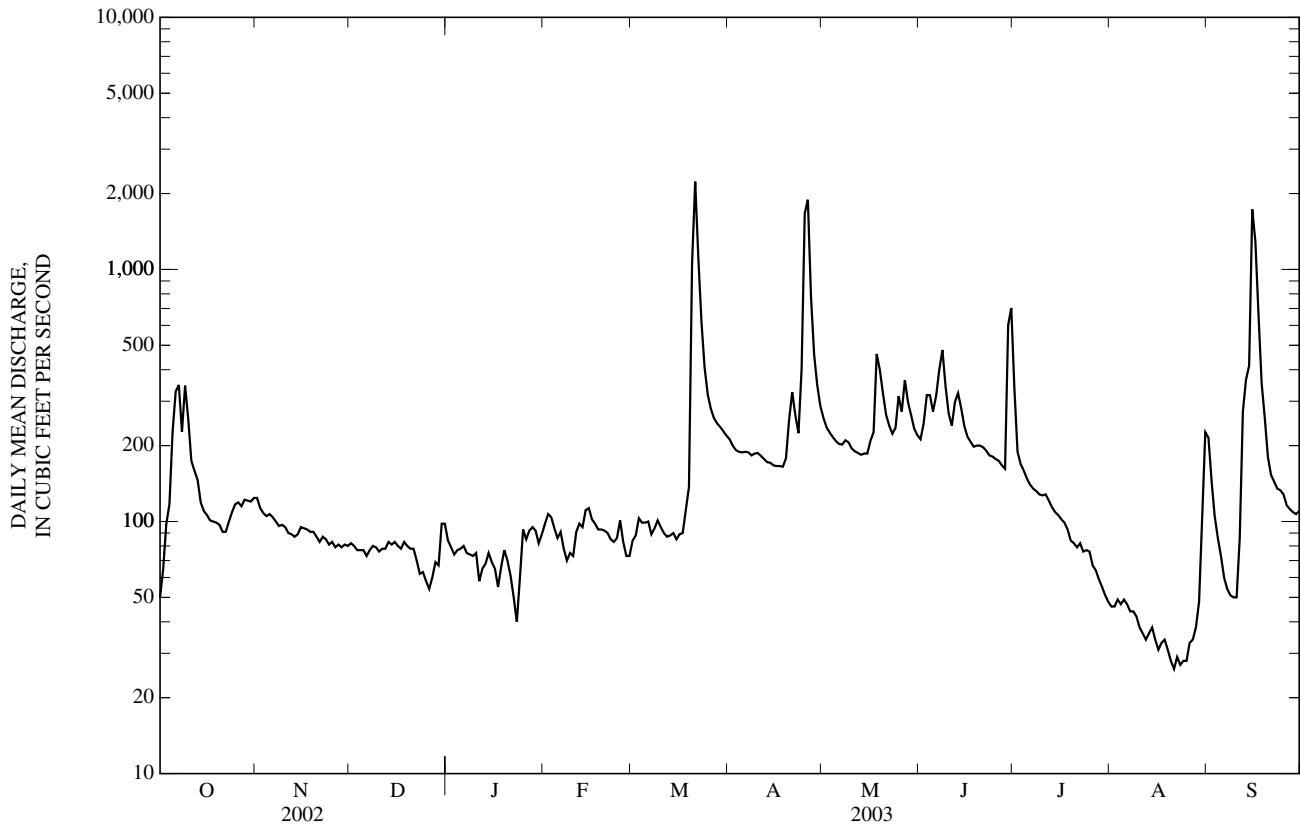
MEAN	496	396	360	278	436	682	842	1,034	1,114	999	700	606
MAX	6,168	3,087	3,293	2,071	2,850	4,789	6,506	5,331	5,360	12,190	5,796	4,601
(WY)	(1974)	(1974)	(1974)	(1994)	(1993)	(1973)	(1973)	(1995)	(1995)	(1993)	(1993)	(1993)
MIN	23.2	43.1	40.8	40.0	35.8	40.6	47.2	47.6	117	52.5	45.4	56.8
(WY)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1988)	(1968)	(2003)	(2002)

KANSAS RIVER BASIN

06870200 SMOKY HILL RIVER AT NEW CAMBRIA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL MEAN	152		171		663	
HIGHEST ANNUAL MEAN					3,609	1993
LOWEST ANNUAL MEAN					117	1989
HIGHEST DAILY MEAN	820	Apr 22	2,230	Mar 21	25,000	Oct 12, 1973
LOWEST DAILY MEAN	31	Aug 9	26	Aug 21	13	Oct 18, 1991
ANNUAL SEVEN-DAY MINIMUM	36	Aug 4	28	Aug 19	14	Oct 18, 1991
MAXIMUM PEAK FLOW			2,500	Mar 21	26,400	Oct 12, 1973
MAXIMUM PEAK STAGE			12.98	Mar 21	31.72	Jun 25, 1993
INSTANTANEOUS LOW FLOW			24	Aug 20	11	Oct 22, 1991
ANNUAL RUNOFF (AC-FT)	110,200		123,700		480,200	
10 PERCENT EXCEEDS	249		315		1,780	
50 PERCENT EXCEEDS	145		100		220	
90 PERCENT EXCEEDS	56		51		70	

e Estimated



## 06870300 GYPSUM CREEK NEAR GYPSUM, KS

LOCATION.--Lat 38°39'11", long 97°25'10", in SE ¼ SE ¼ SW ¼ sec.15, T.16 S., R.1 W., Saline County, Hydrologic Unit 10260008, on left bank at downstream side of highway bridge, 2.6 mi upstream from Stag Creek, 3.5 mi south of Gypsum, and at mile 22.7.

DRAINAGE AREA.--117 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1954 to September 1971. October 1971 to September 1990, flood hydrograph record. May 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,232.16 ft above NGVD of 1929. Prior to July 21, 1959, nonrecording and crest-stage gages at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 11,400 ft<sup>3</sup>/s, June 26, 1965 (gage height 20.71 ft). Maximum stage known since at least 1869, 22.2 ft, May 29, 1903; flood in April 1929 reached a stage of 21.9 ft, and that of July 11, 1951, a stage of 21.7 ft, from floodmark; information from newspapers and local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	1100	814	13.89	Apr 24	2200	*1,110	*15.82
Mar 20	0600	873	14.30				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	6.5	6.0	6.0	10	e3.5	15	28	9.8	3.5	0.14	37
2	25	6.5	5.3	5.7	9.3	e4.0	14	26	24	3.1	0.34	9.9
3	219	6.1	5.2	4.9	7.6	e5.0	13	24	39	2.4	0.29	4.4
4	202	5.7	5.0	6.2	5.5	e6.0	12	24	17	1.8	0.07	1.9
5	49	5.4	4.9	5.8	6.6	5.6	11	21	14	1.2	0.04	0.89
6	15	5.5	4.3	5.4	6.9	8.4	11	19	17	0.71	0.09	0.66
7	7.4	5.3	6.2	5.0	4.4	8.9	13	19	16	0.70	0.13	0.47
8	4.9	5.5	5.8	6.3	4.9	8.9	11	19	13	0.67	0.02	0.32
9	3.9	5.7	5.8	6.0	6.7	6.2	11	18	11	1.2	0.00	0.26
10	3.2	5.2	5.8	4.5	7.2	6.3	11	29	10	2.2	0.00	0.22
11	2.7	4.7	6.1	3.5	7.4	7.1	11	30	9.1	2.2	0.00	177
12	2.4	4.6	6.4	5.9	6.4	6.5	11	18	13	1.3	0.00	147
13	2.0	4.8	11	6.0	6.4	6.6	10	17	18	1.2	0.00	26
14	1.8	5.4	14	6.4	11	6.3	10	21	11	1.0	0.00	10
15	1.7	6.3	8.9	4.2	15	6.4	9.8	16	8.6	0.89	0.00	5.9
16	1.5	7.7	7.4	4.3	7.8	6.1	10	35	7.6	0.68	0.00	3.9
17	1.6	6.9	7.0	e4.0	6.5	6.3	9.6	70	7.1	0.60	0.00	3.0
18	1.9	6.0	6.8	e4.5	7.4	9.5	9.6	29	6.5	0.55	0.00	2.5
19	1.9	5.6	6.2	6.0	7.1	394	15	23	6.5	0.51	0.01	1.9
20	1.7	5.5	5.7	7.4	6.1	629	103	45	6.7	0.54	0.01	1.5
21	1.7	5.6	5.5	6.9	5.9	142	39	26	6.8	0.55	0.01	1.4
22	1.6	5.6	4.7	5.1	5.7	66	20	19	6.1	0.52	0.01	1.9
23	3.1	5.4	4.5	e4.5	5.0	41	22	16	5.5	0.53	0.01	3.9
24	10	5.3	e4.0	e4.0	3.1	32	650	34	4.7	0.45	0.00	3.2
25	15	5.0	4.6	4.5	e3.0	25	405	61	3.7	0.35	0.00	1.6
26	16	4.7	5.8	5.0	e2.8	22	106	24	3.1	0.28	0.00	1.1
27	9.1	4.8	6.7	5.8	e3.0	20	60	17	2.4	0.21	0.00	0.86
28	24	5.2	7.1	6.1	e3.2	17	45	14	2.5	0.15	0.05	0.71
29	14	5.7	7.6	7.2	---	15	38	13	4.8	0.09	0.08	0.58
30	9.9	6.4	7.2	7.8	---	14	33	12	3.6	0.05	1.0	0.67
31	8.0	---	6.6	9.2	---	15	---	10	---	0.19	73	---
MEAN	21.3	5.62	6.39	5.62	6.50	50.0	58.0	25.1	10.3	0.98	2.43	15.0
MAX	219	7.7	14	9.2	15	629	650	70	39	3.5	73	177
MIN	0.00	4.6	4.0	3.5	2.8	3.5	9.6	10	2.4	0.05	0.00	0.22
AC-FT	1,310	334	393	345	361	3,070	3,450	1,540	611	60	149	894

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)

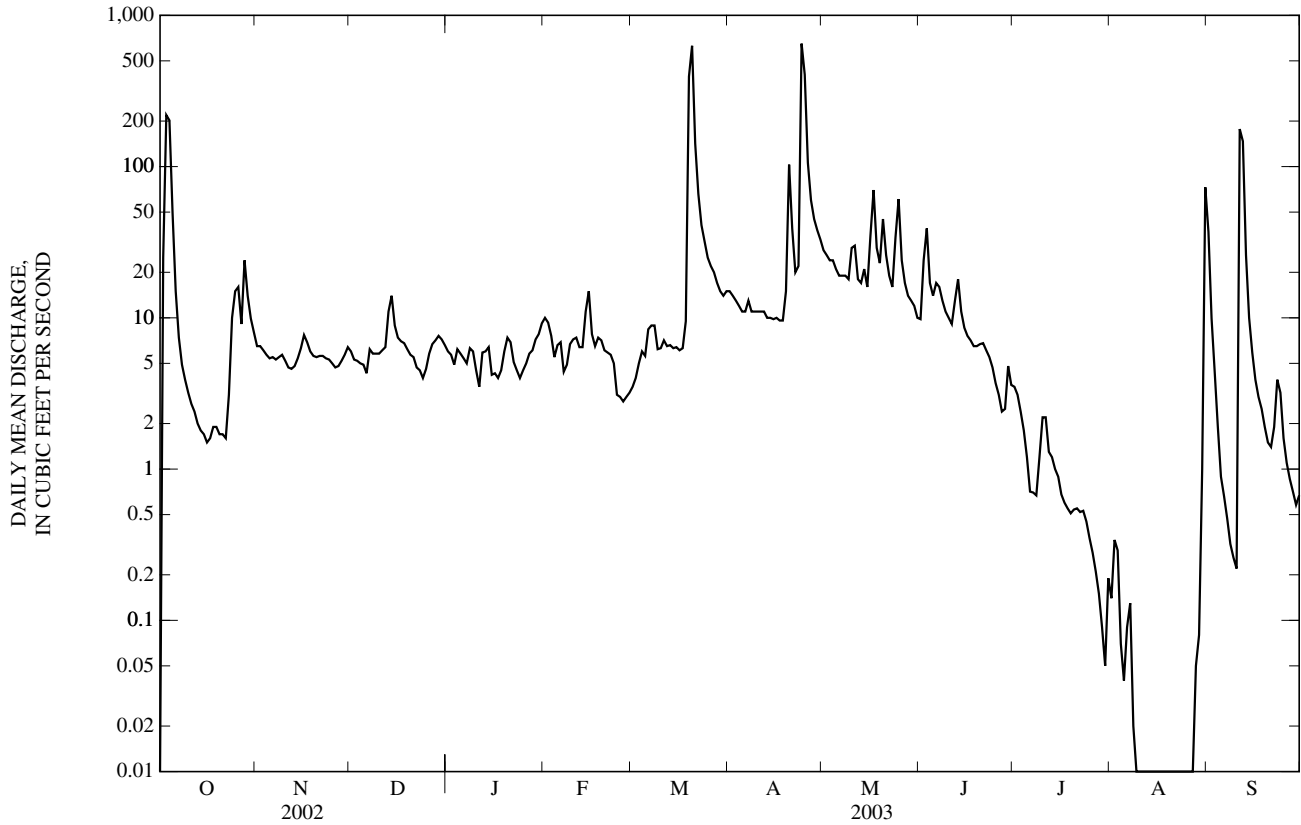
	14.8	8.45	8.09	11.8	16.8	31.3	38.0	56.6	60.2	22.8	5.36	24.4
MEAN	14.8	8.45	8.09	11.8	16.8	31.3	38.0	56.6	60.2	22.8	5.36	24.4
MAX	89.3	30.8	25.0	58.9	57.1	123	145	359	331	101	22.3	237
(WY)	(1968)	(1968)	(1968)	(1962)	(2001)	(1960)	(1969)	(1969)	(1965)	(1969)	(2001)	(1967)
MIN	0.000	0.000	0.000	0.000	0.000	0.016	0.12	1.42	0.050	0.000	0.000	0.000
(WY)	(1955)	(1955)	(1956)	(1957)	(1957)	(1956)	(1956)	(1955)	(1956)	(1956)	(1955)	(1956)

KANSAS RIVER BASIN

06870300 GYPSUM CREEK NEAR GYPSUM, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003	
ANNUAL MEAN	18.4		17.3		25.2	
HIGHEST ANNUAL MEAN					73.3	
LOWEST ANNUAL MEAN					0.26	
HIGHEST DAILY MEAN	968	Apr 21	650	Apr 24	3,500	Jun 26, 1965
LOWEST DAILY MEAN	0.00	Aug 31	0.00	Oct 1	0.00	Oct 1, 1954
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 31	0.00	Aug 9	0.00	Oct 1, 1954
MAXIMUM PEAK FLOW			1,110	Apr 24	11,400	Jun 26, 1965
MAXIMUM PEAK STAGE			15.82	Apr 24	20.71	Jun 26, 1965
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	13,310		12,520		18,270	
10 PERCENT EXCEEDS	25		25		34	
50 PERCENT EXCEEDS	6.5		6.0		7.0	
90 PERCENT EXCEEDS	0.19		0.29		0.00	

e Estimated



06871000 NORTH FORK SOLOMON RIVER AT GLADE, KS

LOCATION.--Lat 39°40'40", long 99°18'30", in NW ¼ SW ¼ sec.25, T.4 S., R.18 W., Phillips County, Hydrologic Unit 10260011, on left bank at downstream side of bridge on U.S. Highway 183, 0.5 mi south of Glade.

DRAINAGE AREA.--849 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,754.04 ft above NGVD of 1929. Prior to Feb. 17, 1965, at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 18	1700	*21	*3.40	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	e3.8	7.0	7.5	3.7	1.1	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	e4.2	6.7	7.0	4.5	0.55	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	e4.8	6.6	7.1	4.5	0.07	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	e5.6	6.5	7.1	4.5	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	6.4	6.3	6.5	4.4	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	e6.4	8.7	7.2	4.7	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	e6.5	9.3	7.5	5.3	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	e6.7	8.7	9.9	5.6	0.01	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	e6.8	8.7	7.3	4.6	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	e7.4	8.2	6.9	4.1	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	7.8	7.6	6.7	3.7	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	7.1	7.0	6.0	5.5	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	6.9	6.7	5.8	4.9	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.59	7.1	6.1	5.3	4.8	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	2.2	7.1	5.9	5.6	4.9	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.47	7.0	9.2	6.1	4.5	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	1.9	7.4	8.5	5.7	3.9	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	2.9	11	8.0	5.5	3.9	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	3.6	13	8.6	6.0	4.2	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	3.8	12	8.5	5.9	4.2	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	3.9	11	7.8	6.5	3.9	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	4.2	11	6.8	6.6	8.6	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	e3.1	9.8	9.1	7.0	7.0	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	2.9	8.7	9.9	7.9	4.3	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	e3.0	8.0	9.4	6.7	2.8	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	3.4	7.8	9.7	5.9	2.0	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	e3.4	7.8	10	5.4	1.5	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	e3.6	7.5	9.4	4.9	1.1	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	7.0	8.4	4.8	1.6	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	7.4	8.0	4.4	1.3	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	7.3	---	3.8	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	1.53	7.69	8.04	6.34	4.15	0.056	0.000	0.000
MAX	0.00	0.00	0.00	0.00	4.2	13	10	9.9	8.6	1.1	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	3.8	5.9	3.8	1.1	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	85	473	479	390	247	3.4	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

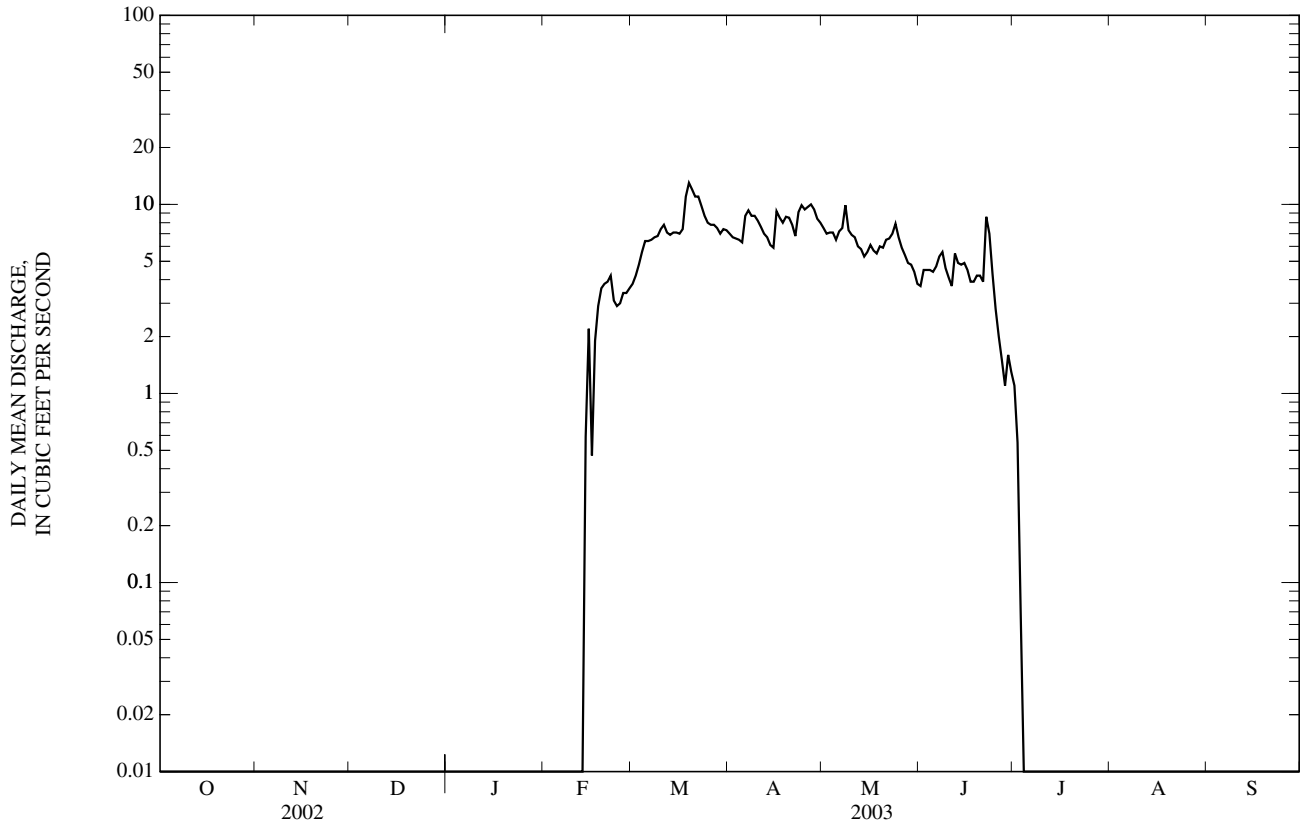
MEAN	12.9	8.76	8.92	10.1	18.1	27.6	24.9	53.0	68.8	39.3	30.2	17.1
MAX	318	60.6	59.5	66.8	105	250	98.7	512	1,011	182	315	249
(WY)	(1966)	(1994)	(1994)	(1994)	(1966)	(1960)	(1987)	(1995)	(1957)	(1957)	(1968)	(1965)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.94	0.28	0.000	0.000	0.000
(WY)	(1959)	(1965)	(1956)	(1957)	(1957)	(1981)	(1981)	(1992)	(1991)	(1980)	(1956)	(1956)

KANSAS RIVER BASIN

06871000 NORTH FORK SOLOMON RIVER AT GLADE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL MEAN	5.36		2.32		26.7	
HIGHEST ANNUAL MEAN					124	1957
LOWEST ANNUAL MEAN					1.26	1991
HIGHEST DAILY MEAN	21	Mar 12	13	Mar 19	10,900	Jun 16, 1957
LOWEST DAILY MEAN	0.00	Jun 20	0.00	Oct 1	0.00	Sep 25, 1953
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 20	0.00	Oct 1	0.00	Sep 25, 1953
MAXIMUM PEAK FLOW			21	Mar 18	23,300	Jun 16, 1957
MAXIMUM PEAK STAGE			3.40	Mar 18	18.55	Jun 16, 1957
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	3,880		1,680		19,330	
10 PERCENT EXCEEDS	15		7.5		45	
50 PERCENT EXCEEDS	0.00		0.00		8.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated





06871500 BOW CREEK NEAR STOCKTON, KS

LOCATION.--Lat 39°33'46", long 99°17'04", in SW ¼ NW ¼ sec.1, T.6 S., R.18 W., Rooks County, Hydrologic Unit 10260011, on left bank at downstream side of bridge on U.S. Highway 183, 8.5 mi north of Stockton.

DRAINAGE AREA.--341 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,801.80 ft above NGVD of 1929. Prior to June 28, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 8	1945	*18	*3.72	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.16	e0.23	e0.69	e2.1	e2.5	e3.0	5.4	5.4	4.0	1.1	0.00	0.00
2	0.86	e0.28	e0.73	e2.0	e2.5	e4.0	5.3	5.3	4.8	0.95	0.00	0.00
3	0.68	e0.35	e0.63	e1.8	e2.5	e4.0	5.1	5.2	4.5	0.77	0.00	0.00
4	0.68	e0.25	e0.65	e1.7	e4.0	e4.0	5.1	5.2	4.8	0.58	0.00	0.00
5	0.51	e0.26	e0.64	e1.8	e5.0	e3.0	5.1	5.0	5.1	0.41	0.00	0.00
6	0.46	e0.24	e0.56	e2.0	e5.0	e3.0	6.0	5.4	4.7	0.31	0.00	0.00
7	0.48	e0.21	e0.56	e2.4	e5.0	e4.0	6.0	5.5	4.6	0.24	0.00	0.00
8	e0.16	e0.23	e0.59	e2.5	e5.0	e4.0	5.7	9.7	4.4	0.57	0.00	0.00
9	e0.16	e0.26	e0.61	e2.3	e5.0	e3.0	5.5	6.8	4.0	0.60	0.00	0.00
10	e0.16	e0.26	e0.70	e2.0	e6.5	e4.0	5.3	5.5	3.8	0.39	0.00	0.02
11	e0.16	e0.26	e0.74	e2.0	e8.0	e4.0	5.2	5.1	3.6	0.21	0.00	1.3
12	e0.16	e0.21	e0.79	e2.4	e7.3	e4.0	5.1	4.9	4.7	0.16	0.00	0.03
13	e0.16	e0.38	e0.75	e2.5	e7.0	e5.0	5.1	5.0	4.0	0.11	0.00	0.00
14	e0.16	e0.31	e0.79	e2.0	e6.7	e5.0	5.0	4.5	4.0	0.09	0.00	0.00
15	e0.16	e0.31	e0.91	e2.0	e6.9	e5.0	4.9	4.5	4.5	0.06	0.00	0.00
16	e0.16	e0.42	e0.96	e2.0	e5.8	e5.0	7.0	5.0	3.6	0.05	0.00	0.00
17	e0.16	e0.69	e1.0	e2.0	e7.0	e5.0	6.2	4.8	3.5	0.02	0.00	0.00
18	e0.16	e0.66	e1.0	e2.5	e5.7	e5.0	5.8	4.7	3.9	0.01	0.00	0.00
19	e0.17	e0.81	e1.1	e2.5	e6.7	8.8	5.6	4.9	3.3	0.02	0.00	0.00
20	e0.17	e0.80	e1.2	e2.5	e5.5	7.4	5.5	4.5	3.2	0.03	0.00	0.00
21	e0.17	e0.77	e1.3	e2.0	e5.4	6.6	5.2	4.3	2.8	0.01	0.00	0.00
22	e0.17	e0.69	e1.4	e2.0	e5.1	6.1	5.0	4.2	2.4	0.01	0.00	0.00
23	e0.19	e0.77	e1.4	e2.0	e5.8	5.8	6.4	5.1	2.1	0.01	0.00	0.00
24	e0.19	e0.75	e1.6	e2.0	e4.2	5.6	6.9	6.2	1.8	0.00	0.00	0.00
25	e0.19	e0.67	e1.6	e2.0	e3.0	5.5	6.7	4.9	1.4	0.00	0.00	0.00
26	e0.22	e0.53	e1.7	e2.0	e3.0	5.6	6.2	4.8	1.3	0.00	0.00	0.00
27	e0.22	e0.61	e1.8	e2.0	e3.0	5.6	5.9	4.8	1.2	0.00	0.00	0.00
28	e0.22	e0.74	e1.9	e2.5	e3.0	5.5	5.6	4.6	1.0	0.00	0.00	0.00
29	e0.27	e0.85	e2.0	e2.5	---	5.4	5.6	4.5	2.0	0.00	0.00	0.00
30	e0.27	e0.71	e2.1	e2.5	---	e4.3	5.5	4.2	1.4	0.00	0.00	0.00
31	e0.23	---	e2.2	e2.5	---	e4.2	---	4.1	---	0.00	0.00	---
MEAN	0.27	0.48	1.12	2.16	5.08	4.85	5.63	5.12	3.35	0.22	0.000	0.045
MAX	0.86	0.85	2.2	2.5	8.0	8.8	7.0	9.7	5.1	1.1	0.00	1.3
MIN	0.16	0.21	0.56	1.7	2.5	3.0	4.9	4.1	1.0	0.00	0.00	0.00
AC-FT	16	29	69	133	282	298	335	315	199	13	0.00	2.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2003, BY WATER YEAR (WY)

MEAN	7.31	5.44	5.44	5.87	9.64	12.3	12.5	26.9	30.1	21.6	13.5	7.96
MAX	98.5	25.8	22.7	22.0	57.6	91.2	68.8	247	321	300	145	66.6
(WY)	(1966)	(1994)	(1994)	(1994)	(1966)	(1960)	(1987)	(1995)	(1957)	(1993)	(1968)	(1965)
MIN	0.000	0.000	0.000	0.000	0.22	1.68	3.98	2.41	0.37	0.000	0.000	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1957)	(1982)	(1955)	(1991)	(1991)	(1964)	(1956)

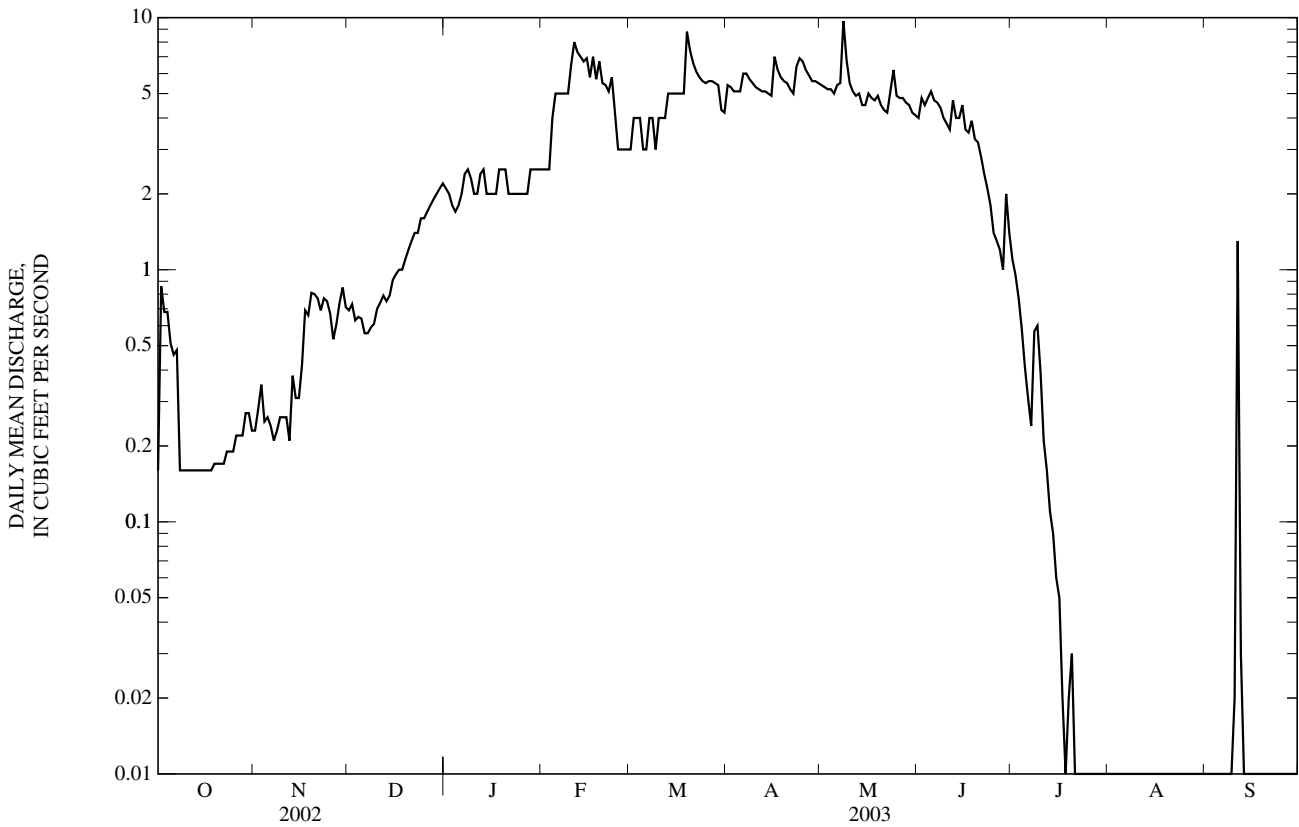
KANSAS RIVER BASIN

06871500 BOW CREEK NEAR STOCKTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1952 - 2003	
ANNUAL MEAN	3.34	2.34	13.2	
HIGHEST ANNUAL MEAN			45.5	1993
LOWEST ANNUAL MEAN			1.73	1981
HIGHEST DAILY MEAN	9.2 Apr 8	9.7 May 8	3,810	May 27, 1995
LOWEST DAILY MEAN	0.06 Sep 7	0.00 Jul 24	0.00	Sep 15, 1953
ANNUAL SEVEN-DAY MINIMUM	0.08 Sep 3	0.00 Jul 24	0.00	Sep 15, 1953
MAXIMUM PEAK FLOW		18 May 8	a12,900	Jul 12, 1951
MAXIMUM PEAK STAGE		3.72 May 8	a13.60	Jul 12, 1951
INSTANTANEOUS LOW FLOW		0.00 Jul 17	0.00	at times
ANNUAL RUNOFF (AC-FT)	2,420	1,690	9,580	
10 PERCENT EXCEEDS	7.9	5.5	18	
50 PERCENT EXCEEDS	1.3	1.6	5.5	
90 PERCENT EXCEEDS	0.16	0.00	0.34	

e Estimated

a Gage installed November 1950 (1951 water year) peak flow recorded on July 12, 1951.



## 06872500 NORTH FORK SOLOMON RIVER AT PORTIS, KS

LOCATION.--Lat 39°33'15", long 98°41'31", in SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec.5, T.6 S., R.12 W., Osborne County, Hydrologic Unit 10260012, on left bank at downstream side of bridge on U.S. Highway 281, 0.5 mi south of Portis, and at mile 27.0.

DRAINAGE AREA.--2,315 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--September 1945 to current year. Prior to Oct. 1, 1964, published as "near Downs."

GAGE.--Water-stage recorder. Datum of gage is 1,490.71 ft above NGVD of 1929. Prior to Dec. 5, 1946, nonrecording gage and Dec. 5, 1946, to Sept. 30, 1964, water-stage recorder at site 9.0 mi downstream at datum 30.39 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow partially regulated since 1955 by Kirwin Reservoir (station 06871700), 40.8 mi upstream. Natural flow also affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1915, reached a stage about 1.0 ft higher than that of July 12, 1951, from information by Kansas Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	18	19	e21	22	e20	19	445	21	8.6	9.7	8.5
2	20	18	19	20	22	e21	19	175	24	8.1	6.7	8.9
3	20	18	19	21	23	22	19	96	25	15	6.2	8.7
4	45	18	18	21	21	21	19	70	34	11	8.1	8.4
5	17	17	18	20	e21	19	18	55	31	9.3	12	7.9
6	15	17	20	19	e21	e20	20	47	29	7.8	13	7.8
7	14	17	20	20	e21	e22	23	44	27	7.8	13	7.9
8	14	20	19	20	e21	23	23	41	24	21	16	7.6
9	13	17	19	19	e22	21	23	40	22	19	12	7.9
10	14	17	20	20	e23	21	22	70	20	20	12	7.2
11	14	16	19	e19	22	21	22	70	19	15	10	49
12	13	17	19	e19	22	22	22	51	22	10	9.9	365
13	14	17	19	e19	21	24	22	40	21	11	10	225
14	15	17	19	e19	23	24	22	36	22	12	9.3	75
15	15	17	19	e19	24	23	21	33	18	9.9	8.5	35
16	15	17	19	e20	24	23	23	32	18	11	7.9	20
17	15	18	19	e21	25	25	21	29	18	9.8	8.4	15
18	15	18	20	e21	25	27	23	27	18	12	14	12
19	15	22	20	e21	25	27	23	27	16	14	61	11
20	15	18	20	e21	29	28	26	25	17	15	22	11
21	15	18	e19	e21	26	27	25	24	15	13	9.4	10
22	16	18	e19	e20	24	29	25	27	14	19	11	10
23	18	18	e19	e20	23	31	29	28	14	12	7.7	10
24	18	18	e19	e20	19	30	36	31	14	11	6.6	9.9
25	17	18	e19	e20	e18	28	39	29	14	11	6.1	9.5
26	17	18	e20	e20	e18	25	38	29	12	8.7	6.0	9.4
27	19	18	e20	e21	e18	23	37	35	12	9.1	6.3	9.1
28	18	18	e21	e22	e19	21	34	33	11	12	9.7	8.9
29	18	19	e21	e23	---	20	32	31	13	12	11	9.0
30	20	19	e21	e23	---	20	75	23	10	11	9.5	9.5
31	18	---	e21	e23	---	20	---	24	---	9.8	8.4	---
MEAN	17.0	17.9	19.5	20.4	22.2	23.5	26.7	57.0	19.2	12.1	11.7	33.1
MAX	45	22	21	23	29	31	75	445	34	21	61	365
MIN	13	16	18	19	18	19	18	23	10	7.8	6.0	7.2
AC-FT	1,050	1,060	1,200	1,260	1,230	1,440	1,590	3,500	1,140	746	717	1,970

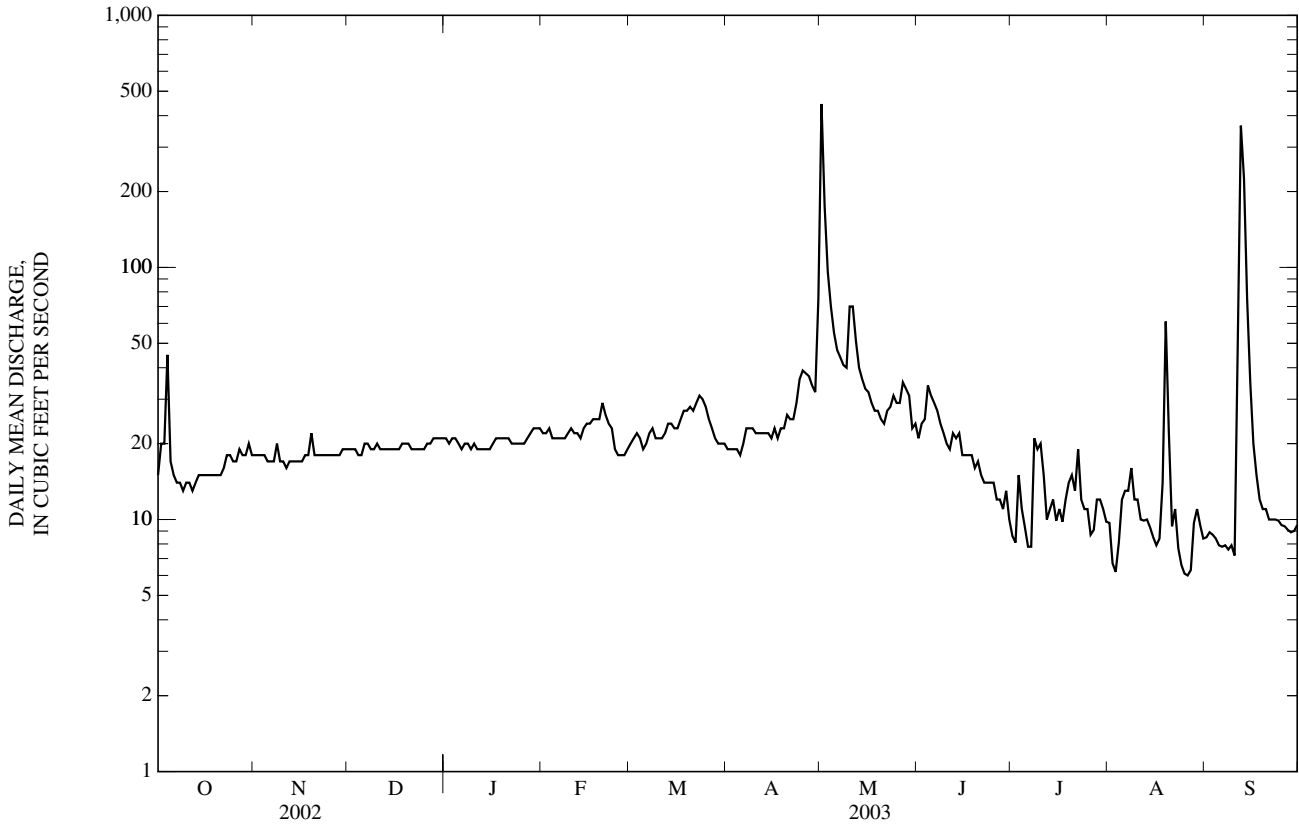
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	70.8	48.3	39.8	45.2	81.0	105	87.9	179	308	237	143	98.8
MAX	686	475	314	399	688	1,043	498	1,416	3,516	4,031	2,247	758
(WY)	(1947)	(1997)	(1994)	(1994)	(1949)	(1993)	(1987)	(1995)	(1951)	(1951)	(1950)	(1951)
MIN	0.65	1.44	2.08	2.19	6.29	9.53	6.81	2.25	10.8	4.03	1.39	0.29
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1991)	(1991)	(1956)	(1956)

06872500 NORTH FORK SOLOMON RIVER AT PORTIS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	31.6		23.3		120	
HIGHEST ANNUAL MEAN					855	1951
LOWEST ANNUAL MEAN					21.7	1991
HIGHEST DAILY MEAN	534	May 28	445	May 1	32,300	Jul 12, 1951
LOWEST DAILY MEAN	5.3	Jul 19	6.0	Aug 26	0.00	Aug 25, 1956
ANNUAL SEVEN-DAY MINIMUM	8.8	Jul 15	7.6	Aug 21	0.07	Aug 23, 1956
MAXIMUM PEAK FLOW			729	Sep 12	35,700	Jul 12, 1951
MAXIMUM PEAK STAGE			8.12	Sep 12	30.41	Jul 12, 1951
INSTANTANEOUS LOW FLOW			4.4	Aug 2	0.00	at times
ANNUAL RUNOFF (AC-FT)	22,900		16,900		87,250	
10 PERCENT EXCEEDS	47		31		177	
50 PERCENT EXCEEDS	24		19		33	
90 PERCENT EXCEEDS	12		9.5		11	

e Estimated



06873000 SOUTH FORK SOLOMON RIVER ABOVE WEBSTER RESERVOIR, KS

LOCATION.--Lat 39°22'26", long 99°34'54", in SW ¼ NW ¼ sec.8, T.8 S., R.20 W., Rooks County, Hydrologic Unit 10260013, on right bank 0.4 mi downstream from county highway bridge, 4.0 mi north of Damar, 7 mi downstream from Wild Horse Creek, and 11 mi upstream from Webster Dam.

DRAINAGE AREA.--1,040 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--January 1945 to current year. Prior to October 1953, published as "at Webster."

REVISED RECORDS.--WSP 1440: 1945-48, 1950.

GAGE.--Water-stage recorders. Datum of gage is 1,936.51 ft above NGVD of 1929 (levels by Bureau of Reclamation). Prior to May 17, 1946, nonrecording gage, May 17, 1946, to May 20, 1951, water-stage recorder, and May 21 to Sept. 30, 1951, nonrecording gage, all at site 8.0 mi downstream at datum 94.52 ft lower. Oct. 1, 1951, to May 22, 1952, nonrecording gage at bridge near Stockton, 23 mi downstream, at different datum. May 23, 1952, to May 23, 1954, water-stage recorder at site 8.0 mi downstream at datum 94.52 ft lower. Since July 30, 1980, supplementary water-stage recorder at site 0.4 mi downstream at datum 3.00 ft lower. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 13.4 ft, June 1908, present site and datum, discharge not determined, from information obtained from Kansas Highway Commission.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 17	2215	*19	*2.83	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	e1.2	2.0	e3.0	10	13	1.6	0.10	0.00	0.00
2	0.00	0.00	0.00	e1.2	1.6	e3.3	9.9	12	2.0	0.01	0.00	0.00
3	0.00	0.00	0.00	e1.2	e1.4	e3.7	9.7	11	1.9	0.00	0.00	0.00
4	0.00	0.00	0.00	e1.2	e1.5	e4.5	9.1	11	2.4	0.00	0.00	0.00
5	0.00	0.00	0.03	e1.2	e1.5	e5.6	8.8	9.8	3.0	0.00	0.00	0.00
6	0.00	0.00	0.49	1.2	e1.5	e7.0	11	11	2.8	0.00	0.00	0.00
7	0.00	0.00	0.48	e1.2	e1.4	10	12	12	3.3	0.00	0.00	0.00
8	0.00	0.00	0.43	1.4	e1.5	e10	13	16	3.0	0.00	0.00	0.00
9	0.00	0.00	e0.38	e1.4	e1.6	e10	13	14	2.5	0.00	0.00	0.00
10	0.00	0.00	e0.35	e1.5	e1.7	10	12	12	2.9	0.00	0.00	0.00
11	0.00	0.00	e0.34	e1.6	e1.8	10	11	10	2.4	0.00	0.00	0.00
12	0.00	0.00	e0.33	e1.6	e1.9	10	11	8.9	3.9	0.00	0.00	0.00
13	0.00	0.00	e0.36	e1.7	2.2	9.3	9.5	7.9	3.0	0.00	0.00	0.00
14	0.00	0.00	e0.43	e1.7	2.2	9.0	8.5	6.7	4.3	0.00	0.00	0.00
15	0.00	0.00	e0.50	e1.8	2.7	8.6	8.0	6.4	3.7	0.00	0.00	0.00
16	0.00	0.00	0.61	e1.8	4.1	8.3	13	10	2.7	0.00	0.00	0.00
17	0.00	0.00	0.68	e1.8	3.8	9.1	16	11	2.1	0.00	0.00	0.00
18	0.00	0.00	0.62	e1.8	3.9	12	18	12	3.6	0.00	0.00	0.00
19	0.00	0.00	0.63	e1.8	3.8	17	15	12	3.2	0.00	0.00	0.00
20	0.00	0.00	e0.63	e1.8	4.1	17	15	11	2.7	0.00	0.00	0.00
21	0.00	0.00	e0.64	e1.8	4.2	16	13	9.3	2.2	0.00	0.00	0.00
22	0.00	0.00	e0.64	e1.5	4.2	14	12	8.4	1.6	0.00	0.00	0.00
23	0.00	0.00	e0.66	e1.3	e3.3	13	14	8.2	1.1	0.00	0.00	0.00
24	0.00	0.00	e0.68	e1.2	e3.0	12	16	8.6	0.56	0.00	0.00	0.00
25	0.00	0.00	e0.74	e1.2	e2.8	11	18	7.5	0.31	0.00	0.00	0.00
26	0.00	0.00	e0.80	e1.3	e2.8	11	17	6.6	0.17	0.00	0.00	0.00
27	0.00	0.00	e0.86	e1.4	e2.8	11	16	5.9	0.05	0.00	0.00	0.00
28	0.00	0.00	e0.94	e1.6	e2.9	11	15	4.2	0.40	0.00	0.00	0.00
29	0.00	0.00	e1.0	e1.7	---	10	14	3.3	1.1	0.00	0.00	0.00
30	0.00	0.00	e1.1	e1.8	---	10	13	2.5	0.47	0.00	0.00	0.00
31	0.00	---	e1.1	1.9	---	10	---	2.0	---	0.00	0.00	---
MEAN	0.000	0.000	0.53	1.51	2.58	9.88	12.7	9.17	2.17	0.004	0.000	0.000
MAX	0.00	0.00	1.1	1.9	4.2	17	18	16	4.3	0.10	0.00	0.00
MIN	0.00	0.00	0.00	1.2	1.4	3.0	8.0	2.0	0.05	0.00	0.00	0.00
AC-FT	0.00	0.00	33	93	143	608	757	564	129	0.2	0.00	0.00

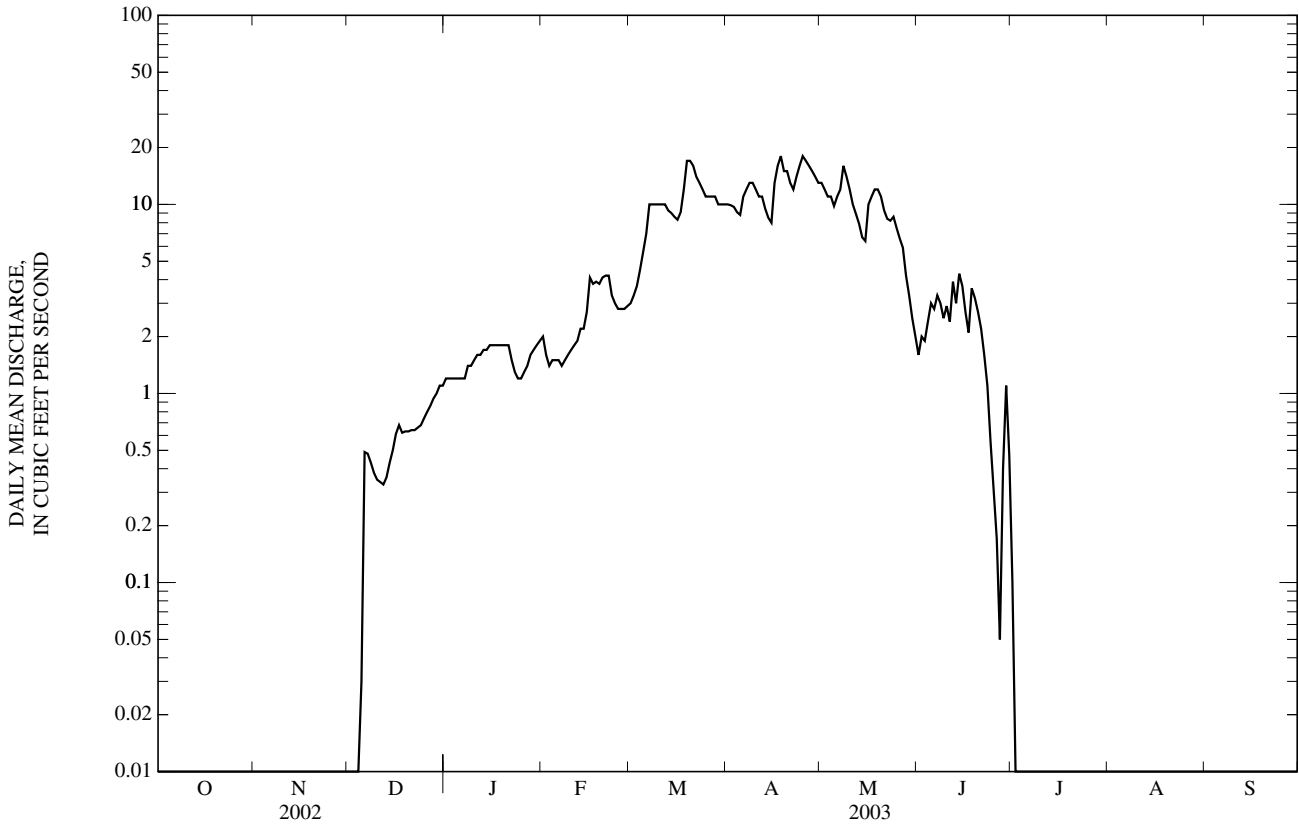
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	34.2	16.1	15.5	17.5	32.6	41.9	45.6	82.9	121	119	61.7	32.1
MAX	1,003	124	84.4	77.1	219	314	174	724	1,767	2,561	1,029	385
(WY)	(1947)	(1947)	(1994)	(1994)	(1949)	(1960)	(1998)	(1995)	(1951)	(1951)	(1950)	(1951)
MIN	0.000	0.000	0.000	0.000	0.023	0.67	0.28	0.065	0.48	0.000	0.000	0.000
(WY)	(1946)	(1946)	(1982)	(1982)	(1992)	(1982)	(1989)	(1989)	(1992)	(1966)	(1946)	(1947)

06873000 SOUTH FORK SOLOMON RIVER ABOVE WEBSTER RESERVOIR, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL MEAN	10.3		3.21		51.8	
HIGHEST ANNUAL MEAN					487	1951
LOWEST ANNUAL MEAN					1.59	1991
HIGHEST DAILY MEAN	33	Mar 28	18	Apr 18	35,000	Jul 12, 1951
LOWEST DAILY MEAN	0.00	Jun 25	0.00	Oct 1	0.00	Oct 1, 1945
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 25	0.00	Oct 1	0.00	Oct 1, 1945
MAXIMUM PEAK FLOW			19	Apr 17	55,200	Jul 12, 1951
MAXIMUM PEAK STAGE			2.83	Apr 17	14.90	Jul 12, 1951
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	7,480		2,330		37,560	
10 PERCENT EXCEEDS	28		11		75	
50 PERCENT EXCEEDS	0.63		0.68		13	
90 PERCENT EXCEEDS	0.00		0.00		0.02	

e Estimated



## 06873460 SOUTH FORK SOLOMON RIVER AT WOODSTON, KS

LOCATION.--39°26'23", long 99°06'05", in NE ¼ SE ¼ SE ¼ sec.16, T.7 S., R.16 W., Rooks County, Hydrologic Unit 10260014, on left bank near upstream side of county highway bridge, 0.8 mi south of Woodston, and at mile 64.1.

DRAINAGE AREA.--1,502 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR KS-82-1: 1979(M) (monthly runoff), 1980 (monthly runoff).

GAGE.--Water-stage recorder. Datum of gage is 1,660.78 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow moderately regulated since 1956 by Webster Reservoir (station 06873100), 28.3 mi upstream, and Woodston diversion dam, 1.9 mi upstream. Natural flow also affected by ground-water withdrawals and return flow from irrigation areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.99	1.0	2.0	e1.5	2.9	1.9	2.4	2.9	0.86	18	11	2.8
2	1.1	1.0	2.1	e1.6	2.6	2.5	2.4	2.6	1.0	16	10	2.3
3	0.99	1.0	2.0	1.6	e2.2	2.7	2.2	2.5	0.87	8.3	7.8	2.0
4	0.96	1.1	1.9	2.0	1.8	3.1	2.1	2.5	0.91	5.7	9.7	1.8
5	0.86	1.1	2.0	1.9	1.8	1.6	2.4	2.3	0.86	0.77	12	1.5
6	0.83	1.1	1.8	1.8	e1.5	2.2	3.3	2.5	1.2	3.6	8.0	1.3
7	0.86	1.0	1.9	1.6	1.5	2.9	3.8	2.9	1.1	7.3	13	1.2
8	0.88	1.0	2.0	1.8	1.7	2.5	2.9	2.5	0.95	2.1	20	1.2
9	0.95	0.99	1.9	1.7	e1.8	1.9	2.5	2.4	0.85	5.7	31	1.2
10	0.96	1.0	2.0	1.3	2.0	1.9	2.2	2.1	0.81	9.8	31	1.2
11	0.98	1.0	2.2	1.3	2.3	2.2	1.9	2.0	0.77	8.4	26	12
12	0.98	0.98	2.1	1.3	2.3	2.1	1.8	1.8	1.1	11	7.2	7.8
13	1.0	0.98	2.0	1.4	e2.2	2.0	1.8	2.0	0.81	10	9.5	2.1
14	1.0	1.0	2.0	1.5	e2.0	2.0	1.7	1.7	0.81	12	19	1.4
15	1.0	0.96	1.9	1.3	e1.9	1.9	1.7	1.5	0.76	7.9	23	1.0
16	1.0	1.0	2.0	e1.0	1.8	1.8	2.5	2.5	0.74	6.8	20	0.92
17	1.0	3.7	2.1	e0.98	2.1	2.0	2.5	2.4	0.73	7.2	12	0.87
18	0.99	3.2	2.1	1.1	2.4	4.0	2.4	2.0	0.71	12	31	0.83
19	0.95	2.6	2.0	1.2	2.2	7.4	2.0	1.6	0.77	16	48	0.81
20	0.98	2.6	1.7	1.5	2.1	6.2	2.0	1.4	0.76	13	28	0.81
21	1.0	2.3	1.5	1.5	2.1	4.2	1.8	1.3	0.73	15	17	0.77
22	1.1	2.2	1.3	e1.3	2.0	3.4	1.8	1.2	0.71	12	13	0.80
23	1.2	2.1	1.2	e1.1	1.7	3.3	4.4	1.2	0.92	1.3	9.6	0.77
24	1.1	1.9	1.4	1.1	1.3	2.7	8.3	2.0	0.70	0.73	6.3	0.70
25	0.98	2.0	1.2	1.2	1.2	2.8	6.6	2.1	0.66	7.7	4.3	0.70
26	0.96	1.9	1.2	1.1	1.3	2.7	4.9	2.0	0.66	16	3.4	0.69
27	1.0	1.9	1.2	1.3	1.6	2.6	4.0	1.4	0.63	17	4.2	0.66
28	0.99	2.1	1.4	1.8	1.7	2.6	3.6	1.1	2.0	9.1	5.3	0.66
29	1.1	2.4	1.6	e2.0	---	2.3	3.2	0.97	36	2.9	4.1	0.72
30	1.1	2.2	e1.5	2.2	---	2.3	3.0	0.90	6.1	15	4.1	0.75
31	1.0	---	1.5	3.1	---	2.5	---	0.88	---	17	3.1	---
MEAN	0.99	1.64	1.76	1.52	1.93	2.78	2.94	1.91	2.22	9.53	14.6	1.74
MAX	1.2	3.7	2.2	3.1	2.9	7.4	8.3	2.9	36	18	48	12
MIN	0.83	0.96	1.2	0.98	1.2	1.6	1.7	0.88	0.63	0.73	3.1	0.66
AC-FT	61	98	108	93	107	171	175	117	132	586	896	104

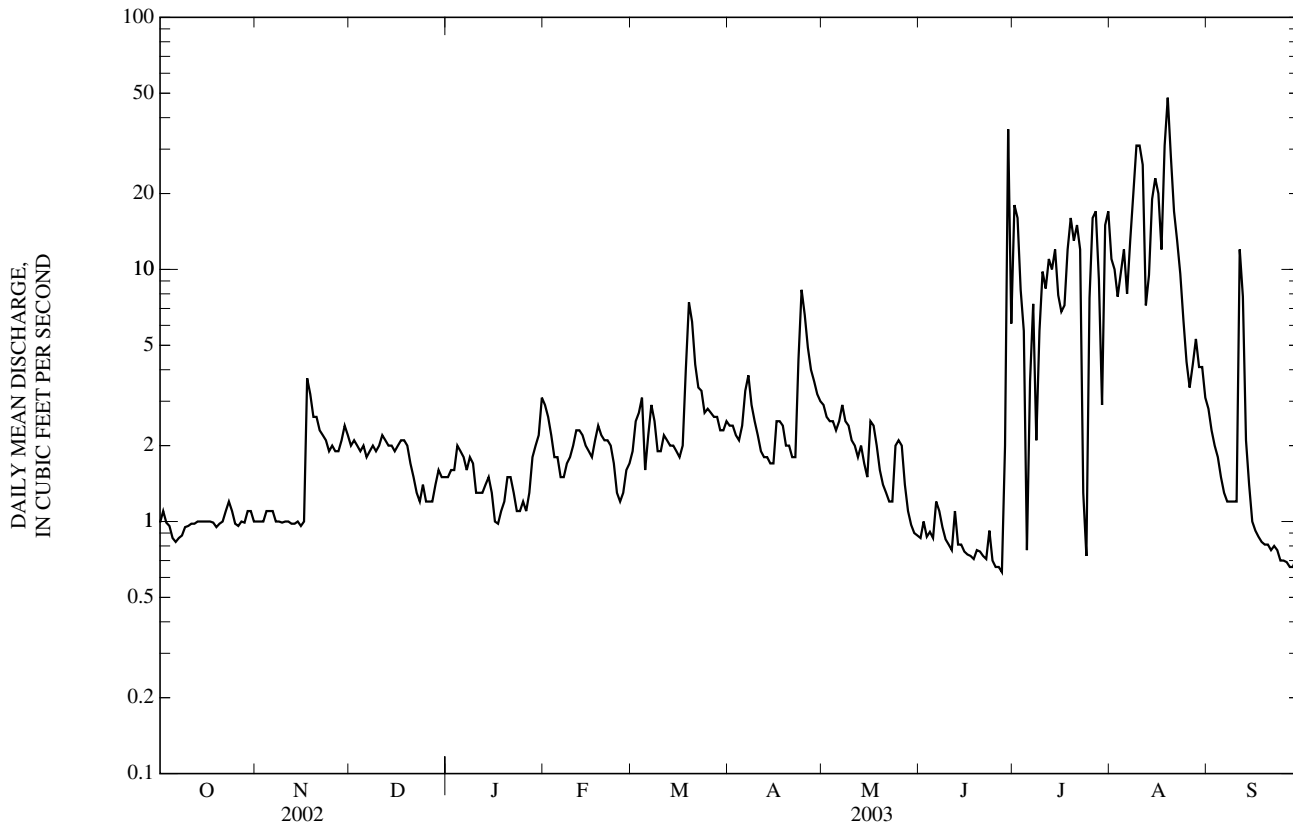
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2003, BY WATER YEAR (WY)

MEAN	16.0	21.1	30.9	22.1	29.4	45.6	67.5	78.1	61.1	125	43.3	18.6
MAX	186	240	541	228	271	282	663	723	862	1,742	346	161
(WY)	(1994)	(1994)	(1994)	(1994)	(1994)	(1994)	(1987)	(1995)	(1995)	(1993)	(1993)	(1993)
MIN	0.006	0.052	0.11	0.055	0.62	0.42	0.36	0.31	0.10	0.080	0.14	0.10
(WY)	(1979)	(1982)	(1982)	(1982)	(1992)	(1982)	(1982)	(1982)	(1981)	(1981)	(1981)	(1981)

06873460 SOUTH FORK SOLOMON RIVER AT WOODSTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1979 - 2003	
ANNUAL MEAN	7.75		3.66		46.8	
HIGHEST ANNUAL MEAN					248	1993
LOWEST ANNUAL MEAN					0.59	1981
HIGHEST DAILY MEAN	76	Aug 13	48	Aug 19	7,260	Jul 21, 1993
LOWEST DAILY MEAN	0.52	Jun 24	0.63	Jun 27	0.00	Oct 1, 1978
ANNUAL SEVEN-DAY MINIMUM	0.90	Oct 4	0.70	Sep 24	0.00	Oct 6, 1978
MAXIMUM PEAK FLOW			87		8,710	Jul 21, 1993
MAXIMUM PEAK STAGE			5.32		22.89	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.49		0.00	Oct 1, 1979
ANNUAL RUNOFF (AC-FT)	5,610		2,650		33,870	
10 PERCENT EXCEEDS	15		9.5		91	
50 PERCENT EXCEEDS	6.3		1.9		6.5	
90 PERCENT EXCEEDS	1.0		0.86		0.48	

e Estimated





## 06874000 SOUTH FORK SOLOMON RIVER AT OSBORNE, KS

LOCATION.--Lat 39°25'43", long 98°41'40", in SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec.20, T.7 S., R.12 W., Osborne County, Hydrologic Unit 10260014, on right bank at downstream side of bridge on U.S. Highway 281, 0.5 mi south of Osborne, 0.6 mi downstream from Covert Creek, and at mile 27.6.

DRAINAGE AREA.--2,012 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,505.09 ft above NGVD of 1929. Prior to Dec. 12, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1956 by Webster Reservoir (station 06873100), 64.8 mi upstream. Diversions upstream from station for irrigation. Occasional low-water regulation by Osborne city reservoir, 1.5 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	12	13	12	15	e13	13	14	9.3	22	7.9	14
2	10	12	13	12	15	e13	13	14	11	17	10	13
3	13	12	13	e12	15	e14	13	14	11	22	7.4	12
4	15	12	13	e12	13	14	13	14	11	20	7.8	11
5	11	13	12	12	e12	12	13	14	11	13	7.4	11
6	10	12	11	12	e12	15	14	14	11	10	5.8	10
7	9.6	12	e11	12	e12	16	15	14	10	9.1	8.4	9.8
8	9.7	13	12	12	e13	14	14	16	9.9	21	10	9.6
9	9.7	13	11	12	e13	13	14	16	9.7	11	7.2	9.3
10	9.8	13	12	11	e14	13	12	14	9.4	8.6	6.9	9.6
11	9.7	13	12	12	e14	13	14	13	9.1	8.2	11	66
12	9.8	13	12	e12	14	13	13	12	11	10	12	160
13	9.9	14	12	e12	14	13	13	13	10	9.5	11	23
14	9.9	14	12	e12	15	13	13	15	9.8	9.9	9.8	16
15	9.9	13	12	e11	14	13	9.7	13	9.4	9.7	9.5	11
16	9.9	13	12	e11	12	13	10	13	9.0	8.7	12	9.5
17	10	14	11	e11	e12	20	14	13	10	7.6	11	8.7
18	10	14	12	e12	e13	18	14	12	8.7	7.3	11	8.1
19	10	13	12	e12	14	24	13	13	8.8	8.2	23	7.7
20	10	14	11	e12	13	21	14	12	9.5	8.5	20	7.6
21	10	14	11	e11	14	18	13	11	9.2	10	32	7.6
22	11	13	13	e10	14	17	13	11	8.7	12	28	7.7
23	13	13	e12	e10	13	16	17	11	8.0	10	21	7.7
24	13	13	e11	e11	e12	15	25	13	7.6	11	18	7.5
25	12	13	e11	e12	e12	14	24	12	7.5	6.9	13	7.0
26	12	13	e12	e12	e12	14	19	11	7.4	5.6	10	7.2
27	12	12	e12	e13	e12	14	17	11	7.3	5.8	10	6.9
28	12	13	12	e14	e12	14	16	10	7.3	8.2	11	6.6
29	12	13	e12	e15	---	13	15	10	61	9.0	20	6.7
30	13	13	12	e15	---	13	15	9.5	33	8.9	17	7.3
31	13	---	e12	15	---	13	---	9.4	---	6.7	15	---
MEAN	10.9	13.0	11.9	12.1	13.2	14.8	14.5	12.6	11.9	10.8	13.0	16.6
MAX	15	14	13	15	15	24	25	16	61	22	32	160
MIN	9.3	12	11	10	12	12	9.7	9.4	7.3	5.6	5.8	6.6
AC-FT	673	772	732	742	734	910	864	777	705	665	802	990

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

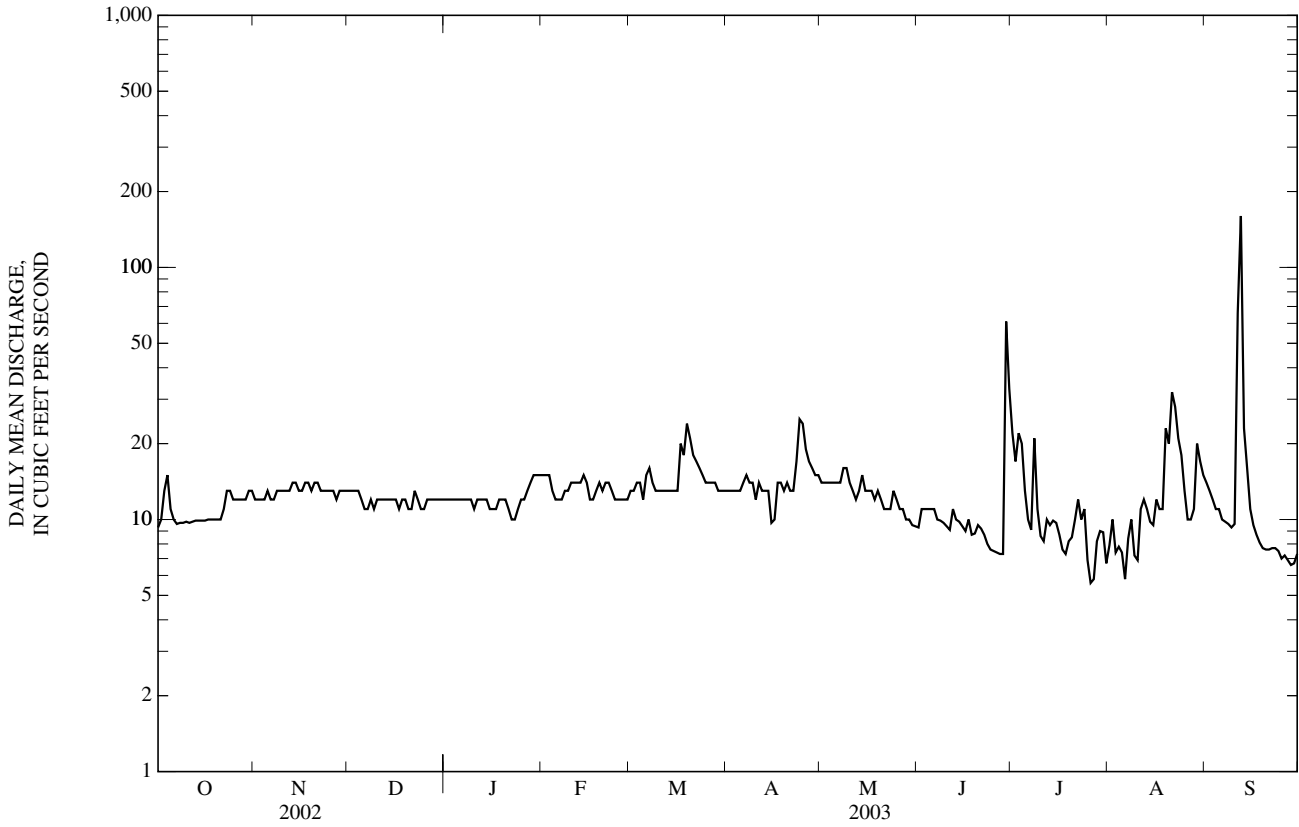
MEAN	60.0	43.4	39.9	38.3	62.0	92.6	117	152	243	301	111	70.7
MAX	792	353	630	342	487	644	1,437	1,158	3,675	5,193	1,666	708
(WY)	(1947)	(1997)	(1994)	(1994)	(1949)	(1993)	(1987)	(1995)	(1951)	(1951)	(1950)	(1951)
MIN	0.21	0.36	1.05	1.22	2.70	4.77	6.01	7.39	5.24	1.74	0.75	0.28
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1957)	(1972)	(1992)	(1981)	(1955)	(1978)	(1956)

KANSAS RIVER BASIN

06874000 SOUTH FORK SOLOMON RIVER AT OSBORNE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL MEAN	17.9		12.9		111	
HIGHEST ANNUAL MEAN					994	
LOWEST ANNUAL MEAN					9.27	
HIGHEST DAILY MEAN	111	May 25	160	Sep 12	53,500	Jul 12, 1951
LOWEST DAILY MEAN	7.7	Aug 3	5.6	Jul 26	0.00	Sep 24, 1984
ANNUAL SEVEN-DAY MINIMUM	9.3	Jun 20	7.0	Sep 24	0.17	Sep 11, 1981
MAXIMUM PEAK FLOW			420	Sep 12	81,200	Jul 13, 1951
MAXIMUM PEAK STAGE			7.61	Sep 12	28.33	Jul 21, 1993
INSTANTANEOUS LOW FLOW			4.6	Jul 26	0.00	many years
ANNUAL RUNOFF (AC-FT)	12,930		9,370		80,530	
10 PERCENT EXCEEDS	27		15		193	
50 PERCENT EXCEEDS	14		12		23	
90 PERCENT EXCEEDS	9.9		8.5		5.7	

e Estimated



## 06875900 SOLOMON RIVER NEAR GLEN ELDER, KS

LOCATION.--Lat 39°28'27", long 98°16'58", in SE ¼ SE ¼ NE ¼ sec.2, T.7 S., R.9 W., Mitchell County, Hydrologic Unit 10260015, on right bank, 3.6 mi downstream from Glen Elder Dam, 2.0 mi southeast of Glen Elder, and at mile 168.8.

DRAINAGE AREA.--5,340 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Concrete control since Mar. 4, 1970. Datum of gage is 1,374.13 ft above NGVD of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow mostly regulated since 1967 by Waconda Lake (station 06874200), which in turn is moderately regulated since 1955 by Kirwin Reservoir (station 06871700), and since 1956 by Webster Reservoir (station 06873100). Large diversions downstream from Kirwin and Webster Reservoirs and many small diversions upstream from Waconda Lake for irrigation. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	18	16	16	18	18	19	18	40	93	37
2	21	19	18	16	16	18	18	18	20	53	95	33
3	22	19	18	16	16	18	18	18	19	62	96	20
4	87	19	18	16	16	17	18	18	19	67	94	20
5	48	19	18	16	16	19	18	18	19	74	89	22
6	30	18	18	16	16	18	19	19	19	79	83	33
7	26	18	18	16	17	18	19	18	20	83	84	33
8	21	18	18	16	17	18	18	19	18	87	88	27
9	19	18	18	16	17	18	18	19	18	88	97	20
10	19	18	18	16	18	18	18	19	18	89	103	21
11	19	18	18	16	17	18	18	19	18	89	103	728
12	19	18	17	16	17	18	18	19	19	97	101	311
13	19	18	17	16	17	18	18	19	18	98	96	65
14	19	18	17	16	18	17	18	19	18	104	92	37
15	19	18	17	16	17	17	18	19	18	104	90	27
16	19	18	17	17	17	17	19	19	24	99	84	23
17	19	18	17	17	17	18	18	18	35	96	83	21
18	19	18	17	17	18	19	18	18	39	96	82	21
19	19	18	17	17	17	18	18	20	52	96	54	21
20	19	18	17	17	17	18	18	19	46	98	22	20
21	19	18	17	17	18	18	18	18	45	102	22	20
22	19	18	17	16	18	17	18	18	49	103	27	20
23	20	18	17	16	18	17	20	18	66	100	44	17
24	19	18	17	16	18	18	20	19	70	98	44	21
25	18	18	17	16	18	18	19	18	75	96	48	21
26	18	18	16	16	18	18	18	18	64	98	59	21
27	19	18	16	e17	18	18	19	18	62	93	64	21
28	18	18	16	16	18	18	18	18	62	85	69	21
29	18	18	16	16	---	18	18	18	57	85	53	21
30	18	18	16	16	---	18	18	18	30	89	38	22
31	18	---	16	16	---	18	---	18	---	98	37	---
MEAN	22.8	18.2	17.2	16.2	17.2	17.9	18.3	18.5	35.2	88.6	72.1	58.2
MAX	87	19	18	17	18	19	20	20	75	104	103	728
MIN	18	18	16	16	16	17	18	18	18	40	22	17
AC-FT	1,400	1,080	1,060	998	954	1,100	1,090	1,140	2,090	5,450	4,430	3,460

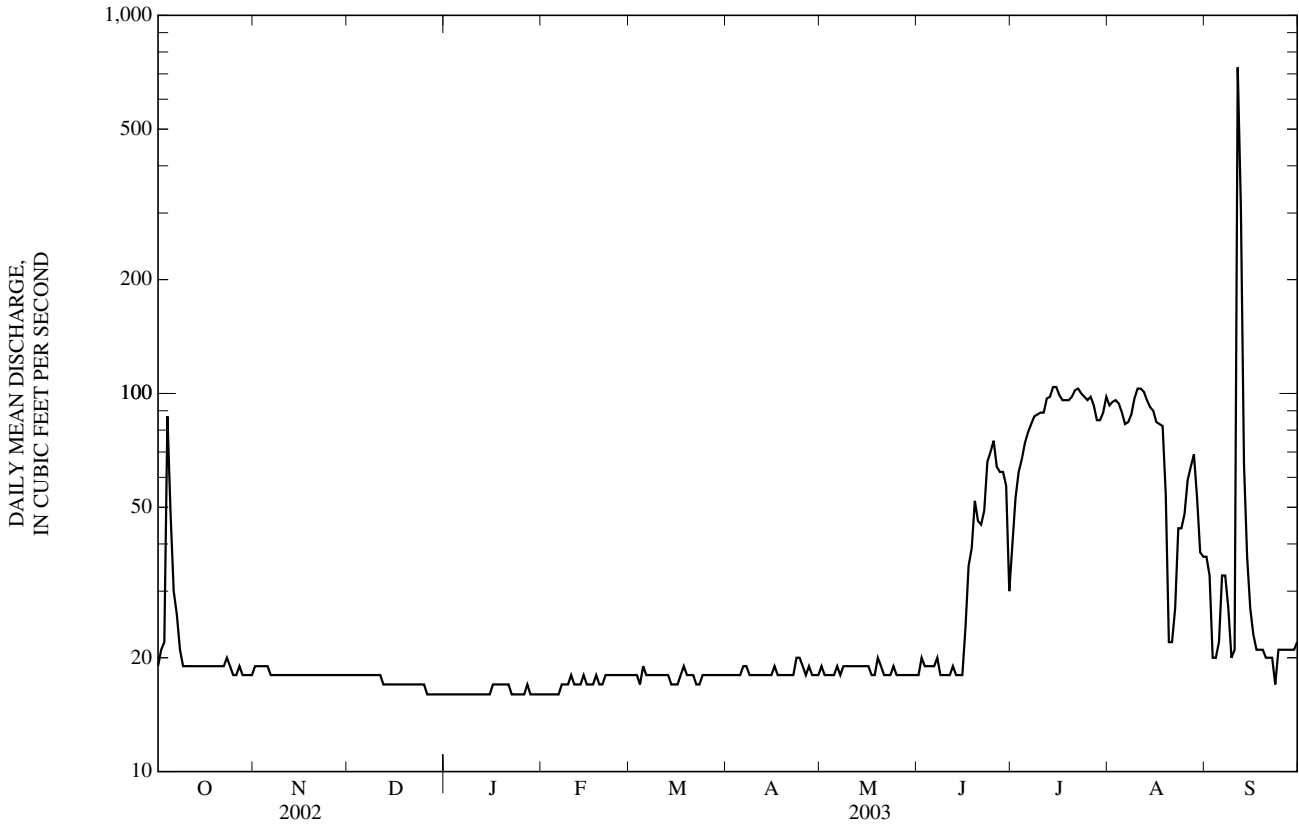
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

MEAN	169	183	188	152	173	229	221	284	356	344	300	203
MAX	3,047	2,983	2,315	2,220	1,472	1,680	1,635	1,939	2,092	2,096	3,083	3,148
(WY)	(1994)	(1994)	(1994)	(1994)	(1994)	(1993)	(1993)	(1987)	(1995)	(1993)	(1993)	(1993)
MIN	11.3	7.70	1.10	8.00	11.7	8.98	9.60	15.0	16.5	28.0	26.1	18.3
(WY)	(1970)	(1972)	(1969)	(1976)	(1978)	(1971)	(1971)	(1970)	(1981)	(1969)	(1969)	(1970)

06875900 SOLOMON RIVER NEAR GLEN ELDER, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL MEAN	64.2		33.5		234	
HIGHEST ANNUAL MEAN					1,369	1994
LOWEST ANNUAL MEAN					18.4	1970
HIGHEST DAILY MEAN	855	May 28	728	Sep 11	7,210	Jul 22, 1993
LOWEST DAILY MEAN	1.0	Mar 27	16	Dec 26	0.32	Nov 22, 1971
ANNUAL SEVEN-DAY MINIMUM	8.4	Mar 23	16	Dec 26	0.62	Dec 13, 1968
MAXIMUM PEAK FLOW			1,250	Sep 11	9,410	Jul 22, 1993
MAXIMUM PEAK STAGE			14.39	Sep 11	29.57	Jul 22, 1993
INSTANTANEOUS LOW FLOW			8.0	Sep 23	0.32	Nov 22, 1971
ANNUAL RUNOFF (AC-FT)	46,470		24,240		169,300	
10 PERCENT EXCEEDS	131		87		587	
50 PERCENT EXCEEDS	40		18		53	
90 PERCENT EXCEEDS	18		17		15	

e Estimated



## 06876070 SOLOMON RIVER NEAR SIMPSON, KS

LOCATION.--Lat 39°22'05", long 97°55'44", in SW 1/4 NW 1/4 SW 1/4 sec.7, T.8 S., R.5 W., Cloud County, Hydrologic Unit 10260015, on right bank at downstream side of county highway bridge, 1.0 mi south of Simpson, and at mile 115.4.

DRAINAGE AREA.--5,538 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1990 to current year.

REVISED RECORDS.--WDR KS-92-1: 1991.

GAGE.--Water-stage recorder. Datum of gage is 1,334.26 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow mostly regulated since 1967 by Waconda Lake (station 06874200), 57.0 mi upstream. Many small diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1951 reached a gage height of 42.2 ft, from floodmark on house on left downstream side of bridge, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	27	27	e20	34	e17	25	22	23	51	27	40
2	24	27	27	e19	32	e22	25	22	36	23	52	40
3	35	27	27	18	28	27	26	22	77	22	52	40
4	53	27	27	30	22	25	26	23	39	26	58	36
5	49	28	26	29	e20	14	26	27	27	35	67	25
6	117	28	22	28	e18	25	28	32	24	35	55	21
7	70	32	30	23	16	27	31	26	23	37	44	20
8	35	42	27	27	26	32	29	31	22	40	39	26
9	31	14	25	26	32	24	25	28	22	40	36	28
10	26	24	28	20	31	25	24	45	22	35	44	36
11	24	30	26	21	31	24	24	44	21	24	59	9,970
12	23	30	26	22	28	25	24	26	23	20	59	8,720
13	22	33	26	26	28	24	24	23	25	27	55	1,900
14	22	41	25	27	31	23	23	22	24	46	48	361
15	23	16	25	25	34	24	23	23	22	48	45	130
16	23	24	26	18	25	24	24	24	22	44	54	79
17	22	27	26	e21	28	24	29	24	21	43	63	59
18	23	27	26	27	27	29	27	24	22	32	65	48
19	24	27	26	32	29	33	25	30	33	25	82	42
20	23	27	26	32	27	30	24	37	83	24	95	38
21	24	28	23	29	26	26	23	28	56	27	68	38
22	24	28	18	24	26	24	23	24	42	38	27	36
23	27	28	e16	19	24	23	25	24	31	52	20	34
24	30	27	e16	25	16	23	41	27	32	45	20	33
25	30	27	e18	28	e15	23	52	31	46	48	34	32
26	26	27	e21	29	e14	23	48	26	49	47	34	30
27	27	27	23	26	e14	25	25	25	50	53	30	29
28	30	28	29	28	e15	25	22	24	37	53	34	30
29	29	28	28	29	---	24	22	24	123	36	45	30
30	28	28	e25	29	---	24	22	24	65	26	67	31
31	29	---	22	34	---	24	---	24	---	17	58	---
MEAN	32.0	27.8	24.6	25.5	24.9	24.6	27.2	27.0	38.1	36.1	49.5	733
MAX	117	42	30	34	34	33	52	45	123	53	95	9,970
MIN	18	14	16	18	14	14	22	22	21	17	20	20
AC-FT	1,970	1,650	1,510	1,570	1,380	1,510	1,620	1,660	2,270	2,220	3,050	43,600

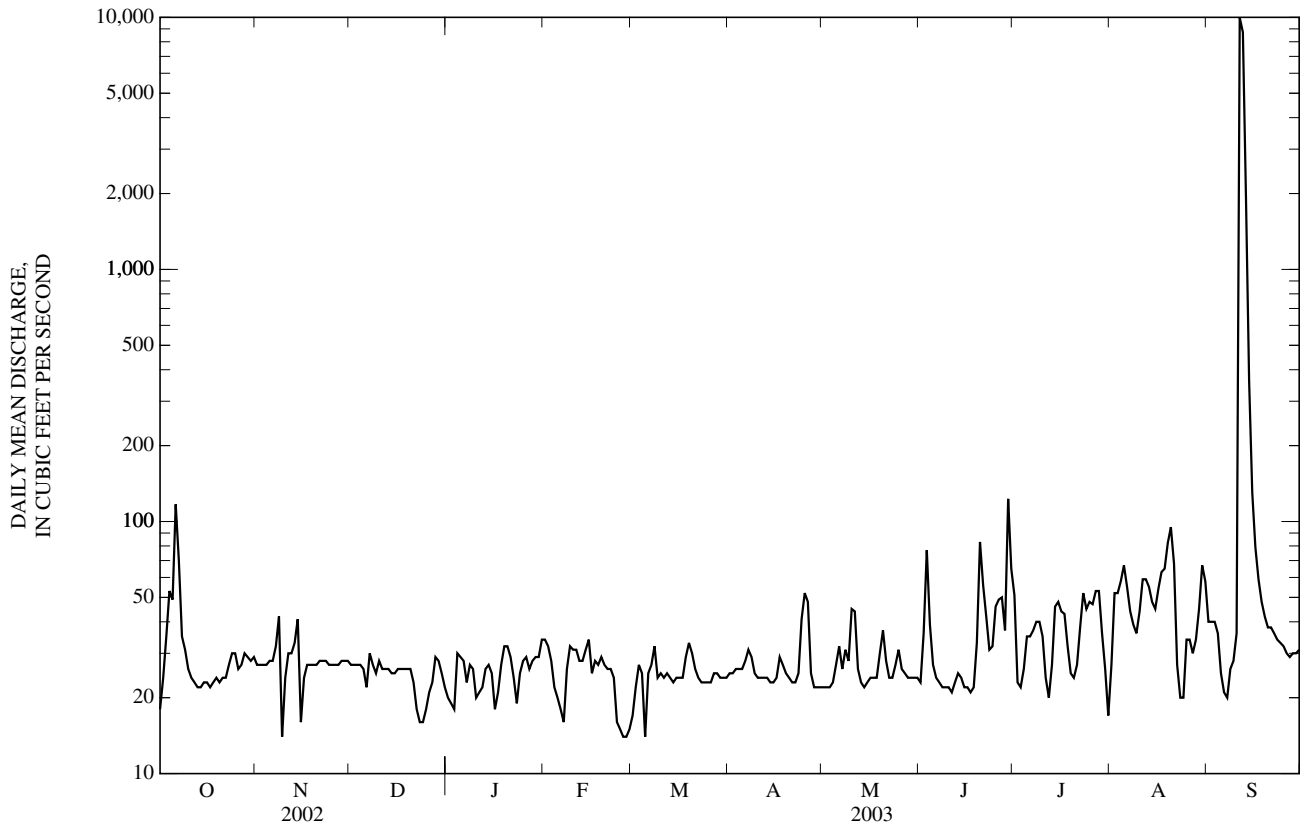
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

MEAN	308	361	425	360	365	428	358	457	566	777	615	422
MAX	3,108	3,055	2,519	2,374	1,574	1,924	1,820	1,395	2,133	5,033	3,671	3,368
(WY)	(1994)	(1994)	(1994)	(1994)	(1994)	(1993)	(1993)	(1993)	(1995)	(1993)	(1993)	(1993)
MIN	23.0	25.0	24.6	22.3	22.2	22.7	25.9	19.1	32.2	32.8	27.8	28.3
(WY)	(1992)	(1992)	(2003)	(2001)	(1992)	(1992)	(1992)	(1992)	(1991)	(2000)	(2000)	(2002)

06876070 SOLOMON RIVER NEAR SIMPSON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL MEAN	60.2		88.4		454	
HIGHEST ANNUAL MEAN					1,694	1993
LOWEST ANNUAL MEAN					74.3	2002
HIGHEST DAILY MEAN	1,010	May 29	9,970	Sep 11	10,200	Jul 8, 1993
LOWEST DAILY MEAN	13	Aug 25	14	Nov 9	2.1	Jun 26, 1991
ANNUAL SEVEN-DAY MINIMUM	19	Sep 25	16	Feb 24	5.4	Jun 21, 1991
MAXIMUM PEAK FLOW			14,700	Sep 11	14,700	Sep 11, 2003
MAXIMUM PEAK STAGE			33.64	Sep 11	33.64	Sep 11, 2003
INSTANTANEOUS LOW FLOW			4.2	Jan 23	0.78	Jun 27, 1991
ANNUAL RUNOFF (AC-FT)	43,560		64,000		329,200	
10 PERCENT EXCEEDS	107		50		1,240	
50 PERCENT EXCEEDS	36		27		115	
90 PERCENT EXCEEDS	22		22		25	

e Estimated



KANSAS RIVER BASIN

06876700 SALT CREEK NEAR ADA, KS

LOCATION.--Lat 39°08'30", long 97°50'10", in NW ¼ NW ¼ SW ¼ sec.36, T.10 S., R.5 W., Ottawa County, Hydrologic Unit 10260015, on left bank at downstream side of county highway bridge, 3.0 mi southeast of Ada, and at mile 19.4.

DRAINAGE AREA.--384 mi<sup>2</sup>, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,247.18 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1942 reached a stage of about 21 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 13	0330	*2,060	*20.89	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.40	1.9	2.1	2.7	3.5	2.7	4.1	7.1	2.9	1.5	0.60	1.6
2	0.75	2.0	2.2	2.6	3.6	2.7	4.0	6.2	7.8	1.2	0.49	0.86
3	2.5	1.9	2.2	2.7	3.5	2.8	4.0	5.6	27	1.1	0.47	0.69
4	26	1.8	2.0	2.6	3.6	e2.7	4.0	5.4	19	1.1	0.43	0.62
5	10	1.8	2.0	2.5	3.6	e2.5	3.9	5.1	25	0.81	0.45	0.71
6	4.0	1.9	2.0	2.5	2.9	3.4	4.1	4.7	42	0.58	0.47	0.47
7	3.2	1.9	2.2	2.6	e2.5	3.4	4.4	4.2	27	0.60	0.39	0.49
8	2.5	2.0	2.2	2.6	2.8	3.4	4.4	4.7	9.2	0.57	0.33	0.42
9	2.2	2.1	2.2	2.6	2.7	2.9	4.2	4.9	6.2	0.45	0.30	0.38
10	1.6	2.1	2.3	2.7	2.8	2.8	4.1	4.8	5.0	0.45	0.26	0.30
11	1.1	2.0	2.3	2.4	2.8	2.9	4.1	4.5	4.0	0.45	0.29	323
12	0.73	2.2	2.4	2.4	2.7	2.7	4.1	4.3	4.0	0.57	0.29	1,250
13	0.65	1.9	2.5	2.5	3.0	2.7	3.9	4.6	3.7	0.62	0.30	1,980
14	0.63	1.9	2.4	2.6	3.7	2.7	3.8	4.3	3.3	0.58	0.30	1,800
15	0.57	1.9	2.3	2.8	4.2	2.6	4.1	3.9	3.1	0.45	0.32	1,600
16	0.51	2.0	2.4	2.8	4.3	2.6	4.8	4.0	3.0	0.36	0.26	1,210
17	0.60	2.1	2.4	2.7	3.9	2.7	5.0	4.1	2.6	0.36	0.25	639
18	0.73	2.1	2.5	2.8	4.1	4.6	5.4	4.3	2.4	0.32	0.27	287
19	0.70	2.3	2.4	2.9	3.8	9.0	5.7	4.2	2.4	0.36	0.69	197
20	0.74	2.2	2.3	3.1	3.3	19	6.4	4.1	2.8	0.33	0.40	150
21	0.74	2.0	2.5	3.1	3.4	18	6.0	4.2	3.0	0.32	0.36	112
22	0.71	2.0	2.2	3.1	2.9	13	5.3	4.0	2.2	0.33	0.35	90
23	1.2	1.9	2.2	3.0	2.7	11	5.4	5.4	1.7	0.33	0.33	74
24	1.7	1.9	2.3	2.9	2.8	8.7	17	5.9	1.7	0.38	0.33	52
25	2.1	1.9	2.3	3.3	2.6	6.9	37	5.5	1.4	0.32	0.32	33
26	2.0	1.9	2.2	3.4	2.5	6.1	32	5.2	1.1	0.29	0.27	23
27	2.7	1.9	2.3	3.3	2.6	5.5	23	4.2	1.1	0.34	0.27	20
28	2.4	1.9	2.4	3.3	2.7	4.9	13	3.5	1.1	0.28	0.33	26
29	2.2	2.0	2.5	3.6	---	4.5	9.4	3.3	1.3	0.26	0.50	24
30	2.5	2.1	2.6	3.6	---	4.3	8.1	2.9	1.3	0.30	1.1	13
31	2.0	---	2.8	3.6	---	4.0	---	3.0	---	0.46	2.0	---
MEAN	2.59	1.98	2.31	2.88	3.20	5.41	8.16	4.58	7.28	0.53	0.44	330
MAX	26	2.3	2.8	3.6	4.3	19	37	7.1	42	1.5	2.0	1,980
MIN	0.40	1.8	2.0	2.4	2.5	2.5	3.8	2.9	1.1	0.26	0.25	0.30
AC-FT	159	118	142	177	178	333	485	282	433	32	27	19,660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

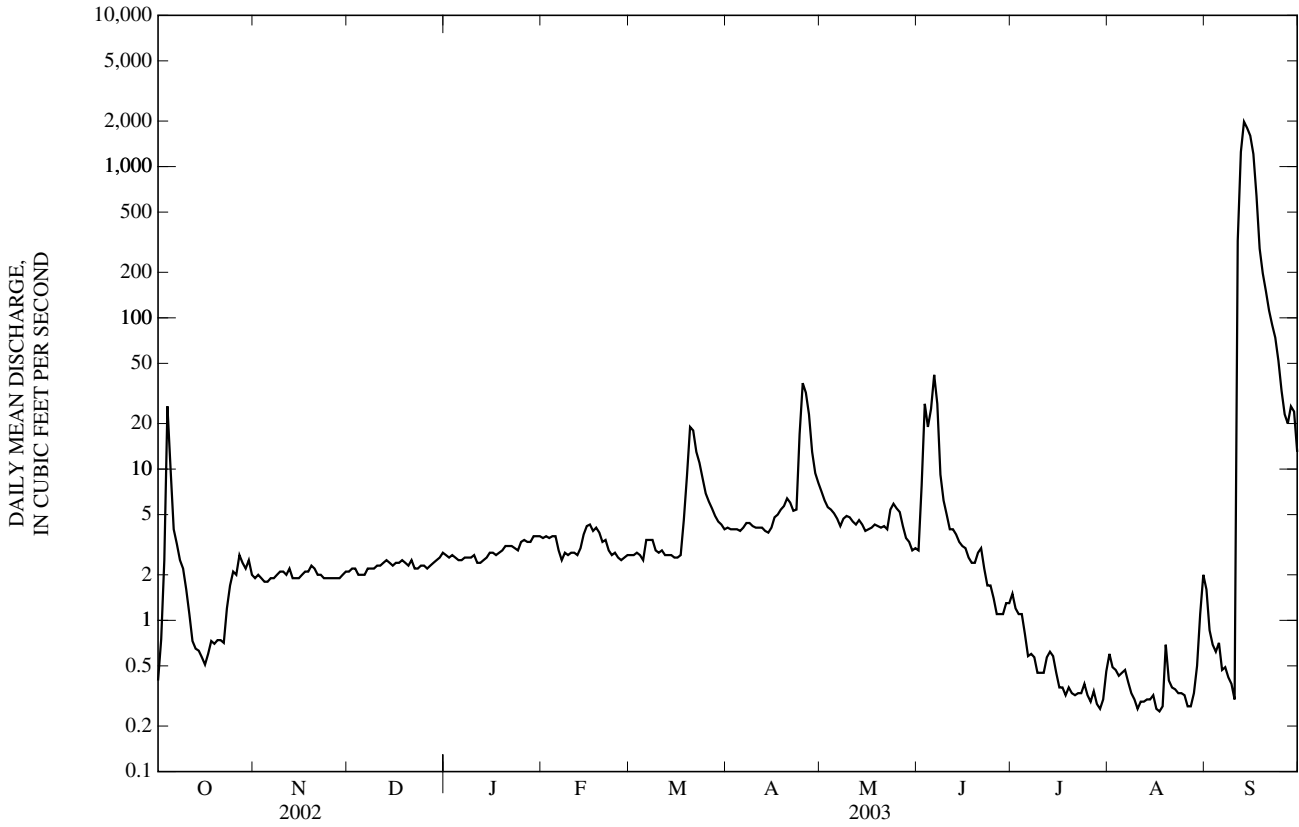
MEAN	40.3	27.1	20.5	24.0	43.7	102	99.4	139	96.2	132	33.8	47.1
MAX	827	216	203	277	495	899	898	1,201	578	2,595	292	677
(WY)	(1974)	(1999)	(1974)	(1974)	(1993)	(1973)	(1987)	(1995)	(1993)	(1993)	(1993)	(1973)
MIN	0.014	0.13	0.39	1.14	1.71	1.25	3.61	1.62	0.48	0.20	0.052	0.43
(WY)	(1967)	(1967)	(1967)	(1967)	(1967)	(1967)	(1992)	(1967)	(1966)	(1970)	(1970)	(1991)

KANSAS RIVER BASIN

06876700 SALT CREEK NEAR ADA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL MEAN	5.95		30.4		67.3	
HIGHEST ANNUAL MEAN					469	1993
LOWEST ANNUAL MEAN					3.81	1966
HIGHEST DAILY MEAN	46	Apr 21	1,980	Sep 13	10,400	May 23, 1961
LOWEST DAILY MEAN	0.25	Sep 9	0.25	Aug 17	0.00	Jul 21, 1964
ANNUAL SEVEN-DAY MINIMUM	0.27	Sep 5	0.28	Aug 12	0.00	Aug 5, 1964
MAXIMUM PEAK FLOW			2,060	Sep 13	16,000	May 23, 1961
MAXIMUM PEAK STAGE			20.89	Sep 13	23.25	May 23, 1961
INSTANTANEOUS LOW FLOW			0.19	Aug 18	0.00	many years
ANNUAL RUNOFF (AC-FT)	4,310		22,020		48,750	
10 PERCENT EXCEEDS	13		9.6		99	
50 PERCENT EXCEEDS	2.6		2.6		11	
90 PERCENT EXCEEDS	0.53		0.39		1.5	

e Estimated





## 06876900 SOLOMON RIVER AT NILES, KS

LOCATION.--Lat 38°58'08", long 97°28'34", in NW ¼ SE ¼ NW ¼ sec.31, T.12 S., R.1 W., Ottawa County, Hydrologic Unit 10260015, on right bank at downstream side of county highway bridge, 0.8 mi west of Niles, and at mile 21.6.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--6,770 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1897 to November 1903, October 1917 to current year. Published as "near Bennington" October 1917 to May 1919. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 806: Drainage area. WSP 926: 1935. WSP 1310: 1897-1903. WSP 1440: 1903, 1919, 1927.

GAGE.--Water-stage recorders. Datum of gage is 1,160.97 ft above NGVD of 1929. Prior to Nov. 30, 1903, nonrecording gage at present site and at different datum. Oct. 1, 1917, to May 31, 1919, nonrecording gage near Bennington, 27 mi upstream at different datum. June 1, 1919, to Sept. 30, 1922, nonrecording gage at present site at datum 2.00 ft higher. Oct. 1, 1922, to Apr. 25, 1934, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1967 by Waconda Lake (station 06874200), 150.8 mi upstream. Slight regulation since 1955 by Kirwin Reservoir (station 06871700) and since 1956 by Webster Reservoir (station 06873100). Many small diversions upstream from station for irrigation. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	54	49	56	70	55	51	67	46	69	45	51
2	38	54	50	53	66	56	51	61	53	140	41	54
3	42	52	50	52	65	57	50	59	93	121	37	58
4	53	49	49	54	66	59	50	57	146	72	35	54
5	267	49	50	51	64	47	51	55	241	56	35	46
6	230	48	50	55	65	57	52	54	251	44	47	43
7	115	47	51	53	53	67	52	54	173	38	50	42
8	75	47	49	54	60	54	52	59	130	37	52	39
9	79	48	50	53	65	55	54	61	104	42	55	36
10	89	48	50	53	62	55	54	63	67	45	53	31
11	67	48	52	51	60	56	54	58	56	45	47	36
12	57	55	52	e46	58	56	54	60	54	45	44	241
13	52	50	52	53	62	54	52	60	51	44	43	4,470
14	47	43	52	49	67	54	51	66	50	42	46	6,850
15	45	44	52	47	69	53	50	63	48	37	49	6,880
16	43	47	52	42	68	53	51	58	46	33	49	3,450
17	42	49	52	e40	65	54	50	57	46	33	48	1,900
18	42	56	52	e38	63	60	52	57	44	42	45	1,220
19	42	51	51	60	61	69	55	57	43	44	43	717
20	41	47	51	58	58	83	61	57	48	44	49	488
21	41	48	51	61	58	115	64	57	49	43	54	393
22	41	50	49	e58	57	93	60	55	48	39	54	319
23	46	50	50	54	57	76	59	57	56	35	59	263
24	52	50	48	e52	47	67	79	61	66	31	62	226
25	54	49	e44	e60	57	63	251	59	61	31	53	201
26	53	49	47	63	57	60	311	59	54	35	38	172
27	53	49	54	61	58	55	261	55	45	43	31	143
28	54	51	56	60	54	53	177	54	44	42	31	121
29	55	50	57	61	---	56	122	54	78	42	35	110
30	55	49	58	66	---	52	86	50	88	42	44	111
31	55	---	56	68	---	51	---	47	---	44	49	---
MEAN	66.5	49.4	51.2	54.3	61.1	61.1	83.9	57.8	79.3	48.4	45.9	959
MAX	267	56	58	68	70	115	311	67	251	140	62	6,880
MIN	38	43	44	38	47	47	50	47	43	31	31	31
AC-FT	4,090	2,940	3,150	3,340	3,400	3,760	4,990	3,550	4,720	2,980	2,820	57,060

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2003, BY WATER YEAR (WY)

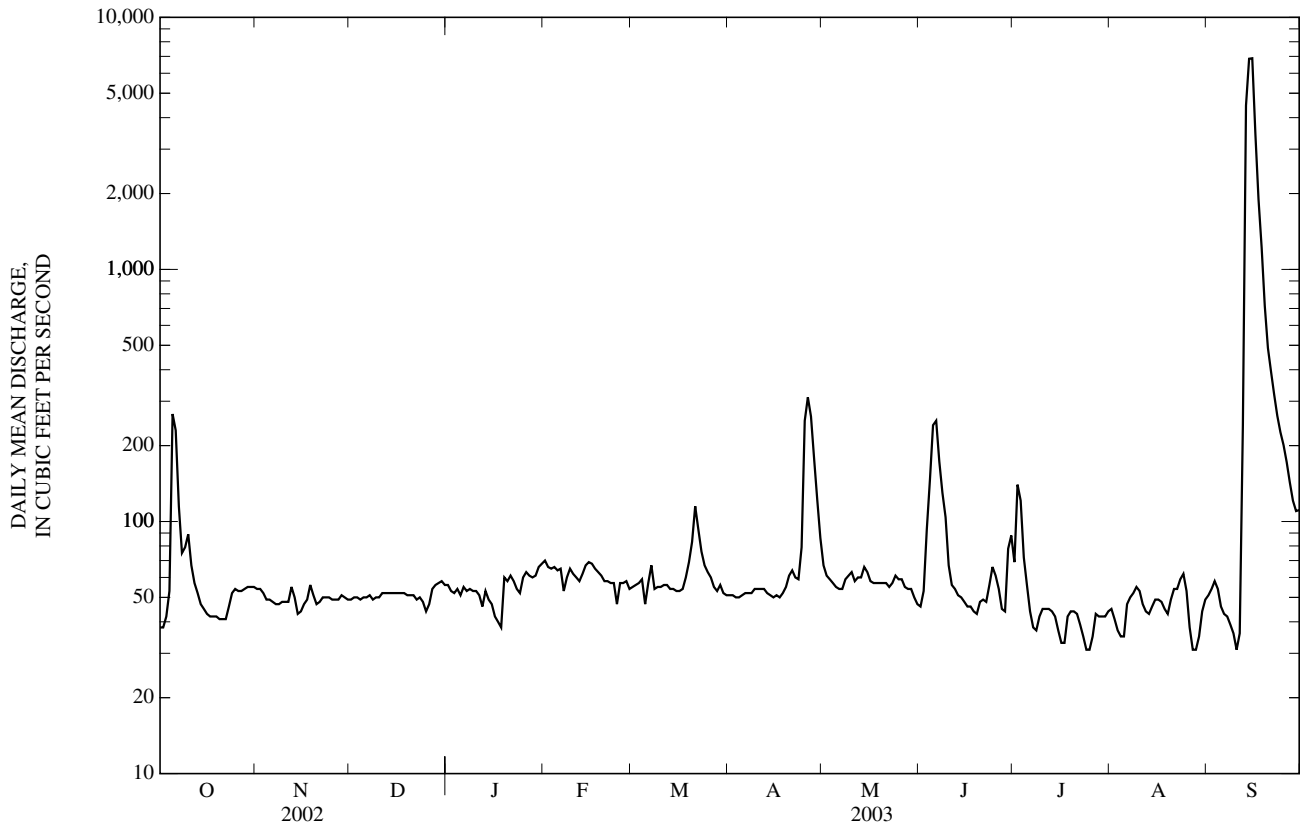
MEAN	394	260	211	201	292	417	525	817	1,328	1,104	603	640
MAX	6,545	3,336	2,844	2,595	2,129	2,693	3,393	5,549	12,150	23,080	4,699	5,066
(WY)	(1974)	(1994)	(1994)	(1994)	(1993)	(1993)	(1987)	(1903)	(1951)	(1951)	(1950)	(1946)
MIN	16.2	22.5	19.0	17.5	26.3	35.9	41.7	32.1	69.7	27.1	17.9	5.60
(WY)	(1923)	(1957)	(1957)	(1940)	(1957)	(1957)	(1940)	(1956)	(1933)	(1901)	(1901)	(1956)

KANSAS RIVER BASIN

06876900 SOLOMON RIVER AT NILES, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1898 - 2003	
ANNUAL MEAN	103		134		567	
HIGHEST ANNUAL MEAN					4,113	1951
LOWEST ANNUAL MEAN					92.3	1970
HIGHEST DAILY MEAN	771	May 31	6,880	Sep 15	157,000	Jul 14, 1951
LOWEST DAILY MEAN	38	Oct 1	31	Jul 24	1.0	Sep 4, 1926
ANNUAL SEVEN-DAY MINIMUM	39	Sep 26	37	Jul 22	4.2	Sep 22, 1956
MAXIMUM PEAK FLOW			7,430	Sep 15	178,000	Jul 14, 1951
MAXIMUM PEAK STAGE			26.46	Sep 15	31.76	Jul 14, 1951
INSTANTANEOUS LOW FLOW			29	Aug 28	1.0	Sep 4, 1926
ANNUAL RUNOFF (AC-FT)	74,930		96,780		410,500	
10 PERCENT EXCEEDS	227		97		1,210	
50 PERCENT EXCEEDS	72		53		158	
90 PERCENT EXCEEDS	46		42		50	

e Estimated



06876900 SOLOMON RIVER AT NILES, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to 1987, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instan- taneous dis- charge, cfs (00061)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment load, tons/d (80155)
SEP 16...	1445	2,870	1,670	12,900

## KANSAS RIVER BASIN

## 06877600 SMOKY HILL RIVER AT ENTERPRISE, KS

LOCATION.--Lat 38°54'24", long 97°07'12", in NW ¼ NW ¼ SE ¼ sec.20, T.13 S., R.3 E., Dickinson County, Hydrologic Unit 10260008, on right bank at downstream side of bridge on Kansas Highway 43 in Enterprise, 18.6 mi upstream from Chapman Creek, and at mile 43.3.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--19,260 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1390: 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 1,098.25 ft above NGVD of 1929. Nov. 1, 1934, to Jan. 28, 1935, nonrecording gage and Jan. 29, 1935, to May 3, 1959, water-stage recorder at site 0.2 mi downstream at datum 0.40 ft lower, May 4, 1959 to Sept. 30, 1991, datum of gage 5.00 ft higher at same site. July 16, 1998, moved gage to new State Highway 43 bridge about 0.1 mi downstream from previous site at previous datum.

REMARKS.--Records good. Natural flow affected by six lakes or reservoirs, and by numerous diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1903 reached stage of about 27 ft, present site and datum, from information by U.S. Army Corps of Engineers, discharge, 90,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

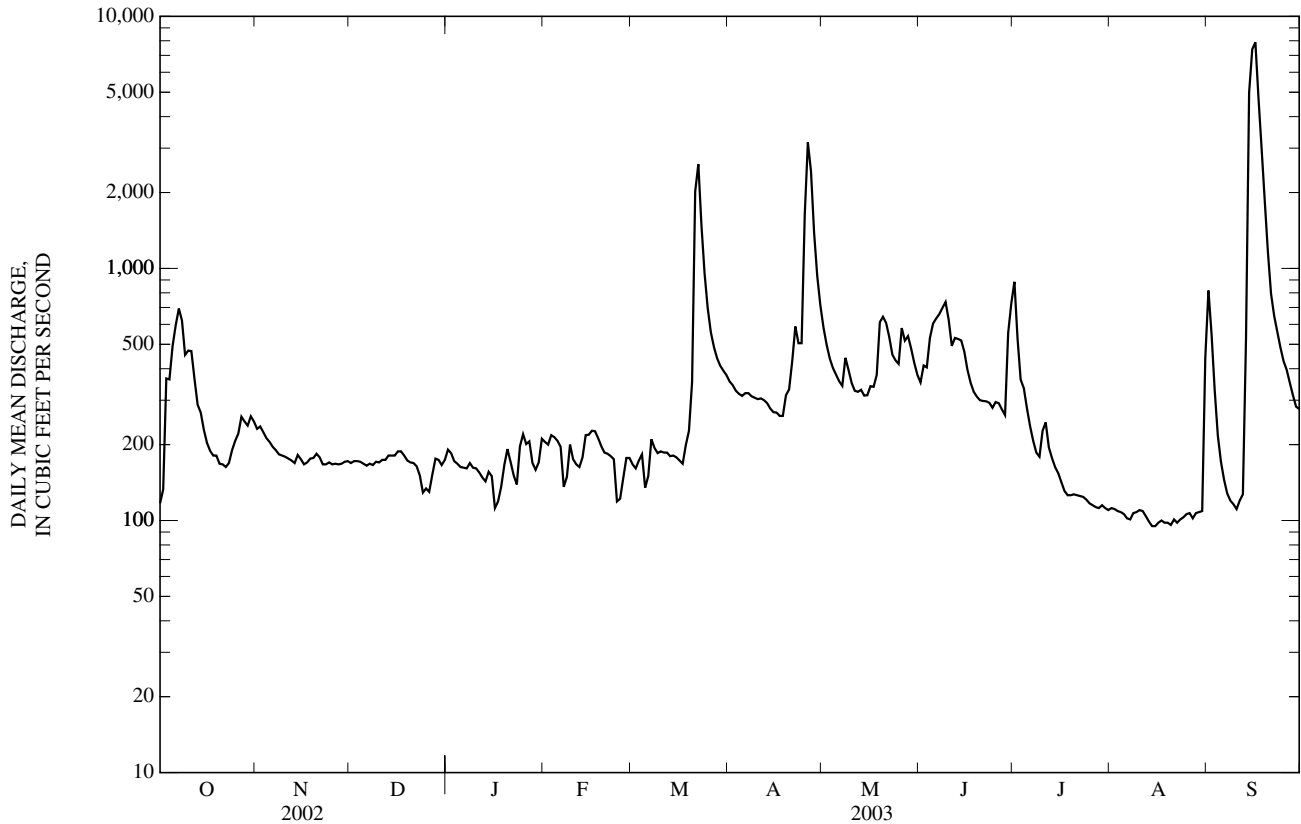
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	231	169	191	205	167	356	582	353	885	112	817
2	133	236	172	185	200	161	344	498	412	527	111	548
3	366	224	172	172	218	173	327	439	405	362	109	329
4	363	212	171	168	214	183	318	403	530	335	108	217
5	492	205	168	163	207	135	312	379	604	279	106	171
6	595	196	165	162	196	150	320	357	633	237	102	145
7	693	190	168	161	136	210	320	342	659	207	101	128
8	621	183	166	169	149	194	311	442	697	186	107	120
9	454	181	171	162	200	185	307	395	736	179	108	116
10	472	179	170	161	175	188	303	351	625	227	110	111
11	470	176	174	155	167	186	305	327	493	245	109	120
12	365	173	174	148	163	186	300	324	530	195	104	127
13	288	169	181	143	178	180	292	330	525	177	99	523
14	268	182	181	156	218	181	278	313	518	163	95	4,990
15	229	175	181	150	219	178	269	314	467	154	95	7,400
16	203	167	188	112	227	173	268	341	396	142	98	7,890
17	189	170	188	119	226	168	260	339	352	131	100	4,730
18	181	176	181	136	212	199	260	378	324	126	98	2,970
19	181	177	173	166	197	227	314	612	310	126	98	1,850
20	168	184	170	192	186	354	331	643	300	127	96	1,160
21	167	178	169	171	184	2,020	428	608	298	126	101	793
22	163	167	164	151	180	2,590	588	535	297	125	98	649
23	169	167	151	139	175	1,480	505	455	293	124	101	561
24	190	170	129	197	119	955	505	432	280	121	103	486
25	207	167	134	220	122	694	1,630	418	295	117	106	429
26	221	168	130	201	147	558	3,160	580	292	115	107	396
27	258	167	152	206	177	487	2,430	517	276	113	102	352
28	247	168	176	169	177	440	1,380	539	262	112	107	314
29	238	171	174	159	---	411	932	481	554	115	108	283
30	259	172	166	170	---	393	713	422	725	112	109	277
31	247	---	174	211	---	377	---	378	---	110	443	---
MEAN	297	183	168	167	185	458	612	435	448	203	115	1,300
MAX	693	236	188	220	227	2,590	3,160	643	736	885	443	7,890
MIN	117	167	129	112	119	135	260	313	262	110	95	111
AC-FT	18,280	10,870	10,320	10,240	10,260	28,130	36,430	26,730	26,660	12,500	7,040	77,360

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

MEAN	1,299	841	651	596	899	1,316	1,748	2,331	3,153	2,995	1,581	1,654
MAX	15,720	6,269	5,723	4,925	5,776	8,584	9,597	11,620	22,500	45,080	11,460	12,130
(WY)	(1974)	(1974)	(1974)	(1994)	(1949)	(1973)	(1973)	(1995)	(1951)	(1951)	(1993)	(1951)
MIN	65.9	96.6	74.2	55.0	89.0	98.1	96.0	102	310	141	115	58.6
(WY)	(1992)	(1940)	(1957)	(1940)	(1957)	(1935)	(1935)	(1956)	(1988)	(1991)	(2003)	(1956)

06877600 SMOKY HILL RIVER AT ENTERPRISE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1935 - 2003	
ANNUAL MEAN	336		380		1,591	
HIGHEST ANNUAL MEAN					8,855	1951
LOWEST ANNUAL MEAN					293	1956
HIGHEST DAILY MEAN	1,400	Apr 23	7,890	Sep 16	207,000	Jul 14, 1951
LOWEST DAILY MEAN	102	Aug 10	95	Aug 14	38	Sep 23, 1956
ANNUAL SEVEN-DAY MINIMUM	109	Sep 24	97	Aug 14	44	Sep 20, 1956
MAXIMUM PEAK FLOW			8,520	Sep 16	233,000	Jul 14, 1951
MAXIMUM PEAK STAGE			18.63	Sep 16	33.96	Jul 14, 1951
INSTANTANEOUS LOW FLOW			75	Jan 16	10	Apr 23, 1935
ANNUAL RUNOFF (AC-FT)	243,000		274,800		1,153,000	
10 PERCENT EXCEEDS	600		584		3,850	
50 PERCENT EXCEEDS	285		196		553	
90 PERCENT EXCEEDS	131		114		158	



## KANSAS RIVER BASIN

06877600 SMOKY HILL RIVER AT ENTERPRISE, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-95, 2000 to September 2003 (discontinued).

PERIOD OF DAILY RECORD.--October 1957 to September 1975.

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
MAR 21...	1410	2,500	745	9.0	3,440	23,200

06878000 CHAPMAN CREEK NEAR CHAPMAN, KS

LOCATION.--Lat 39°01'52", long 97°02'24", in SW 1/4 SE 1/4 SE 1/4 sec.1, T.12 S., R.3 E., Dickinson County, Hydrologic Unit 10260008, on right bank at downstream side of bridge on Kansas Highway 18, 5.0 mi northwest of Chapman, and at mile 10.0.

DRAINAGE AREA.--300 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,102.41 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 5, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1951 reached a stage of 25.5 ft, from floodmarks, discharge, 46,700 ft<sup>3</sup>/s, from rating curve extended above 12,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 25	1700	*954	*12.55	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	13	8.4	11	14	11	12	21	11	13	e1.7	15
2	8.3	13	8.4	11	14	12	12	19	69	11	e2.1	8.5
3	8.7	12	8.5	11	15	12	12	18	64	9.4	e2.6	7.8
4	10	12	8.5	9.3	15	12	12	18	44	7.7	e3.2	6.2
5	12	12	8.4	8.8	12	12	12	17	27	7.0	e4.1	4.5
6	19	12	8.3	10	e12	10	13	17	20	7.0	4.5	4.0
7	13	12	8.6	11	e11	11	14	17	47	6.5	3.2	3.6
8	9.0	11	8.3	9.8	e11	12	13	303	21	5.9	3.6	3.5
9	7.3	11	9.2	9.6	12	13	14	52	17	5.7	1.7	4.2
10	6.3	9.9	9.2	11	12	10	13	27	15	5.5	1.5	5.2
11	6.7	9.6	9.3	9.0	13	10	13	22	14	4.3	1.1	7.4
12	8.1	9.6	9.6	9.0	13	12	12	18	78	2.7	2.3	7.8
13	7.9	8.6	10	8.7	13	13	12	17	52	2.5	3.9	8.7
14	7.6	8.9	9.4	10	17	12	12	16	24	3.2	3.6	9.3
15	7.8	9.4	9.4	10	18	13	12	15	17	2.6	3.5	8.0
16	8.2	9.2	9.5	e9.6	17	12	12	15	15	2.7	3.5	5.7
17	8.5	9.2	9.5	e9.2	13	12	12	16	14	2.9	1.9	4.8
18	9.0	9.4	9.7	e9.0	14	15	12	15	12	2.2	1.6	5.0
19	9.7	9.0	9.6	10	14	19	15	17	14	1.0	1.9	14
20	10	9.6	9.4	11	15	34	19	18	16	0.71	2.4	5.9
21	9.3	9.1	10	e11	13	52	20	16	15	0.93	2.3	4.2
22	8.9	8.0	9.9	e10	12	42	18	16	12	1.7	2.0	5.6
23	11	8.8	10	e9.0	12	26	18	16	11	2.1	2.8	4.7
24	13	8.3	9.9	e8.4	11	21	102	18	9.5	1.8	2.4	3.9
25	14	7.7	9.9	9.1	10	18	724	22	8.9	3.4	e2.2	3.6
26	14	8.1	e9.4	9.1	9.4	16	296	34	8.6	1.2	e2.0	3.6
27	14	8.2	e9.6	9.6	10	15	66	24	8.3	e0.60	e1.7	3.5
28	14	8.3	10	10	11	14	39	17	7.9	e0.70	e1.7	3.2
29	12	8.3	11	11	---	13	29	14	231	e0.90	e3.1	3.3
30	13	8.8	11	12	---	13	24	13	28	e1.1	e4.6	4.4
31	14	---	12	13	---	13	---	12	---	e1.4	e14	---
MEAN	10.4	9.80	9.48	10.0	13.0	16.5	53.1	28.4	31.0	3.85	2.99	5.97
MAX	19	13	12	13	18	52	724	303	231	13	14	15
MIN	6.3	7.7	8.3	8.4	9.4	10	12	12	7.9	0.60	1.1	3.2
AC-FT	637	583	583	615	721	1,010	3,160	1,750	1,850	237	184	355

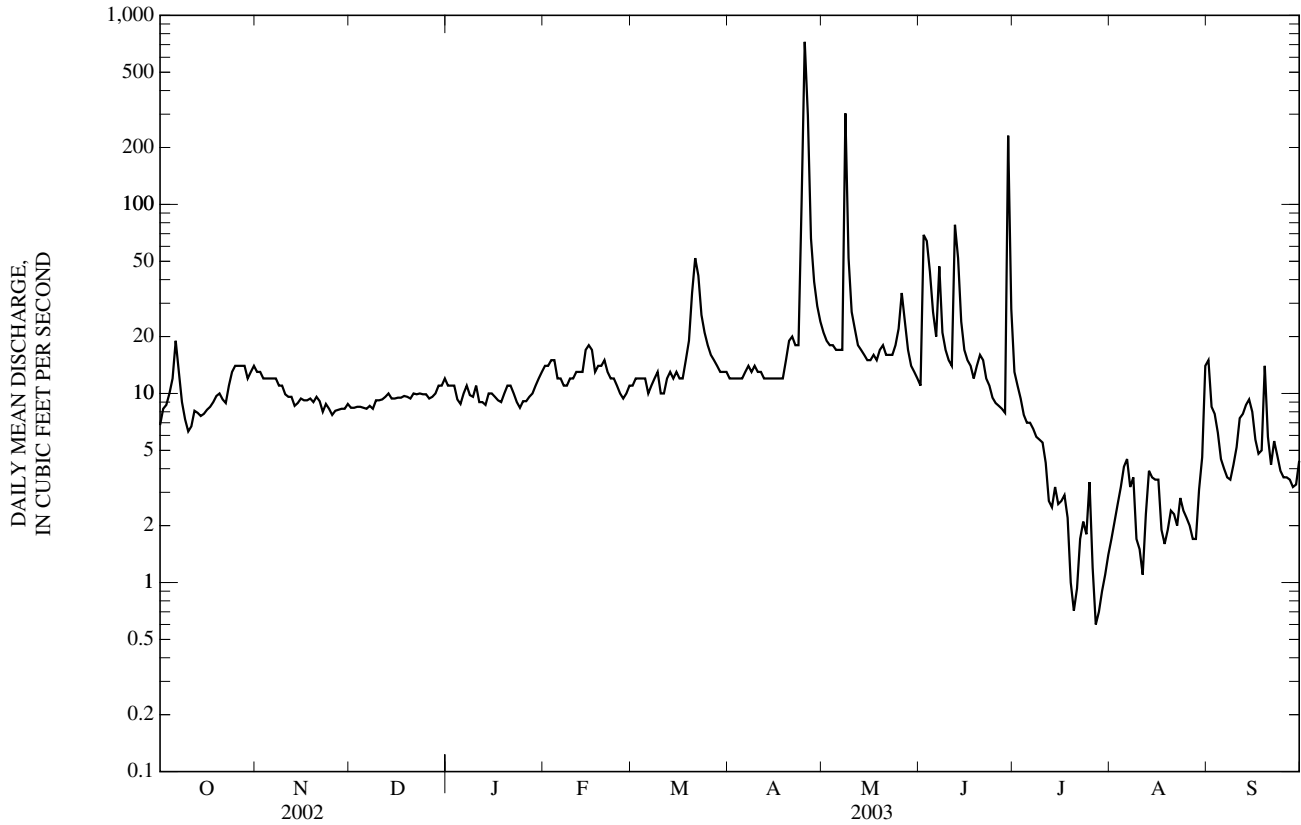
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)

MEAN	69.4	51.1	34.6	36.2	65.1	114	99.8	179	160	131	65.9	71.6
MAX	943	659	214	223	263	690	594	1,115	963	1,479	375	598
(WY)	(1974)	(1999)	(1974)	(1962)	(1969)	(1973)	(1999)	(1995)	(1977)	(1993)	(1977)	(1973)
MIN	2.64	1.69	3.23	3.60	5.30	4.53	5.60	4.14	7.11	3.61	0.86	3.77
(WY)	(1958)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1955)	(1955)	(1957)

06878000 CHAPMAN CREEK NEAR CHAPMAN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003	
ANNUAL MEAN	17.3		16.1		89.9	
HIGHEST ANNUAL MEAN					326	1993
LOWEST ANNUAL MEAN					11.4	1956
HIGHEST DAILY MEAN	196	May 13	724	Apr 25	12,600	Oct 12, 1973
LOWEST DAILY MEAN	2.7	Aug 9	0.60	Jul 27	0.20	Oct 10, 1956
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 4	1.1	Jul 26	0.41	Sep 20, 1956
MAXIMUM PEAK FLOW			954	Apr 25	15,800	Oct 12, 1973
MAXIMUM PEAK STAGE			12.55	Apr 25	24.08	Oct 12, 1973
INSTANTANEOUS LOW FLOW			0.50	Jul 27	0.10	Oct 10, 1956
ANNUAL RUNOFF (AC-FT)	12,490		11,680		65,160	
10 PERCENT EXCEEDS	27		19		120	
50 PERCENT EXCEEDS	12		10		23	
90 PERCENT EXCEEDS	5.5		2.9		7.6	

e Estimated





KANSAS RIVER BASIN

06879100 KANSAS RIVER AT FORT RILEY, KS

LOCATION.--Lat 39°03'09", long 96°46'33", in NE ¼ SW ¼ NW ¼ sec.33, T.11 S., R.6 E., Geary County, Hydrologic Unit 10270101, on right bank at downstream side of military highway bridge, 1.6 mi downstream from the confluence of the Republican and Smoky Hill Rivers, and at mile 168.9.

DRAINAGE AREA.--44,870 mi<sup>2</sup>, of which a large area is noncontributing.

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,034.69 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1951 reached a stage of 34.5 ft, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	425	397	292	266	319	287	467	969	518	799	e170	1,390
2	496	389	299	282	302	276	448	794	582	955	e160	1,350
3	431	387	298	283	292	264	432	705	589	712	e150	796
4	639	378	300	276	295	281	434	650	639	540	e145	570
5	577	364	297	266	298	271	424	613	659	488	143	440
6	576	347	296	266	300	e280	440	610	691	436	138	362
7	608	335	294	271	245	285	428	573	691	382	128	313
8	680	326	298	276	e180	305	428	566	738	370	124	273
9	656	321	293	282	274	294	414	812	752	323	121	247
10	567	316	284	271	287	289	406	701	762	301	136	212
11	531	304	333	265	271	281	400	589	706	317	163	250
12	556	301	321	265	252	289	396	558	630	351	158	241
13	490	301	316	263	250	290	387	547	656	314	151	278
14	427	309	287	253	314	284	373	539	669	281	140	448
15	402	310	277	256	333	279	366	524	626	264	132	4,470
16	375	312	271	e255	324	279	369	526	589	242	118	6,930
17	350	304	273	e250	324	280	365	531	538	224	114	6,290
18	336	304	280	e260	322	306	375	530	500	214	121	3,910
19	336	302	271	e270	311	350	406	584	465	207	121	2,680
20	319	302	257	283	292	426	436	717	497	202	120	1,840
21	312	307	258	280	281	734	435	804	454	204	264	1,280
22	311	306	252	e280	277	1,980	508	732	446	211	312	1,260
23	338	299	243	e275	270	2,500	636	668	455	213	321	1,100
24	350	299	204	e270	e270	1,590	655	634	433	262	325	1,370
25	354	295	185	e270	e275	1,050	1,070	595	437	192	329	1,310
26	354	297	171	e275	e275	767	2,840	600	436	174	333	1,240
27	400	295	230	e275	280	647	3,410	665	436	170	344	1,190
28	409	294	251	e280	293	589	2,600	645	431	173	359	1,150
29	405	294	277	e285	---	546	1,710	623	527	167	380	1,100
30	420	293	270	e290	---	514	1,230	597	784	168	422	1,100
31	403	---	262	296	---	487	---	552	---	170	508	---
MEAN	446	320	272	272	286	558	776	637	578	323	215	1,513
MAX	680	397	333	296	333	2,500	3,410	969	784	955	508	6,930
MIN	311	293	171	250	180	264	365	524	431	167	114	212
AC-FT	27,440	19,020	16,740	16,730	15,880	34,310	46,190	39,180	34,390	19,890	13,190	90,030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

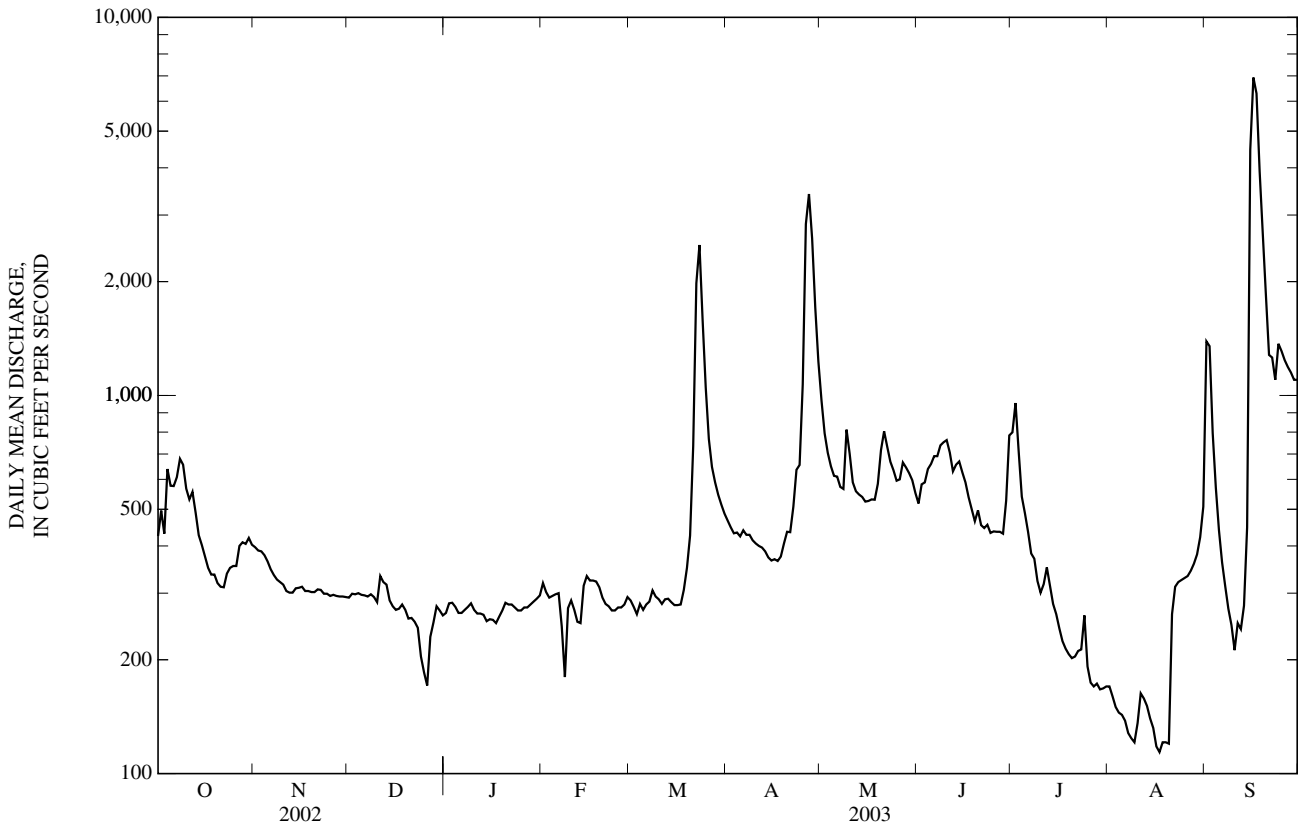
MEAN	2,384	2,037	1,817	1,240	1,887	2,927	3,314	4,113	4,237	4,325	2,872	2,264
MAX	26,340	16,650	10,070	7,041	8,689	13,800	16,580	16,640	18,730	40,990	24,050	16,210
(WY)	(1974)	(1974)	(1974)	(1974)	(1993)	(1973)	(1987)	(1993)	(1995)	(1993)	(1993)	(1993)
MIN	335	226	204	207	182	204	210	191	408	240	215	336
(WY)	(1981)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1988)	(1991)	(2003)	(2002)

KANSAS RIVER BASIN

06879100 KANSAS RIVER AT FORT RILEY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL MEAN	679		515		2,790	
HIGHEST ANNUAL MEAN					12,500	
LOWEST ANNUAL MEAN					515	
HIGHEST DAILY MEAN	2,540	Jan 18	6,930	Sep 16	83,700	Jul 25, 1993
LOWEST DAILY MEAN	150	Sep 9	114	Aug 17	114	Aug 17, 2003
ANNUAL SEVEN-DAY MINIMUM	165	Sep 4	124	Aug 14	124	Aug 14, 2003
MAXIMUM PEAK FLOW			7,430	Sep 16	87,600	Jul 26, 1993
MAXIMUM PEAK STAGE			9.22	Sep 16	27.93	Jul 26, 1993
INSTANTANEOUS LOW FLOW			e100	Feb 8	100	Dec 24, 1966
ANNUAL RUNOFF (AC-FT)	491,800		373,000		2,021,000	
10 PERCENT EXCEEDS	1,130		774		6,860	
50 PERCENT EXCEEDS	580		324		1,230	
90 PERCENT EXCEEDS	294		213		389	

e Estimated



06879650 KINGS CREEK NEAR MANHATTAN, KS

LOCATION.--Lat 39°06'07", long 96°35'42", in NW ¼ NW ¼ NW ¼ sec.18, T.11 S., R.8 E., Riley County, Hydrologic Unit 10270101, on left bank, 6.0 mi south of Manhattan, and at mile 2.9.

DRAINAGE AREA.--4.09 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,094.65 ft above NGVD of 1929.

REMARKS.--Records fair. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 2	0745	93	4.50	Jun 29	0400	*379	*5.72

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.9	2.1	3.1	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	15	2.7	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.7	3.7	2.3	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.9	3.3	2.0	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5	2.9	1.8	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	2.8	1.7	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.4	2.6	1.5	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.9	2.4	1.4	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.3	2.2	1.2	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.2	2.0	1.1	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.8	1.9	0.91	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.7	2.1	0.79	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.8	1.8	0.72	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	1.5	0.65	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.5	1.3	0.51	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6	1.2	0.45	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	1.1	0.38	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	0.96	0.30	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.5	0.94	0.27	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.2	0.86	0.24	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.6	0.83	0.24	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.1	0.93	0.23	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.19	3.8	1.1	0.17	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	8.5	4.2	0.78	0.13	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	5.6	3.5	2.4	0.09	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	4.2	3.2	1.2	0.04	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	3.9	2.9	0.94	0.01	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	3.5	2.7	0.81	0.01	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	3.4	2.6	43	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	3.2	2.4	4.0	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	2.1	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	1.08	2.87	3.62	0.80	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	8.5	7.5	43	3.1	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	0.78	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	64	177	216	49	0.00	0.00

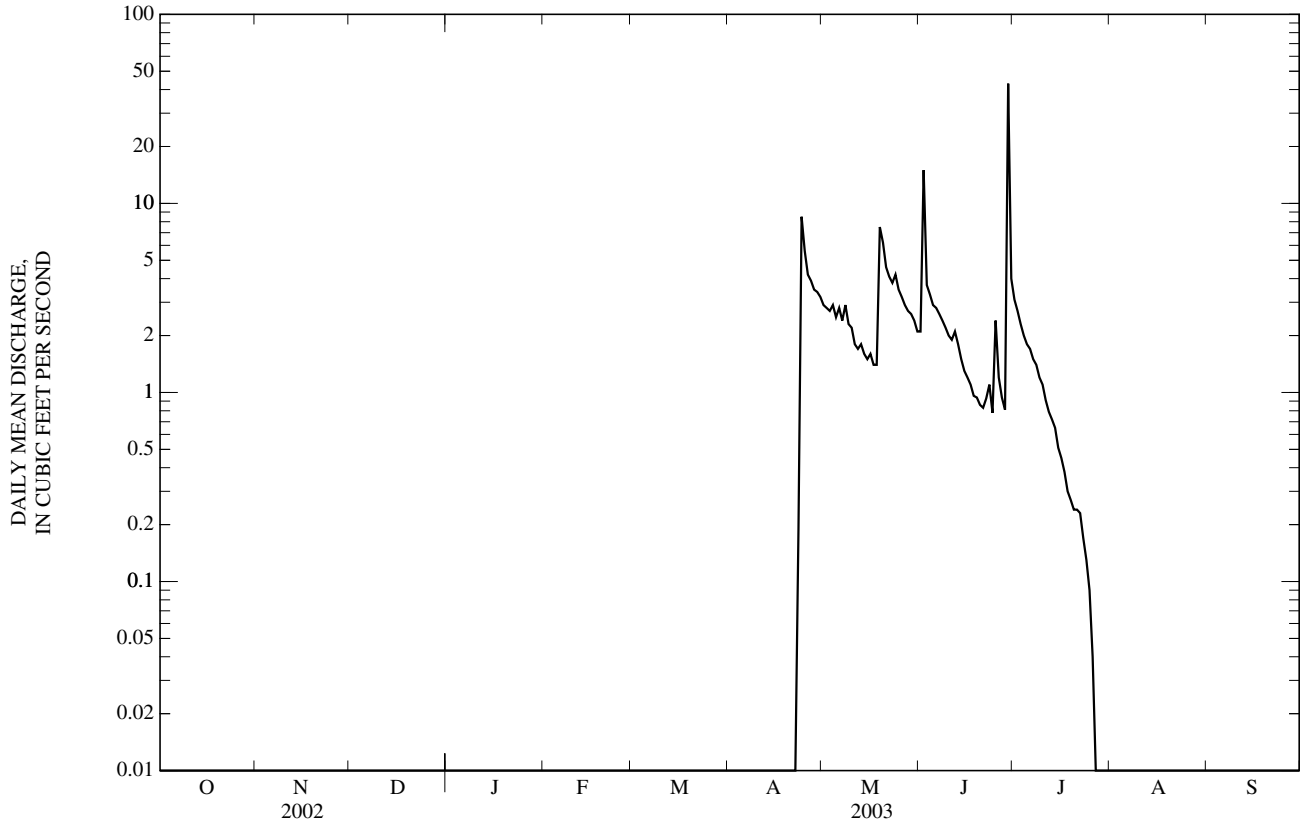
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

MEAN	1.34	1.61	0.82	0.47	1.10	2.88	5.34	6.61	3.07	3.87	0.53	0.23
MAX	10.9	24.7	8.09	2.32	4.51	12.5	21.9	43.7	10.2	43.5	4.11	2.46
(WY)	(1999)	(1999)	(1993)	(1999)	(1993)	(1984)	(1999)	(1995)	(1982)	(1993)	(1998)	(1989)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1980)	(1980)	(1980)	(1980)	(1980)	(1981)	(1981)	(1989)	(1989)	(1988)	(1980)	(1980)

KANSAS RIVER BASIN

06879650 KINGS CREEK NEAR MANHATTAN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL MEAN	0.23		0.70		2.33	
HIGHEST ANNUAL MEAN					9.47 1993	
LOWEST ANNUAL MEAN					0.20 1989	
HIGHEST DAILY MEAN	10	May 5	43	Jun 29	464	May 13, 1995
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1979
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1979
MAXIMUM PEAK FLOW			379	Jun 29	10,200	May 13, 1995
MAXIMUM PEAK STAGE			5.72	Jun 29	13.98	May 13, 1995
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	166		506		1,690	
10 PERCENT EXCEEDS	0.58		2.4		5.1	
50 PERCENT EXCEEDS	0.00		0.00		0.10	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



06882510 BIG BLUE RIVER AT MARYSVILLE, KS

LOCATION.--Lat 39°50'31", long 96°39'39", in NE ¼ NW ¼ NE ¼ sec.32, T.2 S., R.7 E., Marshall County, Hydrologic Unit 10270205, on right bank at downstream side of bridge on U.S. Highway 36, 0.3 mi west of Marysville, and at mile 84.6.

DRAINAGE AREA.--4,777 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,110.31 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Power plant located 0.8 mi upstream. Some pump diversions for irrigation upstream from station. Natural flow affected by ground-water withdrawals for irrigation and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1903 reached a stage of 43.79 ft, from floodmarks. Flood of June 9, 1941, reached a stage of 45.39 ft, from floodmarks; no discharge determined. Flood of June 15, 1951, reached a stage of 40.22 ft, from U.S. Weather Bureau wire-weight gage reading; discharge 55,600 ft<sup>3</sup>/s, by contracted-opening measurement of peak flow. Flood of Oct. 13, 1973, reached a stage of 43.86 ft, from wire-weight gage readings.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 13	0200	*12,200	*23.99	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	625	181	203	232	263	228	295	275	652	126	115
2	167	506	185	214	242	271	226	444	310	589	108	115
3	178	369	185	205	235	270	225	346	317	471	109	110
4	517	288	183	206	207	261	227	306	298	365	119	110
5	1,800	245	189	202	182	e254	217	296	283	e318	123	110
6	3,200	223	173	200	e255	e250	222	278	295	e259	122	107
7	1,880	217	177	200	e243	246	251	501	306	e236	107	103
8	988	211	188	201	234	e239	267	682	286	e212	93	97
9	611	200	174	200	247	232	269	3,960	285	184	87	108
10	420	194	188	196	273	268	265	3,410	333	157	81	223
11	328	185	201	143	292	257	258	1,660	504	148	75	229
12	270	178	192	140	251	253	253	1,080	3,470	140	78	812
13	233	175	204	e137	265	267	246	770	9,140	125	76	3,430
14	216	186	205	e140	e230	255	239	594	4,720	108	69	3,950
15	205	193	197	e140	e240	254	237	485	3,040	99	82	3,640
16	201	186	195	e140	253	262	238	423	1,990	88	95	2,860
17	195	186	200	e140	256	307	234	394	1,420	72	90	1,460
18	192	184	202	e140	266	614	232	367	1,000	66	80	1,040
19	186	180	203	183	284	511	243	346	768	68	91	874
20	181	178	196	216	267	463	238	1,120	615	74	291	652
21	179	176	192	207	256	752	227	1,870	882	72	418	519
22	180	174	183	206	e246	527	221	1,670	863	77	305	424
23	191	173	147	e199	e220	414	231	1,270	2,150	90	244	355
24	208	172	134	e201	e209	361	260	990	2,670	98	194	307
25	220	166	130	206	204	317	271	702	1,430	105	176	262
26	214	168	135	221	205	288	258	542	911	105	150	233
27	209	179	167	237	227	268	250	476	639	119	124	213
28	220	181	170	216	243	257	249	408	497	111	116	194
29	216	183	212	216	---	241	242	370	600	115	116	178
30	247	182	222	218	---	232	258	325	655	112	124	178
31	375	---	211	225	---	229	---	292	---	129	124	---
MEAN	470	222	185	190	242	319	243	860	1,365	179	135	767
MAX	3,200	625	222	237	292	752	271	3,960	9,140	652	418	3,950
MIN	136	166	130	137	182	229	217	278	275	66	69	97
AC-FT	28,890	13,220	11,350	11,700	13,420	19,600	14,440	52,900	81,230	11,040	8,320	45,640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

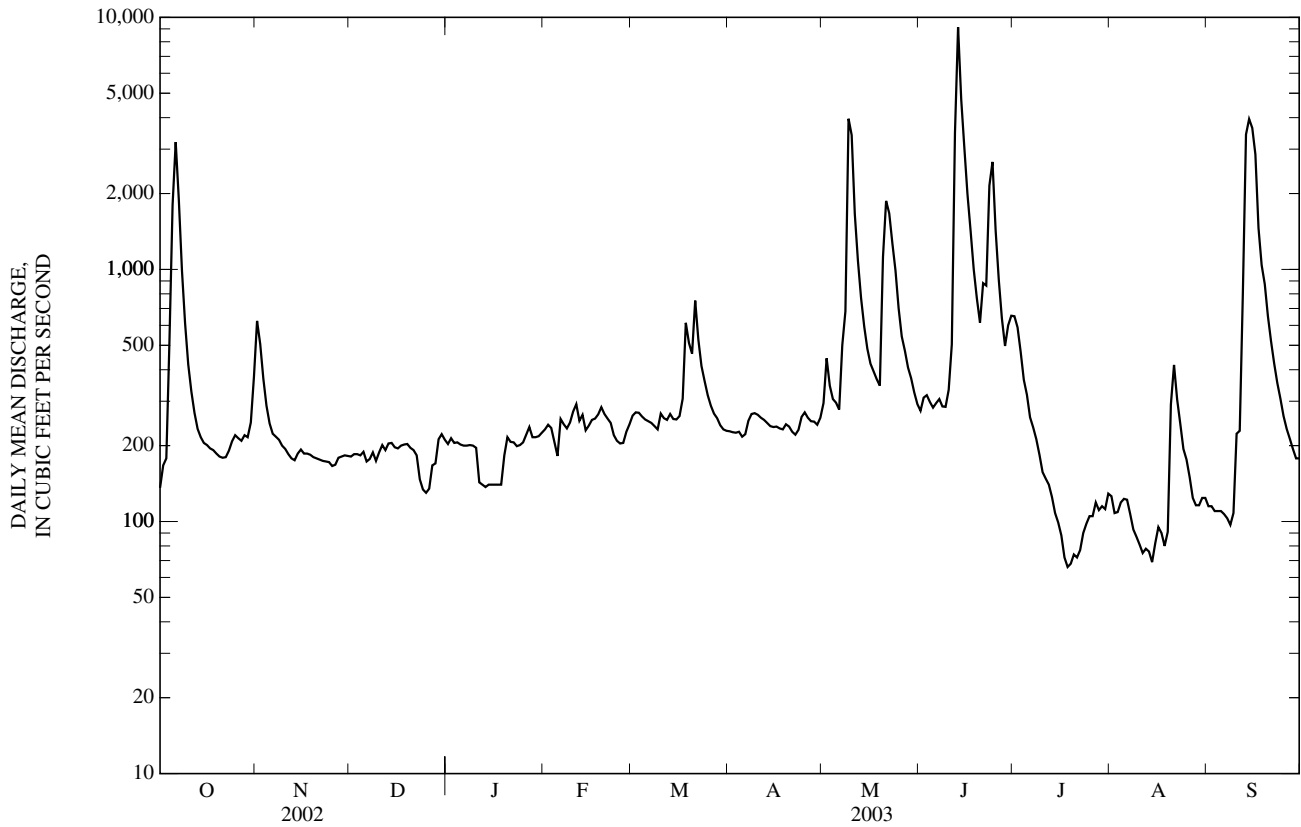
MEAN	709	563	436	364	640	1,448	1,041	1,800	2,016	2,439	999	1,015
MAX	5,114	2,172	1,016	644	2,157	7,346	4,912	5,946	4,229	15,000	2,751	3,957
(WY)	(1987)	(1999)	(1998)	(1987)	(1993)	(1987)	(1987)	(1995)	(2001)	(1993)	(1993)	(1989)
MIN	87.5	146	179	182	208	243	211	187	294	112	135	109
(WY)	(1992)	(1992)	(1991)	(1991)	(1990)	(1991)	(1989)	(1989)	(1988)	(2002)	(2003)	(1991)

KANSAS RIVER BASIN

06882510 BIG BLUE RIVER AT MARYSVILLE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL MEAN	466		431		1,126	
HIGHEST ANNUAL MEAN					3,318	
LOWEST ANNUAL MEAN					413	
HIGHEST DAILY MEAN	9,090	May 29	9,140	Jun 13	34,400	Jul 7, 1986
LOWEST DAILY MEAN	37	Aug 6	66	Jul 18	23	Mar 25, 1991
ANNUAL SEVEN-DAY MINIMUM	49	Aug 4	74	Jul 16	49	Aug 4, 2002
MAXIMUM PEAK FLOW			12,200	Jun 13	39,700	Jul 6, 1986
MAXIMUM PEAK STAGE			23.99	Jun 13	38.90	Jul 6, 1986
INSTANTANEOUS LOW FLOW			65	Jul 18	17	Dec 4, 1991
ANNUAL RUNOFF (AC-FT)	337,500		311,700		815,600	
10 PERCENT EXCEEDS	766		758		2,430	
50 PERCENT EXCEEDS	296		227		433	
90 PERCENT EXCEEDS	131		112		190	

e Estimated



06884200 MILL CREEK AT WASHINGTON, KS

LOCATION.--Lat 39°48'50", long 97°02'20", in SW 1/4 SW 1/4 SE 1/4 sec.1, T.3 S., R.3 E., Washington County, Hydrologic Unit 10270207, on right bank at downstream side of bridge in roadside park on U.S. Highway 36, 0.5 mi east of Washington, and at mile 26, approximately.

DRAINAGE AREA.--344 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,261.56 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Low flow partially regulated at times by irrigation. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum known stages since at least 1903, about 36 ft, June 8, 1941, about 34 ft in 1903 and 1908, from information by local residents and newspaper files.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 24	2315	*3,480	*16.68	Sep 13	0400	1,740	11.38
Jun 30	0600	1,370	10.09				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	6.2	4.8	6.9	10	7.5	5.8	8.3	5.7	199	3.7	3.9
2	4.5	5.4	5.4	6.9	11	e7.5	6.1	7.6	11	84	3.5	3.0
3	4.6	5.0	5.0	6.7	12	e8.0	5.9	7.2	8.1	55	4.0	2.5
4	6.0	4.9	4.9	7.0	e10	e8.5	6.9	7.2	8.1	38	2.8	2.1
5	3.9	5.4	4.8	6.7	e10	e9.0	6.7	6.6	9.8	28	3.3	1.8
6	3.1	4.8	5.3	6.6	e10	e9.0	8.6	7.2	9.7	22	1.9	1.6
7	2.5	4.4	5.4	6.5	e10	9.6	11	7.5	8.6	18	2.8	1.6
8	2.8	4.8	5.6	6.9	e8.0	9.5	11	18	7.4	15	3.0	1.5
9	2.9	5.1	5.1	6.8	7.4	e9.5	11	484	5.8	14	2.8	6.1
10	2.7	5.0	5.9	e6.5	e7.0	e9.5	11	507	8.1	12	2.6	5.0
11	2.6	4.5	6.2	e6.0	e7.5	9.1	10	93	19	11	2.4	15
12	2.4	4.7	6.3	5.8	e8.0	9.2	9.7	47	29	11	2.2	1,020
13	2.5	5.2	6.6	5.9	8.5	9.4	9.1	30	17	9.7	2.2	944
14	2.5	5.8	6.6	e5.9	12	9.8	8.7	22	11	9.3	2.2	109
15	2.7	5.7	6.6	5.8	e12	9.9	8.7	17	8.6	8.4	1.2	52
16	3.5	5.9	6.9	e6.0	e11	10	9.3	16	7.0	7.5	2.1	32
17	3.7	5.9	6.8	e7.0	e11	9.8	8.5	13	6.0	7.0	2.0	25
18	3.3	5.7	7.1	7.9	11	10	9.7	11	5.3	6.5	2.0	22
19	3.0	5.4	6.9	e7.8	10	12	10	11	4.6	6.6	6.3	18
20	3.1	5.5	6.3	7.6	9.8	16	9.9	16	3.9	6.6	45	13
21	3.4	5.3	5.7	e8.0	9.6	16	9.4	28	3.7	6.1	110	13
22	3.3	5.0	5.7	e9.0	9.2	14	9.2	20	3.6	5.7	49	11
23	5.0	5.5	5.6	e10	8.3	11	11	13	514	5.3	19	11
24	5.7	5.5	5.7	11	e8.2	9.8	20	12	2,430	5.2	9.6	10
25	6.3	5.0	e5.7	e10	e8.5	8.7	36	10	1,410	3.4	7.0	9.4
26	4.9	5.0	e5.8	e10	8.6	7.6	28	12	136	3.1	4.1	8.8
27	5.5	5.0	5.9	e9.5	6.8	7.1	19	18	81	3.8	3.6	8.2
28	5.7	5.5	6.4	e9.0	6.9	6.8	13	11	56	4.0	3.3	6.5
29	5.3	5.7	6.9	e9.5	---	6.5	11	8.7	415	3.6	3.4	6.6
30	10	5.3	7.3	e9.5	---	6.5	9.5	7.1	1,050	2.7	3.5	11
31	7.1	---	6.6	10	---	6.4	---	5.7	---	1.9	6.4	---
MEAN	4.07	5.27	5.99	7.70	9.37	9.46	11.5	47.8	210	19.8	10.2	79.2
MAX	10	6.2	7.3	11	12	16	36	507	2,430	199	110	1,020
MIN	1.7	4.4	4.8	5.8	6.8	6.4	5.8	5.7	3.6	1.9	1.2	1.5
AC-FT	250	314	369	473	520	582	682	2,940	12,480	1,220	629	4,710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

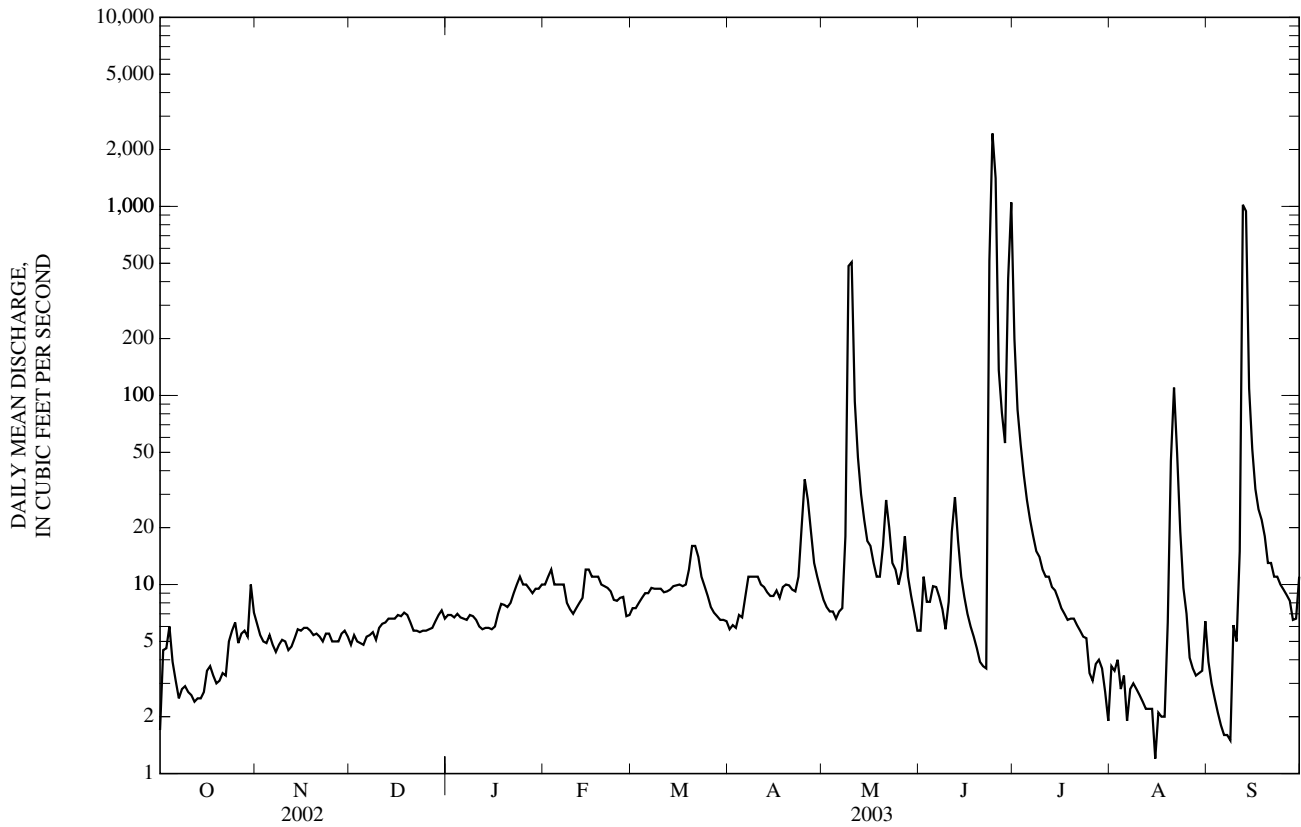
MEAN	69.1	49.3	31.1	44.9	82.6	176	122	197	201	130	58.6	95.3
MAX	839	359	176	367	505	1,264	725	1,161	804	2,151	344	864
(WY)	(1974)	(1973)	(1993)	(1962)	(1969)	(1979)	(1987)	(1995)	(1967)	(1993)	(1968)	(1973)
MIN	1.11	1.50	1.39	1.06	2.23	5.81	6.23	3.54	6.38	0.33	1.15	2.08
(WY)	(1967)	(1967)	(1967)	(1967)	(1967)	(1967)	(1966)	(1966)	(2000)	(1964)	(1991)	(2000)

KANSAS RIVER BASIN

06884200 MILL CREEK AT WASHINGTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL MEAN	28.3		34.8		105	
HIGHEST ANNUAL MEAN					468	1993
LOWEST ANNUAL MEAN					12.7	1964
HIGHEST DAILY MEAN	1,850	May 28	2,430	Jun 24	10,000	Jul 7, 1993
LOWEST DAILY MEAN	0.00	Jul 27	1.2	Aug 15	0.00	Jun 29, 1963
ANNUAL SEVEN-DAY MINIMUM	0.32	Jul 31	2.0	Aug 12	0.00	Jun 29, 1963
MAXIMUM PEAK FLOW			3,480	Jun 24	14,600	Jul 7, 1993
MAXIMUM PEAK STAGE			16.68	Jun 24	29.35	Jul 7, 1993
INSTANTANEOUS LOW FLOW			0.86	Aug 15	0.00	many years
ANNUAL RUNOFF (AC-FT)	20,490		25,170		75,890	
10 PERCENT EXCEEDS	32		19		172	
50 PERCENT EXCEEDS	10		7.1		19	
90 PERCENT EXCEEDS	1.9		3.1		3.2	

e Estimated





06884400 LITTLE BLUE RIVER NEAR BARNES, KS

LOCATION.--Lat 39°46'33", long 96°51'29", in NW ¼ NW ¼ SW ¼ sec.22, T.3 S., R.5 E., Washington County, Hydrologic Unit 10270207, on left bank at upstream side of bridge on Kansas Highway 15E., 0.4 mi downstream from Malone Creek, 4.5 mi north of Barnes, and at mile 19.2.

DRAINAGE AREA.--3,324 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1958 to current year. Published as "at Waterville" April 1958 to September 1960; those prior to April 1958 collected at site 11.5 mi downstream and are considered not equivalent.

GAGE.--Water-stage recorders. Datum of gage is 1,140.06 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0500	5,530	9.63	Jun 25	0800	*33,500	*20.99
May 9	1800	7,990	11.26	Sep 12	1700	12,200	13.58

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	381	147	170	246	e180	152	197	339	2,820	134	102
2	62	393	146	162	227	e185	149	275	324	1,390	146	92
3	87	302	144	155	197	e182	149	259	313	897	156	86
4	707	248	143	150	195	e180	153	233	294	707	157	82
5	4,370	211	145	147	183	173	151	204	278	594	150	76
6	1,730	188	142	145	e160	e175	162	191	294	511	145	71
7	915	175	e133	145	e160	e177	181	204	430	451	135	67
8	563	166	e129	146	e200	e176	195	237	353	413	132	64
9	361	161	e136	146	189	e182	187	5,380	323	383	133	82
10	267	159	145	142	175	e185	176	4,790	302	338	133	108
11	218	151	146	e107	177	182	172	1,940	899	317	143	315
12	188	148	144	112	184	178	169	1,040	1,510	289	137	10,200
13	166	147	147	e110	200	174	166	668	702	273	116	9,090
14	152	149	145	e110	225	170	162	487	436	256	107	3,750
15	145	152	143	e100	224	168	159	452	311	234	113	1,820
16	144	151	143	e135	e192	168	158	438	262	218	120	1,150
17	143	149	143	e150	e187	175	156	354	236	202	127	811
18	139	148	146	e150	211	189	160	317	232	198	127	604
19	133	147	143	194	212	186	166	297	195	189	139	477
20	130	147	142	215	202	208	166	755	161	180	233	367
21	128	147	140	207	193	220	161	1,650	136	179	627	320
22	128	145	121	203	189	204	157	1,070	126	177	745	263
23	139	147	e94.0	196	183	190	160	738	1,860	174	408	236
24	158	146	104	185	173	181	183	512	17,100	162	267	227
25	169	145	190	197	e200	172	211	437	26,400	162	191	200
26	162	144	176	201	e172	168	211	521	5,560	170	150	180
27	162	144	166	201	e176	165	204	1,150	2,230	161	138	166
28	164	144	166	202	e180	165	192	975	1,550	152	118	154
29	165	147	166	212	---	160	182	711	1,760	146	104	146
30	181	146	174	216	---	155	185	536	2,780	143	92	147
31	216	---	171	232	---	148	---	411	---	133	104	---
MEAN	401	178	146	166	193	178	171	885	2,257	407	185	1,048
MAX	4,370	393	190	232	246	220	211	5,380	26,400	2,820	745	10,200
MIN	54	144	94	100	160	148	149	191	126	133	92	64
AC-FT	24,690	10,570	8,970	10,200	10,730	10,950	10,190	54,410	134,300	25,030	11,360	62,390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

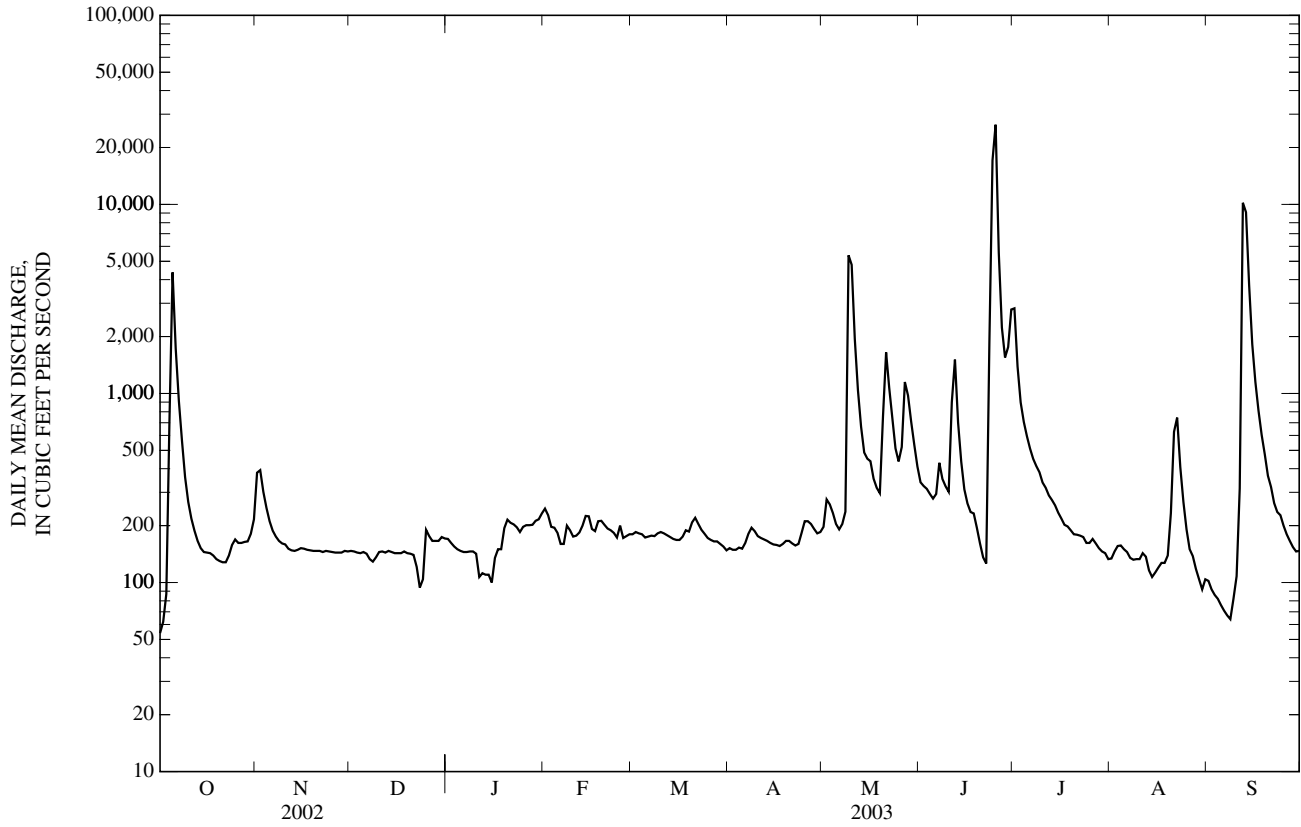
MEAN	571	338	247	294	488	1,008	701	1,139	1,282	1,059	591	598
MAX	6,989	1,526	676	1,097	1,576	5,436	3,696	3,985	5,343	11,420	3,487	3,804
(WY)	(1974)	(1997)	(1974)	(1974)	(1993)	(1979)	(1987)	(1995)	(1984)	(1993)	(1985)	(1973)
MIN	52.9	102	114	90.2	129	146	150	128	208	69.8	63.4	51.5
(WY)	(1992)	(1992)	(1967)	(1967)	(1992)	(1992)	(1981)	(1992)	(1988)	(2002)	(1991)	(1991)

KANSAS RIVER BASIN

06884400 LITTLE BLUE RIVER NEAR BARNES, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL MEAN	298		516		694	
HIGHEST ANNUAL MEAN					2,413	1993
LOWEST ANNUAL MEAN					234	1991
HIGHEST DAILY MEAN	6,900	May 29	26,400	Jun 25	46,100	Oct 13, 1973
LOWEST DAILY MEAN	40	Sep 12	54	Oct 1	24	Aug 4, 1964
ANNUAL SEVEN-DAY MINIMUM	44	Sep 7	75	Sep 3	28	Aug 1, 1964
MAXIMUM PEAK FLOW			33,500	Jun 25	53,700	Oct 12, 1973
MAXIMUM PEAK STAGE			20.99	Jun 25	27.70	Oct 12, 1973
INSTANTANEOUS LOW FLOW			53	Oct 2	22	Aug 6, 1964
ANNUAL RUNOFF (AC-FT)	215,800		373,700		502,900	
10 PERCENT EXCEEDS	408		704		1,320	
50 PERCENT EXCEEDS	188		176		260	
90 PERCENT EXCEEDS	57		131		126	

e Estimated



06885500 BLACK VERMILLION RIVER NEAR FRANKFORT, KS

LOCATION.--Lat 39°41'03", long 96°26'15", in NE 1/4 NW 1/4 NW 1/4 sec.29, T.4 S., R.9 E., Marshall County, Hydrologic Unit 10270205, on right bank at downstream side of county highway bridge, 0.2 mi downstream from Robidoux Creek, 2.2 mi southwest of Frankfort, and at mile 19.9.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--410 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1953 to current year. Monthly discharge only for October to December 1953, published in WSP 1730.

GAGE.--Water-stage recorder. Datum of gage is 1,106.91 ft above NGVD of 1929. Prior to May 13, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 3, 1948, reached a stage of 30.2 ft, present site and datum, from floodmarks. Flood in June 1951 reached a stage of 28.6 ft, present site and datum, from floodmarks, discharge, 30,400 ft<sup>3</sup>/s, based on contracted-opening measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 23	1800	*1,160	*11.58	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	16	9.0	e11	19	8.5	10	47	9.2	5.1	1.3	4.4
2	4.0	e11	9.5	e9.9	21	8.9	11	40	11	4.7	1.3	2.7
3	6.9	e8.4	9.2	9.1	22	9.9	10	36	14	4.4	1.3	1.8
4	37	6.4	8.6	e9.7	18	10	e11	33	14	4.1	1.3	1.3
5	47	e6.8	8.6	9.9	16	9.9	e39	29	14	3.7	1.3	1.1
6	10	e7.4	8.0	10	14	10	e31	28	47	3.4	1.2	1.0
7	4.5	7.9	9.4	10	10	10	e44	31	24	3.1	1.2	0.97
8	3.2	7.8	9.4	11	11	10	e28	315	15	2.9	1.2	1.1
9	3.0	8.2	9.1	10	11	10	18	489	13	2.6	1.1	1.6
10	3.0	8.8	10	9.4	11	9.6	13	129	11	2.4	1.1	2.0
11	2.9	8.4	11	7.8	11	9.3	12	99	10	5.8	1.0	2.7
12	2.9	8.6	12	7.7	12	9.7	12	51	9.9	3.5	0.91	2.8
13	3.1	10	12	8.0	14	11	11	40	9.8	2.4	1.0	3.1
14	3.2	11	11	e8.2	e17	11	11	33	9.8	2.8	1.0	3.3
15	3.3	12	11	8.1	e14	10	10	27	8.0	2.3	1.0	3.4
16	3.9	12	10	e7.3	e12	10	11	23	7.3	1.9	1.1	3.8
17	4.7	13	10	e6.7	e13	13	12	22	7.4	1.8	0.99	3.9
18	4.9	13	9.7	e6.9	e13	30	12	19	7.4	2.5	0.88	4.8
19	4.2	15	9.9	e7.4	14	25	16	17	29	2.4	0.56	5.3
20	3.9	15	8.9	e9.5	14	45	101	35	10	2.1	0.57	6.3
21	4.0	14	8.3	e10	13	42	61	29	8.0	2.1	0.69	5.4
22	4.0	13	7.8	e9.8	13	26	26	20	7.8	2.7	0.83	5.1
23	4.6	13	e7.2	e8.4	e12	20	21	17	387	2.2	0.88	5.3
24	7.7	7.8	e6.9	e9.4	e9.0	16	119	16	152	1.9	0.58	5.6
25	14	10	e6.8	e11	e7.0	14	96	16	24	1.8	0.39	5.6
26	14	11	7.3	e10	e4.7	12	55	14	11	1.7	0.34	5.5
27	11	10	8.5	e11	6.8	12	43	13	8.0	1.5	0.45	5.4
28	9.3	9.4	8.7	13	7.5	11	375	12	6.1	1.4	1.1	5.8
29	8.2	9.7	10	13	---	11	141	11	5.7	1.3	1.1	5.9
30	11	9.6	12	14	---	10	60	10	5.5	1.3	7.5	6.7
31	14	---	e11	18	---	10	---	9.6	---	1.3	5.3	---
MEAN	8.37	10.5	9.38	9.85	12.9	14.7	47.3	55.2	29.9	2.68	1.31	3.79
MAX	47	16	12	18	22	45	375	489	387	5.8	7.5	6.7
MIN	2.2	6.4	6.8	6.7	4.7	8.5	10	9.6	5.5	1.3	0.34	0.97
AC-FT	515	623	577	605	714	902	2,820	3,390	1,780	165	80	225

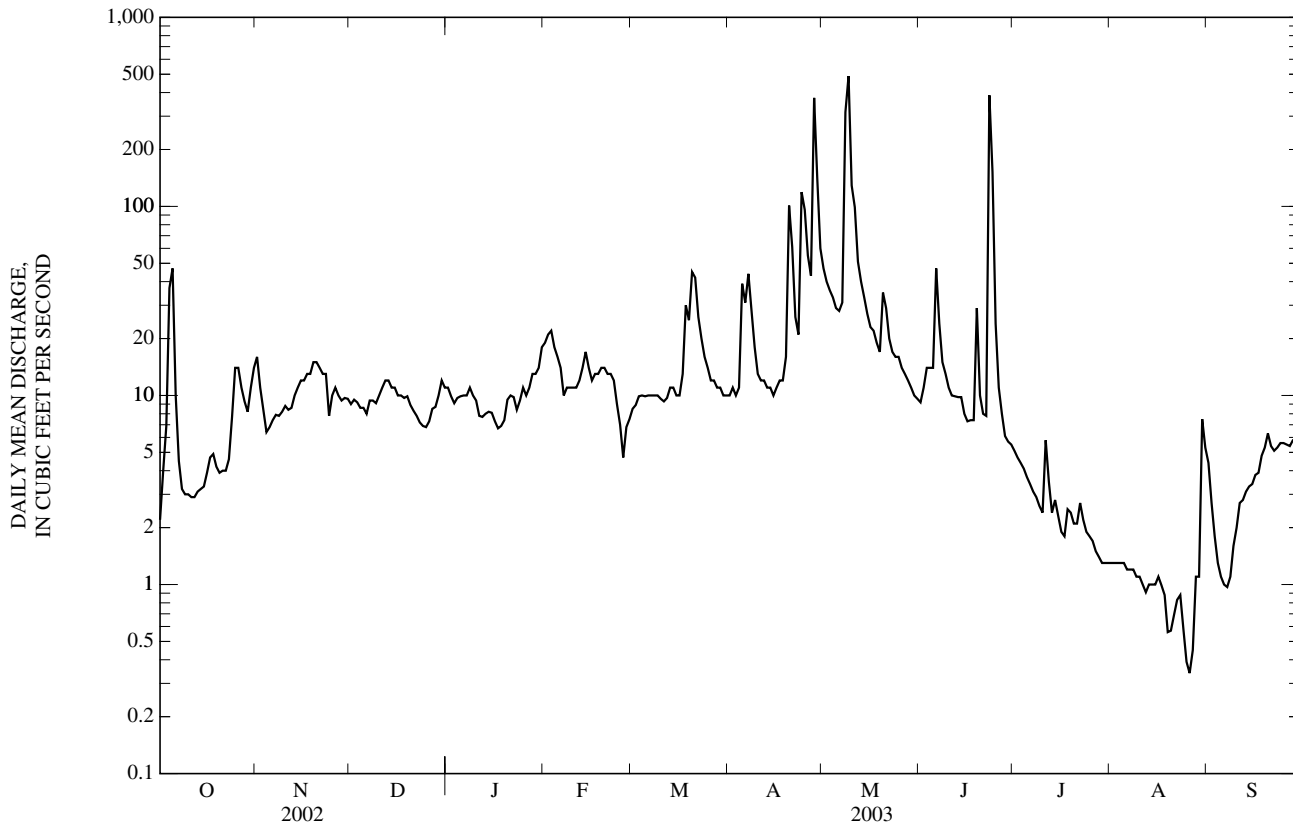
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

MEAN	118	88.9	49.1	54.0	141	239	213	310	313	269	82.0	164
MAX	1,685	1,158	255	371	662	1,413	1,750	1,873	1,431	4,575	675	1,068
(WY)	(1974)	(1999)	(1993)	(1962)	(1969)	(1979)	(1999)	(1995)	(1999)	(1993)	(1985)	(1977)
MIN	0.000	0.020	0.51	0.49	2.00	2.87	3.18	3.88	11.8	2.38	0.22	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1956)	(1972)	(1954)	(1955)	(1956)

06885500 BLACK VERMILLION RIVER NEAR FRANKFORT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL MEAN	23.5		17.1		170	
HIGHEST ANNUAL MEAN					812 1993	
LOWEST ANNUAL MEAN					11.8 1956	
HIGHEST DAILY MEAN	945	May 27	489	May 9	28,800	Oct 11, 1973
LOWEST DAILY MEAN	1.6	Sep 10	0.34	Aug 26	0.00	Aug 3, 1955
ANNUAL SEVEN-DAY MINIMUM	1.7	Sep 6	0.59	Aug 21	0.00	Aug 28, 1956
MAXIMUM PEAK FLOW			1,160	Jun 23	38,300	May 30, 1959
MAXIMUM PEAK STAGE			11.58	Jun 23	32.28	Jul 22, 1993
INSTANTANEOUS LOW FLOW			0.29	Aug 25	30.00	at times
ANNUAL RUNOFF (AC-FT)	17,050		12,390		123,300	
10 PERCENT EXCEEDS	39		28		237	
50 PERCENT EXCEEDS	13		9.7		28	
90 PERCENT EXCEEDS	2.9		1.3		4.0	

e Estimated



06885500 BLACK VERMILION RIVER NEAR FRANKFORT, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to April 1990, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
APR 25...	1315	92	420	15.0	434	107
JUN 09...	1420	12	--	23.0	73	2.4

06886900 TUTTLE CREEK LAKE NEAR MANHATTAN, KS

LOCATION.--Lat 39°15'16", long 96°36'08", in NW 1/4 NE 1/4 SW 1/4 sec.24, T.9 S., R.7 E., Pottawatomie County, Hydrologic Unit 10270205, on Big Blue River, near right end of dam, 5.0 mi north of Manhattan, and at mile 10.0.

DRAINAGE AREA.--9,628 mi<sup>2</sup>.

PERIOD OF RECORD.--March to April 1960, March 1962 to current year. Prior to October 1968, published as "Tuttle Creek Reservoir near Randolph." October 1968 to September 1971 published as "Tuttle Creek Reservoir near Manhattan."

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 1, 1968, at site 19.8 mi upstream at same datum.

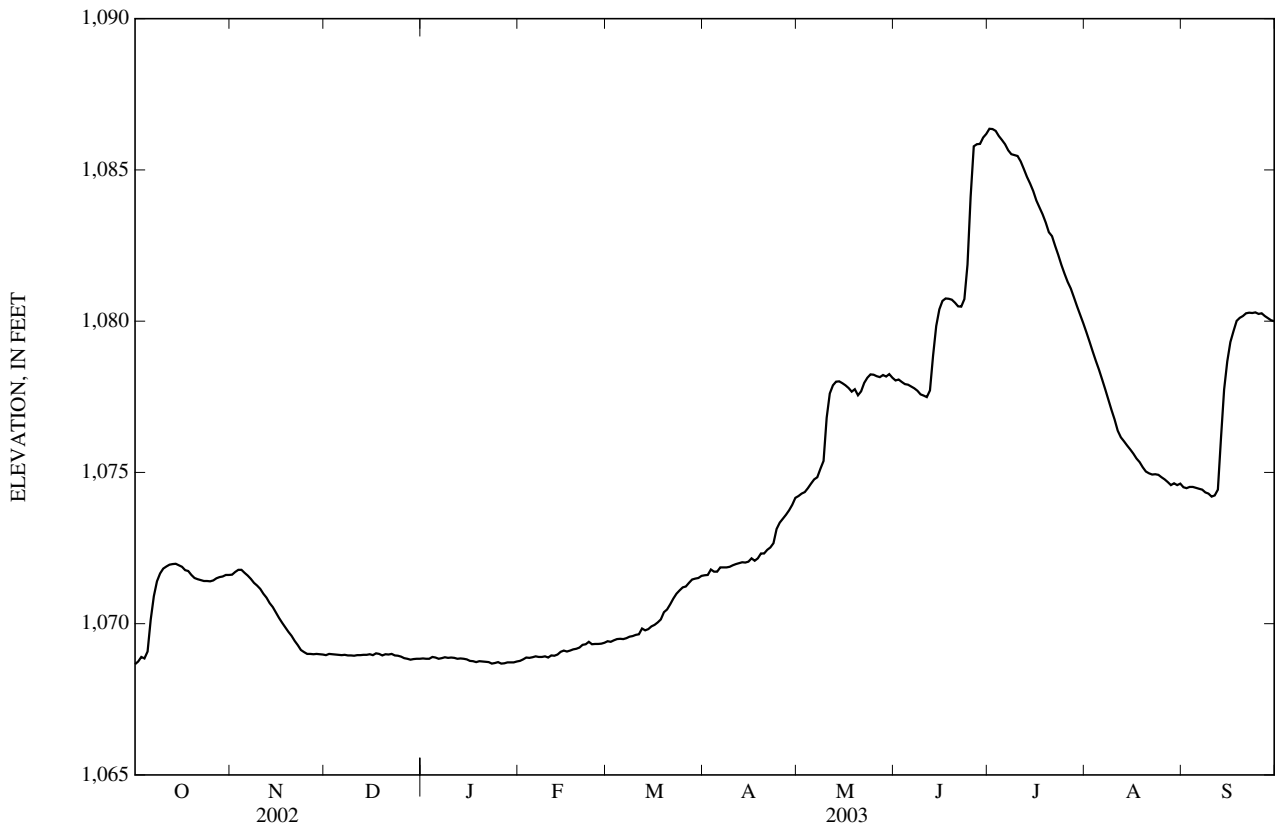
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Mar. 15, 1962. Conservation pool elevation was first reached on Apr. 30, 1963. Total capacity, 3,186,000 acre-ft consisting of the following: Sedimentation, 211,500 acre-ft below elevation 1,061.0 ft; conservation pool, 177,100 acre-ft between elevations 1,061.0 ft and 1,075.0 ft; flood-control pool, 1,937,000 acre-ft between elevations 1,075.0 ft and 1,136.0 ft; and surcharge pool, 860,100 acre-ft between elevations 1,136.0 ft and 1,150.0 ft. Reservoir is used to store water for flood control. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,137.76 ft, July 22, 1993, contents, 2,423,000 acre-ft; minimum elevation since conservation pool was first reached, 1,060.82 ft, Jan. 4, 1967, contents, 231,000 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,086.38 ft, July 2, contents, 589,000 acre-ft; minimum elevation, 1,068.65 ft, Oct. 1, contents, 302,400 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by U.S. Army Corps of Engineers in 1973 revised 1982)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,065	256,400	1,075	388,600	1,090	663,700
1,070	320,100	1,080	469,400	1,095	778,700
1,576	19,150	1,582	33,900		



## 06886900 TUTTLE CREEK LAKE NEAR MANHATTAN, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,068.66	1,071.62	1,068.96	1,068.85	1,068.77	1,069.42	1,071.60	1,074.22	1,078.04	1,086.36	1,079.63	1,074.51
2	1,068.75	1,071.71	1,069.00	1,068.84	1,068.82	1,069.40	1,071.61	1,074.30	1,078.07	1,086.35	1,079.32	1,074.48
3	1,068.90	1,071.78	1,068.99	1,068.84	1,068.88	1,069.45	1,071.79	1,074.35	1,077.99	1,086.29	1,079.00	1,074.52
4	1,068.85	1,071.78	1,068.98	1,068.90	1,068.87	1,069.49	1,071.72	1,074.48	1,077.92	1,086.12	1,078.69	1,074.52
5	1,069.08	1,071.68	1,068.97	1,068.88	1,068.89	1,069.50	1,071.72	1,074.63	1,077.90	1,085.99	1,078.40	1,074.49
6	1,070.13	1,071.59	1,068.96	1,068.84	1,068.92	1,069.49	1,071.86	1,074.77	1,077.84	1,085.85	1,078.08	1,074.46
7	1,070.91	1,071.48	1,068.97	1,068.86	1,068.90	1,069.52	1,071.86	1,074.84	1,077.78	1,085.65	1,077.75	1,074.43
8	1,071.40	1,071.35	1,068.95	1,068.89	1,068.90	1,069.57	1,071.86	1,075.12	1,077.70	1,085.52	1,077.41	1,074.34
9	1,071.66	1,071.26	1,068.95	1,068.87	1,068.92	1,069.59	1,071.88	1,075.38	1,077.58	1,085.49	1,077.07	1,074.30
10	1,071.82	1,071.15	1,068.94	1,068.88	1,068.88	1,069.63	1,071.93	1,076.81	1,077.54	1,085.46	1,076.75	1,074.20
11	1,071.89	1,070.99	1,068.96	1,068.87	1,068.95	1,069.65	1,071.97	1,077.61	1,077.49	1,085.28	1,076.38	1,074.24
12	1,071.95	1,070.86	1,068.96	1,068.84	1,068.94	1,069.84	1,072.00	1,077.88	1,077.71	1,085.03	1,076.16	1,074.43
13	1,071.97	1,070.68	1,068.97	1,068.85	1,068.98	1,069.78	1,072.03	1,078.00	1,078.86	1,084.77	1,076.03	1,076.14
14	1,071.98	1,070.55	1,068.97	1,068.84	1,069.07	1,069.82	1,072.02	1,078.01	1,079.84	1,084.55	1,075.89	1,077.74
15	1,071.93	1,070.37	1,068.99	1,068.82	1,069.11	1,069.91	1,072.05	1,077.95	1,080.39	1,084.30	1,075.76	1,078.67
16	1,071.88	1,070.19	1,068.96	1,068.77	1,069.08	1,069.96	1,072.16	1,077.88	1,080.67	1,083.99	1,075.62	1,079.31
17	1,071.77	1,070.03	1,069.02	1,068.76	1,069.11	1,070.04	1,072.08	1,077.79	1,080.75	1,083.76	1,075.46	1,079.67
18	1,071.74	1,069.88	1,069.00	1,068.73	1,069.15	1,070.14	1,072.16	1,077.67	1,080.74	1,083.53	1,075.34	1,080.01
19	1,071.61	1,069.73	1,068.95	1,068.76	1,069.17	1,070.38	1,072.32	1,077.75	1,080.71	1,083.26	1,075.17	1,080.11
20	1,071.51	1,069.60	1,068.99	1,068.75	1,069.21	1,070.47	1,072.32	1,077.55	1,080.61	1,082.94	1,075.03	1,080.17
21	1,071.47	1,069.43	1,068.98	1,068.74	1,069.30	1,070.64	1,072.44	1,077.68	1,080.49	1,082.81	1,074.97	1,080.26
22	1,071.44	1,069.29	1,069.00	1,068.73	1,069.32	1,070.83	1,072.52	1,077.96	1,080.48	1,082.49	1,074.93	1,080.28
23	1,071.41	1,069.13	1,068.95	1,068.68	1,069.40	1,070.99	1,072.66	1,078.13	1,080.73	1,082.19	1,074.94	1,080.27
24	1,071.41	1,069.06	1,068.94	1,068.70	1,069.32	1,071.10	1,073.13	1,078.24	1,081.87	1,081.86	1,074.92	1,080.29
25	1,071.40	1,069.00	1,068.91	1,068.73	1,069.33	1,071.20	1,073.34	1,078.23	1,084.11	1,081.57	1,074.84	1,080.24
26	1,071.43	1,069.00	1,068.86	1,068.68	1,069.33	1,071.23	1,073.47	1,078.18	1,085.78	1,081.30	1,074.77	1,080.26
27	1,071.50	1,068.99	1,068.84	1,068.69	1,069.34	1,071.35	1,073.60	1,078.15	1,085.85	1,081.08	1,074.68	1,080.17
28	1,071.54	1,069.00	1,068.81	1,068.72	1,069.37	1,071.46	1,073.75	1,078.22	1,085.86	1,080.79	1,074.58	1,080.10
29	1,071.56	1,068.99	1,068.83	1,068.72	---	1,071.49	1,073.93	1,078.17	1,086.07	1,080.49	1,074.64	1,080.03
30	1,071.61	1,068.98	1,068.84	1,068.72	---	1,071.51	1,074.16	1,078.25	1,086.19	1,080.21	1,074.58	1,080.00
31	1,071.61	---	1,068.84	1,068.75	---	1,071.58	---	1,078.13	---	1,079.93	1,074.63	---
MEAN	1,071.12	1,070.31	1,068.94	1,068.79	1,069.08	1,070.27	1,072.40	1,076.98	1,080.45	1,083.72	1,076.17	1,077.56
MAX	1,071.98	1,071.78	1,069.02	1,068.90	1,069.40	1,071.58	1,074.16	1,078.25	1,086.19	1,086.36	1,079.63	1,080.29
MIN	1,068.66	1,068.98	1,068.81	1,068.68	1,068.77	1,069.40	1,071.60	1,074.22	1,077.49	1,079.93	1,074.58	1,074.20
(+)	341,400	306,700	304,800	303,700	311,800	341,000	376,300	437,800	585,200	468,200	383,100	469,400
(#)	+37,700	-34,700	-1,900	-1,100	+8,100	+29,200	+35,300	+61,500	+147,400	-117,000	-85,100	+86,300
CAL YR	2002	.....	(#)	-86,200								
WTR YR	2003	.....	(#)	+165,700								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
# CHANGE IN CONTENTS, IN ACRE-FEET.

## 06887000 BIG BLUE RIVER NEAR MANHATTAN, KS

LOCATION.--Lat 39°14'14", long 96°34'16", in SW ¼ NW ¼ SE ¼ sec.30, T.9 S., R.8 E., Riley County, Hydrologic Unit 10270205, on right bank at downstream side of county highway bridge, 2.5 mi downstream from Tuttle Creek Dam, 4.0 mi north of Manhattan, and at mile 7.5.

DRAINAGE AREA.--9,640 mi<sup>2</sup>.

PERIOD OF RECORD.--May to July 1951 (published in WSP 1139), October 1954 to current year. Records for April 1895 to October 1905, published in previous Annual Reports and Water-Supply Papers, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorders. Datum of gage is 988.86 ft above NGVD of 1929. May 1 to July 31, 1951, nonrecording gage above power dam 1.1 mi upstream at datum 8.34 ft higher. Oct. 1 to Nov. 17, 1954, nonrecording gage and Nov. 18, 1954, to Sept. 30, 1974, recording gage at present site and datum 3.00 ft higher.

REMARKS.--Records good. Flow regulated since 1962 by Tuttle Creek Lake (station 06886900), 2.5 mi upstream. Discharge may, at times, be affected by backwater from the Kansas River. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 31, 1903, reached a stage of 38.85 ft, and flood in June 1941 reached a stage of about 37.1 ft, from floodmarks and information by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	527	410	332	414	350	321	125	99	1,230	2,150	2,510	744
2	522	410	334	411	350	321	296	97	1,270	2,390	2,540	435
3	387	411	333	412	352	321	300	96	1,230	2,390	2,580	76
4	249	719	342	412	346	325	303	95	1,230	2,380	2,580	108
5	95	1,150	383	412	374	322	301	135	1,240	2,360	2,570	283
6	95	1,150	384	412	413	321	314	105	1,240	2,360	2,550	285
7	139	1,150	384	395	410	320	303	92	1,230	2,350	2,550	283
8	231	1,140	385	358	409	322	301	217	1,220	2,420	2,540	389
9	266	1,130	383	358	409	320	300	432	1,390	2,290	2,530	585
10	320	1,130	384	355	409	322	300	1,640	1,390	856	2,520	572
11	314	1,130	383	357	408	321	301	1,650	781	1,990	2,520	584
12	313	1,130	384	357	407	334	302	1,650	860	2,670	1,710	567
13	348	1,240	384	356	411	312	300	1,660	839	2,670	978	520
14	409	1,380	383	357	422	243	331	1,650	846	2,660	1,000	458
15	497	1,370	384	360	416	242	381	1,650	849	2,650	1,010	597
16	754	1,360	384	360	408	243	386	1,650	1,040	2,640	1,020	e593
17	785	1,360	386	359	407	268	378	1,640	1,640	2,630	1,010	e588
18	782	1,200	385	359	372	255	384	1,640	1,640	2,620	1,000	e565
19	781	1,140	384	358	326	264	352	1,650	1,650	2,610	999	545
20	779	1,210	383	360	326	200	128	1,630	1,590	2,610	996	538
21	657	1,210	386	359	327	95	90	1,620	1,510	2,600	992	536
22	637	1,210	384	361	327	92	87	1,630	1,430	2,590	884	526
23	649	1,210	389	363	330	89	148	1,630	1,450	2,580	850	525
24	549	870	404	356	326	90	206	1,640	1,260	2,580	920	526
25	337	404	413	354	324	86	153	1,620	1,030	2,570	885	556
26	229	403	414	351	322	85	117	1,620	1,510	2,550	846	611
27	234	401	414	348	324	89	111	1,490	2,750	2,540	848	674
28	302	401	414	351	323	85	108	1,240	2,630	2,530	854	795
29	411	389	413	350	---	82	103	1,230	1,100	2,520	803	797
30	417	332	414	350	---	84	102	1,230	1,780	2,510	754	804
31	411	---	413	353	---	84	---	1,230	---	2,510	807	---
MEAN	433	938	385	368	369	221	244	1,150	1,362	2,444	1,521	522
MAX	785	1,380	414	414	422	334	386	1,660	2,750	2,670	2,580	804
MIN	95	332	332	348	322	82	87	92	781	856	754	76
AC-FT	26,630	55,840	23,690	22,650	20,490	13,600	14,500	70,730	81,040	150,300	93,530	31,070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	1,663	1,707	1,431	833	1,548	2,519	3,157	3,593	4,021	4,235	2,558	1,763
MAX	13,370	20,110	4,969	3,311	5,586	12,200	15,400	15,210	16,640	24,360	23,900	14,770
(WY)	(1987)	(1974)	(1974)	(1974)	(1973)	(1969)	(1987)	(1987)	(1995)	(1993)	(1993)	(1993)
MIN	63.7	56.6	161	106	21.9	48.1	50.8	53.7	91.5	371	308	43.3
(WY)	(1985)	(1988)	(1965)	(1970)	(1975)	(1967)	(1967)	(1967)	(1981)	(1970)	(1976)	(1988)

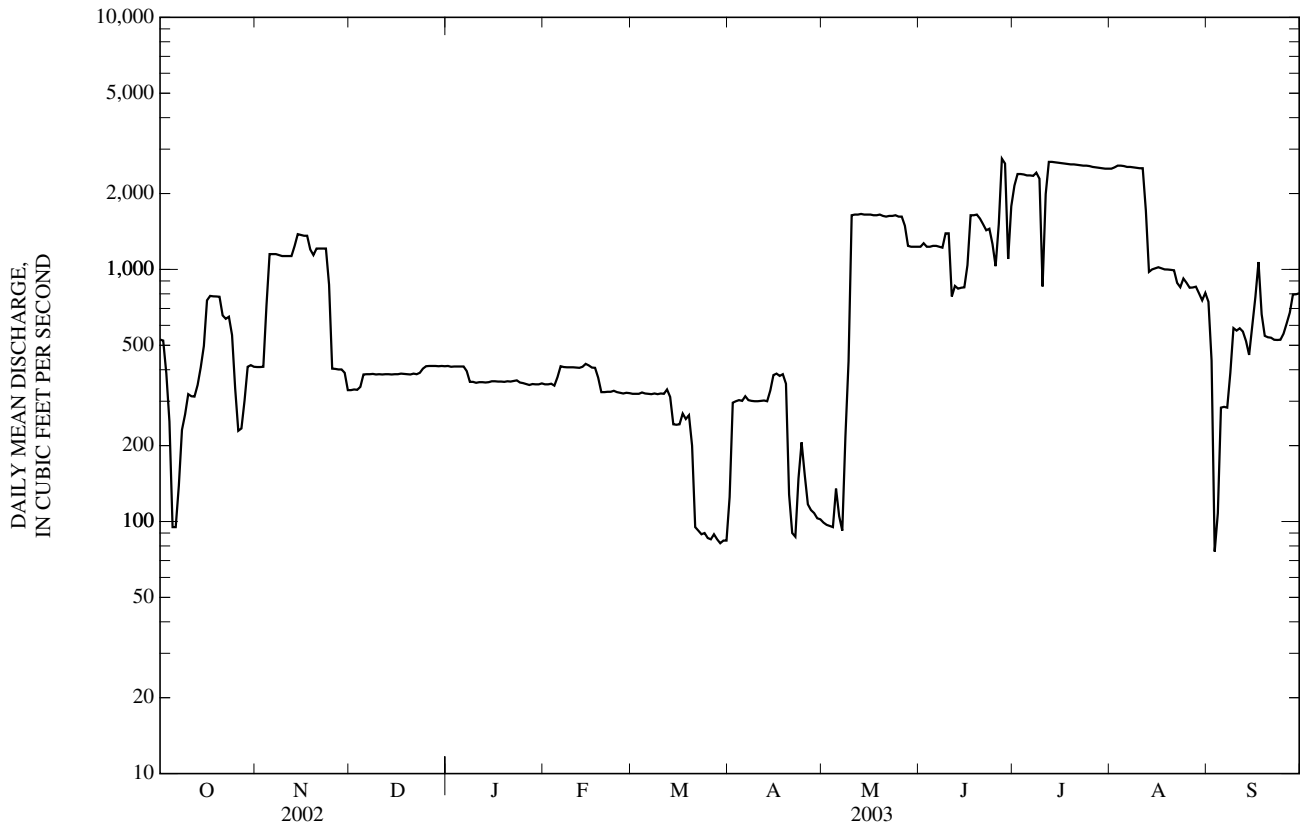


06887000 BIG BLUE RIVER NEAR MANHATTAN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL MEAN	908		836		2,423	
HIGHEST ANNUAL MEAN					9,450	1993
LOWEST ANNUAL MEAN					790	1988
HIGHEST DAILY MEAN	5,770	May 31	2,750	Jun 27	59,500	Jul 24, 1993
LOWEST DAILY MEAN	51	Aug 20	76	Sep 3	2.3	Sep 14, 1988
ANNUAL SEVEN-DAY MINIMUM	199	Oct 4	85	Mar 25	2.6	Sep 8, 1988
MAXIMUM PEAK FLOW			3,080	Jun 28	a93,400	Jul 12, 1951
MAXIMUM PEAK STAGE			4.72	Jun 28	a36.04	Jul 12, 1951
INSTANTANEOUS LOW FLOW			71	Sep 3	0.20	Nov 23, 1978
ANNUAL RUNOFF (AC-FT)	657,100		604,100		1,755,000	
10 PERCENT EXCEEDS	1,650		2,380		6,210	
50 PERCENT EXCEEDS	578		413		956	
90 PERCENT EXCEEDS	384		213		187	

e Estimated

a Maximum peak flow and stage recorded outside period of record and prior to Tuttle Creek Lake filling.



## 06887500 KANSAS RIVER AT WAMEGO, KS

LOCATION.--Lat 39°11'52", long 96°18'16", in NW ¼ SW ¼ NE ¼ sec.9, T.10 S., R.10 E., Pottawatomie County, Hydrologic Unit 10270102, on left bank at upstream side of bridge on Kansas Highway 99 at Wamego, 3.0 mi downstream from Antelope Creek, and at mile 126.9.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--55,280 mi<sup>2</sup>, approximately, of which a large area is probably noncontributing.

PERIOD OF RECORD.--January 1919 to current year.

REVISED RECORDS.--WSP 806: Drainage area. WSP 1310: 1937(M).

GAGE.--Water-stage recorder. Datum of gage is 950.82 ft above NGVD of 1929. Prior to Aug. 1 1934, nonrecording gage and Aug. 1, 1934, to Sept. 30, 1955, water-stage recorder at present site at datum 3.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by reservoirs in Colorado, Nebraska, and Kansas, and by numerous small diversions for irrigation upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1903 reached a stage of 29.3 ft, present datum, determined by U.S. Weather Bureau, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e980	868	657	648	e621	669	624	1,640	1,960	2,930	e2,720	1,600
2	1,170	854	659	646	710	640	662	1,390	2,330	3,110	2,730	2,220
3	1,250	862	648	651	694	625	744	1,210	2,410	3,290	2,790	1,700
4	994	851	651	656	680	616	735	1,080	2,090	3,120	2,800	1,090
5	917	1,250	664	651	680	679	723	997	2,110	2,930	2,800	910
6	844	1,450	684	645	720	673	775	983	2,150	2,860	2,790	865
7	809	1,430	688	644	744	652	782	958	2,140	2,800	2,780	784
8	875	1,420	684	628	714	634	733	947	2,090	2,820	2,770	728
9	990	1,390	682	607	689	616	722	1,150	2,120	2,910	2,760	868
10	1,030	1,370	685	602	733	622	717	1,760	2,310	2,440	2,750	1,000
11	976	1,340	677	613	710	617	712	2,440	1,980	1,800	2,750	955
12	907	1,340	699	600	703	609	706	2,320	1,820	2,660	2,710	980
13	910	1,330	702	601	692	622	700	2,300	1,830	2,920	1,670	896
14	919	1,490	694	593	776	578	692	2,300	1,720	2,900	1,410	802
15	887	1,540	678	591	774	544	723	2,280	1,690	2,870	1,360	893
16	1,020	1,630	673	e601	747	533	770	2,290	1,610	2,840	1,320	3,940
17	1,200	1,620	665	e593	760	533	750	2,300	1,980	2,820	1,270	6,520
18	1,160	1,610	663	e585	747	575	765	2,300	2,200	2,790	1,240	5,660
19	1,130	1,280	656	e572	696	587	860	2,390	2,170	2,770	1,210	3,710
20	1,130	1,310	649	e575	662	707	974	2,640	2,130	2,770	1,190	2,770
21	1,110	1,330	644	e575	647	606	735	2,570	2,070	2,780	1,170	2,280
22	970	1,320	640	e577	632	831	687	2,620	2,060	2,780	1,190	1,880
23	1,020	1,330	641	e578	627	1,610	765	2,570	2,170	e2,760	1,110	1,790
24	1,090	1,300	639	e578	630	2,300	1,900	2,520	2,100	2,740	1,180	1,700
25	969	900	654	e581	e767	1,620	2,300	2,470	2,040	2,770	1,210	1,830
26	768	742	648	e579	e703	1,190	2,230	2,400	2,140	2,730	1,170	1,900
27	722	722	620	e581	e836	968	2,830	2,370	2,580	2,720	1,170	1,860
28	758	712	623	e600	e752	836	3,240	2,260	3,250	2,720	1,190	1,950
29	836	708	638	e622	---	745	2,650	2,180	3,170	2,720	1,320	1,970
30	931	685	655	e626	---	e699	2,060	2,120	2,350	2,710	1,230	1,980
31	904	---	648	e625	---	659	---	2,050	---	e2,710	1,880	---
MEAN	973	1,199	662	607	709	787	1,142	1,994	2,159	2,790	1,859	1,934
MAX	1,250	1,630	702	656	836	2,300	3,240	2,640	3,250	3,290	2,800	6,520
MIN	722	685	620	572	621	533	624	947	1,610	1,800	1,110	728
AC-FT	59,850	71,370	40,680	37,340	39,360	48,390	67,970	122,600	128,500	171,600	114,300	115,100

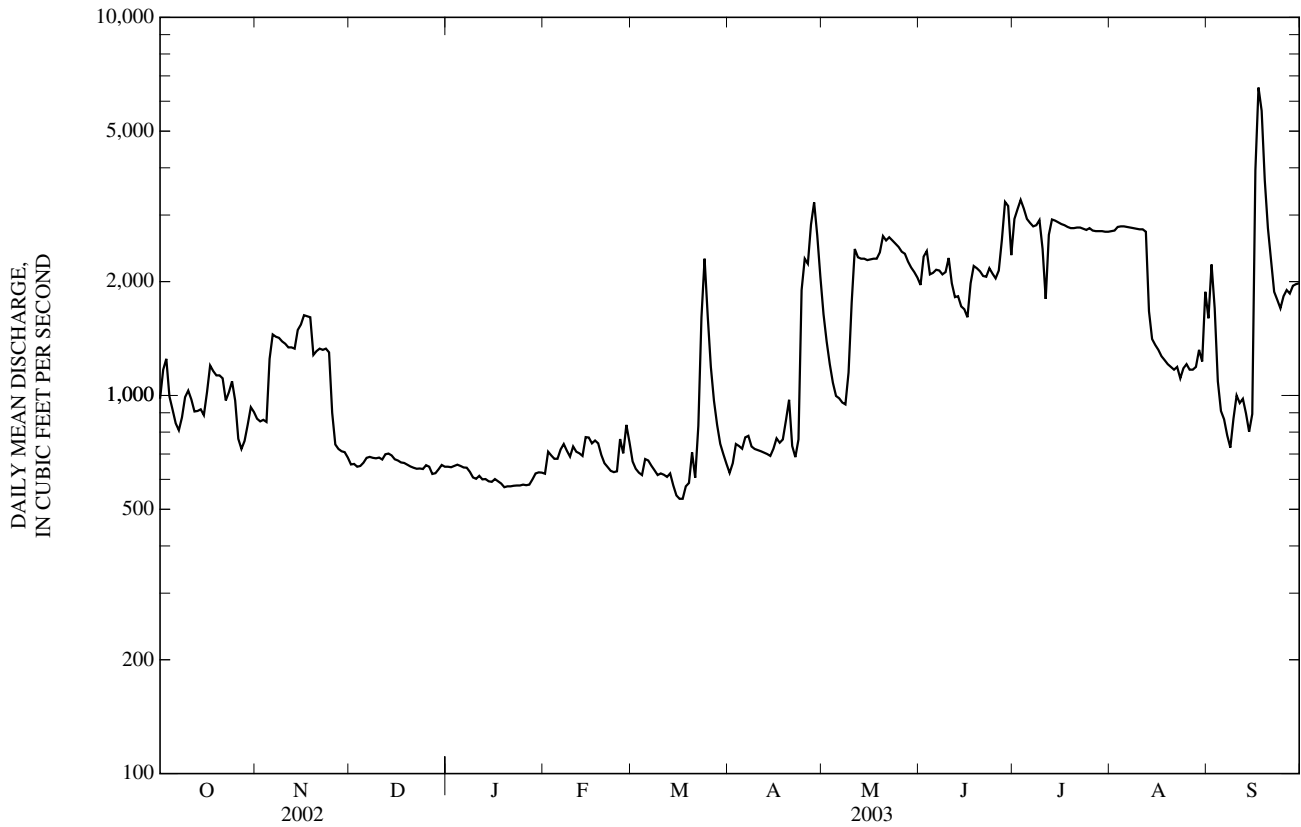
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

MEAN	3,935	2,988	2,451	1,972	3,139	4,696	5,863	7,464	10,440	8,869	5,291	4,786
MAX	39,030	35,430	14,410	9,735	14,320	23,240	32,710	30,610	64,620	98,420	50,300	32,530
(WY)	(1974)	(1974)	(1974)	(1974)	(1949)	(1973)	(1987)	(1987)	(1951)	(1951)	(1993)	(1951)
MIN	336	390	384	302	494	465	606	379	1,114	747	271	388
(WY)	(1957)	(1957)	(1957)	(1940)	(1957)	(1967)	(1956)	(1967)	(1966)	(1936)	(1934)	(1956)

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL MEAN	1,730		1,405		5,164	
HIGHEST ANNUAL MEAN					22,320	1993
LOWEST ANNUAL MEAN					1,135	1956
HIGHEST DAILY MEAN	7,140	Jun 1	6,520	Sep 17	393,000	Jul 13, 1951
LOWEST DAILY MEAN	620	Dec 27	533	Mar 16	116	Dec 14, 1940
ANNUAL SEVEN-DAY MINIMUM	638	Dec 23	567	Mar 13	171	Oct 5, 1956
MAXIMUM PEAK FLOW			6,780	Sep 17	400,000	Jul 13, 1951
MAXIMUM PEAK STAGE			7.03	Sep 17	30.56	Jul 13, 1951
INSTANTANEOUS LOW FLOW			505	Feb 24	73	Dec 14, 1940
ANNUAL RUNOFF (AC-FT)	1,252,000		1,017,000		3,741,000	
10 PERCENT EXCEEDS	2,900		2,760		12,200	
50 PERCENT EXCEEDS	1,370		994		2,320	
90 PERCENT EXCEEDS	718		623		782	

e Estimated



## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-74, 1999 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to September 1974, July 1999 to current year.

pH: July 1999 to current year.

WATER TEMPERATURE: October 1969 to September 1974, July 1999 to current year.

DISSOLVED OXYGEN: July 1999 to current year.

TURBIDITY: July 1999 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records fair except those for periods of missing records. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,820 microsiemens/cm, Oct. 24, 1999; minimum, 268 microsiemens/cm, Aug. 26, 2001.

pH: Maximum, 9.4 standard units, Sept. 7, 2003; minimum, 7.1 standard units, Aug. 26, 2001.

WATER TEMPERATURE: Maximum, 34.1°C, Aug. 1, 2002; minimum, -0.2°C, Feb. 15, 2001.

DISSOLVED OXYGEN: Maximum 18.9 mg/L, Dec. 10, 2001; minimum, 4.7 mg/L, Aug. 8, 2002.

TURBIDITY: Maximum, >1,600 NTU, Aug. 28, 2001; minimum, 6 NTU, Oct. 18, 1999.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,500 microsiemens/cm, Mar. 23; minimum, 277 microsiemens/cm, Sept. 17.

pH: Maximum, 9.4 standard units, Sept. 7; minimum, 7.5 standard units, Apr. 27.

WATER TEMPERATURE: Maximum, 32.9°C, Aug. 16; minimum, 0.0°C, Dec. 25.

DISSOLVED OXYGEN: Maximum, 18.4 mg/L, Dec. 22; minimum, 5.9 mg/L, Aug. 20.

TURBIDITY: Maximum, >1,300 NTU, Sept. 16; minimum, 6 NTU, Dec. 25.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	846	813	834	892	877	884	1,030	1,010	1,020	---	---	---
2	850	701	784	899	880	889	1,050	1,030	1,040	---	---	---
3	809	689	744	912	890	900	1,040	1,030	1,030	---	---	---
4	962	725	864	908	883	897	1,050	1,030	1,040	---	---	---
5	1,100	933	1,000	886	719	793	1,070	1,040	1,060	---	---	---
6	1,350	946	1,180	723	712	718	1,060	1,020	1,040	---	---	---
7	1,330	876	1,020	716	705	712	1,040	1,010	1,020	---	---	---
8	1,140	996	1,120	727	715	720	1,030	1,010	1,020	---	---	---
9	1,140	884	966	731	725	729	1,030	1,000	1,010	---	---	---
10	994	754	901	733	721	727	1,030	1,000	1,020	---	---	---
11	862	754	811	734	727	731	1,010	997	1,000	---	---	---
12	848	774	799	739	722	731	1,050	1,010	1,030	---	---	---
13	851	723	811	740	728	733	1,020	998	1,010	---	---	---
14	776	701	732	749	697	719	1,040	1,020	1,030	---	---	---
15	918	715	851	708	701	704	1,020	992	1,010	---	---	---
16	909	710	808	708	695	701	1,040	1,020	1,030	---	---	---
17	710	678	689	709	701	705	1,040	1,030	1,030	---	---	---
18	709	697	704	713	701	706	1,050	1,020	1,030	---	---	---
19	700	693	698	740	703	728	1,060	1,030	1,050	---	---	---
20	712	691	702	742	716	728	1,070	1,050	1,060	---	---	---
21	727	689	716	738	723	733	1,070	1,040	1,060	---	---	---
22	794	716	767	739	728	735	1,040	1,020	1,030	---	---	---
23	769	746	757	745	730	739	1,060	1,020	1,040	---	---	---
24	752	731	743	736	723	729	1,060	1,030	1,050	---	---	---
25	826	742	779	915	723	795	1,050	923	1,000	---	---	---
26	953	826	884	961	915	950	---	---	---	---	---	---
27	989	935	968	961	953	957	---	---	---	---	---	---
28	1,010	986	997	981	960	974	---	---	---	---	---	---
29	1,000	875	956	1,000	981	993	---	---	---	---	---	---
30	896	875	889	1,010	987	995	---	---	---	---	---	---
31	899	876	888	---	---	---	---	---	---	---	---	---
MONTH	1,350	678	850	1,010	695	792	1,070	923	1,030	---	---	---

## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	1,030	998	1,020	706	639	673
2	---	---	---	---	---	---	1,060	924	1,020	786	705	754
3	---	---	---	---	---	---	932	898	921	820	786	804
4	---	---	---	---	---	---	948	903	936	898	820	861
5	---	---	---	---	---	---	969	947	960	968	898	926
6	---	---	---	---	---	---	975	906	948	997	918	961
7	---	---	---	---	---	---	966	932	948	988	952	966
8	---	---	---	1,160	1,130	1,140	996	965	988	1,020	819	985
9	---	---	---	1,140	1,050	1,110	1,020	702	984	986	894	919
10	---	---	---	1,150	1,080	1,120	1,040	949	1,010	1,010	730	870
11	---	---	---	1,160	1,100	1,140	1,030	783	991	730	608	648
12	---	---	---	1,150	1,100	1,130	1,040	814	998	666	623	640
13	---	---	---	1,120	1,080	1,100	1,040	971	1,010	670	658	663
14	1,070	987	1,040	1,180	1,080	1,120	1,030	978	1,010	672	632	659
15	1,050	959	1,010	1,210	1,160	1,190	1,050	978	1,020	670	649	657
16	1,090	1,030	1,050	1,160	1,120	1,150	1,000	958	979	678	652	662
17	1,120	1,050	1,090	1,160	1,120	1,140	982	956	972	677	661	669
18	1,070	999	1,040	1,160	1,000	1,110	1,000	950	973	677	641	658
19	1,080	998	1,040	1,120	1,020	1,080	987	866	941	652	565	618
20	1,110	1,080	1,090	1,060	1,000	1,040	1,020	879	924	657	611	631
21	1,090	1,060	1,070	1,250	1,020	1,110	1,110	1,020	1,050	674	627	647
22	1,060	1,020	1,040	1,460	---	---	1,180	1,010	1,110	673	628	653
23	1,050	1,020	1,040	1,500	901	---	1,050	898	1,010	630	593	609
24	---	---	---	901	513	591	1,100	802	984	624	594	606
25	---	---	---	562	505	516	805	599	714	627	591	615
26	---	---	---	706	535	601	732	549	635	613	583	601
27	---	---	---	845	706	801	837	732	790	651	600	636
28	---	---	---	819	741	769	759	500	595	710	641	664
29	---	---	---	907	808	869	549	507	524	718	675	703
30	---	---	---	929	905	915	639	543	584	688	664	676
31	---	---	---	998	925	964	---	---	---	678	671	674
MONTH	1,120	959	1,050	1,500	505	987	1,180	500	918	1,020	565	720

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	688	666	674	604	550	584	479	471	476	663	484	597
2	695	570	631	588	511	552	482	471	478	751	624	683
3	639	571	611	573	505	542	480	465	472	971	625	828
4	713	623	673	505	472	482	471	465	468	838	693	727
5	713	673	701	480	460	470	467	460	464	776	607	714
6	708	669	678	498	480	486	465	458	462	607	478	557
7	740	708	728	529	498	515	463	458	461	535	448	500
8	745	716	730	530	513	522	467	453	460	531	462	494
9	735	675	695	517	472	500	460	453	457	762	527	681
10	709	639	671	580	443	481	457	451	454	686	634	653
11	722	630	668	661	553	599	464	451	456	678	640	657
12	720	628	684	559	495	520	471	461	466	666	626	650
13	755	623	680	513	495	504	621	468	558	688	645	666
14	755	697	734	511	499	502	629	620	623	763	688	717
15	768	588	716	499	480	487	621	598	611	833	763	798
16	---	597	---	482	475	479	610	598	604	1,060	304	657
17	---	643	---	481	475	478	610	590	601	365	277	295
18	643	623	631	480	471	475	605	594	599	374	308	331
19	628	612	618	480	474	478	617	598	607	355	339	346
20	637	622	629	483	476	480	616	586	604	364	341	352
21	672	635	650	483	470	478	---	596	---	396	364	382
22	674	609	658	487	463	477	---	---	---	420	396	408
23	672	507	638	487	478	483	680	589	650	492	420	460
24	---	627	---	490	480	484	655	525	609	514	492	502
25	731	---	---	503	486	495	655	569	625	559	514	540
26	739	583	664	491	472	479	---	629	---	574	559	566
27	663	542	593	482	469	474	701	---	---	595	573	583
28	546	527	535	471	464	468	698	677	688	596	576	584
29	594	522	547	469	463	466	689	660	672	588	574	580
30	684	526	612	470	462	466	704	648	686	590	574	582
31	---	---	---	482	465	474	648	473	569	---	---	---
MONTH	768	507	656	661	443	496	704	451	551	1,060	277	570

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.8	8.1	8.4	8.5	8.3	8.5	8.7	8.5	8.6	---	---	---
2	8.6	8.2	8.3	8.5	8.4	8.4	8.7	8.5	8.6	---	---	---
3	8.4	8.1	8.2	8.6	8.3	8.4	8.7	8.5	8.6	---	---	---
4	8.6	8.2	8.3	8.6	8.4	8.5	8.7	8.5	8.6	---	---	---
5	8.8	8.3	8.5	8.5	8.3	8.4	8.7	8.5	8.6	---	---	---
6	9.0	8.4	8.6	8.6	8.3	8.4	8.7	8.5	8.6	---	---	---
7	8.9	8.4	8.6	8.6	8.3	8.4	8.7	8.5	8.6	---	---	---
8	8.8	8.3	8.5	8.6	8.3	8.4	8.8	8.5	8.6	---	---	---
9	8.6	8.2	8.4	8.6	8.3	8.4	8.8	8.6	8.7	---	---	---
10	8.5	8.2	8.3	8.7	8.3	8.5	8.7	8.5	8.7	---	---	---
11	8.4	8.2	8.2	8.7	8.4	8.5	8.7	8.5	8.6	---	---	---
12	8.4	8.2	8.3	8.7	8.4	8.5	8.6	8.4	8.5	---	---	---
13	8.3	8.2	8.3	8.7	8.4	8.5	---	8.4	---	---	---	---
14	8.4	8.2	8.3	8.6	8.4	8.4	---	---	---	---	---	---
15	8.4	8.3	8.3	8.6	8.3	8.4	---	---	---	---	---	---
16	8.4	8.3	8.3	8.7	8.4	8.5	8.9	---	---	---	---	---
17	8.4	8.3	8.3	8.7	8.4	8.5	8.8	8.5	8.7	---	---	---
18	8.4	8.3	8.3	8.6	8.4	8.5	8.9	8.5	8.7	---	---	---
19	8.5	8.3	8.4	8.6	8.4	8.5	8.9	8.5	8.7	---	---	---
20	8.6	8.3	8.4	8.7	8.4	8.5	8.8	8.6	8.8	---	---	---
21	8.6	8.3	8.5	8.7	8.4	8.5	8.8	8.6	8.7	---	---	---
22	8.6	8.4	8.5	8.7	8.4	8.5	8.8	8.6	8.7	---	---	---
23	8.5	8.4	8.5	8.7	8.4	8.5	8.7	8.5	8.6	---	---	---
24	8.5	8.3	8.4	8.7	8.4	8.5	8.7	8.5	8.6	---	---	---
25	8.6	8.3	8.4	8.6	8.4	8.5	8.7	8.5	8.6	---	---	---
26	8.5	8.4	8.5	8.6	8.4	8.5	8.7	---	---	---	---	---
27	8.5	8.4	8.4	8.6	8.4	8.5	---	---	---	---	---	---
28	8.6	8.3	8.4	8.6	8.5	8.5	---	---	---	---	---	---
29	8.5	8.4	8.4	8.6	8.5	8.5	---	---	---	---	---	---
30	8.6	8.3	8.4	8.7	8.5	8.6	---	---	---	---	---	---
31	8.6	8.4	8.5	---	---	---	---	---	---	---	---	---
MAX	9.0	8.4	8.6	8.7	8.5	8.6	8.9	8.6	8.8	---	---	---
MIN	8.3	8.1	8.2	8.5	8.3	8.4	8.6	8.4	8.5	---	---	---

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	8.7	8.0	8.3	7.9	7.8	7.8
2	---	---	---	---	---	---	8.8	8.3	8.5	8.1	7.8	7.9
3	---	---	---	---	---	---	8.7	8.1	8.3	8.3	7.9	8.0
4	---	---	---	---	---	---	8.5	---	---	8.5	8.0	8.1
5	---	---	---	---	---	---	8.6	8.1	8.3	8.8	8.1	8.5
6	---	---	---	---	---	---	8.4	8.1	8.2	8.6	8.3	8.4
7	---	---	---	---	---	---	8.4	8.0	8.2	8.7	8.0	8.3
8	---	---	---	9.1	8.8	8.9	8.4	8.0	8.2	8.6	8.1	8.3
9	---	---	---	9.1	8.9	9.0	8.6	8.1	8.3	8.6	8.1	8.4
10	---	---	---	9.0	8.9	8.9	8.7	8.2	8.4	8.4	8.0	8.2
11	---	---	---	8.9	8.8	8.9	8.7	8.2	8.4	8.2	7.8	8.0
12	---	---	---	8.9	8.8	8.8	8.7	8.2	8.4	8.3	7.9	8.1
13	9.1	---	---	8.9	8.7	8.8	8.7	8.2	8.4	8.2	7.9	8.1
14	8.9	8.7	8.8	8.9	8.7	8.8	8.7	8.2	8.4	8.3	7.9	8.1
15	8.9	8.6	8.8	8.9	8.5	8.7	8.6	8.2	8.4	8.2	7.9	8.1
16	8.9	8.7	8.8	9.0	8.5	8.8	8.5	8.0	8.2	8.1	7.9	8.0
17	8.9	8.8	8.8	9.1	8.6	8.9	8.5	7.9	8.2	8.2	7.9	8.0
18	9.1	8.8	8.9	9.2	8.6	8.9	8.6	8.0	8.3	8.2	7.9	8.1
19	9.1	8.9	9.0	9.0	8.6	8.8	8.5	8.0	8.2	8.1	7.8	7.9
20	9.1	8.9	9.0	9.1	8.4	8.7	8.2	7.8	8.0	8.2	7.8	7.9
21	9.1	8.9	9.0	9.2	8.7	8.9	8.5	7.9	8.1	8.2	7.9	8.1
22	9.2	8.9	9.0	9.1	---	---	8.6	8.0	8.3	8.2	7.9	8.0
23	9.1	9.0	9.1	---	7.9	---	8.4	8.0	8.2	8.1	7.9	8.0
24	---	9.2	---	8.1	7.8	7.9	8.1	7.6	7.9	8.2	7.9	8.0
25	---	---	---	8.1	7.8	8.0	7.8	7.6	7.7	8.2	7.8	8.0
26	---	---	---	8.0	7.8	7.8	7.8	7.6	7.7	8.3	7.9	8.1
27	---	---	---	8.0	7.8	7.9	7.8	7.5	7.6	8.6	8.0	8.2
28	---	---	---	7.9	7.7	7.8	7.6	7.5	7.5	8.6	8.1	8.4
29	---	---	---	8.1	7.7	7.8	7.8	7.6	7.6	8.8	8.1	8.5
30	---	---	---	8.2	7.8	7.9	7.9	7.7	7.7	8.8	8.2	8.5
31	---	---	---	8.4	7.9	8.1	---	---	---	8.7	8.2	8.5
MAX	9.2	9.2	9.1	9.2	8.9	9.0	8.8	8.3	8.5	8.8	8.3	8.5
MIN	8.9	8.6	8.8	7.9	7.7	7.8	7.6	7.5	7.5	7.9	7.8	7.8



## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.8	8.3	8.5	8.4	8.1	8.3	8.4	8.2	8.3	8.6	8.2	8.3
2	8.6	8.2	8.3	8.3	8.1	8.2	8.4	8.2	8.3	8.5	8.2	8.3
3	8.5	8.1	8.2	8.3	8.1	8.2	8.4	8.2	8.3	8.7	8.2	8.3
4	8.6	8.2	8.4	8.3	8.1	8.2	8.5	8.3	8.4	8.8	8.2	8.4
5	8.7	8.2	8.5	8.3	8.1	8.2	8.5	8.3	8.4	9.1	8.3	8.7
6	8.8	8.3	8.5	8.5	8.2	8.3	8.6	8.3	8.4	9.3	8.7	8.9
7	8.7	8.3	8.5	8.4	8.2	8.3	8.8	8.4	8.5	9.4	8.9	9.2
8	8.6	8.3	8.5	8.4	8.2	8.3	8.6	8.4	8.5	9.4	8.9	9.2
9	8.6	8.3	8.5	8.3	8.1	8.2	8.6	8.3	8.5	9.2	8.6	9.0
10	8.5	8.2	8.3	8.3	8.1	8.1	8.7	8.3	8.5	9.1	8.4	8.8
11	8.5	8.1	8.3	8.8	8.1	8.3	8.8	8.4	8.6	9.0	8.5	8.8
12	8.4	8.2	8.3	8.5	8.2	8.3	8.9	8.5	8.6	8.9	8.3	8.7
13	8.5	8.1	8.2	8.4	8.1	8.3	9.1	8.5	8.7	8.9	8.5	8.8
14	8.7	8.2	8.4	8.5	8.2	8.3	9.1	8.7	9.0	8.9	8.5	8.7
15	8.8	8.3	8.6	8.4	8.1	8.2	9.1	8.6	8.9	8.9	8.5	8.7
16	8.7	8.3	8.5	8.5	8.2	8.3	9.2	8.6	8.9	8.8	7.9	8.0
17	8.7	8.3	8.5	8.3	8.1	8.2	9.3	8.6	8.9	8.0	7.9	8.0
18	8.7	8.3	8.5	8.3	8.1	8.2	9.4	8.8	9.1	8.0	8.0	8.0
19	8.6	8.3	8.4	8.4	8.2	8.2	9.4	8.7	9.1	8.1	8.0	8.0
20	8.7	8.3	8.5	8.3	8.1	8.2	9.4	8.7	9.1	8.2	8.1	8.1
21	8.7	8.3	8.6	8.3	8.1	8.2	9.3	8.6	9.0	8.2	8.2	8.2
22	8.6	8.3	8.4	8.4	8.2	8.2	9.2	8.5	8.8	8.2	8.2	8.2
23	8.5	8.2	8.3	8.4	8.2	8.3	9.1	8.4	8.7	8.3	8.2	8.3
24	8.6	8.2	8.4	8.3	8.2	8.3	9.3	8.5	8.9	8.4	8.3	8.3
25	8.5	8.0	8.3	8.3	8.2	8.2	9.2	8.3	8.7	8.4	8.3	8.4
26	8.4	8.0	8.1	8.3	8.2	8.2	---	8.6	---	8.4	8.4	8.4
27	8.3	8.1	8.2	8.3	8.2	8.2	9.2	---	---	8.5	8.4	8.4
28	8.2	8.0	8.1	8.4	8.2	8.2	9.0	8.6	8.8	8.6	8.4	8.5
29	8.3	8.0	8.2	8.6	8.2	8.3	9.0	8.3	8.7	8.6	8.5	8.5
30	8.4	8.1	8.1	8.4	8.2	8.3	8.7	8.4	8.6	8.5	8.5	8.5
31	---	---	---	8.4	8.2	8.2	8.5	8.2	8.3	---	---	---
MAX	8.8	8.3	8.6	8.8	8.2	8.3	9.4	8.8	9.1	9.4	8.9	9.2
MIN	8.2	8.0	8.1	8.3	8.1	8.1	8.4	8.2	8.3	8.0	7.9	8.0

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.2	21.3	22.7	7.9	5.5	6.7	6.1	2.0	4.0	---	---	---
2	23.1	18.4	20.8	6.8	6.2	6.5	6.9	3.5	4.9	---	---	---
3	18.4	16.9	17.6	7.9	6.3	7.0	4.0	1.8	2.5	---	---	---
4	19.5	16.5	17.9	9.6	4.8	7.2	3.0	1.1	1.9	---	---	---
5	20.5	14.7	17.4	9.8	7.6	8.5	3.7	1.0	2.0	---	---	---
6	20.5	16.1	17.9	10.6	6.4	8.4	4.7	0.5	2.4	---	---	---
7	18.6	13.4	15.9	12.3	7.2	9.6	5.1	1.8	3.3	---	---	---
8	17.5	13.8	15.7	13.1	9.0	10.9	5.4	2.4	3.6	---	---	---
9	21.4	15.6	18.1	12.7	9.9	11.1	4.1	1.5	2.9	---	---	---
10	21.2	16.0	18.5	13.0	10.0	11.2	3.9	2.3	3.2	---	---	---
11	20.3	16.6	18.3	10.3	7.6	9.0	5.0	3.9	4.4	---	---	---
12	18.5	14.9	17.5	10.7	6.4	8.4	5.7	5.0	5.3	---	---	---
13	17.3	12.0	14.5	11.4	7.2	9.2	7.0	3.8	5.3	---	---	---
14	16.2	11.4	13.8	10.2	8.8	9.6	6.6	2.8	4.6	---	---	---
15	16.1	11.7	13.8	9.4	7.4	8.2	7.5	3.1	5.1	---	---	---
16	13.7	10.3	11.4	10.4	7.0	8.5	8.1	4.6	6.2	---	---	---
17	14.8	9.5	11.8	10.4	6.6	8.5	9.5	6.6	7.7	---	---	---
18	16.8	11.7	14.1	10.3	8.0	8.9	8.9	6.0	7.5	---	---	---
19	16.4	12.7	14.6	9.8	6.5	8.1	7.3	4.7	6.0	---	---	---
20	16.0	11.1	13.4	10.9	7.0	8.8	5.2	2.2	3.7	---	---	---
21	16.8	11.2	13.8	10.6	7.6	8.9	3.4	1.2	2.3	---	---	---
22	14.0	10.9	12.1	9.7	6.2	8.0	3.5	0.2	1.8	---	---	---
23	10.9	7.9	8.9	10.0	6.9	8.3	1.7	0.1	0.6	---	---	---
24	7.9	7.4	7.7	8.2	5.0	6.9	1.7	0.0	0.5	---	---	---
25	9.8	7.5	8.5	5.5	3.2	4.4	1.7	0.0	---	---	---	---
26	10.3	8.4	9.1	4.4	3.0	3.8	---	---	---	---	---	---
27	8.7	7.9	8.2	5.5	2.9	4.0	---	---	---	---	---	---
28	9.6	8.0	8.8	6.3	2.4	4.4	---	---	---	---	---	---
29	9.5	8.9	9.1	7.7	4.3	5.9	---	---	---	---	---	---
30	9.2	8.0	8.8	6.4	3.3	4.7	---	---	---	---	---	---
31	8.0	6.7	7.3	---	---	---	---	---	---	---	---	---
MONTH	24.2	6.7	13.8	13.1	2.4	7.8	9.5	0.0	3.8	---	---	---

## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	19.6	11.8	15.4	21.9	18.3	19.5
2	---	---	---	---	---	---	21.2	14.2	17.5	23.0	16.2	19.2
3	---	---	---	---	---	---	20.0	16.1	18.1	22.3	17.1	19.5
4	---	---	---	---	---	---	18.3	10.6	---	24.5	18.1	20.5
5	---	---	---	---	---	---	12.9	8.6	10.5	25.2	17.6	21.2
6	---	---	---	---	---	---	10.2	7.3	8.1	22.6	18.1	20.2
7	---	---	---	7.0	---	---	7.8	6.5	7.2	23.5	15.6	19.3
8	---	---	---	4.9	1.7	3.9	9.3	4.8	6.6	21.3	17.4	19.2
9	---	---	---	5.1	0.0	---	14.6	5.1	9.3	25.6	17.8	21.4
10	---	---	---	6.1	0.0	2.8	16.5	8.5	12.3	22.9	16.8	20.6
11	---	---	---	7.8	2.4	5.1	20.4	11.5	15.5	19.6	14.2	16.7
12	---	---	---	10.4	4.7	7.5	22.1	14.1	17.9	22.4	15.6	18.8
13	5.6	---	---	10.7	6.5	8.3	21.5	15.4	18.6	22.4	17.2	19.6
14	6.3	5.0	5.6	14.4	7.0	10.3	23.6	16.6	19.9	24.7	19.0	21.5
15	5.9	0.7	3.4	17.4	9.6	13.3	21.0	17.4	19.1	21.9	18.7	20.4
16	4.1	0.0	---	19.7	12.9	15.9	18.8	15.2	17.1	19.3	17.2	17.8
17	4.4	0.0	---	16.6	14.2	15.2	16.8	12.3	14.4	21.5	16.2	18.6
18	5.6	1.9	3.6	16.6	13.0	14.6	18.4	12.8	15.1	24.0	18.1	21.0
19	9.0	3.3	5.8	14.5	9.0	11.6	17.5	14.0	15.5	21.8	17.1	19.3
20	9.5	3.8	6.5	9.0	7.7	8.3	14.3	12.4	13.4	20.2	15.1	17.4
21	10.2	5.0	7.4	14.0	5.9	9.7	19.4	10.6	14.4	22.2	16.4	19.0
22	7.7	3.3	5.1	---	8.8	---	21.6	13.4	17.3	21.5	17.4	19.6
23	3.3	0.0	---	16.5	---	---	18.9	13.9	15.8	23.3	18.1	20.4
24	---	---	---	16.4	12.3	14.0	13.9	12.6	13.1	23.9	19.3	21.1
25	---	---	---	16.9	12.2	14.0	15.4	12.4	13.6	22.9	17.9	20.3
26	---	---	---	16.8	11.7	14.1	19.4	12.9	15.7	23.9	18.0	20.9
27	---	---	---	16.0	11.4	13.4	19.8	15.6	17.4	24.6	18.6	21.6
28	---	---	---	12.1	8.4	9.7	21.4	17.2	18.9	25.6	19.8	22.7
29	---	---	---	11.8	5.0	8.2	22.6	18.0	19.9	26.6	20.6	23.5
30	---	---	---	13.7	5.7	9.5	24.5	19.3	21.6	27.8	20.8	24.1
31	---	---	---	17.6	9.2	13.0	---	---	---	24.4	20.0	21.6
MONTH	10.2	0.0	5.3	19.7	0.0	10.6	24.5	4.8	15.1	27.8	14.2	20.2

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.0	19.0	20.9	28.7	24.2	26.4	26.5	24.2	25.3	23.4	19.9	21.5
2	21.0	18.0	19.3	29.2	24.7	26.9	29.5	24.6	26.9	26.2	21.0	23.4
3	20.6	17.9	19.0	29.8	25.6	27.6	29.8	25.7	27.8	28.3	22.1	24.9
4	22.2	17.2	19.7	29.7	25.5	27.6	28.3	25.7	26.7	27.9	22.1	25.0
5	24.4	18.9	21.3	29.6	25.4	27.5	30.7	24.9	27.5	28.2	21.4	24.8
6	24.6	19.4	21.9	29.1	25.2	27.2	30.2	26.6	28.5	28.4	22.1	25.1
7	22.5	19.2	20.5	28.8	25.0	26.9	29.8	25.7	27.7	28.0	21.8	24.8
8	23.3	17.1	20.1	29.1	24.7	26.9	29.4	25.7	27.6	27.6	21.1	24.2
9	25.5	19.2	22.3	28.5	25.3	26.7	30.0	25.7	27.8	26.0	22.1	24.0
10	26.1	21.9	23.9	29.7	23.9	26.7	29.5	25.7	27.6	26.4	22.0	24.1
11	28.5	21.6	24.9	31.1	25.2	28.0	28.8	25.4	27.0	24.1	21.4	23.0
12	26.2	22.9	24.4	28.9	25.0	27.0	28.9	24.8	26.8	25.6	19.7	22.2
13	27.2	20.8	23.8	28.9	24.5	26.7	28.9	23.9	26.4	22.9	19.6	20.9
14	29.0	22.4	25.6	30.2	25.4	27.8	29.4	25.1	27.1	24.2	18.2	20.8
15	29.3	23.3	26.3	29.8	26.3	28.2	30.8	25.1	27.9	24.2	18.5	21.3
16	29.1	23.9	26.6	28.7	25.0	27.1	32.9	26.1	29.3	22.4	19.7	21.1
17	28.7	23.9	26.3	29.0	25.4	27.0	32.0	26.6	29.4	22.9	20.5	21.6
18	28.9	22.7	25.6	30.5	25.6	27.8	31.1	26.3	28.6	22.1	19.3	20.8
19	26.1	23.6	24.8	28.6	25.7	26.9	31.0	25.3	28.1	20.7	17.5	19.1
20	26.5	22.0	24.1	29.8	25.0	27.3	30.9	25.9	28.2	20.6	17.0	18.8
21	25.4	21.3	23.3	29.3	25.5	27.4	32.8	26.3	29.2	20.9	18.6	19.7
22	24.5	22.4	23.2	27.9	24.8	26.4	31.8	26.1	29.0	22.7	18.7	20.4
23	27.2	21.8	24.5	28.6	23.8	26.2	32.2	26.2	29.2	22.8	17.8	20.3
24	29.7	24.2	26.9	27.8	23.9	25.9	32.7	25.9	29.3	22.7	20.0	21.3
25	27.7	23.1	25.4	28.5	24.2	26.2	32.5	27.0	29.8	21.6	17.7	19.7
26	27.0	20.5	23.7	29.9	25.0	27.3	---	26.9	---	22.6	18.4	20.4
27	26.6	22.1	24.4	30.0	26.0	28.0	31.1	---	---	21.4	18.1	19.7
28	27.3	22.3	24.6	28.9	25.7	27.4	29.0	26.0	27.2	19.8	16.2	18.0
29	26.1	23.4	24.5	29.7	25.2	27.4	29.6	25.0	26.9	19.2	15.2	17.2
30	27.9	22.1	24.9	30.4	25.4	27.8	27.1	21.8	23.8	17.5	14.7	16.1
31	---	---	---	28.3	25.3	26.9	21.8	20.6	20.8	---	---	---
MONTH	29.7	17.1	23.6	31.1	23.8	27.1	32.9	20.6	27.5	28.4	14.7	21.5

## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.8	7.7	9.3	12.4	---	---	14.0	13.1	13.5	---	---	---
2	9.2	7.4	8.3	12.2	11.0	11.5	13.5	12.7	13.1	---	---	---
3	10.4	8.1	9.1	12.3	10.9	11.6	15.2	13.1	14.1	---	---	---
4	11.4	8.6	9.9	12.6	11.2	11.8	15.1	14.1	14.6	---	---	---
5	12.9	9.2	10.7	11.8	10.5	11.1	15.3	14.2	14.7	---	---	---
6	14.2	8.9	11.2	12.2	10.7	11.3	14.7	13.5	14.3	---	---	---
7	12.1	9.6	10.8	12.1	10.4	11.2	14.8	13.0	13.8	---	---	---
8	13.6	9.5	11.1	11.6	10.1	10.7	14.8	13.1	13.9	---	---	---
9	12.0	9.1	10.3	11.7	9.8	10.6	15.5	13.5	14.4	---	---	---
10	10.8	8.5	9.4	11.9	9.9	10.7	15.4	13.4	14.3	---	---	---
11	10.3	8.4	9.1	12.8	10.4	11.5	14.7	13.0	13.8	---	---	---
12	10.0	8.5	9.2	13.1	11.2	11.9	14.2	12.5	13.2	---	---	---
13	10.9	9.7	10.2	12.5	10.8	11.6	15.8	12.7	14.1	---	---	---
14	11.0	9.8	10.4	11.9	10.4	11.0	16.3	13.6	14.7	---	---	---
15	11.1	9.9	10.4	12.9	10.9	11.8	15.9	13.6	14.6	---	---	---
16	11.2	10.0	10.7	13.0	11.3	12.0	17.8	13.0	15.2	---	---	---
17	11.3	10.1	10.9	13.2	11.2	11.9	15.6	13.4	14.4	---	---	---
18	10.6	9.2	10.1	12.8	10.9	11.7	17.0	12.7	14.6	---	---	---
19	10.9	9.2	10.0	13.0	11.4	12.0	17.3	13.6	15.1	---	---	---
20	11.2	9.8	10.4	13.0	11.3	12.0	17.3	14.7	15.9	---	---	---
21	---	---	---	12.7	11.2	11.9	17.7	15.4	16.5	---	---	---
22	---	---	---	13.4	11.4	12.3	18.4	16.1	17.1	---	---	---
23	---	---	---	13.3	11.4	12.2	18.4	16.2	17.1	---	---	---
24	---	---	---	13.4	11.4	12.3	18.2	16.3	17.2	---	---	---
25	---	---	---	13.7	12.7	13.3	---	16.5	---	---	---	---
26	---	---	---	14.3	13.1	13.5	---	---	---	---	---	---
27	---	---	---	14.1	13.3	13.6	---	---	---	---	---	---
28	---	---	---	13.9	13.0	13.5	---	---	---	---	---	---
29	---	---	---	13.3	12.4	12.8	---	---	---	---	---	---
30	---	---	---	13.8	12.3	13.2	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	14.2	7.4	10.1	14.3	9.8	11.9	18.4	12.5	14.8	---	---	---

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	14.5	9.7	11.6	7.6	6.7	7.2
2	---	---	---	---	---	---	15.2	9.0	11.5	8.3	7.5	7.9
3	---	---	---	---	---	---	12.9	8.5	10.4	9.2	7.5	8.2
4	---	---	---	---	---	---	14.4	---	---	9.3	7.6	8.1
5	---	---	---	---	---	---	14.6	10.8	12.6	12.8	7.3	9.6
6	---	---	---	---	---	---	13.2	11.3	12.1	9.9	7.2	8.5
7	---	---	---	16.1	---	---	14.8	11.6	13.1	12.6	7.8	9.9
8	---	---	---	15.6	12.7	14.2	14.6	12.5	13.5	11.6	7.7	8.9
9	---	---	---	15.4	14.2	14.7	14.9	12.3	13.5	12.0	7.4	9.5
10	---	---	---	15.3	13.9	14.6	15.5	10.9	13.0	8.7	7.3	8.1
11	---	---	---	14.5	12.7	13.7	16.2	9.8	12.7	9.9	8.5	9.2
12	---	---	---	14.3	11.6	12.9	15.5	9.0	12.0	10.3	8.6	9.3
13	14.9	---	---	14.4	11.0	12.5	13.9	8.5	11.0	10.0	8.3	8.9
14	13.8	10.8	12.1	13.5	10.8	12.1	12.0	7.9	9.8	10.2	8.0	9.0
15	14.2	11.0	12.5	13.1	9.7	11.3	11.8	7.8	9.3	10.2	8.0	9.0
16	14.8	13.3	14.0	14.5	8.6	11.2	12.2	8.0	9.6	10.1	8.4	9.1
17	15.2	13.3	14.2	15.2	8.2	11.5	12.9	9.1	10.7	10.6	8.8	9.6
18	16.5	12.8	14.5	16.5	8.8	11.9	12.8	9.2	10.7	9.9	8.3	9.0
19	16.6	12.3	14.3	12.1	9.0	10.4	11.7	8.5	9.9	9.0	8.0	8.4
20	16.4	12.1	14.2	15.5	10.4	12.7	11.8	9.0	10.3	10.7	8.8	9.8
21	17.7	11.7	14.3	17.6	11.4	14.2	13.0	9.9	11.2	10.6	9.0	9.6
22	17.4	11.7	14.3	---	10.7	---	14.3	8.9	11.2	10.4	8.7	9.4
23	17.4	13.5	15.5	12.8	---	---	11.5	8.4	9.6	9.7	---	---
24	---	15.3	---	8.8	8.0	8.3	9.9	8.4	9.2	---	---	---
25	---	---	---	9.0	8.7	8.8	9.4	8.4	8.9	---	---	---
26	---	---	---	9.7	8.8	9.2	8.8	8.3	8.7	---	---	---
27	---	---	---	10.1	8.8	9.7	8.3	7.1	7.7	11.2	---	---
28	---	---	---	11.5	9.8	10.9	7.6	7.1	7.3	11.4	8.0	9.5
29	---	---	---	12.8	11.2	12.0	7.5	7.1	7.3	12.6	7.7	9.9
30	---	---	---	12.7	11.1	12.0	7.3	6.6	7.0	11.6	7.7	9.6
31	---	---	---	12.5	10.1	11.3	---	---	---	11.4	7.8	9.3
MONTH	17.7	10.8	14.0	17.6	8.0	11.8	16.2	6.6	10.5	12.8	6.7	9.0

## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.8	8.2	9.8	8.9	7.2	8.1	7.7	6.8	7.2	---	---	---
2	9.9	8.2	9.0	8.2	6.9	7.4	7.8	6.8	7.2	7.5	---	---
3	10.2	8.2	9.0	7.9	6.8	7.3	7.7	6.7	7.2	9.8	6.5	7.8
4	11.0	8.7	9.8	7.8	6.9	7.3	7.6	6.8	7.2	9.4	6.6	7.7
5	11.3	8.3	9.7	8.1	7.0	7.5	7.8	6.9	7.3	11.2	6.7	8.6
6	12.0	8.3	9.9	8.9	7.2	8.0	8.0	6.7	7.3	12.7	6.6	9.1
7	11.5	8.3	9.7	8.6	7.2	7.9	9.4	6.9	7.9	13.8	6.5	9.6
8	11.4	9.0	10.1	8.6	7.3	7.9	8.5	6.9	7.6	13.3	6.5	9.4
9	10.8	8.7	9.6	8.5	7.2	7.7	8.5	7.0	7.6	11.0	6.4	8.1
10	10.2	8.1	9.1	7.8	6.9	7.4	8.6	7.0	7.6	10.5	6.4	8.1
11	10.4	8.2	9.1	10.2	6.6	7.8	8.8	7.1	7.8	9.7	6.5	7.8
12	10.2	7.8	8.7	8.6	6.9	7.6	9.4	7.2	8.1	10.5	7.0	8.4
13	10.0	8.2	8.9	8.8	7.1	7.8	10.3	7.4	8.5	9.8	6.9	8.3
14	11.1	8.1	9.4	8.8	7.0	7.7	10.5	7.0	8.6	10.1	7.5	8.6
15	12.0	8.1	9.8	8.1	6.8	7.4	9.4	6.6	7.8	10.3	7.2	8.6
16	11.4	8.1	9.6	9.2	7.0	7.8	10.1	6.0	7.8	---	---	---
17	10.8	8.1	9.2	8.0	7.1	7.5	11.1	6.4	8.3	---	---	---
18	10.9	7.7	9.1	7.7	7.0	7.4	11.3	6.6	8.4	---	---	---
19	10.6	7.7	8.8	8.6	6.9	7.6	10.6	6.3	8.0	7.9	---	---
20	11.3	7.8	9.4	8.2	7.2	7.6	10.1	5.9	7.6	8.3	7.7	8.0
21	11.3	8.0	9.5	8.0	7.1	7.5	---	---	---	8.2	7.9	8.0
22	9.5	7.8	8.5	8.4	7.1	7.7	---	---	---	8.2	7.8	8.0
23	9.6	7.8	8.5	8.6	7.0	7.7	---	---	---	8.4	7.8	8.1
24	10.1	7.3	8.5	8.1	7.1	7.6	---	---	---	8.1	7.8	8.0
25	9.0	7.0	7.7	7.7	7.1	7.4	---	---	---	8.7	8.0	8.4
26	10.3	7.2	8.5	7.7	7.0	7.3	---	---	---	8.6	8.2	8.4
27	9.2	7.4	8.3	7.9	6.9	7.4	13.7	---	---	8.9	8.3	8.7
28	8.9	7.8	8.3	8.4	7.0	7.5	---	7.1	---	9.6	8.8	9.3
29	9.4	7.1	8.1	9.0	7.1	7.9	---	---	---	10.0	9.3	9.7
30	9.1	7.6	8.1	8.5	7.1	7.7	---	---	---	10.3	9.4	9.8
31	---	---	---	7.7	7.0	7.4	---	---	---	---	---	---
MONTH	12.0	7.0	9.1	10.2	6.6	7.6	13.7	5.9	7.8	13.8	6.4	8.5

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	38	25	32	43	24	33	16	11	13	---	---	---
2	88	28	54	29	20	24	14	10	12	---	---	---
3	170	54	82	23	18	21	14	10	12	---	---	---
4	170	38	56	22	18	19	12	9	10	---	---	---
5	50	39	42	58	19	42	15	9	12	---	---	---
6	80	42	51	60	38	49	13	11	12	---	---	---
7	110	38	73	55	36	46	12	9	11	---	---	---
8	97	61	77	57	39	48	12	9	10	---	---	---
9	120	64	91	56	40	47	12	8	10	---	---	---
10	290	110	180	53	36	44	11	8	9	---	---	---
11	290	150	230	47	28	37	11	8	9	---	---	---
12	240	160	200	39	27	33	12	9	10	---	---	---
13	380	220	270	38	29	33	12	8	10	---	---	---
14	400	240	310	46	33	40	11	7	9	---	---	---
15	250	130	170	51	33	41	10	7	9	---	---	---
16	150	120	140	44	29	36	11	8	9	---	---	---
17	160	120	140	42	29	34	13	9	10	---	---	---
18	160	110	120	40	29	34	12	8	10	---	---	---
19	120	87	100	110	24	34	11	7	9	---	---	---
20	94	76	85	35	25	29	10	7	8	---	---	---
21	84	70	77	31	24	27	9	7	8	---	---	---
22	75	58	65	34	21	26	10	7	8	---	---	---
23	62	51	55	38	22	28	9	6	7	---	---	---
24	63	51	56	28	21	25	9	6	7	---	---	---
25	52	42	47	24	13	18	12	6	9	---	---	---
26	44	38	41	15	11	13	---	---	---	---	---	---
27	48	33	39	14	12	13	---	---	---	---	---	---
28	40	34	37	15	12	14	---	---	---	---	---	---
29	47	38	41	16	13	14	---	---	---	---	---	---
30	46	38	42	18	12	15	---	---	---	---	---	---
31	52	34	40	---	---	---	---	---	---	---	---	---
MONTH	400	25	98	110	11	31	16	6	10	---	---	---



## 06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	71	48	60	330	240	290
2	---	---	---	---	---	---	84	49	65	240	180	210
3	---	---	---	---	---	---	100	81	91	190	140	170
4	---	---	---	---	---	---	---	63	---	230	120	140
5	---	---	---	---	---	---	65	45	54	130	100	110
6	---	---	---	---	---	---	85	45	53	210	110	110
7	---	---	---	---	---	---	57	39	48	120	81	100
8	---	---	---	18	12	15	39	32	35	250	81	120
9	---	---	---	15	11	12	43	31	36	260	110	150
10	---	---	---	15	11	12	57	41	46	270	98	180
11	---	---	---	16	11	13	60	53	57	280	140	220
12	---	---	---	16	12	14	76	57	65	140	98	120
13	---	---	---	16	12	14	82	60	68	170	83	92
14	79	16	25	15	10	13	120	69	83	100	68	77
15	53	18	23	16	11	14	150	82	110	77	69	72
16	21	13	16	19	11	15	190	140	170	130	74	88
17	22	13	15	18	14	16	190	120	170	---	110	---
18	20	12	15	220	17	26	150	85	110	---	---	---
19	20	15	17	43	18	28	160	90	110	---	---	---
20	19	13	15	30	17	24	210	82	130	---	---	---
21	21	14	17	20	16	18	90	73	81	---	---	---
22	19	13	16	---	19	---	99	72	85	---	---	---
23	16	13	14	440	---	---	190	90	130	---	---	---
24	---	---	---	>1,200	440	>1,100	550	170	250	---	---	---
25	---	---	---	>1,200	560	>950	550	310	410	---	---	---
26	---	---	---	560	320	430	370	290	320	---	---	---
27	---	---	---	320	230	270	560	290	430	---	---	---
28	---	---	---	300	210	270	750	550	670	---	---	---
29	---	---	---	210	93	140	780	510	640	---	---	---
30	---	---	---	93	67	77	630	330	430	---	---	---
31	---	---	---	77	63	68	---	---	---	---	---	---
MONTH	79	12	17	1,200	10	160	780	31	170	330	68	140

> Actual value is known to be greater than the value shown

## KANSAS RIVER BASIN

06887500 KANSAS RIVER AT WAMEGO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	210	150	180	72	59	65	130	52	81			
2	---	---	---	210	160	180	65	54	59	270	54	160			
3	---	---	---	190	140	170	64	52	58	210	99	150			
4	---	---	---	180	130	150	60	51	55	130	85	110			
5	---	---	---	160	110	140	60	48	54	99	79	90			
6	130	100	120	120	95	110	56	46	51	86	55	69			
7	130	99	110	110	79	96	51	42	47	64	49	56			
8	120	100	110	100	83	94	51	42	45	58	46	51			
9	130	110	120	170	85	110	53	41	46	77	45	59			
10	160	130	150	350	95	190	54	41	46	88	54	71			
11	170	130	150	140	88	120	52	43	46	69	45	54			
12	230	150	180	120	90	100	60	42	48	64	46	56			
13	240	130	190	110	80	94	51	32	38	55	39	47			
14	150	110	130	100	75	86	49	36	40	46	32	40			
15	150	110	130	100	76	85	43	36	40	66	33	43			
16	130	100	120	120	76	87	43	32	37	>1,300	66	>920			
17	150	110	130	110	80	88	38	31	35	>1,300	>1,300	>1,300			
18	130	88	110	110	76	87	40	32	36	>1,300	>1,300	>1,300			
19	110	86	95	98	76	87	43	34	39	>1,300	1,200	>1,300			
20	100	80	91	100	75	85	48	30	37	1,200	870	1,000			
21	94	77	87	140	76	89	49	31	39	940	670	770			
22	150	75	86	91	77	83	52	32	43	690	520	600			
23	500	81	130	95	70	80	61	37	44	620	380	480			
24	200	72	110	85	68	77	99	52	72	390	290	330			
25	>1,300	68	>410	84	69	77	72	31	39	320	240	280			
26	870	140	310	82	70	74	41	---	---	240	170	200			
27	250	120	160	82	69	75	---	29	---	200	150	170			
28	230	94	140	79	67	74	35	27	31	190	120	150			
29	1,300	77	230	77	68	72	43	33	38	190	100	130			
30	640	210	350	73	61	66	54	35	38	190	100	120			
31	---	---	---	---	---	---	120	40	84	---	---	---			
MONTH	1,300	68	160	350	61	100	120	27	47	1,300	32	340			

&gt; Actual value is known to be greater than the value shown

## 06888000 VERMILLION CREEK NEAR WAMEGO, KS

LOCATION.--Lat 39°21'00", long 96°13'10", in NE ¼ NW ¼ NW ¼ sec.20, T.8 S., R.11 E., Pottawatomie County, Hydrologic Unit 10270102, on left bank at upstream side of county highway bridge, 1.9 mi upstream from Indian Creek, 14 mi northeast of Wamego, and at mile 15.8.

DRAINAGE AREA.--243 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1936 to June 1946, January 1954 to June 1972, February 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 992.20 ft above NGVD of 1929. Apr. 22, 1936, to June 30, 1946, gage at present site and datum. Jan 1, 1954, to June 30, 1972, gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--maximum known stage 31.2 ft in June 1915, from floodmarks and other information from local residents.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	17	13	7.8	16	6.9	8.8	63	12	5.7	e0.62	25
2	3.0	13	13	8.0	18	7.2	8.6	53	23	5.6	e0.60	8.0
3	7.6	11	13	7.5	19	7.4	8.6	47	32	5.0	e0.57	4.9
4	9.9	10	12	6.7	16	8.6	8.7	45	26	4.2	e0.56	3.1
5	9.4	10	12	7.3	16	6.7	24	44	19	3.4	e0.53	2.1
6	8.9	10	12	7.3	14	7.3	26	40	18	2.9	e0.53	1.2
7	9.0	11	12	7.5	10	7.9	24	51	18	2.5	e0.51	0.93
8	6.2	10	12	7.0	10	8.5	28	49	18	2.7	e0.46	0.87
9	4.7	10	11	7.7	9.9	6.7	25	150	14	2.6	e0.42	1.1
10	3.6	11	11	6.8	10	7.0	17	65	12	3.3	e0.44	1.2
11	3.1	11	11	5.7	10	7.8	14	67	11	8.6	e0.41	1.5
12	2.8	11	11	5.5	11	8.3	12	44	9.7	6.8	e0.40	1.8
13	2.8	11	11	5.5	11	9.9	12	36	9.9	4.6	e0.40	1.5
14	2.9	13	10	5.2	17	9.8	11	32	9.0	3.3	e0.41	1.4
15	3.0	13	8.1	5.1	22	10	10	30	8.3	2.4	e0.40	1.2
16	3.0	13	8.1	5.6	15	9.1	12	28	14	e1.8	e0.40	1.0
17	3.5	13	8.2	5.3	14	16	17	30	7.8	e1.6	e0.39	0.97
18	3.8	14	7.8	6.0	13	29	17	28	7.1	e1.4	e0.39	1.1
19	4.5	14	7.4	6.0	10	23	65	28	6.7	e1.3	e0.39	1.0
20	4.8	14	7.3	6.6	9.8	55	390	90	6.8	e1.2	0.37	1.1
21	4.4	14	7.5	6.7	9.5	55	170	61	5.9	e1.1	0.41	1.1
22	3.9	14	6.7	7.4	9.1	30	68	36	6.4	e1.0	0.34	1.1
23	4.5	14	6.1	6.5	8.4	20	77	30	12	e0.99	0.41	1.0
24	7.4	14	6.2	6.3	7.0	17	618	29	30	e0.90	0.39	0.96
25	19	13	6.0	6.5	5.9	14	364	27	32	e0.89	0.36	0.96
26	16	13	5.5	e7.1	5.9	12	131	24	17	e0.84	0.42	0.94
27	12	13	5.9	e7.7	6.0	11	84	21	8.6	e0.74	0.54	0.95
28	12	13	6.4	e8.2	6.5	10	220	18	6.7	e0.69	0.65	0.90
29	9.6	13	7.0	9.1	---	9.1	238	17	6.4	e0.69	0.60	0.84
30	29	14	8.0	10	---	8.8	84	15	6.1	e0.68	0.60	1.0
31	22	---	8.7	13	---	8.6	---	13	---	e0.67	49	---
MEAN	7.68	12.5	9.19	7.05	11.8	14.4	93.1	42.3	13.8	2.58	2.03	2.36
MAX	29	17	13	13	22	55	618	150	32	8.6	49	25
MIN	1.7	10	5.5	5.1	5.9	6.7	8.6	13	5.9	0.67	0.34	0.84
AC-FT	472	744	565	434	655	888	5,540	2,600	820	159	125	140

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	75.2	36.2	29.8	28.8	60.7	83.9	104	175	196	72.4	60.2	55.0
MAX	845	259	226	219	250	495	539	619	879	544	668	675
(WY)	(1942)	(1962)	(1945)	(1962)	(1969)	(1960)	(1944)	(1959)	(1967)	(1958)	(1968)	(1965)
MIN	0.000	0.000	0.000	0.000	0.29	0.33	0.31	1.01	4.67	0.49	0.000	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1937)	(1940)	(1937)	(1937)

06888000 VERMILLION CREEK NEAR WAMEGO, KS—Continued

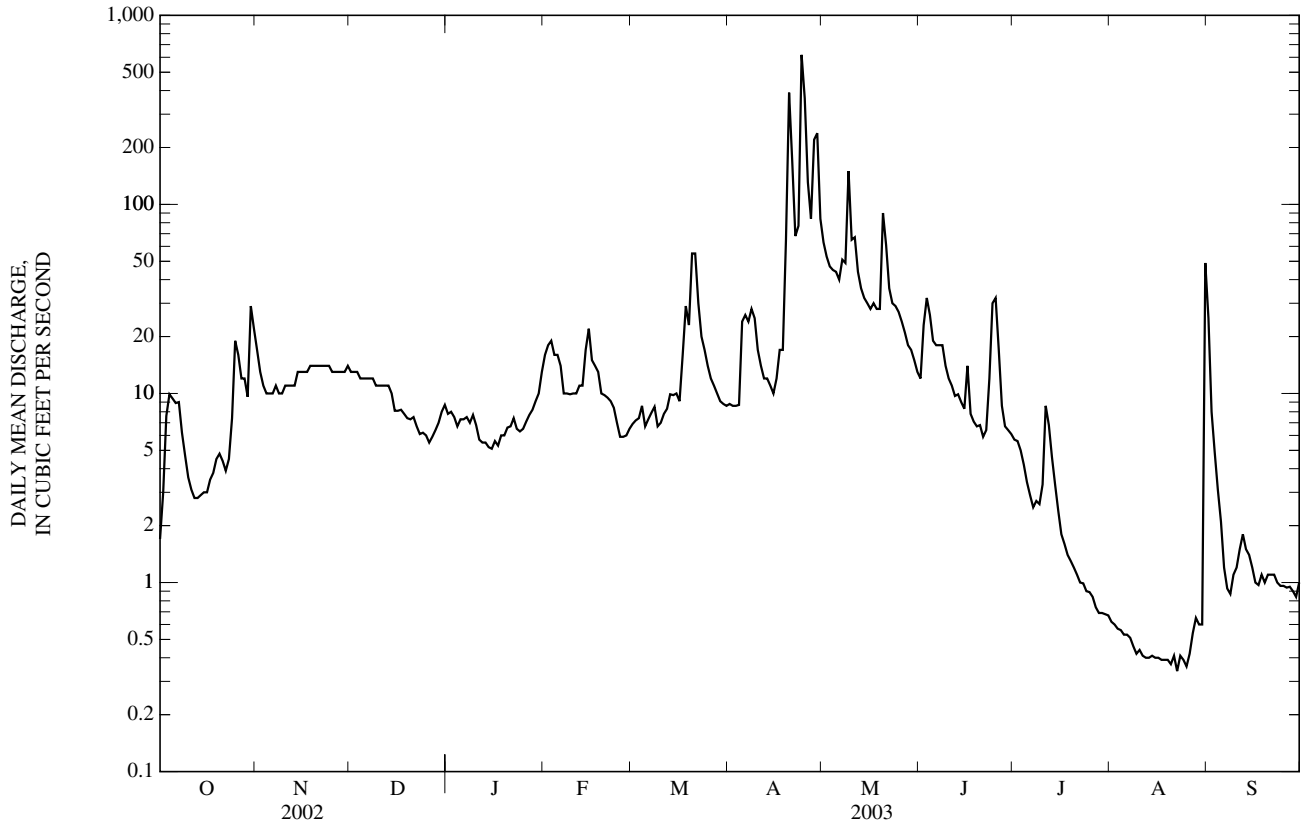
SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 1936 - 2003

ANNUAL MEAN	18.2	88.1	
HIGHEST ANNUAL MEAN		208	1945
LOWEST ANNUAL MEAN		1.88	1956
HIGHEST DAILY MEAN	618	Apr 24	13,200
LOWEST DAILY MEAN	0.34	Aug 22	0.00
ANNUAL SEVEN-DAY MINIMUM	0.38	Aug 19	0.00
MAXIMUM PEAK FLOW	733	Apr 24	26,500
MAXIMUM PEAK STAGE	8.95	Apr 24	29.70
INSTANTANEOUS LOW FLOW	0.32	Aug 22	0.00
ANNUAL RUNOFF (AC-FT)	13,140		63,820
10 PERCENT EXCEEDS	30		144
50 PERCENT EXCEEDS	8.6		18
90 PERCENT EXCEEDS	0.84		0.40

e Estimated



## 06888350 KANSAS RIVER NEAR BELVUE, KS

LOCATION.--Lat 39°11'15", long 96°08'50", in NW ¼ NW ¼ NW ¼ sec.13, T.10 S., R.11 E., Wabaunsee County, Hydrologic Unit 10270102, on left bank at downstream side of county highway bridge, 3.5 mi southeast of Belvue, 1.3 mi downstream from Wells Creek, 6.4 mi downstream from Vermillion Creek, and at mile 115.0.

DRAINAGE AREA.--55,870 mi<sup>2</sup>, of which a large area is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 925.54 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by lakes and reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	859	854	662	628	e605	678	590	1,730	1,890	2,840	2,540	2,000
2	947	832	650	628	e599	601	580	1,340	2,230	3,130	2,560	1,840
3	1,090	829	639	631	e600	581	676	1,140	2,640	3,330	2,590	1,980
4	951	820	632	636	e606	572	680	1,040	2,170	3,230	2,660	1,160
5	858	927	646	637	609	554	662	971	2,090	2,990	2,650	924
6	801	1,170	676	627	618	592	722	945	2,140	2,870	2,630	882
7	744	1,210	678	623	657	710	751	936	2,160	2,790	2,620	817
8	759	1,210	698	619	692	624	707	929	2,100	2,760	2,610	759
9	842	1,220	695	597	646	590	694	1,180	2,100	2,950	2,590	796
10	883	1,200	695	589	635	571	683	1,260	2,230	3,900	2,580	993
11	891	1,190	692	592	622	570	675	2,270	2,190	1,850	2,600	956
12	833	1,190	696	590	617	566	679	2,210	1,720	2,370	2,610	987
13	821	1,200	713	587	614	573	673	2,130	1,890	2,890	1,850	916
14	821	1,290	704	578	675	578	673	2,110	1,650	2,890	1,190	864
15	814	1,440	658	567	719	535	681	2,090	1,630	2,830	1,140	823
16	833	1,440	646	509	695	525	745	2,080	1,520	2,790	1,110	2,410
17	988	1,450	645	506	687	535	737	2,080	1,670	2,760	1,080	5,860
18	999	1,440	637	519	694	632	754	2,070	2,110	2,730	1,060	6,260
19	992	1,310	630	e553	667	615	850	2,140	2,110	2,710	1,040	4,970
20	982	1,180	623	e576	622	717	1,800	2,460	2,090	2,710	1,050	3,680
21	968	1,230	614	e615	604	737	1,230	2,510	2,020	2,710	1,020	2,900
22	918	1,240	609	e623	585	695	871	2,480	2,060	2,690	1,000	2,380
23	910	1,240	603	e592	575	953	843	2,450	2,570	2,670	997	2,160
24	968	1,370	621	e558	722	2,000	2,930	2,400	2,420	2,630	991	2,060
25	990	1,050	650	e558	670	1,660	3,490	2,360	3,010	2,640	1,040	2,090
26	864	796	659	e558	650	1,120	2,650	2,290	3,480	2,650	1,020	2,160
27	772	755	626	e556	767	935	2,590	2,240	2,420	2,590	1,010	2,130
28	779	731	609	e573	736	815	3,310	2,200	3,240	2,560	1,020	2,140
29	808	719	625	e596	---	734	3,200	2,080	3,380	2,550	1,110	2,210
30	880	701	636	e610	---	657	2,340	2,020	2,630	2,530	1,090	2,220
31	906	---	638	e610	---	627	---	1,980	---	2,520	1,760	---
MEAN	886	1,108	652	588	650	737	1,282	1,875	2,252	2,776	1,704	2,078
MAX	1,090	1,450	713	637	767	2,000	3,490	2,510	3,480	3,900	2,660	6,260
MIN	744	701	603	506	575	525	580	929	1,520	1,850	991	759
AC-FT	54,490	65,920	40,080	36,180	36,080	45,330	76,300	115,300	134,000	170,700	104,800	123,600

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

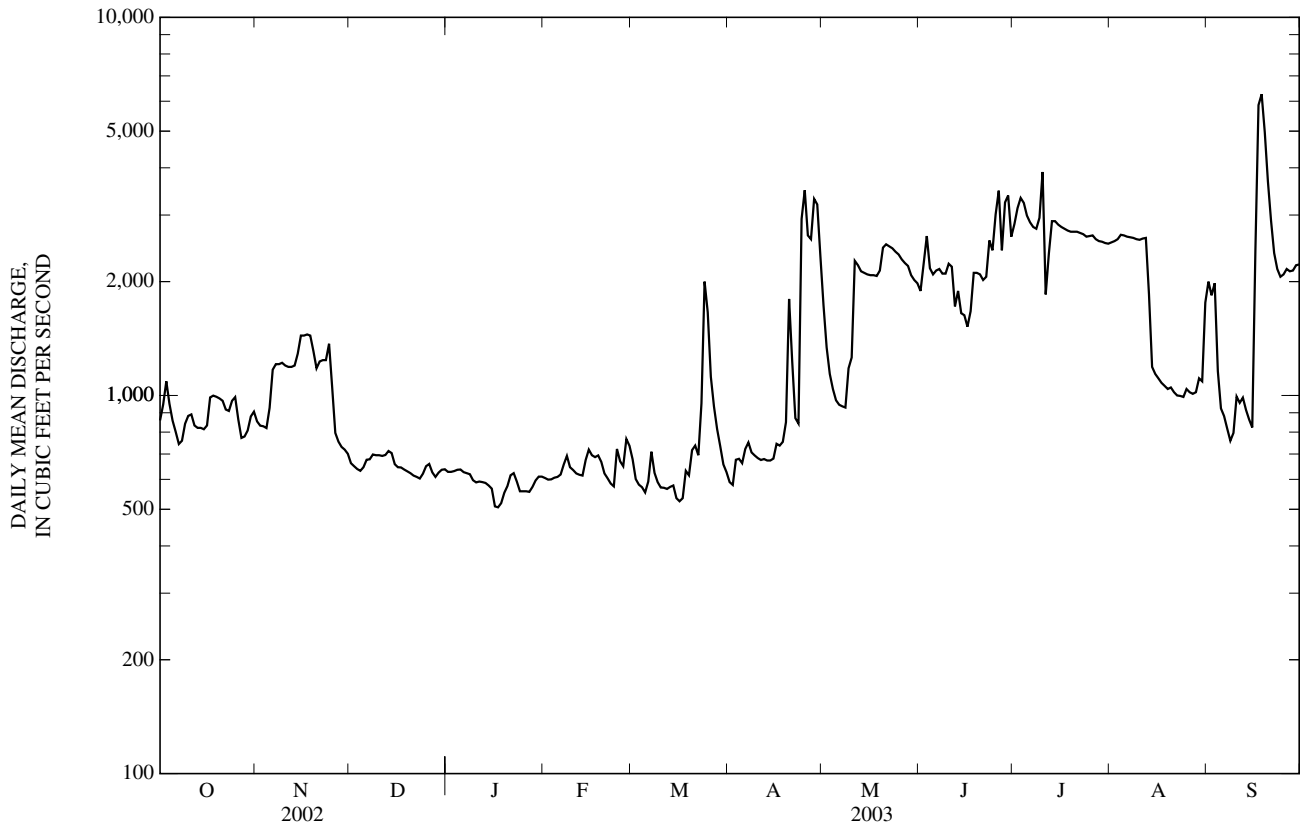
MEAN	4,578	3,755	4,149	2,584	4,144	5,476	7,889	11,050	10,640	11,000	8,352	5,044
MAX	23,260	21,070	10,790	7,497	15,650	24,150	32,300	31,800	42,050	72,370	57,370	35,230
(WY)	(1987)	(1999)	(1993)	(1994)	(1993)	(1993)	(1987)	(1995)	(1995)	(1993)	(1993)	(1993)
MIN	756	651	567	588	650	737	846	869	1,441	1,385	895	680
(WY)	(1985)	(1992)	(1992)	(2003)	(2003)	(2003)	(1989)	(1992)	(1989)	(1991)	(2002)	(1991)

KANSAS RIVER BASIN

06888350 KANSAS RIVER NEAR BELVUE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL MEAN	1,796		1,385		6,570	
HIGHEST ANNUAL MEAN					25,330	1993
LOWEST ANNUAL MEAN					1,385	2003
HIGHEST DAILY MEAN	7,270	Jun 1	6,260	Sep 18	167,000	Jul 26, 1993
LOWEST DAILY MEAN	603	Dec 23	506	Jan 17	390	Jan 16, 1992
ANNUAL SEVEN-DAY MINIMUM	620	Dec 18	544	Jan 14	478	Jan 14, 1992
MAXIMUM PEAK FLOW			6,550	Sep 18	170,000	Jul 26, 1993
MAXIMUM PEAK STAGE			9.22	Sep 18	26.00	Jul 26, 1993
INSTANTANEOUS LOW FLOW			445	Jan 16	390	Jan 16, 1992
ANNUAL RUNOFF (AC-FT)	1,300,000		1,003,000		4,760,000	
10 PERCENT EXCEEDS	3,330		2,650		16,500	
50 PERCENT EXCEEDS	1,380		953		3,120	
90 PERCENT EXCEEDS	703		598		902	

e Estimated



06888500 MILL CREEK NEAR PAXICO, KS

LOCATION.--Lat 39°03'46", long 96°08'59", in SW 1/4 NW 1/4 SW 1/4 sec.25, T.11 S., R.11 E., Wabaunsee County, Hydrologic Unit 10270102, on right bank at downstream side of bridge on Snokomo Road, 1.0 mi east of Paxico, 4.5 mi downstream from Kuenzli Creek, and at mile 13.5

DRAINAGE AREA.--316 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1953 to current year.

REVISED RECORDS.--WSP 1560: 1954, 1957.

GAGE.--Water-stage recorder. Datum of gage is 955.00 ft above NGVD of 1929 from topographic map. Prior to Apr. 15, 1958, nonrecording gage at same site and datum. Prior to Oct. 1, 2001, water-stage recorder at site 2.5 mi upstream at datum 9.92 ft higher.

REMARKS.--Records good. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum known stage since at least 1935, 34.7 ft, July 12, 1951, from floodmarks, discharge, 77,200 ft<sup>3</sup>/s, from contracted-opening measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 24	0600	*3,790	*15.49	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	90	27	20	18	34	66	214	61	88	6.6	236
2	13	76	27	19	18	34	67	194	175	67	6.9	75
3	32	70	25	19	18	34	63	176	141	55	6.2	42
4	71	64	25	19	18	33	63	167	100	46	4.2	29
5	67	56	25	19	18	33	62	152	87	40	4.5	22
6	30	54	24	19	17	32	66	141	86	34	4.8	18
7	19	51	24	18	17	32	69	142	86	30	4.2	16
8	15	47	24	18	16	32	65	184	77	27	3.7	14
9	13	45	24	18	16	30	59	216	70	24	5.8	14
10	12	44	24	18	16	29	57	485	64	28	5.7	14
11	11	42	24	18	16	28	55	266	60	23	6.1	16
12	11	39	24	17	15	28	54	168	55	18	5.9	24
13	9.6	38	25	17	15	28	53	145	56	18	5.7	29
14	9.4	37	24	17	28	28	51	138	55	19	5.3	27
15	9.3	40	23	17	58	28	48	122	51	17	4.7	23
16	10	40	23	19	60	28	52	121	49	15	3.5	19
17	13	38	23	18	46	29	52	129	46	14	2.9	18
18	12	37	24	18	41	31	51	116	42	13	2.5	16
19	11	36	23	18	40	40	210	117	38	12	2.2	17
20	10	35	22	18	38	173	1,610	143	36	14	1.4	15
21	9.6	34	22	18	37	171	562	129	35	15	1.2	15
22	9.5	32	22	17	36	123	285	113	32	15	1.6	15
23	11	32	22	16	36	107	318	105	69	15	1.1	15
24	20	31	21	16	35	98	2,430	104	92	13	0.78	14
25	90	30	21	16	33	92	1,330	109	51	12	0.65	13
26	84	30	20	17	32	86	660	98	43	10	1.9	12
27	61	29	20	16	33	82	428	90	39	12	2.4	12
28	88	28	21	17	34	78	327	83	37	10	2.5	11
29	74	28	21	17	---	73	272	76	214	9.6	5.4	11
30	125	28	21	17	---	69	239	72	183	8.3	16	13
31	135	---	20	19	---	67	---	66	---	6.5	314	---
MEAN	35.2	42.7	23.1	17.7	28.8	58.4	324	148	74.3	23.5	14.2	27.2
MAX	135	90	27	20	60	173	2,430	485	214	88	314	236
MIN	4.5	28	20	16	15	28	48	66	32	6.5	0.65	11
MED	13	38	23	18	30	34	66	129	58	15	4.2	16
AC-FT	2,160	2,540	1,420	1,090	1,600	3,590	19,290	9,090	4,420	1,440	873	1,620

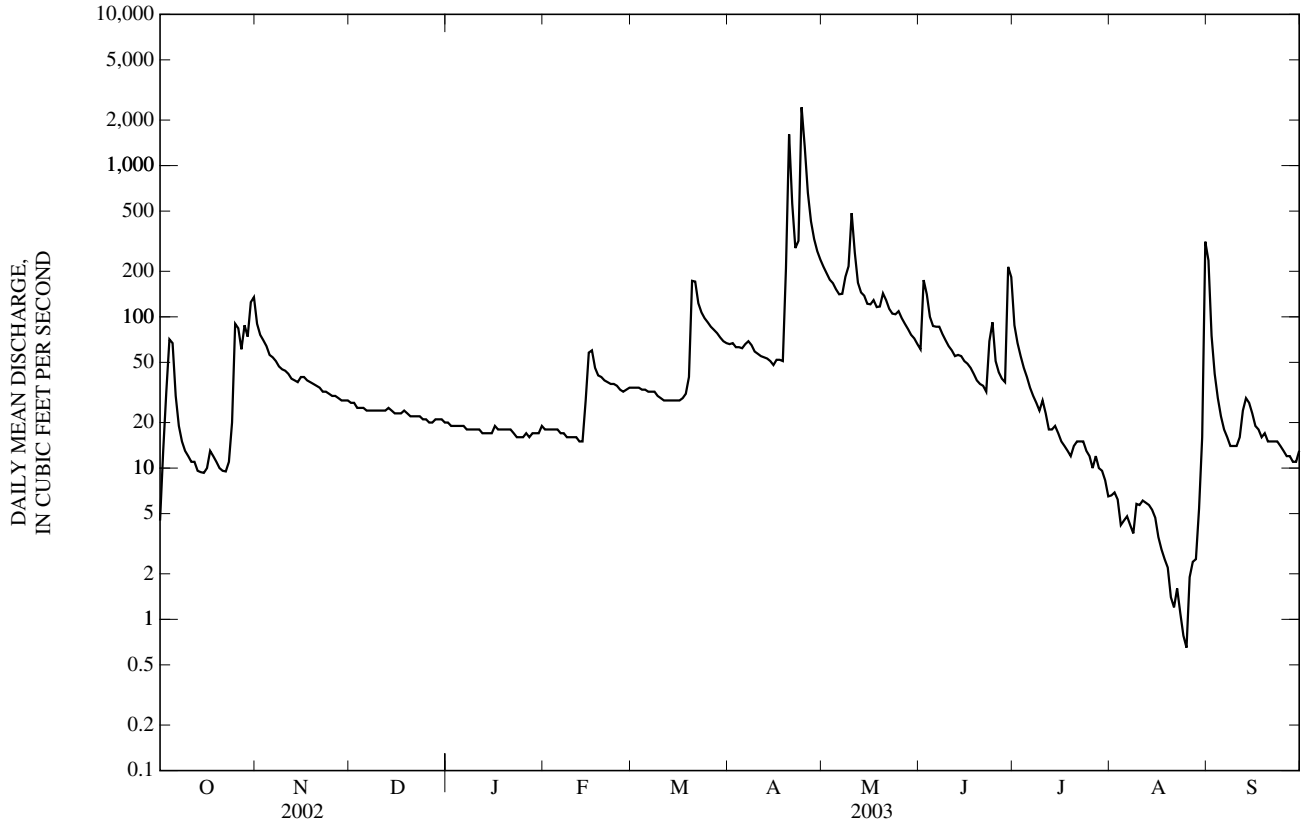
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

MEAN (WY)	149 (1986)	118 (1999)	96.8 (1974)	79.8 (1974)	135 (1973)	248 (1973)	324 (1999)	379 (1995)	316 (1967)	188 (1993)	78.6 (1968)	113 (1973)
MAX (WY)	1,179 (1957)	1,108 (1957)	668 (1957)	382 (1957)	611 (1957)	1,325 (1957)	1,680 (1954)	2,895 (1989)	1,653 (1989)	2,136 (1956)	535 (1955)	1,954 (1956)
MIN (WY)	0.000 (1957)	0.000 (1957)	0.000 (1957)	0.000 (1957)	0.000 (1957)	0.97 (1957)	1.51 (1954)	3.05 (1989)	1.89 (1989)	1.82 (1956)	0.055 (1955)	0.040 (1956)

KANSAS RIVER BASIN

06888500 MILL CREEK NEAR PAXICO, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL MEAN	48.1		67.9		188	
HIGHEST ANNUAL MEAN					634	
LOWEST ANNUAL MEAN					7.02	
HIGHEST DAILY MEAN	1,320	May 27	2,430	Apr 24	21,700	May 17, 1995
LOWEST DAILY MEAN	2.7	Sep 11	0.65	Aug 25	0.00	Sep 22, 1954
ANNUAL SEVEN-DAY MINIMUM	3.3	Sep 6	1.2	Aug 20	0.00	Sep 22, 1954
MAXIMUM PEAK FLOW			3,790	Apr 24	42,200	Sep 26, 1973
MAXIMUM PEAK STAGE			15.49	Apr 24	32.21	Sep 26, 1973
INSTANTANEOUS LOW FLOW			0.65	Aug 24	0.00	at times
ANNUAL RUNOFF (AC-FT)	34,820		49,130		136,200	
10 PERCENT EXCEEDS	99		131		330	
50 PERCENT EXCEEDS	23		28		54	
90 PERCENT EXCEEDS	7.1		9.6		5.1	





## 06889000 KANSAS RIVER AT TOPEKA, KS

LOCATION.--Lat 39°04'00", long 95°38'58", in SW ¼ SW ¼ NW ¼ sec.28, T.11 S., R.16 E., Shawnee County, Hydrologic Unit 10270102, on right bank at downstream side of Sardou Bridge in Topeka, 2.3 mi upstream from Soldier Creek (diversion channel), and at mile 83.1.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--56,720 mi<sup>2</sup>, approximately, of which a large area is probably noncontributing.

PERIOD OF RECORD.--April to August 1904 (gage heights only), June 1917 to current year. Gage-height records for this vicinity since August 1904 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 806: Drainage area. WSP 1310: 1920(M), 1922(M).

GAGE.--Water-stage recorder. Datum of gage is 846.66 ft above NGVD of 1929. Feb. 28, 1961, to Sept. 30, 1988, gage datum was 5.00 ft higher. Prior to Feb. 28, 1961, recording or nonrecording gages at several sites within 8,000 ft of present site at various datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1903 (second highest since 1844) reached a stage of about 37 ft, present site and datum, from floodmarks at site 5,900 ft upstream, discharge, about 300,000 ft<sup>3</sup>/s. A flood in the spring of 1844 is known to have been higher than that of 1903.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	833	1,140	737	700	e661	847	786	2,720	1,950	2,770	2,380	2,360
2	918	999	723	693	e647	839	734	2,160	2,370	3,030	2,400	1,920
3	1,120	949	687	677	e676	755	722	1,790	3,010	3,270	2,380	1,810
4	1,260	929	695	690	740	759	852	1,560	2,830	3,410	2,430	1,650
5	1,050	919	681	694	724	636	860	1,370	2,310	3,190	2,490	1,140
6	983	1,030	688	693	738	516	887	1,290	2,270	2,980	2,480	935
7	852	1,240	727	687	533	749	930	1,260	2,190	2,820	2,410	876
8	774	1,250	728	691	650	862	962	1,290	2,160	2,810	2,390	792
9	792	1,250	750	699	837	789	902	1,420	2,070	2,770	2,370	743
10	872	1,270	739	649	820	732	862	2,280	2,110	3,210	2,350	771
11	905	1,260	747	621	738	705	836	2,390	2,330	3,770	2,500	1,010
12	934	1,260	747	644	725	712	818	2,820	2,140	1,750	2,390	1,010
13	857	1,250	761	650	709	710	799	2,590	1,800	2,370	2,330	1,100
14	831	1,280	773	647	859	776	762	2,500	1,870	2,800	1,480	1,000
15	849	1,350	762	627	883	717	745	2,440	1,680	2,800	1,170	866
16	852	1,410	709	483	e865	643	825	2,490	1,680	2,710	1,130	814
17	896	1,400	686	406	842	621	886	2,390	1,590	2,700	1,100	2,630
18	1,030	1,410	686	430	859	654	870	2,330	1,750	2,670	1,060	6,150
19	1,080	1,400	686	495	847	826	1,540	2,380	2,050	2,610	1,040	5,660
20	1,030	1,330	681	633	807	885	4,040	2,670	3,150	2,590	1,040	4,110
21	1,020	1,290	673	718	761	1,030	4,400	2,910	2,130	2,580	1,070	3,200
22	1,010	1,300	657	715	768	1,030	2,250	2,750	1,980	2,620	1,020	2,570
23	998	1,310	659	e665	731	958	1,550	2,690	2,790	2,560	985	2,060
24	1,080	1,320	649	595	515	1,190	4,190	2,680	3,660	2,510	965	1,900
25	1,150	1,310	593	e617	358	1,970	7,660	2,590	2,590	2,450	961	1,770
26	1,190	1,110	681	e624	553	1,640	5,150	2,500	4,330	2,480	1,010	1,860
27	1,040	854	762	e631	674	1,280	3,620	2,370	3,280	2,480	1,030	1,930
28	886	791	703	e663	791	1,150	3,690	2,360	2,840	2,430	1,060	1,900
29	909	783	656	e659	---	1,020	4,090	2,260	3,620	2,410	1,090	1,940
30	e966	774	680	698	---	e918	3,630	2,100	3,720	2,390	1,380	2,080
31	e1,060	---	681	e672	---	837	---	1,970	---	2,390	2,040	---
MEAN	969	1,172	703	638	725	895	2,028	2,236	2,475	2,720	1,675	1,952
MAX	1,260	1,410	773	718	883	1,970	7,660	2,910	4,330	3,770	2,500	6,150
MIN	774	774	593	406	358	516	722	1,260	1,590	1,750	961	743
AC-FT	59,560	69,760	43,210	39,210	40,290	55,050	120,700	137,500	147,300	167,300	103,000	116,100

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2003, BY WATER YEAR (WY)

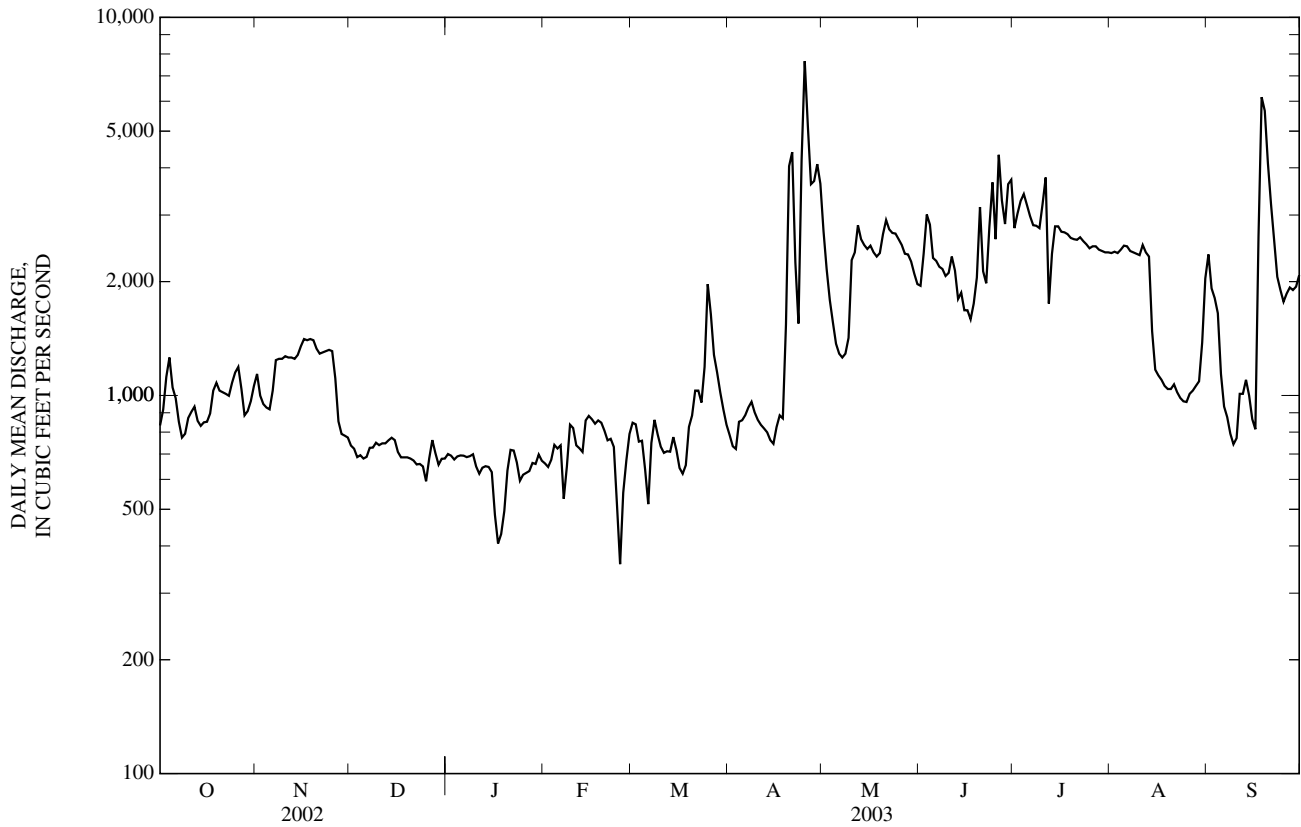
MEAN	4,328	3,375	2,736	2,199	3,463	5,398	6,954	8,584	11,680	9,544	5,651	5,250
MAX	42,320	35,190	16,140	11,280	16,720	27,610	32,500	36,010	64,670	109,100	55,350	34,840
(WY)	(1974)	(1974)	(1974)	(1974)	(1949)	(1973)	(1987)	(1995)	(1951)	(1951)	(1993)	(1951)
MIN	348	406	383	328	500	492	650	585	1,075	986	269	425
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1967)	(1956)	(1956)	(1989)	(1936)	(1934)	(1956)

KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1918 - 2003	
ANNUAL MEAN	1,835		1,518		5,808	
HIGHEST ANNUAL MEAN					25,580	1993
LOWEST ANNUAL MEAN					1,138	1956
HIGHEST DAILY MEAN	9,620	May 12	7,660	Apr 25	458,000	Jul 13, 1951
LOWEST DAILY MEAN	593	Dec 25	358	Feb 25	170	Oct 11, 1956
ANNUAL SEVEN-DAY MINIMUM	656	Dec 20	532	Jan 14	183	Oct 7, 1956
MAXIMUM PEAK FLOW			8,410	Apr 25	469,000	Jul 13, 1951
MAXIMUM PEAK STAGE			9.22	Apr 25	40.80	Jul 13, 1951
INSTANTANEOUS LOW FLOW			233	Feb 25	112	Dec 16, 1940
ANNUAL RUNOFF (AC-FT)	1,328,000		1,099,000		4,208,000	
10 PERCENT EXCEEDS	3,350		2,780		13,500	
50 PERCENT EXCEEDS	1,380		1,040		2,640	
90 PERCENT EXCEEDS	785		673		872	

e Estimated



## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1999 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1999 to current year.

pH: July 1999 to current year.

WATER TEMPERATURE: July 1999 to current year.

DISSOLVED OXYGEN: July 1999 to current year.

TURBIDITY: July 1999 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records fair except those for periods of missing records. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,630 microsiemens/cm, Oct. 26, 1999; minimum, 189 microsiemens/cm, Aug. 17, 2000.

pH: Maximum, 10.0 standard units, Aug. 16, 2003; minimum, 7.0 standard units, July 5, 2000.

WATER TEMPERATURE: Maximum, 33.4°C, July 14, 2000; minimum, 0.0°C, Feb. 25, 2001.

DISSOLVED OXYGEN: Maximum 20.8 mg/L, Nov. 28, 2003; minimum, 3.7 mg/L, Sept. 3, 2002.

TURBIDITY: Maximum, >1,700 NTU, Sept. 17 2003; minimum, 6.0 NTU, July 28, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,330 microsiemens/cm, Mar. 25; minimum, 292 microsiemens/cm, Sept. 18.

pH: Maximum, 9.6 standard units, Aug. 21; minimum, 7.4 standard units, Apr. 20.

WATER TEMPERATURE: Maximum, 32.1°C, July 3; minimum, 0.0°C, Dec. 24.

DISSOLVED OXYGEN: Maximum, 20.8 mg/L, Nov. 28; minimum, 3.7 mg/L, Aug. 26.

TURBIDITY: Maximum, >1,700 NTU, Sept. 17; minimum 6.0 NTU, Jan. 11.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	815	799	807	818	797	805	983	971	977	1,060	1,000	1,030
2	812	757	782	849	813	837	980	964	972	1,080	1,060	1,070
3	776	686	747	849	834	840	1,010	975	992	1,100	1,070	1,090
4	774	694	724	865	842	853	1,020	1,010	1,020	1,080	1,050	1,060
5	767	696	738	867	852	859	1,020	999	1,010	1,060	1,050	1,050
6	867	767	819	866	855	862	1,030	1,010	1,020	1,080	1,050	1,060
7	952	867	923	---	727	---	1,040	1,020	1,030	1,090	1,070	1,080
8	1,160	923	1,060	---	717	---	1,030	1,000	1,020	1,070	1,010	1,040
9	1,150	904	989	722	710	715	1,020	1,000	1,010	1,020	1,010	1,010
10	1,050	960	1,030	725	718	721	1,020	991	1,010	1,050	1,010	1,020
11	1,000	900	934	729	724	727	1,000	979	995	1,100	1,040	1,080
12	958	811	882	727	721	723	1,010	1,000	1,010	1,100	1,010	1,080
13	857	812	837	727	721	725	1,010	988	1,000	1,120	1,080	1,100
14	846	815	826	730	---	---	1,020	1,000	1,010	---	---	---
15	854	780	826	---	---	---	1,010	981	995	---	---	---
16	797	749	775	710	690	693	1,010	989	997	---	---	---
17	879	765	843	709	704	---	1,000	983	991	---	---	---
18	877	731	797	---	---	---	1,020	1,000	1,020	---	---	---
19	731	686	709	---	---	---	1,030	1,020	1,020	---	---	---
20	726	700	716	729	717	720	1,050	1,030	1,040	---	---	---
21	740	726	731	743	729	741	1,060	1,050	1,050	---	---	---
22	742	731	736	---	---	---	1,060	1,040	1,050	---	---	---
23	752	736	745	---	---	---	1,050	1,040	1,050	---	---	---
24	750	728	741	---	---	---	1,040	1,020	1,030	---	---	---
25	736	721	727	771	765	767	1,070	1,030	1,050	---	---	---
26	732	714	724	804	771	792	1,070	1,050	1,060	---	---	---
27	770	725	743	897	804	839	1,050	928	1,000	---	---	---
28	866	769	814	937	897	923	972	925	955	---	---	---
29	900	866	881	945	936	941	963	947	956	---	---	---
30	895	873	853	971	953	959	969	942	951	---	---	---
31	---	818	---	---	---	---	1,000	969	988	---	---	---
MONTH	1,160	686	815	971	690	802	1,070	925	1,010	1,120	1,000	1,060

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	934	904	917	548	510	530
2	---	---	---	---	---	---	963	934	948	607	548	576
3	---	---	---	---	---	---	981	948	961	660	607	630
4	---	---	---	---	---	---	994	953	982	---	660	---
5	---	---	---	---	---	---	953	926	935	755	---	---
6	---	---	---	---	---	---	944	928	935	788	755	771
7	---	---	---	---	1,030	---	942	921	933	836	788	807
8	---	---	---	1,030	937	974	944	928	939	838	798	823
9	---	---	---	1,130	990	1,080	955	929	940	838	796	819
10	---	---	---	1,120	1,090	1,110	981	955	972	---	---	---
11	---	---	---	1,100	1,070	1,080	985	966	977	---	---	---
12	---	---	---	1,100	1,070	1,090	977	970	973	---	---	---
13	---	---	---	1,110	1,090	1,100	991	968	976	674	636	660
14	1,050	953	992	1,100	1,020	1,050	997	983	989	676	645	662
15	1,020	989	1,000	1,040	1,020	1,040	1,000	988	995	678	651	664
16	1,040	983	1,020	1,080	1,030	1,040	1,020	988	1,000	694	660	675
17	1,010	982	999	1,100	1,070	1,090	998	963	979	711	694	706
18	1,040	1,010	1,020	1,090	1,050	1,070	974	958	966	719	684	707
19	1,060	1,020	1,040	1,060	965	1,030	968	597	795	714	687	705
20	1,020	978	1,000	972	946	958	597	492	538	709	689	701
21	1,030	979	1,000	981	894	938	526	474	502	690	679	686
22	1,050	1,030	1,040	894	842	860	668	526	589	729	690	710
23	1,060	1,030	1,050	1,090	865	936	734	668	711	766	729	755
24	---	---	---	1,180	1,010	1,080	729	437	626	756	684	720
25	---	---	---	1,330	607	946	482	393	436	684	664	670
26	---	---	---	607	570	580	518	472	491	681	671	675
27	---	---	---	643	582	606	568	496	518	679	635	654
28	---	---	---	881	643	712	727	568	649	---	---	---
29	---	---	---	---	---	---	708	534	626	---	---	---
30	---	---	---	---	---	---	534	506	525	729	649	700
31	---	---	---	905	---	---	---	---	---	721	688	709
MONTH	1,060	953	1,020	1,330	570	970	1,020	393	811	838	510	696

## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	694	679	686	720	544	590	---	---	---	592	553	576
2	683	602	644	738	655	684	---	---	---	615	522	561
3	645	616	631	689	628	662	---	---	---	734	615	672
4	653	607	634	675	586	628	---	---	---	764	665	701
5	657	625	640	657	526	570	538	532	536	913	764	858
6	699	646	674	528	509	519	537	526	531	788	722	746
7	671	651	661	528	511	519	531	521	527	771	700	739
8	709	660	691	560	528	545	525	514	521	700	649	665
9	737	639	700	593	560	580	520	514	518	673	653	664
10	---	---	---	592	556	578	524	517	521	---	672	---
11	---	---	---	556	392	449	518	488	506	---	645	---
12	---	---	---	646	481	547	520	505	512	659	631	644
13	794	748	774	647	571	609	544	520	534	662	597	644
14	758	705	727	575	565	569	555	535	549	688	611	641
15	799	732	775	584	554	577	621	546	595	723	688	707
16	810	771	784	564	545	557	624	607	615	794	722	747
17	779	631	726	552	533	542	609	594	601	1,160	421	817
18	690	643	668	549	534	542	601	577	587	421	292	318
19	---	659	---	555	544	547	589	568	576	360	315	334
20	670	416	543	568	554	559	592	567	579	363	322	351
21	644	598	623	564	541	550	598	573	586	372	356	362
22	638	603	618	564	546	552	599	582	588	416	372	390
23	644	571	611	553	549	551	605	593	596	431	414	422
24	571	527	543	552	543	550	659	593	615	476	431	445
25	654	570	623	551	545	549	660	640	648	526	476	506
26	662	360	526	576	549	558	651	601	628	573	526	542
27	581	404	501	576	547	561	643	608	628	609	573	593
28	677	581	644	564	551	558	671	643	656	627	609	616
29	613	571	589	557	551	553	679	652	668	636	627	632
30	592	547	570	553	542	548	695	525	652	634	612	624
31	---	---	---	542	529	536	553	449	511	---	---	---
MONTH	810	360	646	738	392	563	695	449	577	1,160	292	590

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.7	8.2	8.5	8.4	8.1	8.2	8.5	8.3	8.4	8.6	8.4	8.5
2	8.4	8.2	8.3	8.2	8.1	8.1	8.5	8.2	8.4	8.6	8.4	8.6
3	8.6	8.2	8.3	8.2	8.0	8.2	8.5	8.3	8.4	8.6	8.4	8.5
4	8.6	8.3	8.4	8.3	8.1	8.2	8.4	8.2	8.4	8.6	8.4	8.5
5	8.7	8.3	8.5	8.3	8.1	8.2	8.4	8.2	8.3	8.6	8.4	8.5
6	8.9	8.4	8.7	8.5	8.2	8.3	8.4	8.2	8.3	8.6	8.4	8.5
7	8.9	8.6	8.8	8.5	8.3	8.4	8.5	8.2	8.3	8.6	8.4	8.5
8	8.8	8.5	8.6	8.7	8.3	8.5	8.5	8.2	8.3	8.6	8.4	8.5
9	9.0	8.4	8.8	8.7	8.4	8.5	8.5	8.3	8.4	8.6	8.4	8.5
10	9.1	8.5	8.7	8.7	8.4	8.5	8.4	8.1	8.2	8.6	8.4	8.5
11	8.9	8.5	8.8	8.7	8.4	8.5	8.4	8.1	8.3	8.5	8.4	8.4
12	8.8	8.5	8.7	8.7	8.4	8.5	8.6	8.2	8.4	8.5	8.3	8.4
13	8.7	8.4	8.6	8.7	8.4	8.5	8.8	8.4	8.6	8.8	8.3	8.4
14	8.6	8.3	8.5	8.4	8.4	8.4	8.8	8.5	8.7	---	8.3	---
15	8.8	8.3	8.5	8.7	8.3	8.5	8.8	8.5	8.6	---	---	---
16	8.5	8.3	8.3	8.7	8.4	8.5	8.8	8.5	8.6	---	---	---
17	8.5	8.2	8.4	8.7	8.4	8.5	8.8	8.5	8.7	---	---	---
18	8.6	8.3	8.4	---	---	---	8.8	8.5	8.7	---	---	---
19	8.5	8.3	8.4	---	---	---	8.8	8.6	8.7	---	---	---
20	8.6	8.3	8.5	8.7	---	---	8.8	8.6	8.7	---	---	---
21	8.7	8.4	8.6	8.7	---	---	8.7	8.5	8.6	---	---	---
22	8.6	8.4	8.6	---	---	---	8.7	8.5	8.6	---	---	---
23	8.6	8.4	8.5	---	---	---	8.6	8.4	8.5	---	---	---
24	8.6	8.3	8.4	---	---	---	8.5	8.3	8.4	---	---	---
25	8.5	8.3	8.4	8.7	8.4	8.4	8.5	8.3	8.4	---	---	---
26	8.5	8.3	8.4	8.5	8.3	8.4	8.4	8.3	8.4	---	---	---
27	8.5	8.4	8.4	8.5	8.2	8.3	8.5	8.3	8.4	---	---	---
28	8.6	8.3	8.4	8.5	8.2	8.3	8.5	8.2	8.3	---	---	---
29	8.5	8.3	8.4	8.5	8.2	8.3	8.5	8.3	8.4	---	---	---
30	8.6	8.3	8.4	8.5	8.3	8.4	8.7	8.4	8.5	---	---	---
31	---	8.1	---	---	---	---	8.6	8.5	8.6	---	---	---
MAX	9.1	8.6	8.8	8.7	8.4	8.5	8.8	8.6	8.7	8.8	8.4	8.6
MIN	8.4	8.1	8.3	8.2	8.0	8.1	8.4	8.1	8.2	8.5	8.3	8.4

## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	---	---	---	---	---	---	8.4	8.0	8.3	8.2	8.0	8.0
2	---	---	---	---	---	---	8.5	8.1	8.4	8.4	8.1	8.1
3	---	---	---	---	---	---	8.3	7.9	8.1	8.3	8.2	8.2
4	---	---	---	---	---	---	8.3	8.0	8.1	8.5	8.3	8.3
5	---	---	---	---	---	---	8.3	8.0	8.2	8.6	8.4	8.5
6	---	---	---	---	---	---	8.2	8.1	8.2	8.6	8.5	8.6
7	---	---	---	---	---	---	8.2	8.0	8.2	8.6	8.4	8.5
8	---	---	---	8.4	8.0	8.2	8.3	8.1	8.2	8.5	8.4	8.4
9	---	---	---	8.3	8.1	8.2	8.3	8.1	8.2	8.6	8.3	8.5
10	---	---	---	8.4	8.0	8.1	8.4	8.2	8.3	---	8.1	---
11	---	---	---	8.2	8.0	8.1	8.5	8.2	8.3	---	---	---
12	---	---	---	8.3	8.0	8.1	8.4	8.0	8.2	---	---	---
13	8.6	---	---	8.4	8.0	8.2	8.4	7.9	8.2	8.5	8.3	8.4
14	8.6	8.5	8.6	8.4	8.1	8.2	8.3	8.0	8.2	8.8	8.4	8.5
15	8.7	8.5	8.6	8.5	8.1	8.3	8.3	8.0	8.1	8.7	8.3	8.4
16	8.7	8.5	8.6	8.6	8.1	8.4	8.2	8.0	8.1	8.7	8.3	8.5
17	8.6	8.4	8.5	8.6	8.2	8.3	8.3	8.0	8.2	8.8	8.5	8.6
18	8.7	8.4	8.6	8.6	8.2	8.3	8.5	8.1	8.3	8.8	8.3	8.6
19	8.7	8.5	8.6	8.3	8.1	8.2	8.3	7.6	8.0	8.6	8.3	8.5
20	9.0	8.6	8.8	8.3	8.0	8.2	7.7	7.5	7.6	8.5	8.3	8.4
21	8.9	8.7	8.8	8.5	8.2	8.3	7.7	7.4	7.6	8.5	8.3	8.4
22	8.9	8.5	8.7	8.6	8.2	8.4	8.0	7.6	7.7	8.7	8.4	8.6
23	8.9	8.6	8.8	8.7	8.3	8.5	8.2	7.9	8.1	8.7	8.5	8.6
24	---	8.7	---	8.5	8.1	8.3	8.1	7.5	7.8	8.6	8.4	8.5
25	---	---	---	8.2	7.7	7.9	7.6	7.5	7.5	8.6	8.4	8.5
26	---	---	---	---	7.7	---	7.8	7.6	7.6	8.7	8.5	8.6
27	---	---	---	8.1	7.7	7.8	7.9	7.7	7.8	8.8	8.6	8.7
28	---	---	---	8.0	7.8	7.9	8.0	7.9	7.9	8.8	8.3	8.6
29	---	---	---	8.0	7.8	7.9	8.2	7.8	7.8	8.8	8.1	8.5
30	---	---	---	---	---	---	8.0	7.8	8.0	8.8	8.2	8.5
31	---	---	---	---	---	---	---	---	---	8.8	8.2	8.4
MAX	9.0	8.7	8.8	8.7	8.3	8.5	8.5	8.2	8.4	8.8	8.6	8.7
MIN	8.6	8.4	8.5	8.0	7.7	7.8	7.6	7.4	7.5	8.2	8.0	8.0

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.8	8.2	8.5	8.3	8.1	8.2	---	---	---	8.2	8.1	8.1
2	8.7	8.1	8.4	8.6	8.3	8.3	---	---	---	8.3	8.0	8.1
3	8.6	8.2	8.4	8.5	8.3	8.4	---	---	---	8.8	8.3	8.4
4	8.5	8.2	8.4	8.4	8.2	8.3	8.9	---	---	8.6	8.2	8.3
5	8.8	8.4	8.5	8.4	8.2	8.3	8.9	8.7	8.8	9.0	8.5	8.7
6	8.8	8.3	8.4	8.5	8.3	8.4	8.9	8.6	8.8	9.1	8.6	8.8
7	8.6	8.1	8.3	8.8	8.4	8.5	9.1	8.7	8.9	9.1	8.6	8.9
8	8.7	8.2	8.4	8.8	8.6	8.7	9.2	9.0	9.1	8.9	8.6	8.8
9	8.6	8.0	8.3	8.8	8.6	8.6	9.3	9.1	9.2	8.7	8.4	8.6
10	8.5	8.0	8.2	8.7	8.3	8.5	9.2	8.9	9.1	8.7	8.2	---
11	8.7	8.1	8.4	8.5	7.8	8.0	9.1	8.8	9.0	8.8	---	---
12	8.7	8.3	8.4	8.8	8.2	8.4	9.1	8.9	9.0	8.9	8.5	8.7
13	8.8	8.5	8.6	8.8	8.8	8.8	9.2	8.9	9.1	8.9	8.7	8.8
14	8.7	8.5	8.6	9.0	8.7	8.8	9.3	9.1	9.2	8.9	8.4	8.7
15	8.8	8.5	8.6	9.1	8.7	8.9	9.4	9.1	9.2	9.0	8.8	8.9
16	8.8	8.3	8.6	9.2	8.8	9.0	9.5	8.8	9.1	9.0	8.8	8.9
17	8.8	8.2	8.5	9.0	8.8	8.9	9.6	8.8	9.2	8.9	7.8	8.5
18	8.8	8.0	8.3	9.0	8.6	8.7	9.4	8.8	9.1	7.8	7.8	7.8
19	8.9	8.1	8.6	8.9	8.5	8.6	9.5	8.7	9.0	8.0	7.8	7.8
20	8.7	7.9	8.3	8.9	8.4	8.5	9.5	8.7	9.1	7.9	7.8	7.9
21	8.9	8.5	8.7	9.1	8.8	9.0	9.6	8.8	9.2	8.1	7.9	8.0
22	8.9	8.2	8.4	9.0	8.5	8.7	9.4	8.8	9.1	8.2	8.0	8.0
23	8.5	8.2	8.4	8.8	8.5	8.7	9.4	8.8	9.1	8.3	8.0	8.1
24	8.3	8.0	8.1	8.9	8.6	8.8	9.3	8.8	9.1	8.6	8.2	8.2
25	8.5	8.2	8.3	8.8	8.6	8.8	9.2	8.6	8.9	8.4	8.2	8.2
26	8.6	7.7	8.1	8.9	8.6	8.7	8.9	8.5	8.7	8.4	8.3	8.3
27	8.1	7.8	8.0	8.9	8.6	8.7	8.7	8.4	8.6	8.4	8.3	8.3
28	8.5	8.1	8.4	8.8	8.5	8.6	8.8	8.6	8.8	8.4	8.4	8.4
29	8.4	8.3	8.4	8.8	8.5	8.6	8.9	8.6	8.7	8.6	8.4	8.4
30	8.5	8.1	8.3	8.9	8.6	8.7	8.8	8.4	8.7	8.5	8.4	8.4
31	---	---	---	8.9	8.6	8.7	8.4	8.1	8.2	---	---	---
MAX	8.9	8.5	8.7	9.2	8.8	9.0	9.6	9.1	9.2	9.1	8.8	8.9
MIN	8.1	7.7	8.0	8.3	7.8	8.0	8.4	8.1	8.2	7.8	7.8	7.8



## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.7	21.9	23.2	6.8	5.2	6.1	4.6	2.2	3.5	3.8	2.0	2.7
2	23.6	20.8	22.5	6.6	6.0	6.2	5.9	3.5	4.5	3.2	1.3	2.1
3	20.8	18.0	18.8	6.8	6.0	6.4	4.3	1.9	3.0	3.1	1.0	2.1
4	18.9	17.9	18.4	7.7	5.1	6.6	2.5	1.3	1.8	4.8	2.1	3.4
5	18.9	15.5	17.4	8.5	7.3	7.8	2.7	1.2	1.7	5.1	3.5	4.3
6	19.6	16.7	17.9	8.4	6.1	7.5	3.0	0.5	---	4.3	2.8	3.7
7	17.8	14.7	16.3	10	---	---	3.8	1.6	2.7	4.0	1.4	2.9
8	18.2	15.0	16.3	11.6	---	---	4.4	2.8	3.4	6.4	3.4	4.8
9	20.8	15.8	18.0	12.3	10.8	11.6	4.0	2.1	3.1	5.8	3.9	5.0
10	20.7	17.0	18.8	12.6	11.2	11.9	---	2.9	---	3.9	1.1	2.3
11	19.6	17.7	18.7	11.3	8.7	9.6	4.9	3.4	4.1	2.5	0.1	1.1
12	19.3	16.5	18.3	9.2	7.1	8.4	6.1	4.9	5.6	2.6	0.0	1.2
13	16.9	13.8	15.4	10.0	7.5	8.9	7.0	5.3	6.0	3.1	0.8	1.9
14	15.7	12.6	14.2	10.0	9.0	9.5	5.8	3.9	5.0	---	1.0	---
15	15.4	12.4	13.8	9.2	8.0	8.8	6.5	4.1	5.4	---	---	---
16	13.6	9.6	11.3	8.8	---	8.4	7.7	5.5	6.6	---	---	---
17	12.6	8.8	10.7	---	6.7	---	9.1	7.3	8.2	---	---	---
18	14.5	10.9	12.6	---	---	---	9.3	7.9	8.5	---	---	---
19	15.3	13.0	14.2	---	---	---	8.0	5.7	6.8	---	---	---
20	14.4	11.8	13.3	9.3	---	---	5.7	3.4	4.3	---	---	---
21	14.9	11.6	13.4	9.3	---	---	3.4	2.0	2.6	---	---	---
22	14.1	11.6	12.5	---	---	---	2.6	0.8	1.7	---	---	---
23	11.6	8.4	9.8	---	---	---	1.6	0.3	0.8	---	---	---
24	8.4	7.4	7.7	---	---	---	0.9	0.0	0.4	---	---	---
25	8.3	6.9	7.6	5.3	3.5	---	1.0	0.1	0.3	---	---	---
26	8.9	8.1	8.5	4.0	---	---	1.4	0.1	0.5	---	---	---
27	8.7	7.9	8.2	4.4	2.8	3.5	1.8	0.2	0.7	---	---	---
28	8.9	7.8	8.4	4.8	2.4	3.8	2.5	0.1	1.2	---	---	---
29	9.1	8.8	8.9	6.4	4.1	5.4	5.5	1.8	3.3	---	---	---
30	8.9	8.3	8.6	---	3.8	---	7.2	5.4	6.1	---	---	---
31	---	6.3	---	---	---	---	5.7	3.6	4.5	---	---	---
MONTH	24.7	6.3	14.1	12.6	2.4	7.7	9.3	0.0	3.7	6.4	0.0	2.9

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	17.6	13.1	15.3	22.7	19.1	20.3
2	---	---	---	---	---	---	19.6	15.4	17.4	21.1	17.3	19.1
3	---	---	---	---	---	---	18.4	17.0	17.5	20.9	18.5	19.9
4	---	---	---	---	---	---	17.4	11.5	14.5	21.2	18.4	19.8
5	---	---	---	---	---	---	12.0	9.4	10.9	22.7	18.6	20.9
6	---	---	---	---	---	---	10.8	7.9	8.8	22.2	19.2	20.5
7	---	---	---	5.5	---	---	7.9	7.0	7.4	21.7	17.3	19.7
8	---	---	---	5.1	2.5	4.1	7.0	5.5	6.2	20.7	18.7	19.5
9	---	---	---	4.1	0.2	2.1	11.1	5.2	8.0	24.1	18.9	21.6
10	---	---	---	5.1	0.7	2.7	14.6	9.7	12.2	23.8	---	---
11	---	---	---	6.2	3.0	4.7	17.7	12.9	15.3	---	---	---
12	---	---	---	8.4	5.3	6.9	19.9	15.8	18.0	21.5	---	---
13	---	---	---	11.2	7.0	8.8	20.6	17.4	19.2	21.5	18.1	20.0
14	6.7	5.5	6.1	12.8	8.7	10.6	22.2	17.8	19.9	24.9	20.3	22.4
15	6.5	2.1	4.6	15.9	10.3	13.0	21.1	18.1	19.7	24.1	21.7	22.7
16	3.2	0.4	1.9	18.6	13.9	16.0	19.8	16.3	17.9	22.2	18.0	19.4
17	3.7	0.6	2.2	17.7	15.6	16.5	16.3	13.8	14.5	21.3	17.3	19.0
18	4.5	2.5	3.5	17.8	14.7	16.0	17.3	12.9	14.9	24.2	19.7	21.9
19	7.8	4.0	5.9	15.8	10.6	13.2	17.3	14.4	16.0	23.5	19.2	21.2
20	8.7	5.4	7.2	10.6	8.1	9.2	14.4	12.6	13.3	20.8	17.1	18.9
21	8.7	6.4	7.6	11.7	6.9	9.3	16.5	11.7	13.8	21.4	17.4	19.4
22	7.9	4.3	6.1	12.6	9.8	11.4	18.4	14.1	16.2	22.1	18.8	20.5
23	4.3	0.1	2.2	15.3	11.1	13.5	18.0	14.4	15.9	23.4	20.0	21.6
24	---	---	---	16.7	13.5	15.2	14.4	12.9	13.3	23.1	21.0	22.1
25	---	---	---	15.7	13.6	14.8	13.6	12.5	12.9	23.4	20.0	21.7
26	---	---	---	15.5	12.5	14.2	17.3	13.1	14.8	24.2	20.1	22.2
27	---	---	---	14.7	12.2	13.2	18.6	15.5	16.8	25.2	21.2	23.2
28	---	---	---	12.3	8.3	10.0	20.9	18.1	19.2	26.1	22.4	24.3
29	---	---	---	8.8	5.9	---	22.3	19.0	20.6	27.0	23.1	25.0
30	---	---	---	---	---	---	23.4	20.2	21.7	28.0	23.4	25.7
31	---	---	---	14.9	---	---	---	---	---	27.0	22.6	23.7
MONTH	8.7	0.1	4.7	18.6	0.2	10.7	23.4	5.2	15.1	28.0	17.1	21.3

## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.6	20.9	22.3	29.9	26.1	27.9	---	---	---	21.5	19.9	20.5
2	22.5	19.2	20.1	31.1	27.6	29.3	---	---	---	24.8	20.6	22.3
3	20.4	18.4	19.3	32.1	28.3	30.1	---	---	---	27.0	23.2	25.1
4	22.4	18.3	20.3	32.0	28.7	30.4	28.6	---	---	26.5	24.0	25.4
5	23.9	20.7	22.2	32.0	28.7	30.4	30.6	26.6	28.5	26.0	23.3	24.9
6	24.9	21.6	23.3	31.2	28.6	30.0	30.9	28.1	29.6	27.0	23.6	25.3
7	24.1	20.4	21.7	30.8	27.6	29.2	30.6	28.0	29.4	26.7	23.5	25.0
8	23.0	18.7	20.8	30.8	27.7	29.2	30.4	27.8	29.1	26.7	23.0	24.6
9	25.3	21.0	23.1	30.2	27.8	29.1	30.5	27.5	29.0	26.4	23.6	24.5
10	26.2	23.2	24.8	30.5	27.0	28.6	29.8	27.1	28.4	26.1	22.8	---
11	27.8	24.1	25.8	30.4	26.3	28.5	28.7	26.3	27.6	23.4	22.2	---
12	27.1	25.0	26.2	30.1	27.5	28.9	28.4	26.3	27.4	23.5	20.8	22.1
13	28.3	24.6	26.4	30.2	27.3	28.8	27.8	25.6	26.8	22.8	19.8	21.6
14	28.6	25.2	27.0	31.5	27.3	29.3	29.0	26.0	27.6	22.1	18.5	20.3
15	29.4	25.9	27.7	31.5	29.1	30.3	30.3	26.9	28.7	22.8	19.7	21.3
16	29.3	26.3	27.9	31.3	28.1	29.8	31.8	28.1	30.0	23.6	20.3	21.8
17	29.5	26.3	28.0	31.5	28.1	29.7	31.2	29.1	30.1	23.2	21.3	22.3
18	29.9	26.3	28.2	32.0	28.2	30.0	31.0	28.3	29.7	22.9	19.7	21.4
19	29.4	26.8	28.1	31.5	28.5	29.4	30.7	27.9	29.4	19.9	17.5	18.8
20	27.1	22.2	24.9	31.6	27.5	29.3	30.1	27.9	28.8	19.9	17.6	18.8
21	26.0	22.8	24.5	31.0	28.2	29.6	31.2	26.8	29.0	19.9	18.6	19.3
22	25.7	23.6	24.6	29.7	27.2	28.3	31.8	28.6	30.2	21.2	18.8	20.0
23	27.7	23.1	25.3	28.6	25.5	27.1	31.8	28.3	29.8	21.6	18.4	20.0
24	29.7	25.6	27.5	28.1	25.3	26.8	31.5	27.5	29.4	21.6	20.5	21.1
25	28.9	25.3	27.2	28.6	25.1	26.8	31.6	28.5	30.1	20.9	18.3	19.5
26	25.4	22.6	24.2	30.2	25.7	27.8	31.6	28.8	30.1	21.6	18.7	20.2
27	27.0	23.3	25.1	31.5	27.9	29.6	30.1	27.6	29.0	21.3	18.6	19.4
28	28.1	24.0	26.0	30.9	28.1	29.3	28.9	26.5	27.7	18.7	16.1	17.2
29	27.6	25.7	26.5	30.0	27.3	28.7	27.7	25.6	26.6	17.4	15.0	16.0
30	28.1	24.7	26.4	30.9	27.2	29.0	27.2	21.9	24.5	16.8	14.0	15.4
31	---	---	---	30.4	27.4	28.3	21.9	20.3	20.8	---	---	---
MONTH	29.9	18.3	24.8	32.1	25.1	29.0	31.8	20.3	28.4	27.0	14.0	21.2

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.6	7.0	8.7	13.4	11.8	12.5	---	---	---	14.5	12.3	13.3
2	10.2	6.8	8.1	13.0	11.6	12.2	---	---	---	15.1	13.1	13.8
3	9.8	7.4	8.5	13.4	11.9	12.4	---	---	---	15.4	13.1	14.0
4	10.0	7.7	8.7	14.0	11.9	12.9	---	---	---	14.9	12.3	13.5
5	11.5	8.2	9.6	13.9	11.7	12.5	---	---	---	15.9	12.0	13.5
6	12.9	8.2	10.0	14.7	12.0	13.3	---	---	---	16.7	12.3	13.7
7	12.5	8.3	10.2	14.5	12.0	---	---	---	---	16.6	13.1	14.5
8	12.9	8.3	10.2	14.5	11.6	---	---	---	---	16.0	12.3	13.7
9	17.5	8.2	11.8	14.2	11.4	12.5	---	---	---	16.7	11.8	13.6
10	18.4	8.1	12.0	14.6	11.5	12.7	---	---	---	17.1	12.8	14.6
11	14.7	8.0	10.8	15.5	12.1	13.7	---	---	---	17.7	14.1	15.3
12	13.2	8.2	10.2	16.1	13.3	14.5	16.8	11.0	13.7	17.6	14.0	15.3
13	14.4	9.0	11.3	15.9	13.2	14.3	15.5	10.8	12.6	17.4	13.8	15.1
14	12.9	9.5	10.9	14.8	12.9	13.6	15.2	11.0	12.6	---	13.6	---
15	12.8	9.6	10.9	16.0	13.5	---	14.4	11.1	12.2	---	---	---
16	11.3	9.6	10.4	16.7	14.2	---	14.4	10.7	11.9	---	---	---
17	13.4	10.2	11.6	16.9	---	---	12.8	10.2	11.0	---	---	---
18	12.3	10.0	11.0	---	---	---	13.0	9.8	11.1	---	---	---
19	12.1	9.8	10.8	---	---	---	13.2	10.2	11.5	---	---	---
20	12.9	10.0	11.2	17.1	---	---	13.8	11.1	12.3	---	---	---
21	11.7	10.0	10.8	16.8	---	---	15.0	11.7	13.0	---	---	---
22	12.5	9.8	11.0	---	---	---	15.4	12.4	13.7	---	---	---
23	13.0	11.2	12.1	18.5	---	---	15.0	12.8	13.6	---	---	---
24	13.7	12.5	13.0	---	---	---	15.5	12.7	13.9	---	---	---
25	14.6	12.9	13.5	20.4	16.6	18.7	15.7	12.8	14.0	---	---	---
26	14.1	12.8	13.3	20.5	17.7	19.0	15.1	13.0	13.8	---	---	---
27	13.7	12.6	13.0	20.6	17.9	18.9	16.2	13.4	14.1	---	---	---
28	14.0	---	---	20.8	17.9	19.0	15.8	12.7	14.0	---	---	---
29	---	---	---	---	---	---	14.8	12.0	13.0	---	---	---
30	---	---	---	---	---	---	13.5	11.2	12.2	---	---	---
31	12.6	---	---	---	---	---	14.5	11.4	12.7	---	---	---
MONTH	18.4	6.8	10.9	20.8	11.4	14.5	16.8	9.8	12.8	17.7	11.8	14.1

## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	11.6	8.4	9.7	9.9	9.0	9.6
2	---	---	---	---	---	---	11.4	7.8	9.3	10.7	9.5	10.1
3	---	---	---	---	---	---	10.2	7.7	8.6	10.2	9.3	9.7
4	---	---	---	---	---	---	9.7	7.6	8.6	10.3	8.8	9.5
5	---	---	---	---	---	---	12.0	8.7	10.3	10.7	8.0	9.3
6	---	---	---	---	---	---	11.7	9.6	10.5	10.7	7.6	9.1
7	---	---	---	---	---	---	11.9	9.9	10.8	11.8	8.4	9.9
8	---	---	---	---	---	---	11.6	9.4	10.5	10.4	8.2	9.1
9	---	---	---	---	---	---	13.6	9.0	10.9	11.3	8.1	9.4
10	---	---	---	---	---	---	13.5	9.4	11.0	---	---	---
11	---	---	---	---	---	---	12.8	8.6	10.4	---	---	---
12	---	---	---	---	---	---	12.5	8.4	10.2	---	---	---
13	14.6	---	---	13.3	9.5	11.0	11.9	8.1	9.8	10.4	8.6	9.3
14	13.0	11.5	12.1	13.5	9.2	10.7	10.5	8.0	9.2	11.8	8.4	9.8
15	14.0	11.5	12.7	12.7	8.7	10.5	10.6	8.0	9.1	11.3	8.0	9.6
16	15.8	13.3	14.3	14.0	8.1	10.5	10.8	7.9	9.2	10.6	8.3	9.3
17	15.4	13.2	14.2	13.1	7.5	9.8	11.4	8.6	10	11.8	8.5	9.9
18	15.4	12.9	13.9	13.4	7.8	9.7	11.6	8.4	9.7	11.6	8.2	9.6
19	15.6	12.3	13.7	9.8	8.1	9.0	9.6	8.0	8.9	9.5	8.0	8.6
20	17.1	11.6	13.9	12.5	9.4	10.8	10.5	8.5	9.8	10.1	8.5	9.3
21	16.5	11.4	13.4	14.7	10.6	12.4	11.3	9.5	10.4	10.0	8.3	9.1
22	17.0	11.2	13.5	14.1	10.2	12.0	11.0	9.8	10.5	10.6	8.2	9.2
23	16.9	12.8	14.7	15.2	9.4	11.9	11.0	9.5	10.0	10.3	7.7	8.9
24	---	14.5	---	13.7	9.2	11.2	10.6	9.1	9.8	9.5	7.6	8.4
25	---	---	---	10.8	9.1	10	10.5	9.2	10.0	9.9	8.0	8.8
26	---	---	---	11.0	8.6	9.7	10.7	9.8	10.4	10.3	7.7	8.9
27	---	---	---	9.5	8.6	9.1	10.7	9.8	10.2	10.4	7.3	8.8
28	---	---	---	10.7	9.2	10.0	9.8	8.9	9.5	11.1	7.5	9.1
29	---	---	---	12.8	10.4	11.3	9.4	8.6	9.0	11.9	7.8	9.3
30	---	---	---	13.7	9.8	11.6	9.4	8.5	9.0	11.4	7.3	9.1
31	---	---	---	---	8.6	---	---	---	---	11.1	7.4	9.0
MONTH	17.1	11.2	13.6	15.2	7.5	10.6	13.6	7.6	9.8	11.9	7.3	9.3

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.0	8.3	10	9.0	7.3	7.9	---	---	---	---	---	---
2	10.9	8.4	9.7	9.1	7.4	8.2	---	---	---	11.9	---	---
3	11.4	9.1	10.1	8.5	7.2	7.8	---	---	---	11.3	7.1	8.8
4	12.0	9.4	10.5	8.2	7.0	7.5	10.6	---	---	9.2	7.2	8.1
5	13.5	9.1	10.9	8.0	5.9	7.3	10.6	7.9	9.0	13.1	6.9	9.5
6	14.2	8.7	11.3	7.6	5.6	6.5	10.3	7.6	8.8	14.0	6.8	10
7	13.6	8.8	11.2	8.0	5.2	6.5	10.8	7.5	9.0	13.9	6.5	9.8
8	15.5	9.8	12.4	8.2	5.7	6.8	10.8	7.4	8.9	11.3	6.2	8.6
9	15.7	9.1	12.2	6.9	4.8	5.7	---	---	---	10.9	5.9	8.1
10	14.3	8.6	11.3	8.3	5.0	6.8	---	---	---	10.3	6.1	---
11	15.1	8.6	11.4	7.2	6.0	6.7	---	---	---	7.9	---	---
12	13.1	8.4	10.2	9.2	6.9	7.9	10.9	---	---	11.0	6.4	8.3
13	13.1	8.5	10.6	10.2	7.2	8.7	10.6	7.4	8.9	9.9	6.3	7.7
14	12.7	8.7	10.5	9.3	7.6	8.4	11.8	7.0	9.1	12.6	7.2	9.5
15	---	---	---	9.4	6.8	7.9	13.4	6.5	9.3	11.8	7.0	9.2
16	---	---	---	9.7	6.4	7.8	12.6	5.5	8.5	12.0	6.7	8.9
17	---	---	---	9.2	6.3	7.6	12.2	5.0	8.3	8.5	6.6	7.2
18	---	---	---	8.9	6.5	7.6	---	---	---	7.4	6.5	6.8
19	11.1	---	---	8.7	6.5	7.5	---	---	---	8.1	7.3	7.8
20	7.9	5.2	7.0	9.1	6.9	7.9	---	---	---	8.5	7.8	8.2
21	11.3	7.2	9.1	9.0	6.5	7.7	13.2	---	---	8.5	7.9	8.2
22	11.4	7.1	8.8	9.2	6.9	7.9	12.0	5.1	8.2	8.7	7.9	8.4
23	9.0	7.3	7.9	9.3	7.1	8.1	12.1	4.8	8.1	8.8	7.9	8.3
24	7.6	6.9	7.3	9.3	6.8	7.9	12.8	4.6	8.0	8.1	7.8	8.0
25	8.4	7.0	7.7	8.6	6.3	7.3	12.6	4.5	8.0	8.7	8.1	8.4
26	8.7	6.5	7.3	8.4	6.0	7.1	11.4	3.7	6.9	9.2	8.2	8.5
27	7.9	6.8	7.5	---	---	---	9.8	3.9	6.6	9.0	8.2	8.7
28	9.3	7.5	8.3	---	---	---	10.2	4.2	6.9	9.8	8.9	9.4
29	9.0	7.2	8.2	---	---	---	9.6	6.7	---	10.2	9.4	9.8
30	9.7	7.2	8.1	---	---	---	---	---	---	10.5	9.7	10.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	15.7	5.2	9.6	10.2	4.8	7.5	13.4	3.7	8.3	14.0	5.9	8.6

## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	55	24	39	84	43	65	17	13	15	18	10	12
2	83	29	52	47	29	36	47	13	26	16	8	11
3	140	38	68	35	26	29	19	13	15	15	10	11
4	180	51	96	66	24	38	58	13	25	24	10	13
5	70	28	45	46	26	35	50	15	24	20	12	16
6	75	34	48	---	23	---	31	16	20	20	10	13
7	49	22	37	71	---	---	41	17	24	18	10	11
8	40	25	32	76	---	---	22	14	17	19	10	13
9	50	22	36	63	44	52	37	15	22	22	10	14
10	54	26	40	63	43	51	---	15	---	15	8	11
11	61	33	46	57	37	46	42	14	21	18	6	11
12	74	44	57	61	33	42	40	15	24	16	7	12
13	63	35	47	58	34	43	39	15	21	16	9	11
14	87	46	64	49	35	41	34	13	18	---	---	---
15	150	56	100	52	37	45	21	12	15	---	---	---
16	170	100	130	55	34	43	27	12	18	---	---	---
17	130	74	100	---	31	---	43	16	24	---	---	---
18	150	86	110	---	---	---	72	19	34	---	---	---
19	150	92	110	---	---	---	52	16	27	---	---	---
20	120	61	89	57	---	---	29	13	19	---	---	---
21	120	63	83	46	29	36	18	12	15	---	---	---
22	120	64	87	---	---	---	18	11	15	---	---	---
23	83	40	65	---	---	---	60	11	24	---	---	---
24	120	44	65	---	---	---	29	10	17	---	---	---
25	80	47	63	33	22	25	34	8	17	---	---	---
26	85	53	68	25	18	21	64	12	28	---	---	---
27	73	40	53	20	14	17	30	16	22	---	---	---
28	69	31	43	19	14	15	28	12	18	---	---	---
29	58	35	47	---	13	---	20	11	14	---	---	---
30	77	42	57	27	13	18	27	13	18	---	---	---
31	130	---	---	---	---	---	23	10	15	---	---	---
MONTH	180	22	66	84	13	37	72	8	20	24	6	12

## KANSAS RIVER BASIN

06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	150	70	93	480	340	400
2	---	---	---	---	---	---	160	62	87	380	200	270
3	---	---	---	---	---	---	170	61	91	220	150	190
4	---	---	---	---	---	---	160	71	96	220	150	170
5	---	---	---	---	---	---	170	52	78	180	110	150
6	---	---	---	---	---	---	78	52	64	130	100	110
7	---	---	---	---	---	---	130	58	82	130	97	110
8	---	---	---	47	25	34	260	57	110	140	98	120
9	---	---	---	30	17	22	110	38	58	170	110	140
10	---	---	---	130	15	47	78	52	65	550	---	---
11	---	---	---	140	19	45	91	59	71	---	---	---
12	---	---	---	130	23	51	150	61	80	---	290	---
13	---	---	---	94	25	52	85	52	68	290	200	240
14	150	27	57	130	30	58	85	58	68	210	170	190
15	36	23	28	76	30	47	73	57	65	200	140	170
16	27	19	22	49	23	35	100	56	76	160	130	150
17	39	18	22	74	30	44	110	74	91	150	120	130
18	78	16	29	150	24	57	100	76	87	130	94	110
19	92	21	42	180	46	96	1,300	80	360	150	100	120
20	38	19	28	140	39	64	>1,400	800	>1,200	190	130	160
21	82	20	39	84	38	59	1,300	480	840	270	160	190
22	44	21	29	130	54	78	480	180	310	190	62	120
23	27	17	21	150	41	64	230	150	180	250	84	150
24	---	---	---	180	56	88	>1,400	180	>550	200	150	170
25	---	---	---	590	160	340	>1,400	650	>1,100	170	160	160
26	---	---	---	750	530	630	800	420	630	170	130	150
27	---	---	---	560	350	480	420	280	340	190	130	160
28	---	---	---	380	230	300	470	260	320	190	130	160
29	---	---	---	380	170	220	660	440	520	160	91	120
30	---	---	---	200	---	---	700	480	560	100	86	94
31	---	---	---	160	78	---	---	---	---	100	68	80
MONTH	150	16	32	750	15	130	1,400	38	280	550	62	160

&gt; Actual value is known to be greater than the value shown



## 06889000 KANSAS RIVER AT TOPEKA, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	92	74	81	620	270	370	---	---	---	160	96	120
2	220	74	130	340	200	250	---	---	---	140	62	100
3	260	140	200	250	180	210	---	---	---	110	56	77
4	200	170	180	220	170	200	---	---	---	130	74	110
5	180	110	140	190	160	180	120	86	99	85	47	71
6	130	110	120	170	150	160	160	85	100	70	46	56
7	130	110	120	240	130	160	100	81	91	57	40	50
8	120	100	110	140	110	120	92	71	83	55	38	45
9	130	100	110	130	100	110	98	64	78	47	32	39
10	150	97	120	200	100	140	---	---	---	---	30	---
11	140	100	120	1,300	170	720	---	---	---	97	---	---
12	190	100	130	290	150	200	---	---	---	84	45	60
13	180	100	110	190	150	170	76	46	57	62	43	51
14	130	92	110	200	130	160	68	37	48	56	32	44
15	100	74	88	150	110	130	56	31	41	100	33	56
16	160	79	94	120	100	110	44	30	38	80	39	50
17	110	77	88	130	94	110	49	25	37	>1,700	40	>560
18	120	76	100	120	91	100	73	24	40	>1,700	>1,700	>1,700
19	140	100	120	140	92	110	64	24	38	>1,700	1,300	>1,600
20	1,600	110	600	150	96	110	86	22	36	1,500	1,100	1,200
21	220	130	160	120	91	110	68	23	41	1,200	830	1,000
22	140	120	130	160	94	120	48	24	35	920	630	800
23	370	110	210	130	92	110	49	22	32	1,100	610	780
24	480	240	350	130	91	100	38	22	31	810	620	720
25	240	130	180	120	86	100	68	24	39	620	370	500
26	1,600	120	800	110	82	94	91	26	46	440	340	390
27	1,000	330	590	190	76	100	81	24	42	360	250	300
28	330	190	240	160	82	120	70	---	---	250	150	200
29	220	170	190	190	98	140	42	22	33	290	140	180
30	800	140	320	130	88	110	94	23	47	150	110	120
31	---	---	---	120	93	110	200	76	120	---	---	---
MONTH	1,600	74	200	1,300	76	160	200	22	54	1,700	30	390

> Actual value is known to be greater than the value shown

KANSAS RIVER BASIN

06889170 SOLDIER CREEK NEAR HOLTON, KS

LOCATION.--Lat 39°26'03", long 95°55'31", in NW 1/4 NW 1/4 sec.23, T.7 S., R.13 E., Jackson County, Hydrologic Unit 10270102, on right bank at downstream side of bridge on County Road 214, 10.5 mi west and 2 mi south of Holton, and at mile 50.9.

DRAINAGE AREA.--60.8 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,055.00 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 24	0400	*465	*7.35	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.70	7.0	3.4	3.1	3.0	1.3	1.8	8.9	2.3	1.4	0.08	0.78
2	1.7	3.5	3.7	3.0	3.0	1.3	1.8	7.6	5.1	1.2	0.09	0.14
3	2.4	2.9	3.6	2.7	3.1	1.4	1.7	6.5	4.4	0.98	0.09	0.06
4	2.1	2.2	3.5	2.8	2.8	1.3	2.0	5.9	4.5	0.83	0.07	0.04
5	1.9	2.4	3.5	2.7	2.4	1.3	2.1	5.4	3.5	0.71	0.09	0.03
6	7.1	2.3	3.3	2.8	2.2	1.2	3.8	5.3	3.0	0.56	0.10	0.03
7	1.6	2.1	3.3	2.9	1.9	1.3	4.4	6.0	2.9	0.43	0.09	0.02
8	1.3	2.0	3.5	2.9	1.7	1.4	3.8	16	3.0	0.45	0.09	0.02
9	1.2	2.2	3.4	2.9	1.7	1.3	4.2	84	2.7	0.48	0.08	0.01
10	1.1	2.4	3.8	2.7	1.7	1.2	3.1	13	2.3	0.96	0.07	0.02
11	0.97	2.7	4.2	2.4	1.7	1.2	2.6	7.9	2.4	0.86	0.09	0.04
12	0.97	2.8	4.2	2.2	1.6	1.3	2.5	6.2	2.2	0.59	0.09	0.11
13	1.1	3.3	3.9	2.2	1.7	1.5	2.3	5.1	2.3	0.49	0.08	0.09
14	1.1	4.1	3.7	2.0	3.5	1.3	2.1	4.6	2.2	0.37	0.06	0.12
15	1.1	4.4	3.6	2.1	3.2	1.5	1.9	4.3	1.9	0.34	0.07	0.09
16	1.5	3.9	3.4	2.6	3.7	1.3	3.0	4.1	1.8	0.33	0.08	0.05
17	1.9	3.9	3.7	2.2	2.4	1.3	2.9	4.1	1.8	0.28	0.08	0.03
18	1.7	4.1	3.4	2.1	2.0	1.3	2.8	3.8	1.6	0.25	0.06	0.02
19	1.4	4.2	3.1	2.1	1.9	2.2	59	4.9	1.6	0.20	0.05	0.05
20	1.4	3.9	3.1	2.3	1.7	41	240	13	1.3	0.28	0.03	0.05
21	1.4	4.0	2.9	2.4	1.5	16	43	7.6	1.2	0.32	0.04	0.04
22	1.7	3.8	2.9	2.2	2.0	5.9	12	4.6	1.9	0.30	0.03	0.06
23	3.1	4.0	2.8	2.0	1.6	4.0	37	3.8	12	0.32	0.03	0.10
24	7.4	4.1	2.8	2.1	1.5	3.0	279	3.5	31	0.28	0.03	0.06
25	12	4.1	2.3	2.1	1.2	2.5	157	3.4	6.1	0.22	0.03	0.06
26	6.1	4.1	2.3	2.2	1.3	2.2	32	3.3	3.5	0.19	0.02	0.04
27	5.1	4.2	2.8	2.2	1.2	2.0	15	3.0	2.4	0.14	0.08	0.05
28	5.6	3.8	2.9	2.4	1.3	1.8	71	2.7	1.7	0.11	0.05	0.07
29	4.8	4.1	3.2	2.6	---	1.8	50	2.7	1.7	0.12	0.13	0.05
30	16	3.6	3.3	2.7	---	e1.9	14	2.6	1.6	0.11	0.16	0.13
31	17	---	2.9	2.8	---	2.0	---	2.2	---	0.09	42	---
MEAN	3.69	3.54	3.30	2.46	2.09	3.55	35.3	8.26	3.86	0.46	1.42	0.082
MAX	17	7.0	4.2	3.1	3.7	41	279	84	31	1.4	42	0.78
MIN	0.70	2.0	2.3	2.0	1.2	1.2	1.7	2.2	1.2	0.09	0.02	0.01
AC-FT	227	210	203	152	116	218	2,100	508	230	28	88	4.9

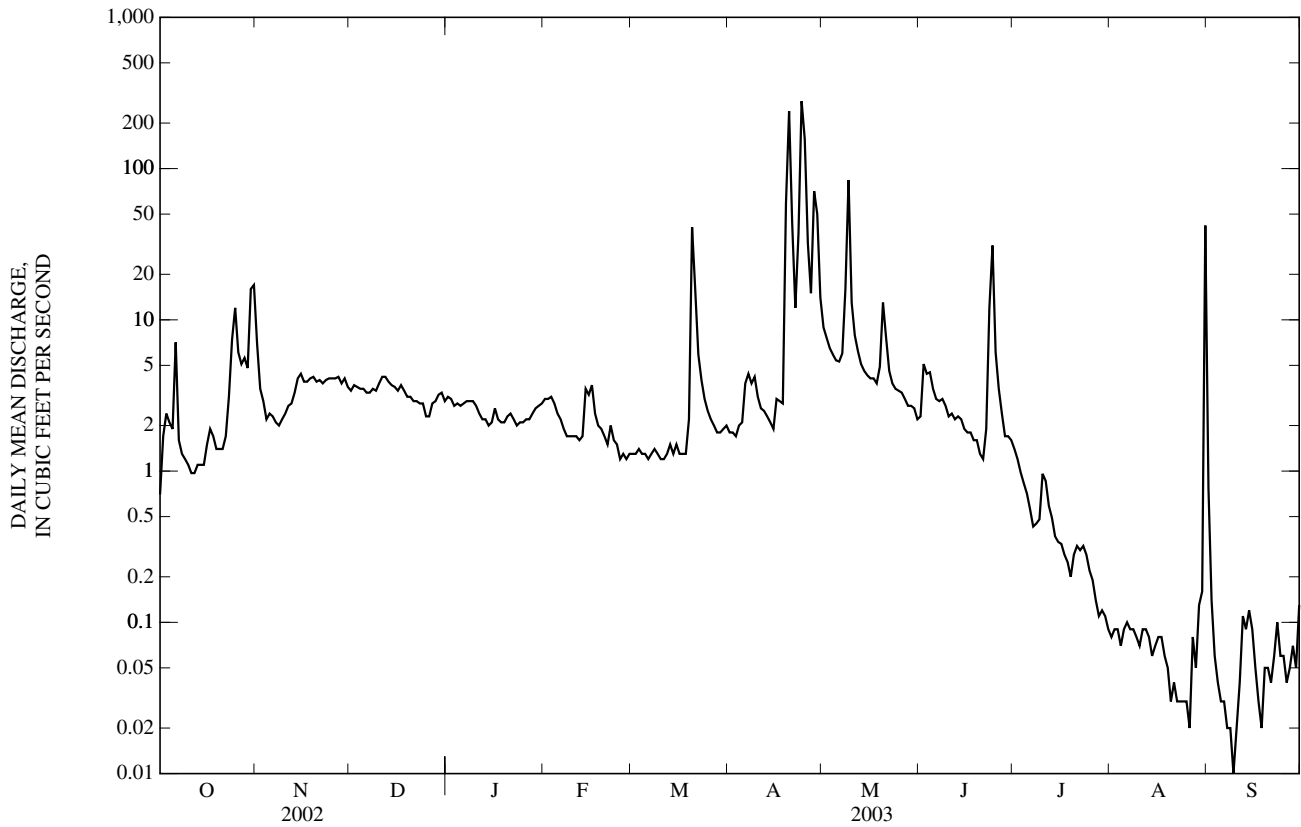
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	9.18	5.09	4.64	3.45	3.36	3.86	39.7	52.5	65.1	18.5	14.6	123
MAX	14.7	6.64	5.97	4.43	4.64	4.18	70.4	135	182	49.6	40.6	368
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2002)	(2001)	(2001)	(2001)	(2001)
MIN	3.69	3.54	3.30	2.46	2.09	3.55	13.5	8.26	3.86	0.46	1.42	0.082
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)

06889170 SOLDIER CREEK NEAR HOLTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL MEAN	16.1		5.64		11.6	
HIGHEST ANNUAL MEAN					17.5	2002
LOWEST ANNUAL MEAN					5.64	2003
HIGHEST DAILY MEAN	1,580	May 11	279	Apr 24	6,400	Sep 17, 2001
LOWEST DAILY MEAN	0.60	Sep 10	0.01	Sep 9	0.01	Sep 9, 2003
ANNUAL SEVEN-DAY MINIMUM	0.64	Sep 7	0.02	Sep 4	0.02	Sep 4, 2003
MAXIMUM PEAK FLOW			465	Apr 24	20,700	Sep 17, 2001
MAXIMUM PEAK STAGE			7.35	Apr 24	21.85	Sep 17, 2001
INSTANTANEOUS LOW FLOW			0.00	Aug 24	0.00	Aug 24, 2003
ANNUAL RUNOFF (AC-FT)	11,620		4,080		8,370	
10 PERCENT EXCEEDS	19		5.9		13	
50 PERCENT EXCEEDS	3.7		2.2		3.4	
90 PERCENT EXCEEDS	0.83		0.08		0.32	

e Estimated



06889200 SOLDIER CREEK NEAR DELIA, KS

LOCATION.--Lat 39°14'18", long 95°53'18", in SE 1/4 SE 1/4 NE 1/4 sec.30, T.9 S., R.14 E., Jackson County, Hydrologic Unit 10270102, on right bank at upstream side of bridge, 0.56 mi downstream of Dutch Creek, 5.0 mi east of Delia, and at mile 26.4.

DRAINAGE AREA.--157 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 945.00 ft above NGVD of 1929, from topographic map. Gage datum lowered 2.0 ft on Oct. 1, 1993. Gage datum lowered 5.0 ft on Oct. 1, 1999. Prior to Nov. 2, 2002, recording gage at site 4.5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1909, about 24 ft, June 21, 1951, from floodmarks and information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 20	0545	*1,230	*16.90	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.67	32	7.7	6.8	9.9	6.4	8.5	39	7.7	7.9	0.40	29
2	2.0	21	7.9	6.5	9.8	6.3	8.3	34	51	6.9	0.36	6.2
3	3.8	17	7.7	5.5	9.9	6.0	8.0	30	29	6.0	0.50	2.4
4	34	15	7.5	6.2	10	7.8	7.7	31	15	5.2	0.51	0.81
5	9.8	14	7.3	7.2	8.7	6.8	7.5	28	13	4.4	0.54	0.45
6	5.4	15	6.4	6.6	7.2	5.8	9.4	24	12	3.7	0.30	0.18
7	9.1	e12	7.8	6.0	7.7	6.5	13	25	10	3.2	0.34	0.06
8	7.0	11	8.0	6.4	5.4	7.2	11	25	9.6	2.8	0.24	0.04
9	5.2	11	7.2	6.5	6.1	7.3	9.8	59	8.9	3.1	0.11	0.04
10	4.2	11	7.6	5.8	6.2	6.5	9.3	47	7.9	3.4	0.09	0.05
11	4.3	10	8.1	5.2	6.2	6.9	9.3	28	7.4	3.2	0.25	0.15
12	4.2	9.7	8.2	5.0	5.9	12	8.6	21	6.9	2.7	0.19	0.13
13	4.3	9.9	8.2	5.5	5.9	123	8.0	19	6.5	2.4	0.12	0.45
14	4.6	9.2	7.8	5.4	12	18	7.5	18	6.1	2.2	0.08	0.57
15	4.3	12	7.5	5.5	16	12	7.1	16	5.8	1.7	0.07	0.76
16	4.1	11	7.6	5.1	16	11	8.1	16	6.3	1.3	0.06	0.30
17	5.8	10	7.5	5.4	11	9.8	11	17	5.6	1.3	0.05	0.11
18	7.0	9.9	7.8	5.6	9.6	9.5	9.9	15	5.1	1.2	0.03	0.11
19	6.9	9.2	7.2	5.4	8.6	11	97	24	4.6	1.0	0.03	0.08
20	6.3	8.9	6.8	5.8	7.2	75	749	56	4.5	0.98	0.02	0.04
21	6.4	9.0	6.4	6.4	6.5	62	163	29	4.3	1.9	0.03	0.05
22	6.2	8.5	5.8	5.8	6.4	29	59	21	155	1.4	0.02	0.05
23	6.5	8.6	5.5	5.5	5.9	19	77	17	487	0.87	0.00	0.03
24	13	8.7	6.4	5.1	6.2	15	751	16	58	0.65	0.00	0.02
25	95	8.2	5.8	5.2	4.9	13	532	15	72	0.76	0.00	0.04
26	41	7.8	5.7	5.8	4.7	11	136	13	46	0.60	0.00	0.03
27	20	7.9	6.4	5.6	5.5	10	72	12	15	0.43	0.00	0.01
28	29	8.1	6.5	5.8	6.1	9.6	53	11	11	0.60	0.00	0.00
29	21	8.4	7.0	6.5	---	8.8	89	9.8	9.4	0.39	0.00	0.02
30	116	8.3	8.3	7.2	---	8.3	53	9.0	9.0	0.30	0.02	0.08
31	66	---	7.4	8.5	---	8.3	---	8.3	---	0.24	7.1	---
MEAN	17.8	11.4	7.19	5.96	8.05	17.7	99.8	23.6	36.3	2.35	0.37	1.41
MAX	116	32	8.3	8.5	16	123	751	59	487	7.9	7.1	29
MIN	0.67	7.8	5.5	5.0	4.7	5.8	7.1	8.3	4.3	0.24	0.00	0.00
AC-FT	1,100	679	442	367	447	1,090	5,940	1,450	2,160	144	23	84

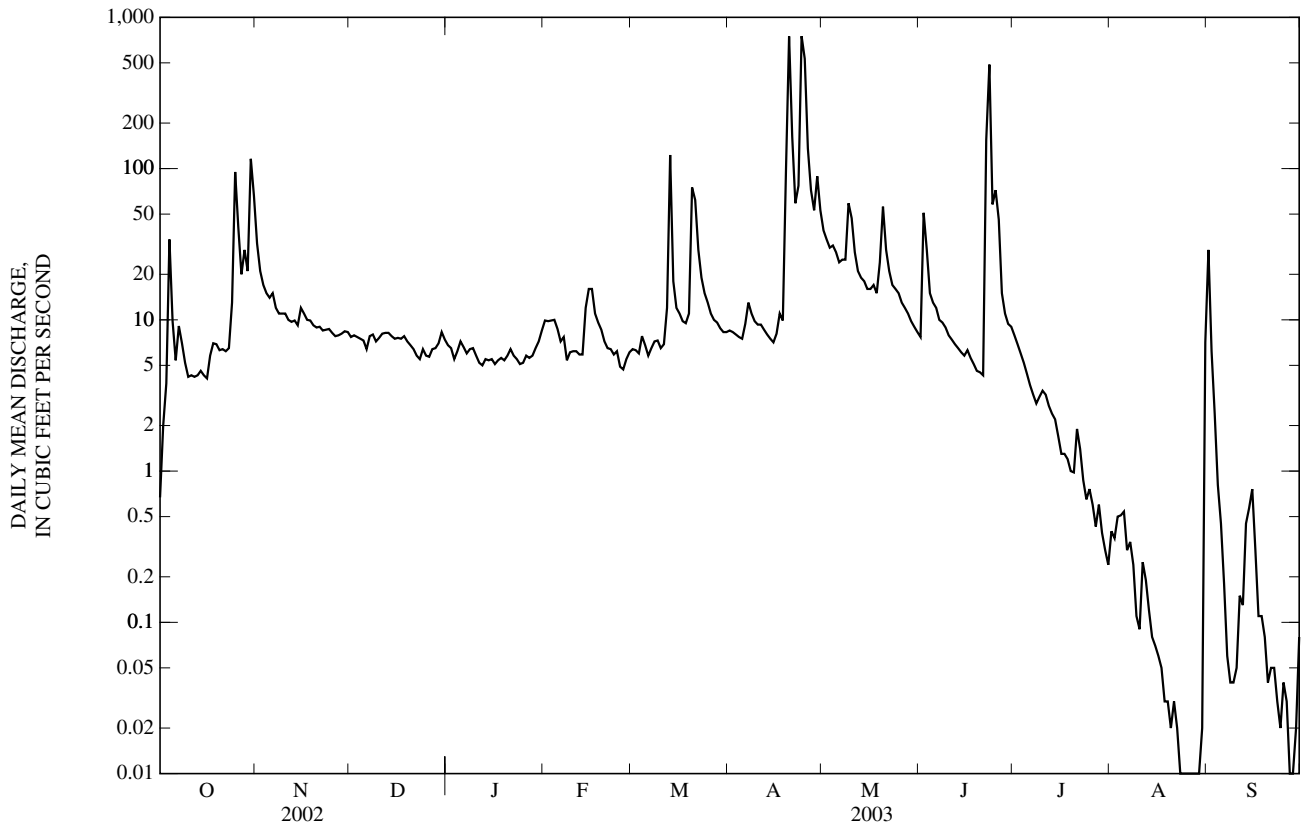
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	73.2	65.6	43.9	36.8	69.1	129	149	178	191	85.1	45.1	93.7
MAX	484	605	293	236	316	651	800	1,056	1,051	1,139	540	670
(WY)	(1974)	(1999)	(1973)	(1973)	(1973)	(1973)	(1999)	(1995)	(1967)	(1993)	(1968)	(1977)
MIN	0.005	1.74	1.86	1.22	2.23	2.67	3.62	2.82	4.50	2.35	0.37	0.15
(WY)	(1992)	(1977)	(1977)	(1977)	(1989)	(1967)	(1989)	(1989)	(1989)	(2003)	(2003)	(2000)

06889200 SOLDIER CREEK NEAR DELIA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL MEAN	36.0		19.2		96.5	
HIGHEST ANNUAL MEAN					281	1973
LOWEST ANNUAL MEAN					19.2	2003
HIGHEST DAILY MEAN	2,370	May 11	751	Apr 24	14,800	Jun 9, 1982
LOWEST DAILY MEAN	0.67	Oct 1	0.00	Aug 23	0.00	Sep 10, 1976
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 25	0.00	Aug 23	0.00	Oct 1, 1991
MAXIMUM PEAK FLOW			1,230	Apr 20	29,400	Jun 9, 1982
MAXIMUM PEAK STAGE			16.90	Apr 20	26.44	Sep 18, 2001
INSTANTANEOUS LOW FLOW			0.00	Nov 7	0.00	Sep 10, 1976
ANNUAL RUNOFF (AC-FT)	26,090		13,920		69,910	
10 PERCENT EXCEEDS	59		29		149	
50 PERCENT EXCEEDS	9.8		7.2		20	
90 PERCENT EXCEEDS	2.8		0.11		2.8	

e Estimated



## 06889500 SOLDIER CREEK NEAR TOPEKA, KS

LOCATION.--Lat 39°06'00", long 95°43'27", in SW ¼ NW ¼ NW ¼ sec.14, T.11 S., R.15 E., Shawnee County, Hydrologic Unit 10270102, on right bank 150 ft downstream of county highway bridge, 1.5 mi upstream from Halfday Creek, 4.0 mi northwest of Topeka, and at mile 6.0.

DRAINAGE AREA.--290 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1929 to September 1932, August 1935 to current year. Prior to October 1935, published as "at Topeka." Records for October 1932 to July 1935, published in WSP 746, 761, and 786, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1440: 1929-30(M), 1941-42, 1948(P), 1950. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 862.95 ft above NGVD of 1929. Prior to July 27, 1935, chain gage at site 2.0 mi downstream at different datum. Aug. 1, 1935, to June 16, 1958, nonrecording gage and June 17, 1958, to May 24, 1960, water-stage recorder, at present site and datum 4.0 ft higher. May 25, 1960, to June 8, 1961, nonrecording gage at site 1.1 mi downstream at datum 1.79 ft lower.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 23	1600	*2,970	*8.83				
						No peak greater than base discharge.	

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

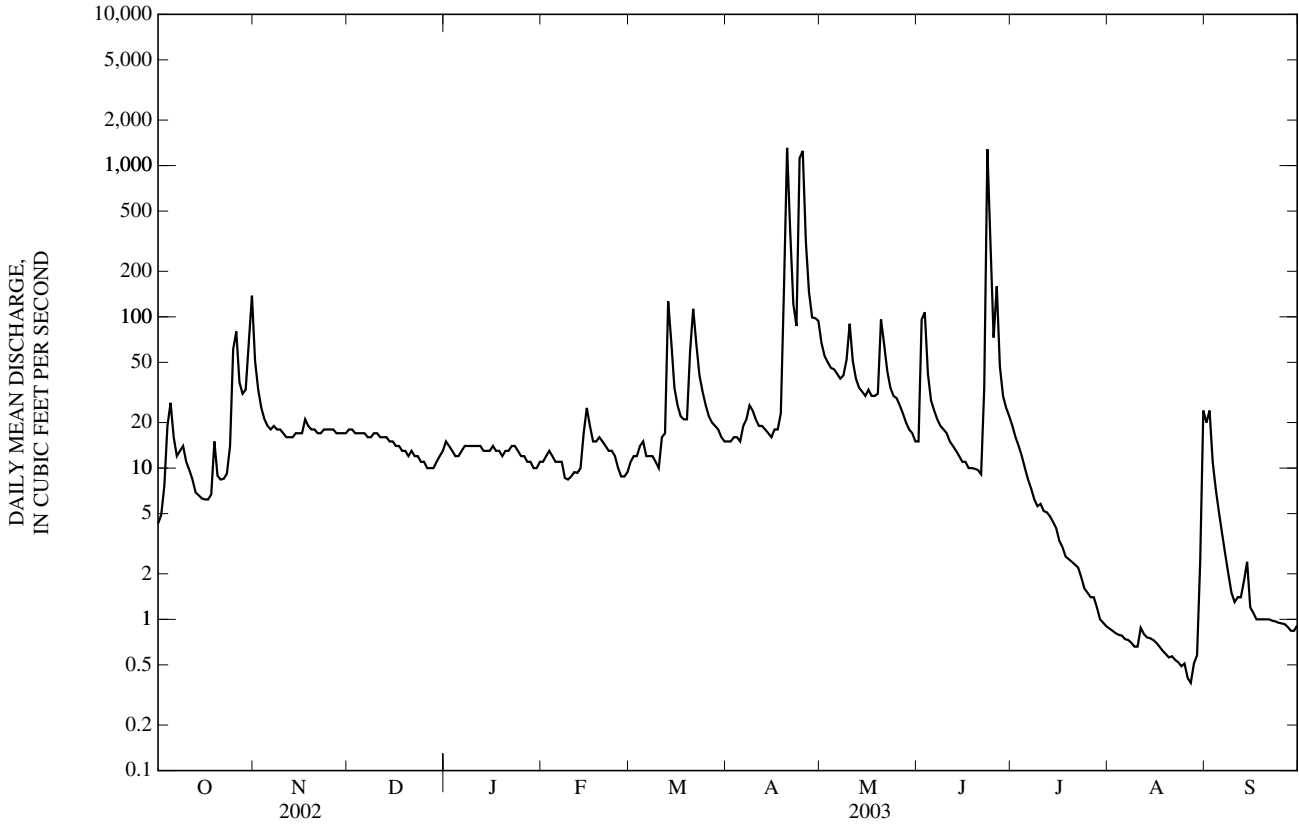
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	51	18	15	11	11	15	67	15	19	0.87	20
2	4.9	33	18	14	12	12	15	55	96	16	0.84	24
3	7.6	25	17	13	13	12	16	50	107	14	0.81	11
4	19	21	17	12	12	14	16	46	42	12	0.79	7.2
5	27	19	17	12	11	15	15	45	28	10	0.78	5.1
6	16	18	17	13	11	12	19	42	24	8.4	0.74	3.7
7	12	19	16	14	11	12	21	39	21	7.3	0.73	2.7
8	13	18	16	14	8.6	12	26	41	19	6.2	0.70	2.0
9	14	18	17	14	8.4	11	24	52	18	5.6	0.66	1.5
10	11	17	17	14	8.8	10	21	90	17	5.8	0.66	1.3
11	9.7	16	16	14	9.4	16	19	51	15	5.2	0.88	1.4
12	8.4	16	16	14	9.3	17	19	39	14	5.1	0.80	1.4
13	6.9	16	16	13	10	127	18	34	13	4.8	0.76	1.8
14	6.6	17	15	13	17	68	17	32	12	4.4	0.75	2.4
15	6.3	17	15	13	25	34	16	30	11	4.0	0.73	1.2
16	6.2	17	14	14	19	26	18	33	11	3.3	0.70	1.1
17	6.2	21	14	13	15	22	18	30	10	3.0	0.66	1.0
18	6.7	19	13	13	15	21	23	30	10	2.6	0.62	1.0
19	15	18	13	12	16	21	153	31	9.9	2.5	0.59	1.0
20	8.9	18	12	13	15	59	1,310	96	9.7	2.4	0.56	1.0
21	8.4	17	13	13	14	113	366	66	9.1	2.3	0.57	1.0
22	8.5	17	12	14	13	66	121	44	34	2.2	0.54	0.98
23	9.2	18	12	14	13	41	87	34	1,280	1.9	0.52	0.97
24	14	18	11	13	12	32	1,120	30	302	1.6	0.49	0.95
25	61	18	11	12	10	26	1,250	29	73	1.5	0.51	0.94
26	80	18	10	12	8.8	22	314	26	159	1.4	0.41	0.93
27	37	17	10	11	8.8	20	146	23	47	1.4	0.38	0.89
28	31	17	10	11	9.4	19	99	20	30	1.2	0.51	0.84
29	33	17	11	10	---	18	98	18	25	1.0	0.58	0.84
30	68	17	12	10	---	16	94	17	22	0.95	2.4	0.91
31	138	---	13	11	---	15	---	15	---	0.90	24	---
MEAN	22.5	19.6	14.2	12.8	12.4	29.7	183	40.5	82.8	5.10	1.47	3.37
MAX	138	51	18	15	25	127	1,310	96	1,280	19	24	24
MIN	4.3	16	10	10	8.4	10	15	15	9.1	0.90	0.38	0.84
AC-FT	1,380	1,170	871	789	687	1,820	10,900	2,490	4,930	313	90	200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	119	86.5	65.7	55.0	101	189	232	276	327	189	85.5	142
MAX	1,178	1,175	475	359	382	1,269	1,464	1,838	2,183	2,711	1,130	1,288
(WY)	(1974)	(1999)	(1973)	(1974)	(1937)	(1987)	(1944)	(1995)	(1967)	(1993)	(1968)	(1977)
MIN	0.000	0.000	0.000	0.000	0.18	0.14	1.03	5.17	4.06	1.13	0.27	0.000
(WY)	(1938)	(1938)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1953)	(1940)	(1957)	(1937)

06889500 SOLDIER CREEK NEAR TOPEKA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL MEAN	57.2		35.4		156	
HIGHEST ANNUAL MEAN					590	
LOWEST ANNUAL MEAN					5.07	
HIGHEST DAILY MEAN	2,760	May 11	1,310	Apr 20	17,200	Sep 13, 1977
LOWEST DAILY MEAN	3.7	Sep 12	0.38	Aug 27	0.00	Jul 24, 1936
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 7	0.48	Aug 22	0.00	Aug 17, 1936
MAXIMUM PEAK FLOW			2,970	Jun 23	30,400	Jun 9, 1982
MAXIMUM PEAK STAGE			8.83	Jun 23	27.44	Jun 9, 1982
INSTANTANEOUS LOW FLOW			0.36	Aug 26	0.00	many years
ANNUAL RUNOFF (AC-FT)	41,380		25,640		112,800	
10 PERCENT EXCEEDS	86		48		239	
50 PERCENT EXCEEDS	22		14		29	
90 PERCENT EXCEEDS	7.0		0.95		2.1	



## KANSAS RIVER BASIN

## 06890100 DELAWARE RIVER NEAR MUSCOTAH, KS

LOCATION.--Lat 39°31'17", long 95°31'57", in SW ¼ SW ¼ SW ¼ sec.16, T.6 S., R.17 E., Atchison County, Hydrologic Unit 10270103, on right bank at downstream side of county highway bridge, 2.0 mi south of Muscotah, and at mile 45.5.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--431 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1964-67. July 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 920.88 ft above NGVD of 1929 (Kansas Geological Survey bench mark).

REMARKS.--Records poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1925 reached a stage of 36.5 ft, from information by local residents (discharge not determined). Floods in 1951 and 1967 were lower than the flood of 1925.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 9	0000	*1,820	*8.88	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	12	3.7	8.5	e7.4	e3.3	4.1	72	6.7	8.9	0.11	25
2	16	6.1	3.7	7.1	e9.1	8.3	4.4	52	16	4.0	0.09	21
3	13	4.2	3.2	5.6	e8.9	11	4.7	38	24	2.7	0.05	6.6
4	20	3.0	3.4	6.8	e6.4	e13	7.0	35	19	2.1	0.04	2.8
5	12	3.7	2.8	7.0	e7.7	e15	13	43	14	1.7	0.09	1.2
6	6.3	3.4	3.1	8.3	e7.9	17	23	25	16	1.3	0.10	0.49
7	3.6	3.2	3.2	7.8	e7.3	12	22	23	11	0.86	0.04	0.26
8	1.6	2.8	2.9	7.9	e7.5	11	21	184	11	0.89	0.03	0.13
9	0.82	2.8	3.2	7.9	e7.5	13	18	805	9.5	0.77	0.02	0.07
10	1.4	2.6	3.6	7.0	e7.6	14	14	188	8.6	0.57	0.04	e0.08
11	2.3	2.1	4.8	5.8	12	12	11	95	7.3	0.47	0.11	e0.45
12	1.7	2.1	7.2	5.5	e8.7	13	10	59	6.7	0.31	0.05	e0.62
13	1.6	2.0	7.2	4.2	e9.2	21	9.1	44	8.9	0.22	0.03	e2.0
14	1.6	2.4	6.0	3.5	e9.4	20	8.0	36	7.0	0.17	0.03	e3.0
15	3.2	2.7	5.7	4.0	e9.2	15	6.9	30	11	0.10	0.03	0.46
16	3.7	2.6	6.5	e2.1	e8.9	13	7.9	26	8.4	0.08	0.03	0.17
17	2.1	3.0	6.6	e2.3	e8.7	11	8.9	24	6.0	0.13	0.02	0.11
18	1.7	2.8	7.1	e2.1	e9.7	10	10	22	6.3	0.09	0.01	e0.24
19	1.7	2.6	6.3	e2.3	e9.7	12	26	24	16	0.08	0.01	e0.17
20	2.0	2.8	5.5	e3.2	e9.6	27	376	40	6.0	0.09	0.01	0.07
21	3.0	2.9	4.8	e3.5	e9.3	38	196	41	3.3	0.10	0.00	0.13
22	3.8	2.8	4.2	e2.8	e8.8	26	78	27	2.9	0.12	0.00	0.09
23	5.1	2.8	3.7	e2.2	12	17	48	22	50	0.09	0.00	0.05
24	6.7	5.4	3.5	e2.5	e5.6	13	262	20	145	0.08	0.00	0.04
25	9.1	4.0	3.2	e2.8	e5.7	10	484	18	55	0.06	0.00	0.03
26	9.1	2.4	3.2	e3.5	e4.2	8.9	153	17	30	0.04	0.00	0.03
27	11	2.6	3.2	e4.1	e2.7	7.8	79	14	16	0.04	0.03	0.02
28	9.0	2.8	3.6	e5.4	e2.9	6.8	383	12	9.8	0.04	0.05	0.03
29	7.8	3.9	4.5	e4.9	---	6.2	327	10	7.9	0.04	0.06	0.04
30	18	3.2	6.7	e4.4	---	e5.0	115	9.0	6.8	0.04	0.07	0.23
31	27	---	7.3	e6.3	---	4.7	---	7.6	---	0.06	4.1	---
MEAN	6.90	3.39	4.63	4.88	7.99	13.4	91.0	66.5	18.2	0.85	0.17	2.19
MAX	27	12	7.3	8.5	12	38	484	805	145	8.9	4.1	25
MIN	0.82	2.0	2.8	2.1	2.7	3.3	4.1	7.6	2.9	0.04	0.00	0.02
AC-FT	425	202	285	300	444	823	5,410	4,090	1,080	52	10	130

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

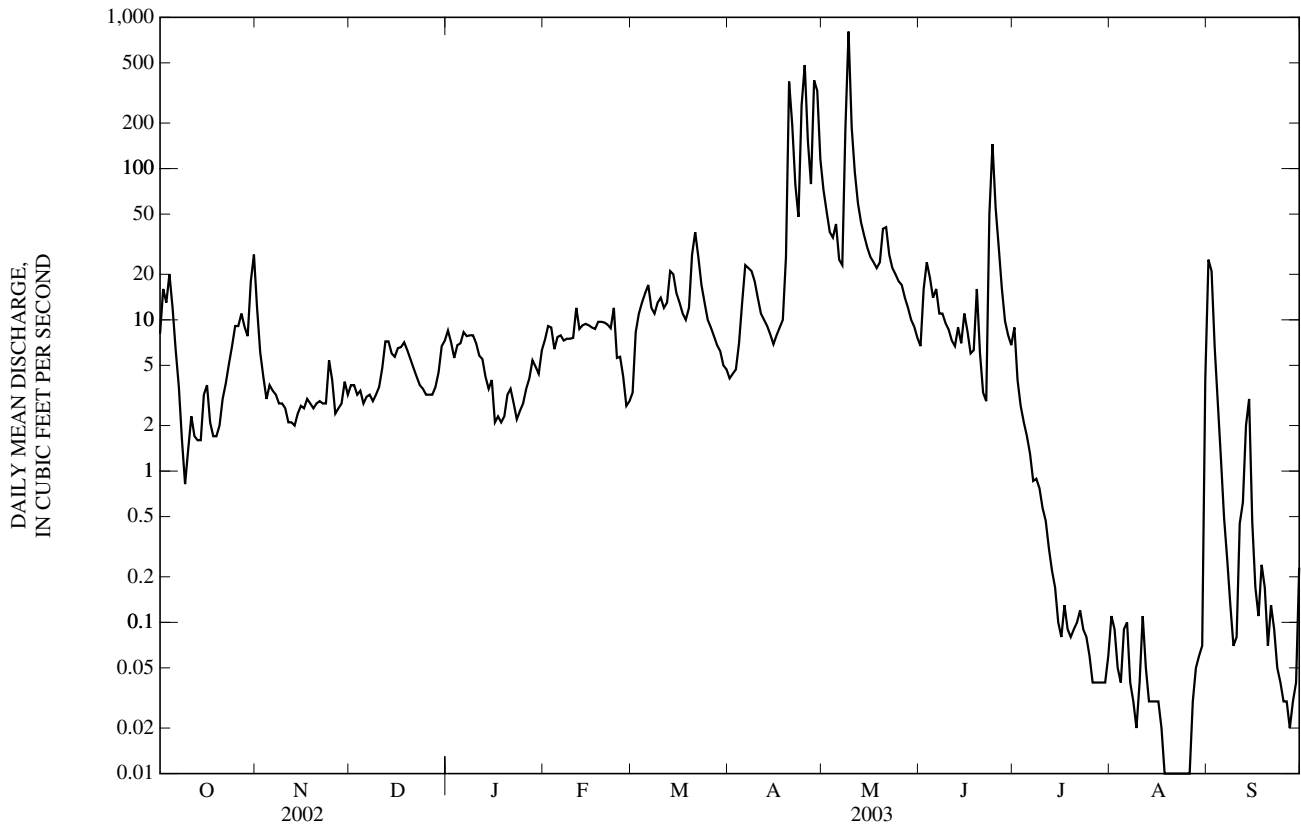
MEAN	174	172	116	86.9	184	357	405	497	429	351	157	320
MAX	1,921	1,240	655	545	917	1,703	1,771	2,355	2,725	4,103	1,039	2,474
(WY)	(1974)	(1999)	(1973)	(1973)	(1973)	(1973)	(1999)	(1995)	(1984)	(1993)	(1973)	(1977)
MIN	1.57	3.39	3.25	3.01	7.99	13.4	8.81	9.01	16.5	0.85	0.17	0.32
(WY)	(1989)	(2003)	(2001)	(1977)	(2003)	(2003)	(1989)	(1989)	(1988)	(2003)	(2003)	(1991)



06890100 DELAWARE RIVER NEAR MUSCOTAH, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL MEAN	64.9		18.3		271	
HIGHEST ANNUAL MEAN					830	
LOWEST ANNUAL MEAN					18.3	
HIGHEST DAILY MEAN	3,710	May 11	805	May 9	23,400	Oct 11, 1973
LOWEST DAILY MEAN	0.51	Aug 7	0.00	Aug 21	0.00	Sep 12, 2000
ANNUAL SEVEN-DAY MINIMUM	1.1	Aug 4	0.00	Aug 20	0.00	Aug 20, 2003
MAXIMUM PEAK FLOW			1,820	May 9	28,000	Sep 13, 1977
MAXIMUM PEAK STAGE			8.88	May 9	30.83	Sep 13, 1977
INSTANTANEOUS LOW FLOW			0.00	Aug 18	0.00	Aug 17, 1989
ANNUAL RUNOFF (AC-FT)	47,000		13,260		196,100	
10 PERCENT EXCEEDS	108		26		416	
50 PERCENT EXCEEDS	25		5.5		48	
90 PERCENT EXCEEDS	2.7		0.06		4.9	

e Estimated



## KANSAS RIVER BASIN

06890100 DELAWARE RIVER NEAR MUSCOTAH, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to August 1991, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
MAY 09...	1115	700	3,400	6,420

06890898 PERRY LAKE NEAR PERRY, KS

LOCATION.--Lat 39°06'52", long 95°25'33", in NE 1/4 NW 1/4 NW 1/4 sec.9, T.11 S., R.18 E., Jefferson County, Hydrologic Unit 10270103, in control tower near center of dam on Delaware River, 4.5 mi northwest of Perry, and at mile 5.8.

DRAINAGE AREA.--1,117 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1969 to current year. Prior to October 1971, published as "Perry Reservoir."

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

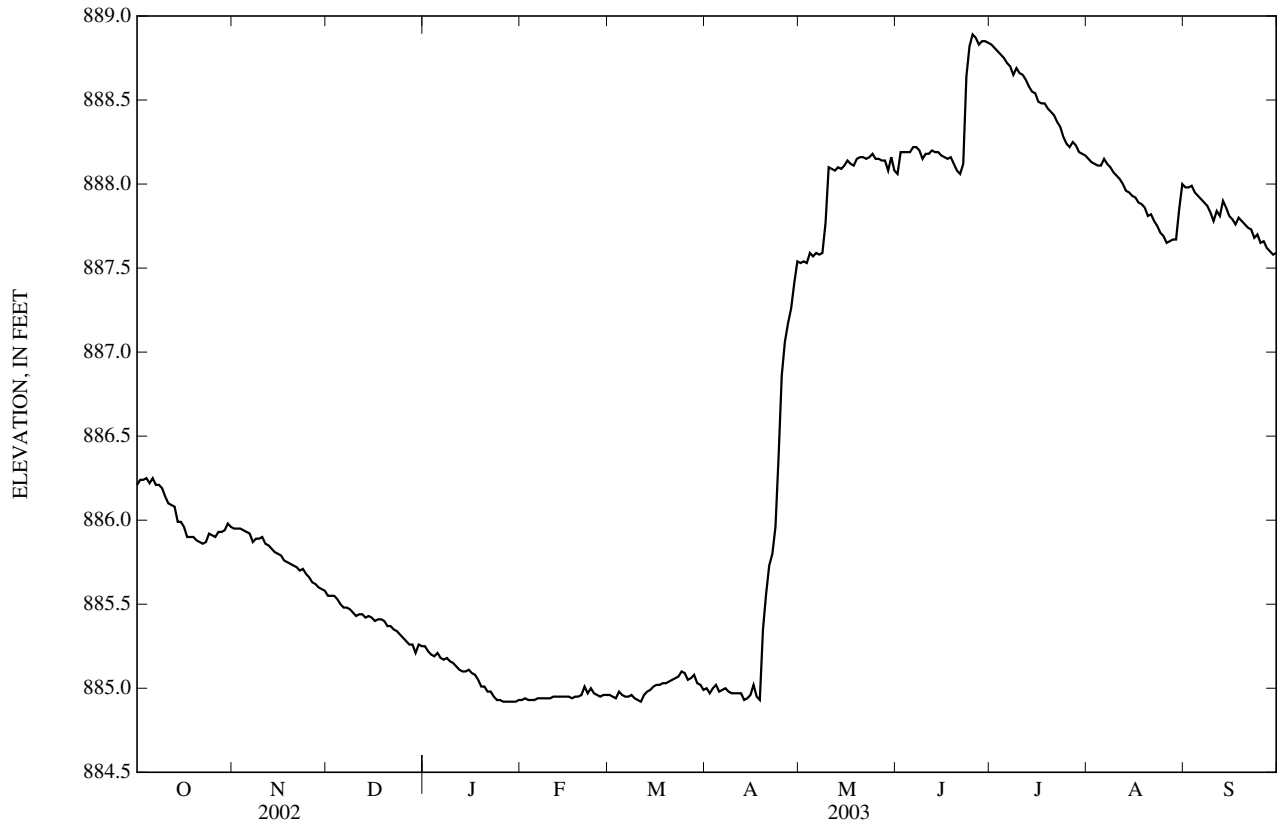
REMARKS.--Reservoir is formed by compacted earthfill dam. Some temporary storage occurred in Feb. 1969; dam was closed Mar. 21, 1969. Conservation pool elevation was first reached on June 3, 1970. Total capacity, 778,700 acre-ft, consisting of the following: Conservation pool, 225,000 acre-ft below elevation 891.5 ft; flood-control pool, 517,500 acre-ft between elevations 891.5 ft and 920.6 ft; and uncontrolled storage, 36,160 acre-ft between elevations 920.6 ft and 922.0 ft. Reservoir is used to store water for flood control, irrigation, and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 920.94 ft, July 26, 1993, contents, 734,000 acre-ft; minimum elevation since conservation pool was first reached, 884.90 ft, Apr. 14, 2003, contents, 143,600 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 888.89 ft, June 25, contents, 181,500 acre-ft; minimum elevation, 884.90 ft, Apr. 14, contents, 143,600 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
 (Computed by U.S. Army Corps of Engineers on basis of resurvey made in 1989)  
 (Effective date Oct. 1, 1990.)

Elevation	Contents	Elevation	Contents	Elevation	Contents
880	106,300	890	193,200	900	320,800
885	144,400	895	251,200		



KANSAS RIVER BASIN

06890898 PERRY LAKE NEAR PERRY, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	886.21	885.95	885.55	885.25	e884.93	884.96	885.00	887.53	888.06	888.83	888.15	887.98
2	886.24	885.95	885.55	885.22	e884.94	884.95	884.97	887.54	888.19	888.81	888.13	887.98
3	886.24	885.95	885.55	885.20	e884.93	884.94	885.00	887.53	888.19	888.79	888.12	887.99
4	886.25	885.94	885.53	885.19	e884.93	884.98	885.02	887.59	888.19	888.77	888.11	887.95
5	886.22	885.93	885.50	885.21	e884.93	884.96	884.98	887.57	888.19	888.75	888.11	887.93
6	886.25	885.92	885.48	885.18	e884.94	884.95	884.99	887.59	888.22	888.72	888.15	887.91
7	886.21	885.87	885.48	885.17	e884.94	884.95	885.00	887.58	888.22	888.70	888.12	887.89
8	886.21	885.89	885.47	885.18	e884.94	884.96	884.98	887.59	888.20	888.65	888.10	887.87
9	886.19	885.89	885.45	885.16	e884.94	884.94	884.97	887.77	888.15	888.69	888.07	887.83
10	886.14	885.90	885.43	885.15	e884.94	884.93	884.97	888.10	888.18	888.66	888.05	887.78
11	886.10	885.86	885.44	885.13	e884.95	884.92	884.97	888.09	888.18	888.65	888.03	887.84
12	886.09	885.85	885.44	885.11	e884.95	884.96	884.97	888.08	888.20	888.62	888.00	887.81
13	886.08	885.83	885.42	885.10	e884.95	884.98	884.93	888.10	888.19	888.58	887.96	887.90
14	885.99	885.81	885.43	885.10	e884.95	884.99	884.94	888.09	888.19	888.55	887.95	887.86
15	885.99	885.80	885.42	e885.11	e884.95	885.01	884.96	888.11	888.17	888.54	887.93	887.81
16	885.96	885.79	885.40	e885.09	884.95	e885.02	885.02	888.14	888.16	888.49	887.92	887.79
17	885.90	885.76	885.41	e885.08	884.94	e885.02	884.95	888.12	888.15	888.48	887.89	887.76
18	885.90	885.75	885.41	e885.05	884.95	e885.03	884.93	888.11	888.16	888.48	887.88	887.80
19	885.90	885.74	885.40	e885.01	884.95	e885.03	885.35	888.15	888.12	888.45	887.86	e887.78
20	885.88	885.73	885.37	885.01	884.96	e885.04	885.56	888.16	888.08	888.43	887.81	e887.76
21	885.87	885.72	885.37	884.98	885.01	885.05	885.73	888.16	888.06	888.41	887.82	887.74
22	885.86	885.70	885.35	884.98	884.97	885.06	885.80	888.15	888.12	888.37	887.78	887.73
23	885.87	885.71	885.34	e884.95	885.00	885.07	885.96	888.16	888.64	888.34	887.75	887.68
24	885.92	885.68	e885.32	e884.93	884.97	885.10	886.38	888.18	888.82	888.28	887.71	887.70
25	885.91	885.66	e885.30	e884.93	884.96	885.09	886.86	888.15	888.89	888.24	887.69	887.65
26	885.90	885.63	e885.28	e884.92	884.95	885.05	887.06	888.15	888.87	888.22	887.65	887.66
27	885.93	885.62	e885.26	e884.92	884.96	885.06	887.17	888.14	888.83	888.25	887.66	887.62
28	885.93	885.60	885.26	e884.92	884.96	885.08	887.26	888.14	888.85	888.23	887.67	887.60
29	885.94	885.59	885.21	e884.92	---	885.03	887.41	888.08	888.85	888.19	887.67	887.58
30	885.98	885.58	885.26	e884.92	---	885.02	887.54	888.16	888.84	888.18	887.85	887.59
31	885.96	---	885.25	e884.93	---	884.99	---	888.08	---	888.17	888.00	---
MEAN	886.03	885.79	885.40	885.06	884.95	885.00	885.59	887.97	888.34	888.50	887.92	887.79
MAX	886.25	885.95	885.55	885.25	885.01	885.10	887.54	888.18	888.89	888.83	888.15	887.99
MIN	885.86	885.58	885.21	884.92	884.93	884.92	884.93	887.53	888.06	888.17	887.65	887.58
(+)	153,000	149,600	146,700	142,800	144,100	144,300	168,000	173,300	181,000	174,200	172,500	168,500
(#)	-2,600	-3,400	-2,900	-3,900	+1,300	+200	+23,700	+5,300	+7,700	-6,800	-1,700	-4,000
CAL YR	2002	..... (#) +12,900										
WTR YR	2003	..... (#) -59,400										

e Estimated

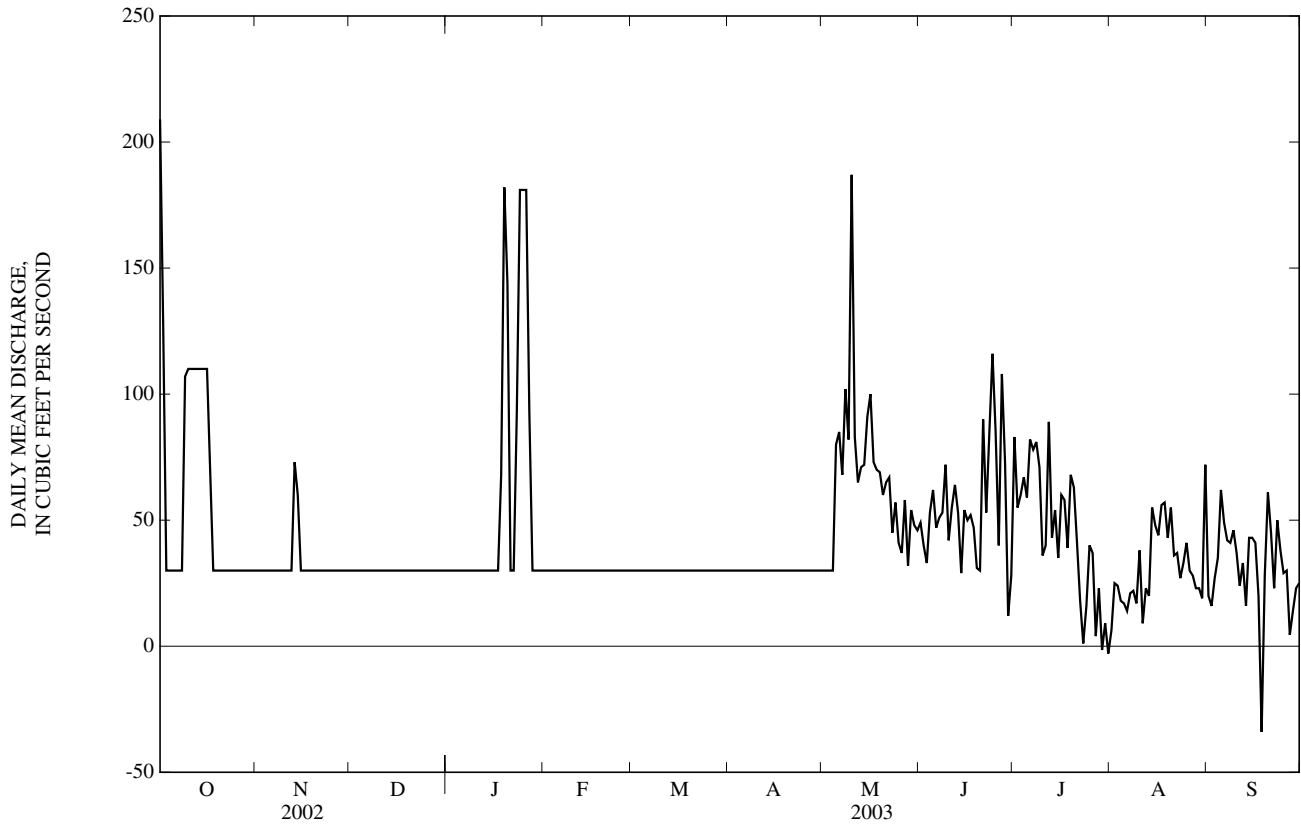
+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.



KANSAS RIVER BASIN

06890900 DELAWARE RIVER BELOW PERRY DAM, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL MEAN	235		41.8		704	
HIGHEST ANNUAL MEAN					1,933	1993
LOWEST ANNUAL MEAN					41.8	2003
HIGHEST DAILY MEAN	5,120	May 17	209	Oct 1	14,000	May 31, 1995
LOWEST DAILY MEAN	9.0	Feb 12	-34	Sep 18	-34	Sep 18, 2003
ANNUAL SEVEN-DAY MINIMUM	30	Oct 18	9.0	Jul 27	0.00	Oct 12, 1973
MAXIMUM PEAK FLOW			598	May 10	14,000	May 31, 1995
INSTANTANEOUS LOW FLOW			-160	Aug 5	0.00many years	
ANNUAL RUNOFF (AC-FT)	169,900		30,290		510,000	
10 PERCENT EXCEEDS	406		73		2,020	
50 PERCENT EXCEEDS	109		30		100	
90 PERCENT EXCEEDS	30		27		25	



## 06891000 KANSAS RIVER AT LECOMPTON, KS

LOCATION.--Lat 39°03'07", long 95°23'15", in SE ¼ SW ¼ NW ¼ sec.35, T.11 S., R.18 E., Jefferson County, Hydrologic Unit 10270104, on left bank at upstream side of county highway bridge at Lecompton, 0.8 mi downstream from Delaware River, and at mile 63.8.

DRAINAGE AREA.--58,460 mi<sup>2</sup>, approximately, of which a large area is noncontributing.

PERIOD OF RECORD.--January to November 1896 and April to July 1906 (gage heights only), March 1936 to current year. Records for April 1899 to December 1905 published in WSP 37, 39, 50, 52, 66, 75, 84, 99, 131, 172, and 796-B have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 876: 1937. WSP 1176: 1903(M). WSP 1440: 1948-49(P). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 821.84 ft above NGVD of 1929. Prior to July 30, 1952, nonrecording gage, and July 30, 1952, to Apr. 29, 1970, recording gage, at site 0.15 mi upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by lakes and reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1844, 30.23 ft, July 13, 1951. Flood of May 31, 1903 (second highest since 1844), reached a stage of 27.9 ft, from floodmark.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,050	1,600	943	843	e760	995	875	3,210	1,860	3,180	2,370	2,460
2	1,100	1,310	901	840	e760	1,000	811	2,510	2,360	2,680	2,390	2,580
3	1,390	1,140	848	841	e748	945	757	2,090	2,870	3,020	2,400	1,850
4	2,110	1,080	831	858	e789	841	792	1,850	2,910	3,170	2,400	2,060
5	1,550	1,060	823	866	880	e636	871	1,600	2,460	3,140	2,490	1,470
6	1,280	1,050	825	878	876	e565	955	1,410	2,330	2,880	2,440	1,130
7	1,070	1,430	851	879	e652	705	1,030	1,320	2,290	2,700	2,390	969
8	870	1,640	868	886	e754	907	1,030	1,320	2,270	2,600	2,360	889
9	840	1,650	893	861	960	916	1,030	1,310	2,200	2,540	2,350	840
10	949	1,650	913	833	1,090	870	967	3,210	2,160	2,830	2,340	784
11	1,040	1,640	915	793	929	794	906	2,360	2,250	3,700	2,480	911
12	1,090	1,650	921	815	875	806	861	2,690	2,390	2,150	2,420	1,120
13	1,030	1,690	917	859	857	807	842	2,630	1,970	1,970	2,370	1,230
14	954	1,690	946	829	1,210	1,030	827	2,490	1,890	2,600	2,020	1,460
15	930	1,710	951	827	1,150	924	795	2,390	1,680	2,700	1,360	1,000
16	957	1,840	917	822	1,150	783	833	2,500	1,620	2,660	1,210	855
17	972	1,880	879	536	1,090	678	964	2,640	1,570	2,670	1,150	1,180
18	1,060	1,870	864	545	1,070	661	1,010	2,470	1,540	2,650	1,090	4,500
19	1,240	1,860	850	864	1,060	759	2,570	2,400	1,830	2,600	1,100	6,010
20	1,250	1,830	841	852	1,030	1,120	6,510	2,590	2,490	2,550	1,130	4,600
21	1,170	1,690	816	732	938	1,230	7,400	2,890	2,390	2,530	1,200	3,410
22	1,130	1,700	815	693	855	1,530	4,250	2,840	1,970	2,550	1,090	2,730
23	1,120	1,710	805	e716	810	1,270	2,670	2,630	3,050	2,510	1,040	2,250
24	1,290	1,720	792	e725	e605	1,330	5,400	2,620	5,110	2,520	1,020	2,010
25	1,570	1,720	764	e687	e436	2,110	11,600	2,560	3,240	2,490	1,000	1,920
26	1,600	1,670	793	e710	e526	2,490	8,440	2,460	2,930	2,470	1,040	1,840
27	1,460	1,220	971	e719	740	2,020	5,030	2,370	4,550	2,500	1,090	1,870
28	1,170	1,050	966	e754	840	1,600	3,730	2,260	2,540	2,450	1,110	1,840
29	1,010	1,000	847	e770	---	1,300	4,300	2,170	3,070	2,410	1,240	1,820
30	1,190	960	821	e805	---	1,140	4,210	2,010	3,510	2,380	1,320	1,930
31	1,450	---	820	e792	---	986	---	1,910	---	2,370	4,450	---
MEAN	1,190	1,524	868	788	873	1,089	2,742	2,313	2,510	2,651	1,802	1,984
MAX	2,110	1,880	971	886	1,210	2,490	11,600	3,210	5,110	3,700	4,450	6,010
MIN	840	960	764	536	436	565	757	1,310	1,540	1,970	1,000	784
AC-FT	73,180	90,670	53,370	48,460	48,480	66,940	163,200	142,200	149,400	163,000	110,800	118,100

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2003, BY WATER YEAR (WY)

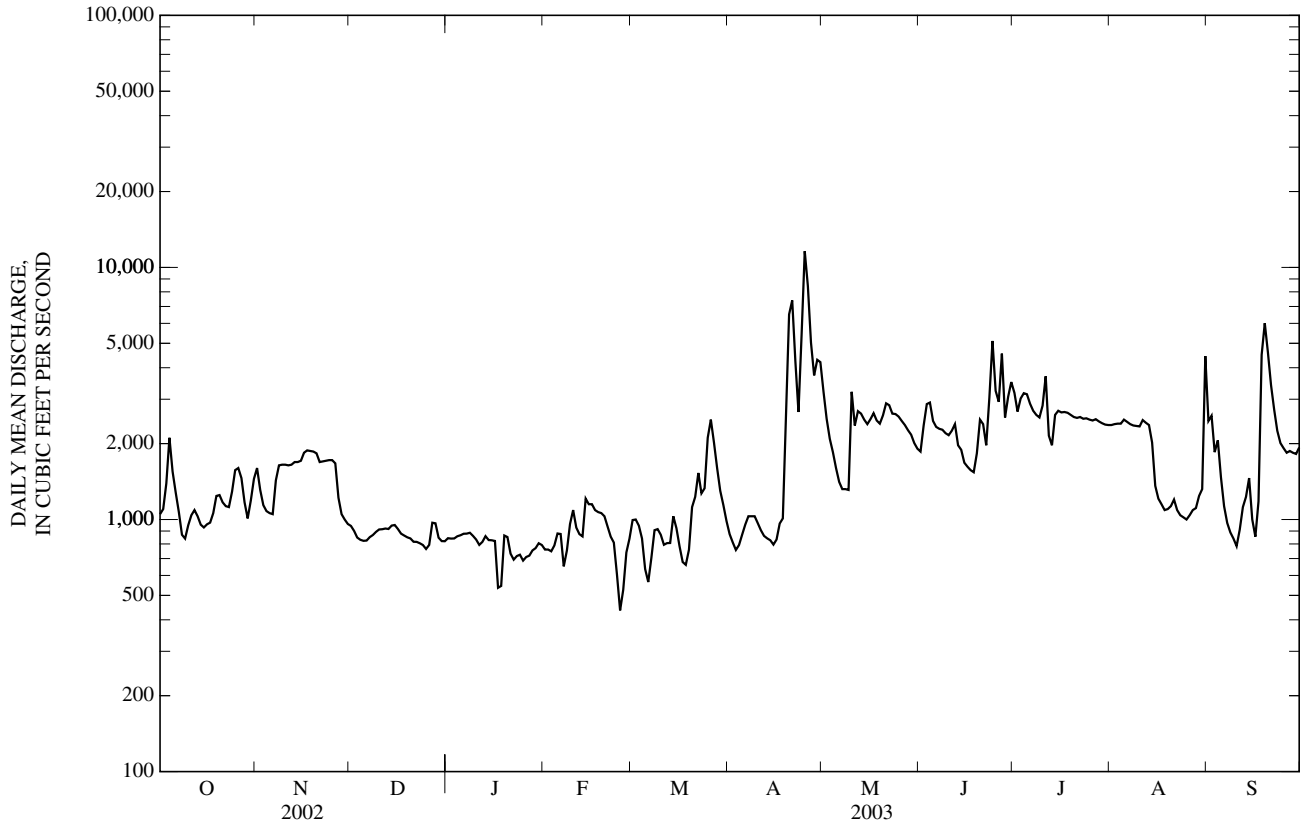
MEAN	5,698	4,301	3,588	2,767	4,473	7,083	9,069	10,740	14,380	12,030	6,903	6,273
MAX	49,500	41,790	20,690	13,740	19,640	31,540	39,070	40,820	81,560	116,500	65,080	36,200
(WY)	(1974)	(1974)	(1974)	(1974)	(1949)	(1973)	(1987)	(1995)	(1951)	(1951)	(1993)	(1951)
MIN	349	417	377	329	496	564	774	784	1,120	1,190	602	448
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1967)	(1956)	(1956)	(1989)	(1940)	(1955)	(1956)

KANSAS RIVER BASIN

06891000 KANSAS RIVER AT LECOMPTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1937 - 2003	
ANNUAL MEAN	2,358		1,696		7,283	
HIGHEST ANNUAL MEAN					28,330	1993
LOWEST ANNUAL MEAN					1,275	1956
HIGHEST DAILY MEAN	13,500	May 12	11,600	Apr 25	472,000	Jul 13, 1951
LOWEST DAILY MEAN	764	Dec 25	436	Feb 25	185	Oct 13, 1956
ANNUAL SEVEN-DAY MINIMUM	804	Dec 20	687	Feb 22	200	Oct 8, 1956
MAXIMUM PEAK FLOW			12,600	Apr 25	483,000	Jul 13, 1951
MAXIMUM PEAK STAGE			6.32	Apr 25	30.23	Jul 13, 1951
INSTANTANEOUS LOW FLOW			336	Jan 17	185	Oct 13, 1956
ANNUAL RUNOFF (AC-FT)	1,707,000		1,228,000		5,276,000	
10 PERCENT EXCEEDS	4,570		2,710		17,600	
50 PERCENT EXCEEDS	1,900		1,230		3,360	
90 PERCENT EXCEEDS	939		794		975	

e Estimated





06891260 WAKARUSA RIVER NEAR RICHLAND, KS

LOCATION.--Lat 38°53'32", long 95°35'41", in SE 1/4 SE 1/4 NE 1/4 sec.26, T.13 S., R.16 E., Shawnee County, Hydrologic Unit 10270104, on left bank at upstream side of the bridge on Paulen Road and at mile 38.5.

DRAINAGE AREA.--164 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2002 to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 880.00 ft above NGVD of 1929 from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	27	e0.33	e0.55	e0.57	1.6	1.6	58	3.3	32	e0.08	e250
2	---	16	e0.34	e0.55	e0.57	1.7	1.3	51	10	25	e0.08	e58
3	---	11	e0.35	e0.54	e0.58	1.8	1.2	43	44	17	e0.08	e23
4	---	7.3	e0.36	e0.54	e0.58	2.0	1.0	37	32	16	e0.08	e11
5	---	4.8	e0.38	e0.54	e0.59	2.4	1.0	34	20	8.4	e0.07	e5.2
6	---	e3.1	e0.40	e0.54	e0.60	2.1	1.2	30	26	5.4	e0.07	e4.4
7	---	e1.7	e0.42	e0.55	e0.60	2.3	1.5	31	39	3.5	e0.07	e7.2
8	---	e1.4	e0.44	e0.54	e0.62	2.4	1.5	28	26	3.1	e0.06	e7.0
9	---	e1.3	e0.46	e0.54	e0.62	2.2	1.5	26	17	5.1	e0.06	e6.2
10	---	e1.2	e0.48	e0.55	e0.64	2.1	2.0	301	12	7.2	e0.06	e5.5
11	---	e1.1	e0.50	e0.55	e0.64	2.3	1.9	249	8.4	4.8	e0.05	e5.4
12	---	e1.0	e0.52	e0.54	e0.66	2.4	1.5	90	5.9	1.8	e0.05	e5.5
13	---	e0.94	e0.55	e0.54	e0.69	3.7	1.2	57	5.2	0.27	e0.05	e6.7
14	---	e0.89	e0.55	e0.54	5.3	3.6	1.1	47	4.3	0.10	e0.05	e71
15	---	e0.85	e0.55	e0.54	31	3.2	1.1	37	11	e0.11	e0.04	e27
16	---	e0.85	e0.55	e0.54	26	2.8	1.3	34	7.3	e0.40	e0.03	e14
17	---	e0.85	0.55	e0.54	15	2.3	1.4	59	4.1	e1.2	e0.02	e8.8
18	---	e0.76	e0.55	e0.55	11	1.9	1.3	53	2.6	e1.0	e0.02	e6.9
19	---	e0.73	e0.56	e0.55	8.0	2.0	1,420	40	1.8	e0.80	e0.01	e5.5
20	---	e0.63	e0.55	e0.55	6.0	2.9	2,370	41	603	e0.60	e0.01	e5.2
21	---	e0.59	e0.56	e0.54	4.6	10	618	39	184	e0.45	0.00	e4.5
22	7.1	e0.59	e0.55	e0.54	3.7	20	229	30	71	e0.25	0.00	e3.9
23	6.9	e0.52	e0.56	e0.55	3.2	15	176	25	163	e0.39	0.00	e3.3
24	8.1	e0.48	e0.55	e0.56	3.2	10	1,750	21	265	e0.32	0.00	e2.7
25	29	e0.41	e0.56	e0.56	2.7	7.5	1,250	21	105	e0.15	0.00	e2.3
26	22	e0.43	e0.57	e0.56	2.2	5.7	439	18	332	e0.10	0.00	e1.7
27	21	e0.41	e0.56	e0.56	1.9	4.4	219	15	150	e0.09	0.00	e1.4
28	20	e0.39	e0.56	e0.56	1.8	3.4	129	12	77	e0.09	0.04	e1.2
29	16	e0.37	e0.56	e0.56	---	2.9	93	9.7	64	e0.09	0.16	e1.1
30	19	e0.37	e0.55	e0.56	---	2.5	72	6.8	44	e0.08	1.9	e1.3
31	38	---	e0.55	e0.56	---	2.0	---	4.6	---	e0.07	421	---
MEAN	---	2.93	0.50	0.55	4.77	4.23	293	49.9	77.9	4.38	13.7	18.6
MAX	---	27	0.57	0.56	31	20	2,370	301	603	32	421	250
MIN	---	0.37	0.33	0.54	0.57	1.6	1.0	4.6	1.8	0.07	0.00	1.1
AC-FT	---	174	31	34	265	260	17,430	3,070	4,640	269	841	1,100

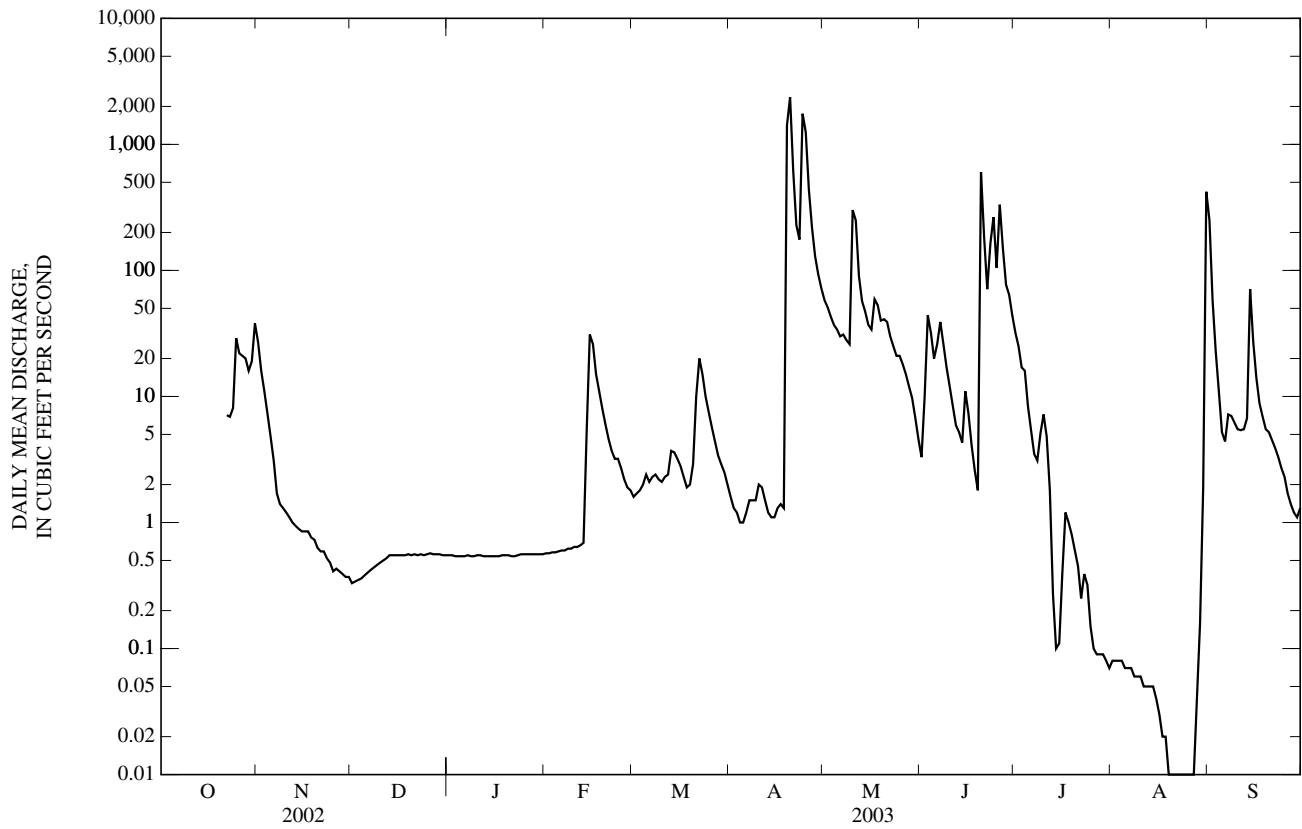
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2003, BY WATER YEAR (WY)

MEAN	---	2.93	0.50	0.55	4.77	4.23	293	49.9	77.9	4.38	13.7	18.6
MAX	---	2.93	0.50	0.55	4.77	4.23	293	49.9	77.9	4.38	13.7	18.6
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	---	2.93	0.50	0.55	4.77	4.23	293	49.9	77.9	4.38	13.7	18.6
(WY)	---	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)

e Estimated

KANSAS RIVER BASIN

06891260 WAKARUSA RIVER NEAR RICHLAND, KS—Continued



06891478 CLINTON LAKE NEAR LAWRENCE, KS

LOCATION.--Lat 38°55'51", long 95°20'02", in NW 1/4 SW 1/4 SW 1/4 sec.8, T.13 S., R.19 E., Douglas County, Hydrologic Unit 10270104, in control tower of Clinton Dam on Wakarusa River, 4.0 mi west of Lawrence, and at mile 22.3.

DRAINAGE AREA.--367 mi<sup>2</sup>.

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

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

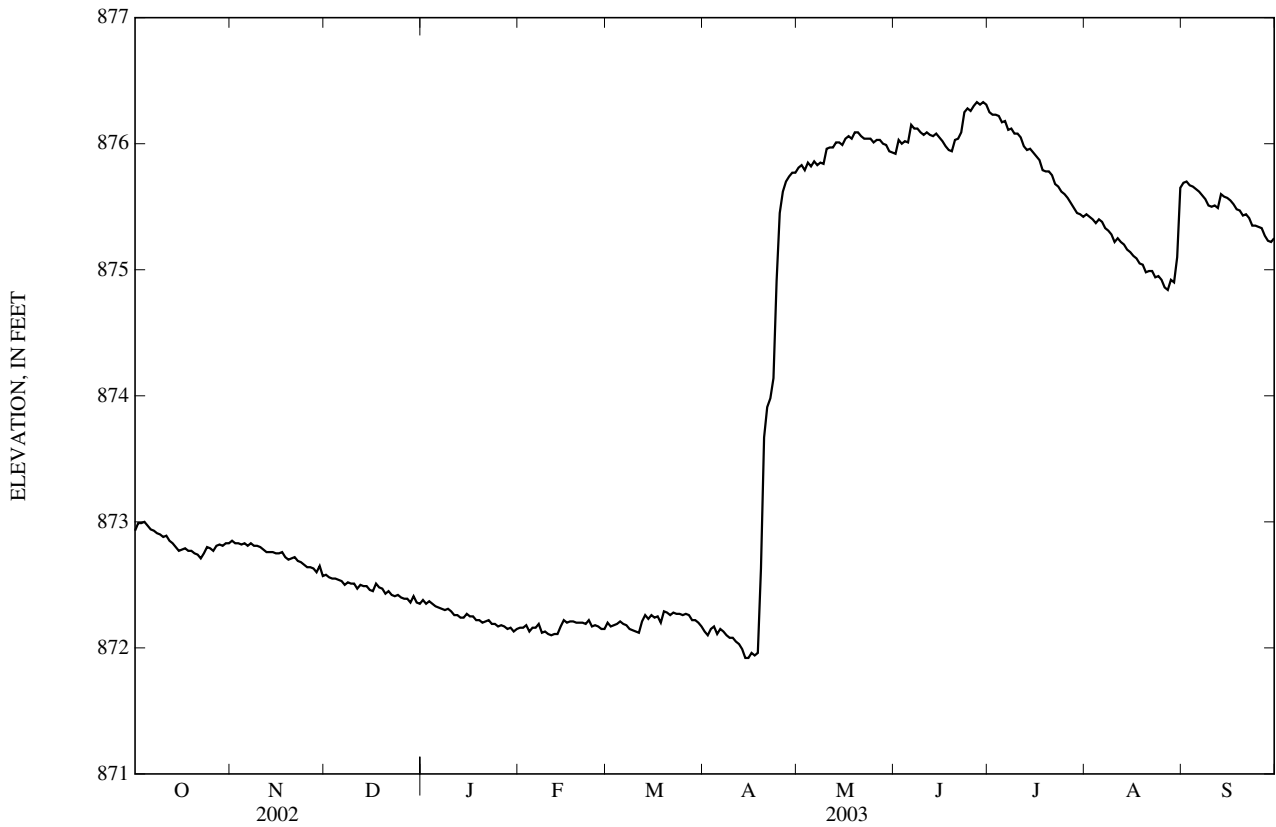
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Nov. 30, 1977. Conservation pool elevation was first reached Apr. 3, 1980. Total capacity, 683,400 acre-ft, consisting of the following: Dead storage, 90 acre-ft below elevation 825.0 ft; conservation pool, 129,100 acre-ft between elevations 825.0 ft and 875.5 ft; flood-control pool, 268,400 acre-ft between elevations 875.5 ft and 903.4 ft; and surcharge pool, 285,800 acre-ft between elevations 903.4 ft and 921.4 ft. Reservoir is used for flood control, conservation, and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 892.48 ft, May 29, 1995, contents, 274,500 acre-ft; minimum elevation since conservation pool first reached, 871.60 ft, Aug. 18, 1989, contents, 103,300 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 876.36 ft, June 27, contents, 135,300 acre-ft; minimum elevation, 871.82 ft, Apr. 18, contents, 104,700 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Computed by U.S. Army Corps of Engineers in 1965)

Elevation	Contents	Elevation	Contents	Elevation	Contents
870	93,420	874	118,900	878	147,200
872	105,800	876	132,700		



KANSAS RIVER BASIN

06891478 CLINTON LAKE NEAR LAWRENCE, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	872.93	872.85	872.58	872.38	872.16	872.20	872.13	875.81	875.92	876.25	875.44	875.69
2	872.99	872.83	872.56	872.35	872.16	872.17	872.10	875.83	876.03	876.23	875.42	875.70
3	872.99	872.83	872.55	872.37	872.18	872.18	872.15	875.79	876.00	876.23	875.40	875.67
4	873.00	872.82	872.55	872.35	872.13	872.19	872.17	875.85	876.02	876.22	875.37	875.66
5	872.97	872.83	872.54	872.33	872.16	872.21	872.11	875.82	876.01	876.17	875.40	875.64
6	872.94	872.81	872.53	872.32	872.16	872.19	872.15	875.86	876.15	876.18	875.38	875.62
7	872.93	872.83	872.50	872.31	872.19	872.18	872.13	875.83	876.12	876.11	875.33	875.59
8	872.91	872.81	872.52	872.30	872.12	872.15	872.10	875.85	876.12	876.12	875.31	875.56
9	872.90	872.81	872.51	872.31	872.13	872.14	872.08	875.84	876.09	876.08	875.28	875.51
10	872.88	872.80	872.51	872.29	872.11	872.13	872.08	875.96	876.07	876.08	875.22	875.50
11	872.89	872.78	872.47	872.26	872.10	872.12	872.05	875.97	876.09	876.05	875.25	875.51
12	872.85	872.76	872.50	872.26	872.11	872.21	872.03	875.97	876.07	875.98	875.22	875.49
13	872.83	872.76	872.49	872.24	872.11	872.26	871.99	876.01	876.06	875.95	875.20	875.60
14	872.80	872.76	872.49	872.24	872.17	872.23	871.92	876.01	876.08	875.96	875.16	875.58
15	872.77	872.75	872.46	872.27	872.22	872.26	871.92	875.99	876.05	875.93	875.14	875.57
16	872.78	872.75	872.45	872.25	872.20	872.24	871.96	876.04	876.02	875.90	875.11	875.55
17	872.79	872.76	872.51	872.25	872.21	872.25	871.94	876.06	875.98	875.87	875.09	875.52
18	872.77	872.72	872.48	872.22	872.21	872.20	871.96	876.04	875.95	875.79	875.05	875.48
19	872.77	872.70	872.47	872.22	872.20	872.29	872.63	876.09	875.94	875.78	875.04	875.47
20	872.75	872.71	872.43	872.20	872.20	872.28	873.67	876.09	876.03	875.78	874.98	875.43
21	872.74	872.72	872.45	872.21	872.20	872.26	873.91	876.06	876.04	875.75	874.99	875.44
22	872.71	872.69	872.42	872.22	872.19	872.28	873.98	876.04	876.09	875.68	874.99	875.41
23	872.75	872.68	872.41	872.19	872.22	872.27	874.14	876.04	876.25	875.66	874.94	875.35
24	872.80	872.66	872.42	872.19	872.17	872.27	874.91	876.04	876.28	875.62	874.95	875.35
25	872.79	872.64	872.40	872.17	872.18	872.26	875.45	876.01	876.26	875.60	874.92	875.34
26	872.77	872.64	872.39	872.18	872.17	872.27	875.62	876.03	876.30	875.57	874.86	875.33
27	872.81	872.63	872.39	872.17	872.15	872.26	875.70	876.03	876.33	875.53	874.84	875.27
28	872.82	872.60	872.36	872.15	872.15	872.22	875.74	876.00	876.31	875.49	874.92	875.23
29	872.81	872.65	872.41	872.16	---	872.22	875.77	875.99	876.33	875.45	874.90	875.22
30	872.83	872.57	872.36	872.13	---	872.20	875.77	875.94	876.31	875.44	875.10	875.25
31	872.83	---	872.35	872.15	---	872.17	---	875.93	---	875.42	875.65	---
MEAN	872.84	872.74	872.47	872.25	872.17	872.22	873.14	875.96	876.11	875.87	875.16	875.48
MAX	873.00	872.85	872.58	872.38	872.22	872.29	875.77	876.09	876.33	876.25	875.65	875.70
MIN	872.71	872.57	872.35	872.13	872.10	872.12	871.92	875.79	875.92	875.42	874.84	875.22
(+)	111,100	109,500	108,000	106,700	106,700	106,900	131,100	132,200	134,800	128,500	130,200	127,400
(#)	-1,500	-1,600	-1,500	-1,300	0	+200	+24,200	+1,100	+2,600	-6,300	+1,700	-2,800
CAL YR	2002	..... (#) -28,800										
WTR YR	2003	..... (#) +14,800										

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

## 06891500 WAKARUSA RIVER NEAR LAWRENCE, KS

LOCATION.--Lat 38°54'40", long 95°15'37", in NE ¼ NE ¼ NE ¼ sec.23, T.13 S., R.19 E., Douglas County, Hydrologic Unit 10270104, on left bank at upstream side of bridge on U.S. Highway 59, 4 mi south of Lawrence, and at mile 16.3.

DRAINAGE AREA.--425 mi<sup>2</sup>, Dec. 1, 1972, to Sept. 30, 1980, 412 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1929 to current year. Published as "below Clinton Dam" December 1972 to September 1980.

REVISED RECORDS.--WSP 976: 1935. WSP 1310: 1929(M), 1933(M), 1938(M), 1945-47(M), 1949-50(M). WSP 1919: 1958, 1959.

GAGE.--Water-stage recorder. Datum of gage is 799.26 ft above NGVD of 1929. Prior to May 7, 1959, nonrecording gage, and May 8, 1959, to Nov. 30, 1972, water-stage recorder at present site and datum. Dec. 1, 1972, to Sept. 30, 1980, water-stage recorder at site 2.3 mi upstream at datum 3.95 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow significantly regulated since 1977 by Clinton Lake (station 06891478), 6.0 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1880, that of July 12, 1951.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	5.6	e4.0	4.1	5.2	4.7	4.7	33	23	24	12	81
2	9.9	5.0	e4.0	3.9	4.9	5.2	11	28	101	23	21	38
3	9.2	5.3	e4.0	3.8	4.9	4.5	26	27	36	22	20	29
4	16	5.0	3.9	3.7	4.5	4.2	26	28	29	22	20	26
5	5.0	5.4	3.8	3.7	4.4	4.2	27	27	27	22	21	24
6	7.8	5.0	3.9	3.8	4.7	5.1	34	32	146	22	23	23
7	4.8	4.4	3.8	3.6	3.5	6.3	27	27	59	22	21	22
8	4.5	4.9	3.6	3.7	3.1	4.5	26	30	36	22	20	21
9	4.7	e4.8	3.6	3.7	3.2	3.3	26	32	29	23	20	21
10	4.0	e4.8	3.6	3.7	3.3	2.3	26	51	26	28	20	21
11	3.3	e4.8	3.7	3.7	3.3	2.0	26	34	32	23	28	26
12	3.9	e4.8	3.7	3.9	3.6	49	54	28	30	23	21	27
13	4.1	e4.8	3.8	4.0	3.7	59	118	28	49	22	21	111
14	3.7	e4.8	3.6	3.8	42	11	75	26	33	22	21	72
15	3.8	e4.8	4.0	3.8	10	5.5	12	25	27	22	20	31
16	7.4	e4.8	3.8	4.2	6.4	3.2	25	47	25	22	20	26
17	8.3	e4.8	4.0	3.9	4.6	2.8	24	29	41	23	20	24
18	4.2	e4.8	4.1	3.9	3.8	2.7	24	27	33	22	20	26
19	5.9	e4.8	3.9	4.0	3.4	7.1	232	35	24	22	20	25
20	4.2	e4.8	3.8	4.5	3.4	14	106	36	23	22	20	23
21	3.8	e4.8	3.7	4.4	3.5	6.3	48	27	23	22	20	23
22	3.7	e4.6	4.1	4.1	3.3	5.4	37	26	59	23	20	22
23	10	e4.6	4.1	3.9	3.4	5.8	71	25	94	23	20	22
24	19	e4.6	3.9	4.3	3.3	4.6	156	27	63	23	20	22
25	15	e4.4	4.0	4.6	3.1	4.7	111	27	38	23	20	22
26	5.7	e4.4	4.5	4.8	3.3	5.6	57	24	31	23	20	22
27	21	e4.2	4.6	4.8	4.3	5.3	41	23	28	23	20	22
28	7.6	e4.2	4.5	5.5	4.5	6.2	34	23	28	19	24	22
29	7.6	e4.2	4.5	5.8	---	5.9	31	22	25	1.9	29	22
30	9.6	e4.0	4.4	5.2	---	5.7	30	22	24	0.69	95	36
31	6.2	---	4.1	7.3	---	5.4	---	23	---	0.53	484	---
MEAN	7.71	4.74	3.97	4.26	5.52	8.44	51.5	29.0	41.4	20.5	38.1	31.1
MAX	21	5.6	4.6	7.3	42	59	232	51	146	28	484	111
MIN	3.3	4.0	3.6	3.6	3.1	2.0	4.7	22	23	0.53	12	21
AC-FT	474	282	244	262	307	519	3,070	1,780	2,460	1,260	2,340	1,850

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2003, BY WATER YEAR (WY)

MEAN	224	208	151	68.2	134	280	377	492	515	306	129	103
MAX	2,038	1,953	984	380	682	874	1,481	2,324	2,447	725	1,145	702
(WY)	(1986)	(1999)	(1993)	(1998)	(1982)	(1987)	(1983)	(1999)	(1995)	(1984)	(1993)	(1993)
MIN	2.66	3.60	2.04	1.26	1.71	3.54	15.1	17.4	23.9	11.5	16.3	3.42
(WY)	(1991)	(1996)	(1979)	(1996)	(1996)	(1996)	(1981)	(2000)	(1989)	(1994)	(1990)	(1991)

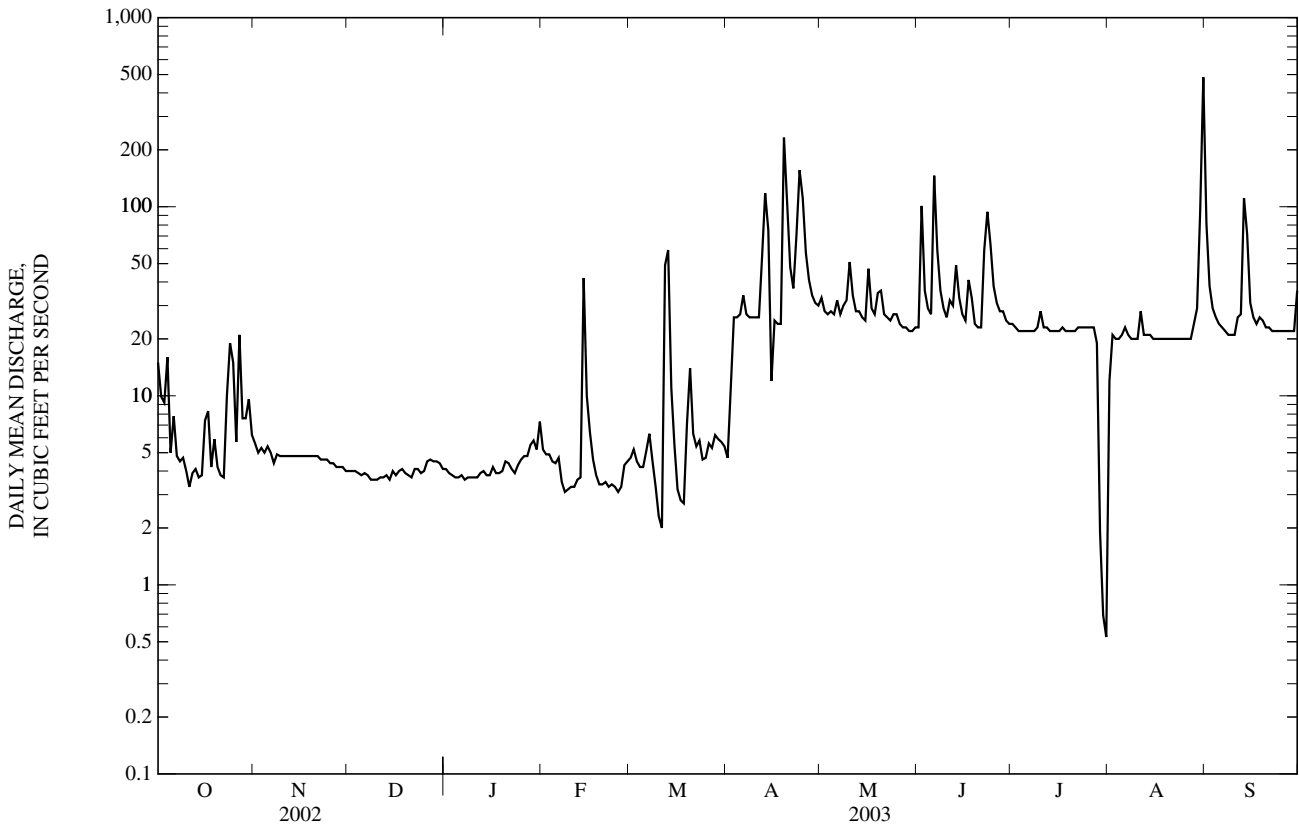
KANSAS RIVER BASIN

06891500 WAKARUSA RIVER NEAR LAWRENCE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1978 - 2003	
ANNUAL MEAN	137		20.5		249	
HIGHEST ANNUAL MEAN					728	
LOWEST ANNUAL MEAN					20.5	
HIGHEST DAILY MEAN	1,480	May 25	484	Aug 31	6,340	Oct 5, 1998
LOWEST DAILY MEAN	3.3	Oct 11	0.53	Jul 31	0.24	Nov 3, 1983
ANNUAL SEVEN-DAY MINIMUM	3.7	Dec 8	3.3	Feb 20	0.59	Oct 30, 1983
MAXIMUM PEAK FLOW			845	Aug 31	a24,200	Jul 12, 1951
MAXIMUM PEAK STAGE			9.64	Aug 31	a31.59	Jul 12, 1951
INSTANTANEOUS LOW FLOW			0.43	Jul 31	0.00	some years
ANNUAL RUNOFF (AC-FT)	99,300		14,850		180,500	
10 PERCENT EXCEEDS	491		35		787	
50 PERCENT EXCEEDS	17		15		27	
90 PERCENT EXCEEDS	4.2		3.7		5.2	

e Estimated

a Maximum peak flow and stage recorded outside period of record and prior to Clinton Lake filling.



06892000 STRANGER CREEK NEAR TONGANOXIE, KS

LOCATION.--Lat 39°06'59", long 95°00'39", in NE 1/4 NE 1/4 NW 1/4 sec.7, T.11 S., R.22 E., Leavenworth County, Hydrologic Unit 10270104, on left bank at downstream side of bridge on U.S. Highway 40, 2.0 mi upstream from Tonganoxie Creek, 4.0 mi east of Tonganoxie, and at mile 18.1.

DRAINAGE AREA.--406 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1929 to current year.

REVISED RECORDS.--WSP 1440: 1929, 1936(M), 1940, 1942(M), 1949. WSP 1710: 1951.

GAGE.--Water-stage recorder. Datum of gage is 800.95 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Apr. 30, 1929, to June 1, 1939, nonrecording gage and June 2, 1939, to June 1, 1960, water-stage recorder, at present site and datum. June 1, 1960, to May 16, 1997, water-stage recorder 1.3 mi upstream of present site, at datum 4.00 ft higher. May 28, 1998, moved gage back to permanent location on U.S. Highway 40.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 23	1300	*3,250	*18.47	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	17	e4.2	5.6	8.4	7.8	3.6	66	8.9	e8.1	0.39	177
2	1.1	40	e4.6	6.0	9.4	7.6	3.8	49	29	e5.5	0.42	47
3	1.5	19	e4.8	6.1	11	7.6	4.2	40	21	e4.0	0.40	20
4	1.8	11	4.9	6.4	13	8.5	4.3	38	26	e3.0	0.34	8.6
5	1.9	9.9	4.9	5.7	12	8.0	4.1	49	31	e2.5	0.31	4.4
6	1.7	8.5	4.9	5.7	10	8.0	4.4	40	258	e2.0	0.26	2.3
7	1.6	5.1	5.2	5.4	11	8.9	4.8	35	41	e1.7	0.22	1.8
8	3.6	4.2	5.2	5.7	8.3	10	4.2	31	24	e1.5	0.22	1.4
9	1.7	4.2	5.1	5.4	8.1	9.7	4.5	29	20	e1.4	0.20	1.2
10	1.4	4.2	5.1	5.3	8.2	10	5.9	428	15	e1.5	0.18	0.99
11	1.1	4.0	5.3	5.0	7.8	10	7.1	266	12	e1.7	0.53	1.4
12	1.2	4.0	5.6	5.4	7.7	9.8	6.4	72	93	e1.7	0.42	1.8
13	1.2	4.4	6.0	5.5	7.8	62	5.6	48	305	e1.6	0.28	2.8
14	e1.2	e1.4	5.7	5.5	12	26	5.0	36	74	e1.6	0.22	44
15	1.1	e1.6	5.9	5.4	14	37	4.6	27	39	e1.5	0.18	19
16	e1.2	e1.9	5.8	5.4	12	17	4.7	23	22	e1.4	0.17	6.6
17	1.3	e2.2	5.9	5.4	13	12	5.0	23	18	e1.5	0.15	7.2
18	1.3	e2.4	5.9	5.0	15	9.6	5.9	20	14	e1.4	0.13	4.0
19	1.2	e2.6	5.8	e4.9	14	8.3	40	18	11	e1.4	0.11	42
20	1.2	e2.7	5.6	e4.8	13	9.4	590	18	9.6	e1.3	0.05	16
21	1.1	e2.7	5.5	e4.6	11	9.3	656	29	8.8	e1.2	0.08	5.0
22	1.0	e2.8	5.2	e4.4	10	9.3	161	32	140	e1.2	0.06	2.3
23	1.2	e2.8	5.4	e4.2	9.4	12	74	24	1,760	e1.1	0.08	1.3
24	3.4	e2.8	5.5	e3.9	8.4	12	488	19	e657	e1.1	0.09	1.1
25	4.2	e3.0	5.3	e3.7	7.7	9.3	1,030	17	e180	e1.0	0.12	0.95
26	7.2	e3.2	5.3	e3.5	7.5	7.3	620	15	e62	e1.0	0.12	0.84
27	7.6	e3.4	5.4	3.9	7.4	6.6	179	13	e25	e0.90	0.16	0.98
28	19	e3.6	5.4	5.4	7.3	5.7	95	12	e15	e0.80	0.22	0.94
29	9.4	e3.8	5.5	5.6	---	4.9	136	11	e9.8	e0.70	1.2	0.88
30	8.6	e4.0	6.0	5.7	---	4.2	138	10	e7.2	e0.60	0.85	0.96
31	8.9	---	5.7	7.0	---	3.9	---	9.4	---	e0.50	510	---
MEAN	3.25	6.08	5.37	5.21	10.2	12.0	143	49.9	131	1.82	16.7	14.2
MAX	19	40	6.0	7.0	15	62	1,030	428	1,760	8.1	510	177
MIN	1.0	1.4	4.2	3.5	7.3	3.9	3.6	9.4	7.2	0.50	0.05	0.84
AC-FT	200	362	330	320	564	737	8,520	3,070	7,810	112	1,030	842

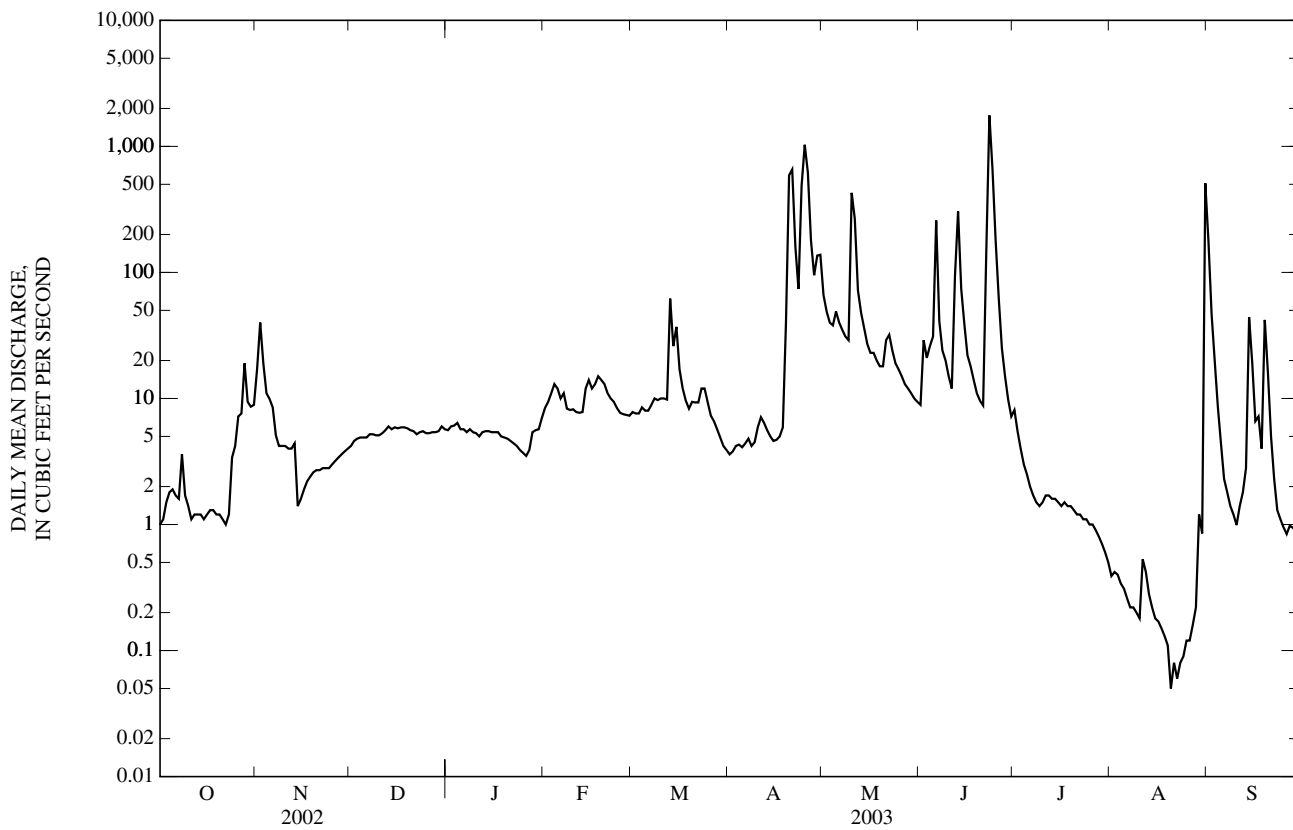
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	198	175	111	90.4	173	268	356	392	499	293	142	251
MAX	2,060	1,734	942	579	1,071	2,013	1,692	1,868	2,915	2,697	1,151	2,411
(WY)	(1986)	(1932)	(1945)	(1973)	(1962)	(1973)	(1999)	(1995)	(1967)	(1993)	(1968)	(1977)
MIN	0.000	0.013	0.12	0.10	0.54	2.85	4.30	9.20	3.61	0.58	0.000	0.000
(WY)	(1954)	(1957)	(1957)	(1957)	(1957)	(1954)	(1935)	(1989)	(1988)	(1934)	(1934)	(1956)

06892000 STRANGER CREEK NEAR TONGANOXIE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL MEAN	99.4		33.0		246	
HIGHEST ANNUAL MEAN					802	
LOWEST ANNUAL MEAN					8.20	
HIGHEST DAILY MEAN	3,750	May 12	1,760	Jun 23	22,200	Jun 21, 2001
LOWEST DAILY MEAN	1.0	Aug 9	0.05	Aug 20	0.00	Jul 4, 1934
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 9	0.08	Aug 19	0.00	Jul 21, 1934
MAXIMUM PEAK FLOW			3,250	Jun 23	40,000	Jun 21, 2001
MAXIMUM PEAK STAGE			18.47	Jun 23	29.81	Jun 21, 2001
INSTANTANEOUS LOW FLOW			0.01	Aug 20	0.00	many years
ANNUAL RUNOFF (AC-FT)	71,990		23,890		177,900	
10 PERCENT EXCEEDS	118		40		428	
50 PERCENT EXCEEDS	19		5.5		39	
90 PERCENT EXCEEDS	1.2		0.92		2.0	

e Estimated





## 06892350 KANSAS RIVER AT DESOTO, KS

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

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--59,756 mi<sup>2</sup>, of which a large area is noncontributing.

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

REVISED RECORDS.--WSP 806: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 753.87 ft above NGVD of 1929. July 9, 1917, to Apr. 23, 1934, nonrecording gage; Apr. 24, 1934, to Nov. 25, 1960, water-stage recorder at site 9.7 mi downstream at datum 11.81 ft lower; Nov. 26, 1960, to Feb. 9, 1961, nonrecording gage; Feb. 10, 1961, to Sept. 30, 1971, water-stage recorder at site 10.2 mi downstream at datum 17.81 ft lower; and Oct. 1, 1971, to Sept. 30, 1973, at site 10.2 mi downstream at datum 22.81 ft lower. Lowered gage datum 5.0 ft Sept. 30, 1996, to 753.87 ft.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by lakes and reservoirs in Colorado, Nebraska, and Kansas, and by numerous diversions upstream from station. Diurnal fluctuations caused by hydroelectric plant 20.8 mi upstream; since storage capacity is small, daily flows are not affected appreciably. Satellite telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	965	e1,690	1,150	1,030	1,200	814	1,080	4,090	2,030	3,490	2,390	5,890
2	1,180	1,750	896	1,020	1,250	894	1,040	3,370	2,240	3,020	2,410	2,660
3	1,210	1,490	665	1,020	1,220	1,150	1,020	2,470	2,840	2,770	2,420	2,350
4	1,660	1,240	668	1,030	1,160	832	992	2,280	2,990	3,010	2,370	1,870
5	2,050	1,140	762	809	1,140	e740	938	2,030	2,910	3,110	2,410	1,850
6	1,800	1,110	1,070	891	888	e700	1,010	1,520	3,060	3,080	2,450	1,530
7	1,250	1,180	695	950	975	712	1,070	1,770	2,790	2,880	2,410	1,110
8	1,680	1,520	680	897	491	669	1,070	1,540	2,380	2,730	2,440	1,140
9	1,030	1,740	1,130	1,070	838	668	1,070	1,470	2,320	2,650	2,480	1,120
10	1,020	1,760	1,070	1,010	1,010	1,120	1,080	1,630	2,200	2,660	2,400	851
11	670	1,910	1,050	678	1,180	1,120	1,060	3,970	2,190	2,820	2,400	1,030
12	870	1,810	1,050	762	1,150	948	1,050	2,610	2,310	3,520	2,410	1,100
13	e1,220	1,590	1,020	787	1,100	1,100	1,070	2,640	3,680	2,350	2,420	1,560
14	e1,400	1,910	587	858	734	1,270	1,050	2,600	2,490	1,900	2,340	1,940
15	e1,130	1,920	1,060	880	1,360	1,030	992	2,510	2,090	2,530	2,000	1,650
16	e1,230	1,990	1,090	e860	1,460	1,000	981	2,470	2,010	2,710	1,500	1,030
17	e1,130	2,010	1,140	e860	1,110	951	1,020	2,490	1,720	2,550	1,280	1,320
18	e1,100	1,840	1,070	e860	761	878	1,090	2,530	1,700	2,620	1,190	1,320
19	e1,130	2,080	1,040	e1,140	1,190	646	1,320	2,410	1,690	2,580	1,120	4,950
20	e1,380	1,930	1,000	e2,190	1,190	1,160	3,790	2,360	1,860	2,580	e1,040	5,790
21	e1,440	1,970	727	e691	1,020	1,290	7,000	2,440	2,650	2,550	e1,030	4,300
22	e1,410	1,790	995	e960	933	995	5,680	2,750	2,510	2,460	e1,030	3,220
23	e1,300	1,740	1,010	e890	1,100	1,530	3,510	2,740	5,210	2,510	1,100	2,470
24	e1,490	1,780	831	e840	637	1,280	3,240	2,600	6,330	2,520	1,100	2,190
25	e1,550	1,790	1,070	e921	563	834	7,720	2,570	5,050	2,500	1,170	2,000
26	e2,060	1,760	472	e1,020	675	1,760	10,600	2,510	3,500	2,440	1,270	1,940
27	e1,960	1,730	743	1,290	457	2,190	6,550	2,430	3,530	2,460	1,150	1,720
28	e1,870	1,360	1,190	1,620	711	1,930	4,480	e2,370	4,010	2,490	1,090	1,710
29	e1,420	1,180	1,040	1,790	---	1,200	3,930	e2,280	2,690	2,460	1,270	1,820
30	e1,180	1,160	1,070	1,440	---	1,120	4,350	e2,180	3,100	2,420	1,640	1,860
31	e1,550	---	751	1,440	---	1,220	---	2,060	---	2,360	6,760	---
MEAN	1,366	1,662	929	1,049	982	1,089	2,695	2,442	2,869	2,669	1,951	2,176
MAX	2,060	2,080	1,190	2,190	1,460	2,190	10,600	4,090	6,330	3,520	6,760	5,890
MIN	670	1,110	472	678	457	646	938	1,470	1,690	1,900	1,030	851
AC-FT	83,970	98,920	57,110	64,470	54,550	66,950	160,400	150,100	170,700	164,100	120,000	129,500

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2003, BY WATER YEAR (WY)

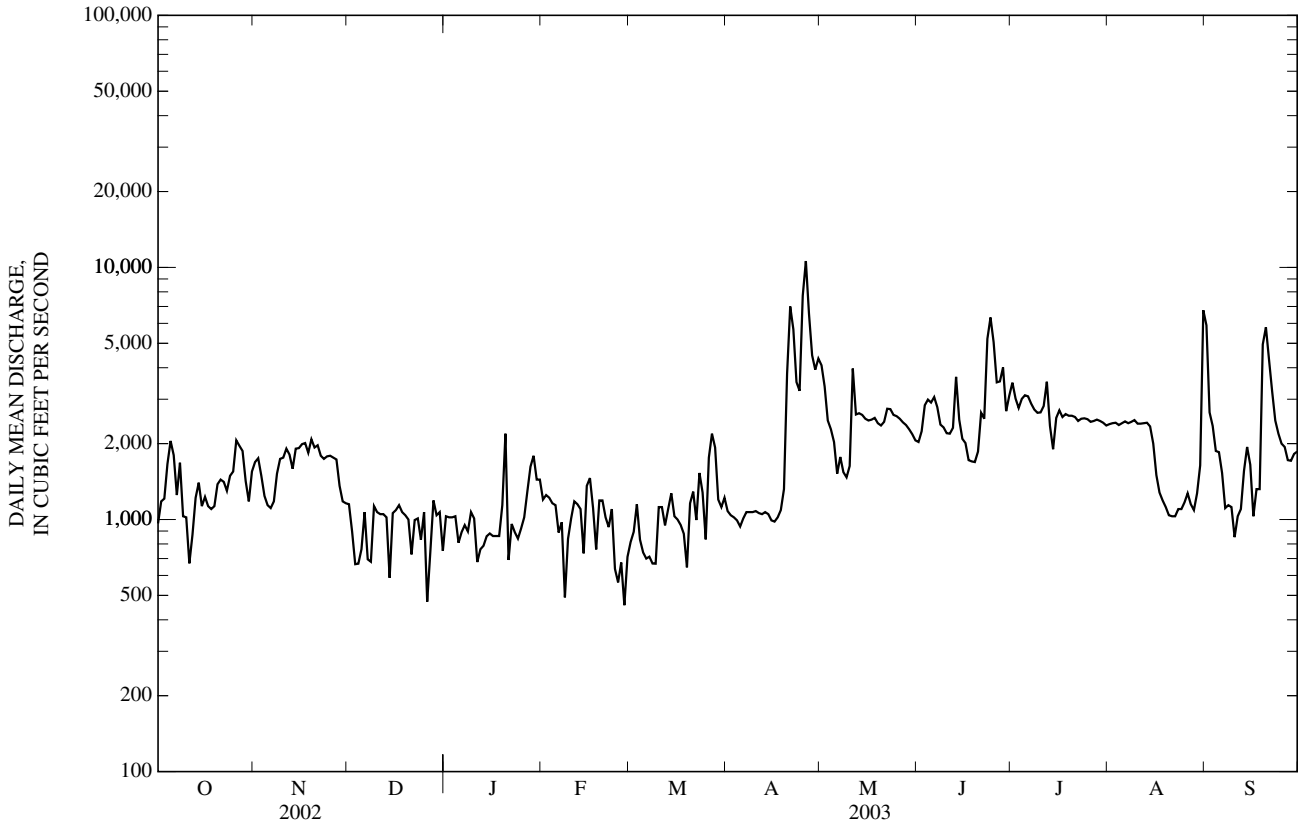
MEAN	5,695	4,595	3,605	2,887	4,484	7,064	9,560	11,040	14,900	11,590	6,893	6,541
MAX	51,630	42,320	21,940	15,990	20,800	36,560	43,570	43,270	78,870	133,200	66,680	44,660
(WY)	(1974)	(1974)	(1974)	(1973)	(1949)	(1973)	(1973)	(1993)	(1951)	(1951)	(1993)	(1951)
MIN	365	504	465	364	635	632	845	953	1,188	1,106	455	525
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1967)	(1956)	(1989)	(1989)	(1936)	(1934)	(1956)

KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1918 - 2003	
ANNUAL MEAN	2,600		1,824		7,410	
HIGHEST ANNUAL MEAN					30,570 1993	
LOWEST ANNUAL MEAN					1,326 1956	
HIGHEST DAILY MEAN	15,800	May 13	10,600	Apr 26	486,000	Jul 14, 1951
LOWEST DAILY MEAN	472	Dec 26	457	Feb 27	160	Oct 11, 1956
ANNUAL SEVEN-DAY MINIMUM	777	Dec 2	679	Feb 24	195	Oct 9, 1956
MAXIMUM PEAK FLOW			12,200	Aug 31	510,000	Jul 13, 1951
MAXIMUM PEAK STAGE			9.58	Aug 31	37.30	Jul 13, 1951
INSTANTANEOUS LOW FLOW			280	Oct 11	160	Oct 11, 1956
ANNUAL RUNOFF (AC-FT)	1,882,000		1,321,000		5,368,000	
10 PERCENT EXCEEDS	5,540		2,940		17,700	
50 PERCENT EXCEEDS	1,910		1,460		3,330	
90 PERCENT EXCEEDS	1,030		847		1,100	

e Estimated



## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-91, 2000 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981, June 1999 to current year.

pH: June 1999 to current year.

WATER TEMPERATURE: October 1974 to September 1981, June 1999 to current year.

DISSOLVED OXYGEN: June 1999 to current year.

TURBIDITY: June 1999 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records fair. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,510 microsiemens/cm, Nov. 6, 1999 minimum, 158 microsiemens/cm, Aug. 31, 2003.

pH: Maximum, 9.5 standard units, Aug. 10, 2003; minimum, 7.4 standard units, June 30, 1999.

WATER TEMPERATURE: Maximum, 34.8°C, Aug. 8, 2002; minimum, 0.0°C, Jan. 26, 2000.

DISSOLVED OXYGEN: Maximum 21.7 mg/L, Nov. 7, 1999; minimum, 5.5 mg/L, June 13, 2003.

TURBIDITY: Maximum, >1,400 NTU, July 3, 1999; minimum, 3 NTU, Nov. 27, 2000.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,200 microsiemens/cm, Feb. 11; minimum, 158 microsiemens/cm, Aug. 31.

pH: Maximum, 9.5 standard units, Aug. 10; minimum, 7.4 standard units, Oct. 18.

WATER TEMPERATURE: Maximum, 33.9°C, July 4; minimum, 0.0°C, Dec. 6.

DISSOLVED OXYGEN: Maximum, 19.5 mg/L, Feb. 22; minimum, 4.2 mg/L, June 13.

TURBIDITY: Maximum, >1,400 NTU, June 23; minimum, 5 NTU, Dec. 23.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	816	807	812	872	845	860	901	830	875	952	933	945
2	839	777	808	860	818	844	912	---	---	954	944	949
3	804	776	795	818	808	811	---	---	---	984	948	969
4	811	770	791	831	813	824	---	---	---	983	965	975
5	808	706	770	849	823	836	966	954	960	1,020	982	1,000
6	711	687	696	850	840	846	971	955	963	1,040	1,020	1,030
7	731	711	722	859	846	853	976	963	968	1,050	1,030	1,040
8	767	731	756	876	859	867	989	974	983	1,030	1,010	1,020
9	879	763	816	896	788	860	1,000	978	989	1,030	1,020	1,020
10	923	878	898	788	746	762	1,000	983	991	1,050	1,030	1,040
11	997	923	971	756	734	746	1,010	998	1,000	1,050	1,030	1,040
12	988	843	926	748	736	742	1,000	989	997	1,030	995	1,020
13	887	847	870	752	732	741	1,000	981	993	995	973	983
14	---	---	---	747	734	741	992	968	983	993	984	989
15	---	---	---	736	725	730	997	970	984	---	---	---
16	823	---	---	746	725	737	986	974	981	---	---	---
17	824	809	816	748	738	743	985	971	976	---	---	---
18	823	790	813	741	727	735	986	963	975	---	---	---
19	791	780	786	729	718	724	977	964	973	---	---	---
20	870	786	841	726	716	720	982	971	976	---	---	---
21	865	769	811	723	717	719	993	972	978	---	---	---
22	769	731	747	731	723	727	1,010	993	1,000	---	---	---
23	752	737	746	747	725	735	1,030	1,000	1,020	---	---	---
24	759	748	752	756	747	751	1,040	1,020	1,030	---	---	---
25	749	733	740	750	746	747	1,060	1,030	1,040	---	---	---
26	746	726	738	758	748	752	---	---	---	---	---	---
27	726	689	709	769	758	763	1,050	---	---	---	---	---
28	728	707	717	771	764	766	1,060	1,010	1,030	---	---	---
29	745	720	733	782	761	774	1,020	1,000	1,010	---	---	---
30	761	739	745	830	761	783	1,000	970	990	---	---	---
31	855	761	805	---	---	---	970	925	943	---	---	---
MONTH	997	687	790	896	716	775	1,060	830	985	1,050	933	1,000

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	800	757	787	703	542	614
2	---	---	---	---	---	---	798	712	764	550	541	544
3	---	---	---	---	---	---	741	703	723	586	549	564
4	---	---	---	927	900	910	787	736	762	630	586	608
5	---	---	---	---	892	---	818	787	804	666	626	647
6	---	---	---	979	951	964	851	818	832	680	648	668
7	---	---	---	1,010	973	986	886	851	873	698	650	675
8	---	---	---	1,040	1,010	1,020	887	864	875	690	656	671
9	---	---	---	1,110	---	---	872	863	868	719	690	708
10	---	---	---	1,110	1,040	1,070	899	862	880	748	686	722
11	---	1,180	---	1,040	945	978	898	859	881	769	526	662
12	1,180	1,100	1,140	1,030	958	1,010	884	853	870	670	509	592
13	1,100	1,000	1,050	1,020	854	942	902	851	879	744	668	698
14	1,000	901	936	972	926	958	888	858	873	756	648	710
15	993	888	938	1,000	970	986	941	867	903	666	584	639
16	1,040	972	1,010	988	898	948	950	939	946	641	595	625
17	1,000	952	968	929	913	922	956	947	951	646	622	635
18	1,000	954	968	927	892	911	972	955	964	643	587	624
19	1,000	972	987	927	910	916	968	734	908	628	589	618
20	975	964	971	990	927	952	780	535	709	638	610	627
21	976	953	964	1,020	990	1,010	554	471	499	634	606	619
22	981	952	968	1,030	951	1,000	519	473	510	626	602	617
23	980	939	961	951	841	901	545	518	536	615	589	605
24	957	---	---	855	778	823	564	535	548	612	590	603
25	---	---	---	816	778	797	600	504	550	639	603	626
26	---	---	---	1,020	816	924	539	406	446	647	610	635
27	---	---	---	1,130	800	1,010	454	408	432	629	592	614
28	---	---	---	800	635	683	516	445	481	631	592	613
29	---	---	---	651	634	644	613	510	543	626	584	608
30	---	---	---	674	651	661	722	613	688	606	569	592
31	---	---	---	757	674	709	---	---	---	572	555	566
MONTH	1,180	888	988	1,130	634	909	972	406	743	769	509	631

## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	592	555	570	628	600	613	550	540	546	347	166	281
2	590	563	578	612	593	605	546	540	543	517	346	424
3	584	551	568	702	588	616	544	533	540	589	516	563
4	610	523	579	708	667	682	565	535	547	591	546	575
5	625	610	618	679	642	666	590	563	578	680	570	625
6	623	557	600	673	622	646	573	544	566	713	637	688
7	604	555	575	658	552	595	547	536	542	---	658	e674
8	670	598	645	552	527	542	543	518	534	797	682	e753
9	676	644	664	546	509	536	527	509	520	773	637	716
10	682	645	666	563	509	544	515	488	508	726	678	708
11	704	679	695	627	563	604	506	483	496	733	660	707
12	708	608	687	656	589	640	506	484	497	693	684	687
13	664	497	596	589	512	533	494	479	488	705	612	684
14	702	658	675	624	539	574	505	482	495	612	385	466
15	732	662	702	650	615	638	---	512	---	548	514	535
16	723	660	696	615	579	594	---	---	---	623	517	556
17	728	676	702	601	562	589	---	---	---	693	623	666
18	734	707	724	572	549	563	---	---	---	772	692	732
19	747	708	737	562	544	554	727	---	---	985	341	639
20	708	647	677	577	544	562	680	648	662	374	327	348
21	706	638	676	581	552	564	648	619	637	364	336	348
22	641	481	540	562	552	557	665	598	645	374	356	365
23	561	380	485	561	551	557	---	---	---	377	360	367
24	559	389	506	566	554	562	---	---	---	402	374	388
25	527	429	473	568	543	556	686	605	659	430	402	415
26	543	510	520	559	528	549	700	606	660	459	430	439
27	636	543	595	557	527	545	754	---	---	511	459	491
28	632	421	473	576	533	561	744	697	725	537	511	522
29	588	462	522	584	559	575	721	650	692	582	537	560
30	684	588	650	568	555	561	677	606	645	590	580	585
31	---	---	---	560	542	555	616	158	378	---	---	---
MONTH	747	380	613	708	509	582	754	158	570	985	166	550

e Estimated

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.8	8.2	8.5	8.3	8.1	8.2	8.3	8.0	8.2	7.9	7.8	7.8
2	8.4	8.0	8.2	8.2	8.1	8.2	8.2	7.9	8.1	7.9	7.7	7.8
3	8.5	8.0	8.2	8.1	8.0	8.1	8.2	8.0	8.1	7.9	7.7	7.8
4	8.7	8.1	8.4	8.1	8.0	8.1	8.2	8.0	8.1	8.0	7.7	7.8
5	8.9	8.2	8.6	8.0	8.0	8.0	8.1	8.0	8.1	8.0	7.7	7.9
6	9.0	8.4	8.8	8.1	7.8	8.0	8.1	8.0	8.0	8.0	7.8	7.9
7	9.0	8.7	8.9	8.1	7.6	7.9	8.1	7.9	8.0	8.0	7.7	7.8
8	9.2	8.8	8.9	7.8	7.7	7.7	8.0	7.9	7.9	8.0	7.8	7.9
9	9.2	8.5	8.9	8.0	7.8	7.9	8.2	7.9	8.1	8.1	7.9	8.0
10	9.1	8.8	8.9	8.3	7.9	8.1	8.2	7.9	8.0	7.9	7.7	7.8
11	8.9	8.6	8.7	8.5	8.3	8.4	8.0	7.8	7.9	7.8	7.6	7.7
12	9.0	8.4	8.6	8.6	8.4	8.5	8.0	7.8	7.9	7.9	7.6	7.7
13	9.2	8.5	8.8	8.7	8.3	8.5	8.1	7.8	7.9	7.9	7.6	7.7
14	8.6	8.1	8.3	8.6	8.4	8.5	8.0	7.8	8.0	7.8	---	---
15	8.8	8.4	8.6	8.4	8.2	8.4	8.1	7.8	8.0	---	---	---
16	8.6	8.4	8.5	8.5	8.2	8.3	8.1	8.0	8.1	---	---	---
17	8.4	8.2	8.3	8.4	8.2	8.3	8.1	7.9	8.0	---	---	---
18	8.2	7.4	7.7	8.4	8.2	8.3	8.1	7.7	7.9	---	---	---
19	8.2	7.4	8.1	8.4	8.2	8.3	8.2	7.9	8.0	---	---	---
20	8.3	8.1	8.2	8.4	8.2	8.3	8.2	7.9	8.1	---	---	---
21	8.3	8.2	8.2	8.3	8.2	8.3	8.1	7.8	7.9	---	---	---
22	8.4	8.2	8.3	8.3	8.2	8.3	8.0	7.8	7.9	---	---	---
23	8.4	8.2	8.3	8.3	8.2	8.2	7.9	7.7	7.8	---	---	---
24	8.2	8.1	8.2	8.4	8.2	8.3	7.9	7.7	7.7	---	---	---
25	8.2	8.0	8.1	8.5	8.3	8.4	7.9	7.8	7.8	---	---	---
26	8.0	7.9	8.0	8.4	8.3	8.3	7.9	7.6	7.7	---	---	---
27	8.0	7.8	7.9	8.3	8.2	8.3	7.7	7.6	7.6	---	---	---
28	8.0	7.8	7.9	8.3	8.2	8.3	7.7	7.6	7.6	---	---	---
29	8.0	7.8	7.9	8.2	8.0	8.0	7.6	7.5	7.6	---	---	---
30	8.1	7.8	8.0	8.3	8.0	8.2	7.9	7.4	7.6	---	---	---
31	8.2	7.9	8.0	---	---	---	8.0	7.8	7.9	---	---	---
MAX	9.2	8.8	8.9	8.7	8.4	8.5	8.3	8.0	8.2	8.1	7.9	8.0
MIN	8.0	7.4	7.7	7.8	7.6	7.7	7.6	7.4	7.6	7.8	7.6	7.7

06892350 KANSAS RIVER AT DESOTO, KS—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	---	---	---	---	---	---	8.8	8.5	8.7	8.1	8.0	8.1
2	---	---	---	---	---	---	9.0	8.6	8.9	8.1	8.0	8.0
3	---	---	---	9.1	---	---	9.0	8.7	8.8	8.2	7.9	8.0
4	---	---	---	9.1	---	---	9.1	8.5	8.8	8.3	8.1	8.2
5	---	---	---	9.2	8.9	9.1	9.1	8.6	8.9	8.5	8.2	8.3
6	---	---	---	9.1	---	---	9.0	8.7	8.8	8.8	8.4	8.6
7	---	---	---	9.1	8.9	9.0	9.0	8.5	8.8	9.1	8.5	8.8
8	---	---	---	9.2	8.9	9.0	9.0	8.5	8.8	8.7	8.2	8.5
9	---	---	---	9.1	---	---	8.9	8.6	8.8	9.0	8.2	8.7
10	---	---	---	9.1	9.0	9.0	9.2	8.6	8.8	8.8	8.3	8.7
11	---	---	---	9.1	8.9	9.0	9.1	8.5	8.8	8.7	8.1	8.4
12	8.0	7.8	7.9	8.9	8.6	8.8	9.1	8.3	8.5	8.8	8.0	8.3
13	8.1	7.9	8.0	8.6	8.1	8.5	9.1	8.4	8.8	8.7	8.4	8.5
14	8.0	7.9	8.0	8.7	8.1	8.5	8.8	8.4	8.7	8.7	8.2	8.4
15	7.9	7.8	7.8	8.9	8.6	8.7	8.8	8.2	8.6	9.0	8.5	8.6
16	7.9	7.7	7.8	8.7	8.2	8.4	8.8	8.2	8.5	8.9	8.6	8.7
17	8.0	7.8	7.9	8.8	8.0	8.5	8.8	8.1	8.4	9.0	8.3	8.6
18	8.0	7.9	8.0	9.0	8.2	8.7	8.8	8.0	8.4	9.1	8.6	8.8
19	8.2	7.9	8.1	8.9	8.4	8.6	8.6	8.0	8.3	8.7	8.4	8.6
20	8.2	7.9	8.0	8.6	8.2	8.4	8.1	7.8	8.0	9.0	8.2	8.7
21	8.2	7.9	8.0	8.9	8.4	8.7	7.8	7.8	7.8	9.0	8.5	8.7
22	---	---	---	8.9	8.5	8.8	7.9	7.8	7.8	8.9	8.5	8.7
23	---	---	---	9.1	8.6	8.9	8.1	7.9	8.0	8.9	8.4	8.7
24	---	---	---	9.1	8.6	8.8	8.1	8.0	8.0	8.9	8.4	8.6
25	---	---	---	9.0	8.5	8.8	8.1	8.0	8.0	9.0	8.4	8.6
26	---	---	---	9.0	8.6	8.9	8.0	7.9	7.9	8.9	8.3	8.6
27	---	---	---	9.0	8.7	8.9	8.0	7.9	8.0	9.0	8.3	8.6
28	---	---	---	8.7	8.3	8.4	8.0	7.9	8.0	8.9	8.3	8.6
29	---	---	---	8.5	8.3	8.4	8.1	8.0	8.1	9.0	8.4	8.7
30	---	---	---	8.5	8.3	8.4	8.2	8.1	8.1	9.0	8.5	8.8
31	---	---	---	8.7	8.4	8.6	---	---	---	9.0	8.4	8.8
MAX	8.2	7.9	8.1	9.2	9.0	9.1	9.2	8.7	8.9	9.1	8.6	8.8
MIN	7.9	7.7	7.8	8.5	8.0	8.4	7.8	7.8	7.8	8.1	7.9	8.0

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	9.0	8.3	8.8	8.8	8.3	8.5	9.3	8.9	9.1	8.2	8.1	8.1
2	8.8	8.4	8.6	8.6	8.3	8.5	9.2	8.8	9.0	8.4	8.1	8.2
3	8.8	8.2	8.4	8.4	8.1	8.2	9.2	8.7	9.0	8.9	8.3	8.6
4	9.0	8.1	8.6	8.7	8.3	8.4	9.3	8.8	9.1	9.0	8.6	8.8
5	9.1	8.5	8.9	8.8	8.3	8.6	9.2	8.7	9.0	9.4	9.0	9.1
6	9.1	8.6	8.9	8.7	8.3	8.5	9.2	8.6	9.0	9.3	9.1	9.2
7	9.1	8.8	8.9	8.7	8.3	8.5	9.1	8.4	8.8	9.4	9.2	9.3
8	9.1	8.5	8.9	8.8	8.3	8.5	9.1	8.4	8.9	9.5	9.2	9.3
9	9.1	8.6	8.9	8.9	8.3	8.6	9.2	8.4	8.9	9.3	9.0	9.2
10	9.0	8.5	8.8	9.1	8.6	8.8	9.5	8.7	9.1	9.2	8.7	9.1
11	8.9	8.1	8.6	9.0	8.6	8.9	9.5	9.1	9.3	9.2	8.8	9.0
12	9.0	8.3	8.7	8.8	8.0	8.5	9.4	8.9	9.2	9.2	8.8	9.0
13	8.9	7.8	8.3	8.0	7.8	7.9	9.4	8.8	9.2	8.9	8.7	8.8
14	9.0	8.5	8.8	8.6	8.0	8.2	9.4	8.8	9.1	8.9	8.3	8.6
15	8.9	8.3	8.7	9.1	8.6	8.7	9.3	8.9	9.1	9.2	8.7	8.9
16	9.0	8.5	8.9	9.0	8.7	8.9	---	---	---	9.5	9.1	9.2
17	9.1	8.7	8.9	9.2	8.8	9.0	---	---	---	9.5	9.2	9.3
18	9.1	8.6	8.9	9.3	8.9	9.1	---	---	---	9.4	8.8	9.0
19	9.1	8.2	8.8	9.3	8.9	9.1	8.9	---	---	8.8	8.2	8.3
20	9.1	8.0	8.8	9.1	8.5	8.8	8.8	8.2	8.7	8.3	8.2	8.2
21	9.0	8.2	8.8	8.9	8.6	8.8	8.9	8.1	8.6	8.3	8.2	8.3
22	8.9	8.2	8.3	9.0	8.6	8.8	9.1	8.5	8.8	8.4	8.3	8.3
23	8.5	7.9	8.2	8.9	8.6	8.8	9.1	8.3	8.9	8.4	8.3	8.4
24	8.6	8.0	8.2	8.7	8.4	8.6	9.0	8.3	8.8	8.4	8.3	8.4
25	8.0	7.8	7.9	9.2	8.6	8.9	8.9	8.3	8.8	8.5	8.4	8.4
26	8.3	8.0	8.1	9.2	9.0	9.1	9.1	8.1	8.8	8.5	8.4	8.5
27	8.9	8.2	8.4	9.1	8.8	9.0	9.0	8.6	8.9	8.6	8.4	8.5
28	8.6	8.0	8.0	9.0	8.6	8.8	9.2	8.7	8.9	8.7	8.6	8.6
29	8.2	8.0	8.1	9.1	8.4	8.8	9.2	8.7	8.9	8.8	8.7	8.7
30	8.7	8.2	8.3	9.2	8.6	9.0	8.9	8.6	8.8	8.9	8.7	8.8
31	---	---	---	9.3	8.8	9.1	8.6	8.2	8.3	---	---	---
MAX	9.1	8.8	8.9	9.3	9.0	9.1	9.5	9.1	9.3	9.5	9.2	9.3
MIN	8.0	7.8	7.9	8.0	7.8	7.9	8.6	8.1	8.3	8.2	8.1	8.1



06892350 KANSAS RIVER AT DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.1	22.2	23.8	7.9	5.6	6.7	5.2	1.7	3.3	3.7	2.3	2.9
2	23.8	21.4	22.7	6.8	6.0	6.4	6.3	3.1	4.4	3.9	1.8	2.6
3	21.8	19.7	20.8	6.9	6.0	6.5	3.8	1.8	2.5	3.7	0.3	2.0
4	21.3	18.2	20.2	8.3	4.7	6.5	2.6	1.1	1.8	4.9	1.4	2.9
5	20.7	16.5	18.4	8.3	6.8	7.5	3.0	0.8	1.6	5.1	2.2	3.5
6	20.3	17.0	18.4	9.6	5.5	7.4	3.1	0.0	1.4	3.4	1.9	2.7
7	19.0	14.7	16.7	11.1	6.7	8.7	4.1	0.9	2.3	4.8	1.0	2.8
8	18.8	15.8	17.0	11.9	8.5	10.1	4.1	1.6	2.5	7.1	3.0	4.8
9	20.7	16.4	18.3	12.5	10.3	11.3	3.6	0.9	2.2	5.0	2.6	4.0
10	21.2	16.4	18.6	13.1	10.6	11.7	3.4	1.6	2.5	2.9	0.9	1.9
11	20.8	17.3	18.9	11.1	8.9	9.9	4.5	3.2	3.8	3.1	0.0	1.2
12	19.4	15.9	18.0	10.6	7.9	9.2	5.6	4.4	4.9	4.0	0.4	1.9
13	18.3	13.2	15.7	10.7	7.7	9.2	6.6	4.7	5.4	3.7	0.8	2.2
14	---	---	---	9.8	8.7	9.4	6.6	2.8	4.6	---	---	---
15	16.4	---	---	9.4	7.7	8.4	7.2	3.9	5.4	---	---	---
16	13.3	10.3	11.5	9.9	7.7	8.6	7.2	5.3	6.2	---	---	---
17	14.6	10.2	11.9	9.2	6.7	8.0	8.9	6.6	7.8	---	---	---
18	14.2	11.1	12.8	9.4	7.9	8.6	10.0	7.8	8.7	---	---	---
19	15.4	11.9	13.5	8.9	6.5	7.8	8.1	5.9	7.0	---	---	---
20	15.3	10.9	12.9	9.8	7.6	8.6	6.2	4.2	5.2	---	---	---
21	15.6	11.7	13.5	9.3	7.8	8.5	4.6	2.4	3.5	---	---	---
22	14.1	11.5	12.7	8.8	6.5	7.7	4.2	1.4	2.7	---	---	---
23	12.1	9.7	10.8	9.1	6.9	7.8	2.2	0.9	1.4	---	---	---
24	9.9	9.4	9.6	7.8	4.7	6.6	1.1	0.0	0.5	---	---	---
25	10.1	8.7	9.4	5.8	3.9	4.7	0.8	0.0	0.2	---	---	---
26	9.3	8.6	8.9	5.0	3.5	4.3	1.1	0.0	0.4	---	---	---
27	8.7	8.0	8.3	4.1	2.8	3.5	2.6	0.8	1.5	---	---	---
28	8.8	8.2	8.5	4.8	1.7	3.2	2.4	0.2	1.2	---	---	---
29	9.0	8.6	8.8	6.2	3.4	4.6	5.4	0.8	2.9	---	---	---
30	8.9	8.1	8.5	5.1	2.7	3.8	7.1	4.6	6.1	---	---	---
31	8.1	6.7	7.5	---	---	---	5.4	2.4	4.0	---	---	---
MONTH	26.1	6.7	14.4	13.1	1.7	7.5	10.0	0.0	3.5	7.1	0.0	2.7

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	18.1	11.3	14.4	22.7	20.1	21.0
2	---	---	---	---	---	---	20.9	13.7	17.0	22.4	18.1	20.2
3	---	---	---	---	---	---	18.3	16.2	17.3	22.2	18.1	20.1
4	---	---	---	4.8	0.1	3.9	17.1	10.8	14.2	21.5	18.0	19.6
5	---	---	---	0.3	0.0	---	15.0	9.2	11.9	23.9	18.0	20.9
6	---	---	---	4.2	0.0	---	11.6	8.4	9.4	22.0	19.8	20.8
7	---	---	---	---	1.8	4.5	9.5	8.1	8.6	24.1	18.5	21.0
8	---	---	---	7.5	2.3	4.9	8.1	6.3	7.0	21.8	19.1	19.8
9	---	---	---	5.8	---	---	13.8	5.0	8.9	25.8	19.2	22.2
10	---	---	---	6.6	1.6	3.9	15.5	8.0	11.5	26.0	20.7	22.8
11	5.0	---	---	7.3	2.8	5.2	18.9	10.3	14.2	21.2	18.2	19.8
12	6.1	1.4	3.6	8.3	4.3	7.0	21.0	13.5	16.9	22.8	16.4	19.5
13	5.8	2.6	4.2	11.0	6.0	8.4	22.2	15.4	18.5	21.8	17.6	19.8
14	6.7	5.1	5.9	12.7	7.8	9.8	23.8	16.8	19.9	24.9	19.5	22.0
15	6.3	1.6	4.0	16.9	9.2	12.9	23.5	17.4	20.0	24.5	20.2	22.6
16	4.1	0.8	2.2	19.0	12.4	15.3	20.0	16.9	18.0	23.3	19.4	20.4
17	5.0	0.8	2.7	19.4	14.6	16.7	16.9	14.3	15.2	22.3	18.3	20.0
18	5.2	2.2	3.6	19.0	14.4	16.4	19.3	14.0	16.2	24.6	18.8	21.6
19	8.0	3.3	5.4	15.7	10.7	13.2	17.9	14.9	16.5	23.1	20.1	21.2
20	8.6	3.6	6.0	10.9	10.0	10.5	15.6	13.6	14.7	22.5	17.9	20.0
21	9.0	5.1	7.0	14.0	8.5	11.0	15.8	13.0	14.3	22.7	17.5	20.0
22	7.3	3.9	5.4	14.1	8.9	11.4	18.2	13.3	15.6	23.8	18.0	20.9
23	3.9	0.1	2.3	16.2	10.8	13.4	17.0	13.9	15.7	24.0	19.4	21.9
24	---	0.0	---	18.4	12.7	15.2	15.9	14.1	14.7	23.5	20.3	22.1
25	---	---	---	17.3	12.6	14.6	14.5	13.2	13.7	24.3	19.4	21.8
26	---	---	---	17.3	12.9	14.8	15.8	12.9	14.1	25.0	19.8	22.5
27	---	---	---	15.0	12.7	13.7	18.6	14.4	16.3	26.0	20.4	23.3
28	---	---	---	12.7	8.8	10.4	20.5	16.7	18.4	26.6	21.8	24.3
29	---	---	---	10.6	6.4	8.2	22.5	17.7	20.0	28.0	22.4	25.3
30	---	---	---	12.8	6.1	9.2	24.1	19.3	21.8	29.1	23.0	26.1
31	---	---	---	15.3	8.6	11.7	---	---	---	26.9	21.6	23.6
MONTH	9.0	0.0	4.4	19.4	0.0	10.6	24.1	5.0	15.2	29.1	16.4	21.5

## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.5	21.6	23.2	30.8	25.7	28.2	28.6	26.0	27.1	21.3	19.6	20.3
2	23.0	19.4	20.6	32.2	26.6	29.4	30.0	25.4	27.6	23.9	20.1	21.7
3	20.3	18.6	19.5	33.5	27.8	30.6	30.8	25.9	28.4	26.2	20.7	23.5
4	23.4	17.6	20.3	33.9	28.8	31.3	29.8	26.2	28.3	26.5	22.2	24.4
5	24.7	19.5	22.1	33.9	28.7	31.3	31.4	27.0	29.1	27.2	22.5	24.9
6	25.4	21.3	23.3	33.1	28.9	31.1	31.4	27.3	29.4	27.7	22.9	25.2
7	23.6	21.1	22.4	32.6	28.0	30.3	31.6	27.2	29.3	28.3	22.0	25.0
8	24.8	19.7	22.2	32.7	28.0	30.4	31.4	27.3	29.5	28.1	21.9	24.8
9	26.4	20.2	23.2	32.4	28.2	30.1	31.4	27.3	29.3	28.2	22.8	25.2
10	26.1	22.5	24.3	32.0	27.1	29.5	30.7	26.9	28.7	27.9	22.3	24.9
11	26.8	23.1	24.8	32.7	27.2	29.7	28.9	26.0	27.5	25.6	23.2	24.3
12	27.6	24.0	25.5	32.1	27.3	29.8	29.6	25.7	27.5	23.4	21.4	22.4
13	28.6	23.0	25.7	32.1	27.0	29.6	29.2	25.1	27.1	22.3	20.0	21.4
14	30.2	24.9	27.5	33.2	27.3	30.2	29.3	25.7	27.6	22.8	18.8	20.5
15	31.2	25.6	28.3	32.6	29.1	30.8	30.8	26.3	28.4	23.8	18.5	21.0
16	31.5	26.4	28.9	33.2	27.8	30.6	---	---	---	24.4	19.4	21.6
17	31.8	25.9	28.8	32.7	28.4	30.7	---	---	---	24.9	20.7	22.5
18	32.2	26.4	29.3	33.4	28.7	30.9	---	---	---	22.8	19.1	20.8
19	30.6	26.9	28.7	31.9	28.0	30.1	33.9	---	---	20.5	18.0	19.2
20	29.2	24.5	26.9	33.3	28.4	30.9	33.0	27.7	30.1	20.4	17.9	19.2
21	27.7	24.0	25.9	32.2	27.8	30.2	33.5	27.9	30.4	20.2	18.1	19.2
22	26.1	23.5	24.7	30.2	26.8	28.7	32.3	27.5	29.9	21.1	18.0	19.5
23	26.3	22.9	24.7	30.0	25.4	27.7	32.9	27.1	29.6	21.8	17.3	19.7
24	29.6	24.8	26.9	29.4	24.9	27.3	33.0	26.4	29.5	22.5	19.5	21.0
25	28.6	26.0	27.2	29.8	25.1	27.5	33.5	27.5	30.2	21.6	17.9	20.0
26	28.2	24.0	26.1	31.3	25.8	28.5	33.5	28.1	30.4	22.5	18.5	20.5
27	28.9	23.4	26.0	32.5	27.4	30.0	31.1	27.2	28.8	20.7	17.9	19.3
28	28.9	23.8	26.2	31.4	27.2	29.5	30.3	27.2	28.3	18.5	16.0	17.4
29	28.7	25.0	26.8	31.1	27.4	29.2	29.3	26.0	27.4	17.7	14.7	16.4
30	28.9	24.9	26.8	31.7	26.5	29.1	27.5	22.9	25.1	17.0	13.9	15.2
31	---	---	---	30.0	26.9	28.7	22.9	19.6	21.1	---	---	---
MONTH	32.2	17.6	25.2	33.9	24.9	29.7	33.9	19.6	28.4	28.3	13.9	21.4

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.4	6.4	8.7	12.6	10.5	11.5	---	---	---	15.1	13.1	14.0
2	8.8	6.3	7.3	12.6	10.6	11.4	---	---	---	15.2	12.9	13.9
3	9.9	6.6	7.8	12.2	10.3	11.3	---	---	---	15.3	12.7	13.9
4	10.8	6.8	8.5	12.4	10.5	11.4	---	---	---	14.9	12.3	13.6
5	12.4	7.5	9.6	12.1	10.1	11.0	13.6	12.4	13.0	14.9	12.3	13.5
6	11.8	7.4	9.5	12.6	10.3	11.2	13.8	12.8	13.3	15.0	12.7	13.8
7	12.6	7.7	9.9	12.9	10.0	11.2	13.7	12.5	13.0	15.9	12.2	13.8
8	14.4	7.8	10.5	12.5	9.4	10.9	13.8	12.4	13.0	15.1	12.4	13.9
9	15.6	7.8	11.1	13.3	9.3	11.0	14.5	12.7	13.7	15.5	12.2	14.0
10	14.9	7.7	10.9	13.4	8.8	10.9	13.7	12.6	13.2	15.5	12.1	13.7
11	13.1	7.3	9.6	14.6	9.3	11.5	13.4	11.9	12.6	15.5	11.0	13.2
12	13.2	7.1	9.3	14.5	9.8	11.8	13.2	11.6	12.3	16.1	11.9	13.9
13	---	7.9	---	14.9	9.6	11.8	13.8	11.3	12.3	16.3	11.7	14.0
14	---	---	---	13.0	10.2	11.5	13.5	11.5	12.4	---	12.0	---
15	15.2	---	13.1	13.6	10.4	11.8	13.8	11.2	12.5	---	---	---
16	---	---	---	14.2	10.7	12.2	13.8	10.8	12.2	---	---	---
17	---	---	---	13.4	10.8	12.0	12.9	10.4	11.6	---	---	---
18	---	---	---	13.4	10.5	11.8	13.2	10.3	11.5	---	---	---
19	---	---	---	13.5	10.8	11.9	13.2	10.8	11.9	---	---	---
20	---	---	---	13.6	10.7	11.9	13.1	11.3	12.2	---	---	---
21	12.3	---	---	12.9	10.5	11.6	13.6	11.8	12.6	---	---	---
22	12.4	9.2	10.6	13.4	10.6	11.7	14.4	12.4	13.3	---	---	---
23	11.4	9.3	10.2	13.1	10.5	11.6	15.4	13.1	14.1	---	---	---
24	10.8	9.5	10.1	---	---	---	15.7	13.9	14.6	---	---	---
25	11.6	9.6	10.5	---	---	---	15.4	13.9	14.6	---	---	---
26	11.4	9.8	10.5	---	---	---	15.2	13.3	14.3	---	---	---
27	11.1	9.8	10.3	---	---	---	15.3	13.8	14.5	---	---	---
28	11.0	9.7	10.3	---	---	---	15.2	13.7	14.5	---	---	---
29	10.9	9.6	10.1	---	---	---	15.0	13.2	14.2	---	---	---
30	11.3	9.7	10.4	---	---	---	14.4	12.6	13.5	---	---	---
31	12.1	10.0	10.9	---	---	---	14.8	13.2	13.9	---	---	---
MONTH	15.6	6.3	10.0	14.9	8.8	11.5	15.7	10.3	13.1	16.3	11.0	13.8

## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	12.8	8.9	10.6	7.5	7.1	7.3
2	---	---	---	---	---	---	13.5	8.3	10.5	7.8	7.2	7.5
3	---	---	---	---	---	---	13.6	7.2	10.0	8.2	6.6	7.5
4	---	---	---	16.5	13.2	14.8	12.9	6.9	9.6	9.0	7.6	8.2
5	---	---	---	18.6	---	---	14.4	8.4	11.1	9.9	7.3	8.4
6	---	---	---	17.3	---	---	11.4	8.1	9.7	11.1	7.2	9.0
7	---	---	---	17.6	13.4	15.2	13.7	8.3	10.8	13.0	7.5	10.2
8	---	---	---	16.9	12.9	14.9	14.0	9.2	11.5	10.3	7.6	8.8
9	---	---	---	17.0	---	---	13.5	10.4	11.8	12.6	6.9	9.8
10	---	---	---	17.7	13.6	15.6	13.3	9.4	11.4	12.0	7.1	9.0
11	---	---	---	16.6	13.4	15.1	13.8	8.7	11.2	8.6	6.7	7.6
12	15.3	13.0	14.0	15.9	11.8	13.8	---	---	---	12.2	6.9	9.1
13	15.5	12.9	14.1	13.9	9.8	11.2	---	---	---	11.5	7.6	9.0
14	13.6	11.6	12.4	13.5	9.8	11.5	---	---	---	12.4	7.0	9.4
15	13.4	11.3	12.3	16.1	10.3	13.1	11.0	6.3	8.6	13.2	6.7	9.7
16	14.9	12.8	13.7	17.6	9.6	13.0	10.5	5.4	8.0	10.6	7.2	8.6
17	15.5	13.0	14.2	15.7	8.9	12.2	10.3	6.1	8.1	12.7	7.1	9.5
18	16.4	13.1	14.7	14.3	8.4	10.6	9.1	5.8	7.4	13.4	7.7	10.4
19	17.7	13.3	15.5	11.7	7.7	9.5	8.9	4.4	6.2	9.7	7.0	8.3
20	17.3	13.7	15.3	11.9	8.6	10.0	8.3	5.7	6.8	12.7	7.1	9.8
21	18.6	12.8	15.2	13.7	9.2	11.3	8.5	6.9	8.1	13.5	8.1	10.5
22	19.5	11.9	15.2	14.8	9.4	11.9	8.5	6.3	7.7	12.5	7.9	10.2
23	---	---	---	16.0	9.8	12.9	8.1	6.6	7.4	11.8	7.5	9.7
24	---	---	---	15.5	9.7	12.5	8.2	7.2	7.8	11.6	7.2	8.8
25	---	---	---	17.8	8.6	12.6	9.4	8.0	8.8	12.2	6.8	9.4
26	---	---	---	14.7	9.6	12.0	9.5	9.1	9.3	12.0	7.7	9.8
27	---	---	---	15.7	9.5	12.4	9.3	8.1	8.8	12.4	7.6	9.9
28	---	---	---	11.6	9.3	10.4	8.5	7.4	8.1	13.8	7.2	10.2
29	---	---	---	11.9	10.3	11.0	8.5	7.7	8.2	12.5	6.2	9.2
30	---	---	---	11.6	10.2	10.9	8.2	7.4	7.9	10.9	6.2	8.2
31	---	---	---	12.0	9.5	10.7	---	---	---	10.0	6.1	7.9
MONTH	19.5	11.3	14.2	18.6	7.7	12.4	14.4	4.4	9.1	13.8	6.1	9.1

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.9	6.5	7.9	9.8	6.1	7.8	10.9	6.4	8.3	---	---	---
2	9.5	6.4	8.0	9.2	6.3	7.6	11.6	6.5	8.9	---	---	---
3	10.1	7.0	8.4	7.6	6.0	6.7	12.0	6.6	9.1	---	---	---
4	12.1	7.7	9.6	9.6	6.0	7.5	11.4	6.5	8.6	10.8	7.1	8.8
5	12.7	7.5	9.9	9.6	6.0	7.6	11.6	6.0	8.3	13.6	7.2	10.1
6	12.8	7.0	9.6	9.4	6.2	7.6	11.1	5.6	8.1	13.1	7.1	9.9
7	11.6	7.0	9.1	9.0	6.3	7.4	11.5	5.9	8.3	14.1	7.1	10.1
8	11.8	6.7	9.3	9.3	6.2	7.6	11.4	5.8	8.1	13.6	7.1	10
9	11.9	6.8	9.1	10.0	6.0	7.6	---	5.4	---	13.1	6.7	9.4
10	10.1	6.4	8.0	11.2	5.7	8.1	---	---	---	12.8	6.6	9.2
11	10.4	5.8	7.9	11.4	5.9	8.4	11.6	---	---	11.8	6.5	8.5
12	10.7	5.8	7.9	9.8	5.9	7.3	13.0	6.6	9.5	11.6	6.8	8.7
13	9.6	4.2	6.6	6.6	5.7	6.2	13.5	7.1	9.8	9.0	6.8	7.9
14	13.4	6.2	9.4	9.3	5.9	7.3	13.0	7.3	9.9	9.3	6.8	7.9
15	13.3	6.2	9.7	---	---	---	13.8	7.4	10.4	12.5	7.7	9.7
16	12.9	5.9	9.3	---	---	---	---	---	---	13.7	7.6	10.2
17	12.7	5.9	9.2	11.3	5.8	8.2	---	---	---	13.9	7.2	10
18	11.4	5.5	8.5	---	---	---	11.0	---	---	10.3	6.8	8.6
19	11.4	4.9	7.6	---	---	---	11.4	---	---	7.7	7.0	7.4
20	10.3	4.9	7.7	---	---	---	11.4	5.4	8.0	7.9	7.5	7.7
21	10.3	5.2	7.8	10.6	---	8.0	11.8	5.2	7.9	8.1	7.8	7.9
22	7.6	5.5	6.5	9.9	5.6	7.5	11.8	5.2	8.0	8.1	7.8	8.0
23	7.7	4.9	6.0	10.9	5.8	8.0	11.9	5.2	8.2	8.3	7.7	8.0
24	8.0	5.1	6.2	---	---	---	11.4	5.4	8.1	8.0	7.7	7.9
25	5.5	4.8	5.0	---	---	---	11.7	5.3	8.1	8.4	7.7	8.0
26	7.1	5.2	6.1	---	---	---	11.9	4.9	7.9	8.3	7.8	8.0
27	10.5	6.1	7.9	---	---	---	11.3	5.1	7.7	8.5	7.8	8.2
28	7.3	5.6	5.9	---	---	---	10.6	5.2	7.2	9.2	8.3	8.9
29	6.3	5.6	6.0	---	---	---	10.7	5.1	7.2	9.7	8.9	9.3
30	8.9	6.1	7.2	---	---	---	---	5.2	---	10.1	9.0	9.6
31	---	---	---	12.4	6.5	9.2	---	---	---	---	---	---
MONTH	13.4	4.2	7.9	12.4	5.6	7.7	13.8	4.9	8.4	14.1	6.5	8.8

## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	53	38	44	33	25	28	13	9	11	12	8	9
2	58	34	48	34	27	30	13	9	11	12	8	9
3	60	36	46	32	23	28	16	9	13	12	7	9
4	75	47	59	27	17	23	14	8	12	11	7	8
5	87	50	70	22	15	18	13	8	9	10	7	8
6	72	45	56	20	14	17	14	8	10	12	7	10
7	58	38	46	24	13	19	11	8	9	14	9	11
8	76	41	58	27	12	20	10	7	9	14	9	11
9	57	43	50	32	15	21	14	8	11	16	9	12
10	59	40	46	37	14	23	12	8	10	17	11	13
11	59	29	42	34	15	24	13	9	10	22	10	13
12	56	29	47	30	11	19	12	8	10	16	12	13
13	---	---	---	26	11	17	16	9	12	17	11	12
14	---	---	---	25	15	20	16	11	13	---	---	---
15	---	---	---	34	15	22	24	13	20	---	---	---
16	52	40	45	34	18	25	24	18	20	---	---	---
17	45	34	39	34	17	25	26	11	17	---	---	---
18	38	30	34	31	16	24	18	10	13	---	---	---
19	44	32	38	40	20	28	17	10	12	---	---	---
20	54	38	45	36	16	25	18	10	12	---	---	---
21	53	31	42	40	21	27	12	8	10	---	---	---
22	46	32	38	31	10	22	12	7	9	---	---	---
23	44	31	36	20	11	15	10	6	8	---	---	---
24	43	28	35	22	13	17	9	6	7	---	---	---
25	33	24	28	23	14	17	12	6	9	---	---	---
26	45	28	36	19	12	14	11	5	8	---	---	---
27	48	29	37	17	12	14	13	8	10	---	---	---
28	48	29	38	16	12	14	13	8	10	---	---	---
29	41	24	30	19	11	13	11	8	9	---	---	---
30	35	25	29	17	9	12	12	7	9	---	---	---
31	35	27	31	---	---	---	10	7	8	---	---	---
MONTH	87	24	43	40	9	21	26	5	11	22	7	11

## KANSAS RIVER BASIN

06892350 KANSAS RIVER AT DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	56	29	39	258	169	214
2	---	---	---	---	---	---	48	26	37	245	158	210
3	---	---	---	---	---	---	47	24	33	245	106	164
4	---	---	---	27	22	24	56	23	38	149	90	124
5	---	---	---	35	23	30	61	20	39	145	78	106
6	---	---	---	38	24	33	55	20	33	99	55	78
7	---	---	---	42	31	34	73	21	32	119	60	82
8	---	---	---	---	---	---	83	20	36	96	49	68
9	---	---	---	---	---	---	66	16	30	97	50	65
10	---	---	---	---	---	---	80	17	29	134	42	66
11	---	---	---	58	32	38	26	16	21	285	117	214
12	23	15	18	53	32	37	28	15	20	244	82	144
13	24	14	19	783	42	---	25	15	19	231	58	100
14	160	14	22	362	90	200	40	19	26	---	---	---
15	189	51	93	95	52	73	37	19	25	---	---	---
16	84	46	54	---	---	---	36	20	26	153	90	121
17	51	32	41	---	---	---	34	22	26	154	82	117
18	36	28	31	---	---	---	42	20	28	147	68	99
19	41	32	36	69	49	60	111	19	36	119	62	90
20	44	34	39	92	63	77	571	97	349	119	70	98
21	56	35	41	---	---	---	984	451	657	121	57	96
22	76	35	49	---	---	---	978	416	578	139	70	99
23	---	---	---	---	---	---	416	177	244	124	72	96
24	---	---	---	---	---	---	343	167	236	116	54	87
25	---	---	---	85	28	42	991	260	504	110	55	84
26	---	---	---	90	32	58	1,226	748	1,030	104	54	81
27	---	---	---	99	56	79	1,016	403	597	112	57	81
28	---	---	---	129	84	114	509	212	317	112	50	83
29	---	---	---	127	73	99	252	170	199	124	46	74
30	---	---	---	90	65	79	205	162	183	86	38	62
31	---	---	---	84	37	65	---	---	---	68	29	50
MONTH	189	14	40	783	22	67	1,226	15	182	285	29	105



## 06892350 KANSAS RIVER AT DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	64	35	50	216	164	194	128	108	117	>1,441	228	>585			
2	96	30	55	219	140	166	131	108	119	295	144	194			
3	111	68	86	248	171	210	130	116	122	144	99	114			
4	107	76	93	229	129	181	141	108	120	109	94	102			
5	105	86	97	255	124	160	130	100	116	109	95	102			
6	148	80	96	150	112	135	131	92	112	107	85	93			
7	165	85	116	163	131	147	123	84	107	89	64	72			
8	98	66	82	167	136	152	116	90	103	88	72	80			
9	89	60	76	158	115	143	119	86	99	95	62	79			
10	75	50	65	158	116	138	140	71	105	65	54	56			
11	68	40	55	---	---	---	110	88	97	75	53	59			
12	312	42	63	---	---	---	104	86	93	90	48	60			
13	>1,458	56	>448	520	284	401	101	84	92	150	78	94			
14	134	63	93	363	136	201	94	79	87	399	136	235			
15	99	41	66	169	126	150	88	66	79	143	95	113			
16	87	38	59	190	124	158	---	---	---	96	55	69			
17	100	39	55	148	116	133	---	---	---	99	70	89			
18	69	34	53	140	109	128	72	48	56	194	68	92			
19	71	42	56	131	97	113	91	43	55	>1,446	194	>970			
20	91	45	66	130	92	113	64	45	50	>1,445	1,434	>1,439			
21	126	75	101	137	104	121	60	49	54	>1,439	1,172	>1,385			
22	306	102	226	129	92	114	54	44	50	1,258	836	1,018			
23	>1,472	268	>665	123	83	105	46	39	41	892	501	643			
24	1,036	241	419	136	83	104	48	32	39	566	452	506			
25	848	319	577	130	72	102	48	33	42	504	405	445			
26	360	177	249	---	---	---	57	38	47	455	394	420			
27	271	159	200	---	---	---	48	36	41	536	306	429			
28	787	271	601	---	---	---	44	34	38	309	226	280			
29	565	219	336	---	---	---	63	40	47	236	208	220			
30	254	193	219	---	---	---	---	---	---	219	180	199			
31	---	---	---	131	110	119	>1,445	60	>710	---	---	---			
MONTH	1,472	30	181	520	72	154	1,445	32	101	1,446	48	341			

> Actual value is known to be greater than the value shown

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS

LOCATION.--Lat 38°51'33", long 94°51'14", in SE ¼ NE ¼ SE ¼ sec.4, T.14 S., R.23 E., Johnson County, Hydrologic Unit 10300101, on right upstream side of old Highway 56 bridge, 2 mi west of Olathe.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--13.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 955.00 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.4	0.09	0.09	0.27	0.72	0.43	4.0	0.12	3.8	0.00	20
2	0.19	1.6	0.08	0.09	0.22	0.78	0.48	2.1	38	1.4	0.00	5.7
3	0.59	1.7	0.07	0.07	0.27	0.74	0.53	2.1	8.0	1.1	0.00	3.5
4	11	1.4	0.07	0.05	0.41	0.92	0.65	5.9	2.3	0.44	0.00	4.1
5	1.2	2.2	0.09	0.05	0.16	0.92	0.63	1.3	1.3	0.19	0.00	2.8
6	0.52	1.7	e0.10	0.05	0.14	0.85	1.4	2.4	16	0.12	0.00	2.1
7	0.43	0.82	e0.10	0.04	0.11	0.93	0.84	2.3	3.4	0.06	0.00	1.6
8	0.23	1.1	e0.10	0.07	0.07	0.96	0.47	4.6	1.3	0.03	0.00	2.0
9	0.12	1.0	e0.10	0.15	0.08	0.75	0.40	5.2	0.99	6.9	0.00	2.4
10	0.07	0.73	e0.15	0.10	0.10	0.75	0.40	53	7.7	21	0.00	2.6
11	0.14	0.24	0.21	e0.10	0.13	0.65	0.39	6.3	21	1.7	0.00	3.3
12	0.11	0.19	0.16	e0.10	0.11	1.1	0.39	3.7	3.5	0.40	0.00	2.1
13	0.10	0.20	0.14	e0.10	0.13	9.1	0.32	2.4	2.1	0.18	0.00	52
14	0.04	0.22	0.13	e0.10	15	2.7	0.30	1.8	1.1	0.43	0.00	23
15	0.00	0.30	0.13	e0.10	20	1.5	0.47	1.3	0.61	0.19	0.00	5.6
16	0.25	0.23	0.12	e0.10	2.5	1.3	1.2	8.5	0.46	0.04	0.00	4.4
17	0.78	0.72	0.16	e0.20	2.6	1.2	0.82	3.9	0.32	0.00	0.00	4.3
18	0.57	0.43	0.31	e0.30	2.0	1.9	1.3	1.7	0.21	0.00	0.00	2.4
19	0.59	0.19	0.20	0.43	1.2	5.6	133	1.4	31	0.00	0.00	2.0
20	0.31	0.20	0.17	0.33	1.0	14	87	0.89	9.4	0.00	0.00	2.3
21	0.26	0.40	0.14	e0.25	0.85	4.6	8.9	0.59	2.1	0.00	0.00	1.9
22	0.18	0.53	0.12	e0.20	0.70	2.0	6.7	0.57	1.4	0.00	0.00	1.7
23	3.2	0.29	0.09	0.14	0.61	1.5	8.4	0.59	29	0.00	0.00	1.2
24	3.7	0.18	0.08	e0.14	0.60	1.3	36	0.59	5.5	0.00	0.00	1.6
25	2.9	0.14	0.06	e0.15	0.45	1.1	25	0.57	18	0.00	0.00	0.72
26	0.95	0.12	0.04	0.15	0.48	0.78	7.5	0.46	7.3	0.00	0.00	0.77
27	7.1	0.11	0.05	0.08	0.55	2.2	3.9	0.32	2.0	0.00	0.00	2.0
28	2.6	0.13	0.06	0.12	0.71	0.57	2.7	0.24	1.9	0.00	0.00	1.1
29	7.4	0.12	0.07	0.20	---	0.40	2.2	0.20	10	0.00	0.02	0.78
30	5.6	0.11	0.08	0.13	---	0.36	2.2	0.17	14	0.00	13	9.4
31	2.5	---	0.07	0.66	---	0.36	---	0.14	---	0.00	334	---
TOTAL	53.63	18.70	3.54	4.84	51.45	62.54	334.92	119.23	240.01	37.98	347.02	169.37
MEAN	1.73	0.62	0.11	0.16	1.84	2.02	11.2	3.85	8.00	1.23	11.2	5.65
MAX	11	2.2	0.31	0.66	20	14	133	53	38	21	334	52
MIN	0.00	0.11	0.04	0.04	0.07	0.36	0.30	0.14	0.12	0.00	0.00	0.72
MED	0.52	0.29	0.10	0.10	0.47	0.96	1.0	1.7	2.9	0.03	0.00	2.4
AC-FT	106	37	7.0	9.6	102	124	664	236	476	75	688	336

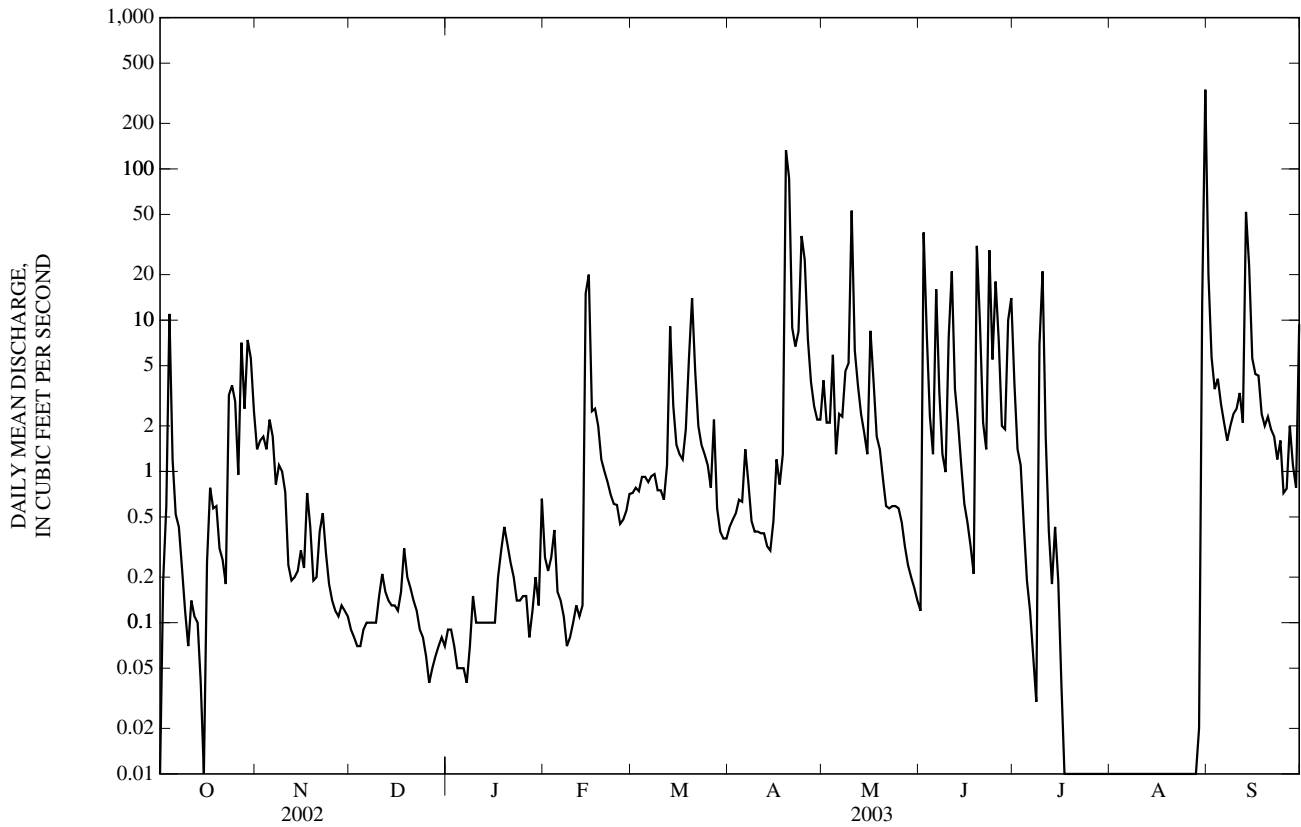
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	4.56	2.78	0.51	2.28	11.3	6.40	11.0	15.9	22.3	2.93	8.62	13.2
MAX	7.59	5.86	0.75	4.75	25.8	14.1	13.8	29.8	57.3	7.52	14.6	33.5
(WY)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2001)	(2001)	(2001)	(2001)
MIN	1.73	0.62	0.11	0.16	1.84	2.02	8.09	3.85	1.75	0.043	0.043	0.32
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2001)	(2003)	(2002)	(2002)	(2002)	(2002)

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	1,808.15		1,443.23		8.41	
ANNUAL MEAN	4.95		3.95		15.7	
HIGHEST ANNUAL MEAN					3.95	
LOWEST ANNUAL MEAN					2001	
HIGHEST DAILY MEAN	321	May 12	334	Aug 31	484	Jun 4, 2001
LOWEST DAILY MEAN	0.00	Jun 24	0.00	Oct 1	0.00	Oct 1, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 14	0.00	Jul 17	0.00	Jul 14, 2002
MAXIMUM PEAK FLOW			935	Aug 31	1,870	Jun 4, 2001
MAXIMUM PEAK STAGE			63.80	Aug 31	66.03	Jun 4, 2001
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Oct 1, 2000
ANNUAL RUNOFF (AC-FT)	3,590		2,860		6,090	
10 PERCENT EXCEEDS	7.4		6.8		16	
50 PERCENT EXCEEDS	0.32		0.47		1.3	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 2000 to current year.

pH: October 2000 to current year.

WATER TEMPERATURE: October 2000 to current year.

DISSOLVED OXYGEN: October 2000 to current year.

TURBIDITY: October 2000 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records fair. Interruptions in record are due to ice conditions, malfunction of the recording instrument or sensors, or during days of no streamflow. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens/cm, Dec. 10, 2002; minimum, 99 microsiemens/cm, June 1, 2001.

pH: Maximum, 8.8 standard units, Jan. 9, 2003; minimum, 7.2 standard units, May 2, 2001.

WATER TEMPERATURE: Maximum, 33.3°C, July 22, 2001; minimum, 0.4°C, Jan. 13, 2003.

DISSOLVED OXYGEN: Maximum 34.1 mg/L, Feb. 12, 2003; minimum, 2.2 mg/L, July 15, 2003.

TURBIDITY: Maximum, >1,400 NTU, Apr. 19, 2003; minimum, <2.0 NTU, Oct. 22, 2000.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens/cm, Dec. 10; minimum, 374 microsiemens/cm, June 19.

pH: Maximum, 8.8 standard units, Jan. 9; minimum, 7.3 standard units, Apr. 17.

WATER TEMPERATURE: Maximum, 32.2°C, July 5; minimum, 0.4°C, Jan. 13.

DISSOLVED OXYGEN: Maximum, 34.1 mg/L, Feb. 12; minimum, 2.2 mg/L, July 15.

TURBIDITY: Maximum, >1,400 NTU, Apr. 19; minimum, <2.0 NTU, Dec. 15

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	1,240	1,090	1,180	---	---	---	---	---	---
2	---	---	---	1,300	1,240	1,260	---	---	---	---	---	---
3	700	491	565	1,470	1,300	1,430	---	---	---	---	---	---
4	692	442	583	1,460	1,440	1,450	---	---	---	---	---	---
5	750	568	653	1,470	1,330	1,430	---	---	---	---	---	---
6	746	602	638	1,410	1,140	1,330	1,910	1,500	1,700	---	---	---
7	776	743	765	1,140	969	1,040	2,120	1,910	2,080	---	---	---
8	743	683	712	1,080	906	1,000	2,140	2,100	2,130	---	---	---
9	683	661	670	931	905	921	2,160	2,100	2,140	1,270	1,220	1,260
10	---	---	---	927	913	921	2,180	2,130	2,160	1,250	1,220	1,230
11	663	659	661	914	888	901	2,170	2,160	2,160	1,260	1,220	1,250
12	---	---	---	891	881	887	2,170	2,120	2,150	1,760	1,260	1,440
13	---	---	---	893	882	886	2,140	2,010	2,080	1,840	1,760	1,820
14	---	---	---	918	893	903	2,090	2,020	2,040	---	---	---
15	---	---	---	955	918	937	2,080	1,950	2,010	---	---	---
16	---	---	---	971	955	962	1,970	1,920	1,950	---	---	---
17	817	566	658	1,030	970	989	1,920	1,810	1,870	---	---	---
18	722	701	717	996	964	970	1,820	1,700	1,750	---	---	---
19	719	653	679	979	968	973	1,750	1,720	1,730	---	---	---
20	701	653	677	1,020	979	1,000	1,760	1,720	1,740	---	---	---
21	705	695	702	1,030	1,020	1,030	1,740	1,670	1,710	---	---	---
22	695	677	686	1,040	1,010	1,020	1,680	1,640	1,660	---	---	---
23	709	503	647	1,060	1,010	1,040	---	---	---	---	---	---
24	573	514	523	1,070	1,060	1,060	---	---	---	---	---	---
25	574	543	550	1,090	1,070	1,080	---	---	---	---	---	---
26	557	542	548	1,110	1,090	1,100	---	---	---	---	---	---
27	592	477	554	1,130	1,110	1,120	---	---	---	---	---	---
28	607	592	600	1,200	1,130	1,170	---	---	---	---	---	---
29	919	599	723	1,340	1,200	1,250	---	---	---	---	---	---
30	957	657	820	---	---	---	---	---	---	---	---	---
31	1,090	874	959	---	---	---	---	---	---	---	---	---
MONTH	1,090	442	665	1,470	881	1,080	2,180	1,500	1,940	1,840	1,220	1,400

## 06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	1,030	987	1,000	974	836	904	1,240	881	1,080
2	---	---	---	1,020	1,000	1,010	933	894	915	881	817	829
3	---	---	---	1,020	962	992	899	876	889	906	840	874
4	---	---	---	1,140	951	1,060	932	872	896	905	677	756
5	---	---	---	1,130	1,060	1,090	1,000	932	966	740	694	725
6	---	---	---	1,730	1,010	1,110	1,260	1,000	1,110	1,150	729	872
7	---	---	---	1,420	1,000	1,320	1,370	1,190	1,310	1,140	803	903
8	---	---	---	1,350	1,160	1,270	1,370	1,350	1,360	874	616	804
9	---	---	---	1,160	1,110	1,140	1,350	1,310	1,340	916	698	828
10	---	---	---	1,160	1,000	1,100	1,320	1,260	1,300	1,070	492	691
11	---	---	---	1,000	879	927	1,260	1,200	1,240	716	621	677
12	1,920	1,760	1,810	1,050	807	861	1,210	1,140	1,180	984	716	830
13	1,860	1,640	1,690	1,230	761	985	1,150	1,020	1,100	1,120	984	1,070
14	2,000	611	881	1,120	837	1,010	1,260	1,070	1,160	1,000	829	884
15	919	595	832	908	752	859	1,260	1,220	1,240	901	829	854
16	847	829	838	992	752	832	1,260	1,200	1,230	990	615	824
17	876	841	859	989	909	958	1,240	1,150	1,190	734	612	668
18	1,320	858	1,170	983	820	896	1,280	1,140	1,170	827	733	792
19	1,320	1,180	1,250	1,290	968	1,100	1,280	436	990	844	812	827
20	1,180	1,080	1,150	1,100	909	1,000	603	494	559	859	824	840
21	1,080	1,020	1,050	1,190	1,100	1,140	909	597	721	889	855	875
22	1,020	984	1,010	1,270	1,190	1,240	1,120	909	1,020	943	882	917
23	1,010	987	1,000	1,240	1,110	1,190	1,180	619	1,080	1,020	938	986
24	1,050	1,000	1,020	1,190	1,080	1,140	804	637	715	1,060	1,020	1,030
25	1,120	1,040	1,080	1,150	1,040	1,110	821	655	726	1,070	1,030	1,060
26	1,330	988	1,070	1,070	1,010	1,040	1,020	821	931	1,080	1,050	1,070
27	988	970	979	1,200	1,030	1,100	920	827	872	1,100	1,070	1,090
28	993	965	980	1,070	988	1,030	1,030	910	945	1,090	1,060	1,080
29	---	---	---	996	946	977	1,070	982	1,030	1,080	1,040	1,060
30	---	---	---	962	898	936	999	905	953	1,060	1,020	1,050
31	---	---	---	903	827	871	---	---	---	1,040	1,010	1,030
MONTH	2,000	595	1,100	1,730	752	1,040	1,370	436	1,030	1,240	492	899

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1,050	907	1,030	763	659	724	---	---	---	---	---	---
2	1,010	443	751	1,040	762	884	---	---	---	---	---	---
3	778	681	706	1,060	889	978	---	---	---	889	639	755
4	811	778	804	924	870	885	---	---	---	1,230	808	1,010
5	813	795	804	1,010	921	972	---	---	---	1,310	780	1,170
6	802	571	664	1,060	1,010	1,030	---	---	---	1,370	806	1,190
7	742	659	715	---	---	---	---	---	---	1,440	1,160	1,300
8	779	742	766	---	---	---	---	---	---	1,490	1,440	1,470
9	802	759	779	---	---	---	---	---	---	1,540	1,360	1,440
10	840	579	779	825	537	635	---	---	---	1,510	1,420	1,460
11	729	526	580	955	733	855	---	---	---	1,470	1,190	1,320
12	592	525	559	1,040	924	985	---	---	---	1,490	1,280	1,360
13	666	590	634	1,100	1,010	1,060	---	---	---	1,600	460	1,110
14	647	626	635	1,170	1,100	1,140	---	---	---	595	472	505
15	657	647	653	1,140	1,080	1,100	---	---	---	682	498	582
16	676	657	667	---	---	---	---	---	---	1,080	526	813
17	691	676	686	---	---	---	---	---	---	1,120	803	1,010
18	698	687	693	---	---	---	---	---	---	1,230	803	972
19	709	374	635	---	---	---	---	---	---	1,520	1,230	1,390
20	969	551	707	---	---	---	---	---	---	1,650	1,520	1,600
21	1,030	813	973	---	---	---	---	---	---	1,670	1,390	1,520
22	954	792	837	---	---	---	---	---	---	1,630	1,420	1,570
23	928	512	731	---	---	---	---	---	---	1,780	1,630	1,710
24	871	639	691	---	---	---	---	---	---	1,890	1,710	1,810
25	942	536	804	---	---	---	---	---	---	1,750	1,570	1,650
26	668	606	641	---	---	---	---	---	---	1,570	1,450	1,490
27	693	668	680	---	---	---	---	---	---	1,660	1,480	1,560
28	792	677	719	---	---	---	---	---	---	1,750	1,660	1,720
29	792	553	713	---	---	---	---	---	---	1,750	1,720	1,740
30	659	537	592	---	---	---	---	---	---	1,720	536	1,310
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	1,050	374	721	1,170	537	937	---	---	---	1,890	460	1,300

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	8.0	7.8	8.0	---	---	---	---	---	---
2	---	---	---	7.8	7.7	7.8	---	---	---	---	---	---
3	7.8	7.6	7.7	7.8	7.7	7.7	---	---	---	---	---	---
4	8.2	7.7	8.0	7.8	7.7	7.7	---	---	---	---	---	---
5	8.0	7.8	7.9	7.9	7.7	7.7	---	---	---	---	---	---
6	8.1	7.8	8.0	7.8	7.6	7.7	7.8	7.5	7.6	---	---	---
7	8.0	7.8	8.0	7.8	7.7	7.7	7.6	7.6	7.6	---	---	---
8	8.1	7.8	7.9	7.7	7.5	7.6	7.7	7.6	7.6	---	---	---
9	8.2	7.9	8.0	7.6	7.5	7.5	7.7	7.6	7.7	8.8	8.7	---
10	---	---	---	7.5	7.4	7.5	7.8	7.6	7.7	8.8	8.6	8.7
11	8.1	7.9	8.0	7.6	7.4	7.5	7.8	7.7	7.8	8.8	8.4	8.6
12	---	---	---	7.6	7.5	7.5	7.8	7.7	7.7	8.8	8.3	8.7
13	---	---	---	7.6	7.4	7.5	7.8	7.7	7.7	8.7	8.6	8.7
14	---	---	---	7.5	7.4	7.4	7.9	7.7	7.8	---	---	---
15	---	---	---	7.6	7.4	7.5	8.0	7.8	7.8	---	---	---
16	---	---	---	7.6	7.4	7.5	7.9	7.8	7.8	---	---	---
17	7.9	7.8	7.8	7.6	7.5	7.5	8.0	7.8	7.9	---	---	---
18	7.8	7.8	7.8	7.6	7.4	7.5	8.1	7.9	8.0	---	---	---
19	7.9	7.8	7.9	7.6	7.4	7.5	8.1	8.0	8.0	---	---	---
20	7.9	7.8	7.9	7.6	7.4	7.5	8.2	8.0	8.1	---	---	---
21	7.9	7.8	7.9	7.7	7.5	7.6	8.3	8.1	8.2	---	---	---
22	7.9	7.8	7.9	7.7	7.5	7.6	8.1	8.0	8.1	---	---	---
23	8.0	7.8	7.9	7.6	7.5	7.5	---	---	---	---	---	---
24	8.1	8.0	8.0	7.7	7.5	7.6	---	---	---	---	---	---
25	8.0	7.9	8.0	7.7	7.6	7.6	---	---	---	---	---	---
26	8.0	7.9	8.0	7.7	7.6	7.6	---	---	---	---	---	---
27	8.1	7.9	8.0	7.7	7.6	7.6	---	---	---	---	---	---
28	8.1	7.9	8.0	7.7	7.6	7.7	---	---	---	---	---	---
29	8.1	7.9	8.0	7.7	7.6	7.6	---	---	---	---	---	---
30	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
31	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
MAX	8.2	8.0	8.0	8.0	7.8	8.0	8.3	8.1	8.2	8.8	8.7	8.7
MIN	7.8	7.6	7.7	7.5	7.4	7.4	7.6	7.5	7.6	8.7	8.3	8.6

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	8.3	8.1	8.2	8.6	8.2	8.4	8.1	7.7	7.8
2	---	---	---	8.4	8.0	8.2	8.6	8.0	8.4	8.5	7.8	8.1
3	---	---	---	8.4	8.1	8.3	8.4	7.8	8.1	8.5	7.8	8.0
4	---	---	---	8.4	8.1	8.2	8.1	7.4	7.8	8.6	7.9	8.0
5	---	---	---	8.2	8.0	8.1	8.2	7.5	7.7	8.8	7.9	8.2
6	---	---	---	8.4	8.0	8.2	8.2	7.6	7.9	8.5	7.5	7.9
7	---	---	---	8.3	7.7	8.1	7.9	7.5	7.6	8.5	7.5	7.9
8	---	---	---	8.4	8.1	8.2	8.2	7.8	7.9	7.9	7.5	7.6
9	---	---	---	8.4	8.1	8.2	8.3	8.1	8.2	8.1	7.5	7.7
10	---	---	---	8.5	8.0	8.2	8.3	7.9	8.1	8.1	7.5	7.9
11	---	---	---	8.4	8.0	8.2	8.5	7.7	8.0	7.9	7.6	7.6
12	8.8	8.3	8.5	8.4	7.8	8.3	8.6	7.7	8.1	7.9	7.5	7.6
13	8.7	8.4	8.5	8.4	7.8	8.3	8.7	7.6	8.1	7.9	7.5	7.5
14	8.8	8.0	8.2	8.5	7.6	7.9	8.7	7.7	8.3	8.3	7.5	7.6
15	8.1	8.0	8.0	8.6	7.6	8.2	8.7	7.7	8.2	8.1	7.5	7.7
16	8.1	7.9	8.0	8.5	7.5	8.1	8.6	7.5	8.0	8.0	7.4	7.6
17	8.1	7.9	8.0	8.5	7.6	8.2	8.0	7.3	7.6	8.4	7.6	7.8
18	8.0	7.8	7.9	8.5	7.6	8.0	8.6	7.5	7.8	8.5	7.5	7.7
19	8.0	7.8	7.9	7.8	7.6	7.6	8.0	7.4	7.7	8.0	7.4	7.6
20	8.2	7.8	8.0	7.9	7.6	7.7	7.9	7.6	7.6	8.1	7.4	7.7
21	8.5	7.9	8.2	8.2	7.6	7.9	7.6	7.5	7.6	8.0	7.5	7.7
22	8.6	8.2	8.3	8.5	7.6	8.1	7.7	7.5	7.6	8.1	7.5	7.8
23	8.6	8.4	8.5	8.5	7.5	8.1	7.8	7.4	7.5	8.0	7.5	7.8
24	8.7	8.4	8.5	8.5	7.5	8.0	7.8	7.6	7.7	8.0	7.5	7.7
25	8.6	8.4	8.5	8.5	7.5	8.0	7.8	7.7	7.7	8.2	7.4	7.7
26	8.6	8.4	8.5	8.6	7.8	8.2	7.8	7.6	7.7	8.2	7.6	8.0
27	8.5	8.3	8.3	8.5	7.6	8.0	7.8	7.6	7.7	8.3	7.7	7.9
28	8.4	8.1	8.3	8.6	7.9	8.2	7.8	7.6	7.6	8.4	7.6	7.8
29	---	---	---	8.6	8.3	8.5	8.0	7.6	7.7	8.5	7.3	7.9
30	---	---	---	8.6	8.3	8.5	8.2	7.5	7.8	8.6	7.4	8.0
31	---	---	---	8.6	8.3	8.5	---	---	---	8.6	7.5	8.2
MAX	8.8	8.4	8.5	8.6	8.3	8.5	8.7	8.2	8.4	8.8	7.9	8.2
MIN	8.0	7.8	7.9	7.8	7.5	7.6	7.6	7.3	7.5	7.9	7.3	7.5



06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.8	7.5	8.3	7.8	7.6	7.7	---	---	---	---	---	---
2	8.2	7.6	7.8	7.6	7.5	7.6	---	---	---	---	---	---
3	7.8	7.6	7.6	7.7	7.5	7.6	---	---	---	7.6	7.4	7.5
4	8.3	7.4	7.7	7.7	7.4	7.5	---	---	---	7.7	7.4	7.6
5	8.5	7.6	7.9	7.9	7.4	7.5	---	---	---	7.8	7.5	7.5
6	8.4	7.6	7.9	8.1	7.4	7.7	---	---	---	7.9	7.5	7.6
7	8.3	7.6	7.8	---	---	---	---	---	---	7.9	7.5	7.6
8	8.5	7.6	8.0	---	---	---	---	---	---	8.1	7.6	7.8
9	8.7	7.4	7.8	---	---	---	---	---	---	8.1	7.7	7.8
10	8.4	7.4	7.7	8.0	7.7	7.8	---	---	---	8.1	7.5	7.8
11	8.0	7.6	7.7	7.8	7.6	7.7	---	---	---	7.9	7.5	7.6
12	7.7	7.6	7.6	7.8	7.5	7.7	---	---	---	7.7	7.5	7.5
13	8.0	7.5	7.6	7.7	7.5	7.6	---	---	---	8.0	7.5	7.8
14	8.0	7.5	7.7	7.8	7.5	7.6	---	---	---	7.8	7.7	7.7
15	7.8	7.4	7.6	7.8	7.5	7.7	---	---	---	8.0	7.6	7.7
16	7.7	7.4	7.6	---	---	---	---	---	---	8.2	7.6	7.7
17	7.8	7.4	7.6	---	---	---	---	---	---	8.3	7.8	8.0
18	7.9	7.4	7.6	---	---	---	---	---	---	8.1	7.7	8.0
19	8.3	7.4	7.6	---	---	---	---	---	---	8.2	7.7	8.0
20	7.8	7.6	7.7	---	---	---	---	---	---	8.3	7.8	8.0
21	7.7	7.5	7.6	---	---	---	---	---	---	8.2	7.9	8.1
22	7.7	7.5	7.6	---	---	---	---	---	---	8.2	7.8	8.0
23	7.9	7.4	7.8	---	---	---	---	---	---	8.2	7.9	8.1
24	7.8	7.6	7.7	---	---	---	---	---	---	8.2	7.8	8.0
25	7.9	7.5	7.6	---	---	---	---	---	---	8.3	7.9	8.2
26	7.8	7.6	7.7	---	---	---	---	---	---	8.3	8.0	8.1
27	7.7	7.6	7.6	---	---	---	---	---	---	8.0	7.6	7.8
28	7.7	7.6	7.6	---	---	---	---	---	---	8.2	7.7	7.9
29	7.9	7.5	7.6	---	---	---	---	---	---	8.2	7.7	8.0
30	7.9	7.7	7.8	---	---	---	---	---	---	8.0	7.7	7.9
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	8.8	7.7	8.3	8.1	7.7	7.8	---	---	---	8.3	8.0	8.2
MIN	7.7	7.4	7.6	7.6	7.4	7.5	---	---	---	7.6	7.4	7.5

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	6.5	5.3	5.8	---	---	---	---	---	---
2	---	---	---	5.6	5.1	5.4	---	---	---	---	---	---
3	20.4	18.8	19.7	6.4	5.5	5.9	---	---	---	---	---	---
4	20.9	18.4	20.0	6.6	4.4	5.7	---	---	---	---	---	---
5	18.5	15.9	17.3	7.5	6.1	6.8	---	---	---	---	---	---
6	18.0	15.5	16.6	7.9	5.4	6.9	4.2	1.6	2.9	---	---	---
7	15.9	13.2	14.8	8.5	5.9	7.4	2.9	1.4	2.1	---	---	---
8	16.4	13.2	14.5	10.1	8.2	9.1	3.1	1.4	2.2	---	---	---
9	16.9	14.2	15.5	11.2	9.4	10.2	3.0	1.5	2.2	6.2	4.0	5.1
10	---	---	---	11.8	9.8	10.9	2.7	1.4	2.0	5.4	3.1	4.0
11	16.9	14.4	15.7	9.8	6.9	8.3	4.1	2.7	3.5	5.0	2.6	3.7
12	---	---	---	7.0	5.1	6.2	4.5	3.7	4.1	3.5	0.9	1.7
13	---	---	---	8.7	5.0	6.8	6.0	3.7	4.7	1.7	0.4	1.1
14	---	---	---	8.2	7.5	7.9	6.6	3.5	4.6	---	---	---
15	---	---	---	8.1	6.6	7.5	7.4	4.4	5.7	---	---	---
16	---	---	---	7.9	6.1	6.9	6.3	5.2	5.7	---	---	---
17	10.0	7.2	8.5	7.2	5.1	6.2	8.8	6.0	7.3	---	---	---
18	11.2	8.7	9.8	8.4	6.4	7.2	9.4	7.3	8.5	---	---	---
19	12.2	10.3	11.3	7.2	5.1	6.4	7.3	4.8	6.0	---	---	---
20	11.0	8.3	9.8	8.1	5.8	6.9	5.2	3.1	4.0	---	---	---
21	10.9	8.2	9.6	7.9	5.8	6.9	4.0	2.4	3.2	---	---	---
22	11.0	8.9	9.9	6.9	5.1	6.0	5.8	2.9	4.1	---	---	---
23	10.1	8.2	9.0	6.6	4.8	5.7	---	---	---	---	---	---
24	9.3	8.5	9.2	5.6	4.3	5.2	---	---	---	---	---	---
25	9.6	8.7	9.1	5.1	3.7	4.3	---	---	---	---	---	---
26	9.3	8.7	9.0	4.9	4.1	4.4	---	---	---	---	---	---
27	9.0	7.5	8.6	5.1	4.1	4.4	---	---	---	---	---	---
28	9.1	8.8	8.9	5.7	3.7	4.5	---	---	---	---	---	---
29	9.3	9.0	9.2	6.4	3.2	4.8	---	---	---	---	---	---
30	9.1	8.2	8.7	6.3	3.6	4.5	---	---	---	---	---	---
31	8.2	6.5	7.5	---	---	---	---	---	---	---	---	---
MONTH	20.9	6.5	11.8	11.8	3.2	6.5	9.4	1.4	4.3	6.2	0.4	3.1

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	2.9	2.4	2.7	19.1	11.4	15.2	21.7	17.6	19.4
2	---	---	---	4.8	2.5	3.4	21.4	14.4	17.9	21.4	15.7	18.3
3	---	---	---	4.6	2.3	3.3	19.0	16.8	18.0	21.2	15.5	18.1
4	---	---	---	3.6	2.5	2.9	17.7	11.4	14.9	20.2	16.7	18.4
5	---	---	---	2.8	1.9	2.2	13.9	8.9	11.7	23.6	16.4	19.8
6	---	---	---	5.0	1.5	2.4	11.8	8.6	9.6	21.5	18.3	19.6
7	---	---	---	4.9	1.5	3.2	9.7	8.0	8.7	23.0	16.7	19.4
8	---	---	---	5.7	3.0	4.4	8.3	6.3	7.1	20.1	17.4	18.5
9	---	---	---	6.0	4.2	5.0	12.3	4.1	8.2	22.8	18.4	20.6
10	---	---	---	6.2	4.3	5.0	15.6	7.1	11.3	23.4	17.2	21.1
11	---	---	---	6.2	4.0	5.2	17.6	10.3	14.0	19.8	15.6	17.6
12	8.7	6.2	7.1	8.5	5.2	6.3	19.9	12.8	16.3	20.3	15.4	17.6
13	7.3	6.2	6.8	9.7	4.9	7.1	22.0	14.2	18.0	19.7	16.5	17.7
14	6.5	2.0	4.2	12.8	7.3	9.3	23.6	16.9	20.0	23.8	17.6	20.1
15	5.8	2.2	4.1	15.4	7.4	11.1	23.5	17.6	20.3	22.7	17.4	20.2
16	3.6	1.0	2.2	16.3	11.1	13.7	20.8	16.2	18.1	21.0	16.7	18.4
17	3.6	0.9	2.1	17.5	13.2	15.3	16.2	13.4	14.4	19.9	17.3	18.3
18	4.3	1.4	2.8	18.6	13.1	15.5	18.9	12.8	15.3	23.0	16.6	19.4
19	6.7	2.7	4.6	14.9	10.4	12.8	17.8	14.1	16.1	20.9	18.8	19.6
20	6.9	3.5	5.4	11.0	9.7	10.4	14.8	13.1	13.9	21.1	16.1	18.7
21	7.1	4.5	5.9	13.7	7.8	10.4	17.4	11.8	14.5	20.1	15.9	17.9
22	6.7	3.5	4.9	14.6	8.6	11.4	17.9	12.4	15.5	21.1	15.1	18.2
23	3.6	2.3	3.0	16.1	8.7	12.5	16.8	14.0	15.6	20.9	17.4	19.3
24	3.7	2.2	3.1	17.6	11.8	14.8	15.7	13.7	14.5	20.6	18.1	19.3
25	3.7	1.5	2.6	15.7	12.4	14.0	14.8	13.7	14.2	22.3	17.1	19.7
26	4.2	1.8	3.0	16.6	10.6	13.6	18.2	11.7	15.0	22.2	16.8	19.6
27	3.8	2.3	3.1	14.3	11.2	13.1	18.6	15.0	16.7	23.3	17.0	20.0
28	3.2	2.6	2.8	12.0	7.8	9.5	19.8	16.9	18.0	24.6	19.0	21.6
29	---	---	---	9.8	5.2	7.3	22.7	16.6	19.3	25.1	18.8	21.9
30	---	---	---	11.8	4.2	8.0	24.7	18.0	20.9	27.0	20.6	23.6
31	---	---	---	15.3	7.8	11.5	---	---	---	24.1	19.6	21.3
MONTH	8.7	0.9	4.0	18.6	1.5	8.6	24.7	4.1	15.1	27.0	15.1	19.5

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.1	17.6	20.0	27.9	23.3	25.3	---	---	---	---	---	---
2	20.4	15.6	18.9	29.2	23.3	26.1	---	---	---	---	---	---
3	18.8	16.8	17.8	30.0	24.3	27.4	---	---	---	23.5	20.0	21.6
4	20.1	15.3	17.7	31.2	25.9	28.4	---	---	---	23.3	20.6	21.8
5	22.3	17.2	19.5	32.2	26.6	29.1	---	---	---	23.0	19.4	21.0
6	23.6	18.6	21.3	32.0	26.6	29.1	---	---	---	23.4	18.9	21.0
7	21.2	18.4	19.7	---	---	---	---	---	---	23.5	18.3	20.9
8	22.7	16.3	19.3	---	---	---	---	---	---	23.0	18.4	20.7
9	24.0	18.1	20.8	---	---	---	---	---	---	24.1	20.0	21.9
10	24.0	20.4	21.9	28.0	23.9	26.7	---	---	---	25.0	21.6	23.1
11	22.9	21.6	22.2	27.8	24.7	26.2	---	---	---	23.5	22.2	22.9
12	24.0	21.5	22.5	28.8	24.1	26.3	---	---	---	22.7	20.8	21.3
13	25.7	21.1	23.1	29.3	23.8	26.5	---	---	---	21.1	18.9	20.5
14	26.4	20.8	23.5	30.6	25.1	27.7	---	---	---	21.3	19.1	20.2
15	25.8	21.8	23.8	31.5	26.9	28.8	---	---	---	20.6	17.6	19.2
16	25.8	22.0	23.9	---	---	---	---	---	---	20.3	18.6	19.4
17	26.3	21.3	23.8	---	---	---	---	---	---	22.0	19.9	20.9
18	27.6	21.8	24.5	---	---	---	---	---	---	21.3	17.8	20.2
19	26.6	22.1	24.8	---	---	---	---	---	---	18.6	15.2	17.0
20	25.6	22.5	24.1	---	---	---	---	---	---	18.2	13.7	16.0
21	25.5	21.6	23.4	---	---	---	---	---	---	18.6	16.0	17.3
22	24.0	21.6	22.7	---	---	---	---	---	---	19.6	16.3	17.9
23	26.2	20.6	23.9	---	---	---	---	---	---	19.3	15.4	17.8
24	27.3	24.4	25.9	---	---	---	---	---	---	21.0	18.1	19.4
25	28.0	25.0	26.1	---	---	---	---	---	---	19.3	15.8	17.9
26	25.6	22.2	23.8	---	---	---	---	---	---	19.9	16.7	18.3
27	26.9	21.0	23.5	---	---	---	---	---	---	18.5	15.8	17.0
28	27.1	21.3	24.1	---	---	---	---	---	---	16.5	13.9	15.3
29	25.4	22.6	24.0	---	---	---	---	---	---	14.9	11.6	13.6
30	25.4	23.2	24.4	---	---	---	---	---	---	14.8	11.0	13.4
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	28.0	15.3	22.5	32.2	23.3	27.3	---	---	---	25.0	11.0	19.2

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	11.5	9.9	10.5	---	---	---	---	---	---
2	---	---	---	10.4	9.3	9.9	---	---	---	---	---	---
3	7.7	2.9	5.2	10.0	8.9	9.5	---	---	---	---	---	---
4	9.4	5.4	7.6	10.2	8.8	9.5	---	---	---	---	---	---
5	9.9	6.3	7.7	10.2	8.4	9.3	---	---	---	---	---	---
6	10.6	6.4	8.4	10.3	7.9	9.1	14.3	10.3	12.1	---	---	---
7	10.7	6.4	8.8	9.6	6.9	8.6	13.2	11.3	12.3	---	---	---
8	10.1	6.5	8.1	9.7	5.4	7.6	13.4	12.2	12.8	---	---	---
9	11.6	7.8	9.7	7.2	4.2	6.1	13.6	12.8	13.1	---	---	---
10	---	---	---	5.9	3.8	4.8	15.2	12.9	13.8	---	---	---
11	10.9	7.8	9.3	6.9	3.8	5.0	15.2	13.6	14.6	---	---	---
12	---	---	---	6.7	4.4	5.4	15.4	12.8	13.9	---	---	---
13	---	---	---	7.3	4.6	6.0	15.2	12.2	13.6	---	---	---
14	---	---	---	5.8	3.3	4.6	17.4	12.6	14.3	---	---	---
15	---	---	---	6.9	4.2	5.4	20.1	12.5	15.3	---	---	---
16	---	---	---	7.3	4.3	5.8	15.9	13.8	14.7	---	---	---
17	9.3	8.2	8.7	7.9	5.1	6.3	15.5	13.2	14.5	---	---	---
18	8.6	7.0	7.7	6.7	3.6	5.2	18.7	12.3	14.8	---	---	---
19	8.8	6.4	7.7	6.8	3.7	5.3	16.4	13.4	14.8	---	---	---
20	9.4	7.4	8.4	7.6	4.7	6.4	17.3	15.3	16.2	---	---	---
21	8.9	7.3	8.2	8.8	5.0	6.9	18.0	14.7	16.0	---	---	---
22	9.6	6.8	8.2	7.6	5.9	6.7	22.1	13.5	16.5	---	---	---
23	9.3	7.1	8.4	8.3	4.8	6.4	---	---	---	---	---	---
24	9.5	8.9	9.1	8.7	6.1	7.4	---	---	---	---	---	---
25	10.2	8.4	9.2	10.1	6.8	8.3	---	---	---	---	---	---
26	10.3	8.6	9.3	10.0	7.1	8.4	---	---	---	---	---	---
27	10.5	8.2	9.6	10.0	7.5	8.5	---	---	---	---	---	---
28	9.7	8.8	9.1	10.0	7.4	8.8	---	---	---	---	---	---
29	10.0	8.8	9.5	10.7	7.5	9.2	---	---	---	---	---	---
30	10.1	9.2	9.6	12.2	9.0	10.4	---	---	---	---	---	---
31	10.6	9.2	9.9	---	---	---	---	---	---	---	---	---
MONTH	11.6	2.9	8.6	12.2	3.3	7.4	22.1	10.3	14.3	---	---	---

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	23.5	18.6	21.1	19.7	16.1	17.8	---	---	---
2	---	---	---	26.4	17.5	21.6	18.4	9.8	15.8	---	---	---
3	---	---	---	29.8	20.8	24.2	15.4	6.3	11.8	---	---	---
4	---	---	---	26.5	20.0	22.2	11.5	6.2	8.8	---	---	---
5	---	---	---	21.0	16.9	18.8	14.3	7.0	10.4	---	---	---
6	---	---	---	22.5	18.6	20.0	12.6	9.3	11.1	---	---	---
7	---	---	---	23.4	15.9	19.3	13.4	7.8	10.2	15.6	5.8	9.8
8	---	---	---	25.8	21.2	23.8	16.8	2.4	11.8	9.3	5.4	7.1
9	---	---	---	27.2	21.5	24.3	20.0	11.8	16.2	11.5	5.8	8.0
10	---	---	---	28.8	22.6	25.7	19.5	5.9	15.8	8.7	5.1	7.1
11	---	---	---	27.8	22.8	25.0	22.5	5.7	17.2	9.6	6.8	7.8
12	34.1	27.5	30.6	26.2	14.9	23.5	22.6	13.8	18.1	11.1	6.4	8.0
13	32.0	27.7	30.8	15.0	10.8	12.6	21.4	12.0	16.1	11.8	6.1	7.5
14	27.7	11.1	14.1	18.4	9.2	12.9	18.2	10.7	14.1	15.3	5.8	9.0
15	12.2	11.3	11.9	21.0	9.8	14.1	18.1	9.8	12.9	14.4	4.6	8.6
16	14.1	11.4	12.7	21.0	9.3	15.7	11.8	8.1	10	8.9	4.3	6.7
17	14.5	11.5	13.2	22.8	11.9	17.4	10.9	3.6	7.1	13.6	6.1	8.4
18	13.6	10.7	12.3	22.9	9.1	15.5	17.0	7.7	11.2	18.1	5.9	10
19	13.6	10.8	12.0	10.3	7.2	8.6	---	---	---	11.4	4.5	7.1
20	16.0	11.7	13.9	10.2	8.2	9.2	---	---	---	13.5	4.5	8.6
21	16.5	11.7	14.7	15.6	5.9	11.2	---	---	---	13.7	6.0	9.6
22	18.2	14.2	16.4	19.3	7.8	13.3	8.7	6.7	7.6	15.2	6.8	10.9
23	20.6	16.9	18.2	25.1	8.9	16.2	8.8	6.2	7.2	13.7	7.2	10.9
24	22.7	18.3	20.4	24.9	6.3	16.6	8.9	8.1	8.6	13.6	6.8	10.1
25	26.8	22.1	24.5	25.0	8.0	16.5	8.8	8.1	8.5	14.9	4.9	10.4
26	31.1	24.2	27.1	26.9	18.0	22.4	9.2	7.2	8.3	16.4	5.6	12.3
27	28.3	25.1	26.5	23.5	10.3	17.4	9.4	6.4	7.6	16.9	10.0	13.3
28	26.2	19.9	22.8	17.2	11.1	13.6	9.5	6.2	7.5	18.5	11.9	15.2
29	---	---	---	19.0	15.0	16.7	12.5	6.3	8.5	19.5	9.7	15.2
30	---	---	---	20.2	16.6	18.3	14.9	5.6	9.6	18.3	10.7	14.6
31	---	---	---	20.9	16.8	18.8	---	---	---	16.1	9.8	13.0
MONTH	34.1	10.7	18.9	29.8	5.9	18.0	22.6	2.4	11.5	19.5	4.3	10.0

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.8	8.3	12.8	9.4	5.5	6.7	---	---	---	---	---	---
2	13.6	7.0	9.0	7.8	4.5	5.7	---	---	---	---	---	---
3	---	---	---	7.0	3.7	5.2	---	---	---	7.0	4.8	6.3
4	---	---	---	6.4	2.5	4.2	---	---	---	7.7	5.3	6.5
5	15.3	5.7	9.8	7.8	2.9	5.0	---	---	---	8.4	5.3	6.8
6	9.7	6.2	7.8	8.7	2.6	5.8	---	---	---	9.6	5.1	7.1
7	11.7	5.6	7.9	---	---	---	---	---	---	11.2	5.2	7.6
8	15.4	5.8	9.6	---	---	---	---	---	---	12.6	5.4	8.2
9	18.4	4.2	10.5	---	---	---	---	---	---	13.0	5.2	8.2
10	14.4	4.0	7.4	7.1	5.0	6.0	---	---	---	12.5	5.9	8.6
11	7.4	5.9	6.7	6.5	4.6	5.2	---	---	---	8.2	4.0	6.6
12	6.4	5.1	5.6	6.5	3.8	5.1	---	---	---	10.8	3.5	6.7
13	9.1	4.8	6.2	5.5	3.9	4.6	---	---	---	8.3	4.6	6.4
14	9.9	4.2	6.3	6.0	3.5	4.6	---	---	---	7.5	3.3	5.6
15	7.4	3.2	5.3	5.6	2.2	4.1	---	---	---	9.1	2.5	6.6
16	8.1	3.3	5.8	---	---	---	---	---	---	10.6	5.3	7.6
17	9.5	3.4	6.2	---	---	---	---	---	---	10.6	6.4	8.2
18	10.5	4.1	7.2	---	---	---	---	---	---	8.6	6.3	7.4
19	9.0	3.1	6.4	---	---	---	---	---	---	12.0	6.1	8.7
20	8.5	6.0	7.1	---	---	---	---	---	---	13.2	7.3	9.7
21	9.1	5.2	6.6	---	---	---	---	---	---	12.2	7.7	9.8
22	8.5	4.8	5.9	---	---	---	---	---	---	12.1	6.7	9.4
23	9.1	3.3	6.2	---	---	---	---	---	---	12.5	7.2	10.1
24	8.2	5.6	6.5	---	---	---	---	---	---	11.8	6.8	9.4
25	7.8	4.4	6.0	---	---	---	---	---	---	13.0	8.2	10.4
26	9.2	5.9	7.2	---	---	---	---	---	---	13.7	8.4	11.0
27	8.1	5.4	6.5	---	---	---	---	---	---	10.0	5.5	8.3
28	8.9	5.2	6.6	---	---	---	---	---	---	12.2	7.6	9.7
29	8.2	3.5	5.4	---	---	---	---	---	---	14.4	7.9	11.1
30	8.0	6.7	7.4	---	---	---	---	---	---	12.2	8.9	10.4
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	18.4	3.1	7.2	9.4	2.2	5.2	---	---	---	14.4	2.5	8.3

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	26	9.0	17	---	---	---	---	---	---
2	---	---	---	15	9.0	11	---	---	---	---	---	---
3	84	15	43	11	5.1	7.9	---	---	---	---	---	---
4	330	15	75	8.1	4.1	5.6	---	---	---	---	---	---
5	43	17	26	12	4.1	6.1	---	---	---	---	---	---
6	35	11	16	8.1	2.1	3.6	9.0	2.0	3.4	---	---	---
7	25	8.0	11	4.2	2.2	3.2	14	8.0	11	---	---	---
8	26	13	16	8.2	3.2	5.3	10	5.0	7.1	---	---	---
9	16	7.1	12	5.2	<2.0	3.3	6.0	4.0	4.9	3.0	2.0	2.4
10	---	---	---	5.3	<2.0	3.8	5.0	4.0	4.3	5.0	2.0	2.8
11	19	3.7	10	8.3	3.3	5.2	5.0	3.0	3.7	6.0	2.0	3.3
12	---	---	---	6.3	2.3	4.6	4.0	3.0	3.4	15	3.0	7.2
13	---	---	---	6.3	3.3	4.8	3.0	2.0	2.3	14	6.0	8.8
14	---	---	---	12	3.4	5.0	3.0	2.0	2.2	---	---	---
15	---	---	---	6.4	3.4	4.5	3.0	<2.0	2.1	---	---	---
16	---	---	---	4.4	2.4	3.5	4.0	<2.0	<2.0	---	---	---
17	82	15	46	5.4	2.4	3.3	5.0	<2.0	2.5	---	---	---
18	15	<2.0	7.1	5.5	<2.0	3.1	3.0	2.0	2.7	---	---	---
19	9.5	2.5	6.6	5.5	2.5	3.1	5.0	2.0	2.3	---	---	---
20	8.3	3.7	5.9	5.5	2.5	3.2	4.0	2.0	2.0	---	---	---
21	9.5	3.7	6.0	3.6	<2.0	3.1	2.0	<2.0	<2.0	---	---	---
22	13	2.5	9.8	4.6	<2.0	3.1	2.0	<2.0	<2.0	---	---	---
23	140	8.3	28	4.6	2.6	3.6	---	---	---	---	---	---
24	68	29	36	---	---	---	---	---	---	---	---	---
25	45	22	30	---	---	---	---	---	---	---	---	---
26	45	20	24	6.7	4.7	5.1	---	---	---	---	---	---
27	360	15	55	4.7	3.7	4.4	---	---	---	---	---	---
28	32	15	24	5.7	2.7	4.4	---	---	---	---	---	---
29	1,200	18	120	4.8	3.8	4.2	---	---	---	---	---	---
30	59	18	33	5.8	2.8	4.5	---	---	---	---	---	---
31	35	13	21	---	---	---	---	---	---	---	---	---
MONTH	1,200	2.0	29	26	2.0	5.0	14	2.0	3.5	15	2.0	4.9

&lt; Actual value is known to be less than the value shown



## 06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	15	6.0	8.8	40	8.8	14	55	15	26
2	---	---	---	19	10	14	13	7.8	9.1	37	14	24
3	---	---	---	25	11	18	11	5.8	8.0	18	7.7	13
4	---	---	---	29	10	15	22	5.8	10	110	12	36
5	---	---	---	21	5.0	7.7	9.7	4.7	7.2	32	3.8	20
6	---	---	---	14	3.0	4.8	43	5.7	16	67	11	23
7	---	---	---	7.0	4.0	5.8	18	5.6	9.7	26	11	20
8	---	---	---	9.0	5.0	7.1	8.6	3.7	6.0	440	10	55
9	---	---	---	14	4.0	9.0	9.5	4.6	7.2	100	22	46
10	---	---	---	23	5.0	9.0	10	3.6	6.4	1,300	22	450
11	---	---	---	23	3.0	7.1	45	4.5	9.4	160	48	82
12	4.0	2.0	2.6	280	3.0	27	12	2.5	5.2	70	24	45
13	210	2.0	4.3	280	17	57	8.4	2.5	4.4	42	23	29
14	520	3.0	120	42	16	21	12	2.5	4.7	52	16	27
15	210	42	100	32	13	20	12	2.5	4.4	37	9.0	20
16	78	33	44	37	17	25	39	3.4	9.2	270	15	58
17	38	20	27	42	17	26	27	8.2	17	260	25	50
18	66	33	54	41	16	25	20	5.3	9.2	36	11	22
19	52	16	29	130	18	37	>1,400	5.3	>370	42	11	22
20	32	10	16	89	32	49	1,100	290	500	37	10	25
21	27	12	19	38	17	27	400	96	190	38	9.0	22
22	28	14	20	26	10	17	130	50	76	28	4.0	17
23	17	14	15	24	9.0	14	600	31	76	26	11	17
24	21	12	16	22	8.0	14	510	130	210	27	12	18
25	18	12	15	33	10	17	240	99	150	39	11	21
26	16	10	13	28	12	19	99	46	71	37	20	28
27	13	5.0	8.5	24	13	19	57	32	41	85	18	31
28	10	5.0	6.3	35	8.9	12	36	25	32	30	6.0	16
29	---	---	---	19	7.9	11	33	17	22	28	8.0	18
30	---	---	---	16	5.9	12	25	8.7	17	40	10	23
31	---	---	---	47	9.9	14	---	---	---	44	9.0	25
MONTH	520	2.0	30	280	3.0	18	1,400	2.5	64	1,300	3.8	43

&gt; Actual value is known to be greater than the value shown

## KANSAS RIVER BASIN

06892440 CEDAR CREEK AT HIGHWAY 56 AT OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	410	10	40	90	50	65	---	---	---	---	---	---
2	1,300	32	240	90	39	62	---	---	---	---	---	---
3	170	56	85	92	37	60	---	---	---	35	14	24
4	82	33	51	110	30	61	---	---	---	33	10	19
5	39	16	29	120	23	57	---	---	---	24	8.0	14
6	>1,400	31	>160	77	24	48	---	---	---	18	9.0	11
7	61	27	40	---	---	---	---	---	---	19	6.0	10
8	36	18	26	---	---	---	---	---	---	14	6.0	8.8
9	56	21	32	---	---	---	---	---	---	16	4.0	6.9
10	240	19	53	>1,400	160	>340	---	---	---	17	3.0	7.0
11	>1,400	90	>790	180	88	150	---	---	---	24	4.0	9.9
12	>1,400	70	>520	150	47	84	---	---	---	15	4.0	8.2
13	86	52	63	120	50	76	---	---	---	1,300	4.0	130
14	79	17	48	110	27	70	---	---	---	73	19	34
15	110	23	56	100	20	54	---	---	---	24	8.0	18
16	82	29	51	---	---	---	---	---	---	26	6.0	15
17	96	23	49	---	---	---	---	---	---	35	17	23
18	87	21	43	---	---	---	---	---	---	36	19	24
19	>1,400	23	>280	---	---	---	---	---	---	36	12	21
20	140	38	66	---	---	---	---	---	---	21	7.0	12
21	64	28	47	---	---	---	---	---	---	18	6.0	9.9
22	75	33	51	---	---	---	---	---	---	17	8.0	11
23	>1,400	46	>230	---	---	---	---	---	---	20	7.0	12
24	140	47	73	---	---	---	---	---	---	18	8.0	13
25	700	39	100	---	---	---	---	---	---	20	8.0	13
26	450	43	100	---	---	---	---	---	---	22	9.0	13
27	130	53	91	---	---	---	---	---	---	22	9.0	14
28	100	35	57	---	---	---	---	---	---	21	9.0	13
29	550	40	110	---	---	---	---	---	---	17	6.0	10
30	120	55	88	---	---	---	---	---	---	1,100	8.0	84
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	1,400	10	120	1,400	20	94	---	---	---	1,300	3.0	21

&gt; Actual value is known to be greater than the value shown

06892450 OLATHE LAKE NEAR OLATHE, KS

LOCATION.--Lat 38°52'52", long 94°52'23", in SE 1/4 NE 1/4 NE 1/4 sec.32, T.13 S., R.23 E., Johnson County, Hydrologic Unit 10300101, on intake structure of Olathe Lake on Cedar Creek, 2 mi west of Olathe, and at mile 13.0.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--13.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929.

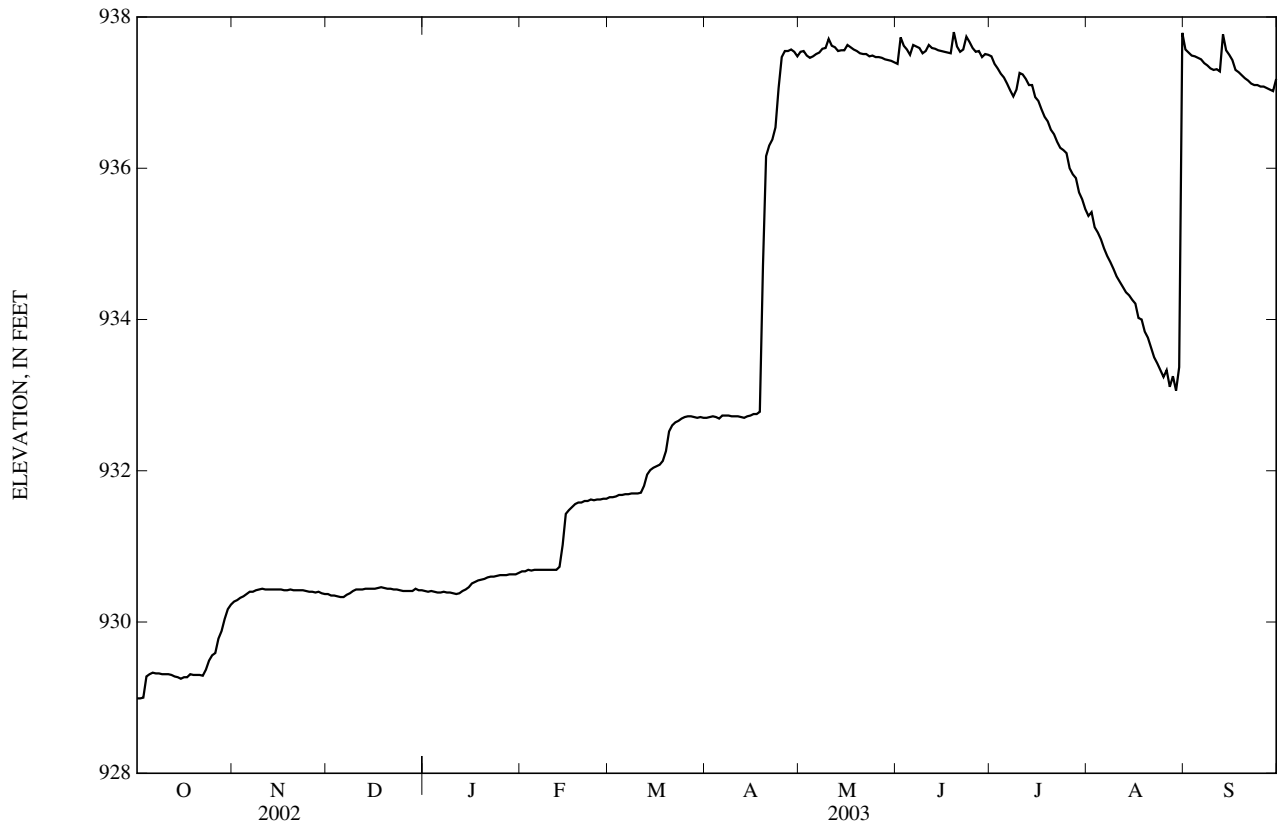
REMARKS.--Reservoir is compacted earthfill dam and concrete control structure. Filling began January 1956. Reservoir is used for water supply. Satellite telemeter at station.

EXTREMES FOR PERIODS OF RECORD.--Maximum elevation, 938.56 ft, May 12, 2002, contents 3,910 acre-ft; minimum elevation, 928.94 ft, Oct. 2, 2002, contents 1,830 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 937.93 ft, Aug. 31, contents, 3,040 acre-ft; minimum elevation, 928.94 ft, Oct. 2, contents, 1,830 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by U.S. Geological Survey)  
(Effective date Oct. 1, 2002.)

Elevation	Contents	Elevation	Contents	Elevation	Contents
928	1,720	932	2,200	936	2,750
930	1,950	934	2,470	938	3,050



## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	928.99	930.27	930.37	930.41	930.67	931.65	932.70	937.54	937.38	937.48	935.37	937.57
2	928.99	930.29	930.35	930.40	930.67	931.65	932.71	937.55	937.73	937.38	935.42	937.53
3	929.00	930.32	930.35	930.41	930.69	931.66	932.72	937.49	937.62	937.32	935.22	937.49
4	929.28	930.34	930.34	930.40	930.68	931.68	932.71	937.46	937.57	937.25	935.15	937.48
5	929.31	930.37	930.33	930.39	930.69	931.68	932.69	937.48	937.50	937.20	935.06	937.46
6	929.33	930.40	930.33	930.39	930.69	931.69	932.73	937.51	937.63	937.12	934.94	937.44
7	929.32	930.40	930.36	930.40	930.69	931.69	932.73	937.53	937.61	937.03	934.84	937.39
8	929.32	930.42	930.38	930.39	930.69	931.70	932.73	937.58	937.59	936.95	934.76	937.36
9	929.31	930.43	930.41	930.39	930.69	931.70	932.72	937.59	937.52	937.04	934.67	937.32
10	929.31	930.44	930.43	930.38	930.69	931.70	932.72	937.71	937.55	937.26	934.57	937.30
11	929.31	930.43	930.43	930.37	930.69	931.71	932.72	937.62	937.63	937.24	934.50	937.31
12	929.30	930.43	930.43	930.38	930.69	931.80	932.71	937.60	937.59	937.18	934.43	937.28
13	929.28	930.43	930.44	930.41	930.73	931.95	932.70	937.55	937.58	937.10	934.36	937.77
14	929.27	930.43	930.44	930.43	931.02	932.01	932.72	937.56	937.56	937.10	934.32	937.56
15	929.25	930.43	930.44	930.46	931.43	932.04	932.73	937.56	937.55	936.94	934.26	937.50
16	929.27	930.43	930.44	930.51	931.48	932.06	932.75	937.63	937.54	936.89	934.21	937.43
17	929.27	930.42	930.45	930.53	931.52	932.08	932.75	937.60	937.53	936.78	934.02	937.30
18	929.31	930.42	930.46	930.55	931.56	932.13	932.78	937.57	937.52	936.68	934.00	937.27
19	929.30	930.43	930.45	930.56	931.58	932.26	934.71	937.55	937.80	936.62	933.84	937.23
20	929.30	930.42	930.44	930.57	931.58	932.52	936.16	937.52	937.61	936.51	933.76	937.19
21	929.30	930.42	930.44	930.59	931.60	932.60	936.30	937.51	937.54	936.45	933.63	937.16
22	929.29	930.42	930.43	930.60	931.60	932.64	936.38	937.51	937.57	936.35	933.50	937.12
23	929.37	930.42	930.43	930.60	931.62	932.66	936.54	937.48	937.74	936.27	933.42	937.10
24	929.49	930.41	930.42	930.61	931.61	932.69	937.06	937.49	937.67	936.24	933.33	937.10
25	929.56	930.40	930.41	930.62	931.62	932.71	937.47	937.47	937.59	936.20	933.24	937.08
26	929.59	930.40	930.41	930.62	931.62	932.72	937.55	937.47	937.54	936.00	933.33	937.08
27	929.78	930.39	930.41	930.62	931.63	932.72	937.55	937.46	937.55	935.92	933.11	937.06
28	929.88	930.40	930.41	930.63	931.63	932.71	937.57	937.44	937.47	935.87	933.25	937.04
29	930.04	930.38	930.44	930.63	---	932.70	937.54	937.43	937.51	935.68	933.06	937.02
30	930.17	930.37	930.42	930.63	---	932.71	937.48	937.42	937.50	935.59	933.37	937.18
31	930.23	---	930.42	930.65	---	932.70	---	937.40	---	935.46	937.79	---
MEAN	929.41	930.40	930.41	930.50	931.14	932.16	934.38	937.53	937.58	936.68	934.28	937.30
MAX	930.23	930.44	930.46	930.65	931.63	932.72	937.57	937.71	937.80	937.48	937.79	937.77
MIN	928.99	930.27	930.33	930.37	930.67	931.65	932.69	937.40	937.38	935.46	933.06	937.02
(+)	1,980	1,990	2,000	2,030	2,150	2,290	2,970	2,960	2,970	2,670	3,020	2,930
(#)	+140	+10	+10	+30	+120	+140	+680	-10	+10	-300	+350	-90
CAL YR	2002	.....	(#)	-930								
WTR YR	2003	.....	(#)	+1,090								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 2000 to current year.

pH: October 2000 to current year.

WATER TEMPERATURE: October 2000 to current year.

DISSOLVED OXYGEN: October 2000 to current year.

TURBIDITY: October 2000 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor .

REMARKS.--Records fair. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 704 microsiemens/cm, May 20, 2003; minimum, 361 microsiemens/cm, July 18, 2001.

pH: Maximum, 9.1 standard units, Sept. 7, 2002; minimum, 6.9 standard units, June 14, 2002.

WATER TEMPERATURE: Maximum, 33.7°C, Aug. 5, 2001; minimum, 1.7°C, Jan. 18, 2003.

DISSOLVED OXYGEN: Maximum 18.0 mg/L, June 2, 2002; minimum, &lt;0.2 mg/L, July 20, 2002.

TURBIDITY: Maximum, 250 NTU, Aug. 31, 2003; minimum, &lt;2.0 NTU, Oct. 29, 2000.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 704 microsiemens/cm, May 20; minimum, 484 microsiemens/cm, Aug. 31.

pH: Maximum, 9.0 standard units, Sept. 8; minimum, 7.4 standard units, Aug. 31.

WATER TEMPERATURE: Maximum, 30.5°C, July 17, Aug. 19; minimum, 1.7°C, Jan. 18.

DISSOLVED OXYGEN: Maximum, 14.2 mg/L, Mar. 11; minimum, 0.1 mg/L, Aug. 20.

TURBIDITY: Maximum, 250 NTU, Aug. 31; minimum, &lt;2.0 NTU, Feb. 10.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	493	485	487	---	---	---	567	565	566	584	582	583
2	---	---	---	545	543	544	567	565	566	585	583	584
3	---	---	---	546	544	545	567	566	567	585	584	584
4	---	---	---	554	546	547	568	565	567	586	583	585
5	517	515	516	551	546	549	569	567	568	586	583	585
6	520	516	518	551	548	549	569	568	569	585	584	585
7	519	518	519	551	549	550	570	569	569	586	585	585
8	519	518	519	555	550	552	570	569	569	587	583	585
9	520	518	519	555	553	554	571	570	570	586	584	585
10	521	514	518	555	554	554	572	570	571	586	585	586
11	519	516	518	556	555	555	573	571	572	590	585	586
12	523	517	520	557	555	556	574	573	574	589	586	588
13	523	521	522	558	556	557	577	573	575	589	587	587
14	526	521	522	558	557	557	577	575	576	591	587	588
15	524	523	523	558	557	558	578	576	577	594	588	590
16	527	523	525	559	558	558	578	576	577	595	588	592
17	526	524	525	559	558	559	579	577	577	598	594	595
18	525	524	525	559	559	559	578	577	578	602	596	599
19	527	525	526	560	559	559	579	577	578	605	599	602
20	530	524	527	560	559	560	579	578	578	605	601	603
21	529	526	527	561	560	560	580	575	579	604	602	603
22	529	526	527	561	560	561	580	579	580	606	603	604
23	528	526	527	562	560	561	581	579	580	612	606	608
24	530	527	528	562	561	562	583	580	581	615	611	612
25	531	528	529	563	562	563	584	581	582	614	610	612
26	533	529	531	564	563	563	585	582	584	614	609	611
27	534	530	532	564	563	564	585	583	584	615	612	614
28	535	531	533	565	564	564	585	583	584	616	614	615
29	534	531	532	565	564	565	585	583	584	617	615	616
30	538	532	535	566	565	565	584	582	583	618	617	617
31	---	---	---	---	---	---	584	582	583	618	617	617
MONTH	538	485	523	566	543	557	585	565	576	618	582	597

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	618	617	617	644	641	643	678	665	667	678	667	673
2	619	617	617	644	641	642	669	667	668	679	673	675
3	618	614	617	644	641	642	670	667	668	686	669	676
4	615	610	612	643	642	642	670	668	669	678	674	676
5	616	611	613	643	641	642	672	669	670	683	676	679
6	617	613	614	643	641	642	671	668	669	685	678	681
7	617	614	615	643	641	642	671	669	670	683	680	681
8	619	615	617	642	641	641	672	670	671	691	679	681
9	621	616	619	643	641	642	673	671	672	687	680	683
10	622	617	619	644	641	642	674	669	672	687	679	684
11	622	618	620	648	641	643	677	669	672	688	684	686
12	622	618	621	643	636	642	678	668	673	686	684	685
13	622	617	619	644	636	640	696	665	672	687	682	685
14	618	613	616	644	639	641	678	660	666	689	684	687
15	624	614	618	647	641	644	668	655	660	689	686	688
16	628	623	625	648	645	647	662	656	659	689	687	688
17	628	626	627	649	642	647	662	659	661	692	688	690
18	630	626	629	649	645	647	660	659	660	694	689	691
19	631	628	630	651	644	646	661	657	660	693	690	691
20	634	629	632	647	645	646	663	657	659	704	690	696
21	637	632	634	672	646	650	663	659	661	696	695	696
22	637	634	636	660	650	654	662	661	661	697	693	696
23	638	636	637	665	653	657	666	658	661	697	695	696
24	639	637	638	664	654	660	664	657	661	697	695	697
25	642	638	640	664	659	661	671	662	664	698	695	697
26	646	639	641	665	660	662	669	659	665	699	696	697
27	644	640	641	665	661	663	670	664	666	701	694	697
28	643	641	642	664	661	664	670	666	667	700	695	697
29	---	---	---	667	664	665	671	667	668	700	691	697
30	---	---	---	668	665	667	678	665	670	702	692	696
31	---	---	---	668	665	667	---	---	---	701	691	697
MONTH	646	610	625	672	636	649	696	655	666	704	667	688

## 06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	695	691	693	684	659	671	642	636	639	554	525	540
2	698	687	691	681	656	668	650	640	643	558	523	544
3	700	689	693	669	637	658	645	627	638	582	534	565
4	692	690	691	670	635	651	642	624	633	581	574	580
5	692	690	691	663	633	653	636	615	623	582	576	580
6	692	687	690	659	632	639	628	612	620	585	577	581
7	692	689	691	635	629	632	647	600	621	593	584	587
8	692	682	688	657	627	640	656	616	638	594	571	586
9	687	680	682	667	650	654	660	616	635	587	575	578
10	688	679	682	666	650	657	655	627	639	585	580	583
11	683	676	681	664	651	655	658	629	643	588	584	586
12	681	656	673	662	655	658	646	632	637	595	587	591
13	675	662	670	662	645	655	641	633	638	596	591	593
14	669	653	663	660	647	650	641	633	637	603	595	599
15	663	650	655	659	648	654	643	606	639	604	601	602
16	698	651	680	658	647	651	643	626	639	608	602	604
17	698	680	691	656	643	649	646	633	640	611	605	608
18	700	687	695	659	638	646	645	621	638	615	610	612
19	701	653	694	653	638	646	647	620	634	617	613	615
20	699	654	686	650	631	641	667	635	651	616	612	614
21	691	652	661	648	624	638	666	654	662	614	610	612
22	657	647	654	666	624	645	665	647	661	613	609	611
23	668	646	650	657	647	650	666	630	659	611	605	608
24	648	640	644	652	646	648	664	631	647	608	601	606
25	642	630	635	655	646	652	662	639	656	602	592	598
26	670	627	652	658	654	656	664	623	655	593	587	591
27	675	664	668	662	655	657	663	623	638	588	583	586
28	675	662	667	660	649	657	661	630	642	590	582	586
29	677	656	668	660	643	653	654	627	640	599	584	593
30	680	659	667	658	649	654	654	629	645	600	590	596
31	---	---	---	662	635	648	647	484	576	---	---	---
MONTH	701	627	675	684	624	651	667	484	639	617	523	591

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	7.8	7.6	7.7	7.6	7.6	7.6	7.9	7.8	7.9	8.2	8.2	8.2
2	7.7	7.6	7.6	7.6	7.6	7.6	8.0	7.8	7.9	8.2	8.2	8.2
3	7.9	7.7	7.7	7.6	7.6	7.6	8.0	7.8	7.9	8.2	8.2	8.2
4	7.8	7.6	7.7	7.6	7.6	7.6	8.0	7.8	8.0	8.2	8.2	8.2
5	8.0	7.6	7.8	7.6	7.6	7.6	8.0	8.0	8.0	8.3	8.2	8.2
6	7.9	7.6	7.8	7.6	7.6	7.6	8.0	8.0	8.0	8.3	8.2	8.3
7	8.1	7.7	7.8	7.6	7.6	7.6	8.1	8.0	8.1	8.3	8.3	8.3
8	8.2	7.7	7.8	7.7	7.6	7.7	8.1	8.1	8.1	8.3	8.3	8.3
9	8.2	7.7	7.8	7.7	7.7	7.7	8.1	8.1	8.1	8.3	8.3	8.3
10	8.6	7.6	8.1	7.7	7.7	7.7	8.1	8.1	8.1	8.3	8.3	8.3
11	8.5	8.0	8.3	7.7	7.7	7.7	8.1	8.1	8.1	8.3	8.3	8.3
12	8.3	7.7	7.9	7.7	7.7	7.7	8.1	8.1	8.1	8.3	8.3	8.3
13	7.8	7.7	7.7	7.8	7.7	7.8	8.1	8.1	8.1	8.3	8.3	8.3
14	8.0	7.7	7.8	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.3	8.3
15	7.8	7.7	7.8	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.3	8.4
16	7.8	7.6	7.7	7.8	7.7	7.8	8.1	8.1	8.1	8.4	8.3	8.4
17	7.7	7.6	7.6	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.4	8.4
18	7.8	7.7	7.7	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.4	8.4
19	7.7	7.6	7.7	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.4	8.4
20	8.0	7.6	7.7	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.3	8.4
21	7.9	7.5	7.7	7.8	7.8	7.8	8.2	8.1	8.1	8.4	8.4	8.4
22	7.8	7.5	7.6	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.4	8.4
23	7.7	7.6	7.6	7.8	7.8	7.8	8.1	8.1	8.1	8.4	8.4	8.4
24	7.6	7.6	7.6	7.8	7.8	7.8	8.2	8.1	8.1	8.4	8.4	8.4
25	7.6	7.6	7.6	7.8	7.8	7.8	8.2	8.2	8.2	8.4	8.3	8.4
26	7.6	7.5	7.6	7.8	7.8	7.8	8.2	8.2	8.2	8.4	8.3	8.3
27	7.6	7.5	7.6	7.9	7.8	7.8	8.2	8.2	8.2	8.4	8.3	8.3
28	7.6	7.5	7.5	7.9	7.8	7.8	8.2	8.2	8.2	8.3	8.3	8.3
29	7.5	7.5	7.5	7.9	7.8	7.9	8.2	8.2	8.2	8.3	8.3	8.3
30	7.6	7.5	7.6	7.9	7.9	7.9	8.2	8.2	8.2	8.3	8.3	8.3
31	---	---	---	---	---	---	8.2	8.2	8.2	8.3	8.3	8.3
MAX	8.6	8.0	8.3	7.9	7.9	7.9	8.2	8.2	8.2	8.4	8.4	8.4
MIN	7.5	7.5	7.5	7.6	7.6	7.6	7.9	7.8	7.9	8.2	8.2	8.2



06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.3	8.3	8.3	8.2	8.2	8.2	8.0	7.8	8.0	8.3	7.7	7.8
2	8.3	8.3	8.3	8.2	8.2	8.2	8.0	7.9	8.0	8.0	7.7	7.8
3	8.3	8.3	8.3	8.2	8.2	8.2	8.0	7.9	8.0	8.4	7.7	8.1
4	8.3	8.3	8.3	8.2	8.2	8.2	8.0	7.8	7.9	8.4	8.0	8.2
5	8.3	8.3	8.3	8.2	8.2	8.2	8.0	7.8	7.9	8.1	7.9	8.0
6	8.3	8.2	8.3	8.3	8.2	8.2	8.0	8.0	8.0	8.3	7.9	7.9
7	8.3	8.2	8.3	8.3	8.2	8.3	8.0	7.9	8.0	8.2	7.9	7.9
8	8.3	8.3	8.3	8.3	8.2	8.3	8.0	7.9	8.0	8.3	7.9	8.2
9	8.3	8.2	8.3	8.3	8.3	8.3	8.0	7.9	7.9	8.2	7.9	8.0
10	8.3	8.2	8.3	8.3	8.3	8.3	8.1	7.9	8.0	8.1	7.8	7.9
11	8.3	8.2	8.2	8.3	8.3	8.3	8.1	7.9	7.9	8.1	7.8	7.9
12	8.3	8.2	8.2	8.3	8.3	8.3	8.1	7.9	7.9	8.1	8.0	8.1
13	8.3	8.2	8.3	8.3	8.3	8.3	8.7	7.8	7.9	8.3	8.0	8.0
14	8.3	8.2	8.3	8.3	8.3	8.3	8.5	7.9	8.4	8.1	7.9	8.0
15	8.2	8.2	8.2	8.3	8.2	8.3	8.6	8.3	8.4	8.1	7.8	7.9
16	8.3	8.2	8.2	8.3	8.2	8.3	8.5	8.1	8.4	7.9	7.8	7.8
17	8.3	8.2	8.2	8.3	8.2	8.2	8.3	8.1	8.2	7.9	7.7	7.8
18	8.3	8.2	8.2	8.3	8.2	8.2	8.3	8.3	8.3	8.0	7.7	7.8
19	8.3	8.2	8.2	8.2	8.2	8.2	8.3	8.1	8.2	7.9	7.7	7.7
20	8.3	8.1	8.2	8.2	8.2	8.2	8.2	8.0	8.1	8.4	7.7	7.9
21	8.2	8.1	8.1	8.2	8.1	8.1	8.1	8.0	8.1	8.4	8.3	8.4
22	8.1	8.1	8.1	8.2	8.1	8.2	8.1	8.0	8.1	8.6	8.3	8.4
23	8.2	8.1	8.1	8.3	8.1	8.2	8.5	8.0	8.2	8.5	8.3	8.4
24	8.2	8.1	8.2	8.3	8.0	8.2	8.3	8.0	8.1	8.5	8.2	8.3
25	8.2	8.2	8.2	8.3	8.0	8.1	8.1	8.0	8.0	8.6	8.1	8.4
26	8.2	8.2	8.2	8.3	8.1	8.2	8.2	8.0	8.1	8.6	8.3	8.3
27	8.2	8.2	8.2	8.2	8.0	8.2	8.3	8.0	8.1	8.6	8.2	8.4
28	8.2	8.2	8.2	8.1	8.0	8.0	8.0	7.9	8.0	8.7	8.1	8.4
29	---	---	---	8.0	8.0	8.0	8.0	7.8	7.9	8.7	8.3	8.4
30	---	---	---	8.0	7.9	8.0	8.5	7.8	7.9	8.7	8.0	8.6
31	---	---	---	8.0	7.9	8.0	---	---	---	8.7	8.0	8.4
MAX	8.3	8.3	8.3	8.3	8.3	8.3	8.7	8.3	8.4	8.7	8.3	8.6
MIN	8.1	8.1	8.1	8.0	7.9	8.0	8.0	7.8	7.9	7.9	7.7	7.7

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.7	8.6	8.7	8.4	7.6	8.0	8.6	8.2	8.5	7.6	7.5	7.5
2	8.6	8.0	8.5	8.4	7.8	8.1	8.6	7.8	8.3	7.6	7.5	7.5
3	8.5	7.7	8.2	8.5	7.9	8.2	8.7	7.9	8.4	7.7	7.5	7.6
4	8.3	8.1	8.3	8.7	7.9	8.3	8.6	7.7	8.2	8.1	7.6	7.8
5	8.3	8.1	8.2	8.7	7.9	8.1	8.5	7.6	8.1	8.8	7.5	7.8
6	8.5	8.0	8.2	8.7	8.0	8.5	8.3	7.7	7.9	8.9	7.5	7.7
7	8.3	8.0	8.1	8.6	8.2	8.5	8.7	7.6	8.0	8.1	7.6	7.7
8	8.7	7.9	8.2	8.5	7.8	8.4	8.7	7.6	8.0	9.0	7.6	7.8
9	8.7	8.2	8.6	8.5	7.5	8.4	8.6	7.6	8.0	8.9	7.9	8.8
10	8.6	8.0	8.4	8.4	7.5	8.0	8.7	7.6	8.0	8.8	8.5	8.6
11	8.3	8.0	8.2	8.5	7.5	8.2	8.4	7.6	7.7	8.5	8.1	8.2
12	8.7	7.7	8.1	8.1	7.6	7.8	8.5	7.7	8.0	8.2	7.7	8.0
13	8.2	7.8	8.0	8.5	7.6	7.8	8.5	7.9	8.1	8.0	7.8	7.9
14	8.2	7.7	7.8	8.5	7.6	8.3	8.4	7.6	8.2	7.9	7.6	7.7
15	7.9	7.6	7.8	8.4	7.6	8.0	8.2	7.6	7.7	8.3	7.7	7.8
16	7.9	7.6	7.7	8.5	7.6	8.1	8.2	7.6	7.7	8.1	7.9	8.0
17	7.8	7.6	7.7	8.5	7.5	7.9	8.5	7.7	7.8	8.1	7.9	8.0
18	8.2	7.6	7.7	8.3	7.5	7.9	8.8	7.6	7.9	8.0	7.7	7.8
19	8.8	7.6	7.7	8.4	7.6	7.9	8.8	7.5	7.9	8.0	7.7	7.7
20	8.6	7.6	7.7	8.3	7.5	7.7	8.6	7.5	7.7	8.2	7.8	7.9
21	8.8	7.7	8.6	8.3	7.5	7.6	7.8	7.6	7.6	8.1	7.8	7.9
22	8.7	8.5	8.6	8.3	7.5	7.8	7.8	7.5	7.6	8.0	7.7	7.8
23	8.6	7.8	8.4	8.3	7.8	8.1	8.5	7.6	7.6	8.2	7.7	8.0
24	8.5	8.2	8.4	8.5	8.2	8.4	8.6	7.5	7.8	8.2	7.8	8.0
25	8.5	7.8	8.3	8.6	8.3	8.5	8.1	7.6	7.7	8.6	7.8	8.0
26	8.7	8.0	8.3	8.6	8.3	8.5	8.7	7.6	7.7	8.5	7.8	8.3
27	8.8	8.1	8.6	8.6	8.0	8.5	8.7	7.6	8.5	8.4	7.8	8.1
28	8.8	8.2	8.7	8.5	8.1	8.3	8.6	7.5	8.2	8.2	7.9	8.0
29	8.6	8.0	8.4	8.5	8.0	8.4	8.5	7.6	8.0	8.6	7.6	7.9
30	8.5	7.7	8.1	8.5	8.0	8.3	8.0	7.5	7.7	8.1	7.7	7.9
31	---	---	---	8.7	7.7	8.3	7.9	7.4	7.6	---	---	---
MAX	8.8	8.6	8.7	8.7	8.3	8.5	8.8	8.2	8.5	9.0	8.5	8.8
MIN	7.8	7.6	7.7	8.1	7.5	7.6	7.8	7.4	7.6	7.6	7.5	7.5

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.3	21.8	22.0	---	10.4	---	6.3	6.1	6.2	4.1	3.8	4.0
2	22.2	21.7	21.9	10.4	10.1	10.3	6.1	5.9	6.0	4.0	3.6	3.8
3	22.2	21.4	21.7	10.1	9.9	10.0	5.9	5.5	5.8	3.7	3.4	3.6
4	21.9	21.0	21.4	10.5	9.7	9.8	5.5	5.3	5.4	3.6	3.0	3.4
5	21.2	20.6	20.9	10.1	9.5	9.7	5.3	4.8	4.9	3.8	3.5	3.6
6	20.7	20.1	20.4	9.7	9.4	9.5	4.8	4.6	4.7	3.7	3.5	3.5
7	20.2	19.7	19.9	10.0	9.3	9.7	4.6	4.3	4.4	3.5	3.1	3.3
8	19.9	19.4	19.6	10.1	9.7	9.9	4.5	4.2	4.4	3.6	3.3	3.4
9	19.7	19.1	19.4	10.4	9.9	10.2	4.5	4.0	4.2	3.8	3.5	3.7
10	20.2	19.1	19.6	10.4	10.2	10.3	4.2	4.0	4.1	3.6	3.3	3.5
11	19.9	19.3	19.6	10.3	9.9	10.1	4.2	4.1	4.1	3.4	2.9	3.3
12	19.6	18.8	19.2	10.0	9.7	9.8	4.3	4.2	4.2	3.2	2.7	3.0
13	18.8	18.1	18.4	10.0	9.6	9.8	4.4	4.2	4.3	3.2	2.9	3.1
14	18.1	17.7	17.9	10.0	9.8	9.9	4.4	4.1	4.3	3.3	3.0	3.1
15	17.8	17.0	17.4	9.8	9.5	9.7	4.6	4.2	4.4	3.2	2.1	2.8
16	17.1	16.3	16.7	9.6	9.3	9.4	4.8	4.5	4.6	3.0	2.4	2.7
17	16.3	15.8	16.0	9.4	9.1	9.3	5.2	4.7	4.9	2.6	2.1	2.3
18	15.8	15.4	15.6	9.3	9.1	9.2	5.6	5.2	5.3	2.4	1.7	2.1
19	15.7	15.2	15.4	9.2	9.0	9.1	5.5	5.3	5.4	2.4	2.2	2.3
20	16.4	15.0	15.4	9.2	9.1	9.2	5.5	5.2	5.3	2.6	2.3	2.5
21	15.7	15.0	15.2	9.2	9.0	9.1	5.2	5.0	5.1	2.8	2.6	2.6
22	15.4	14.6	14.9	9.0	8.8	8.9	5.0	4.6	4.8	2.8	2.6	2.7
23	14.7	14.2	14.4	8.9	8.6	8.7	4.7	4.4	4.6	2.6	2.2	2.5
24	14.2	13.6	13.9	8.6	8.3	8.5	4.4	3.8	4.2	2.3	2.2	2.2
25	13.6	13.1	13.4	8.4	7.7	8.0	3.9	3.1	3.7	2.5	2.3	2.4
26	13.1	12.8	13.0	7.7	7.4	7.5	3.1	2.5	2.9	2.6	2.5	2.5
27	12.8	12.4	12.6	7.4	7.0	7.3	3.3	2.7	3.1	2.7	2.6	2.7
28	12.4	12.2	12.3	7.0	6.7	6.8	3.3	2.9	3.0	2.8	2.7	2.8
29	12.2	11.9	12.0	6.8	6.6	6.7	3.5	3.0	3.2	2.9	2.8	2.8
30	11.9	11.5	11.7	6.7	6.3	6.5	4.2	3.5	4.0	3.0	2.9	2.9
31	---	---	---	---	---	---	4.3	4.0	4.1	3.1	3.0	3.1
MONTH	22.3	11.5	17.1	10.5	6.3	9.1	6.3	2.5	4.5	4.1	1.7	3.0

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.2	3.1	3.2	3.4	3.1	3.3	11.2	10.3	10.8	18.2	14.9	16.1
2	3.4	3.2	3.3	3.5	3.1	3.3	12.2	11.0	11.5	17.5	15.9	16.4
3	3.4	3.2	3.3	3.7	3.2	3.5	12.6	12.0	12.3	19.0	15.6	17.4
4	3.3	3.0	3.2	3.7	3.5	3.6	12.7	12.2	12.5	18.7	17.4	18.1
5	3.3	2.4	3.0	3.6	3.0	3.2	12.4	11.8	12.0	17.9	17.3	17.6
6	3.1	2.8	3.0	3.1	2.7	2.9	12.3	11.4	11.7	19.2	17.1	17.7
7	3.1	2.7	2.9	3.3	2.8	3.0	11.4	11.0	11.2	18.5	17.3	17.9
8	2.9	2.8	2.8	3.6	3.1	3.4	11.0	10.4	10.8	19.5	17.6	18.8
9	3.1	2.8	2.9	3.5	3.3	3.4	10.4	10.0	10.2	19.2	17.8	18.5
10	3.3	3.0	3.1	3.7	3.0	3.3	12.2	10.1	10.8	19.6	17.6	18.4
11	3.5	3.2	3.4	3.6	2.9	3.4	12.2	10.2	10.7	19.0	17.5	18.5
12	3.7	3.4	3.5	4.1	3.4	3.8	11.8	10.4	10.8	19.0	18.7	18.8
13	3.8	3.3	3.7	5.2	3.9	4.4	16.8	10.3	12.1	19.9	18.7	19.2
14	4.0	3.6	3.8	5.8	4.6	5.1	16.5	11.8	14.9	19.2	18.6	18.9
15	4.0	3.7	3.9	6.7	5.3	5.8	16.2	15.1	15.8	19.5	18.6	18.9
16	3.9	3.3	3.5	7.4	6.5	6.9	16.0	14.2	15.2	19.1	18.7	18.9
17	3.6	3.3	3.5	9.0	7.2	8.0	14.5	14.1	14.3	19.3	18.7	19.0
18	3.4	3.1	3.3	9.7	7.9	9.0	14.7	14.1	14.3	19.5	18.4	19.0
19	3.9	3.3	3.5	9.7	8.6	9.0	14.7	14.3	14.5	19.3	18.6	18.9
20	4.1	3.4	3.7	8.8	8.6	8.7	14.4	14.0	14.3	19.9	18.7	19.3
21	5.1	3.8	4.1	9.1	8.2	8.6	14.5	14.0	14.2	19.9	19.4	19.6
22	4.3	3.9	4.1	9.5	8.7	9.0	14.6	14.3	14.4	20.3	19.5	19.7
23	4.1	3.5	3.9	11.0	8.7	10.1	16.0	14.3	15.0	19.8	19.5	19.7
24	3.5	3.1	3.3	11.7	9.2	10.6	15.4	14.4	14.7	20.0	19.5	19.7
25	3.2	2.5	2.9	11.4	9.6	10.5	14.6	14.4	14.5	20.4	19.5	19.9
26	3.0	2.2	2.7	12.1	11.2	11.6	15.7	14.5	14.7	20.8	19.9	20.1
27	3.0	2.5	2.8	11.8	10.6	11.2	16.3	14.4	15.3	21.1	19.8	20.3
28	3.3	3.0	3.1	10.9	10.2	10.5	15.4	14.6	15.1	21.2	19.9	20.5
29	---	---	---	10.2	9.6	9.8	15.4	14.6	15.1	21.8	20.4	21.0
30	---	---	---	9.7	9.3	9.5	18.7	14.6	16.4	23.2	20.1	22.0
31	---	---	---	10.8	9.5	10	---	---	---	22.4	20.3	21.5
MONTH	5.1	2.2	3.3	12.1	2.7	6.7	18.7	10.0	13.3	23.2	14.9	19.0

## 06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.1	22.1	22.5	25.9	25.0	25.5	28.5	27.7	28.0	23.3	22.8	23.0
2	22.6	21.1	21.9	26.0	25.3	25.6	28.3	27.1	27.5	23.2	22.6	22.9
3	21.4	20.5	20.9	28.2	25.3	26.1	27.9	27.1	27.4	23.5	22.6	23.1
4	20.8	20.4	20.5	30.3	25.5	27.2	28.1	27.1	27.5	23.6	23.2	23.4
5	20.6	20.4	20.5	30.4	26.0	27.3	28.3	27.1	27.6	24.0	23.2	23.5
6	21.5	20.4	20.7	30.2	26.5	29.1	28.2	27.4	27.6	24.3	23.3	23.6
7	21.1	20.6	20.8	29.9	28.5	29.2	28.6	27.2	27.9	23.8	23.4	23.6
8	22.1	20.6	21.2	29.8	28.1	29.1	28.3	27.0	27.6	25.1	23.3	23.9
9	23.3	21.3	22.4	29.7	27.2	29.0	28.6	27.0	27.9	25.3	24.0	24.6
10	23.1	21.6	22.4	29.1	27.2	28.1	28.6	27.1	28.0	24.6	24.1	24.4
11	22.4	21.8	22.1	28.9	27.1	28.1	28.3	27.2	27.7	24.4	23.9	24.1
12	23.8	21.4	22.4	28.3	27.5	27.9	27.8	27.0	27.4	24.0	23.5	23.6
13	23.1	21.7	22.4	29.7	27.7	28.3	27.9	27.0	27.2	23.5	22.9	23.2
14	23.0	22.0	22.5	30.2	27.9	29.2	27.6	26.9	27.3	22.9	22.3	22.6
15	22.8	22.0	22.5	29.8	28.3	29.0	27.3	27.0	27.1	23.2	22.2	22.6
16	23.2	22.1	22.6	30.1	28.3	29.1	27.6	26.9	27.2	22.8	22.1	22.4
17	23.6	22.1	22.7	30.5	28.5	29.4	28.0	27.0	27.3	22.3	21.8	22.0
18	23.5	22.4	22.8	30.0	28.3	29.3	30.4	27.0	27.8	22.1	21.4	21.7
19	27.6	22.4	23.2	30.2	28.7	29.2	30.5	27.1	28.6	21.4	20.9	21.1
20	25.9	22.8	23.7	29.9	28.7	29.2	29.5	26.6	28.0	21.3	20.6	21.0
21	25.8	23.4	25.2	30.1	28.5	29.2	28.3	27.2	27.6	21.1	20.7	20.8
22	25.4	24.8	25.0	29.7	28.4	29.0	28.4	27.3	27.7	20.7	20.4	20.5
23	25.4	23.8	24.9	29.0	28.1	28.4	28.8	27.3	27.8	21.0	20.3	20.6
24	26.3	25.0	25.5	28.7	27.9	28.3	28.7	26.9	28.1	20.8	20.3	20.6
25	26.2	24.6	25.8	28.4	27.7	28.0	28.2	27.4	27.7	21.7	20.3	20.8
26	25.6	24.7	25.1	28.5	27.2	27.8	29.1	27.1	27.7	21.1	20.2	20.7
27	25.9	24.7	25.2	28.3	27.4	27.9	29.3	27.3	28.4	20.7	20.1	20.3
28	26.7	25.2	25.7	28.3	27.5	27.8	28.8	27.2	28.2	20.1	19.7	19.9
29	26.3	25.1	25.6	28.5	27.4	27.9	28.2	27.4	27.8	19.8	19.4	19.5
30	26.0	25.0	25.6	28.2	27.6	27.9	27.5	26.6	27.2	19.4	18.8	19.1
31	---	---	---	28.8	27.3	28.1	26.6	22.9	24.8	---	---	---
MONTH	27.6	20.4	23.1	30.5	25.0	28.2	30.5	22.9	27.6	25.3	18.8	22.1

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	10.1	9.5	9.8	12.5	12.2	12.4
2	---	---	---	5.0	4.6	4.8	10.3	9.7	10.0	12.6	12.2	12.5
3	---	---	---	5.0	4.6	4.8	10.4	9.8	10.1	12.7	12.5	12.6
4	---	---	---	5.5	4.6	4.8	10.8	10.3	10.5	12.7	12.4	12.6
5	7.3	4.5	5.9	5.5	4.2	4.6	10.8	10.5	10.7	12.8	12.5	12.6
6	6.6	4.4	5.8	5.2	4.6	4.8	11.0	10.7	10.8	12.8	12.6	12.7
7	7.9	5.3	6.4	6.0	4.9	5.4	11.2	10.9	11.0	13.0	12.7	12.8
8	8.6	5.7	6.8	6.9	6.0	6.4	11.3	11.0	11.1	13.0	12.6	12.9
9	8.4	5.6	6.5	7.2	6.7	7.0	11.4	11.1	11.2	12.9	12.6	12.8
10	11.3	4.6	7.8	7.1	6.6	7.0	11.3	11.1	11.2	13.1	12.8	12.9
11	10.6	7.2	8.9	7.2	6.6	7.0	11.4	11.1	11.2	13.2	12.8	13.0
12	9.5	4.9	7.1	7.3	7.0	7.1	11.5	11.3	11.4	13.2	13.0	13.1
13	6.4	5.1	5.6	7.8	6.9	7.4	11.4	11.2	11.3	13.3	13.1	13.2
14	7.4	5.7	6.4	7.8	7.4	7.6	11.5	11.3	11.4	13.4	13.2	13.3
15	6.8	5.5	6.2	7.8	7.4	7.6	11.7	11.4	11.5	13.6	13.3	13.4
16	6.4	4.6	5.5	7.8	7.5	7.7	11.7	11.4	11.5	13.5	13.3	13.4
17	6.0	4.8	5.1	8.3	7.7	8.1	11.7	11.5	11.6	13.6	13.4	13.5
18	6.6	5.5	6.0	8.3	7.9	8.1	11.7	11.5	11.5	13.8	13.4	13.6
19	6.1	5.1	5.6	8.4	7.9	8.2	11.6	11.4	11.5	13.9	13.6	13.7
20	8.9	5.3	6.3	8.4	8.0	8.2	11.7	11.4	11.6	13.8	13.3	13.6
21	7.9	4.0	5.8	8.6	8.0	8.3	11.7	11.4	11.6	13.8	13.5	13.6
22	7.1	3.9	5.6	8.7	8.3	8.5	11.7	11.4	11.5	13.7	13.5	13.6
23	6.2	5.1	5.5	8.7	8.3	8.5	11.7	11.5	11.6	13.8	13.5	13.6
24	5.4	4.8	5.1	8.8	8.3	8.6	11.9	11.5	11.7	13.8	13.5	13.6
25	5.5	4.8	5.3	9.0	8.4	8.8	12.1	11.8	11.8	13.8	13.4	13.6
26	5.2	4.4	5.0	9.1	8.7	8.9	12.4	11.9	12.2	13.6	13.2	13.4
27	5.5	4.3	4.9	9.2	8.7	8.9	12.3	12.0	12.2	13.5	13.3	13.4
28	5.0	3.4	4.4	9.3	8.9	9.1	12.3	12.1	12.2	13.4	13.2	13.3
29	4.6	3.5	4.0	9.4	9.0	9.2	12.4	12.2	12.3	13.4	13.1	13.3
30	4.7	3.8	4.4	9.9	9.3	9.7	12.5	12.3	12.4	13.4	13.2	13.3
31	---	---	---	---	---	---	12.5	12.2	12.4	13.4	13.2	13.3
MONTH	11.3	3.4	5.8	9.9	4.2	7.4	12.5	9.5	11.4	13.9	12.2	13.2

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	13.4	13.1	13.3	13.7	13.5	13.6	10.2	9.6	10	9.6	6.6	7.4
2	13.4	13.1	13.2	14.0	13.5	13.7	10.0	8.5	9.3	7.8	6.6	7.0
3	13.3	13.1	13.2	13.9	13.6	13.7	9.5	7.9	8.9	10.1	6.2	8.1
4	13.2	12.8	13.0	13.8	13.6	13.7	9.7	8.5	9.2	9.6	7.8	9.0
5	13.2	12.8	13.1	13.9	13.6	13.7	9.9	8.7	9.2	8.3	7.3	7.8
6	13.0	12.8	12.9	14.0	13.7	13.9	10.0	9.6	9.9	9.0	6.8	7.5
7	13.0	12.8	12.9	14.1	13.8	14.0	9.9	9.3	9.7	8.3	6.8	7.4
8	13.1	12.8	12.9	14.0	13.9	14.0	10.0	9.6	9.8	8.9	6.8	8.2
9	13.1	12.5	12.8	14.0	13.8	13.9	10.1	9.7	9.9	8.5	6.7	7.5
10	13.0	12.6	12.8	14.1	13.8	14.0	11.2	9.6	10.3	8.1	6.0	7.0
11	12.9	12.5	12.7	14.2	13.8	14.1	11.2	9.6	10.1	8.0	5.6	6.8
12	12.9	12.5	12.6	14.1	13.9	14.0	11.2	9.6	10	8.0	7.4	7.7
13	13.0	12.6	12.8	14.2	13.8	14.0	---	8.8	---	9.2	7.1	8.1
14	12.9	12.5	12.7	14.1	13.7	13.9	13.9	10.2	12.4	7.9	6.6	7.4
15	12.6	12.3	12.5	13.8	13.6	13.7	12.5	11.3	11.7	8.1	6.1	6.8
16	12.7	12.3	12.6	13.6	13.4	13.5	11.3	9.8	10.6	6.7	5.7	6.2
17	12.7	12.4	12.6	13.4	13.1	13.3	10.6	9.6	10.0	6.8	5.6	5.9
18	12.7	12.4	12.6	13.2	12.6	13.0	10.4	9.9	10.2	7.0	4.9	5.8
19	12.7	11.9	12.4	12.7	12.3	12.5	10.1	9.1	9.6	6.6	4.6	5.3
20	13.2	11.7	12.6	12.4	12.0	12.2	9.3	8.6	9.1	9.2	4.6	6.7
21	13.0	12.7	12.8	12.2	11.3	11.9	9.2	8.7	9.0	9.4	8.5	8.9
22	12.9	12.6	12.7	12.2	11.7	12.0	9.5	8.9	9.2	10.9	8.5	9.7
23	12.9	12.6	12.8	12.6	11.5	12.2	11.1	8.7	9.8	10.0	8.4	9.0
24	13.1	12.8	13.0	12.5	11.3	12.0	10.3	8.5	9.2	9.9	7.6	8.7
25	13.5	13.0	13.2	12.2	11.0	11.6	9.1	8.3	8.6	11.1	7.4	9.0
26	13.5	13.2	13.3	12.2	11.1	11.8	9.6	8.6	9.0	10.6	8.4	9.0
27	13.7	13.2	13.4	11.4	10.4	11.1	10.2	8.0	9.1	11.0	7.4	9.0
28	13.7	13.2	13.4	10.8	10.2	10.4	8.9	8.1	8.5	11.6	7.0	9.1
29	---	---	---	10.3	9.9	10.1	8.5	7.3	8.0	12.0	7.9	9.5
30	---	---	---	10.1	9.5	9.9	10.8	6.9	8.7	12.5	6.6	10.7
31	---	---	---	10.2	9.5	10.0	---	---	---	11.9	6.6	9.3
MONTH	13.7	11.7	12.9	14.2	9.5	12.8	13.9	6.9	9.6	12.5	4.6	7.9

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.0	10.8	11.4	8.8	1.1	5.7	10.1	8.0	9.3	4.1	2.9	3.5
2	10.9	6.1	9.5	9.2	2.1	5.9	9.5	5.1	7.8	3.4	2.1	2.9
3	9.6	3.7	7.2	9.5	2.9	6.6	10.6	5.2	8.0	4.6	1.8	3.6
4	8.6	6.9	8.1	10.9	3.1	7.9	10.5	4.2	7.4	6.7	3.8	5.2
5	8.1	6.7	7.4	9.9	3.8	6.7	9.8	3.5	7.0	10.1	3.4	5.7
6	9.6	6.1	7.6	9.1	4.6	7.9	8.6	4.2	6.0	11.6	3.0	5.9
7	8.1	5.8	6.9	8.2	6.5	7.5	12.1	2.8	7.0	6.6	3.0	4.5
8	11.5	5.1	7.8	7.5	3.8	6.6	12.2	1.2	6.3	12.4	1.9	5.8
9	11.4	7.3	10.3	7.2	1.6	6.3	11.8	0.6	7.5	10.7	4.7	9.4
10	10.7	5.8	8.6	6.8	0.9	4.3	10.9	0.7	7.3	9.1	6.6	7.7
11	8.3	5.8	7.3	7.6	1.4	5.2	9.4	1.1	4.9	6.6	5.0	5.9
12	12.8	2.6	7.2	5.1	2.1	3.6	8.9	4.0	6.8	6.0	3.7	4.9
13	7.5	3.1	5.2	8.8	1.6	4.6	8.8	6.3	7.3	5.8	4.6	5.2
14	7.8	2.9	4.9	7.6	2.3	6.2	8.2	4.6	7.1	6.3	4.5	5.2
15	5.2	1.7	3.4	7.4	2.8	5.2	7.7	3.4	5.0	8.4	5.2	6.4
16	4.8	0.4	2.4	7.5	2.7	5.6	8.1	3.0	5.5	7.7	6.3	6.9
17	4.5	0.3	2.6	8.6	2.1	5.3	9.6	3.2	5.2	7.4	6.2	6.7
18	7.2	1.2	2.8	7.6	0.7	4.6	11.3	1.8	5.8	7.1	5.2	6.0
19	11.6	0.9	3.4	8.4	1.8	5.1	10.8	0.9	6.1	7.4	4.9	5.8
20	9.7	1.3	4.0	9.7	1.8	5.0	8.8	<0.2	2.9	7.7	5.5	6.5
21	9.8	2.8	8.2	9.5	1.3	4.7	2.9	0.4	1.0	7.1	3.5	6.1
22	9.2	7.9	8.5	9.0	0.6	4.7	3.1	<0.2	0.9	6.0	3.2	5.1
23	8.8	3.7	7.7	8.1	5.3	6.6	8.7	0.2	1.7	7.2	2.9	5.9
24	8.0	6.1	7.0	9.4	7.3	8.3	8.6	0.5	4.3	6.5	3.6	5.3
25	7.6	4.1	6.5	9.0	7.7	8.1	5.8	0.4	1.9	9.1	4.7	6.6
26	9.7	5.0	6.9	8.6	7.0	7.8	9.3	0.4	2.5	8.5	2.4	6.2
27	10.7	6.1	8.8	8.5	5.7	7.4	9.3	0.5	6.0	6.3	2.5	4.8
28	11.7	7.1	9.8	9.4	6.1	7.0	7.8	0.2	4.9	4.5	2.4	3.6
29	11.0	5.7	8.5	9.6	5.3	7.5	6.9	1.8	4.6	7.1	1.5	2.7
30	10.1	3.3	7.2	9.1	5.7	7.5	4.7	1.2	2.8	6.4	1.7	4.8
31	---	---	---	11.0	3.8	8.0	5.1	0.4	3.8	---	---	---
MONTH	12.8	0.3	6.9	11.0	0.6	6.2	12.2	0.2	5.3	12.4	1.5	5.5

&gt; Actual value is known to be less than the value shown



06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	15	12	12	9.8	6.4	7.2
2	---	---	---	26	19	---	15	10	12	9.7	6.4	8.1
3	---	---	---	25	19	21	13	9.9	11	9.7	6.6	7.7
4	---	---	---	25	16	20	13	9.1	11	9.4	6.0	7.2
5	26	15	19	24	17	20	13	9.9	11	8.9	6.9	7.7
6	28	15	18	23	18	20	12	8.5	10	8.6	6.4	7.7
7	23	14	18	24	17	20	11	7.9	9.0	8.5	6.1	7.1
8	22	14	17	23	19	21	12	7.1	8.4	8.8	6.2	7.1
9	19	12	14	25	18	20	9.5	7.0	8.3	8.8	6.1	7.3
10	21	11	15	24	18	19	9.5	6.7	7.9	9.8	7.3	8.2
11	24	12	16	26	17	21	9.4	6.7	7.5	9.5	6.0	7.6
12	28	11	17	23	16	19	8.4	6.4	7.2	8.5	5.9	7.1
13	26	14	19	23	16	19	9.2	6.1	7.3	8.0	5.6	6.7
14	28	14	20	23	17	19	7.8	5.4	6.6	8.3	5.5	7.0
15	28	15	20	24	18	20	7.6	5.7	6.5	7.6	5.3	6.4
16	24	16	18	22	18	19	7.4	5.6	6.3	7.6	5.1	6.5
17	23	15	18	26	18	21	11	5.9	7.7	7.9	5.9	6.6
18	24	15	19	22	18	20	9.9	6.5	7.7	6.7	5.3	5.8
19	25	15	20	21	17	19	9.7	6.6	8.0	7.0	4.6	5.4
20	27	18	21	20	16	18	12	7.2	8.6	6.4	4.7	5.3
21	28	15	18	22	16	18	12	7.4	8.9	6.1	4.3	5.1
22	33	14	20	21	16	18	12	7.9	9.8	6.1	4.3	5.0
23	36	18	25	20	15	18	10	8.4	9.4	6.5	4.2	4.9
24	35	21	27	20	15	17	12	8.6	9.9	5.4	4.2	4.8
25	39	26	30	22	15	19	12	7.9	9.7	5.6	3.8	4.3
26	42	22	29	20	15	17	9.8	7.5	8.6	6.6	3.7	4.3
27	45	25	31	16	14	15	10	7.4	8.3	5.6	3.5	4.2
28	38	22	27	16	12	14	9.0	7.0	7.9	6.1	3.2	3.9
29	29	21	24	16	12	13	9.7	6.8	8.1	5.9	2.9	3.7
30	29	21	24	17	12	14	10	7.0	8.3	4.3	2.9	3.5
31	---	---	---	---	---	---	9.0	6.7	7.8	4.9	2.5	3.3
MONTH	45	11	21	26	12	19	15	5.4	8.7	9.8	2.5	6.0

## KANSAS RIVER BASIN

06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	4.1	2.0	3.0	6.5	3.6	4.3	16	10	13	38	12	20
2	4.7	2.0	2.8	5.5	3.5	4.2	20	11	14	42	15	28
3	3.5	2.0	2.6	6.3	3.1	4.0	22	14	17	34	10	18
4	3.9	<2.0	2.7	4.9	3.1	3.9	27	13	18	41	8.5	18
5	4.2	<2.0	2.8	4.7	3.3	3.9	24	16	20	24	7.9	15
6	3.6	2.0	2.7	7.6	3.6	4.4	31	15	22	40	7.4	12
7	4.9	<2.0	2.6	6.5	3.5	4.3	34	18	21	38	6.7	11
8	4.2	<2.0	2.6	7.2	3.4	4.4	25	17	20	16	5.2	7.5
9	3.2	<2.0	2.3	6.6	4.0	4.9	24	14	17	18	5.3	10
10	3.2	<2.0	2.0	6.9	4.7	5.5	16	10	13	13	5.2	9.0
11	2.8	<2.0	2.0	7.5	4.4	5.0	16	8.2	10	14	7.6	9.3
12	3.0	<2.0	2.2	5.9	3.8	4.7	12	7.3	8.7	11	6.8	8.7
13	3.8	<2.0	2.0	5.6	4.1	4.8	17	7.2	9.2	12	6.8	8.1
14	4.4	2.8	3.4	6.7	4.4	5.5	25	9.7	14	20	6.4	10
15	4.2	2.7	3.5	10	4.3	5.5	17	11	12	16	7.2	9.2
16	---	---	---	6.6	4.8	5.7	18	8.9	12	14	6.9	8.5
17	---	---	---	7.9	5.0	6.0	19	9.3	12	12	6.3	7.6
18	---	---	---	9.8	4.9	6.3	17	8.8	13	12	6.1	7.9
19	---	---	---	9.8	5.0	6.9	14	7.5	10	9.3	5.7	6.8
20	---	---	---	11	5.3	7.6	72	5.5	17	12	5.6	8.6
21	6.5	3.4	4.5	24	6.1	9.3	30	16	22	8.5	4.9	6.0
22	11	3.8	4.8	12	6.8	8.3	18	11	14	7.6	3.5	5.2
23	7.7	4.1	5.5	11	6.5	8.2	16	9.9	13	8.3	3.2	4.4
24	8.9	5.5	6.4	19	6.9	9.4	23	10	13	7.9	2.8	3.7
25	8.2	5.0	5.8	---	---	---	18	10	13	5.6	2.5	3.9
26	6.8	3.9	4.9	---	---	---	15	9.1	11	7.0	2.7	3.7
27	5.6	3.7	4.4	---	---	---	13	8.4	10	5.6	2.7	3.9
28	8.3	3.7	4.4	---	---	---	14	7.7	10	5.5	2.9	3.8
29	---	---	---	---	---	---	20	9.2	11	5.6	2.7	3.8
30	---	---	---	---	---	---	22	11	16	7.6	2.5	4.3
31	---	---	---	---	---	---	---	---	---	8.9	3.3	5.0
MONTH	11	2.0	3.5	24	3.1	5.7	72	5.5	14	42	2.5	9.1

&lt; Actual value is known to be less than the value shown

## 06892450 OLATHE LAKE NEAR OLATHE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.0	2.8	4.6	10	4.3	6.6	19	11	15	110	46	77
2	6.1	2.8	4.2	15	4.9	8.4	19	8.0	14	55	23	39
3	11	2.7	5.6	16	3.9	6.8	20	8.6	14	29	11	18
4	9.3	3.8	5.3	7.9	3.7	5.6	20	9.9	15	14	7.9	10
5	6.9	2.8	4.1	8.7	3.5	6.2	20	9.3	14	11	4.7	8.1
6	6.8	2.7	4.0	12	3.6	5.7	23	8.7	14	13	4.8	7.1
7	5.4	<2.0	3.4	---	---	---	21	7.5	14	8.2	3.5	5.7
8	5.9	2.1	3.5	---	---	---	20	7.2	12	12	3.8	6.4
9	6.6	2.3	3.9	14	3.6	6.1	24	4.9	14	7.4	2.9	5.4
10	7.8	2.4	4.6	24	4.4	8.2	22	6.7	14	7.6	2.3	5.1
11	6.2	3.0	4.2	14	4.8	6.5	19	6.9	12	6.8	<2.0	4.2
12	---	---	---	15	4.9	7.3	18	8.9	12	8.2	<2.0	3.4
13	---	---	---	21	4.7	8.8	14	8.1	11	6.8	<2.0	3.2
14	---	---	---	18	5.1	9.9	13	6.4	9.9	23	2.2	6.5
15	---	---	---	25	5.2	11	13	5.6	9.5	9.1	3.7	5.4
16	---	---	---	17	5.9	11	18	8.5	12	8.0	3.6	5.5
17	---	---	---	13	4.0	9.1	16	9.0	12	9.8	4.3	6.5
18	5.3	<2.0	---	13	5.5	8.3	18	7.5	12	11	4.4	5.7
19	7.1	2.2	3.7	16	5.8	9.1	23	10	17	8.2	4.7	6.1
20	6.4	2.3	3.9	13	4.1	8.4	31	6.6	17	10	3.9	6.3
21	9.5	3.0	6.0	17	6.4	10	24	7.9	12	7.0	2.8	5.2
22	6.9	4.3	5.7	17	6.1	10	17	8.5	12	18	2.0	5.2
23	7.9	3.5	6.0	22	6.8	11	28	7.9	12	22	3.3	7.3
24	11	4.1	7.4	19	7.7	11	50	8.9	18	9.6	3.1	5.9
25	12	4.2	6.8	12	9.3	11	20	9.1	14	8.1	3.2	5.5
26	14	4.2	7.3	15	9.8	11	31	12	19	11	3.7	5.9
27	7.5	3.3	5.1	16	8.4	12	32	11	23	12	3.0	7.2
28	15	4.6	8.0	17	9.8	13	30	8.6	20	18	6.1	10
29	14	4.1	8.5	19	8.9	13	36	9.4	18	28	9.3	17
30	12	3.0	6.9	17	8.6	13	17	7.2	11	26	9.0	---
31	---	---	---	19	8.2	13	250	8.7	67	---	---	---
MONTH	15	2.0	5.3	25	3.5	9.3	250	4.9	16	110	2.0	10

&lt; Actual value is known to be less than the value shown

KANSAS RIVER BASIN

06892460 CEDAR CREEK BELOW OLATHE LAKE NEAR OLATHE, KS

LOCATION.--Lat 38°53'02", long 94°52'48", in NW ¼ NW ¼ NE ¼ sec.32, T.13 S., R.23 E., Johnson County, Hydrologic Unit 10270104, on right upstream bank of Cedar Creek, 2 mi west of Olathe, and at mile 1.9.

DRAINAGE AREA.--17.3 mi<sup>2</sup>.

PERIOD OF RECORD.--March 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (NGVD 29).

REMARKS.--Records fair. Majority of flow regulated by Olathe Lake located 0.5 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

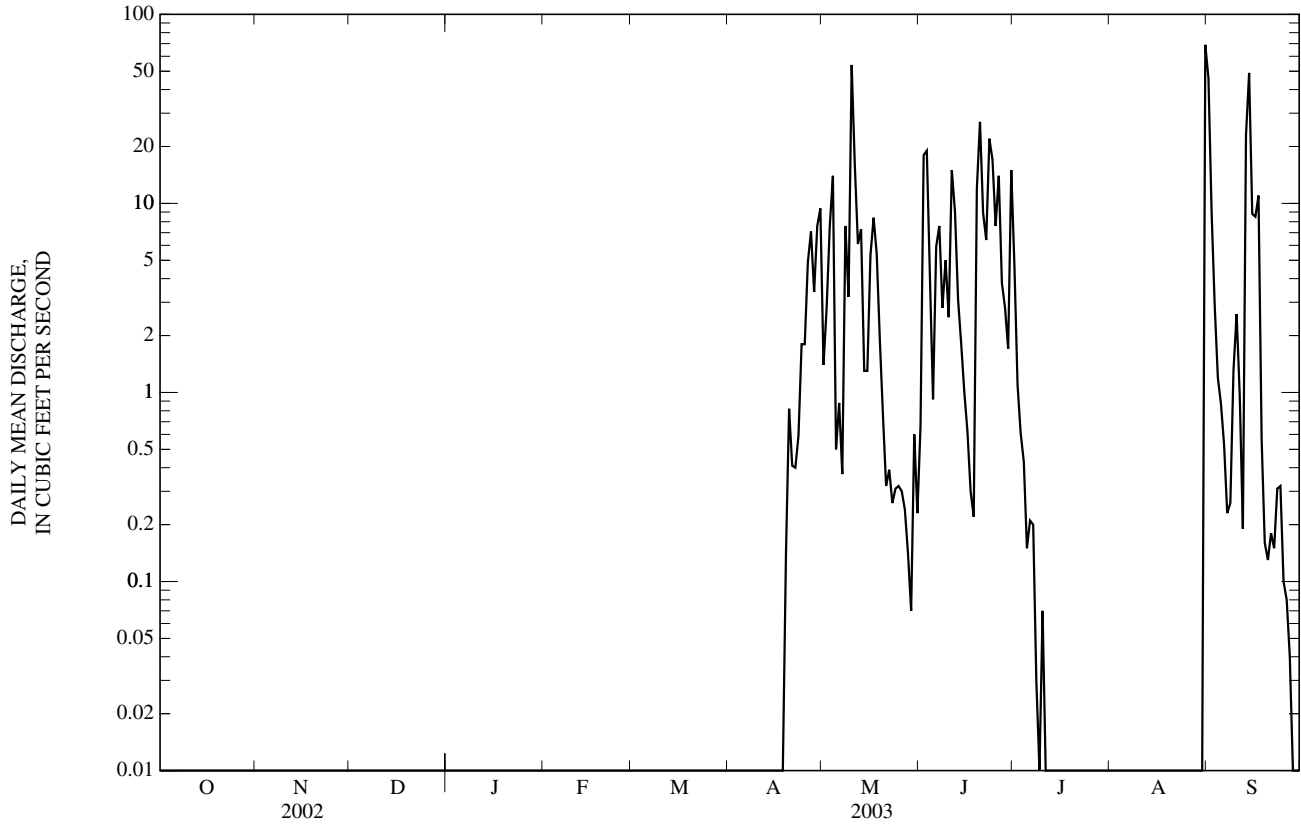
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.4	0.67	4.7	0.00	46
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.8	18	1.1	0.00	9.1
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.6	19	0.61	0.00	2.9
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14	4.1	0.43	0.00	1.2
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.92	0.15	0.00	0.87
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	5.9	0.21	0.00	0.53
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	7.6	0.20	0.00	0.23
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.6	2.8	0.03	0.00	0.26
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.2	5.0	0.01	0.00	1.3
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54	2.5	0.07	0.00	2.6
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	15	0.00	0.00	0.97
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.1	9.1	0.00	0.00	0.19
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.3	3.1	0.00	0.00	23
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.3	1.8	0.00	0.00	49
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.3	1.0	0.00	0.00	8.8
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.3	0.62	0.00	0.00	8.5
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.4	0.30	0.00	0.00	11
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.4	0.22	0.00	0.00	0.56
19	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1.9	12	0.00	0.00	0.16
20	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.75	27	0.00	0.00	0.13
21	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.32	8.9	0.00	0.00	0.18
22	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.39	6.4	0.00	0.00	0.15
23	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.26	22	0.00	0.00	0.31
24	0.00	0.00	0.00	0.00	0.00	0.00	1.8	0.31	17	0.00	0.00	0.32
25	0.00	0.00	0.00	0.00	0.00	0.00	1.8	0.32	7.6	0.00	0.00	0.10
26	0.00	0.00	0.00	0.00	0.00	0.00	4.9	0.30	14	0.00	0.00	0.08
27	0.00	0.00	0.00	0.00	0.00	0.00	7.1	0.24	3.8	0.00	0.00	0.04
28	0.00	0.00	0.00	0.00	0.00	0.00	3.4	0.14	2.8	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	7.6	0.07	1.7	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	9.4	0.60	15	0.00	0.00	0.01
31	0.00	---	0.00	0.00	---	0.00	---	0.23	---	0.00	69	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	1.28	4.82	7.86	0.24	2.23	5.62
MAX	0.00	0.00	0.00	0.00	0.00	0.00	9.4	54	27	4.7	69	49
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.22	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	76	296	468	15	137	334

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	2.56	0.040	0.091	0.69	2.99	0.75	10.6	18.6	16.6	0.96	0.94	4.11
MAX	5.12	0.079	0.18	1.39	5.99	1.51	19.5	42.8	38.8	2.64	2.23	6.71
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2003)	(2001)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	1.28	4.82	3.22	0.000	0.000	0.000
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)

06892460 CEDAR CREEK BELOW OLATHE LAKE NEAR OLATHE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL MEAN	6.21		1.83		4.25	
HIGHEST ANNUAL MEAN					6.67	2002
LOWEST ANNUAL MEAN					1.83	2003
HIGHEST DAILY MEAN	400	May 12	69	Aug 31	400	May 12, 2002
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Jul 5, 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 20	0.00	Oct 1	0.00	Jul 20, 2001
MAXIMUM PEAK FLOW			269	Aug 31	913	May 12, 2002
MAXIMUM PEAK STAGE			76.69	Aug 31	81.63	Jun 4, 2001
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	May 16, 2001
ANNUAL RUNOFF (AC-FT)	4,500		1,330		3,080	
10 PERCENT EXCEEDS	9.8		5.1		8.4	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	





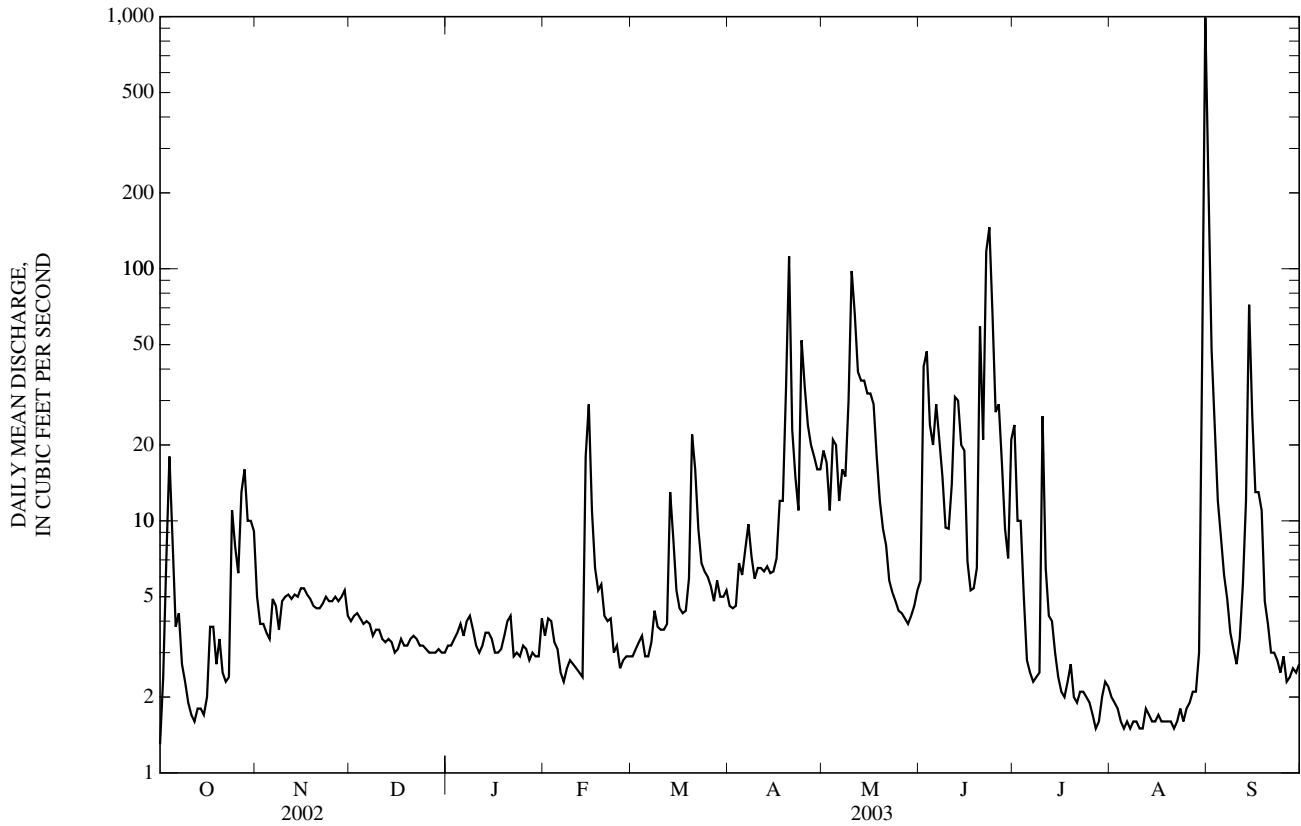
06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

SUMMARY STATISTICS

FOR 2003 WATER YEAR

ANNUAL MEAN	12.6	
HIGHEST DAILY MEAN	992	Aug 31
LOWEST DAILY MEAN	1.3	Oct 1
ANNUAL SEVEN-DAY MINIMUM	1.5	Aug 5
MAXIMUM PEAK FLOW	2,950	Aug 31
MAXIMUM PEAK STAGE	61.60	Aug 31
INSTANTANEOUS LOW FLOW	1.2	Oct 1
ANNUAL RUNOFF (AC-FT)	9,120	
10 PERCENT EXCEEDS	23	
50 PERCENT EXCEEDS	4.1	
90 PERCENT EXCEEDS	1.9	

e Estimated



06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 2002 to September 2003.

pH: October 2002 to September 2003.

WATER TEMPERATURE: October 2002 to September 2003.

DISSOLVED OXYGEN: October 2002 to September 2003.

TURBIDITY: October 2002 to September 2003.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6136 turbidity sensor.

REMARKS.--Records good. Interruptions in record are due to ice conditions, malfunction of the recording instrument or sensors, or during days of no streamflow. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens/cm, Mar. 17, 2003; minimum, 216 microsiemens/cm, Aug. 31, 2003.

pH: Maximum, 9.1 standard units, Aug. 6, 2003; minimum, 7.6 standard units, July 15, 2003.

WATER TEMPERATURE: Maximum, 31.9°C, July 18, 2003; minimum, 0.4°C, Mar. 5, 2003.

DISSOLVED OXYGEN: Maximum 22.9 mg/L, Apr. 12, 2003; minimum, 1.2 mg/L, July 19, 2003.

TURBIDITY: Maximum, 2,100 NTU, June 23, 2003; minimum, &lt;2.0 NTU, Nov. 12, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens/cm, Mar. 17; minimum, 216 microsiemens/cm, Aug. 31.

pH: Maximum, 9.1 standard units, Aug. 6; minimum, 7.6 standard units, July 15.

WATER TEMPERATURE: Maximum, 31.9°C, July 18; minimum, 0.4°C, Mar. 5.

DISSOLVED OXYGEN: Maximum, 22.9 mg/L, Apr. 12; minimum, 1.2 mg/L, July 19.

TURBIDITY: Maximum, 2,100 NTU, June 23; minimum, &lt;2.0 NTU, Nov. 12.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	750	730	738	639	588	613	1,160	1,120	1,140	---	---	---
2	731	690	714	689	638	663	1,150	1,130	1,140	---	---	---
3	842	689	757	718	488	664	1,150	1,130	1,150	---	---	---
4	1,070	841	927	749	712	730	1,140	1,120	1,140	---	---	---
5	1,090	1,060	1,080	760	223	672	1,160	1,130	1,150	---	---	---
6	1,060	993	1,020	762	742	756	1,170	1,140	1,160	---	---	---
7	994	909	948	767	750	757	1,190	1,160	1,180	---	---	---
8	909	810	854	796	757	779	1,220	1,180	1,210	---	---	---
9	810	670	744	811	792	801	1,260	1,220	1,250	---	---	---
10	670	607	642	826	807	815	1,280	1,250	1,270	---	---	---
11	609	581	597	857	823	842	1,260	1,200	1,250	---	---	---
12	582	572	576	883	845	860	1,250	1,190	1,230	---	---	---
13	585	572	576	933	873	904	1,250	1,220	1,240	---	---	---
14	614	582	596	948	439	900	1,240	1,170	1,210	---	---	---
15	651	614	631	970	930	951	1,190	1,170	1,180	---	---	---
16	697	651	674	977	956	969	1,180	1,150	1,170	---	---	---
17	797	697	741	980	960	970	1,170	1,150	1,160	---	---	---
18	840	797	828	975	959	968	1,170	1,150	1,160	---	---	---
19	865	839	852	980	964	972	1,180	1,160	1,170	---	---	---
20	896	865	879	989	971	978	1,200	1,170	1,180	---	---	---
21	938	896	916	1,010	979	997	1,220	1,190	1,200	---	---	---
22	1,010	937	969	1,040	1,010	1,020	1,220	1,190	1,200	---	---	---
23	1,070	1,010	1,040	1,060	1,030	1,050	---	1,200	---	---	---	---
24	1,130	1,070	1,100	1,090	1,060	1,070	---	---	---	---	---	---
25	1,070	---	---	1,100	1,080	1,100	---	---	---	---	---	---
26	1,070	1,020	1,050	1,110	1,080	1,100	---	---	---	---	---	---
27	1,030	---	---	1,100	1,090	1,100	---	---	---	---	---	---
28	967	787	846	1,100	1,080	1,100	---	---	---	---	---	---
29	831	771	796	1,100	1,080	1,090	---	---	---	---	---	---
30	831	659	764	1,130	1,090	1,110	---	---	---	---	---	---
31	660	580	600	---	---	---	---	---	---	---	---	---
MONTH	1,130	572	809	1,130	223	910	1,280	1,120	1,190	---	---	---



06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	1,310	1,270	1,290	874	832	845
2	---	---	---	---	---	---	1,290	1,250	1,270	964	871	932
3	---	---	---	---	1,280	---	1,260	1,230	1,250	962	941	950
4	---	---	---	1,310	1,280	1,300	1,240	1,220	1,230	948	899	933
5	---	---	---	1,340	1,310	1,330	1,220	1,200	1,210	989	898	942
6	---	---	---	1,320	1,260	1,310	1,210	1,180	1,200	990	963	979
7	---	---	---	1,270	1,230	1,260	1,210	1,180	1,200	968	883	929
8	---	---	---	1,260	1,240	1,250	1,200	1,180	1,200	885	834	858
9	---	---	---	1,290	1,260	1,280	1,200	1,170	1,190	837	821	828
10	---	---	---	1,300	1,270	1,290	1,180	1,160	1,170	969	419	777
11	1,370	1,360	1,360	1,300	1,270	1,290	1,180	1,140	1,160	652	530	608
12	1,380	1,360	1,370	1,300	1,260	1,290	1,160	1,130	1,150	686	651	670
13	1,390	1,370	1,380	1,340	1,260	1,290	1,150	1,120	1,130	704	684	695
14	1,420	1,300	1,360	1,340	1,310	1,330	1,140	1,120	1,130	742	704	725
15	1,370	1,290	1,330	1,390	1,320	1,350	1,130	1,100	1,120	770	742	759
16	1,290	954	1,100	1,540	1,380	1,480	1,130	1,110	1,120	791	758	771
17	954	871	900	1,560	1,500	1,540	1,130	1,110	1,120	827	790	811
18	922	876	903	1,510	1,400	1,450	1,140	1,120	1,140	895	827	866
19	937	909	924	1,400	1,340	1,380	1,330	1,130	1,190	896	794	844
20	910	871	890	1,430	1,330	1,390	1,330	330	487	801	789	796
21	878	870	874	1,440	1,380	1,410	782	477	653	797	780	785
22	897	873	884	1,380	1,340	1,360	810	774	793	791	772	783
23	943	897	916	1,350	1,300	1,330	836	795	824	798	785	792
24	---	943	---	1,310	1,250	1,270	989	788	905	804	792	797
25	---	---	---	1,260	1,240	1,250	837	522	601	813	799	806
26	---	---	---	1,240	1,210	1,230	793	684	757	831	807	815
27	---	---	---	1,230	1,210	1,230	794	779	789	836	817	827
28	---	---	---	1,260	1,230	1,250	846	779	806	862	831	847
29	---	---	---	1,270	1,250	1,260	888	844	874	892	856	873
30	---	---	---	1,290	1,260	1,280	883	841	855	912	880	893
31	---	---	---	1,300	1,270	1,290	---	---	---	920	897	913
MONTH	1,420	870	1,090	1,560	1,210	1,320	1,330	330	1,030	990	419	827

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	933	917	928	840	787	816	1,050	1,010	1,030	581	348	517
2	968	840	922	798	728	754	1,090	1,050	1,060	663	527	617
3	963	310	472	728	704	709	1,130	1,090	1,110	709	661	690
4	665	460	604	709	702	704	1,140	1,130	1,130	739	709	723
5	689	664	679	727	708	717	1,150	1,140	1,140	768	738	750
6	742	680	701	737	724	731	1,150	1,120	1,140	798	767	784
7	793	742	764	750	737	742	1,140	1,110	1,130	827	798	814
8	799	728	785	758	744	750	1,130	1,090	1,110	868	827	850
9	728	661	676	769	739	759	1,120	1,090	1,100	905	868	890
10	731	664	699	903	741	828	1,130	1,090	1,110	933	904	920
11	773	730	749	916	878	903	1,130	1,110	1,120	952	925	936
12	828	547	780	879	648	741	1,150	1,130	1,140	957	941	952
13	755	582	652	649	550	592	1,150	1,140	1,140	959	903	944
14	638	614	623	552	487	524	1,140	1,130	1,140	971	482	697
15	668	637	658	489	462	476	1,140	1,120	1,130	598	570	581
16	685	666	678	485	469	477	1,130	1,120	1,120	636	598	617
17	699	684	692	510	485	498	1,130	1,120	1,120	674	636	652
18	722	698	709	545	510	526	1,140	1,120	1,130	730	674	697
19	735	715	725	584	545	564	1,150	1,140	1,140	781	730	757
20	857	527	722	635	584	602	1,160	1,140	1,150	792	781	787
21	717	584	685	689	632	656	1,160	1,150	1,160	793	786	788
22	669	253	606	732	689	710	1,180	1,160	1,160	798	789	792
23	468	245	364	775	732	754	1,170	1,160	1,170	795	786	791
24	563	386	480	825	775	798	1,180	1,160	1,170	790	771	780
25	622	563	598	866	825	843	1,180	1,170	1,170	778	769	774
26	721	622	672	894	864	874	1,180	1,170	1,180	797	775	786
27	771	721	753	920	891	907	1,180	1,170	1,180	831	797	814
28	769	753	764	940	918	932	1,180	1,160	1,180	860	828	845
29	753	728	740	970	938	958	1,160	1,150	1,150	907	860	887
30	787	728	750	980	963	971	1,210	939	1,150	---	---	---
31	---	---	---	1,020	980	998	939	216	361	---	---	---
MONTH	968	245	688	1,020	462	736	1,210	216	1,110	971	348	774

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.4	8.1	8.2	8.2	7.9	8.0	8.2	8.1	8.2	---	---	---
2	8.2	7.8	8.0	8.1	7.9	8.0	8.2	8.1	8.2	---	---	---
3	8.0	7.8	7.8	8.1	8.0	8.0	8.2	8.2	8.2	---	---	---
4	8.0	7.8	7.9	8.3	8.0	8.1	8.3	8.2	8.2	---	---	---
5	8.0	7.7	7.8	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---
6	8.1	7.7	7.8	8.2	8.0	8.1	8.2	8.1	8.2	---	---	---
7	8.1	7.8	7.9	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---
8	8.3	7.8	7.9	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---
9	8.2	7.8	8.0	8.2	7.9	8.0	8.3	8.2	8.2	---	---	---
10	8.2	7.8	8.0	8.0	7.8	7.9	8.3	8.2	8.2	---	---	---
11	8.2	7.8	8.0	7.9	7.8	7.9	8.3	8.1	8.2	---	---	---
12	8.2	7.8	8.0	8.0	7.9	7.9	8.3	8.1	8.2	---	---	---
13	8.3	7.9	7.9	8.0	7.8	7.9	8.3	8.1	8.2	---	---	---
14	8.2	7.9	8.2	7.9	7.8	7.8	8.5	8.3	8.4	---	---	---
15	8.2	7.9	8.1	7.9	7.8	7.8	8.6	8.3	8.4	---	---	---
16	8.2	8.0	8.0	8.0	7.8	7.9	8.4	8.3	8.3	---	---	---
17	8.4	7.9	8.0	8.0	7.9	7.9	8.4	8.2	8.3	---	---	---
18	8.4	7.9	8.2	7.9	7.9	7.9	8.5	8.2	8.2	---	---	---
19	8.3	8.0	8.2	8.0	7.9	7.9	8.4	8.2	8.2	---	---	---
20	8.3	8.0	8.2	8.0	7.9	8.0	8.4	8.2	8.3	---	---	---
21	8.3	8.0	8.2	8.0	7.9	7.9	8.3	8.3	8.3	---	---	---
22	8.4	8.0	8.2	8.0	8.0	8.0	8.3	8.2	8.3	---	---	---
23	8.4	8.1	8.1	8.0	7.9	8.0	8.3	8.2	e8.3	---	---	---
24	8.1	7.9	8.0	8.0	8.0	8.0	---	---	---	---	---	---
25	8.3	7.9	8.0	8.1	8.0	8.0	---	---	---	---	---	---
26	8.2	8.0	8.0	8.1	8.1	8.1	---	---	---	---	---	---
27	8.2	8.0	8.1	8.1	8.1	8.1	---	---	---	---	---	---
28	8.1	7.9	8.0	8.1	8.0	8.1	---	---	---	---	---	---
29	8.1	7.9	8.0	8.2	8.1	8.1	---	---	---	---	---	---
30	8.1	7.9	8.0	8.2	8.1	8.1	---	---	---	---	---	---
31	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
MAX	8.4	8.1	8.2	8.3	8.1	8.1	8.6	8.3	8.4	---	---	---
MIN	8.0	7.7	7.8	7.9	7.8	7.8	8.2	8.1	8.2	---	---	---

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	8.7	8.1	8.5	8.0	7.8	7.8
2	---	---	---	---	---	---	8.8	8.3	8.6	8.1	7.8	7.8
3	---	---	---	8.6	---	---	8.7	8.3	8.6	8.2	7.7	7.8
4	---	---	---	8.6	8.3	8.4	8.6	8.4	8.5	8.0	7.8	7.9
5	---	---	---	8.6	8.3	8.4	9.0	8.5	8.6	8.2	7.8	7.9
6	---	---	---	8.7	8.4	8.6	9.0	8.6	8.6	8.0	7.8	7.9
7	---	---	---	8.8	8.5	8.6	8.8	8.2	8.5	8.2	7.8	7.9
8	---	---	---	8.7	8.5	8.7	8.8	8.3	8.6	7.9	7.8	7.8
9	---	---	---	8.7	8.5	8.6	8.8	8.3	8.6	7.9	7.7	7.8
10	---	---	---	8.8	8.5	8.7	8.9	8.4	8.7	7.8	7.6	7.7
11	8.6	---	---	8.8	8.6	8.7	9.0	8.4	8.7	7.8	7.6	7.7
12	8.6	8.2	8.4	8.7	8.5	8.6	9.0	8.4	8.8	7.9	7.7	7.7
13	8.6	8.2	8.4	8.9	8.4	8.7	9.0	8.4	8.8	7.8	7.7	7.7
14	8.5	8.0	8.3	9.0	8.6	8.8	9.0	8.5	8.9	7.9	7.7	7.7
15	8.3	7.9	8.2	9.0	8.7	8.9	9.0	8.6	8.9	7.9	7.6	7.7
16	8.0	7.8	7.9	8.9	8.5	8.8	8.9	8.6	8.7	7.8	7.7	7.7
17	7.9	7.7	7.8	8.9	8.3	8.7	8.9	8.5	8.7	7.8	7.7	7.7
18	7.9	7.7	7.8	8.8	8.2	8.6	8.9	8.3	8.7	8.0	7.7	7.8
19	8.0	7.7	7.8	8.7	8.2	8.3	8.8	8.0	8.3	7.8	7.7	7.7
20	8.0	7.7	7.9	8.3	8.0	8.2	8.0	7.7	7.8	8.0	7.6	7.7
21	7.9	7.7	7.8	8.5	8.0	8.2	7.9	7.8	7.8	8.0	7.6	7.7
22	7.9	7.7	7.8	8.5	8.0	8.1	7.9	7.8	7.8	8.0	7.7	7.8
23	8.0	7.8	7.9	8.6	8.0	8.2	8.0	7.8	7.9	8.1	7.7	7.8
24	8.0	7.8	7.9	8.4	7.9	8.2	8.0	7.9	7.9	8.0	7.7	7.8
25	---	---	---	8.4	7.9	8.1	7.9	7.7	7.8	8.2	7.7	7.9
26	---	---	---	8.5	7.8	8.2	8.0	7.8	7.9	8.2	7.8	7.9
27	---	---	---	8.4	7.9	8.2	8.0	7.9	7.9	8.3	7.8	8.0
28	---	---	---	8.3	7.9	8.1	8.0	7.8	7.9	8.4	7.8	8.1
29	---	---	---	8.6	8.0	8.3	8.1	7.8	7.9	8.5	7.9	8.2
30	---	---	---	8.6	8.2	8.4	8.1	7.8	7.9	8.8	8.1	8.4
31	---	---	---	8.7	8.1	8.4	---	---	---	8.9	8.4	8.6
MAX	8.6	8.2	8.4	9.0	8.7	8.9	9.0	8.6	8.9	8.9	8.4	8.6
MIN	7.9	7.7	7.8	8.3	7.8	8.1	7.9	7.7	7.8	7.8	7.6	7.7

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.8	8.4	8.7	8.0	7.8	7.9	8.4	8.1	8.2	8.0	7.9	8.0
2	8.7	7.8	8.4	8.0	7.8	7.8	8.3	8.0	8.2	8.0	8.0	8.0
3	7.8	7.6	7.6	8.1	7.8	7.8	8.3	8.0	8.2	8.0	8.0	8.0
4	8.0	7.6	7.8	8.2	7.8	7.9	8.5	8.1	8.2	8.0	7.8	7.9
5	8.1	7.8	7.9	8.2	7.8	7.9	8.8	8.3	8.4	8.0	7.8	7.8
6	8.0	7.8	7.8	8.3	7.8	8.0	9.1	8.6	8.8	8.0	7.9	7.9
7	8.0	7.8	7.9	8.4	7.9	8.1	9.1	8.6	8.9	8.1	7.9	7.9
8	8.2	7.8	7.9	8.6	8.1	8.3	9.0	8.4	8.8	8.2	7.9	8.0
9	8.1	7.7	7.9	8.7	8.3	8.5	8.8	8.3	8.6	8.3	7.9	8.0
10	8.1	7.7	7.8	8.5	7.8	8.3	8.7	8.2	8.4	8.3	8.0	8.1
11	8.1	7.7	7.9	8.4	7.8	8.0	8.4	8.0	8.2	8.3	8.0	8.2
12	8.0	7.8	7.8	8.2	7.6	7.9	8.3	8.0	8.1	8.2	8.0	8.1
13	7.9	7.7	7.8	8.2	7.6	7.8	8.2	7.9	8.1	8.1	7.9	8.0
14	8.1	7.7	7.8	8.5	7.6	7.9	8.2	7.9	8.0	8.0	7.9	8.0
15	8.1	7.6	7.8	8.3	7.6	8.0	8.2	7.8	8.0	8.2	7.9	7.9
16	8.1	7.6	7.8	8.3	7.6	7.9	8.2	7.9	8.0	8.2	7.8	7.9
17	8.2	7.6	7.8	8.4	7.6	7.9	8.3	7.8	8.1	8.2	7.9	8.0
18	8.2	7.7	7.8	8.3	7.6	8.0	8.3	7.9	8.1	8.0	7.9	8.0
19	8.2	7.7	7.9	8.2	7.6	7.9	8.6	7.9	8.1	8.2	7.9	8.0
20	8.0	7.6	7.7	8.2	7.6	7.9	8.7	8.0	8.2	8.2	7.9	8.0
21	8.0	7.6	7.7	8.4	7.7	8.0	8.5	8.0	8.2	8.1	7.9	8.0
22	7.9	7.6	7.7	8.2	7.8	8.0	8.2	7.9	8.1	8.2	7.9	8.0
23	7.9	7.7	7.8	8.2	7.8	8.0	8.3	8.0	8.1	8.2	7.9	8.1
24	7.8	7.7	7.8	8.3	7.8	8.1	8.4	8.0	8.1	8.3	7.9	8.1
25	7.8	7.8	7.8	8.5	8.0	8.2	8.6	8.0	8.2	8.2	8.0	8.1
26	7.8	7.7	7.8	8.9	8.2	8.4	8.5	8.1	8.2	8.3	8.0	8.1
27	7.9	7.8	7.8	8.9	8.4	8.7	8.6	8.1	8.2	8.2	8.0	8.2
28	7.9	7.8	7.8	8.9	8.4	8.7	8.3	8.0	8.1	8.2	8.1	8.2
29	8.0	7.8	7.8	8.8	8.2	8.5	8.2	7.9	8.0	8.3	8.1	8.2
30	7.9	7.8	7.8	8.6	8.1	8.4	8.2	7.8	7.9	---	---	---
31	---	---	---	8.5	8.2	8.4	8.0	7.8	7.9	---	---	---
MAX	8.8	8.4	8.7	8.9	8.4	8.7	9.1	8.6	8.9	8.3	8.1	8.2
MIN	7.8	7.6	7.6	8.0	7.6	7.8	8.0	7.8	7.9	8.0	7.8	7.8

e Estimated

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24.0	21.5	22.6	7.6	6.2	6.9	3.6	2.2	2.8	---	---	---
2	22.9	21.1	22.2	6.8	6.3	6.5	4.9	2.4	3.5	---	---	---
3	21.1	19.5	20.4	7.0	6.3	6.7	3.6	2.3	2.8	---	---	---
4	21.0	18.5	20.0	7.7	5.2	6.4	2.5	1.2	2.1	---	---	---
5	19.6	16.8	18.2	7.4	6.2	6.9	2.7	1.6	2.1	---	---	---
6	19.8	16.8	18.0	8.3	5.7	6.8	2.9	1.6	2.3	---	---	---
7	17.8	14.6	16.3	8.4	5.7	7.1	3.2	2.0	2.7	---	---	---
8	17.2	14.9	16.1	10.3	7.8	9.0	3.5	2.3	3.2	---	---	---
9	17.9	15.8	16.7	11.3	9.2	10.2	3.3	2.2	2.8	---	---	---
10	18.0	15.2	16.5	12.0	9.9	10.6	2.9	2.1	2.4	---	---	---
11	17.7	15.4	16.6	9.9	7.7	8.6	3.8	2.5	3.4	---	---	---
12	17.2	15.4	16.5	8.6	6.0	7.2	5.2	3.7	4.5	---	---	---
13	15.4	13.0	14.2	8.6	6.2	7.5	5.8	3.9	4.9	---	---	---
14	14.4	11.7	12.8	8.6	8.2	8.4	4.0	1.7	3.2	---	---	---
15	13.8	11.3	12.2	8.8	7.4	7.9	5.2	2.2	3.7	---	---	---
16	12.1	9.3	10.4	8.7	6.8	7.6	5.6	4.0	4.6	---	---	---
17	11.5	9.0	10.1	8.0	6.0	7.0	7.3	4.8	6.0	---	---	---
18	13.0	9.9	11.4	8.3	7.0	7.6	9.0	6.8	7.6	---	---	---
19	13.6	11.4	12.4	7.8	6.0	7.0	6.8	4.4	5.7	---	---	---
20	11.6	9.4	10.6	9.2	6.5	7.5	5.0	3.2	3.8	---	---	---
21	11.9	9.5	10.6	7.7	6.7	7.3	3.3	2.0	2.8	---	---	---
22	11.5	10.0	10.7	7.6	5.6	6.4	3.2	2.0	2.5	---	---	---
23	10.8	9.0	9.8	7.8	5.3	6.3	---	---	---	---	---	---
24	9.0	8.7	8.9	6.5	4.4	5.7	---	---	---	---	---	---
25	9.4	8.4	8.9	4.5	3.2	3.8	---	---	---	---	---	---
26	9.0	8.6	8.8	4.3	3.0	3.6	---	---	---	---	---	---
27	8.7	8.0	8.4	3.8	2.7	3.2	---	---	---	---	---	---
28	8.8	8.4	8.6	3.9	2.1	2.8	---	---	---	---	---	---
29	9.1	8.7	8.9	5.2	3.0	4.1	---	---	---	---	---	---
30	9.0	8.4	8.8	4.9	2.8	4.1	---	---	---	---	---	---
31	8.5	7.2	8.0	---	---	---	---	---	---	---	---	---
MONTH	24.0	7.2	13.4	12.0	2.1	6.7	9.0	1.2	3.6	---	---	---

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	16.1	11.7	14.1	21.6	19.0	20.1
2	---	---	---	---	---	---	18.3	13.7	16.1	22.1	17.6	19.8
3	---	---	---	---	---	---	17.6	16.0	16.9	21.2	17.5	19.5
4	---	---	---	5.1	1.7	3.6	17.1	12.3	15.0	20.4	17.8	19.0
5	---	---	---	1.8	0.4	1.1	13.6	10.3	12.0	22.8	17.2	19.9
6	---	---	---	3.4	1.2	2.1	12.8	9.7	10.8	21.3	18.3	19.7
7	---	---	---	5.3	2.4	3.7	10.4	9.5	9.9	22.5	17.4	19.9
8	---	---	---	5.6	3.6	4.8	10.0	8.1	8.6	20.9	18.3	19.3
9	---	---	---	4.6	1.4	3.2	12.1	6.6	9.0	22.5	18.5	20.5
10	---	---	---	5.1	2.7	3.9	14.4	9.0	11.8	22.0	19.7	20.6
11	---	---	---	6.5	3.3	4.9	16.3	10.6	13.3	21.1	18.3	19.8
12	4.1	3.0	3.6	7.5	5.2	6.2	18.6	12.7	15.1	21.7	16.9	19.1
13	4.4	3.0	3.6	8.4	5.4	7.1	18.8	14.4	16.8	20.1	17.4	18.6
14	4.8	2.7	4.0	10.0	5.5	7.5	20.6	16.0	18.3	23.1	18.5	20.5
15	2.7	1.4	1.8	13.1	6.6	9.8	21.1	17.4	19.3	22.6	18.4	20.6
16	3.4	1.0	2.0	15.5	10.4	12.9	20.1	16.9	18.1	21.1	18.6	19.2
17	4.3	1.0	2.5	16.7	13.0	14.9	16.9	15.1	15.6	21.0	18.1	19.2
18	4.6	2.2	3.4	17.1	13.5	15.4	18.1	14.2	16.0	23.0	17.7	20.1
19	6.1	3.1	4.6	16.2	11.6	13.7	18.0	15.1	16.5	20.6	18.9	19.8
20	5.8	2.4	4.3	11.6	10.2	11.2	15.7	13.1	13.7	21.6	16.9	19.1
21	6.0	3.4	4.9	13.5	8.8	11.1	17.4	12.6	14.5	21.2	16.7	18.8
22	5.8	3.3	4.4	12.9	8.5	10.8	18.6	12.8	15.3	22.1	16.6	19.4
23	3.3	1.2	2.1	14.8	9.3	12.1	16.6	14.2	15.4	22.3	18.2	20.2
24	---	---	---	16.0	11.4	13.7	15.0	13.9	14.5	21.2	18.6	19.9
25	---	---	---	14.8	12.4	13.7	14.2	13.3	13.7	22.5	17.8	20.0
26	---	---	---	15.0	11.0	13.1	17.5	12.6	14.6	22.8	17.8	20.1
27	---	---	---	14.1	11.7	12.8	18.5	14.0	16.1	24.1	18.4	20.9
28	---	---	---	12.7	9.3	10.7	19.4	16.6	17.9	25.1	19.9	22.2
29	---	---	---	9.6	7.5	8.7	21.9	17.6	19.5	25.5	20.2	22.6
30	---	---	---	11.4	6.8	9.1	23.0	0.0	20.2	27.0	21.3	23.8
31	---	---	---	14.7	9.1	11.9	---	---	---	25.3	21.4	22.4
MONTH	6.1	1.0	3.4	17.1	0.4	9.1	23.0	0.0	15.0	27.0	16.6	20.1

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.8	19.6	21.2	27.5	23.3	25.4	26.7	24.7	25.3	21.9	21.0	21.7
2	21.7	18.3	19.7	29.1	24.0	26.4	27.7	24.1	25.6	22.8	21.3	21.9
3	18.3	16.3	17.0	30.8	25.5	28.0	28.7	25.1	26.8	24.6	21.2	22.7
4	20.8	15.8	18.0	31.6	27.0	29.2	27.7	25.3	26.5	24.3	20.8	22.6
5	21.9	17.8	19.7	31.9	27.4	29.6	28.7	25.8	27.1	24.3	20.3	22.4
6	22.0	19.4	20.6	31.4	27.9	29.6	29.2	26.6	27.9	24.2	20.2	22.3
7	21.2	19.0	20.1	31.2	27.3	29.3	28.5	26.1	27.4	23.7	19.9	21.9
8	23.5	18.2	20.8	31.6	27.9	29.7	28.3	25.4	27.0	23.7	19.7	21.9
9	24.6	18.8	21.7	31.2	28.2	29.6	28.5	25.7	27.1	24.6	21.0	22.8
10	23.8	21.3	22.5	30.2	26.8	28.4	27.6	25.4	26.5	24.7	21.7	23.3
11	23.4	21.1	22.2	30.2	25.7	27.8	26.4	24.8	25.7	24.0	22.7	23.3
12	24.8	21.7	22.8	29.9	25.9	27.9	26.9	23.9	25.4	23.3	21.4	22.0
13	25.8	21.0	23.1	29.6	25.6	27.5	25.9	23.9	25.0	21.7	20.5	21.1
14	26.8	21.4	23.9	30.8	26.4	28.5	26.3	24.4	25.2	20.6	19.0	19.8
15	27.1	22.3	24.6	31.8	28.3	29.8	27.3	24.5	25.9	22.0	19.1	20.4
16	28.0	22.9	25.2	30.6	26.5	28.5	28.5	25.5	26.9	21.5	18.9	20.0
17	27.8	22.9	25.3	31.3	27.9	29.3	29.2	26.3	27.8	22.4	19.6	20.9
18	28.2	23.4	25.6	31.9	28.1	29.7	29.6	26.7	28.1	21.0	18.6	20.2
19	27.7	24.7	26.1	30.6	28.1	29.5	30.0	27.1	28.4	20.2	16.7	18.4
20	25.8	22.8	24.0	31.0	27.5	29.1	29.5	27.1	28.3	19.6	16.0	18.1
21	25.6	22.0	23.6	31.7	27.9	29.6	29.9	27.3	28.6	19.7	17.9	18.8
22	24.2	18.8	23.2	29.4	26.6	28.0	30.2	27.6	29.1	20.3	17.5	18.8
23	23.2	18.8	21.3	27.9	24.3	26.1	29.5	27.1	28.4	19.6	16.7	18.4
24	25.6	23.2	24.5	27.5	23.7	25.5	29.1	26.1	27.6	21.4	18.8	20.0
25	27.5	24.9	25.8	28.4	24.5	26.2	29.2	26.7	28.0	19.8	17.0	18.3
26	26.6	23.6	24.8	29.2	25.2	26.9	30.4	27.1	28.4	21.0	17.5	19.0
27	26.9	22.2	24.4	30.4	27.2	28.6	28.8	27.0	27.9	19.5	17.2	18.3
28	27.5	22.7	25.0	30.2	27.9	28.8	28.2	26.7	27.3	17.6	15.3	16.3
29	26.8	23.8	25.1	29.2	26.5	27.8	27.4	26.0	26.6	15.8	13.6	14.8
30	26.3	23.5	24.5	28.6	25.3	27.1	26.6	23.3	25.2	---	---	---
31	---	---	---	28.1	25.6	26.8	23.3	20.0	21.2	---	---	---
MONTH	28.2	15.8	22.9	31.9	23.3	28.2	30.4	20.0	26.8	24.7	13.6	20.4



06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.4	7.8	8.7	13.2	10.2	11.6	15.2	13.6	14.1	---	---	---
2	8.2	6.7	7.5	12.3	10.5	11.5	14.7	12.8	14.1	---	---	---
3	8.9	6.2	7.3	12.4	10.8	11.6	15.0	13.7	14.3	---	---	---
4	8.5	6.6	7.2	13.9	10.9	12.3	15.4	14.5	14.9	---	---	---
5	9.8	6.8	8.0	13.0	11.1	12.1	15.6	14.5	15.0	---	---	---
6	10.3	6.6	8.2	13.8	10.9	12.2	15.7	14.4	15.1	---	---	---
7	10.6	7.2	8.7	13.1	10.7	12.0	16.0	14.7	15.4	---	---	---
8	11.6	7.2	9.1	12.5	10.4	11.5	16.6	14.6	15.6	---	---	---
9	11.0	7.5	9.2	12.1	9.5	10.8	16.1	14.8	15.5	---	---	---
10	10.8	7.4	9.2	10.5	8.7	9.7	16.0	14.8	15.3	---	---	---
11	11.2	7.8	9.4	10.5	8.6	9.6	15.6	13.9	14.7	---	---	---
12	10.2	7.8	8.9	11.6	9.5	10.4	15.0	13.4	14.1	---	---	---
13	11.6	8.7	9.9	11.0	9.1	10.1	15.4	13.5	14.3	---	---	---
14	12.3	9.2	10.8	10.1	7.9	8.9	17.2	14.8	15.8	---	---	---
15	11.9	9.7	10.8	9.8	7.7	8.7	17.5	15.0	15.8	---	---	---
16	11.7	10.1	10.7	10.6	8.9	9.7	15.8	14.2	14.9	---	---	---
17	13.6	9.9	11.5	10.5	9.0	9.8	14.9	13.2	13.9	---	---	---
18	14.0	9.5	11.5	10.0	8.9	9.6	15.1	12.1	13.3	---	---	---
19	13.0	9.7	11.4	10.7	9.4	10.0	15.1	12.7	13.6	---	---	---
20	13.7	10.2	12.1	10.5	9.5	10.0	16.0	13.9	14.5	---	---	---
21	14.2	10.4	12.2	10.4	9.4	9.9	15.5	14.4	14.9	---	---	---
22	14.5	10.8	12.6	11.4	10.0	10.6	16.0	14.2	15.0	---	---	---
23	14.1	11.2	12.1	11.9	10.4	10.9	---	---	---	---	---	---
24	11.8	9.8	10.8	11.0	10.5	10.7	---	---	---	---	---	---
25	12.9	9.8	11.0	13.2	10.8	11.8	---	---	---	---	---	---
26	12.2	9.9	10.9	13.2	12.5	12.9	---	---	---	---	---	---
27	12.5	10.2	11.0	13.4	12.6	13.0	---	---	---	---	---	---
28	11.6	10.3	10.8	13.9	12.6	13.2	---	---	---	---	---	---
29	11.5	9.9	10.4	14.0	12.3	13.3	---	---	---	---	---	---
30	11.5	9.8	10.4	13.8	12.6	13.3	---	---	---	---	---	---
31	11.8	9.8	10.6	---	---	---	---	---	---	---	---	---
MONTH	14.5	6.2	10.1	14.0	7.7	11.1	17.5	12.1	14.7	---	---	---

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	16.8	9.5	13.2	7.6	5.2	6.2
2	---	---	---	---	---	---	17.2	9.7	13.1	9.1	5.1	6.7
3	---	---	---	---	---	---	14.1	8.7	11.5	9.8	5.0	7.1
4	---	---	---	16.8	13.8	14.7	12.0	8.6	10.6	8.5	5.5	6.7
5	---	---	---	17.5	13.9	15.1	21.0	10.7	14.9	9.9	6.1	7.5
6	---	---	---	17.8	15.3	16.5	18.7	11.5	13.8	8.2	5.3	6.7
7	---	---	---	19.1	14.8	16.9	17.2	9.2	13.0	9.9	5.5	7.3
8	---	---	---	18.0	14.7	16.4	16.9	10.0	13.2	7.1	5.5	6.3
9	---	---	---	18.0	14.8	16.3	18.6	11.1	14.8	7.9	5.4	6.5
10	---	---	---	18.9	15.2	17.0	19.9	11.0	15.6	6.6	5.2	5.9
11	17.9	---	---	18.1	14.9	16.5	20.4	11.4	15.3	7.1	5.7	6.4
12	18.3	15.0	16.6	16.8	14.2	15.4	22.9	10.9	15.6	8.4	6.6	7.3
13	18.8	15.7	17.2	18.5	12.4	15.5	19.9	10.3	15.2	8.1	6.4	7.0
14	17.8	13.8	15.7	18.6	13.7	15.7	18.0	9.6	13.7	8.8	6.2	7.2
15	15.7	12.9	14.3	16.9	12.5	14.7	16.9	8.7	12.4	8.8	5.6	6.9
16	13.8	12.7	13.0	15.6	10.4	13.1	12.2	8.0	10.4	7.6	5.5	6.5
17	13.2	12.3	12.6	14.3	9.2	11.7	14.4	7.9	10.7	7.7	5.8	6.5
18	13.4	11.9	12.5	13.7	8.4	11.1	14.8	7.6	10.6	8.8	6.2	7.2
19	14.1	11.7	12.8	11.7	7.9	9.3	11.8	6.6	8.3	7.2	5.6	6.4
20	14.4	12.2	13.1	10.4	8.7	9.4	8.8	6.2	8.1	9.1	5.8	7.2
21	13.5	11.8	12.7	12.6	8.5	10.1	9.0	8.0	8.6	9.2	5.6	7.0
22	13.3	11.3	12.3	13.2	8.7	10.6	8.9	7.7	8.3	9.7	5.4	7.4
23	14.1	12.3	13.1	13.6	8.4	10.7	9.3	7.4	8.1	10.2	5.4	7.5
24	---	13.0	---	12.4	8.0	10.1	8.5	7.5	8.1	9.7	5.4	7.3
25	---	---	---	13.4	7.3	10	8.3	7.8	8.0	11.5	6.0	8.2
26	---	---	---	14.4	8.0	10.8	9.5	8.0	8.6	11.6	6.1	8.5
27	---	---	---	12.2	8.0	10.4	9.5	7.5	8.4	12.4	6.5	9.0
28	---	---	---	12.8	8.3	10.2	9.2	7.0	7.8	13.1	6.2	9.2
29	---	---	---	15.7	9.9	12.6	9.6	6.3	7.5	13.9	6.3	9.7
30	---	---	---	16.3	10.8	13.5	9.4	5.8	7.1	18.7	6.9	11.4
31	---	---	---	16.6	10.4	13.5	---	---	---	17.9	7.1	11.5
MONTH	18.8	11.3	13.8	19.1	7.3	13.1	22.9	5.8	11.2	18.7	5.0	7.5

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.9	7.7	11.6	8.0	5.8	6.6	7.2	4.8	6.0	7.9	7.6	7.7
2	12.2	6.5	8.3	8.4	5.4	6.5	8.2	4.8	6.2	7.6	6.7	7.1
3	7.2	6.8	7.0	8.8	4.9	6.4	7.9	4.5	6.4	7.2	6.2	6.8
4	8.8	6.9	7.6	8.9	4.6	6.3	8.7	4.8	6.6	7.2	5.9	6.4
5	9.3	6.6	7.6	9.1	4.4	6.5	12.9	6.2	8.7	8.1	6.0	6.8
6	8.3	6.3	7.0	9.5	4.2	6.7	18.4	7.4	12.3	9.1	6.3	7.4
7	8.0	6.2	6.8	10.3	4.9	7.5	19.3	8.1	13.3	9.9	6.7	8.1
8	9.8	6.1	7.3	12.2	5.2	8.4	17.7	7.1	12.3	10.9	7.2	8.9
9	9.6	5.7	7.3	11.6	5.3	8.1	15.6	6.7	10.7	11.8	7.2	9.4
10	9.5	4.8	6.7	11.6	5.3	8.0	13.1	6.1	9.0	12.2	7.6	9.9
11	8.7	5.3	6.8	12.3	4.9	7.8	9.2	5.8	7.7	10.9	8.0	9.5
12	8.5	5.7	6.7	10.2	3.7	6.7	9.1	5.5	7.4	11.3	7.9	9.1
13	7.4	5.4	6.4	9.9	3.1	6.3	8.4	5.2	7.2	---	---	---
14	9.3	5.2	6.5	13.2	3.3	7.1	8.2	5.7	7.0	---	---	---
15	9.2	4.7	6.5	11.8	2.1	6.5	8.5	5.3	7.0	---	---	---
16	9.5	4.6	6.6	12.6	2.1	6.7	9.4	5.5	7.0	9.1	6.6	7.5
17	10.4	4.5	6.9	11.7	1.8	6.4	10.1	5.0	7.1	9.2	6.7	7.6
18	10.6	4.8	7.3	9.0	1.6	5.2	10.3	5.2	7.4	7.6	6.6	7.1
19	10.7	4.8	7.2	7.1	1.2	4.2	14.1	5.4	8.2	9.7	6.3	7.8
20	7.3	4.9	5.8	8.6	1.2	4.3	16.4	6.0	8.9	9.7	6.5	7.9
21	8.5	5.5	6.6	9.4	2.2	5.6	12.5	6.2	8.4	9.4	6.2	7.8
22	7.4	5.0	6.2	8.0	3.0	5.5	9.3	5.4	7.1	9.9	6.2	8.0
23	7.1	6.7	6.9	7.9	3.8	5.8	11.2	5.1	7.1	9.8	6.3	8.2
24	6.8	6.3	6.6	9.2	4.0	6.5	12.0	5.6	7.6	10.1	6.7	8.4
25	6.6	5.9	6.2	11.0	4.5	7.2	12.9	5.6	7.9	10.2	6.7	8.4
26	6.5	5.7	6.0	15.6	4.9	9.0	11.9	5.7	8.0	9.9	6.8	8.4
27	7.4	5.9	6.4	14.5	3.7	8.6	11.5	5.6	7.6	10.0	6.6	8.5
28	7.9	5.7	6.5	---	---	---	8.6	5.8	6.7	10.4	7.5	9.1
29	8.3	5.5	6.5	---	---	---	7.9	4.4	6.0	12.0	8.0	9.8
30	7.3	5.5	6.0	---	---	---	7.4	4.6	6.1	---	8.0	---
31	---	---	---	8.5	5.1	7.0	8.2	6.7	7.6	---	---	---
MONTH	14.9	4.5	6.9	15.6	1.2	6.7	19.3	4.4	8.0	12.2	5.9	8.1

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18	12	14	10	6.0	8.3	<2.0	<2.0	<2.0	---	---	---
2	29	11	16	6.3	3.3	4.7	3.5	<2.0	<2.0	---	---	---
3	19	13	16	21	<2.0	5.4	2.3	<2.0	<2.0	---	---	---
4	28	12	17	2.8	<2.0	1.9	<2.0	<2.0	<2.0	---	---	---
5	17	11	14	150	<2.0	17	<2.0	<2.0	<2.0	---	---	---
6	15	11	12	3.8	<2.0	2.3	<2.0	<2.0	<2.0	---	---	---
7	15	11	13	4.1	<2.0	2.2	<2.0	<2.0	<2.0	---	---	---
8	14	9.0	11	5.4	3.0	3.9	<2.0	<2.0	<2.0	---	---	---
9	15	9.5	12	4.4	2.5	3.2	<2.0	<2.0	<2.0	---	---	---
10	19	12	14	4.5	2.3	3.2	<2.0	<2.0	<2.0	---	---	---
11	19	12	15	4.7	<2.0	2.1	2.1	<2.0	<2.0	---	---	---
12	15	11	13	<2.0	<2.0	<2.0	3.3	<2.0	2.2	---	---	---
13	16	9.5	13	<2.0	<2.0	<2.0	4.0	<2.0	2.7	---	---	---
14	12	9.4	10	54	<2.0	6.6	3.0	<2.0	<2.0	---	---	---
15	14	9.4	11	5.7	<2.0	2.6	2.5	<2.0	<2.0	---	---	---
16	12	7.9	9.8	3.0	<2.0	<2.0	3.8	<2.0	2.1	---	---	---
17	9.8	7.2	7.9	3.0	<2.0	<2.0	4.8	<2.0	3.2	---	---	---
18	12	7.9	9.2	3.5	<2.0	2.3	5.1	3.3	4.2	---	---	---
19	12	8.3	9.5	4.5	<2.0	2.4	5.0	<2.0	2.9	---	---	---
20	9.0	6.4	7.3	3.6	<2.0	2.4	2.1	<2.0	<2.0	---	---	---
21	8.1	6.2	7.1	5.3	<2.0	3.0	2.2	<2.0	<2.0	---	---	---
22	10	6.5	7.8	5.3	<2.0	2.5	<2.0	<2.0	<2.0	---	---	---
23	11	7.5	9.3	2.5	<2.0	<2.0	<2.0	<2.0	<2.0	---	---	---
24	12	3.7	7.1	3.1	<2.0	2.2	---	---	---	---	---	---
25	7.1	2.4	3.5	<2.0	<2.0	<2.0	---	---	---	---	---	---
26	4.3	2.3	3.1	<2.0	<2.0	<2.0	---	---	---	---	---	---
27	20	2.2	6.3	<2.0	<2.0	<2.0	---	---	---	---	---	---
28	8.6	6.0	7.0	2.0	<2.0	<2.0	---	---	---	---	---	---
29	11	7.5	8.7	3.9	<2.0	<2.0	---	---	---	---	---	---
30	17	7.9	9.9	2.1	<2.0	<2.0	---	---	---	---	---	---
31	13	9.8	11	---	---	---	---	---	---	---	---	---
MONTH	29	2.2	10	150	2.0	3.3	5.1	2.0	2.2	---	---	---

&lt; Actual value is known to be less than the value shown

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	---	---	---	8.7	5.3	6.7	19	12	14
2	---	---	---	---	---	---	9.7	4.7	7.7	19	9.5	14
3	---	---	---	3.7	2.3	---	11	6.2	8.1	18	11	14
4	---	---	---	3.1	<2.0	2.4	10	5.6	7.5	21	11	15
5	---	---	---	2.4	<2.0	<2.0	8.9	2.9	5.1	22	10	16
6	---	---	---	3.9	<2.0	<2.0	8.3	3.4	4.9	21	12	16
7	---	---	---	3.9	<2.0	2.4	8.9	4.1	6.7	21	8.8	15
8	---	---	---	5.2	2.6	3.3	7.8	4.4	6.0	20	9.5	15
9	---	---	---	4.8	2.7	3.5	6.7	3.4	4.9	22	11	16
10	---	---	---	5.1	2.7	3.5	9.1	0.4	5.8	250	11	66
11	3.9	<2.0	2.3	7.5	3.6	4.6	9.2	4.0	6.2	130	39	69
12	4.2	2.0	2.9	42	4.3	7.8	42	4.0	8.8	42	22	33
13	4.0	<2.0	2.6	21	5.4	11	16	6.7	8.9	28	21	24
14	39	2.4	11	8.0	5.0	5.9	12	7.7	9.4	25	14	21
15	28	11	18	11	4.8	6.5	15	7.2	11	27	15	20
16	58	18	40	11	5.4	7.3	13	7.5	10	28	16	21
17	61	42	51	18	7.7	11	16	6.2	9.3	27	16	21
18	44	31	37	14	8.9	11	19	6.8	10	26	16	20
19	41	29	33	13	9.1	11	120	5.3	19	25	13	18
20	44	30	34	19	9.1	15	2,000	32	530	22	16	19
21	45	30	35	16	9.9	12	210	64	120	25	12	17
22	42	20	27	16	10	12	83	30	49	21	8.3	14
23	23	13	17	16	10	12	43	25	29	17	5.4	12
24	14	12	13	16	9.2	11	72	32	38	16	7.0	12
25	---	---	---	14	8.9	10	82	41	65	17	4.7	11
26	---	---	---	13	6.2	8.3	50	24	33	18	5.6	11
27	---	---	---	10	5.8	7.7	29	20	24	17	4.1	9.9
28	---	---	---	12	5.9	8.9	26	17	21	15	6.1	9.7
29	---	---	---	7.8	3.6	5.3	32	14	20	21	7.9	12
30	---	---	---	10	4.0	6.5	23	12	16	20	7.4	15
31	---	---	---	10	3.9	6.3	---	---	---	21	10	16
MONTH	61	2.0	23	42	2.0	7.5	2,000	0.4	37	250	4.1	20

&lt; Actual value is known to be less than the value shown

## KANSAS RIVER BASIN

06892495 CEDAR CREEK NEAR DESOTO, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22	9.4	14	46	14	24	24	13	17	190	13	50
2	60	12	26	26	8.5	16	19	8.0	14	23	5.0	13
3	130	33	90	24	6.5	14	22	8.0	13	31	3.0	14
4	74	19	37	19	6.4	12	19	7.0	13	21	9.0	12
5	24	16	20	19	5.9	11	18	9.0	13	22	8.0	14
6	42	15	21	18	7.9	12	24	8.0	15	24	9.0	14
7	25	16	21	26	6.9	15	21	11	16	30	6.0	12
8	24	10	17	28	8.3	15	25	11	16	17	5.0	7.3
9	24	12	15	26	8.4	15	24	10	17	10	4.0	5.9
10	18	9.8	14	45	13	24	22	11	16	13	3.0	6.3
11	21	8.9	15	36	11	21	23	11	17	10	3.0	6.8
12	460	10	36	30	15	21	22	10	16	12	4.0	6.3
13	200	30	77	33	17	24	23	8.0	14	28	5.0	9.9
14	36	16	26	40	20	26	18	5.0	11	77	18	35
15	23	11	17	31	17	24	19	5.0	11	19	11	14
16	19	9.8	14	36	22	27	14	3.0	9.2	15	9.0	12
17	20	8.2	13	60	19	42	18	4.0	9.3	16	9.0	12
18	16	6.9	10	35	11	21	16	5.0	9.9	17	8.0	12
19	13	6.5	8.8	60	15	34	21	6.0	12	16	7.0	11
20	79	9.7	51	49	14	20	25	8.0	15	16	7.0	10
21	70	12	34	28	14	20	19	4.0	10	12	6.0	8.6
22	2,100	13	280	29	15	19	20	6.0	12	11	6.0	7.8
23	2,100	110	520	27	16	20	17	4.0	11	14	6.0	9.4
24	270	61	110	24	14	19	16	4.0	8.7	12	5.0	8.3
25	61	37	46	26	14	19	14	4.0	9.4	14	6.0	9.0
26	47	33	39	24	14	19	20	6.0	12	12	6.0	8.5
27	41	21	32	42	15	23	20	6.0	11	13	6.0	7.8
28	32	15	23	40	15	23	20	7.0	9.9	12	6.0	8.3
29	30	13	19	46	11	24	17	6.0	10	11	4.0	6.4
30	38	17	25	31	13	19	110	6.0	23	---	---	---
31	---	---	---	24	12	17	1,500	68	390	---	---	---
MONTH	2,100	6.5	56	60	5.9	21	1,500	3.0	25	190	3.0	12

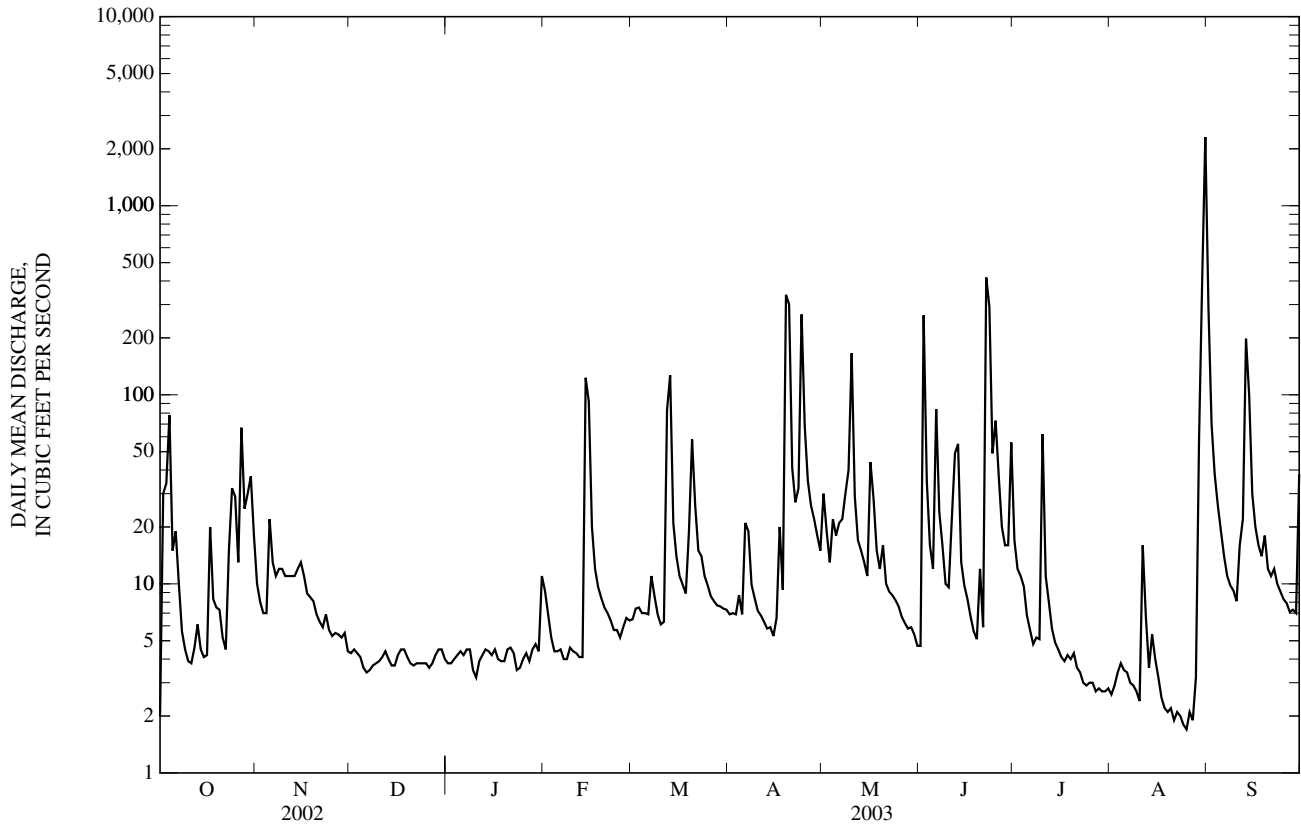


SUMMARY STATISTICS

FOR 2003 WATER YEAR

ANNUAL MEAN	26.9	
HIGHEST DAILY MEAN	2,310	Aug 31
LOWEST DAILY MEAN	1.7	Aug 25
ANNUAL SEVEN-DAY MINIMUM	1.9	Aug 21
MAXIMUM PEAK FLOW	6,020	Aug 31
MAXIMUM PEAK STAGE	60.82	Aug 31
INSTANTANEOUS LOW FLOW	1.6	Oct 2
ANNUAL RUNOFF (AC-FT)	19,510	
10 PERCENT EXCEEDS	36	
50 PERCENT EXCEEDS	7.0	
90 PERCENT EXCEEDS	3.5	

e Estimated





06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 2002 to September 2003.

pH: October 2002 to September 2003.

WATER TEMPERATURE: October 2002 to September 2003.

DISSOLVED OXYGEN: October 2002 to September 2003.

TURBIDITY: October 2002 to September 2003.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6136 turbidity sensor.

REMARKS.--Records good. Interruptions in record are due to ice conditions, malfunction of the recording instrument or sensors, or during days of no streamflow. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,790 microsiemens/cm, Mar. 12, 2003; minimum, 181 microsiemens/cm, June 22, 2003.

pH: Maximum, 9.1 standard units, July 18, 2003; minimum, 7.4 standard units, June 27, 2003.

WATER TEMPERATURE: Maximum, 32.8°C, July 20, 2003; minimum, 0.6°C, Feb. 1, 2003.

DISSOLVED OXYGEN: Maximum 21.0 mg/L, Jan. 12, 2003; minimum, 1.8 mg/L, Aug. 28, 2003.

TURBIDITY: Maximum, &gt;1,900 NTU, June 22, 2003; minimum, &lt;2.0 NTU, Apr. 30, 2003.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,790 microsiemens/cm, Mar. 12; minimum, 181 microsiemens/cm, June 22.

pH: Maximum, 9.1 standard units, July 18; minimum, 7.4 standard units, June 27.

WATER TEMPERATURE: Maximum, 32.8°C, July 20; minimum, 0.6°C, Feb. 1.

DISSOLVED OXYGEN: Maximum, 21.0 mg/L, Jan. 12; minimum, 1.8 mg/L, Aug. 28.

TURBIDITY: Maximum, &gt;1,900 NTU, June 22; minimum, &lt;2.0 NTU, Apr. 30.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	570	537	554	623	580	606	1,070	1,060	1,060	1,080	1,070	1,070
2	693	447	567	638	623	631	1,060	1,040	1,050	1,090	1,070	1,080
3	890	490	748	655	638	648	1,040	1,040	1,040	1,120	1,080	1,100
4	873	473	615	660	655	658	1,040	1,030	1,030	1,140	1,120	1,130
5	473	446	462	736	656	681	1,040	1,030	1,040	1,150	1,140	1,140
6	446	410	424	762	736	751	1,060	1,040	1,050	1,140	1,120	1,130
7	496	423	459	804	762	786	1,070	1,060	1,060	1,120	1,110	1,110
8	552	496	522	833	804	818	1,060	1,050	1,060	1,110	1,090	1,100
9	594	552	562	840	832	836	1,050	1,050	1,050	1,100	1,090	1,100
10	620	587	601	857	840	848	1,050	1,040	1,040	1,100	1,100	1,100
11	634	620	625	870	854	864	1,040	1,040	1,040	1,120	1,100	1,110
12	638	626	633	872	864	869	1,070	1,040	1,050	1,130	1,120	1,120
13	636	629	632	866	860	863	1,090	1,070	1,080	1,120	1,110	1,120
14	643	635	639	861	839	853	1,110	1,090	1,100	1,150	1,120	1,130
15	660	642	652	841	830	837	1,110	1,090	1,100	1,160	1,150	1,160
16	672	652	666	830	821	827	1,100	1,080	1,090	1,170	1,160	1,160
17	926	652	799	872	829	850	1,080	1,070	1,080	1,190	1,160	1,180
18	975	926	955	904	871	896	1,070	1,060	1,070	1,220	1,190	1,210
19	973	948	963	925	903	913	1,080	1,070	1,080	1,220	1,210	1,220
20	952	868	900	931	922	928	1,100	1,080	1,090	1,230	1,220	1,230
21	872	824	855	934	930	931	1,120	1,100	1,110	1,230	1,210	1,220
22	834	818	822	944	934	938	1,130	1,120	1,120	1,240	1,230	1,230
23	923	809	842	951	944	948	1,130	1,120	1,130	1,260	1,240	1,250
24	933	772	863	962	950	955	1,120	1,100	1,110	1,310	1,260	1,290
25	772	507	635	980	962	971	1,110	1,110	1,110	1,330	1,300	1,320
26	537	500	512	1,010	979	996	1,120	1,110	1,120	1,340	1,320	1,330
27	588	526	559	1,020	1,010	1,010	1,120	1,110	1,120	1,350	1,340	1,340
28	561	448	495	1,030	1,010	1,020	1,130	1,120	1,120	1,340	1,340	1,340
29	468	402	426	1,040	1,020	1,030	1,130	1,110	1,130	1,380	1,340	1,360
30	628	468	565	1,060	1,040	1,050	1,120	1,070	1,090	1,430	1,380	1,410
31	627	561	583	---	---	---	1,100	1,080	1,090	1,480	1,420	1,440
MONTH	975	402	650	1,060	580	860	1,130	1,030	1,080	1,480	1,070	1,200

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1,520	1,440	1,490	1,210	1,170	1,180	1,240	1,200	1,220	932	881	919
2	1,520	1,410	1,480	1,240	1,210	1,230	1,220	1,200	1,200	930	919	924
3	1,410	1,350	1,370	1,260	1,240	1,250	1,260	1,220	1,230	985	930	957
4	1,350	1,340	1,350	1,250	1,230	1,240	1,260	1,240	1,260	983	898	953
5	1,340	1,330	1,330	1,300	1,250	1,270	1,260	1,250	1,260	898	837	857
6	1,330	1,320	1,330	1,400	1,300	1,330	1,260	1,180	1,230	942	830	899
7	1,400	1,330	1,370	1,520	1,370	1,440	1,230	1,190	1,200	913	793	840
8	1,420	1,400	1,420	1,600	1,520	1,570	1,220	1,210	1,220	851	793	813
9	1,460	1,420	1,440	1,570	1,540	1,550	1,220	1,170	1,210	841	712	794
10	1,480	1,460	1,480	1,620	1,550	1,590	1,170	1,080	1,120	712	387	512
11	1,470	1,440	1,460	1,630	1,610	1,620	1,100	1,040	1,060	513	438	476
12	1,440	1,380	1,410	1,790	986	1,560	1,060	1,000	1,030	609	513	561
13	1,380	1,330	1,350	1,270	959	1,120	1,030	979	1,000	686	609	651
14	1,410	504	1,150	1,200	1,020	1,100	1,020	968	989	747	686	716
15	830	500	716	1,220	1,200	1,210	1,020	991	1,000	787	747	767
16	826	734	769	1,230	1,210	1,210	1,040	1,020	1,030	853	744	797
17	762	734	747	1,260	1,220	1,240	1,120	1,030	1,090	878	738	820
18	776	762	769	1,310	1,260	1,290	1,140	1,120	1,140	738	640	690
19	817	776	795	1,370	1,310	1,330	1,160	410	925	640	606	619
20	881	817	849	1,420	1,230	1,380	649	397	521	645	603	620
21	940	881	914	1,230	1,070	1,120	780	649	720	689	639	661
22	994	940	969	1,070	1,020	1,040	849	780	818	735	689	712
23	1,040	994	1,010	1,080	1,030	1,050	908	829	879	786	735	769
24	1,100	1,030	1,070	1,140	1,080	1,110	884	474	582	816	786	802
25	1,160	1,100	1,130	1,180	1,140	1,160	696	582	629	863	813	834
26	1,160	1,150	1,150	1,210	1,180	1,190	796	696	755	885	862	871
27	1,150	1,150	1,150	1,240	1,200	1,220	874	796	834	893	883	887
28	1,170	1,150	1,160	1,280	1,240	1,260	929	874	901	909	893	903
29	---	---	---	1,290	1,280	1,290	955	926	942	914	899	909
30	---	---	---	1,290	1,270	1,290	956	931	946	935	911	927
31	---	---	---	1,270	1,220	1,260	---	---	---	974	932	954
MONTH	1,520	500	1,170	1,790	959	1,280	1,260	397	998	985	387	788

## 06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	990	961	978	653	507	572	845	819	831	639	359	537
2	994	325	657	507	481	488	871	837	849	737	639	692
3	442	366	411	513	484	493	919	866	895	774	737	760
4	511	442	473	552	513	543	956	914	937	792	774	782
5	597	511	552	593	552	582	972	954	961	831	791	809
6	754	529	626	635	588	611	1,000	960	988	847	826	836
7	529	467	480	642	632	637	1,020	989	1,000	859	843	851
8	530	474	497	654	640	648	1,010	994	1,000	877	858	870
9	604	530	561	660	637	651	999	980	993	894	877	887
10	651	604	631	935	571	751	989	977	984	901	891	897
11	770	651	705	571	411	474	1,060	896	999	928	887	903
12	839	308	764	412	389	398	1,050	918	966	934	882	903
13	553	390	501	412	394	405	976	927	950	910	355	787
14	540	515	523	429	411	421	1,020	973	993	505	378	440
15	584	540	559	446	429	439	1,030	1,000	1,020	598	505	552
16	644	584	618	460	446	453	1,040	1,030	1,030	667	598	632
17	682	644	667	478	456	471	1,060	1,040	1,050	718	667	696
18	701	682	693	508	478	491	1,090	1,050	1,070	751	718	736
19	725	701	713	535	503	520	1,100	1,080	1,090	787	751	772
20	764	718	738	568	535	552	1,110	1,090	1,100	817	787	805
21	812	764	783	598	562	579	1,100	1,090	1,100	835	817	828
22	830	181	685	620	592	601	1,090	989	1,060	854	835	846
23	381	306	345	648	616	626	1,070	960	995	871	850	864
24	430	340	394	676	640	658	1,070	1,050	1,060	871	853	865
25	598	430	481	713	669	693	1,060	1,030	1,040	879	853	865
26	603	444	516	753	709	729	1,030	1,000	1,020	909	879	892
27	444	408	419	788	743	766	1,030	1,000	1,020	916	900	911
28	538	438	479	800	777	789	1,040	983	1,020	915	909	912
29	606	538	577	805	784	795	1,020	370	643	934	915	924
30	793	590	737	811	785	797	694	222	482	938	825	916
31	---	---	---	834	807	820	359	206	271	---	---	---
MONTH	994	181	592	935	389	595	1,110	206	949	938	355	799

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.2	7.8	7.9	8.0	7.9	8.0	8.2	8.1	8.2	8.4	8.1	8.3
2	8.0	7.7	7.8	8.0	7.9	8.0	8.3	8.1	8.2	8.5	8.2	8.3
3	7.9	7.8	7.8	8.0	7.9	8.0	8.3	8.2	8.2	8.7	8.2	8.3
4	7.9	7.7	7.8	8.0	7.9	7.9	8.3	8.2	8.2	8.6	8.2	8.3
5	7.8	7.7	7.7	8.0	7.9	8.0	8.3	8.2	8.2	8.6	8.2	8.3
6	7.8	7.7	7.7	8.0	7.9	8.0	8.3	8.2	8.2	8.4	8.2	8.3
7	7.7	7.5	7.6	8.1	8.0	8.0	8.3	8.2	8.2	8.5	8.2	8.3
8	7.8	7.5	7.6	8.1	8.0	8.0	8.3	8.2	8.2	8.5	8.2	8.3
9	7.8	7.7	7.8	8.0	7.9	7.9	8.3	8.2	8.2	8.3	8.1	8.2
10	7.8	7.6	7.7	7.9	7.8	7.9	8.3	8.2	8.2	8.4	8.2	8.2
11	7.8	7.7	7.7	7.9	7.8	7.9	8.2	8.2	8.2	8.5	8.2	8.2
12	7.8	7.7	7.7	7.9	7.8	7.9	8.2	8.1	8.1	8.6	8.2	8.3
13	7.8	7.7	7.8	7.9	7.8	7.9	8.5	8.0	8.2	8.5	8.2	8.3
14	7.9	7.8	7.8	7.9	7.8	7.9	8.2	8.1	8.2	8.6	8.2	8.3
15	7.9	7.8	7.9	8.0	7.8	7.9	8.4	8.1	8.2	8.4	8.2	8.3
16	7.9	7.9	7.9	8.0	7.9	7.9	8.3	8.1	8.2	8.5	8.3	8.3
17	8.1	7.9	8.0	8.0	7.9	7.9	8.2	8.1	8.2	8.4	8.3	8.3
18	8.2	8.0	8.1	8.0	7.9	7.9	8.2	8.1	8.1	8.4	8.2	8.3
19	8.2	8.0	8.1	8.0	7.9	7.9	8.2	8.0	8.1	8.4	8.2	8.3
20	8.2	8.0	8.1	8.1	7.9	8.0	8.2	8.0	8.1	8.3	8.2	8.3
21	8.1	7.9	8.0	8.0	7.9	8.0	8.3	8.1	8.2	8.3	8.2	8.3
22	8.0	7.9	8.0	8.1	8.0	8.0	8.4	8.1	8.2	8.3	8.3	8.3
23	8.1	7.9	8.0	8.1	8.0	8.0	8.3	8.1	8.2	8.3	8.2	8.2
24	8.2	7.9	8.1	8.1	8.0	8.0	8.2	8.1	8.2	8.2	8.1	8.2
25	8.0	7.8	7.8	8.1	8.0	8.0	8.4	8.1	8.2	8.2	8.1	8.2
26	7.9	7.8	7.9	8.2	8.0	8.1	8.4	8.1	8.2	8.2	8.1	8.2
27	8.0	7.9	7.9	8.2	8.0	8.1	8.4	8.1	8.2	8.2	8.2	8.2
28	8.0	7.8	7.9	8.3	8.0	8.1	8.4	8.1	8.2	8.2	8.1	8.2
29	7.9	7.8	7.8	8.3	8.1	8.1	8.4	8.2	8.2	8.2	8.1	8.1
30	8.0	7.9	7.9	8.2	8.1	8.2	8.4	8.2	8.2	8.2	8.2	8.2
31	8.0	8.0	8.0	---	---	---	8.4	8.2	8.3	8.3	8.1	8.2
MAX	8.2	8.0	8.1	8.3	8.1	8.2	8.5	8.2	8.3	8.7	8.3	8.3
MIN	7.7	7.5	7.6	7.9	7.8	7.9	8.2	8.0	8.1	8.2	8.1	8.1

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.3	8.1	8.1	8.3	8.3	8.3	8.2	7.9	8.0	8.1	8.0	8.0
2	8.4	8.1	8.2	8.4	8.3	8.4	8.2	8.0	8.1	8.2	8.0	8.1
3	8.4	8.2	8.2	8.4	8.4	8.4	8.2	8.0	8.1	8.1	8.0	8.0
4	8.3	8.2	8.2	8.4	8.3	8.4	8.1	7.9	8.0	8.1	8.0	8.0
5	8.3	8.2	8.3	8.4	8.3	8.4	8.0	7.9	8.0	8.2	8.0	8.0
6	8.3	8.2	8.3	8.4	8.3	8.3	8.1	8.0	8.0	8.1	8.0	8.0
7	8.4	8.2	8.3	8.5	8.3	8.4	8.2	8.0	8.0	8.2	7.9	8.0
8	8.3	8.2	8.3	8.6	8.3	8.4	8.2	8.1	8.1	8.1	7.8	8.0
9	8.4	8.3	8.3	8.6	8.4	8.4	8.3	8.0	8.1	8.0	7.8	7.9
10	8.5	8.3	8.4	8.6	8.5	8.6	8.3	8.0	8.0	7.8	7.7	7.8
11	8.5	8.4	8.4	8.7	8.5	8.5	8.1	7.9	8.0	7.8	7.7	7.7
12	8.7	8.4	8.5	8.6	8.0	8.6	8.1	7.8	8.0	7.9	7.7	7.7
13	8.7	8.5	8.6	8.3	7.8	7.9	8.4	7.9	8.1	7.9	7.8	7.8
14	8.6	7.8	8.1	7.8	7.8	7.8	8.3	8.1	8.2	8.0	7.8	7.8
15	8.0	7.8	7.9	7.8	7.7	7.8	8.4	8.2	8.3	8.1	7.8	7.9
16	7.9	7.8	7.8	8.0	7.7	7.8	8.3	7.9	8.1	8.0	7.8	7.9
17	7.8	7.8	7.8	8.1	7.8	7.9	8.0	7.8	7.9	8.0	7.8	7.9
18	7.9	7.8	7.8	8.2	7.9	8.0	8.1	7.8	7.9	7.9	7.7	7.8
19	7.9	7.8	7.8	8.2	7.9	8.0	8.1	7.6	7.9	7.8	7.7	7.8
20	7.9	7.8	7.9	8.1	7.9	8.0	8.0	7.7	7.9	7.9	7.7	7.8
21	8.0	7.9	7.9	7.9	7.8	7.9	8.0	7.9	8.0	8.0	7.8	7.8
22	8.0	8.0	8.0	7.9	7.8	7.9	8.0	8.0	8.0	8.0	7.8	7.9
23	8.1	8.0	8.1	7.9	7.8	7.8	8.0	7.9	8.0	8.0	7.8	7.9
24	8.2	8.1	8.1	8.0	7.8	7.9	8.0	7.8	7.9	8.0	7.8	7.9
25	8.2	8.1	8.2	8.0	7.9	8.0	8.0	7.9	7.9	8.2	7.8	8.0
26	8.3	8.2	8.2	8.0	7.8	8.0	8.0	8.0	8.0	8.1	7.9	8.0
27	8.3	8.2	8.3	8.0	7.9	8.0	8.0	8.0	8.0	8.1	7.9	8.0
28	8.3	8.3	8.3	8.0	7.9	8.0	8.1	8.0	8.0	8.2	8.0	8.1
29	---	---	---	8.0	8.0	8.0	8.1	8.0	8.0	8.2	8.0	8.2
30	---	---	---	8.1	8.0	8.0	8.2	8.0	8.0	8.2	8.0	8.1
31	---	---	---	8.2	8.0	8.0	---	---	---	8.2	8.0	8.1
MAX	8.7	8.5	8.6	8.7	8.5	8.6	8.4	8.2	8.3	8.2	8.0	8.2
MIN	7.8	7.8	7.8	7.8	7.7	7.8	8.0	7.6	7.9	7.8	7.7	7.7

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.2	8.0	8.1	7.9	7.7	7.8	8.1	7.6	7.8	7.9	7.7	7.9
2	8.2	7.8	8.0	7.8	7.7	7.8	8.2	7.6	7.8	7.9	7.9	7.9
3	7.8	7.8	7.8	8.1	7.8	7.9	8.4	7.8	8.0	8.0	7.9	7.9
4	7.9	7.7	7.8	8.2	7.9	8.1	8.4	7.8	8.1	8.0	7.9	8.0
5	8.0	7.8	7.8	8.4	8.0	8.2	8.6	7.6	8.2	8.0	7.9	7.9
6	8.1	7.9	8.0	8.6	8.1	8.2	8.8	7.8	8.2	8.0	7.9	8.0
7	7.9	7.8	7.9	8.6	8.3	8.4	8.8	7.7	8.1	8.1	8.0	8.0
8	8.1	7.8	7.9	8.8	8.3	8.6	8.5	7.6	8.2	8.1	8.0	8.0
9	8.2	7.9	8.0	9.0	8.5	8.8	8.8	7.8	8.2	8.1	8.0	8.0
10	8.2	7.9	8.0	8.8	7.6	7.9	8.5	7.6	8.2	8.2	8.0	8.1
11	8.1	8.0	8.0	8.3	7.5	7.6	8.1	7.6	7.9	8.2	8.0	8.1
12	8.3	7.9	8.1	8.4	7.6	7.9	8.0	7.6	7.7	8.2	8.0	8.0
13	8.1	7.7	7.8	8.5	7.6	8.0	7.9	7.6	7.8	8.1	7.9	8.0
14	7.8	7.7	7.7	8.7	7.8	8.2	7.9	7.6	7.8	8.0	7.9	7.9
15	7.9	7.7	7.8	8.9	8.0	8.4	8.0	7.7	7.8	8.0	7.9	8.0
16	8.0	7.7	7.8	9.0	8.0	8.5	8.2	7.6	7.8	8.1	7.9	8.0
17	8.0	7.7	7.8	9.1	8.4	8.8	8.5	7.7	8.0	8.2	8.0	8.0
18	8.0	7.8	7.9	9.1	8.4	8.8	8.5	7.8	8.1	8.2	8.0	8.1
19	8.2	7.8	8.0	8.8	8.0	8.6	8.6	7.7	8.3	8.2	8.1	8.1
20	8.2	7.8	8.0	8.6	8.0	8.4	8.6	7.8	8.3	8.3	8.1	8.2
21	8.3	7.8	8.0	8.5	7.9	8.3	8.9	7.9	8.4	8.3	8.1	8.2
22	8.3	7.7	8.1	8.4	7.8	8.2	9.0	8.0	8.5	8.3	8.1	8.2
23	7.9	7.8	7.8	8.4	7.8	8.1	8.8	8.0	8.6	8.4	8.1	8.2
24	7.8	7.7	7.7	8.4	7.8	8.2	8.8	8.0	8.6	8.4	8.1	8.3
25	8.0	7.7	7.7	8.4	8.0	8.2	8.9	8.4	8.6	8.4	8.2	8.3
26	8.0	7.6	7.8	8.5	8.1	8.3	8.9	8.2	8.7	8.4	8.2	8.3
27	7.6	7.4	7.6	8.6	8.2	8.4	8.7	8.2	8.4	8.5	8.3	8.4
28	7.8	7.6	7.6	8.5	8.0	8.4	8.5	7.7	8.1	8.4	8.3	8.4
29	7.9	7.7	7.8	8.3	7.8	8.2	8.1	7.6	7.7	8.4	8.4	8.4
30	8.0	7.8	8.0	8.4	7.7	8.1	8.0	7.5	7.6	8.4	8.3	8.4
31	---	---	---	8.2	7.7	8.0	7.8	7.7	7.7	---	---	---
MAX	8.3	8.0	8.1	9.1	8.5	8.8	9.0	8.4	8.7	8.5	8.4	8.4
MIN	7.6	7.4	7.6	7.8	7.5	7.6	7.8	7.5	7.6	7.9	7.7	7.9

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

 TEMPERATURE, WATER, DEGREES CELSIUS  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.7	21.4	22.2	7.6	6.6	7.0	3.5	2.9	3.3	3.8	3.0	3.3
2	22.7	21.1	22.0	6.9	6.2	6.4	4.0	3.2	3.6	3.2	2.6	2.9
3	21.4	20.3	20.8	6.7	6.1	6.4	4.0	2.6	3.2	3.3	2.6	2.9
4	20.8	18.8	20.0	6.8	5.4	6.1	2.6	1.9	2.1	3.4	2.6	3.0
5	18.8	16.9	18.0	7.2	6.3	6.7	2.7	2.0	2.3	3.6	3.1	3.3
6	18.4	16.9	17.6	7.5	6.1	6.9	2.8	2.1	2.5	3.5	2.9	3.1
7	17.3	15.3	16.2	8.4	6.2	7.3	3.2	2.4	2.8	3.3	2.7	3.0
8	16.5	15.1	15.9	9.8	8.0	8.8	3.2	2.7	3.0	4.1	3.0	3.5
9	16.6	15.7	16.2	11.2	9.4	10.2	3.2	2.7	3.0	4.2	3.8	3.9
10	17.6	15.6	16.3	11.0	10.3	10.7	3.2	2.8	3.0	3.8	2.5	3.0
11	17.2	15.9	16.4	10.3	8.7	9.3	3.9	3.1	3.4	3.1	2.2	2.6
12	17.1	16.0	16.7	8.7	7.9	8.2	4.6	3.9	4.2	3.1	2.3	2.7
13	16.0	13.9	14.7	8.9	7.7	8.2	4.8	4.3	4.6	3.4	2.8	3.1
14	14.3	13.1	13.7	8.9	8.4	8.7	4.5	3.5	4.1	3.6	2.9	3.2
15	13.2	12.2	12.7	8.7	8.0	8.2	4.8	3.4	4.1	3.1	2.5	2.8
16	12.5	10.2	11.3	8.3	7.5	7.8	5.5	4.2	4.7	2.9	2.3	2.5
17	10.4	9.4	9.9	7.6	7.0	7.4	6.9	5.1	5.8	2.4	2.0	2.1
18	11.8	9.5	10.4	8.5	7.1	7.8	7.8	6.9	7.3	2.0	1.5	1.7
19	12.3	11.0	11.7	8.1	6.8	7.4	7.3	5.8	6.3	1.8	1.4	1.6
20	11.7	10.1	11.0	8.3	6.8	7.4	5.8	4.4	5.0	2.1	1.5	1.8
21	11.4	10.2	10.8	7.9	7.2	7.5	4.4	3.7	4.0	1.9	1.5	1.8
22	11.6	10.6	11.0	7.5	6.4	6.8	3.7	3.2	3.5	1.5	1.2	1.3
23	10.9	9.4	10.3	7.2	6.0	6.6	3.5	2.8	3.0	1.2	0.8	1.0
24	9.6	8.6	8.9	6.8	5.5	6.4	2.9	2.5	2.6	1.1	0.9	1.0
25	8.9	8.4	8.6	5.5	4.0	4.5	2.8	2.0	2.4	1.0	0.7	0.8
26	9.0	8.6	8.8	4.3	4.0	4.1	2.6	2.1	2.4	1.0	0.8	0.8
27	8.9	8.3	8.5	4.3	3.6	3.9	3.2	2.4	2.7	1.0	0.6	0.8
28	8.7	8.3	8.5	3.8	3.0	3.4	3.1	2.5	2.8	1.1	0.8	1.0
29	9.0	8.6	8.8	4.7	3.4	4.0	3.4	2.6	2.9	1.7	1.1	1.4
30	9.1	8.8	8.9	4.7	3.5	4.1	5.7	3.4	4.4	1.7	1.2	1.4
31	8.8	7.6	8.3	---	---	---	5.7	3.6	4.8	2.0	0.9	1.7
MONTH	23.7	7.6	13.4	11.2	3.0	6.9	7.8	1.9	3.7	4.2	0.6	2.2

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	2.0	0.6	1.2	2.7	2.4	2.6	14.9	11.1	12.4	22.3	19.3	20.7
2	2.8	1.2	1.8	3.7	2.2	2.8	17.9	13.4	15.7	20.8	18.0	19.4
3	3.1	2.0	2.7	4.6	2.2	3.3	17.6	16.1	17.0	20.7	18.0	19.4
4	2.5	1.5	2.0	4.8	2.1	3.8	17.2	13.2	15.3	19.9	18.5	19.1
5	2.5	2.3	2.4	2.1	0.9	1.5	14.1	11.6	12.7	21.9	17.6	19.4
6	2.6	2.2	2.4	2.9	1.1	1.8	12.9	10.1	11.4	20.7	19.3	19.9
7	2.6	1.7	2.1	4.8	1.6	3.2	10.1	9.0	9.4	21.8	18.1	19.8
8	2.4	1.8	2.1	4.6	2.4	3.6	9.0	7.6	8.0	20.8	18.9	19.6
9	2.8	2.1	2.5	4.3	1.2	2.8	10.6	6.1	7.8	21.8	18.4	20.0
10	3.2	2.5	2.8	4.3	3.2	3.7	10.5	7.8	9.3	21.5	19.2	20.6
11	3.6	2.9	3.1	5.6	3.9	4.5	11.9	10.0	10.8	20.6	18.3	19.6
12	4.1	3.1	3.6	6.6	0.9	5.3	13.6	11.0	12.5	21.1	17.2	19.1
13	4.1	3.3	3.7	8.6	1.9	7.0	17.1	13.6	14.8	20.0	17.9	18.9
14	6.2	1.8	3.6	10.8	8.0	9.1	20.9	15.7	18.1	23.0	18.9	20.4
15	6.0	3.8	5.1	13.4	9.1	10.9	21.4	18.0	19.6	22.7	19.6	21.1
16	3.8	2.5	3.0	15.0	11.9	13.3	20.4	17.6	18.6	21.9	18.2	19.9
17	3.4	1.5	2.3	16.3	13.7	15.0	17.6	15.5	16.0	20.0	17.1	18.3
18	3.8	1.8	2.7	17.1	14.5	15.7	17.5	14.4	15.7	22.3	18.1	19.7
19	4.8	2.7	3.7	16.5	12.7	14.3	17.5	14.3	16.3	21.8	19.7	20.5
20	5.1	3.7	4.5	12.7	9.2	10.8	14.5	12.9	13.5	21.0	17.7	19.3
21	5.8	4.5	5.3	11.2	8.1	9.5	16.2	13.1	14.5	20.3	17.6	18.7
22	6.0	4.6	5.4	11.8	8.9	10.3	17.4	14.3	15.7	20.4	17.7	18.7
23	4.6	2.0	3.5	13.4	9.8	11.3	17.3	15.4	16.4	21.5	18.8	20.0
24	2.8	1.3	2.0	15.9	12.0	13.3	15.7	13.3	13.8	21.1	19.4	20.1
25	2.4	1.8	2.2	15.4	13.2	14.2	13.9	13.4	13.7	21.5	18.4	19.7
26	2.7	1.9	2.3	15.4	12.5	14.0	16.1	12.6	14.2	21.7	18.9	20.1
27	2.7	2.2	2.4	14.6	12.4	13.4	18.4	15.1	16.5	21.6	19.2	20.4
28	2.7	2.2	2.5	13.6	10.4	11.6	20.2	17.8	18.8	24.1	20.6	22.0
29	---	---	---	10.4	8.7	9.4	21.8	18.4	19.9	23.7	20.9	22.1
30	---	---	---	11.0	7.8	9.2	23.2	19.8	21.3	24.2	22.3	23.1
31	---	---	---	12.8	8.9	10.2	---	---	---	24.5	22.0	22.9
MONTH	6.2	0.6	3.0	17.1	0.9	8.4	23.2	6.1	14.7	24.5	17.1	20.1



06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.0	20.9	21.9	27.1	23.6	24.9	27.2	25.4	25.9	20.9	20.4	20.6
2	22.2	16.7	18.8	26.6	24.8	25.5	27.7	24.7	25.9	22.2	20.6	21.3
3	17.2	16.3	16.7	28.8	26.3	27.2	28.0	25.4	26.7	23.7	21.0	22.4
4	19.8	15.8	17.6	29.2	27.9	28.6	27.8	25.6	26.7	24.0	21.9	23.0
5	21.4	18.0	19.3	29.6	28.5	29.0	28.7	26.1	27.4	24.3	21.2	22.8
6	21.6	19.6	20.7	30.2	28.7	29.4	29.6	26.8	28.2	24.0	21.2	22.7
7	21.0	19.6	20.3	30.2	28.1	28.9	29.0	26.5	27.7	23.8	21.1	22.6
8	22.6	18.5	20.2	29.4	28.4	28.8	29.1	26.0	27.5	23.9	21.0	22.6
9	23.6	19.7	21.0	31.2	28.5	29.7	29.0	26.3	27.6	24.6	21.9	23.3
10	23.9	21.9	22.8	29.4	26.5	27.8	28.5	26.3	27.3	24.9	22.6	23.8
11	23.6	21.8	22.8	29.7	25.9	27.5	27.0	25.4	26.3	24.5	23.3	23.8
12	25.1	21.8	23.2	30.0	26.4	28.1	27.4	24.5	25.8	23.3	22.1	22.5
13	24.6	21.3	22.8	30.7	26.3	28.4	27.3	24.6	25.7	22.3	19.5	21.2
14	26.8	22.7	24.3	32.2	27.0	29.4	27.4	25.0	26.0	20.7	18.9	19.7
15	26.6	23.8	24.9	32.3	28.7	30.3	27.6	25.4	26.5	21.0	18.7	19.9
16	26.1	24.0	25.0	31.2	27.5	29.4	28.4	26.0	27.1	21.2	19.4	20.3
17	26.2	24.1	24.9	32.0	28.6	30.1	29.8	26.7	28.1	22.0	19.7	20.9
18	25.9	24.6	25.3	32.0	28.6	29.9	31.4	27.3	29.0	21.8	19.5	20.8
19	26.9	25.5	26.2	31.3	28.1	29.6	31.4	27.8	29.4	19.7	17.7	18.8
20	26.9	24.0	25.5	32.8	28.1	30.1	30.7	27.7	29.1	19.0	16.6	18.1
21	26.2	24.0	24.8	31.6	28.5	30.0	30.2	28.0	29.2	19.3	17.8	18.6
22	25.4	13.4	22.8	29.9	27.3	28.3	30.7	28.2	29.4	20.0	17.6	18.8
23	23.2	18.6	20.4	29.0	25.7	27.2	30.1	27.7	28.9	20.0	17.3	18.8
24	26.1	22.9	24.3	28.8	24.9	26.8	30.7	26.9	28.7	21.5	18.9	20.1
25	26.5	25.1	25.7	29.4	25.4	27.3	30.8	27.5	28.8	20.5	17.9	19.1
26	25.7	23.0	24.4	31.2	25.9	28.3	30.3	27.7	28.9	20.6	18.4	19.4
27	26.5	22.6	24.3	31.3	27.5	29.1	29.5	27.6	28.3	20.0	18.0	18.9
28	27.4	23.6	25.1	30.4	28.0	29.2	28.4	27.1	27.7	18.2	16.5	17.2
29	26.8	24.9	25.7	30.4	27.1	28.6	27.4	25.0	25.9	16.5	15.1	15.7
30	25.4	23.5	24.5	28.8	26.3	27.6	25.6	22.2	24.0	15.8	13.1	14.9
31	---	---	---	28.6	26.3	27.3	22.4	19.7	20.6	---	---	---
MONTH	27.4	13.4	22.9	32.8	23.6	28.5	31.4	19.7	27.2	24.9	13.1	20.4

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.6	6.7	7.9	11.9	10.8	11.3	15.6	13.7	14.7	17.0	13.6	15.0
2	7.8	5.4	7.0	12.0	11.1	11.5	15.2	14.5	14.9	17.6	14.5	15.6
3	7.3	7.0	7.1	12.1	11.2	11.6	15.4	14.3	14.8	19.7	13.9	15.9
4	8.0	6.0	7.1	12.6	11.3	11.8	15.7	14.9	15.3	19.1	14.6	16.0
5	8.1	6.6	7.5	12.5	11.3	11.8	16.0	15.0	15.5	18.0	14.6	15.7
6	8.3	6.9	7.6	12.2	11.3	11.7	16.7	15.2	15.9	16.9	14.8	15.5
7	6.9	3.0	4.8	12.1	11.1	11.6	16.6	15.6	16.1	19.8	14.8	16.5
8	8.5	3.9	6.2	11.9	10.7	11.1	16.8	16.1	16.5	19.2	14.9	16.4
9	8.4	6.4	7.5	11.3	9.8	10.5	16.9	16.0	16.5	16.8	14.6	15.5
10	8.6	6.8	7.7	10.3	9.4	9.8	16.9	16.2	16.5	18.1	15.1	16.0
11	8.7	7.1	8.0	10.0	9.1	9.6	16.5	15.5	16.0	19.9	15.0	16.9
12	8.8	7.4	8.1	10.3	9.4	9.9	16.1	14.4	15.1	21.0	16.3	17.9
13	9.2	7.9	8.5	10.8	9.5	10.2	17.8	14.3	15.6	20.0	16.4	17.6
14	9.4	8.3	8.8	10.9	9.8	10.3	16.8	14.6	15.8	21.0	16.3	17.8
15	10.3	8.4	9.4	11.9	9.9	10.4	17.2	15.0	15.8	19.5	16.5	17.6
16	10.0	9.5	9.6	11.9	10.0	10.8	16.1	14.0	15.1	19.7	16.9	17.9
17	11.6	9.7	10.6	12.2	10.9	11.6	15.1	13.4	14.4	18.9	16.8	17.6
18	11.6	10.5	11.0	11.8	10.8	11.4	14.4	12.6	13.7	19.5	16.8	17.9
19	11.5	9.9	10.6	12.4	9.8	11.4	15.1	12.4	13.5	20.1	17.1	18.1
20	11.2	9.4	10.3	11.9	10.6	11.1	13.6	12.0	12.9	18.9	17.1	17.8
21	11.0	9.2	10.0	11.6	10.6	11.1	13.5	11.6	12.7	18.4	16.7	17.7
22	10.8	9.7	10.3	12.5	10.9	11.6	15.3	12.1	13.4	18.3	17.5	17.9
23	10.9	9.8	10.3	12.7	10.9	11.6	14.6	12.9	13.6	17.7	16.9	17.3
24	10.5	10.1	10.3	12.4	11.2	11.8	14.5	13.2	13.9	18.2	15.9	17.0
25	10.4	9.8	10.1	13.0	11.5	12.2	16.7	13.5	14.8	18.2	17.2	17.6
26	10.7	10.1	10.3	15.0	12.4	13.3	17.7	13.6	15.3	18.2	17.2	17.7
27	10.8	9.9	10.4	14.7	13.0	13.6	18.0	13.6	15.3	19.2	17.6	18.0
28	10.8	10.2	10.5	15.6	13.2	14.2	17.4	14.5	15.7	18.3	17.1	17.6
29	10.4	10.1	10.2	16.3	13.9	14.7	17.6	14.9	16.0	17.6	16.5	16.9
30	10.5	10.2	10.4	15.0	14.2	14.5	16.3	14.1	14.9	18.2	17.3	17.6
31	11.1	10.5	10.7	---	---	---	15.7	13.4	14.5	18.0	16.4	17.4
MONTH	11.6	3.0	9.0	16.3	9.1	11.6	18.0	11.6	15.0	21.0	13.6	17.0

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.3	15.8	16.5	16.6	15.9	16.3	11.1	8.0	9.7	7.7	6.7	7.0
2	17.4	15.1	16.1	16.7	15.9	16.4	10.6	8.7	9.6	8.6	6.8	7.6
3	17.4	14.9	15.7	16.8	16.0	16.3	9.8	7.9	8.6	8.9	7.0	7.8
4	16.7	15.2	15.8	16.9	15.2	15.8	8.6	7.0	7.8	8.1	6.9	7.3
5	16.8	15.9	16.3	16.7	15.3	15.7	9.5	7.4	8.2	8.8	6.8	7.5
6	16.9	16.0	16.3	17.3	15.9	16.5	9.8	8.1	9.2	7.7	6.6	7.2
7	18.4	16.3	17.1	18.1	16.0	17.2	11.0	9.8	10.3	8.9	6.7	7.6
8	17.9	16.6	17.2	18.1	16.2	17.0	12.3	10.4	11.0	7.8	6.8	7.1
9	18.6	17.2	17.7	18.0	16.3	17.1	13.4	11.1	11.9	7.8	6.8	7.3
10	18.8	17.3	17.8	18.3	17.0	17.8	13.3	10.1	11.6	7.1	6.2	6.7
11	19.6	17.4	18.1	19.5	16.5	17.6	11.7	9.3	10.5	6.9	6.1	6.5
12	18.1	17.0	17.5	18.2	13.9	16.8	11.2	8.6	9.7	8.0	6.5	7.0
13	18.2	16.1	17.0	14.5	11.4	12.2	12.7	8.5	10.4	8.1	6.6	7.2
14	17.4	9.9	13.2	11.4	10.3	10.9	11.5	9.1	10.2	8.9	5.9	7.4
15	11.3	10.1	11.0	10.5	9.1	9.9	11.6	8.7	10.1	9.2	6.3	7.4
16	11.9	11.3	11.6	10.5	8.2	9.5	10.2	7.1	8.6	8.0	6.0	7.0
17	12.4	11.8	12.1	11.2	7.9	9.5	8.6	7.1	7.7	8.2	7.4	7.7
18	12.8	12.0	12.3	11.5	8.5	9.8	9.7	7.1	8.2	8.1	6.4	7.3
19	12.7	12.2	12.4	10.4	7.4	8.7	9.7	6.0	8.1	7.5	6.2	6.7
20	12.6	11.6	12.2	10.8	8.7	10.1	10.0	7.4	9.8	8.4	6.2	7.2
21	12.9	11.7	12.2	11.2	10.8	11.0	9.9	9.4	9.7	8.6	6.6	7.4
22	13.1	12.2	12.6	11.0	10.2	10.7	9.5	9.1	9.3	8.3	6.3	7.3
23	13.4	12.6	12.9	10.6	10.0	10.2	9.1	8.5	8.8	9.0	6.8	7.7
24	14.6	13.4	14.0	10.1	8.7	9.3	10.3	9.1	10	9.1	6.5	7.6
25	15.2	14.6	14.9	9.0	8.0	8.5	10.1	9.6	9.8	10.0	5.7	8.0
26	16.3	15.1	15.8	9.2	7.3	8.3	10.2	9.8	9.9	9.9	6.4	8.2
27	16.5	15.8	16.1	8.9	7.4	8.3	9.8	9.2	9.6	10.3	6.6	8.8
28	16.6	16.0	16.2	9.2	7.6	8.3	9.4	8.5	8.9	11.0	7.8	9.2
29	---	---	---	9.7	8.8	9.2	9.5	8.2	8.7	11.5	7.2	9.7
30	---	---	---	11.4	9.6	10.3	9.2	7.0	8.0	11.0	7.8	9.0
31	---	---	---	11.4	9.2	10.3	---	---	---	9.5	7.1	8.3
MONTH	19.6	9.9	14.9	19.5	7.3	12.4	13.4	6.0	9.5	11.5	5.7	7.6

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.8	7.6	9.3	7.2	5.8	6.4	8.3	4.1	6.1	8.3	8.0	8.2
2	10.8	8.0	9.2	6.7	5.4	6.0	9.8	4.2	6.8	8.2	7.8	7.9
3	9.0	8.3	8.6	8.0	5.6	6.6	10.9	6.4	8.2	8.0	7.6	7.8
4	8.8	7.9	8.3	9.1	5.8	7.2	10.7	6.0	8.6	8.0	7.2	7.6
5	9.5	7.1	8.1	9.7	5.9	7.6	14.8	9.1	11.5	8.5	6.6	7.5
6	8.9	8.2	8.6	11.9	6.2	8.6	17.1	8.1	12.4	9.1	6.5	7.6
7	8.6	7.9	8.3	11.3	7.2	9.1	16.2	5.5	9.5	9.8	7.5	8.5
8	9.7	7.9	8.7	12.8	7.7	10.2	14.1	3.9	8.7	10.5	7.6	9.0
9	10.2	7.7	8.7	---	---	---	18.7	5.7	10	10.9	7.3	9.3
10	---	---	---	---	4.7	---	14.2	4.9	9.7	11.9	7.4	9.7
11	---	---	---	8.3	3.2	5.3	9.2	5.2	7.3	11.3	7.8	9.2
12	---	---	---	9.4	4.0	6.5	9.1	4.0	6.3	10.2	7.5	8.5
13	6.9	6.0	6.5	10.3	4.1	7.1	8.8	4.1	6.6	9.3	6.7	7.9
14	6.6	5.0	5.8	11.3	5.2	8.0	8.8	5.3	7.0	9.3	8.8	9.1
15	6.8	4.6	5.7	13.6	6.0	8.9	9.2	5.3	7.0	9.6	7.9	8.7
16	7.0	4.6	5.7	12.9	6.1	9.4	11.6	5.4	7.9	10.4	8.0	9.0
17	7.2	4.3	5.8	13.9	8.2	10.7	14.2	5.6	9.1	12.6	8.6	9.8
18	7.2	4.8	6.3	12.3	7.6	9.9	12.9	6.2	9.6	10.4	8.3	9.3
19	8.2	4.8	6.5	9.6	5.2	7.7	13.4	6.0	10.4	13.9	8.5	10.1
20	8.7	5.2	7.2	9.0	4.4	7.0	13.4	5.8	9.7	14.5	8.9	11.2
21	9.4	5.0	6.9	8.7	3.8	6.9	16.0	6.3	10.8	13.4	8.9	11.4
22	9.3	5.4	7.5	8.3	3.9	6.2	19.5	6.4	11.7	18.0	9.0	11.9
23	8.1	6.9	7.5	9.4	3.8	6.4	15.1	6.3	10.8	14.6	8.9	11.8
24	6.9	5.9	6.4	8.9	4.0	7.0	13.2	5.2	10.3	14.0	8.9	11.6
25	6.6	5.6	5.9	9.2	5.6	7.6	16.3	8.3	11.6	14.2	9.8	12.1
26	6.6	5.6	6.0	9.0	5.6	7.3	17.8	5.9	11.5	13.4	10.0	11.9
27	6.1	5.4	5.7	9.6	5.6	7.1	12.7	6.0	9.1	14.0	9.9	11.9
28	6.8	5.4	6.0	9.4	5.1	7.5	10.4	1.8	6.0	15.1	10.0	11.9
29	7.4	5.4	6.3	9.4	4.3	7.1	6.6	5.0	5.6	13.1	10.8	11.8
30	7.4	6.3	7.0	9.2	4.3	7.0	7.9	4.4	6.0	12.3	9.6	10.8
31	---	---	---	9.1	4.9	7.3	8.5	7.8	8.1	---	---	---
MONTH	10.8	4.3	7.1	13.9	3.2	7.6	19.5	1.8	8.8	18.0	6.5	9.8

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17	7.0	9.8	13	5.3	8.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2	310	9.5	49	6.2	3.8	4.9	<2.0	<2.0	<2.0	2.2	<2.0	<2.0
3	340	31	89	4.6	2.4	3.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4	250	30	98	3.7	<2.0	2.5	3.2	<2.0	<2.0	<2.0	<2.0	<2.0
5	61	30	39	9.2	2.6	5.7	5.4	<2.0	2.1	2.5	<2.0	<2.0
6	47	26	34	10	5.4	6.8	4.6	<2.0	2.2	2.4	<2.0	<2.0
7	29	11	19	9.0	4.0	6.1	3.6	<2.0	2.0	<2.0	<2.0	<2.0
8	39	6.8	12	16	6.3	8.4	4.7	<2.0	2.2	<2.0	<2.0	<2.0
9	67	9.0	17	26	6.9	12	4.4	<2.0	<2.0	5.3	<2.0	2.8
10	22	9.5	15	15	5.4	8.8	3.0	<2.0	<2.0	4.3	<2.0	2.6
11	17	7.9	11	11	3.8	6.6	3.2	<2.0	<2.0	2.2	<2.0	<2.0
12	26	8.5	13	6.4	2.2	3.9	2.2	<2.0	<2.0	2.3	<2.0	<2.0
13	25	8.9	16	5.2	<2.0	2.6	2.3	<2.0	<2.0	2.4	<2.0	<2.0
14	16	7.7	11	8.4	<2.0	3.2	2.8	<2.0	<2.0	2.2	<2.0	<2.0
15	17	6.5	9.6	16	4.5	7.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
16	23	8.1	11	16	7.1	9.1	3.7	<2.0	<2.0	<2.0	<2.0	<2.0
17	19	7.4	11	12	5.5	8.5	6.1	<2.0	3.5	2.0	<2.0	<2.0
18	33	5.7	8.2	14	6.0	8.8	8.9	3.0	5.4	<2.0	<2.0	<2.0
19	32	9.1	14	21	2.9	13	8.3	5.0	6.4	<2.0	<2.0	<2.0
20	12	5.8	8.6	6.5	<2.0	3.8	7.5	2.1	4.8	<2.0	<2.0	<2.0
21	8.8	3.6	5.9	12	3.7	7.2	2.7	<2.0	2.3	<2.0	<2.0	<2.0
22	8.7	3.1	4.3	9.1	2.6	5.4	2.6	<2.0	<2.0	2.0	<2.0	<2.0
23	24	4.2	9.6	4.9	2.1	3.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
24	24	9.9	13	6.7	2.9	4.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
25	17	11	14	7.3	<2.0	3.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
26	14	8.2	10	2.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
27	130	7.4	41	2.1	<2.0	<2.0	4.7	<2.0	<2.0	<2.0	<2.0	<2.0
28	120	29	55	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
29	35	15	25	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0
30	31	13	21	<2.0	<2.0	<2.0	3.5	<2.0	<2.0	<2.0	<2.0	<2.0
31	19	12	15	---	---	---	5.4	<2.0	3.1	9.2	<2.0	4.3
MONTH	340	3.1	23	26	2.0	5.6	8.9	2.0	2.5	9.2	2.0	2.1

&lt; Actual value is known to be less than the value shown

## KANSAS RIVER BASIN

06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.9	<2.0	3.1	4.0	2.1	2.6	45	7.1	14	22	7.2	15
2	3.0	<2.0	2.0	4.9	2.2	3.0	20	9.8	15	22	8.0	13
3	3.4	<2.0	2.3	4.9	2.4	3.6	28	9.2	19	21	8.5	12
4	<2.0	<2.0	<2.0	8.3	3.5	5.2	55	17	39	24	8.8	15
5	<2.0	<2.0	<2.0	6.1	3.5	4.6	54	23	39	22	6.9	14
6	2.9	<2.0	2.0	8.8	3.2	4.6	64	26	43	34	8.3	17
7	2.9	<2.0	<2.0	7.0	3.5	5.0	58	21	40	30	8.9	17
8	<2.0	<2.0	<2.0	7.9	3.2	5.3	42	21	31	64	9.3	18
9	2.9	<2.0	<2.0	7.8	3.2	4.6	49	17	33	54	26	34
10	2.9	<2.0	<2.0	6.5	3.3	5.0	83	25	48	810	34	280
11	3.9	<2.0	<2.0	6.5	4.1	5.0	93	<2.0	35	130	50	89
12	5.2	<2.0	2.8	>1,700	4.6	>130	80	<2.0	21	59	34	45
13	3.1	<2.0	2.0	1,600	190	570	53	2.3	13	50	20	33
14	>1,700	<2.0	>240	190	77	120	23	4.2	13	41	18	25
15	>1,700	92	>410	150	53	73	31	9.4	13	52	20	27
16	95	53	72	99	36	49	37	8.1	15	59	19	37
17	54	32	41	56	21	34	26	15	21	52	31	41
18	32	22	26	140	21	54	26	7.3	16	41	25	32
19	22	15	18	81	33	49	>1,800	6.7	>330	37	16	20
20	16	12	14	62	36	46	>1,800	68	>380	32	16	22
21	17	9.7	13	51	31	38	71	32	47	35	10	20
22	18	11	14	41	28	33	34	16	26	34	11	18
23	19	8.3	10	48	29	35	60	15	22	45	9.8	17
24	20	5.7	8.1	38	13	26	370	59	170	24	7.7	13
25	8.1	4.6	5.6	19	10	16	120	40	72	26	6.5	13
26	6.1	3.3	4.4	25	12	16	40	28	34	18	5.6	11
27	4.3	2.8	3.6	19	7.8	12	---	---	---	21	5.3	11
28	3.0	2.1	2.5	26	11	17	---	---	---	34	4.5	11
29	---	---	---	16	6.4	10	---	---	---	27	3.3	11
30	---	---	---	15	4.1	7.6	27	<2.0	10	39	2.9	12
31	---	---	---	40	5.2	9.9	---	---	---	25	7.5	15
MONTH	1,700	2.0	33	1,700	2.1	45	1,800	2.0	58	810	2.9	31

< Actual value is known to be less than the value shown  
 > Actual value is known to be greater than the value shown

## 06892513 MILL CREEK AT JOHNSON DRIVE, SHAWNEE, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26	6.2	17	24	8.7	16	19	9.1	13	190	31	71
2	>1,900	4.1	>260	18	5.3	11	22	6.5	13	38	19	27
3	170	48	99	19	5.1	9.6	16	4.7	10	24	6.3	15
4	73	12	37	26	2.1	7.0	18	2.6	9.3	8.3	3.9	6.6
5	29	8.4	16	23	2.9	6.7	18	<2.0	7.8	7.2	2.2	4.9
6	70	9.4	37	12	1.4	5.4	16	<2.0	9.3	5.0	<2.0	3.0
7	35	17	24	17	1.2	6.1	17	3.5	8.4	5.2	<2.0	2.7
8	27	12	18	37	2.8	9.3	28	7.1	13	3.9	<2.0	2.1
9	27	6.4	15	23	2.7	7.4	21	<2.0	8.0	2.6	<2.0	<2.0
10	25	7.1	14	42	4.0	30	10	<2.0	4.8	<2	<2.0	<2.0
11	32	4.5	20	33	13	22	22	4.4	11	8.0	<2.0	2.6
12	>1,900	<2.0	>180	21	10	16	11	2.8	6.2	7.7	<2.0	4.0
13	>1,900	120	>450	19	5.3	11	24	2.8	8.0	320	<2.0	61
14	140	44	84	11	3.3	6.9	13	2.5	6.0	110	13	44
15	78	27	44	13	3.1	6.0	8.8	<2.0	4.2	14	6.7	9.2
16	75	13	29	15	3.9	7.1	8.9	<2.0	3.7	9.5	5.0	6.6
17	47	8.3	20	11	3.9	7.5	8.4	<2.0	3.8	7.3	3.3	4.9
18	42	7.5	19	13	4.3	7.2	15	<2.0	4.0	9.3	2.7	4.3
19	38	6.4	19	14	5.4	8.9	10	<2.0	4.1	7.8	2.3	5.1
20	36	5.5	16	12	4.0	7.3	18	<2.0	6.0	4.5	<2.0	2.4
21	74	4.8	18	14	4.6	8.1	16	<2.0	7.1	4.5	<2.0	2.5
22	>1,900	3.5	>300	12	5.1	8.8	13	<2.0	4.5	5.4	<2.0	3.0
23	750	200	380	14	5.8	9.3	13	<2.0	6.5	3.9	<2.0	2.6
24	240	39	86	13	5.3	8.6	16	2.8	8.0	4.2	<2.0	3.0
25	310	22	62	14	5.3	9.0	15	<2.0	7.1	54	2.1	4.3
26	170	54	98	15	3.6	8.6	11	<2.0	4.1	7.6	2.2	3.2
27	98	25	51	24	<2.0	8.4	14	2.4	5.5	5.0	2.4	3.2
28	30	11	21	32	2.8	11	13	3.1	6.3	6.4	2.5	3.6
29	22	3.5	10	24	6.9	12	250	7.4	96	5.6	2.8	3.6
30	54	17	28	32	4.7	11	>1,900	46	>340	22	2.9	7.8
31	---	---	---	24	7.0	12	1,600	190	640	---	---	---
MONTH	1,900	2.0	82	42	1.2	10	1,900	2.0	41	320	2.0	11

> Actual value is known to be greater than the value shown  
 < Actual value is known to be less than the value shown

BLUE RIVER BASIN

06893080 BLUE RIVER NEAR STANLEY, KS

LOCATION.--Lat 38°48'45", long 94°40'31", in SW ¼ SW ¼ SE ¼ sec.19, T.14 S., R.25 E., Johnson County, Hydrologic Unit 10300001, on left bank between bridges on U.S. Highway 69, 0.5 mi downstream from confluence of Wolf and Coffee Creeks, and 3.0 mi south of Stanley.

DRAINAGE AREA.--46 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Annual maximum, water years 1970-74. October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 886.05 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1974, crest-stage gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug 31	1215	*3,050	*12.11	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.44	e0.17	e0.22	e0.09	0.88	1.5	5.8	0.18	3.1	0.00	251
2	0.00	0.56	e0.15	e0.17	e0.10	1.1	1.2	5.0	16	1.1	0.00	62
3	0.00	0.51	e0.14	e0.14	e0.09	1.3	1.2	3.2	19	0.60	0.00	33
4	0.00	0.39	e0.15	e0.14	e0.10	1.5	1.3	6.7	4.3	0.39	0.00	20
5	0.00	0.34	e0.17	e0.13	e0.09	1.9	1.7	7.5	2.0	0.23	0.00	14
6	0.00	0.35	e0.15	e0.13	e0.09	1.5	1.2	4.8	14	e0.17	0.00	18
7	0.00	0.40	e0.13	e0.12	e0.13	1.1	1.1	5.0	8.9	e0.13	0.00	6.6
8	0.00	0.50	e0.13	e0.12	e0.12	0.99	0.94	3.5	2.4	e0.11	0.00	4.0
9	0.00	0.60	e0.13	e0.11	e0.12	1.4	0.60	8.2	1.2	e0.11	0.00	3.3
10	0.00	0.34	e0.12	e0.10	e0.12	1.3	0.44	117	52	e0.14	0.00	3.1
11	0.00	e0.23	e0.13	e0.09	e0.21	1.0	0.47	31	64	0.41	0.00	3.5
12	0.00	e0.20	e0.13	e0.09	e0.12	1.1	0.41	13	16	0.41	0.00	7.3
13	0.00	e0.22	e0.15	e0.09	e0.10	10	0.38	7.7	7.3	0.27	0.00	15
14	0.00	e0.23	e0.21	e0.09	10	5.3	0.39	5.6	3.2	e0.17	0.00	47
15	0.00	e0.32	e0.18	e0.09	39	3.1	0.41	3.5	1.4	e0.12	0.00	20
16	0.00	e0.27	e0.17	e0.10	8.7	2.5	0.74	3.8	0.84	e0.10	0.00	9.8
17	e0.01	e0.22	e0.16	e0.09	3.9	2.1	0.60	6.9	0.42	e0.09	0.00	5.7
18	e0.01	e0.18	e0.16	e0.09	3.2	1.9	0.62	3.8	0.27	e0.07	0.00	4.2
19	e0.01	e0.16	e0.15	e0.08	3.1	4.9	22	2.7	1.2	e0.05	0.00	4.9
20	e0.01	e0.14	e0.14	e0.08	2.5	18	165	2.5	11	e0.03	0.00	3.5
21	e0.01	e0.13	e0.13	e0.08	1.8	11	17	1.7	1.8	e0.02	0.00	3.1
22	e0.01	e0.12	e0.13	e0.08	1.5	5.7	6.8	1.1	0.89	e0.01	0.00	3.1
23	e0.01	e0.12	e0.11	e0.07	2.1	4.3	4.4	0.94	12	e0.01	0.00	3.1
24	e0.02	e0.12	e0.11	e0.06	1.4	3.8	56	0.84	8.7	e0.01	0.00	2.2
25	e0.04	e0.17	e0.13	e0.06	1.1	3.0	105	0.71	1.9	0.00	0.00	1.5
26	e0.04	e0.18	e0.12	e0.07	0.86	2.3	23	0.59	4.2	0.00	0.00	1.5
27	e0.05	e0.17	e0.12	e0.06	0.87	1.8	11	0.58	1.3	0.00	0.00	2.4
28	0.40	e0.27	e0.12	e0.07	0.79	1.7	7.3	0.40	0.61	0.00	0.00	3.0
29	2.0	e0.26	e0.12	e0.07	---	1.9	4.9	0.33	2.4	0.00	0.00	1.6
30	1.5	e0.20	e0.13	e0.07	---	1.8	3.7	0.30	18	0.00	0.00	2.1
31	1.0	---	e0.20	e0.09	---	1.5	---	0.24	---	0.00	1,000	---
MEAN	0.17	0.28	0.14	0.098	2.94	3.28	14.7	8.22	9.25	0.25	32.3	18.6
MAX	2.0	0.60	0.21	0.22	39	18	165	117	64	3.1	1,000	251
MIN	0.00	0.12	0.11	0.06	0.09	0.88	0.38	0.24	0.18	0.00	0.00	1.5
AC-FT	10	17	8.8	6.0	163	202	875	506	550	16	1,980	1,110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

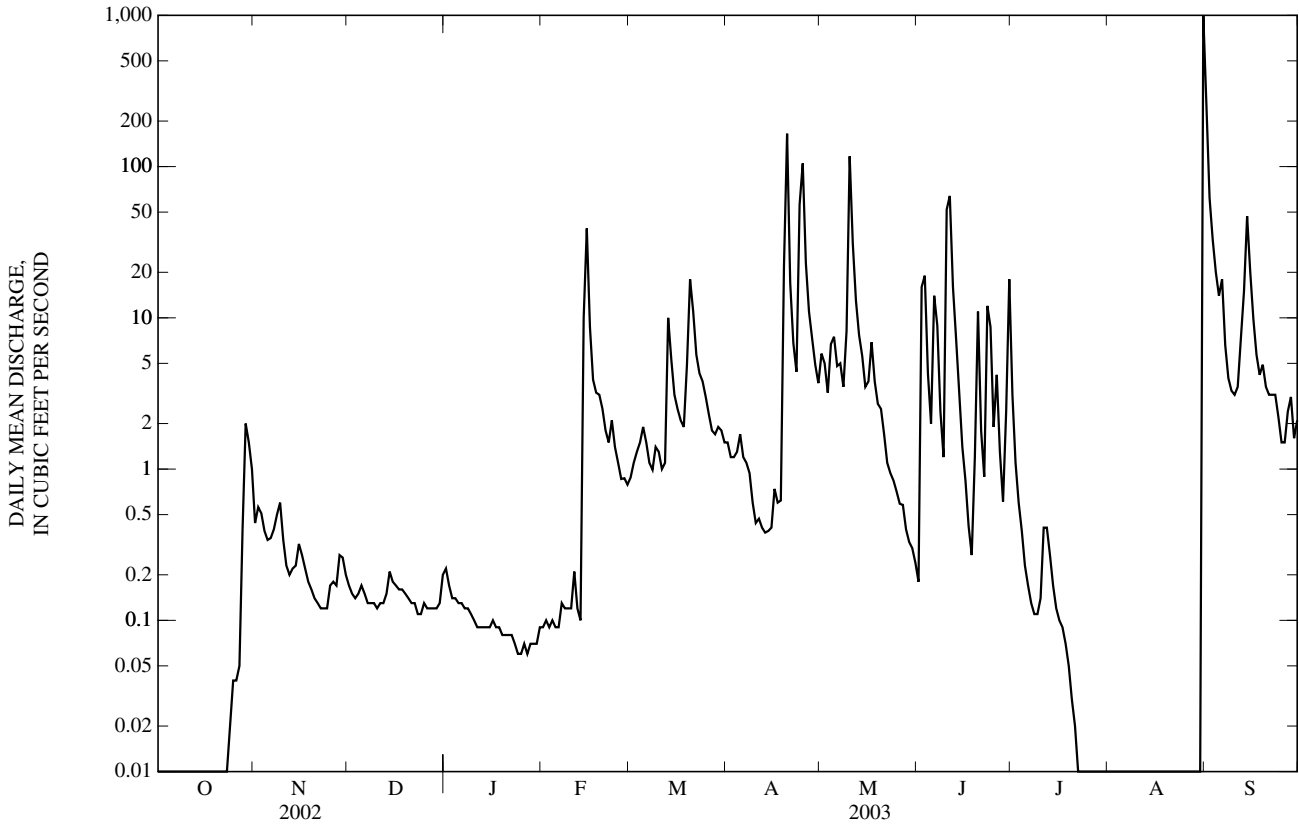
	2000 (1987)	2001 (1988)	2002 (1989)	2003 (1990)	2004 (1991)	2005 (1992)	2006 (1993)	2007 (1994)	2008 (1995)	2009 (1996)	2010 (1997)	2011 (1998)
MEAN	26.3	28.9	20.3	14.2	34.3	38.9	55.5	82.0	54.5	26.6	7.73	26.9
MAX	200	200	143	65.3	208	133	223	450	182	415	44.7	237
(WY)	(1987)	(1988)	(1989)	(1990)	(1991)	(1992)	(1993)	(1994)	(1995)	(1996)	(1997)	(1998)
MIN	0.000	0.016	0.040	0.042	0.45	0.78	1.12	2.29	1.07	0.040	0.000	0.000
(WY)	(1979)	(1981)	(1977)	(1977)	(1977)	(1996)	(1996)	(1988)	(1988)	(1980)	(1991)	(1976)



06893080 BLUE RIVER NEAR STANLEY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL MEAN	25.6		7.52		34.6	
HIGHEST ANNUAL MEAN					104	1993
LOWEST ANNUAL MEAN					4.99	1976
HIGHEST DAILY MEAN	1,980	May 12	1,000	Aug 31	5,520	May 17, 1995
LOWEST DAILY MEAN	0.00	Aug 29	0.00	Oct 1	0.00	Aug 9, 1976
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 29	0.00	Oct 1	0.00	Aug 9, 1976
MAXIMUM PEAK FLOW			3,050	Aug 31	20,200	May 15, 1990
MAXIMUM PEAK STAGE			12.11	Aug 31	20.51	May 15, 1990
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	18,530		5,450		25,060	
10 PERCENT EXCEEDS	30		8.8		54	
50 PERCENT EXCEEDS	0.58		0.34		4.4	
90 PERCENT EXCEEDS	0.00		0.00		0.07	

e Estimated



06893300 INDIAN CREEK AT OVERLAND PARK, KS

LOCATION.--Lat 38°56'30", long 94°40'10", in NW ¼ NE ¼ NE ¼ sec.7, T.13 S., R.25 E., Johnson County, Hydrologic Unit 10300001, on right bank at downstream side of Marty Street bridge in Overland Park.

DRAINAGE AREA.--26.6 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 856.88 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 17, 1977, water-stage recorder at site 700 ft downstream at same datum.

REMARKS.--Records good. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 19	1300	1,320	9.54	Aug 30	1300	1,980	10.43
Apr 19	2215	2,270	10.79	Aug 30	1800	1,650	10.01
Jun 2	1130	1,020	9.07	Aug 31	1100	*4,250	*12.59
Jun 22	1845	3,300	11.87				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

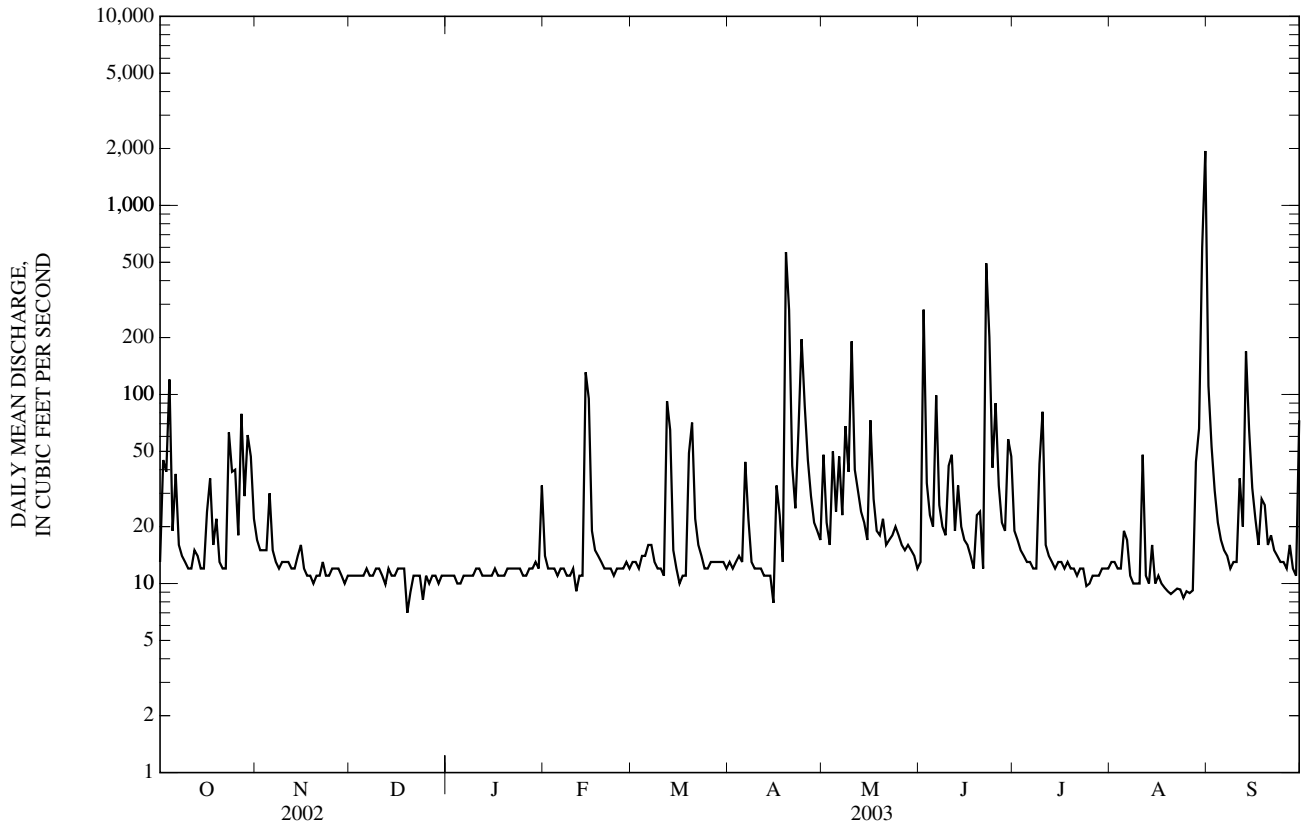
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	17	11	11	14	13	13	48	13	19	13	111
2	45	15	11	11	12	13	12	21	281	17	13	53
3	39	15	11	11	12	12	13	16	34	15	12	31
4	120	15	11	10	12	14	14	50	23	14	12	21
5	19	30	11	10	11	14	13	24	20	13	19	17
6	38	15	12	11	12	16	44	47	99	13	17	15
7	16	13	11	11	12	16	22	23	26	12	11	14
8	14	12	11	11	11	13	13	68	20	12	10	12
9	13	13	12	11	11	12	12	39	18	43	10	13
10	12	13	12	12	12	12	12	191	42	81	10	13
11	12	13	11	12	9.1	11	12	40	48	16	48	36
12	15	12	9.9	11	11	92	11	31	19	14	11	20
13	14	12	12	11	11	65	11	24	33	13	10	169
14	12	14	11	11	131	15	11	21	20	12	16	65
15	12	16	11	11	95	12	7.9	17	17	13	10	32
16	24	12	12	12	19	10	33	73	16	13	11	22
17	36	11	12	11	15	11	23	28	14	12	10	16
18	16	11	12	11	14	11	13	19	12	13	9.5	28
19	22	10	7.0	11	13	49	566	18	23	12	9.1	26
20	13	11	9.0	12	12	71	280	22	24	12	8.8	16
21	12	11	11	12	12	22	42	16	12	11	9.1	18
22	12	13	11	12	12	16	25	17	494	12	9.4	15
23	63	11	11	12	11	14	65	18	201	12	9.3	14
24	39	11	8.2	12	12	12	196	20	41	9.7	8.4	13
25	40	12	11	11	12	12	87	18	90	10	9.1	13
26	18	12	10	11	12	13	45	16	33	11	8.9	12
27	79	12	11	12	13	13	29	15	21	11	9.2	16
28	29	11	11	12	12	13	21	16	19	11	44	12
29	61	10	10	13	---	13	19	15	58	12	66	11
30	47	11	11	12	---	13	17	14	47	12	600	73
31	22	---	11	33	---	12	---	12	---	12	1,940	---
MEAN	29.9	13.1	10.8	12.1	19.5	20.5	56.1	32.2	60.6	15.9	96.3	30.9
MAX	120	30	12	33	131	92	566	191	494	81	1,940	169
MIN	12	10	7.0	10	9.1	10	7.9	12	12	9.7	8.4	11
AC-FT	1,840	781	667	742	1,080	1,260	3,340	1,980	3,610	977	5,920	1,840

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	33.4	25.8	21.0	18.5	24.9	33.4	44.1	55.5	67.3	32.5	23.5	43.1
MAX	146	114	107	99.1	118	208	158	243	263	248	96.3	217
(WY)	(1986)	(1999)	(1993)	(1982)	(1985)	(1973)	(1994)	(1990)	(1984)	(1993)	(2003)	(1986)
MIN	0.003	0.47	0.000	0.26	0.63	1.19	2.86	3.26	4.86	0.91	0.56	0.66
(WY)	(1964)	(1967)	(1964)	(1964)	(1964)	(1964)	(1977)	(1965)	(1968)	(1975)	(1967)	(1976)

06893300 INDIAN CREEK AT OVERLAND PARK, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL MEAN	31.4		33.2		35.2	
HIGHEST ANNUAL MEAN					89.5	1993
LOWEST ANNUAL MEAN					8.32	1976
HIGHEST DAILY MEAN	739	May 25	1,940	Aug 31	4,340	Jun 9, 1984
LOWEST DAILY MEAN	7.0	Dec 19	7.0	Dec 19	0.00	Oct 1, 1963
ANNUAL SEVEN-DAY MINIMUM	9.7	Dec 19	9.0	Aug 20	0.00	Oct 1, 1963
MAXIMUM PEAK FLOW			4,250	Aug 31	12,800	Jun 9, 1984
MAXIMUM PEAK STAGE			12.59	Aug 31	17.78	Jun 9, 1984
INSTANTANEOUS LOW FLOW			1.6	Dec 19	0.00	many years
ANNUAL RUNOFF (AC-FT)	22,750		24,020		25,520	
10 PERCENT EXCEEDS	64		48		57	
50 PERCENT EXCEEDS	15		13		13	
90 PERCENT EXCEEDS	11		11		1.5	



## 06910800 MARAIS DES CYGNES RIVER NEAR READING, KS

LOCATION.--Lat 38°34'00", long 95°57'50", in NE ¼ SE ¼ SW ¼ sec.15, T.17 S., R.13 E., Lyon County, Hydrologic Unit 10290101, on left bank at downstream side of county highway bridge, 1.9 mi downstream from confluence of One Hundred and Fortytwo Mile Creek and Elm Creek, 4.3 mi upstream from Duck Creek, 3.0 mi north of Reading, and at mile 467.0.

DRAINAGE AREA.--177 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,048.32 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 19	2100	*4,960	*19.10	Apr 24	0730	3,710	15.66

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	18	1.6	0.67	0.98	3.1	4.2	61	9.1	23	0.49	425
2	0.03	9.3	1.3	0.61	e1.0	3.3	4.0	53	132	18	0.48	103
3	0.10	5.7	1.1	0.69	e1.1	3.2	3.6	45	165	14	0.44	46
4	0.67	3.9	0.94	0.74	e1.2	3.3	3.7	45	57	12	0.39	26
5	3.8	3.1	0.94	0.67	1.4	3.4	3.5	38	33	9.3	0.47	16
6	3.8	3.4	0.98	0.59	1.6	3.4	3.4	32	93	7.6	0.61	11
7	4.7	2.3	0.81	0.60	1.5	3.4	3.9	29	136	6.2	0.47	7.3
8	3.1	2.3	0.74	0.60	1.4	3.0	4.1	45	52	5.4	0.41	5.3
9	1.9	1.5	0.76	0.58	1.4	2.8	4.4	40	34	4.9	0.34	4.4
10	1.2	0.97	0.83	0.49	1.3	2.7	4.2	242	26	6.6	0.28	3.7
11	0.80	0.55	0.85	0.43	1.3	2.8	4.0	196	20	9.0	0.25	5.6
12	0.60	0.30	0.90	0.37	1.2	2.7	3.7	70	17	7.7	0.20	26
13	0.43	0.16	0.90	0.39	1.2	2.7	3.4	46	16	5.4	0.14	58
14	0.48	0.16	0.91	0.42	7.1	2.6	3.1	39	14	4.3	0.11	292
15	0.48	0.40	0.96	0.53	101	2.6	2.9	34	12	3.6	0.09	91
16	0.37	0.90	1.0	0.55	44	2.8	3.5	34	10	2.8	0.07	39
17	0.30	0.77	1.1	0.48	21	3.5	4.0	41	9.2	2.3	0.05	22
18	0.26	1.1	1.1	0.47	13	4.2	3.5	45	7.8	2.0	0.03	15
19	0.26	0.69	0.94	0.69	9.7	5.4	1,850	33	7.7	2.0	0.02	11
20	0.20	1.3	0.84	0.75	7.9	22	2,970	27	8.1	1.9	0.01	9.6
21	0.18	0.93	0.79	0.71	6.6	75	418	27	10	1.6	0.00	8.3
22	0.15	1.2	0.74	0.69	5.7	40	206	29	13	1.8	0.00	8.7
23	0.34	1.4	0.72	0.71	4.9	22	268	23	82	1.8	0.00	6.6
24	0.51	1.7	0.70	0.69	4.6	15	2,380	23	107	1.5	0.00	5.0
25	1.5	1.5	0.68	0.65	4.1	12	1,520	50	262	1.2	0.00	3.9
26	1.3	1.8	0.66	0.67	3.5	9.4	308	28	741	0.92	0.00	3.4
27	9.8	1.9	0.78	0.56	3.1	7.6	164	22	111	0.83	0.00	3.7
28	12	3.2	0.77	0.73	2.9	6.5	113	17	52	0.80	1.0	3.4
29	13	2.7	0.78	e0.80	---	5.7	88	14	37	0.85	1.7	2.8
30	13	2.0	0.80	e0.85	---	5.0	71	12	30	0.70	20	3.1
31	16	---	0.69	e0.90	---	4.6	---	10	---	0.56	1,750	---
MEAN	2.94	2.50	0.89	0.62	9.13	9.22	347	46.8	76.8	5.18	57.4	42.2
MAX	16	18	1.6	0.90	101	75	2,970	242	741	23	1,750	425
MIN	0.00	0.16	0.66	0.37	0.98	2.6	2.9	10	7.7	0.56	0.00	2.8
MED	0.60	1.5	0.84	0.65	3.0	3.4	4.2	34	32	2.8	0.20	9.2
AC-FT	181	149	55	38	507	567	20,670	2,880	4,570	318	3,530	2,510

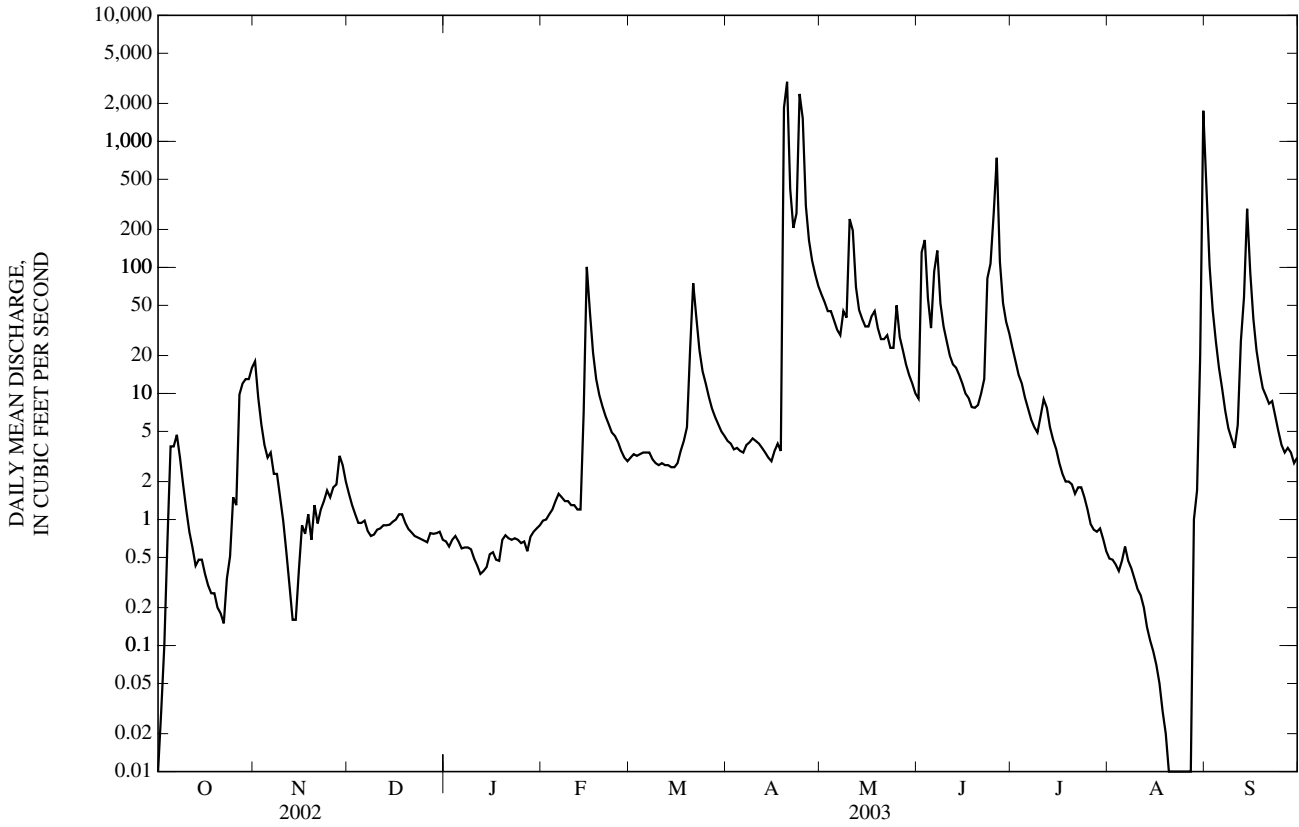
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

MEAN	76.9	81.3	54.1	45.1	95.0	146	178	237	198	83.9	25.1	64.7
MAX	773	978	276	208	424	744	778	1,766	1,173	875	156	828
(WY)	(1986)	(1999)	(1993)	(1974)	(1985)	(1973)	(1983)	(1982)	(1977)	(1993)	(1977)	(1973)
MIN	0.000	0.000	0.000	0.000	0.013	0.66	0.74	13.6	0.58	0.27	0.000	0.000
(WY)	(1989)	(1989)	(1992)	(1992)	(1992)	(1989)	(1981)	(1980)	(1989)	(1980)	(1991)	(1991)

06910800 MARAIS DES CYGNES RIVER NEAR READING, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL MEAN	37.8		49.7		107	
HIGHEST ANNUAL MEAN					296	
LOWEST ANNUAL MEAN					8.37	
HIGHEST DAILY MEAN	1,890	May 9	2,970	Apr 20	25,000	May 29, 1982
LOWEST DAILY MEAN	0.00	Sep 27	0.00	Oct 1	0.00	Sep 8, 1976
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 25	0.00	Aug 21	0.00	Sep 8, 1976
MAXIMUM PEAK FLOW			4,960	Apr 19	67,400	May 29, 1982
MAXIMUM PEAK STAGE			19.10	Apr 19	27.47	May 29, 1982
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	27,350		35,970		77,430	
10 PERCENT EXCEEDS	44		52		161	
50 PERCENT EXCEEDS	2.3		3.1		13	
90 PERCENT EXCEEDS	0.12		0.40		0.15	

e Estimated



06910997 MELVERN LAKE NEAR MELVERN, KS

LOCATION.--Lat 38°30'34", long 95°42'36", in NW 1/4 SW 1/4 SW 1/4 sec.1, T.18 S., R.15 E., Osage County, Hydrologic Unit 10290101, in control tower of Melvern Dam on Marais des Cygnes River, 4.0 mi west of Melvern, and at mile 447.7.

DRAINAGE AREA.--349 mi<sup>2</sup>.

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

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

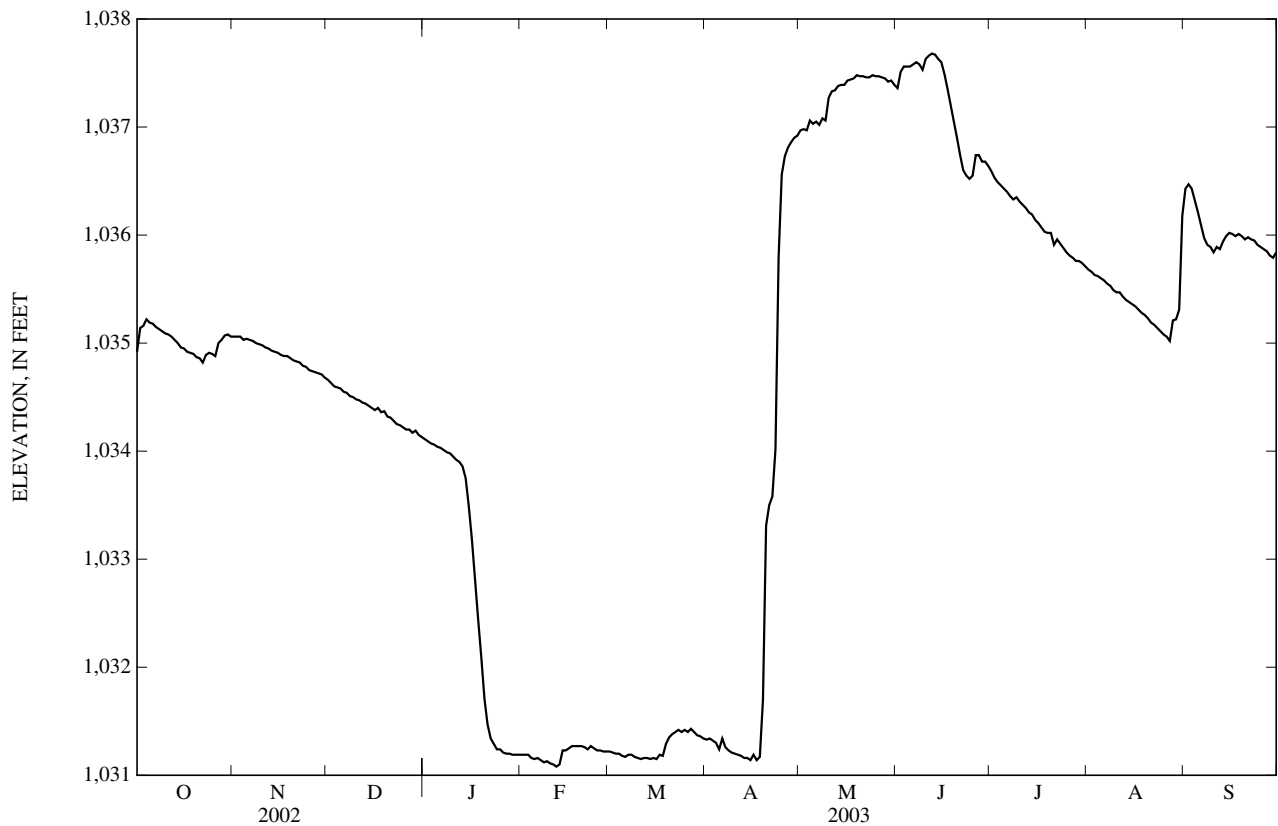
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began in July 1972. Conservation pool elevation first reached Apr. 4, 1975. Total capacity, 920,600 acre-ft, consisting of the following: Dead storage, 26 acre-ft below elevation 962.0 ft; conservation pool, 154,400 acre-ft between elevations 962.0 ft and 1,036.0 ft; flood-control pool, 258,600 acre-ft between elevations 1,036.0 ft and 1,057.0 ft; and surcharge pool, 507,600 acre-ft between elevations 1,057.0 ft and 1,073.0 ft. Reservoir is used to store water for flood control, irrigation, and recreation. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,053.45 ft, June 13, 1995, contents, 316,300 acre-ft; minimum elevation since conservation pool first reached, 1,029.86 ft, Feb. 11, 1992, contents, 115,800 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,037.69 ft, June 13, contents, 166,400 acre-ft; minimum elevation, 1,031.07 ft, Feb. 13 contents, 122,800 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Computed by U.S. Army Corps of Engineers in 1963)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,030	116,600	1,040	184,000	1,035	147,600



## 06910997 MELVERN LAKE NEAR MELVERN, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,034.92	1,035.06	1,034.66	1,034.11	1,031.19	1,031.22	1,031.33	1,036.97	1,037.36	1,036.59	1,035.68	1,036.43
2	1,035.14	1,035.06	1,034.63	1,034.09	1,031.19	1,031.21	1,031.34	1,036.98	1,037.51	1,036.53	1,035.66	1,036.47
3	1,035.16	1,035.06	1,034.60	1,034.07	1,031.19	1,031.20	1,031.32	1,036.97	1,037.56	1,036.49	1,035.63	1,036.43
4	1,035.22	1,035.03	1,034.59	1,034.06	1,031.16	1,031.20	1,031.30	1,037.06	1,037.56	1,036.46	1,035.62	1,036.32
5	1,035.19	1,035.04	1,034.58	1,034.04	1,031.15	1,031.18	1,031.24	1,037.03	1,037.56	1,036.43	1,035.60	1,036.21
6	1,035.18	1,035.03	1,034.55	1,034.03	1,031.16	1,031.17	1,031.34	1,037.05	1,037.58	1,036.40	1,035.58	1,036.09
7	1,035.15	1,035.02	1,034.54	1,034.01	1,031.14	1,031.19	1,031.26	1,037.02	1,037.60	1,036.36	1,035.55	1,035.97
8	1,035.13	1,035.00	1,034.51	1,033.99	1,031.12	1,031.19	1,031.23	1,037.08	1,037.58	1,036.33	1,035.53	1,035.91
9	1,035.11	1,034.99	1,034.50	1,033.98	1,031.13	1,031.17	1,031.21	1,037.06	1,037.53	1,036.35	1,035.49	1,035.89
10	1,035.09	1,034.98	1,034.48	1,033.95	1,031.11	1,031.16	1,031.20	1,037.27	1,037.63	1,036.31	1,035.47	1,035.84
11	1,035.08	1,034.96	1,034.47	1,033.92	1,031.10	1,031.15	1,031.19	1,037.33	1,037.66	1,036.28	1,035.47	1,035.89
12	1,035.06	1,034.95	1,034.45	1,033.90	1,031.08	1,031.16	1,031.18	1,037.34	1,037.68	1,036.25	1,035.43	1,035.87
13	1,035.03	1,034.93	1,034.44	1,033.86	1,031.10	1,031.16	1,031.16	1,037.38	1,037.67	1,036.21	1,035.40	1,035.94
14	1,035.00	1,034.92	1,034.42	1,033.75	1,031.23	1,031.15	1,031.16	1,037.39	1,037.63	1,036.19	1,035.38	1,035.99
15	1,034.96	1,034.91	1,034.40	1,033.49	1,031.23	1,031.16	1,031.14	1,037.39	1,037.60	1,036.14	1,035.36	1,036.02
16	1,034.95	1,034.89	1,034.38	1,033.18	1,031.25	1,031.15	1,031.19	1,037.43	1,037.49	1,036.11	1,035.34	1,036.01
17	1,034.92	1,034.88	1,034.40	1,032.81	1,031.27	1,031.19	1,031.14	1,037.44	1,037.35	1,036.07	1,035.31	1,035.99
18	1,034.91	1,034.88	1,034.36	1,032.44	1,031.27	1,031.18	1,031.17	1,037.45	1,037.20	1,036.03	1,035.28	1,036.01
19	1,034.90	1,034.86	1,034.37	1,032.09	1,031.27	1,031.29	1,031.70	1,037.48	1,037.05	1,036.02	1,035.26	1,035.99
20	1,034.87	1,034.84	1,034.32	1,031.71	1,031.27	1,031.35	1,033.31	1,037.47	1,036.90	1,036.02	1,035.23	1,035.96
21	1,034.86	1,034.83	1,034.31	1,031.47	1,031.26	1,031.38	1,033.50	1,037.47	1,036.74	1,035.91	1,035.19	1,035.98
22	1,034.82	1,034.82	1,034.28	1,031.34	1,031.24	1,031.40	1,033.58	1,037.46	1,036.60	1,035.96	1,035.17	1,035.96
23	1,034.89	1,034.79	1,034.25	e1,031.29	1,031.27	1,031.42	1,034.02	1,037.46	1,036.55	1,035.92	1,035.14	1,035.95
24	1,034.91	1,034.78	1,034.24	1,031.24	1,031.25	1,031.40	1,035.79	1,037.48	1,036.52	1,035.88	1,035.11	1,035.91
25	1,034.90	1,034.75	1,034.22	1,031.24	1,031.23	1,031.42	1,036.56	1,037.47	1,036.55	1,035.84	1,035.08	1,035.89
26	1,034.88	1,034.74	1,034.20	1,031.21	1,031.23	1,031.40	1,036.73	1,037.47	1,036.74	1,035.81	1,035.06	1,035.87
27	1,035.00	1,034.73	1,034.20	1,031.20	1,031.22	1,031.43	1,036.81	1,037.46	1,036.74	1,035.79	1,035.02	1,035.85
28	1,035.03	1,034.72	1,034.17	1,031.20	1,031.22	1,031.40	1,036.86	1,037.45	1,036.68	1,035.76	1,035.21	1,035.81
29	1,035.07	1,034.71	1,034.19	1,031.19	---	1,031.37	1,036.90	1,037.42	1,036.68	1,035.76	1,035.22	1,035.79
30	1,035.08	1,034.68	1,034.15	1,031.19	---	1,031.36	1,036.92	1,037.43	1,036.64	1,035.74	1,035.31	1,035.84
31	1,035.06	---	1,034.13	1,031.19	---	1,031.34	---	1,037.39	---	1,035.71	1,036.18	---
MEAN	1,035.02	1,034.89	1,034.39	1,032.75	1,031.20	1,031.26	1,032.83	1,037.31	1,037.20	1,036.12	1,035.39	1,036.00
MAX	1,035.22	1,035.06	1,034.66	1,034.11	1,031.27	1,031.43	1,036.92	1,037.48	1,037.68	1,036.59	1,036.18	1,036.47
MIN	1,034.82	1,034.68	1,034.13	1,031.19	1,031.08	1,031.15	1,031.14	1,036.97	1,036.52	1,035.71	1,035.02	1,035.79
(+)	148,000	145,400	141,800	123,500	123,700	124,400	160,800	164,200	158,900	152,400	155,600	153,300
(#)	+800	-2,600	-3,600	-18,300	+200	+700	+36,400	+3,400	-5,300	-6,500	+3,200	-2,300
CAL YR	2002	..... (#)	-6,500									
WTR YR	2003	..... (#)	+6,100									

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
# CHANGE IN CONTENTS, IN ACRE-FEET.

e Estimated

OSAGE RIVER BASIN

06911490 SALT CREEK AT LYNDON, KS

LOCATION.--Lat 38°36'07", long 95°41'05", in SE 1/4 SE 1/4 NW 1/4 sec.06, T.17 S., R.16 E., Osage County, Hydrologic Unit 10290101, on left bank at upstream side of U.S. Highway 75 bridge, 0.25 mi south of Lyndon, and at mile 16.6.

DRAINAGE AREA.--97.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Otober 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 979.79 ft above NGVD of 1929. Prior to Oct. 1, 1999, recording gage at site 0.5 mi north and 2.5 mi east of present site.

REMARKS.--Records good. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 24	0600	*1,890	*5.02			No peak greater than base discharge.	

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	4.5	0.31	0.89	0.46	0.67	0.49	22	3.1	6.9	0.40	194
2	0.00	3.3	0.35	0.79	0.48	0.67	0.52	19	134	5.0	0.37	35
3	0.04	3.0	0.26	0.77	0.60	0.64	0.59	15	135	3.7	0.28	13
4	0.36	1.7	0.34	0.75	1.2	0.63	0.47	16	33	2.9	0.22	5.8
5	0.36	1.7	0.36	0.68	1.3	2.7	0.40	17	17	2.3	0.11	3.2
6	0.60	2.0	0.39	0.69	1.2	3.5	0.39	14	54	2.0	0.13	2.1
7	0.44	1.8	0.40	0.68	0.93	3.4	0.38	9.9	22	1.5	0.13	1.8
8	0.33	1.8	0.38	0.66	0.85	3.4	0.48	8.8	12	1.5	0.12	1.2
9	0.24	1.9	0.34	0.66	0.66	1.8	0.49	17	7.4	1.7	0.10	0.79
10	0.19	1.8	0.37	0.64	0.56	0.91	0.53	144	6.0	1.6	0.06	0.87
11	0.16	1.7	0.42	0.67	0.48	0.58	0.66	92	5.7	1.9	0.42	1.2
12	0.17	0.73	0.36	0.73	0.49	0.49	0.85	29	64	2.3	0.41	1.6
13	0.08	0.23	0.34	0.73	0.45	0.68	1.2	19	220	1.9	0.33	5.0
14	0.04	0.16	0.33	0.74	2.5	0.60	1.0	15	18	1.8	0.24	14
15	0.01	0.14	0.36	0.69	10	0.50	1.1	12	8.3	1.7	0.13	32
16	0.03	0.13	0.44	0.97	3.5	0.47	1.0	17	5.5	1.5	0.09	9.7
17	0.04	0.13	0.57	0.81	1.5	0.48	1.1	37	3.9	1.4	0.07	4.7
18	0.03	0.16	0.57	0.77	0.94	0.50	1.2	24	3.3	1.2	0.04	3.2
19	0.03	0.22	0.54	0.85	0.69	0.72	50	15	3.2	1.2	0.04	1.2
20	0.01	0.24	2.5	0.90	0.59	1.5	627	15	3.0	1.1	0.02	0.65
21	0.01	0.33	6.3	0.85	0.51	2.5	88	11	2.6	0.82	0.01	0.49
22	0.04	0.36	6.2	0.84	0.63	4.3	36	7.6	2.5	0.93	0.01	0.65
23	4.5	0.41	3.4	0.72	0.67	4.5	66	5.9	95	0.84	0.00	0.75
24	4.0	0.41	2.2	0.70	0.66	3.0	1,390	5.6	145	0.60	0.00	0.67
25	3.3	0.35	1.6	0.72	0.58	2.4	534	4.8	38	0.55	0.00	0.83
26	2.6	0.34	1.5	0.85	0.57	1.8	133	4.2	228	0.53	0.00	0.85
27	2.8	0.30	1.4	0.68	0.60	1.3	65	3.7	48	0.45	0.00	1.0
28	1.4	0.26	1.2	0.67	0.65	0.72	44	4.5	21	0.29	0.09	1.9
29	7.9	0.29	1.2	0.56	---	0.49	31	3.9	13	0.47	0.31	2.1
30	7.3	0.39	1.1	0.47	---	0.48	24	3.6	10	0.48	1.7	2.4
31	6.0	---	1.0	0.51	---	0.48	---	3.9	---	0.43	1,090	---
MEAN	1.39	1.03	1.19	0.73	1.22	1.51	103	19.9	45.4	1.66	35.3	11.4
MAX	7.9	4.5	6.3	0.97	10	4.5	1,390	144	228	6.9	1,090	194
MIN	0.00	0.13	0.26	0.47	0.45	0.47	0.38	3.6	2.5	0.29	0.00	0.49
AC-FT	85	61	73	45	68	93	6,150	1,220	2,700	102	2,170	680

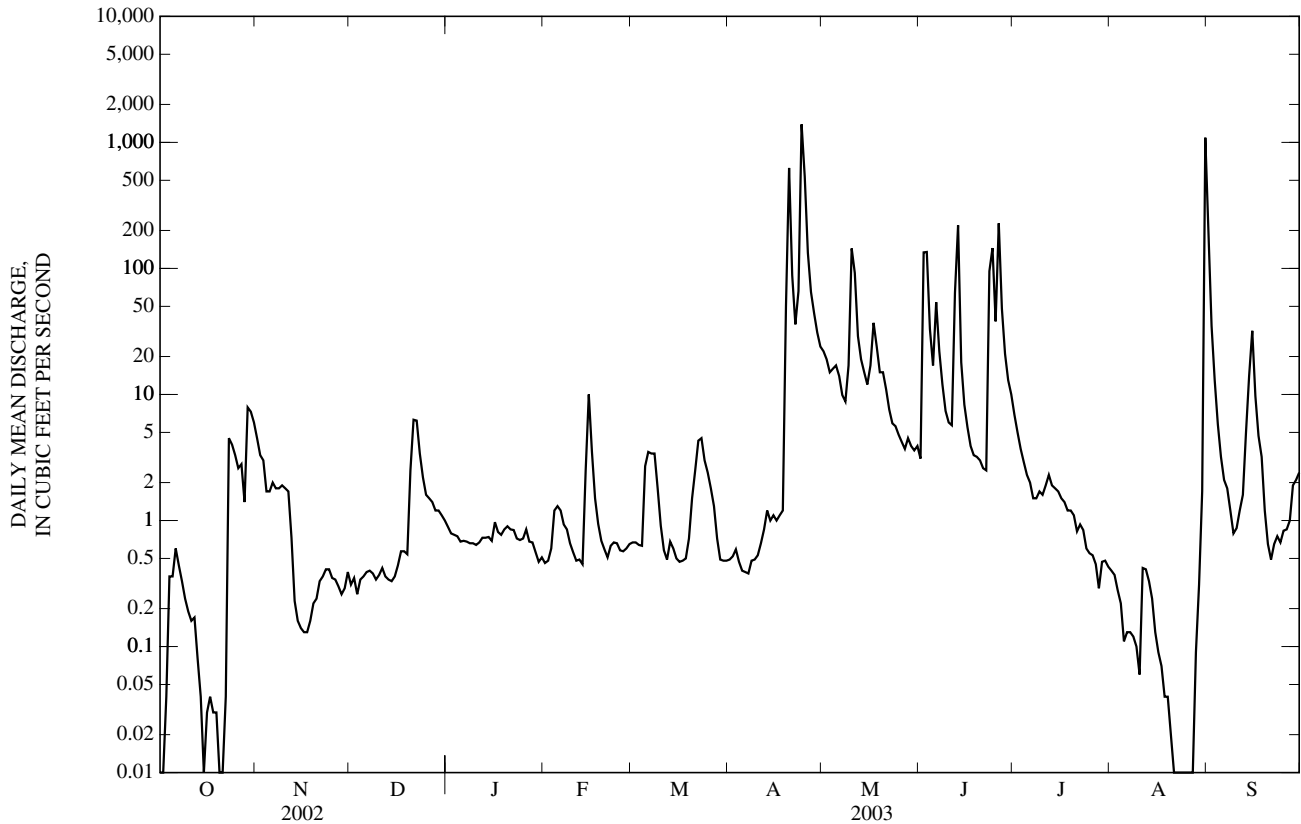
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

MEAN	2.19	3.33	27.1	2.81	42.2	36.8	54.8	84.6	70.4	1.41	10.2	22.1
MAX	4.62	10.4	105	8.25	106	89.0	103	275	161	2.01	35.3	77.1
(WY)	(2002)	(2000)	(2000)	(2000)	(2000)	(2000)	(2003)	(2002)	(2001)	(2001)	(2003)	(2001)
MIN	0.000	0.018	0.062	0.087	1.22	1.51	8.72	7.12	2.71	0.77	0.11	0.000
(WY)	(2001)	(2001)	(2001)	(2001)	(2003)	(2003)	(2001)	(2000)	(2000)	(2000)	(2000)	(2000)



06911490 SALT CREEK AT LYNDON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL MEAN	39.0		18.6		29.6	
HIGHEST ANNUAL MEAN					39.4	2002
LOWEST ANNUAL MEAN					18.6	2003
HIGHEST DAILY MEAN	2,520	May 12	1,390	Apr 24	2,520	May 12, 2002
LOWEST DAILY MEAN	0.00	Sep 12	0.00	Oct 1	0.00	Aug 25, 2000
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 12	0.00	Aug 21	0.00	Aug 25, 2000
MAXIMUM PEAK FLOW			1,890	Apr 24	4,320	May 25, 2002
MAXIMUM PEAK STAGE			5.02	Apr 24	5.02	Apr 24, 2003
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Aug 28, 2000
ANNUAL RUNOFF (AC-FT)	28,250		13,450		21,470	
10 PERCENT EXCEEDS	38		19		37	
50 PERCENT EXCEEDS	2.1		0.85		2.0	
90 PERCENT EXCEEDS	0.07		0.15		0.02	



OSAGE RIVER BASIN

06911900 DRAGON CREEK NEAR BURLINGAME, KS

LOCATION.--Lat 38°42'30", long 95°50'20", in SE 1/4 SE 1/4 sec.27, T.15 S., R.14 E., Osage County, Hydrologic Unit 10290101, on left bank 110 ft downstream from city of Burlingame pumping station and dam, 0.2 mi downstream from bridge on U.S. Highway 56, 2.0 mi downstream from Plum Creek, and 3.0 mi south of Burlingame.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--114 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,016.06 ft above NGVD of 1929. Prior to June 8, 1960, nonrecording gage at bridge 180 ft upstream at present datum.

REMARKS.--Records good. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1900, 23.4 ft, June 26, 1946, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr 20	0100	*4,090	*16.72	Jun 25	2330	2,670	11.99
Apr 24	0700	2,430	11.03				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

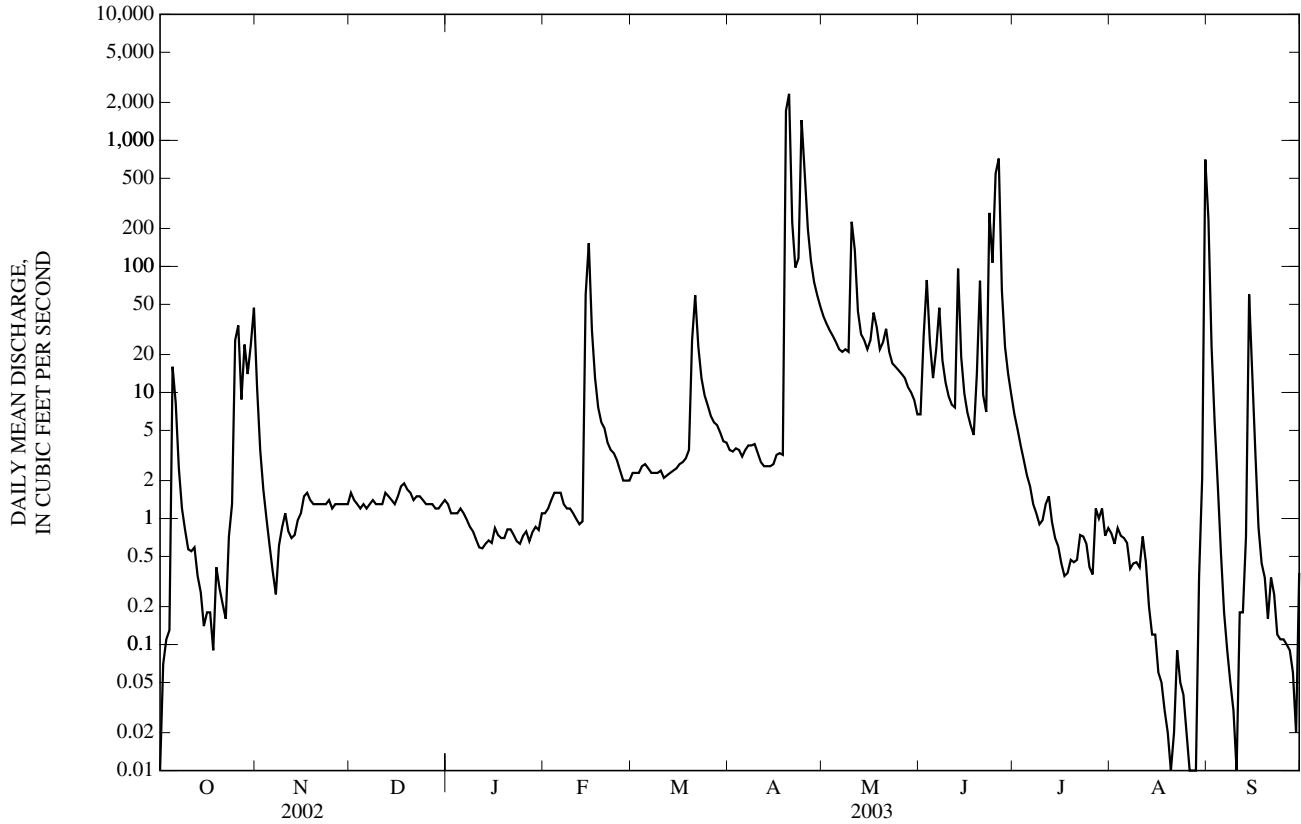
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	11	1.6	1.3	1.1	2.3	3.5	40	6.7	6.7	0.76	235
2	0.07	3.5	1.4	1.1	1.2	2.3	3.4	35	28	5.1	0.63	23
3	0.11	1.7	1.3	1.1	1.4	2.3	3.6	31	78	3.8	0.84	5.7
4	0.13	1.0	1.2	1.1	1.6	2.6	3.5	28	25	2.9	0.73	1.8
5	16	0.61	1.3	1.2	1.6	2.7	3.1	25	13	2.2	0.70	0.53
6	8.3	0.38	1.2	1.1	1.6	2.5	3.5	22	22	1.8	0.64	0.18
7	2.5	0.25	1.3	0.98	1.3	2.3	3.8	21	47	1.3	0.40	0.09
8	1.2	0.61	1.4	0.86	1.2	2.3	3.8	22	18	1.1	0.44	0.05
9	0.81	0.85	1.3	0.79	1.2	2.3	3.9	21	12	0.90	0.45	0.03
10	0.57	1.1	1.3	0.68	1.1	2.4	3.3	226	9.3	0.97	0.41	0.01
11	0.55	0.79	1.3	0.59	0.99	2.1	2.8	135	8.0	1.3	0.72	0.18
12	0.59	0.70	1.6	0.58	0.90	2.2	2.6	44	7.6	1.5	0.45	0.18
13	0.35	0.74	1.5	0.63	0.95	2.3	2.6	29	96	0.94	0.20	0.72
14	0.26	0.97	1.4	0.67	60	2.4	2.6	26	19	0.70	0.12	60
15	0.14	1.1	1.3	0.64	153	2.5	2.7	22	9.8	0.60	0.12	14
16	0.18	1.5	1.5	0.84	31	2.7	3.2	26	6.9	0.44	0.06	3.3
17	0.18	1.6	1.8	0.74	13	2.8	3.3	43	5.5	0.35	0.05	0.85
18	0.09	1.4	1.9	0.70	7.6	3.0	3.2	33	4.6	0.37	0.03	0.44
19	0.41	1.3	1.7	0.70	5.8	3.5	1,720	22	14	0.47	0.02	0.34
20	0.28	1.3	1.6	0.82	5.2	26	2,340	25	77	0.45	0.00	0.16
21	0.21	1.3	1.4	0.82	4.0	59	224	32	9.6	0.47	0.02	0.34
22	0.16	1.3	1.5	0.74	3.5	23	98	21	7.0	0.74	0.09	0.25
23	0.72	1.3	1.5	0.66	3.3	13	116	17	266	0.72	0.05	0.12
24	1.3	1.4	1.4	0.63	2.9	9.5	1,450	16	107	0.63	0.04	0.11
25	26	1.2	1.3	0.73	2.4	7.9	545	15	546	0.41	0.02	0.11
26	34	1.3	1.3	0.79	2.0	6.5	198	14	717	0.36	0.00	0.10
27	8.8	1.3	1.3	0.66	2.0	5.8	110	13	64	1.2	0.00	0.09
28	24	1.3	1.2	0.78	2.0	5.5	75	11	23	1.0	0.00	0.06
29	14	1.3	1.2	0.86	---	4.8	59	10	14	1.2	0.34	0.02
30	24	1.3	1.3	0.81	---	4.1	48	8.7	9.6	0.73	2.1	0.37
31	47	---	1.4	1.1	---	4.0	---	6.7	---	0.84	704	---
MEAN	6.87	1.51	1.41	0.83	11.2	6.99	235	33.6	75.7	1.36	23.0	11.6
MAX	47	11	1.9	1.3	153	59	2,340	226	717	6.7	704	235
MIN	0.00	0.25	1.2	0.58	0.90	2.1	2.6	6.7	4.6	0.35	0.00	0.01
MED	0.57	1.3	1.4	0.79	2.0	2.7	3.7	22	16	0.90	0.20	0.21
AC-FT	422	90	87	51	623	430	13,970	2,060	4,500	84	1,420	691

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

MEAN	49.6	48.2	30.8	26.7	50.8	92.8	118	137	143	51.7	15.4	36.0
MAX	447	621	186	182	249	511	600	1,008	856	652	186	339
(WY)	(1986)	(1999)	(1974)	(1962)	(1985)	(1973)	(1983)	(1995)	(1977)	(1993)	(1968)	(1973)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.21	0.002	0.009	0.000	0.000
(WY)	(1965)	(1967)	(1967)	(1977)	(1992)	(1967)	(1977)	(1989)	(1989)	(1991)	(1966)	(1966)

06911900 DRAGON CREEK NEAR BURLINGAME, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL MEAN	32.0		33.7		66.6	
HIGHEST ANNUAL MEAN					175	1999
LOWEST ANNUAL MEAN					5.54	1989
HIGHEST DAILY MEAN	1,300	May 27	2,340	Apr 20	13,400	May 29, 1982
LOWEST DAILY MEAN	0.00	Jul 26	0.00	Oct 1	0.00	Aug 14, 1962
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 31	0.03	Aug 22	0.00	Aug 14, 1962
MAXIMUM PEAK FLOW			4,090	Apr 20	34,400	May 29, 1982
MAXIMUM PEAK STAGE			16.72	Apr 20	22.80	May 17, 1995
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	23,150		24,430		48,250	
10 PERCENT EXCEEDS	44		32		91	
50 PERCENT EXCEEDS	4.3		1.4		7.6	
90 PERCENT EXCEEDS	0.00		0.18		0.00	



## OSAGE RIVER BASIN

06911900 DRAGOON CREEK NEAR BURLINGAME, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to June 1990, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 20...	1030	1.4	386	8.0	15	0.06
JUN 11...	1410	7.9	516	22.0	22	0.47

06912490 POMONA LAKE NEAR QUENEMO, KS

LOCATION.--Lat 38°38'51", long 95°33'50", in NE 1/4 SE 1/4 NE 1/4 sec.19, T.16 S., R.17 E., Osage County, Hydrologic Unit 10290101, in control tower at dam on Hundred and Ten Mile Creek, 5.0 mi northwest of Quenemo, and at mile 7.9.

DRAINAGE AREA.--322 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1971, published as "Pomona Reservoir."

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

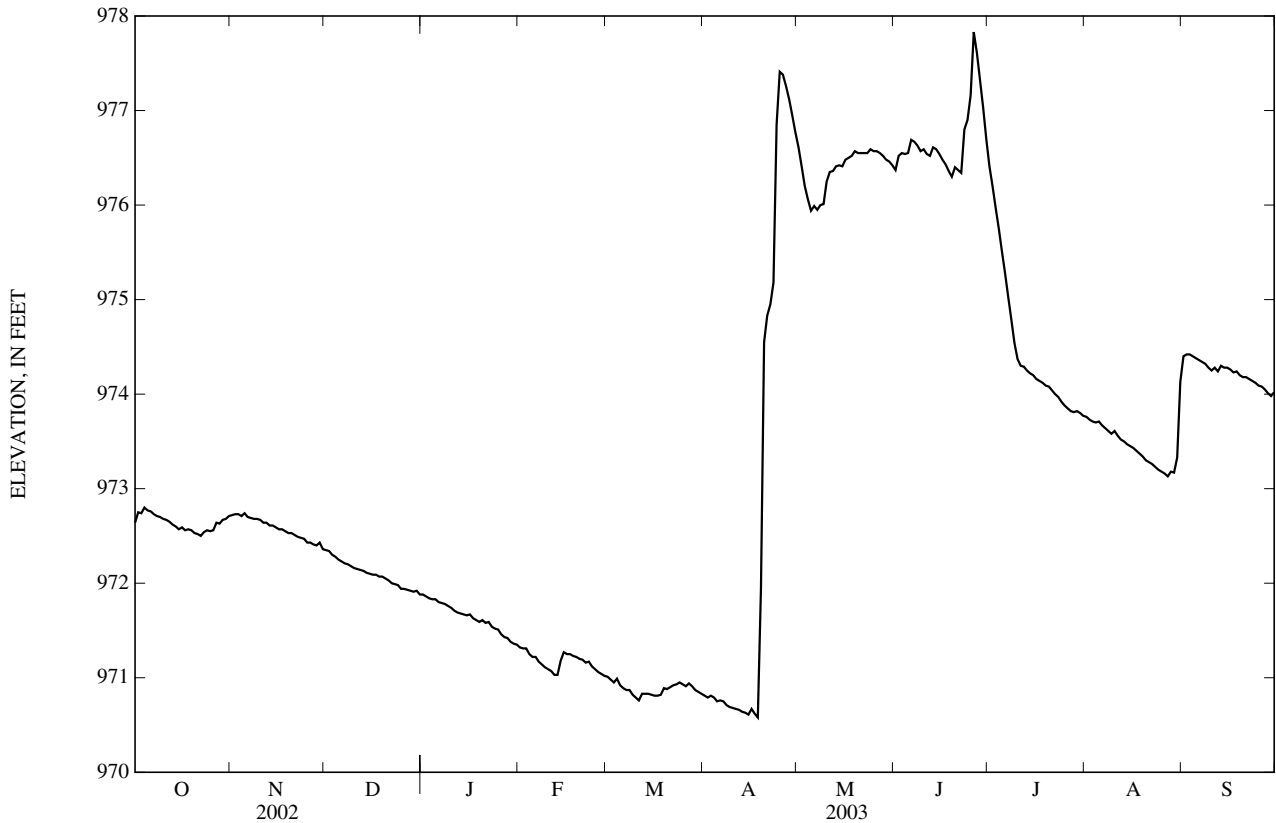
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Oct. 18, 1963. Conservation pool elevation was first reached on June 4, 1965. Total capacity, 498,500 acre-ft, consisting of the following: Sedimentation, 25,610 acre-ft below elevation 960.5 ft; conservation pool, 41,030 acre-ft between elevations 960.5 ft and 974.0 ft; flood-control pool, 176,500 acre-ft between elevations 974.0 ft and 1,003.0 ft; and surcharge pool, 255,400 acre-ft between elevations 1,003.0 ft and 1,025.4 ft. Reservoir is used for flood control, conservation, and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 998.40 ft, June 12, 1995, contents, 203,200 acre-ft; minimum elevation since conservation pool was first filled, 969.60 ft, Mar. 29, 30, 1967, contents, 54,260 acre-ft, from capacity table then in use.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 977.87 ft, June 26, contents, 80,260 acre-ft; minimum elevation, 970.57 ft, Apr. 18, contents, 51,760 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
 (Computed by U.S. Army Corps of Engineers on basis of resurvey made in 1989)  
 Note.--Effective date of new capacity table, Apr. 1, 1990.

Elevation	Contents	Elevation	Contents	Elevation	Contents
965	34,440	975	68,150	980	90,000
970	49,820				



## OSAGE RIVER BASIN

06912490 POMONA LAKE NEAR QUENEMO, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	972.64	972.72	972.35	971.88	971.32	971.01	970.81	976.61	976.37	976.41	973.76	974.40
2	972.75	972.73	972.34	971.86	971.31	970.98	970.79	976.41	976.52	976.20	973.73	974.42
3	972.74	972.73	972.30	971.84	971.31	970.95	970.81	976.20	976.55	975.97	973.71	974.42
4	972.80	972.71	972.28	971.83	971.25	970.99	970.79	976.06	976.54	975.75	973.70	974.40
5	972.77	972.74	972.25	971.83	971.22	970.92	970.75	975.94	976.55	975.51	973.71	974.38
6	972.76	972.70	972.23	971.80	971.22	970.89	970.76	975.99	976.69	975.28	973.67	974.36
7	972.73	972.69	972.21	971.79	971.17	970.87	970.75	975.95	976.67	975.03	973.64	974.34
8	972.71	972.68	972.20	971.78	971.14	970.87	970.71	976.00	976.63	974.79	973.61	974.32
9	972.70	972.68	972.18	971.76	971.11	970.82	970.69	976.01	976.57	974.54	973.58	974.28
10	972.68	972.67	972.16	971.74	971.09	970.79	970.68	976.25	976.59	974.37	973.61	974.25
11	972.67	972.64	972.15	971.71	971.07	970.76	970.67	976.35	976.54	974.30	973.56	974.28
12	972.65	972.64	972.14	971.69	971.03	970.83	970.66	976.36	976.52	974.29	973.52	974.24
13	972.62	972.61	972.13	971.68	971.03	970.83	970.64	976.41	976.61	974.25	973.50	974.30
14	972.60	972.61	972.11	971.67	971.18	970.83	970.63	976.42	976.59	974.22	973.47	974.28
15	972.57	972.59	972.10	971.66	971.27	970.82	970.61	976.41	976.54	974.20	973.45	974.28
16	972.59	972.57	972.09	971.67	971.25	970.81	970.67	976.48	976.48	974.16	973.43	974.26
17	972.56	972.57	972.09	971.63	971.25	970.81	970.62	976.50	976.43	974.14	973.40	974.23
18	972.57	972.55	972.07	971.61	971.23	970.82	970.58	976.52	976.36	974.12	973.37	974.24
19	972.56	972.53	972.07	971.59	971.22	970.89	971.95	976.57	976.30	974.09	973.34	974.20
20	972.53	972.53	972.05	971.61	971.20	970.88	974.55	976.55	976.40	974.08	973.30	974.18
21	972.52	972.51	972.03	971.58	971.19	970.90	974.83	976.55	976.37	974.04	973.28	974.18
22	972.50	972.49	972.00	971.59	971.16	970.92	974.95	976.55	976.34	974.00	973.26	974.16
23	972.54	972.48	971.99	971.54	971.17	970.93	975.18	976.55	976.80	973.97	973.23	974.14
24	972.56	972.47	971.98	971.52	971.12	970.95	976.85	976.59	976.90	973.92	973.20	974.12
25	972.55	972.43	971.94	971.51	971.09	970.93	977.41	976.57	977.16	973.88	973.18	974.09
26	972.56	972.43	971.94	971.46	971.06	970.91	977.38	976.57	977.83	973.85	973.16	974.08
27	972.64	972.41	971.93	971.43	971.04	970.94	977.26	976.55	977.61	973.82	973.13	974.05
28	972.63	972.40	971.92	971.42	971.02	970.91	977.12	976.52	977.32	973.81	973.18	974.01
29	972.67	972.43	971.91	971.38	---	970.87	976.95	976.48	977.03	973.82	973.17	973.98
30	972.68	972.36	971.92	971.36	---	970.85	976.77	976.46	976.70	973.80	973.33	974.02
31	972.71	---	971.88	971.35	---	970.83	---	976.42	---	973.77	974.13	---
MEAN	972.64	972.58	972.09	971.64	971.17	970.88	972.79	976.38	976.68	974.46	973.46	974.23
MAX	972.80	972.74	972.35	971.88	971.32	971.01	977.41	976.61	977.83	976.41	974.13	974.42
MIN	972.50	972.36	971.88	971.35	971.02	970.76	970.58	975.94	976.30	973.77	973.13	973.98
(+)	59,360	58,080	56,350	54,480	53,310	52,660	75,490	74,010	75,200	63,340	64,720	64,290
(#)	+230	-1,280	-1,730	-1,870	-1,170	-650	+22,830	-1,480	+1,190	-11,860	+1,380	-430
CAL YR	2002	.....	(#)	+7,000								
WTR YR	2003	.....	(#)	+5,160								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.

# CHANGE IN CONTENTS, IN ACRE-FEET.

## 06912500 HUNDRED AND TEN MILE CREEK NEAR QUENEMO, KS

LOCATION.--Lat 38°38'41", long 95°33'34", in NE ¼ NW ¼ SW ¼ sec.20, T.16 S., R.17 E., Osage County, Hydrologic Unit 10290101, on left bank 800 ft downstream from outlet works of Pomona Dam, 4.5 mi northwest of Quenemo, and at mile 7.7.

DRAINAGE AREA.--322 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1939 to current year. Prior to October 1941, published as "Dragoon Creek."

REVISED RECORDS.--WSP 1116: 1942.

GAGE.--Water-stage recorder. Datum of gage is 919.05 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). See WSP 1919 for history of changes prior to Apr. 11, 1963.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow completely regulated since 1964 by Pomona Lake (station 06912490), 0.2 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1919, that of July 11, 1951, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	19	14	25	41	40	21	493	53	607	14	e18
2	19	19	14	25	41	40	20	485	56	453	14	14
3	19	18	30	25	41	40	21	486	53	453	14	14
4	20	19	39	25	41	40	21	487	53	446	14	14
5	19	19	31	25	41	40	20	257	52	448	15	14
6	19	19	31	25	40	40	19	23	93	451	15	14
7	19	19	31	25	41	40	18	24	114	450	15	14
8	19	19	31	25	41	40	17	24	113	451	15	14
9	19	19	31	25	40	40	17	24	113	458	15	14
10	19	18	31	25	40	40	16	26	112	315	15	15
11	19	16	26	25	40	40	16	24	112	76	16	15
12	20	16	23	25	40	40	15	24	111	13	16	15
13	20	16	24	25	40	33	16	24	111	14	16	16
14	20	16	24	25	41	20	15	24	112	14	15	16
15	19	16	24	25	41	20	15	24	111	14	15	16
16	19	16	24	25	40	23	16	24	111	14	15	16
17	19	16	24	25	40	27	16	24	110	14	15	16
18	19	16	24	25	40	26	17	25	111	13	15	16
19	20	15	25	25	40	24	19	25	110	13	15	16
20	20	15	24	25	40	20	22	25	111	17	15	16
21	19	15	25	25	40	20	21	25	111	15	15	16
22	19	15	25	24	40	20	21	24	111	13	15	16
23	19	15	25	24	40	21	e22	24	112	12	15	16
24	19	15	25	33	40	22	e24	25	178	12	15	17
25	19	14	25	44	40	21	176	25	221	12	15	17
26	19	14	24	43	40	19	512	24	481	12	16	18
27	21	14	24	43	40	19	504	35	702	13	16	18
28	20	14	25	42	40	21	497	54	728	13	16	18
29	19	14	25	41	---	20	494	53	747	14	16	27
30	20	14	25	41	---	19	497	53	742	14	16	42
31	20	---	25	41	---	19	---	53	---	14	e16	---
MEAN	19.3	16.3	25.7	29.1	40.3	28.8	104	95.7	202	157	15.2	16.9
MAX	21	19	39	44	41	40	512	493	747	607	16	42
MIN	18	14	14	24	40	19	15	23	52	12	14	14
AC-FT	1,190	972	1,580	1,790	2,240	1,770	6,200	5,890	12,010	9,680	932	1,010

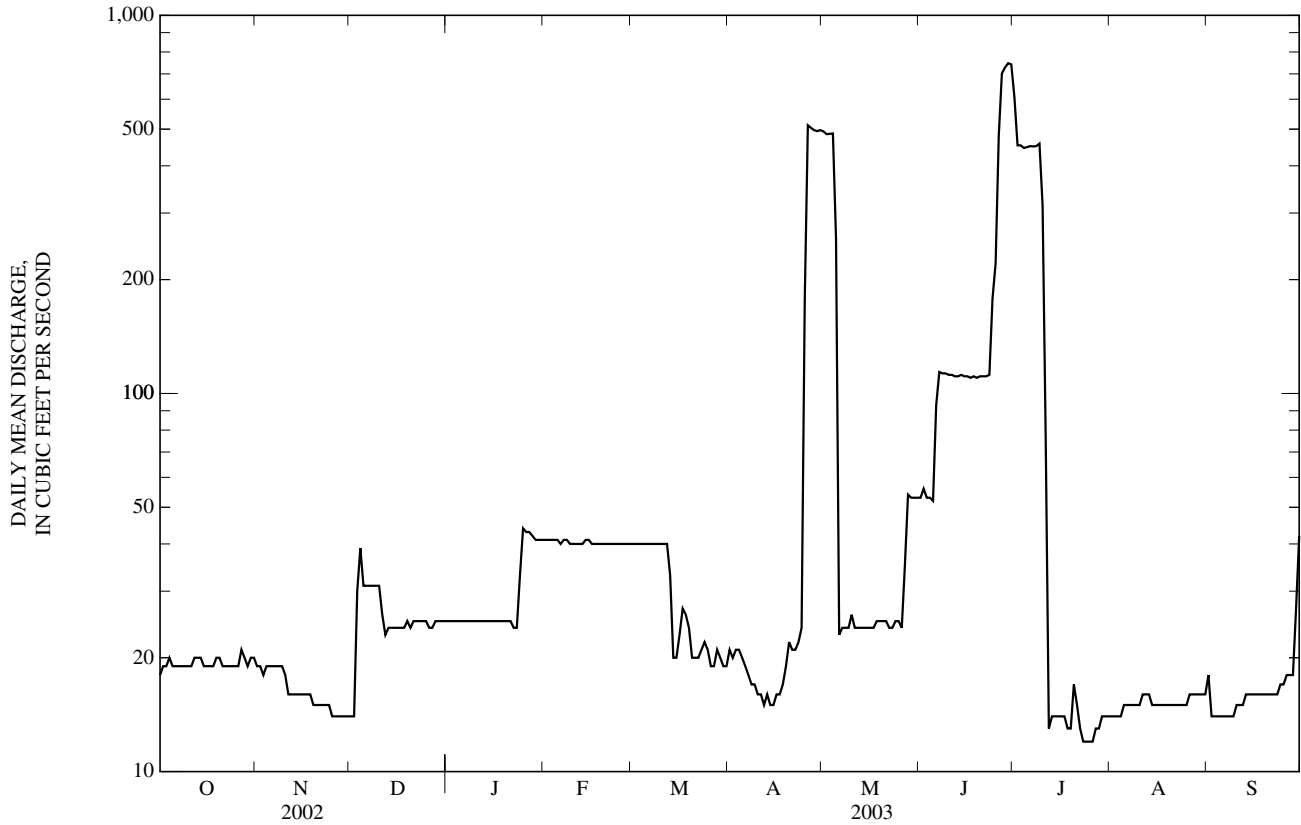
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	131	137	121	85.1	108	196	275	272	375	286	89.1	82.7
MAX	1,196	1,520	1,113	506	847	984	2,476	1,645	2,141	3,096	1,296	1,331
(WY)	(1942)	(1999)	(1999)	(1962)	(1973)	(1987)	(1944)	(1999)	(1982)	(1951)	(1993)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.033	5.04	1.22	0.023	0.000	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1940)	(1940)	(1954)	(1954)	(1953)	(1954)	(1940)	(1953)

06912500 HUNDRED AND TEN MILE CREEK NEAR QUENEMO, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL MEAN	94.4		62.5		180	
HIGHEST ANNUAL MEAN					554	
LOWEST ANNUAL MEAN					3.65	
HIGHEST DAILY MEAN	2,080	Jun 6	747	Jun 29	27,700	Jul 11, 1951
LOWEST DAILY MEAN	13	May 14	12	Jul 23	0.00	Oct 1, 1939
ANNUAL SEVEN-DAY MINIMUM	13	Aug 26	12	Jul 22	0.00	Oct 1, 1939
MAXIMUM PEAK FLOW			763	Jun 28	38,600	Jul 11, 1951
MAXIMUM PEAK STAGE			5.76	Jun 28	28.47	Jul 11, 1951
INSTANTANEOUS LOW FLOW			10	Apr 15	0.00	some years
ANNUAL RUNOFF (AC-FT)	68,380		45,250		130,400	
10 PERCENT EXCEEDS	121		111		432	
50 PERCENT EXCEEDS	18		24		20	
90 PERCENT EXCEEDS	14		14		1.3	

e Estimated





## 06913000 MARAIS DES CYGNES RIVER NEAR POMONA, KS

LOCATION.--Lat 38°35'03", long 95°27'12", in SE ¼ NE ¼ SE ¼ sec.7, T.17 S., R.18 E., Franklin County, Hydrologic Unit 10290101, on right bank at downstream side of county highway bridge, 1.5 mi south of Pomona, 4.7 mi upstream from Miller Dam, 5.7 mi downstream from Hundred and Ten Mile Creek, and at mile 418.1.

DRAINAGE AREA.--1,040 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1922 to February 1938, October 1968 to current year. Prior to October 1968, published as "near Quenemo."

REVISED RECORDS.--WSP 1310: 1924(M), 1929, 1931(M), 1934, 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 893.74 ft above NGVD of 1929. July 1922 to February 1938, nonrecording gage 1.7 mi upstream at datum 891.36 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since 1973 by Melvern Lake (station 06910997) and since 1964 by Pomona Lake (station 06912490). Diversions upstream from station for irrigation. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	64	e40	52	68	67	37	939	87	930	34	8,270
2	48	57	e40	52	66	67	38	1,160	192	682	32	3,030
3	58	51	e40	52	66	67	38	705	395	665	33	425
4	62	46	e56	52	63	66	40	924	245	574	33	449
5	51	43	e66	52	63	65	39	1,090	174	516	35	467
6	46	41	68	52	63	66	40	280	534	509	36	424
7	43	e40	68	52	59	68	38	189	706	506	33	399
8	42	e40	69	53	62	67	38	136	366	504	32	380
9	48	e40	70	54	70	67	38	112	302	502	31	150
10	46	e40	70	52	65	66	38	228	271	468	29	53
11	41	e40	72	51	64	64	38	724	323	231	34	49
12	40	e40	63	54	64	64	38	271	385	75	33	48
13	40	e40	60	56	66	69	38	164	1,410	69	31	53
14	40	e40	60	79	97	53	40	135	630	69	32	63
15	40	e40	60	304	158	46	41	130	355	69	32	82
16	44	e40	61	933	149	46	44	116	296	69	35	92
17	43	e40	62	1,140	108	41	45	170	570	69	36	72
18	42	e40	64	1,130	91	41	44	182	640	69	36	64
19	42	e40	64	1,130	83	45	53	133	632	67	34	59
20	40	e40	64	1,130	81	54	904	112	629	45	36	55
21	40	e40	65	1,120	76	114	720	107	630	39	38	53
22	40	e40	65	631	71	89	226	103	626	40	40	51
23	48	e40	66	370	70	70	147	89	678	38	43	51
24	50	e40	66	195	68	61	2,570	91	622	37	45	51
25	48	e40	67	166	66	55	2,780	114	526	36	46	51
26	43	e40	51	86	75	49	1,190	79	623	40	48	50
27	50	e40	68	76	69	45	850	72	1,090	41	52	49
28	61	e40	57	74	68	42	721	89	991	40	54	49
29	74	e40	57	71	---	40	653	96	1,010	44	62	49
30	61	e40	57	66	---	38	611	93	977	41	66	64
31	67	---	55	75	---	37	---	90	---	40	3,050	---
MEAN	47.7	42.1	61.0	305	77.5	59.0	405	288	564	230	136	507
MAX	74	64	72	1,140	158	114	2,780	1,160	1,410	930	3,050	8,270
MIN	40	40	40	51	59	37	37	72	87	36	29	48
AC-FT	2,930	2,500	3,750	18,760	4,300	3,630	24,070	17,700	33,550	14,130	8,350	30,150

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

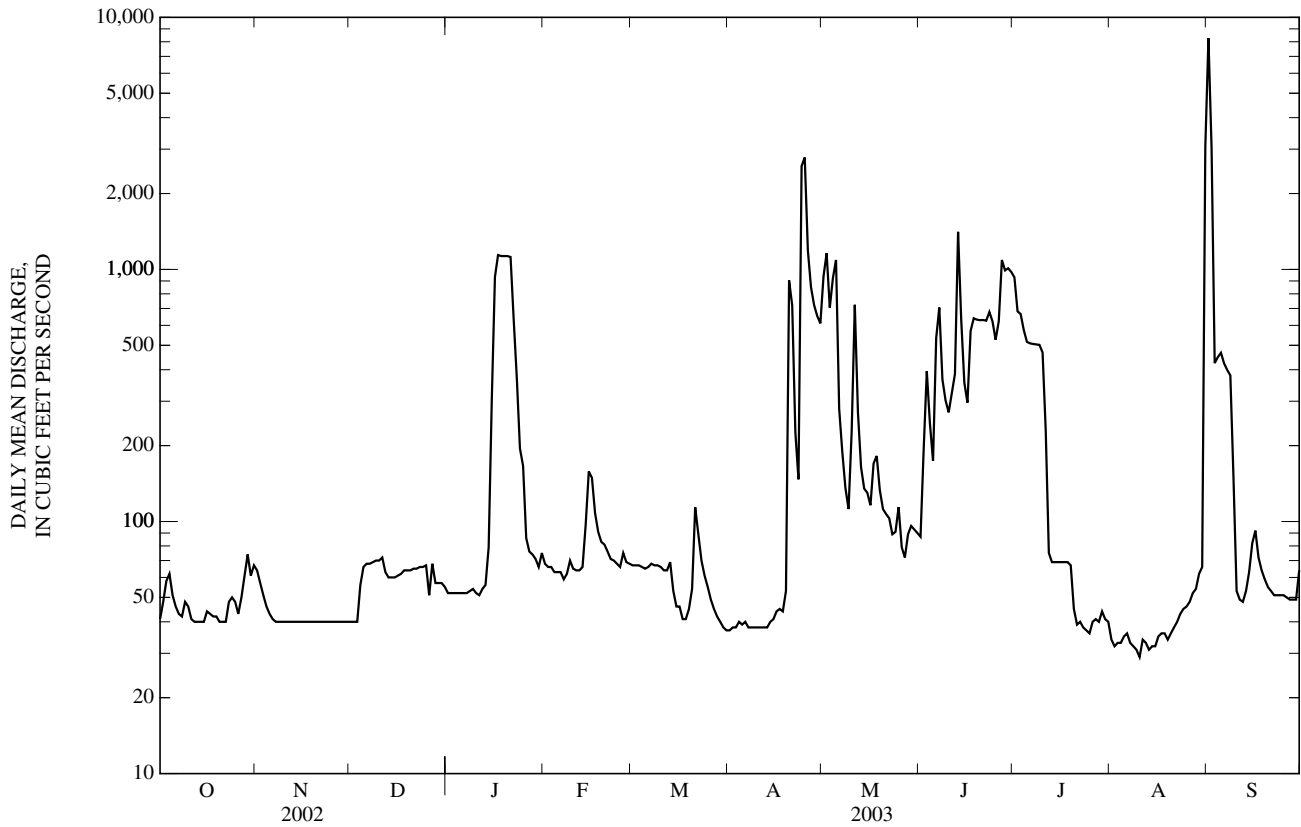
MEAN	388	596	441	274	413	608	921	1,008	1,352	612	231	221
MAX	4,204	6,256	3,275	1,342	2,224	3,772	3,722	4,717	5,587	3,206	2,807	1,436
(WY)	(1986)	(1999)	(1999)	(1973)	(1973)	(1973)	(1984)	(1999)	(1982)	(1969)	(1993)	(1973)
MIN	0.29	1.00	0.87	1.00	1.32	1.87	8.00	59.3	8.93	0.42	0.000	0.87
(WY)	(1938)	(1938)	(1938)	(1938)	(1938)	(1934)	(1936)	(2000)	(1936)	(1936)	(1934)	(1931)

OSAGE RIVER BASIN

06913000 MARAIS DES CYGNES RIVER NEAR POMONA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1923 - 2003	
ANNUAL MEAN	302		226		592	
HIGHEST ANNUAL MEAN					2,092	1999
LOWEST ANNUAL MEAN					55.6	1934
HIGHEST DAILY MEAN	3,920	May 25	8,270	Sep 1	40,600	Nov 2, 1998
LOWEST DAILY MEAN	31	Sep 4	29	Aug 10	0.00	Jul 27, 1926
ANNUAL SEVEN-DAY MINIMUM	33	Aug 30	32	Aug 8	0.00	Jul 16, 1934
MAXIMUM PEAK FLOW			8,890	Sep 1	69,400	Nov 17, 1928
MAXIMUM PEAK STAGE			22.70	Sep 1	38.38	Nov 17, 1928
INSTANTANEOUS LOW FLOW			22	Dec 26	0.00	many years
ANNUAL RUNOFF (AC-FT)	218,600		163,800		428,500	
10 PERCENT EXCEEDS	715		630		1,660	
50 PERCENT EXCEEDS	59		64		77	
90 PERCENT EXCEEDS	39		39		7.0	

e Estimated



## 06913500 MARAIS DES CYGNES RIVER NEAR OTTAWA, KS

LOCATION.--Lat 38°37'07", long 95°16'04", in NW ¼ SW ¼ NW ¼ sec.36, T.16 S., R.19 E., Franklin County, Hydrologic Unit 10290101, on right bank at downstream side of Main Street Bridge, on U.S. Highway 59, 1.0 mi downstream of Eightmile Creek, and at mile 398.0.

DRAINAGE AREA.--1,250 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--August 1902 to October 1905, October 1918 to current year. Published as Osage River at Ottawa 1902-05, and as Osage River near Ottawa 1918-47.

REVISED RECORDS.--WSP 1006: 1923, 1927, 1929. WSP 1440: 1904-05, 1922, 1929(M), 1935, 1941-43, 1944-45(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 857.68 ft above NGVD of 1929. Aug. 26, 1902, to Oct. 31, 1905, nonrecording gages at Main Street Bridge in Ottawa at different datums. Oct. 27, 1918, to Sept. 4, 1962, water-stage recorder at Seventh Street Bridge, 0.9 mi downstream at datum 0.47 ft higher. Sept. 5, 1962, to Aug. 8, 1971, water-stage recorder at sewage disposal plant at datum 857.68 ft. Aug. 9, 1971, to July 23, 1987, water-stage recorder outside sewage disposal plant at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since 1973 by Melvern Lake (station 06910997) and since 1964 by Pomona Lake (station 06912490). Many small diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of 1951 is the highest known since Ottawa was settled (about 1864) according to information reported in "Climate of Kansas - 1948." Flood of June 13 or 14, 1844, reached a stage of about 1.5 ft lower than that in 1951 according to same information.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 1	2000	*7,890	*23.28	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	58	35	63	65	65	41	659	77	981	37	7,460
2	39	52	38	62	67	67	41	1,330	253	756	29	5,240
3	49	48	39	61	68	66	40	771	456	657	29	740
4	63	44	45	58	64	65	41	700	376	613	30	441
5	45	43	65	58	62	65	40	1,300	199	517	39	524
6	38	42	67	58	61	62	43	530	486	505	38	468
7	33	37	66	59	57	71	43	258	1,060	500	33	433
8	35	35	68	60	53	66	41	172	504	498	35	407
9	37	34	70	61	69	66	39	133	350	498	31	266
10	41	35	67	60	65	67	42	235	297	498	31	70
11	39	37	67	55	63	67	43	721	298	322	36	51
12	33	38	65	53	59	68	42	434	462	119	35	48
13	30	37	64	60	60	71	39	210	1,580	68	36	94
14	31	38	63	61	113	65	38	154	1,090	67	35	89
15	32	36	62	246	139	53	37	141	424	63	35	86
16	36	33	60	806	174	47	41	139	312	61	33	94
17	39	36	64	1,120	114	47	40	153	438	61	27	81
18	37	37	63	1,130	90	48	38	207	639	60	28	64
19	39	38	63	1,130	79	53	77	155	632	59	29	57
20	33	40	59	1,130	73	59	457	120	623	44	31	53
21	33	38	58	1,120	71	90	1,140	107	616	29	27	52
22	33	35	59	827	70	105	315	100	615	31	27	50
23	41	36	59	443	69	81	167	87	684	33	27	46
24	46	37	60	242	64	72	1,440	78	698	30	26	43
25	45	39	58	e165	61	62	3,590	133	575	23	27	40
26	41	39	59	e120	74	55	1,590	102	515	23	27	40
27	47	39	68	e88.0	71	51	976	78	1,010	27	27	37
28	52	36	67	72	67	49	784	74	985	28	28	36
29	68	35	62	70	---	48	692	87	991	39	34	38
30	62	36	61	63	---	46	636	85	994	37	47	55
31	56	---	62	71	---	44	---	80	---	37	2,190	---
MEAN	41.5	38.9	60.1	312	76.5	62.6	420	308	608	235	101	573
MAX	68	58	70	1,130	174	105	3,590	1,330	1,580	981	2,190	7,460
MIN	30	33	35	53	53	44	37	74	77	23	26	36
AC-FT	2,550	2,320	3,700	19,180	4,250	3,850	24,980	18,910	36,180	14,450	6,240	34,120

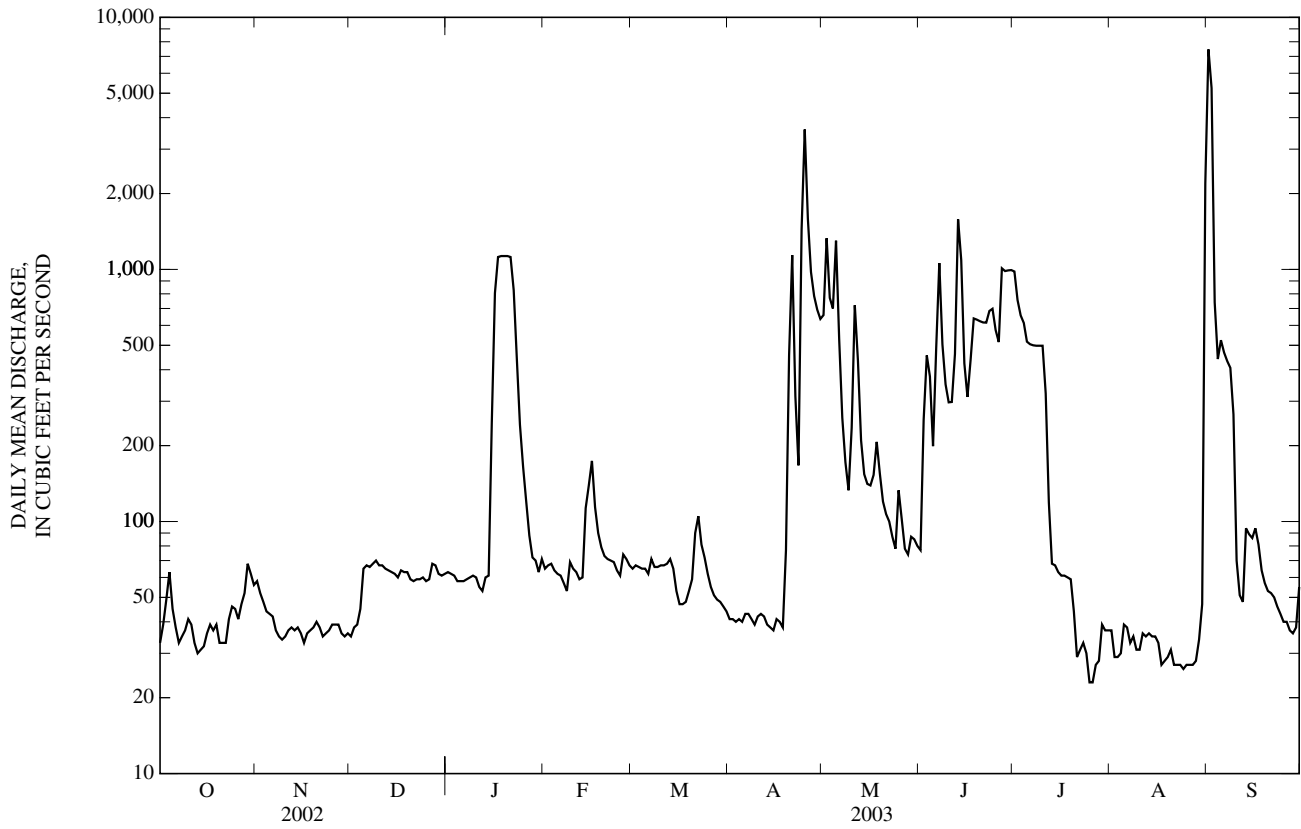
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

MEAN	516	569	401	301	419	752	1,110	1,125	1,468	838	329	413
MAX	6,546	6,913	3,820	2,011	2,578	4,422	8,859	5,170	6,143	13,580	3,683	4,581
(WY)	(1942)	(1999)	(1945)	(1941)	(1949)	(1973)	(1944)	(1904)	(1904)	(1951)	(1950)	(1951)
MIN	0.032	0.33	0.065	0.23	1.14	1.88	9.52	51.6	7.87	0.19	0.52	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1940)	(1956)	(1956)	(1965)	(1936)	(1940)	(1936)	(1939)

06913500 MARAIS DES CYGNES RIVER NEAR OTTAWA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1903 - 2003	
ANNUAL MEAN	332		236		690	
HIGHEST ANNUAL MEAN					2,332	1999
LOWEST ANNUAL MEAN					26.0	1956
HIGHEST DAILY MEAN	4,760	May 26	7,460	Sep 1	134,000	Jul 12, 1951
LOWEST DAILY MEAN	28	Sep 12	23	Jul 25	0.00	Jun 27, 1920
ANNUAL SEVEN-DAY MINIMUM	31	Sep 3	27	Aug 21	0.00	Jul 1, 1933
MAXIMUM PEAK FLOW			7,890	Sep 1	142,000	Jul 11, 1951
MAXIMUM PEAK STAGE			23.28	Sep 1	42.50	Jul 11, 1951
INSTANTANEOUS LOW FLOW			16	Aug 24	0.00	at times
ANNUAL RUNOFF (AC-FT)	240,300		170,700		500,100	
10 PERCENT EXCEEDS	902		646		1,630	
50 PERCENT EXCEEDS	63		62		94	
90 PERCENT EXCEEDS	33		33		4.0	

e Estimated



06914100 POTTAWATOMIE CREEK NEAR SCIPIO, KS

LOCATION.--Lat 38°20'57", long 95°12'12", in NW 1/4 SW 1/4 SE 1/4 sec.33, T.19 S., R.20 E., Anderson County, Hydrologic Unit 10290101, on right downstream side of bridge on NW Norton Road and at mile 33.9.

DRAINAGE AREA.--343 mi<sup>2</sup>.

PERIOD OF RECORD.--October 2001 to current year. Prior to October 2001, published as "near Garnett."

GAGE.--Water-stage recorder. Datum of gage is 865.00 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. Satellite telemeter at station.

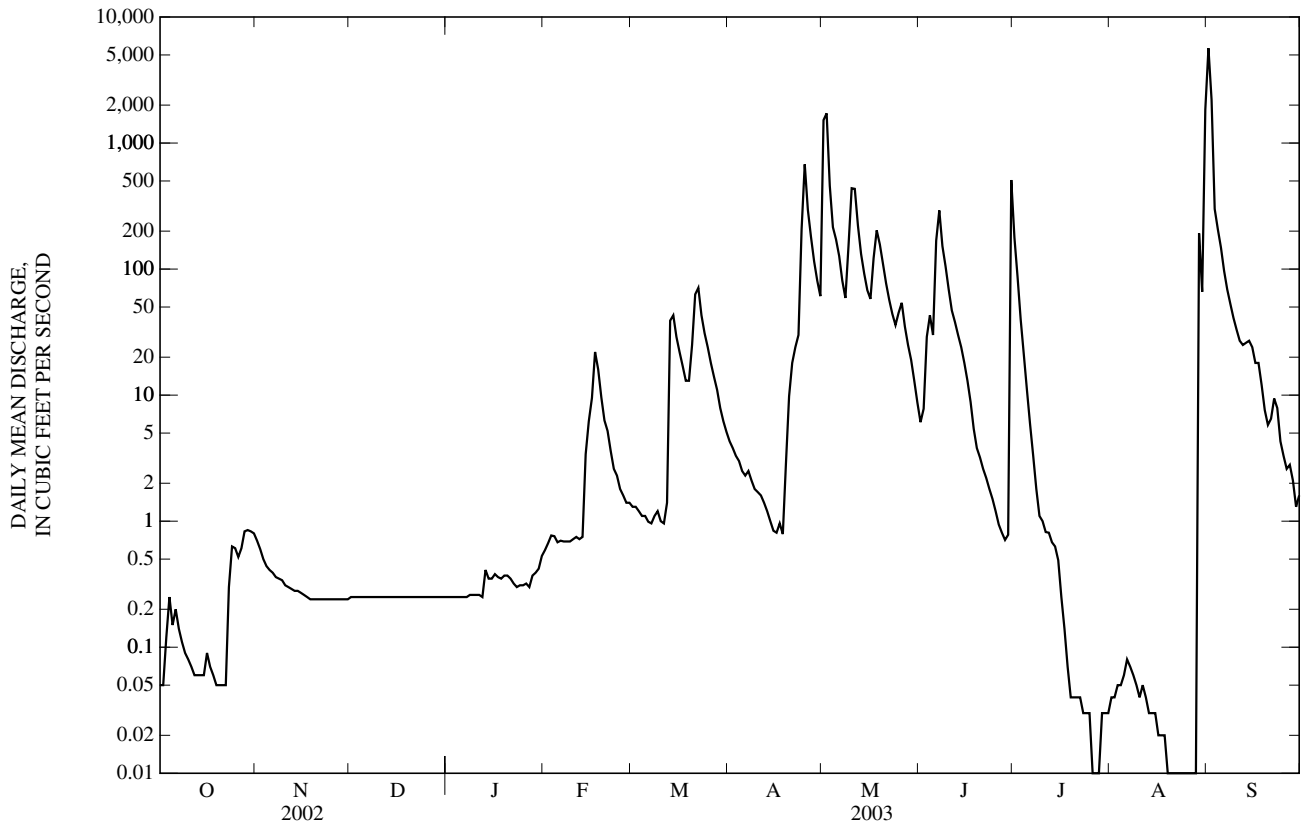
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1858, that of Sept. 13, 1961, from information by local newspaper.

REVISIONS.--The minimum discharge for water year 2002 has been revised to 0.06 ft<sup>3</sup>/s, Sept. 30, 2002. Revised daily discharges, in cubic feet per second, for Sept. 18-30, 2002, are given below. The minimum and daily discharge figures supersede those published in the report for 2002.

Sept. 18.....e0.40	Sept. 22.....e0.26	Sept. 26.....e0.11	Sept. 30.....e0.06
Sept. 19.....e0.37	Sept. 23.....e0.21	Sept. 27.....e0.09	
Sept. 20.....e0.34	Sept. 24.....e0.17	Sept. 28.....e0.08	
Sept. 21.....e0.29	Sept. 25.....e0.14	Sept. 29.....e0.07	
MEAN	MAX	MIN	AC-FT
0.48	1.7	0.06	29

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 1	1200	*5,960	*25.34	No peak greater than base discharge.			



06914100 POTTAWATOMIE CREEK NEAR SCIPIO, KS—Continued

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.05	e0.70	e0.25	e0.25	0.59	1.3	4.3	1,520	6.1	178	e0.04	5,650
2	e0.05	e0.60	e0.25	e0.25	0.67	1.3	3.8	1,720	7.8	87	e0.04	2,200
3	e0.12	e0.50	e0.25	e0.25	0.77	1.2	3.3	458	29	40	e0.05	300
4	e0.25	e0.44	e0.25	e0.25	0.76	1.1	3.0	215	43	21	e0.05	207
5	e0.15	e0.41	e0.25	e0.25	0.68	1.1	2.5	172	30	11	e0.06	148
6	e0.20	e0.39	e0.25	e0.25	0.70	0.99	2.3	127	168	5.9	e0.08	97
7	e0.14	e0.36	e0.25	e0.25	0.69	0.96	2.5	81	292	3.3	e0.07	e69
8	e0.11	e0.35	e0.25	e0.26	0.69	1.1	2.1	59	152	1.8	e0.06	53
9	e0.09	e0.34	e0.25	e0.26	0.69	1.2	1.8	155	105	1.1	e0.05	41
10	e0.08	e0.31	e0.25	e0.26	0.72	1.0	1.7	438	69	1.0	e0.04	33
11	e0.07	e0.30	e0.25	e0.26	0.75	0.96	1.6	433	47	0.82	e0.05	27
12	e0.06	e0.29	e0.25	e0.25	0.72	1.4	1.4	221	38	0.81	e0.04	25
13	e0.06	e0.28	e0.25	0.41	0.75	39	1.2	132	30	0.68	e0.03	26
14	e0.06	e0.28	e0.25	0.35	3.4	43	1.0	92	24	0.63	e0.03	27
15	e0.06	e0.27	e0.25	0.35	6.2	29	0.84	68	18	0.49	e0.03	24
16	e0.09	e0.26	e0.25	0.38	9.5	22	0.81	58	13	0.25	e0.02	18
17	e0.07	e0.25	e0.25	0.36	22	17	0.96	122	8.8	e0.14	e0.02	18
18	e0.06	e0.24	e0.25	0.35	16	13	0.79	203	5.4	e0.07	e0.02	12
19	e0.05	e0.24	e0.25	0.37	9.6	13	2.9	157	3.8	e0.04	e0.01	7.6
20	e0.05	e0.24	e0.25	0.37	6.3	25	9.8	110	3.2	e0.04	e0.01	5.8
21	e0.05	e0.24	e0.25	0.35	5.2	63	18	77	2.6	e0.04	0.00	6.5
22	e0.05	e0.24	e0.25	0.32	3.6	71	24	57	2.2	e0.04	0.00	9.4
23	e0.30	e0.24	e0.25	0.30	2.6	43	30	44	1.8	e0.03	0.00	7.9
24	e0.63	e0.24	e0.25	0.31	2.3	31	207	36	1.5	e0.03	0.00	4.3
25	e0.61	e0.24	e0.25	0.31	1.8	24	678	45	1.2	e0.03	0.00	3.3
26	e0.52	e0.24	e0.25	0.32	1.6	18	295	54	0.94	e0.01	0.00	2.6
27	e0.61	e0.24	e0.25	0.30	1.4	14	180	35	0.81	e0.01	0.00	2.8
28	e0.83	e0.24	e0.25	0.37	1.4	11	115	25	0.71	e0.01	0.01	2.1
29	e0.85	e0.24	e0.25	0.39	---	7.9	81	19	0.78	e0.03	192	e1.3
30	e0.83	e0.24	e0.25	0.42	---	6.2	61	13	509	e0.03	66	e1.6
31	e0.80	---	e0.25	0.53	---	5.1	---	8.7	---	e0.03	1,840	---
MEAN	0.26	0.32	0.25	0.32	3.65	16.4	57.9	224	53.8	11.4	67.7	301
MAX	0.85	0.70	0.25	0.53	22	71	678	1,720	509	178	1,840	5,650
MIN	0.05	0.24	0.25	0.25	0.59	0.96	0.79	8.7	0.71	0.01	0.00	1.3
AC-FT	16	19	15	20	202	1,010	3,450	13,790	3,200	703	4,160	17,910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	2.40	0.82	0.66	0.85	20.8	14.3	98.0	635	173	17.6	34.8	151
MAX	4.54	1.33	1.08	1.38	38.0	16.4	138	1,047	293	23.8	67.7	301
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2003)
MIN	0.26	0.31	0.25	0.32	3.65	12.2	57.9	224	53.8	11.4	1.96	0.48
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL MEAN	131	61.5	96.3
HIGHEST ANNUAL MEAN			131
LOWEST ANNUAL MEAN			61.5
HIGHEST DAILY MEAN	6,100	May 26	6,100
LOWEST DAILY MEAN	0.05	Oct 1	0.00
ANNUAL SEVEN-DAY MINIMUM	0.06	Oct 16	0.00
MAXIMUM PEAK FLOW			5,960
MAXIMUM PEAK STAGE			25.34
INSTANTANEOUS LOW FLOW			0.00
ANNUAL RUNOFF (AC-FT)	94,600	44,500	69,780
10 PERCENT EXCEEDS	156	83	115
50 PERCENT EXCEEDS	2.9	0.80	2.1
90 PERCENT EXCEEDS	0.24	0.05	0.24

e Estimated

## 06914950 BIG BULL CREEK NEAR EDGERTON, KS

LOCATION.--Lat 38°45'12", long 94°58'34", in SW ¼ NE ¼ SW ¼ sec.9, T.15 S., R.22 E., Johnson County, Hydrologic Unit 10290102, located on right bank at upstream side of southbound Interstate Highway 35 bridge, 1.5 mi east of Edgerton.

DRAINAGE AREA.--28.7 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 925.04 ft above NGVD of 1929.

REMARKS.--Records fair. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.98	0.44	0.45	1.1	0.67	0.45	1.5	0.35	1.8	0.00	62
2	0.14	1.0	0.43	0.39	0.96	0.70	0.44	1.3	11	0.71	0.00	12
3	0.60	1.0	0.46	0.39	1.0	0.60	0.45	3.0	11	0.39	0.00	5.7
4	2.0	0.97	0.46	0.41	0.95	0.65	0.47	1.5	4.0	0.18	0.00	3.3
5	1.7	1.0	0.43	0.47	0.74	0.61	0.40	1.1	1.9	0.07	0.00	1.5
6	0.45	0.98	0.40	0.48	0.72	0.50	0.41	4.7	9.6	0.03	0.00	0.91
7	0.36	0.93	0.45	0.48	0.68	0.52	0.54	5.5	6.9	0.01	0.00	0.64
8	0.27	0.69	0.49	0.51	0.59	0.53	0.47	3.4	3.1	0.00	0.00	0.44
9	0.18	0.63	0.43	0.54	0.65	0.47	0.47	3.4	1.7	0.04	0.00	0.34
10	0.14	0.63	0.46	0.46	0.72	0.43	0.41	22	12	1.7	0.00	0.26
11	0.20	0.55	0.48	0.41	0.72	0.41	0.35	9.0	38	0.46	0.00	3.2
12	0.20	0.60	0.51	0.39	0.70	1.2	0.35	4.3	12	0.12	0.00	2.0
13	0.11	0.65	0.51	0.45	0.61	11	0.31	3.6	13	0.03	0.00	73
14	0.06	0.61	0.43	0.51	4.5	3.1	0.29	2.0	7.0	0.01	0.00	60
15	0.04	0.74	0.39	0.48	9.0	1.4	0.24	1.3	4.2	0.00	0.00	10
16	0.03	0.65	0.39	0.59	4.3	0.86	0.22	2.8	2.9	0.00	0.00	4.0
17	0.04	0.64	0.46	0.63	1.8	0.73	0.25	3.8	2.2	0.00	0.00	1.9
18	0.03	0.68	0.52	0.55	1.1	0.73	0.28	2.1	1.6	0.00	0.00	1.2
19	0.06	0.61	0.54	0.56	0.96	1.0	20	1.4	1.3	0.00	0.00	1.0
20	0.07	0.51	0.47	0.69	0.75	3.8	52	1.5	1.2	0.65	0.00	0.84
21	0.06	0.46	0.39	0.77	0.58	3.7	11	1.0	0.94	1.6	0.00	0.72
22	0.04	0.47	0.40	0.66	0.65	1.6	5.5	0.91	0.74	0.85	0.00	0.72
23	0.06	0.46	0.43	0.58	0.86	1.1	3.0	0.75	1.7	0.30	0.00	0.66
24	0.12	0.46	0.43	0.50	0.75	0.86	23	0.81	2.0	0.27	0.00	0.45
25	0.21	0.43	0.43	0.64	0.60	0.76	22	1.0	1.2	0.26	0.14	0.41
26	0.17	0.47	0.41	0.93	0.59	0.59	8.9	0.73	1.0	0.07	0.04	0.39
27	0.13	0.48	0.45	0.70	0.61	0.47	4.4	0.58	0.88	0.02	0.01	0.47
28	0.13	0.48	0.57	0.97	0.60	0.44	3.0	0.58	0.73	0.00	0.00	0.47
29	0.26	0.48	0.55	1.2	---	0.42	2.1	0.42	0.89	0.00	0.00	0.34
30	0.50	0.51	0.59	0.85	---	0.41	1.6	0.36	3.7	0.00	0.03	0.36
31	1.0	---	0.52	1.1	---	0.45	---	0.43	---	0.00	759	---
MEAN	0.30	0.66	0.46	0.60	1.35	1.31	5.44	2.80	5.29	0.31	24.5	8.31
MAX	2.0	1.0	0.59	1.2	9.0	11	52	22	38	1.8	759	73
MIN	0.03	0.43	0.39	0.39	0.58	0.41	0.22	0.36	0.35	0.00	0.00	0.26
AC-FT	19	39	28	37	75	81	324	172	315	19	1,510	494

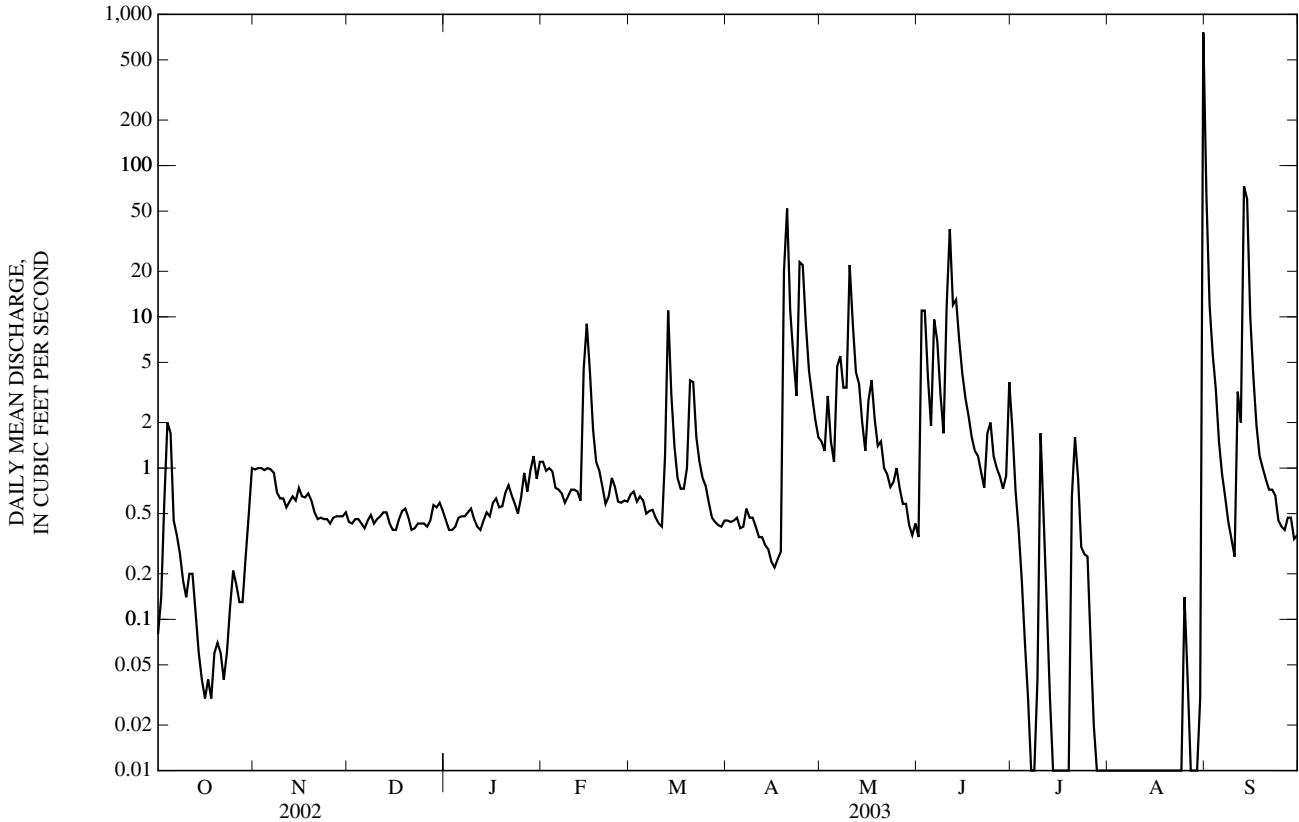
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	17.1	26.2	10.8	4.50	17.7	15.4	37.0	55.3	36.1	6.92	6.21	14.1
MAX	107	139	38.7	14.3	69.0	59.2	119	246	74.9	22.6	24.5	91.8
(WY)	(1999)	(1999)	(1998)	(1999)	(1997)	(1998)	(1994)	(1995)	(1996)	(1998)	(2003)	(1998)
MIN	0.30	0.66	0.46	0.60	0.74	0.73	1.32	2.80	5.29	0.31	0.73	0.59
(WY)	(2003)	(2003)	(2003)	(2003)	(1996)	(1996)	(1996)	(2003)	(2003)	(2003)	(2000)	(1995)

OSAGE RIVER BASIN

06914950 BIG BULL CREEK NEAR EDGERTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL MEAN	12.1		4.29		20.5	
HIGHEST ANNUAL MEAN					45.8	1999
LOWEST ANNUAL MEAN					4.29	2003
HIGHEST DAILY MEAN	976	May 12	759	Aug 31	2,520	May 17, 1995
LOWEST DAILY MEAN	0.00	Aug 25	0.00	Jul 8	0.00	Sep 11, 1997
ANNUAL SEVEN-DAY MINIMUM	0.05	Oct 14	0.00	Jul 28	0.00	Jul 28, 2003
MAXIMUM PEAK FLOW			2,580	Aug 31	4,960	Oct 4, 1998
MAXIMUM PEAK STAGE			11.03	Aug 31	14.54	Oct 4, 1998
INSTANTANEOUS LOW FLOW			0.00	Jul 8	0.00	Sep 11, 1997
ANNUAL RUNOFF (AC-FT)	8,750		3,110		14,880	
10 PERCENT EXCEEDS	10		3.9		21	
50 PERCENT EXCEEDS	1.6		0.55		2.4	
90 PERCENT EXCEEDS	0.27		0.01		0.44	





## 06914990 LITTLE BULL CREEK NEAR SPRING HILL, KS

LOCATION.--Lat 38°45'11", long 94°52'10", in NW ¼ NW ¼ NW ¼ sec.16, T.15 S., R.23 E., Johnson County, Hydrologic Unit 10290102, located on right bank at downstream side of county highway bridge, 0.3 mi west of intersection of 207th Street and Clare Road, 4 mi south and 3.2 mi east of Gardner.

DRAINAGE AREA.--8.81 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 925.244 ft above NGVD of 1929.

REMARKS.--Records poor. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.52	0.65	0.20	0.35	e0.56	0.81	0.99	1.9	0.56	1.4	0.14	9.3
2	0.92	0.51	0.18	0.37	e0.58	0.78	1.1	1.3	22	1.0	0.15	2.9
3	3.9	0.64	0.22	0.29	0.60	0.80	1.0	1.1	3.6	0.79	0.15	2.0
4	8.0	0.58	0.25	0.34	0.62	0.89	1.1	1.4	1.5	0.71	0.11	1.5
5	2.0	0.70	0.27	0.42	0.58	0.85	1.0	1.2	1.3	0.66	0.12	1.2
6	1.2	0.68	0.24	0.38	0.63	0.90	1.0	1.5	6.0	0.49	0.16	0.97
7	1.1	0.52	0.23	0.37	e0.60	0.91	1.1	1.5	1.8	0.41	0.14	0.81
8	0.93	0.47	0.25	0.38	e0.60	0.89	1.1	1.9	1.4	0.42	0.14	0.74
9	0.84	0.38	0.23	0.42	e0.60	0.84	0.98	3.4	1.1	0.47	0.15	0.67
10	0.75	0.34	0.25	0.36	0.60	0.67	0.90	15	3.4	3.1	0.14	0.67
11	0.78	0.32	0.28	0.34	0.64	0.77	0.92	2.6	54	0.94	0.15	2.2
12	0.81	0.34	0.30	0.39	0.67	0.89	0.82	1.4	5.8	0.67	0.18	1.8
13	0.92	0.32	0.32	0.39	0.62	3.8	0.75	1.5	4.2	0.54	0.15	57
14	0.70	0.30	0.28	0.42	7.2	1.3	0.68	1.5	2.1	0.38	0.12	19
15	0.54	0.32	0.29	e0.42	13	1.1	0.62	1.1	1.7	0.36	0.14	4.1
16	0.63	0.31	0.27	e0.41	1.4	1.1	0.77	2.9	1.3	0.36	0.13	2.7
17	1.5	0.28	0.32	e0.40	0.99	0.90	0.96	1.8	1.2	0.34	0.12	1.9
18	0.94	0.25	0.28	e0.39	0.92	1.0	0.70	1.1	1.1	0.30	0.09	1.4
19	0.99	0.31	0.30	e0.41	0.83	2.1	50	0.90	1.1	0.31	0.09	1.5
20	0.88	0.31	0.28	e0.40	0.77	7.7	35	1.0	1.2	0.28	0.11	1.3
21	0.61	0.26	0.31	e0.39	0.80	2.4	2.2	1.0	1.0	0.21	0.10	1.1
22	0.65	0.26	0.30	e0.38	0.80	1.5	1.5	0.87	0.81	0.23	0.11	1.2
23	1.3	0.28	0.25	e0.37	0.78	1.2	1.5	0.84	4.0	0.28	0.09	1.0
24	2.7	0.26	0.27	e0.38	0.66	1.1	24	0.91	1.5	0.22	0.09	0.95
25	1.9	0.22	0.28	e0.41	e0.70	1.1	10	1.9	1.7	0.21	0.08	0.84
26	1.1	0.23	e0.30	e0.44	e0.70	1.1	2.9	0.87	1.4	0.22	0.05	0.97
27	3.2	0.23	0.31	e0.46	e0.75	1.1	1.7	0.71	0.94	0.19	0.06	1.7
28	1.5	0.22	0.39	e0.48	0.80	1.1	1.4	0.72	0.83	0.14	0.10	0.86
29	2.9	0.25	0.36	e0.50	---	1.1	1.3	0.61	16	0.13	0.22	0.56
30	1.9	0.20	0.32	e0.52	---	0.98	1.3	0.71	4.9	0.16	0.78	3.6
31	1.1	---	0.32	e0.55	---	0.88	---	0.65	---	0.16	119	---
MEAN	1.54	0.36	0.28	0.40	1.39	1.37	4.98	1.80	4.98	0.52	3.98	4.21
MAX	8.0	0.70	0.39	0.55	13	7.7	50	15	54	3.1	119	57
MIN	0.52	0.20	0.18	0.29	0.56	0.67	0.62	0.61	0.56	0.13	0.05	0.56
AC-FT	95	22	17	25	77	84	296	111	296	32	245	251

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

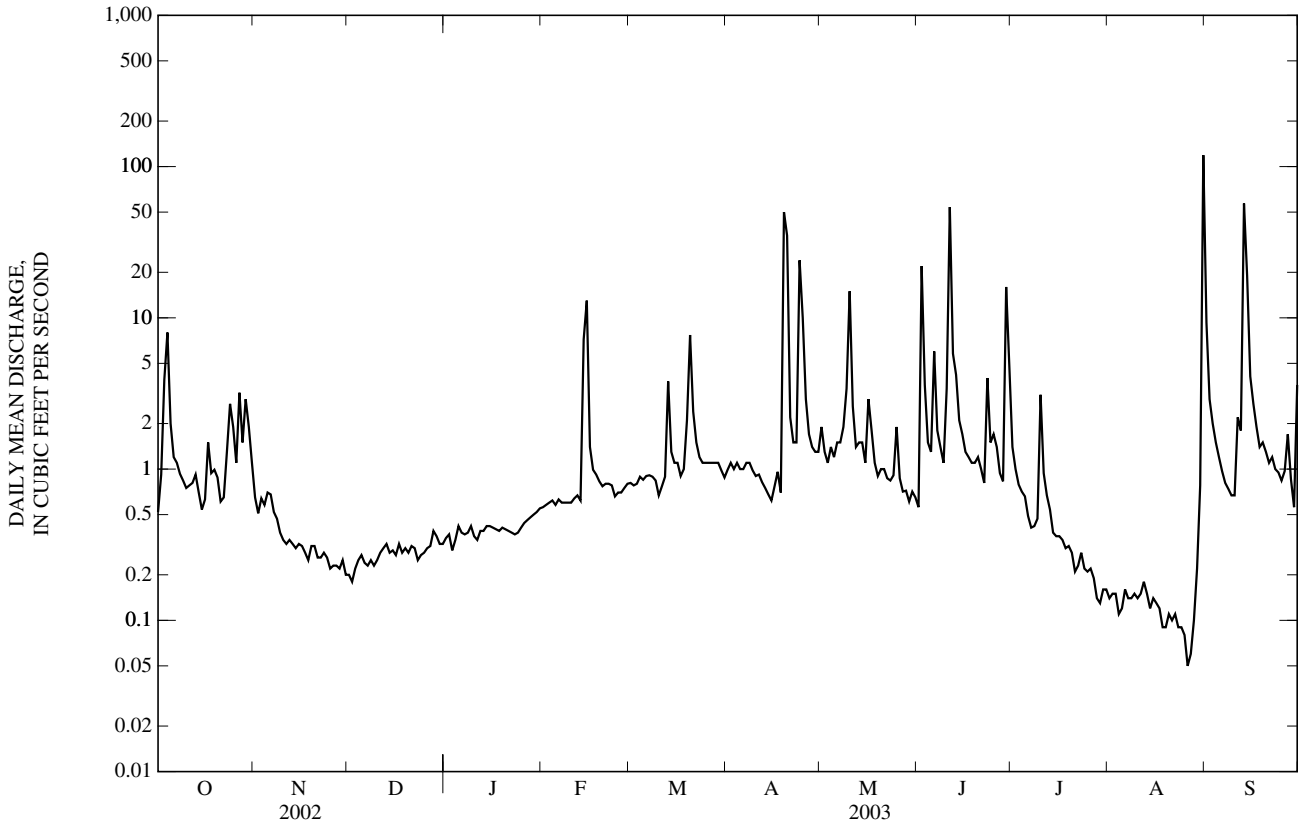
MEAN	6.37	8.47	3.62	2.40	9.19	5.68	13.1	19.7	15.5	2.32	3.11	3.97
MAX	22.6	37.5	10.3	5.64	33.2	20.9	46.6	88.4	31.8	8.63	11.9	19.1
(WY)	(1999)	(1999)	(1999)	(2001)	(1997)	(1998)	(1994)	(1995)	(1996)	(1998)	(1996)	(1998)
MIN	0.44	0.36	0.28	0.40	0.63	0.46	0.44	1.62	1.16	0.42	0.16	0.44
(WY)	(1996)	(2003)	(2003)	(2003)	(1996)	(1996)	(1996)	(2000)	(2002)	(1994)	(2000)	(1995)

OSAGE RIVER BASIN

06914990 LITTLE BULL CREEK NEAR SPRING HILL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL MEAN	5.66		2.14		7.75	
HIGHEST ANNUAL MEAN					12.8	1999
LOWEST ANNUAL MEAN					2.14	2003
HIGHEST DAILY MEAN	311	May 12	119	Aug 31	930	May 17, 1995
LOWEST DAILY MEAN	0.18	Dec 2	0.05	Aug 26	0.00	Aug 30, 2000
ANNUAL SEVEN-DAY MINIMUM	0.21	Nov 27	0.08	Aug 21	0.01	Sep 4, 2000
MAXIMUM PEAK FLOW			389	Aug 31	1,670	Jun 16, 1997
MAXIMUM PEAK STAGE			8.78	Aug 31	15.70	Jun 16, 1997
INSTANTANEOUS LOW FLOW			0.04	Aug 26	0.00	Aug 22, 2000
ANNUAL RUNOFF (AC-FT)	4,100		1,550		5,620	
10 PERCENT EXCEEDS	6.5		2.6		9.0	
50 PERCENT EXCEEDS	0.72		0.74		1.2	
90 PERCENT EXCEEDS	0.28		0.21		0.30	

e Estimated



06914995 HILLSDALE LAKE NEAR HILLSDALE, KS

LOCATION.--Lat 38°39'36", long 94°53'50", in NE ¼ SW ¼ NW ¼ sec.17, T.16 S., R.23 E., Miami County, Hydrologic Unit 10290102, in control tower at dam on Big Bull Creek, 2.5 mi west of Hillsdale, and at mile 18.2.

DRAINAGE AREA.--144 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

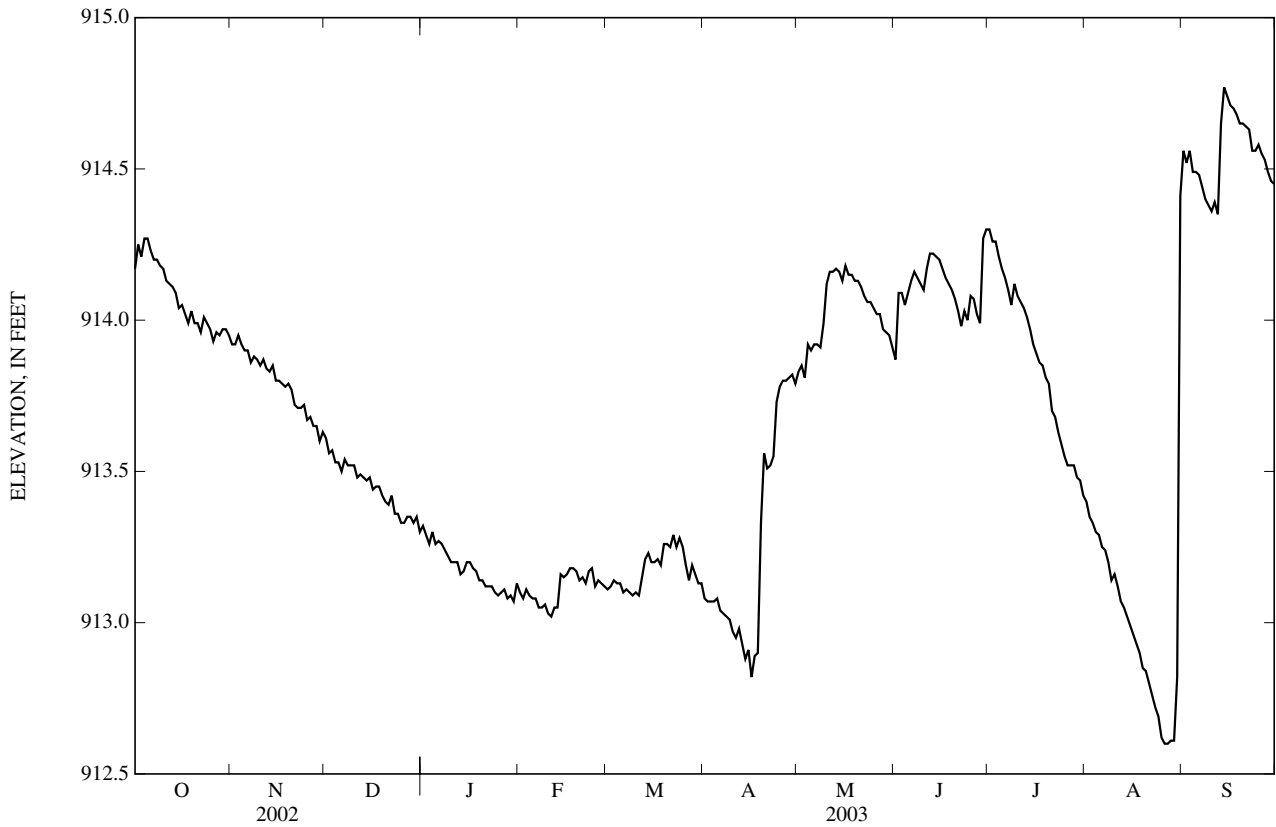
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Sept. 19, 1981. Conservation pool elevation was first reached on Feb. 23, 1985. Total capacity, 315,600 acre-ft, consisting of the following: Conservation pool, 76,270 acre-ft between elevations 860.0 ft and 917.0 ft; flood-control pool, 83,570 acre-ft between elevations 917.0 ft and 931.0 ft; and surcharge pool, 155,800 acre-ft between elevations 931.0 ft and 948.0 ft. Reservoir is used for flood control, water supply, water-quality control, fish and wildlife, and recreation. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 928.49 ft, Oct. 20, 1986, contents, 141,900 acre-ft; minimum elevation since conservation pool first filled, 904.91 ft, Dec. 14, 1987, contents, 33,740 acre-ft.

EXTREMES FOR CURRENT OF RECORD.--Maximum elevation, 914.78 ft, Sept. 15, contents, 66,590 acre-ft; minimum elevation, 912.55 ft, Aug. 28, contents, 57,770 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey made in 1969 by U.S. Army Corps of Engineers)

Elevation	Contents	Elevation	Contents	Elevation	Contents
912	55,700	914	63,390	915	67,500
913	59,460				



## OSAGE RIVER BASIN

06914995 HILLSDALE LAKE NEAR HILLSDALE, KS—Continued

 ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	914.17	913.92	913.61	913.32	913.10	913.11	913.08	913.83	913.87	914.30	913.40	914.56
2	914.25	913.92	913.56	913.29	913.08	913.12	913.07	913.85	914.09	914.26	913.35	914.52
3	914.21	913.95	913.57	913.26	913.11	913.14	913.07	913.81	914.09	914.26	913.33	914.56
4	914.27	913.92	913.53	913.30	913.09	913.13	913.07	913.92	914.05	914.21	913.30	914.49
5	914.27	913.90	913.53	913.26	913.08	913.13	913.08	913.90	914.09	914.17	913.29	914.49
6	914.23	913.90	913.50	913.27	913.08	913.10	913.04	913.92	914.13	914.14	913.25	914.48
7	914.20	913.86	913.54	913.26	913.05	913.11	913.03	913.92	914.16	914.10	913.24	914.44
8	914.20	913.88	913.52	913.24	913.05	913.10	913.02	913.91	914.14	914.05	913.20	914.40
9	914.18	913.87	913.52	913.22	913.06	913.09	913.01	913.99	914.12	914.12	913.14	914.38
10	914.17	913.85	913.52	913.20	913.03	913.10	912.97	914.12	914.10	914.08	913.16	914.36
11	914.13	913.87	913.48	913.20	913.02	913.09	912.95	914.16	914.17	914.06	913.12	914.39
12	914.12	913.84	913.49	913.20	913.05	913.15	912.98	914.16	914.22	914.04	913.07	914.35
13	914.11	913.83	913.48	913.16	913.05	913.21	912.93	914.17	914.22	914.01	913.05	914.65
14	914.09	913.85	913.47	913.17	913.16	913.23	912.88	914.16	914.21	913.97	913.02	914.77
15	914.04	913.80	913.48	913.20	913.15	913.20	912.91	914.13	914.20	913.92	912.99	914.74
16	914.05	913.80	913.44	913.20	913.16	913.20	912.82	914.18	914.17	913.89	912.96	914.71
17	914.02	913.79	913.45	913.18	913.18	913.21	912.89	914.15	914.14	913.86	912.93	914.70
18	913.99	913.78	913.45	913.17	913.18	913.19	912.90	914.15	914.12	913.85	912.90	914.68
19	914.03	913.79	913.42	913.14	913.17	913.26	913.33	914.13	914.10	913.81	912.85	914.65
20	913.99	913.77	913.40	913.14	913.14	913.26	913.56	914.13	914.07	913.79	912.84	914.65
21	913.99	913.72	913.39	913.12	913.15	913.25	913.51	914.11	914.03	913.70	912.80	914.64
22	913.96	913.71	913.42	913.12	913.13	913.29	913.52	914.08	913.98	913.68	912.76	914.63
23	914.01	913.71	913.36	913.12	913.17	913.25	913.55	914.06	914.03	913.63	912.72	914.56
24	913.99	913.72	913.36	913.10	913.18	913.28	913.73	914.06	914.00	913.59	912.69	914.56
25	913.97	913.67	913.33	913.09	913.12	913.25	913.78	914.04	914.08	913.55	912.62	914.58
26	913.93	913.68	913.33	913.10	913.14	913.19	913.80	914.02	914.07	913.52	912.60	914.55
27	913.96	913.65	913.35	913.11	913.13	913.14	913.80	914.02	914.02	913.52	912.60	914.53
28	913.95	913.65	913.35	913.08	913.12	913.19	913.81	913.97	913.99	913.52	912.61	914.49
29	913.97	913.60	913.33	913.09	---	913.16	913.82	913.96	914.27	913.48	912.61	914.46
30	913.97	913.63	913.35	913.07	---	913.13	913.79	913.95	914.30	913.47	912.82	914.45
31	913.95	---	913.30	913.13	---	913.13	---	913.91	---	913.42	914.41	---
MEAN	914.08	913.79	913.45	913.18	913.11	913.17	913.26	914.03	914.11	913.87	913.02	914.55
MAX	914.27	913.95	913.61	913.32	913.18	913.29	913.82	914.18	914.30	914.30	914.41	914.77
MIN	913.93	913.60	913.30	913.07	913.02	913.09	912.82	913.81	913.87	913.42	912.60	914.35
(+)	63,190	61,910	60,620	59,960	59,920	59,960	62,550	63,030	64,600	61,090	65,050	65,210
(#)	-1,130	-1,280	-1,290	-660	-40	+40	+2,590	+480	+1,570	-3,510	+3,960	+160
CAL YR	2002	.....	(#)	-8,400								
WTR YR	2003	.....	(#)	+890								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

## 06915000 BIG BULL CREEK NEAR HILLSDALE, KS

LOCATION.--Lat 38°38'12", long 94°53'29", in SW ¼ SW ¼ SE ¼ sec.20, T.16 S., R.23 E., Miami County, Hydrologic Unit 10290102, on right bank 1.0 mi upstream from Tenmile Creek, 3.0 mi southwest of Hillsdale, and at mile 16.2.

DRAINAGE AREA.--147 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1958 to current year. Records for 1949 to 1953 published in WSP 1146, 1176, 1210, 1240, and 1280 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1919: 1958. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 854.49 ft above NGVD of 1929. Prior to July 29, 1958, water-stage recorder and nonrecording gage operated 1,850 ft downstream at datum 6.00 ft lower. All records from this site were later discredited.

REMARKS.--Records good. Flow completely regulated since 1981 by Hillsdale Lake (station 06914995), 2.0 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1910, 21.2 ft, July 11, 1951, present site and datum, discharge, 45,200 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	13	8.8	8.3	4.1	4.6	12	18	21	21	20	36
2	16	9.8	8.8	8.0	4.4	4.7	12	16	46	21	20	22
3	15	9.5	8.7	8.0	4.6	4.6	12	15	22	21	20	22
4	16	9.2	8.7	8.2	4.4	4.7	12	25	21	20	20	22
5	15	8.8	8.8	8.4	4.5	4.7	12	15	21	20	19	22
6	15	9.2	8.8	6.5	4.5	4.7	12	16	24	20	19	22
7	15	8.9	8.8	3.8	4.5	4.6	12	14	22	20	19	22
8	15	8.9	8.6	3.8	4.5	4.7	12	13	22	20	19	22
9	15	8.9	8.6	3.9	4.5	4.7	12	15	21	20	19	22
10	16	9.0	8.7	3.8	4.5	4.7	12	58	21	20	19	22
11	17	9.2	8.6	4.0	4.5	4.7	12	13	21	19	20	23
12	16	8.8	8.9	4.1	4.5	5.5	12	12	22	19	20	23
13	16	8.9	8.6	3.8	4.6	5.3	12	12	22	19	20	40
14	15	8.7	8.5	3.7	5.5	4.5	12	12	21	19	20	27
15	16	8.6	8.4	4.0	4.4	4.5	13	12	21	19	20	23
16	16	8.6	8.7	3.7	4.4	4.6	13	15	21	20	21	23
17	16	8.7	8.6	3.6	4.6	7.6	13	21	21	19	21	22
18	16	8.8	8.6	3.6	4.6	12	13	21	21	19	21	23
19	16	8.7	8.6	3.7	4.6	13	18	21	21	19	21	23
20	15	8.6	8.5	3.5	4.6	13	18	21	20	19	21	23
21	16	8.9	8.7	3.7	4.6	13	14	21	20	19	22	22
22	16	8.9	8.7	3.8	4.9	12	14	21	20	19	22	22
23	16	9.1	8.9	3.0	4.8	12	15	21	21	19	22	23
24	16	9.1	8.5	2.9	4.6	12	21	21	21	19	22	22
25	15	9.1	8.5	3.0	4.6	12	16	21	21	19	22	23
26	16	9.1	8.4	3.1	4.6	12	15	21	21	19	22	22
27	16	9.1	8.1	3.2	4.6	12	15	21	21	19	22	23
28	16	9.1	8.2	3.6	4.6	12	15	20	21	19	23	23
29	16	8.8	8.0	3.4	---	12	16	20	42	20	23	23
30	16	8.8	7.9	3.3	---	12	16	20	25	19	23	24
31	16	---	8.1	3.7	---	12	---	21	---	19	114	---
MEAN	15.9	9.09	8.56	4.42	4.58	8.21	13.8	19.1	22.8	19.5	23.7	23.7
MAX	20	13	8.9	8.4	5.5	13	21	58	46	21	114	40
MIN	15	8.6	7.9	2.9	4.1	4.5	12	12	20	19	19	22
AC-FT	976	541	526	272	254	505	819	1,180	1,360	1,200	1,460	1,410

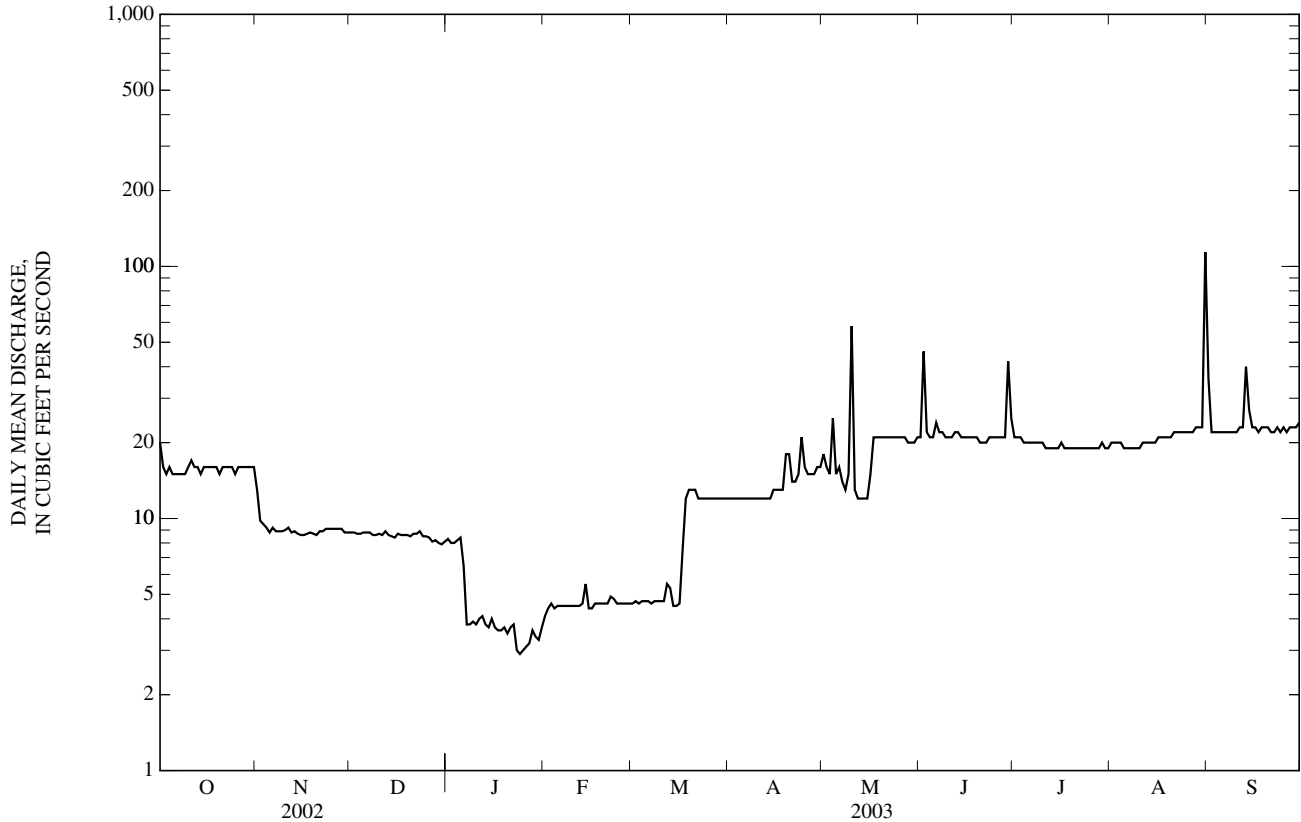
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	91.2	75.8	93.8	68.3	59.7	123	101	135	246	83.1	41.1	76.8
MAX	773	612	688	408	389	1,057	368	492	1,061	744	730	1,019
(WY)	(1974)	(1962)	(1987)	(1993)	(1982)	(1973)	(1987)	(1993)	(1995)	(1984)	(1993)	(1961)
MIN	0.000	0.000	0.000	0.000	0.18	0.43	1.77	7.90	8.23	0.011	0.000	0.000
(WY)	(1964)	(1964)	(1964)	(1964)	(1981)	(1964)	(1981)	(1965)	(1959)	(1980)	(1975)	(1963)

OSAGE RIVER BASIN

06915000 BIG BULL CREEK NEAR HILLSDALE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL MEAN	58.0		14.5		99.6	
HIGHEST ANNUAL MEAN					271	1973
LOWEST ANNUAL MEAN					12.0	1989
HIGHEST DAILY MEAN	1,130	Jun 6	114	Aug 31	18,000	Sep 13, 1961
LOWEST DAILY MEAN	1.8	Jan 17	2.9	Jan 24	0.00	Sep 11, 1959
ANNUAL SEVEN-DAY MINIMUM	1.9	Jan 16	3.2	Jan 23	0.00	Sep 11, 1959
MAXIMUM PEAK FLOW			454	Aug 31	39,600	Sep 13, 1961
MAXIMUM PEAK STAGE			4.12	Aug 31	20.85	Sep 13, 1961
INSTANTANEOUS LOW FLOW			2.6	Jan 23	0.00	many years
ANNUAL RUNOFF (AC-FT)	41,960		10,500		72,180	
10 PERCENT EXCEEDS	68		22		217	
50 PERCENT EXCEEDS	16		15		15	
90 PERCENT EXCEEDS	2.8		4.5		0.40	



06915800 MARAIS DES CYGNES RIVER AT LA CYGNE, KS

LOCATION.--Lat 38°20'43", long 94°46'19", in SE ¼ SE ¼ SE ¼ sec.32, T.19 S., R.24 E., Linn County, Hydrologic Unit 10290102, on right bank at upstream side of bridge on Kansas Highway 152, at west edge of La Cygne, and at mile 331.9.

DRAINAGE AREA.--2,669 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 776.21 ft above NGVD of 1929 (levels by National Weather Service).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow slightly affected since 1964 by Pomona Lake (station 06912490), since 1973 by Melvern Lake (station 06910997), and by numerous small diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 13, 1951, reached a stage of 36.19 ft, present datum, discharge not determined; information supplied by National Weather Service.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 3	0900	*14,000	*22.33	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	102	48	81	86	86	78	880	135	1,820	51	7,720
2	68	87	48	80	94	83	72	2,320	196	1,410	51	12,700
3	62	83	48	81	78	80	67	3,950	1,510	992	51	13,500
4	62	78	49	83	77	80	63	1,940	1,120	780	49	5,380
5	92	73	49	81	76	82	61	1,630	767	709	47	951
6	96	71	50	78	75	80	63	1,860	899	596	47	819
7	78	68	65	77	72	77	62	1,270	1,250	557	50	695
8	55	63	84	75	70	77	59	892	1,860	543	58	609
9	47	60	82	73	67	82	60	669	1,090	536	58	555
10	45	57	82	73	66	81	60	1,350	724	547	53	471
11	52	54	86	73	69	78	58	2,760	585	541	51	260
12	51	52	86	79	71	84	58	1,980	558	435	49	157
13	54	52	85	79	70	109	62	1,230	933	259	48	132
14	49	52	85	68	89	145	60	743	1,850	133	49	571
15	50	51	84	66	153	285	57	546	1,430	97	50	540
16	48	49	83	78	183	203	56	438	671	82	51	315
17	50	49	83	486	252	146	58	422	462	78	50	222
18	58	49	81	1,240	222	119	57	503	442	75	49	188
19	64	47	80	e1,250	165	108	60	680	679	74	47	151
20	71	47	80	e1,240	131	122	89	622	699	72	43	119
21	64	48	78	e1,230	113	155	815	468	677	71	42	95
22	60	51	76	1,230	101	200	1,420	361	662	66	43	87
23	56	54	74	e950	94	276	676	295	655	53	46	82
24	57	52	73	e620	90	262	418	248	694	44	43	73
25	66	49	74	e400	86	200	2,030	228	759	44	41	68
26	72	48	74	e250	80	168	5,300	210	673	45	41	60
27	72	68	74	e190	78	140	2,770	269	582	44	46	59
28	69	79	76	e115	84	116	1,520	244	893	41	46	57
29	75	55	82	97	---	100	1,140	183	992	44	49	54
30	99	50	90	83	---	90	944	153	1,430	47	55	60
31	105	---	86	77	---	84	---	146	---	47	757	---
MEAN	65.2	59.9	74.0	345	103	129	610	951	863	351	71.3	1,558
MAX	105	102	90	1,250	252	285	5,300	3,950	1,860	1,820	757	13,500
MIN	45	47	48	66	66	77	56	146	135	41	41	54
AC-FT	4,010	3,570	4,550	21,190	5,740	7,930	36,280	58,490	51,330	21,580	4,390	92,730

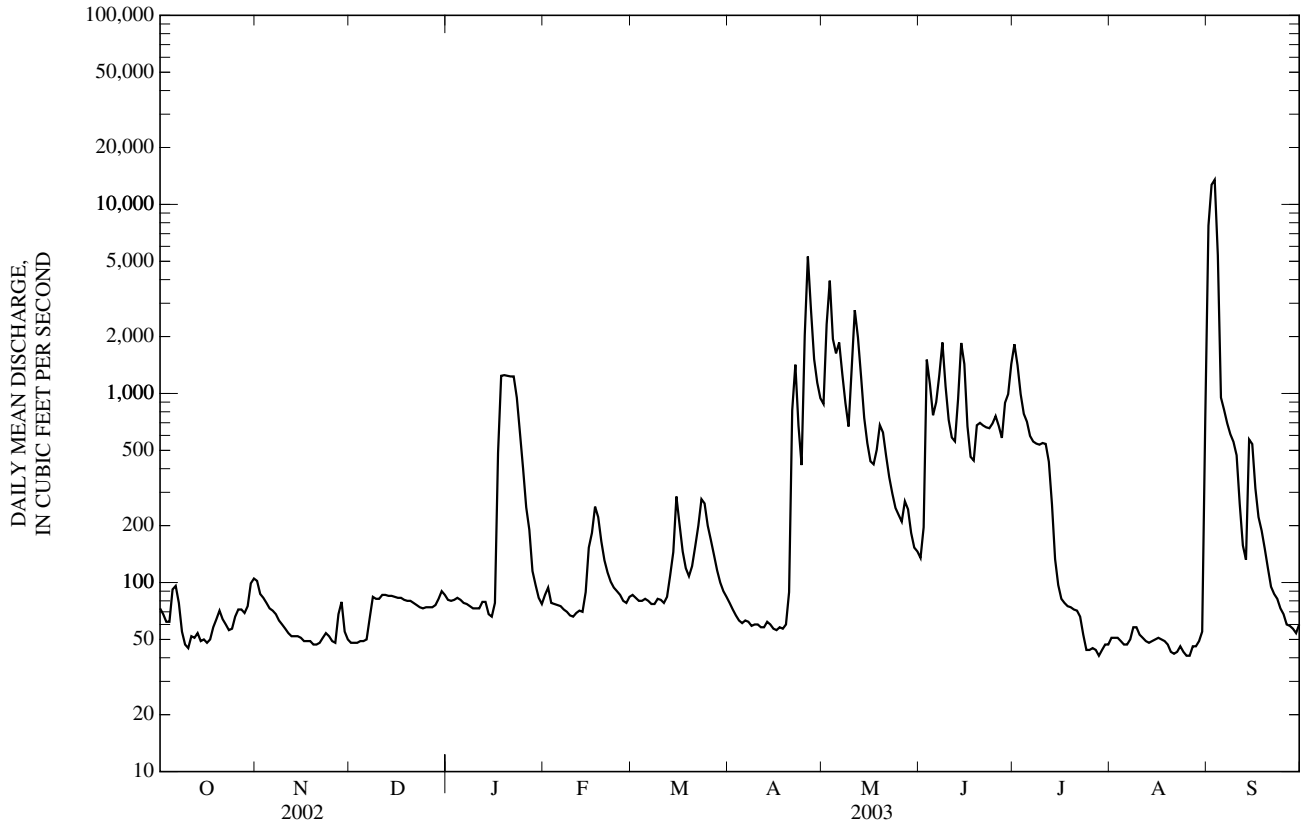
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2003, BY WATER YEAR (WY)

MEAN	2,011	2,283	1,880	948	1,626	2,227	2,630	3,854	3,334	1,831	839	984
MAX	12,290	13,630	8,038	4,631	8,653	9,746	6,920	11,640	11,020	12,060	4,120	4,627
(WY)	(1987)	(1999)	(1993)	(1993)	(1985)	(1987)	(1999)	(1995)	(1995)	(1993)	(1993)	(1993)
MIN	49.0	59.6	50.3	56.0	64.2	66.1	83.6	222	112	144	48.2	52.8
(WY)	(1992)	(1996)	(2001)	(1996)	(1996)	(1996)	(1996)	(2000)	(1988)	(1991)	(1991)	(1991)

06915800 MARAIS DES CYGNES RIVER AT LA CYGNE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1985 - 2003	
ANNUAL MEAN	864		431		2,037	
HIGHEST ANNUAL MEAN					5,540	1993
LOWEST ANNUAL MEAN					313	1991
HIGHEST DAILY MEAN	15,800	May 27	13,500	Sep 3	60,600	Nov 4, 1998
LOWEST DAILY MEAN	45	Oct 10	41	Jul 28	1.0	Oct 4, 1984
ANNUAL SEVEN-DAY MINIMUM	49	Nov 15	43	Aug 20	1.8	Oct 1, 1984
MAXIMUM PEAK FLOW			14,000	Sep 3	66,700	Nov 4, 1998
MAXIMUM PEAK STAGE			22.33	Sep 3	33.49	Nov 4, 1998
INSTANTANEOUS LOW FLOW			39	Jul 28	36	Nov 7, 1988
ANNUAL RUNOFF (AC-FT)	625,600		311,800		1,476,000	
10 PERCENT EXCEEDS	2,200		992		5,680	
50 PERCENT EXCEEDS	108		82		442	
90 PERCENT EXCEEDS	53		49		60	

e Estimated





## 06916600 MARAIS DES CYGNES RIVER NEAR KANSAS-MISSOURI STATE LINE, KS

LOCATION.--Lat 38°13'21", long 94°40'04", in NE ¼ SE ¼ NW ¼ sec.16, T.21 S., R.25 E., Linn County, Hydrologic Unit 10290102, on right bank 1.7 mi downstream from Big Sugar Creek, 6.8 mi upstream from Kansas-Missouri State line, and at mile 313.5.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--3,230 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 757.06 ft above NGVD of 1929. Prior to Jan. 15, 1959, nonrecording gage 6.8 mi downstream at datum 15.62 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow slightly affected since 1964 by Pomona Lake (station 06912490), since 1973 by Melvern Lake (station 06910997), and by retention of overbank flow in wildlife refuge ponds, capacity, 5,500 acre-ft, power developments, and by numerous small diversions upstream from station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1951, reached a stage of 41.2 ft, from floodmark, discharge, 148,000 ft<sup>3</sup>/s, from rating curve extended above 110,000 ft<sup>3</sup>/s on basis of velocity-area study. Flood of Nov. 18, 1928, reached a stage about 3.7 ft lower, discharge, 106,000 ft<sup>3</sup>/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 3	1400	*13,000	*17.82	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	95	e53	57	47	58	101	1,090	111	2,150	49	6,850
2	109	68	e50	54	59	58	94	2,920	187	1,830	52	11,900
3	104	51	e47	50	53	53	89	4,840	1,350	1,240	50	12,900
4	103	88	e47	50	46	53	84	2,940	1,550	878	51	8,620
5	96	80	e47	52	48	54	73	2,050	956	774	50	1,540
6	134	43	e47	51	47	53	78	2,430	1,350	644	46	883
7	123	54	e47	49	45	52	82	1,780	2,530	562	45	748
8	94	67	e50	46	43	51	69	1,200	2,540	538	49	606
9	61	50	e53	45	41	50	67	910	1,660	529	54	526
10	48	76	e56	42	38	54	58	1,120	933	538	49	459
11	36	68	e58	42	37	53	38	3,450	669	532	49	266
12	34	64	e58	48	40	54	34	2,690	598	494	50	138
13	40	48	e58	55	41	102	34	1,780	1,240	324	49	111
14	43	32	e56	46	71	140	34	975	2,370	186	51	342
15	39	53	e56	38	115	258	33	658	2,140	118	52	516
16	33	60	e55	40	157	263	42	526	938	99	53	350
17	34	62	e55	188	200	187	64	499	563	90	52	209
18	34	61	e54	812	221	151	62	587	445	79	52	165
19	53	32	e53	1,210	156	165	68	795	652	76	50	133
20	32	9.2	e53	1,200	108	214	91	794	745	74	47	93
21	35	48	e52	1,170	85	294	477	610	718	72	39	64
22	30	44	51	1,340	79	370	1,560	450	696	69	42	58
23	26	57	52	1,530	71	377	926	353	686	57	40	76
24	21	58	52	795	66	376	479	272	702	47	45	83
25	25	58	51	425	59	295	1,140	237	811	42	38	68
26	37	56	49	218	56	239	5,280	207	750	43	36	42
27	87	55	49	148	51	200	4,020	229	617	44	48	31
28	81	97	49	109	51	163	2,110	251	783	43	35	27
29	48	75	51	73	---	138	1,440	191	1,100	45	43	24
30	100	e60	60	54	---	120	1,130	143	1,390	49	39	27
31	122	---	64	50	---	113	---	122	---	48	217	---
MEAN	62.3	59.0	52.7	325	76.1	155	662	1,197	1,059	397	52.3	1,595
MAX	134	97	64	1,530	221	377	5,280	4,840	2,540	2,150	217	12,900
MIN	21	9.2	47	38	37	50	33	122	111	42	35	24
AC-FT	3,830	3,510	3,240	20,010	4,230	9,540	39,390	73,590	63,040	24,420	3,220	94,920

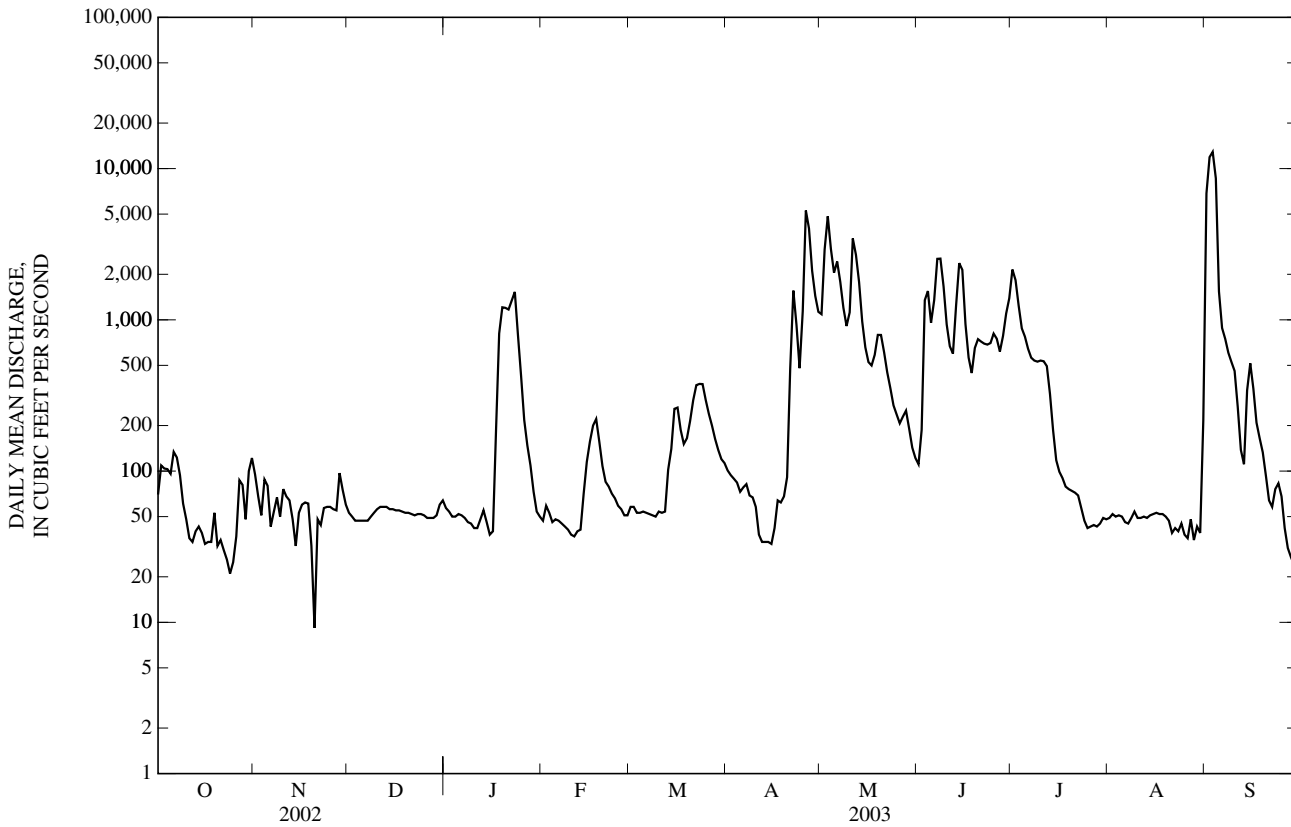
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	1,827	2,046	1,460	1,064	1,723	2,773	3,274	3,507	4,275	1,746	688	1,430
MAX	15,030	13,830	9,470	5,023	9,357	15,760	12,900	13,560	14,740	14,540	4,392	13,300
(WY)	(1987)	(1999)	(1993)	(1993)	(1985)	(1973)	(1983)	(1995)	(1967)	(1993)	(1968)	(1961)
MIN	3.94	5.63	1.56	3.08	9.32	6.73	30.6	165	97.6	21.3	12.6	14.6
(WY)	(1964)	(1964)	(1964)	(1964)	(1964)	(1964)	(1981)	(1965)	(1988)	(1980)	(1963)	(1963)

06916600 MARAIS DES CYGNES RIVER NEAR KANSAS-MISSOURI STATE LINE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL MEAN	1,027		474		2,148	
HIGHEST ANNUAL MEAN					6,283	1993
LOWEST ANNUAL MEAN					361	1991
HIGHEST DAILY MEAN	19,500	May 27	12,900	Sep 3	61,400	Oct 4, 1986
LOWEST DAILY MEAN	9.2	Nov 20	9.2	Nov 20	0.00	Oct 12, 1963
ANNUAL SEVEN-DAY MINIMUM	29	Oct 20	29	Oct 20	0.00	Nov 13, 1963
MAXIMUM PEAK FLOW			13,000	Sep 3	64,100	Oct 4, 1986
MAXIMUM PEAK STAGE			17.82	Sep 3	34.31	Oct 4, 1986
INSTANTANEOUS LOW FLOW			7.3	Nov 20	0.00	many years
ANNUAL RUNOFF (AC-FT)	743,200		342,900		1,556,000	
10 PERCENT EXCEEDS	2,400		1,200		5,880	
50 PERCENT EXCEEDS	135		70		460	
90 PERCENT EXCEEDS	48		40		40	

e Estimated



06916600 MARAIS DES CYGNES RIVER NEAR KANSAS-MISSOURI STATE LINE, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-73, 1976-82, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
MAR 07...	0945	53	447	3.0	26	3.8
JUN 10...	1200	945	353	21.0	299	763

OSAGE RIVER BASIN

06917000 LITTLE OSAGE RIVER AT FULTON, KS

LOCATION.--Lat 38°01'09", long 94°42'48", in SE 1/4 NE 1/4 NE 1/4 sec.25, T.23 S., R.24 E., Bourbon County, Hydrologic Unit 10290103, on right bank at downstream side of county highway bridge, 0.8 mi north of Fulton.

DRAINAGE AREA.--295 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1440: 1949(P), 1950(M). WDR KS-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 776.37 ft above NGVD of 1929. Prior to May 28, 1952, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharge, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 6	1200	*4,480	*17.26	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.03	0.12	0.04	0.62	0.46	1.0	12	295	17	3.2	0.05	322
2	0.03	0.10	0.04	1.1	0.45	1.5	11	228	107	2.6	0.04	397
3	0.13	0.12	0.04	0.97	0.48	2.3	9.7	137	221	2.3	0.03	137
4	0.45	0.11	0.08	0.79	0.43	2.2	8.8	87	105	2.0	0.11	74
5	0.40	0.11	0.10	0.74	0.40	1.9	7.4	70	78	1.8	28	43
6	0.36	0.08	0.10	0.76	0.42	1.4	8.5	111	2,950	1.6	9.7	27
7	0.29	0.06	0.12	0.70	0.44	1.0	9.9	297	1,200	1.5	2.6	18
8	0.23	0.06	0.12	0.64	0.42	0.89	12	122	325	1.7	1.1	11
9	0.17	0.06	0.12	0.62	0.40	0.88	9.4	84	186	1.6	0.67	7.9
10	0.13	0.05	0.12	0.60	0.40	0.74	7.5	67	130	1.8	0.39	5.0
11	0.11	0.04	0.12	0.53	0.40	0.70	7.2	51	99	1.6	0.29	3.4
12	0.10	0.04	0.12	0.50	0.37	0.89	6.8	38	84	2.1	0.22	2.8
13	0.08	0.04	0.14	0.55	0.36	1.3	6.4	32	94	1.8	0.17	2.3
14	0.07	0.04	0.14	0.56	40	1.5	5.6	33	76	1.7	0.13	1.6
15	0.05	0.06	0.15	0.51	26	2.3	4.8	31	57	1.5	0.11	0.90
16	0.05	0.06	0.17	0.57	14	3.1	4.8	166	45	1.2	0.09	0.52
17	0.06	0.06	0.19	0.56	7.2	2.4	5.3	1,070	36	1.0	0.07	0.33
18	0.05	0.07	0.34	0.50	4.9	1.9	4.7	369	29	0.89	0.05	0.20
19	0.07	0.06	0.40	0.49	3.9	72	5.1	182	24	0.70	0.03	0.14
20	0.07	0.06	0.41	0.51	2.8	521	15	314	19	0.56	0.02	0.13
21	0.06	0.06	0.42	0.49	2.2	256	25	196	16	0.43	0.01	0.24
22	0.06	0.06	0.39	0.45	1.8	121	18	136	14	0.36	0.00	0.39
23	0.05	0.06	0.37	0.41	1.5	79	19	96	12	0.26	0.00	0.34
24	0.05	0.06	0.43	0.35	1.4	58	201	76	9.9	0.19	0.00	0.29
25	0.08	0.06	e0.40	0.34	1.1	45	157	67	8.7	0.15	0.00	0.19
26	0.08	0.05	0.39	0.34	1.0	36	148	61	9.5	0.11	0.00	0.25
27	0.08	0.05	0.38	0.31	0.94	30	97	49	7.2	0.09	0.00	0.27
28	0.09	0.05	0.40	0.36	0.91	25	69	40	5.2	0.06	0.00	0.20
29	0.16	0.05	0.49	0.40	---	21	54	33	4.0	0.09	0.41	0.18
30	0.17	0.05	0.66	0.35	---	16	44	27	3.7	0.08	0.98	0.35
31	0.16	---	0.63	0.45	---	14	---	21	---	0.06	4.4	---
MEAN	0.13	0.065	0.26	0.55	4.11	42.6	33.1	148	199	1.13	1.60	35.2
MAX	0.45	0.12	0.66	1.1	40	521	201	1,070	2,950	3.2	28	397
MIN	0.03	0.04	0.04	0.31	0.36	0.70	4.7	21	3.7	0.06	0.00	0.13
MED	0.08	0.06	0.17	0.51	0.93	2.3	9.8	84	40	1.2	0.09	0.71
AC-FT	7.9	3.9	16	34	228	2,620	1,970	9,100	11,850	69	99	2,100

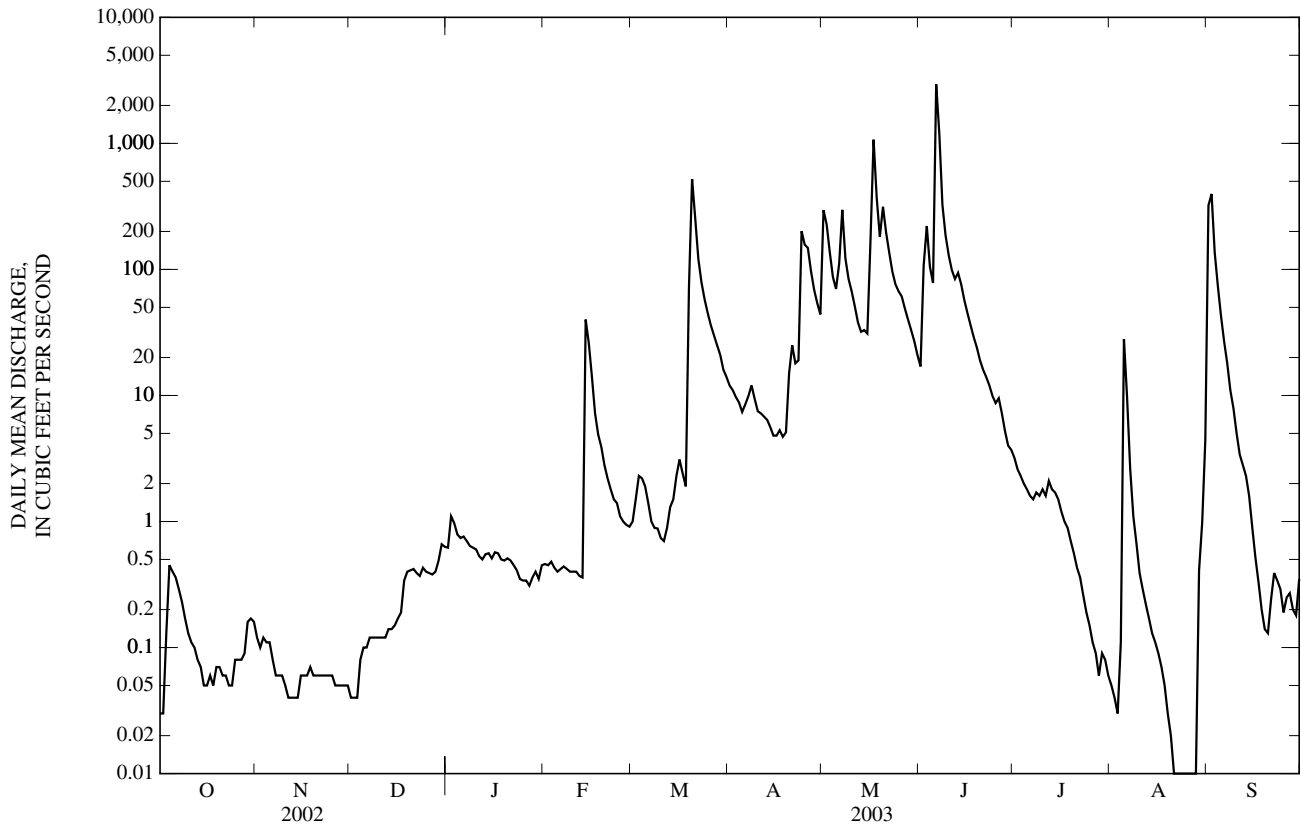
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2003, BY WATER YEAR (WY)

	190	222	144	132	225	342	383	340	350	226	60.3	179
MEAN	3,327	1,867	1,170	715	1,378	2,254	2,681	2,206	1,982	2,128	699	2,377
(WY)	(1987)	(1993)	(1993)	(1973)	(1985)	(1973)	(1994)	(1995)	(1970)	(1951)	(1950)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.77	9.05	3.38	0.042	0.000	0.000
(WY)	(1954)	(1953)	(1957)	(1957)	(1964)	(1964)	(1996)	(1962)	(1972)	(1954)	(1953)	(1953)

06917000 LITTLE OSAGE RIVER AT FULTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1949 - 2003	
ANNUAL MEAN	142		38.8		232	
HIGHEST ANNUAL MEAN					656	1993
LOWEST ANNUAL MEAN					9.21	1953
HIGHEST DAILY MEAN	6,510	May 25	2,950	Jun 6	51,800	Oct 3, 1986
LOWEST DAILY MEAN	0.02	Sep 12	0.00	Aug 22	0.00	Oct 12, 1949
ANNUAL SEVEN-DAY MINIMUM	0.03	Sep 11	0.00	Aug 22	0.00	Oct 3, 1952
MAXIMUM PEAK FLOW			4,480	Jun 6	62,800	Oct 3, 1986
MAXIMUM PEAK STAGE			17.26	Jun 6	35.21	Oct 3, 1986
INSTANTANEOUS LOW FLOW			0.00	Aug 22	0.00	many years
ANNUAL RUNOFF (AC-FT)	103,000		28,090		167,900	
10 PERCENT EXCEEDS	197		84		384	
50 PERCENT EXCEEDS	3.1		0.70		29	
90 PERCENT EXCEEDS	0.06		0.06		0.18	

e Estimated



OSAGE RIVER BASIN

06917240 MARMATON RIVER AT UNIONTOWN, KS

LOCATION.--Lat 37°50'08", long 94°58'52", in SE 1/4 SE 1/4 SW 1/4 sec.27, T.25 S., R.22 E., Bourbon County, Hydrologic Unit 10290104, on left bank at downstream side of U.S. Highway 3 bridge, 0.9 mi south of Uniontown, and at mile 73.5.

DRAINAGE AREA.--84.0 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 870.00 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Flow affected at times, usually in September, by draining of Bourbon County State Lake located about 5.0 mi upstream of gage. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 6	1400	*2,210	*10.35	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

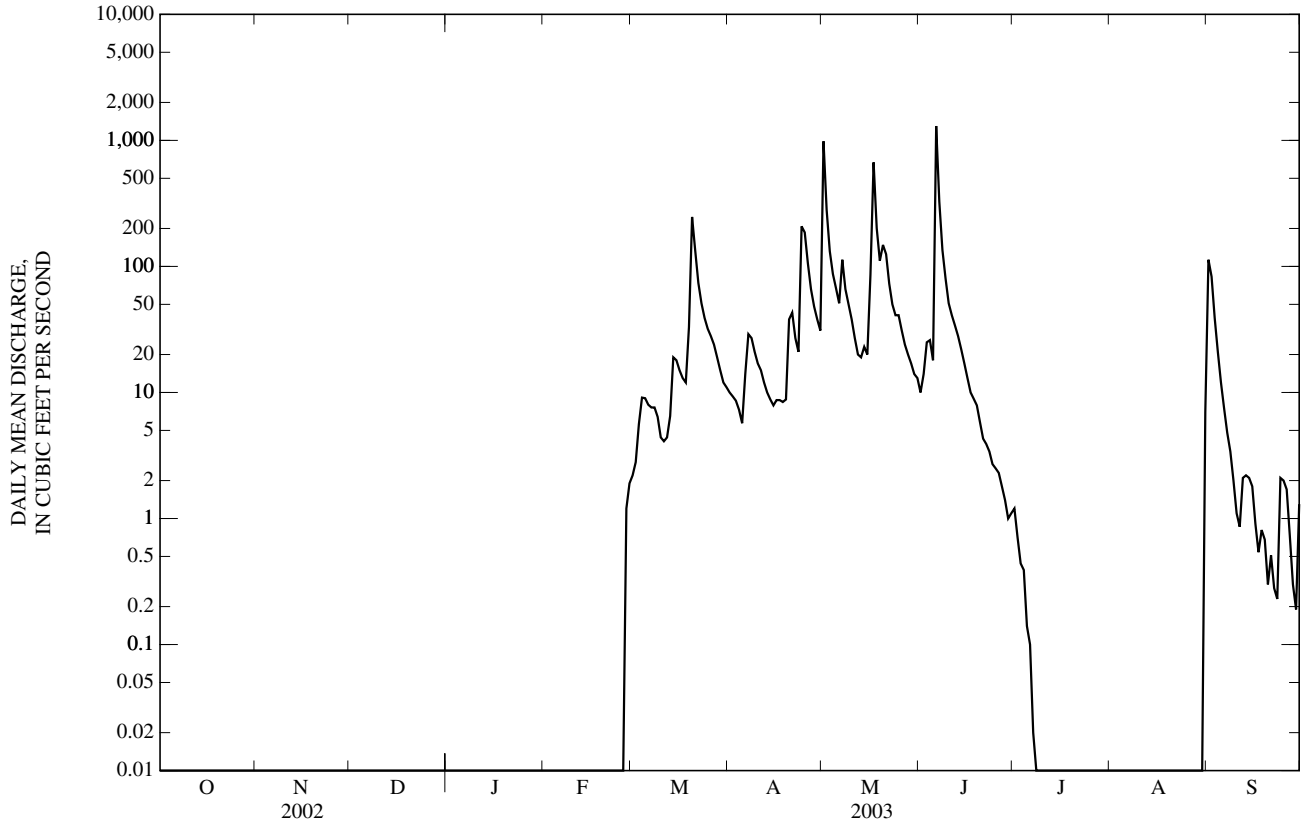
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	2.2	10	983	10	1.2	0.00	113
2	0.00	0.00	0.00	0.00	0.00	2.8	9.3	281	14	0.71	0.00	83
3	0.00	0.00	0.00	0.00	0.00	5.6	8.6	132	25	0.44	0.00	39
4	0.00	0.00	0.00	0.00	0.00	9.1	7.3	87	26	0.39	0.00	21
5	0.00	0.00	0.00	0.00	0.00	9.0	5.7	67	18	0.14	0.00	12
6	0.00	0.00	0.00	0.00	0.00	8.0	14	51	1,300	0.10	0.00	7.5
7	0.00	0.00	0.00	0.00	0.00	7.6	29	113	327	0.02	0.00	4.8
8	0.00	0.00	0.00	0.00	0.00	7.6	27	66	135	0.00	0.00	3.4
9	0.00	0.00	0.00	0.00	0.00	6.4	21	50	80	0.00	0.00	2.0
10	0.00	0.00	0.00	0.00	0.00	4.4	17	38	51	0.00	0.00	1.1
11	0.00	0.00	0.00	0.00	0.00	4.1	15	27	41	0.00	0.00	0.86
12	0.00	0.00	0.00	0.00	0.00	4.4	12	20	34	0.00	0.00	2.1
13	0.00	0.00	0.00	0.00	0.00	6.5	10	19	28	0.00	0.00	2.2
14	0.00	0.00	0.00	0.00	0.00	19	8.8	23	22	0.00	0.00	2.1
15	0.00	0.00	0.00	0.00	0.00	18	7.9	20	17	0.00	0.00	1.8
16	0.00	0.00	0.00	0.00	0.00	15	8.7	86	13	0.00	0.00	0.91
17	0.00	0.00	0.00	0.00	0.00	13	8.7	669	10	0.00	0.00	0.54
18	0.00	0.00	0.00	0.00	0.00	12	8.4	201	8.9	0.00	0.00	0.81
19	0.00	0.00	0.00	0.00	0.00	33	8.8	111	7.9	0.00	0.00	0.68
20	0.00	0.00	0.00	0.00	0.00	247	38	148	5.8	0.00	0.00	0.30
21	0.00	0.00	0.00	0.00	0.00	134	43	125	4.3	0.00	0.00	0.51
22	0.00	0.00	0.00	0.00	0.00	74	27	73	3.9	0.00	0.00	0.28
23	0.00	0.00	0.00	0.00	0.00	51	21	50	3.4	0.00	0.00	0.23
24	0.00	0.00	0.00	0.00	0.00	39	208	41	2.7	0.00	0.00	2.1
25	0.00	0.00	0.00	0.00	0.00	32	186	41	2.5	0.00	0.00	2.0
26	0.00	0.00	0.00	0.00	0.00	28	106	31	2.3	0.00	0.00	1.7
27	0.00	0.00	0.00	0.00	1.2	24	66	24	1.8	0.00	0.00	0.73
28	0.00	0.00	0.00	0.00	1.9	19	48	20	1.4	0.00	0.00	0.30
29	0.00	0.00	0.00	0.00	---	15	38	17	1.0	0.00	0.00	0.19
30	0.00	0.00	0.00	0.00	---	12	31	14	1.1	0.00	0.00	1.3
31	0.00	---	0.00	0.00	---	11	---	13	---	0.00	7.0	---
MEAN	0.000	0.000	0.000	0.000	0.11	28.2	35.0	117	73.3	0.097	0.23	10.3
MAX	0.00	0.00	0.00	0.00	1.9	247	208	983	1,300	1.2	7.0	113
MIN	0.00	0.00	0.00	0.00	0.00	2.2	5.7	13	1.0	0.00	0.00	0.19
AC-FT	0.00	0.00	0.00	0.00	6.1	1,730	2,080	7,220	4,360	6.0	14	612

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	0.41	0.27	1.65	1.43	7.04	20.5	54.3	134	109	28.1	2.64	5.26
MAX	0.82	0.53	3.30	2.85	14.0	28.2	72.6	260	151	81.4	7.56	10.3
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2001)	(2001)	(2001)	(2003)
MIN	0.000	0.000	0.000	0.000	0.11	12.9	35.0	23.3	73.3	0.097	0.13	0.000
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2001)	(2003)	(2003)	(2002)	(2002)

06917240 MARMATON RIVER AT UNIONTOWN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL MEAN	39.1		22.1		30.8	
HIGHEST ANNUAL MEAN					39.5	2002
LOWEST ANNUAL MEAN					22.1	2003
HIGHEST DAILY MEAN	1,410	Jun 12	1,300	Jun 6	1,530	Jul 27, 2001
LOWEST DAILY MEAN	0.00	Aug 7	0.00	Oct 1	0.00	Sep 30, 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 7	0.00	Oct 1	0.00	Aug 7, 2002
MAXIMUM PEAK FLOW			2,210	Jun 6	2,900	Jul 27, 2001
MAXIMUM PEAK STAGE			10.35	Jun 6	11.72	Jul 27, 2001
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Jul 20, 2001
ANNUAL RUNOFF (AC-FT)	28,320		16,030		22,330	
10 PERCENT EXCEEDS	69		41		51	
50 PERCENT EXCEEDS	0.76		0.00		0.68	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



OSAGE RIVER BASIN

06917380 MARMATON RIVER NEAR MARMATON, KS

LOCATION.--Lat 37°49'03", long 94°47'30", in SW ¼ NE ¼ NW ¼ sec.4, T.26 S., R.24 E., Bourbon County, Hydrologic Unit 10290104, on left bank 150 ft downstream from Cedar Creek, 2.0 mi southeast of Marmaton, and at mile 55.7.

DRAINAGE AREA.--292 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 780.66 ft above NGVD of 1929.

REMARKS.--Records good except for periods of low flow, Oct. 1 to Feb. 14 and July 9 to Aug. 30, which are fair and those for estimated daily discharges, which are poor. Flow affected at times, usually in September, by draining of Bourbon County State Lake located about 14.5 mi upstream of gage. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	0700	5,470	18.28	Jun 6	1300	*5,490	*18.34

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.03	0.03	1.5	0.25	15	34	1,320	35	4.0	0.05	249
2	0.03	0.03	0.03	1.8	0.31	20	29	728	65	3.6	0.08	204
3	0.30	0.05	0.03	1.6	0.26	29	26	311	120	3.1	0.08	119
4	0.35	0.03	e0.05	1.4	0.24	28	23	189	101	2.7	0.07	66
5	0.24	0.04	e0.15	2.7	0.30	26	21	144	68	2.3	0.08	40
6	0.18	0.03	e0.25	5.6	0.43	25	39	122	3,290	1.8	0.12	25
7	0.13	0.03	0.15	4.9	e0.60	23	120	166	1,160	1.4	0.13	16
8	0.10	0.04	0.15	4.6	0.36	21	102	153	385	1.0	0.10	11
9	0.07	0.03	0.16	3.9	0.32	17	71	109	226	0.80	0.08	9.4
10	0.05	0.03	0.13	2.9	0.31	15	53	89	156	0.91	0.08	7.4
11	0.05	0.03	0.10	2.1	0.30	14	45	63	151	0.78	0.09	5.5
12	0.04	0.02	0.11	1.5	0.31	13	38	47	116	0.81	0.08	5.8
13	0.03	0.02	0.25	1.2	0.30	498	33	40	94	0.73	0.06	5.4
14	0.03	0.04	0.21	0.97	18	156	29	37	75	0.67	0.05	4.2
15	0.02	0.10	0.19	0.72	47	80	26	41	52	0.61	0.05	3.1
16	0.02	0.07	0.17	0.72	41	69	26	164	39	0.53	0.04	3.1
17	0.03	e0.15	0.19	0.64	24	53	29	3,640	30	0.42	0.03	3.4
18	0.02	e0.10	8.4	0.45	18	41	29	738	24	0.38	0.03	3.8
19	0.02	e0.07	5.2	0.35	43	286	29	368	19	0.30	0.02	3.9
20	0.02	e0.05	1.8	0.35	73	1,370	32	509	16	0.27	0.01	3.4
21	0.00	e0.04	2.0	0.46	47	623	76	386	14	0.25	0.01	4.0
22	0.00	e0.04	2.8	0.41	28	278	73	204	12	0.20	0.00	15
23	0.00	e0.04	1.7	0.29	21	178	53	148	10	0.13	0.00	34
24	0.01	e0.04	1.3	0.18	17	138	525	125	9.0	0.09	0.00	21
25	0.04	e0.03	0.87	0.11	14	117	518	120	8.0	0.06	0.00	11
26	0.02	0.03	0.56	0.11	12	110	295	111	8.2	0.05	0.00	8.9
27	0.02	0.03	0.42	0.10	12	92	178	86	6.8	0.05	0.00	10
28	0.03	0.03	0.37	0.11	12	73	133	69	5.9	0.05	0.00	6.7
29	0.06	0.03	0.40	0.15	---	57	103	59	5.1	0.06	0.42	4.9
30	0.07	0.03	0.83	0.22	---	45	97	49	4.6	0.05	0.94	5.8
31	0.04	---	1.4	0.24	---	40	---	41	---	0.05	6.0	---
MEAN	0.065	0.044	0.98	1.36	15.4	147	96.2	335	210	0.91	0.28	30.3
MAX	0.35	0.15	8.4	5.6	73	1,370	525	3,640	3,290	4.0	6.0	249
MIN	0.00	0.02	0.03	0.10	0.24	13	21	37	4.6	0.05	0.00	3.1
AC-FT	4.0	2.6	60	84	855	9,020	5,720	20,580	12,510	56	17	1,800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

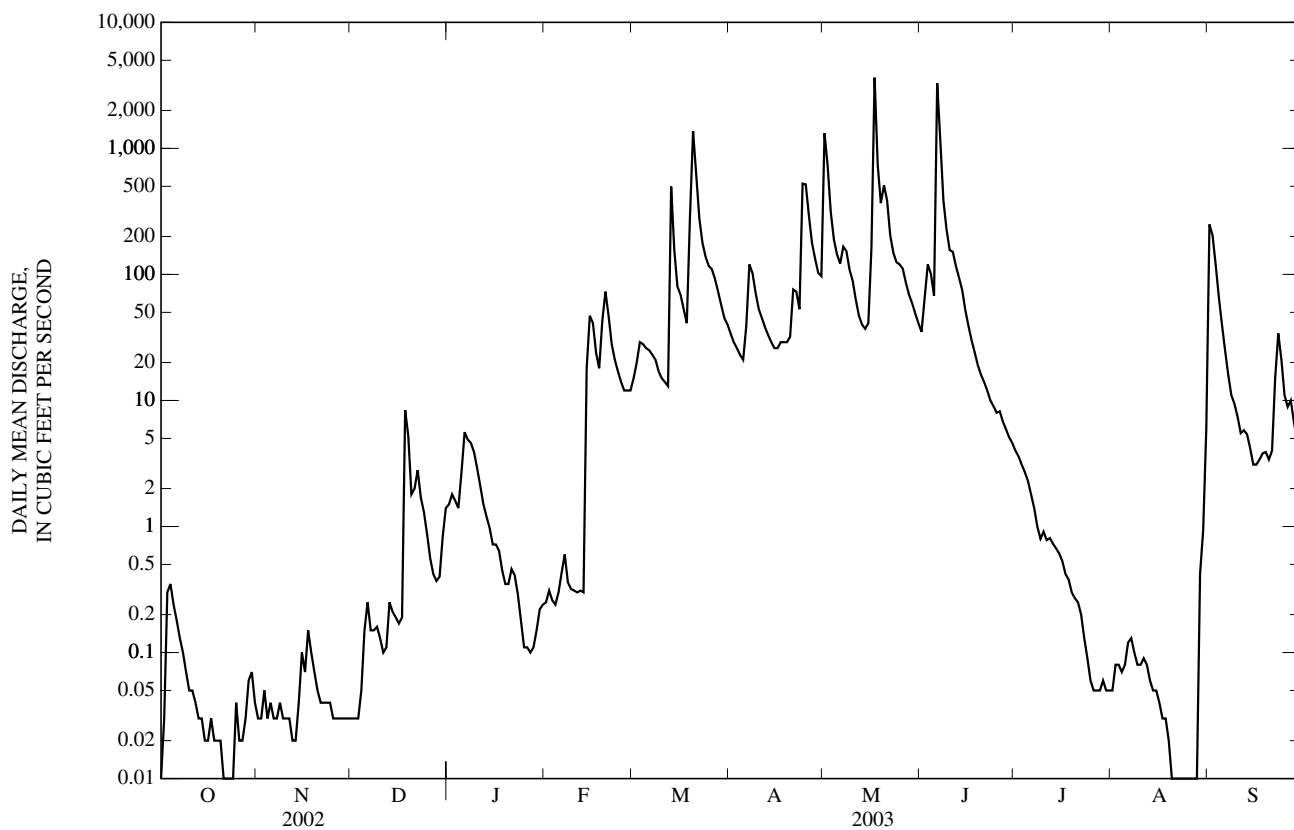
MEAN	258	347	218	172	296	471	461	390	396	173	78.0	175
MAX	3,884	1,523	997	980	1,627	2,603	3,139	2,002	1,652	2,071	793	1,895
(WY)	(1987)	(1975)	(1993)	(1973)	(1985)	(1973)	(1994)	(1990)	(1977)	(1992)	(1985)	(1998)
MIN	0.029	0.029	0.079	0.047	0.097	0.10	0.057	14.3	1.03	0.11	0.057	0.029
(WY)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1980)	(1980)	(1980)	(1980)	(2002)



06917380 MARMATON RIVER NEAR MARMATON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1972 - 2003	
ANNUAL MEAN	139		70.1		285	
HIGHEST ANNUAL MEAN					644	1987
LOWEST ANNUAL MEAN					63.0	1996
HIGHEST DAILY MEAN	9,680	May 8	3,640	May 17	67,900	Oct 3, 1986
LOWEST DAILY MEAN	0.00	Aug 26	0.00	Oct 1	0.00	Aug 25, 1978
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 26	0.00	Aug 22	0.00	Oct 13, 1978
MAXIMUM PEAK FLOW			5,490	Jun 6	106,000	Oct 3, 1986
MAXIMUM PEAK STAGE			18.34	Jun 6	42.87	Oct 3, 1986
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Aug 1, 1978
ANNUAL RUNOFF (AC-FT)	100,900		50,720		206,800	
10 PERCENT EXCEEDS	221		128		444	
50 PERCENT EXCEEDS	2.2		2.1		38	
90 PERCENT EXCEEDS	0.01		0.03		0.39	

e Estimated



## LOWER MISSISSIPPI RIVER BASIN

## ARKANSAS RIVER BASIN

07137000 FRONTIER DITCH NEAR COOLIDGE, KS

LOCATION.--Lat 38°02'18", long 102°02'19", in SW ¼ SE ¼ NE ¼ sec.21, T.23 S., R.43 W., Hamilton County, Hydrologic Unit 11030001, on left bank 0.3 mi east of Colorado-Kansas State line, 0.5 mi downstream from Holly drain diversion, 1.5 mi west of Coolidge, and 2.3 mi downstream from diversion of the Arkansas River.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1731: 1951.

GAGE.--Water-stage recorders and Parshall flume. Datum of gage is 3,343.14 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. This ditch diverts water from the Arkansas River in Colorado for use in Kansas. These records and records for the Arkansas River near Coolidge represent total flow of the Arkansas River at the Colorado-Kansas State line. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft<sup>3</sup>/s, Aug. 1, 1975; no flow many days each year.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	27	18	15	14
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	29	21	13	13
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	31	25	13	13
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	30	25	13	13
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	31	24	14	12
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19	31	26	13	12
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	19	24	11	15
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17	0.06	20	13	18
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17	0.00	19	12	17
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00	19	14	22
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00	19	14	16
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	0.00	18	13	14
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	0.00	17	12	14
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20	0.00	19	10	16
15	0.00	0.00	0.00	0.00	0.00	0.00	11	19	0.00	17	11	16
16	0.00	0.00	0.00	0.00	0.00	0.00	19	20	0.00	17	13	16
17	0.00	0.00	0.00	0.00	0.00	0.00	19	19	0.00	16	13	15
18	0.00	0.00	0.00	0.00	0.00	0.00	25	25	0.00	15	12	14
19	0.00	0.00	0.00	0.00	0.00	0.00	25	21	0.00	14	14	14
20	0.00	0.00	0.00	0.00	0.00	0.00	28	20	0.00	15	12	14
21	0.00	0.00	0.00	0.00	0.00	0.00	28	19	0.00	15	12	15
22	0.00	0.00	0.00	0.00	0.00	0.00	27	20	0.00	13	15	15
23	0.00	0.00	0.00	0.00	0.00	0.00	29	21	0.00	13	13	14
24	0.00	0.00	0.00	0.00	0.00	0.00	31	22	0.00	14	12	13
25	0.00	0.00	0.00	0.00	0.00	0.00	31	24	0.00	14	11	13
26	0.00	0.00	0.00	0.00	0.00	0.00	0.08	24	0.00	13	9.9	13
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21	0.00	14	9.6	13
28	0.00	0.00	0.00	0.00	0.00	0.00	12	20	0.00	16	9.2	14
29	0.00	0.00	0.00	0.00	---	0.00	19	25	9.5	19	11	16
30	0.00	0.00	0.00	0.00	---	0.00	19	25	19	20	e21	19
31	0.00	---	0.00	0.00	---	0.00	---	26	---	18	16	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	10.8	20.1	7.55	18.0	12.7	14.8
MAX	0.00	0.00	0.00	0.00	0.00	0.00	31	26	31	26	21	22
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	0.00	13	9.2	12
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	641	1,240	449	1,100	783	879
CAL YR	2002	MEAN 10.0	MAX 37	MIN 0.00	AC-FT 7,260							
WTR YR	2003	MEAN 7.03	MAX 31	MIN 0.00	AC-FT 5,090							

e Estimated

ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS

LOCATION.--Lat 38°01'34", long 102°00'41", in NW ¼ NE ¼ NW ¼ sec.26, T.23 S., R.43 W., Hamilton County, Hydrologic Unit 11030001, on right bank at downstream side of county highway bridge, 1.0 mi south of Coolidge, 1.9 mi downstream from Colorado-Kansas State line, and at mile 1,099.3 .

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--25,410 mi<sup>2</sup>, of which 1,708 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May to October 1903, March to May 1921, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: 1903, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,330.84 ft above NGVD of 1929. May 5 to Oct. 31, 1903, nonrecording gage, and Mar. 1 to May 31, 1921, water-stage recorder at present site at different datum. Oct. 1, 1950, to Mar. 31, 1966, water-stage recorder at site 0.3 mi upstream at datum 3.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Combined flow of river and Frontier Ditch (station 07137000) represents entire flow that enters Kansas. Flow regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 500,000 acres, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	59	57	59	59	62	36	36	28	39	4.5	25
2	49	59	59	59	59	62	36	40	29	34	4.3	19
3	50	60	59	59	59	60	35	41	37	29	3.6	9.2
4	51	61	58	59	58	60	35	41	38	31	3.4	9.2
5	48	59	59	59	59	59	34	42	90	25	3.0	16
6	47	59	59	59	59	59	36	37	95	18	4.3	11
7	46	59	60	59	57	57	37	32	122	16	3.2	17
8	46	59	58	60	58	57	37	30	153	14	2.6	24
9	46	60	61	59	60	57	37	29	153	12	10	14
10	46	58	60	59	60	59	36	27	142	11	6.0	9.9
11	49	55	59	59	59	59	37	26	127	11	4.1	5.2
12	48	56	60	60	58	58	37	28	116	11	3.0	4.1
13	49	56	61	60	59	56	37	28	109	12	5.5	3.9
14	44	57	60	60	60	54	35	25	130	9.4	3.7	3.7
15	41	57	59	59	60	52	31	24	105	13	12	3.4
16	38	60	60	58	59	52	29	30	98	11	8.0	3.2
17	39	61	58	60	60	52	28	27	91	9.4	8.3	2.7
18	44	56	58	60	60	52	30	31	86	10	6.0	2.5
19	44	56	56	60	60	55	30	29	127	8.8	6.2	2.5
20	41	57	56	60	60	53	32	26	149	7.0	4.4	2.5
21	46	58	58	60	60	52	31	25	163	5.9	3.3	2.9
22	46	59	57	59	60	48	30	26	151	5.6	5.1	2.6
23	50	59	58	e50	61	48	31	28	125	6.0	3.4	3.2
24	50	56	57	e48	59	49	31	31	111	5.5	4.1	3.2
25	50	56	53	62	53	57	32	35	97	4.6	4.4	4.5
26	46	57	52	61	52	52	45	35	83	4.5	5.4	10
27	49	59	51	58	62	44	45	36	81	4.5	6.5	14
28	52	59	57	59	63	44	40	34	78	5.0	5.7	12
29	55	59	61	59	---	41	37	30	62	8.2	4.7	18
30	59	58	60	58	---	38	37	29	45	13	41	15
31	58	---	59	58	---	38	---	28	---	8.0	21	---
MEAN	47.6	58.1	58.1	58.7	59.0	53.1	34.8	31.2	101	13.0	6.80	9.11
MAX	59	61	61	62	63	62	45	42	163	39	41	25
MIN	38	55	51	48	52	38	28	24	28	4.5	2.6	2.5
AC-FT	2,930	3,460	3,570	3,610	3,280	3,260	2,070	1,920	5,990	798	418	542

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

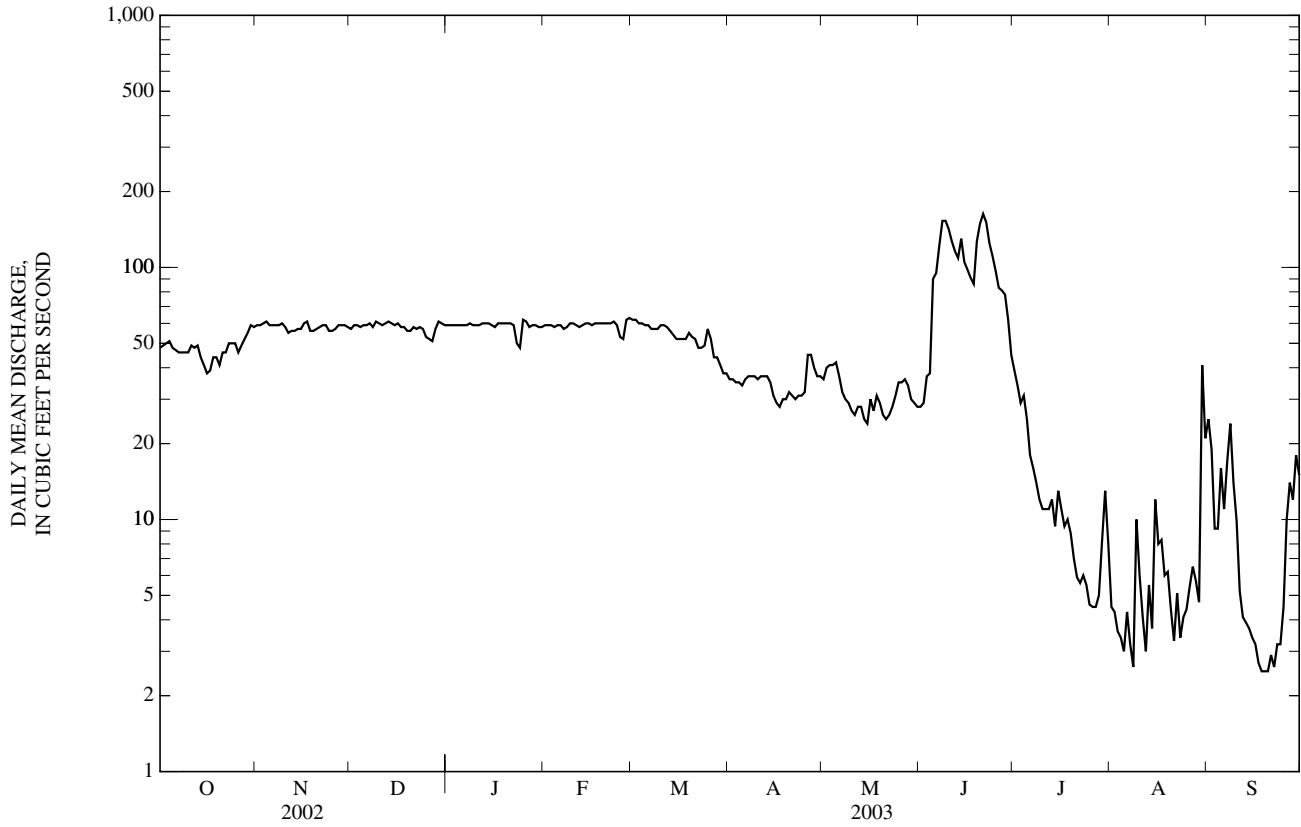
MEAN	134	122	127	134	140	134	214	318	484	357	329	179
MAX	332	424	534	972	602	658	1,221	2,478	8,221	2,255	1,979	1,079
(WY)	(1998)	(1998)	(1998)	(1998)	(1966)	(1998)	(1987)	(1999)	(1965)	(1995)	(1965)	(1965)
MIN	1.97	1.53	3.94	3.14	5.52	5.63	9.43	6.61	4.20	3.59	1.94	0.90
(WY)	(1979)	(1979)	(1979)	(1979)	(1978)	(1978)	(1979)	(1963)	(1954)	(1974)	(1964)	(1960)

ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL MEAN	83.4		44.0		223	
HIGHEST ANNUAL MEAN					1,012	1965
LOWEST ANNUAL MEAN					19.8	1979
HIGHEST DAILY MEAN	985	Aug 30	163	Jun 21	101,000	Jun 18, 1965
LOWEST DAILY MEAN	12	Aug 11	2.5	Sep 18	0.00	Jul 9, 1954
ANNUAL SEVEN-DAY MINIMUM	14	Aug 16	2.7	Sep 16	0.00	Jul 9, 1954
MAXIMUM PEAK FLOW			187	Jun 14	158,000	Jun 17, 1965
MAXIMUM PEAK STAGE			3.32	Jun 14	14.80	Jun 17, 1965
INSTANTANEOUS LOW FLOW			1.9	Sep 17	0.00	many years
ANNUAL RUNOFF (AC-FT)	60,340		31,840		161,700	
10 PERCENT EXCEEDS	135		61		458	
50 PERCENT EXCEEDS	59		48		126	
90 PERCENT EXCEEDS	24		5.2		10	

e Estimated



07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-68, 1970-73, 1975-81, July 1999 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1963 to September 1968, January 1976 to September 1981, October 2000 to current year.

WATER TEMPERATURE: November 1963 to September 1968, October 1976 to September 1981, July 1999 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor.

REMARKS.--Records good. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 6,800 microsiemens/cm, Mar. 29, 1978; minimum, 184 microsiemens/cm, Aug. 30, 2002.

WATER TEMPERATURE: Maximum, 36.4°C, Aug. 7, 2003; minimum, -0.1°C, Nov. 28, 2001.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 4,810 microsiemens/cm, Feb. 25; minimum, 1,790 microsiemens/cm, Aug. 30.

WATER TEMPERATURE: Maximum, 36.4°C, Aug. 7; minimum, -0.1°C, Dec. 25.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	4,450	4,370	4,410	4,490	4,440	4,460	4,520	4,450	4,480
2	---	---	---	4,440	4,390	4,420	4,490	4,450	4,470	4,510	4,440	4,480
3	---	---	---	4,420	4,380	4,400	4,490	4,400	4,470	4,520	4,450	4,490
4	---	---	---	4,460	4,400	4,430	4,410	4,370	4,390	4,510	4,470	4,490
5	---	---	---	4,490	4,420	4,450	4,440	4,410	4,420	4,500	4,470	4,480
6	---	---	---	4,490	4,390	4,430	4,470	4,350	4,410	4,500	4,470	4,480
7	---	---	---	4,470	4,400	4,430	4,420	4,380	4,390	4,520	4,470	4,490
8	---	---	---	4,450	4,410	4,430	4,420	4,370	4,390	4,530	4,480	4,500
9	---	---	---	4,460	4,410	4,440	4,400	4,370	4,390	4,530	4,500	4,510
10	---	---	---	4,450	4,410	4,440	4,430	4,370	4,390	4,570	4,530	4,550
11	---	---	---	4,550	4,430	4,460	4,440	4,370	4,400	4,600	4,510	4,560
12	---	---	---	4,480	4,420	4,450	4,430	4,390	4,410	4,550	4,500	4,530
13	---	---	---	4,460	4,420	4,440	4,450	4,390	4,420	4,560	4,500	4,520
14	---	---	---	4,450	4,410	4,430	4,450	4,390	4,420	4,540	4,500	4,520
15	---	---	---	4,450	4,400	4,420	4,460	4,380	4,420	4,580	4,540	4,560
16	---	---	---	4,430	4,380	4,400	4,440	4,380	4,410	4,670	4,520	4,600
17	---	---	---	4,420	4,370	4,390	4,440	4,380	4,410	4,570	4,520	4,540
18	---	---	---	4,590	4,380	4,490	4,540	4,350	4,430	4,600	4,510	4,560
19	---	---	---	4,480	4,440	4,460	4,580	4,540	4,560	4,570	4,510	4,540
20	---	---	---	4,480	4,440	4,460	4,610	4,540	4,580	4,570	4,520	4,540
21	---	---	---	4,470	4,440	4,450	4,600	4,540	4,580	4,560	4,520	4,550
22	---	---	---	4,470	4,430	4,450	4,610	4,520	4,570	---	4,560	---
23	4,320	---	---	4,460	4,430	4,450	4,560	4,460	4,520	4,800	---	---
24	4,410	4,310	4,350	4,480	4,450	4,470	4,550	4,480	4,510	4,780	4,560	4,710
25	4,410	4,340	4,360	4,500	4,480	4,490	4,730	4,550	4,660	4,560	4,310	4,450
26	4,510	4,360	4,430	4,540	4,460	4,510	4,760	4,620	4,680	4,540	4,310	4,490
27	4,430	4,300	4,360	4,540	4,400	4,490	4,770	4,610	4,690	4,580	4,440	4,520
28	4,440	4,330	4,380	4,470	4,430	4,450	4,650	4,390	4,510	4,510	4,480	4,490
29	4,460	4,050	4,240	4,460	4,430	4,440	4,480	4,380	4,430	4,510	4,460	4,480
30	4,400	4,110	4,250	4,460	4,430	4,440	4,490	4,400	4,460	4,490	4,450	4,470
31	4,450	4,400	4,420	---	---	---	4,530	4,480	4,500	4,520	4,460	4,490
MONTH	4,510	4,050	4,350	4,590	4,370	4,440	4,770	4,350	4,480	4,800	4,310	4,520

## 07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4,500	4,460	4,480	4,400	4,320	4,380	4,660	4,600	4,640	4,270	4,080	4,190
2	4,480	4,460	4,470	4,440	4,400	4,420	4,680	4,620	4,650	4,090	3,620	3,810
3	4,480	4,420	4,450	4,460	4,390	4,420	4,700	4,650	4,680	3,820	3,560	3,730
4	4,520	4,440	4,470	4,510	4,420	4,460	4,690	4,610	4,660	3,880	3,550	3,740
5	4,500	4,440	4,470	4,550	4,430	4,500	4,700	4,610	4,650	4,040	3,860	3,940
6	4,520	4,460	4,490	4,510	4,400	4,450	4,680	4,580	4,620	4,100	3,960	4,040
7	4,670	4,470	4,570	4,460	4,420	4,440	4,640	4,590	4,600	4,230	4,100	4,170
8	4,700	4,480	4,590	4,490	4,440	4,470	4,690	4,550	4,640	4,330	4,230	4,290
9	4,520	4,450	4,480	4,500	4,400	4,450	4,740	4,580	4,660	4,340	4,300	4,320
10	4,580	4,470	4,520	4,460	4,380	4,420	4,750	4,640	4,690	4,330	4,300	4,320
11	4,540	4,490	4,520	4,410	4,380	4,400	4,720	4,600	4,660	4,310	4,200	4,260
12	4,580	4,500	4,530	4,450	4,400	4,420	4,710	4,600	4,670	4,280	4,060	4,180
13	4,520	4,490	4,510	4,500	4,450	4,480	4,740	4,650	4,690	4,150	4,110	4,130
14	4,530	4,470	4,500	4,530	4,490	4,510	4,770	4,650	4,700	---	---	---
15	4,540	4,480	4,520	4,520	4,500	4,510	4,750	4,650	4,710	---	---	---
16	4,530	4,460	4,500	4,520	4,480	4,510	4,700	4,500	4,610	---	---	---
17	4,520	4,440	4,470	4,540	4,510	4,520	4,770	4,540	4,660	---	---	---
18	4,460	4,360	4,430	4,550	4,430	4,530	4,650	4,430	4,580	---	---	---
19	4,410	4,370	4,400	4,450	4,260	4,340	4,520	4,380	4,450	---	---	---
20	4,450	4,410	4,420	4,520	4,450	4,470	4,550	4,290	4,420	---	---	---
21	4,470	4,410	4,440	4,490	4,460	4,470	4,490	4,310	4,380	---	---	---
22	4,480	4,430	4,460	4,570	4,490	4,540	4,500	4,300	4,380	---	---	---
23	4,500	4,360	4,410	4,600	4,550	4,580	4,430	4,310	4,360	---	---	---
24	4,660	4,490	4,560	4,660	4,530	4,610	4,420	4,250	4,360	---	---	---
25	4,810	4,560	4,700	4,530	4,430	4,480	4,370	4,270	4,330	---	---	---
26	4,780	4,430	4,660	4,620	4,500	4,540	4,410	4,150	4,270	---	---	---
27	4,430	4,170	4,320	4,690	4,600	4,650	4,360	4,140	4,250	---	---	---
28	4,350	4,240	4,300	4,630	---	---	4,310	4,170	4,260	---	---	---
29	---	---	---	---	4,460	---	4,380	4,220	4,310	---	---	---
30	---	---	---	4,610	4,540	4,570	4,340	4,200	4,270	---	---	---
31	---	---	---	4,600	4,560	4,590	---	---	---	---	---	---
MONTH	4,810	4,170	4,490	4,690	4,260	4,490	4,770	4,140	4,530	4,340	3,550	4,090

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	3,900	3,720	3,800	4,540	4,410	4,490	3,920	3,650	3,830
2	---	---	---	3,980	3,810	3,880	4,560	4,430	4,500	4,010	3,680	3,790
3	---	---	---	3,900	3,790	3,840	4,600	4,540	4,570	4,120	3,950	4,030
4	---	---	---	3,790	3,620	3,720	4,610	4,490	4,560	4,110	3,950	4,060
5	4,030	2,800	3,370	3,820	3,620	3,710	4,660	4,570	4,620	4,000	3,930	3,960
6	3,630	2,920	3,350	3,930	3,720	3,820	4,630	4,430	4,560	4,140	3,970	4,030
7	3,570	3,320	3,450	4,000	3,840	3,920	4,470	---	---	4,000	3,660	3,800
8	3,320	2,570	2,920	4,060	3,910	3,980	4,400	4,350	4,380	3,820	3,620	3,680
9	3,040	2,470	2,810	4,050	3,960	4,000	4,400	3,700	3,880	3,940	3,800	3,880
10	3,110	3,010	3,060	4,050	3,960	4,000	4,290	3,900	4,100	4,160	3,700	4,030
11	3,190	2,900	3,090	4,030	3,920	3,990	4,370	4,190	4,260	4,280	4,130	4,190
12	3,250	2,980	3,150	3,990	3,900	3,940	4,440	4,210	4,350	4,310	4,170	4,230
13	3,330	3,100	3,270	4,010	3,850	3,960	4,380	3,930	4,130	4,310	4,190	4,240
14	3,100	2,600	2,860	4,000	3,840	3,910	4,380	4,210	4,320	4,290	4,170	4,220
15	3,350	3,090	3,270	3,980	3,910	3,950	4,250	3,550	3,800	4,300	4,180	4,230
16	3,390	3,320	3,360	4,040	3,910	3,980	3,970	3,610	3,790	4,330	4,210	4,260
17	3,510	3,360	3,420	4,190	4,040	4,130	4,100	3,460	3,820	4,370	4,230	4,290
18	3,520	3,210	3,430	4,210	4,150	4,190	4,250	3,900	4,040	4,370	4,240	4,290
19	3,210	2,570	2,660	4,300	4,180	4,230	4,140	3,890	3,990	4,360	4,250	4,300
20	2,580	2,510	2,550	4,390	4,300	4,350	4,380	4,120	4,270	4,380	4,270	4,320
21	2,590	2,510	2,550	4,420	4,350	4,390	4,420	4,260	4,370	4,370	4,210	4,290
22	2,850	2,590	2,700	4,480	4,380	4,410	4,380	3,120	3,970	4,420	4,280	4,350
23	3,120	2,850	3,000	4,420	4,360	4,390	4,450	4,200	4,320	4,470	4,320	4,380
24	3,310	3,030	3,180	4,420	4,340	4,380	4,450	4,140	4,340	4,420	4,310	4,370
25	3,480	3,280	3,380	4,480	4,390	4,440	4,380	4,210	4,280	4,570	4,300	4,400
26	3,580	3,430	3,500	4,540	4,460	4,500	4,300	4,160	4,230	4,310	3,970	4,190
27	3,630	3,510	3,560	4,560	4,490	4,530	4,260	4,160	4,210	3,980	3,450	3,790
28	3,540	3,400	3,490	4,520	4,370	4,480	---	4,200	4,250	3,810	3,480	3,690
29	3,660	3,390	3,530	4,400	4,110	4,310	4,310	3,840	4,180	3,610	3,470	3,560
30	3,800	3,630	3,710	4,120	3,960	4,040	4,090	1,790	3,030	3,800	3,550	3,660
31	---	---	---	4,410	3,990	4,210	3,940	3,600	3,770	---	---	---
MONTH	4,030	2,470	3,180	4,560	3,620	4,110	4,660	1,790	4,180	4,570	3,450	4,080

## ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.2	13.0	17.6	7.2	2.8	4.8	8.7	2.3	5.5	4.7	2.0	3.7
2	17.5	12.0	13.6	7.7	4.1	5.7	9.9	3.8	6.8	5.8	0.5	3.1
3	16.2	10.7	12.8	10.5	5.1	7.4	7.3	2.5	4.8	7.0	1.4	4.0
4	20.0	9.9	14.5	9.3	5.4	6.9	6.7	2.2	4.5	8.0	3.1	5.3
5	22.1	11.2	16.1	11.2	3.8	7.2	8.6	5.1	6.6	9.4	4.2	6.4
6	20.8	12.0	16.0	12.7	3.8	7.9	8.7	3.4	6.0	9.2	3.8	6.4
7	20.7	10.6	15.3	13.6	4.9	9.1	8.4	3.7	6.0	9.0	3.2	6.0
8	21.5	12.0	16.2	14.0	6.9	10.5	8.3	3.4	5.9	9.2	3.1	6.1
9	19.6	15.4	16.7	15.8	9.4	11.9	8.9	4.6	6.5	7.1	3.2	5.1
10	22.4	14.4	17.3	13.0	8.2	10.6	8.6	2.4	5.7	5.0	1.0	3.0
11	22.0	13.1	17.2	12.0	6.1	9.0	8.4	2.5	5.5	5.0	0.3	2.7
12	16.5	11.5	13.7	11.6	4.3	7.9	7.7	4.3	5.7	7.3	1.8	4.4
13	16.9	7.9	11.9	10.8	4.2	7.6	8.0	2.7	5.3	7.9	1.5	4.7
14	17.2	7.6	11.9	12.7	6.9	9.2	8.9	3.4	5.9	7.8	3.1	5.2
15	16.9	7.3	11.7	11.8	6.2	8.4	8.9	2.6	5.9	4.2	1.6	2.9
16	16.9	7.3	11.4	11.2	4.1	7.4	8.4	4.6	6.5	5.1	-0.1	2.1
17	17.6	6.4	11.5	10.9	4.0	7.2	9.3	4.1	6.4	6.8	1.6	3.7
18	18.0	8.8	13.2	11.4	6.4	8.3	9.8	5.7	7.0	6.9	0.6	3.7
19	17.4	9.1	13.1	11.7	5.0	8.1	6.8	2.5	4.7	8.8	1.6	5.0
20	17.9	8.0	12.6	12.6	5.5	8.9	6.3	0.8	3.5	9.1	2.4	5.7
21	16.7	9.2	12.9	12.8	5.8	9.2	5.8	1.5	3.3	5.7	2.3	3.7
22	13.9	9.6	12.0	13.1	5.7	9.3	5.9	0.6	3.0	2.3	---	---
23	9.6	5.9	7.8	12.0	6.8	9.2	3.4	1.5	2.3	3.0	---	---
24	8.0	5.1	6.4	8.0	4.8	6.2	5.1	0.7	2.4	7.1	-0.1	2.8
25	13.5	5.8	8.8	5.1	2.8	4.0	4.4	-0.1	1.5	8.2	1.2	4.1
26	13.5	7.8	10.2	5.4	0.1	2.6	3.4	-0.1	1.2	3.8	1.8	2.5
27	11.7	8.5	10.2	7.6	0.4	3.6	5.1	-0.1	1.9	8.9	0.8	4.4
28	12.7	9.8	11.0	8.6	2.3	5.3	7.8	0.8	3.7	8.0	4.6	6.3
29	11.2	6.0	9.8	9.3	4.8	6.8	6.0	1.5	3.5	8.6	3.7	6.0
30	8.6	3.6	5.9	9.3	4.2	6.5	7.1	2.2	4.3	8.2	2.8	5.5
31	6.8	3.6	5.2	---	---	---	6.8	1.6	4.2	10.2	3.4	6.8
MONTH	23.2	3.6	12.4	15.8	0.1	7.6	9.9	-0.1	4.7	10.2	-0.1	4.5



07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	12.5	4.9	8.6	12.5	4.5	7.7	21.6	8.2	14.6	22.3	14.0	17.7
2	11.2	6.7	8.6	7.5	4.2	5.6	19.2	9.0	13.8	20.7	12.8	16.5
3	7.1	2.3	4.6	12.1	2.3	6.8	21.4	8.7	14.5	20.3	13.7	16.2
4	7.9	0.2	3.9	7.9	0.7	4.0	20.2	8.2	13.5	19.6	12.4	15.8
5	7.4	2.0	4.6	7.1	-0.1	2.7	14.6	7.3	10.6	22.7	11.1	16.4
6	4.7	0.6	2.7	12.1	1.3	6.3	13.0	4.7	8.2	22.5	12.0	16.9
7	5.6	-0.1	1.7	14.2	4.2	8.9	11.8	5.8	8.1	21.6	12.8	16.7
8	7.2	-0.1	2.5	14.4	5.4	9.4	17.7	4.2	10.2	22.5	14.1	17.8
9	6.8	1.4	3.7	9.5	3.9	6.3	20.6	6.0	12.8	22.9	11.2	16.5
10	8.6	-0.1	4.0	12.6	1.9	7.0	21.9	8.0	14.6	20.2	12.0	15.6
11	9.4	1.9	5.5	15.6	4.9	10.0	22.7	9.4	15.7	23.4	9.6	15.9
12	10.4	1.9	6.1	16.0	6.8	11.2	22.3	10.1	15.6	24.7	10.8	17.4
13	9.3	5.5	7.3	17.7	7.3	12.2	22.7	10.3	15.5	24.2	13.9	18.6
14	11.1	5.2	8.0	19.0	8.2	13.2	23.2	10.1	16.0	27.6	13.4	19.7
15	8.0	4.0	5.6	18.4	9.6	13.6	20.5	12.9	16.3	26.6	15.2	18.9
16	10.4	3.0	6.3	18.0	8.9	13.4	19.4	11.1	14.5	21.6	14.0	17.2
17	11.6	3.0	7.1	15.7	9.0	12.2	20.6	9.6	14.5	26.4	13.4	19.3
18	8.8	6.1	7.5	14.9	9.8	12.1	21.2	10.8	15.1	---	---	---
19	11.4	5.7	8.1	11.4	7.3	9.6	15.3	9.2	11.2	---	---	---
20	11.6	4.6	7.8	11.6	6.5	8.7	16.6	7.4	11.6	---	---	---
21	11.5	4.2	7.8	10.5	7.6	9.0	19.8	10.6	14.4	---	---	---
22	12.0	4.9	8.0	16.2	6.1	10.9	16.6	11.0	13.7	---	---	---
23	6.8	-0.1	3.2	18.4	7.6	12.8	19.5	11.6	14.8	25.2	---	---
24	2.8	-0.1	0.8	18.6	8.8	13.4	17.1	8.4	12.8	27.2	17.9	21.3
25	4.0	-0.1	1.3	18.2	9.4	13.3	20.4	10.2	14.3	23.2	17.0	19.3
26	8.3	-0.1	3.1	17.5	8.7	12.9	21.8	10.5	15.6	20.5	15.7	17.9
27	10.0	1.5	4.9	12.5	6.0	9.7	16.7	12.8	14.2	26.5	14.4	19.8
28	7.9	1.3	4.5	11.5	3.3	6.9	19.4	13.4	15.6	29.7	17.4	22.7
29	---	---	---	10.9	2.6	6.9	24.4	12.9	17.9	30.7	17.9	23.9
30	---	---	---	16.2	3.7	9.8	24.5	15.1	19.2	31.7	18.1	24.1
31	---	---	---	19.8	7.0	13.1	---	---	---	25.4	16.6	20.6
MONTH	12.5	-0.1	5.3	19.8	-0.1	9.7	24.5	4.2	14.0	31.7	9.6	18.5

## ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	25.5	16.4	19.7	29.9	18.7	23.6	33.2	18.7	24.9	26.7	15.2	20.1
2	28.3	15.5	21.1	31.1	18.3	23.9	33.1	18.2	24.9	29.3	15.8	21.5
3	25.9	16.4	20.7	30.4	18.5	23.6	34.0	19.3	25.6	28.8	16.1	21.4
4	19.9	---	18.4	31.2	18.4	24.0	34.3	20.5	26.0	30.0	18.3	22.3
5	17.4	15.3	16.0	30.6	18.5	23.5	35.1	19.7	26.4	29.0	17.5	21.9
6	24.3	12.9	18.1	30.9	18.0	23.4	34.1	19.5	24.8	29.2	17.1	21.7
7	20.8	15.7	18.0	30.8	18.0	23.4	36.4	19.1	26.9	24.5	18.6	20.0
8	24.2	14.8	19.2	32.3	18.2	24.3	33.6	19.9	25.2	25.8	17.5	20.5
9	28.4	17.9	22.6	30.5	18.7	23.8	33.9	20.6	26.3	28.6	17.1	22.0
10	26.3	19.7	22.9	32.6	16.7	23.3	32.4	19.2	24.7	28.3	18.2	22.2
11	28.5	18.6	22.1	33.5	17.8	24.3	33.6	18.7	25.1	26.0	13.9	18.9
12	28.1	17.2	22.1	31.6	17.7	23.7	32.4	17.1	23.8	28.3	12.2	19.0
13	27.2	18.3	22.1	32.4	18.6	24.7	30.8	16.2	22.6	21.5	11.6	16.1
14	26.5	17.8	21.7	31.8	17.6	24.1	30.3	16.5	22.2	26.4	10.4	17.2
15	28.9	18.8	23.3	32.0	19.1	24.8	30.1	17.6	22.7	29.0	12.7	19.2
16	28.4	19.3	23.6	32.1	20.0	25.1	30.4	17.3	22.7	29.7	14.9	20.4
17	26.2	19.8	22.7	31.8	18.4	24.3	30.4	17.7	22.6	26.0	14.1	19.0
18	25.4	19.3	22.0	33.1	18.4	24.7	33.8	17.5	24.1	23.4	10.2	15.5
19	22.9	19.0	20.8	34.0	19.3	25.4	32.5	19.4	24.1	24.3	8.4	15.0
20	25.1	18.8	21.6	34.7	20.1	26.0	35.3	18.0	25.3	24.0	10.8	16.5
21	25.7	18.8	21.9	35.5	19.1	26.3	34.0	19.1	25.7	28.5	14.4	19.9
22	28.7	19.8	23.7	33.3	18.5	25.0	32.7	19.5	25.3	27.6	12.7	19.0
23	27.7	20.3	23.8	31.7	17.8	24.0	31.8	18.5	23.9	29.3	14.8	20.2
24	27.5	19.2	23.0	34.4	17.6	24.8	31.9	17.4	23.6	24.4	12.0	17.4
25	26.3	19.2	22.7	32.8	19.1	24.7	33.0	18.1	23.9	25.0	10.0	16.6
26	26.7	17.7	21.8	33.2	18.5	24.9	30.5	18.6	23.9	24.0	12.0	17.4
27	26.8	18.1	22.4	34.5	19.3	24.6	33.5	18.9	24.7	22.8	11.2	16.4
28	26.9	19.5	22.9	28.3	20.8	23.7	31.1	19.7	24.1	22.8	10.7	16.0
29	27.0	18.6	22.2	34.6	19.1	24.9	26.6	19.4	22.2	22.4	11.8	16.3
30	26.1	18.5	21.9	33.4	18.5	25.1	19.4	17.3	18.1	15.9	11.8	13.7
31	---	---	---	35.8	19.1	26.0	21.6	16.5	18.4	---	---	---
MONTH	28.9	12.9	21.5	35.8	16.7	24.4	36.4	16.2	24.0	30.0	8.4	18.8

07138000 ARKANSAS RIVER AT SYRACUSE, KS

LOCATION.--Lat 37°57'58", long 101°45'23", in NW ¼ SE ¼ NW ¼ sec.18, T.24 S., R.40 W., Hamilton County, Hydrologic Unit 11030001, on left bank at downstream side of bridge on U.S. Highway 270, 0.5 mi south of Syracuse, and at mile 1,080.9.

DRAINAGE AREA.--25,763 mi<sup>2</sup>, of which 1,857 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--August 1902 to September 1906 (published as "near Syracuse"), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 3,209.32 ft above NGVD of 1929. See WSP 1921 for history of changes prior to Nov. 15, 1956.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1908 reached a stage of about 11.7 ft from information by local newspaper, discharge, about 87,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	47	48	50	50	59	40	43	26	38	2.1	1.5
2	22	48	47	50	51	59	37	44	30	32	2.0	1.4
3	24	50	49	50	52	59	35	49	31	26	2.0	1.3
4	27	54	51	51	52	58	33	49	39	23	2.0	1.3
5	26	53	50	51	51	56	34	51	47	20	1.9	1.3
6	24	51	50	51	52	56	34	52	71	19	1.8	1.3
7	23	48	49	51	51	56	34	49	83	17	1.7	1.6
8	22	49	48	51	49	56	34	41	92	14	1.7	2.0
9	23	49	49	51	51	55	34	35	103	12	1.6	1.6
10	24	47	51	51	53	57	34	32	101	10	1.9	1.6
11	24	45	50	52	53	59	34	31	94	9.0	1.6	1.5
12	26	45	51	52	53	60	34	29	148	8.0	1.6	1.5
13	28	46	52	54	54	59	33	30	93	7.1	1.6	1.4
14	30	46	52	52	55	57	32	31	131	6.2	1.5	1.4
15	28	45	51	52	55	56	31	28	101	5.5	1.5	1.3
16	26	45	50	50	53	57	33	30	82	4.9	1.5	1.3
17	25	49	50	50	53	57	32	31	73	4.3	1.5	1.2
18	25	52	47	51	55	55	27	29	67	3.9	1.6	1.3
19	30	45	47	53	55	64	26	35	73	3.6	1.7	1.3
20	31	46	48	53	55	61	31	29	90	3.3	1.5	1.3
21	29	46	48	53	55	58	39	28	106	3.2	1.4	1.3
22	33	47	47	49	55	57	29	29	112	3.1	1.3	1.2
23	37	47	47	45	e54	54	30	29	99	3.0	1.3	1.2
24	41	48	48	42	e52	55	39	31	82	2.8	1.3	1.2
25	40	45	45	45	e48	57	43	36	69	2.6	1.3	1.3
26	40	44	41	53	47	61	49	40	60	2.5	1.2	1.2
27	36	47	41	52	49	57	50	41	53	2.4	1.3	1.2
28	39	49	44	52	59	49	53	40	50	2.3	1.3	1.2
29	42	50	48	51	---	49	52	32	49	2.4	1.5	1.2
30	45	50	51	52	---	43	51	27	43	2.3	1.7	1.3
31	45	---	51	51	---	41	---	26	---	2.2	1.5	---
MEAN	30.3	47.8	48.4	50.7	52.6	56.0	36.6	35.7	76.6	9.54	1.59	1.36
MAX	45	54	52	54	59	64	53	52	148	38	2.1	2.0
MIN	22	44	41	42	47	41	26	26	26	2.2	1.2	1.2
AC-FT	1,860	2,840	2,980	3,120	2,920	3,450	2,180	2,200	4,560	586	98	81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

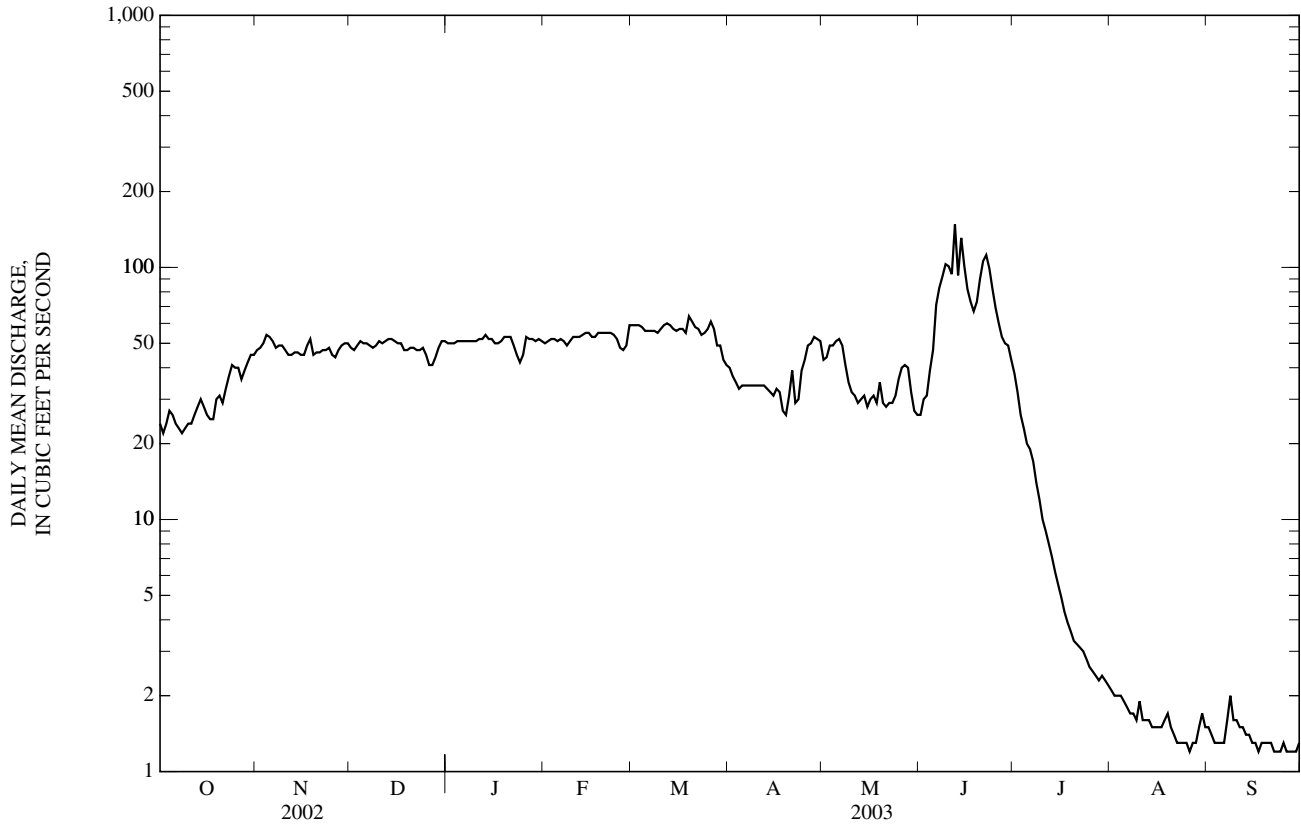
MEAN	192	150	150	162	166	144	291	450	786	449	482	238
MAX	2,401	1,200	669	1,100	976	641	5,962	5,070	9,499	3,030	4,365	1,720
(WY)	(1924)	(1942)	(1924)	(1924)	(1924)	(1998)	(1942)	(1942)	(1921)	(1921)	(1923)	(1923)
MIN	0.31	0.75	0.69	1.19	0.98	1.70	3.24	5.42	7.04	2.10	0.50	0.19
(WY)	(1975)	(1975)	(1975)	(1979)	(1978)	(1978)	(1979)	(1937)	(1954)	(1940)	(1974)	(1974)

ARKANSAS RIVER BASIN

07138000 ARKANSAS RIVER AT SYRACUSE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1903 - 2003	
ANNUAL MEAN	74.4		37.1		295	
HIGHEST ANNUAL MEAN					1,950	1942
LOWEST ANNUAL MEAN					14.0	1979
HIGHEST DAILY MEAN	647	Aug 30	148	Jun 12	109,000	Jun 18, 1965
LOWEST DAILY MEAN	2.4	Aug 28	1.2	Aug 26	0.03	Sep 27, 1974
ANNUAL SEVEN-DAY MINIMUM	2.6	Aug 22	1.2	Sep 22	0.06	Sep 21, 1974
MAXIMUM PEAK FLOW			224	Jun 12	174,000	Jun 17, 1965
MAXIMUM PEAK STAGE			4.38	Jun 12	19.75	Jun 17, 1965
INSTANTANEOUS LOW FLOW			0.68	Aug 30	0.00	Aug 17, 1946
ANNUAL RUNOFF (AC-FT)	53,900		26,860		213,500	
10 PERCENT EXCEEDS	131		57		515	
50 PERCENT EXCEEDS	51		44		128	
90 PERCENT EXCEEDS	17		1.5		7.3	

e Estimated



07138020 ARKANSAS RIVER AT KENDALL, KS

LOCATION.--Lat 37°55'48", long 101°32'56", in SW ¼ sec.25, T.24 S., R.39 W., Hamilton County, Hydrologic Unit 11030001, on left upstream side of county road bridge, 0.24 mi south of Kendall, and at mile 1,066.7.

DRAINAGE AREA.--26,028 mi<sup>2</sup>, of which 1,886 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--April 1979 to September 1982. June 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,120.10 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	39	50	50	51	56	47	47	29	62	2.9	1.0
2	26	40	49	51	51	57	46	45	29	57	2.5	0.99
3	27	40	51	50	52	58	43	46	29	50	2.2	0.97
4	28	41	52	50	52	58	41	47	30	44	1.9	0.79
5	27	42	52	50	52	57	39	47	36	39	1.8	0.77
6	26	42	51	51	51	57	38	52	43	36	1.7	0.72
7	24	43	51	52	50	56	37	54	64	32	1.6	0.84
8	23	45	50	53	50	56	36	50	74	28	1.5	0.95
9	23	45	50	52	50	56	36	43	83	25	1.5	0.81
10	23	45	51	51	51	57	35	38	91	23	1.6	0.86
11	22	44	51	51	51	58	34	33	94	21	1.4	0.75
12	22	43	51	52	51	58	32	31	108	19	1.4	0.69
13	24	43	50	52	51	58	31	29	114	18	1.3	0.72
14	25	43	51	52	52	58	30	29	101	16	1.2	0.67
15	25	43	51	52	52	57	29	29	125	14	1.2	0.66
16	23	43	50	51	52	56	28	34	100	13	1.1	0.66
17	22	45	51	e51	53	56	27	30	93	11	1.1	0.60
18	20	46	50	50	53	56	27	30	88	9.7	1.1	0.57
19	20	46	50	52	54	60	26	29	84	9.0	1.2	0.58
20	24	44	49	53	54	e60	24	30	92	8.3	1.1	0.58
21	24	45	48	53	54	e59	27	29	103	7.3	1.0	0.56
22	25	46	48	53	54	e57	32	30	113	7.0	1.0	0.56
23	27	46	49	e50	e52	e56	33	29	114	6.3	1.0	0.55
24	30	46	48	e47	e50	e56	31	29	102	5.6	1.0	0.55
25	33	46	49	47	e49	e58	35	31	92	5.2	0.99	0.51
26	34	44	45	48	e49	e60	39	33	86	5.1	0.98	0.54
27	34	44	e44	51	e48	60	46	36	79	4.7	0.96	0.54
28	34	48	45	51	52	56	48	39	73	4.1	0.95	0.59
29	35	48	47	52	---	53	50	39	73	3.9	1.1	0.60
30	37	49	48	52	---	51	49	32	67	4.2	1.3	0.60
31	38	---	49	49	---	49	---	30	---	3.1	1.1	---
MEAN	26.8	44.1	49.4	50.9	51.5	56.8	35.9	36.5	80.3	19.1	1.38	0.69
MAX	38	49	52	53	54	60	50	54	125	62	2.9	1.0
MIN	20	39	44	47	48	49	24	29	29	3.1	0.95	0.51
AC-FT	1,650	2,630	3,040	3,130	2,860	3,490	2,130	2,240	4,780	1,170	85	41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

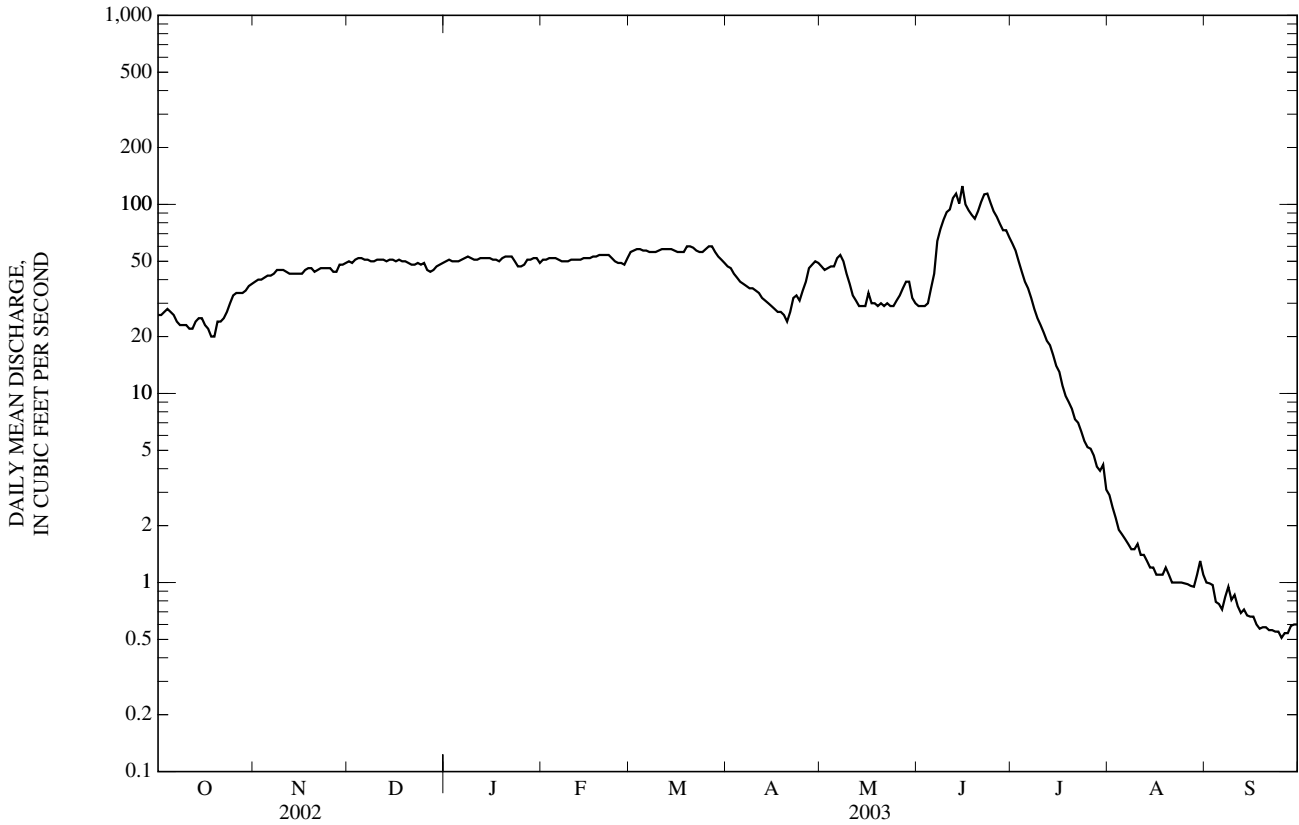
MEAN	75.3	71.5	76.8	78.4	80.9	80.0	73.6	94.1	218	312	212	98.7
MAX	276	220	196	186	201	186	165	241	592	637	466	171
(WY)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2000)	(2000)	(2000)	(2000)
MIN	0.000	0.000	0.000	0.000	5.24	19.8	16.9	22.7	17.6	19.1	1.38	0.69
(WY)	(1980)	(1980)	(1980)	(1980)	(1980)	(1980)	(1982)	(1982)	(1981)	(2003)	(2003)	(2003)

ARKANSAS RIVER BASIN

07138020 ARKANSAS RIVER AT KENDALL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL MEAN	75.1		37.6		109	
HIGHEST ANNUAL MEAN					251	
LOWEST ANNUAL MEAN					37.6	
HIGHEST DAILY MEAN	435	Jul 7	125	Jun 15	984	Jul 19, 2000
LOWEST DAILY MEAN	1.4	Aug 29	0.51	Sep 25	0.00	Oct 1, 1979
ANNUAL SEVEN-DAY MINIMUM	2.2	Aug 23	0.54	Sep 21	0.00	Oct 1, 1979
MAXIMUM PEAK FLOW			141	Jun 13	1,060	Jul 19, 2000
MAXIMUM PEAK STAGE			6.45	Jun 13	9.37	Jul 19, 2000
INSTANTANEOUS LOW FLOW			0.39	Sep 28	0.00	many years
ANNUAL RUNOFF (AC-FT)	54,410		27,250		78,780	
10 PERCENT EXCEEDS	134		58		275	
50 PERCENT EXCEEDS	52		43		57	
90 PERCENT EXCEEDS	23		1.0		2.4	

e Estimated



07138070 ARKANSAS RIVER AT DEERFIELD, KS

LOCATION.--Lat 37°58'11", long 101°17'42", in NW ¼ SW ¼ NE ¼ sec.14, T.24 S., R.35 W., Kearny County, Hydrologic Unit 11030001, on right downstream end of bridge on paved county road about 0.75 mi southwest of Deerfield and at mile 1,039.8.

DRAINAGE AREA.--26,964 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,920.00 ft above NGVD of 1929.

REMARKS.--Records poor. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e12	e18	0.00	e2.5	0.00	e8.6	e0.40	0.00	0.00	0.00
2	0.00	0.00	e12	e18	0.00	e20	0.00	e8.5	e3.8	0.00	0.00	0.00
3	0.00	0.00	e12	e18	0.00	e25	0.00	e5.8	e3.7	0.00	0.00	0.00
4	0.00	0.00	e12	e18	0.00	e27	0.00	e4.7	e5.0	0.00	0.00	0.00
5	0.00	0.00	e12	e19	0.00	e28	0.00	e4.0	e5.7	0.00	0.00	0.00
6	0.00	0.00	e12	e19	0.00	e29	0.00	e5.4	e6.5	0.00	0.00	0.00
7	0.00	0.00	e13	e19	0.00	e31	0.00	e5.5	e17	0.00	0.00	0.00
8	0.00	0.00	e13	e19	0.00	e18	0.00	e5.4	e11	0.00	0.00	0.00
9	0.00	e0.42	e14	e18	0.00	e9.9	0.00	e8.4	e2.8	0.00	0.00	0.00
10	0.00	e1.2	e14	e18	0.00	e0.96	0.00	e8.5	0.00	0.00	0.00	0.00
11	0.00	e2.2	e14	e18	0.00	0.00	0.00	e5.0	0.00	0.00	0.00	0.00
12	0.00	e3.4	e15	e18	0.00	0.00	0.00	e1.2	0.00	0.00	0.00	0.00
13	0.00	e5.0	e15	e18	e1.0	0.00	0.00	e0.29	0.00	0.00	0.00	0.00
14	0.00	e6.5	e15	e11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	e7.0	e15	e1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	e7.4	e16	0.00	0.00	0.00	0.00	e15	0.00	0.00	0.00	0.00
17	0.00	e7.8	e16	0.00	0.00	0.00	0.00	e9.8	0.00	0.00	0.00	0.00
18	0.00	e8.0	e16	0.00	0.00	0.00	0.00	e5.8	0.00	0.00	0.00	0.00
19	0.00	e8.3	e16	e3.7	0.00	0.00	0.00	e2.4	0.00	0.00	0.00	0.00
20	0.00	e8.4	e17	e13	0.00	0.00	0.00	e1.0	0.00	0.00	0.00	0.00
21	0.00	e8.6	e17	e1.9	0.00	0.00	0.00	e1.1	0.00	0.00	0.00	0.00
22	0.00	e9.2	e17	0.00	0.00	0.00	0.00	e0.81	0.00	0.00	0.00	0.00
23	0.00	e9.8	e17	0.00	0.00	0.00	0.00	e0.25	0.00	0.00	0.00	0.00
24	0.00	e9.9	e17	0.00	0.00	0.00	0.00	e0.20	0.00	0.00	0.00	0.00
25	0.00	e10	e18	e0.14	0.00	0.00	0.00	e0.20	0.00	0.00	0.00	0.00
26	0.00	e11	e18	0.00	0.00	0.00	0.00	e0.28	0.00	0.00	0.00	0.00
27	0.00	e12	e18	e0.51	0.00	0.00	e0.24	e0.55	0.00	0.00	0.00	0.00
28	0.00	e12	e18	e13	0.00	0.00	e2.9	e1.4	0.00	0.00	0.00	0.00
29	0.00	e12	e18	e3.3	---	0.00	e5.1	e2.0	0.00	0.00	0.00	0.00
30	0.00	e12	e18	e0.83	---	0.00	e8.3	e0.50	0.00	0.00	0.00	0.00
31	0.00	---	e18	0.0	---	0.00	---	e0.20	---	0.00	0.00	---
MEAN	0.000	5.74	15.3	9.24	0.036	6.17	0.55	3.64	1.86	0.000	0.000	0.000
MAX	0.00	12	18	19	1.0	31	8.3	15	17	0.00	0.00	0.00
MIN	0.00	0.00	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	341	942	568	2.0	380	33	224	111	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

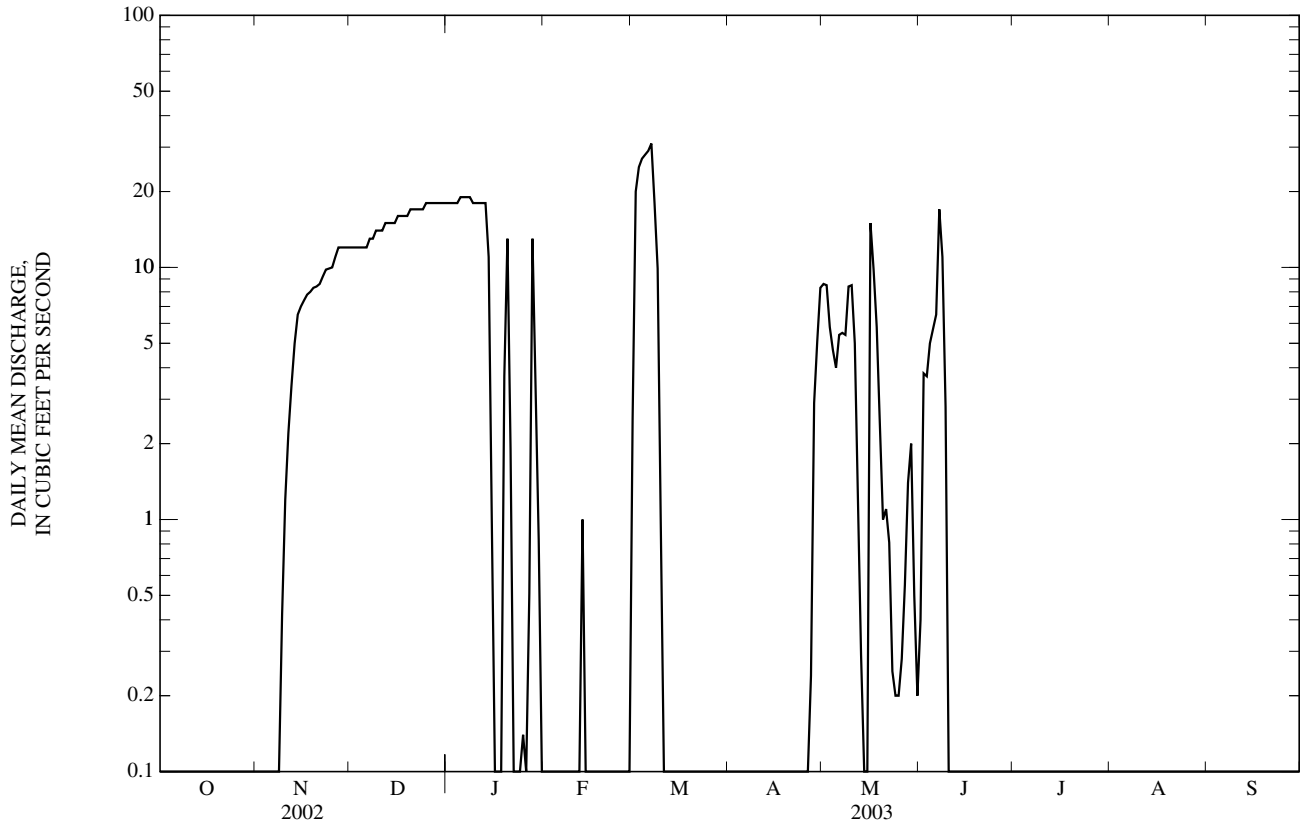
MEAN	138	177	156	134	157	161	133	502	515	184	233	94.4
MAX	309	317	277	206	312	386	263	2,083	2,147	535	884	325
(WY)	(2000)	(1999)	(2000)	(2000)	(2000)	(2000)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	0.000	5.74	15.3	9.24	0.036	6.17	0.55	3.64	0.97	0.000	0.000	0.000
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2002)

ARKANSAS RIVER BASIN

07138070 ARKANSAS RIVER AT DEERFIELD, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL MEAN	24.8		3.59		216	1999
HIGHEST ANNUAL MEAN					637	2003
LOWEST ANNUAL MEAN					3.59	2003
HIGHEST DAILY MEAN	150	Mar 7	31	Mar 7	2,630	Jun 13, 1999
LOWEST DAILY MEAN	0.00	May 28	0.00	Oct 1	0.00	May 28, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	May 28	0.00	Oct 1	0.00	May 28, 2002
MAXIMUM PEAK FLOW			e60	Mar 6	2,740	May 24, 1999
MAXIMUM PEAK STAGE			e6.74	Mar 6	12.32	May 24, 1999
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	17,940		2,600		156,200	
10 PERCENT EXCEEDS	98		16		349	
50 PERCENT EXCEEDS	7.3		0.00		121	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated





07139000 ARKANSAS RIVER AT GARDEN CITY, KS

LOCATION.--Lat 37°57'21", long 100°52'37", in NW ¼ SE ¼ NW ¼ sec.19, T.24 S., R.32 W., Finney County, Hydrologic Unit 11030001, on left bank at downstream side of bridge on U.S. Highway 82, 0.5 mi south of Garden City, and at mile 1,024.2.

DRAINAGE AREA.--27,071 mi<sup>2</sup>, of which 2,368 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--June 1922 to June 1970, October 1986 to current year. July 1970 to September 1986, flood hydrograph record.

GAGE.--Water-stage recorder. Datum of gage is 2,815.43 ft above NGVD of 1929. Prior to May 9, 1957, water-stage recorder at site 60 ft downstream at datum 9.0 ft higher. May 9, 1957, to July 9, 1964, water-stage recorder at present site at datum 9.0 ft higher. July 9, 1964, to Apr. 8, 1976, water-stage recorder at present site at datum 6.0 ft higher. Apr. 8, 1976, to Sept. 30, 1986, water-stage recorder at present site at datum 3.0 ft higher.

REMARKS.--Records poor. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug 10	0500	*5.00	*5.46	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.10	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	e0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	e0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.01	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.00	0.02	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

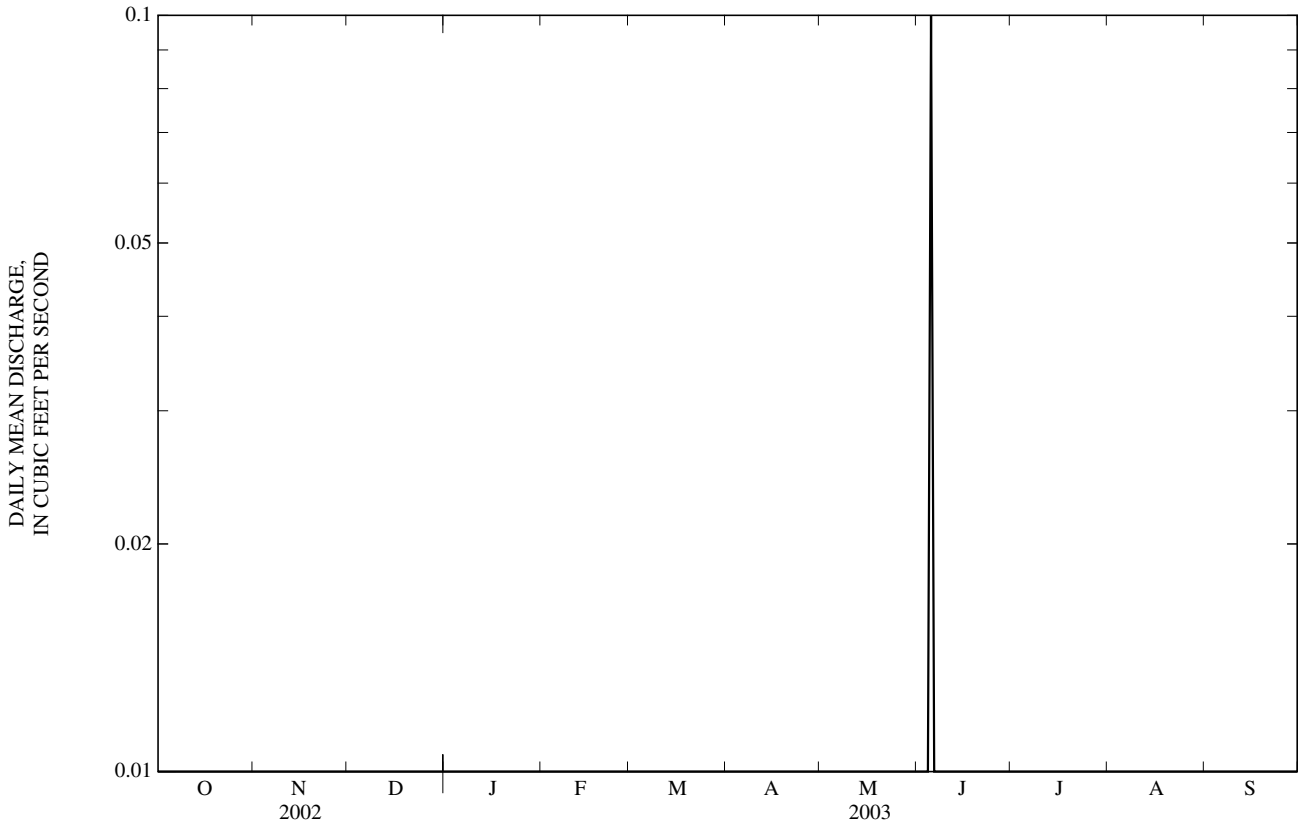
	125	117	122	136	131	111	174	270	469	192	255	108
MEAN	2,751	1,023	673	843	850	903	5,556	4,693	6,859	1,696	3,949	1,611
(WY)	(1924)	(1942)	(1924)	(1998)	(1924)	(1924)	(1942)	(1942)	(1965)	(1947)	(1923)	(1923)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1938)	(1991)	(1991)	(1992)	(1992)	(1935)	(1935)	(1937)	(1934)	(1926)	(1924)	(1926)

ARKANSAS RIVER BASIN

07139000 ARKANSAS RIVER AT GARDEN CITY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1923 - 2003	
ANNUAL MEAN	13.2		0.00		185	
HIGHEST ANNUAL MEAN					1,690	1942
LOWEST ANNUAL MEAN					0.000	1992
HIGHEST DAILY MEAN	134	Mar 7	0.10	Jun 5	104,000	Jun 19, 1965
LOWEST DAILY MEAN	0.00	Feb 2	0.00	Oct 1	0.00	Oct 1, 1922
ANNUAL SEVEN-DAY MINIMUM	0.00	Mar 28	0.00	Oct 1	0.00	Oct 1, 1922
MAXIMUM PEAK FLOW			e5.0	Aug 10	130,000	Jun 19, 1965
MAXIMUM PEAK STAGE			5.46	Aug 10	16.30	Jun 19, 1965
INSTANTANEOUS LOW FLOW			0.00	Oct 4	0.00	most years
ANNUAL RUNOFF (AC-FT)	9,540		0.2		134,100	
10 PERCENT EXCEEDS	71		0.00		333	
50 PERCENT EXCEEDS	0.00		0.00		20	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



07139500 ARKANSAS RIVER AT DODGE CITY, KS

LOCATION.--Lat 37°44'41", long 100°01'57", in SW 1/4 SW 1/4 NW 1/4 sec.35, T.26 S., R.25 W., Ford County, Hydrologic Unit 11030003, on left bank at downstream side of bridge on Fourteenth Avenue in Dodge City, and at mile 970.9.

DRAINAGE AREA.--30,600 mi<sup>2</sup>, of which 5,583 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1902 to September 1906 (published as "near Dodge"), September 1944 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site at different datum 1909-32 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1341: 1903(M), 1904, 1905(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 2,468.71 ft above NGVD of 1929. Nov. 28, 1902, to Aug. 10, 1906, nonrecording gage at site 0.7 mi downstream at datum about 4.00 ft higher. Sept. 1 to Nov. 5, 1944, nonrecording gage and Nov. 6, 1944, to Sept. 30, 1975, recording gage at site 0.7 mi downstream and datum 1.00 ft lower. Oct. 1, 1975, to March 16, 1981, recording gage at site 0.7 mi downstream at datum 4.00 ft lower.

REMARKS.--Records fair. Flow moderately regulated since Oct. 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug 29	1800	982	8.59	Aug 29	2230	*1,450	*8.99

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	227	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	198	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.7	1.80
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	227	54
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	843	107

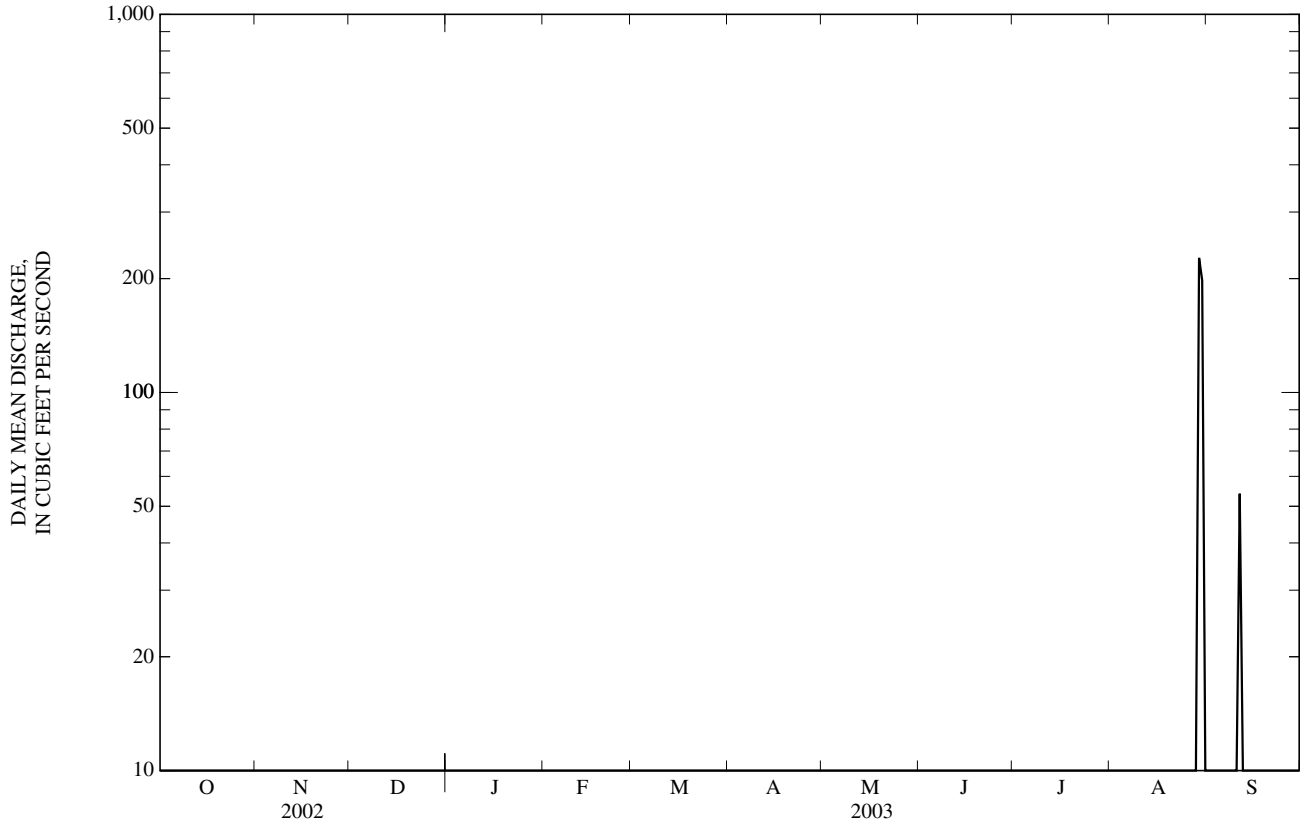
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

MEAN	91.5	77.8	81.4	91.8	111	112	145	238	389	136	98.6	69.4
MAX	1,986	455	351	651	590	502	3,130	5,771	5,370	1,848	851	1,146
(WY)	(1905)	(1947)	(1966)	(1998)	(1998)	(1966)	(1905)	(1905)	(1965)	(1947)	(1965)	(1965)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1904)	(1977)	(1977)	(1977)	(1977)	(1977)	(1981)	(1981)	(1981)	(1983)	(1976)	(1903)

ARKANSAS RIVER BASIN

07139500 ARKANSAS RIVER AT DODGE CITY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1903 - 2003	
ANNUAL MEAN	0.000		1.31		137	
HIGHEST ANNUAL MEAN					1,354	1905
LOWEST ANNUAL MEAN					0.000	1990
HIGHEST DAILY MEAN	0.00	Jan 1	227	Aug 29	70,300	Jun 20, 1965
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Apr 8, 1903
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Apr 10, 1903
MAXIMUM PEAK FLOW			1,450	Aug 29	82,000	Jun 19, 1965
MAXIMUM PEAK STAGE			8.99	Aug 29	14.68	Jun 19, 1965
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many years
ANNUAL RUNOFF (AC-FT)	0.00		950		98,950	
10 PERCENT EXCEEDS	0.00		0.00		263	
50 PERCENT EXCEEDS	0.00		0.00		35	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07140000 ARKANSAS RIVER NEAR KINSLEY, KS

LOCATION.--Lat 37°55'33", long 99°22'31", in SW 1/4 SE 1/4 sec.26, T.24 S., R.19 W., Edwards County, Hydrologic Unit 11030004, on right bank at downstream side of bridge on U.S. Highway 50, 2.0 mi east of Kinsley, and at mile 920.3.

DRAINAGE AREA.--31,066 mi<sup>2</sup>, of which 5,660 mi<sup>2</sup> is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 2,141.64 ft above NGVD of 1929. Prior to Nov. 10, 1944, nonrecording gage, and Nov. 10, 1944, to Dec. 31, 1975, water-stage recorder, both at present site and datum 3.00 ft higher.

REMARKS.--Records poor. Flow moderately regulated since 1943 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug 10	unknown	*5.0	*5.46	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.10	e0.11	e0.11	e0.03	e0.12	e0.10	e0.13	e0.12	e0.03	e0.00	e0.00	e0.00
2	e0.10	e0.11	e0.11	e0.03	e0.13	e0.10	e0.13	e0.12	e0.03	e0.00	e0.00	e0.00
3	e0.10	e0.11	e0.11	e0.03	e0.13	e0.10	e0.13	e0.12	e0.03	e0.00	e0.00	e0.00
4	e0.12	e0.11	e0.11	e0.03	e0.13	e0.10	e0.13	e0.12	e0.03	e0.00	e0.00	e0.00
5	e0.10	e0.11	e0.11	e0.03	e0.13	e0.10	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
6	e0.10	e0.11	e0.11	e0.03	e0.13	e0.10	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
7	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
8	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
9	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
10	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.11	e0.02	e0.00	e0.00	e0.00
11	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.11	e0.02	e0.00	e0.00	e0.50
12	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.02	e0.00	e0.00	e0.20
13	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.02	e0.00	e0.00	e0.10
14	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.02	e0.00	e0.00	e0.00
15	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.02	e0.00	e0.00	e0.00
16	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.15	e0.10	e0.01	e0.00	e0.00	e0.00
17	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.15	e0.15	e0.01	e0.00	e0.00	e0.00
18	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.15	e0.12	e0.01	e0.00	e0.00	e0.00
19	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.01	e0.00	e0.00	e0.00
20	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.01	e0.00	e0.00	e0.00
21	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.10	e0.01	e0.00	e0.00	e0.01
22	e0.10	e0.11	e0.11	e0.03	e0.13	e0.13	e0.13	e0.08	e0.00	e0.00	e0.00	e0.01
23	e0.10	e0.11	e0.11	e0.03	e0.10	e0.13	e0.20	e0.08	e0.00	e0.00	e0.00	e0.01
24	e0.10	e0.11	e0.05	e0.03	e0.10	e0.13	e0.15	e0.08	e0.00	e0.00	e0.00	e0.01
25	e0.10	e0.11	e0.03	e0.04	e0.10	e0.13	e0.13	e0.08	e0.00	e0.00	e0.00	e0.01
26	e0.10	e0.11	e0.03	e0.04	e0.10	e0.13	e0.13	e0.06	e0.00	e0.00	e0.00	e0.01
27	e0.10	e0.11	e0.03	e0.06	e0.10	e0.13	e0.13	e0.06	e0.00	e0.00	e0.00	e0.01
28	e0.10	e0.11	e0.03	e0.10	e0.10	e0.13	e0.13	e0.06	e0.00	e0.00	e0.01	e0.02
29	e0.10	e0.11	e0.03	e0.12	---	e0.13	e0.13	e0.04	e0.00	e0.00	e0.02	e0.02
30	e0.10	e0.11	e0.03	e0.12	---	e0.13	e0.13	e0.04	e0.00	e0.00	e0.01	e0.02
31	e0.11	---	e0.03	e0.12	---	e0.13	---	e0.03	---	e0.00	e0.00	---
MEAN	0.10	0.11	0.090	0.043	0.12	0.12	0.14	0.095	0.013	0.000	0.001	0.031
MAX	0.12	0.11	0.11	0.12	0.13	0.13	0.20	0.15	0.03	0.00	0.02	0.50
MIN	0.10	0.11	0.03	0.03	0.10	0.10	0.13	0.03	0.00	0.00	0.00	0.00
AC-FT	6.2	6.5	5.5	2.6	6.8	7.6	8.0	5.8	0.8	0.00	0.08	1.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

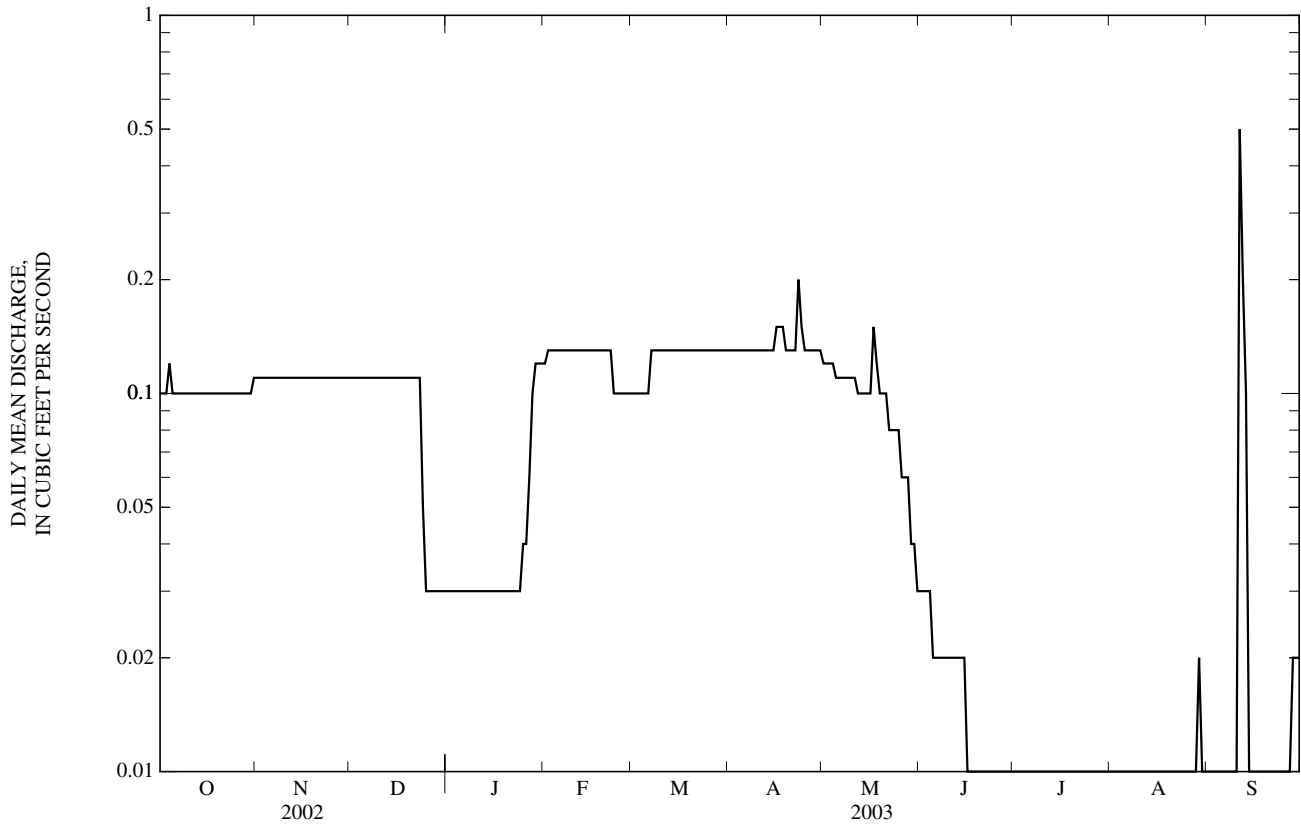
MEAN	83.1	90.7	91.6	102	123	129	129	173	273	153	95.5	94.3
MAX	736	465	399	599	610	585	901	2,189	3,937	1,985	765	1,154
(WY)	(1966)	(1966)	(1966)	(1998)	(1998)	(1966)	(1973)	(1951)	(1965)	(1947)	(1965)	(1965)
MIN	0.10	0.007	0.000	0.000	0.000	0.000	0.000	0.089	0.013	0.000	0.001	0.031
(WY)	(2003)	(1995)	(1995)	(1995)	(1995)	(1995)	(1995)	(1992)	(2003)	(2003)	(2003)	(2003)

ARKANSAS RIVER BASIN

07140000 ARKANSAS RIVER NEAR KINSLEY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL MEAN	0.29		0.072		128	
HIGHEST ANNUAL MEAN					608	1951
LOWEST ANNUAL MEAN					0.072	2003
HIGHEST DAILY MEAN	1.2	May 23	0.50	Sep 11	36,000	Jun 21, 1965
LOWEST DAILY MEAN	0.03	Dec 25	0.00	Jun 22	0.00	Aug 31, 1982
ANNUAL SEVEN-DAY MINIMUM	0.03	Dec 25	0.00	Jun 22	0.00	Aug 31, 1982
MAXIMUM PEAK FLOW			5.0	Aug 10	49,800	Jun 21, 1965
MAXIMUM PEAK STAGE			5.46	Aug 10	17.60	Jun 21, 1965
INSTANTANEOUS LOW FLOW			0.00	Oct 4	0.00	Jul 28, 1977
ANNUAL RUNOFF (AC-FT)	210		52		92,650	
10 PERCENT EXCEEDS	0.55		0.13		272	
50 PERCENT EXCEEDS	0.20		0.10		52	
90 PERCENT EXCEEDS	0.10		0.00		0.71	

e Estimated



ARKANSAS RIVER BASIN

07140850 PAWNEE RIVER NEAR BURDETT, KS

LOCATION.--Lat 38°12'24", long 99°38'35", in NW ¼ SW ¼ SW ¼ sec.21, T.21 S., R.21 W., Hodgeman County, Hydrologic Unit 11030006, on right bank at downstream side of county highway bridge, 3.2 mi north of Gray, 6.5 mi west and 1.2 mi north of Burdett.

DRAINAGE AREA.--1,091 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 2,102.55 ft above NGVD of 1929.

REMARKS.--Records good. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	1.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	4.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

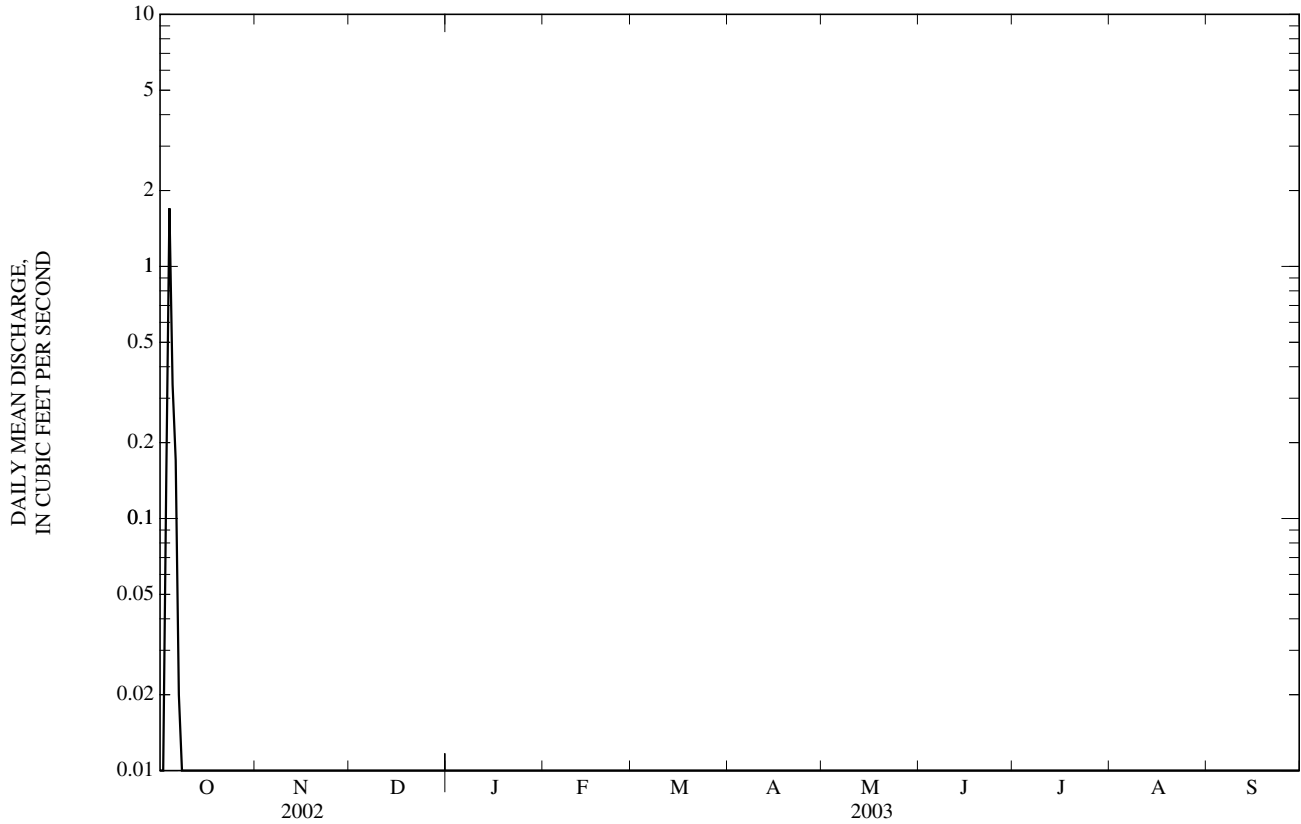
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

MEAN	1.80	2.43	1.20	1.36	4.37	7.86	9.75	6.57	11.0	38.6	22.0	13.2
MAX	10.9	31.5	8.79	10.1	71.1	100	106	55.0	89.1	539	166	73.8
(WY)	(1994)	(1997)	(1998)	(1998)	(1993)	(1993)	(1987)	(1996)	(1996)	(1993)	(1997)	(2001)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1982)	(1982)	(1982)	(1982)	(1982)	(1983)	(1982)	(1982)	(1982)	(1983)	(1983)	(1982)

ARKANSAS RIVER BASIN

07140850 PAWNEE RIVER NEAR BURDETT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL MEAN	2.76		0.007		10.1	
HIGHEST ANNUAL MEAN					72.3	1993
LOWEST ANNUAL MEAN					0.000	1988
HIGHEST DAILY MEAN	408	Jul 28	1.7	Oct 4	3,830	Jul 21, 1993
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 8	0.00	Oct 1, 1981
MAXIMUM PEAK FLOW			7.4	Oct 4	4,290	Jul 21, 1993
MAXIMUM PEAK STAGE			3.17	Oct 4	27.38	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	many days
ANNUAL RUNOFF (AC-FT)	2,000		4.7		7,300	
10 PERCENT EXCEEDS	0.02		0.00		9.1	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	





07141175 BUCKNER CREEK NEAR BURDETT, KS

LOCATION.--Lat 38°09'45", long 99°38'33", in NW 1/4 SW 1/4 SW 1/4 sec.4, T.22 S., R.21 W., Hodgeman County, Hydrologic Unit 11030006, on right bank at downstream side and 100 ft south of bridge 4 mi east of Hanson and 0.2 mi north or 7 mi west of Burdett and 0.2 north, and at mile 8.5.

DRAINAGE AREA.--735 mi<sup>2</sup>.

PERIOD OF RECORD.--October1995 to current year.

GAGE.--Water-stage recorders. Datum of gage is 2,098.21 ft above NGVD of 1929.

REMARKS.--Records fair. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 13	1000	*457	*13.18				
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	200
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	202
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	201
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	170
6	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87
7	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61
8	5.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
9	1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36
10	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30
11	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17
12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	362
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.3
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.9
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.9
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.5
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.1
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.89
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.86
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	1.94	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	68.2
MAX	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	362
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
AC-FT	119	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,060

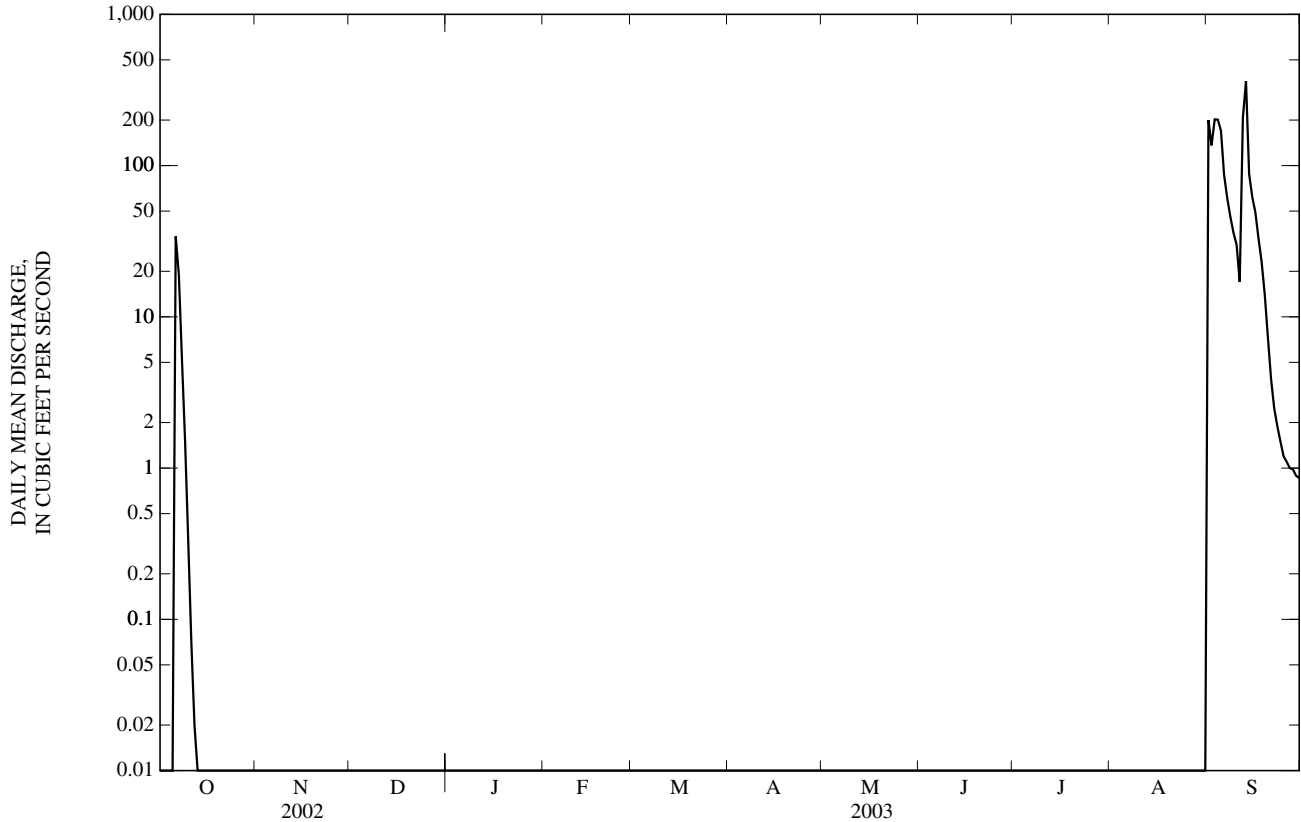
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	15.2	29.3	7.57	8.78	9.39	13.2	13.3	19.8	20.3	17.6	57.0	59.4
MAX	81.8	198	27.5	29.6	32.5	57.1	41.9	44.4	63.6	93.8	286	362
(WY)	(1998)	(1997)	(1997)	(1998)	(1998)	(1998)	(1998)	(1996)	(1997)	(1996)	(1996)	(1996)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1996)	(1996)	(1996)	(1996)	(2002)	(2002)	(1996)	(2002)	(2003)	(2002)	(2003)	(2000)

ARKANSAS RIVER BASIN

07141175 BUCKNER CREEK NEAR BURDETT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL MEAN	1.58		5.77		22.6	
HIGHEST ANNUAL MEAN					68.7	1996
LOWEST ANNUAL MEAN					1.42	2002
HIGHEST DAILY MEAN	140	Aug 14	362	Sep 13	2,160	Sep 21, 1996
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1995
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 13	0.00	Oct 1, 1995
MAXIMUM PEAK FLOW			457	Sep 13	2,360	Nov 17, 1996
MAXIMUM PEAK STAGE			13.18	Sep 13	24.39	Nov 17, 1996
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	1,150		4,180		16,370	
10 PERCENT EXCEEDS	0.00		0.04		30	
50 PERCENT EXCEEDS	0.00		0.00		3.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07141200 PAWNEE RIVER AT ROZEL, KS

LOCATION.--Lat 38°12'26", long 99°24'18", in SW 1/4 SW 1/4 sec.22, T.21 S., R.19 W., Pawnee County, Hydrologic Unit 11030005, on left bank at downstream side of highway bridge, 1.2 mi north of U.S. Highway 156 on county road at west edge of Rozel, 16.6 mi west of Larned, and at mile 30.6.

DRAINAGE AREA.--2,148 mi<sup>2</sup>, of which 138 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--April to September 1924 (gage heights and discharge measurements only), October 1924 to September 1995 published as "near Larned," and October 1995 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1177: 1949. WSP 1241: 1927-28(M), 1935, 1940, 1943. WSP 1341: Drainage area.

GAGE.--Water-stage recorders. Datum of gage is 2,040.24 ft above NGVD of 1929. June 3, 1959, to June 6, 1990, at site 5.8 mi downstream at datum 0.66 ft higher. See WSP 1921 for history of changes prior to June 2, 1959.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 14	0500	*511	*15.11			No peak greater than base discharge.	

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.43	0.00	e0.09	50
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.18	e0.02	e0.02	136
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.01	e0.25	0.00	189
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.19	0.00	196
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.01	0.00	175
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.12	0.00	109
8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.33	0.00	72
9	16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.47	0.00	55
10	8.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.23	0.00	41
11	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.07	0.00	57
12	5.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38
13	e2.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	265
14	e1.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	397
15	e0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149
16	e0.57	0.00	0.00	0.00	0.00	0.00	e0.15	0.00	0.00	e0.06	0.00	98
17	e0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.11	0.00	70
18	e0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.04	0.00	43
19	e0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28
20	e0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17
21	e0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.01	0.00	11
22	e0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	e0.01	0.00	7.0
23	e0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.9
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.4
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.4
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.6
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.1
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.66
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e0.10	204	0.39
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	e0.23	131	0.24
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	e0.05	53	---
MEAN	1.89	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.021	0.074	12.5	74.8
MAX	16	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.43	0.47	204	397
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
AC-FT	116	0.00	0.00	0.00	0.00	0.00	0.3	0.00	1.2	4.6	770	4,450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

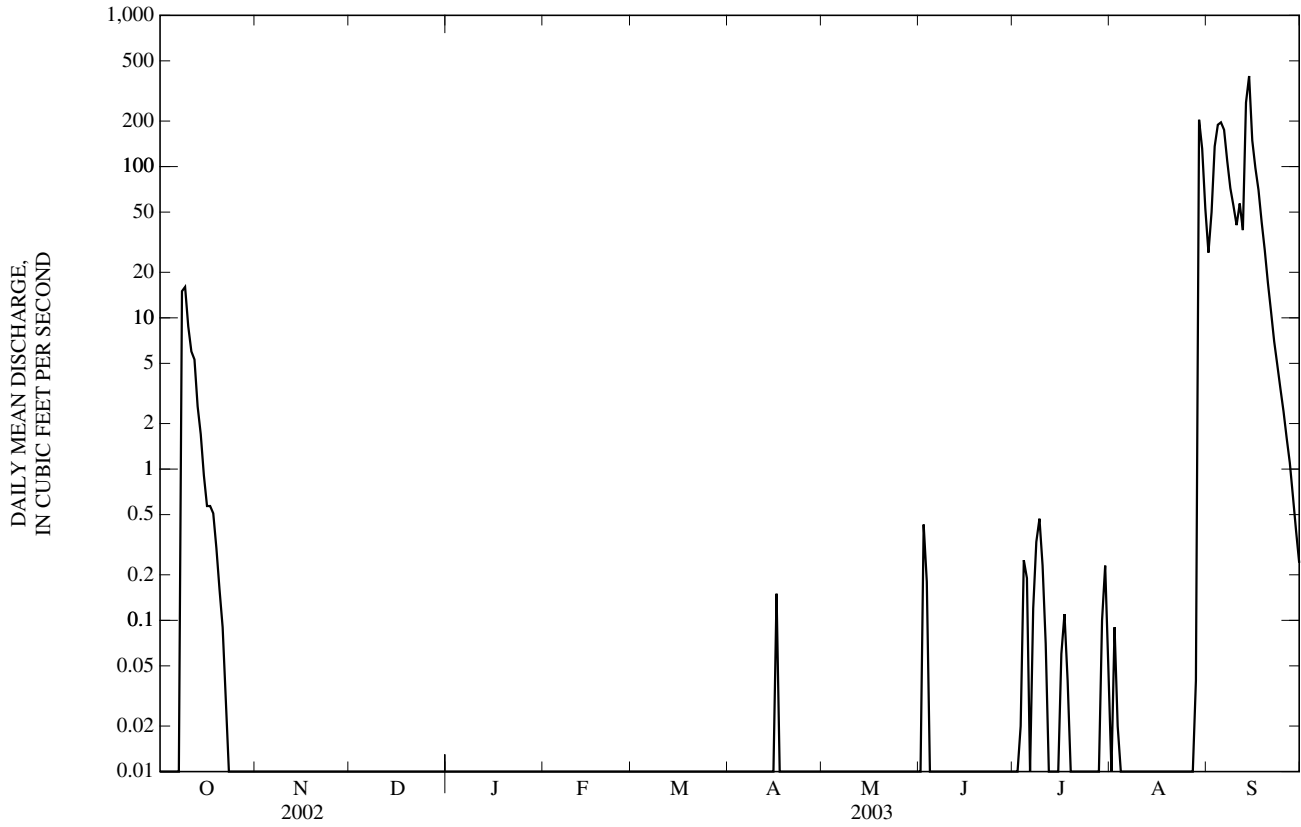
MEAN	48.4	16.8	7.05	6.93	11.2	29.3	47.3	94.3	149	155	105	53.2
MAX	1,185	320	63.5	59.7	304	552	640	1,286	2,298	2,264	2,536	447
(WY)	(1947)	(1997)	(1974)	(1952)	(1949)	(1960)	(1973)	(1935)	(1951)	(1958)	(1950)	(1962)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1940)	(1940)	(1955)	(1956)	(1957)	(1957)	(1935)	(1956)	(1966)	(1976)	(1946)	(1939)

ARKANSAS RIVER BASIN

07141200 PAWNEE RIVER AT ROZEL, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL MEAN	3.51		7.38		60.8	
HIGHEST ANNUAL MEAN					549	1951
LOWEST ANNUAL MEAN					0.000	1991
HIGHEST DAILY MEAN	394	Jul 29	397	Sep 14	14,300	Jul 28, 1958
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	May 5, 1926
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Jul 10, 1930
MAXIMUM PEAK FLOW			511	Sep 14	16,300	Jul 28, 1958
MAXIMUM PEAK STAGE			15.11	Sep 14	33.75	Jul 22, 1993
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	2,540		5,340		44,040	
10 PERCENT EXCEEDS	3.1		1.3		56	
50 PERCENT EXCEEDS	0.00		0.00		3.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



07141220 ARKANSAS RIVER NEAR LARNED, KS

LOCATION.--Lat 38°12'13", long 99°00'05", in SE 1/4 SE 1/4 SE 1/4 sec.19, T.21 S., R.15 W., Pawnee County, Hydrologic Unit 11030004, on right bank at downstream side of county bridge, 1 mi north and 5.1 mi east of Larned, and at mile 904.5.

DRAINAGE AREA.-34,002 mi<sup>2</sup>, of which 5,871 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,943.33 ft above NGVD of 1929.

REMARKS.--Records fair. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 16	0800	*174	*6.08	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	112
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.8
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.3
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.6
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,580

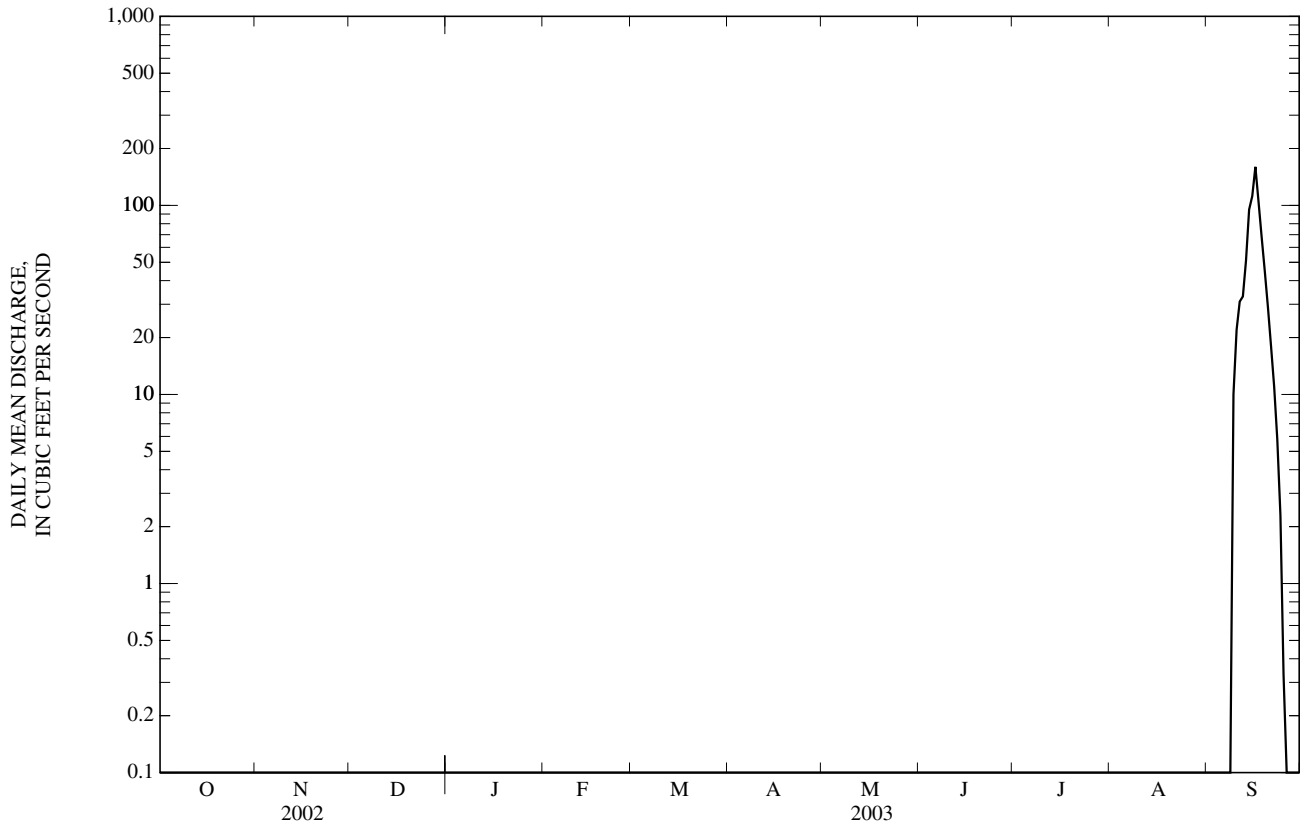
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MEAN	46.5	61.3	52.7	48.2	63.1	109	133	260	400	165	101	88.0
MAX	154	175	140	134	150	347	307	911	1,662	678	449	222
(WY)	(2000)	(1999)	(2000)	(2000)	(1999)	(2000)	(1999)	(1999)	(1999)	(1999)	(1999)	(2001)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)

ARKANSAS RIVER BASIN

07141220 ARKANSAS RIVER NEAR LARNED, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL MEAN	0.28		2.19		127	
HIGHEST ANNUAL MEAN					413	1999
LOWEST ANNUAL MEAN					1.70	2002
HIGHEST DAILY MEAN	16	Aug 1	160	Sep 16	2,100	Sep 20, 2001
LOWEST DAILY MEAN	0.00	Apr 18	0.00	Oct 1	0.00	Apr 18, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Apr 18	0.00	Oct 1	0.00	Apr 18, 2002
MAXIMUM PEAK FLOW			174	Sep 16	2,340	Sep 20, 2001
MAXIMUM PEAK STAGE			6.08	Sep 16	10.90	Sep 20, 2001
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	Sep 20, 2002
ANNUAL RUNOFF (AC-FT)	204		1,580		92,190	
10 PERCENT EXCEEDS	0.87		0.00		304	
50 PERCENT EXCEEDS	0.00		0.00		14	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07141300 ARKANSAS RIVER AT GREAT BEND, KS

LOCATION.--Lat 38°21'11", long 98°45'50", in SW 1/4 NW 1/4 SE 1/4 sec.33, T.19 S., R.13 W., Barton County, Hydrologic Unit 11030004, on left bank, top of levee, at downstream side of bridge on U.S. Highway 281, 0.5 mi south of Great Bend, 4.5 mi upstream from Walnut Creek, and at mile 873.2.

DRAINAGE AREA.--34,356 mi<sup>2</sup>, of which 6,002 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--September 1940 to current year. Fragmentary gage-height records collected at same site, at datum 3.0 ft higher, 1906, 1908-12, are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,835.19 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1975, at datum 4.00 ft higher.

REMARKS.--Records poor. Flow moderately regulated since 1948 by John Martin Reservoir (station 07130000). Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	1400	*218	*2.48	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	e2.8	e2.7	e2.9	e2.5	e3.0	e4.0	e4.7	e4.0	e2.3	e0.69	e0.91
2	2.2	e2.8	e2.7	e2.9	e2.9	e3.1	e4.0	e4.6	e4.0	e2.1	e0.66	e0.50
3	6.7	e2.8	e2.7	e2.8	e3.0	e3.0	e4.0	e4.5	e4.0	e2.0	e0.62	e0.40
4	4.7	e2.8	e2.7	e2.9	e2.8	e2.9	e4.0	e4.4	e4.0	e1.9	e0.59	e0.40
5	128	e2.8	e2.7	e2.7	e2.9	e2.7	e4.0	e4.3	e4.0	e1.8	e0.55	e0.40
6	94	e2.8	e2.7	e2.7	e3.0	e2.9	e4.0	e4.2	e4.0	e1.7	e0.52	e0.40
7	30	e2.7	e2.7	e2.6	e2.9	e2.9	e4.0	e4.1	e4.0	e1.6	e0.49	e0.40
8	16	e2.7	e2.8	e2.5	e3.3	e3.1	e4.0	e4.0	e4.0	e1.6	e0.47	e0.40
9	9.3	e2.7	e2.8	e2.3	e3.3	e2.7	e4.0	e4.0	e4.0	e1.5	e0.44	e0.40
10	6.1	e2.7	e2.8	e2.3	e3.2	e2.7	e4.0	e4.0	e4.0	e1.4	e0.42	e0.40
11	4.6	e2.6	e2.8	e2.3	e3.2	e2.7	e4.0	e4.0	e4.0	e1.4	e0.41	e2.0
12	3.8	e2.6	e2.8	e2.4	e3.1	e2.8	e4.0	e4.0	e4.0	e1.3	e0.40	e1.2
13	3.4	e2.6	e2.8	e2.6	e3.0	e2.9	e4.0	e4.0	e4.0	e1.3	e0.40	e0.89
14	2.9	e2.6	e2.8	e2.7	e2.9	e3.2	e4.0	e4.0	e4.0	e1.2	e0.40	e0.75
15	2.5	e2.6	e2.9	e2.4	e3.1	e3.2	e6.0	e4.0	e4.0	e1.2	e0.40	e0.66
16	2.2	e2.5	e2.9	e2.4	e3.1	e3.2	e5.8	e5.2	e4.0	e1.1	e0.40	e0.59
17	2.1	e2.5	e2.9	e2.4	e3.1	e3.6	e5.4	e6.0	e4.0	e1.1	e0.40	e0.50
18	2.1	e2.5	e2.9	e2.5	e3.3	e3.3	e5.2	e5.6	e4.0	e1.1	e0.40	e20
19	1.9	e2.5	e2.9	e2.5	e4.1	e5.0	e5.1	e5.1	e4.0	e1.0	e0.40	e5.0
20	1.8	e2.5	e2.9	e2.7	e3.5	e4.5	e5.0	e4.6	e3.9	e0.97	e0.40	e2.0
21	1.9	e2.5	e2.9	e2.5	e3.1	e4.3	e5.0	e4.3	e3.8	e0.92	e0.40	e1.0
22	1.9	e2.5	e2.9	e2.4	e3.0	e4.2	e5.0	e4.0	e3.7	e0.87	e0.40	e0.30
23	3.2	e2.5	e2.9	e2.3	e3.3	e4.2	e6.4	e5.5	e3.5	e0.83	e0.40	e0.10
24	2.7	e2.5	e2.9	e2.5	e3.1	e4.1	e7.0	e7.0	e3.3	e0.79	e0.40	e0.10
25	2.2	e2.6	e2.9	e2.0	e2.9	e3.9	e6.2	e6.3	e3.2	e0.74	e0.40	e0.10
26	2.0	e2.6	e2.9	e1.3	e3.0	e4.0	e5.5	e5.9	e3.1	e0.70	e0.40	e0.10
27	3.1	e2.6	e2.9	e1.5	e3.0	e4.0	e5.2	e4.8	e2.9	e0.68	e0.40	e0.10
28	3.0	e2.6	e2.9	e1.8	e2.8	e4.0	e5.2	e4.0	e2.8	e0.65	e0.40	e0.10
29	e2.8	e2.6	e2.9	e1.8	---	e4.0	e4.9	e4.0	e2.6	e0.62	e0.40	e0.10
30	e2.8	e2.6	e2.9	e2.0	---	e4.0	e4.8	e4.0	e2.4	e0.60	e0.80	e0.10
31	e2.8	---	e2.9	e2.4	---	e4.0	---	e4.0	---	e0.80	e1.2	---
MEAN	11.4	2.62	2.83	2.39	3.09	3.49	4.79	4.62	3.71	1.22	0.49	1.34
MAX	128	2.8	2.9	2.9	4.1	5.0	7.0	7.0	4.0	2.3	1.2	20
MIN	1.5	2.5	2.7	1.3	2.5	2.7	4.0	4.0	2.4	0.60	0.40	0.10
AC-FT	703	156	174	147	171	214	285	284	221	75	30	80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

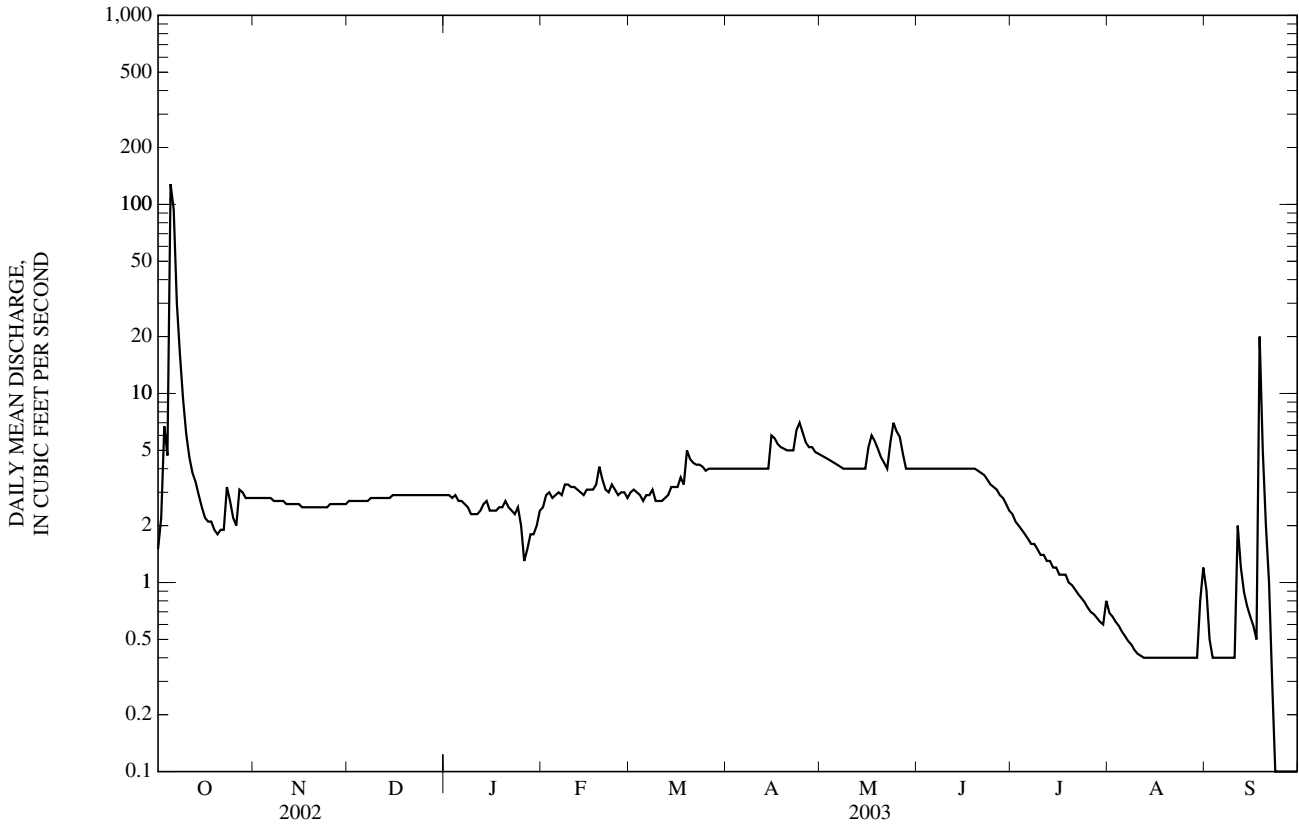
	170	161	127	132	168	218	265	380	564	455	280	210
MEAN	1,304	1,170	589	707	843	1,560	2,646	6,047	4,089	4,033	3,247	1,347
(WY)	(1974)	(1997)	(1942)	(1943)	(1949)	(1973)	(1973)	(1942)	(1951)	(1951)	(1950)	(1950)
MIN	0.39	0.33	0.80	0.38	1.75	1.11	1.46	1.09	3.05	1.22	0.13	0.38
(WY)	(1985)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1992)	(1991)	(2003)	(1946)	(1984)

ARKANSAS RIVER BASIN

07141300 ARKANSAS RIVER AT GREAT BEND, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL MEAN	7.33		3.51		261	
HIGHEST ANNUAL MEAN					1,565	1942
LOWEST ANNUAL MEAN					2.46	1985
HIGHEST DAILY MEAN	128	Oct 5	128	Oct 5	21,800	Jun 23, 1965
LOWEST DAILY MEAN	0.85	Sep 9	0.10	Sep 23	0.00	Oct 25, 1940
ANNUAL SEVEN-DAY MINIMUM	0.98	Sep 5	0.10	Sep 23	0.00	Aug 2, 1946
MAXIMUM PEAK FLOW			218	Oct 5	27,800	Jun 23, 1965
MAXIMUM PEAK STAGE			2.48	Oct 5	17.70	Jun 15, 1981
INSTANTANEOUS LOW FLOW			0.10	Sep 23	0.00	at times
ANNUAL RUNOFF (AC-FT)	5,310		2,540		189,100	
10 PERCENT EXCEEDS	13		4.7		528	
50 PERCENT EXCEEDS	6.1		2.8		78	
90 PERCENT EXCEEDS	1.8		0.42		3.5	

e Estimated





07141750 WET WALNUT WATERSHED STRUCTURE NO. 39 NEAR BAZINE, KS

LOCATION.--Lat 38°29'48", long 99°47'06", in SW 1/4 SW 1/4 NE 1/4 sec.08, T.18 S., R.22 W., Ness County, Hydrologic Unit 11030008, on upstream face of dam, 5.7 mi northwest of Bazine.

DRAINAGE AREA.--17 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1994 to current year

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Natural Resources Conservation Service).

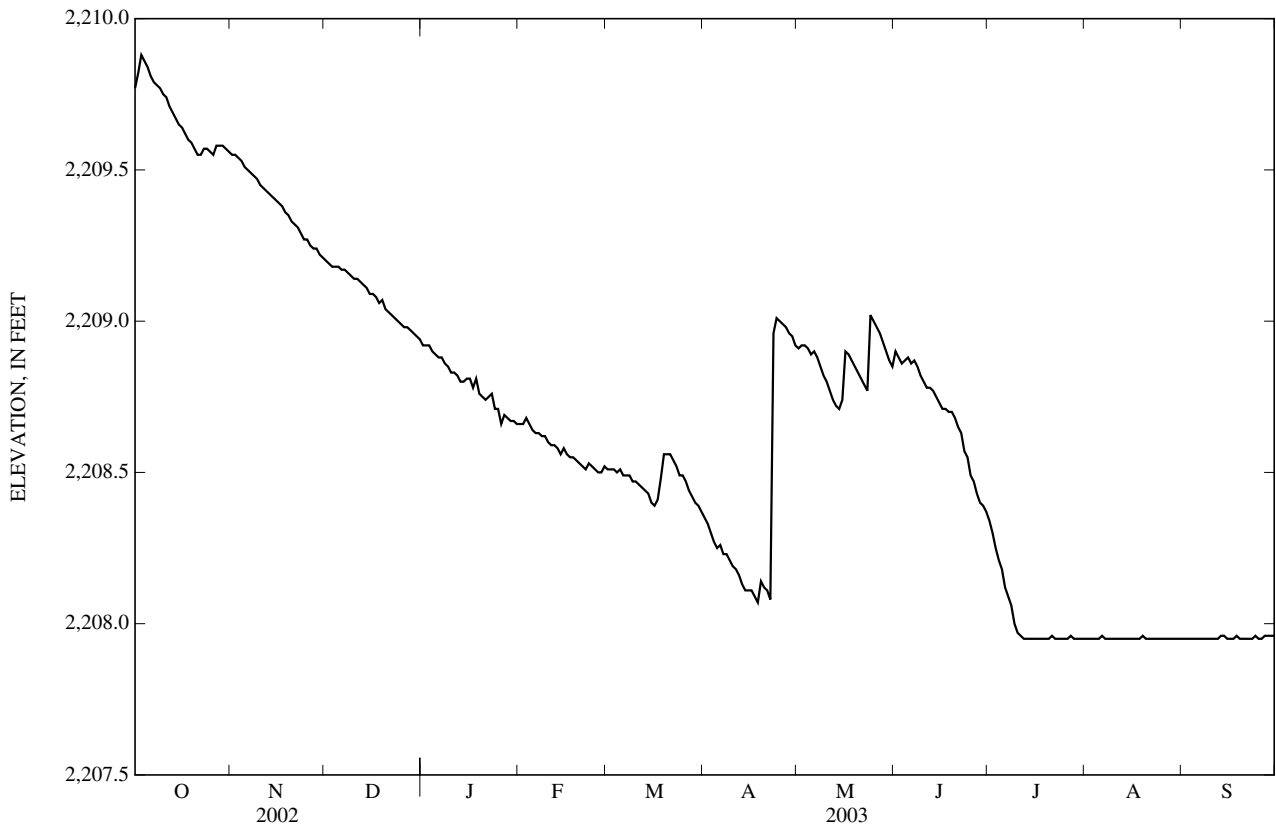
REMARKS.--Water elevation not recorded below 2,207.96 ft. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,221.58 ft, Aug. 3, 1999, contents, 571 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2,209.88 ft, Oct. 3, contents, 7.58 acre-ft; minimum elevation, 2,207.97 ft, July 10, contents, 1.98 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by Natural Resources Conservation Service)

Elevation	Contents	Elevation	Contents	Elevation	Contents
2,207	1.20	2,209	4.06	2,211	16.7



ARKANSAS RIVER BASIN

07141750 WET WALNUT WATERSHED STRUCTURE NO. 39 NEAR BAZINE, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,209.77	2,209.55	2,209.20	2,208.92	2,208.66	2,208.51	2,208.35	2,208.91	2,208.90	2,208.34	<2,207.95	<2,207.95
2	2,209.82	2,209.55	2,209.19	2,208.92	2,208.66	2,208.51	2,208.33	2,208.92	2,208.88	2,208.30	<2,207.95	<2,207.95
3	2,209.88	2,209.54	2,209.18	2,208.92	e2,208.68	2,208.51	2,208.30	2,208.92	2,208.86	2,208.25	<2,207.95	<2,207.95
4	2,209.86	2,209.53	2,209.18	2,208.90	2,208.66	2,208.50	2,208.27	2,208.91	2,208.87	2,208.21	<2,207.95	<2,207.95
5	2,209.84	2,209.51	2,209.18	2,208.89	2,208.64	2,208.51	2,208.25	2,208.89	2,208.88	2,208.18	<2,207.95	<2,207.95
6	2,209.81	2,209.50	2,209.17	2,208.88	2,208.63	2,208.49	2,208.26	2,208.90	2,208.86	2,208.12	<2,207.96	<2,207.95
7	2,209.79	2,209.49	2,209.17	2,208.88	2,208.63	2,208.49	2,208.23	2,208.88	2,208.87	2,208.09	<2,207.95	<2,207.95
8	2,209.78	2,209.48	2,209.16	2,208.86	2,208.62	2,208.49	2,208.23	2,208.85	2,208.85	2,208.06	<2,207.95	<2,207.95
9	2,209.77	2,209.47	2,209.15	2,208.85	2,208.62	2,208.47	2,208.21	2,208.82	2,208.82	2,208.00	<2,207.95	<2,207.95
10	2,209.75	2,209.45	2,209.14	2,208.83	2,208.60	2,208.47	2,208.19	2,208.80	2,208.80	2,207.97	<2,207.95	<2,207.95
11	2,209.74	2,209.44	2,209.14	2,208.83	2,208.59	2,208.46	2,208.18	2,208.77	2,208.78	<2,207.96	<2,207.95	<2,207.95
12	2,209.71	2,209.43	2,209.13	2,208.82	2,208.59	2,208.45	2,208.16	2,208.74	2,208.78	<2,207.95	<2,207.95	<2,207.95
13	2,209.69	2,209.42	2,209.12	2,208.80	2,208.58	2,208.44	2,208.13	2,208.72	2,208.77	<2,207.95	<2,207.95	<2,207.96
14	2,209.67	2,209.41	2,209.11	2,208.80	2,208.56	2,208.43	2,208.11	2,208.71	2,208.75	<2,207.95	<2,207.95	<2,207.96
15	2,209.65	2,209.40	2,209.09	e2,208.81	2,208.58	2,208.40	2,208.11	2,208.74	2,208.73	<2,207.95	<2,207.95	<2,207.95
16	2,209.64	2,209.39	2,209.09	e2,208.81	2,208.56	2,208.39	2,208.11	2,208.90	2,208.71	<2,207.95	<2,207.95	<2,207.95
17	2,209.62	2,209.38	2,209.08	e2,208.78	2,208.55	2,208.41	2,208.09	2,208.89	2,208.71	<2,207.95	<2,207.95	<2,207.95
18	2,209.60	2,209.36	2,209.06	2,208.81	2,208.55	2,208.48	2,208.07	2,208.87	2,208.70	<2,207.95	<2,207.95	<2,207.96
19	2,209.59	2,209.35	2,209.07	2,208.76	2,208.54	2,208.56	2,208.14	2,208.85	2,208.70	<2,207.95	<2,207.96	<2,207.95
20	2,209.57	2,209.33	2,209.04	2,208.75	2,208.53	2,208.56	2,208.12	2,208.83	2,208.68	<2,207.95	<2,207.95	<2,207.95
21	2,209.55	2,209.32	2,209.03	2,208.74	2,208.52	2,208.56	2,208.11	2,208.81	2,208.65	<2,207.96	<2,207.95	<2,207.95
22	2,209.55	2,209.31	2,209.02	e2,208.75	2,208.51	2,208.54	2,208.08	2,208.79	2,208.63	<2,207.95	<2,207.95	<2,207.95
23	2,209.57	2,209.29	2,209.01	e2,208.76	2,208.53	2,208.52	2,208.96	2,208.77	2,208.57	<2,207.95	<2,207.95	<2,207.95
24	2,209.57	2,209.27	2,209.00	e2,208.71	2,208.52	2,208.49	2,209.01	2,209.02	2,208.55	<2,207.95	<2,207.95	<2,207.96
25	2,209.56	2,209.27	2,208.99	e2,208.71	2,208.51	2,208.49	2,209.00	2,209.00	2,208.49	<2,207.95	<2,207.95	<2,207.95
26	2,209.55	2,209.25	2,208.98	2,208.66	2,208.50	2,208.47	2,208.99	2,208.98	2,208.47	<2,207.95	<2,207.95	<2,207.95
27	2,209.58	2,209.24	2,208.98	2,208.69	2,208.50	2,208.44	2,208.98	2,208.96	2,208.43	<2,207.96	<2,207.95	<2,207.96
28	2,209.58	2,209.24	2,208.97	2,208.68	2,208.52	2,208.42	2,208.96	2,208.93	2,208.40	<2,207.95	<2,207.95	<2,207.96
29	2,209.58	2,209.22	2,208.96	2,208.67	---	2,208.40	2,208.95	2,208.90	2,208.39	<2,207.95	<2,207.95	<2,207.96
30	2,209.57	2,209.21	2,208.95	2,208.67	---	2,208.39	2,208.92	2,208.87	2,208.37	<2,207.95	<2,207.95	<2,207.96
31	2,209.56	---	2,208.94	2,208.66	---	2,208.37	---	2,208.85	---	<2,207.95	<2,207.95	---
MEAN	2,209.67	2,209.39	2,209.08	2,208.79	2,208.58	2,208.47	2,208.39	2,208.86	2,208.70	2,208.02	2,207.95	2,207.95
MAX	2,209.88	2,209.55	2,209.20	2,208.92	2,208.68	2,208.56	2,209.01	2,209.02	2,208.90	2,208.34	2,207.96	2,207.96
MIN	2,209.55	2,209.21	2,208.94	2,208.66	2,208.50	2,208.37	2,208.07	2,208.71	2,208.37	2,207.95	2,207.95	2,207.95
(+)	6.04	4.71	3.89	3.19	2.89	2.60	3.84	3.65	2.60			
(#)	-1.12	-1.33	-0.82	-0.70	-0.30	-0.29	+1.24	-0.19	-1.05			
CAL YR	2002	.....	(#)	-101.1								
WTR YR	2003	.....	(#)	not determined								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

e Estimated  
 < Actual value is known to be less than the value shown

ARKANSAS RIVER BASIN

07141770 WALNUT CREEK NEAR ALEXANDER, KS

LOCATION.--Lat 38°27'53", long 99°37'20", in NW ¼ NW ¼ NW ¼ sec.26, T.18 S., R.21 W., Ness County, Hydrologic Unit 11030008, at right bank of downstream side of bridge, 3.6 mi west of Alexander, and at mile 105.0.

DRAINAGE AREA.--1,025 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,068.19 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 21	0800	*17	*2.36	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	e2.1	1.3	1.2	4.5	4.7	3.2	4.1	2.7	0.98	0.40	0.53
2	1.3	e2.2	0.89	1.1	4.7	5.0	2.8	3.4	4.4	0.84	0.32	0.41
3	3.0	2.5	0.69	1.2	4.8	5.0	2.7	3.4	4.6	0.73	0.31	0.36
4	4.2	1.7	e0.68	1.2	4.4	e4.5	3.0	2.6	3.9	0.51	0.39	0.29
5	3.5	1.8	e0.80	1.3	3.9	e4.7	2.7	2.0	4.9	0.46	0.30	0.28
6	2.2	2.3	0.96	1.7	3.8	5.0	2.9	4.1	6.1	0.41	0.31	0.23
7	3.9	3.9	1.0	1.7	4.0	5.2	2.7	4.7	5.6	0.29	0.29	0.22
8	2.3	3.4	1.1	2.0	2.8	5.4	2.2	4.4	5.2	0.18	0.23	0.25
9	1.2	2.3	1.3	1.7	3.0	5.2	2.3	3.7	3.0	0.12	0.29	0.32
10	0.66	4.1	1.4	e1.4	3.5	5.1	2.5	4.3	4.9	0.09	e0.20	0.26
11	0.71	2.9	1.3	e1.3	3.3	5.2	2.7	4.4	5.2	0.10	e0.16	0.43
12	0.63	3.5	1.1	1.3	3.9	5.2	2.6	3.5	4.8	0.11	e0.13	0.57
13	0.50	2.6	1.3	1.6	3.9	5.1	2.8	3.2	5.3	0.17	e0.24	0.51
14	0.81	2.1	0.92	1.8	4.5	5.4	2.9	3.2	4.8	0.20	e0.30	0.32
15	0.66	3.4	0.74	e1.4	4.6	4.3	2.7	2.6	4.9	0.18	e0.16	0.26
16	0.71	4.1	0.68	e1.5	4.0	4.2	3.7	5.7	3.9	0.18	0.08	0.80
17	0.69	4.5	0.68	2.1	4.2	3.1	3.9	6.1	5.1	0.24	0.09	1.4
18	0.70	2.4	0.53	1.9	4.2	4.0	2.8	11	5.3	0.19	0.08	0.67
19	0.79	1.2	0.39	2.1	4.5	10	5.8	12	4.8	0.23	0.08	0.60
20	0.58	2.0	0.39	2.4	4.5	11	6.8	7.0	6.3	0.27	0.09	0.59
21	0.58	1.7	0.44	3.0	4.3	16	5.0	5.6	8.1	0.27	0.09	0.38
22	0.65	0.58	0.40	e2.1	3.3	11	8.8	5.3	6.0	0.28	0.10	0.25
23	1.0	0.25	0.35	e2.0	e2.8	8.0	8.6	5.2	5.0	0.38	0.10	0.24
24	2.0	0.61	0.41	e2.5	e2.7	6.9	7.0	7.3	4.1	0.44	0.09	0.25
25	1.6	e0.48	0.50	3.4	e2.8	6.0	6.6	13	2.5	0.46	0.10	0.20
26	1.5	0.52	0.50	2.9	e3.1	5.5	7.6	6.1	1.8	0.32	0.10	0.22
27	2.1	0.56	0.61	3.2	3.8	5.2	6.5	4.0	1.4	0.27	0.10	0.25
28	3.2	0.42	0.67	3.5	4.3	4.8	5.7	4.3	0.87	0.35	0.13	0.22
29	2.8	0.71	0.97	3.8	---	4.3	5.1	4.1	0.82	0.43	0.27	0.15
30	2.6	1.3	1.1	4.2	---	3.2	4.6	3.1	1.1	0.55	0.78	0.20
31	e2.6	---	1.2	4.7	---	3.2	---	2.5	---	0.55	0.97	---
MEAN	1.63	2.07	0.82	2.17	3.86	5.85	4.31	5.03	4.25	0.35	0.23	0.39
MAX	4.2	4.5	1.4	4.7	4.8	16	8.8	13	8.1	0.98	0.97	1.4
MIN	0.50	0.25	0.35	1.1	2.7	3.1	2.2	2.0	0.82	0.09	0.08	0.15
AC-FT	101	123	50	133	214	360	256	309	253	21	14	23

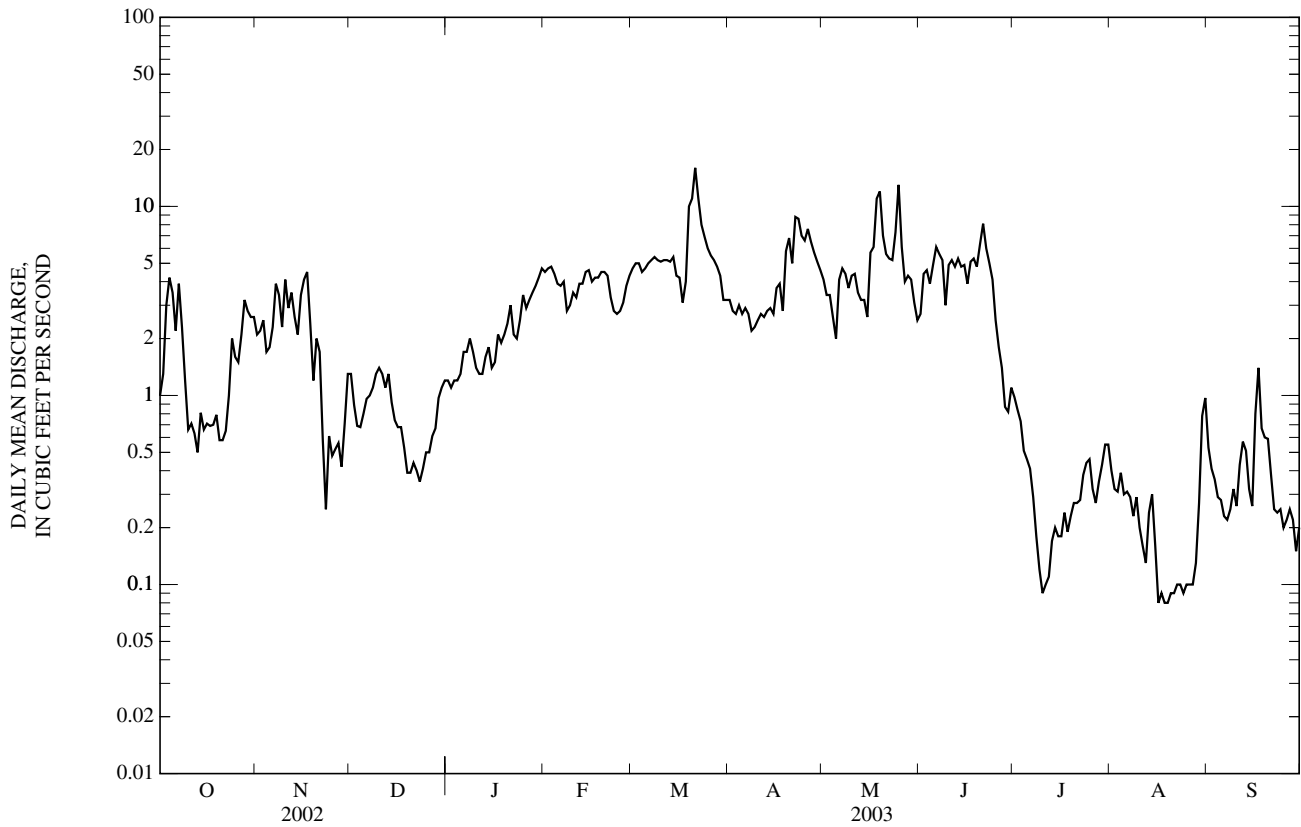
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	8.04	15.5	8.68	8.77	10.2	17.1	13.5	16.1	39.7	31.6	42.1	19.3
MAX	22.6	67.5	18.4	13.7	16.5	50.2	26.7	49.1	148	87.3	116	100
(WY)	(1997)	(1997)	(1997)	(1997)	(1998)	(2000)	(1998)	(1996)	(1996)	(1999)	(1999)	(1996)
MIN	1.63	2.07	0.82	2.17	3.86	5.85	4.31	4.04	4.25	0.35	0.23	0.39
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)

07141770 WALNUT CREEK NEAR ALEXANDER, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL MEAN	4.24		2.57		19.3	
HIGHEST ANNUAL MEAN					37.7	
LOWEST ANNUAL MEAN					2.57	
HIGHEST DAILY MEAN	76	Jul 29	16	Mar 21	1,550	Jun 1, 1996
LOWEST DAILY MEAN	0.25	Nov 23	0.08	Aug 16	0.08	Aug 16, 2003
ANNUAL SEVEN-DAY MINIMUM	0.41	Dec 19	0.09	Aug 16	0.09	Aug 16, 2003
MAXIMUM PEAK FLOW			17	Mar 21	3,070	Jun 1, 1996
MAXIMUM PEAK STAGE			2.36	Mar 21	21.19	Jun 1, 1996
INSTANTANEOUS LOW FLOW			0.07	Aug 16	0.07	Aug 16, 2003
ANNUAL RUNOFF (AC-FT)	3,070		1,860		13,950	
10 PERCENT EXCEEDS	7.4		5.2		25	
50 PERCENT EXCEEDS	2.8		2.1		8.3	
90 PERCENT EXCEEDS	0.71		0.24		1.3	

e Estimated



07141778 WET WALNUT WATERSHED STRUCTURE NO. 17 NEAR NEKOMA, KS

LOCATION.--Lat 38°24'58", long 99°28'40", in NE 1/4 SE 1/4 SW 1/4 sec.12, T.19 S., R.20 W., Rush County, Hydrologic Unit 11030008, on upstream face of dam, 4.8 mi southwest of Nekoma.

DRAINAGE AREA.--9.1 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Natural Resources Conservation Service).

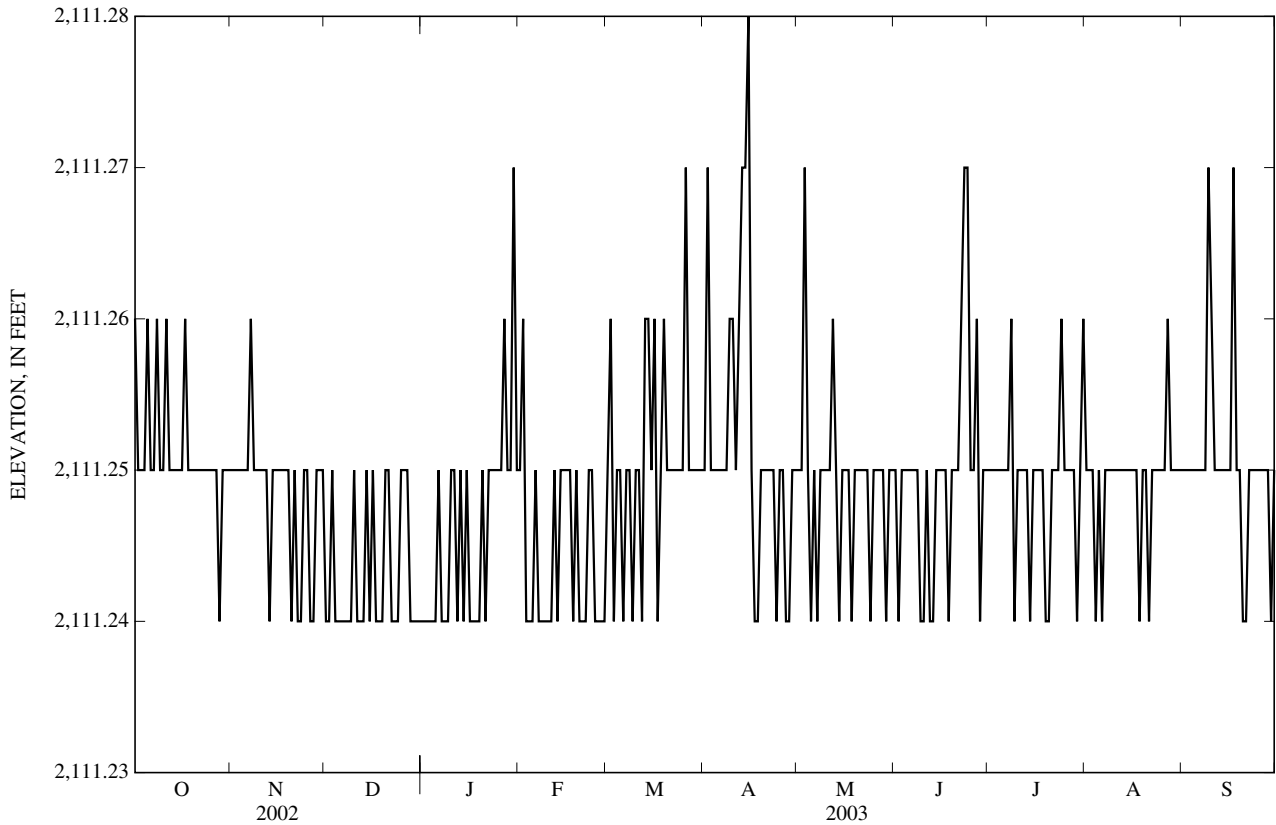
REMARKS.--Water elevation not recorded below 2,111.28 ft. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,126.24 ft, Nov. 11, 1997, contents, 740 acre-ft.

EXTREMES FOR CURRENT YEAR.--No extremes, all elevations below recorded elevation.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by Natural Resources Conservation Service)

Elevation	Contents	Elevation	Contents	Elevation	Contents
2,110	15.1	2,115	79.6	2,120	279



07141778 WET WALNUT WATERSHED STRUCTURE NO. 17 NEAR NEKOMA, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	<2,111.26	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
2	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.26	<2,111.26	<2,111.27	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25
3	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.27	<2,111.25	<2,111.25	<2,111.25	<2,111.25
4	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25
5	<2,111.26	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25
6	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25
7	<2,111.25	<2,111.26	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25
8	<2,111.26	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.26	<2,111.25	<2,111.25
9	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.24	<2,111.26	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.27
10	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.26	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.26
11	<2,111.26	<2,111.25	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
12	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.26	<2,111.26	<2,111.24	<2,111.25	<2,111.25	<2,111.25
13	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.26	<2,111.27	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25
14	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.26	<2,111.27	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.25
15	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.28	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
16	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.26	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
17	<2,111.26	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.27
18	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.25
19	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.26	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25
20	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.24
21	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.24
22	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.26	<2,111.25	<2,111.25	<2,111.25
23	<2,111.25	<2,111.24	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.27	<2,111.25	<2,111.25	<2,111.25
24	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.24	<2,111.27	<2,111.26	<2,111.25	<2,111.25
25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
26	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.24	<2,111.27	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
27	<2,111.25	<2,111.24	<2,111.25	<2,111.26	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.26	<2,111.25	<2,111.26	<2,111.25
28	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.25	<2,111.25
29	<2,111.25	<2,111.25	<2,111.24	<2,111.25	---	<2,111.25	<2,111.25	<2,111.24	<2,111.25	<2,111.24	<2,111.25	<2,111.24
30	<2,111.25	<2,111.25	<2,111.24	<2,111.27	---	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25	<2,111.25
31	<2,111.25	---	<2,111.24	<2,111.25	---	<2,111.25	---	<2,111.25	---	<2,111.26	<2,111.25	---
MEAN	2,111.25	2,111.25	2,111.24	2,111.25	2,111.24	2,111.25	2,111.25	2,111.25	2,111.25	2,111.25	2,111.25	2,111.25
MAX	2,111.26	2,111.26	2,111.25	2,111.27	2,111.26	2,111.27	2,111.28	2,111.27	2,111.27	2,111.26	2,111.26	2,111.27
MIN	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24	2,111.24

&lt; Actual value is known to be less than the value shown

ARKANSAS RIVER BASIN

07141780 WALNUT CREEK AT NEKOMA, KS

LOCATION.--Lat 38°28'37", long 99°26'13", in SW 1/4 NW 1/4 NW 1/4 sec.21, T.18 S., R.19 W., Rush County, Hydrologic Unit 11030008, on right bank at downstream side of bridge 1,000 ft north of State Highway 96, 7.0 mi west of Rush Center.

DRAINAGE AREA.--1,256 mi<sup>2</sup>, of which 104 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1969 to current year. Published as "near Rush Center" October 1969 to September 1995.

GAGE.--Water-stage recorder. Elevation of gage is 2,030 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 22	2130	*17	*7.19	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.32	e2.1	e1.9	e3.0	e4.6	6.0	5.6	7.3	4.2	2.1	0.00	0.00
2	0.91	e1.9	e1.9	e3.0	e4.7	6.0	5.5	6.8	5.1	2.2	0.00	0.00
3	0.99	e2.0	e1.9	e3.0	e4.9	6.1	5.3	e6.5	4.6	2.3	0.00	0.00
4	1.7	e1.9	e1.8	e3.2	e4.9	e6.1	5.2	e6.2	4.4	1.9	0.00	0.00
5	1.9	e1.9	e1.9	e3.1	e5.0	e6.3	5.0	e6.0	4.8	1.9	0.00	0.00
6	1.8	e1.9	e2.0	e3.0	e5.0	6.7	5.1	6.0	4.5	1.8	0.00	0.00
7	1.8	e1.8	e2.0	e3.1	e5.0	6.7	4.9	5.8	4.3	1.7	0.00	0.00
8	1.3	e1.8	e2.0	e3.4	5.3	6.3	4.8	5.8	4.9	1.6	0.00	0.00
9	1.4	e1.9	e2.0	e3.5	5.3	6.2	4.7	5.9	4.9	0.89	0.00	0.00
10	1.4	e1.9	e2.1	e3.3	5.3	6.1	4.7	5.5	4.5	0.90	0.00	0.00
11	1.2	e2.0	e2.3	e3.3	5.1	6.0	4.7	5.2	3.9	0.77	0.00	0.00
12	0.83	e1.9	e2.4	e3.5	5.5	6.0	4.8	4.9	3.4	0.45	0.00	0.00
13	0.54	e1.9	e2.4	e3.5	5.1	6.1	5.0	5.4	3.8	0.29	0.00	0.00
14	0.56	e1.8	e2.4	e3.5	5.4	6.4	4.9	4.9	4.0	0.22	0.00	0.00
15	0.55	e1.7	e2.6	e3.5	5.5	6.0	4.8	4.7	3.9	0.10	0.00	0.00
16	0.50	e1.8	e2.6	e3.5	5.6	6.1	5.4	5.7	3.8	0.04	0.00	0.00
17	0.52	e2.0	e2.7	e3.5	5.4	6.2	5.2	5.8	3.7	0.04	0.00	0.00
18	0.62	e2.0	e2.7	e3.6	5.3	6.5	5.0	6.2	3.4	0.01	0.00	0.00
19	0.74	e1.9	e2.7	e3.7	5.3	8.6	5.7	6.6	3.3	0.00	0.00	0.00
20	0.81	e2.0	e2.6	e3.8	5.4	11	5.7	12	4.1	0.00	0.00	0.00
21	0.65	e1.9	e2.6	e3.8	e5.4	12	7.1	10	3.6	0.00	0.00	0.00
22	0.76	e1.9	e2.5	e3.8	5.4	14	8.0	7.5	3.8	0.00	0.00	0.00
23	0.96	e1.9	e2.5	e3.6	5.6	15	7.6	6.1	5.3	0.00	0.00	0.00
24	0.99	e1.9	e2.6	e3.7	5.7	11	13	5.6	4.2	0.00	0.00	0.00
25	1.2	e1.9	e2.6	e3.9	5.6	9.4	11	5.1	3.4	0.00	0.00	0.00
26	1.4	e1.7	e2.6	e4.0	5.6	8.2	9.3	7.9	3.0	0.00	0.00	0.00
27	2.2	e1.9	e2.5	e4.0	5.6	7.5	8.7	10	2.7	0.00	0.00	0.00
28	2.9	e1.9	e2.7	e4.3	5.6	6.6	9.4	6.8	2.5	0.00	0.00	0.00
29	e2.0	e1.9	e2.9	e4.3	---	6.1	8.7	4.9	2.3	0.00	0.00	0.00
30	e2.1	e1.9	e2.9	e4.4	---	5.7	7.9	4.4	2.2	0.00	0.00	0.00
31	e2.0	---	e2.9	e4.6	---	5.7	---	4.2	---	0.00	0.00	---
MEAN	1.21	1.90	2.39	3.59	5.29	7.50	6.42	6.31	3.88	0.62	0.000	0.000
MAX	2.9	2.1	2.9	4.6	5.7	15	13	12	5.3	2.3	0.00	0.00
MIN	0.32	1.7	1.8	3.0	4.6	5.7	4.7	4.2	2.2	0.00	0.00	0.00
AC-FT	74	113	147	221	294	461	382	388	231	38	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

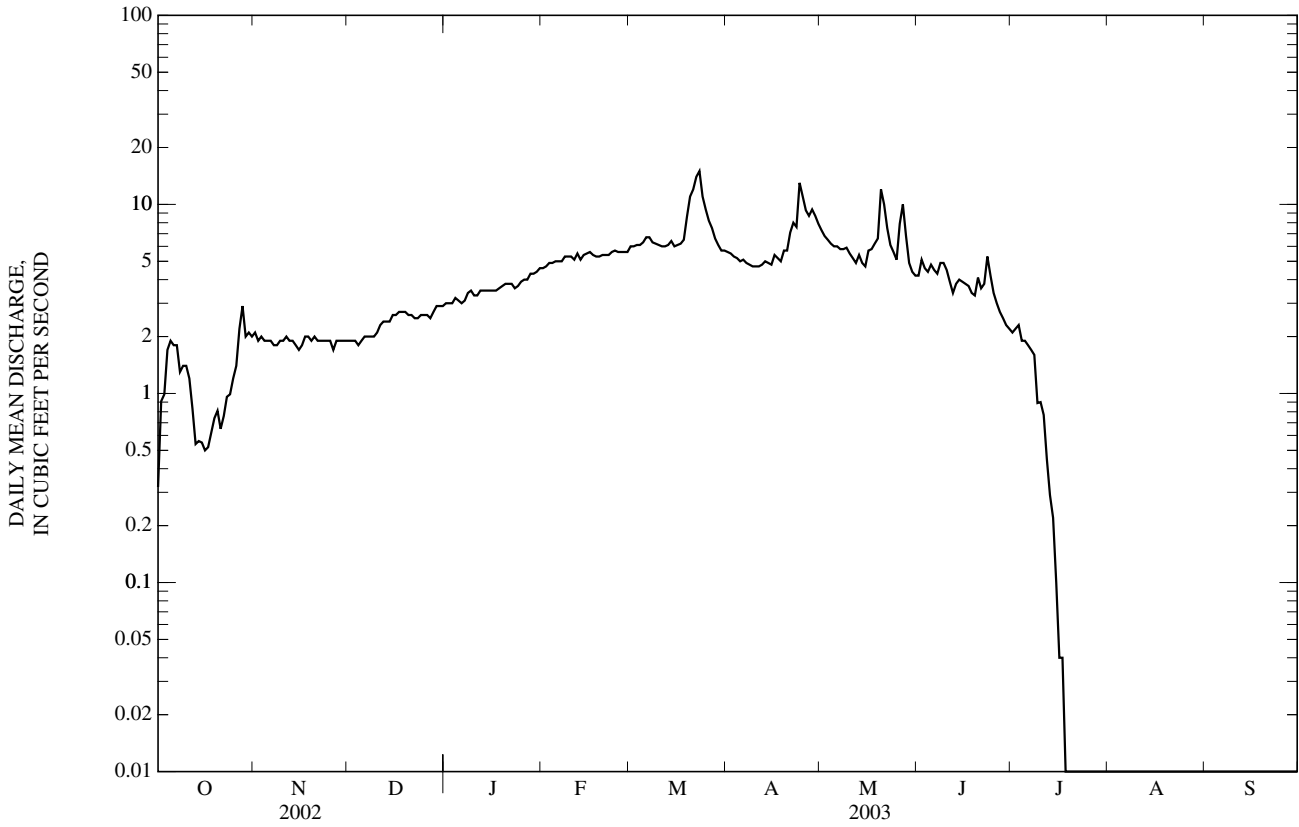
MEAN	6.66	8.79	5.30	6.36	9.62	35.6	38.4	18.1	46.1	69.0	26.7	16.4
MAX	60.4	125	29.5	61.1	88.0	349	553	96.2	308	969	164	150
(WY)	(1974)	(1997)	(1974)	(1974)	(1993)	(1973)	(1987)	(1973)	(2001)	(1993)	(1999)	(1972)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1971)	(1971)	(1971)	(1971)	(1978)	(1978)	(1972)	(1983)	(1977)	(1977)	(1970)	(1970)

ARKANSAS RIVER BASIN

07141780 WALNUT CREEK AT NEKOMA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL MEAN	5.32		3.25		24.0	
HIGHEST ANNUAL MEAN					129	1993
LOWEST ANNUAL MEAN					0.000	1983
HIGHEST DAILY MEAN	48	Jul 30	15	Mar 23	5,690	Jul 22, 1993
LOWEST DAILY MEAN	0.00	Aug 18	0.00	Jul 19	0.00	May 21, 1970
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 17	0.00	Jul 19	0.00	Jul 24, 1970
MAXIMUM PEAK FLOW			17	Mar 22	5,790	Jul 21, 1993
MAXIMUM PEAK STAGE			7.19	Mar 22	34.00	Jul 21, 1993
INSTANTANEOUS LOW FLOW			0.00	Jul 18	0.00	many years
ANNUAL RUNOFF (AC-FT)	3,850		2,350		17,390	
10 PERCENT EXCEEDS	10		6.2		28	
50 PERCENT EXCEEDS	3.1		2.7		1.8	
90 PERCENT EXCEEDS	0.56		0.00		0.00	

e Estimated





07141890 WET WALNUT WATERSHED STRUCTURE NO. 2 NEAR OTIS, KS

LOCATION.--Lat 38°30'40", long 99°04'25", in SE ¼ SE ¼ NW ¼ sec.03, T.18 S., R.16 W., Rush County, Hydrologic Unit 11030008, on upstream face of dam, 1.5 mi south and 1 mi west of Otis.

DRAINAGE AREA.-5.9 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Natural Resources Conservation Service).

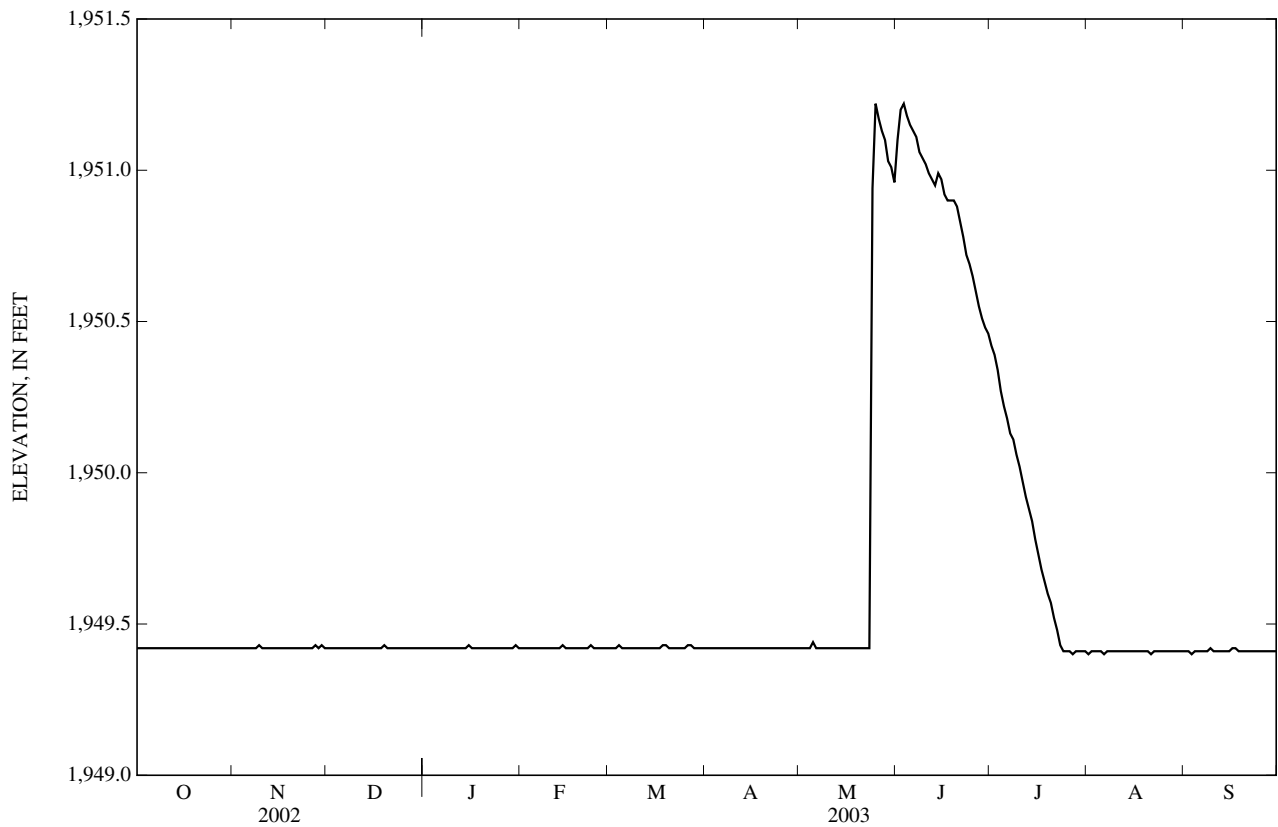
REMARKS.--Water elevations are not recorded below 1,949.42 ft, Oct. 1, 2002, to May 23, 2003, and July 24, 2003, to Sept. 30, 2003. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation 1,962.11 ft, Nov. 16, 1997, contents, 543 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,951.22 ft, June 3, contents, 33.0 acre-ft; minimum elevation, 1,949.42 ft, July 24, contents, 12.7 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on field survey by Natural Resources Conservation Service)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,949	10.2	1,953	70.2	1,955	129



07141890 WET WALNUT WATERSHED STRUCTURE NO. 2 NEAR OTIS, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
 DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.10	1,950.42	<1,949.40	<1,949.41
2	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.20	1,950.39	<1,949.41	<1,949.41
3	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.22	1,950.34	<1,949.41	<1,949.40
4	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	1,951.18	1,950.27	<1,949.41	<1,949.41
5	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.44	1,951.15	1,950.22	<1,949.41	<1,949.41
6	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.13	1,950.18	<1,949.40	<1,949.41
7	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.11	1,950.13	<1,949.41	<1,949.41
8	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.06	1,950.11	<1,949.41	<1,949.41
9	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.04	1,950.06	<1,949.41	<1,949.42
10	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.02	1,950.02	<1,949.41	<1,949.41
11	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.99	1,949.97	<1,949.41	<1,949.41
12	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.97	1,949.92	<1,949.41	<1,949.41
13	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.95	1,949.88	<1,949.41	<1,949.41
14	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.42	1,950.99	1,949.84	<1,949.41	<1,949.41
15	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.97	1,949.78	<1,949.41	<1,949.41
16	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.92	1,949.73	<1,949.41	<1,949.42
17	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.90	1,949.68	<1,949.41	<1,949.42
18	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	1,950.90	1,949.64	<1,949.41	<1,949.41
19	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	1,950.90	1,949.60	<1,949.41	<1,949.41
20	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.88	1,949.57	<1,949.41	<1,949.41
21	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.83	1,949.52	<1,949.40	<1,949.41
22	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.78	1,949.48	<1,949.41	<1,949.41
23	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.42	1,950.72	1,949.43	<1,949.41	<1,949.41
24	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,950.94	1,950.69	<1,949.41	<1,949.41	<1,949.41
25	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.22	1,950.65	<1,949.41	<1,949.41	<1,949.41
26	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	1,951.17	1,950.60	<1,949.41	<1,949.41	<1,949.41
27	<1,949.42	<1,949.43	<1,949.42	<1,949.42	<1,949.42	<1,949.43	<1,949.42	1,951.13	1,950.55	<1,949.40	<1,949.41	<1,949.41
28	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	<1,949.42	1,951.10	1,950.51	<1,949.41	<1,949.41	<1,949.41
29	<1,949.42	<1,949.43	<1,949.42	<1,949.42	---	<1,949.42	<1,949.42	1,951.03	1,950.48	<1,949.41	<1,949.41	<1,949.41
30	<1,949.42	<1,949.42	<1,949.42	<1,949.43	---	<1,949.42	<1,949.42	1,951.01	1,950.46	<1,949.41	<1,949.41	<1,949.41
31	<1,949.42	---	<1,949.42	<1,949.42	---	<1,949.42	---	1,950.96	---	<1,949.41	<1,949.41	---
MEAN	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.85	1,950.89	1,949.79	1,949.41	1,949.41
MAX	1,949.42	1,949.43	1,949.43	1,949.43	1,949.43	1,949.43	1,949.42	1,951.22	1,951.22	1,950.42	1,949.41	1,949.42
MIN	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,949.42	1,950.46	1,949.40	1,949.40	1,949.40
(+)	28.8	22.1										
(#)	-6.7											
CAL YR	2002	.....	(#)	-28.9								
WTR YR	2003	.....	(#)									

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
 # CHANGE IN CONTENTS, IN ACRE-FEET.

< Actual value is known to be less than the value shown

07141900 WALNUT CREEK AT ALBERT, KS

LOCATION.--Lat 38°27'40", long 99°00'50", in SW 1/4 NW 1/4 NW 1/4 sec.29, T.18 S., R.15 W., Barton County, Hydrologic Unit 11030008, on left bank at downstream side of county highway bridge, 0.2 mi north of Albert, 14 mi northwest of Great Bend, and at mile 43.0.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--1,410 mi<sup>2</sup>, approximately, of which 104 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,897.37 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1927 reached a stage of 21.3 ft, from floodmark and information by local residents (discharge not determined, but due to levees built in 1934 is substantially greater than indicated by current rating).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 25	0000	*232	*7.01	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	0.67	0.59	2.5	4.2	5.4	6.4	7.7	9.9	3.1	0.00	0.00
2	2.3	0.59	0.70	2.5	4.4	5.5	6.0	8.5	28	2.8	0.00	0.00
3	2.9	0.46	0.73	2.7	4.5	5.5	6.0	8.3	48	2.4	0.00	0.00
4	12	0.48	0.97	2.6	e4.4	e5.4	6.2	7.8	15	2.1	0.00	0.00
5	7.8	0.52	1.3	2.7	4.3	e5.5	6.0	7.4	13	1.7	0.00	0.00
6	3.4	0.45	1.2	2.7	4.3	e5.5	6.0	7.1	15	1.6	0.00	0.00
7	2.3	0.50	1.1	2.8	e4.2	e5.6	5.8	7.1	12	1.3	0.00	0.00
8	1.8	0.48	1.2	2.9	4.1	e5.6	5.6	6.9	10	1.1	0.00	0.00
9	1.5	0.48	1.3	2.9	4.6	e5.6	5.6	6.0	8.9	0.98	0.00	0.00
10	1.3	0.41	1.3	e2.7	4.5	e5.6	5.3	5.8	7.3	0.86	0.00	0.00
11	1.1	0.43	1.4	2.9	4.4	e5.6	5.1	5.3	6.3	0.64	0.00	0.00
12	1.0	0.41	1.5	3.0	4.7	5.6	5.1	4.8	6.1	0.44	0.00	0.00
13	1.0	0.33	1.6	3.1	4.5	5.8	5.0	4.5	6.6	0.46	0.00	0.00
14	1.1	0.31	1.6	3.2	4.9	6.3	5.2	4.4	6.0	0.22	0.00	0.00
15	1.1	0.28	1.8	e3.2	4.9	5.8	5.2	4.3	7.4	0.07	0.00	0.00
16	1.1	0.25	1.8	e3.2	e4.7	5.5	6.4	6.1	8.6	0.02	0.00	0.00
17	0.99	0.25	1.9	e3.2	e4.6	6.0	6.2	6.4	6.0	0.00	0.00	0.00
18	0.98	0.22	2.0	3.4	4.5	7.5	7.0	6.3	5.2	0.00	0.00	0.00
19	0.99	0.22	1.8	3.5	4.3	21	6.5	6.4	5.0	0.00	0.00	0.00
20	0.88	0.19	2.0	e3.5	4.6	20	6.5	6.2	5.0	0.00	0.00	0.00
21	0.65	0.16	1.9	e3.5	5.1	16	6.1	5.8	4.3	0.00	0.00	0.00
22	0.55	0.14	1.8	e3.6	4.9	16	5.9	5.3	6.0	0.00	0.00	0.00
23	0.62	0.16	1.7	e3.6	e4.9	15	5.9	5.9	5.7	0.00	0.00	0.00
24	0.65	0.17	1.8	4.0	e4.9	15	6.9	80	4.4	0.00	0.00	0.00
25	0.69	0.19	1.8	4.0	e4.9	15	9.5	124	3.9	0.00	0.00	0.00
26	0.76	0.21	1.7	e3.6	e4.9	15	11	38	3.5	0.00	0.00	0.00
27	0.66	0.23	1.9	e3.6	5.0	12	15	23	3.1	0.00	0.00	0.00
28	0.71	0.38	1.9	e3.6	5.3	10	12	16	2.9	0.00	0.00	0.00
29	0.75	0.52	2.1	e3.6	---	9.0	9.6	12	3.1	0.00	0.00	0.00
30	0.70	0.53	2.3	3.9	---	8.0	8.2	10	3.2	0.00	0.00	0.00
31	0.76	---	2.5	3.8	---	7.1	---	11	---	0.00	0.00	---
MEAN	1.77	0.35	1.59	3.23	4.62	9.11	6.91	14.8	8.98	0.64	0.000	0.000
MAX	12	0.67	2.5	4.0	5.3	21	15	124	48	3.1	0.00	0.00
MIN	0.55	0.14	0.59	2.5	4.1	5.4	5.0	4.3	2.9	0.00	0.00	0.00
MED	1.0	0.35	1.7	3.2	4.6	6.0	6.0	6.9	6.0	0.02	0.00	0.00
AC-FT	109	21	98	198	257	560	411	909	534	39	0.00	0.00

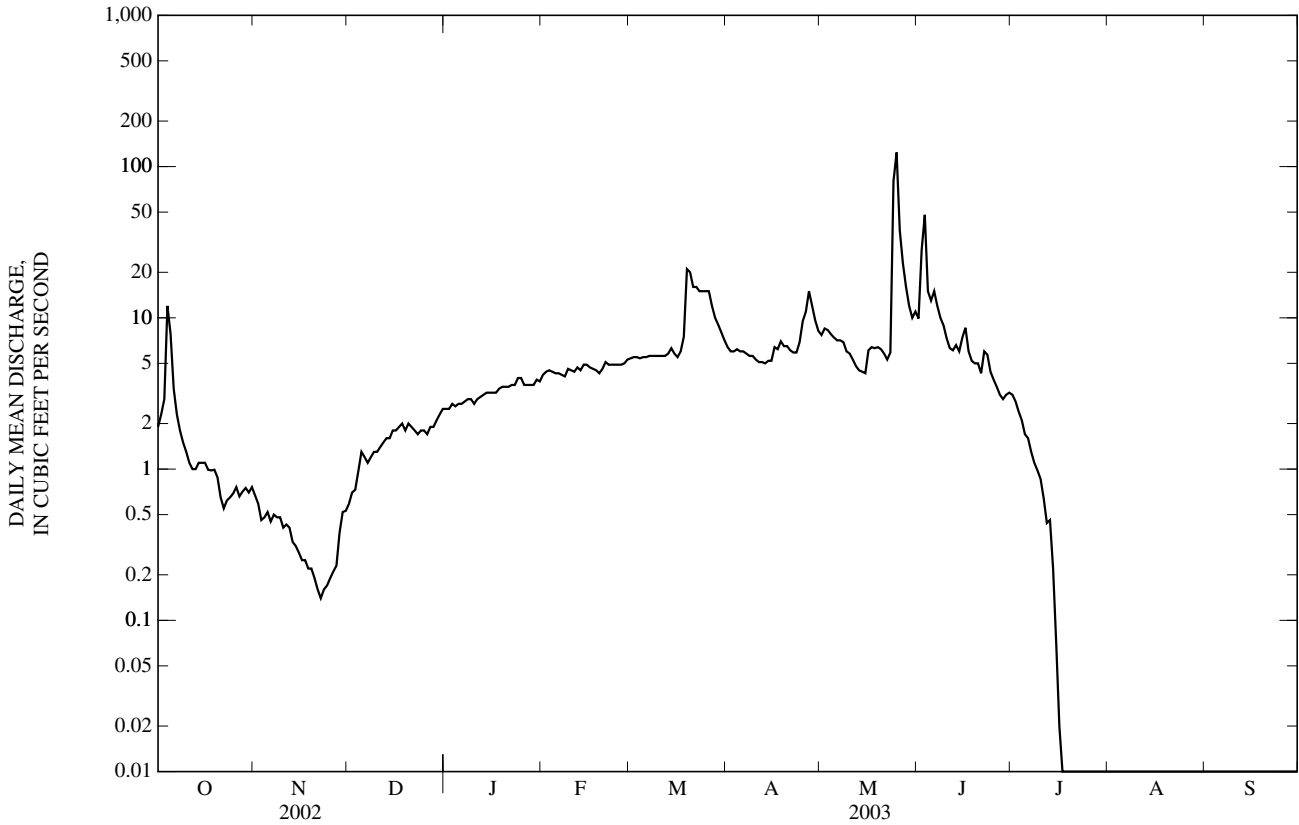
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	31.0	21.4	10.4	11.0	18.3	57.7	56.1	44.2	98.0	96.7	58.0	77.1
MAX	492	352	89.7	116	271	576	779	248	1,015	1,038	508	1,370
(WY)	(1960)	(1997)	(1974)	(1974)	(1993)	(1960)	(1987)	(2001)	(1967)	(1993)	(1961)	(1959)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1965)	(1967)	(1967)	(1978)	(1981)	(1967)	(1981)	(1966)	(1985)	(1980)	(1983)	(1964)

07141900 WALNUT CREEK AT ALBERT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL MEAN	9.44		4.33		48.4	
HIGHEST ANNUAL MEAN					189	1993
LOWEST ANNUAL MEAN					0.085	1983
HIGHEST DAILY MEAN	25	Feb 14	124	May 25	10,300	Sep 23, 1959
LOWEST DAILY MEAN	0.00	Sep 23	0.00	Jul 17	0.00	Jul 29, 1961
ANNUAL SEVEN-DAY MINIMUM	0.01	Sep 20	0.00	Jul 17	0.00	Jul 5, 1963
MAXIMUM PEAK FLOW			232	May 25	12,700	Sep 22, 1959
MAXIMUM PEAK STAGE			7.01	May 25	25.75	Sep 22, 1959
INSTANTANEOUS LOW FLOW			0.00	Jul 17	0.00	most years
ANNUAL RUNOFF (AC-FT)	6,830		3,140		35,060	
10 PERCENT EXCEEDS	20		8.4		59	
50 PERCENT EXCEEDS	7.6		2.7		3.0	
90 PERCENT EXCEEDS	0.21		0.00		0.00	

e Estimated



07141900 WALNUT CREEK AT ALBERT, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to June 1985, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
APR 28...	1515	12	1,280	16.5	129	4.2

07142020 WALNUT CREEK BELOW CHEYENNE BOTTOMS DIVERSION NEAR GREAT BEND, KS

LOCATION.--Lat 38°25'08", long 98°45'53", in SW 1/4 NW 1/4 NE 1/4 sec.09, T.19 S., R.13 W., Barton County, Hydrologic Unit 11030008, on left bank at downstream side of Cheyenne Bottoms diversion structure, 3 mi north of Great Bend, and at mile 13.5.

DRAINAGE AREA.--1,500 mi<sup>2</sup>, does not include Dry Walnut Creek Basin, or any portion of the Arkansas River Basin above the Dundee diversion.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,830.00 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for periods of discharge below 1 ft<sup>3</sup>/s and estimated daily discharges, which are poor. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.46	0.24	e0.07	0.26	0.08	0.09	0.10	0.00	0.00
2	0.00	0.00	0.00	0.46	0.20	e0.07	0.19	0.08	0.05	0.12	0.00	0.00
3	0.00	0.00	0.00	0.44	0.18	e0.08	0.13	0.10	0.04	0.15	0.00	0.00
4	0.65	0.00	e0.00	0.46	0.13	e0.09	0.12	0.10	0.32	0.15	0.00	0.00
5	16	0.00	e0.00	0.50	e0.12	0.12	0.06	0.08	0.45	0.16	0.00	0.00
6	13	0.00	e0.00	0.49	e0.11	0.11	0.06	0.03	0.19	0.12	0.00	0.00
7	3.8	0.00	e0.00	0.45	e0.11	0.14	0.03	0.01	0.09	0.13	0.00	0.00
8	0.57	0.00	0.00	0.40	e0.11	e0.13	0.04	0.04	0.08	0.06	0.00	0.00
9	0.28	0.00	0.00	0.39	0.12	0.15	0.03	0.03	0.12	0.02	0.00	0.00
10	0.10	0.00	0.00	0.37	0.13	0.15	0.00	0.03	0.15	0.00	0.00	0.00
11	0.06	0.00	0.00	0.30	0.11	0.18	0.00	0.03	0.18	0.00	0.00	0.00
12	0.17	0.00	0.00	0.27	0.12	0.22	0.01	0.11	0.18	0.00	0.00	0.00
13	0.22	0.00	0.00	0.39	0.15	0.22	0.00	0.20	0.17	0.00	0.00	0.00
14	0.17	0.00	0.00	0.46	0.15	0.22	0.06	0.17	0.13	0.00	0.00	0.00
15	0.16	0.00	0.00	0.43	e0.12	0.19	0.20	0.14	0.13	0.00	0.00	0.00
16	0.12	0.00	0.00	0.41	0.11	0.19	0.21	0.35	0.14	0.00	0.00	0.00
17	0.09	0.00	0.00	0.39	0.11	0.22	0.17	0.37	0.15	0.00	0.00	0.00
18	0.01	0.00	e0.00	0.40	0.14	0.26	0.12	0.38	0.29	0.00	0.00	0.00
19	0.00	0.00	e0.08	0.41	0.11	0.25	0.14	0.38	0.34	0.00	0.00	0.00
20	0.00	0.00	0.87	0.44	0.11	1.1	0.13	0.40	0.23	0.00	0.00	0.00
21	0.00	0.00	e0.80	e0.30	0.11	2.2	0.15	0.32	0.30	0.00	0.00	0.00
22	0.00	0.00	0.84	e0.26	0.10	1.5	0.12	0.25	0.70	0.00	0.00	0.00
23	0.00	0.00	0.83	e0.27	0.10	1.0	0.16	0.25	0.44	0.00	0.00	0.00
24	0.00	0.00	0.80	0.32	0.08	0.77	0.17	0.35	0.29	0.00	0.00	0.00
25	0.00	0.00	0.74	0.33	e0.07	0.65	0.15	0.71	0.21	0.00	0.00	0.02
26	0.00	e0.00	0.65	0.32	0.06	0.56	0.15	3.1	0.23	0.00	0.00	0.05
27	0.00	e0.00	0.63	0.29	e0.06	0.48	0.23	1.7	0.27	0.00	0.00	0.00
28	0.00	0.00	0.63	0.20	e0.06	0.44	0.20	0.71	0.20	0.00	0.00	0.00
29	0.00	0.00	e0.56	0.18	---	0.39	0.16	0.45	0.10	0.00	0.00	0.00
30	0.00	0.00	0.55	0.18	---	0.34	0.14	0.31	0.09	0.00	0.00	0.00
31	0.00	---	0.49	0.24	---	0.30	---	0.19	---	0.00	0.00	---
MEAN	1.14	0.000	0.27	0.36	0.12	0.41	0.12	0.37	0.21	0.033	0.000	0.002
MAX	16	0.00	0.87	0.50	0.24	2.2	0.26	3.1	0.70	0.16	0.00	0.05
MIN	0.00	0.00	0.00	0.18	0.06	0.07	0.00	0.01	0.04	0.00	0.00	0.00
AC-FT	70	0.00	17	22	6.6	25	7.1	23	13	2.0	0.00	0.1

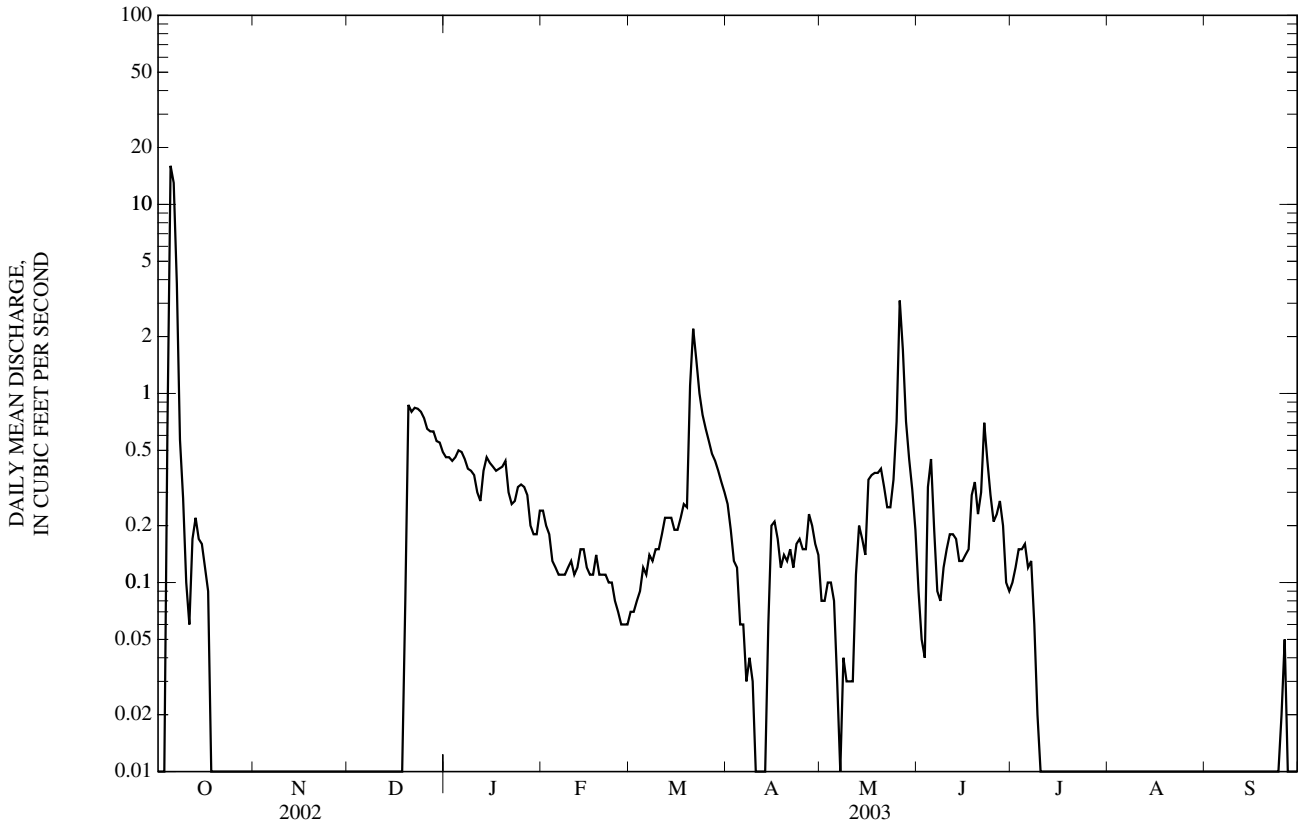
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

MEAN	11.4	27.6	10.1	11.2	16.3	30.3	42.6	71.9	89.9	63.9	77.0	31.9
MAX	30.0	169	56.5	37.8	59.2	103	122	195	360	238	201	153
(WY)	(1997)	(1997)	(1997)	(1997)	(1998)	(2000)	(1998)	(1995)	(2001)	(1999)	(1999)	(1996)
MIN	0.043	0.000	0.065	0.052	0.050	0.054	0.050	0.37	0.21	0.024	0.000	0.002
(WY)	(1996)	(2003)	(1995)	(1995)	(1995)	(1995)	(1995)	(2003)	(2003)	(2002)	(2003)	(2003)

07142020 WALNUT CREEK BELOW CHEYENNE BOTTOMS DIVERSION NEAR GREAT BEND, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL MEAN	0.46		0.26		40.4	
HIGHEST ANNUAL MEAN					69.7	
LOWEST ANNUAL MEAN					0.26	
HIGHEST DAILY MEAN	16	Oct 5	16	Oct 5	809	Jun 11, 2001
LOWEST DAILY MEAN	0.00	Jul 6	0.00	Oct 1	0.00	Oct 1, 1995
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 8	0.00	Oct 19	0.00	Jul 8, 2002
MAXIMUM PEAK FLOW					1,170	Sep 18, 2001
MAXIMUM PEAK STAGE					21.58	Sep 18, 2001
INSTANTANEOUS LOW FLOW					0.00	Oct 1, 1995
ANNUAL RUNOFF (AC-FT)	335		186		29,290	
10 PERCENT EXCEEDS	0.88		0.45		84	
50 PERCENT EXCEEDS	0.28		0.09		4.2	
90 PERCENT EXCEEDS	0.00		0.00		0.05	

e Estimated



## ARKANSAS RIVER BASIN

## 07142300 RATTLESNAKE CREEK NEAR MACKSVILLE, KS

LOCATION.--Lat 37°52'18", long 98°52'33", in SW ¼ SW ¼ sec.16, T.25 S., R.14 W., Stafford County, Hydrologic Unit 11030009, on left bank at downstream side of county highway bridge, 8 mi southeast of Macksville, and at mile 87.5.

DRAINAGE AREA.--784 mi<sup>2</sup>, of which about 428 mi<sup>2</sup> is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,963.46 ft above NGVD of 1929 (Stafford County bench mark). Prior to July 14, 1960, nonrecording gage and crest-stage gages at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	2000	*20	*3.82				

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.32	2.9	3.8	4.2	e4.0	4.1	5.4	9.2	2.0	0.00	0.00
2	0.36	0.40	3.1	3.8	4.4	e4.0	3.9	6.3	14	1.5	0.00	0.00
3	1.2	0.55	3.0	3.8	4.4	e4.0	3.9	5.4	15	0.87	0.00	0.00
4	0.95	0.72	3.0	4.0	3.8	e4.3	4.0	6.0	14	0.39	0.00	0.00
5	0.60	0.82	3.9	3.9	4.2	e4.4	3.9	5.3	15	0.06	0.00	0.00
6	0.50	0.78	3.5	3.7	4.4	e4.0	4.0	5.2	16	0.01	0.00	0.00
7	0.46	0.84	4.0	3.8	4.5	e3.5	3.7	4.9	17	0.02	0.00	0.00
8	0.52	0.93	3.8	4.2	5.3	e4.0	3.5	e4.5	15	0.10	0.00	0.00
9	0.00	1.1	3.8	3.9	4.7	4.0	3.6	e4.2	13	0.04	0.00	0.00
10	e0.00	0.90	3.9	3.5	5.4	3.9	3.6	e4.0	12	0.03	0.00	0.00
11	e0.00	0.81	3.8	3.5	4.9	4.0	3.6	e3.8	11	0.01	0.00	0.00
12	e0.00	0.74	4.0	4.2	4.4	4.2	3.3	e3.5	10	0.00	0.00	0.00
13	e0.01	0.86	4.0	4.2	4.5	4.3	3.3	e3.2	7.0	0.00	0.00	0.00
14	e0.02	1.1	3.9	4.0	4.9	4.3	3.4	e4.0	7.0	0.00	0.00	0.00
15	e0.04	1.2	3.9	3.7	4.7	4.2	3.7	e10	7.5	0.00	0.00	0.00
16	0.00	1.4	3.9	e3.5	4.1	4.3	6.5	e8.0	7.5	0.00	0.00	0.00
17	e0.00	1.5	3.8	4.2	4.4	4.6	4.9	e7.0	6.1	0.00	0.00	0.00
18	0.18	1.7	3.7	4.5	4.7	6.1	4.4	e6.8	7.3	0.00	0.00	0.00
19	0.18	1.8	3.5	4.5	4.5	15	4.5	e6.2	5.6	0.00	0.00	0.00
20	0.13	1.9	3.4	4.4	4.4	13	5.0	5.7	5.3	0.00	0.00	0.00
21	0.14	2.0	3.6	4.1	4.5	8.3	4.6	6.3	4.8	0.00	0.00	0.00
22	0.15	2.2	3.2	4.0	4.7	6.6	4.3	7.0	4.6	0.00	0.00	0.00
23	0.37	2.4	3.3	e3.0	4.8	5.7	4.9	8.2	3.9	0.00	0.00	0.00
24	0.38	2.3	3.5	e3.5	e4.0	5.5	7.8	12	2.7	0.00	0.00	0.00
25	0.30	2.4	3.7	e4.0	e3.0	5.0	6.9	13	2.1	0.00	0.00	0.00
26	0.29	2.5	3.8	e3.5	e3.5	4.9	6.6	13	1.9	0.00	0.00	0.00
27	0.46	2.5	3.9	4.8	e4.0	5.1	5.5	11	1.2	0.00	0.00	0.00
28	0.33	2.7	4.2	4.8	e4.0	4.7	6.5	10	0.97	0.00	0.00	0.00
29	0.36	3.0	4.3	4.4	---	4.3	6.4	12	1.1	0.00	0.00	0.00
30	0.35	2.9	4.1	4.2	---	4.2	6.0	10	1.5	0.00	0.00	0.00
31	0.29	---	3.6	4.3	---	4.2	---	8.6	---	0.00	0.00	---
MEAN	0.28	1.51	3.68	3.99	4.40	5.25	4.68	7.11	7.98	0.16	0.000	0.000
MAX	1.2	3.0	4.3	4.8	5.4	15	7.8	13	17	2.0	0.00	0.00
MIN	0.00	0.32	2.9	3.0	3.0	3.5	3.3	3.2	0.97	0.00	0.00	0.00
AC-FT	17	90	226	245	245	323	278	437	475	10	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

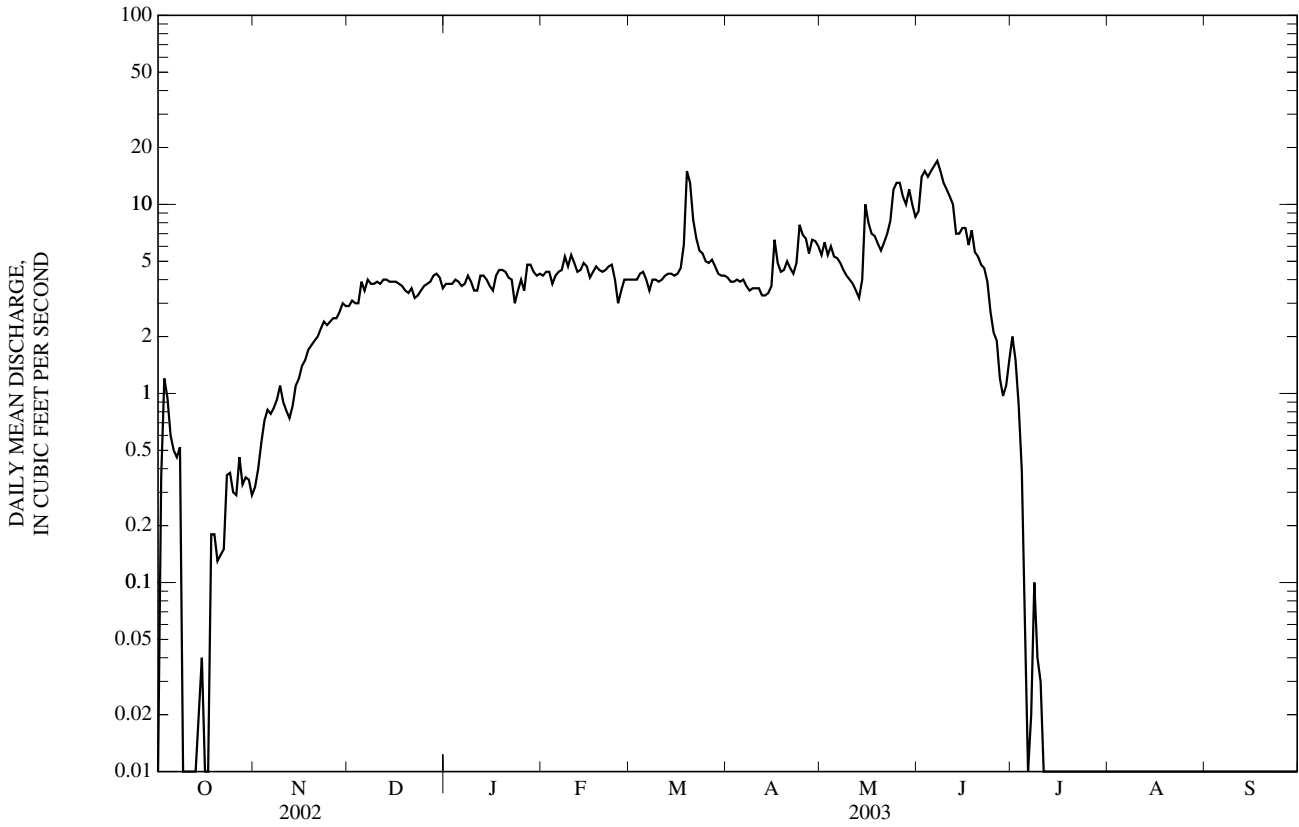
MEAN	22.1	18.0	17.9	17.6	19.5	29.7	28.4	33.4	36.9	22.0	16.0	34.5
MAX	322	118	124	94.1	89.7	188	247	156	248	179	68.4	671
(WY)	(1974)	(1974)	(1974)	(1974)	(1974)	(1973)	(1973)	(1995)	(1975)	(1993)	(1975)	(1973)
MIN	0.000	0.011	0.11	0.12	0.093	0.099	0.19	0.067	3.27	0.019	0.000	0.000
(WY)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(2002)	(1991)	(1991)	(1991)



07142300 RATTLESNAKE CREEK NEAR MACKSVILLE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL MEAN	4.01		3.24		24.7	
HIGHEST ANNUAL MEAN					110	1973
LOWEST ANNUAL MEAN					1.46	1991
HIGHEST DAILY MEAN	19	Aug 17	17	Jun 7	7,330	Sep 27, 1973
LOWEST DAILY MEAN	0.00	Jul 16	0.00	Oct 1	0.00	Sep 5, 1982
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 16	0.00	Jul 12	0.00	Aug 12, 1988
MAXIMUM PEAK FLOW			20	Mar 19	17,700	Sep 26, 1973
MAXIMUM PEAK STAGE			3.82	Mar 19	11.02	Sep 26, 1973
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	2,900		2,350		17,860	
10 PERCENT EXCEEDS	8.1		6.7		39	
50 PERCENT EXCEEDS	3.8		3.5		14	
90 PERCENT EXCEEDS	0.00		0.00		1.0	

e Estimated



ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS

LOCATION.--Lat 38°05'37", long 98°32'45", in SW ¼ SW ¼ NW ¼ sec.33, T.22 S., R.11 W., Stafford County, Hydrologic Unit 11030009, on left bank at downstream side of county highway bridge, 3.0 mi west and 9.5 mi north of Zenith, and at mile 19.3.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--1,047 mi<sup>2</sup>, of which 519 mi<sup>2</sup> is noncontributing.

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

GAGE.--Water-stage recorder. Elevation of gage is 1,790 ft above sea level, from topographic map. Prior to Aug. 9, 1995, water-stage recorder at site 2.8 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 20	2100	*273	*14.47	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	14	12	14	18	e19	27	26	20	6.9	5.9	5.8
2	6.2	13	12	13	e18	21	26	25	22	6.7	5.0	3.8
3	14	13	11	14	e18	22	25	25	22	6.5	4.6	2.8
4	45	13	12	12	e18	23	25	23	21	6.5	4.0	2.6
5	53	13	13	13	17	e23	25	22	20	6.6	3.8	3.1
6	32	12	13	15	16	e24	25	21	19	6.3	3.4	2.6
7	e25	12	13	14	e16	24	25	21	19	5.8	3.4	2.3
8	e20	12	13	12	e15	21	25	20	18	5.7	3.3	2.5
9	16	12	13	13	e16	21	24	19	16	5.2	3.2	2.6
10	14	12	13	13	17	21	23	19	15	4.9	3.0	2.5
11	13	11	13	15	17	20	23	18	14	4.8	2.8	4.6
12	12	11	14	14	17	19	22	17	13	4.7	2.6	3.1
13	11	12	15	15	17	19	21	18	13	4.8	2.5	2.8
14	7.9	11	15	22	18	19	21	16	12	4.9	2.5	3.3
15	7.1	12	14	18	19	18	22	16	12	e4.5	2.5	3.5
16	7.8	12	13	17	17	19	58	32	11	e4.2	2.4	3.3
17	9.0	12	13	e15	19	19	47	44	10	3.9	2.2	3.3
18	9.4	12	13	e14	18	26	36	30	10	3.6	1.9	3.0
19	9.3	11	13	e14	17	122	33	24	17	3.7	2.0	3.0
20	9.1	12	13	15	17	244	35	24	20	3.8	2.0	3.2
21	8.8	11	13	15	18	200	32	22	15	3.8	1.9	3.2
22	8.6	12	13	e15	18	136	29	19	13	3.5	1.7	3.6
23	9.3	11	13	e14	17	99	30	27	11	3.6	1.7	3.7
24	11	11	13	e13	e18	63	35	96	9.8	3.4	1.7	3.4
25	12	12	e13	e13	e17	48	35	120	9.1	3.2	1.8	3.3
26	11	12	13	e14	e16	40	35	77	8.8	2.9	1.7	3.4
27	12	12	e13	e14	e16	36	33	48	8.3	3.1	1.9	3.3
28	14	12	14	e15	e16	34	31	34	7.7	3.2	1.8	3.2
29	14	12	12	e16	---	32	29	27	7.7	3.3	2.5	3.3
30	15	12	14	e17	---	30	27	23	7.6	3.0	6.5	3.7
31	15	---	13	17	---	28	---	21	---	2.9	6.7	---
MEAN	14.7	12.0	13.1	14.7	17.2	48.1	29.5	31.4	14.1	4.51	3.00	3.26
MAX	53	14	15	22	19	244	58	120	22	6.9	6.7	5.8
MIN	5.1	11	11	12	15	18	21	16	7.6	2.9	1.7	2.3
AC-FT	906	712	803	902	954	2,960	1,750	1,930	837	277	184	194

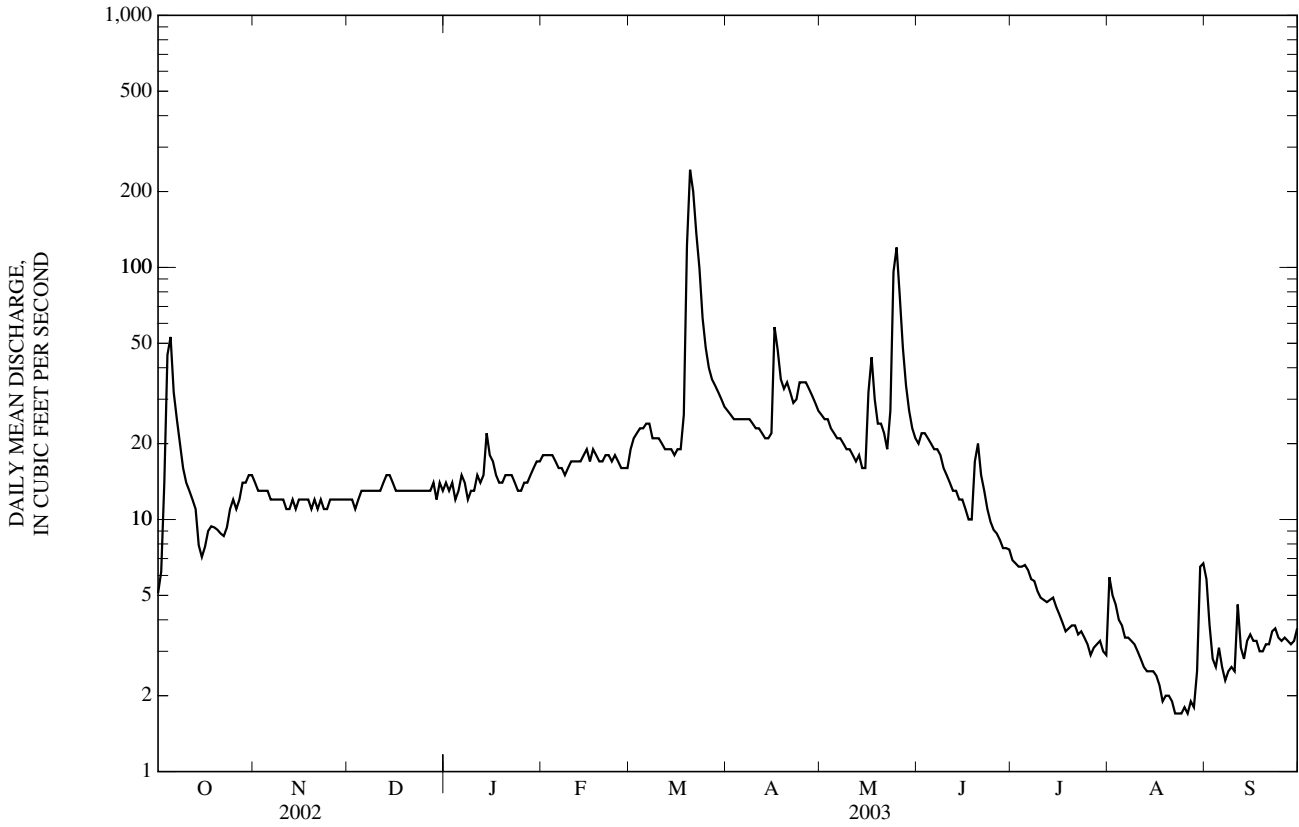
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

MEAN	41.6	32.0	37.4	36.1	43.1	62.3	63.1	73.8	76.7	70.7	20.3	17.0
MAX	691	185	270	192	141	207	272	371	596	1,099	79.5	93.3
(WY)	(1974)	(1974)	(1974)	(1974)	(1974)	(1987)	(1976)	(1995)	(1993)	(1993)	(1975)	(1996)
MIN	0.046	3.27	5.56	6.48	6.64	7.78	6.47	5.24	10.2	1.54	0.88	0.091
(WY)	(1992)	(1985)	(1992)	(1992)	(1992)	(1992)	(1992)	(1992)	(1991)	(1991)	(1991)	(1991)

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL MEAN	15.1		17.1		47.9	
HIGHEST ANNUAL MEAN					186	1993
LOWEST ANNUAL MEAN					6.59	1991
HIGHEST DAILY MEAN	86	Jun 12	244	Mar 20	13,600	Jul 19, 1993
LOWEST DAILY MEAN	2.9	Sep 22	1.7	Aug 22	0.00	Sep 14, 1984
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 18	1.8	Aug 22	0.00	Sep 11, 1991
MAXIMUM PEAK FLOW			273	Mar 20	29,300	Jul 18, 1993
MAXIMUM PEAK STAGE			14.47	Mar 20	17.18	Jul 2, 1999
INSTANTANEOUS LOW FLOW			1.5	Aug 23	0.00	Sep 14, 1984
ANNUAL RUNOFF (AC-FT)	10,950		12,410		34,700	
10 PERCENT EXCEEDS	24		29		80	
50 PERCENT EXCEEDS	13		13		27	
90 PERCENT EXCEEDS	4.2		3.2		4.6	

e Estimated



## 07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1998 to current year.

pH: November 1998 to current year.

WATER TEMPERATURE: November 1998 to current year.

DISSOLVED OXYGEN: November 1998 to current year.

TURBIDITY: November 1998 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records fair. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 12,000 microsiemens/cm, Aug. 23, 2003; minimum, 164 microsiemens/cm, Mar. 25, 2000.

pH: Maximum, 9.4 standard units, Aug. 4, 2000; minimum, 7.2 standard units, June 10, 2001.

WATER TEMPERATURE: Maximum, 37.8°C, Apr. 5, 2003; minimum, -0.3°C, Nov. 28, 2003.

DISSOLVED OXYGEN: Maximum 19.3 mg/L, Aug. 6, 1999; minimum, 1.1 mg/L, Aug. 23, 2003.

TURBIDITY: Maximum, 950 NTU, Feb. 26, 2001; minimum, 4 NTU, Sept. 15, 2000.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 12,000 microsiemens/cm, Aug. 26; minimum, 918 microsiemens/cm, Mar. 20.

pH: Maximum, 9.4 standard units, July 29; minimum, 7.3 standard units, Oct. 6.

WATER TEMPERATURE: Maximum, 37.8°C, Aug. 5; minimum, -0.3°C, Nov. 28.

DISSOLVED OXYGEN: Maximum, 18.5 mg/L, Jan. 24; minimum, 1.1 mg/L, Aug. 23.

TURBIDITY: Maximum, 550 NTU, Sept. 11; minimum, 4.7 NTU, Dec. 27.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9,060	8,950	9,020	6,850	6,660	6,770	7,900	7,740	7,810	7,010	6,890	6,970
2	9,000	6,330	7,840	6,660	6,510	6,560	7,810	7,720	7,770	6,930	6,830	6,890
3	6,760	3,880	5,520	6,660	6,540	6,580	7,980	7,750	7,890	7,280	6,400	6,870
4	3,880	1,820	2,640	6,860	6,660	6,800	9,050	6,810	7,890	7,110	6,730	6,960
5	1,940	922	1,360	6,930	6,830	6,880	7,820	6,900	7,560	6,900	6,660	6,740
6	3,210	959	1,560	7,080	6,920	7,010	8,240	7,390	7,730	6,930	6,440	6,640
7	3,320	2,070	2,440	7,110	7,020	7,060	7,770	7,550	7,670	6,940	6,820	6,890
8	4,360	2,550	3,430	7,110	7,030	7,080	7,560	7,390	7,480	7,340	6,910	7,150
9	5,530	4,360	4,950	7,170	7,060	7,130	7,490	7,240	7,360	7,050	6,950	7,010
10	6,240	5,530	5,960	7,200	7,110	7,160	7,390	7,250	7,320	7,870	6,630	7,150
11	6,960	6,240	6,680	7,280	7,150	7,240	7,290	7,260	7,270	7,450	6,840	7,010
12	7,370	6,960	7,160	7,310	7,230	7,270	7,270	6,660	7,060	7,100	6,940	7,020
13	7,620	7,370	7,460	7,550	7,240	7,400	6,960	6,780	6,860	7,060	6,370	6,890
14	---	---	---	7,580	7,440	7,500	7,020	6,940	6,980	6,680	6,310	6,540
15	---	---	---	7,520	7,420	7,470	7,120	7,020	7,080	7,340	6,500	6,850
16	9,330	8,030	8,800	7,500	7,390	7,450	7,230	7,110	7,170	8,610	6,240	7,240
17	8,030	6,740	7,120	7,570	7,460	7,510	7,290	7,000	7,180	8,200	6,820	7,400
18	7,220	6,750	7,020	7,560	7,500	7,530	7,240	7,010	7,120	7,600	6,280	6,990
19	7,550	7,160	7,350	7,650	7,500	7,570	7,400	7,220	7,320	6,900	6,090	6,570
20	7,830	7,550	7,730	7,580	7,500	7,530	7,460	6,710	7,080	7,040	6,210	6,830
21	7,940	7,830	7,910	7,630	7,510	7,590	7,410	7,200	7,350	7,170	6,720	6,980
22	8,480	7,910	8,250	7,620	7,470	7,550	7,960	7,000	7,320	7,990	6,840	7,430
23	8,480	7,610	7,960	7,800	7,620	7,740	7,470	7,190	7,390	8,780	7,320	7,910
24	7,940	7,750	7,860	7,980	7,780	7,830	8,070	6,880	7,480	7,940	7,350	7,650
25	7,900	7,470	7,660	8,120	7,700	7,840	9,250	6,850	8,000	7,840	6,600	7,040
26	7,820	7,520	7,670	8,720	7,650	7,930	8,070	7,040	7,620	7,240	6,660	6,870
27	7,990	7,050	7,490	8,070	7,750	7,910	8,690	6,810	7,600	7,550	6,860	7,120
28	7,130	6,900	7,010	8,090	7,810	7,960	7,450	7,170	7,360	7,290	6,110	6,620
29	7,000	6,850	6,950	7,920	7,720	7,830	7,730	7,300	7,500	6,470	5,930	6,170
30	6,910	6,700	6,830	7,830	7,660	7,750	7,300	6,850	6,950	6,610	6,100	6,400
31	6,800	6,710	6,750	---	---	---	7,070	6,820	6,930	6,290	5,920	6,110
MONTH	9,330	922	6,430	8,720	6,510	7,380	9,250	6,660	7,390	8,780	5,920	6,930

## 07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6,310	5,640	5,920	5,750	5,390	5,570	4,600	4,490	4,540	4,930	4,780	4,870
2	5,990	5,520	5,720	5,780	5,240	5,480	4,640	4,560	4,610	5,060	4,830	5,000
3	5,900	5,540	5,770	5,240	4,790	5,080	4,700	4,600	4,650	5,180	5,020	5,100
4	6,220	5,720	5,960	---	4,780	---	4,750	4,640	4,690	5,370	5,120	5,260
5	6,130	5,520	5,840	6,810	---	---	4,780	4,690	4,740	5,410	5,230	5,340
6	6,400	5,860	6,110	5,580	4,520	5,210	4,790	4,700	4,750	5,510	5,200	5,380
7	8,940	5,940	6,780	5,640	4,520	4,960	4,870	4,790	4,840	5,550	5,320	5,450
8	7,380	5,870	6,620	5,490	5,070	5,290	4,910	4,820	4,860	5,600	5,400	5,510
9	6,660	5,080	6,170	5,390	4,880	5,130	4,920	4,810	4,870	5,810	5,490	5,640
10	7,070	4,820	5,770	5,180	4,960	5,070	4,980	4,880	4,940	5,860	5,700	5,780
11	6,500	5,920	6,220	5,410	5,180	5,300	5,050	4,970	5,020	5,860	5,560	5,740
12	6,570	5,730	6,160	5,500	5,360	5,420	5,030	4,790	4,960	6,100	5,800	5,950
13	6,000	5,550	5,820	5,520	5,330	5,420	5,130	4,790	4,990	6,460	5,330	6,000
14	5,680	5,270	5,440	5,370	5,320	5,350	5,260	5,100	5,200	6,560	6,090	6,300
15	5,510	5,130	5,450	5,470	5,350	5,410	5,290	3,870	5,160	6,610	6,130	6,390
16	6,200	5,130	5,540	5,410	5,220	5,300	4,190	3,590	3,800	6,480	4,560	5,260
17	5,680	4,690	5,360	5,470	4,940	5,320	4,110	3,320	3,640	4,560	3,780	4,100
18	6,100	5,460	5,730	5,260	4,670	5,090	4,580	4,110	4,390	4,720	3,680	4,250
19	5,880	5,510	5,710	4,670	---	---	4,660	4,540	4,600	5,180	4,720	5,060
20	5,780	5,510	5,630	---	918	---	4,650	4,530	4,580	5,390	4,950	5,160
21	5,610	5,360	5,510	1,340	950	1,120	4,750	4,590	4,650	5,120	4,860	4,950
22	5,540	5,080	5,310	1,530	1,340	1,410	4,920	4,750	4,840	5,520	5,060	5,310
23	6,830	5,510	5,840	2,500	1,530	1,980	5,040	4,870	4,960	5,410	4,400	4,950
24	8,230	5,840	6,690	3,150	2,500	2,890	5,020	4,850	4,930	4,620	1,840	3,210
25	7,770	6,120	6,680	3,530	3,150	3,360	4,860	4,600	4,700	1,880	1,680	1,750
26	7,460	5,440	5,840	3,820	3,530	3,670	4,700	4,260	4,490	2,680	1,880	2,320
27	5,930	5,440	5,700	4,010	3,820	3,920	4,450	4,260	4,350	3,710	2,680	3,180
28	5,950	5,580	5,740	4,110	4,010	4,070	4,500	4,450	4,480	4,550	3,710	4,120
29	---	---	---	4,190	4,100	4,140	4,640	4,480	4,550	5,170	4,550	4,870
30	---	---	---	4,340	4,180	4,280	4,840	4,640	4,780	5,500	5,170	5,400
31	---	---	---	4,500	4,310	4,390	---	---	---	5,800	5,050	5,560
MONTH	8,940	4,690	5,890	6,810	918	4,430	5,290	3,320	4,690	6,610	1,680	4,940

## 07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6,010	5,090	5,750	8,870	8,240	8,650	10,000	6,310	8,240	7,160	6,370	6,800
2	5,800	5,090	5,490	9,040	8,810	8,940	7,420	5,210	5,930	8,700	6,860	7,970
3	5,820	5,300	5,550	9,140	8,840	9,010	7,610	6,710	7,300	9,550	8,380	9,030
4	5,760	5,140	5,480	9,230	8,900	9,100	8,670	6,720	8,090	9,790	8,950	9,390
5	6,090	5,760	5,900	9,420	9,070	9,270	8,760	8,280	8,550	8,990	7,920	8,630
6	6,140	5,930	6,010	9,400	9,130	9,290	9,340	8,570	8,900	10,400	8,490	9,630
7	6,070	5,770	5,940	9,370	9,070	9,170	9,580	9,220	9,370	10,700	10,300	10,500
8	5,960	5,640	5,830	9,540	9,220	9,350	9,610	9,280	9,440	10,600	10,300	10,500
9	6,150	5,870	6,000	10,000	9,450	9,730	9,970	9,600	9,790	10,800	10,200	10,500
10	6,310	6,120	6,230	10,000	9,740	9,880	10,300	9,740	9,940	11,300	10,700	10,900
11	6,470	6,230	6,350	10,100	9,820	9,940	10,300	10,000	10,200	10,700	6,060	7,190
12	6,500	6,170	6,390	10,200	9,860	10,000	10,300	10,000	10,200	10,300	8,020	9,190
13	6,430	5,690	6,290	10,200	9,660	9,890	10,300	9,910	10,100	10,600	10,100	10,400
14	6,670	6,090	6,460	10,200	---	---	10,200	9,730	10,000	10,100	8,490	8,960
15	6,770	6,260	6,540	---	---	---	10,100	9,430	9,870	8,810	8,480	8,640
16	7,170	6,160	6,740	---	---	---	10,400	9,900	10,100	9,260	8,740	9,060
17	7,250	7,000	7,130	---	---	---	10,800	10,000	10,500	9,400	9,180	9,270
18	7,250	5,870	6,690	---	---	---	11,200	10,700	10,900	9,530	9,090	9,340
19	6,720	2,430	5,270	---	---	---	11,500	10,600	10,900	9,570	9,120	9,350
20	4,140	2,640	3,450	10,400	9,820	10,100	11,200	10,400	10,800	9,450	9,260	9,380
21	5,090	4,140	4,710	10,300	9,890	10,100	11,100	10,900	11,000	9,600	9,340	9,450
22	5,700	5,090	5,380	10,500	10,100	10,300	11,400	10,600	10,900	9,380	8,560	9,120
23	---	5,700	---	10,500	9,920	10,200	11,600	10,600	11,200	9,520	9,050	9,290
24	---	---	---	10,800	10,200	10,400	11,800	10,800	11,400	9,650	9,330	9,520
25	---	---	---	11,000	9,920	10,400	11,500	10,500	11,200	9,770	9,450	9,580
26	---	---	---	11,200	9,790	10,500	12,000	10,400	11,400	9,720	9,400	9,580
27	8,660	---	---	10,700	9,640	10,200	12,000	10,400	11,000	9,800	9,380	9,610
28	8,880	8,610	8,780	10,800	10,200	10,500	11,600	10,700	11,200	9,840	9,540	9,660
29	8,960	8,640	8,810	10,800	10,300	10,600	11,100	7,830	9,880	9,840	9,550	9,630
30	8,830	8,240	8,670	10,700	10,100	10,300	7,860	6,350	7,080	9,550	8,940	9,160
31	---	---	---	10,500	9,440	10,100	6,740	5,970	6,400	---	---	---
MONTH	8,960	2,430	6,230	11,200	8,240	9,840	12,000	5,210	9,730	11,300	6,060	9,310

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.6	8.0	8.3	8.5	8.2	8.3	8.4	7.9	8.1	8.4	8.2	8.3
2	8.2	7.9	8.0	8.4	8.2	8.3	8.5	8.0	8.1	8.6	8.2	8.3
3	8.1	7.7	7.9	8.6	8.2	8.4	8.3	8.0	8.1	8.6	8.2	8.3
4	7.8	7.5	7.6	8.6	8.2	8.4	8.2	7.9	8.0	8.8	8.2	8.4
5	7.5	7.3	7.4	8.7	8.2	8.4	8.3	7.9	8.1	8.8	8.2	8.5
6	8.0	7.3	7.6	8.7	8.3	8.5	8.2	7.9	8.0	8.6	8.4	8.5
7	7.8	7.8	7.8	8.8	8.3	8.5	8.3	8.0	8.1	8.6	8.4	8.4
8	8.0	7.8	7.9	8.8	8.3	8.5	8.4	8.0	8.1	8.7	8.3	8.4
9	8.2	7.8	8.0	8.8	8.2	8.5	8.4	8.0	8.1	8.7	8.3	8.5
10	8.2	7.9	8.0	8.8	8.2	8.5	8.4	8.0	8.1	8.6	8.3	8.5
11	8.2	8.0	8.1	8.7	8.2	8.5	8.3	8.0	8.1	8.6	8.3	8.5
12	8.3	8.0	8.2	8.7	8.2	8.4	8.2	8.0	8.1	8.6	8.3	8.5
13	8.4	8.1	8.2	8.5	8.1	8.3	8.4	7.9	8.1	8.6	8.3	8.5
14	8.3	8.0	8.1	8.3	7.8	8.0	8.4	7.9	8.1	8.6	8.4	8.5
15	8.4	7.9	8.1	8.4	7.8	8.1	8.5	8.0	8.1	8.5	8.4	8.5
16	8.4	8.0	8.1	8.3	7.8	8.1	8.5	8.0	8.2	8.4	8.3	8.4
17	8.6	8.0	8.3	8.4	7.8	8.1	8.5	8.0	8.2	8.4	8.2	8.3
18	8.6	8.0	8.3	8.4	7.9	8.1	8.5	8.0	8.2	8.5	8.2	8.4
19	8.6	8.0	8.3	8.4	7.9	8.1	8.4	8.0	8.2	8.5	8.3	8.4
20	8.5	8.0	8.3	8.4	7.9	8.1	8.3	7.9	8.1	8.5	8.3	8.4
21	8.6	8.0	8.3	8.4	7.9	8.1	8.3	7.9	8.1	8.6	8.3	8.4
22	8.5	8.0	8.3	8.4	7.9	8.1	8.3	7.9	8.1	8.5	8.3	8.4
23	8.3	8.0	8.2	8.4	7.9	8.2	8.3	8.0	8.1	8.5	8.3	8.4
24	8.3	8.0	8.2	8.3	7.9	8.1	8.3	8.0	8.1	8.4	8.2	8.3
25	8.5	8.1	8.2	8.2	7.9	8.1	8.3	7.9	8.1	8.3	8.1	8.2
26	8.6	8.1	8.3	8.1	7.9	8.0	8.2	8.0	8.1	8.4	8.1	8.2
27	8.5	8.1	8.3	8.2	7.9	8.0	8.3	8.0	8.1	8.4	8.1	8.3
28	8.5	8.1	8.2	8.3	7.9	8.0	8.4	8.1	8.2	8.5	8.2	8.4
29	8.5	8.1	8.2	8.4	7.9	8.1	8.6	8.1	8.2	8.5	8.3	8.4
30	8.5	8.1	8.3	8.4	8.0	8.1	8.6	8.2	8.3	8.6	8.3	8.4
31	8.4	8.2	8.3	---	---	---	8.6	8.2	8.3	8.7	8.3	8.5
MAX	8.6	8.2	8.3	8.8	8.3	8.5	8.6	8.2	8.3	8.8	8.4	8.5
MIN	7.5	7.3	7.4	8.1	7.8	8.0	8.2	7.9	8.0	8.3	8.1	8.2

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.7	8.3	8.5	8.4	8.2	8.3	8.4	8.2	8.3	8.8	8.2	8.5
2	8.8	8.3	8.5	8.5	8.2	8.3	8.4	8.3	8.3	8.8	8.2	8.6
3	8.8	8.3	8.6	8.5	8.3	8.3	8.4	8.2	8.3	8.8	8.2	8.6
4	8.7	8.4	8.5	8.5	8.2	8.3	8.5	8.3	8.4	8.8	8.2	8.5
5	8.6	8.4	8.5	---	---	---	8.6	8.3	8.5	8.8	8.3	8.5
6	8.6	8.3	8.5	8.4	8.2	8.3	8.5	8.4	8.5	8.8	8.2	8.6
7	8.5	8.2	8.4	8.4	8.3	8.4	8.6	8.4	8.5	8.8	8.2	8.6
8	8.5	8.3	8.4	8.6	8.3	8.4	8.6	8.4	8.5	8.7	8.1	8.5
9	8.5	8.3	8.4	8.5	8.3	8.4	8.6	8.4	8.5	8.7	8.1	8.5
10	8.5	8.3	8.4	8.5	8.3	8.4	8.6	8.4	8.5	8.7	8.1	8.4
11	8.5	8.3	8.4	8.6	8.3	8.4	8.6	8.3	8.5	8.7	8.3	8.5
12	8.5	8.2	8.3	8.6	8.3	8.4	8.6	8.3	8.5	8.6	8.1	8.5
13	8.5	8.2	8.3	8.6	8.2	8.4	8.6	8.3	8.5	8.6	8.1	8.4
14	8.6	8.1	8.3	8.7	8.2	8.4	8.6	8.3	8.4	8.6	8.0	8.4
15	8.5	8.2	8.4	8.7	8.2	8.4	8.6	8.2	8.4	8.5	7.9	8.2
16	8.5	8.3	8.4	8.7	8.1	8.4	8.3	7.9	8.1	8.3	7.8	8.0
17	8.5	8.3	8.3	8.8	8.1	8.4	8.3	8.0	8.1	8.3	7.8	8.0
18	8.6	8.2	8.3	8.4	8.0	8.2	8.5	8.1	8.3	8.5	7.9	8.1
19	8.6	8.2	8.4	8.0	---	---	8.4	8.3	8.3	8.3	7.8	8.1
20	8.6	8.2	8.4	8.0	---	---	8.6	8.2	8.4	8.6	8.0	8.4
21	8.7	8.2	8.4	8.0	8.0	8.0	8.6	8.3	8.4	8.6	8.0	8.4
22	8.6	8.2	8.4	8.0	8.0	8.0	8.7	8.3	8.4	8.7	8.0	8.3
23	8.4	8.3	8.4	8.1	8.0	8.0	8.5	8.3	8.4	8.3	7.8	8.1
24	8.3	8.2	8.3	8.2	8.1	8.1	8.5	8.2	8.3	7.8	7.6	7.7
25	8.3	8.1	8.2	8.2	8.2	8.2	8.5	8.3	8.4	7.8	7.6	7.7
26	8.2	8.0	8.1	8.3	8.2	8.2	8.6	8.3	8.4	7.9	7.7	7.8
27	8.4	8.1	8.2	8.4	8.2	8.3	8.6	8.3	8.4	8.1	7.8	8.0
28	8.4	8.2	8.3	8.4	8.3	8.3	8.6	8.2	8.4	8.2	7.9	8.0
29	---	---	---	8.4	8.3	8.4	8.7	8.2	8.4	8.3	7.9	8.1
30	---	---	---	8.4	8.3	8.3	8.7	8.2	8.5	8.4	8.0	8.2
31	---	---	---	8.4	8.3	8.3	---	---	---	8.6	8.2	8.3
MAX	8.8	8.4	8.6	8.8	8.3	8.4	8.7	8.4	8.5	8.8	8.3	8.6
MIN	8.2	8.0	8.1	8.0	8.0	8.0	8.3	7.9	8.1	7.8	7.6	7.7



07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.7	8.2	8.5	8.8	7.9	8.4	9.3	7.8	8.7	8.9	8.0	8.6
2	8.6	8.2	8.4	8.8	7.9	8.4	9.4	7.8	8.6	8.9	8.0	8.4
3	8.6	8.2	8.4	8.9	7.9	8.5	9.4	7.9	8.7	8.9	7.8	8.1
4	8.6	8.3	8.4	8.9	8.0	8.5	9.2	8.0	8.6	9.0	7.8	8.2
5	8.6	8.3	8.4	8.9	8.0	8.5	9.2	7.9	8.6	9.2	7.8	8.5
6	8.8	8.3	8.5	8.9	8.0	8.5	9.2	7.9	8.5	8.8	7.9	8.3
7	8.7	8.3	8.5	8.8	8.0	8.5	9.3	8.0	8.6	8.8	7.8	8.2
8	8.8	8.4	8.6	8.9	8.0	8.5	9.4	8.0	8.7	8.8	7.9	8.2
9	8.8	8.3	8.5	8.9	8.0	8.4	9.3	8.0	8.6	9.0	8.0	8.4
10	8.8	8.2	8.5	9.0	7.9	8.4	9.3	8.0	8.6	8.9	7.9	8.3
11	8.8	8.2	8.4	9.0	8.0	8.7	9.3	7.9	8.6	8.7	7.8	8.2
12	8.8	8.3	8.5	9.0	8.0	8.6	9.2	8.0	8.6	8.9	8.0	8.2
13	8.8	8.3	8.5	9.0	8.0	8.6	9.3	8.0	8.6	8.9	7.9	8.4
14	8.8	8.2	8.5	---	8.0	---	9.2	8.0	8.6	9.2	8.1	8.6
15	8.8	8.2	8.5	---	---	---	9.2	8.0	8.6	9.1	8.2	8.6
16	8.8	8.2	8.5	9.1	---	---	9.2	7.9	8.5	9.0	8.2	8.6
17	8.8	8.1	8.5	9.1	8.0	8.6	9.1	8.0	8.4	8.9	8.1	8.4
18	8.8	8.1	8.4	9.1	7.9	8.4	9.0	7.9	8.3	8.8	8.2	8.4
19	8.6	7.9	8.2	9.2	7.9	8.5	9.0	7.9	8.2	8.8	8.2	8.4
20	8.5	7.9	8.2	9.2	7.9	8.5	9.1	7.9	8.2	8.7	8.2	8.4
21	8.6	8.1	8.4	9.2	7.9	8.6	8.9	7.8	8.0	8.8	8.1	8.4
22	8.7	8.2	8.4	9.2	7.9	8.6	8.9	7.6	7.9	8.9	8.1	8.4
23	8.7	8.2	8.4	9.2	8.0	8.6	8.9	7.6	7.9	8.9	8.1	8.4
24	8.8	8.2	8.5	9.2	8.0	8.6	8.9	7.5	8.0	8.9	8.2	8.5
25	8.9	8.2	8.6	9.1	8.0	8.5	9.0	7.6	8.0	8.7	8.1	8.4
26	8.8	8.3	8.6	9.0	7.8	8.3	9.0	7.6	7.8	8.8	8.1	8.4
27	8.8	8.2	8.6	9.3	7.8	8.5	9.1	7.6	8.1	8.8	8.2	8.4
28	8.8	8.0	8.4	9.3	7.8	8.6	9.0	7.7	8.1	8.8	8.2	8.4
29	8.8	8.0	8.4	9.4	7.9	8.6	9.2	7.8	8.5	8.4	8.0	8.2
30	8.7	8.0	8.4	9.3	7.8	8.5	8.7	7.9	8.2	8.2	7.9	8.0
31	---	---	---	9.3	7.8	8.4	8.6	7.9	8.2	---	---	---
MAX	8.9	8.4	8.6	9.4	8.0	8.7	9.4	8.0	8.7	9.2	8.2	8.6
MIN	8.5	7.9	8.2	8.8	7.8	8.3	8.6	7.5	7.8	8.2	7.8	8.0

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.5	17.9	21.1	5.6	3.0	4.3	8.2	0.5	4.0	2.6	-0.1	0.6
2	20.7	12.8	17.2	5.1	4.0	4.6	9.9	2.3	5.3	5.1	-0.2	1.8
3	16.9	11.8	14.0	11.6	5.1	7.4	4.0	-0.2	1.6	7.3	-0.2	2.7
4	18.8	12.7	15.8	10.6	3.8	7.0	1.1	-0.3	0.1	8.8	2.1	4.7
5	19.1	14.1	16.4	11.2	5.4	7.6	3.6	-0.2	1.0	6.5	1.3	3.7
6	20.3	14.5	16.8	12.7	3.1	7.5	5.7	-0.3	1.8	5.0	1.0	2.4
7	18.4	12.0	15.0	14.7	5.3	9.6	7.2	1.3	3.8	8.6	-0.1	3.6
8	17.4	12.7	14.9	15.1	6.7	10.5	8.5	3.4	5.4	10.9	2.2	6.0
9	22.6	14.7	17.7	16.0	8.8	11.8	7.4	1.1	3.9	6.7	1.4	3.9
10	23.2	13.8	17.8	14.9	8.2	11.1	6.1	1.0	3.4	3.9	-0.2	1.0
11	18.9	14.8	16.7	13.3	6.4	9.3	5.5	3.8	4.6	3.4	-0.2	1.1
12	16.8	11.9	15.5	13.4	5.8	9.2	6.0	4.3	5.3	6.6	0.3	2.8
13	18.8	8.0	12.7	13.3	5.0	8.8	7.8	1.3	4.3	8.0	-0.1	3.6
14	18.7	7.3	12.6	11.1	7.4	8.9	9.0	1.8	4.9	4.9	0.4	2.7
15	18.3	8.1	12.6	10.8	5.7	7.6	10.3	2.8	6.0	1.6	-0.2	0.1
16	12.9	8.7	10.3	11.9	3.9	7.4	10.5	4.2	6.9	-0.1	-0.2	-0.2
17	17.6	6.0	10.9	12.6	4.0	8.0	10.6	3.7	6.7	0.1	-0.2	-0.1
18	20.1	9.4	14.1	12.0	6.0	8.6	9.4	3.6	6.4	0.1	-0.2	-0.1
19	16.1	10.4	13.2	11.9	4.1	7.4	7.3	1.8	4.1	6.8	-0.2	2.0
20	17.2	6.8	11.4	12.5	5.2	8.2	5.6	-0.2	2.2	8.6	-0.2	3.6
21	19.0	8.0	12.8	12.5	5.8	8.4	4.0	0.2	1.6	4.4	-0.2	1.5
22	13.5	8.8	11.5	11.5	4.0	7.3	4.2	-0.3	1.3	-0.2	-0.2	-0.2
23	8.8	4.9	6.5	11.5	5.4	7.9	1.3	-0.2	0.4	0.0	-0.2	-0.2
24	5.0	4.0	4.5	8.3	2.0	5.3	2.5	-0.2	0.4	0.0	-0.2	-0.1
25	8.5	4.4	6.1	5.4	-0.2	2.4	3.0	-0.3	0.4	0.0	-0.2	-0.1
26	12.3	6.8	8.6	2.9	-0.2	1.0	0.5	-0.2	0.1	0.0	-0.2	-0.1
27	9.5	7.2	8.5	5.5	-0.2	2.1	5.3	-0.2	1.3	0.1	-0.2	-0.1
28	10.4	8.3	9.3	8.4	-0.3	3.7	7.1	-0.1	2.8	1.4	-0.2	0.0
29	9.8	8.6	9.1	8.7	2.7	5.3	7.0	0.5	3.6	3.5	0.7	1.7
30	8.7	4.8	6.7	7.7	1.3	4.2	7.8	2.0	4.4	6.5	-0.2	2.7
31	5.4	4.0	4.6	---	---	---	6.4	-0.2	2.8	9.8	2.4	5.7
MONTH	26.5	4.0	12.4	16.0	-0.3	7.1	10.6	-0.3	3.3	10.9	-0.2	1.8

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.9	3.4	6.7	6.2	-0.1	2.4	21.3	10.6	15.5	19.7	15.2	17.2
2	11.5	5.6	7.8	9.2	1.2	4.3	22.1	11.8	16.7	24.2	13.3	18.0
3	6.4	0.2	3.5	10.5	0.8	5.2	21.0	14.5	17.1	19.2	15.4	17.6
4	2.9	-0.1	0.9	6.2	0.0	---	18.8	11.0	14.8	25.4	17.9	20.6
5	1.6	-0.2	0.7	---	-0.1	---	12.0	8.2	10	27.6	14.5	20.5
6	1.4	-0.2	0.4	4.4	-0.1	1.1	11.7	6.3	8.5	21.6	15.8	18.5
7	0.3	-0.2	-0.1	8.6	0.1	3.5	12.5	3.2	7.4	22.8	13.8	18.1
8	2.3	-0.2	0.4	7.0	2.0	4.6	13.1	3.9	7.9	27.0	16.0	20.3
9	1.5	-0.2	0.4	8.3	-0.1	3.1	17.5	4.5	10.4	27.7	14.6	20.4
10	7.7	-0.2	2.5	10.2	-0.1	4.4	19.4	7.0	12.8	21.9	15.6	19.1
11	8.1	0.2	4.1	10.0	2.4	5.6	22.8	10.3	16.0	23.4	11.8	17.3
12	10.3	0.8	5.1	10.9	3.9	7.5	23.2	12.1	16.9	24.9	13.5	18.7
13	6.6	3.2	5.1	16.3	5.0	10.0	22.4	12.8	17.6	25.2	13.7	19.7
14	9.9	6.4	7.8	18.9	6.6	12.2	25.6	14.3	19.6	30.0	18.7	23.4
15	6.4	-0.1	2.4	18.7	9.0	13.6	20.0	15.9	17.7	22.8	18.5	20.0
16	7.2	-0.1	2.4	22.1	10.9	15.9	15.9	11.7	14.1	18.5	15.4	16.3
17	9.0	-0.1	3.8	19.4	13.3	15.7	19.7	9.1	14.0	26.1	13.4	19.0
18	9.4	4.2	6.2	13.4	12.0	12.7	21.1	11.9	15.9	26.6	18.4	21.9
19	13.8	4.9	8.6	12.2	9.9	10.9	16.4	11.6	14.4	22.2	14.4	19.0
20	11.7	3.7	7.5	9.9	7.3	8.3	17.8	9.8	13.5	23.3	11.3	16.7
21	13.9	5.3	8.8	11.6	6.3	8.9	22.3	10.4	15.8	27.0	14.9	20.0
22	8.2	2.6	5.1	15.2	10.5	12.5	19.9	13.2	16.3	27.2	15.8	21.0
23	2.6	-0.2	0.3	17.3	11.8	14.2	15.4	12.5	13.2	26.6	17.5	21.3
24	0.2	-0.2	-0.1	18.4	12.0	14.7	15.1	11.4	13.2	26.4	19.3	22.8
25	0.2	-0.2	-0.1	17.7	10.8	13.7	15.8	11.7	13.6	25.7	19.6	22.5
26	0.2	-0.2	0.0	18.3	10.6	14.0	21.1	11.1	15.8	24.6	19.1	21.9
27	0.0	-0.1	-0.1	13.7	7.7	11.0	17.3	14.0	15.8	27.5	18.3	22.5
28	0.2	-0.1	0.0	11.8	5.3	8.1	24.8	14.3	19.1	29.5	19.0	23.9
29	---	---	---	12.2	3.7	7.6	26.7	16.9	21.3	30.9	20.8	25.5
30	---	---	---	14.6	4.1	---	26.5	17.2	21.3	32.5	20.9	26.4
31	---	---	---	18.4	8.0	13.0	---	---	---	25.3	18.4	20.9
MONTH	13.9	-0.2	3.2	22.1	-0.1	9.2	26.7	3.2	14.9	32.5	11.3	20.4

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	28.2	16.8	21.9	34.5	20.7	27.0	33.3	20.2	25.6	28.4	17.5	21.4
2	27.6	19.2	22.9	34.2	21.5	27.2	35.9	21.1	28.0	32.5	16.6	23.4
3	22.7	18.8	20.7	33.6	21.4	27.1	34.5	22.9	28.1	33.1	17.5	24.4
4	21.6	16.8	19.1	33.2	20.8	26.4	32.6	22.6	26.9	31.9	18.1	24.0
5	25.2	17.3	20.5	33.5	20.9	26.5	37.8	23.6	29.1	31.6	17.8	23.7
6	27.3	16.0	21.1	32.9	20.9	26.3	36.3	22.4	28.5	31.2	17.2	23.2
7	22.1	17.7	19.5	32.4	20.9	25.8	33.7	22.5	27.3	28.5	17.3	21.8
8	28.2	13.8	20.6	33.6	21.4	26.6	31.3	22.6	26.2	24.1	17.3	20.1
9	28.5	17.1	22.9	34.5	21.4	27.3	37.3	22.1	28.6	29.4	18.0	22.2
10	27.9	21.1	24.3	36.2	20.2	27.4	36.8	22.6	28.8	28.9	19.1	22.6
11	33.1	19.8	25.6	35.2	21.4	27.3	33.5	22.3	27.0	22.5	17.0	19.5
12	31.3	20.2	25.0	32.9	20.3	25.7	33.9	19.8	26.1	28.9	13.9	20.0
13	24.7	18.7	22.0	34.7	20.2	26.8	34.4	19.6	25.8	24.7	15.0	18.7
14	28.7	19.6	23.8	---	22.0	---	30.3	19.6	24.7	28.7	13.8	19.9
15	33.1	19.0	25.6	---	---	---	34.7	20.1	26.4	26.8	13.2	19.2
16	34.3	20.6	26.7	32.6	---	---	33.7	20.7	26.2	27.9	15.6	20.9
17	34.0	21.4	27.1	33.8	21.0	26.7	33.1	20.8	26.0	27.8	17.9	21.9
18	33.6	21.0	26.5	37.0	21.3	28.3	33.0	21.2	25.6	22.5	13.4	17.3
19	26.7	21.8	23.8	36.9	23.3	29.0	33.2	21.4	26.0	26.9	9.3	---
20	28.0	21.1	24.0	34.7	24.2	28.9	33.2	22.4	26.7	23.8	10.9	16.2
21	29.9	20.5	24.5	36.4	22.8	28.4	36.7	21.4	28.2	25.1	15.5	18.5
22	33.0	21.7	26.2	33.1	20.1	25.5	35.6	22.6	28.0	27.4	15.0	19.9
23	33.3	22.5	27.0	34.4	18.7	25.4	34.1	22.4	27.8	28.1	14.3	20.0
24	32.6	22.7	26.8	31.6	18.2	24.1	35.5	21.7	27.6	25.1	15.1	19.2
25	28.5	19.7	24.5	33.9	19.6	26.0	32.9	21.7	26.7	24.6	11.1	17.0
26	31.7	17.1	23.6	35.1	22.1	27.8	33.4	21.4	26.4	27.6	14.2	19.3
27	31.3	17.9	24.3	36.0	21.5	27.9	33.7	21.6	26.6	23.3	13.0	17.1
28	33.9	18.3	25.1	35.3	22.6	27.5	34.7	21.8	26.7	23.9	12.0	16.7
29	30.7	20.4	24.6	36.5	21.9	28.1	29.8	20.8	25.0	14.4	11.3	12.7
30	34.2	19.5	26.1	36.7	22.6	28.8	20.8	18.2	19.3	12.6	10.4	11.6
31	---	---	---	32.8	21.8	26.2	20.1	17.9	18.6	---	---	---
MONTH	34.3	13.8	23.9	37.0	18.2	27.0	37.8	17.9	26.4	33.1	9.3	19.7

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.2	6.2	8.1	---	---	---	15.4	12.2	13.9	15.6	12.3	13.9
2	10.2	6.8	8.6	---	---	---	15.2	12.2	13.3	15.6	12.9	14.1
3	11.0	7.4	9.7	---	---	---	16.8	12.3	14.6	15.4	11.8	13.8
4	8.5	7.2	---	---	---	---	16.4	14.1	15.1	14.4	11.4	12.6
5	---	---	---	---	---	---	16.6	14.4	15.3	15.6	11.4	13.1
6	---	---	---	---	---	---	16.2	13.5	14.8	15.0	11.9	---
7	---	---	---	---	---	---	16.2	12.4	14.3	14.5	10.7	12.7
8	10.3	9.0	9.6	---	---	---	16.5	12.3	13.9	14.4	10.0	11.9
9	10.2	8.5	9.4	---	---	---	17.0	12.6	14.4	13.8	10.1	12.1
10	10.7	8.5	9.5	---	---	---	17.1	12.9	14.5	14.8	11.8	13.2
11	10.9	8.7	9.7	---	---	---	16.0	12.5	13.8	14.8	12.1	13.3
12	11.8	9.0	10.3	---	---	---	15.3	12.1	13.1	14.4	11.6	12.8
13	12.9	9.9	11.5	---	---	---	17.0	12.5	14.4	14.6	11.1	12.7
14	12.8	9.4	11.3	13.1	10.0	11.1	17.1	12.4	14.2	14.0	11.1	12.6
15	12.9	9.5	11.3	13.8	10.5	11.8	16.7	11.6	13.8	14.1	12.2	13.1
16	14.6	9.5	11.7	13.7	10.7	12.0	17.1	11.6	13.5	15.1	12.9	13.9
17	14.7	9.5	12.0	13.5	10.2	11.7	16.6	11.3	13.4	14.9	12.3	13.7
18	12.9	7.8	10.4	12.8	10.2	11.4	16.9	11.3	13.5	14.7	12.5	13.5
19	12.8	7.8	10.3	13.9	10.9	12.1	---	11.8	---	13.6	11.4	12.7
20	12.0	8.9	10.5	13.3	10.6	11.8	14.9	11.9	13.3	13.6	11.0	12.4
21	11.6	8.0	9.9	13.2	10.7	11.8	14.8	12.2	13.4	14.5	11.2	13.1
22	11.5	8.0	9.5	13.6	---	---	15.5	12.8	13.8	15.6	12.8	14.2
23	12.1	9.5	10.8	13.7	10.9	12.0	15.4	12.8	13.8	18.0	14.0	15.9
24	12.5	10.6	11.4	13.8	11.1	12.7	15.5	13.3	14.1	18.5	15.4	17.0
25	12.2	9.5	10.9	15.2	12.9	14.0	15.0	12.7	13.8	17.9	14.0	15.8
26	11.9	8.8	10.2	15.2	12.8	14.3	15.1	13.2	14.0	18.0	13.4	15.5
27	11.4	8.4	9.6	15.3	13.0	14.2	14.5	12.9	13.6	17.5	12.6	14.9
28	10.7	7.8	8.9	15.1	12.1	13.7	15.1	12.0	13.6	15.5	12.2	13.6
29	---	---	---	15.1	11.9	13.2	14.6	11.3	13.0	14.9	12.6	13.5
30	---	---	---	15.6	12.0	13.7	14.2	11.3	12.7	14.6	11.4	13.2
31	---	---	---	---	---	---	15.6	12.1	13.6	14.3	11.0	12.5
MONTH	14.7	6.2	10.2	15.6	10.0	12.6	17.1	11.3	13.9	18.5	10.0	13.6

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	15.3	10.3	12.4	14.4	11.8	13.4	10.4	8.0	9.2	12.1	7.3	9.3
2	15.4	10.2	12.0	14.4	11.7	12.9	10.3	7.9	8.9	13.0	7.8	10.0
3	14.9	10.5	12.7	14.1	10.6	12.5	10.3	7.8	8.8	12.0	7.6	9.5
4	15.7	13.1	14.1	14.0	10.6	---	10.5	7.8	9.3	12.0	7.4	9.2
5	15.6	13.2	14.1	15.7	---	---	11.8	8.8	10.4	13.3	6.9	9.7
6	15.6	13.1	14.3	15.1	12.2	13.4	11.8	10.2	10.8	12.8	6.8	9.5
7	15.8	12.9	14.3	14.0	11.2	12.8	12.5	10.5	11.4	13.5	7.8	10.1
8	15.5	12.9	14.0	13.5	11.2	12.3	12.7	10.3	11.5	11.7	7.3	9.0
9	14.6	13.1	13.9	14.4	11.9	13.3	12.5	9.3	11.1	12.9	7.1	9.5
10	14.3	12.1	13.4	14.4	11.0	13.0	11.7	8.6	10.3	11.6	6.8	9.0
11	14.1	11.3	12.8	14.1	10.5	12.3	11.6	8.0	9.8	12.3	8.0	10
12	14.3	10.8	12.6	13.8	9.6	11.7	11.4	7.9	9.5	11.5	7.8	9.4
13	14.5	10.5	12.2	14.5	9.3	11.5	10.7	7.8	9.2	11.4	6.9	9.0
14	13.8	10.2	11.4	13.3	8.4	10.9	10.4	7.4	8.7	11.7	6.4	8.5
15	14.4	10.6	12.8	12.8	7.9	10.2	9.8	7.5	8.5	10.2	6.2	8.0
16	14.8	12.1	13.6	13.2	7.3	9.8	8.8	6.8	7.9	9.0	7.2	8.3
17	14.5	11.1	13.1	12.6	7.4	9.4	10.6	7.7	8.9	10.8	6.5	8.4
18	14.3	10.5	12.2	10.9	7.8	9.0	10.0	7.7	8.8	11.5	6.2	8.2
19	14.8	10.2	12.0	---	---	---	9.6	7.7	8.7	9.9	6.1	7.9
20	14.7	10.2	12.1	---	---	---	10.9	8.8	9.8	13.0	7.9	10.4
21	15.0	9.8	11.9	9.2	8.4	8.9	11.2	7.9	9.6	12.7	7.1	9.7
22	14.9	9.8	12.3	8.4	7.9	8.2	10.8	7.8	9.1	12.5	6.9	9.4
23	15.3	11.9	13.8	8.3	7.8	8.0	10.1	8.1	9.0	10.4	5.9	8.1
24	16.8	12.8	14.7	8.5	7.8	8.1	10.8	8.8	9.5	7.2	4.6	5.9
25	16.0	13.7	15.1	9.3	8.2	8.8	11.0	8.7	9.7	6.6	4.5	5.5
26	15.7	12.9	14.2	9.5	8.3	8.8	11.1	8.0	9.6	7.5	5.5	6.6
27	15.3	12.7	13.7	9.9	8.5	9.3	10.7	7.9	9.1	8.4	6.4	7.3
28	14.8	13.0	13.7	11.3	9.9	10.5	11.5	7.3	9.3	9.0	6.4	7.6
29	---	---	---	11.9	10.3	11.0	11.0	7.0	8.7	9.3	6.4	7.7
30	---	---	---	11.8	9.4	10.7	11.6	6.9	8.9	9.7	6.4	7.9
31	---	---	---	10.8	8.4	9.7	---	---	---	10.9	6.4	8.7
MONTH	16.8	9.8	13.2	15.7	7.3	10.8	12.7	6.8	9.5	13.5	4.5	8.6

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11.5	7.4	9.3	10.4	5.4	7.6	16.8	2.2	8.2	13.5	6.2	9.4
2	10.8	7.0	8.6	10.1	5.2	7.7	15.4	2.1	7.5	13.5	5.0	8.9
3	10.6	7.0	8.6	10.0	5.2	7.4	15.9	2.1	7.9	13.8	4.2	8.4
4	11.3	7.6	9.2	9.7	4.9	7.2	14.3	2.4	7.6	13.8	4.4	---
5	11.4	7.6	8.9	9.3	4.6	6.9	14.8	2.4	7.4	14.3	4.6	8.5
6	11.8	7.2	9.5	9.1	4.6	6.8	13.6	3.6	7.6	12.1	4.2	7.7
7	11.6	7.2	9.2	8.4	4.7	6.5	14.4	3.7	8.2	10.7	4.6	7.4
8	12.6	7.1	9.9	9.3	4.8	7.0	14.9	3.6	8.2	11.7	5.0	7.9
9	11.3	6.7	8.9	9.4	5.2	7.2	15.7	3.1	8.6	11.1	6.4	8.5
10	11.3	6.6	8.6	9.9	4.4	7.3	16.1	3.0	8.3	10.8	6.5	8.2
11	---	6.3	---	9.7	4.4	7.0	13.0	3.0	7.7	10.9	5.8	8.1
12	11.1	6.2	8.5	10.0	4.8	7.3	14.5	2.6	8.4	12.4	5.8	8.8
13	10.8	6.7	8.8	9.5	4.5	6.7	13.8	2.8	7.6	11.4	6.0	8.5
14	11.1	6.6	8.6	10.5	4.8	---	14.0	3.2	8.0	13.4	6.4	9.3
15	10.8	5.7	8.3	---	---	---	13.4	2.9	7.2	12.0	6.1	8.8
16	10.4	5.7	7.9	10.2	---	---	11.4	3.1	6.7	12.0	6.1	8.3
17	10.5	5.1	---	10.7	4.3	7.3	12.8	3.1	7.3	10.2	6.2	8.0
18	10.8	5.6	7.8	11.0	3.9	7.2	11.7	2.9	6.9	11.3	6.8	9.0
19	10.2	5.6	7.1	10.6	3.9	7.0	12.1	2.7	6.4	11.3	---	---
20	9.3	5.6	7.2	11.6	3.8	7.2	13.0	2.9	---	11.6	7.2	9.2
21	10.1	6.2	7.8	10.9	3.8	7.1	12.0	2.9	6.8	12.4	6.4	8.8
22	9.5	6.2	7.7	11.8	4.5	7.7	11.0	2.4	6.2	12.0	6.2	8.6
23	9.7	6.2	7.8	12.7	4.5	8.3	10.4	1.1	5.2	11.1	6.1	8.4
24	10.0	6.5	7.9	11.3	4.5	8.0	10.6	1.4	5.0	11.8	6.3	9.1
25	11.3	6.4	8.5	10.6	3.4	7.7	10.6	1.4	5.4	12.6	7.6	10.0
26	10.8	5.8	8.5	12.0	3.8	7.4	9.1	1.4	4.6	11.9	6.1	9.0
27	10.5	5.8	8.0	14.7	3.1	8.2	10.8	1.8	5.4	10.7	6.3	8.4
28	10.8	5.9	8.1	14.1	3.1	7.7	13.7	2.2	6.3	11.6	6.5	9.3
29	10.8	5.9	8.1	14.5	3.6	8.1	16.0	4.5	8.7	11.6	6.5	9.3
30	10.9	5.5	8.1	14.1	2.8	7.8	11.6	6.7	8.6	12.2	9.1	10.2
31	---	---	---	12.4	2.7	6.6	12.0	7.3	8.8	---	---	---
MONTH	12.6	5.1	8.4	14.7	2.7	7.4	16.8	1.1	7.2	14.3	4.2	8.7

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	23	11	16	10	5.3	7.1	15	6.7	9.6
2	---	---	---	23	15	18	13	5.3	7.2	10	7.0	8.3
3	290	67	110	23	15	18	9.9	5.2	6.8	16	7.9	11
4	---	85	---	18	11	13	37	6.2	14	14	6.1	8.2
5	---	---	---	16	11	13	16	8.0	10	16	6.2	8.7
6	---	---	---	21	9.0	11	14	6.9	9.8	15	7.8	10
7	---	---	---	15	8.4	12	12	6.8	9.0	15	7.9	10
8	---	160	---	18	10	13	8.0	6.1	6.8	9.6	6.7	8.1
9	160	76	110	20	12	16	9.9	6.2	7.4	19	7.4	9.9
10	76	50	64	17	12	15	11	6.2	7.9	24	7.6	10
11	50	37	44	18	11	13	18	6.5	9.8	33	9.7	16
12	46	27	36	16	9.3	12	17	7.5	9.9	20	9.5	14
13	30	15	24	16	9.8	11	15	8.4	11	47	8.4	19
14	17	7.2	10	16	9.1	11	16	8.2	9.6	47	18	29
15	12	5.3	7.5	24	8.7	12	10	7.3	8.6	36	10	18
16	11	5.1	6.9	14	8.0	11	12	6.0	7.7	28	7.7	14
17	16	8.5	12	16	9.2	12	10	6.4	7.1	56	7.7	22
18	18	10	14	18	8.9	12	9.7	5.8	7.1	54	10	22
19	15	9.9	13	16	8.5	11	12	6.4	8.0	48	12	24
20	16	9.1	11	16	9.3	12	9.7	6.3	8.2	44	12	19
21	15	7.6	12	15	8.9	11	9.5	6.1	7.2	97	12	27
22	14	9.5	11	14	9.3	12	11	5.9	7.6	31	7.0	13
23	14	8.4	10	14	8.0	10	10	5.5	7.1	40	6.6	11
24	15	9.8	12	15	7.0	9.9	18	5.1	8.7	9.8	6.2	7.5
25	16	11	12	11	6.5	8.9	22	5.8	10	8.0	5.8	6.7
26	16	9.8	12	15	8.4	11	14	6.1	9.0	9.1	5.4	6.9
27	31	9.4	17	14	7.9	9.9	16	4.7	9.7	8.1	4.9	6.3
28	21	16	19	14	7.3	9.3	13	7.8	9.6	23	6.2	12
29	21	13	16	11	6.2	7.7	9.5	6.3	7.4	23	12	15
30	28	13	16	12	5.3	7.3	13	8.0	11	16	12	14
31	16	10	13	---	---	---	16	6.7	8.4	23	12	16
MONTH	290	5.1	26	24	5.3	12	37	4.7	8.7	97	4.9	14



07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18	12	14	42	29	35	43	36	40	25	19	21
2	39	12	17	44	32	38	44	36	41	31	16	19
3	---	---	---	41	32	37	51	36	41	47	15	24
4	---	---	---	52	34	---	51	36	42	34	18	23
5	22	11	15	---	---	---	39	22	28	34	18	22
6	39	13	18	100	20	39	28	14	20	35	13	20
7	21	8.6	12	50	29	38	21	14	17	17	11	14
8	42	8.6	19	42	27	33	24	12	16	24	12	15
9	36	22	28	36	22	30	36	12	21	21	13	16
10	36	20	25	38	24	30	37	23	29	19	13	15
11	42	18	26	33	22	26	36	26	30	24	9.5	13
12	26	19	22	32	21	24	38	27	30	17	11	13
13	24	18	21	41	22	26	38	28	32	81	12	26
14	27	20	23	32	24	26	43	28	33	22	14	17
15	29	20	26	36	28	31	210	32	50	---	---	---
16	31	15	21	72	29	38	210	61	100	---	---	---
17	45	22	28	110	34	46	64	35	47	45	29	36
18	27	20	23	85	51	61	36	27	32	---	---	---
19	27	19	23	---	85	---	43	22	31	92	26	46
20	32	18	22	---	---	---	32	22	25	36	21	28
21	32	19	23	---	120	---	30	22	27	43	28	32
22	32	21	26	160	130	140	33	25	28	---	---	---
23	35	12	24	130	80	100	42	22	27	68	---	---
24	21	11	16	80	59	70	34	23	27	89	60	75
25	26	13	18	60	51	56	90	25	31	88	56	67
26	27	21	24	57	48	52	30	25	27	60	48	53
27	33	18	25	56	36	49	65	21	28	58	50	54
28	41	25	31	36	25	31	43	21	26	59	44	51
29	---	---	---	26	22	24	29	22	25	52	40	46
30	---	---	---	30	17	22	30	21	23	50	36	43
31	---	---	---	40	26	33	---	---	---	42	25	33
MONTH	45	8.6	22	160	17	44	210	12	32	92	9.5	32

## ARKANSAS RIVER BASIN

07142575 RATTLESNAKE CREEK NEAR ZENITH, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	75	23	29	17	8.9	13	71	16	42	56	32	43
2	75	34	41	16	9.3	11	120	25	43	34	16	24
3	45	24	34	20	9.3	13	36	20	27	23	12	17
4	34	21	26	21	8.9	13	28	17	23	22	11	17
5	38	19	25	34	11	18	31	18	25	27	15	20
6	31	17	24	25	9.5	18	71	20	27	31	14	22
7	35	17	24	62	11	19	34	20	25	31	12	19
8	32	13	20	46	9.4	14	35	20	26	28	11	20
9	30	16	22	21	9.4	13	36	19	27	28	12	18
10	33	15	20	13	8.3	11	33	19	25	32	11	20
11	21	14	18	15	8.0	10	31	16	23	550	32	120
12	34	16	22	18	6.2	9.7	32	17	22	35	16	26
13	22	14	17	24	5.8	10	30	15	19	---	---	---
14	27	14	20	---	---	---	24	13	19	---	---	---
15	50	15	25	---	---	---	23	14	19	---	---	---
16	45	19	27	---	---	---	36	12	21	22	14	18
17	44	15	22	11	5.5	7.6	22	12	18	28	15	20
18	170	13	31	26	5.5	8.4	22	13	17	52	14	22
19	240	13	71	34	5.6	12	47	14	21	26	11	15
20	110	44	77	13	6.5	9.8	32	17	23	24	11	17
21	44	24	33	27	7.7	13	33	15	21	24	13	18
22	29	22	25	53	8.0	18	36	16	23	39	18	26
23	25	18	22	22	8.0	12	53	17	25	64	24	34
24	24	15	18	13	6.7	9.2	34	15	25	64	21	39
25	23	11	15	46	7.1	15	54	20	31	47	16	31
26	36	7.5	14	48	12	19	94	33	55	---	---	---
27	19	6.8	13	27	6.8	14	---	---	---	---	---	---
28	19	7.4	12	19	8.7	12	---	20	---	---	---	---
29	28	8.3	13	14	8.1	11	68	21	32	21	10	14
30	130	9.6	24	44	7.7	12	100	41	60	18	10	13
31	---	---	---	28	8.6	14	100	40	62	---	---	---
MONTH	240	6.8	26	62	5.5	13	120	12	28	550	10	26

07142680 ARKANSAS RIVER NEAR NICKERSON, KS

LOCATION.--Lat 38°08'42", long 98°06'39", in SE ¼ SW ¼ SE ¼ sec.8, T.22 S., R.7 W., Reno County, Hydrologic Unit 11030010, on left bank at upstream side of State highway bridge, 1.5 mi west of Nickerson, and at mile 825.8.

DRAINAGE AREA.--36,015 mi<sup>2</sup>, of which 6,571 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--July 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,581.63 ft above NGVD of 1929.

REMARKS.--Records fair. Flow slightly regulated since 1948 by John Martin Reservoir (station 07130000). Extensive diversions upstream from station for irrigation. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 22	0800	*742	*11.65				
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	93	76	76	67	72	191	165	159	78	49	96
2	79	93	76	76	67	74	183	160	170	75	48	87
3	175	93	75	75	67	74	177	157	167	72	46	71
4	242	92	75	75	66	76	171	154	161	69	45	55
5	189	91	75	75	66	76	165	150	157	67	45	50
6	203	89	75	74	66	74	162	145	153	65	44	46
7	224	88	75	74	64	85	158	139	149	64	43	44
8	222	89	74	75	64	84	153	135	143	62	42	43
9	176	89	73	75	67	82	150	132	138	61	42	44
10	150	88	74	72	67	82	149	137	134	61	41	43
11	135	86	75	71	67	82	147	127	129	60	40	52
12	124	85	80	71	67	83	145	123	126	59	40	61
13	115	84	80	71	69	83	142	140	121	59	39	57
14	109	87	79	71	73	88	140	126	117	57	39	52
15	104	85	77	70	70	86	141	126	115	56	39	50
16	101	84	78	70	73	85	160	159	112	55	38	49
17	97	83	79	67	71	97	195	162	109	53	38	47
18	96	82	79	68	71	131	216	156	105	52	37	47
19	94	81	80	69	71	209	230	152	107	52	35	45
20	92	81	79	70	70	320	213	143	105	51	35	44
21	90	80	79	69	70	504	193	137	101	50	35	45
22	89	79	78	67	70	711	181	132	98	50	35	50
23	95	79	78	63	70	591	182	139	96	49	34	46
24	95	78	78	63	64	468	189	191	93	49	34	45
25	92	76	76	67	64	378	190	227	91	48	33	43
26	90	76	77	66	66	314	187	222	88	47	33	43
27	96	76	77	66	69	283	183	218	86	46	33	42
28	97	77	77	67	70	261	179	218	84	45	33	41
29	100	77	78	68	---	235	174	199	83	45	39	42
30	97	76	77	67	---	213	169	182	81	45	77	45
31	95	---	77	67	---	200	---	168	---	45	84	---
MEAN	123	83.9	77.0	70.2	68.1	200	174	159	119	56.4	41.8	50.8
MAX	242	93	80	76	73	711	230	227	170	78	84	96
MIN	47	76	73	63	64	72	140	123	81	45	33	41
AC-FT	7,560	4,990	4,730	4,310	3,780	12,300	10,340	9,760	7,100	3,470	2,570	3,020

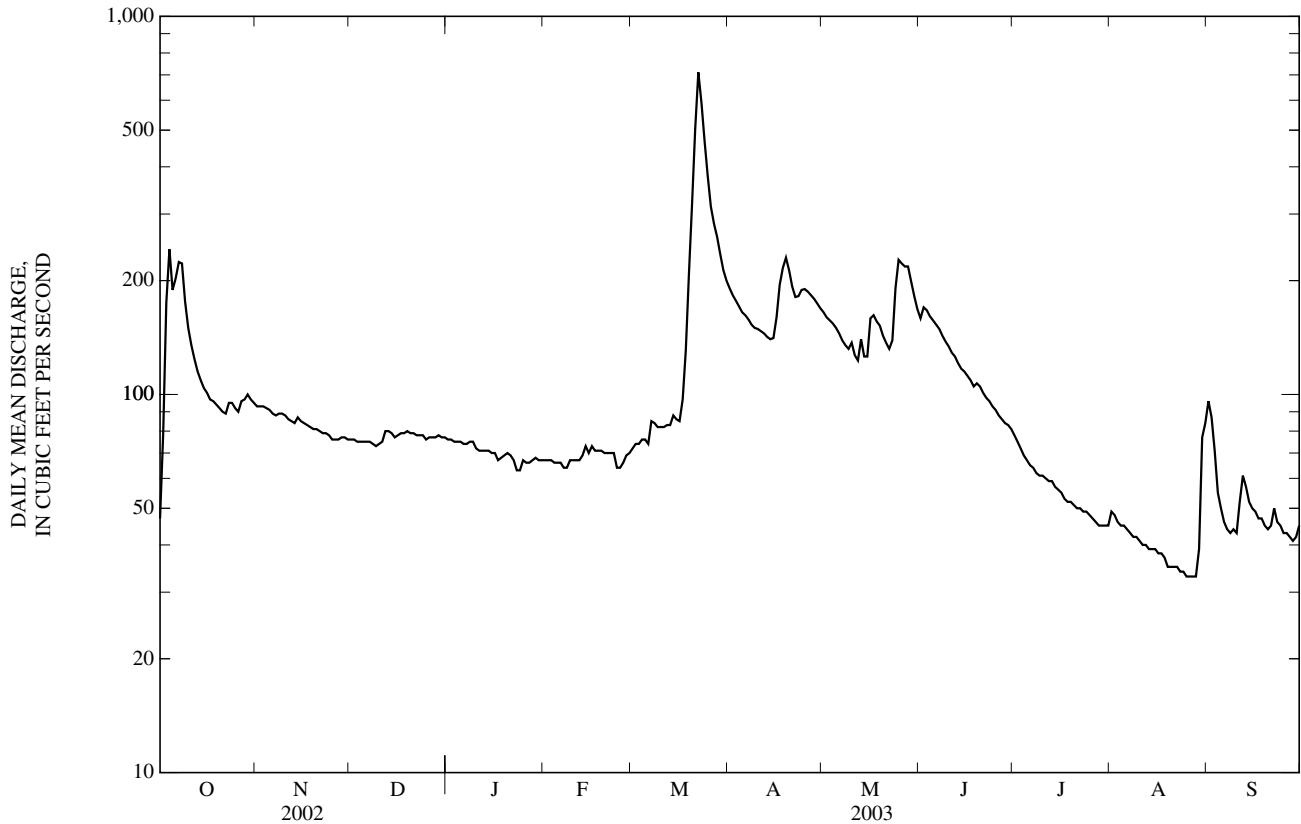
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	189	221	188	223	321	457	547	495	674	412	294	183
MAX	299	412	378	604	892	977	1,414	957	1,935	1,455	895	372
(WY)	(1998)	(1998)	(1998)	(1998)	(1998)	(1998)	(1998)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	97.7	83.9	77.0	70.2	68.1	73.1	75.2	69.5	94.9	56.4	41.8	50.8
(WY)	(2001)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)	(2003)	(2003)

ARKANSAS RIVER BASIN

07142680 ARKANSAS RIVER NEAR NICKERSON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL MEAN	84.6		102		350	
HIGHEST ANNUAL MEAN					682	1999
LOWEST ANNUAL MEAN					91.2	2002
HIGHEST DAILY MEAN	990	Aug 13	711	Mar 22	3,760	Jun 12, 2001
LOWEST DAILY MEAN	44	Aug 8	33	Aug 25	33	Aug 25, 2003
ANNUAL SEVEN-DAY MINIMUM	46	Aug 2	34	Aug 22	34	Aug 22, 2003
MAXIMUM PEAK FLOW			742	Mar 22	3,870	Jun 12, 2001
MAXIMUM PEAK STAGE			11.65	Mar 22	15.50	Jun 12, 2001
INSTANTANEOUS LOW FLOW			32	Aug 26	32	Aug 26, 2003
ANNUAL RUNOFF (AC-FT)	61,220		73,940		253,500	
10 PERCENT EXCEEDS	100		182		767	
50 PERCENT EXCEEDS	76		78		213	
90 PERCENT EXCEEDS	56		45		70	



07143300 COW CREEK NEAR LYONS, KS

LOCATION.--Lat 38°18'30", long 98°11'30", in SW ¼ NW ¼ SE ¼ sec.15, T.20 S., R.8 W., Rice County, Hydrologic Unit 11030011, on left bank near downstream side of Missouri Pacific Railroad bridge, 500 ft downstream from Little Cow Creek, 3.0 mi south of Lyons, and at mile 33.0.

DRAINAGE AREA.--728 mi<sup>2</sup>, includes 229 mi<sup>2</sup> in Cheyenne Bottoms, closed basin.

PERIOD OF RECORD.--October 1937 to September 1951. Occasional low-flow measurements, water years 1954-60. Annual maximum, water years 1960-61. October 1961 to current year. Prior to April 1938, monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 877: 1938(M), WSP 1117: Drainage area. WSP 1177: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 1,628.16 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 3, 1938, nonrecording gage at present site and datum. July 3, 1938, to Sept. 30, 1951, water-stage recorder at site 60 ft upstream at same datum. October 1959 to Mar. 12, 1962, crest-stage gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by releases from Cheyenne Bottoms, which in turn is affected by diversions from Arkansas River and Walnut Creek, and by periodic discharges from salt plant immediately upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 22.75 ft, July 11, 1929, from information by Missouri Pacific Railroad Co.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 6	0400	1,550	16.50	Mar 21	0000	*3,620	*18.32

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	32	8.9	7.5	7.6	8.2	31	25	19	8.5	3.2	4.5
2	9.5	22	8.8	7.7	7.7	8.6	29	23	24	8.6	3.5	5.5
3	247	18	8.4	8.1	7.7	9.7	27	22	24	7.9	3.8	4.2
4	1,020	15	8.5	7.6	7.6	9.3	26	21	25	7.6	3.1	3.7
5	1,490	13	8.4	7.4	7.5	10	25	20	21	6.9	3.4	2.9
6	1,380	11	8.3	7.1	7.5	8.9	24	19	21	6.5	3.8	2.4
7	373	11	8.5	7.2	e7.5	8.0	24	18	22	6.2	3.5	2.2
8	86	11	8.7	7.4	8.0	8.0	23	18	33	5.8	3.1	1.9
9	42	11	8.7	7.4	7.8	8.5	23	17	29	5.5	2.8	2.1
10	29	11	8.8	7.1	8.3	8.0	22	17	20	5.3	2.9	2.0
11	21	9.9	8.8	7.1	8.3	7.3	22	17	18	5.1	3.2	151
12	17	9.7	9.1	6.8	8.3	7.2	21	16	18	4.7	2.3	269
13	15	9.7	9.5	6.8	8.6	7.7	20	17	26	3.8	2.4	76
14	13	9.5	9.9	6.8	9.8	7.8	20	16	18	4.7	2.2	18
15	11	9.7	9.7	6.9	9.9	7.7	20	18	15	4.5	2.0	9.5
16	11	10	9.2	e6.8	11	7.7	29	24	14	4.4	1.8	5.7
17	9.9	10	8.9	e6.6	11	8.0	332	122	13	4.3	1.7	4.2
18	10	9.8	8.9	6.8	9.7	33	160	519	12	4.1	1.7	3.5
19	8.9	9.3	8.7	6.9	9.2	e1,140	61	281	12	4.2	1.5	2.9
20	8.4	8.8	8.3	6.9	9.2	e3,110	36	90	12	3.9	1.4	2.7
21	8.7	9.1	8.1	7.1	8.6	3,020	28	40	16	3.8	1.5	2.7
22	8.4	8.8	7.8	e6.6	8.3	1,530	25	27	16	4.1	1.8	6.8
23	8.3	8.9	7.9	7.3	8.1	451	25	25	12	3.5	1.5	19
24	9.4	8.8	7.9	7.3	e8.0	173	31	49	11	3.6	1.5	21
25	13	8.5	e8.0	7.2	8.2	109	99	444	9.7	5.1	1.7	10
26	13	e8.5	8.0	7.3	8.3	79	179	682	9.3	4.1	1.3	6.2
27	16	8.5	7.8	7.6	8.1	60	113	317	8.7	3.7	1.7	4.3
28	29	8.3	7.7	7.6	8.0	48	61	96	8.4	3.6	1.6	3.0
29	88	8.5	7.7	7.3	---	41	39	42	8.3	2.9	1.7	2.3
30	51	8.6	7.9	7.6	---	36	30	28	8.1	2.7	1.1	2.5
31	41	---	7.7	7.8	---	34	---	22	---	2.8	6.1	---
MEAN	164	11.3	8.50	7.21	8.49	323	53.5	99.7	16.8	4.92	2.73	21.7
MAX	1,490	32	9.9	8.1	11	3,110	332	682	33	8.6	11	269
MIN	2.8	8.3	7.7	6.6	7.5	7.2	20	16	8.1	2.7	1.3	1.9
AC-FT	10,100	670	523	444	472	19,840	3,180	6,130	999	302	168	1,290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

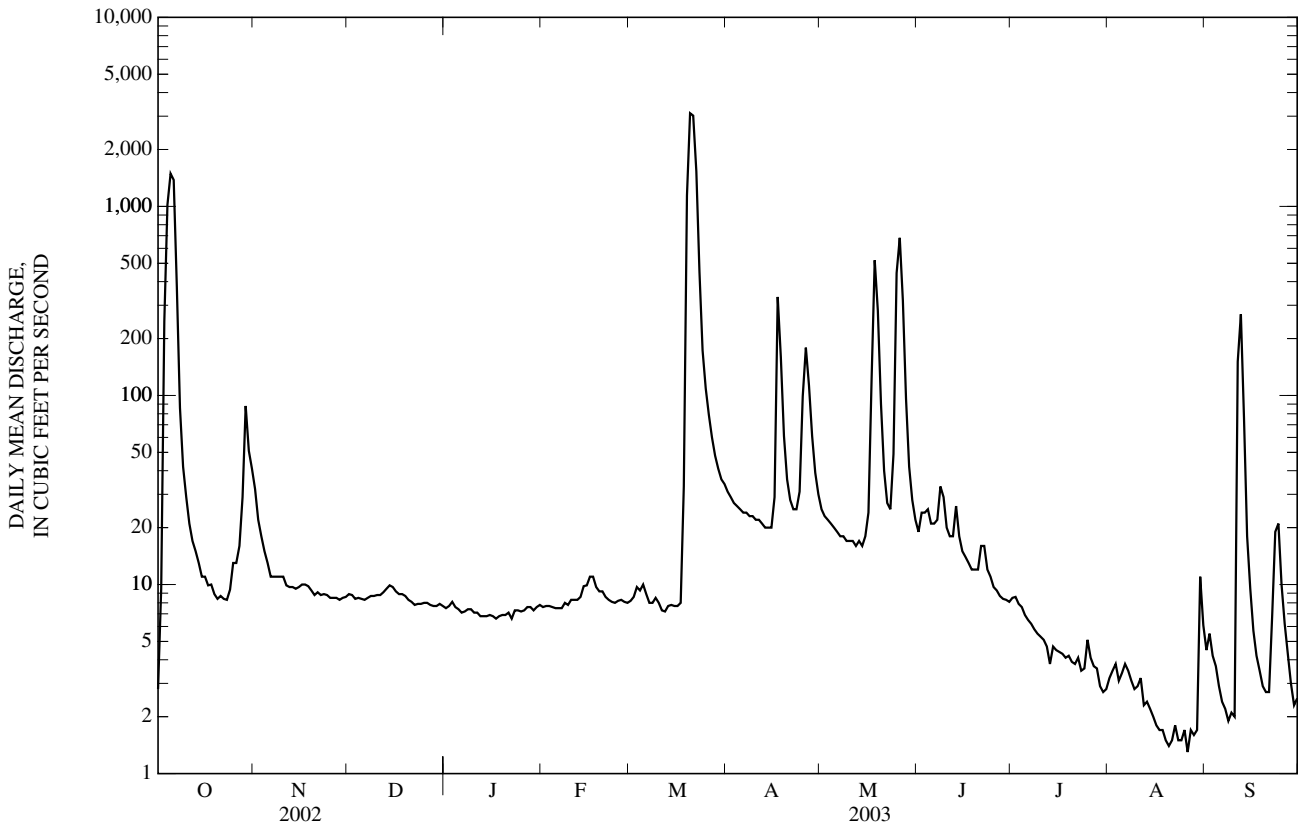
MEAN	71.6	28.5	19.8	20.8	48.0	84.8	83.7	128	148	129	87.5	91.9
MAX	1,025	244	281	343	480	954	766	1,038	1,491	1,503	794	1,895
(WY)	(1974)	(1974)	(1974)	(1974)	(1993)	(1973)	(1973)	(1995)	(1965)	(1993)	(1950)	(1973)
MIN	0.31	1.65	2.13	1.00	1.97	3.82	2.36	2.30	3.90	1.79	0.65	0.34
(WY)	(1992)	(1992)	(1940)	(1940)	(1940)	(1991)	(1992)	(1992)	(1940)	(1991)	(1991)	(1991)

ARKANSAS RIVER BASIN

07143300 COW CREEK NEAR LYONS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL MEAN	56.5		61.0		79.3	
HIGHEST ANNUAL MEAN					377	1973
LOWEST ANNUAL MEAN					10.1	1946
HIGHEST DAILY MEAN	2,810	Aug 14	3,110	Mar 20	16,800	Sep 27, 1973
LOWEST DAILY MEAN	2.1	Aug 8	1.3	Aug 26	0.00	Jul 13, 1938
ANNUAL SEVEN-DAY MINIMUM	2.2	Aug 5	1.5	Aug 20	0.14	Aug 16, 1946
MAXIMUM PEAK FLOW			3,620	Mar 21	24,100	Sep 26, 1973
MAXIMUM PEAK STAGE			18.32	Mar 21	20.38	Sep 26, 1973
INSTANTANEOUS LOW FLOW			1.2	Aug 19	0.00	at times
ANNUAL RUNOFF (AC-FT)	40,880		44,130		57,470	
10 PERCENT EXCEEDS	32		48		131	
50 PERCENT EXCEEDS	10		8.7		12	
90 PERCENT EXCEEDS	4.1		3.1		3.3	

e Estimated



07143330 ARKANSAS RIVER NEAR HUTCHINSON, KS

LOCATION.--Lat 37°56'47", long 97°46'29", in SW 1/4 NW 1/4 SW 1/4 sec.21, T.24 S., R.4 W., Reno County, Hydrologic Unit 11030010, on right bank at downstream side of county highway bridge, 3.0 mi north of Haven, 4.5 mi downstream from Cow Creek, 11 mi southeast of Hutchinson, and at mile 800.3.

DRAINAGE AREA.--38,910 mi<sup>2</sup>, of which 7,186 mi<sup>2</sup> is probably noncontributing.

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

REVISED RECORDS.--WDR KS-74-1: 1973(M).

GAGE.--Water-stage recorder. Datum of gage is 1,454.10 ft above NGVD of 1929. Prior to June 22, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow slightly regulated since 1948 by John Martin Reservoir (station 07130000). Extensive diversions upstream from station for irrigation. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0800	2,740	6.34	Mar 22	1700	*5,870	*8.16

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	309	167	144	133	134	395	332	285	142	86	212
2	128	283	168	147	131	138	362	307	447	135	90	164
3	832	269	167	149	132	139	352	288	359	128	85	149
4	1,990	253	178	153	128	141	358	281	310	123	80	133
5	2,500	244	174	151	128	136	355	269	296	121	78	116
6	1,660	233	171	149	130	132	348	265	291	112	77	106
7	1,370	232	170	149	122	139	330	256	264	104	74	97
8	1,500	231	169	147	122	151	317	247	252	102	76	93
9	1,060	222	167	146	130	147	301	238	243	99	73	93
10	469	218	167	149	132	136	298	249	243	132	69	89
11	368	216	167	148	128	139	305	241	240	111	67	107
12	323	210	174	144	128	139	298	226	256	104	72	109
13	290	211	195	144	130	141	291	264	242	102	67	199
14	274	219	180	143	192	141	284	333	222	101	69	256
15	260	223	172	144	159	142	278	263	211	102	68	183
16	255	216	168	141	133	140	303	428	204	98	66	133
17	248	211	168	134	134	145	300	659	197	96	65	116
18	247	210	165	143	130	288	356	524	189	94	62	105
19	240	206	162	149	132	1,230	602	482	184	94	61	96
20	233	202	158	147	132	2,590	773	583	217	95	61	93
21	231	198	149	144	131	2,760	598	425	189	94	60	93
22	235	193	155	136	130	5,130	413	325	174	109	60	124
23	274	191	154	e130	134	4,660	368	301	163	97	59	126
24	293	187	152	e135	128	2,840	703	425	161	93	58	103
25	318	183	146	e140	125	1,320	911	807	160	88	56	94
26	278	180	145	e135	130	755	576	777	156	82	57	102
27	367	173	150	e140	140	625	477	800	151	81	55	97
28	394	173	150	149	138	546	452	755	149	84	58	90
29	345	173	149	142	---	495	387	508	150	85	79	87
30	330	170	148	134	---	449	346	376	145	82	199	98
31	327	---	145	138	---	418	---	319	---	81	321	---
MEAN	572	215	163	143	134	854	415	405	225	102	80.9	122
MAX	2,500	309	195	153	192	5,130	911	807	447	142	321	256
MIN	90	170	145	130	122	132	278	226	145	81	55	87
AC-FT	35,170	12,770	10,020	8,810	7,420	52,530	24,670	24,900	13,390	6,290	4,970	7,270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

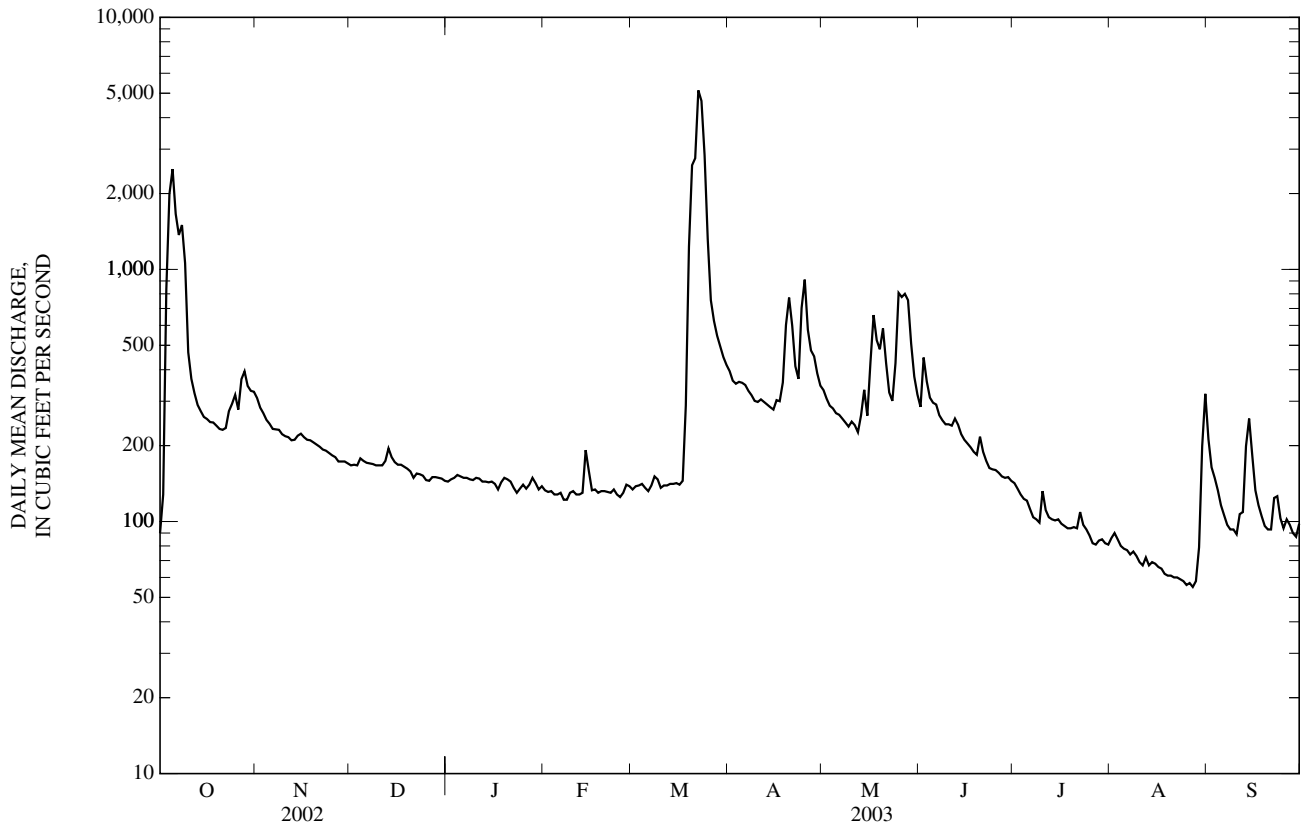
MEAN	536	359	283	271	385	664	703	659	872	761	492	492
MAX	7,342	1,586	1,841	1,520	1,868	4,086	5,865	2,727	5,299	6,279	1,749	3,345
(WY)	(1974)	(1974)	(1974)	(1974)	(1993)	(1973)	(1973)	(1995)	(1965)	(1993)	(1993)	(1973)
MIN	40.8	52.1	59.6	69.2	64.2	80.7	73.3	56.5	167	62.0	53.1	51.5
(WY)	(1965)	(1992)	(1992)	(1992)	(1992)	(1992)	(1989)	(1992)	(1988)	(1991)	(1991)	(1964)

ARKANSAS RIVER BASIN

07143330 ARKANSAS RIVER NEAR HUTCHINSON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL MEAN	253		288		540	
HIGHEST ANNUAL MEAN					1,667	1974
LOWEST ANNUAL MEAN					108	1991
HIGHEST DAILY MEAN	3,600	Aug 13	5,130	Mar 22	24,200	Sep 30, 1973
LOWEST DAILY MEAN	50	Aug 8	55	Aug 27	28	Oct 14, 1980
ANNUAL SEVEN-DAY MINIMUM	53	Aug 4	58	Aug 22	33	Oct 9, 1980
MAXIMUM PEAK FLOW			5,870	Mar 22	24,700	Sep 28, 1973
MAXIMUM PEAK STAGE			8.16	Mar 22	12.95	Sep 28, 1973
INSTANTANEOUS LOW FLOW			49	Aug 27	27	Oct 13, 1980
ANNUAL RUNOFF (AC-FT)	182,900		208,200		391,300	
10 PERCENT EXCEEDS	343		450		1,130	
50 PERCENT EXCEEDS	144		163		270	
90 PERCENT EXCEEDS	108		89		96	

e Estimated





07143375 ARKANSAS RIVER NEAR MAIZE, KS

LOCATION.--Lat 37°46'53", long 97°23'33", in NW ¼ NE ¼ NE ¼ sec.23, T.26 S., R.1 W., Sedgwick County, Hydrologic Unit 11030010, on right bank at downstream side of county highway bridge, 4.0 mi east of Maize, 3.5 mi south-southwest of Valley Center, 2.8 mi downstream from Little Arkansas River Floodway Diversion channel, and at mile 772.2.

DRAINAGE AREA.--39,110 mi<sup>2</sup>, of which 7,186 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--March 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1317.08 ft above NGVD of 1929 (Wichita-Valley Center Flood Control Project).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow slightly regulated since Oct. 1948 by John Martin Reservoir (station 07130000). Extensive diversions upstream from station for irrigation. Natural flow is significantly altered, since May 1957, by diversion from the Little Arkansas River into the stream upstream from station during high-flow events. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0900	5,740	9.96	Apr 26	0700	3,380	8.99
Mar 23	0400	*8,140	*10.77	Sep 12	0300	3,420	9.01

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	325	185	143	e170	120	493	440	373	193	75	217
2	104	312	e179	e139	e160	112	454	403	376	182	86	161
3	285	299	e178	e140	e140	e108	417	366	498	171	76	126
4	2,560	285	190	e143	129	e128	389	346	411	161	70	105
5	5,550	270	190	e140	132	e100	359	324	384	153	69	87
6	4,370	257	186	139	132	e110	349	320	494	145	66	72
7	2,070	243	186	143	e120	121	339	315	394	137	62	65
8	1,330	226	186	140	e130	133	312	314	348	134	62	60
9	1,350	216	175	140	133	135	312	302	330	132	60	56
10	780	203	e180	140	126	100	298	298	321	133	56	54
11	497	198	186	142	123	114	279	295	322	142	56	616
12	397	202	186	144	121	148	262	287	318	132	51	1,640
13	331	200	192	e140	126	142	255	300	328	126	49	187
14	297	207	191	145	147	147	266	327	318	117	52	181
15	277	204	179	e140	157	152	274	364	301	111	e48	197
16	264	206	176	e130	e160	150	282	477	292	108	e45	158
17	272	211	177	e120	143	e170	270	2,360	281	107	e41	130
18	263	213	167	e130	141	e400	278	1,230	271	99	e38	115
19	281	223	150	e130	147	e800	423	588	268	98	e35	105
20	253	235	151	e140	151	7,170	1,140	510	269	100	e32	99
21	247	237	151	e140	140	6,850	759	501	283	99	30	121
22	236	231	e151	e130	145	6,540	575	391	263	118	30	122
23	291	222	e149	e110	143	7,560	492	336	253	113	29	119
24	324	215	147	e115	e110	3,490	1,280	343	242	103	31	114
25	316	203	143	e120	e115	2,100	2,610	560	239	94	29	98
26	299	199	143	e130	e120	1,150	3,110	668	221	90	25	92
27	446	202	150	e150	e130	844	2,220	661	212	88	25	88
28	822	200	151	e160	140	706	640	683	209	85	24	86
29	425	e195	153	e200	---	637	547	618	222	82	31	86
30	336	e188	148	e190	---	575	486	490	209	78	86	104
31	320	---	143	e180	---	524	---	408	---	76	147	---
MEAN	828	228	168	142	137	1,340	672	510	308	120	52.1	182
MAX	5,550	325	192	200	170	7,560	3,110	2,360	498	193	147	1,640
MIN	89	188	143	110	110	100	255	287	209	76	24	54
AC-FT	50,940	13,540	10,350	8,710	7,600	82,390	40,010	31,390	18,350	7,350	3,210	10,830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

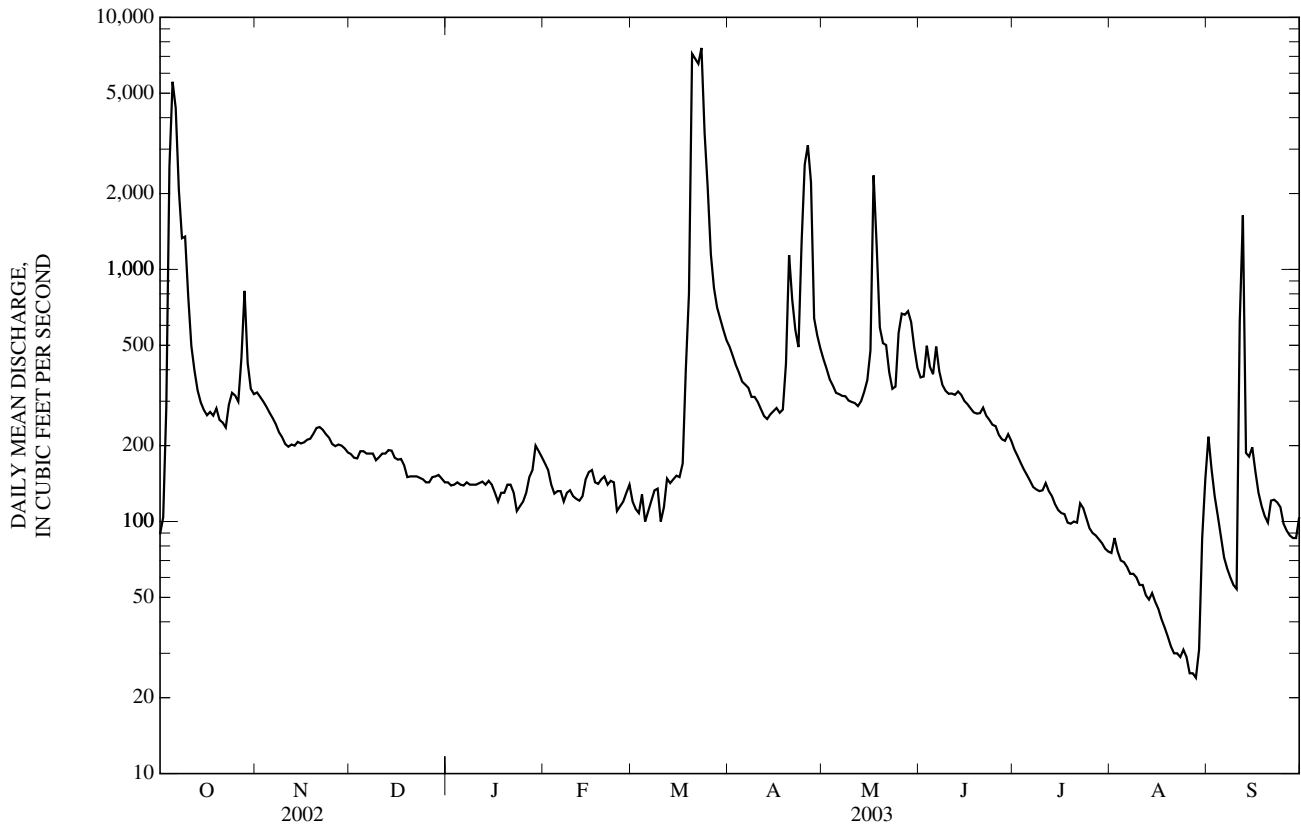
MEAN	348	622	281	250	537	763	617	1,185	1,275	1,282	641	423
MAX	828	4,999	756	775	2,831	2,998	2,076	6,416	4,603	12,920	1,995	1,393
(WY)	(2003)	(1999)	(1997)	(1998)	(1993)	(2000)	(1998)	(1993)	(1995)	(1993)	(1993)	(1996)
MIN	7.65	41.6	45.5	58.3	53.1	72.8	64.3	49.6	138	23.9	16.2	31.7
(WY)	(1992)	(1992)	(1992)	(1992)	(1992)	(1991)	(1989)	(1992)	(1991)	(1991)	(1991)	(1991)

ARKANSAS RIVER BASIN

07143375 ARKANSAS RIVER NEAR MAIZE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL MEAN	347		393		686	
HIGHEST ANNUAL MEAN					2,756	1993
LOWEST ANNUAL MEAN					83.6	1991
HIGHEST DAILY MEAN	6,370	Jun 13	7,560	Mar 23	42,500	Jul 15, 1993
LOWEST DAILY MEAN	31	Jan 31	24	Aug 28	3.5	Oct 17, 1991
ANNUAL SEVEN-DAY MINIMUM	41	Aug 5	28	Aug 22	4.0	Oct 14, 1991
MAXIMUM PEAK FLOW			8,140	Mar 23	45,900	Nov 1, 1998
MAXIMUM PEAK STAGE			10.77	Mar 23	16.93	Nov 1, 1998
INSTANTANEOUS LOW FLOW			22	Aug 28	3.4	Oct 16, 1991
ANNUAL RUNOFF (AC-FT)	251,200		284,700		496,900	
10 PERCENT EXCEEDS	449		575		1,200	
50 PERCENT EXCEEDS	153		182		276	
90 PERCENT EXCEEDS	94		84		66	

e Estimated



07143665 LITTLE ARKANSAS RIVER AT ALTA MILLS, KS

LOCATION.--Lat 38°06'44", long 97°35'30", in SW 1/4 NW 1/4 NW 1/4 sec.30, T.22 S., R.2 W., Harvey County, Hydrologic Unit 11030012, on right bank at downstream side of county highway bridge, 0.4 mi south of Alta Mills, 0.8 mi downstream from Sand Creek, and at mile 50.1.

DRAINAGE AREA.--736 mi<sup>2</sup>, of which 55 mi<sup>2</sup> is probably noncontributing.

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

REVISED RECORDS.--WDR KS-74-1: 1974(M), KS-80-1: 1980(M), KS-86-1: 1986(M).

GAGE.--Water-stage recorder. Datum of gage is 1,391.40 ft above NGVD of 1929.

REMARKS.--Records good. Natural flow of stream affected by ground-water withdrawals for irrigation and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0700	4,670	19.93	May 13	2200	1,090	9.43
Mar 21	1800	*4,730	*20.07	May 16	1900	1,940	12.73
Apr 26	1000	4,340	19.20	May 26	0200	1,080	9.38

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	91	12	12	14	13	54	89	51	15	3.7	387
2	12	67	12	12	15	13	49	74	191	14	5.5	395
3	1,490	49	12	12	15	14	46	65	547	14	5.3	144
4	4,260	37	12	13	14	14	43	60	392	13	4.7	54
5	4,520	32	12	12	14	13	40	54	145	12	3.7	29
6	2,710	28	12	13	13	16	39	49	168	11	3.2	19
7	419	24	13	13	12	15	37	46	84	11	4.6	13
8	176	22	12	13	14	16	34	43	62	11	5.9	10
9	88	20	12	13	14	15	33	40	51	11	5.5	8.2
10	55	17	13	12	13	15	32	74	44	10	4.7	7.1
11	39	16	13	11	13	15	31	56	39	9.9	3.9	8.2
12	30	16	13	13	13	14	29	56	37	9.2	3.4	325
13	25	15	14	12	13	14	28	472	36	9.2	2.9	692
14	22	14	15	12	17	14	27	599	37	9.0	3.2	211
15	20	14	16	11	17	14	26	248	34	8.1	3.9	68
16	18	14	18	13	17	14	26	1,270	33	7.4	3.8	34
17	17	13	16	13	20	14	25	1,720	29	6.6	3.1	21
18	16	13	15	12	19	17	25	1,100	27	5.8	2.8	14
19	14	13	15	12	17	1,190	30	356	25	6.3	2.3	10
20	14	13	14	13	17	3,870	197	195	24	6.3	1.9	8.9
21	14	13	14	12	16	4,640	390	147	34	6.8	1.7	8.1
22	13	12	13	12	15	4,210	197	98	41	9.4	1.4	11
23	14	13	12	14	15	2,020	131	78	30	9.0	1.3	13
24	19	13	12	13	14	473	1,190	290	25	7.0	1.1	36
25	55	12	11	12	14	269	3,090	813	22	7.1	1.7	32
26	115	12	12	12	13	175	4,030	840	20	6.9	1.5	20
27	192	12	12	12	13	112	1,240	235	19	6.7	1.6	13
28	499	12	12	12	13	86	309	111	17	5.9	1.7	9.4
29	310	12	12	13	---	77	168	80	17	5.1	3.4	7.1
30	202	12	12	13	---	72	112	66	16	4.8	9.5	6.7
31	141	---	12	14	---	60	---	57	---	4.6	120	---
MEAN	501	21.7	13.1	12.5	14.8	565	390	306	76.6	8.81	7.19	87.2
MAX	4,520	91	18	14	20	4,640	4,030	1,720	547	15	120	692
MIN	3.7	12	11	11	12	13	25	40	16	4.6	1.1	6.7
AC-FT	30,790	1,290	803	766	821	34,740	23,220	18,810	4,560	542	442	5,190

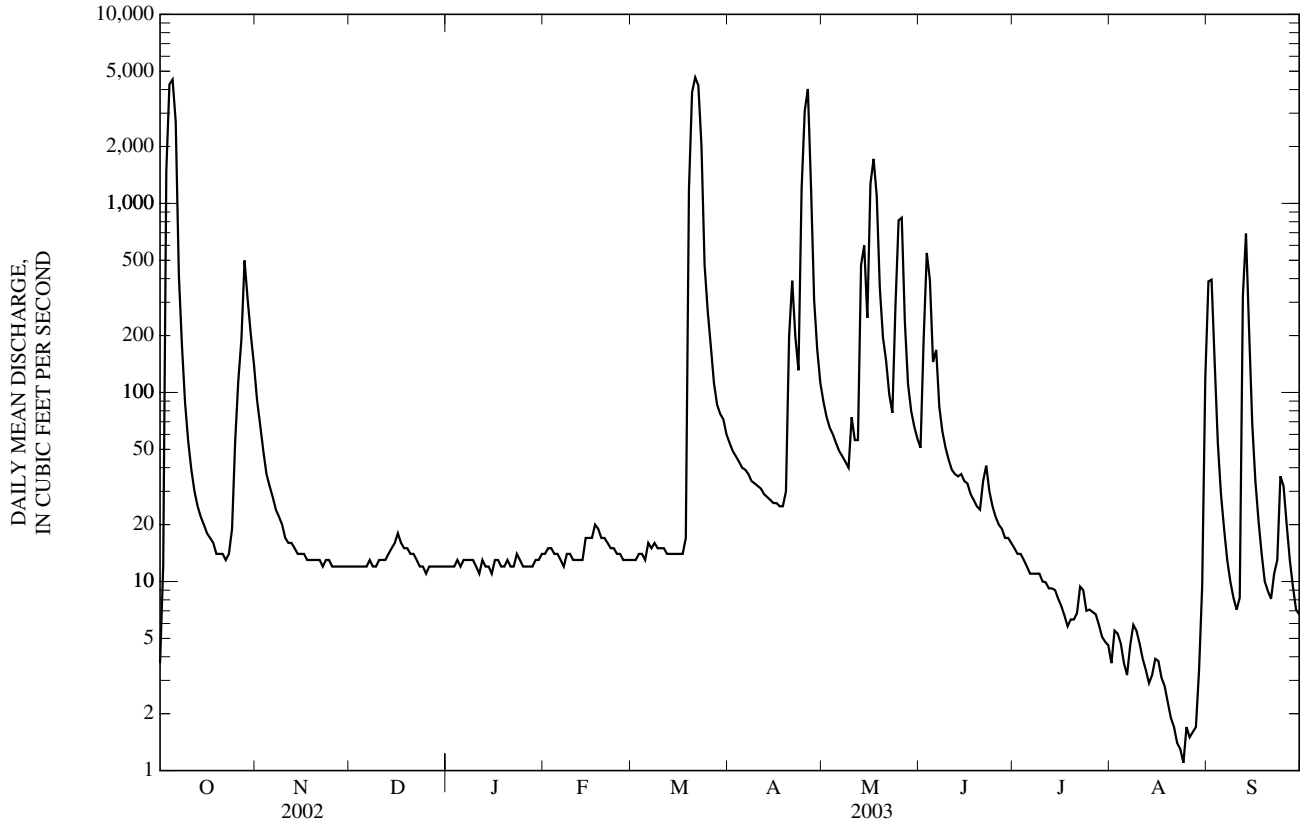
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

MEAN	219	179	55.5	39.3	148	381	257	394	394	294	187	114
MAX	2,314	1,983	505	340	1,240	2,489	990	2,496	1,816	3,900	1,032	868
(WY)	(1974)	(1999)	(1974)	(1974)	(1993)	(1987)	(1974)	(1995)	(1977)	(1993)	(1987)	(1977)
MIN	0.19	3.92	3.76	4.98	4.02	6.11	4.63	7.58	10.8	2.13	2.59	1.79
(WY)	(1992)	(1991)	(1991)	(1991)	(1992)	(1991)	(1992)	(1992)	(1994)	(1991)	(1984)	(1984)

ARKANSAS RIVER BASIN

07143665 LITTLE ARKANSAS RIVER AT ALTA MILLS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL MEAN	121		168		222	
HIGHEST ANNUAL MEAN					935	
LOWEST ANNUAL MEAN					16.2	
HIGHEST DAILY MEAN	4,520	Oct 5	4,640	Mar 21	15,300	Nov 2, 1998
LOWEST DAILY MEAN	2.0	Aug 8	1.1	Aug 24	0.00	Aug 15, 1991
ANNUAL SEVEN-DAY MINIMUM	2.5	Aug 3	1.5	Aug 21	0.02	Oct 7, 1991
MAXIMUM PEAK FLOW			4,730	Mar 21	30,100	Oct 12, 1973
MAXIMUM PEAK STAGE			20.07	Mar 21	27.42	Oct 12, 1973
INSTANTANEOUS LOW FLOW			0.90	Aug 24	0.00	Aug 15, 1991
ANNUAL RUNOFF (AC-FT)	87,580		122,000		161,000	
10 PERCENT EXCEEDS	137		240		316	
50 PERCENT EXCEEDS	12		15		21	
90 PERCENT EXCEEDS	5.1		6.3		4.9	

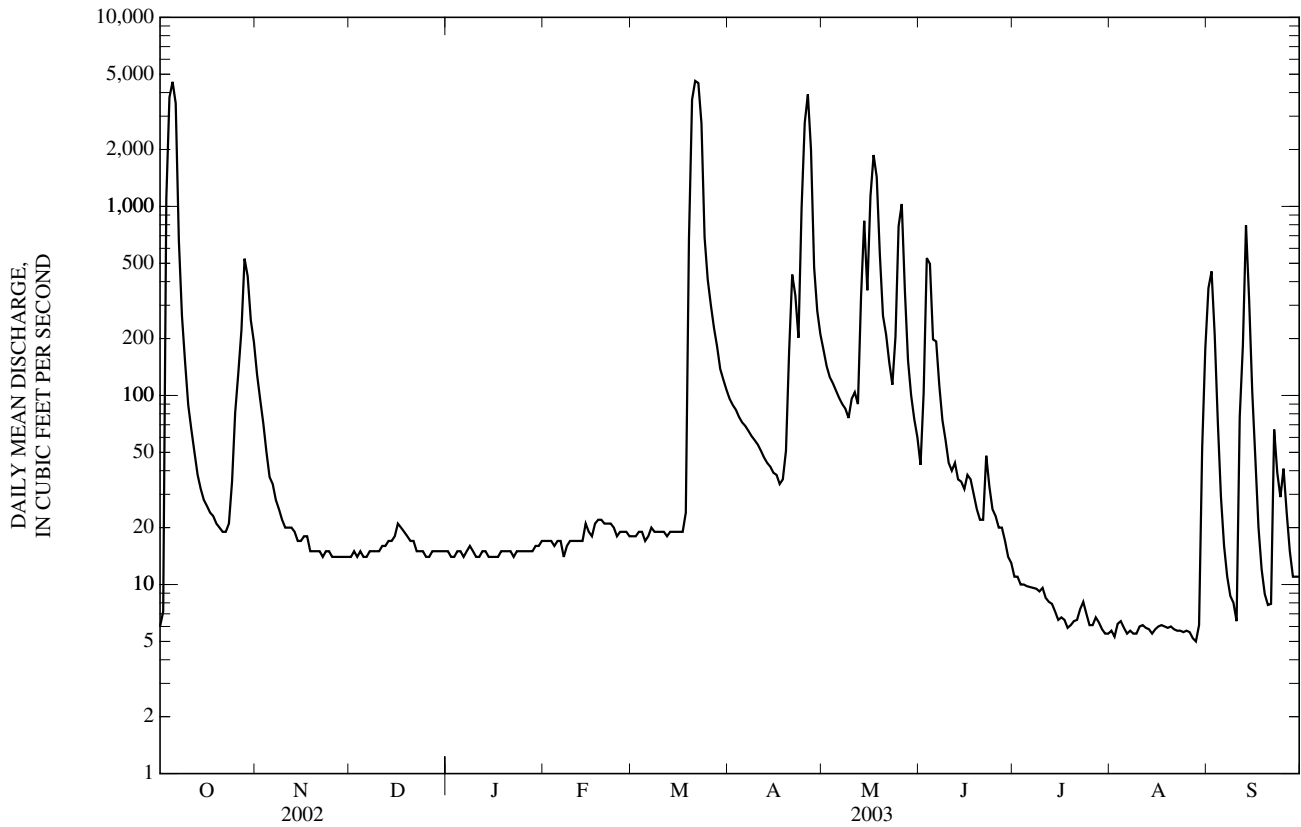




07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL MEAN	133		185		224	
HIGHEST ANNUAL MEAN					528	
LOWEST ANNUAL MEAN					88.7	
HIGHEST DAILY MEAN	4,560	Oct 5	4,610	Mar 21	9,570	Nov 3, 1998
LOWEST DAILY MEAN	1.2	Sep 11	5.0	Aug 28	1.2	Sep 11, 2002
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 6	5.5	Aug 22	1.5	Sep 6, 2002
MAXIMUM PEAK FLOW			4,750	Mar 21	10,300	Nov 2, 1998
MAXIMUM PEAK STAGE			21.76	Mar 21	27.13	Nov 2, 1998
INSTANTANEOUS LOW FLOW			3.3	Jul 7	0.98	Aug 7, 2002
ANNUAL RUNOFF (AC-FT)	96,270		134,200		162,300	
10 PERCENT EXCEEDS	173		327		440	
50 PERCENT EXCEEDS	17		19		30	
90 PERCENT EXCEEDS	5.8		6.3		10	

e Estimated



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1998 to current year.

pH: May 1998 to current year.

WATER TEMPERATURE: May 1998 to current year.

DISSOLVED OXYGEN: October 1998 to current year.

TURBIDITY: October 1998 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records good. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,290 microsiemens/cm, May 11, 2002; minimum, 85 microsiemens/cm, Nov. 1, 1998.

pH: Maximum, 9.0 standard units, July 8, 2001; minimum, 6.6 standard units, Oct. 5, 1998.

WATER TEMPERATURE: Maximum, 33.1°C, Aug. 1, 2002; minimum, 0.0°C, Jan. 3, 1999.

DISSOLVED OXYGEN: Maximum 21.9 mg/L, July 10, 2001; minimum, 3.2 mg/L, Aug. 31, 1999.

TURBIDITY: Maximum, >1,800 NTU, May 13, 2003; minimum, <2.0 NTU, Jan. 8, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,260 microsiemens/cm, Sept. 26; minimum, 120 microsiemens/cm, Oct. 4.

pH: Maximum, 8.8 standard units, Mar. 8; minimum, 6.8 standard units, Oct. 4.

WATER TEMPERATURE: Maximum, 31.9°C, Aug. 6; minimum, 0.0°C, Jan. 23.

DISSOLVED OXYGEN: Maximum, 18.2 mg/L, Mar. 1; minimum, 4.1 mg/L, Aug. 23.

TURBIDITY: Maximum, >1,800 NTU, May 13; minimum, 2.9 NTU, Jan. 15.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1,250	1,220	1,240	---	---	---	1,700	1,650	1,680	1,910	1,880	1,900
2	1,240	1,120	1,200	---	---	---	1,770	1,700	1,730	1,910	1,850	1,880
3	1,500	138	661	---	---	---	1,820	1,770	1,800	1,850	1,780	1,820
4	173	120	134	---	---	---	1,820	1,760	1,790	1,810	1,780	1,790
5	138	130	133	698	647	665	1,770	1,760	1,770	1,830	1,800	1,820
6	188	138	163	726	698	715	1,810	1,770	1,800	1,830	1,820	1,830
7	232	188	212	773	726	756	1,820	1,810	1,820	1,830	1,820	1,820
8	277	232	254	773	727	756	1,840	1,820	1,830	1,840	1,820	1,830
9	311	277	289	765	725	737	1,840	1,830	1,840	1,870	1,830	1,860
10	401	308	359	806	765	793	1,860	1,830	1,850	1,880	1,860	1,870
11	481	401	440	826	806	818	1,860	1,850	1,850	1,910	1,870	1,900
12	549	481	516	849	825	836	1,890	1,860	1,880	1,920	1,890	1,900
13	602	549	574	878	849	866	1,940	1,870	1,900	1,930	1,900	1,920
14	647	602	636	925	878	904	2,010	1,940	1,990	1,960	1,910	1,930
15	709	647	676	997	925	959	2,030	1,990	2,020	1,960	1,940	1,950
16	732	709	716	1,070	997	1,030	2,030	1,990	2,000	1,950	1,900	1,920
17	788	732	766	1,110	1,070	1,090	2,070	2,030	2,060	1,930	1,900	1,910
18	860	788	817	1,140	1,110	1,120	2,130	2,050	2,090	1,910	1,890	1,900
19	903	860	884	1,180	1,140	1,160	2,210	2,130	2,180	1,940	1,890	1,920
20	920	903	914	1,240	1,180	1,220	2,200	2,120	2,160	1,980	1,940	1,960
21	953	920	935	1,290	1,240	1,260	2,120	2,030	2,070	2,060	1,960	2,030
22	997	953	974	1,340	1,290	1,320	2,030	1,990	2,010	2,050	1,990	2,010
23	998	980	988	1,400	1,340	1,380	2,000	1,990	2,000	2,020	1,990	2,000
24	1,030	828	981	1,450	1,400	1,430	2,020	2,000	2,010	1,990	1,960	1,980
25	1,140	816	1,000	1,480	1,450	1,460	2,010	1,990	2,000	1,990	1,960	1,970
26	1,140	698	927	1,510	1,480	1,490	2,030	1,990	2,010	2,150	1,990	2,070
27	1,660	613	1,290	1,570	1,510	1,540	2,020	1,990	2,000	2,200	2,150	2,180
28	613	308	431	1,580	1,560	1,580	2,000	1,980	1,990	2,160	2,100	2,130
29	370	296	335	1,570	1,540	1,560	1,990	1,940	1,980	2,140	2,110	2,130
30	549	306	419	1,650	1,570	1,610	1,940	1,860	1,900	2,140	2,110	2,130
31	704	477	549	---	---	---	1,900	1,860	1,880	2,160	2,100	2,130
MONTH	1,660	120	658	1,650	647	1,120	2,210	1,650	1,930	2,200	1,780	1,950

## 07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2,170	2,110	2,150	2,040	1,840	1,960	1,050	1,000	1,020	781	680	729
2	2,120	2,050	2,080	1,840	1,690	1,750	1,110	1,050	1,080	860	781	818
3	2,060	1,950	2,020	1,710	1,670	1,690	1,170	1,110	1,140	960	860	919
4	1,950	1,880	1,920	1,780	1,680	1,730	1,210	1,170	1,190	1,030	960	993
5	1,900	1,870	1,880	1,800	1,760	1,790	1,240	1,210	1,230	1,080	1,030	1,060
6	1,900	1,820	1,870	1,760	1,720	1,740	1,290	1,240	1,260	1,140	1,080	1,120
7	1,830	1,770	1,800	1,750	1,720	1,730	1,310	1,280	1,300	1,180	1,140	1,170
8	1,800	1,760	1,780	1,800	1,710	1,750	1,330	1,290	1,320	1,240	1,180	1,210
9	1,790	1,760	1,780	1,840	1,780	1,820	1,350	1,330	1,340	1,290	1,240	1,260
10	1,810	1,760	1,790	1,830	1,780	1,810	1,390	1,350	1,380	1,360	1,290	1,320
11	1,870	1,800	1,850	1,840	1,800	1,830	1,420	1,390	1,400	1,440	599	983
12	1,860	1,820	1,840	1,860	1,820	1,840	1,450	1,410	1,430	979	689	868
13	1,860	1,750	1,850	1,940	1,860	1,910	1,480	1,450	1,460	1,490	189	896
14	1,750	1,650	1,690	1,960	1,920	1,950	1,470	1,430	1,450	395	189	300
15	1,740	1,700	1,710	1,940	1,880	1,910	1,460	1,440	1,460	477	286	355
16	1,770	1,690	1,740	1,910	1,800	1,870	1,510	1,460	1,480	477	142	265
17	1,700	1,680	1,690	1,830	1,740	1,800	1,510	1,470	1,490	455	171	289
18	1,750	1,690	1,730	1,740	1,600	1,670	1,500	1,460	1,480	463	311	375
19	1,780	1,690	1,720	1,720	311	1,030	1,490	1,300	1,410	393	319	355
20	1,860	1,780	1,840	582	205	299	1,560	502	1,270	476	393	437
21	1,830	1,710	1,760	205	179	188	1,440	590	884	534	450	482
22	1,750	1,710	1,730	207	177	184	921	703	761	641	534	601
23	1,800	1,750	1,790	290	207	240	720	558	666	803	628	700
24	1,820	1,780	1,810	414	290	357	643	226	372	863	316	778
25	1,850	1,800	1,840	533	414	474	293	212	258	704	262	348
26	1,860	1,840	1,850	609	533	560	241	194	207	698	339	433
27	1,950	1,840	1,890	744	609	678	316	198	247	449	357	410
28	2,050	1,950	2,020	863	744	800	428	316	370	548	446	498
29	---	---	---	938	863	916	553	428	490	628	548	587
30	---	---	---	958	936	950	680	553	616	705	628	666
31	---	---	---	1,000	953	974	---	---	---	785	705	745
MONTH	2,170	1,650	1,840	2,040	177	1,300	1,560	194	1,050	1,490	142	709



## 07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	859	785	824	1,180	1,150	1,170	1,340	1,290	1,320	1,420	371	694
2	940	499	875	1,180	1,110	1,150	1,350	1,320	1,340	371	301	316
3	653	300	407	1,160	1,070	1,130	1,340	1,260	1,310	330	305	319
4	457	331	380	1,130	1,070	1,110	1,370	1,270	1,320	345	312	326
5	555	457	531	1,190	1,110	1,160	1,380	1,360	1,370	390	345	369
6	584	358	484	1,180	1,160	1,170	1,380	1,320	1,370	420	390	405
7	599	366	477	1,200	1,160	1,180	1,360	1,320	1,350	448	420	433
8	703	599	652	1,200	1,190	1,200	1,370	1,340	1,350	465	448	456
9	809	703	754	1,230	1,200	1,220	1,360	1,320	1,340	479	465	474
10	920	809	863	1,250	1,230	1,240	1,360	1,290	1,340	500	479	492
11	1,010	920	969	1,260	1,250	1,250	1,340	1,300	1,320	500	214	312
12	1,020	610	856	1,250	1,240	1,250	1,300	1,230	1,270	1,240	265	461
13	1,130	918	1,050	1,240	1,200	1,220	1,230	1,170	1,200	521	210	268
14	1,220	1,130	1,160	1,210	1,200	1,200	1,170	1,130	1,150	269	222	250
15	1,230	1,190	1,210	1,230	1,200	1,220	1,140	1,110	1,130	297	269	283
16	1,330	596	1,220	1,260	1,210	1,240	1,110	1,080	1,100	322	297	311
17	1,360	635	1,220	1,270	1,250	1,260	1,100	1,080	1,090	347	322	335
18	1,370	1,330	1,350	1,280	1,250	1,270	1,110	1,090	1,100	373	347	360
19	1,550	1,340	1,450	1,270	1,240	1,260	1,120	1,100	1,110	395	373	383
20	1,530	1,150	1,290	1,260	1,250	1,250	1,150	1,120	1,140	412	395	403
21	1,160	1,070	1,100	1,250	1,190	1,230	1,160	1,140	1,150	430	412	418
22	1,410	1,140	1,250	1,210	1,180	1,200	1,140	1,140	1,140	431	206	300
23	1,690	1,410	1,570	1,260	1,180	1,220	1,140	1,130	1,130	467	263	365
24	1,670	1,310	1,520	1,270	1,230	1,260	1,140	1,130	1,140	604	467	546
25	1,310	876	1,140	1,260	1,240	1,250	1,160	1,140	1,150	1,610	532	794
26	1,080	889	1,040	1,240	1,240	1,240	1,180	1,160	1,170	2,260	1,610	2,090
27	1,110	1,050	1,090	1,320	1,240	1,280	1,200	1,180	1,190	2,060	1,110	1,420
28	1,130	1,090	1,110	1,330	1,300	1,320	1,210	1,160	1,200	1,110	897	1,010
29	1,150	1,130	1,140	1,320	1,260	1,280	1,180	1,070	1,130	897	836	869
30	1,170	1,140	1,160	1,280	1,250	1,270	1,070	265	715	836	782	812
31	---	---	---	1,300	1,250	1,270	1,000	261	640	---	---	---
MONTH	1,690	300	1,000	1,330	1,070	1,220	1,380	261	1,190	2,260	206	542

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.1	8.1	8.1	---	7.6	---	8.2	8.1	8.1	8.3	8.2	8.2
2	8.1	8.0	8.1	---	---	---	8.2	8.1	8.1	8.3	8.2	8.2
3	8.1	7.0	7.4	---	---	---	8.2	8.1	8.2	8.2	8.2	8.2
4	7.0	6.8	6.8	---	---	---	8.2	8.2	8.2	8.2	8.2	8.2
5	6.9	6.8	6.8	7.8	7.7	7.8	8.2	8.2	8.2	8.3	8.2	8.2
6	7.0	6.9	7.0	7.8	7.8	7.8	8.2	8.2	8.2	8.3	8.2	8.2
7	7.3	7.0	7.2	7.9	7.8	7.8	8.2	8.2	8.2	8.3	8.2	8.2
8	7.4	7.3	7.3	7.9	7.8	7.9	8.2	8.2	8.2	8.3	8.2	8.2
9	7.5	7.4	7.4	7.8	7.8	7.8	8.2	8.2	8.2	8.3	8.2	8.2
10	7.6	7.5	7.5	7.8	7.8	7.8	8.2	8.2	8.2	8.3	8.3	8.3
11	7.6	7.6	7.6	7.8	7.8	7.8	8.2	8.1	8.2	8.3	8.3	8.3
12	7.7	7.6	7.7	7.8	7.8	7.8	8.2	8.1	8.1	8.3	8.2	8.3
13	7.8	7.7	7.7	7.9	7.8	7.8	8.2	8.1	8.1	8.3	8.2	8.3
14	7.8	7.8	7.8	7.8	7.8	7.8	8.2	8.2	8.2	8.3	8.2	8.3
15	7.8	7.8	7.8	7.9	7.8	7.8	8.2	8.1	8.2	8.3	8.2	8.2
16	7.8	7.7	7.8	7.9	7.8	7.9	8.2	8.1	8.2	8.3	8.2	8.2
17	7.7	7.7	7.7	7.9	7.9	7.9	8.2	8.1	8.2	8.3	8.2	8.3
18	7.8	7.7	7.7	8.0	7.9	7.9	8.2	8.2	8.2	8.3	8.2	8.2
19	7.8	7.7	7.8	8.0	7.9	7.9	8.2	8.2	8.2	8.3	8.2	8.2
20	7.8	7.7	7.8	8.0	7.9	7.9	8.3	8.2	8.2	8.2	8.2	8.2
21	7.8	7.7	7.8	8.0	7.9	8.0	8.3	8.2	8.3	8.2	8.2	8.2
22	7.8	7.8	7.8	8.1	8.0	8.1	8.3	8.3	8.3	8.3	8.2	8.2
23	7.8	7.8	7.8	8.2	8.0	8.1	8.3	8.2	8.3	8.3	8.2	8.2
24	7.9	7.8	7.9	8.2	8.1	8.1	8.3	8.2	8.3	8.2	8.2	8.2
25	7.9	7.8	7.9	8.2	8.1	8.1	8.3	8.3	8.3	8.2	8.2	8.2
26	7.9	7.6	7.7	8.2	8.1	8.2	8.3	8.2	8.3	8.2	8.2	8.2
27	7.7	7.5	7.7	8.2	8.1	8.2	8.3	8.2	8.3	8.2	8.2	8.2
28	7.5	7.4	7.4	8.2	8.1	8.2	8.3	8.3	8.3	8.2	8.2	8.2
29	7.4	7.3	7.4	8.2	8.1	8.1	8.3	8.3	8.3	8.2	8.2	8.2
30	7.6	7.4	7.5	8.2	8.1	8.1	8.3	8.2	8.3	8.3	8.2	8.2
31	7.7	7.6	7.6	---	---	---	8.3	8.2	8.2	8.3	8.2	8.2
MAX	8.1	8.1	8.1	8.2	8.1	8.2	8.3	8.3	8.3	8.3	8.3	8.3
MIN	6.9	6.8	6.8	7.8	7.6	7.8	8.2	8.1	8.1	8.2	8.2	8.2

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.3	8.2	8.3	8.6	8.4	8.5	8.2	8.0	8.1	7.8	7.6	7.7
2	8.3	8.2	8.3	8.6	8.4	8.5	8.4	8.0	8.2	7.8	7.8	7.8
3	8.4	8.2	8.3	8.7	8.5	8.6	8.4	8.1	8.2	7.8	7.8	7.8
4	8.4	8.3	8.3	8.6	8.5	8.5	8.5	8.1	8.3	7.9	7.8	7.8
5	8.4	8.3	8.4	8.6	8.5	8.5	8.6	8.2	8.3	7.9	7.8	7.9
6	8.5	8.3	8.4	8.6	8.5	8.6	8.5	8.2	8.4	8.0	7.8	7.9
7	8.5	8.4	8.4	8.7	8.5	8.6	8.6	8.2	8.4	8.0	7.9	8.0
8	8.4	8.3	8.4	8.8	8.6	8.7	8.5	8.3	8.4	8.1	7.9	8.0
9	8.4	8.3	8.4	8.7	8.6	8.6	8.4	8.3	8.4	8.1	7.9	8.0
10	8.4	8.3	8.4	8.6	8.4	8.5	8.4	8.3	8.4	8.1	7.9	8.0
11	8.4	8.3	8.4	8.5	8.4	8.5	8.4	8.2	8.3	8.0	7.5	7.8
12	8.4	8.3	8.4	8.5	8.4	8.4	8.4	8.2	8.3	7.8	7.6	7.7
13	8.4	8.3	8.4	8.4	8.3	8.4	8.3	8.2	8.3	7.8	7.2	7.8
14	8.5	8.2	8.3	8.4	8.3	8.4	8.3	8.1	8.2	7.4	7.1	7.2
15	8.5	8.3	8.4	8.6	8.3	8.4	8.2	8.1	8.2	7.4	7.3	7.3
16	8.5	8.3	8.4	8.8	8.5	8.6	8.2	8.0	8.1	7.4	7.1	7.2
17	8.5	8.3	8.5	8.8	8.6	8.7	8.3	8.1	8.2	7.4	7.1	7.2
18	8.5	8.3	8.4	8.6	8.2	8.3	8.3	8.1	8.2	7.4	7.3	7.4
19	8.4	8.3	8.4	8.3	7.5	8.1	8.2	8.1	8.1	7.5	7.3	7.4
20	8.5	8.3	8.4	7.5	7.3	7.3	8.2	7.7	8.1	7.8	7.5	7.6
21	8.5	8.3	8.4	7.3	7.3	7.3	7.8	7.7	7.8	7.8	7.7	7.8
22	8.5	8.3	8.4	7.3	7.2	7.3	7.8	7.8	7.8	7.8	7.8	7.8
23	8.5	8.3	8.4	7.3	7.2	7.3	7.8	7.7	7.8	7.8	7.8	7.8
24	8.6	8.4	8.5	7.5	7.3	7.5	7.8	7.4	7.5	7.9	7.4	7.8
25	8.7	8.5	8.6	7.6	7.5	7.6	7.4	7.3	7.3	7.7	7.3	7.4
26	8.7	8.6	8.6	7.7	7.6	7.7	7.3	7.2	7.2	7.7	7.5	7.6
27	8.7	8.6	8.6	7.8	7.7	7.8	7.4	7.2	7.2	7.6	7.6	7.6
28	8.6	8.5	8.6	7.9	7.8	7.9	7.5	7.4	7.5	7.7	7.6	7.7
29	---	---	---	8.0	7.9	8.0	7.6	7.5	7.6	7.7	7.7	7.7
30	---	---	---	8.1	8.0	8.0	7.6	7.6	7.6	7.7	7.7	7.7
31	---	---	---	8.1	8.0	8.0	---	---	---	7.8	7.7	7.8
MAX	8.7	8.6	8.6	8.8	8.6	8.7	8.6	8.3	8.4	8.1	7.9	8.0
MIN	8.3	8.2	8.3	7.3	7.2	7.3	7.3	7.2	7.2	7.4	7.1	7.2

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	7.9	7.8	7.8	8.4	8.2	8.3	8.3	8.3	8.3	7.9	7.6	7.7
2	7.9	7.6	7.9	8.3	8.1	8.2	8.3	8.3	8.3	7.6	7.5	7.5
3	7.6	7.3	7.4	8.2	8.0	8.2	8.3	8.2	8.2	7.6	7.5	7.5
4	7.6	7.4	7.5	8.1	8.0	8.1	8.3	8.2	8.2	7.6	7.6	7.6
5	7.7	7.6	7.7	8.0	8.0	8.0	8.3	8.2	8.3	7.7	7.6	7.7
6	7.8	7.5	7.7	8.0	8.0	8.0	8.3	8.2	8.2	7.8	7.7	7.7
7	7.7	7.5	7.6	8.2	8.0	8.0	8.4	8.3	8.3	7.8	7.7	7.7
8	7.8	7.7	7.8	8.2	8.1	8.2	8.5	8.3	8.4	8.1	7.8	7.8
9	7.9	7.8	7.8	8.2	8.1	8.2	8.5	8.2	8.4	8.2	7.8	7.9
10	7.9	7.8	7.9	8.2	8.1	8.2	8.4	8.2	8.3	8.2	7.9	8.0
11	8.0	7.8	7.9	8.2	8.2	8.2	8.4	8.2	8.4	8.1	7.4	7.5
12	7.9	7.6	7.8	8.3	8.2	8.2	8.5	8.2	8.4	7.8	7.4	7.6
13	8.1	7.9	8.0	8.3	8.2	8.2	8.5	8.4	8.4	7.5	7.3	7.4
14	8.2	7.9	8.0	8.2	8.1	8.1	8.5	8.3	8.4	7.5	7.4	7.4
15	8.2	8.0	8.1	8.2	8.1	8.1	8.5	8.3	8.4	7.6	7.5	7.6
16	8.3	7.8	8.2	8.2	8.2	8.2	8.5	8.3	8.4	7.6	7.6	7.6
17	8.3	7.8	8.1	8.2	8.2	8.2	8.4	---	---	7.7	7.6	7.7
18	8.4	8.1	8.2	8.2	8.1	8.2	---	---	---	7.7	7.7	7.7
19	8.3	8.1	8.2	8.2	8.2	8.2	---	---	---	7.8	7.7	7.7
20	8.3	8.1	8.2	8.2	8.2	8.2	8.5	---	---	7.8	7.7	7.7
21	8.3	8.0	8.2	8.2	8.2	8.2	8.5	8.4	8.4	7.7	7.6	7.6
22	8.3	8.1	8.2	8.4	8.2	8.3	8.6	8.4	8.5	7.7	7.4	7.5
23	8.1	7.8	7.9	8.4	8.3	8.3	8.6	8.4	8.5	7.8	7.4	7.6
24	8.0	7.8	7.9	8.4	8.3	8.3	8.6	8.3	8.4	8.0	7.7	7.8
25	7.9	7.7	7.8	8.3	8.2	8.3	8.6	8.4	8.5	8.0	7.7	7.8
26	8.2	7.7	8.1	8.3	8.2	8.2	8.5	8.4	8.5	8.4	7.9	8.1
27	8.3	8.1	8.2	8.2	8.2	8.2	8.5	8.4	8.5	8.3	7.9	8.1
28	8.4	8.2	8.3	8.4	8.2	8.3	8.6	8.4	8.4	8.2	7.8	8.0
29	8.4	8.2	8.4	8.4	8.3	8.3	8.5	8.3	8.4	8.0	7.8	7.9
30	8.4	8.4	8.4	8.4	8.3	8.3	8.4	7.6	8.1	7.9	7.8	7.8
31	---	---	---	8.4	8.2	8.3	8.1	7.5	7.9	---	---	---
MAX	8.4	8.4	8.4	8.4	8.3	8.3	8.6	8.4	8.5	8.4	7.9	8.1
MIN	7.6	7.3	7.4	8.0	8.0	8.0	8.1	7.5	7.9	7.5	7.3	7.4

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.3	21.1	22.1	6.7	6.2	---	4.6	3.3	4.1	3.0	2.3	2.6
2	22.6	20.0	21.8	---	---	---	5.7	4.2	5.0	3.3	2.2	2.7
3	20.0	14.7	16.7	---	---	---	5.3	3.1	4.1	3.3	2.0	2.8
4	15.7	14.9	15.4	7.4	---	---	3.1	2.0	2.6	4.7	3.0	3.9
5	15.8	14.9	15.5	7.7	6.7	7.2	3.4	2.4	2.9	4.4	3.5	3.9
6	15.9	15.4	15.8	8.1	5.8	7.1	2.9	1.8	2.3	3.8	2.5	3.2
7	15.5	14.9	15.2	9.1	6.9	8.1	3.9	2.2	3.0	3.9	1.8	2.8
8	15.1	14.4	14.7	9.5	7.9	8.9	4.8	3.8	4.3	5.2	3.7	4.4
9	16.0	14.4	15.1	10.6	8.9	9.8	4.4	3.3	3.8	5.0	3.6	4.4
10	16.8	14.5	15.5	11.0	9.8	10.4	3.8	3.2	3.5	3.6	1.8	2.5
11	16.4	14.8	15.6	10.2	8.9	9.4	4.9	3.8	4.4	2.8	1.3	2.0
12	16.4	15.1	16.0	9.8	8.6	9.2	5.3	4.9	5.1	4.2	2.7	3.4
13	15.3	13.2	14.4	9.9	8.6	9.3	5.4	4.7	5.1	3.8	2.9	3.3
14	14.6	12.6	13.7	9.8	8.8	9.5	5.2	4.1	4.7	3.4	2.2	2.8
15	13.8	12.2	13.2	8.8	7.9	8.3	6.0	4.6	5.3	2.2	1.4	1.6
16	13.1	11.0	12.0	8.4	7.1	7.8	6.4	5.6	6.0	1.4	0.5	0.9
17	12.0	9.8	11.0	8.6	7.4	8.1	6.5	5.1	5.8	1.1	0.1	0.6
18	13.7	11.6	12.4	9.2	8.3	8.7	6.6	5.9	6.3	1.8	0.3	1.1
19	13.7	11.7	12.9	8.4	7.3	7.8	6.4	5.2	5.8	3.3	1.6	2.4
20	11.9	10.3	11.2	8.6	7.2	8.0	5.2	4.2	4.6	3.9	2.6	3.3
21	12.4	10.9	11.7	9.0	7.8	8.4	4.9	3.9	4.3	3.5	1.5	2.3
22	12.5	11.9	12.2	8.2	7.0	7.6	4.2	3.1	3.6	1.5	0.0	0.6
23	12.1	9.3	10.6	8.4	7.1	7.8	3.7	2.5	3.2	0.7	0.0	0.3
24	9.3	7.6	8.5	8.1	6.1	7.2	2.6	1.9	2.2	0.8	0.1	0.4
25	8.5	7.4	7.8	6.1	4.6	5.2	2.1	1.0	1.6	0.7	0.1	0.4
26	7.5	6.5	7.0	5.4	4.4	4.9	1.9	1.3	1.6	1.0	0.2	0.5
27	7.3	6.6	7.0	5.1	4.0	4.5	2.6	1.7	2.1	1.1	0.2	0.7
28	8.0	7.3	7.7	5.2	3.9	4.7	2.9	1.7	2.3	3.5	1.1	2.3
29	8.4	7.8	8.2	5.8	4.8	5.4	4.1	2.3	3.0	3.6	2.7	3.3
30	8.4	7.9	8.2	5.6	4.2	4.9	4.8	4.0	4.3	3.3	1.6	2.4
31	7.9	6.7	7.3	---	---	---	4.0	2.6	3.2	5.1	3.2	4.1
MONTH	23.3	6.5	12.8	11.0	3.9	7.6	6.6	1.0	3.9	5.2	0.0	2.3

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.9	3.7	4.4	4.1	3.0	3.5	15.3	10.3	12.6	19.6	17.7	19.0
2	5.9	4.5	5.3	4.6	3.0	3.9	17.4	12.4	14.7	19.5	16.5	17.8
3	5.8	3.0	4.7	5.4	3.1	4.3	17.8	14.7	16.2	18.9	16.5	17.7
4	3.0	1.6	2.3	5.4	2.0	4.4	16.8	14.7	15.7	21.4	17.4	19.1
5	3.4	2.5	2.9	2.0	0.5	0.9	14.7	12.5	13.3	22.6	17.5	19.8
6	3.4	2.0	3.0	4.4	0.7	2.2	12.5	10.8	11.4	21.2	18.2	19.0
7	2.0	0.5	1.2	6.0	3.8	4.9	11.4	8.6	10.1	20.0	16.6	18.4
8	2.4	0.5	1.5	6.0	4.6	5.5	10.6	7.9	9.3	20.9	16.9	18.7
9	2.8	1.9	2.4	4.6	2.6	3.7	12.3	7.5	10	21.6	17.1	19.4
10	4.0	2.2	3.1	5.4	3.1	4.2	13.7	8.7	11.2	21.4	19.1	20.3
11	4.6	3.2	4.0	5.4	4.6	4.9	15.9	10.6	13.2	19.7	17.0	18.4
12	4.7	3.0	3.9	6.8	4.5	5.4	17.3	12.5	14.9	20.4	15.4	17.8
13	4.9	3.7	4.2	7.7	6.2	7.0	18.9	14.0	16.5	18.6	13.5	16.3
14	7.7	4.9	6.4	10.2	6.8	8.4	20.7	15.8	18.3	18.8	13.9	17.0
15	7.5	2.9	5.1	12.5	9.2	10.7	20.0	17.2	18.5	19.1	18.4	18.7
16	4.2	2.0	3.1	14.5	11.9	13.1	19.0	16.5	17.8	18.8	15.9	17.1
17	5.3	3.4	4.3	14.8	13.7	14.3	17.8	14.3	16.3	16.7	15.8	16.2
18	5.5	4.8	5.1	14.8	13.6	14.0	18.6	14.9	16.8	18.3	16.7	17.6
19	6.9	5.0	5.9	13.7	11.2	12.5	18.0	15.1	16.3	18.9	18.2	18.6
20	6.7	5.0	5.9	11.2	8.3	9.6	16.6	13.1	14.7	18.2	16.9	17.6
21	6.7	6.0	6.3	8.6	7.6	7.9	14.7	12.5	13.5	18.5	16.1	17.3
22	6.6	4.8	5.5	11.1	8.6	9.6	15.5	13.9	14.7	19.7	17.3	18.2
23	4.8	1.3	3.1	12.6	11.1	11.6	15.0	13.6	14.4	20.8	17.9	19.2
24	1.4	0.3	0.9	13.8	12.6	13.3	13.6	12.0	12.5	21.7	18.5	19.7
25	1.5	0.3	1.0	13.9	13.0	13.4	12.2	11.9	12.1	21.1	19.4	20.2
26	3.2	1.1	2.0	14.0	12.2	13.1	14.1	12.2	12.8	20.1	19.0	19.6
27	3.5	3.0	3.3	13.6	11.6	12.8	15.4	14.1	15.2	20.7	18.7	19.7
28	3.5	3.0	3.3	11.7	9.7	11.1	17.2	15.3	16.1	22.3	19.7	20.8
29	---	---	---	11.2	8.6	9.6	19.5	16.9	18.0	23.9	20.6	22.0
30	---	---	---	11.4	7.8	9.1	21.2	18.9	19.8	26.0	21.2	23.3
31	---	---	---	---	8.4	---	---	---	---	24.2	21.0	22.1
MONTH	7.7	0.3	3.7	14.8	0.5	8.3	21.2	7.5	14.6	26.0	13.5	18.9

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.7	19.6	21.3	26.8	23.5	25.0	29.8	26.2	27.7	20.3	19.3	19.7
2	22.5	19.4	20.8	27.9	24.8	26.4	29.7	25.6	27.7	20.4	18.7	19.6
3	20.8	19.5	19.8	28.6	26.1	27.5	29.6	26.9	28.3	22.0	19.5	20.6
4	19.8	18.9	19.3	28.7	26.5	27.7	28.5	26.8	27.5	23.7	20.9	22.0
5	20.0	18.3	19.1	28.9	26.5	27.8	30.9	26.1	28.1	24.1	20.0	22.0
6	20.5	18.5	19.5	28.9	26.3	27.6	31.9	26.6	29.1	24.2	20.8	22.7
7	19.7	18.6	19.3	28.6	26.3	27.7	29.1	27.1	28.0	23.6	21.4	22.6
8	21.7	17.6	19.4	29.2	26.0	27.7	28.5	26.0	27.3	23.6	21.2	22.6
9	23.4	17.8	20.4	29.0	26.4	27.8	30.3	25.6	27.8	24.6	22.2	23.6
10	22.8	20.4	21.7	29.2	26.1	27.8	30.4	26.9	28.5	25.0	22.9	24.0
11	24.8	21.0	22.7	30.2	26.6	28.4	29.2	26.7	27.9	24.4	20.4	21.9
12	25.2	20.8	23.3	29.0	26.6	27.9	28.7	25.3	26.9	22.3	19.0	19.9
13	24.6	21.7	23.2	29.4	25.7	27.6	27.7	24.6	26.1	19.4	18.4	18.7
14	25.0	22.0	23.6	30.2	27.1	28.6	26.7	24.3	25.6	19.5	18.0	18.6
15	25.8	21.7	23.8	30.4	27.6	28.9	27.8	24.9	26.4	20.1	17.8	18.8
16	25.4	21.9	23.7	29.5	26.8	28.3	29.0	25.6	27.4	21.6	17.7	19.5
17	25.7	22.1	23.7	30.3	27.5	28.9	29.4	26.4	28.0	22.8	19.4	20.9
18	26.2	22.1	24.4	31.6	27.1	29.3	29.4	27.2	28.3	22.2	17.8	19.8
19	25.7	23.1	24.2	31.2	28.7	29.9	29.7	27.4	28.4	18.5	16.1	17.4
20	25.3	22.6	24.0	29.6	28.6	29.0	30.0	27.2	28.7	19.1	16.4	17.9
21	25.8	22.3	24.2	30.6	27.3	28.8	31.1	27.4	29.2	19.5	---	---
22	27.6	23.2	25.2	28.6	26.1	27.3	31.3	27.7	29.6	18.9	16.3	17.7
23	27.9	24.0	25.9	28.1	24.7	26.5	31.3	27.7	29.5	20.6	17.4	19.0
24	28.0	24.9	26.5	27.7	24.9	26.5	31.5	27.6	29.5	20.8	19.0	20.0
25	27.3	24.3	25.7	28.4	25.2	26.9	30.6	27.5	29.1	20.3	17.3	18.8
26	25.4	21.8	23.7	30.0	26.4	28.2	30.4	27.3	28.9	20.9	17.5	19.1
27	25.8	22.4	24.3	30.5	27.4	28.9	29.5	27.0	28.0	19.9	17.7	18.8
28	25.4	21.9	24.0	29.7	27.6	28.7	29.7	26.2	27.8	18.4	16.8	17.6
29	25.2	22.7	23.9	30.3	26.7	28.4	28.5	26.3	27.3	17.4	15.3	15.9
30	24.9	22.7	23.8	31.1	26.8	28.6	26.9	20.1	23.4	15.3	13.4	14.4
31	---	---	---	29.9	26.8	28.4	22.5	20.0	20.9	---	---	---
MONTH	28.0	17.6	22.8	31.6	23.5	28.0	31.9	20.0	27.6	25.0	13.4	19.8

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.7	6.5	7.1	12.4	---	---	13.3	11.7	12.6	14.7	13.0	13.8
2	7.0	6.2	6.5	---	---	---	13.1	11.5	12.4	14.9	12.9	13.9
3	8.0	5.6	6.9	---	---	---	13.3	11.5	12.4	14.6	12.5	13.7
4	7.0	6.6	6.7	---	---	---	14.6	12.2	13.3	14.2	12.5	13.4
5	7.0	6.6	6.8	11.7	11.4	11.6	14.8	12.8	13.8	14.6	12.3	13.4
6	6.8	6.5	6.6	11.6	11.0	11.4	14.4	12.9	13.8	14.4	12.8	13.6
7	8.0	6.8	7.6	11.2	10.7	11.0	14.4	12.7	13.6	14.7	13.1	14.0
8	8.6	8.0	8.3	10.8	10.3	10.6	14.4	12.4	13.6	14.0	12.4	13.2
9	8.7	8.5	8.6	10.3	9.7	10.1	14.8	12.8	13.8	13.1	11.9	12.6
10	8.6	8.2	8.5	9.8	9.4	9.6	14.4	12.9	13.5	13.8	11.9	12.8
11	8.4	8.1	8.3	9.9	9.3	9.6	13.5	11.9	12.4	14.3	12.5	13.5
12	8.3	8.1	8.2	10.0	9.5	9.7	12.3	11.2	11.5	14.2	12.4	13.2
13	8.6	8.3	8.4	10.0	9.4	9.7	13.6	10.9	12.1	13.4	11.8	12.7
14	8.8	8.3	8.5	9.7	9.1	9.4	13.5	11.8	12.7	14.4	12.1	13.2
15	9.0	8.4	8.7	10.5	9.4	9.9	13.1	11.2	12.3	14.2	13.0	13.5
16	10.4	8.6	9.4	10.7	10.0	10.3	13.1	10.8	12.0	14.9	12.3	13.6
17	10.8	10.3	10.5	10.6	9.8	10.2	13.3	11.0	12.2	14.8	13.6	14.4
18	10.6	10.1	10.3	10.8	9.5	10.1	13.0	10.8	12.0	15.1	13.2	14.1
19	10.6	9.8	10.1	11.2	9.8	10.5	13.0	10.9	12.0	14.7	12.9	13.7
20	11.0	10.2	10.5	11.3	10.0	10.6	13.5	11.4	12.5	13.9	12.3	13.2
21	10.8	10.2	10.5	11.3	9.9	10.6	14.1	11.6	12.9	14.6	12.5	13.5
22	10.7	9.9	10.3	11.7	10.1	10.8	14.9	12.0	13.4	15.2	13.2	14.2
23	11.0	10.4	10.8	12.0	10.2	11.1	14.4	12.4	13.0	16.3	14.2	15.3
24	11.5	10.7	11.1	12.5	10.3	11.3	16.0	12.2	14.0	16.1	14.5	15.3
25	12.0	11.4	11.7	13.3	11.1	12.1	15.5	13.7	14.7	15.9	14.2	14.9
26	12.3	12.0	12.1	13.3	11.4	12.4	14.9	13.3	14.2	15.9	13.6	14.8
27	12.3	11.9	12.2	13.6	11.6	12.6	15.4	13.0	14.3	16.1	14.1	15.2
28	12.0	11.3	11.6	13.5	11.9	12.7	16.2	13.4	14.9	15.9	13.6	14.8
29	11.5	11.3	11.4	13.4	11.5	12.5	15.6	13.5	14.7	15.4	12.8	14.0
30	11.6	11.4	11.5	13.1	11.5	12.4	14.6	12.5	13.7	16.0	13.7	14.8
31	12.2	11.6	11.9	---	---	---	14.8	12.9	14.0	15.8	13.2	14.3
MONTH	12.3	5.6	9.4	13.6	9.1	10.9	16.2	10.8	13.2	16.3	11.8	13.9



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	15.6	13.1	14.2	18.2	13.9	16.0	13.2	10.1	11.3	7.9	7.6	7.7
2	15.4	12.7	14.1	17.6	13.6	15.7	14.4	9.6	11.5	8.2	7.7	7.9
3	14.9	11.9	13.2	17.4	13.4	15.5	14.9	9.1	11.4	8.3	8.0	8.1
4	16.3	12.6	14.2	16.0	12.4	13.2	15.5	8.7	11.6	8.7	7.9	8.2
5	16.2	13.5	14.6	15.9	12.3	14.0	15.9	9.0	12.2	9.1	7.6	8.2
6	15.9	12.4	14.0	16.7	13.7	15.2	14.9	9.8	12.2	9.7	7.5	8.4
7	16.4	14.2	15.5	17.3	12.7	15.1	16.2	10.3	13.1	11.0	7.7	9.0
8	17.0	14.2	15.6	17.4	13.1	15.3	15.2	10.8	13.0	10.8	8.0	9.1
9	16.7	13.8	15.4	17.3	13.9	15.6	15.0	10.8	12.9	11.2	7.7	9.2
10	16.8	13.5	15.3	16.6	13.0	14.9	14.4	10.6	12.5	10.9	7.2	8.6
11	17.1	13.6	15.3	14.8	12.2	13.6	14.2	9.8	11.9	8.2	7.5	7.9
12	16.9	14.1	15.4	14.8	12.0	13.4	13.6	9.1	11.2	8.6	7.6	8.2
13	15.8	13.3	14.3	14.5	11.5	13.1	12.5	8.5	10.4	8.5	7.9	8.2
14	14.6	11.1	12.8	14.4	11.3	12.9	11.6	7.9	9.5	8.2	6.8	7.1
15	14.0	11.1	12.2	15.5	10.6	13.1	10.3	7.5	8.9	7.5	6.8	7.1
16	16.2	11.5	13.7	17.2	10.3	13.9	11.4	7.0	9.0	7.3	6.8	7.1
17	15.4	12.0	13.9	14.6	10.3	12.5	12.1	7.8	9.8	7.2	7.0	7.1
18	14.2	11.0	12.7	11.7	8.2	9.5	11.5	7.7	9.5	7.2	7.0	7.1
19	14.9	11.6	13.3	8.7	6.7	7.6	9.3	7.3	8.0	7.7	7.2	7.4
20	15.1	11.8	13.5	8.6	7.1	7.9	10.4	7.5	8.4	8.3	7.7	8.0
21	14.6	11.5	13.2	9.2	8.6	9.0	8.4	7.9	8.1	8.2	7.9	8.1
22	13.8	10.9	12.5	9.0	8.2	8.7	8.4	7.9	8.2	8.0	7.8	7.9
23	14.7	11.4	13.0	8.2	7.5	7.7	8.6	8.2	8.4	7.8	7.6	7.7
24	16.8	13.0	14.8	8.3	7.8	8.1	8.7	7.7	8.3	7.7	6.7	7.4
25	17.8	14.2	16.1	8.7	8.3	8.5	8.4	7.4	7.8	6.7	6.1	6.3
26	17.7	14.3	16.1	9.1	8.7	8.9	7.7	6.8	7.2	6.6	6.1	6.3
27	17.7	13.9	16.0	9.2	8.9	9.0	7.7	6.2	6.9	7.2	6.6	7.0
28	17.7	14.3	16.1	10.0	9.2	9.6	8.0	7.7	7.8	7.4	7.2	7.3
29	---	---	---	11.1	10.0	10.6	8.1	7.6	7.9	7.2	6.9	7.1
30	---	---	---	12.0	10.7	11.2	7.9	7.6	7.7	6.9	6.6	6.8
31	---	---	---	---	10.6	---	---	---	---	7.2	6.6	6.9
MONTH	17.8	10.9	14.3	18.2	6.7	12.0	16.2	6.2	9.9	11.2	6.1	7.7

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.8	6.8	7.3	13.8	7.1	10.2	8.5	5.8	7.1	7.0	6.2	6.6
2	8.1	6.4	7.4	13.1	6.6	9.7	8.9	5.5	7.3	6.9	6.7	6.8
3	6.4	5.6	5.9	13.3	6.2	9.5	7.9	5.7	6.9	7.3	6.9	7.1
4	7.0	5.7	6.3	11.8	5.8	8.8	7.2	5.2	5.7	7.1	6.8	7.0
5	7.7	7.0	7.4	10.4	5.2	7.8	8.3	4.4	6.3	7.0	6.3	6.8
6	7.7	7.2	7.4	9.9	5.3	7.4	8.2	5.4	6.8	7.0	6.2	6.6
7	7.4	6.8	7.2	8.8	5.2	7.2	9.0	5.5	6.8	7.4	6.1	6.7
8	7.8	7.4	7.6	8.7	5.1	6.9	9.3	5.5	7.2	8.7	6.2	7.1
9	8.2	7.4	7.8	8.6	4.8	6.7	9.2	5.8	7.5	8.4	6.3	7.2
10	8.4	7.2	7.7	9.0	4.6	6.7	9.2	6.7	7.8	7.9	5.9	6.9
11	9.3	6.8	7.9	9.0	4.9	6.9	8.6	6.1	7.4	7.4	5.0	6.1
12	8.1	6.0	7.1	9.2	5.1	7.0	8.7	5.9	7.0	6.9	5.4	5.8
13	10.2	6.7	8.3	8.9	5.4	7.2	8.8	5.4	7.1	6.3	5.4	5.8
14	12.0	6.8	9.1	8.8	5.0	7.0	8.5	6.0	7.3	7.4	6.3	6.8
15	12.9	7.0	9.8	9.0	4.9	7.0	---	6.0	---	7.6	7.4	7.5
16	13.3	6.9	9.6	9.2	5.6	7.3	---	---	---	7.5	6.9	7.3
17	13.3	6.5	9.4	9.1	5.5	7.4	---	---	---	7.2	6.7	7.0
18	15.4	7.0	10.7	9.4	5.8	7.6	---	---	---	7.2	6.5	6.8
19	11.0	6.8	9.2	8.8	5.2	7.1	---	---	---	7.5	7.1	7.2
20	13.0	6.4	9.5	8.0	4.9	6.5	7.2	---	---	7.6	6.9	7.2
21	12.7	6.5	9.5	9.2	5.2	7.0	7.2	4.2	5.8	7.2	6.7	6.9
22	12.2	6.9	8.9	10.1	5.6	7.6	7.7	4.3	5.8	7.8	6.6	7.3
23	9.4	5.8	7.4	9.9	6.0	7.9	7.8	4.1	5.7	8.3	6.6	7.5
24	9.6	5.4	7.3	9.8	6.2	8.0	8.0	4.1	5.8	8.9	6.8	7.7
25	7.7	5.5	6.4	9.1	6.5	8.0	7.6	4.3	5.9	8.9	7.4	8.0
26	12.0	5.5	8.3	10.0	6.2	8.1	7.3	4.2	5.7	12.5	7.6	9.6
27	13.0	6.4	9.6	9.9	5.7	7.9	6.8	4.3	5.6	10.5	7.4	8.9
28	13.3	6.8	10	9.8	5.9	7.8	7.5	4.3	6.0	10.0	7.5	8.7
29	13.2	7.3	10.2	10.0	5.9	7.9	8.3	5.0	6.4	8.8	7.7	8.4
30	13.3	8.0	10.6	9.4	6.0	7.8	7.1	5.6	6.4	8.4	7.7	8.0
31	---	---	---	8.4	6.0	7.4	7.0	6.6	6.8	---	---	---
MONTH	15.4	5.4	8.4	13.8	4.6	7.7	9.3	4.1	6.6	12.5	5.0	7.2

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	48	28	36	190	170	180	12	9.1	10	---	---	---
2	86	28	42	180	---	---	14	9.8	11	---	---	---
3	>1,400	86	>820	---	---	---	17	8.4	10	7.2	5.2	5.8
4	1,400	810	1,200	---	100	---	17	9.1	10	8.5	5.9	7.0
5	1,300	750	1,000	100	76	90	12	8.2	9.2	8.4	6.2	7.1
6	1,100	660	870	77	66	70	9.6	7.5	8.1	6.7	4.6	5.6
7	780	560	670	66	54	58	8.3	6.8	7.3	5.5	3.9	4.4
8	660	440	510	60	52	56	9.7	7.4	8.3	---	5.4	---
9	440	---	---	65	51	57	9.8	6.9	8.0	---	5.8	---
10	---	250	---	54	42	46	9.8	7.0	7.7	5.8	3.9	4.4
11	260	180	220	44	34	37	11	7.6	9.4	4.8	3.8	4.2
12	180	140	160	36	32	34	14	11	12	7.3	4.6	5.5
13	140	110	120	35	31	33	19	11	13	8.7	4.3	5.4
14	110	88	94	34	27	31	13	10	12	4.5	3.2	3.9
15	88	66	78	27	24	25	16	12	14	3.8	2.9	3.2
16	66	58	62	26	22	24	18	15	16	3.6	2.9	3.2
17	59	46	51	27	23	24	16	12	14	4.5	3.1	3.6
18	49	39	44	28	25	26	16	14	15	4.6	3.2	3.8
19	44	30	38	26	19	21	16	12	14	6.0	3.7	4.5
20	35	27	28	24	20	21	12	9.7	11	6.3	5.0	5.5
21	32	28	30	26	22	23	10	8.5	9.5	6.6	3.7	4.9
22	33	25	29	25	18	21	8.9	6.5	7.7	4.2	3.4	3.7
23	87	26	46	22	17	19	7.1	5.9	6.3	5.7	3.2	3.7
24	120	36	68	21	16	19	7.1	5.2	5.8	4.6	3.2	3.6
25	110	43	68	18	13	15	6.6	4.6	5.2	3.9	3.1	3.4
26	220	44	140	15	11	13	5.8	4.6	5.0	4.2	3.2	3.4
27	500	100	190	14	9.7	11	6.0	4.8	5.2	4.3	3.3	3.5
28	820	480	610	12	8.0	9.5	7.3	5.2	5.6	6.1	3.2	4.3
29	780	400	560	15	9.9	12	7.2	5.4	5.9	6.7	4.7	5.7
30	440	290	340	15	10	12	11	6.7	8.3	4.9	3.4	3.8
31	290	180	250	---	---	---	11	---	---	7.6	4.1	6.1
MONTH	1,400	25	290	190	8.0	37	19	4.6	9.5	8.7	2.9	4.6

> Actual value is known to be greater than the value shown

## ARKANSAS RIVER BASIN

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.1	5.4	6.4	9.5	6.8	7.7	54	46	49	210	97	130
2	8.9	6.6	7.4	11	9.3	10	52	46	49	97	71	83
3	9.5	5.1	7.5	14	11	12	49	42	45	71	53	62
4	5.8	4.5	4.9	17	10	14	49	43	46	53	39	44
5	7.1	4.6	5.5	11	8.5	9.5	52	40	45	44	36	39
6	7.5	4.7	6.7	13	9.3	11	42	29	34	43	36	39
7	5.5	3.2	4.0	19	12	15	31	24	27	50	38	42
8	4.0	3.0	3.4	18	12	16	26	20	22	46	30	35
9	4.0	3.3	3.6	12	8.5	9.9	24	18	21	39	27	34
10	7.6	3.8	4.9	14	9.5	12	27	19	22	64	25	39
11	10	6.1	7.5	16	13	14	29	24	26	210	52	110
12	6.5	4.2	5.4	13	10	12	37	27	30	130	71	87
13	80	6.0	9.9	17	11	13	40	27	30	>1,800	74	>580
14	80	13	24	20	13	14	35	29	32	>1,800	660	>1,100
15	14	7.7	11	20	15	17	43	35	39	1,000	400	600
16	10	7.3	8.1	21	18	20	50	41	48	1,300	570	910
17	14	9.6	12	24	18	21	50	45	48	750	510	620
18	14	8.8	12	76	24	44	53	47	49	600	500	550
19	13	7.4	8.9	>1,700	76	>780	310	51	110	500	320	410
20	12	7.6	9.6	>1,700	840	>1,100	1,200	62	280	320	260	280
21	23	11	14	840	620	720	820	400	560	280	220	250
22	14	9.7	12	620	500	560	400	250	330	220	160	180
23	9.9	8.7	9.3	610	490	520	590	180	290	160	100	130
24	12	8.2	9.2	610	460	520	1,400	270	970	960	95	230
25	11	7.4	8.5	470	360	410	1,300	660	910	960	560	660
26	8.4	6.6	7.4	370	260	330	930	540	720	880	590	720
27	8.8	7.0	7.8	260	150	190	550	470	500	610	360	470
28	8.7	6.6	7.5	150	85	110	470	320	390	360	230	290
29	---	---	---	85	62	73	320	220	270	230	150	180
30	---	---	---	62	44	52	220	130	170	150	98	120
31	---	---	---	48	44	45	---	---	---	98	76	86
MONTH	80	3.0	8.5	1,700	6.8	180	1,400	18	210	1,800	25	290

&gt; Actual value is known to be greater than the value shown

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	77	62	70	100	63	83	51	30	41	560	180	380
2	780	58	120	96	62	79	81	22	40	560	320	470
3	1,100	630	840	96	62	79	50	28	39	320	220	250
4	630	360	480	95	61	78	67	35	48	220	190	210
5	450	240	300	90	61	76	48	25	37	190	140	170
6	570	220	410	90	63	77	49	20	32	160	140	150
7	490	160	270	92	57	71	48	25	36	150	130	140
8	160	86	110	86	54	71	46	27	38	140	130	140
9	86	56	72	87	59	73	65	28	46	160	110	140
10	58	40	51	79	47	62	64	36	45	140	110	120
11	49	30	43	76	44	60	56	35	45	760	110	420
12	390	30	150	69	45	56	52	33	43	>1,600	140	>510
13	87	40	63	72	42	57	56	35	44	>1,600	760	>1,100
14	67	40	54	100	40	63	60	40	44	760	450	570
15	66	34	50	71	38	52	48	32	42	450	370	400
16	300	39	86	62	34	50	57	33	42	370	280	320
17	250	58	88	65	34	47	49	36	44	290	230	270
18	94	61	75	86	28	54	61	45	48	240	200	220
19	87	52	75	55	31	45	56	42	49	200	170	180
20	100	61	80	60	38	51	63	42	51	170	150	160
21	91	58	75	60	35	49	69	39	54	160	150	160
22	100	58	80	80	42	58	68	36	53	780	150	370
23	120	71	110	72	38	54	67	36	53	200	100	130
24	130	100	110	62	40	52	61	32	50	130	100	110
25	160	110	130	65	42	56	62	35	53	170	81	130
26	140	99	120	62	39	54	58	32	49	81	64	68
27	130	85	100	63	39	52	55	40	48	83	69	77
28	120	85	99	63	35	48	130	34	55	86	77	79
29	100	74	90	72	32	46	110	47	64	90	76	83
30	98	70	84	51	28	40	380	57	180	120	82	92
31	---	---	---	52	32	43	350	130	200	---	---	---
MONTH	1,100	30	150	100	28	59	380	20	55	1,600	64	250

> Actual value is known to be greater than the value shown

ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS

LOCATION.--Lat 37°52'59", long 97°25'27", in NE ¼ NW ¼ NW ¼ sec.15, T.25 S., R.01 W., Sedgwick County, Hydrologic Unit 11030012, on left bank at downstream side of county highway bridge, 2.1 mi south of Sedgwick, and at mile 23.7.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--1,239 mi<sup>2</sup>, of which about 74 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,340.00 ft above NGVD of 1929.

REMARKS.--Records good. Natural flow of stream affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0500	5,390	16.31	May 17	0400	4,510	14.83
Mar 20	1700	*6,560	*18.03	Sep 12	0000	3,920	13.78
Apr 26	0100	4,730	15.20				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

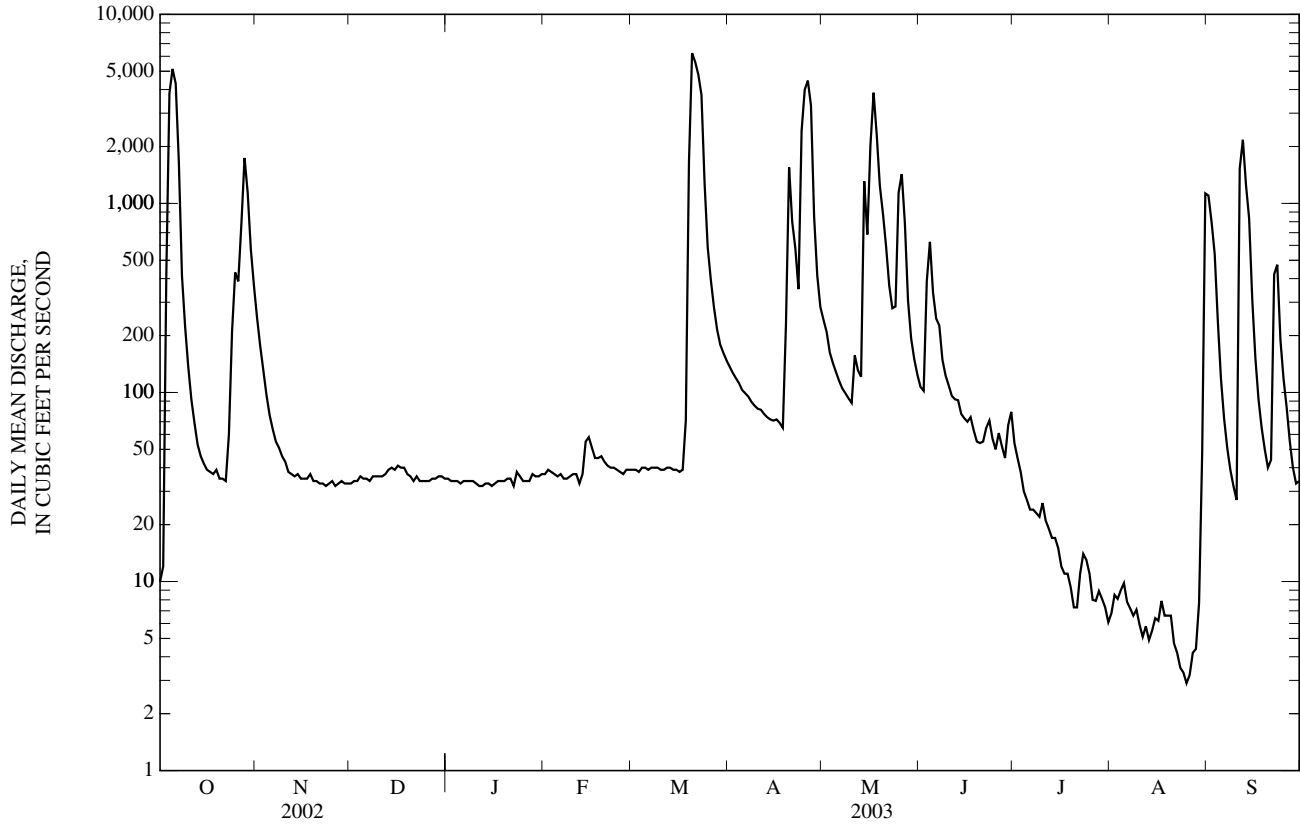
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	248	33	35	37	39	137	242	107	54	6.8	1,100
2	12	176	34	34	39	39	127	209	102	45	8.5	798
3	421	131	34	34	38	38	119	163	389	38	8.1	540
4	3,830	97	36	34	37	40	112	143	626	30	9.0	238
5	5,140	76	35	33	36	40	103	128	337	27	9.8	118
6	4,300	64	35	34	37	39	99	115	246	24	7.8	73
7	1,650	55	34	34	35	40	95	105	226	24	7.2	51
8	414	51	36	34	35	40	89	99	149	23	6.6	39
9	224	46	36	34	36	40	85	93	123	22	7.1	32
10	137	43	36	33	37	39	82	88	109	26	5.9	27
11	92	38	36	32	37	39	81	157	96	21	5.1	1,530
12	69	37	37	32	33	40	77	131	92	19	5.8	2,170
13	53	36	39	33	37	40	74	121	91	17	4.9	1,250
14	46	37	40	33	55	39	72	1,310	77	17	5.5	833
15	42	35	39	32	58	39	71	685	73	15	6.4	310
16	39	35	41	33	51	38	72	2,040	70	12	6.2	152
17	38	35	40	34	45	39	69	3,850	74	11	7.9	92
18	37	37	40	34	45	71	65	2,310	63	11	6.6	65
19	39	34	37	34	46	1,650	230	1,240	55	9.3	6.6	50
20	35	34	36	35	43	6,230	1,550	880	54	7.3	6.6	40
21	35	33	34	35	41	5,600	799	590	55	7.3	4.7	44
22	34	33	36	32	40	4,790	578	368	65	11	4.2	422
23	60	32	34	38	40	3,750	352	279	71	14	3.5	474
24	210	33	34	36	39	1,280	2,420	285	57	13	3.3	190
25	431	34	34	34	38	584	4,000	1,140	50	11	2.9	118
26	387	32	34	34	37	393	4,460	1,430	61	8.0	3.2	83
27	789	33	35	34	39	282	3,290	787	52	7.9	4.2	55
28	1,740	34	35	37	39	215	848	306	45	8.9	4.4	40
29	1,140	33	36	36	---	179	416	193	67	8.1	7.7	33
30	573	33	36	36	---	162	283	150	79	7.3	4.8	34
31	367	---	35	37	---	148	---	124	---	6.1	1,130	---
MEAN	722	55.8	36.0	34.2	40.4	839	695	637	125	17.9	43.7	367
MAX	5,140	248	41	38	58	6,230	4,460	3,850	626	54	1,130	2,170
MIN	10	32	33	32	33	38	65	88	45	6.1	2.9	27
AC-FT	44,420	3,320	2,220	2,100	2,240	51,570	41,370	39,200	7,460	1,100	2,690	21,820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	270	446	120	73.3	295	550	368	753	874	290	216	245
MAX	893	3,319	412	219	1,391	2,218	1,260	4,423	2,927	921	747	666
(WY)	(1999)	(1999)	(1998)	(1999)	(2001)	(2000)	(1999)	(1995)	(1995)	(1999)	(1999)	(2001)
MIN	8.92	19.9	18.8	21.4	19.5	34.5	38.6	53.5	50.6	17.9	15.8	9.13
(WY)	(1995)	(1995)	(1995)	(1995)	(1995)	(1996)	(1996)	(1994)	(1994)	(2003)	(1994)	(1994)

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL MEAN	222		303		375	
HIGHEST ANNUAL MEAN					859	1999
LOWEST ANNUAL MEAN					69.3	1994
HIGHEST DAILY MEAN	5,580	Jun 13	6,230	Mar 20	17,600	Nov 2, 1998
LOWEST DAILY MEAN	4.8	Aug 8	2.9	Aug 25	2.9	Aug 25, 2003
ANNUAL SEVEN-DAY MINIMUM	7.1	Aug 5	3.7	Aug 22	3.7	Aug 22, 2003
MAXIMUM PEAK FLOW			6,560	Mar 20	17,600	Nov 1, 1998
MAXIMUM PEAK STAGE			18.03	Mar 20	25.82	Nov 1, 1998
INSTANTANEOUS LOW FLOW			2.8	Aug 24	2.8	Aug 24, 2003
ANNUAL RUNOFF (AC-FT)	160,400		219,500		271,400	
10 PERCENT EXCEEDS	375		726		686	
50 PERCENT EXCEEDS	36		40		61	
90 PERCENT EXCEEDS	13		9.2		19	



07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1998 to current year.

pH: May 1998 to current year.

WATER TEMPERATURE: May 1998 to current year.

DISSOLVED OXYGEN: October 1998 to current year.

TURBIDITY: October 1998 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records good. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,580 microsiemens/cm, Dec. 26, 2002; minimum, 36 microsiemens/cm, Sept. 18, 2001.

pH: Maximum, 9.2 standard units, July 11, 2003; minimum, 6.7 standard units, June 20, 1999.

WATER TEMPERATURE: Maximum, 35.3°C, July 4, 1998; minimum, 0.0°C, Jan. 2, 1999.

DISSOLVED OXYGEN: Maximum 24.0 mg/L, July 11, 2003; minimum, 0.1 mg/L, Aug. 4, 1999.

TURBIDITY: Maximum, &gt;2,000 NTU, June 6, 2001; minimum, 1.1 NTU, Jan. 19, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,580 microsiemens/cm, Dec. 26; minimum, 120 microsiemens/cm, Sept. 22.

pH: Maximum, 9.2 standard units, July 11; minimum, 6.7 standard units, Oct. 4.

WATER TEMPERATURE: Maximum, 32.4°C, July 19; minimum, 0.0°C, Jan. 18.

DISSOLVED OXYGEN: Maximum, 24.0 mg/L, July 11; minimum, 2.9 mg/L, Aug. 2.

TURBIDITY: Maximum, &gt;1,800 NTU, May 14; minimum, &lt;2.0 NTU, Jan. 23.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	827	815	823	445	417	434	1,120	1,090	1,110	1,370	1,320	1,340
2	831	772	812	551	442	514	1,140	1,110	1,120	1,390	1,340	1,360
3	1,050	334	692	507	495	501	1,140	1,120	1,130	1,350	1,320	1,330
4	334	132	161	---	507	---	1,160	1,130	1,150	1,410	1,280	1,330
5	135	128	132	---	---	---	1,210	1,140	1,160	1,350	1,310	1,330
6	164	128	142	---	---	---	1,180	1,120	1,140	1,330	1,300	1,320
7	212	164	187	617	---	---	1,210	1,140	1,170	1,320	1,280	1,300
8	---	212	---	646	617	632	1,210	1,170	1,200	1,340	1,270	1,300
9	284	---	---	655	626	637	1,230	1,200	1,210	1,310	1,270	1,290
10	326	284	306	---	---	---	1,250	1,210	1,230	1,290	1,250	1,270
11	362	326	344	---	---	---	1,260	1,230	1,250	1,300	1,250	1,270
12	395	362	379	---	---	---	1,260	1,230	1,240	1,340	1,240	1,280
13	437	393	413	776	---	---	1,240	1,230	1,240	---	---	---
14	478	437	457	766	742	756	1,240	1,200	1,220	---	---	---
15	519	478	499	773	762	767	1,240	1,220	1,230	1,270	1,240	1,250
16	558	519	537	793	767	780	1,260	1,230	1,250	1,320	1,220	1,270
17	584	556	568	804	787	796	1,320	1,260	1,290	1,330	1,240	1,280
18	613	584	597	822	801	812	1,330	1,290	1,310	1,310	1,210	1,270
19	620	599	608	843	811	828	1,380	1,320	1,360	1,320	1,270	1,300
20	658	620	634	848	838	843	1,400	1,360	1,380	1,300	1,240	1,270
21	674	658	668	874	838	856	1,410	1,380	1,390	1,320	1,250	1,280
22	689	666	682	907	874	893	1,400	1,370	1,380	1,380	1,290	1,330
23	694	565	661	928	905	916	1,440	1,390	1,420	1,420	1,310	1,380
24	625	282	342	942	928	938	1,430	1,410	1,420	1,430	1,310	1,360
25	377	344	360	966	940	956	1,540	1,430	1,460	1,440	1,370	1,400
26	449	359	386	1,000	966	986	1,580	1,400	1,470	1,400	1,320	1,350
27	629	253	441	1,030	1,000	1,020	1,470	1,360	1,400	1,370	1,310	1,330
28	413	261	342	1,050	1,020	1,030	1,430	1,350	1,390	1,360	1,290	1,320
29	338	247	279	1,070	1,050	1,060	1,430	1,330	1,370	1,360	1,280	1,310
30	282	257	274	1,100	1,070	1,090	1,360	1,320	1,340	1,280	1,240	1,260
31	429	273	345	---	---	---	1,370	1,330	1,350	1,340	1,230	1,280
MONTH	1,050	128	451	1,100	417	820	1,580	1,090	1,280	1,440	1,210	1,310



07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1,300	1,260	1,280	1,210	1,190	1,200	853	841	850	610	507	555
2	1,330	1,300	1,310	1,220	1,180	1,210	881	852	862	634	561	595
3	1,360	1,330	1,350	1,230	1,160	1,200	---	881	---	715	634	676
4	1,380	1,330	1,360	1,230	1,190	1,210	---	---	---	772	715	742
5	1,420	1,330	1,370	1,260	1,230	1,240	---	---	---	836	772	811
6	1,380	1,290	1,350	1,340	1,230	1,280	---	---	---	864	836	846
7	1,410	1,350	1,380	1,310	1,190	1,250	1,020	---	---	---	864	---
8	1,530	1,330	1,430	1,220	1,170	1,190	1,040	1,020	1,040	---	---	---
9	1,430	1,290	1,370	1,200	1,170	1,190	1,060	1,040	1,050	959	---	---
10	1,390	1,280	---	1,220	1,150	1,190	1,070	1,060	1,070	974	956	964
11	1,340	---	---	1,210	1,170	1,190	1,100	1,070	1,080	1,040	974	996
12	---	---	---	1,190	1,160	1,180	1,110	1,090	1,100	1,050	960	1,010
13	1,300	1,210	1,280	1,180	1,160	1,170	1,120	1,110	1,110	1,020	635	857
14	1,240	1,180	1,210	1,160	1,130	1,150	1,140	1,120	1,130	883	271	478
15	1,240	1,090	1,140	1,160	1,140	1,150	1,160	1,140	1,150	341	246	300
16	1,130	1,060	1,080	1,210	1,150	1,180	1,170	1,150	1,160	355	180	271
17	1,170	1,130	1,150	---	1,180	---	1,180	1,140	1,150	275	151	194
18	1,220	1,170	1,190	1,180	969	1,090	1,160	1,140	1,150	376	275	335
19	1,240	1,180	1,210	977	301	624	1,160	304	1,000	323	298	305
20	1,230	1,180	1,210	437	215	274	381	190	299	333	296	315
21	1,210	1,180	1,190	215	186	192	982	381	678	394	307	341
22	1,210	1,160	1,190	188	183	184	1,100	650	782	444	394	409
23	1,190	1,160	1,180	246	188	221	746	436	635	533	444	484
24	1,240	1,130	1,180	343	246	293	436	223	276	580	532	554
25	1,300	1,180	1,240	429	343	387	245	211	227	604	283	429
26	1,270	1,230	1,240	520	429	474	223	195	208	571	273	415
27	1,260	1,190	1,230	582	520	539	246	193	209	377	340	352
28	1,210	1,190	1,190	653	576	606	339	246	294	450	377	418
29	---	---	---	732	653	692	420	339	377	522	450	485
30	---	---	---	809	732	768	507	420	463	584	522	550
31	---	---	---	841	809	834	---	---	---	626	584	604
MONTH	1,530	1,060	1,250	1,340	183	879	1,180	190	774	1,050	151	546

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	677	626	654	806	761	788	852	749	829	424	196	317
2	718	677	696	826	710	788	859	784	812	896	289	462
3	939	370	700	---	800	---	880	830	861	291	263	275
4	638	404	454	---	---	---	847	804	834	313	287	296
5	513	387	440	---	---	---	859	801	834	374	313	331
6	565	513	548	920	900	912	869	725	823	400	374	384
7	590	485	537	949	906	928	867	834	855	461	400	431
8	494	441	460	966	949	961	867	862	865	495	461	481
9	600	494	557	983	904	961	865	855	859	544	495	517
10	642	600	620	924	596	---	860	844	853	548	506	525
11	718	635	674	---	---	---	849	804	833	517	134	251
12	775	708	729	896	841	878	831	791	817	179	133	162
13	864	775	818	912	879	894	819	731	794	700	175	307
14	866	747	825	927	904	916	828	754	810	263	219	231
15	823	739	754	943	927	936	837	799	823	290	256	268
16	937	823	896	939	906	926	---	805	---	338	290	313
17	1,020	936	981	925	902	912	---	---	---	382	331	354
18	1,020	981	1,010	923	904	914	898	---	---	---	---	---
19	1,010	944	988	928	899	916	902	896	899	447	---	---
20	985	873	907	912	891	904	902	886	894	488	447	468
21	1,060	985	1,040	897	846	873	896	867	885	491	462	473
22	1,190	1,050	1,080	850	815	829	892	838	868	532	120	312
23	1,260	968	1,150	840	825	832	862	819	844	201	171	190
24	1,020	961	987	848	824	829	854	807	843	227	171	195
25	1,100	1,020	1,070	874	842	862	847	820	836	272	219	237
26	1,260	1,100	1,170	883	834	862	832	794	807	426	272	326
27	1,160	1,100	1,120	866	840	852	822	811	818	561	426	516
28	1,180	1,080	1,150	881	850	863	816	804	812	583	561	575
29	1,080	718	936	913	881	896	818	791	808	657	583	629
30	761	614	680	899	857	884	831	526	741	725	657	684
31	---	---	---	865	839	858	526	196	349	---	---	---
MONTH	1,260	370	821	983	596	884	902	196	818	896	120	375

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.3	8.1	8.2	7.8	7.8	7.8	8.3	8.1	8.2	8.0	7.9	8.0
2	8.2	8.0	8.1	7.9	7.8	7.9	8.3	8.1	8.2	8.1	7.9	8.0
3	8.0	7.3	7.8	7.9	7.8	7.9	8.3	8.1	8.2	8.1	7.9	8.0
4	7.3	6.7	7.0	7.9	---	7.9	8.3	8.1	8.2	8.1	7.9	8.0
5	6.8	6.7	6.8	---	---	---	8.3	8.2	8.2	8.1	7.9	8.0
6	6.9	6.8	6.9	---	---	---	8.2	8.2	8.2	8.1	7.9	8.0
7	7.1	6.9	7.0	7.9	---	7.8	8.2	8.1	8.2	8.1	7.9	8.0
8	7.2	7.1	7.2	8.0	7.8	7.9	8.2	8.0	8.1	8.1	7.9	8.0
9	7.5	---	7.4	7.9	7.7	7.9	8.2	8.0	8.1	8.1	7.9	8.0
10	7.5	7.5	7.5	8.0	7.8	7.9	8.2	8.0	8.1	8.1	7.9	8.0
11	7.6	7.5	7.5	---	---	---	8.1	8.0	8.1	8.2	7.9	8.0
12	7.7	7.6	7.6	---	---	---	8.1	8.0	8.0	8.2	7.9	8.0
13	7.7	7.6	7.6	---	---	---	8.2	8.0	8.1	---	---	---
14	7.8	7.6	7.7	7.9	7.9	7.9	8.2	8.0	8.1	---	---	---
15	7.8	7.6	7.8	7.9	7.9	7.9	8.2	8.0	8.1	8.4	8.2	8.2
16	7.9	7.7	7.8	7.9	7.9	7.9	8.2	8.0	8.1	8.4	8.2	8.2
17	8.0	7.8	7.9	8.0	7.9	7.9	8.2	8.0	8.1	8.3	8.1	8.2
18	7.9	7.8	7.9	8.0	7.9	8.0	8.1	7.9	8.0	8.3	8.1	8.2
19	8.0	7.9	7.9	8.1	8.0	8.0	8.1	7.9	8.0	8.4	8.2	8.2
20	8.0	7.9	7.9	8.1	8.0	8.0	8.1	7.9	8.0	8.4	8.2	8.2
21	8.0	7.9	8.0	8.2	8.0	8.0	8.1	7.9	8.1	8.4	8.2	8.3
22	8.0	8.0	8.0	8.1	8.0	8.0	8.1	8.0	8.1	8.4	8.2	8.3
23	8.1	8.0	8.0	8.2	8.0	8.0	8.1	8.0	8.0	8.3	8.1	8.2
24	8.0	7.7	7.7	8.2	8.0	8.1	8.1	7.9	8.0	8.3	8.1	8.2
25	7.8	7.7	7.8	8.2	8.1	8.2	8.1	8.0	8.0	8.3	8.1	8.2
26	7.8	7.7	7.8	8.2	8.1	8.2	8.0	7.9	8.0	8.3	8.2	8.2
27	8.0	7.4	7.8	8.2	8.0	8.2	8.0	7.9	8.0	8.3	8.2	8.2
28	7.6	7.5	7.5	8.2	8.1	8.2	8.1	7.9	8.0	8.4	8.2	8.3
29	7.5	7.5	7.5	8.3	8.1	8.2	8.1	8.0	8.1	8.5	8.2	8.3
30	7.6	7.5	7.6	8.3	8.1	8.2	8.2	8.0	8.1	8.5	8.3	8.4
31	7.8	7.6	7.7	---	---	---	8.1	8.0	8.0	8.6	8.3	8.4
MAX	8.3	8.1	8.2	8.3	8.1	8.2	8.3	8.2	8.2	8.6	8.3	8.4
MIN	6.8	6.7	6.8	7.8	7.7	7.8	8.0	7.9	8.0	8.0	7.9	8.0

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.6	8.3	8.4	8.7	8.4	8.5	8.6	8.2	8.4	8.0	7.9	8.0
2	8.7	8.3	8.4	8.8	8.4	8.6	8.7	8.3	8.5	8.0	8.0	8.0
3	8.6	8.3	8.4	8.8	8.4	8.6	8.8	8.4	8.5	8.1	8.0	8.1
4	8.6	8.4	8.4	8.5	8.4	8.5	8.8	8.4	8.7	8.2	8.1	8.1
5	8.6	8.3	8.4	8.6	8.3	8.5	8.9	8.5	8.7	8.3	8.1	8.2
6	8.7	8.3	8.5	8.6	8.4	8.5	8.8	8.6	8.7	8.5	8.1	8.2
7	8.6	8.4	8.5	8.7	8.4	8.5	8.8	8.6	8.7	8.6	8.2	8.3
8	8.5	8.3	8.4	8.8	8.4	8.6	8.8	8.6	8.7	8.6	8.2	8.4
9	8.5	8.3	8.4	8.8	8.5	8.6	8.8	8.6	8.7	8.7	8.3	8.6
10	8.6	8.3	8.4	8.8	8.5	8.6	8.8	8.5	8.7	8.9	8.4	8.6
11	8.7	8.4	8.5	8.7	8.4	8.5	8.8	8.5	8.7	8.7	8.3	8.5
12	8.7	8.4	8.5	8.8	8.4	8.5	8.8	8.4	8.6	8.5	8.3	8.4
13	8.7	8.4	8.5	8.8	8.4	8.5	8.7	8.4	8.6	8.4	8.1	8.2
14	8.7	8.3	8.5	8.8	8.4	8.6	8.7	8.4	8.6	8.1	7.5	7.6
15	8.6	8.3	8.4	8.8	8.4	8.6	8.7	8.4	8.6	7.6	7.5	7.6
16	8.6	8.3	8.4	8.8	8.4	8.6	8.7	8.3	8.5	7.8	7.4	7.6
17	8.6	8.3	8.5	8.7	8.4	8.5	8.7	8.4	8.5	7.5	7.3	7.4
18	8.6	8.3	8.5	8.6	8.2	8.3	8.6	8.3	8.5	7.6	7.5	7.6
19	8.7	8.4	8.6	8.2	7.6	7.9	8.5	7.6	8.3	7.7	7.6	7.6
20	8.8	8.4	8.6	7.6	7.4	7.5	7.8	7.6	7.7	7.8	7.6	7.7
21	8.8	8.4	8.6	7.4	7.4	7.4	8.1	7.8	8.0	7.7	7.6	7.7
22	8.8	8.4	8.5	7.4	7.4	7.4	7.9	7.8	7.9	7.8	7.7	7.8
23	8.7	8.4	8.5	7.4	7.4	7.4	8.0	7.9	8.0	7.8	7.8	7.8
24	8.6	8.4	8.5	7.6	7.4	7.5	7.9	7.6	7.7	7.9	7.8	7.8
25	8.5	8.3	8.4	7.8	7.6	7.7	7.6	7.5	7.5	7.8	7.5	7.8
26	8.5	8.3	8.4	7.9	7.8	7.8	7.5	7.4	7.4	7.6	7.4	7.6
27	8.6	8.3	8.4	8.0	7.9	7.9	7.5	7.4	7.4	7.7	7.6	7.6
28	8.6	8.4	8.5	8.0	8.0	8.0	7.7	7.5	7.6	7.7	7.7	7.7
29	---	---	---	8.1	8.0	8.1	7.8	7.7	7.8	7.8	7.7	7.8
30	---	---	---	8.2	8.1	8.2	7.9	7.8	7.9	7.8	7.8	7.8
31	---	---	---	8.4	8.2	8.2	---	---	---	8.0	7.8	7.9
MAX	8.8	8.4	8.6	8.8	8.5	8.6	8.9	8.6	8.7	8.9	8.4	8.6
MIN	8.5	8.3	8.4	7.4	7.4	7.4	7.5	7.4	7.4	7.5	7.3	7.4

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.0	7.9	8.0	8.7	8.3	8.4	8.8	8.3	8.4	7.6	7.5	7.5
2	8.1	8.0	8.0	8.8	8.2	8.5	8.7	8.2	8.5	7.6	7.4	7.5
3	8.1	7.6	8.0	8.8	8.3	8.6	8.7	8.3	8.6	7.5	7.4	7.4
4	7.7	7.5	7.6	8.8	8.2	8.6	8.6	8.3	8.4	7.6	7.5	7.5
5	7.8	7.7	7.7	8.8	8.2	8.6	8.5	8.3	8.3	7.6	7.5	7.6
6	7.9	7.8	7.8	8.8	8.3	8.7	8.7	8.4	8.5	7.6	7.6	7.6
7	7.9	7.8	7.9	8.7	8.2	8.6	8.8	8.4	8.6	7.7	7.6	7.6
8	7.8	7.8	7.8	8.7	8.2	8.5	8.8	8.3	8.5	7.8	7.6	7.6
9	7.9	7.8	7.9	8.6	8.2	8.5	8.8	8.3	8.5	7.9	7.6	7.7
10	8.0	7.9	7.9	---	8.1	---	8.9	8.4	8.7	8.2	7.7	7.8
11	8.3	7.9	8.0	9.2	---	---	9.0	8.5	8.7	8.0	7.1	7.3
12	8.4	8.0	8.1	9.0	8.5	8.9	8.9	8.4	8.6	7.3	7.1	7.1
13	8.5	8.2	8.3	8.9	8.5	8.7	8.8	8.4	8.6	7.5	7.2	7.3
14	8.5	8.1	8.3	8.7	8.3	8.6	8.6	8.3	8.5	7.4	7.3	7.4
15	8.5	8.0	8.2	8.6	8.4	8.6	8.6	8.2	8.5	7.5	7.4	7.5
16	8.7	8.2	8.4	8.6	8.5	8.5	8.6	8.2	8.4	7.6	7.5	7.6
17	8.7	8.2	8.5	8.7	8.4	8.5	8.6	8.3	8.4	7.7	7.6	7.6
18	8.7	8.3	8.5	8.6	8.3	8.5	8.7	8.3	8.5	7.8	7.6	7.7
19	8.6	8.2	8.4	8.6	8.2	8.4	8.8	8.3	8.6	7.7	7.7	7.7
20	8.7	8.0	8.4	8.4	8.1	8.2	8.8	8.4	8.6	7.7	7.6	7.7
21	8.6	8.2	8.4	8.5	8.0	8.2	8.9	8.4	8.6	7.7	7.6	7.7
22	8.6	8.2	8.4	8.7	8.2	8.4	8.9	8.3	8.6	7.8	7.1	7.6
23	8.7	8.2	8.4	8.5	8.1	8.4	8.8	8.3	8.5	7.3	7.2	7.3
24	8.6	8.2	8.4	8.8	8.3	8.4	8.6	8.3	8.5	7.4	7.2	7.3
25	8.5	8.2	8.3	8.9	8.5	8.7	8.5	8.2	8.3	7.4	7.3	7.4
26	8.4	8.2	8.3	8.9	8.4	8.7	8.4	8.0	8.2	7.6	7.4	7.5
27	8.4	8.0	8.2	8.8	8.4	8.6	8.3	8.0	8.2	7.8	7.6	7.6
28	8.5	8.1	8.2	8.6	8.2	8.3	8.4	8.0	8.2	7.8	7.6	7.7
29	8.4	8.1	8.3	8.6	8.2	8.3	8.6	8.0	8.3	7.7	7.7	7.7
30	8.4	8.1	8.1	8.7	8.2	8.3	8.1	7.9	8.0	7.7	7.6	7.7
31	---	---	---	8.7	8.2	8.5	7.9	7.5	7.7	---	---	---
MAX	8.7	8.3	8.5	9.2	8.5	8.9	9.0	8.5	8.7	8.2	7.7	7.8
MIN	7.7	7.5	7.6	8.4	8.0	8.2	7.9	7.5	7.7	7.3	7.1	7.1

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.5	20.8	22.2	6.9	6.2	6.5	5.2	3.6	4.5	4.0	2.3	2.9
2	22.4	19.8	21.6	6.3	5.9	6.0	6.1	4.2	5.1	3.1	1.8	2.5
3	19.8	16.8	17.8	7.8	5.9	6.8	5.5	3.0	4.2	3.3	1.4	2.5
4	16.8	15.3	15.9	---	6.0	---	3.0	1.4	2.1	4.7	2.7	3.7
5	16.0	15.0	15.6	---	---	---	2.7	1.3	2.0	4.6	3.3	4.0
6	16.4	15.3	15.8	---	---	---	2.1	0.7	1.5	4.3	2.8	3.5
7	15.9	14.9	15.5	9.5	---	---	3.3	1.6	2.3	4.0	1.7	2.9
8	---	14.7	---	10.5	8.6	9.6	5.0	3.2	4.0	5.5	3.3	4.4
9	16.7	---	---	12.0	9.9	11.0	4.7	3.3	4.2	5.3	4.0	4.7
10	16.9	15.0	16.0	12.2	10.8	11.4	4.6	3.6	4.1	4.0	2.0	2.7
11	17.2	15.8	16.4	---	---	---	5.2	4.4	4.7	2.5	1.0	1.9
12	16.9	15.5	16.2	---	---	---	5.8	5.2	5.5	3.5	2.0	2.7
13	15.5	13.2	14.4	9.9	---	---	6.2	5.1	5.7	---	---	---
14	14.2	12.0	13.3	9.8	9.0	9.4	5.8	4.3	5.1	---	---	---
15	14.2	12.0	13.1	9.2	7.9	8.6	6.3	4.4	5.4	2.0	0.9	1.6
16	13.4	10.9	12.0	8.7	7.0	7.9	6.9	5.6	6.2	1.6	0.0	0.6
17	12.3	9.4	10.9	8.9	7.0	8.1	7.5	5.5	6.5	1.8	0.0	0.5
18	14.6	11.3	12.7	9.6	8.1	8.8	7.6	6.3	7.0	2.7	0.0	1.1
19	14.7	13.3	14.0	8.9	7.2	8.2	7.0	5.6	6.3	4.7	0.2	2.2
20	13.5	11.3	12.6	9.2	7.4	8.4	5.6	3.9	4.6	5.8	1.8	3.4
21	13.4	11.7	12.5	9.3	7.8	8.6	4.8	3.3	4.0	4.1	1.0	2.4
22	13.1	11.9	12.5	8.4	6.8	7.8	3.7	2.3	3.2	1.2	0.0	0.4
23	12.7	8.6	10.7	8.8	7.0	8.0	3.4	1.5	2.6	0.2	0.0	0.0
24	8.6	6.8	7.4	8.4	6.2	7.4	2.2	1.0	1.6	0.3	0.0	0.1
25	6.8	6.2	6.6	6.2	4.1	4.9	1.6	0.3	1.1	0.6	0.0	0.2
26	7.8	6.5	7.0	5.0	3.8	4.2	1.1	0.3	0.7	0.8	0.0	0.2
27	7.8	7.2	7.5	4.6	3.3	4.0	1.6	0.5	1.1	2.4	0.0	0.8
28	8.1	7.8	8.0	5.0	3.2	4.2	2.3	0.5	1.4	5.2	0.9	2.6
29	8.4	8.1	8.2	6.4	4.5	5.5	4.5	1.6	2.7	4.2	2.1	2.9
30	8.4	7.9	8.3	6.1	4.7	5.3	5.5	4.3	4.8	4.9	1.0	2.8
31	7.9	6.9	7.3	---	---	---	4.8	3.2	4.0	7.3	2.9	4.7
MONTH	23.5	6.2	12.8	12.2	3.2	7.4	7.6	0.3	3.8	7.3	0.0	2.2

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.1	3.7	5.6	6.2	2.8	4.1	16.4	11.7	13.9	21.1	17.8	19.0
2	9.3	5.5	7.0	8.2	2.8	5.1	18.2	13.1	15.6	19.5	16.4	17.9
3	6.9	3.2	5.6	8.5	3.2	5.6	18.4	15.6	16.9	19.2	17.8	18.6
4	4.7	1.7	3.1	6.4	1.8	4.9	17.3	14.2	15.8	23.1	18.4	20.4
5	3.8	2.0	2.8	1.8	0.4	0.9	14.2	11.7	12.5	23.1	18.6	21.0
6	3.2	0.3	2.3	6.6	0.0	2.7	11.7	10.5	11.1	21.6	18.4	19.8
7	3.3	0.0	1.1	9.9	2.7	5.7	12.1	8.6	10.3	20.8	16.4	18.5
8	4.0	0.0	1.5	10.0	5.3	7.2	11.2	8.4	9.9	23.0	18.6	20.5
9	3.4	0.7	2.0	8.6	3.2	5.5	13.0	7.9	10.5	23.6	18.6	21.2
10	6.1	1.1	3.3	8.9	2.9	5.4	15.2	9.9	12.6	24.0	21.0	22.3
11	7.2	2.5	4.5	6.5	4.6	5.2	17.6	12.2	14.9	21.4	17.6	19.5
12	8.2	2.9	5.2	8.5	4.3	6.3	18.6	14.1	16.5	21.5	17.4	19.5
13	6.8	4.3	5.5	12.0	6.5	8.7	19.5	15.1	17.5	20.2	18.0	18.7
14	10.4	6.4	8.2	14.6	7.8	10.6	21.7	16.6	19.1	18.6	15.1	17.3
15	8.8	3.7	6.1	17.4	10.0	13.2	20.7	18.1	19.3	19.1	18.0	18.5
16	6.1	2.1	3.8	19.2	13.0	15.4	19.0	16.4	17.5	18.6	16.6	17.7
17	6.6	2.1	4.0	16.4	14.3	15.3	17.4	13.6	15.6	16.9	15.9	16.4
18	5.8	4.1	4.9	15.6	13.6	14.3	19.4	14.8	17.0	18.8	16.7	17.7
19	10.0	5.0	6.9	13.6	11.2	12.4	19.1	14.3	17.5	18.8	18.0	18.6
20	10.0	5.4	7.4	11.2	8.7	9.8	14.3	13.4	13.9	18.6	16.8	17.7
21	8.8	6.5	7.5	8.7	7.9	8.3	16.3	13.8	15.1	19.8	16.3	17.9
22	7.3	4.5	6.1	9.9	7.8	9.0	16.6	13.9	15.2	20.9	16.7	18.8
23	4.5	0.0	2.5	12.2	9.8	11.3	16.0	13.1	14.5	21.1	18.4	19.8
24	1.4	0.0	0.4	14.6	11.5	12.9	13.2	12.5	12.9	22.2	19.8	20.8
25	3.2	0.0	1.0	14.3	12.6	13.5	13.1	12.3	12.6	20.9	19.2	20.1
26	4.1	0.0	1.7	14.7	12.0	13.5	13.7	12.1	12.9	20.7	19.5	20.1
27	3.8	1.3	2.4	13.9	12.0	13.0	15.9	13.2	14.7	22.0	18.9	20.3
28	3.8	2.2	2.9	12.2	10.0	11.0	17.8	15.3	16.4	23.7	19.2	21.3
29	---	---	---	11.2	8.5	10	20.5	16.6	18.4	25.0	20.9	23.0
30	---	---	---	11.9	8.7	10.3	21.9	18.5	20.2	26.8	22.5	24.6
31	---	---	---	14.3	9.8	12.0	---	---	---	25.6	20.6	22.5
MONTH	10.4	0.0	4.1	19.2	0.0	9.1	21.9	7.9	15.0	26.8	15.1	19.7

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.9	19.0	21.2	29.5	23.4	26.0	29.7	25.1	27.2	20.5	19.6	20.0
2	24.5	21.1	22.7	30.8	25.2	27.8	30.9	25.1	27.6	21.6	19.4	20.5
3	23.0	19.6	21.0	31.0	26.2	28.6	30.0	26.5	28.4	22.8	19.8	21.2
4	20.1	18.8	19.5	30.4	26.2	28.4	28.6	26.6	27.5	24.0	20.8	22.4
5	21.2	18.7	20.0	30.4	26.2	28.3	31.6	25.7	28.2	25.1	21.1	23.1
6	22.9	18.7	20.7	30.0	26.0	28.2	32.0	26.8	29.2	25.4	21.0	23.3
7	21.6	19.0	19.8	29.5	25.9	27.8	30.0	26.6	27.8	24.8	21.1	23.2
8	22.7	17.4	20.0	30.1	25.7	27.9	29.4	25.2	27.1	24.0	21.0	22.8
9	24.1	19.8	21.9	29.5	26.0	27.9	31.2	25.4	27.9	25.4	22.0	23.7
10	24.3	22.0	23.1	---	25.5	---	32.1	26.5	28.6	25.8	22.6	24.2
11	26.7	21.6	23.9	31.4	---	---	30.4	25.6	27.6	25.0	20.0	21.4
12	27.0	22.6	24.8	30.2	26.7	28.5	30.0	24.3	26.8	20.0	19.4	19.7
13	25.2	22.0	23.8	30.3	25.9	28.1	29.1	23.8	26.1	20.0	18.4	19.2
14	27.4	22.1	24.5	30.6	27.3	29.0	27.1	23.4	25.3	20.0	17.7	18.7
15	27.8	22.8	25.3	31.2	27.9	29.5	28.6	24.3	26.6	20.8	17.5	19.2
16	27.1	23.2	25.2	29.9	27.1	28.5	30.6	25.4	27.9	21.9	18.7	20.3
17	27.1	22.6	24.8	30.5	27.0	28.8	29.8	26.3	28.0	23.9	20.3	21.9
18	28.5	22.7	25.5	32.1	27.3	29.5	29.5	26.6	27.9	22.9	18.0	20.1
19	27.2	23.8	25.3	32.4	28.1	30.0	29.5	26.3	27.9	19.3	15.5	17.5
20	26.8	23.2	25.0	29.9	27.5	28.6	29.5	26.3	27.9	19.3	15.8	17.7
21	27.3	23.0	25.1	32.2	25.8	28.6	30.6	26.3	28.6	19.2	18.0	18.5
22	29.4	24.2	26.6	28.5	25.5	26.9	31.6	26.9	29.3	18.5	14.1	16.6
23	30.0	25.2	27.5	28.4	24.5	26.5	31.8	26.9	29.3	19.9	16.4	18.0
24	29.2	25.3	27.3	27.8	24.6	26.3	31.8	26.6	29.1	21.6	18.5	19.8
25	27.8	23.9	25.8	28.7	24.6	26.7	30.9	26.6	28.5	20.4	17.3	19.0
26	26.2	20.9	23.5	30.1	25.6	27.9	30.2	26.1	28.0	22.3	17.9	20.0
27	27.2	21.5	24.3	31.1	26.5	28.7	28.9	26.4	27.1	21.0	18.1	19.6
28	26.9	21.9	24.4	30.3	26.8	28.5	29.2	25.1	26.9	19.6	16.5	18.2
29	26.4	23.0	24.5	31.9	26.9	29.0	27.9	25.5	26.5	18.3	15.2	15.9
30	26.1	22.0	23.8	31.5	26.1	28.5	26.0	21.7	23.9	15.2	13.1	14.2
31	---	---	---	30.7	26.2	28.2	21.8	19.8	20.9	---	---	---
MONTH	30.0	17.4	23.7	32.4	23.4	28.2	32.1	19.8	27.4	25.8	13.1	20.0



07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.7	7.7	10.0	13.1	12.7	13.0	14.5	11.1	12.8	15.7	11.8	13.8
2	9.7	7.3	8.2	13.3	13.1	13.2	14.7	10.8	12.8	16.8	12.5	14.8
3	8.2	6.4	7.6	13.2	12.7	13.0	14.5	10.7	12.7	16.6	12.9	14.9
4	7.1	6.4	6.7	12.8	---	---	16.1	11.7	13.8	16.4	12.5	14.5
5	7.0	6.6	6.9	---	---	---	16.7	12.4	14.5	16.6	12.2	14.4
6	7.0	6.7	6.8	---	---	---	16.3	12.6	14.5	16.2	12.4	14.3
7	8.5	7.0	7.9	12.5	11.8	---	16.5	12.3	14.4	17.1	13.0	15.0
8	8.8	8.5	---	11.8	11.2	11.6	16.5	11.8	14.2	16.6	12.6	14.6
9	---	---	---	11.2	10.4	10.9	16.1	11.5	13.8	15.9	12.0	14.1
10	8.2	8.1	8.1	10.4	10.1	10.3	15.0	11.5	13.3	17.0	12.4	14.7
11	8.1	7.9	8.0	---	---	---	13.5	11.1	12.3	17.7	13.4	15.7
12	8.3	8.1	8.2	---	---	---	12.2	10.6	11.5	18.0	13.5	15.9
13	8.7	7.8	8.5	---	---	---	14.7	10.2	12.3	---	13.3	---
14	9.2	8.6	9.0	8.6	8.1	8.4	15.7	11.0	13.2	---	---	---
15	9.3	9.0	9.1	9.0	8.3	8.6	15.0	11.3	13.1	17.7	13.9	15.4
16	9.5	9.0	9.2	9.4	8.6	8.9	14.4	10.7	12.6	18.6	14.1	15.9
17	10.1	9.5	9.9	9.5	8.7	9.0	14.3	10.5	12.3	18.5	14.8	16.3
18	9.9	9.4	9.8	9.6	8.5	9.1	14.3	9.9	12.0	18.6	14.6	16.1
19	9.4	9.1	9.2	10.0	8.7	9.3	14.1	10.3	12.2	17.5	14.4	15.6
20	10.0	9.1	9.6	10.4	8.8	9.6	15.0	10.8	12.8	17.4	13.4	15.0
21	10.4	9.6	9.9	10.8	8.9	9.8	15.5	11.5	13.4	17.2	13.3	14.9
22	10.5	9.8	10.1	11.3	9.2	10.2	16.2	11.8	13.9	17.3	13.6	15.2
23	11.3	10.1	10.7	11.8	9.3	10.6	14.4	12.1	13.3	17.8	13.9	15.7
24	11.8	11.3	11.6	12.5	9.5	11.0	16.9	12.3	14.5	17.1	14.5	15.6
25	12.3	11.8	12.2	13.2	10.3	11.7	16.6	13.2	14.9	---	---	---
26	12.3	12.2	12.3	13.3	10.8	12.2	16.4	13.1	14.8	---	---	---
27	12.4	11.7	12.1	13.9	11.1	12.5	16.8	13.0	14.9	---	---	---
28	11.9	11.7	11.8	14.0	11.1	12.5	17.6	13.2	15.3	---	---	---
29	11.9	11.8	11.9	14.8	10.8	12.8	17.1	12.9	15.0	---	---	---
30	12.1	11.9	11.9	14.4	10.8	12.6	16.1	11.7	14.1	---	---	---
31	12.7	12.0	12.5	---	---	---	15.5	11.8	13.8	---	---	---
MONTH	12.7	6.4	9.6	14.8	8.1	10.9	17.6	9.9	13.5	18.6	11.8	15.1

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	20.7	14.6	17.1	14.1	10.5	12.0	8.2	7.5	7.9
2	---	---	---	20.4	14.6	17.1	15.4	10.3	12.4	8.8	8.0	8.4
3	---	---	---	20.0	14.3	16.8	16.1	9.5	12.3	9.2	8.2	8.6
4	---	---	---	15.2	13.1	14.1	16.7	9.6	12.8	9.6	8.3	8.8
5	---	---	---	20.0	13.4	16.4	17.9	10.6	14.1	11.0	7.9	9.3
6	---	---	---	20.2	15.9	17.7	16.3	11.4	13.7	12.3	8.0	9.7
7	---	---	---	20.9	14.7	17.1	17.5	11.7	14.5	14.4	9.1	11.4
8	---	---	---	19.2	13.5	16.1	16.9	11.9	14.3	14.6	8.7	11.3
9	---	---	---	21.0	13.8	16.7	18.2	12.1	14.8	17.9	8.8	13.0
10	---	---	---	20.7	14.4	17.1	18.5	11.2	14.5	18.1	8.6	12.9
11	---	---	---	19.6	14.1	16.3	19.7	10.4	14.5	13.0	9.0	10.6
12	17.6	13.2	---	19.2	13.5	15.8	19.9	9.5	14.2	13.5	9.2	11.0
13	17.8	11.8	14.0	---	---	---	17.3	9.2	13.1	10.4	8.7	9.3
14	17.2	11.1	13.3	---	---	---	16.0	8.4	12.1	9.1	7.9	8.3
15	12.6	10.3	11.3	---	---	---	13.9	7.5	10.7	8.1	7.9	8.0
16	16.5	11.5	13.7	---	---	---	15.2	7.6	11.0	8.4	7.5	7.9
17	17.4	13.0	15.0	---	---	---	17.1	8.7	12.4	8.0	7.5	7.7
18	16.8	13.0	14.7	10.6	6.8	8.5	15.6	8.7	11.9	8.2	7.9	8.1
19	18.5	12.3	15.1	8.0	7.4	7.7	11.6	7.5	9.0	8.4	8.0	8.2
20	18.8	12.3	15.1	9.0	8.0	8.5	8.6	7.8	8.1	8.8	8.4	8.6
21	18.4	12.2	14.8	9.6	8.9	9.3	9.4	8.6	9.0	8.9	8.5	8.7
22	19.6	12.0	15.0	9.7	9.1	9.4	8.9	8.6	8.8	8.9	8.3	8.7
23	19.3	13.3	15.8	9.1	8.4	8.7	8.8	8.3	8.6	8.6	8.1	8.4
24	20.2	15.7	17.7	9.1	8.5	8.9	8.8	8.2	8.4	8.4	7.9	8.2
25	19.8	16.3	17.9	9.3	9.0	9.2	8.3	8.1	8.2	8.2	7.5	7.9
26	18.9	15.9	17.3	9.7	9.2	9.5	8.3	7.7	8.0	8.0	7.5	7.8
27	19.3	15.1	17.0	9.7	9.2	9.5	8.0	7.4	7.6	8.3	7.9	8.1
28	19.3	14.9	16.8	10.7	9.6	10.1	8.4	8.0	8.3	8.4	7.7	8.1
29	---	---	---	11.4	10.3	10.9	8.3	7.7	8.1	8.1	7.5	7.8
30	---	---	---	12.1	10.9	11.4	7.9	7.5	7.8	7.7	7.3	7.5
31	---	---	---	12.9	10.9	11.7	---	---	---	8.6	7.2	7.9
MONTH	20.2	10.3	15.3	21.0	6.8	12.8	19.9	7.4	11.2	18.1	7.2	9.0

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.5	8.3	8.8	14.0	6.1	9.3	13.7	5.6	9.5	6.8	5.8	6.5			
2	9.8	7.8	8.7	15.4	5.5	9.5	18.4	2.9	10.7	6.9	6.6	6.8			
3	9.0	7.7	8.3	17.4	5.3	10.3	15.2	7.8	11.8	6.8	6.3	6.6			
4	8.2	7.7	7.9	17.5	4.9	10.3	14.7	7.5	10.6	6.4	6.0	6.3			
5	8.4	8.2	8.3	19.1	5.2	10.7	12.7	4.1	8.4	6.2	5.9	6.0			
6	8.6	8.1	8.3	16.7	5.2	10.6	17.5	4.4	11.3	6.3	5.8	6.0			
7	8.3	8.1	8.3	16.6	5.0	10	11.6	5.3	9.2	6.6	5.6	6.0			
8	8.4	7.8	8.2	15.9	5.2	9.8	14.4	6.3	9.9	7.1	5.7	6.3			
9	8.6	7.6	8.0	14.2	5.2	8.9	14.7	6.6	10.4	7.7	5.7	6.6			
10	8.8	7.3	7.9	---	4.0	---	15.9	7.2	11.2	9.8	5.8	7.5			
11	10.5	7.2	8.6	24.0	---	---	16.2	7.1	11.5	7.7	4.7	6.3			
12	10.7	6.7	8.5	22.8	5.2	13.2	16.5	7.2	11.7	5.8	4.6	5.3			
13	12.2	7.1	9.5	18.5	6.8	12.2	15.6	7.2	11.6	6.6	5.7	6.1			
14	13.5	7.0	9.4	14.7	6.1	10.2	14.2	7.2	10.7	7.2	6.6	7.0			
15	13.1	6.5	9.2	14.4	6.3	10.1	14.0	6.7	10.3	7.4	6.9	7.2			
16	15.7	6.7	10.2	13.3	6.9	10	14.6	6.2	10	7.1	6.7	7.0			
17	14.8	6.6	10.3	13.7	6.6	9.8	12.7	5.7	9.1	6.8	6.5	6.7			
18	17.3	6.6	11.0	13.9	6.2	10.1	12.8	5.7	9.3	7.3	6.5	6.8			
19	13.5	6.2	9.7	12.7	5.8	9.2	12.8	6.1	9.5	7.7	7.2	7.5			
20	16.6	6.1	10.5	11.9	6.0	8.5	13.5	6.1	9.9	7.8	7.2	7.5			
21	14.2	6.3	9.7	15.6	5.9	10.1	16.8	6.4	11.1	7.5	7.0	7.2			
22	14.6	6.2	9.7	14.2	6.3	9.9	17.8	6.6	11.6	8.8	7.0	7.8			
23	15.5	6.0	9.8	14.3	6.1	9.8	16.0	7.2	11.1	7.3	6.6	7.0			
24	12.6	5.7	8.6	17.8	7.4	12.2	14.5	6.3	10.1	6.6	6.5	6.6			
25	10.0	5.7	7.8	19.1	8.4	13.6	11.0	6.2	8.7	7.1	6.6	7.0			
26	12.0	6.3	8.7	23.1	8.9	15.3	10.5	6.0	8.4	7.4	6.8	7.1			
27	11.9	6.1	8.6	21.5	9.3	15.3	9.8	5.7	7.7	8.4	6.8	7.5			
28	12.9	6.0	8.8	18.7	8.6	13.6	11.1	5.6	8.3	8.9	7.3	8.0			
29	10.8	6.0	8.0	15.4	8.2	11.7	13.1	5.5	8.8	8.8	7.6	8.2			
30	9.9	6.1	7.5	13.3	5.0	9.1	7.2	4.9	5.9	8.9	8.0	8.4			
31	---	---	---	14.6	3.0	8.7	5.8	4.9	5.3	---	---	---			
MONTH	17.3	5.7	8.9	24.0	3.0	10.8	18.4	2.9	9.8	9.8	4.6	6.9			

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	66	56	59	260	190	220	8.7	6.8	7.5	9.1	4.4	6.0
2	110	55	67	190	140	160	9.7	7.0	8.0	5.4	4.1	4.7
3	>1,500	79	>430	150	140	150	11	6.0	7.7	8.2	4.1	5.2
4	>1,500	1,100	>1,300	140	110	120	6.9	5.8	6.2	13	4.8	6.7
5	1,200	870	1,000	110	81	96	8.6	5.8	7.2	18	6.5	8.5
6	1,100	770	960	89	83	86	8.9	6.4	7.3	13	5.0	7.2
7	770	600	660	87	77	81	9.1	6.9	7.7	8.2	4.3	5.2
8	620	490	560	79	69	72	9.7	6.9	8.0	11	4.8	7.2
9	---	390	---	72	60	66	18	7.7	9.7	13	7.4	9.2
10	390	300	340	63	46	53	22	8.3	12	9.5	5.2	6.5
11	300	---	---	47	---	---	19	10	13	6.5	4.2	4.9
12	---	---	---	---	---	---	22	14	16	5.8	3.9	4.5
13	---	---	---	---	29	---	21	12	15	---	---	---
14	---	---	---	48	33	37	18	9.4	12	---	---	---
15	140	120	130	36	31	33	16	9.4	12	11	5.1	7.1
16	120	90	110	33	25	28	17	13	16	12	5.1	7.8
17	96	78	85	29	24	26	18	11	14	12	5.6	7.8
18	88	75	80	29	26	28	18	14	16	12	4.8	6.8
19	100	81	91	30	22	25	18	8.5	12	16	4.9	7.9
20	89	50	69	22	18	20	8.7	6.9	7.5	14	5.0	8.7
21	54	38	45	22	16	19	9.5	5.6	6.5	11	5.4	7.7
22	44	38	40	22	13	15	7.2	5.2	5.8	11	5.4	6.9
23	400	39	83	16	13	14	7.9	5.4	6.0	11	<2.0	6.3
24	610	240	400	15	10	12	6.7	5.0	5.8	9.3	5.1	6.9
25	310	250	290	11	8.1	9.6	6.7	4.6	5.8	11	5.1	6.7
26	270	200	240	10	7.8	8.8	8.1	5.5	6.2	12	4.3	7.7
27	1,100	170	510	9.8	7.5	8.5	8.1	5.1	5.8	20	5.5	7.9
28	720	450	540	9.0	6.8	8.1	6.7	5.0	5.3	16	4.8	8.5
29	660	480	570	10	6.8	8.1	6.5	4.5	5.1	19	6.1	10
30	580	310	400	9.2	7.4	8.5	12	6.5	8.3	17	6.1	11
31	340	240	280	---	---	---	10	6.0	7.7	22	7.5	13
MONTH	1,500	38	360	260	6.8	52	22	4.5	9.1	22	1.7	7.4

&gt; Actual value is known to be greater than the value shown

&lt; Actual value is known to be less than the value shown

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	21	7.6	12	16	7.8	11	39	36	38	130	99	110
2	20	8.5	14	18	9.7	13	38	35	36	110	77	92
3	20	6.7	11	21	9.5	13	38	32	35	78	63	72
4	11	5.5	6.9	16	9.5	13	38	28	32	63	48	57
5	9.9	5.3	6.4	17	8.4	11	32	19	26	61	38	42
6	7.2	5.3	5.9	12	8.6	9.7	23	20	21	45	34	40
7	8.6	5.2	6.4	23	8.4	13	21	18	19	38	29	34
8	9.2	5.6	7.2	19	12	16	21	16	17	37	24	31
9	13	5.7	8.4	15	9.7	12	19	12	16	33	20	27
10	14	6.4	9.5	16	9.4	12	22	16	19	28	20	25
11	20	7.5	12	12	9.4	11	23	16	21	130	20	55
12	19	7.8	12	19	8.5	11	23	19	20	78	38	58
13	25	7.8	12	28	12	17	26	21	23	100	39	62
14	61	13	26	24	14	18	28	22	26	1,800	100	940
15	47	16	26	28	15	21	29	22	26	820	400	590
16	22	12	15	29	16	22	26	22	25	790	370	550
17	19	8.7	13	24	12	19	25	20	22	710	460	550
18	14	8.7	11	60	20	40	23	19	21	480	400	440
19	22	10	15	1,600	55	570	1,700	21	260	470	330	410
20	22	10	16	1,200	610	770	1,600	340	680	350	290	310
21	22	12	15	860	650	760	880	200	330	360	230	300
22	17	7.9	11	850	540	620	410	240	330	230	170	200
23	12	6.7	8.0	540	460	500	670	180	270	170	140	160
24	17	7.3	9.7	500	430	480	770	430	540	250	120	150
25	13	7.6	10	440	330	380	850	690	750	610	240	390
26	20	7.4	12	330	250	290	920	610	690	690	500	560
27	14	8.0	10	250	---	---	610	420	480	690	380	530
28	14	7.3	10	---	80	---	440	320	390	380	240	300
29	---	---	---	80	54	67	320	220	270	240	170	210
30	---	---	---	54	40	47	220	130	180	180	120	150
31	---	---	---	40	38	38	---	---	---	120	96	110
MONTH	61	5.2	12	1,600	7.8	170	1,700	12	190	1,800	20	240

## ARKANSAS RIVER BASIN

07144100 LITTLE ARKANSAS RIVER NEAR SEDGWICK, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	96	65	83	79	36	60	110	30	50	370	170	220
2	75	55	69	78	33	57	70	27	42	440	190	310
3	830	55	330	68	26	52	45	29	38	410	230	310
4	780	450	620	70	31	51	46	32	40	230	170	200
5	450	250	360	61	29	47	49	27	38	180	150	170
6	250	200	220	58	33	45	46	25	35	160	130	150
7	250	190	210	57	32	45	44	26	37	130	100	120
8	240	130	200	55	27	43	53	29	43	110	74	98
9	130	81	100	52	29	43	58	28	42	88	59	76
10	89	61	79	49	28	39	47	26	38	88	61	75
11	86	31	61	58	28	44	54	28	41	>1,500	66	>900
12	77	33	57	71	39	53	53	28	40	>1,500	400	>570
13	60	28	48	68	33	51	48	26	38	>1,500	440	>990
14	55	28	44	59	28	46	65	30	42	>1,500	530	>840
15	62	34	49	56	28	42	44	30	38	550	350	440
16	54	29	40	63	33	50	49	26	36	370	250	310
17	52	34	44	55	33	47	54	34	41	260	180	230
18	53	34	43	59	31	45	59	35	41	230	160	190
19	57	35	46	50	29	42	52	38	44	170	130	150
20	58	31	46	51	26	40	62	38	48	130	110	120
21	52	29	42	140	30	57	63	42	49	140	110	130
22	55	33	43	200	40	66	54	27	42	>1,500	120	>830
23	52	33	42	62	42	53	71	28	39	940	450	540
24	54	30	43	69	43	56	76	28	44	620	360	500
25	62	38	48	66	44	55	---	---	---	360	200	280
26	54	41	48	65	36	51	76	---	---	200	130	160
27	64	38	52	51	32	43	55	37	46	130	90	110
28	61	36	51	50	32	42	61	32	48	90	66	78
29	92	43	58	64	30	43	70	32	45	67	48	59
30	150	69	110	50	33	42	140	35	58	60	51	55
31	---	---	---	58	31	43	640	140	380	---	---	---
MONTH	830	28	110	200	26	48	640	25	54	1,500	48	310

&gt; Actual value is known to be greater than the value shown

07144200 LITTLE ARKANSAS RIVER AT VALLEY CENTER, KS

LOCATION.--Lat 37°49'56", long 97°23'16", river gage is in NE 1/4 NW 1/4 SW 1/4 sec.36, T.25 S., R.1 W., Sedgwick County, Hydrologic Unit 11030012, on right bank at downstream side of county highway bridge, 0.5 mi west of Valley Center, and at mile 17.5. Little Arkansas River Floodway gage is in NE 1/4 NE 1/4 sec.34, T.25 S., R.1 W., on right bank at downstream side of county highway bridge, and 1.2 mi northwest of river gage.

DRAINAGE AREA.--1,327 mi<sup>2</sup>, of which about 77 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--June 1922 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1037: 1944. WSP 1117: Drainage area. WSP 1241: 1923, 1924-26(M), 1928-29(M), 1930(M, m), 1931(M), 1932(M, m), 1933(M), 1934, 1937(M), 1949(M). WSP 1711: 1958.

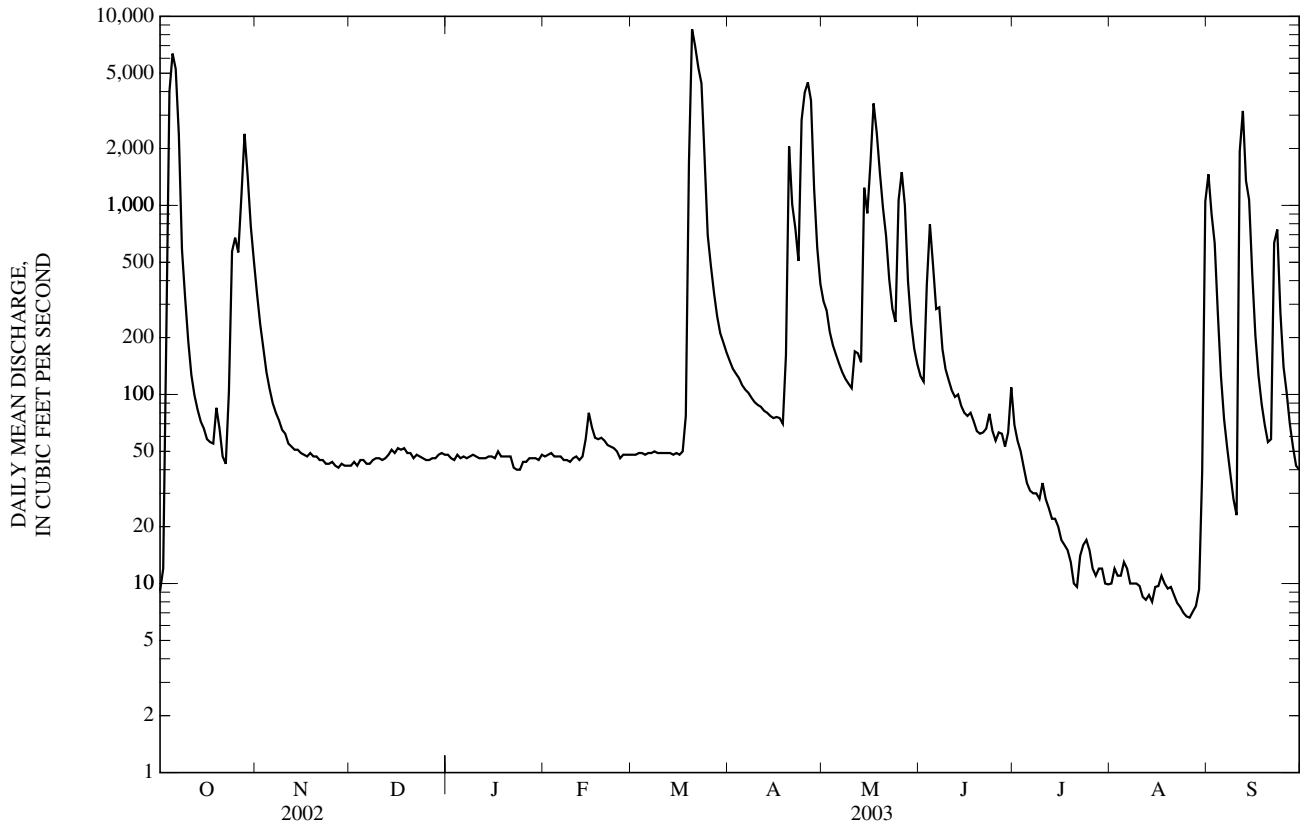
GAGE.--River gage is water-stage recorder. Datum of river gage is 1,325.66 ft above NGVD of 1929. Prior to Feb. 12, 1935, nonrecording gage at site 2.0 mi downstream at different datum. Feb. 12, 1935, to July 1, 1951, water-stage recorder, July 2, 1951, to Feb. 16, 1952, nonrecording gage, and Feb. 17, 1952, to Sept. 30, 1974, water-stage recorder at present site and at datum 2.00 ft higher. Floodway gage is water-stage recorder. Datum of floodway gage is 1,340.00 ft above NGVD of 1929 (levels by Wichita-Valley Center Flood Control Project).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Natural flow affected by diversions and ground-water withdrawal for irrigation and municipal supply. Satellite telemeter at river station and floodway station. Since May 1957, part of high-water flow bypasses river gage through floodway channel for which separate records are computed; figures representing combined discharge are given herein. Discharge through floodway occurred only on the days given in the following table:

Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)
Oct 4	1,580	Nov 3	0.06	Mar 23	1,930	Apr 27	1,120	Aug 31	44
Oct 5	3,550	Mar 18	0.02	Mar 24	240	Apr 28	3.4	Sep 1	23
Oct 6	2,610	Mar 19	608	Apr 20	153	May 16	193	Sep 11	618
Oct 7	554	Mar 20	5,730	Apr 24	649	May 17	1,000	Sep 12	894
Oct 27	101	Mar 21	4,090	Apr 25	1,410	May 18	394		
Oct 28	368	Mar 22	2,650	Apr 26	1,780	May 19	41		

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	0900	6,640	--	May 17	0600	3,830	--
Mar 20	1400	*9,060	--	Sep 12	0100	4,940	--
Apr 26	0400	4,680	--				



## 07144200 LITTLE ARKANSAS RIVER AT VALLEY CENTER, KS—Continued

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	339	42	48	47	48	151	e311	125	69	10	1,460
2	12	235	44	46	48	48	137	278	117	57	12	900
3	207	176	42	45	49	49	129	214	379	50	11	631
4	4,000	131	45	48	47	49	122	182	794	41	11	269
5	6,350	107	45	46	47	48	112	162	483	34	13	125
6	5,270	90	43	47	47	49	106	145	283	31	12	74
7	2,360	80	43	46	45	49	102	131	289	30	10	52
8	585	73	45	47	45	50	96	121	174	30	10	38
9	327	65	46	48	44	49	91	114	136	28	10	28
10	192	62	46	47	46	49	88	108	119	34	9.7	23
11	127	55	45	46	47	49	86	169	105	28	8.5	1,930
12	99	53	46	46	45	49	82	165	97	25	8.2	3,160
13	83	51	48	46	47	49	80	148	100	22	8.7	1,350
14	72	51	51	47	58	48	77	1,240	87	22	8.0	1,070
15	66	49	49	47	80	49	75	908	80	20	9.6	433
16	58	48	52	46	67	48	76	1,670	77	17	9.7	205
17	56	47	51	50	59	50	75	3,460	80	16	11	126
18	55	49	52	47	58	77	70	2,430	72	15	10	89
19	85	47	49	e47	59	1,690	162	1,500	64	13	9.4	69
20	66	47	49	e47	57	8,550	2,050	970	62	10	9.6	56
21	47	45	46	e47	54	6,930	1,010	686	63	9.6	8.7	58
22	43	45	48	e41	53	5,350	756	407	66	14	7.9	634
23	103	43	47	e40	52	4,420	509	285	79	16	7.5	745
24	571	43	46	e40	e50	e1,790	2,830	242	64	17	7.0	270
25	675	44	45	e44	e46	695	3,960	1,070	57	15	6.7	140
26	564	42	45	e44	e48	481	4,470	1,500	63	12	6.6	102
27	1,130	41	46	e46	48	346	3,600	1,000	62	11	7.1	70
28	2,390	43	46	46	48	260	1,220	395	53	12	7.6	53
29	1,430	42	48	46	---	211	596	238	63	12	9.3	42
30	773	42	49	45	---	e188	385	174	109	10	39	40
31	505	---	48	48	---	167	---	144	---	9.9	1,050	---
MEAN	913	76.2	46.7	45.9	51.5	1,032	777	663	147	23.6	43.8	475
MAX	6,350	339	52	50	80	8,550	4,470	3,460	794	69	1,050	3,160
MIN	9.1	41	42	40	44	48	70	108	53	9.6	6.6	23
AC-FT	56,150	4,530	2,870	2,820	2,860	63,440	46,220	40,790	8,730	1,450	2,700	28,250

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

MEAN	278	201	102	87.6	207	371	394	569	616	453	226	258
MAX	3,873	2,969	953	589	2,241	4,392	3,857	4,710	3,076	6,794	1,996	1,471
(WY)	(1974)	(1980)	(1945)	(1962)	(1993)	(1973)	(1944)	(1993)	(1965)	(1993)	(1950)	(1977)
MIN	5.06	10.9	11.2	9.37	11.8	17.0	17.1	17.0	12.5	7.14	4.29	3.49
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(1956)	(1934)	(1991)	(1956)	(1956)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1923 - 2003

ANNUAL MEAN	256	360	314
HIGHEST ANNUAL MEAN			1,698
LOWEST ANNUAL MEAN			24.9
HIGHEST DAILY MEAN	6,960	Jun 13	28,600
LOWEST DAILY MEAN	2.9	Aug 9	1.1
ANNUAL SEVEN-DAY MINIMUM	5.9	Aug 5	1.9
MAXIMUM PEAK FLOW			9,060
MAXIMUM PEAK STAGE			Mar 20
INSTANTANEOUS LOW FLOW		6.3	Aug 25
ANNUAL RUNOFF (AC-FT)	185,300	260,800	227,300
10 PERCENT EXCEEDS	480	903	492
50 PERCENT EXCEEDS	45	52	59
90 PERCENT EXCEEDS	11	12	21

e Estimated



07144300 ARKANSAS RIVER AT WICHITA, KS

LOCATION.--Lat 37°38'41", long 97°20'06", river gage is in SE 1/4 SE 1/4 NE 1/4 sec.5, T.28 S., R.1 E., Sedgwick County, Hydrologic Unit 11030013, on right bank at downstream side of bridge on Broadway Street in Wichita, 3.7 mi downstream from mouth of Little Arkansas River and at mile 759.7. Big Slough-Cowskin Floodway gage is in sec.11, T.27 S., R.1 W., Sedgwick County, on right bank at downstream side of bridge on Zoo Boulevard in Wichita, 1.0 mi downstream from control structure, and 6.5 mi northwest of Broadway Street gage.

DRAINAGE AREA.--40,490 mi<sup>2</sup>, of which 7,263 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--July 1934 to current year. Gage-height records collected at site 3.2 mi upstream since 1897 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1241: 1940, 1944. WSP 1341: Drainage area.

GAGE.--River gage is water-stage recorder. Datum of river gage is 1,262.42 ft above NGVD of 1929. Prior to Oct. 1, 1985, at datum 5.00 ft higher than present datum. See WSP 1921 for history of changes prior to Oct. 1, 1968. Floodway gage is water-stage recorder. Datum of floodway gage is 1,300.00 ft above NGVD of 1929 (levels by Wichita-Valley Center Flood Control Project).

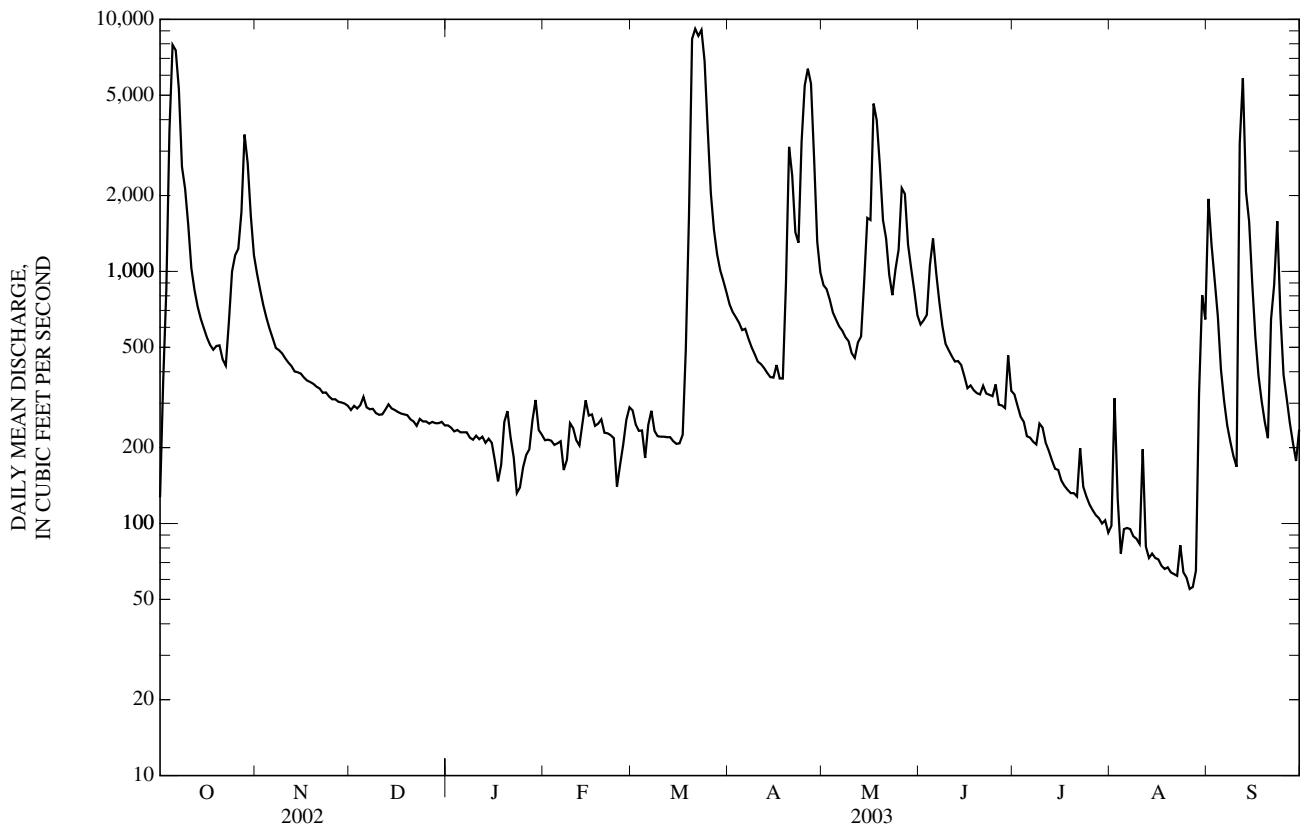
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow slightly regulated since 1943 by John Martin Reservoir (station 07130000). Natural flow affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, city of Wichita weir 2.2 mi upstream, and return flow from irrigated areas. Since May 1957, part of high-water flow bypasses river gage through floodway channel for which separate records are computed; figures representing floodway discharge and combined discharge are given herein. Satellite telemeter at station. Discharge through floodway occurred only on days given in the following table:

Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)	Date	Discharge (ft <sup>3</sup> /s)
Oct 5	124	Mar 20	789	Mar 22	757	Mar 23	1,100	Mar 24	131
Oct 6	58	Mar 21	900						

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of May 18, 1877, and July 8, 1904, reached stages of 21 ft and 20.3 ft, respectively, river gage site and datum then in use (from reports of U.S. Weather Bureau).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	1830	8,090	--	Apr 26	1200	6,640	8.98
Oct 28	0900	3,790	7.20	May 17	1600	5,600	8.41
Mar 20	2300	*9,800	--	Sep 12	0630	7,240	9.40
Apr 20	1900	4,260	7.58				



ARKANSAS RIVER BASIN

07144300 ARKANSAS RIVER AT WICHITA, KS—Continued

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	978	282	245	214	281	739	882	616	325	98	1,940
2	368	843	293	240	215	247	689	850	640	293	314	1,270
3	844	734	286	232	213	233	658	772	672	265	126	922
4	3,610	654	295	235	205	234	626	687	1,060	253	76	663
5	7,920	592	318	230	208	182	585	644	1,350	222	95	408
6	7,540	543	289	230	212	246	592	605	988	219	96	307
7	5,300	497	284	230	163	280	542	582	759	211	95	245
8	2,600	487	285	e219	179	233	501	549	606	206	89	211
9	2,130	473	274	215	250	222	470	529	516	249	87	185
10	1,530	452	270	223	239	221	439	474	487	240	83	168
11	1,030	435	271	216	214	221	429	454	461	209	197	3,220
12	845	421	283	221	204	220	414	523	439	194	81	5,840
13	726	401	297	209	251	220	396	552	441	178	73	2,070
14	649	398	286	217	308	212	381	919	425	165	76	1,580
15	595	393	282	209	268	207	379	1,630	384	163	73	893
16	546	379	277	177	271	208	425	1,600	344	148	72	549
17	511	369	273	147	244	225	376	4,630	353	141	68	386
18	489	364	271	171	249	491	376	3,980	338	136	66	306
19	506	358	269	253	259	1,650	898	2,640	329	132	67	253
20	509	349	259	279	229	8,360	3,120	1,600	325	132	64	218
21	448	343	254	220	228	9,170	2,400	1,350	352	128	63	645
22	423	330	244	183	224	8,600	1,430	970	328	199	62	885
23	632	331	260	132	218	9,080	1,300	805	324	140	82	1,580
24	1,000	319	254	139	140	6,830	3,270	1,020	320	128	64	675
25	1,160	311	254	167	171	3,650	5,470	1,220	356	119	61	389
26	1,230	311	249	187	206	2,040	6,370	2,140	296	113	55	314
27	1,720	304	253	197	258	1,460	5,560	2,030	294	108	56	251
28	3,490	302	250	257	289	1,170	2,790	1,280	287	105	65	209
29	2,690	299	250	309	---	1,010	1,310	1,030	464	100	328	177
30	1,660	293	253	235	---	916	991	840	336	103	806	236
31	1,160	---	245	225	---	825	---	670	---	92	645	---
MEAN	1,742	442	271	214	226	1,908	1,464	1,241	496	175	138	900
MAX	7,920	978	318	309	308	9,170	6,370	4,630	1,350	325	806	5,840
MIN	127	293	244	132	140	182	376	454	287	92	55	168
AC-FT	107,100	26,310	16,680	13,190	12,550	117,300	87,130	76,280	29,530	10,740	8,500	53,540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

MEAN	930	685	462	427	688	1,174	1,246	1,661	1,961	1,603	942	871
MAX	12,900	5,957	2,963	2,153	5,278	9,361	8,498	9,215	8,851	14,620	9,202	3,932
(WY)	(1974)	(1999)	(1974)	(1974)	(1949)	(1973)	(1973)	(1951)	(1951)	(1993)	(1950)	(1973)
MIN	10.2	30.7	23.4	18.8	53.7	63.2	58.1	119	119	46.8	14.2	7.90
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1935)	(1935)	(1992)	(1956)	(1991)	(1956)	(1956)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1935 - 2003

ANNUAL MEAN	574		772		1,055
HIGHEST ANNUAL MEAN					3,850
LOWEST ANNUAL MEAN					151
HIGHEST DAILY MEAN	7,920	Oct 5	9,170	Mar 21	41,100
LOWEST DAILY MEAN	65	Aug 10	55	Aug 26	5.0
ANNUAL SEVEN-DAY MINIMUM	71	Aug 5	63	Aug 21	5.4
MAXIMUM PEAK FLOW			9,800	Mar 20	48,400
INSTANTANEOUS LOW FLOW			33	Aug 24	3.0
ANNUAL RUNOFF (AC-FT)	415,300		558,900		764,600
10 PERCENT EXCEEDS	1,160		1,600		2,260
50 PERCENT EXCEEDS	251		309		435
90 PERCENT EXCEEDS	140		130		107

e Estimated

07144480 COWSKIN CREEK AT 119TH STREET AT WICHITA, KS

LOCATION.--Lat 37°42'05", Long 97°28'49", in SW 1/4 SW 1/4 NW 1/4 sec.18, T.27 S.,R.1 W., Sedgwick County, Hydrologic Unit 11030013, at left downstream end of bridge on 119th St West and at mile 46.1.

DRAINAGE AREA.--86.0 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2001 to current year.

REVISED RECORDS.--2001(M).

GAGE.--Water-stage recorder. Datum of gage is 1,312.40 ft above NGVD of 1929 (from city of Wichita bench mark).

REMARKS.--Records good. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	40	3.3	2.1	6.5	6.5	6.6	13	9.4	4.2	2.5	34
2	5.3	22	4.6	3.7	6.0	5.7	6.2	14	9.0	4.6	4.6	17
3	282	14	6.7	4.6	5.7	e5.7	5.5	13	7.5	3.8	3.3	9.5
4	966	12	6.4	4.6	5.2	7.1	5.1	14	6.5	3.3	3.5	6.7
5	483	9.4	5.4	4.3	5.6	6.9	5.1	15	9.7	3.0	3.7	5.7
6	95	7.1	4.3	4.1	5.9	6.2	5.7	9.8	137	3.0	3.5	5.2
7	43	5.8	3.7	3.6	5.7	6.6	6.1	7.8	113	3.0	3.3	4.3
8	24	5.2	3.4	3.8	5.7	6.2	6.9	7.2	43	2.8	3.2	3.8
9	14	6.5	3.3	3.7	5.8	5.6	6.8	6.9	28	2.7	3.1	3.3
10	11	6.4	4.1	3.7	6.1	5.7	4.9	6.9	16	2.6	3.1	2.9
11	8.3	6.1	3.8	3.9	6.4	5.5	4.6	6.1	11	2.6	2.8	51
12	6.7	5.7	3.9	4.1	6.1	4.0	5.1	5.8	8.4	2.7	2.8	109
13	6.0	5.6	5.6	3.9	6.8	3.0	5.7	6.4	25	2.7	2.5	37
14	6.1	5.3	5.0	4.1	7.1	2.6	5.6	5.6	21	2.6	2.3	18
15	5.7	4.6	4.6	4.0	7.3	2.5	5.6	5.7	15	2.6	2.3	9.8
16	5.2	4.5	4.7	4.4	7.8	2.6	6.9	39	9.8	2.5	2.3	6.2
17	5.0	5.3	4.8	4.6	7.5	3.1	7.6	63	6.9	2.5	2.3	4.5
18	5.0	5.0	4.7	4.9	7.3	12	8.0	32	5.6	2.6	2.2	3.6
19	4.7	4.3	4.5	4.9	7.2	435	40	17	5.1	2.7	2.2	3.2
20	5.0	4.4	4.5	4.9	7.0	860	298	11	5.1	2.7	2.1	3.1
21	4.9	4.1	4.2	5.6	7.3	211	163	9.8	4.6	2.8	2.1	10
22	4.6	5.3	3.5	5.6	7.2	59	51	7.9	4.1	3.3	2.2	33
23	13	6.3	3.2	5.3	7.4	43	75	6.9	3.7	2.7	2.2	47
24	44	6.0	3.1	5.4	e7.1	33	476	148	3.3	2.8	2.2	29
25	92	5.9	2.7	5.2	e5.7	21	254	305	3.1	3.1	2.1	13
26	60	7.8	2.7	3.8	4.9	15	79	115	3.0	3.0	2.1	8.7
27	389	7.4	2.7	3.6	6.4	12	47	52	2.9	2.9	2.2	7.9
28	648	4.9	2.6	6.0	6.9	10	37	38	2.8	2.7	2.3	6.1
29	182	3.4	2.2	6.3	---	8.7	21	22	3.4	2.7	3.2	4.8
30	92	3.2	2.1	6.7	---	8.3	15	15	3.2	2.6	1.8	4.5
31	57	---	2.1	6.5	---	7.1	---	12	---	2.6	2.8	---
MEAN	115	7.78	3.95	4.58	6.49	58.7	55.5	33.3	17.5	2.92	4.01	16.7
MAX	966	40	6.7	6.7	7.8	860	476	305	137	4.6	2.8	109
MIN	2.7	3.2	2.1	2.1	4.9	2.5	4.6	5.6	2.8	2.5	2.1	2.9
AC-FT	7,080	463	243	281	360	3,610	3,300	2,040	1,040	179	246	995

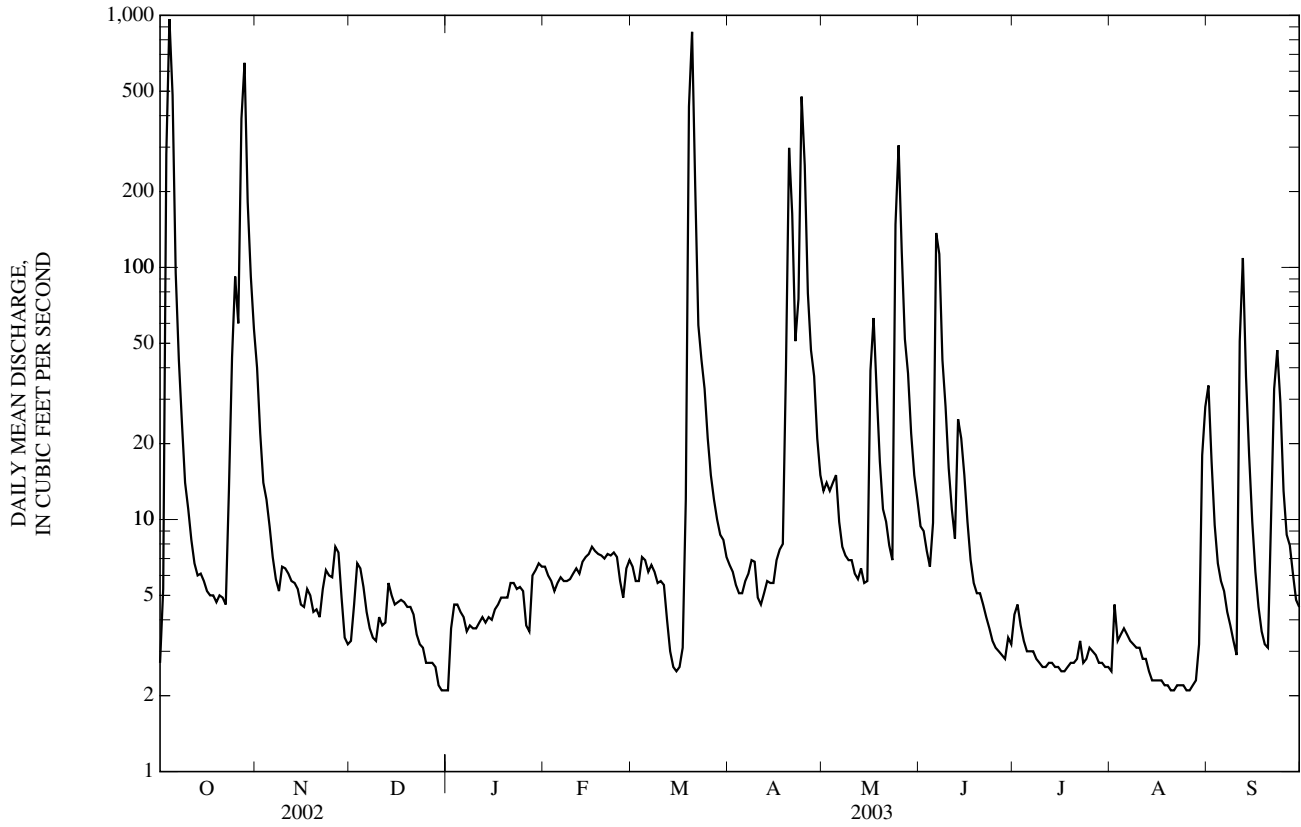
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	58.3	4.90	3.21	3.44	4.08	30.6	22.0	24.4	58.4	2.54	14.2	8.30
MAX	115	7.78	3.95	4.58	6.49	58.7	55.5	36.5	118	3.22	36.8	16.7
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(2003)
MIN	1.35	2.02	2.47	2.30	1.67	2.47	3.87	3.48	17.5	1.50	1.77	3.98
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2003)	(2001)	(2001)	(2002)

07144480 COWSKIN CREEK AT 119TH STREET AT WICHITA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL MEAN	28.1		27.4		22.6	
HIGHEST ANNUAL MEAN					27.4	
LOWEST ANNUAL MEAN					17.9	
HIGHEST DAILY MEAN	996	Jun 16	966	Oct 4	996	Jun 16, 2002
LOWEST DAILY MEAN	0.91	Feb 15	2.1	Dec 30	0.91	Feb 15, 2002
ANNUAL SEVEN-DAY MINIMUM	0.97	Feb 12	2.1	Aug 20	0.97	Feb 12, 2002
MAXIMUM PEAK FLOW			1,180	Mar 20	1,420	Jun 16, 2002
MAXIMUM PEAK STAGE			17.40	Mar 20	17.40	Mar 20, 2003
INSTANTANEOUS LOW FLOW			2.0	Dec 30	0.88	Feb 14, 2002
ANNUAL RUNOFF (AC-FT)	20,360		19,850		16,400	
10 PERCENT EXCEEDS	33		43		28	
50 PERCENT EXCEEDS	3.8		5.6		3.8	
90 PERCENT EXCEEDS	1.8		2.7		1.7	

e Estimated



07144550 ARKANSAS RIVER AT DERBY, KS

LOCATION.--Lat 37°32'34", long 97°16'31", in SE 1/4 SW 1/4 NW 1/4 sec.12, T.29 S., R.1 E., Sedgwick County, Hydrologic Unit 11030013, on left bank at downstream side of county highway bridge at west edge of Derby, 0.9 mi downstream from mouth of bypass channel, and at mile 749.5.

DRAINAGE AREA.--40,830 mi<sup>2</sup>, of which 7,263 mi<sup>2</sup> is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,229.95 ft above NGVD of 1929 (city of Wichita bench mark).

REMARKS.--Records good. Flow slightly regulated since 1948 by John Martin Reservoir (station 07130000). Low flow regulated by city of Wichita low-water dam. Natural flow affected by numerous diversions upstream from station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	1000	7,690	7.28	May 17	1900	5,440	5.90
Oct 28	1100	4,600	5.75	May 24	1200	6,270	6.27
Mar 20	1800	*11,800	*8.50	Jun 6	0000	5,830	6.07
Apr 20	2100	5,180	5.76	Aug 30	1500	6,970	6.58
Apr 24	0900	6,610	6.43	Sep 11	2300	7,870	6.95
May 16	0900	4,040	5.17				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	961	310	333	306	395	836	1,160	736	481	189	1,920
2	687	800	326	326	298	381	773	926	1,130	404	1,090	1,550
3	3,200	684	315	321	301	352	736	825	767	366	324	1,100
4	5,790	589	329	333	283	349	704	739	1,200	331	206	799
5	7,490	538	380	324	286	290	650	699	1,550	311	195	496
6	6,720	500	366	328	307	243	630	647	3,030	303	199	354
7	4,860	462	355	323	242	427	675	604	1,380	296	182	279
8	2,520	434	355	334	225	343	565	587	901	293	178	241
9	1,920	414	347	332	338	316	529	564	696	294	171	227
10	1,520	404	331	317	356	321	514	526	632	589	165	212
11	964	417	326	313	328	329	499	492	594	304	400	3,950
12	739	385	330	316	313	330	496	588	571	284	192	6,450
13	597	372	422	313	314	336	495	783	571	265	161	3,000
14	528	379	376	311	902	325	494	819	570	264	153	1,990
15	487	395	360	302	412	322	490	2,100	522	261	152	1,270
16	451	390	361	288	385	323	648	2,450	478	247	147	784
17	442	381	365	222	340	329	517	4,250	492	240	139	559
18	421	381	363	250	333	1,460	492	4,190	477	239	139	460
19	430	382	359	327	494	4,990	1,790	2,970	453	230	138	378
20	439	379	365	417	330	9,810	4,220	2,020	453	228	133	320
21	411	371	348	337	310	10,300	3,390	1,610	483	228	133	1,080
22	387	354	334	285	300	8,720	1,920	1,200	462	441	136	1,360
23	843	349	348	186	297	9,790	2,370	1,060	436	273	130	2,240
24	1,120	339	346	195	234	7,430	5,520	2,420	437	232	323	1,080
25	1,460	328	337	233	247	4,090	6,160	1,780	599	220	140	619
26	1,370	334	329	258	281	2,480	6,300	2,430	519	208	131	454
27	2,490	327	335	270	347	1,760	5,630	2,370	412	202	129	375
28	4,260	325	336	349	385	1,390	3,410	1,650	399	201	133	314
29	3,140	323	348	436	---	1,140	1,690	1,320	986	200	1,120	285
30	1,910	322	355	363	---	1,000	1,270	1,040	483	204	2,950	403
31	1,240	---	344	332	---	919	---	849	---	192	1,680	---
MEAN	1,905	434	348	309	339	2,290	1,814	1,473	747	285	376	1,152
MAX	7,490	961	422	436	902	10,300	6,300	4,250	3,030	589	2,950	6,450
MIN	214	322	310	186	225	243	490	492	399	192	129	212
AC-FT	117,100	25,820	21,420	18,990	18,830	140,800	107,900	90,580	44,470	17,520	23,120	68,530

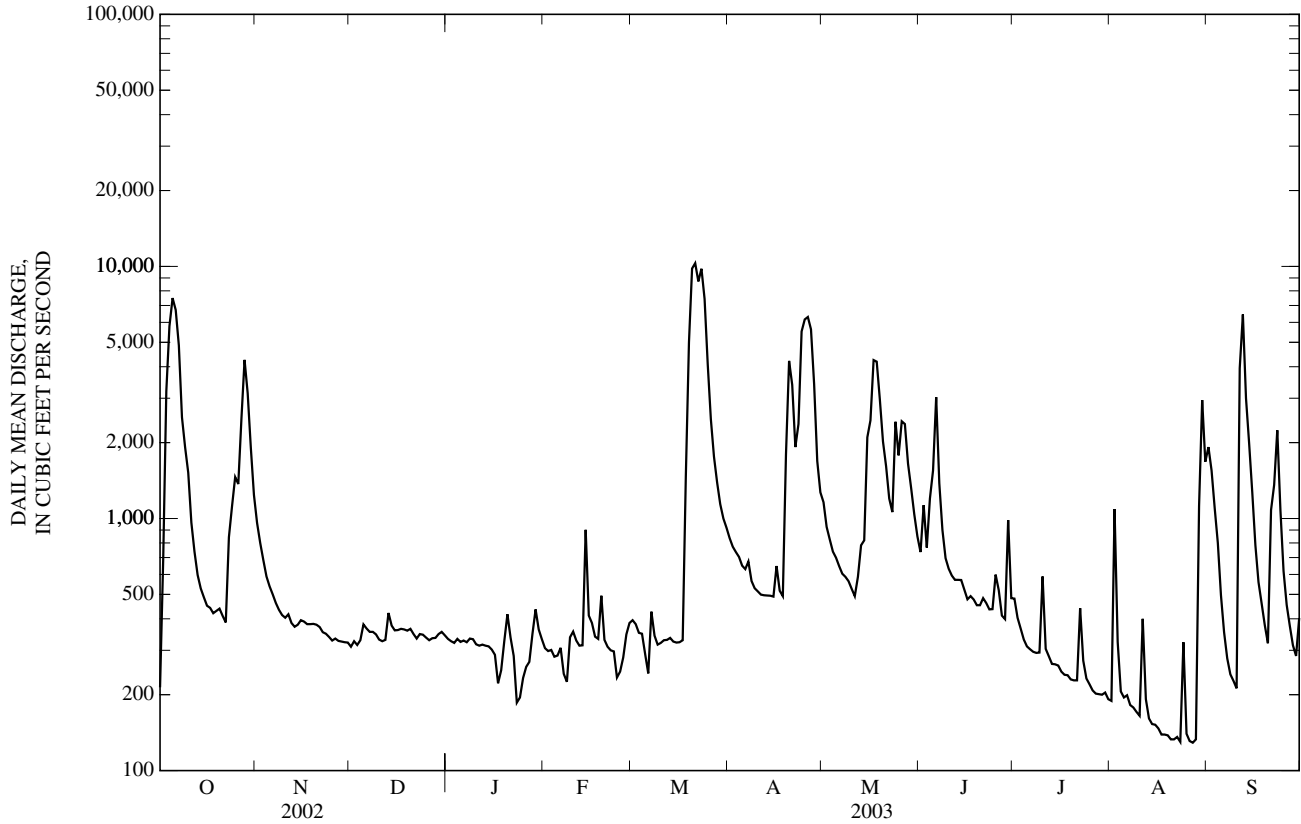
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

MEAN	1,176	982	575	483	817	1,607	1,605	1,767	1,893	1,408	928	949
MAX	13,000	6,293	2,916	2,190	3,965	9,439	8,949	8,939	6,640	13,450	2,774	3,640
(WY)	(1974)	(1999)	(1974)	(1974)	(1993)	(1973)	(1973)	(1993)	(1995)	(1993)	(1987)	(1973)
MIN	102	162	173	179	163	183	178	237	415	185	168	142
(WY)	(1992)	(1981)	(1991)	(1979)	(1989)	(1989)	(1989)	(1992)	(1991)	(1991)	(1984)	(1980)

ARKANSAS RIVER BASIN

07144550 ARKANSAS RIVER AT DERBY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL MEAN	709		960		1,183	
HIGHEST ANNUAL MEAN					3,621	1993
LOWEST ANNUAL MEAN					259	1991
HIGHEST DAILY MEAN	8,980	Jun 13	10,300	Mar 21	44,300	Nov 2, 1998
LOWEST DAILY MEAN	143	Aug 10	129	Aug 27	83	Oct 6, 1991
ANNUAL SEVEN-DAY MINIMUM	149	Aug 5	135	Aug 17	90	Oct 2, 1991
MAXIMUM PEAK FLOW			11,800	Mar 20	58,300	Nov 2, 1998
MAXIMUM PEAK STAGE			8.50	Mar 20	16.45	Nov 2, 1998
INSTANTANEOUS LOW FLOW			90	Jan 23	62	Oct 5, 1991
ANNUAL RUNOFF (AC-FT)	513,100		695,100		857,300	
10 PERCENT EXCEEDS	1,690		2,370		2,540	
50 PERCENT EXCEEDS	338		395		526	
90 PERCENT EXCEEDS	227		224		195	



07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS

LOCATION.--Lat 37°51'49", long 98°00'52", in NE ¼ SE ¼ NE ¼ sec.19, T.25 S., R.6 W., Reno County, Hydrologic Unit 11030014, on right bank at upstream side of county highway bridge, 10 mi south of Hutchinson, 18.1 mi upstream from Cheney Dam, and at mile 33.8.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--713 mi<sup>2</sup>, of which 237 mi<sup>2</sup> is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,456.05 ft above NGVD of 1929. Prior to Feb. 12, 1996, at site 4 mi downstream, datum 1,431.75 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	unkno	*4,100	*11.75	Apr 24	1800	1,350	9.76

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	109	71	84	78	104	146	173	119	65	14	90
2	e37	107	74	83	82	114	141	154	123	61	25	68
3	214	106	74	83	84	124	135	138	144	54	23	56
4	e710	102	80	83	77	123	130	130	120	49	20	47
5	730	100	84	82	78	e110	122	121	112	44	19	34
6	388	97	82	81	79	e100	126	110	114	40	18	30
7	234	93	87	81	68	109	124	101	112	38	16	27
8	167	90	89	82	e80	103	122	98	107	36	15	25
9	124	87	87	81	94	100	122	93	102	35	14	25
10	102	84	85	78	99	96	124	90	99	33	13	23
11	91	80	85	77	93	96	121	89	97	30	12	52
12	84	78	88	81	89	96	117	85	96	27	12	43
13	77	76	109	82	89	97	117	86	93	27	12	34
14	75	80	130	84	132	95	118	86	91	24	12	30
15	73	83	118	83	142	95	118	84	88	21	12	26
16	73	84	107	e80	113	94	146	219	91	19	12	24
17	71	82	101	e80	102	102	183	294	85	18	10	24
18	e65	82	96	e80	98	495	216	208	81	16	8.7	23
19	67	79	89	85	99	e3,460	312	162	79	15	7.4	22
20	64	76	86	87	99	e2,730	746	137	89	16	6.6	24
21	64	74	85	83	98	e1,550	485	122	94	16	6.4	26
22	65	70	84	83	96	e950	348	113	81	15	6.4	30
23	73	70	85	e80	78	581	336	114	74	15	6.4	30
24	93	70	87	e80	40	405	1,000	537	70	15	6.2	26
25	111	69	83	e80	e70	e292	746	727	69	14	6.1	23
26	108	68	88	e85	e100	e245	394	396	68	13	6.1	23
27	137	67	89	e85	114	216	286	262	67	12	6.1	22
28	195	68	90	e85	108	185	235	205	67	12	7.2	20
29	164	70	90	e85	---	167	204	181	67	11	14	20
30	135	71	90	81	---	e154	178	157	67	12	48	27
31	118	---	86	78	---	151	---	135	---	12	80	---
MEAN	153	82.4	89.6	82.0	92.1	430	257	181	92.2	26.3	15.3	32.5
MAX	730	109	130	87	142	3,460	1,000	727	144	65	80	90
MIN	25	67	71	77	40	94	117	84	67	11	6.1	20
AC-FT	9,390	4,900	5,510	5,040	5,120	26,460	15,270	11,120	5,490	1,620	941	1,930

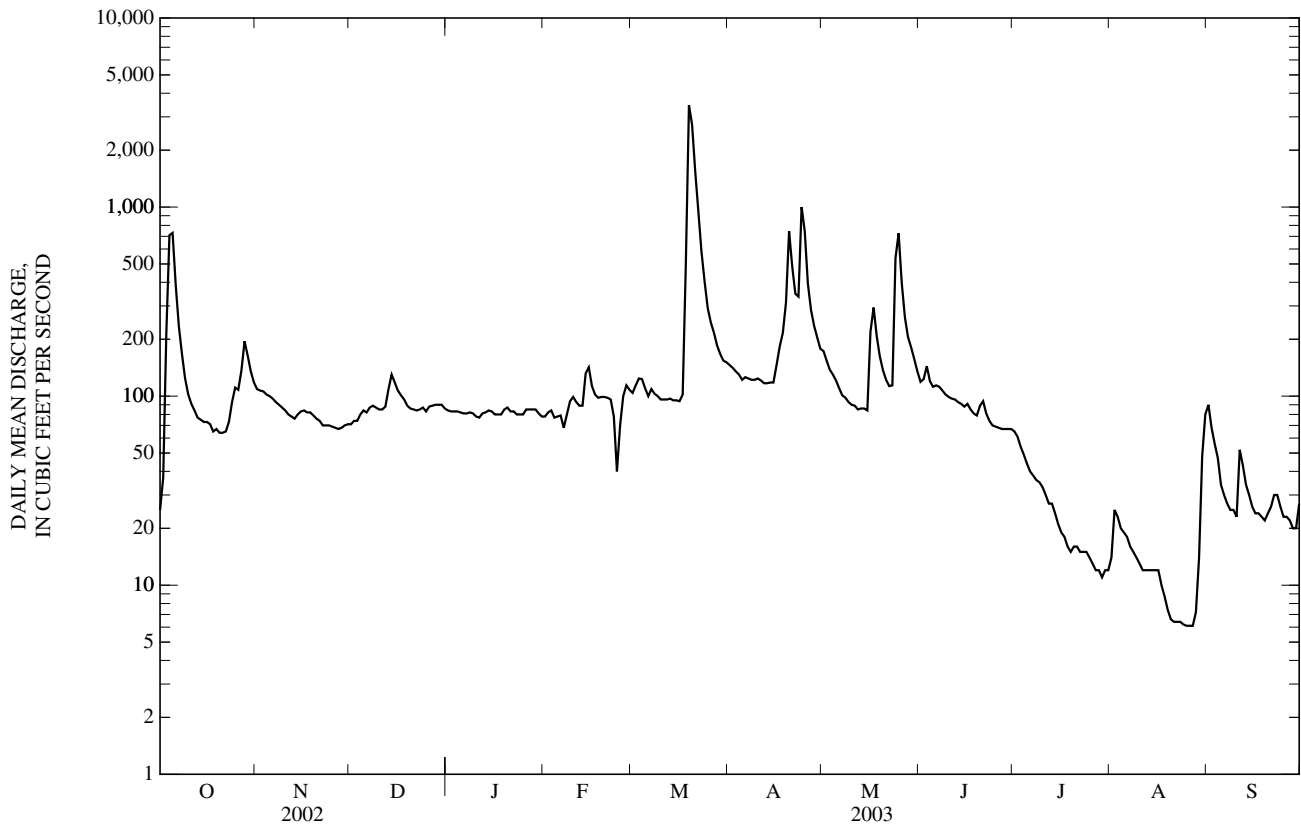
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

MEAN	169	99.8	98.9	98.3	131	215	214	232	189	133	64.0	96.5
MAX	1,632	305	252	202	535	866	1,097	1,805	820	1,392	351	968
(WY)	(1980)	(1982)	(1974)	(1980)	(1993)	(1987)	(1974)	(1995)	(1995)	(1987)	(1977)	(1977)
MIN	15.0	36.0	39.5	50.3	54.7	44.7	48.3	32.5	16.5	13.0	8.08	6.80
(WY)	(1992)	(1967)	(1967)	(1977)	(1967)	(1967)	(1972)	(1967)	(1966)	(1968)	(1968)	(1971)

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL MEAN	82.4		128		145	
HIGHEST ANNUAL MEAN					388	1987
LOWEST ANNUAL MEAN					54.3	1968
HIGHEST DAILY MEAN	730	Oct 5	3,460	Mar 19	39,700	Oct 30, 1979
LOWEST DAILY MEAN	11	Aug 6	6.1	Aug 25	0.00	Jul 14, 1966
ANNUAL SEVEN-DAY MINIMUM	12	Aug 5	6.2	Aug 21	0.56	Jul 14, 1966
MAXIMUM PEAK FLOW			a4,100	Mar 19	87,000	Oct 30, 1979
MAXIMUM PEAK STAGE			b11.75	Mar 19	11.75	Mar 19, 2003
INSTANTANEOUS LOW FLOW			5.0	Aug 25	0.00	Jul 14, 1966
ANNUAL RUNOFF (AC-FT)	59,630		92,790		105,100	
10 PERCENT EXCEEDS	112		189		220	
50 PERCENT EXCEEDS	71		85		76	
90 PERCENT EXCEEDS	26		16		24	

e Estimated  
 a Estimated from high-water mark  
 b High-water mark





07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1998 to current year.

pH: November 1998 to current year.

WATER TEMPERATURE: November 1998 to current year.

DISSOLVED OXYGEN: November 1998 to current year.

TURBIDITY: November 1998 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6026 turbidity sensor.

REMARKS.--Records good. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens/cm, Jan. 24, 2003; minimum, 122 microsiemens/cm, Sept. 18, 2001.

pH: Maximum, 9.4 standard units, Sept. 29, 2001; minimum, 7.2 standard units, June 12, 2002.

WATER TEMPERATURE: Maximum, 38.5°C, Aug. 1, 2002; minimum, -0.2°C, Jan. 1, 2002.

DISSOLVED OXYGEN: Maximum 18.4 mg/L, Jan. 27, 2001; minimum, 2.3 mg/L, July 16, 1999.

TURBIDITY: Maximum, >1,700 NTU, Sept. 17, 2001; minimum, <2.0 NTU, Oct. 1, 2001.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens/cm, Jan. 24; minimum, 202 microsiemens/cm, Mar. 20.

pH: Maximum, 9.1 standard units, Aug. 1; minimum, 7.4 standard units, July 16.

WATER TEMPERATURE: Maximum, 38.2°C, Aug. 5; minimum, -0.1°C, Jan. 7.

DISSOLVED OXYGEN: Maximum, 17.2 mg/L, Oct. 24; minimum, 5.4 mg/L, July 6.

TURBIDITY: Maximum, 1,400 NTU, Oct. 4; minimum, <2.0 NTU, July 29.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1,110	1,050	1,080	1,340	1,320	1,330	1,260	1,240	1,250	1,370	1,340	1,360
2	1,080	829	984	1,340	1,300	1,320	1,260	1,240	1,250	1,360	1,340	1,350
3	829	412	666	1,310	1,280	1,300	---	---	---	1,370	1,330	1,350
4	469	406	---	1,320	1,300	1,310	---	---	---	1,360	1,320	1,340
5	605	440	523	1,320	1,300	1,310	---	---	---	1,340	1,300	1,320
6	661	598	631	1,320	1,310	1,320	---	---	---	1,310	1,300	1,310
7	760	661	707	1,320	1,310	1,310	---	---	---	1,330	1,290	1,310
8	882	760	816	1,320	1,320	1,320	---	---	---	1,310	1,280	1,290
9	1,010	877	953	1,320	1,300	1,310	---	---	---	1,300	1,280	1,290
10	1,070	1,010	1,040	1,310	1,300	1,310	---	---	---	1,310	1,290	1,300
11	1,090	1,060	1,080	1,310	1,300	1,310	1,350	1,330	1,340	1,340	1,270	1,300
12	1,140	1,090	1,120	1,310	1,280	1,300	1,340	1,240	1,310	1,310	1,260	1,280
13	1,170	1,140	1,150	1,310	1,300	1,300	1,240	1,060	1,190	1,280	1,240	1,270
14	1,210	1,150	1,180	1,300	1,230	1,260	1,190	1,050	1,130	1,320	1,240	1,280
15	1,230	1,190	1,210	1,240	1,230	1,240	1,260	1,190	1,220	1,320	1,230	1,300
16	1,230	1,220	1,220	1,270	1,240	1,260	1,250	1,210	1,230	---	1,290	---
17	1,240	1,220	1,230	1,300	1,270	1,280	1,230	1,190	1,210	---	---	---
18	1,240	1,200	1,230	1,310	1,300	1,300	1,200	1,180	1,190	---	---	---
19	1,270	1,160	1,240	1,310	1,280	1,300	1,220	1,190	1,210	1,320	1,220	1,280
20	1,290	1,260	1,270	1,280	1,260	1,270	1,240	1,210	1,220	1,320	1,240	1,280
21	1,290	1,270	1,280	1,270	1,260	1,260	1,220	1,200	1,210	1,290	1,260	1,270
22	1,300	1,280	1,290	1,270	1,260	1,260	1,280	1,210	1,250	1,440	1,280	1,340
23	1,290	---	---	1,260	1,250	1,260	1,280	1,260	1,270	1,510	1,360	1,440
24	---	1,020	---	1,270	1,250	1,260	1,350	1,250	1,310	1,560	1,410	1,490
25	1,140	1,040	1,080	1,280	1,260	1,260	1,410	1,290	1,350	1,480	1,390	1,440
26	1,260	1,140	1,220	1,290	1,260	1,270	1,390	1,290	1,360	1,410	1,290	1,350
27	1,260	936	1,090	1,290	1,260	1,270	1,420	1,320	1,360	1,330	1,200	1,270
28	973	819	895	1,270	1,250	1,260	1,370	1,330	1,350	1,260	1,140	1,190
29	1,100	874	1,030	1,260	1,240	1,250	1,360	1,350	1,360	1,190	1,130	1,160
30	---	---	---	1,260	1,240	1,250	1,360	1,280	1,350	1,270	1,190	1,240
31	1,320	---	---	---	---	---	1,370	1,330	1,350	1,240	1,220	1,230
MONTH	1,320	406	1,050	1,340	1,230	1,290	1,420	1,050	1,270	1,560	1,130	1,310

## 07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1,230	1,220	1,220	1,280	1,240	1,270	1,230	1,220	1,220	1,170	1,100	1,130
2	1,220	1,140	1,180	1,300	1,260	1,280	1,230	1,220	1,230	1,110	1,100	1,100
3	1,180	1,130	1,160	1,330	1,260	1,300	1,240	1,230	1,240	1,160	1,090	1,140
4	1,280	1,160	1,230	1,310	1,290	1,290	1,240	1,240	1,240	1,170	1,140	1,150
5	1,280	1,240	1,260	1,460	1,300	1,390	1,260	1,240	1,250	1,210	1,150	1,180
6	1,300	1,220	1,240	1,440	1,260	1,350	1,260	1,220	1,240	1,210	1,190	1,200
7	1,380	1,230	1,310	1,380	1,280	1,320	1,260	1,160	1,220	1,210	1,190	1,200
8	1,350	1,200	1,290	1,290	1,260	1,270	1,280	1,260	1,270	1,200	1,170	1,180
9	1,290	1,160	1,230	1,270	1,230	1,250	1,290	1,270	1,280	1,180	1,150	1,170
10	1,290	1,200	1,250	1,270	1,230	1,250	1,290	1,250	1,280	1,200	1,170	1,180
11	1,270	1,240	1,250	1,250	1,220	1,230	1,270	1,240	1,260	1,200	1,160	1,180
12	1,290	1,250	1,270	1,240	1,200	1,220	1,250	1,210	1,230	1,210	1,180	1,200
13	1,310	1,210	1,290	1,210	1,190	1,200	1,210	1,170	1,180	1,210	1,170	1,180
14	1,210	936	1,060	1,200	1,180	1,200	1,210	1,170	1,190	1,170	1,150	1,160
15	1,370	932	1,160	1,210	1,180	1,190	1,210	1,160	1,200	1,180	1,140	1,150
16	1,420	1,360	1,380	1,190	1,170	1,180	1,160	1,070	1,120	1,150	585	785
17	1,390	1,330	1,360	1,180	868	1,120	1,200	1,060	1,130	852	594	727
18	1,330	1,280	1,310	868	456	658	1,180	937	1,020	1,080	852	973
19	1,280	1,250	1,260	499	246	355	962	735	830	1,090	1,050	1,060
20	1,280	1,250	1,260	---	202	---	770	299	462	1,110	1,060	1,090
21	1,290	1,270	1,280	550	---	---	936	659	830	1,120	1,100	1,110
22	1,280	1,280	1,280	653	545	597	1,030	924	988	1,140	1,110	1,130
23	1,300	1,230	1,280	791	653	720	1,060	839	975	1,150	1,060	1,100
24	1,410	1,240	1,310	930	790	857	839	519	626	1,060	465	691
25	1,500	1,280	1,360	1,030	930	980	879	577	707	747	492	614
26	1,420	1,260	1,350	1,090	1,030	1,060	1,020	879	971	883	747	848
27	1,300	1,230	1,260	1,130	1,090	1,110	1,090	1,020	1,060	889	853	879
28	1,250	1,230	1,240	1,190	1,130	1,160	1,140	1,090	1,120	961	---	---
29	---	---	---	1,210	1,190	1,200	---	1,140	1,150	1,000	961	979
30	---	---	---	---	---	---	1,180	1,160	1,170	1,050	1,000	1,020
31	---	---	---	1,220	1,210	1,220	---	---	---	1,090	1,050	1,070
MONTH	1,500	932	1,260	1,460	202	1,120	1,290	299	1,090	1,210	465	1,050

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1,130	1,090	1,110	1,140	1,080	1,110	1,250	1,080	1,140	---	---	---
2	1,130	1,020	1,070	1,140	1,090	1,120	1,170	726	927	---	---	---
3	1,080	981	1,030	1,160	1,120	1,130	1,050	978	1,000	---	1,160	---
4	1,120	1,080	1,100	1,160	1,130	1,140	1,080	992	1,050	1,200	1,160	1,170
5	1,130	1,080	1,110	1,180	1,140	1,160	1,110	1,080	1,090	1,190	1,160	1,180
6	1,100	1,070	1,090	1,200	1,160	1,180	1,130	1,100	1,110	1,180	1,140	1,160
7	1,150	1,080	1,110	1,210	1,180	1,190	---	---	---	1,180	1,150	1,160
8	1,180	1,140	1,160	1,220	1,190	1,200	---	---	---	1,170	1,150	1,160
9	---	---	---	1,230	993	1,170	---	---	---	1,190	1,160	1,170
10	---	1,150	---	1,200	1,040	1,160	---	---	---	1,200	1,180	1,190
11	1,170	---	---	1,230	1,160	1,190	---	---	---	1,210	568	887
12	---	1,080	---	1,270	1,180	1,210	---	---	---	1,130	962	1,060
13	1,180	1,090	1,140	1,330	1,190	1,220	---	---	---	1,230	1,130	1,180
14	1,190	1,140	1,170	1,330	1,190	1,250	---	---	---	1,270	1,230	1,250
15	1,200	1,150	1,170	1,350	1,220	1,260	---	---	---	1,270	1,230	1,250
16	1,200	1,120	1,170	1,420	1,240	1,310	---	---	---	1,270	1,220	1,250
17	1,200	1,130	1,170	1,280	1,230	1,240	---	---	---	1,260	1,220	1,250
18	1,180	1,120	1,150	1,250	1,200	1,220	---	---	---	1,260	1,210	1,220
19	1,180	1,120	1,150	1,260	1,170	1,210	---	---	---	1,240	1,180	1,210
20	1,180	1,070	1,130	1,230	1,150	1,190	---	---	---	1,180	1,140	1,160
21	1,190	1,080	1,150	1,210	1,140	1,170	---	---	---	1,170	1,130	1,150
22	1,210	1,180	1,190	1,190	1,110	1,150	---	---	---	1,160	1,040	1,100
23	1,210	1,140	1,180	1,230	1,130	1,160	---	---	---	1,120	1,100	1,110
24	1,190	1,130	1,160	1,200	1,140	1,160	---	---	---	1,180	1,110	1,140
25	1,190	1,120	1,150	1,230	1,170	1,200	---	---	---	1,220	1,180	1,200
26	1,200	1,130	1,160	1,280	1,180	1,210	---	---	---	1,210	1,180	1,200
27	1,210	934	1,130	1,320	1,210	1,240	---	---	---	1,210	1,180	1,190
28	1,160	934	1,080	1,370	1,200	1,270	---	---	---	1,210	1,180	1,200
29	1,140	1,040	1,110	1,390	1,200	1,270	---	---	---	1,200	1,160	1,180
30	1,140	1,100	1,130	1,330	1,160	1,240	---	---	---	1,170	1,070	1,110
31	---	---	---	1,310	1,180	1,240	---	---	---	---	---	---
MONTH	1,210	934	1,130	1,420	993	1,200	1,250	726	1,050	1,270	568	1,170

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.4	8.1	8.2	8.3	8.3	8.3	8.4	8.4	8.4	8.4	8.4	8.4
2	8.3	8.1	8.1	8.3	8.3	8.3	8.5	8.4	8.4	8.4	8.4	8.4
3	8.0	7.8	8.0	8.3	8.3	8.3	---	---	---	8.4	8.4	8.4
4	7.9	7.8	7.9	8.3	8.3	8.3	---	---	---	8.5	8.4	8.4
5	8.0	7.9	7.9	8.3	8.3	8.3	---	---	---	8.5	8.4	8.4
6	8.1	8.0	8.0	8.3	8.3	8.3	---	---	---	8.5	8.4	8.4
7	8.2	8.1	8.2	8.3	8.3	8.3	---	---	---	8.4	8.4	8.4
8	8.3	8.2	8.3	8.4	8.3	8.4	---	---	---	8.5	8.4	8.4
9	8.3	8.3	8.3	8.4	8.4	8.4	---	---	---	8.5	7.9	8.4
10	8.4	8.3	8.3	8.5	8.4	8.4	---	---	---	7.9	7.9	7.9
11	8.4	8.4	8.4	8.5	8.4	8.4	8.4	8.4	8.4	7.9	7.8	7.9
12	8.5	8.4	8.5	8.4	8.4	8.4	8.4	8.4	8.4	7.9	7.8	7.9
13	8.5	8.5	8.5	8.4	8.4	8.4	8.4	8.4	8.4	7.9	7.8	7.9
14	8.5	8.5	8.5	8.4	8.4	8.4	8.4	8.3	8.4	8.0	7.9	7.9
15	8.6	8.5	8.5	8.4	8.3	8.4	8.4	8.3	8.4	8.0	7.9	8.0
16	8.6	8.5	8.6	8.4	8.4	8.4	8.4	8.4	8.4	7.9	---	---
17	8.6	8.5	8.6	8.4	8.3	8.4	8.4	8.4	8.4	---	---	---
18	8.6	8.5	8.6	8.5	8.4	8.4	8.4	8.4	8.4	---	---	---
19	8.6	8.5	8.6	8.4	8.4	8.4	8.4	8.4	8.4	8.0	8.0	8.0
20	8.6	8.5	8.6	8.4	8.4	8.4	8.4	8.4	8.4	8.1	8.0	8.0
21	8.6	8.5	8.6	8.5	8.3	8.4	8.4	8.4	8.4	8.1	8.0	8.0
22	8.7	8.5	8.6	8.4	8.3	8.4	8.4	8.4	8.4	8.0	8.0	8.0
23	8.5	8.3	8.4	8.5	8.3	8.4	8.4	8.4	8.4	8.0	7.8	7.9
24	8.5	8.3	8.4	8.5	8.4	8.4	8.4	8.3	8.4	7.9	7.8	7.8
25	8.4	8.3	8.4	8.4	8.4	8.4	8.4	8.3	8.4	7.9	7.9	7.9
26	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.3	8.4	7.9	7.9	7.9
27	8.4	8.2	8.3	8.4	8.3	8.4	8.4	8.3	8.4	8.0	7.9	7.9
28	8.3	8.2	8.2	8.4	8.4	8.4	8.4	8.4	8.4	8.0	7.9	8.0
29	8.3	8.2	8.3	8.5	8.4	8.4	8.4	8.4	8.4	8.1	8.0	8.1
30	---	---	---	8.5	8.4	8.4	8.5	8.4	8.4	8.1	8.1	8.1
31	---	---	---	---	---	---	8.4	8.4	8.4	8.2	8.1	8.2
MAX	8.7	8.5	8.6	8.5	8.4	8.4	8.5	8.4	8.4	8.5	8.4	8.4
MIN	7.9	7.8	7.9	8.3	8.3	8.3	8.4	8.3	8.4	7.9	7.8	7.8

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.2	8.1	8.2	8.3	8.2	8.2	8.1	8.0	8.0	8.5	8.3	8.4
2	8.2	8.1	8.2	8.3	8.2	8.3	8.2	8.0	8.1	8.5	8.3	8.4
3	8.3	8.1	8.2	8.2	8.2	8.2	8.3	8.0	8.1	8.4	8.3	8.4
4	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.0	8.1	8.5	8.3	8.4
5	8.2	8.2	8.2	8.2	8.1	8.1	8.2	8.0	8.1	8.4	8.3	8.4
6	8.3	8.2	8.2	8.2	8.1	8.1	8.1	8.0	8.0	8.5	8.3	8.4
7	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.0	8.0	8.5	8.3	8.4
8	8.2	8.1	8.1	8.3	8.2	8.2	8.1	8.0	8.1	8.6	8.3	8.4
9	8.2	8.2	8.2	8.3	8.2	8.2	8.1	8.0	8.0	8.6	8.4	8.5
10	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.0	8.0	8.6	8.2	8.4
11	8.6	8.2	8.2	8.3	8.2	8.2	8.1	8.0	8.0	8.6	8.3	8.4
12	8.4	8.3	8.4	8.3	8.2	8.2	8.2	8.0	8.0	8.6	8.2	8.4
13	8.4	8.3	8.4	8.3	8.2	8.3	8.2	8.0	8.1	8.5	8.3	8.4
14	8.3	8.3	8.3	8.4	8.2	8.3	8.2	8.0	8.1	8.6	8.3	8.4
15	8.3	8.3	8.3	8.4	8.2	8.3	8.3	8.0	8.2	8.5	8.3	8.4
16	8.3	8.3	8.3	8.4	8.2	8.3	8.4	8.0	8.2	8.4	7.9	8.0
17	8.3	8.2	8.3	8.5	8.1	8.3	8.3	8.2	8.3	8.1	7.9	8.0
18	8.3	8.2	8.2	8.1	7.6	7.8	8.3	8.1	8.2	8.4	8.0	8.2
19	8.3	8.2	8.3	7.6	7.5	7.5	8.2	8.0	8.1	8.3	8.2	8.3
20	8.3	8.2	8.3	7.7	7.6	7.6	8.0	7.8	7.8	8.4	8.2	8.3
21	8.3	8.2	8.3	7.7	7.7	7.7	8.1	7.9	8.0	8.5	8.2	8.3
22	8.3	8.2	8.3	7.8	7.7	7.7	8.2	8.0	8.1	8.6	8.3	8.4
23	8.3	8.2	8.3	7.8	7.8	7.8	8.2	8.0	8.1	8.6	8.3	8.4
24	8.2	8.1	8.1	8.0	7.8	7.9	8.0	7.8	7.9	8.4	7.8	7.9
25	8.1	8.1	8.1	8.0	8.0	8.0	8.0	7.8	7.9	8.0	7.8	7.9
26	8.1	8.1	8.1	8.0	8.0	8.0	8.1	8.0	8.0	8.2	7.9	8.0
27	8.2	8.1	8.2	8.1	8.0	8.0	8.2	8.1	8.2	8.4	8.1	8.2
28	8.2	8.2	8.2	8.1	8.0	8.0	8.3	8.1	8.2	8.6	8.1	8.2
29	---	---	---	8.0	7.9	8.0	8.4	8.2	8.3	8.6	8.2	8.4
30	---	---	---	---	---	---	8.6	8.3	8.4	8.8	8.3	8.5
31	---	---	---	8.0	7.9	8.0	---	---	---	8.6	8.3	8.5
MAX	8.6	8.3	8.4	8.5	8.2	8.3	8.6	8.3	8.4	8.8	8.4	8.5
MIN	8.1	8.1	8.1	7.6	7.5	7.5	8.0	7.8	7.8	8.0	7.8	7.9

## ARKANSAS RIVER BASIN

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.7	8.3	8.5	8.8	8.0	8.5	9.1	7.6	8.3	---	---	---
2	8.6	8.3	8.5	8.9	8.0	8.6	9.1	7.9	8.3	---	---	---
3	8.4	8.2	8.3	8.8	8.0	8.5	8.9	7.8	8.3	8.8	---	---
4	8.5	8.2	8.3	8.7	7.9	8.3	8.7	7.7	7.9	8.9	8.1	8.4
5	8.5	8.3	8.4	8.4	7.7	8.0	8.4	7.6	7.8	8.9	8.0	8.4
6	8.6	8.3	8.4	8.6	7.6	8.0	8.5	7.6	7.9	8.8	8.1	8.4
7	8.6	8.3	8.4	8.7	7.7	8.2	---	---	---	8.9	8.1	8.5
8	8.6	8.3	8.4	8.6	---	---	---	---	---	8.9	8.1	8.5
9	8.7	8.4	8.5	8.9	---	---	---	---	---	8.7	8.1	8.3
10	8.8	8.4	8.5	8.8	8.0	8.4	---	---	---	8.6	8.1	8.3
11	---	8.3	---	8.8	8.0	8.3	---	---	---	8.3	8.0	8.2
12	8.8	---	---	8.8	7.6	8.0	---	---	---	8.6	8.1	8.4
13	8.8	8.2	8.5	8.6	7.5	7.9	---	---	---	8.5	8.2	8.4
14	8.7	8.2	8.5	8.6	7.4	7.8	---	---	---	8.6	8.3	8.4
15	8.7	8.2	8.5	8.8	7.4	8.3	---	---	---	8.6	8.3	8.4
16	8.7	8.2	8.5	8.7	7.4	8.1	---	---	---	8.6	8.3	8.4
17	8.7	8.2	8.5	8.8	7.7	8.0	---	---	---	8.6	8.2	8.3
18	8.8	8.1	8.6	8.6	7.7	8.0	---	---	---	8.6	8.2	8.4
19	8.8	8.1	8.6	8.8	7.6	7.8	---	---	---	8.6	8.2	8.4
20	8.7	8.3	8.6	8.8	7.6	7.9	---	---	---	8.5	8.2	8.3
21	8.8	8.3	8.6	8.9	7.7	8.2	---	---	---	8.5	8.1	8.3
22	8.8	8.4	8.6	8.9	7.7	8.1	---	---	---	8.6	8.1	8.3
23	8.7	8.4	8.5	8.9	7.8	8.1	---	---	---	8.6	8.1	8.3
24	8.8	8.0	8.6	8.8	7.8	8.2	---	---	---	8.6	8.1	8.3
25	8.9	8.0	8.8	8.7	7.9	8.2	---	---	---	8.6	8.1	8.3
26	8.8	8.2	8.6	8.6	7.7	8.0	---	---	---	8.6	8.1	8.3
27	8.8	8.2	8.6	8.6	7.6	7.9	---	---	---	8.6	8.1	8.3
28	8.8	8.1	8.4	8.8	7.6	7.9	---	---	---	8.7	8.1	8.3
29	8.8	8.1	8.4	8.7	7.5	8.0	---	---	---	8.5	8.1	8.3
30	8.7	8.1	8.5	8.8	7.6	7.9	---	---	---	8.5	8.2	8.3
31	---	---	---	8.7	7.6	7.9	---	---	---	---	---	---
MAX	8.9	8.4	8.8	8.9	8.0	8.6	9.1	7.9	8.3	8.9	8.3	8.5
MIN	8.4	8.0	8.3	8.4	7.4	7.8	8.4	7.6	7.8	8.3	8.0	8.2

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	26.5	18.7	21.8	6.3	4.8	5.6	7.2	1.4	4.2	3.8	0.5	1.5
2	---	15.5	---	6.0	5.2	5.6	9.0	2.7	5.5	3.6	0.3	1.6
3	17.3	14.0	15.6	11.2	6.0	8.2	---	---	---	5.4	-0.1	2.2
4	---	15.2	---	10.0	5.4	8.0	---	---	---	8.1	2.4	4.9
5	18.5	14.9	16.7	11.1	6.9	8.6	---	---	---	5.9	2.0	4.1
6	19.4	15.6	17.4	11.8	5.0	8.4	---	---	---	4.2	1.0	2.5
7	18.3	13.6	16.1	13.4	6.5	9.9	---	---	---	7.0	-0.1	3.0
8	16.3	14.4	15.4	14.0	8.0	11.0	---	---	---	9.4	2.4	5.8
9	21.2	14.7	17.6	15.4	9.8	12.4	---	---	---	6.9	2.9	4.9
10	21.4	14.3	17.9	14.7	10.0	12.0	---	---	---	3.8	-0.1	1.6
11	18.4	15.6	17.1	12.6	7.3	9.9	5.2	3.8	4.5	3.3	-0.1	1.2
12	18.4	13.6	16.8	12.8	6.9	9.7	5.9	5.2	5.5	5.9	0.6	2.9
13	17.6	---	---	12.5	6.0	9.3	7.4	3.2	5.4	6.7	0.3	3.5
14	17.3	9.4	---	10.4	7.8	9.1	7.6	2.8	5.2	5.0	0.9	3.0
15	17.2	9.9	---	10.7	6.8	8.3	8.3	3.1	5.9	1.7	-0.1	0.4
16	13.2	9.6	10.8	11.2	5.1	8.0	9.5	5.0	7.1	---	0.0	---
17	16.0	7.0	---	11.6	5.0	8.4	9.5	4.5	6.9	---	---	---
18	18.7	---	---	12.0	7.0	9.3	9.1	4.9	7.1	1.3	0.0	---
19	16.5	11.2	13.9	10.7	5.0	7.8	7.6	3.9	5.8	6.4	0.0	2.1
20	16.1	7.7	11.7	12.0	6.0	8.8	5.6	1.0	3.3	7.8	0.5	3.8
21	17.0	8.9	12.7	12.3	6.5	9.1	6.0	1.3	3.2	4.6	0.0	2.1
22	14.5	11.2	12.8	10.5	4.6	7.6	4.0	-0.1	2.0	0.7	0.0	0.0
23	11.2	7.5	9.0	10.8	5.8	8.2	2.5	-0.1	1.2	0.0	0.0	0.0
24	7.5	5.6	6.2	8.2	3.6	6.2	1.8	-0.1	0.3	0.2	0.0	0.0
25	8.5	5.5	6.8	5.4	---	---	2.3	-0.1	0.6	0.2	0.0	0.0
26	11.3	7.0	8.9	4.0	0.0	---	0.6	-0.1	0.1	0.1	0.0	0.0
27	9.8	8.1	9.1	5.4	0.3	3.0	4.2	-0.1	1.5	0.3	0.0	0.1
28	10.1	9.4	9.7	7.3	0.9	4.1	5.6	0.4	2.8	0.7	0.0	0.2
29	9.9	9.1	9.6	8.6	3.7	6.1	6.3	1.2	3.9	2.5	0.2	1.1
30	---	---	---	7.4	2.9	5.0	7.8	3.5	5.4	5.3	0.0	2.2
31	6.9	---	---	---	---	---	6.1	0.9	3.6	9.5	2.6	5.8
MONTH	26.5	5.5	13.3	15.4	0.0	8.1	9.5	-0.1	4.0	9.5	-0.1	2.2

## ARKANSAS RIVER BASIN

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	9.2	3.5	6.3	5.5	0.1	2.4	19.8	11.3	15.5	21.7	16.3	18.0
2	10.5	5.3	7.6	9.2	2.2	5.2	21.2	12.6	16.9	22.3	14.1	17.7
3	7.3	1.3	4.6	8.3	2.0	5.2	20.2	15.1	17.3	19.7	15.8	18.1
4	3.0	0.0	1.1	6.0	0.0	3.8	17.6	12.4	---	25.8	18.2	21.3
5	2.4	0.1	1.2	0.0	0.0	0.0	11.4	9.3	---	26.8	16.1	21.1
6	1.7	0.0	0.9	4.5	0.0	1.6	12.1	8.1	9.4	22.8	17.2	19.0
7	1.4	0.0	0.3	10.3	0.2	5.1	13.7	5.0	9.0	23.5	14.0	18.5
8	3.6	0.0	0.4	10.1	3.9	6.8	12.7	5.5	8.9	26.7	17.0	20.9
9	0.1	0.0	0.0	7.8	-0.1	3.7	16.4	5.3	10.7	27.1	15.6	21.0
10	5.1	0.0	1.9	9.2	0.2	4.6	18.5	8.4	13.4	25.4	18.9	22.0
11	8.2	1.2	4.5	6.3	3.2	4.6	21.5	10.9	16.2	23.9	13.5	18.5
12	9.4	1.8	5.5	10.1	3.0	6.4	22.6	12.8	17.7	25.3	14.3	19.5
13	6.6	3.2	5.1	14.2	6.0	9.6	22.2	13.8	18.2	22.7	15.9	19.2
14	11.6	6.6	8.8	17.4	7.4	12.0	25.1	15.0	19.8	29.1	19.0	23.3
15	9.0	1.0	4.6	18.7	9.5	14.1	20.4	16.5	18.6	23.9	19.4	21.0
16	6.1	-0.1	2.5	21.5	11.9	16.3	18.5	13.8	15.7	19.4	16.0	16.9
17	7.4	0.3	3.7	20.0	13.6	16.2	18.8	10.4	14.3	23.2	14.5	18.6
18	6.7	4.1	5.4	14.3	12.3	12.8	20.8	13.2	16.7	25.4	18.9	22.2
19	12.6	5.2	8.3	12.3	9.8	11.1	18.1	13.8	16.2	23.1	16.3	20.2
20	11.2	3.9	7.7	9.8	7.7	8.5	15.3	11.1	13.2	21.7	12.9	17.0
21	9.2	5.5	7.4	10.8	6.7	8.7	19.0	12.4	15.6	25.7	15.9	20.3
22	6.9	3.2	5.0	13.9	9.6	11.7	19.8	14.5	17.1	26.6	16.6	21.5
23	3.2	0.0	0.7	16.0	11.0	13.6	17.0	12.9	14.0	25.0	18.4	22.0
24	0.4	0.0	0.1	17.5	12.4	14.9	14.7	12.2	13.4	23.9	18.2	21.8
25	0.6	0.0	0.1	15.9	11.4	13.7	14.8	12.8	13.8	24.0	19.8	22.0
26	1.1	0.0	0.2	16.8	10.8	13.7	19.6	12.3	15.8	24.2	19.2	21.8
27	1.0	0.0	0.3	14.2	9.6	12.0	18.2	15.1	16.8	26.4	18.7	22.4
28	2.0	0.0	0.8	11.6	6.7	9.0	23.3	15.3	19.3	28.3	20.1	24.1
29	---	---	---	12.1	5.1	8.5	25.2	18.0	21.4	30.0	21.4	25.5
30	---	---	---	---	---	---	26.1	18.4	22.0	31.5	22.4	26.8
31	---	---	---	17.6	8.6	13.4	---	---	---	27.5	19.8	21.9
MONTH	12.6	-0.1	3.4	21.5	-0.1	9.0	26.1	5.0	15.6	31.5	12.9	20.8



07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	27.3	17.7	22.1	33.4	21.5	27.4	31.6	21.9	26.3	---	---	---
2	27.3	20.4	23.6	35.0	23.0	28.5	36.4	21.7	28.5	---	---	---
3	23.6	19.7	21.1	34.6	23.4	28.5	35.6	24.1	29.1	29.9	---	---
4	21.9	17.0	19.5	34.2	22.6	27.9	31.6	23.6	27.3	29.9	20.6	24.8
5	25.0	17.9	21.2	34.4	22.8	28.0	38.2	24.2	29.8	30.8	19.1	24.4
6	27.3	17.9	22.2	33.5	22.4	27.4	35.9	23.9	29.4	30.7	19.2	24.4
7	22.9	18.8	20.2	32.6	22.5	26.9	---	---	---	29.7	18.8	23.4
8	27.5	15.2	21.0	33.9	22.9	27.6	---	---	---	26.8	19.0	22.5
9	27.8	18.5	23.3	34.4	22.8	---	---	---	---	29.5	20.0	23.7
10	27.2	22.0	24.5	36.3	22.3	28.8	---	---	---	30.2	20.3	24.1
11	31.0	20.9	25.5	35.0	23.5	28.6	---	---	---	23.2	18.7	21.0
12	31.1	21.6	26.0	32.3	21.8	26.6	---	---	---	25.2	16.0	20.3
13	25.1	20.2	23.1	34.9	22.0	27.9	---	---	---	20.8	16.9	18.3
14	30.3	19.9	24.5	34.0	24.0	28.8	---	---	---	27.2	15.2	20.2
15	32.3	20.4	26.1	31.7	24.3	27.9	---	---	---	26.5	15.2	20.3
16	32.9	21.8	26.9	32.4	24.4	28.0	---	---	---	26.7	16.8	21.4
17	32.6	22.2	27.3	33.6	23.3	28.1	---	---	---	28.4	18.9	22.9
18	31.9	21.6	26.9	35.5	23.5	29.1	---	---	---	21.2	15.4	18.5
19	28.8	22.7	25.2	34.8	24.8	29.4	---	---	---	24.9	11.3	17.4
20	28.0	21.7	24.5	32.9	25.6	28.9	---	---	---	24.4	12.6	---
21	31.1	21.6	25.8	34.7	24.2	28.7	---	---	---	22.5	17.1	18.9
22	32.6	23.1	27.4	31.7	21.2	25.8	---	---	---	26.2	16.2	20.2
23	33.3	23.6	27.9	32.6	20.5	25.9	---	---	---	27.8	15.8	21.0
24	32.7	23.8	27.7	31.3	20.4	25.3	---	---	---	26.8	17.5	21.2
25	31.2	22.3	26.7	33.0	21.2	26.6	---	---	---	24.4	13.5	18.8
26	31.2	18.4	24.2	33.7	23.4	28.3	---	---	---	27.7	16.2	20.9
27	31.1	19.2	24.6	32.8	23.5	28.2	---	---	---	23.8	15.3	18.9
28	32.5	19.6	25.1	32.0	23.6	27.7	---	---	---	23.6	13.5	17.7
29	29.4	21.6	24.8	32.1	23.5	27.7	---	---	---	16.4	12.5	13.8
30	32.6	20.6	26.0	33.4	24.2	28.4	---	---	---	13.4	11.4	12.5
31	---	---	---	31.5	23.3	26.9	---	---	---	---	---	---
MONTH	33.3	15.2	24.5	36.3	20.4	27.8	38.2	21.7	28.4	30.8	11.3	20.4

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.4	8.1	9.1	12.1	11.6	11.9	13.2	11.1	12.2	---	---	---
2	10.4	8.3	9.4	12.0	11.6	11.8	12.6	11.0	11.7	---	---	---
3	11.3	9.1	10.3	11.6	10.4	11.1	---	---	---	---	---	---
4	9.8	9.1	9.5	11.8	10.5	11.1	---	---	---	---	---	---
5	10.2	9.1	9.8	11.2	10.4	10.8	---	---	---	---	---	---
6	10.9	9.9	10.5	11.9	10.2	11.0	---	---	---	---	---	---
7	12.0	10.6	11.3	11.4	9.7	10.5	---	---	---	---	---	---
8	11.9	11.0	11.5	10.8	9.3	10.1	---	---	---	---	---	---
9	11.9	10.1	11.0	10.3	9.0	9.6	---	---	---	---	---	---
10	12.1	10.2	11.1	10.3	9.1	9.6	---	---	---	14.0	12.4	13.3
11	11.9	10.5	11.3	10.7	9.3	9.9	---	---	---	14.0	12.9	13.5
12	12.5	11.0	11.6	10.5	9.2	9.8	---	---	---	13.9	12.2	13.1
13	14.4	11.9	13.0	10.3	8.8	9.6	---	---	---	13.9	11.8	12.8
14	14.3	11.8	12.6	9.7	9.0	9.3	---	---	---	13.9	12.1	13.0
15	14.2	12.0	13.1	10.0	9.1	9.5	---	---	---	14.4	13.2	14.0
16	14.3	12.4	13.8	10.2	8.9	9.6	---	---	---	14.4	---	---
17	15.6	12.3	14.0	10.2	8.7	9.4	---	---	---	---	---	---
18	---	11.1	---	9.8	8.7	9.2	---	---	---	---	13.5	---
19	13.5	11.3	12.7	10.2	8.9	9.5	---	---	---	14.3	12.3	13.5
20	15.5	12.4	13.9	9.9	8.6	9.2	---	---	---	13.8	11.7	12.7
21	15.0	12.0	13.5	9.8	8.4	9.1	---	---	---	14.3	12.0	13.4
22	14.4	12.3	13.4	10.1	8.6	9.3	---	---	---	14.8	13.8	14.4
23	---	13.4	---	9.7	8.5	9.1	---	---	---	14.8	13.8	14.3
24	17.2	---	---	9.9	8.8	9.4	---	---	---	14.0	13.7	13.8
25	16.8	15.2	16.3	10.6	9.4	---	---	---	---	14.1	13.7	13.9
26	16.2	14.3	15.3	10.9	9.6	10.3	---	---	---	14.4	14.0	14.1
27	15.5	14.4	15.0	12.4	10.2	11.3	---	---	---	14.4	13.6	14.0
28	14.8	14.4	14.5	12.9	10.9	11.9	---	---	---	14.2	13.8	14.0
29	14.9	14.4	14.7	12.1	10.7	11.4	---	---	---	14.5	13.8	14.2
30	---	---	---	12.8	10.9	11.9	---	---	---	14.6	12.4	13.7
31	---	---	---	---	---	---	---	---	---	13.2	11.4	12.3
MONTH	17.2	8.1	12.4	12.9	8.4	10.2	13.2	11.0	11.9	14.8	11.4	13.6

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	12.9	11.2	12.1	15.2	13.0	14.3	11.3	9.1	10.2	10.6	7.8	9.3
2	12.2	10.9	11.6	14.3	12.0	13.2	11.2	8.8	10.0	10.6	8.3	9.6
3	13.7	11.3	12.6	14.2	12.0	13.1	11.3	9.0	10.0	10.0	8.3	9.2
4	14.7	13.6	14.2	15.3	12.2	13.4	11.7	9.0	---	9.1	7.7	8.5
5	14.6	13.6	14.1	15.5	15.2	15.4	12.9	---	---	9.3	7.4	8.4
6	14.8	13.9	14.4	15.5	13.5	14.6	12.9	11.9	12.3	9.6	7.5	8.8
7	14.9	14.0	14.5	15.2	11.6	13.5	14.1	11.5	12.7	10.0	8.0	9.1
8	14.7	13.4	14.3	13.5	12.0	12.7	14.2	11.7	12.8	9.3	7.5	8.6
9	14.8	14.3	14.5	15.8	12.9	14.2	13.9	10.3	12.2	9.6	7.1	8.6
10	14.5	12.3	13.7	15.6	12.3	13.9	12.6	9.5	11.1	8.9	7.2	8.0
11	14.0	11.5	12.7	14.4	12.8	13.7	11.6	8.7	10.2	9.6	7.5	8.6
12	13.7	11.2	12.4	14.2	11.6	13.2	11.0	8.4	9.7	9.8	7.6	8.6
13	13.3	11.6	12.5	13.6	10.8	12.2	10.5	8.2	9.4	10.0	7.9	9.0
14	11.6	10.3	11.1	13.1	9.9	11.5	10.0	7.6	8.9	9.6	7.2	8.5
15	14.0	10.6	12.4	12.4	9.5	10.9	9.4	7.8	8.7	9.8	7.2	8.7
16	14.9	12.7	13.9	12.1	8.9	10.4	9.8	8.1	8.8	8.7	8.2	8.5
17	14.5	12.1	13.3	11.9	8.9	10.3	10.8	8.5	9.8	9.1	7.4	8.5
18	13.0	12.1	12.6	9.5	9.0	9.3	9.8	8.1	9.0	9.0	7.4	8.2
19	12.7	10.7	11.8	9.8	8.6	9.3	9.2	8.1	8.8	9.0	7.4	8.4
20	13.2	10.9	12.0	11.2	9.8	10.7	9.4	8.6	9.1	10.4	8.5	9.6
21	12.6	11.3	11.9	11.8	10.4	11.2	9.5	8.4	9.1	9.9	8.0	9.1
22	13.5	11.6	12.8	10.7	8.5	10.2	9.5	8.4	8.9	9.9	7.8	9.0
23	15.4	13.1	14.6	10.3	8.5	9.7	9.7	8.6	9.2	9.8	7.6	8.8
24	15.3	14.4	15.0	10.0	8.3	9.1	9.4	8.6	9.1	8.3	6.6	7.5
25	15.2	14.6	15.0	9.9	8.6	9.4	9.2	8.7	9.0	7.5	6.6	7.2
26	15.2	14.4	14.9	10.3	9.1	9.7	9.6	8.2	9.0	8.6	7.1	7.9
27	15.1	14.8	14.9	10.8	9.3	10.1	9.1	8.2	8.7	9.3	7.3	8.4
28	15.3	14.6	15.0	12.4	10.8	11.6	9.2	7.8	8.6	9.6	7.1	---
29	---	---	---	13.3	11.2	12.1	9.1	7.6	8.4	10.0	6.9	8.4
30	---	---	---	---	---	---	9.5	7.6	8.6	10.5	6.8	8.4
31	---	---	---	12.0	9.5	10.8	---	---	---	10.6	6.8	8.8
MONTH	15.4	10.3	13.4	15.8	8.3	11.8	14.2	7.6	9.7	10.6	6.6	8.6

## ARKANSAS RIVER BASIN

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.2	7.4	9.0	11.1	6.5	9.0	---	---	---	---	---	---
2	9.9	7.4	8.6	11.2	6.4	8.8	---	---	---	---	---	---
3	9.4	7.4	8.5	10.6	6.4	8.5	---	---	---	---	---	---
4	9.7	8.1	9.0	10.0	6.3	8.4	---	---	---	10.9	6.6	8.7
5	9.5	7.8	8.6	9.9	5.9	8.1	---	---	---	10.8	6.8	8.8
6	9.6	7.5	8.6	9.3	5.4	7.6	---	---	---	10.5	6.7	8.6
7	10.1	7.6	8.9	---	---	---	---	---	---	10.6	6.8	8.8
8	10.5	7.3	9.1	---	---	---	---	---	---	10.6	7.1	8.7
9	9.9	7.2	8.7	---	---	---	---	---	---	10.2	7.3	8.6
10	12.2	7.1	9.2	---	---	---	---	---	---	9.5	7.1	8.3
11	13.6	7.6	---	---	---	---	---	---	---	8.9	7.3	8.1
12	13.7	7.5	---	---	---	---	---	---	---	10.0	5.5	8.7
13	13.1	7.5	10.3	---	---	---	---	---	---	10.3	5.5	9.1
14	12.9	7.8	10.2	---	---	---	---	---	---	10.3	7.6	9.2
15	12.1	7.4	10	---	---	---	---	---	---	10.2	7.8	9.0
16	13.4	7.3	10.2	---	---	---	---	---	---	9.9	7.6	8.8
17	13.0	7.2	10.0	---	---	---	---	---	---	9.6	7.5	8.5
18	13.4	7.2	10.3	---	---	---	---	---	---	10.8	7.8	9.1
19	13.2	7.3	9.8	---	---	---	---	---	---	11.1	8.0	9.6
20	12.2	7.9	10	---	---	---	---	---	---	11.2	8.3	9.6
21	11.0	7.4	9.3	---	---	---	---	---	---	11.0	8.3	9.4
22	10.3	7.5	9.0	---	---	---	---	---	---	10.8	7.8	9.3
23	11.4	7.4	9.4	---	---	---	---	---	---	11.8	8.2	9.8
24	12.2	6.8	9.4	---	---	---	---	---	---	12.0	7.5	10.0
25	11.3	6.8	9.0	---	---	---	---	---	---	13.2	8.9	10.5
26	11.4	7.0	9.3	---	---	---	---	---	---	11.1	8.6	9.8
27	11.2	7.1	9.2	---	---	---	---	---	---	11.6	9.0	10.3
28	10.9	6.8	8.9	---	---	---	---	---	---	12.3	9.5	10.8
29	10.9	6.8	8.9	---	---	---	---	---	---	12.7	10.0	11.6
30	10.9	6.8	9.1	---	---	---	---	---	---	13.5	11.4	12.2
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	13.7	6.8	9.3	11.2	5.4	8.4	---	---	---	13.5	5.5	9.4

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13	7.8	9.8	31	24	27	9.7	6.7	8.1	14	9.8	11
2	100	10	23	25	20	23	8.9	2.7	6.2	13	9.0	11
3	1,100	72	390	26	21	23	---	---	---	15	7.2	11
4	1,400	520	820	30	19	23	---	---	---	15	9.7	12
5	520	330	420	30	20	23	---	---	---	13	9.3	11
6	340	260	290	28	18	22	---	---	---	12	7.9	9.9
7	260	210	240	24	19	---	---	---	---	16	7.9	11
8	220	140	180	23	18	20	---	---	---	14	9.1	11
9	140	91	110	26	20	23	---	---	---	22	11	14
10	92	76	86	24	16	19	---	---	---	19	10	16
11	80	66	74	18	14	17	15	9.2	11	20	8.4	15
12	68	53	62	18	13	14	16	9.3	12	22	15	18
13	55	42	46	17	12	14	55	15	29	20	14	17
14	44	35	38	21	10	13	53	33	43	20	14	16
15	39	29	33	14	9.0	12	36	23	27	19	10	16
16	31	22	26	21	11	13	25	17	21	16	8.6	---
17	24	20	22	21	12	15	20	15	18	61	11	---
18	28	18	22	18	12	15	19	12	15	59	19	33
19	38	21	26	17	12	14	16	12	13	49	15	32
20	22	16	19	20	12	16	15	11	12	32	21	26
21	18	15	16	19	9.5	13	18	10	12	26	16	21
22	18	10	14	15	8.4	11	14	9.6	12	20	10	13
23	---	---	---	13	8.0	9.6	16	9.6	12	12	5.6	7.2
24	---	---	---	14	7.9	9.9	25	9.1	16	13	7.0	8.9
25	49	11	29	12	7.1	8.3	26	9.5	15	12	8.2	9.8
26	55	15	36	14	8.2	9.9	20	13	16	13	9.0	11
27	---	---	---	12	8.4	9.4	27	8.8	16	14	9.0	11
28	---	---	---	13	8.2	9.3	19	13	16	58	13	29
29	280	52	---	11	7.5	9.2	20	14	16	49	24	30
30	---	---	---	12	8.1	9.2	17	13	15	28	13	22
31	---	30	---	---	---	---	15	11	13	24	19	21
MONTH	1,400	7.8	130	31	7.1	15	55	2.7	16	61	5.6	16

## ARKANSAS RIVER BASIN

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	23	18	19	42	35	38	34	27	30	44	---	---
2	26	19	22	56	35	45	30	25	28	38	27	32
3	34	22	28	52	43	48	30	25	28	36	24	27
4	26	18	23	44	23	37	28	23	---	63	22	28
5	24	18	21	31	18	25	22	16	---	150	21	29
6	23	19	21	54	16	31	29	16	19	28	16	22
7	34	13	23	53	36	43	21	17	18	21	16	19
8	74	19	33	37	27	31	21	16	18	25	18	21
9	43	27	34	36	22	29	55	14	19	22	14	17
10	61	15	35	38	26	29	21	15	18	78	8.3	14
11	42	32	36	29	22	24	23	15	18	28	9.7	17
12	35	27	30	32	22	25	21	14	18	64	11	29
13	30	22	25	30	24	27	23	16	18	17	11	14
14	190	30	120	31	24	27	51	16	20	17	12	14
15	150	55	95	35	26	30	35	16	21	18	13	15
16	55	32	41	62	26	32	42	20	29	300	17	130
17	37	27	32	470	37	99	100	38	68	150	90	120
18	31	22	25	1,300	220	550	160	93	130	99	58	74
19	28	22	24	590	450	---	200	120	140	61	46	51
20	27	22	25	670	260	---	650	200	330	47	40	42
21	26	21	23	590	240	---	200	88	130	43	39	41
22	23	17	20	450	190	---	90	57	73	42	37	40
23	49	17	27	300	120	---	150	49	74	45	36	40
24	55	9.5	21	160	92	110	260	130	180	820	45	290
25	32	8.8	18	93	70	82	220	94	150	220	130	150
26	48	12	27	72	56	64	110	65	81	130	88	100
27	48	20	36	58	48	53	110	56	---	90	78	84
28	44	31	37	50	35	42	100	37	---	---	60	---
29	---	---	---	36	30	33	44	31	40	76	47	65
30	---	---	---	33	28	---	---	---	---	69	49	61
31	---	---	---	33	28	30	---	---	---	140	41	57
MONTH	190	8.8	33	1,300	16	63	650	14	68	820	8.3	57

07144780 NORTH FORK NINNESCAH RIVER ABOVE CHENEY RESERVOIR, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	46	24	40	53	32	42	50	7.1	18	---	---	---
2	65	32	46	55	31	41	230	11	66	---	---	---
3	99	43	77	53	25	39	120	17	38	---	---	---
4	55	37	45	57	28	40	84	16	39	74	54	64
5	47	39	43	44	24	31	76	8.2	31	62	39	51
6	58	38	44	55	18	28	49	8.2	28	76	34	48
7	51	28	41	38	15	24	---	---	---	54	34	44
8	50	31	---	33	20	25	---	---	---	46	31	39
9	81	30	40	33	16	---	---	---	---	45	27	36
10	63	29	43	34	19	25	---	---	---	46	24	33
11	---	---	---	31	17	21	---	---	---	250	27	150
12	70	---	---	22	10	18	---	---	---	160	49	75
13	61	44	52	31	8.7	15	---	---	---	55	27	36
14	180	36	58	25	7.2	13	---	---	---	46	21	32
15	150	31	53	22	6.9	13	---	---	---	40	25	31
16	70	28	52	15	3.6	9.2	---	---	---	37	23	28
17	91	25	51	16	5.6	9.8	---	---	---	45	20	32
18	92	47	63	19	6.7	10	---	---	---	30	9.6	17
19	68	49	58	20	6.2	11	---	---	---	18	7.5	11
20	160	48	83	69	3.6	11	---	---	---	20	10	15
21	150	70	100	21	5.7	12	---	---	---	25	12	17
22	87	54	72	33	7.1	15	---	---	---	77	14	33
23	130	43	63	12	3.9	7.4	---	---	---	31	15	23
24	---	---	---	14	5.2	8.5	---	---	---	25	---	---
25	75	---	---	33	5.7	9.0	---	---	---	24	---	---
26	63	39	50	9.3	2.8	6.1	---	---	---	23	15	20
27	63	37	47	34	<2.0	6.0	---	---	---	20	10	14
28	57	33	43	22	<2.0	5.8	---	---	---	13	8.0	10
29	45	34	39	12	<2.0	5.1	---	---	---	10	6.6	7.8
30	49	31	38	11	<2.0	5.8	---	---	---	13	8.1	10
31	---	---	---	650	6.1	98	---	---	---	---	---	---
MONTH	180	24	54	650	0.9	20	230	7.1	37	250	6.6	35

< Actual value is known to be less than the value shown

07144790 CHENEY RESERVOIR NEAR CHENEY, KS

LOCATION.--Lat 37°43'34", long 97°47'38", in NW 1/4 NE 1/4 SE 1/4 sec.6, T.27 S., R.4 W., Sedgwick County, Hydrologic Unit 11030014, in control house structure at outlet works of Cheney Dam on North Fork Ninnescah River, 6.0 mi north of Cheney, and at mile 15.9.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--901 mi<sup>2</sup>, of which 237 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation).

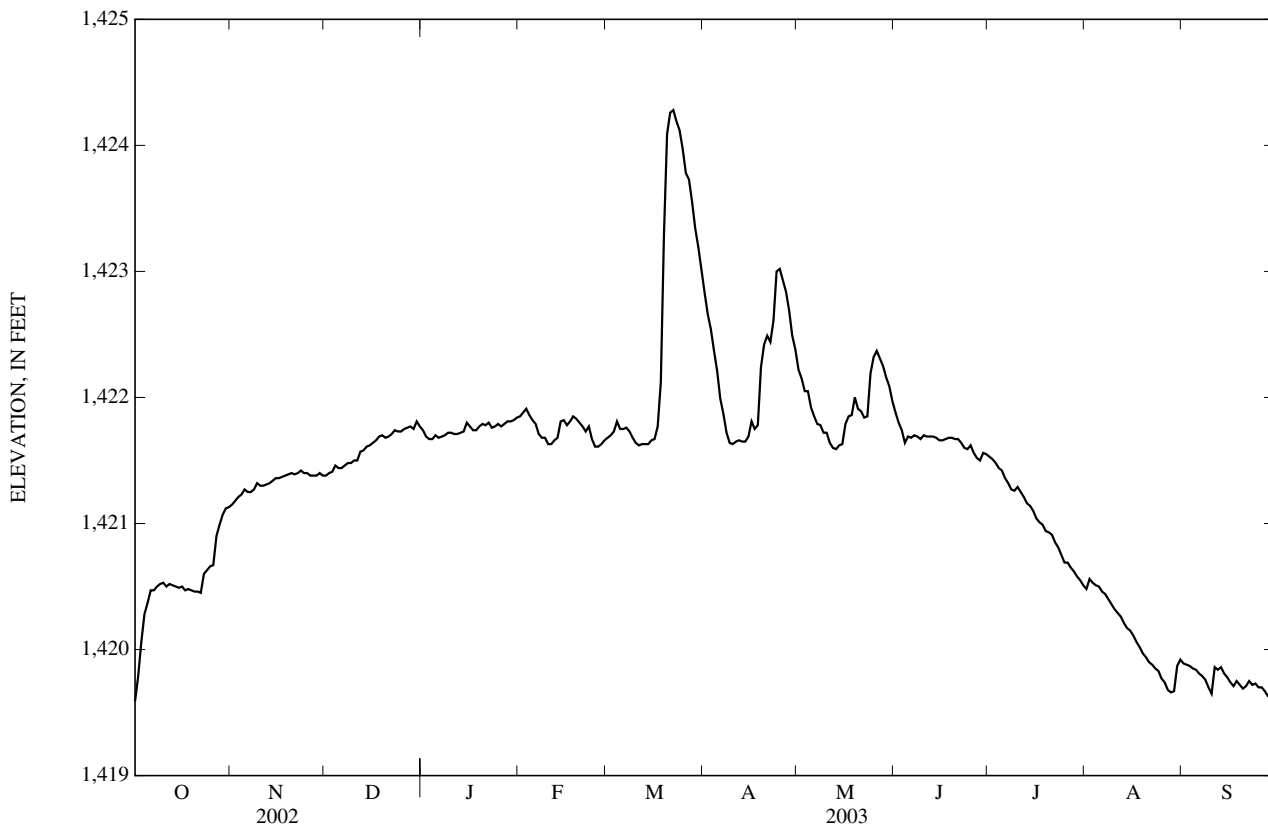
REMARKS.--Reservoir is formed by compacted earthfill dam. Storage began Nov. 17, 1964. Conservation pool elevation was first reached on Nov. 2, 1969. Total capacity, 566,300 acre-ft, consisting of the following: Dead storage, 979 acre-ft below elevation 1,378.5 ft; fish and wildlife storage, 14,310 acre-ft between elevations 1,378.5 ft and 1,392.9 ft; conservation pool, 151,800 acre-ft between elevations 1,392.9 ft and 1,421.6 ft; flood-control pool, 80,860 acre-ft between elevations 1,421.6 ft and 1,429.0 ft, crest of uncontrolled spillway; and uncontrolled storage, 318,300 acre-ft between elevations 1,429.0 ft and 1,447.8 ft. Reservoir is used for supplemental water supply for municipal and industrial uses in the city of Wichita, fish and wildlife conservation, flood control, and recreational purposes in Cheney Division Wichita project. Figures given herein represent total contents. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,429.40 ft, June 11, 1995, contents, 252,980 acre-ft; minimum elevation since conservation pool was first reached, 1,412.33 ft, Dec. 2-4, 1971, contents, 93,300 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,424.29 ft, Aug. 23, contents, 194,000 acre-ft; minimum elevation, 1,419.59 ft, Oct. 1, contents, 148,600 acre-ft.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Bureau of Reclamation computed in 1965)

Elevation	Contents	Elevation	Contents	Elevation	Contents
1,419	143,400	1,422	170,900	1,425	201,600
1,420	152,200	1,423	180,700		
1,421	161,400	1,424	191,000		





07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,419.59	1,421.15	1,421.38	1,421.74	1,421.85	1,421.68	1,422.83	1,422.22	1,421.88	1,421.53	1,420.48	1,419.89
2	1,419.79	1,421.18	1,421.40	1,421.69	1,421.88	1,421.70	1,422.66	1,422.15	1,421.80	1,421.51	1,420.56	1,419.88
3	1,420.06	1,421.21	1,421.41	1,421.67	1,421.91	1,421.73	1,422.54	1,422.05	1,421.74	1,421.48	1,420.53	1,419.87
4	1,420.28	1,421.23	1,421.46	1,421.67	1,421.86	1,421.81	1,422.37	1,422.05	1,421.64	1,421.44	1,420.51	1,419.85
5	1,420.37	1,421.27	1,421.44	1,421.70	1,421.82	1,421.75	1,422.21	1,421.92	1,421.69	1,421.42	1,420.50	1,419.84
6	1,420.47	1,421.25	1,421.44	1,421.68	1,421.79	1,421.75	1,421.99	1,421.85	1,421.68	1,421.36	1,420.46	1,419.81
7	1,420.47	1,421.25	1,421.46	1,421.69	1,421.71	1,421.76	1,421.87	1,421.79	1,421.70	1,421.32	1,420.44	1,419.79
8	1,420.50	1,421.27	1,421.48	1,421.70	1,421.68	1,421.73	1,421.72	1,421.78	1,421.69	1,421.27	1,420.40	1,419.76
9	1,420.52	1,421.32	1,421.48	1,421.72	1,421.68	1,421.68	1,421.64	1,421.72	1,421.67	1,421.26	1,420.36	1,419.70
10	1,420.53	1,421.30	1,421.50	1,421.72	1,421.63	1,421.64	1,421.63	1,421.72	1,421.70	1,421.29	1,420.32	1,419.65
11	1,420.50	1,421.30	1,421.50	1,421.71	1,421.63	1,421.62	1,421.65	1,421.64	1,421.69	1,421.25	1,420.29	1,419.86
12	1,420.52	1,421.31	1,421.57	1,421.71	1,421.66	1,421.63	1,421.66	1,421.60	1,421.69	1,421.21	1,420.26	1,419.84
13	1,420.51	1,421.32	1,421.58	1,421.72	1,421.68	1,421.63	1,421.65	1,421.59	1,421.69	1,421.16	1,420.21	1,419.86
14	1,420.50	1,421.34	1,421.61	1,421.73	1,421.81	1,421.63	1,421.65	1,421.62	1,421.68	1,421.14	1,420.17	1,419.81
15	1,420.49	1,421.36	1,421.62	1,421.80	1,421.82	1,421.66	1,421.69	1,421.63	1,421.66	1,421.10	1,420.15	1,419.78
16	1,420.50	1,421.36	1,421.64	1,421.77	1,421.78	1,421.67	1,421.81	1,421.79	1,421.66	1,421.04	1,420.11	1,419.74
17	1,420.47	1,421.37	1,421.66	1,421.74	1,421.81	1,421.77	1,421.75	1,421.85	1,421.67	1,421.01	1,420.06	1,419.71
18	1,420.48	1,421.38	1,421.69	1,421.74	1,421.85	1,422.12	1,421.78	1,421.86	1,421.68	1,420.99	1,420.02	1,419.75
19	1,420.47	1,421.39	1,421.70	1,421.77	1,421.83	1,423.29	1,422.24	1,422.00	1,421.68	1,420.94	1,419.97	1,419.72
20	1,420.46	1,421.40	1,421.68	1,421.79	1,421.80	1,424.09	1,422.42	1,421.91	1,421.67	1,420.93	1,419.94	1,419.69
21	1,420.46	1,421.39	1,421.69	1,421.78	1,421.77	1,424.26	1,422.49	1,421.89	1,421.67	1,420.91	1,419.90	1,419.71
22	1,420.45	1,421.40	1,421.71	1,421.80	1,421.73	1,424.28	1,422.44	1,421.84	1,421.64	1,420.85	1,419.88	1,419.75
23	1,420.60	1,421.42	1,421.74	1,421.76	1,421.77	1,424.19	1,422.61	1,421.85	1,421.60	1,420.81	1,419.85	1,419.72
24	1,420.63	1,421.40	1,421.73	1,421.77	1,421.67	1,424.12	1,423.00	1,422.19	1,421.59	1,420.75	1,419.83	1,419.73
25	1,420.66	1,421.40	1,421.73	1,421.79	1,421.61	1,423.97	1,423.02	1,422.32	1,421.62	1,420.69	1,419.77	1,419.70
26	1,420.67	1,421.38	1,421.75	1,421.77	1,421.61	1,423.78	1,422.93	1,422.37	1,421.56	1,420.69	1,419.74	1,419.70
27	1,420.90	1,421.38	1,421.76	1,421.79	1,421.63	1,423.73	1,422.84	1,422.31	1,421.52	1,420.65	1,419.68	1,419.67
28	1,420.99	1,421.38	1,421.77	1,421.81	1,421.66	1,423.55	1,422.69	1,422.25	1,421.50	1,420.62	1,419.66	1,419.63
29	1,421.07	1,421.40	1,421.75	1,421.81	---	1,423.34	1,422.49	1,422.16	1,421.56	1,420.58	1,419.67	1,419.62
30	1,421.12	1,421.38	1,421.81	1,421.82	---	1,423.19	1,422.38	1,422.09	1,421.55	1,420.55	1,419.87	1,419.66
31	1,421.13	---	1,421.77	1,421.84	---	1,423.01	---	1,421.97	---	1,420.51	1,419.92	---
MEAN	1,420.52	1,421.33	1,421.61	1,421.75	1,421.75	1,422.57	1,422.22	1,421.93	1,421.66	1,421.04	1,420.11	1,419.76
MAX	1,421.13	1,421.42	1,421.81	1,421.84	1,421.91	1,424.28	1,423.02	1,422.37	1,421.88	1,421.53	1,420.56	1,419.89
MIN	1,419.59	1,421.15	1,421.38	1,421.67	1,421.61	1,421.62	1,421.63	1,421.59	1,421.50	1,420.51	1,419.66	1,419.62
(+)	162,610	164,980	168,690	169,350	167,640	180,840	174,620	170,590	166,600	156,890	151,520	149,230
(#)	+13,730	+2,370	+3,710	+660	-1,710	+13,200	-6,220	-4,030	-3,990	-9,710	-5,370	-2,290
CAL YR	2002	.....	(#)	+33,970								
WTR YR	2003	.....	(#)	+350								

+ CONTENTS, IN ACRE-FEET, AT END OF MONTH.  
# CHANGE IN CONTENTS, IN ACRE-FEET.

## 07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2001 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 2001 to current year.

pH: April 2001 to current year.

WATER TEMPERATURE: April 2001 to current year.

DISSOLVED OXYGEN: April 2001 to current year.

TURBIDITY: April 2001 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor with a Yellow Springs Instruments Model 6136 turbidity sensor.

REMARKS.--Records fair. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 922 microsiemens/cm, Mar. 3, 2002; minimum, 558 microsiemens/cm, Mar. 21, 2003.

pH: Maximum, 9.1 standard units, Apr. 9, 2002; minimum, 7.5 standard units, Aug. 22, 2003.

WATER TEMPERATURE: Maximum, 32.8°C, Aug. 5, 2003; minimum, -0.1°C, Jan. 23, 2003.

DISSOLVED OXYGEN: Maximum 16.8 mg/L, Mar. 2, 2003; minimum, 0.7 mg/L, Aug. 15, 2003.

TURBIDITY: Maximum, 200 NTU, July 16, 2002; minimum, 1.9 NTU, May 5, 2003.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 898 microsiemens/cm, Jan. 24; minimum, 558 microsiemens/cm, Mar. 21.

pH: Maximum, 9.1 standard units, June 18; minimum, 7.5 standard units, Aug. 22.

WATER TEMPERATURE: Maximum, 32.8°C, Aug. 5; minimum, -0.1°C, Jan. 23.

DISSOLVED OXYGEN: Maximum, 16.8 mg/L, Mar. 2; minimum, 0.7 mg/L, Aug. 15.

TURBIDITY: Maximum, 200 NTU, Mar. 21; minimum, <2.0 NTU, May 5.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	847	838	843	818	815	817	841	840	841	861	858	860
2	848	841	845	818	817	817	842	840	841	862	860	861
3	841	829	837	818	815	817	843	841	842	865	860	862
4	835	826	832	818	816	818	843	842	843	864	859	861
5	834	832	833	818	815	817	845	843	844	864	859	863
6	833	826	831	818	817	818	845	844	845	864	861	862
7	832	830	831	818	817	818	846	843	845	862	860	861
8	832	831	831	822	817	819	846	845	845	870	860	862
9	831	828	830	820	819	820	849	845	846	870	860	861
10	830	828	829	820	819	820	846	846	846	864	861	862
11	830	822	829	821	819	820	848	846	847	873	862	867
12	825	817	820	823	821	822	849	847	848	873	865	867
13	819	814	816	822	821	822	848	846	847	867	864	866
14	818	817	818	823	817	820	849	839	846	867	862	865
15	820	817	818	821	819	820	849	847	848	867	863	865
16	819	817	818	823	821	822	849	846	848	878	865	870
17	820	818	819	823	822	823	849	847	848	884	873	878
18	819	818	818	824	823	823	849	847	848	876	869	873
19	821	818	819	825	824	824	849	847	848	879	873	875
20	822	819	820	825	824	825	851	848	850	876	871	873
21	823	821	822	835	825	827	854	849	851	873	871	872
22	824	821	822	835	829	830	854	850	851	877	872	874
23	823	819	820	830	829	829	853	850	851	892	877	881
24	820	819	819	831	829	830	861	853	855	898	886	892
25	821	819	820	831	829	830	864	857	860	892	888	890
26	821	820	820	839	831	835	858	857	857	892	887	889
27	822	818	820	838	835	837	859	857	858	890	882	887
28	821	819	820	839	838	838	858	857	857	885	876	882
29	820	819	819	839	838	838	858	856	857	882	878	880
30	820	818	819	840	838	839	860	856	858	885	877	881
31	819	816	817	---	---	---	862	857	859	880	872	877
MONTH	848	814	824	840	815	824	864	839	849	898	858	872

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	879	875	877	887	884	886	810	809	810	802	796	799
2	876	872	874	887	884	886	810	809	810	803	795	801
3	878	863	869	886	883	885	810	809	809	798	794	796
4	878	875	876	886	883	885	811	809	810	802	798	800
5	876	874	875	888	885	887	811	810	810	811	797	803
6	876	872	874	892	887	889	811	810	811	804	798	802
7	881	872	878	890	886	888	812	810	811	804	802	803
8	879	875	878	888	884	887	821	812	815	804	802	803
9	879	876	878	890	888	889	817	811	814	812	804	807
10	881	876	879	889	887	888	816	815	815	808	806	807
11	882	880	881	889	888	889	817	813	815	811	808	809
12	881	877	879	888	887	888	829	810	813	813	811	812
13	881	878	880	887	885	886	817	813	815	813	811	812
14	879	875	877	886	884	885	816	815	816	831	811	814
15	875	868	872	885	883	884	817	814	816	812	811	812
16	877	873	875	886	882	884	817	814	816	812	808	809
17	879	875	878	886	881	885	823	816	820	813	809	810
18	880	878	879	882	877	881	820	817	818	815	812	813
19	878	875	876	---	---	---	818	797	810	812	808	810
20	877	874	876	863	645	788	809	790	802	812	810	811
21	878	876	877	769	558	662	808	791	803	824	810	813
22	877	873	875	799	723	770	808	806	807	814	811	812
23	878	875	877	803	785	798	810	806	808	822	811	813
24	885	878	882	804	785	799	808	798	804	812	800	806
25	890	880	886	813	787	801	803	790	797	809	807	808
26	891	885	889	815	798	808	804	795	802	808	807	807
27	886	883	884	813	805	810	804	802	803	809	806	807
28	887	885	886	811	808	810	804	795	802	812	807	809
29	---	---	---	812	797	807	802	798	800	811	806	809
30	---	---	---	811	807	807	803	800	802	812	808	810
31	---	---	---	809	807	808	---	---	---	811	809	810
MONTH	891	863	878	892	558	847	829	790	809	831	794	808

## 07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	810	809	810	806	802	804	804	799	802	798	797	797
2	810	802	807	809	805	806	804	797	799	799	796	797
3	---	---	---	809	805	806	812	795	801	801	797	798
4	---	---	---	806	804	805	826	781	803	800	797	798
5	810	804	807	808	805	806	825	781	803	801	797	798
6	804	797	801	807	804	805	825	787	804	800	797	798
7	804	802	803	806	805	805	850	790	805	800	797	798
8	807	803	805	806	804	805	861	794	809	799	797	798
9	806	805	806	807	805	807	893	793	806	797	796	797
10	807	806	806	807	796	805	809	789	793	796	793	794
11	808	806	806	805	782	798	796	789	792	796	783	790
12	809	806	807	807	800	805	794	791	792	790	781	785
13	808	806	807	806	801	804	796	792	794	790	787	789
14	808	801	806	805	796	800	802	794	798	790	786	788
15	808	803	805	807	797	802	804	797	799	789	781	783
16	807	801	804	804	800	801	801	796	798	785	782	783
17	---	---	---	802	794	798	799	797	798	787	783	785
18	---	---	---	801	793	796	801	798	799	794	786	791
19	---	---	---	805	797	801	808	798	800	795	792	793
20	806	801	804	806	798	803	807	798	803	796	793	794
21	806	801	804	806	799	801	804	800	802	798	794	796
22	806	800	804	804	796	800	807	801	804	798	788	794
23	803	795	800	801	790	793	808	801	805	798	793	795
24	804	802	803	805	801	803	806	799	803	795	792	794
25	808	803	804	803	798	801	807	800	804	794	792	792
26	804	800	802	800	798	799	810	806	808	795	793	794
27	805	802	804	800	799	800	810	808	809	794	792	793
28	806	803	804	801	796	800	811	809	810	792	786	790
29	805	800	804	802	799	801	811	808	810	794	790	792
30	806	804	805	807	800	802	810	799	804	793	792	792
31	---	---	---	804	798	800	802	797	798	---	---	---
MONTH	810	795	805	809	782	802	893	781	802	801	781	793

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.6	8.6	8.6	8.5	8.5	8.5	8.4	8.4	8.4	8.6	8.5	8.6
2	8.7	8.6	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.6	8.5	8.6
3	8.6	8.5	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.6	8.6	8.6
4	8.6	8.5	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.7	8.5	8.6
5	8.6	8.6	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.7	8.6	8.6
6	8.6	8.6	8.6	8.5	8.4	8.5	8.4	8.4	8.4	8.7	8.6	8.6
7	8.6	8.6	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.7	8.6	8.7
8	8.6	8.6	8.6	8.5	8.4	8.5	8.4	8.4	8.4	8.7	8.6	8.7
9	8.6	8.5	8.6	8.5	8.5	8.5	8.4	8.4	8.4	8.8	8.6	8.7
10	8.6	8.5	8.5	8.5	8.5	8.5	8.4	8.4	8.4	8.8	8.7	8.8
11	8.6	8.4	8.6	8.6	8.5	8.5	8.4	8.3	8.4	8.8	8.5	8.7
12	8.6	8.4	8.5	8.5	8.2	8.5	8.4	8.4	8.4	8.8	8.5	8.8
13	8.6	8.4	8.5	8.4	8.2	8.3	8.5	8.4	8.4	8.8	8.7	8.8
14	8.5	8.4	8.5	8.4	8.2	8.3	8.5	8.4	8.4	8.9	8.7	8.8
15	8.7	8.5	8.5	8.3	8.3	8.3	8.5	8.4	8.4	8.9	8.8	8.8
16	8.6	8.5	8.5	8.3	8.2	8.3	8.5	8.4	8.4	8.9	8.8	8.8
17	8.5	8.4	8.5	8.3	8.2	8.3	8.4	8.4	8.4	8.8	8.8	8.8
18	8.5	8.5	8.5	8.4	8.3	8.3	8.4	8.4	8.4	8.9	8.8	8.8
19	8.6	8.5	8.5	8.3	8.3	8.3	8.5	8.4	8.4	8.9	8.8	8.8
20	8.5	8.4	8.5	8.4	8.3	8.3	8.6	8.5	8.5	8.9	8.7	8.8
21	8.5	8.4	8.5	8.4	8.3	8.4	8.5	8.5	8.5	8.9	8.8	8.9
22	8.5	8.4	8.5	8.4	8.4	8.4	8.5	8.5	8.5	8.9	8.8	8.9
23	8.5	8.5	8.5	8.4	8.3	8.4	8.5	8.5	8.5	8.9	8.7	8.8
24	8.5	8.5	8.5	8.4	8.3	8.4	8.5	8.5	8.5	8.8	8.6	8.7
25	8.5	8.5	8.5	8.4	8.3	8.4	8.6	8.5	8.5	8.8	8.6	8.7
26	8.5	8.5	8.5	8.4	8.3	8.4	8.5	8.5	8.5	8.8	8.6	8.7
27	8.5	8.4	8.5	8.4	8.4	8.4	8.5	8.5	8.5	8.9	8.8	8.8
28	8.5	8.4	8.5	8.4	8.4	8.4	8.5	8.5	8.5	8.9	8.9	8.9
29	8.5	8.4	8.4	8.4	8.4	8.4	8.5	8.5	8.5	8.9	8.8	8.9
30	8.5	8.4	8.5	8.4	8.4	8.4	8.6	8.5	8.5	8.9	8.8	8.9
31	8.5	8.5	8.5	---	---	---	8.6	8.5	8.5	8.9	8.8	8.9
MAX	8.7	8.6	8.6	8.6	8.5	8.5	8.6	8.5	8.5	8.9	8.9	8.9
MIN	8.5	8.4	8.4	8.3	8.2	8.3	8.4	8.3	8.4	8.6	8.5	8.6

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.9	8.8	8.8	8.6	8.6	8.6	8.3	8.3	8.3	8.2	8.2	8.2
2	8.9	8.9	8.9	8.7	8.6	8.6	8.3	8.3	8.3	8.2	8.1	8.1
3	8.9	8.8	8.8	8.6	8.6	8.6	8.4	8.3	8.3	8.1	8.1	8.1
4	8.8	8.8	8.8	8.6	8.6	8.6	8.5	8.3	8.4	8.1	8.0	8.1
5	8.8	8.8	8.8	8.6	8.6	8.6	8.4	8.3	8.4	8.1	8.1	8.1
6	8.8	8.8	8.8	8.6	8.6	8.6	8.6	8.4	8.4	8.1	8.1	8.1
7	8.8	8.8	8.8	8.6	8.6	8.6	8.8	8.6	8.7	8.1	8.0	8.1
8	8.8	8.8	8.8	8.6	8.6	8.6	8.8	8.5	8.6	8.1	8.0	8.0
9	8.8	8.8	8.8	8.6	8.6	8.6	8.7	8.5	8.5	8.2	8.0	8.1
10	8.8	8.8	8.8	8.6	8.6	8.6	8.6	8.5	8.5	8.1	8.0	8.1
11	8.8	8.8	8.8	8.6	8.6	8.6	8.7	8.5	8.5	8.2	8.1	8.1
12	8.8	8.8	8.8	8.6	8.6	8.6	8.8	8.6	8.7	8.1	8.1	8.1
13	8.8	8.8	8.8	8.6	8.6	8.6	8.7	8.4	8.5	8.1	8.1	8.1
14	8.8	8.8	8.8	8.6	8.6	8.6	8.7	8.5	8.6	8.1	8.1	8.1
15	8.8	8.8	8.8	8.6	8.6	8.6	8.6	8.6	8.6	8.1	8.0	8.1
16	8.8	8.7	8.8	8.6	8.6	8.6	8.6	8.5	8.6	8.1	8.0	8.1
17	8.8	8.8	8.8	8.6	8.6	8.6	8.7	8.5	8.6	8.2	8.1	8.1
18	8.8	8.6	8.8	8.6	8.5	8.6	8.6	8.5	8.6	8.2	8.1	8.2
19	8.6	8.6	8.6	---	---	---	8.5	8.5	8.5	8.1	8.0	8.1
20	8.6	8.6	8.6	8.5	8.2	8.5	8.5	8.5	8.5	8.2	8.1	8.1
21	8.6	8.6	8.6	8.3	8.1	8.2	8.6	8.4	8.5	8.2	8.1	8.1
22	8.6	8.6	8.6	8.4	8.3	8.3	8.5	8.4	8.4	8.2	8.0	8.1
23	8.6	8.6	8.6	8.4	8.3	8.3	8.4	8.3	8.4	8.2	8.0	8.2
24	8.6	8.6	8.6	8.5	8.3	8.3	8.4	8.4	8.4	8.3	8.1	8.2
25	8.6	8.6	8.6	8.4	8.3	8.3	8.4	8.3	8.4	8.3	8.2	8.2
26	8.6	8.6	8.6	8.4	8.3	8.3	8.3	8.2	8.3	8.3	8.2	8.2
27	8.7	8.6	8.6	8.3	8.3	8.3	8.3	8.2	8.3	8.3	8.2	8.3
28	8.6	8.6	8.6	8.3	8.3	8.3	8.3	8.2	8.2	8.5	8.3	8.3
29	---	---	---	8.4	8.3	8.3	8.2	8.2	8.2	8.4	8.2	8.3
30	---	---	---	8.3	8.3	8.3	8.2	8.2	8.2	8.4	8.0	8.4
31	---	---	---	8.3	8.3	8.3	---	---	---	8.4	8.3	8.3
MAX	8.9	8.9	8.9	8.7	8.6	8.6	8.8	8.6	8.7	8.5	8.3	8.4
MIN	8.6	8.6	8.6	8.3	8.1	8.2	8.2	8.2	8.2	8.1	8.0	8.0

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.3	7.9	8.2	8.6	8.3	8.4	8.5	7.9	8.4	8.0	7.9	8.0
2	8.3	7.9	8.2	8.4	8.3	8.3	8.7	7.9	8.2	8.3	7.9	8.0
3	---	---	---	8.5	8.2	8.4	8.5	8.0	8.1	8.2	7.8	8.0
4	---	---	---	8.6	8.5	8.5	8.1	7.8	8.0	8.0	7.8	7.9
5	8.2	8.1	8.1	8.6	8.4	8.5	8.6	7.8	8.2	8.2	7.8	8.1
6	8.5	8.1	8.3	8.7	8.5	8.6	8.8	8.1	8.6	8.2	7.8	8.0
7	8.3	8.2	8.3	8.7	8.5	8.6	8.5	7.6	8.0	8.2	7.6	8.1
8	8.3	8.1	8.2	8.7	8.6	8.6	8.3	7.7	8.0	7.9	7.6	7.8
9	8.2	8.1	8.2	8.7	8.6	8.6	8.7	7.8	8.3	8.1	7.8	7.9
10	8.2	8.1	8.2	8.9	8.6	8.7	8.8	8.2	8.5	8.3	8.1	8.2
11	8.3	8.1	8.2	8.8	8.6	8.7	8.6	7.9	8.3	8.3	8.2	8.3
12	8.5	8.1	8.3	8.7	8.5	8.5	8.2	7.9	8.1	8.6	8.2	8.3
13	8.5	8.3	8.4	8.7	8.4	8.5	8.2	7.6	7.9	8.3	8.1	8.2
14	8.8	8.2	8.4	8.7	8.4	8.6	8.1	7.5	7.7	8.5	8.2	8.3
15	8.6	8.4	8.5	8.6	8.3	8.5	8.1	7.5	7.8	8.4	8.3	8.4
16	8.6	8.3	8.4	8.6	8.4	8.5	8.6	7.8	8.3	8.3	8.2	8.3
17	8.9	8.4	8.7	8.8	8.5	8.6	8.4	7.8	8.0	8.4	8.2	8.3
18	9.1	8.5	8.7	8.8	8.6	8.7	8.1	7.8	7.9	8.4	8.3	8.3
19	8.9	8.7	8.8	8.8	8.4	8.6	8.0	7.8	7.9	8.6	8.3	8.3
20	8.7	7.8	8.2	8.7	8.3	8.5	7.9	7.6	7.8	8.4	8.1	8.2
21	8.1	7.7	8.0	8.7	8.3	8.5	8.2	7.6	7.9	8.4	8.1	8.2
22	8.1	7.8	7.9	8.6	8.3	8.5	8.2	7.5	8.0	8.7	8.1	8.2
23	8.4	8.0	8.2	8.7	8.2	8.5	8.6	7.9	8.2	8.3	8.2	8.3
24	8.4	8.3	8.4	8.2	8.1	8.1	8.7	7.7	8.2	8.5	8.2	8.3
25	8.5	8.3	8.4	8.4	8.2	8.3	8.8	7.8	8.3	8.4	8.2	8.3
26	8.8	8.4	8.5	8.5	8.3	8.3	8.7	8.2	8.5	8.4	8.1	8.3
27	8.5	8.4	8.4	8.6	8.3	8.4	8.5	7.8	8.3	8.5	8.3	8.4
28	8.6	8.4	8.5	8.9	8.4	8.5	8.4	7.9	8.2	8.6	8.3	8.4
29	8.7	8.4	8.5	8.6	8.2	8.4	8.5	7.8	8.1	8.5	8.3	8.4
30	8.5	8.3	8.4	8.7	8.2	8.5	8.0	7.8	7.8	8.3	8.2	8.3
31	---	---	---	8.7	8.5	8.6	8.0	7.9	8.0	---	---	---
MAX	9.1	8.7	8.8	8.9	8.6	8.7	8.8	8.2	8.6	8.7	8.3	8.4
MIN	8.1	7.7	7.9	8.2	8.1	8.1	7.9	7.5	7.7	7.9	7.6	7.8

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	20.9	20.6	20.7	9.9	9.3	9.5	6.3	6.1	6.2	3.2	2.6	3.0
2	21.0	20.5	20.8	9.4	9.2	9.3	6.2	5.9	6.1	2.7	2.4	2.6
3	20.6	20.0	20.2	9.4	9.0	9.2	6.1	5.2	5.7	3.1	2.5	2.9
4	20.0	19.5	19.7	9.2	9.0	9.1	5.2	4.6	4.9	3.4	2.8	3.1
5	19.7	19.4	19.5	9.2	8.8	9.0	4.7	4.1	4.5	3.2	2.8	3.0
6	19.5	19.1	19.3	9.7	8.5	9.1	4.4	4.0	4.2	3.0	2.8	2.9
7	19.1	18.8	18.9	9.1	8.8	9.0	4.3	4.0	4.1	3.0	2.8	2.9
8	18.8	18.5	18.6	9.8	9.0	9.3	4.2	3.6	4.0	3.4	2.7	3.1
9	18.5	18.2	18.4	9.8	9.0	9.3	4.4	3.7	4.2	3.4	2.7	3.2
10	18.5	18.0	18.1	10.6	9.5	9.9	4.2	4.1	4.2	3.0	2.4	2.8
11	18.0	17.8	17.9	10.6	9.6	10	4.2	4.2	4.2	2.8	2.4	2.7
12	17.8	17.1	17.5	10.1	9.4	9.6	4.3	4.2	4.2	3.0	2.6	2.8
13	18.6	16.8	17.4	9.7	9.5	9.6	4.5	4.0	4.2	3.0	2.8	2.9
14	17.6	16.7	16.8	9.7	9.4	9.5	5.8	4.2	4.5	2.9	2.4	2.6
15	16.9	16.2	16.5	9.8	9.2	9.4	4.7	4.2	4.4	2.6	2.4	2.5
16	16.2	15.8	15.9	10.2	9.0	9.4	5.1	4.3	4.6	2.4	0.6	1.6
17	16.8	15.5	15.7	9.5	9.1	9.2	4.7	4.4	4.6	1.0	0.0	0.5
18	15.5	15.3	15.4	9.6	9.0	9.3	5.1	4.5	4.8	1.1	0.3	0.8
19	15.4	14.8	15.1	9.3	9.1	9.2	5.2	4.7	4.9	1.5	1.0	1.3
20	14.8	14.4	14.6	9.7	9.1	9.3	4.9	4.6	4.8	1.8	1.5	1.6
21	14.5	14.2	14.4	9.9	9.1	9.3	5.0	4.4	4.7	1.7	1.4	1.5
22	14.3	14.0	14.2	9.2	9.0	9.1	4.6	4.1	4.4	1.4	0.3	0.9
23	14.0	13.0	13.5	9.2	8.9	9.0	4.4	3.9	4.2	0.5	-0.1	0.2
24	13.0	12.3	12.6	9.0	8.3	8.7	3.9	2.6	3.4	0.5	0.1	0.3
25	12.3	11.6	11.8	8.4	8.0	8.2	3.1	2.3	2.8	0.6	0.4	0.5
26	11.9	11.5	11.6	8.0	6.7	7.2	3.2	3.1	3.1	0.7	0.5	0.6
27	11.5	11.3	11.4	7.0	6.3	6.6	3.1	2.8	2.9	0.9	0.7	0.8
28	11.4	11.2	11.3	6.7	5.6	6.4	3.0	2.8	2.9	1.1	0.5	0.8
29	11.2	11.1	11.1	6.9	6.3	6.5	3.2	2.9	3.1	1.0	0.7	0.9
30	11.1	10.2	10.7	6.6	6.0	6.2	3.4	3.1	3.2	1.2	0.9	1.0
31	10.3	9.9	10.1	---	---	---	3.3	2.8	3.1	1.2	0.4	1.0
MONTH	21.0	9.9	15.8	10.6	5.6	8.8	6.3	2.3	4.2	3.4	-0.1	1.8



07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
 WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.4	0.8	1.2	1.6	1.2	1.4	10.2	9.8	10	17.4	16.6	17.1
2	1.9	1.4	1.7	2.0	1.3	1.7	10.7	10.1	10.4	17.2	16.1	16.6
3	2.1	1.8	2.0	2.1	1.6	1.9	11.5	10.7	11.1	17.5	16.3	16.8
4	2.0	1.3	1.7	2.1	1.6	2.0	13.6	11.3	12.0	17.8	16.4	17.1
5	2.0	1.8	1.9	1.6	0.5	1.0	11.6	11.2	11.3	21.4	17.4	18.6
6	1.9	0.7	1.6	1.6	0.8	1.3	11.3	10.8	11.1	19.3	17.2	17.8
7	1.1	-0.1	0.6	2.0	1.0	1.5	10.9	10.1	10.4	18.9	17.3	18.1
8	1.1	0.7	0.9	2.6	1.6	2.1	10.4	9.7	10.0	18.1	17.2	17.6
9	1.0	0.8	1.0	2.1	1.7	1.9	12.6	9.5	10.2	22.3	17.9	19.3
10	1.3	0.9	1.1	2.4	2.0	2.2	10.4	9.7	10	19.9	18.0	18.9
11	1.5	0.9	1.2	2.4	2.1	2.3	11.0	10.1	10.3	19.2	18.3	18.7
12	1.8	1.2	1.5	2.5	2.4	---	13.9	11.0	11.8	19.0	18.5	18.8
13	1.9	1.5	1.7	3.0	---	---	11.9	10.4	11.0	18.8	18.5	18.6
14	2.8	1.9	2.1	3.5	2.9	3.2	12.7	11.1	11.7	22.1	18.4	19.4
15	3.3	2.4	2.8	4.1	3.4	3.7	13.3	12.6	12.9	18.8	18.5	18.6
16	2.4	1.8	2.2	5.1	4.0	4.4	14.9	13.1	13.8	18.6	18.1	18.4
17	2.4	2.1	2.3	6.4	6.1	5.5	15.9	13.9	14.5	19.8	18.0	18.6
18	2.5	2.3	2.4	6.3	5.0	---	14.2	13.4	13.8	19.7	18.6	19.0
19	3.0	2.4	2.6	---	---	---	14.5	14.0	14.2	19.0	18.4	18.8
20	3.1	2.7	2.9	9.0	6.6	7.4	14.7	13.9	14.3	18.5	17.8	18.2
21	3.1	2.9	3.0	8.8	7.6	8.3	16.4	14.4	15.1	21.4	18.0	18.9
22	3.4	2.9	3.2	10.5	8.0	9.1	15.8	14.3	15.0	18.9	18.1	18.3
23	3.2	1.7	2.6	8.9	8.2	8.6	14.7	14.1	14.3	21.9	17.9	18.9
24	1.8	0.2	0.9	13.1	8.6	9.7	15.2	14.6	14.8	23.0	17.9	19.7
25	1.5	0.1	1.1	10.5	8.8	9.4	15.0	14.4	14.7	20.8	19.4	20.2
26	1.6	1.3	1.4	10.5	9.8	10.2	14.8	14.5	14.6	20.5	19.4	19.8
27	1.6	1.3	1.6	10.2	9.6	9.9	16.2	14.5	15.1	21.3	19.7	20.4
28	1.6	1.2	1.4	9.9	9.0	9.5	16.3	15.3	15.8	24.5	20.3	21.8
29	---	---	---	9.3	8.7	9.1	15.8	15.2	15.4	23.6	20.1	22.5
30	---	---	---	10.1	---	---	17.7	15.6	16.4	24.8	18.8	22.4
31	---	---	---	10.2	9.5	9.8	---	---	---	23.2	21.3	22.4
MONTH	3.4	-0.1	1.8	13.1	0.5	5.3	17.7	9.5	12.9	24.8	16.1	19.0

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.1	20.1	21.3	24.9	24.1	24.4	27.5	26.4	27.0	24.6	24.2	24.3
2	22.3	20.1	21.3	25.4	24.0	24.7	30.0	26.3	27.4	25.3	23.7	24.3
3	---	---	---	25.9	24.2	25.2	27.5	26.6	26.9	25.2	23.8	24.3
4	---	---	---	25.9	25.3	25.6	27.0	26.4	26.6	24.9	23.6	23.9
5	21.4	20.8	21.0	26.0	25.1	25.6	32.8	26.5	28.9	24.7	23.6	24.0
6	22.7	20.5	21.6	26.1	25.5	25.8	30.4	27.3	29.3	24.4	23.5	23.9
7	22.0	21.0	21.4	26.1	25.6	25.9	28.4	26.5	27.0	24.2	23.2	23.6
8	22.6	20.5	21.5	26.4	25.7	26.0	27.7	26.6	27.1	23.6	23.0	23.2
9	22.0	21.5	21.8	26.6	26.1	26.3	30.5	26.8	28.2	23.7	23.1	23.4
10	22.1	21.4	21.7	30.9	26.1	27.5	30.5	27.6	28.5	23.8	23.3	23.5
11	22.3	21.4	21.8	29.0	26.4	27.4	28.9	27.1	27.8	23.6	22.7	23.2
12	25.3	21.2	22.3	27.1	26.0	26.4	28.6	27.0	27.6	24.9	22.4	22.9
13	23.5	22.1	22.8	26.7	26.0	26.3	27.6	26.7	27.1	22.6	21.8	22.1
14	23.7	22.2	22.7	27.5	26.1	26.7	27.2	26.3	26.8	24.4	21.2	22.3
15	25.7	22.3	23.1	27.0	26.5	26.7	28.1	26.2	27.0	22.1	21.6	21.7
16	24.4	22.2	22.8	27.4	26.6	26.9	29.7	26.3	27.6	21.8	21.3	21.5
17	25.6	22.3	23.9	27.8	26.9	27.3	28.0	26.7	27.1	21.6	21.2	21.4
18	28.5	23.4	25.0	29.4	27.2	28.1	27.3	26.6	26.9	21.4	20.6	20.9
19	26.2	25.0	25.6	29.5	27.0	28.1	27.1	26.6	26.8	22.5	20.1	20.9
20	25.5	21.6	22.6	28.5	26.9	27.6	27.3	26.6	26.9	20.9	19.9	20.2
21	23.4	21.6	22.6	28.0	27.1	27.6	29.2	26.8	27.5	20.4	19.9	20.0
22	23.6	22.2	22.8	27.9	26.6	27.2	28.4	26.5	27.3	21.8	19.6	20.3
23	24.5	23.1	24.1	28.6	26.8	27.6	31.2	27.2	28.3	20.4	19.9	20.1
24	24.9	24.3	24.6	26.9	26.5	26.7	31.5	27.1	28.2	21.8	19.9	20.6
25	26.0	24.7	25.0	27.0	26.3	26.6	28.6	27.4	27.9	20.4	19.7	20.0
26	26.1	24.3	24.8	27.6	26.4	26.9	28.4	27.2	27.9	21.2	19.7	20.1
27	25.2	24.4	24.7	28.2	26.8	27.3	27.9	27.2	27.6	20.6	19.8	20.1
28	25.0	24.4	24.6	30.1	27.0	28.1	27.7	27.0	27.3	20.3	19.4	19.7
29	25.5	24.2	24.6	29.1	27.0	27.8	27.7	26.6	27.1	19.6	19.1	19.3
30	24.9	23.9	24.3	32.3	26.8	28.8	26.6	25.5	26.0	19.1	18.3	18.7
31	---	---	---	29.6	27.4	28.4	25.5	24.6	25.0	---	---	---
MONTH	28.5	20.1	23.1	32.3	24.0	26.8	32.8	24.6	27.4	25.3	18.3	21.8

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	9.4	8.5	8.9	13.3	12.8	13.1	12.6	12.2	12.5	15.2	14.2	14.4
2	9.7	8.8	9.2	13.2	12.7	13.0	12.9	12.4	12.7	14.8	14.3	14.5
3	9.3	8.6	9.0	13.9	12.5	13.3	12.9	12.6	12.7	14.8	14.3	14.6
4	10.1	8.7	9.4	13.6	12.9	13.3	13.1	12.8	12.9	15.3	14.2	14.8
5	10.2	9.1	9.6	14.2	12.8	13.5	13.4	13.0	13.2	15.3	14.3	14.7
6	10.1	9.1	9.6	14.1	13.6	13.9	13.3	13.0	13.2	15.2	14.7	15.0
7	10.3	9.5	9.7	14.1	13.5	13.8	13.6	13.0	13.2	15.8	14.8	15.2
8	9.8	9.4	9.6	---	---	---	13.8	13.1	13.5	15.6	14.5	15.1
9	9.8	8.6	9.3	---	---	---	13.6	13.2	13.3	15.9	14.7	15.4
10	10.6	8.6	9.4	---	---	---	13.4	12.8	13.1	15.9	15.1	15.5
11	9.9	8.6	9.5	---	---	---	13.3	12.8	13.1	15.8	14.6	15.3
12	10.5	8.6	9.7	---	---	---	13.4	12.9	13.2	15.9	14.5	15.4
13	11.4	9.7	10.3	---	---	---	13.9	13.3	13.5	16.1	14.7	15.4
14	10.9	9.6	10.1	11.4	10.2	10.7	14.1	13.4	13.6	16.2	14.9	15.9
15	12.2	10.0	10.9	11.3	10.8	11.0	13.6	13.2	13.4	16.0	15.6	15.8
16	11.0	9.9	10.4	11.0	10.7	10.9	13.8	13.1	13.4	15.9	15.4	15.6
17	10.7	9.8	10.2	11.0	10.5	10.8	13.6	13.2	13.4	16.0	15.6	15.8
18	10.6	10.1	10.3	11.6	10.6	11.1	13.6	13.2	13.4	16.1	15.4	15.8
19	11.3	10.2	10.6	11.4	11.0	11.2	13.8	13.4	13.5	15.9	15.2	15.7
20	10.6	9.7	10.2	11.5	11.2	11.3	13.9	13.6	13.7	16.3	15.0	15.6
21	10.7	9.6	10.3	11.8	11.2	11.4	15.3	13.5	13.7	15.9	15.6	15.8
22	10.9	9.4	10.2	11.6	11.3	11.4	14.9	13.5	13.7	15.9	15.6	15.7
23	11.4	10.6	11.0	11.7	11.2	11.4	13.6	13.5	13.6	15.9	14.9	15.4
24	11.7	11.2	11.5	11.7	11.4	11.5	14.4	13.5	13.8	15.5	14.6	15.0
25	12.2	11.5	11.9	11.7	11.5	11.6	14.5	13.9	14.2	15.1	14.4	14.9
26	12.2	11.5	11.8	12.3	11.6	12.1	14.1	13.8	13.9	15.7	14.5	15.1
27	11.9	11.2	11.6	12.4	12.0	12.2	14.1	13.8	13.9	16.1	15.2	15.7
28	11.8	11.0	11.4	12.7	12.2	12.4	14.0	13.7	13.9	16.1	15.7	15.9
29	11.7	11.3	11.6	12.8	12.3	12.6	14.0	13.7	13.9	15.9	15.0	15.5
30	13.1	11.5	12.4	12.8	12.5	12.7	14.4	13.9	14.1	16.2	14.8	15.5
31	13.1	12.6	12.9	---	---	---	14.6	14.2	14.3	15.8	15.0	15.4
MONTH	13.1	8.5	10.4	14.2	10.2	12.1	15.3	12.2	13.5	16.3	14.2	15.3

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	15.4	14.9	15.2	16.4	16.2	16.3	10.6	10.4	10.5	9.7	8.5	9.0
2	15.3	15.0	15.2	16.8	16.1	16.4	10.5	10.1	10.3	8.8	8.4	8.5
3	15.1	14.4	14.6	16.2	15.0	15.5	10.3	9.9	10.2	8.7	8.0	8.4
4	14.6	14.1	14.4	15.0	14.7	14.8	10.7	9.7	10.1	8.8	8.0	8.5
5	14.5	14.1	14.3	15.0	14.5	14.8	10.2	9.6	9.8	8.9	8.2	8.7
6	14.5	14.1	14.3	14.8	14.4	14.6	---	---	---	8.9	8.2	8.5
7	14.7	14.3	14.5	14.9	14.5	14.7	---	---	---	8.6	7.6	8.3
8	14.6	14.0	14.4	14.7	14.3	14.5	---	---	---	8.4	7.7	8.1
9	14.6	14.0	14.3	14.8	14.2	14.4	---	---	---	8.8	8.1	8.5
10	---	---	---	14.5	14.0	14.3	11.2	10.3	10.6	8.6	7.9	8.3
11	---	---	---	14.3	13.7	14.1	12.3	10.7	11.1	9.0	8.5	8.8
12	---	---	---	---	---	---	14.0	11.9	12.8	8.7	8.2	8.4
13	---	---	---	17.2	17.0	17.1	12.6	9.8	10.8	8.3	8.1	8.2
14	---	---	---	17.0	16.3	16.7	11.0	10.1	10.5	9.0	8.2	8.4
15	---	---	---	13.1	12.8	13.0	10.5	9.7	10.2	8.4	8.0	8.2
16	---	---	---	13.2	12.6	12.9	---	---	---	8.5	8.0	8.3
17	---	---	---	---	---	---	---	---	---	9.1	8.4	8.6
18	---	---	---	---	---	---	---	---	---	9.0	8.4	8.6
19	15.0	14.4	14.7	---	---	---	11.0	10.1	10.6	8.7	8.2	8.4
20	15.3	14.8	15.0	---	---	---	10.9	10.1	10.4	9.3	8.6	8.8
21	15.4	14.9	15.2	---	---	---	12.0	10.1	10.8	9.4	8.4	8.9
22	15.6	15.1	15.3	---	---	---	11.4	9.9	10.5	8.6	8.2	8.4
23	15.4	15.1	15.2	---	---	---	10.4	9.1	9.5	9.0	7.5	8.2
24	16.0	15.3	15.7	---	---	---	10.2	9.5	9.8	9.7	7.9	8.7
25	16.0	15.4	15.6	---	---	---	10.6	9.7	10.0	9.4	8.6	8.9
26	15.9	15.4	15.6	---	---	---	10.2	9.1	9.4	9.5	8.6	8.9
27	16.6	15.7	15.9	---	---	---	9.6	8.8	9.2	9.9	8.9	9.4
28	16.6	15.8	16.3	---	---	---	9.8	8.7	9.2	11.2	9.2	9.8
29	---	---	---	---	---	---	8.9	8.4	8.7	10.4	8.3	9.7
30	---	---	---	---	---	---	9.2	8.5	8.8	9.9	7.3	9.2
31	---	---	---	---	---	---	---	---	---	9.3	8.4	9.0
MONTH	16.6	14.0	15.0	17.2	12.6	14.9	14.0	8.4	10.2	11.2	7.3	8.7

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	8.8	6.5	8.1	11.5	7.5	8.7	7.7	3.2	6.1	6.7	6.0	6.4
2	9.3	6.5	8.4	8.9	6.7	7.8	10.4	3.3	6.6	7.8	6.1	6.7
3	---	---	---	---	---	---	8.3	4.6	5.8	8.0	5.8	6.6
4	---	---	---	---	---	---	5.8	2.7	4.6	6.7	5.1	6.1
5	7.1	6.7	6.9	---	---	---	9.3	3.1	6.4	8.0	5.1	6.7
6	9.5	7.0	8.3	---	---	---	11.5	5.3	8.9	8.0	5.2	6.6
7	8.7	8.1	8.4	---	---	---	8.7	1.1	4.0	8.5	2.8	6.5
8	9.5	8.3	8.8	---	---	---	6.8	1.4	4.8	6.2	2.8	4.9
9	9.2	8.5	8.9	---	---	---	10.3	2.1	6.7	7.1	5.0	5.9
10	9.1	8.4	8.7	---	---	---	12.3	3.8	8.3	8.1	6.8	7.5
11	9.6	8.3	8.8	---	---	---	8.8	3.0	6.0	8.2	7.4	7.7
12	10.9	7.9	9.0	---	---	---	6.2	3.2	5.1	10.7	7.1	8.2
13	10.5	8.6	9.7	---	---	---	5.8	0.9	3.7	8.3	6.9	7.6
14	13.5	8.6	9.9	---	---	---	5.6	0.9	2.8	10.0	7.6	8.6
15	12.1	8.5	10.3	---	---	---	6.9	0.7	4.0	9.2	8.0	8.6
16	10.3	8.0	8.9	---	---	---	10.6	4.3	7.4	8.5	7.7	8.1
17	13.9	8.0	10.8	---	---	---	8.6	4.6	5.8	8.6	7.6	8.0
18	12.9	8.3	10.3	---	---	---	6.4	3.5	5.3	8.8	7.9	8.3
19	10.8	8.5	9.5	10.8	5.4	8.4	6.2	4.5	5.6	10.9	8.1	9.0
20	---	---	---	8.3	5.0	6.6	6.3	3.6	5.1	9.0	7.1	8.0
21	---	---	---	8.3	4.7	7.0	8.3	3.6	6.0	9.0	6.7	7.8
22	---	---	---	8.0	4.7	6.7	7.4	3.0	5.5	11.5	7.1	8.8
23	---	---	---	9.3	4.3	7.2	10.7	5.5	7.2	8.7	7.6	8.1
24	8.4	7.5	7.9	5.4	3.9	4.6	10.4	2.9	7.1	9.7	7.9	8.7
25	9.5	7.9	8.5	7.3	5.4	6.2	10.9	4.4	7.6	8.8	7.5	8.2
26	13.6	8.3	9.7	8.4	6.2	7.0	10.3	6.1	8.2	9.2	7.5	8.3
27	9.9	8.2	9.0	9.1	6.9	7.8	7.6	3.4	6.1	9.7	8.7	9.1
28	10.6	8.6	9.3	12.6	7.0	9.4	7.3	4.7	5.9	10.9	8.5	9.5
29	11.9	7.7	9.2	8.9	6.3	7.4	8.7	4.2	5.8	9.6	8.4	8.7
30	9.1	7.1	8.0	11.0	5.7	8.1	5.6	4.0	4.9	8.6	8.0	8.3
31	---	---	---	9.8	7.5	8.9	6.5	5.4	6.1	---	---	---
MONTH	13.9	6.5	9.0	12.6	3.9	7.5	12.3	0.7	5.9	11.5	2.8	7.7

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	24	15	19	33	28	31	18	14	16	14	4.7	7.5
2	35	18	21	42	22	27	21	14	17	19	5.5	9.3
3	33	18	22	49	21	31	19	16	17	8.1	5.1	6.3
4	39	18	27	34	20	26	20	17	18	14	4.9	7.3
5	21	16	18	49	20	31	18	14	16	7.3	4.6	5.7
6	26	15	21	33	22	28	16	13	14	7.3	4.8	6.1
7	24	13	19	37	19	28	15	12	13	9.0	4.7	5.7
8	25	14	19	31	13	23	15	12	13	7.1	4.5	5.6
9	35	16	23	---	---	---	20	11	12	10	5.0	7.1
10	29	14	20	48	16	26	20	11	13	24	6.7	9.8
11	30	12	20	27	11	18	14	11	12	8.5	5.1	6.5
12	50	27	36	---	---	---	15	9.1	11	8.4	5.5	7.2
13	37	28	32	---	---	---	19	9.2	13	14	4.7	6.4
14	34	24	28	29	9.9	20	13	8.4	10	8.7	4.7	7.3
15	35	24	30	23	12	18	11	8.5	9.5	9.9	6.0	7.2
16	31	24	27	20	13	16	13	8.6	11	49	9.9	23
17	35	25	30	18	13	15	11	8.6	9.8	27	8.0	17
18	37	27	30	31	12	18	10	7.7	9.1	21	5.2	11
19	36	24	30	21	14	18	25	7.9	13	8.8	4.3	6.6
20	30	23	27	32	18	22	14	7.7	11	6.6	4.3	5.2
21	26	21	24	44	19	25	19	7.3	11	7.1	5.2	6.3
22	38	18	26	21	17	20	15	6.9	8.6	7.4	5.5	6.2
23	36	30	33	23	16	20	12	7.3	8.8	9.5	3.6	5.1
24	36	29	33	25	21	23	17	9.1	12	5.1	3.1	3.9
25	33	25	31	26	21	23	12	6.8	8.7	5.0	3.0	3.7
26	30	17	26	55	21	30	8.1	5.9	7.0	4.7	3.2	3.7
27	32	22	26	23	18	21	9.0	6.1	6.9	4.4	2.9	3.5
28	33	22	27	24	17	20	7.3	5.7	6.2	4.7	3.3	3.9
29	34	28	31	19	15	17	7.5	5.4	6.2	4.9	2.7	3.7
30	47	30	37	23	14	19	15	5.6	7.3	4.6	2.9	3.6
31	33	29	31	---	---	---	9.2	4.8	6.4	4.9	2.9	3.5
MONTH	50	12	27	55	9.9	23	25	4.8	11	49	2.7	6.9

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.3	2.8	3.4	4.9	3.3	3.7	22	18	19	53	7.3	39
2	10	3.0	4.2	4.9	3.0	3.6	22	16	18	41	4.9	33
3	30	3.8	16	4.3	2.9	3.5	18	15	17	43	9.5	34
4	8.2	3.3	4.5	8.7	3.4	4.6	69	14	30	45	29	34
5	5.7	3.8	4.4	14	4.5	6.6	22	15	18	45	<2.0	31
6	14	4.3	5.3	5.5	4.0	4.9	34	13	18	60	3.6	33
7	17	4.7	8.6	5.3	3.8	4.5	60	23	29	34	4.0	23
8	5.8	3.5	4.2	6.2	3.8	4.5	90	19	29	37	2.3	28
9	7.2	3.0	3.9	5.5	4.0	4.4	37	16	20	36	21	29
10	4.2	3.1	3.9	6.3	4.2	4.9	20	14	17	77	20	30
11	3.7	2.5	3.2	5.2	3.7	4.5	18	14	16	50	30	37
12	4.1	2.6	3.3	5.3	4.0	4.3	16	13	14	34	26	28
13	4.4	2.8	3.3	5.0	4.1	4.5	19	11	15	30	25	28
14	8.7	2.6	3.8	4.9	4.1	4.5	20	15	18	30	18	24
15	11	5.0	6.7	5.5	4.0	4.5	28	19	23	26	18	22
16	19	4.5	8.0	5.8	3.7	4.6	110	24	44	38	25	31
17	5.4	3.3	4.5	5.9	4.2	4.9	55	23	38	38	23	31
18	6.8	3.3	3.9	6.0	4.6	5.0	97	16	29	27	21	23
19	6.8	2.8	3.6	---	---	---	95	15	36	37	18	25
20	3.5	2.7	3.1	180	15	80	41	29	34	39	29	36
21	4.7	2.4	3.2	200	52	120	86	24	33	33	24	29
22	5.4	2.9	4.0	78	37	51	55	21	25	26	21	23
23	7.9	3.1	4.8	38	29	34	45	20	25	39	19	26
24	14	4.0	7.1	38	27	30	63	26	34	55	19	26
25	6.9	3.5	4.9	38	20	30	77	33	42	24	17	22
26	5.0	3.7	4.3	28	20	24	37	23	31	18	15	16
27	5.8	3.2	4.0	70	20	29	32	26	29	16	12	14
28	5.4	2.7	3.7	51	33	41	33	15	28	26	12	14
29	---	---	---	46	20	34	37	9.6	30	19	9.1	12
30	---	---	---	26	17	---	55	6.4	29	18	9.2	13
31	---	---	---	20	16	18	---	---	---	16	8.0	11
MONTH	30	2.4	4.9	200	2.9	20	110	6.4	26	77	1.9	26

< Actual value is known to be less than the value shown

## ARKANSAS RIVER BASIN

07144790 CHENEY RESERVOIR NEAR CHENEY, KS—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	19	7.7	11	14	6.9	10	46	21	29	35	28	32
2	59	11	24	15	7.7	11	32	17	24	35	29	32
3	---	---	---	23	8.6	12	30	17	21	30	24	27
4	---	---	---	19	7.1	11	43	18	24	31	22	26
5	18	7.6	11	19	9.8	13	40	20	26	26	19	22
6	27	8.9	14	31	15	22	32	19	24	26	18	22
7	22	11	14	33	18	25	43	18	25	35	20	25
8	21	13	17	30	16	21	28	18	20	37	21	25
9	18	11	14	28	21	24	22	16	19	29	22	25
10	19	9.5	14	27	15	22	34	14	18	28	23	26
11	14	8.4	11	28	12	18	25	12	17	34	22	27
12	23	9.7	16	40	21	31	22	16	18	27	18	22
13	24	10	16	34	18	23	32	16	21	30	17	24
14	20	8.1	12	34	19	23	33	16	24	26	18	22
15	26	6.9	14	34	19	27	59	17	28	25	18	21
16	10	3.7	7.1	26	15	19	50	19	24	27	19	22
17	33	3.7	15	40	20	25	42	15	23	25	20	22
18	27	3.3	11	62	22	28	50	16	24	35	18	26
19	26	4.8	13	32	12	20	24	15	20	20	11	15
20	12	2.9	5.4	16	9.2	12	23	15	20	26	12	16
21	9.7	5.0	6.8	17	9.2	13	20	15	18	29	13	17
22	11	4.7	7.3	26	15	19	28	15	22	28	14	21
23	20	8.7	14	30	15	22	27	15	20	29	19	22
24	20	10	15	24	15	17	---	---	---	31	20	24
25	70	14	29	27	20	23	22	15	17	31	20	26
26	65	15	25	29	19	25	20	16	18	37	18	23
27	39	13	18	24	19	22	19	15	17	57	20	29
28	23	14	19	42	19	26	22	15	18	36	19	25
29	37	14	21	22	14	18	23	15	17	29	18	24
30	23	8.8	14	22	13	16	33	18	25	34	25	29
31	---	---	---	23	14	17	33	26	29	---	---	---
MONTH	70	2.9	15	62	6.9	20	59	12	22	57	11	24



07144795 NORTH FORK NINNESCAH RIVER AT CHENEY DAM, KS

LOCATION.--Lat 37°43'17", long 97°47'39", in NE ¼ SW ¼ SE ¼ sec.6, T.27 S., R.4 W., Sedgwick County, Hydrologic Unit 11030014, on right bank 1,400 ft downstream from Cheney Dam, 6.0 mi north of Cheney, and at mile 15.5.

DRAINAGE AREA.--901 mi<sup>2</sup>, of which 237 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete Parshall flume. Datum of gage is 1,366.02 ft above NGVD of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 1, 1973, at datum 1.00 ft higher.

REMARKS.--Records fair. Flow completely regulated since 1964 by Cheney Reservoir (station 07144790), 1,400 ft upstream. Satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft<sup>3</sup>/s, Mar. 23, gage height, 4.95 ft; minimum discharge, 0.06 ft<sup>3</sup>/s, on several days, gage height, 1.08 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.14	0.13	0.16	284	0.50	0.46	1,180	1,070	592	0.55	0.47	0.60
2	0.25	0.19	0.16	288	0.49	0.40	1,180	780	588	0.54	0.63	0.58
3	0.97	0.23	0.15	206	0.48	0.41	1,170	598	594	0.53	0.39	0.59
4	0.43	0.23	0.20	0.76	117	0.45	1,160	597	587	0.49	0.57	0.59
5	0.21	0.23	0.16	0.66	291	0.46	1,160	596	269	0.45	0.70	0.61
6	0.18	0.22	0.15	0.67	287	0.71	1,160	482	1.0	0.45	0.50	0.60
7	0.17	0.21	0.16	0.69	288	160	1,070	278	0.84	0.41	0.41	0.56
8	0.17	0.22	0.16	0.73	287	279	816	277	0.91	0.33	0.44	0.57
9	0.15	0.23	0.15	0.74	287	278	578	182	0.85	0.42	0.47	0.57
10	0.10	0.24	0.15	0.69	288	280	213	119	0.86	0.38	0.47	0.60
11	0.08	0.22	0.15	0.70	108	277	1.2	121	0.88	0.36	0.42	1.3
12	0.07	0.23	0.16	0.71	1.3	105	1.1	122	0.71	0.40	0.47	0.71
13	0.06	0.21	0.16	0.76	1.3	1.7	1.1	48	0.74	0.36	0.45	0.81
14	0.07	0.22	0.14	e0.76	1.2	1.3	1.1	0.92	0.80	0.35	0.50	0.78
15	0.06	0.21	0.14	0.78	1.4	1.1	1.2	0.93	0.76	0.34	0.51	0.80
16	0.07	0.20	0.14	e0.78	18	0.96	1.2	1.2	0.86	0.36	0.53	0.80
17	0.07	0.19	0.15	e0.76	0.90	1.0	1.0	1.0	0.87	0.44	0.51	0.85
18	0.07	0.19	0.16	0.76	0.90	1.5	1.0	1.0	0.90	0.56	0.48	0.91
19	0.06	0.24	0.16	0.76	136	1.7	2.3	1.1	1.0	0.72	0.51	1.0
20	0.06	0.20	0.16	0.74	279	212	1.3	145	1.1	0.67	0.56	1.1
21	0.06	0.19	0.16	e0.72	279	822	347	255	1.0	0.63	0.57	1.2
22	0.07	0.19	0.15	0.70	276	1,210	622	257	1.1	0.49	0.59	1.5
23	0.17	0.20	0.17	e0.70	273	1,220	623	260	1.0	0.47	0.60	1.3
24	0.13	0.20	0.16	0.68	274	1,210	203	262	1.0	0.48	0.61	1.3
25	0.12	0.17	0.16	e0.65	275	1,220	505	260	0.96	0.53	0.63	1.4
26	0.10	0.17	0.15	0.58	102	1,210	1,090	264	0.80	0.52	0.68	1.5
27	0.23	0.18	0.17	0.61	0.78	1,210	1,090	468	0.52	0.48	0.65	1.6
28	0.14	0.30	0.17	0.60	0.56	1,200	1,080	593	0.51	0.48	0.68	1.7
29	0.15	0.16	0.17	0.49	---	1,190	1,080	590	0.66	0.49	0.73	1.6
30	0.14	0.16	0.16	0.51	---	1,190	1,070	588	0.63	0.46	1.2	1.6
31	0.13	---	164	0.50	---	1,180	---	596	---	0.46	0.83	---
MEAN	0.16	0.21	5.44	25.7	138	467	580	317	88.4	0.47	0.57	0.99
MAX	0.97	0.30	164	288	291	1,220	1,180	1,070	594	0.72	1.2	1.7
MIN	0.06	0.13	0.14	0.49	0.48	0.40	1.0	0.92	0.51	0.33	0.39	0.56
AC-FT	9.7	12	335	1,580	7,690	28,690	34,530	19,470	5,260	29	35	59

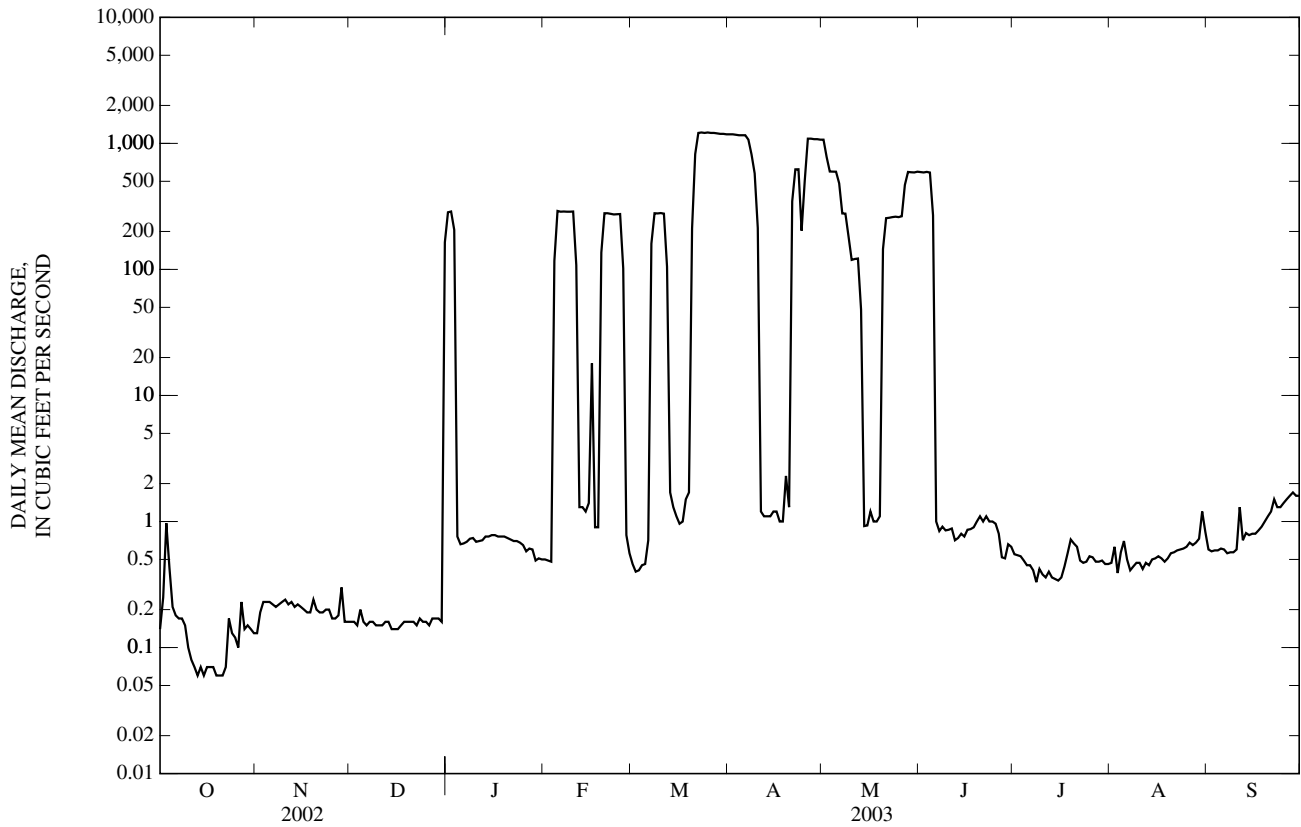
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

MEAN	107	121	59.8	62.8	98.0	149	228	200	199	109	25.6	74.6
MAX	1,054	1,782	334	360	569	681	933	1,142	1,504	1,162	377	973
(WY)	(1974)	(1980)	(1993)	(1998)	(1993)	(2001)	(1973)	(1993)	(1995)	(1987)	(1993)	(1977)
MIN	0.13	0.077	0.082	0.016	0.038	0.058	0.11	0.14	0.10	0.12	0.11	0.031
(WY)	(2001)	(2002)	(2002)	(2002)	(2002)	(2002)	(1965)	(1965)	(1966)	(1966)	(1985)	(2000)

07144795 NORTH FORK NINNESCAH RIVER AT CHENEY DAM, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL MEAN	0.69		135		119	
HIGHEST ANNUAL MEAN					406	1993
LOWEST ANNUAL MEAN					0.24	2002
HIGHEST DAILY MEAN	164	Dec 31	1,220	Mar 23	1,910	Apr 30, 1969
LOWEST DAILY MEAN	0.00	Jan 14	0.06	Oct 13	0.00	May 18, 1966
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 14	0.06	Oct 15	0.00	Aug 16, 1980
MAXIMUM PEAK FLOW			1,280	Mar 23	2,070	Nov 13, 1979
MAXIMUM PEAK STAGE			4.95	Mar 23	5.51	Jul 13, 1987
INSTANTANEOUS LOW FLOW			0.06	Oct 12	0.00	at times
ANNUAL RUNOFF (AC-FT)	499		97,690		86,540	
10 PERCENT EXCEEDS	0.59		589		380	
50 PERCENT EXCEEDS	0.16		0.70		0.48	
90 PERCENT EXCEEDS	0.03		0.16		0.14	

e Estimated



07144910 SOUTH FORK NINNESCAH RIVER NEAR PRATT, KS

LOCATION.--Lat 37°38'16", long 98°43'14", in NW ¼ NW ¼ SW ¼ sec.2, T.28 S., R.13 W., Pratt County, Hydrologic Unit 11030015, on left bank at downstream side of county highway bridge, 500 ft southwest of sewage disposal facility at Pratt, 3.3 mi downstream from major left bank tributary, and at mile 135.2.

DRAINAGE AREA.--117 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,820.83 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated at times by State Fish Hatchery diversion, 0.5 mi upstream. Satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft<sup>3</sup>/s, Oct. 4, gage height, 9.14 ft; minimum discharge, 2.6 ft<sup>3</sup>/s, Aug. 25, 26, gage height, 2.21 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	13	10	9.6	9.7	10	14	12	12	8.7	5.2	50
2	28	13	10	9.5	9.8	9.9	12	12	14	8.4	6.5	26
3	609	12	10	9.5	9.6	9.8	12	12	11	8.1	5.5	16
4	803	12	11	9.5	9.5	9.9	11	11	11	7.7	5.7	12
5	134	11	11	9.5	9.5	9.5	11	11	15	7.6	5.6	11
6	52	11	12	9.3	9.7	9.5	11	11	12	7.3	5.1	9.5
7	31	12	11	9.4	9.6	9.2	11	11	13	7.0	4.7	8.9
8	21	12	11	9.5	9.6	9.2	11	10	11	7.1	4.4	8.9
9	17	11	11	9.3	10	8.9	11	9.7	11	7.1	4.3	8.4
10	14	11	11	9.1	10	8.9	10	9.6	11	7.0	4.2	8.1
11	13	11	11	9.2	9.7	9.0	10	9.3	11	7.0	4.0	14
12	12	11	16	9.3	9.4	e9.2	10	9.3	10	6.7	4.0	8.7
13	11	11	13	9.3	11	e8.3	10	9.2	10	6.6	4.1	8.0
14	11	11	12	9.1	10	e8.3	9.8	9.3	10	6.5	4.1	7.6
15	10	12	12	9.4	9.5	8.3	40	9.4	9.9	6.4	4.2	7.2
16	10	12	11	9.4	9.4	8.2	198	59	9.6	6.1	4.1	6.9
17	10	12	11	9.2	9.3	16	45	20	9.3	5.8	3.9	6.4
18	10	11	11	9.4	9.4	27	25	18	8.8	5.5	3.7	6.3
19	9.8	11	12	9.4	10	179	25	17	8.6	5.4	3.6	6.8
20	9.7	11	11	9.5	9.4	206	23	15	8.8	5.6	3.5	6.9
21	9.6	11	11	9.4	9.3	53	21	14	8.6	5.5	3.3	7.8
22	9.6	11	10	9.2	9.2	28	17	14	8.4	5.5	3.3	7.2
23	19	10	10	8.9	9.7	21	19	25	7.9	5.5	3.4	6.9
24	17	10	11	9.1	9.3	18	18	28	7.8	5.3	3.4	6.6
25	13	9.9	10	9.2	9.2	16	17	17	7.7	5.2	3.2	6.5
26	12	10	10	9.2	9.6	15	14	15	7.7	5.1	9.1	6.6
27	20	10	10	9.4	9.9	14	14	14	7.8	5.0	8.8	6.5
28	19	10	10	9.6	9.5	13	13	13	9.5	4.9	6.3	6.2
29	18	10	10	9.7	---	13	12	12	12	5.0	51	16
30	15	10	9.9	9.9	---	12	12	12	9.3	5.4	452	7.6
31	13	---	9.7	9.9	---	14	---	11	---	7.1	120	---
MEAN	64.0	11.1	11.0	9.38	9.64	25.5	22.2	14.8	10.1	6.36	24.3	10.5
MAX	803	13	16	9.9	11	206	198	59	15	8.7	452	50
MIN	4.4	9.9	9.7	8.9	9.2	8.2	9.8	9.2	7.7	4.9	3.2	6.2
AC-FT	3,940	660	674	577	535	1,570	1,320	912	602	391	1,500	626

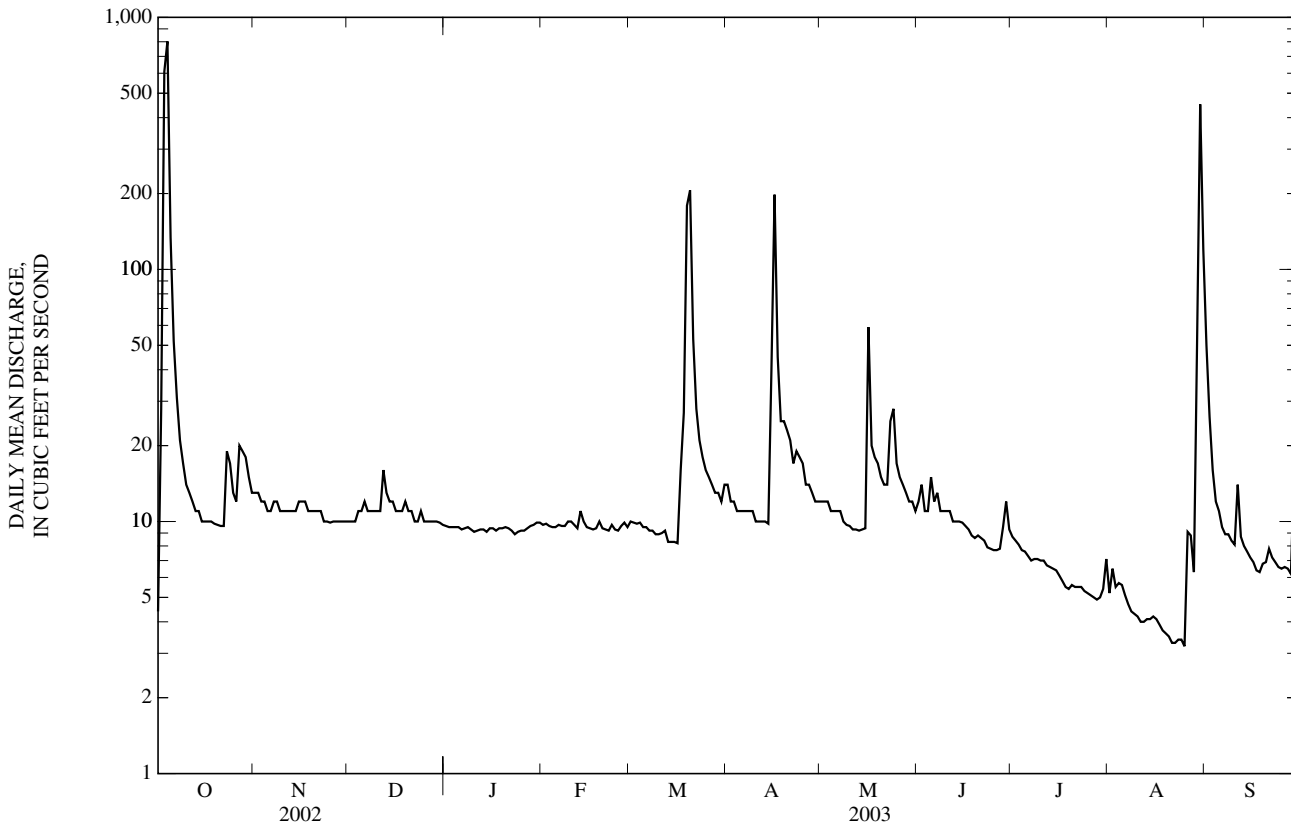
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

MEAN	15.3	15.3	12.3	11.9	12.9	21.9	26.1	29.2	20.6	22.7	19.5	12.3
MAX	64.0	81.5	28.5	16.8	22.8	110	251	160	46.9	143	169	100
(WY)	(2003)	(1997)	(1985)	(1998)	(2000)	(2000)	(1991)	(1995)	(1995)	(1997)	(1996)	(1996)
MIN	6.02	7.73	8.46	8.90	8.89	9.28	7.61	7.20	6.76	5.72	3.55	4.24
(WY)	(1995)	(1995)	(2002)	(2002)	(1992)	(2002)	(1992)	(1992)	(1994)	(1990)	(1990)	(1984)

07144910 SOUTH FORK NINNESCAH RIVER NEAR PRATT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL MEAN	14.7		18.4		18.4	
HIGHEST ANNUAL MEAN					39.4	
LOWEST ANNUAL MEAN					9.36	
HIGHEST DAILY MEAN	803	Oct 4	803	Oct 4	6,240	Apr 13, 1991
LOWEST DAILY MEAN	4.0	Jul 27	3.2	Aug 25	0.85	Sep 8, 1990
ANNUAL SEVEN-DAY MINIMUM	4.3	Aug 5	3.4	Aug 19	1.1	Sep 3, 1990
MAXIMUM PEAK FLOW			1,750	Oct 4	26,200	Apr 13, 1991
MAXIMUM PEAK STAGE			9.14	Oct 4	14.27	Apr 13, 1991
INSTANTANEOUS LOW FLOW			2.6	Aug 25	0.75	Sep 7, 1990
ANNUAL RUNOFF (AC-FT)	10,630		13,300		13,310	
10 PERCENT EXCEEDS	14		18		19	
50 PERCENT EXCEEDS	9.2		10		11	
90 PERCENT EXCEEDS	4.9		5.6		5.9	

e Estimated



07145200 SOUTH FORK NINNESCAH RIVER NEAR MURDOCK, KS

LOCATION.--Lat 37°33'51", long 97°51'10", in SW ¼ SW ¼ SE ¼ sec.34, T.28 S., R.5 W., Kingman County, Hydrologic Unit 11030015, on right bank at upstream side of county highway bridge, 4.0 mi southeast of Murdock, and at mile 68.0.

DRAINAGE AREA.--650 mi<sup>2</sup>, of which 107 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--August 1950 to September 1959. Annual maximums, water years 1960-64. June 1964 to current year.

REVISED RECORDS.--WSP 1561: 1957(P).

GAGE.--Water-stage recorder. Datum of gage is 1,357.81 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Mar. 30, 1951, nonrecording gage, Mar. 30, 1951, to Sept. 30, 1959, water-stage recorder, and Oct. 1, 1959, to June 3, 1964, crest-stage gage, at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 4	0700	3,130	7.23	Apr 23	2200	3,250	7.31
Mar 19	1200	*4,560	*8.08	May 24	1900	2,130	6.53
Apr 19	2100	3,160	7.25	Aug 30	1100	3,300	7.34

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	230	145	193	154	234	156	290	192	106	47	1,050
2	92	215	146	186	161	219	145	261	212	84	62	491
3	661	228	145	183	168	213	150	237	209	77	59	332
4	2,130	226	e160	183	156	191	148	236	191	73	59	261
5	1,690	225	e150	178	160	145	140	220	234	72	61	221
6	908	220	157	181	166	147	140	202	354	75	61	195
7	465	206	168	181	144	205	140	189	239	78	55	178
8	326	191	172	182	141	177	131	186	234	75	54	165
9	257	178	177	187	198	171	126	185	203	71	57	152
10	215	165	175	178	190	169	127	181	181	102	58	141
11	199	157	170	170	177	169	120	171	169	73	58	744
12	189	154	172	179	153	163	122	163	167	69	55	546
13	176	157	192	180	144	162	122	163	151	65	55	290
14	169	168	221	177	180	164	118	165	134	66	55	223
15	167	174	217	172	223	166	118	160	143	61	56	193
16	163	169	207	170	182	171	155	643	139	56	54	174
17	156	164	192	e180	177	180	248	799	135	55	49	159
18	150	162	179	e170	177	1,140	399	503	129	49	42	155
19	145	152	173	e190	198	3,400	1,320	374	124	47	38	144
20	140	152	170	194	202	2,510	1,280	308	121	53	36	137
21	135	153	172	187	191	1,500	548	261	126	55	37	147
22	128	150	172	180	185	743	370	230	111	55	37	176
23	171	153	181	e170	e180	501	900	230	109	53	38	165
24	255	156	e190	e160	e170	377	2,090	988	104	51	46	138
25	297	151	183	e150	e160	310	908	1,220	94	45	46	124
26	265	159	187	e150	e170	266	508	641	93	45	40	122
27	809	156	213	e160	e180	247	398	381	83	44	39	121
28	868	154	204	e160	e210	210	356	300	77	42	43	113
29	520	148	204	e170	---	202	332	261	79	39	67	115
30	355	150	207	164	---	202	307	234	102	42	1,270	144
31	273	---	194	148	---	188	---	211	---	45	734	---
MEAN	405	174	180	175	175	479	404	342	155	62.0	112	244
MAX	2,130	230	221	194	223	3,400	2,090	1,220	354	106	1,270	1,050
MIN	70	148	145	148	141	145	118	160	77	39	36	113
AC-FT	24,880	10,360	11,100	10,740	9,710	29,440	24,040	21,010	9,200	3,810	6,880	14,510

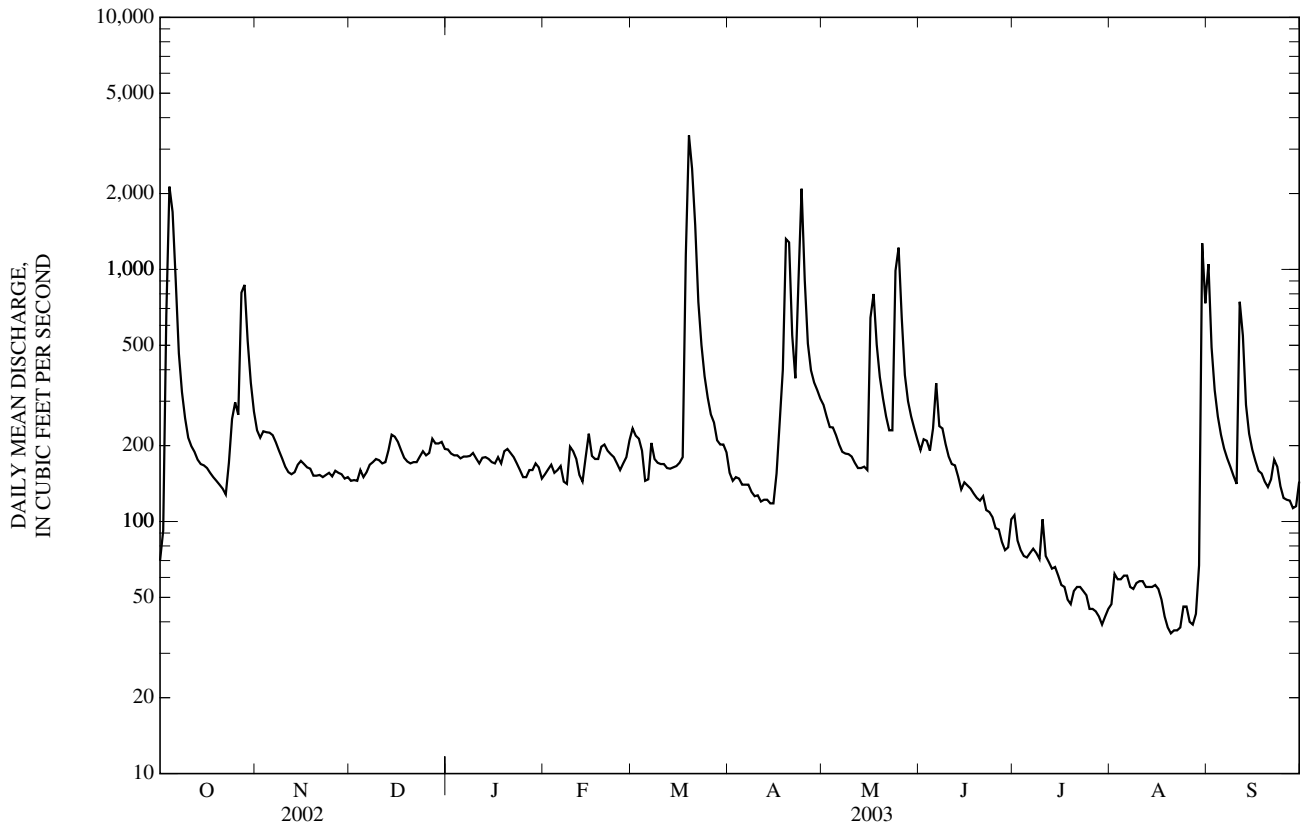
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

MEAN	210	196	166	155	187	271	261	318	309	163	114	172
MAX	1,215	820	319	305	486	1,110	726	1,100	1,808	889	372	1,271
(WY)	(1974)	(1980)	(1974)	(1988)	(2001)	(1973)	(1973)	(1957)	(1957)	(1987)	(1977)	(1973)
MIN	38.4	71.9	79.6	72.1	113	93.9	84.3	86.7	41.5	31.2	13.7	19.0
(WY)	(1957)	(1957)	(1957)	(1957)	(1981)	(1955)	(1955)	(1956)	(1956)	(1954)	(1956)	(1956)

07145200 SOUTH FORK NINNESCAH RIVER NEAR MURDOCK, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL MEAN	191		243		211	
HIGHEST ANNUAL MEAN					371	
LOWEST ANNUAL MEAN					89.0	
HIGHEST DAILY MEAN	2,130	Oct 4	3,400	Mar 19	18,000	Oct 31, 1979
LOWEST DAILY MEAN	68	Aug 7	36	Aug 20	7.9	Aug 4, 1956
ANNUAL SEVEN-DAY MINIMUM	73	Aug 5	39	Aug 18	8.8	Aug 3, 1956
MAXIMUM PEAK FLOW			4,560	Mar 19	28,700	Oct 31, 1979
MAXIMUM PEAK STAGE			8.08	Mar 19	12.84	Oct 31, 1979
INSTANTANEOUS LOW FLOW			31	Aug 20	5.0	Aug 5, 1964
ANNUAL RUNOFF (AC-FT)	138,600		175,700		152,700	
10 PERCENT EXCEEDS	269		379		310	
50 PERCENT EXCEEDS	145		170		136	
90 PERCENT EXCEEDS	82		57		68	

e Estimated



07145500 NINNESCAH RIVER NEAR PECK, KS

LOCATION.--Lat 37°27'26", long 97°25'20", in NW 1/4 SW 1/4 NW 1/4 sec.10, T.30 S., R.1 W., Sumner County, Hydrologic Unit 11030016, on right bank at downstream side of county highway bridge, 3.0 mi southwest of Peck, and at mile 31.6.

DRAINAGE AREA.--2,129 mi<sup>2</sup>, of which 344 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Prior to April 1938 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1211: 1944(M). WSP 1241: 1944, 1945(M), 1947-48(M).

GAGE.--Water-stage recorder. Datum of gage is 1,222.38 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 4, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow partially regulated since 1964 by Cheney Reservoir (station 07144790). Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1923, reached a stage of 26.4 ft from floodmark, discharge, about 70,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	493	227	272	225	331	1,480	2,030	774	155	47	932
2	136	431	226	385	220	320	1,460	1,720	788	154	55	830
3	3,220	409	226	395	218	323	1,460	1,140	798	137	66	455
4	7,630	389	228	378	217	341	1,450	939	802	124	61	316
5	3,290	367	242	275	228	300	1,420	894	809	115	64	254
6	1,660	340	268	240	367	280	1,400	856	2,880	108	60	217
7	901	329	253	232	379	264	1,400	747	1,260	101	57	193
8	613	311	250	230	384	326	1,280	587	506	96	55	178
9	486	300	252	228	391	416	1,110	563	375	94	51	167
10	419	290	259	225	422	422	855	497	319	93	48	156
11	371	280	254	218	431	425	600	434	290	100	50	177
12	347	268	252	218	353	433	438	412	271	98	45	1,440
13	326	260	260	220	260	358	398	407	260	84	44	656
14	305	256	273	220	282	273	381	380	249	79	43	362
15	290	261	283	218	289	255	369	324	249	75	44	277
16	280	264	266	228	303	242	384	540	228	71	45	235
17	274	271	254	221	265	240	393	1,200	215	68	44	211
18	266	251	245	233	254	1,190	451	941	205	65	42	195
19	265	246	241	235	273	10,500	674	642	223	63	39	191
20	255	240	237	249	294	11,600	5,380	552	269	63	36	179
21	246	236	232	232	412	4,120	1,920	495	221	64	34	282
22	242	233	230	217	418	2,790	1,190	576	202	66	33	1,020
23	271	233	233	230	438	2,360	1,630	577	186	62	33	763
24	359	247	232	203	410	2,070	6,710	1,280	171	59	33	313
25	e660	237	240	218	394	1,890	3,750	2,870	162	56	32	222
26	598	234	247	244	e380	1,750	2,010	1,740	155	54	35	184
27	1,940	233	258	283	381	1,670	1,890	1,040	147	53	34	170
28	3,820	232	272	321	324	1,610	1,710	918	141	51	32	163
29	1,710	234	264	323	---	1,540	1,620	906	166	60	45	160
30	993	231	253	283	---	1,490	1,560	859	153	47	1,190	177
31	638	---	249	241	---	1,490	---	808	---	46	2,240	---
MEAN	1,061	287	249	255	329	1,665	1,559	899	449	82.6	153	369
MAX	7,630	493	283	395	438	11,600	6,710	2,870	2,880	155	2,240	1,440
MIN	90	231	226	203	217	240	369	324	141	46	32	156
AC-FT	65,260	17,070	15,280	15,700	18,270	102,400	92,770	55,290	26,730	5,080	9,400	21,970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

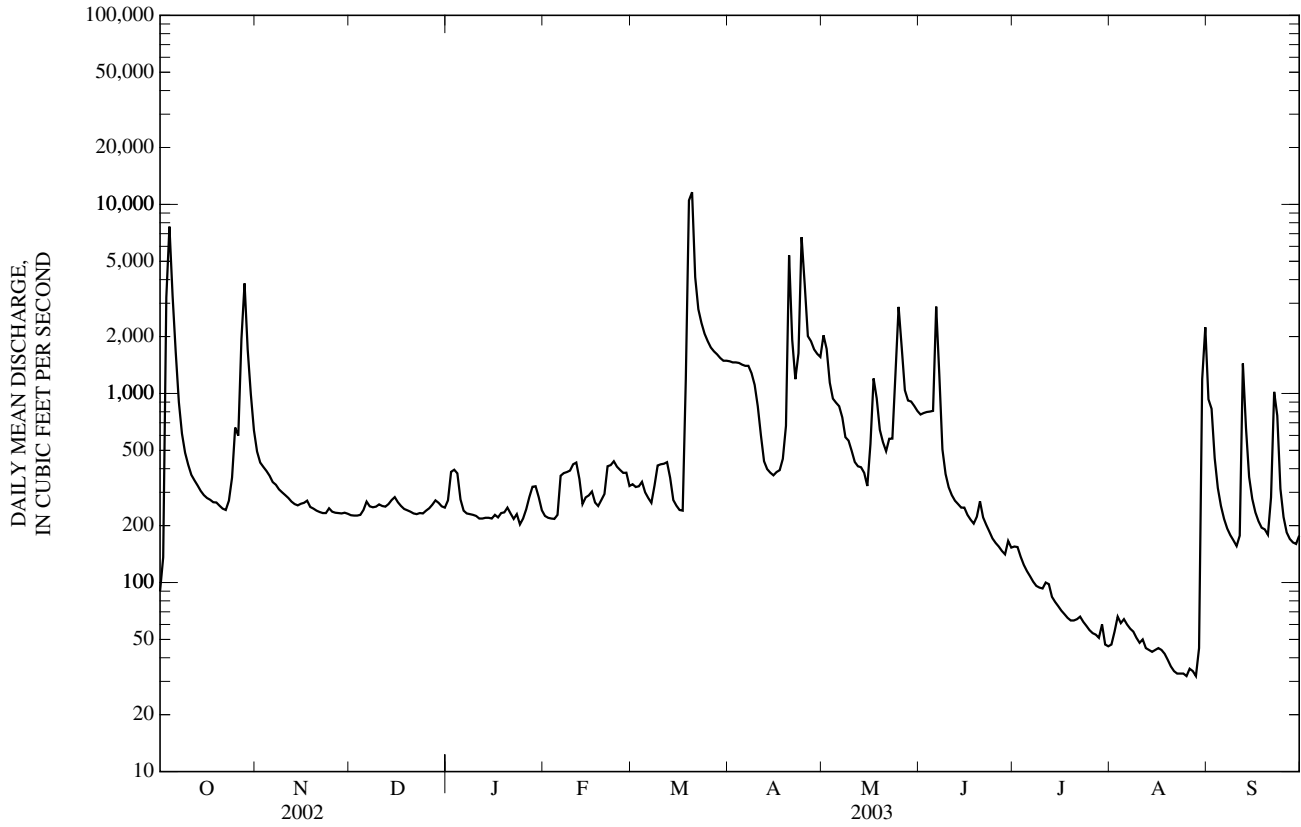
MEAN	458	438	324	324	438	658	725	834	875	485	273	436
MAX	3,170	2,767	1,032	1,429	3,027	3,245	3,568	4,314	3,813	3,258	1,397	2,705
(WY)	(1986)	(1980)	(1945)	(1949)	(1949)	(1973)	(1944)	(1993)	(1957)	(1948)	(1948)	(1977)
MIN	38.5	80.9	95.5	81.5	117	104	120	91.4	43.0	18.3	5.43	3.24
(WY)	(1940)	(1955)	(1957)	(1957)	(1967)	(1967)	(1972)	(1967)	(1956)	(1954)	(1956)	(1956)

ARKANSAS RIVER BASIN

07145500 NINNESCAH RIVER NEAR PECK, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL MEAN	362		615		521	
HIGHEST ANNUAL MEAN					1,234	1993
LOWEST ANNUAL MEAN					158	1966
HIGHEST DAILY MEAN	7,630	Oct 4	11,600	Mar 20	33,700	May 17, 1957
LOWEST DAILY MEAN	49	Aug 9	32	Aug 25	0.20	Sep 3, 1956
ANNUAL SEVEN-DAY MINIMUM	52	Aug 5	33	Aug 22	0.34	Sep 1, 1956
MAXIMUM PEAK FLOW			16,200	Mar 20	38,200	May 17, 1957
MAXIMUM PEAK STAGE			17.14	Mar 20	21.85	May 17, 1957
INSTANTANEOUS LOW FLOW			30	Aug 28	0.20	Sep 3, 1956
ANNUAL RUNOFF (AC-FT)	261,800		445,200		377,600	
10 PERCENT EXCEEDS	446		1,480		1,030	
50 PERCENT EXCEEDS	200		269		240	
90 PERCENT EXCEEDS	88		63		77	

e Estimated





07145700 SLATE CREEK AT WELLINGTON, KS

LOCATION.--Lat 37°15'00", long 97°24'12", in SE 1/4 NE 1/4 SE 1/4 sec.22, T.32 S., R.1 W., Sumner County, Hydrologic Unit 11030013, on right bank at upstream side of bridge on U.S. Highway 81, at south edge of Wellington.

DRAINAGE AREA.--154 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1954-66. Annual maximum, water years 1960-69. April 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,157.24 ft above NGVD of 1929. Prior to Apr. 1, 1969, crest-stage gage at present site and at datum 3.0 ft higher.

REMARKS.--Records good. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 4	0200	*6,000	*21.78	May 17	0800	1,060	13.12
Oct 28	0800	1,280	14.00	May 25	0400	1,430	14.92
Mar 19	2200	3,700	21.08	Jun 6	1500	2,560	19.30
Apr 24	1900	2,770	19.74	Aug 31	0500	3,000	20.22
May 1	2100	1,290	14.26	Sep 23	0200	1,650	15.93

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	38	12	23	11	26	21	503	14	8.2	1.8	114
2	32	32	12	17	11	74	20	439	69	8.0	11	30
3	2,850	40	12	14	11	144	19	63	67	7.3	16	14
4	5,330	40	14	13	10	235	18	40	28	6.7	8.1	9.2
5	1,640	30	14	12	9.8	121	16	33	119	6.1	5.4	7.3
6	95	25	13	12	9.8	35	17	24	2,140	5.8	3.5	6.4
7	47	22	14	12	8.9	30	17	21	662	5.5	2.4	5.8
8	33	20	15	12	8.3	26	15	20	80	5.3	2.0	5.7
9	27	19	17	12	11	24	14	18	50	5.1	1.8	5.4
10	23	18	19	11	11	21	14	16	35	4.9	1.6	5.3
11	20	17	20	10	11	19	14	15	30	4.7	2.1	15
12	18	17	19	10	11	20	13	13	25	4.3	3.8	8.4
13	17	14	21	10	14	19	13	14	21	4.1	1.9	66
14	17	14	21	11	58	18	13	16	19	4.0	1.4	59
15	16	14	21	10	67	18	13	23	17	3.7	1.3	14
16	14	14	17	10	29	17	20	381	15	3.4	1.3	9.1
17	13	15	16	8.9	19	20	17	806	14	3.3	1.2	7.6
18	12	15	15	11	18	608	16	117	13	3.1	1.1	6.3
19	13	14	14	11	86	2,870	97	41	14	2.8	1.0	5.6
20	19	13	13	11	84	2,670	456	32	13	2.8	0.95	5.2
21	14	13	12	11	37	397	170	25	12	2.6	0.88	86
22	12	13	12	9.8	25	116	39	20	11	2.5	0.84	777
23	17	13	12	7.8	23	75	188	24	10	2.4	0.89	970
24	79	13	13	8.7	16	58	2,350	191	9.5	2.1	0.82	80
25	365	12	11	9.2	19	48	1,200	857	9.2	2.1	0.76	31
26	153	12	11	9.2	19	40	111	93	8.4	2.1	0.69	18
27	161	12	13	8.6	20	36	60	38	8.0	2.0	0.86	13
28	859	12	12	10	20	31	46	25	7.9	1.8	0.78	11
29	394	12	15	11	---	27	39	20	7.7	1.8	2.6	10
30	194	12	22	9.9	---	24	33	17	8.4	3.0	929	15
31	62	---	31	11	---	22	---	15	---	2.5	1,960	---
MEAN	405	18.5	15.6	11.2	24.2	254	169	128	118	4.00	95.7	80.3
MAX	5,330	40	31	23	86	2,870	2,350	857	2,140	8.2	1,960	970
MIN	1.9	12	11	7.8	8.3	17	13	13	7.7	1.8	0.69	5.2
AC-FT	24,890	1,100	958	688	1,340	15,650	10,070	7,850	7,020	246	5,890	4,780

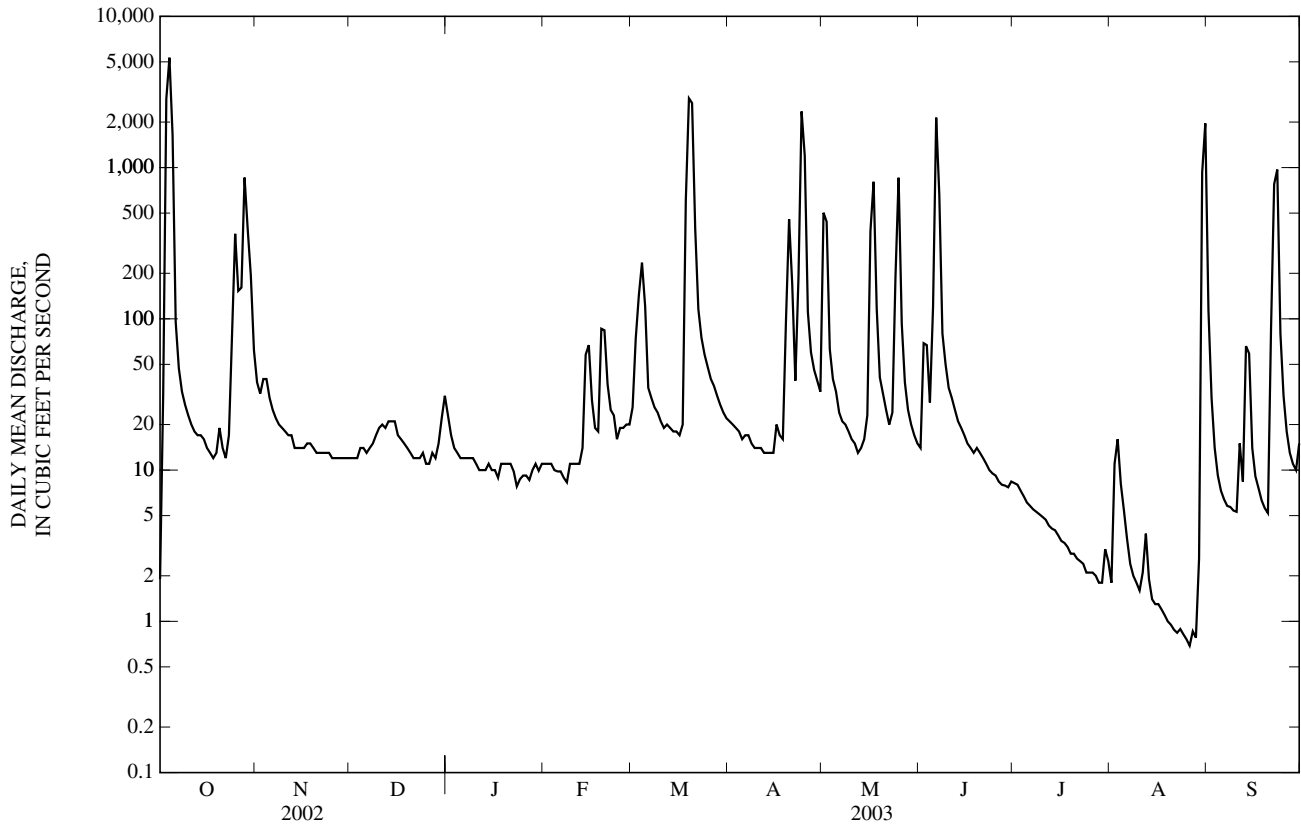
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

MEAN	51.5	63.1	28.9	26.4	57.0	136	88.6	102	153	61.9	49.6	57.1
MAX	405	408	229	116	331	739	477	1,091	972	369	408	620
(WY)	(2003)	(1999)	(2000)	(1993)	(2001)	(1973)	(1983)	(1993)	(1995)	(1999)	(1977)	(1973)
MIN	0.32	0.39	1.85	2.30	2.86	3.40	2.39	3.14	0.49	0.17	0.40	0.28
(WY)	(1981)	(1981)	(1989)	(1981)	(1981)	(1991)	(1981)	(1981)	(1972)	(1980)	(1978)	(1984)

ARKANSAS RIVER BASIN

07145700 SLATE CREEK AT WELLINGTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL MEAN	69.6		111		72.9	
HIGHEST ANNUAL MEAN					210	1993
LOWEST ANNUAL MEAN					4.29	1981
HIGHEST DAILY MEAN	5,330	Oct 4	5,330	Oct 4	10,200	Jun 17, 1975
LOWEST DAILY MEAN	0.85	Sep 12	0.69	Aug 26	0.00	Aug 21, 1972
ANNUAL SEVEN-DAY MINIMUM	0.99	Sep 8	0.81	Aug 22	0.00	Jul 10, 1980
MAXIMUM PEAK FLOW			6,000	Oct 4	28,500	Jun 17, 1975
MAXIMUM PEAK STAGE			21.78	Oct 4	25.82	Jun 17, 1975
INSTANTANEOUS LOW FLOW			0.66	Aug 26	0.00	at times
ANNUAL RUNOFF (AC-FT)	50,420		80,490		52,780	
10 PERCENT EXCEEDS	43		115		74	
50 PERCENT EXCEEDS	7.2		14		8.2	
90 PERCENT EXCEEDS	2.9		2.9		0.99	



07146500 ARKANSAS RIVER AT ARKANSAS CITY, KS

LOCATION.--Lat 37°03'23", long 97°03'32", in NE ¼ NE ¼ NE ¼ sec.35, T.34 S., R.3 E., Cowley County, Hydrologic Unit 11030013, on left bank at downstream side of bridge on U.S. Highway 166, 0.5 mi west of Arkansas City, 5.4 mi upstream from Walnut River, and at mile 701.4.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--43,713 mi<sup>2</sup>, of which 7,607 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--September 1902 to September 1906, September 1921 to current year. Published as "near Arkansas City" 1903-04. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1905. WSP 1341: 1922-23, 1927, 1929, 1931, 1933, 1940, 1945-46(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,050.04 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Sept. 23, 1902, to July 31, 1906, nonrecording gage at site 0.5 mi upstream at datum 9.5 ft higher. Sept. 10, 1921, to Sept 27, 1929, nonrecording gage and Sept. 28, 1929, to Aug. 28, 1956, water-stage recorder at site 0.5 mi upstream at datum 2.97 ft higher than present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow slightly regulated since 1948 by John Martin Reservoir (station 07130000), and since 1964 by Cheney Reservoir (station 07144790). Diversions upstream from station for irrigation. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 5	1100	22,400	18.09	Mar 21	0900	*32,900	*19.73
Oct 29	0500	10,300	14.39	Apr 25	1400	16,700	16.49

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	605	3,530	652	685	697	899	3,550	3,720	1,910	837	322	5,020
2	956	2,880	648	664	672	946	3,330	4,740	1,840	696	386	3,480
3	6,410	2,480	647	719	653	1,110	3,100	3,500	2,190	632	640	2,530
4	15,800	2,200	711	798	626	1,220	2,910	2,480	1,850	586	598	1,760
5	21,300	e1,980	701	814	612	1,150	2,740	1,990	2,030	552	449	1,310
6	16,300	e1,700	692	761	616	963	2,610	1,790	5,590	524	384	985
7	11,300	e1,440	723	676	669	768	2,480	1,640	7,130	502	365	774
8	7,640	e1,240	731	663	732	778	2,410	1,540	4,820	485	345	642
9	5,580	e1,150	716	663	702	732	2,220	1,330	2,570	473	325	551
10	4,710	e1,090	727	643	765	800	1,970	1,240	1,920	522	312	499
11	4,030	e1,030	731	622	833	828	1,780	1,140	1,650	660	306	476
12	3,300	e1,010	741	605	837	875	1,450	1,040	1,460	557	315	3,570
13	2,870	e977	767	600	825	907	1,250	1,050	1,330	527	374	6,100
14	2,520	e955	786	599	791	903	1,110	1,230	1,240	484	299	4,880
15	2,310	e922	784	590	1,180	781	1,030	1,190	1,160	465	284	3,020
16	2,330	e891	782	593	960	727	1,020	2,880	1,090	447	277	1,980
17	1,980	e849	760	574	883	732	979	5,810	1,020	433	266	1,400
18	1,850	e818	737	502	813	887	906	6,740	961	419	256	1,080
19	1,780	795	704	501	806	11,200	907	4,870	925	411	246	910
20	1,670	769	673	564	1,020	26,600	2,110	3,740	912	398	234	798
21	1,630	746	670	662	919	30,400	7,920	2,780	974	390	221	776
22	1,660	717	641	660	891	16,500	4,590	2,300	922	383	225	1,200
23	1,590	688	643	530	953	12,700	3,160	2,040	854	419	218	3,140
24	1,740	670	652	e560	896	12,200	8,030	2,630	798	441	229	4,120
25	2,340	667	627	e590	820	9,420	16,000	5,830	948	379	246	1,960
26	3,430	661	616	e620	738	6,990	11,300	5,220	2,010	364	232	1,270
27	3,430	655	617	e660	852	5,660	8,080	4,290	1,030	349	204	963
28	5,410	655	600	e680	901	4,900	6,620	3,640	757	337	204	804
29	9,110	651	632	719	---	4,410	4,740	2,810	697	328	984	703
30	5,830	654	708	748	---	4,020	3,650	2,470	918	359	2,250	673
31	4,520	---	723	752	---	3,760	---	2,150	---	343	4,840	---
MEAN	5,030	1,182	695	646	809	5,315	3,798	2,897	1,784	474	543	1,912
MAX	21,300	3,530	786	814	1,180	30,400	16,000	6,740	7,130	837	4,840	6,100
MIN	605	651	600	501	612	727	906	1,040	697	328	204	476
AC-FT	309,300	70,350	42,730	39,700	44,950	326,800	226,000	178,200	106,100	29,160	33,390	113,800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

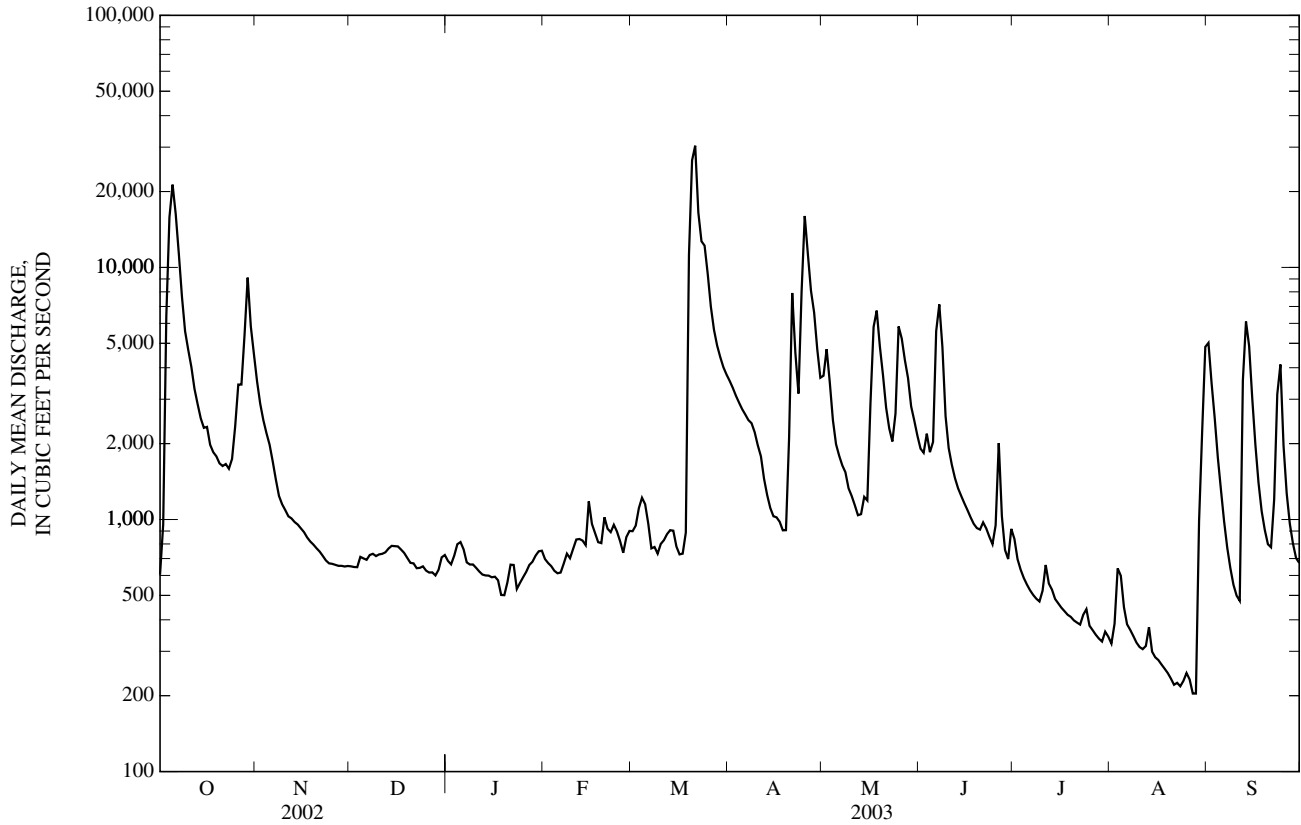
MEAN	1,678	1,414	977	889	1,250	2,057	2,377	3,007	3,642	2,611	1,613	1,555
MAX	18,890	11,550	3,908	3,673	9,658	14,600	14,780	16,890	16,040	17,190	13,320	7,870
(WY)	(1974)	(1999)	(1945)	(1949)	(1949)	(1973)	(1944)	(1993)	(1923)	(1951)	(1950)	(1951)
MIN	19.6	8.27	18.2	84.1	41.6	36.9	118	334	248	112	65.4	32.4
(WY)	(1922)	(1922)	(1922)	(1922)	(1923)	(1923)	(1923)	(1967)	(1956)	(1934)	(1934)	(1956)

ARKANSAS RIVER BASIN

07146500 ARKANSAS RIVER AT ARKANSAS CITY, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1903 - 2003	
ANNUAL MEAN	1,570		2,100		1,924	
HIGHEST ANNUAL MEAN					5,830 1951	
LOWEST ANNUAL MEAN					366 1934	
HIGHEST DAILY MEAN	21,300	Oct 5	30,400	Mar 21	79,700	Nov 3, 1998
LOWEST DAILY MEAN	295	Aug 11	204	Aug 27	4.0	Oct 23, 1921
ANNUAL SEVEN-DAY MINIMUM	308	Aug 6	223	Aug 22	5.6	Nov 5, 1921
MAXIMUM PEAK FLOW			32,900	Mar 21	103,000	Jun 10, 1923
MAXIMUM PEAK STAGE			19.73	Mar 21	28.89	Nov 3, 1998
INSTANTANEOUS LOW FLOW			193	Aug 28	1.0	Oct 9, 1921
ANNUAL RUNOFF (AC-FT)	1,137,000		1,521,000		1,394,000	
10 PERCENT EXCEEDS	3,310		4,850		4,070	
50 PERCENT EXCEEDS	697		896		907	
90 PERCENT EXCEEDS	454		416		282	

e Estimated



07146500 ARKANSAS RIVER AT ARKANSAS CITY, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to June 1988, 2000 to September 2003 (discontinued).

PERIOD OF DAILY RECORD.--September 1961 to September 1975.

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfiltered uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspnd. sediment, fall dia dst wat percent <.002mm (70337)	Suspnd. sediment, fall dia dst wat percent <.004mm (70338)	Suspnd. sediment, fall dia dst wat percent <.008mm (70339)	Suspnd. sediment, fall dia dst wat percent <.016mm (70340)	Suspnd. sediment, fall dia dst wat percent <.031mm (70341)	Suspnd. sediment, fall dia dst wat percent <.063mm (70342)	Suspnd. sediment, fall dia dst wat percent <.125mm (70343)	Suspnd. sediment, fall dia dst wat percent <.25mm (70344)
OCT 29...	1310	9,150	7.7	333	9.4	--	--	--	--	--	--	--	--
MAR 21...	1605	29,800	7.8	308	9.7	39	41	41	44	50	54	60	84
APR 25...	1000	16,000	7.7	416	13.6	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Suspnd. sediment, fall dia dst wat percent <.5 mm (70345)	Suspnd. sediment, fall dia dst wat percent <1 mm (70346)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
OCT 29...	--	--	1,220	30,200
MAR 21...	98	100	1,400	113,000
APR 25...	--	--	1,360	58,800

ARKANSAS RIVER BASIN

07146995 ROCK CREEK NEAR POTWIN, KS

LOCATION.--Lat 37°51'50", Long 97°01'27", in NE¼ SE¼ NE¼ sec.19, T.25 S.,R.4 W., Butler County, Hydrologic Unit 11030017, on left bank at downstream side of county highway bridge, 4.9 mi south of Potwin, 5.3 mi north of Towanda, and at mile 1.9.

DRAINAGE AREA.--12.5 mi<sup>2</sup>.

PERIOD OF RECORD.--June 2002 to September 2002.

GAGE.--Water-stage recorder. Datum of gage is 1,266.82 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Largest flood occurred in May 1953. Stage and discharges are unknown; information supplied by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

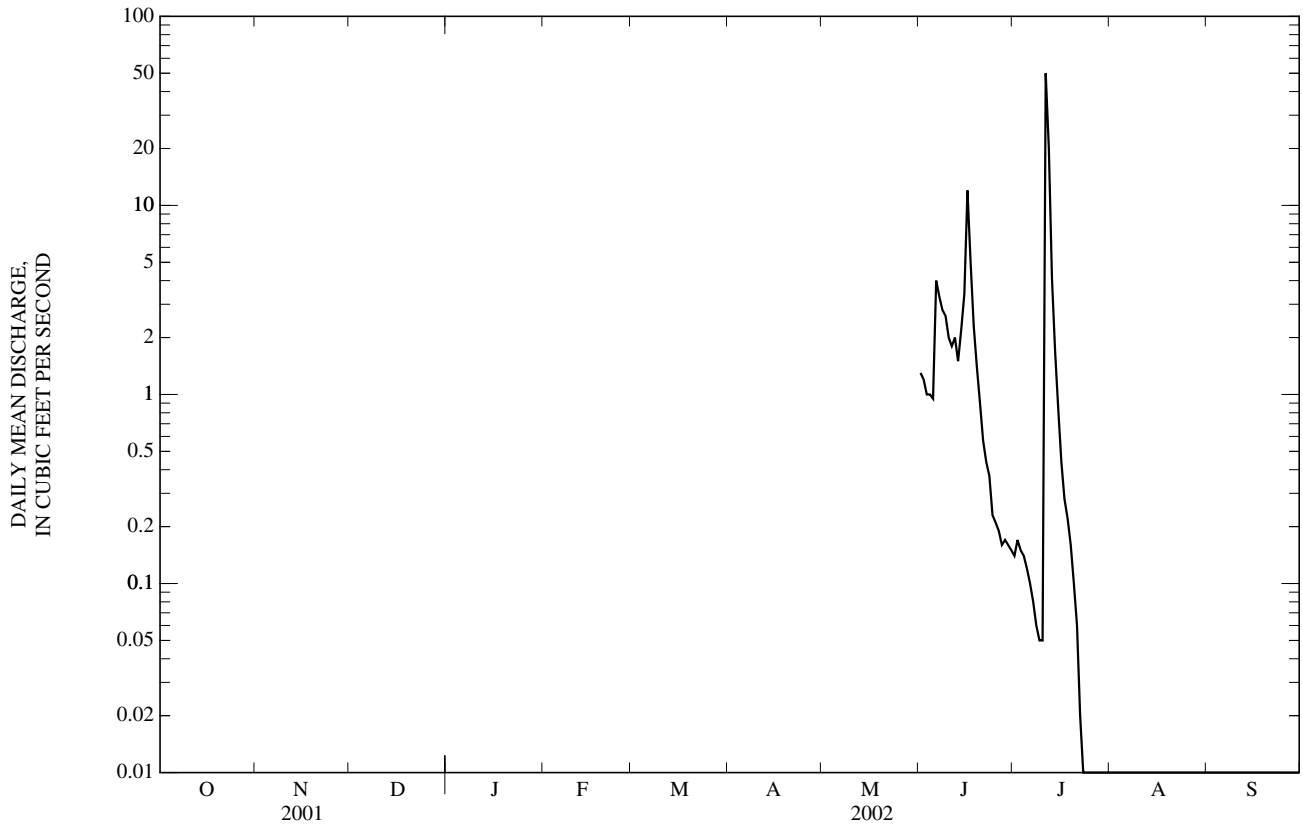
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	e1.3	0.14	0.00	0.00
2	---	---	---	---	---	---	---	---	e1.2	0.17	0.00	0.00
3	---	---	---	---	---	---	---	---	e1.0	0.15	0.00	0.00
4	---	---	---	---	---	---	---	---	e1.0	e0.14	0.00	0.00
5	---	---	---	---	---	---	---	---	e0.95	e0.12	0.00	0.00
6	---	---	---	---	---	---	---	---	e4.0	e0.10	0.00	0.00
7	---	---	---	---	---	---	---	---	e3.3	e0.08	0.00	0.00
8	---	---	---	---	---	---	---	---	e2.8	e0.06	0.00	0.00
9	---	---	---	---	---	---	---	---	e2.6	e0.05	0.00	0.00
10	---	---	---	---	---	---	---	---	e2.0	e0.05	0.00	0.00
11	---	---	---	---	---	---	---	---	e1.8	e50	0.00	0.00
12	---	---	---	---	---	---	---	---	e2.0	e20	0.00	0.00
13	---	---	---	---	---	---	---	---	1.5	4.1	0.00	0.00
14	---	---	---	---	---	---	---	---	2.2	1.7	0.00	0.00
15	---	---	---	---	---	---	---	---	3.4	0.84	0.00	0.00
16	---	---	---	---	---	---	---	---	12	0.44	0.00	0.00
17	---	---	---	---	---	---	---	---	5.0	0.28	0.00	0.00
18	---	---	---	---	---	---	---	---	2.3	0.22	0.00	0.00
19	---	---	---	---	---	---	---	---	1.4	0.16	0.00	0.00
20	---	---	---	---	---	---	---	---	0.90	0.10	0.00	0.00
21	---	---	---	---	---	---	---	---	0.57	0.06	0.00	0.00
22	---	---	---	---	---	---	---	---	0.44	0.02	0.00	0.00
23	---	---	---	---	---	---	---	---	0.37	0.00	0.00	0.00
24	---	---	---	---	---	---	---	---	0.23	0.00	0.00	0.00
25	---	---	---	---	---	---	---	---	0.21	0.00	0.00	0.00
26	---	---	---	---	---	---	---	---	0.19	0.00	0.00	0.00
27	---	---	---	---	---	---	---	---	0.16	0.00	0.00	0.00
28	---	---	---	---	---	---	---	---	0.17	0.00	0.00	0.00
29	---	---	---	---	---	---	---	---	0.16	0.00	0.00	0.00
30	---	---	---	---	---	---	---	---	0.15	0.00	0.00	0.00
31	---	---	---	---	---	---	---	---	---	0.00	0.00	---
MEAN	---	---	---	---	---	---	---	---	1.84	2.55	0.000	0.000
MAX	---	---	---	---	---	---	---	---	12	50	0.00	0.00
MIN	---	---	---	---	---	---	---	---	0.15	0.00	0.00	0.00
AC-FT	---	---	---	---	---	---	---	---	110	157	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2002, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	---	---	1.84	2.55	0.000	0.000
MAX	---	---	---	---	---	---	---	---	1.84	2.55	0.000	0.000
(WY)	---	---	---	---	---	---	---	---	(2002)	(2002)	(2002)	(2002)
MIN	---	---	---	---	---	---	---	---	1.84	2.55	0.000	0.000
(WY)	---	---	---	---	---	---	---	---	(2002)	(2002)	(2002)	(2002)

e Estimated

07146995 ROCK CREEK NEAR POTWIN, KS—Continued



## ARKANSAS RIVER BASIN

07146995 ROCK CREEK NEAR POTWIN, KS

LOCATION.--Lat 37°51'50", Long 97°01'27", in NE $\frac{1}{4}$  SE $\frac{1}{4}$  NE $\frac{1}{4}$  sec.19, T.25 S.,R.4 W., Butler County, Hydrologic Unit 11030017, on left bank at downstream side of county highway bridge, 4.9 mi south of Potwin, 5.3 mi north of Towanda, and at mile 1.9.

DRAINAGE AREA.--12.5 mi<sup>2</sup>.

PERIOD OF RECORD.--June 2002 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,266.82 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Largest flood occurred in May 1953. Stage and discharges are unknown; information supplied by local resident.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.8	0.16	0.09	0.15	0.28	0.33	1.7	1.2	5.3	0.00	0.25
2	0.00	1.3	0.14	0.08	0.18	0.27	0.32	1.4	1.7	2.1	0.00	0.12
3	0.00	0.97	0.14	0.09	0.17	0.27	0.32	1.2	1.6	0.99	0.00	0.08
4	3.2	0.86	0.19	0.08	0.13	0.26	0.29	1.0	1.3	0.46	0.00	0.07
5	0.13	0.34	0.19	0.08	0.15	0.25	0.28	0.82	176	0.32	0.01	0.06
6	0.01	0.19	0.16	0.07	0.17	0.28	0.31	0.86	206	0.26	0.00	0.05
7	0.00	0.20	0.14	0.08	0.16	0.29	0.32	0.81	33	0.22	0.00	0.04
8	0.00	0.23	0.15	0.09	0.15	0.29	0.27	0.70	15	0.19	0.00	0.03
9	0.00	0.22	0.15	0.09	0.18	0.27	0.29	0.73	6.1	0.21	0.00	0.03
10	0.00	0.19	0.16	0.08	0.20	0.26	0.32	0.54	32	0.21	0.00	0.03
11	0.00	0.17	0.16	0.08	0.21	0.29	0.31	0.43	43	0.15	0.00	376
12	0.00	0.13	0.16	0.08	0.18	0.32	0.30	0.39	14	0.10	0.00	65
13	0.00	0.13	0.15	0.09	0.27	0.31	0.27	3.2	5.6	0.10	0.00	216
14	0.00	0.16	0.14	0.10	0.67	0.33	0.30	2.8	2.6	0.09	0.00	61
15	0.00	0.17	0.10	0.10	0.38	0.38	0.27	35	1.5	0.08	0.00	45
16	0.00	0.17	0.10	0.11	0.30	0.40	0.37	124	1.1	0.09	0.00	22
17	0.00	0.19	0.10	0.10	0.31	0.44	0.24	31	0.84	0.07	0.00	7.0
18	0.00	0.19	0.09	0.11	0.31	11	0.25	16	0.66	0.06	0.00	3.0
19	0.00	0.19	0.08	0.13	0.37	151	99	9.3	0.53	0.05	0.00	1.7
20	0.00	0.20	0.08	0.14	0.31	62	73	13	0.39	0.06	0.00	1.2
21	0.00	0.19	0.08	0.13	0.25	21	16	5.3	0.36	0.06	0.00	1.5
22	0.00	0.19	0.07	0.12	0.27	10	9.4	3.0	0.32	0.06	0.00	2.8
23	0.00	0.17	0.07	0.11	0.29	4.6	76	2.0	0.38	0.06	0.00	3.2
24	0.29	0.20	0.08	0.12	0.33	2.9	137	74	0.44	0.04	0.00	1.4
25	0.96	0.18	0.08	0.13	0.30	1.7	31	22	8.3	0.03	0.00	0.95
26	0.28	0.16	0.08	0.16	0.27	1.1	17	11	9.4	0.02	0.00	1.0
27	58	0.15	0.10	0.13	0.27	0.73	11	5.8	4.0	0.02	0.00	1.0
28	29	0.17	0.09	0.16	0.27	0.56	7.1	3.2	1.7	0.01	0.00	1.3
29	9.6	0.16	0.10	0.18	---	0.42	4.0	2.0	12	0.01	0.00	1.4
30	4.3	0.15	0.12	0.16	---	0.36	2.4	1.6	15	0.00	0.97	1.9
31	2.7	---	0.10	0.15	---	0.35	---	1.2	---	0.00	2.1	---
MEAN	3.50	0.32	0.12	0.11	0.26	8.80	16.3	12.1	19.9	0.37	0.099	27.2
MAX	58	1.8	0.19	0.18	0.67	151	137	124	206	5.3	2.1	376
MIN	0.00	0.13	0.07	0.07	0.13	0.25	0.24	0.39	0.32	0.00	0.00	0.03
AC-FT	215	19	7.4	6.8	14	541	968	746	1,180	23	6.1	1,620

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	3.50	0.32	0.12	0.11	0.26	8.80	16.3	12.1	10.9	1.46	0.050	13.6
MAX	3.50	0.32	0.12	0.11	0.26	8.80	16.3	12.1	19.9	2.55	0.099	27.2
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)
MIN	3.50	0.32	0.12	0.11	0.26	8.80	16.3	12.1	1.84	0.37	0.000	0.000
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2002)



07146995 ROCK CREEK NEAR POTWIN, KS—Continued

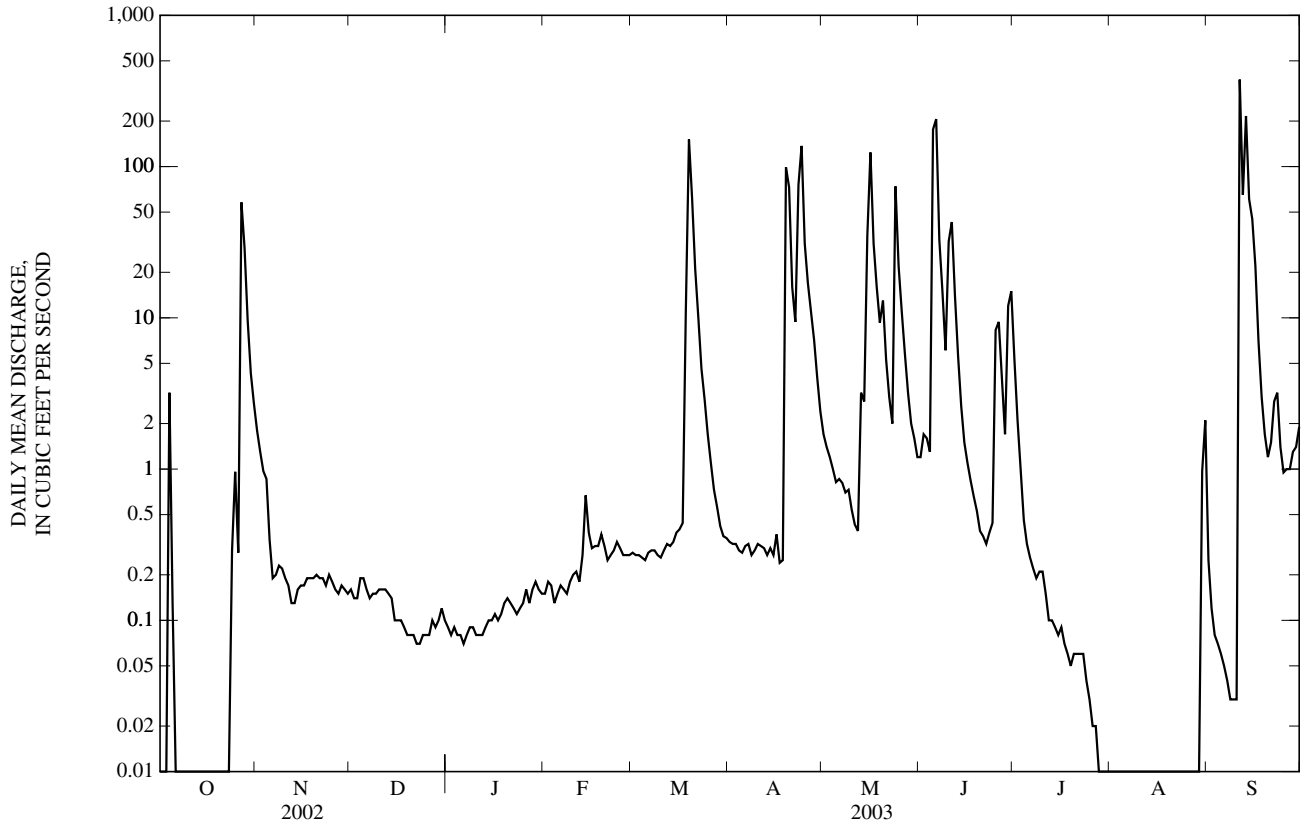
SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL MEAN	7.38		7.38	
HIGHEST ANNUAL MEAN			7.38	2003
LOWEST ANNUAL MEAN			7.38	2003
HIGHEST DAILY MEAN	376	Sep 11	376	Sep 11, 2003
LOWEST DAILY MEAN	0.00	Oct 1	0.00	Jul 23, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 7	0.00	Jul 23, 2002
MAXIMUM PEAK FLOW	1,260	Jun 6	1,260	Jun 6, 2003
MAXIMUM PEAK STAGE	14.85	Jun 6	14.85	Jun 6, 2003
INSTANTANEOUS LOW FLOW	0.00	Oct 1	0.00	Oct 1, 2002
ANNUAL RUNOFF (AC-FT)	5,350		5,350	
10 PERCENT EXCEEDS	11		11	
50 PERCENT EXCEEDS	0.22		0.22	
90 PERCENT EXCEEDS	0.00		0.00	

e Estimated



ARKANSAS RIVER BASIN

07147070 WHITEWATER RIVER AT TOWANDA, KS

LOCATION.--Lat 37°47'45", long 97°00'45", in SE 1/4 SW 1/4 SE 1/4 sec.8, T.26 S., R.4 E., Butler County, Hydrologic Unit 11030017, on right bank at downstream side of bridge on Kansas Highway 254, 0.5 mi west of Towanda, 2.4 mi downstream from West Branch, and at mile 17.5.

DRAINAGE AREA.--426 mi<sup>2</sup>.

PERIOD OF RECORD.--Annual maximum, water years 1960-61. October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,231.47 ft above NGVD of 1929 (levels by Kansas State Highway Commission). Prior to Oct. 1, 1961, crest-stage gage at same site at datum 5.22 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1944 reached a stage of 28.6 ft from floodmark.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 28	0100	4,460	16.52	Jun 6	0500	3,120	12.83
Mar 20	0700	4,980	17.88	Sep 1	0500	2,590	11.28
Apr 20	1000	4,020	15.34	Sep 12	1700	*8,090	*22.27
Apr 24	1500	4,920	17.71	Sep 13	2300	4,580	16.83
May 16	2000	3,110	12.80				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	106	21	16	15	17	43	113	46	112	12	1,700
2	2.3	59	23	15	15	18	41	190	50	64	13	295
3	36	41	26	15	15	18	40	183	52	50	12	99
4	1,240	30	24	14	14	18	39	124	46	42	12	47
5	310	24	21	14	14	18	38	90	163	37	13	33
6	61	21	19	13	14	18	36	73	1,650	33	12	24
7	30	19	19	13	13	18	35	64	257	30	11	19
8	20	21	19	13	12	19	34	56	141	28	10	15
9	14	20	18	13	13	17	33	54	102	26	9.7	e13
10	11	19	18	e14	13	15	34	51	81	25	9.2	10
11	9.2	18	18	e16	13	15	33	63	268	24	11	2,710
12	8.0	17	19	e16	14	16	33	53	94	22	12	7,370
13	6.3	17	19	e16	15	17	33	72	68	20	9.5	4,030
14	5.5	18	18	e15	21	17	33	152	59	19	8.9	2,750
15	5.1	19	18	15	26	18	34	175	54	19	8.1	597
16	5.0	18	18	15	28	17	36	2,140	51	18	e7.8	281
17	4.9	18	18	15	23	17	36	1,600	e49	17	e7.2	174
18	4.2	18	18	13	19	37	34	455	e46	16	6.6	116
19	63	19	17	13	19	2,510	211	265	44	16	6.2	84
20	74	21	15	14	18	4,530	3,300	332	41	15	5.6	67
21	19	17	14	14	18	1,400	801	253	41	15	5.9	121
22	12	16	14	14	17	453	312	150	e40	e15	5.6	602
23	12	17	14	e13	17	261	455	108	39	17	5.0	843
24	432	17	15	12	16	187	4,270	355	38	17	4.8	272
25	788	17	14	12	16	132	1,790	579	101	16	4.6	132
26	417	16	15	11	16	96	568	249	247	15	4.4	79
27	1,780	16	15	11	16	76	e300	158	89	14	4.4	56
28	2,710	17	14	12	17	63	e200	102	56	14	4.2	47
29	467	17	15	13	---	56	161	73	169	14	10	41
30	278	19	16	14	---	e47	132	62	289	13	19	43
31	202	---	17	15	---	45	---	52	---	12	776	---
MEAN	291	23.7	17.7	13.8	16.7	329	438	272	149	25.6	33.6	756
MAX	2,710	106	26	16	28	4,530	4,270	2,140	1,650	112	776	7,370
MIN	1.8	16	14	11	12	15	33	51	38	12	4.2	10
AC-FT	17,910	1,410	1,090	851	926	20,200	26,070	16,750	8,870	1,580	2,060	44,970

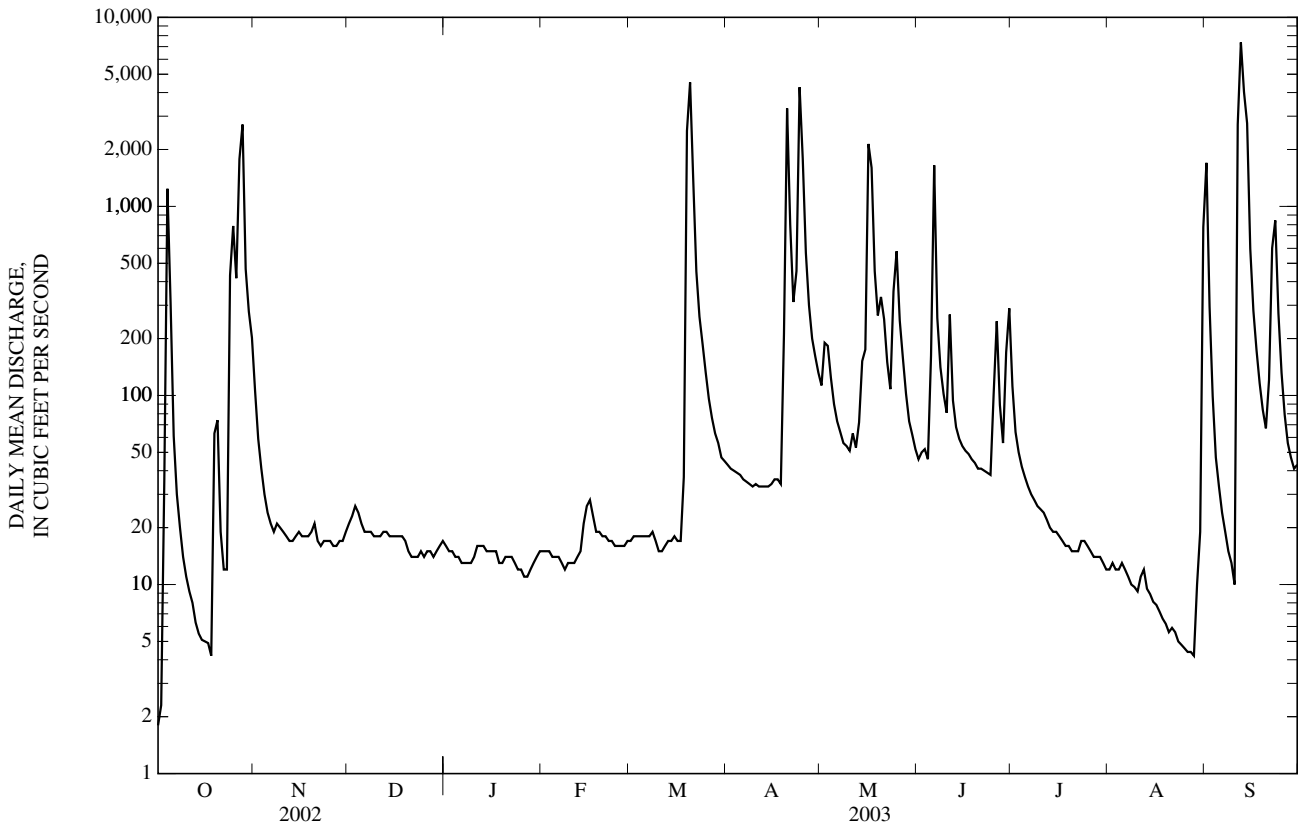
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	160	200	95.9	64.4	140	241	249	326	516	210	104	137
MAX	1,797	3,494	508	401	850	1,933	1,123	2,097	2,467	1,210	1,436	1,599
(WY)	(1986)	(1999)	(1993)	(1962)	(2001)	(1973)	(1999)	(1995)	(1995)	(1993)	(1995)	(1965)
MIN	0.74	2.34	4.34	6.20	5.31	4.77	8.29	3.55	10.4	6.35	4.24	1.11
(WY)	(1992)	(1981)	(1967)	(1967)	(1967)	(1967)	(1967)	(1967)	(1972)	(1980)	(1966)	(1980)

07147070 WHITEWATER RIVER AT TOWANDA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL MEAN	90.5		197		203	
HIGHEST ANNUAL MEAN					682	1999
LOWEST ANNUAL MEAN					21.3	1981
HIGHEST DAILY MEAN	3,500	May 25	7,370	Sep 12	49,400	Nov 1, 1998
LOWEST DAILY MEAN	1.8	Sep 12	1.8	Oct 1	0.30	Oct 20, 1972
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 8	4.7	Aug 22	0.47	Oct 20, 1991
MAXIMUM PEAK FLOW			8,090	Sep 12	80,600	Nov 1, 1998
MAXIMUM PEAK STAGE			22.27	Sep 12	30.54	Nov 1, 1998
INSTANTANEOUS LOW FLOW			1.7	Oct 2	0.20	Jul 14, 1966
ANNUAL RUNOFF (AC-FT)	65,530		142,700		147,200	
10 PERCENT EXCEEDS	80		297		247	
50 PERCENT EXCEEDS	15		19		35	
90 PERCENT EXCEEDS	4.6		12		7.8	

e Estimated



ARKANSAS RIVER BASIN

07147800 WALNUT RIVER AT WINFIELD, KS

LOCATION.--Lat 37°13'27", long 96°59'40", in SW ¼ SW ¼ NE ¼ sec.33, T.32 S., R.4 E., Cowley County, Hydrologic Unit 11030018, on left bank at upstream side of bridge on U.S. Highway 77, 1.0 mi south of Winfield, 1.0 mi upstream from Black Crook Creek, and at mile 25.4.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--1,880 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1921 to current year. October to November 1921 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 607: 1923(M). WDR KS-82-1: Drainage area. WSP 1241: 1922(M), 1923, 1926-27, 1928-29(M), 1934, 1940-41.

GAGE.--Water-stage recorder. Datum of gage is 1,082.86 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1934, nonrecording gage on upstream side of former bridge just upstream from present gage at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation at low flow by City Water Works Dam and Timber Creek Reservoir upstream from station. Flow moderately regulated since 1981 by El Dorado Lake (station 07146622). Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 4	1700	11,900	12.54	Jun 6	0900	9,660	10.79
Mar 21	0200	*20,100	*18.52	Sep 1	0400	12,200	12.75
Apr 25	1200	16,100	15.66	Sep 13	0300	12,800	13.25
May 17	0200	10,400	11.31				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	843	145	161	123	313	598	6,950	740	1,170	91	9,630
2	250	669	145	162	124	437	559	3,190	759	919	145	4,040
3	5,600	547	145	157	124	606	524	2,280	981	683	216	1,680
4	10,200	463	164	155	121	655	496	1,970	911	538	212	1,090
5	8,250	405	171	153	119	631	467	1,710	763	449	133	751
6	3,010	359	174	152	120	549	448	1,510	7,570	385	110	586
7	1,490	321	172	149	118	471	421	1,350	7,120	336	96	433
8	944	293	163	148	116	423	397	1,060	2,980	292	90	324
9	658	273	163	149	116	389	375	881	2,010	279	86	260
10	474	258	162	146	117	356	358	828	1,520	289	80	212
11	364	242	162	139	116	335	343	639	1,250	295	77	197
12	293	226	164	137	115	319	334	540	1,270	295	72	8,410
13	238	209	173	139	117	310	322	1,280	1,100	237	73	12,200
14	198	198	171	143	231	299	309	1,640	894	205	81	12,300
15	170	193	170	142	632	289	299	1,570	1,150	174	76	7,730
16	156	188	170	143	707	280	318	4,780	1,160	158	74	2,560
17	146	184	168	139	488	280	320	9,860	1,080	144	70	1,520
18	136	181	166	137	379	450	314	6,020	655	138	67	1,150
19	144	177	162	135	511	8,830	381	2,970	418	127	63	976
20	172	171	157	138	789	18,500	1,530	2,410	367	121	60	900
21	166	168	153	137	710	18,300	7,290	2,770	355	118	58	1,070
22	226	164	149	137	558	8,280	2,980	2,030	348	118	60	1,100
23	180	164	150	124	476	4,220	1,880	1,480	319	119	62	2,320
24	172	160	156	121	424	2,990	9,290	2,660	296	117	60	2,030
25	384	156	153	116	369	2,200	15,600	7,880	e1,310	109	55	1,000
26	1,080	151	149	120	334	1,630	9,510	4,410	e7,450	100	54	670
27	1,050	148	150	117	323	1,260	4,450	2,770	3,240	97	54	519
28	2,840	146	149	119	314	1,020	3,230	2,100	1,760	96	54	1,030
29	5,200	145	152	121	---	850	2,680	1,540	1,290	98	273	1,180
30	1,750	146	159	123	---	715	2,330	1,150	1,160	122	580	1,130
31	1,150	---	161	124	---	648	---	879	---	94	7,040	---
MEAN	1,521	265	160	138	314	2,479	2,278	2,681	1,741	272	333	2,633
MAX	10,200	843	174	162	789	18,500	15,600	9,860	7,570	1,170	7,040	12,300
MIN	48	145	145	116	115	280	299	540	296	94	54	197
AC-FT	93,500	15,760	9,810	8,500	17,440	152,400	135,600	164,800	103,600	16,710	20,470	156,700

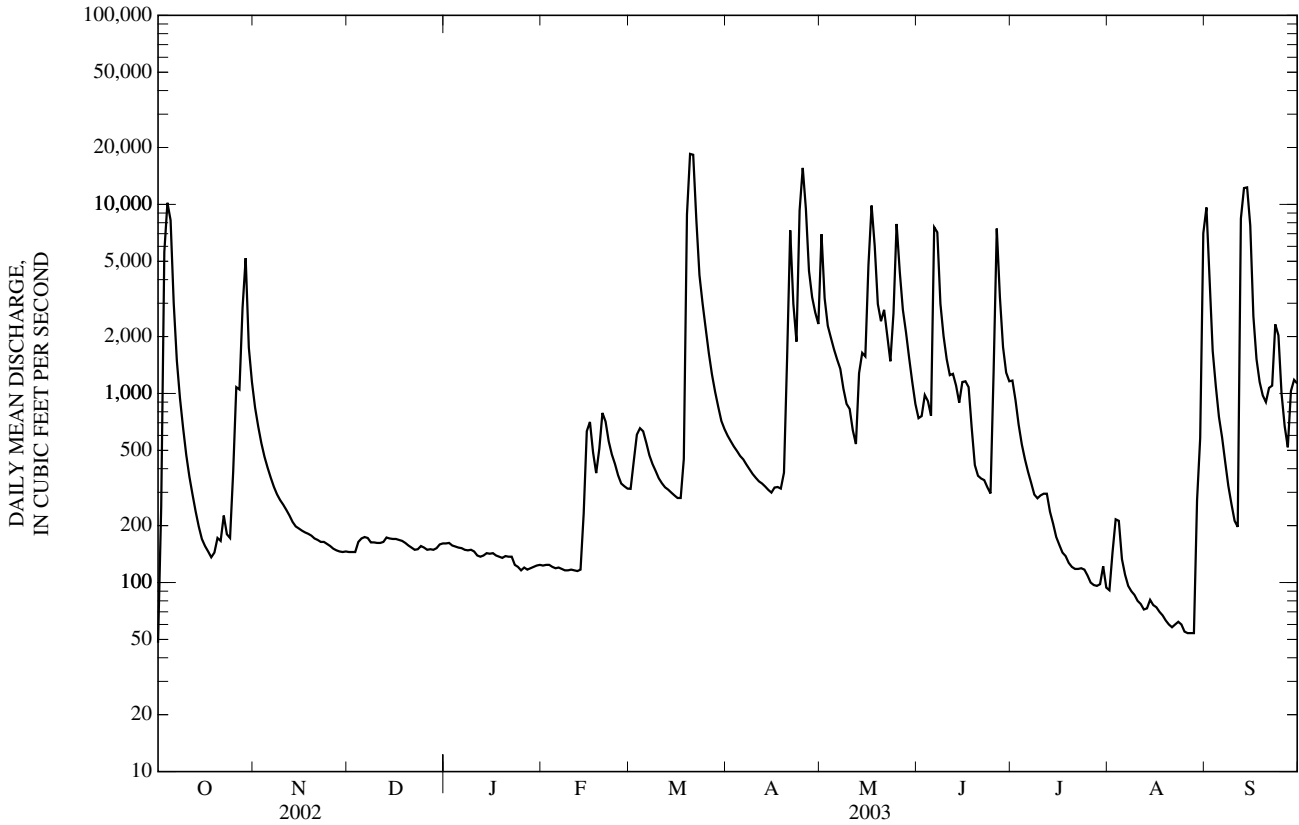
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2003, BY WATER YEAR (WY)

MEAN	699	721	420	348	525	986	1,367	1,552	1,837	954	456	590
MAX	6,877	11,710	3,313	2,633	3,631	8,777	10,080	10,320	11,710	9,335	4,492	4,782
(WY)	(1987)	(1999)	(1945)	(1949)	(1949)	(1973)	(1944)	(1993)	(1995)	(1951)	(1950)	(1965)
MIN	0.000	0.84	4.12	4.33	7.10	8.73	8.87	4.50	23.9	3.90	0.000	0.000
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1957)	(1955)	(1956)	(1933)	(1936)	(1936)	(1954)

07147800 WALNUT RIVER AT WINFIELD, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1922 - 2003	
ANNUAL MEAN	709		1,237		871	
HIGHEST ANNUAL MEAN					2,948	1999
LOWEST ANNUAL MEAN					26.2	1954
HIGHEST DAILY MEAN	17,300	May 26	18,500	Mar 20	85,200	Nov 2, 1998
LOWEST DAILY MEAN	36	Sep 8	48	Oct 1	0.00	Nov 11, 1928
ANNUAL SEVEN-DAY MINIMUM	38	Sep 6	57	Aug 22	0.00	Jul 27, 1936
MAXIMUM PEAK FLOW			20,100	Mar 21	105,000	Apr 23, 1944
MAXIMUM PEAK STAGE			18.52	Mar 21	38.30	Apr 23, 1944
INSTANTANEOUS LOW FLOW			48	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	513,100		895,300		631,100	
10 PERCENT EXCEEDS	1,400		2,980		1,680	
50 PERCENT EXCEEDS	141		319		168	
90 PERCENT EXCEEDS	56		117		24	

e Estimated



## ARKANSAS RIVER BASIN

07147800 WALNUT RIVER AT WINFIELD, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to June 1985, 2000 to September 2003 (discontinued).

PERIOD OF DAILY RECORD.--September 1961 to September 1975.

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
OCT 29...	1120	5,000	7.6	236	8.2	1,060	14,400
APR 25...	1120	15,800	7.6	248	13.7	1,050	44,800
MAY 20...	1400	2,200	7.8	374	18.7	236	1,400

07149000 MEDICINE LODGE RIVER NEAR KIOWA, KS

LOCATION.--Lat 37°02'17", long 98°28'04", in SE 1/4 SW 1/4 sec.36, T.34 S., R.11 W., Barber County, Hydrologic Unit 11060003, on right bank at downstream side of bridge on Kansas Highway 14, 200 ft downstream from the Atchison, Topeka and Santa Fe Railway Co. bridge, 1.5 mi northeast of Kiowa, and at mile 22.2.

DRAINAGE AREA.--903 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1895 to October 1896, October 1937 to September 1950, October 1954 to September 1955, June 1959 to current year. Published as Medicine River near Kiowa 1895-96. All figures of discharge above 2,000 ft<sup>3</sup>/s for June and July 1896, published in Eighteenth Annual Report of the Geological Survey (Part 4), have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1391: 1938(M), 1942(M). WSP 1921: Drainage area. See also "PERIOD OF RECORD."

GAGE.--Water-stage recorder. Datum of gage is 1,286.99 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). May 1895 to October 1896, nonrecording gage at site 2.0 mi upstream at different datum. Feb. 11 to Mar. 2, 1938, nonrecording gage and Mar. 3, 1938, to Sept. 30, 1944, water-stage recorder at present site and datum 3.00 ft higher. Oct. 1, 1944, to Sept. 30, 1950, and Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Satellite telemeter at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 3	2300	*3,930	*8.12	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	175	108	126	122	152	195	211	98	83	21	463
2	32	164	109	122	122	153	186	199	106	68	21	202
3	1,110	162	109	117	117	165	185	189	114	54	18	135
4	2,670	162	112	118	112	187	184	184	111	48	16	104
5	1,980	160	123	120	111	193	177	178	137	41	15	86
6	557	153	117	119	112	176	171	168	296	35	14	74
7	312	147	119	119	103	164	169	157	168	e32	11	69
8	227	139	123	120	102	162	167	151	147	e29	6.6	64
9	182	135	126	119	109	155	165	146	129	26	4.5	61
10	156	128	130	116	117	148	164	142	114	24	3.3	57
11	139	124	131	113	120	146	164	134	109	21	2.4	59
12	128	123	132	117	118	144	163	129	106	18	1.8	154
13	117	120	145	118	116	142	160	124	100	16	1.5	127
14	109	120	151	116	121	139	157	124	99	14	1.2	90
15	105	119	143	113	125	137	157	121	103	12	1.1	76
16	103	116	135	108	121	132	182	211	97	9.8	0.99	68
17	99	116	132	105	114	132	601	1,060	84	8.0	0.78	64
18	92	118	129	108	113	359	325	392	80	6.8	0.58	59
19	135	116	129	117	129	1,060	835	244	79	5.7	0.45	55
20	105	116	125	119	137	1,660	826	192	79	5.2	0.35	53
21	94	113	119	116	132	1,120	553	163	81	4.7	0.30	61
22	96	115	116	112	125	559	324	144	76	3.5	0.38	62
23	205	114	117	72	114	405	397	141	71	2.8	0.34	62
24	264	112	119	83	92	340	750	167	65	2.6	0.32	58
25	237	110	115	102	86	305	447	179	62	2.4	0.27	54
26	220	110	114	124	116	275	347	157	59	2.2	0.22	53
27	775	109	119	138	144	263	285	133	55	2.1	1.1	51
28	695	109	122	149	158	249	255	122	51	1.9	0.68	48
29	391	110	126	154	---	230	236	115	54	1.9	1.8	53
30	253	109	127	130	---	210	224	107	79	3.3	631	61
31	200	---	127	124	---	202	---	101	---	6.4	1,340	---
MEAN	381	127	124	117	118	318	305	193	100	19.0	68.3	89.4
MAX	2,670	175	151	154	158	1,660	835	1,060	296	83	1,340	463
MIN	24	109	108	72	86	132	157	101	51	1.9	0.22	48
AC-FT	23,430	7,580	7,630	7,210	6,560	19,570	18,150	11,870	5,970	1,170	4,200	5,320

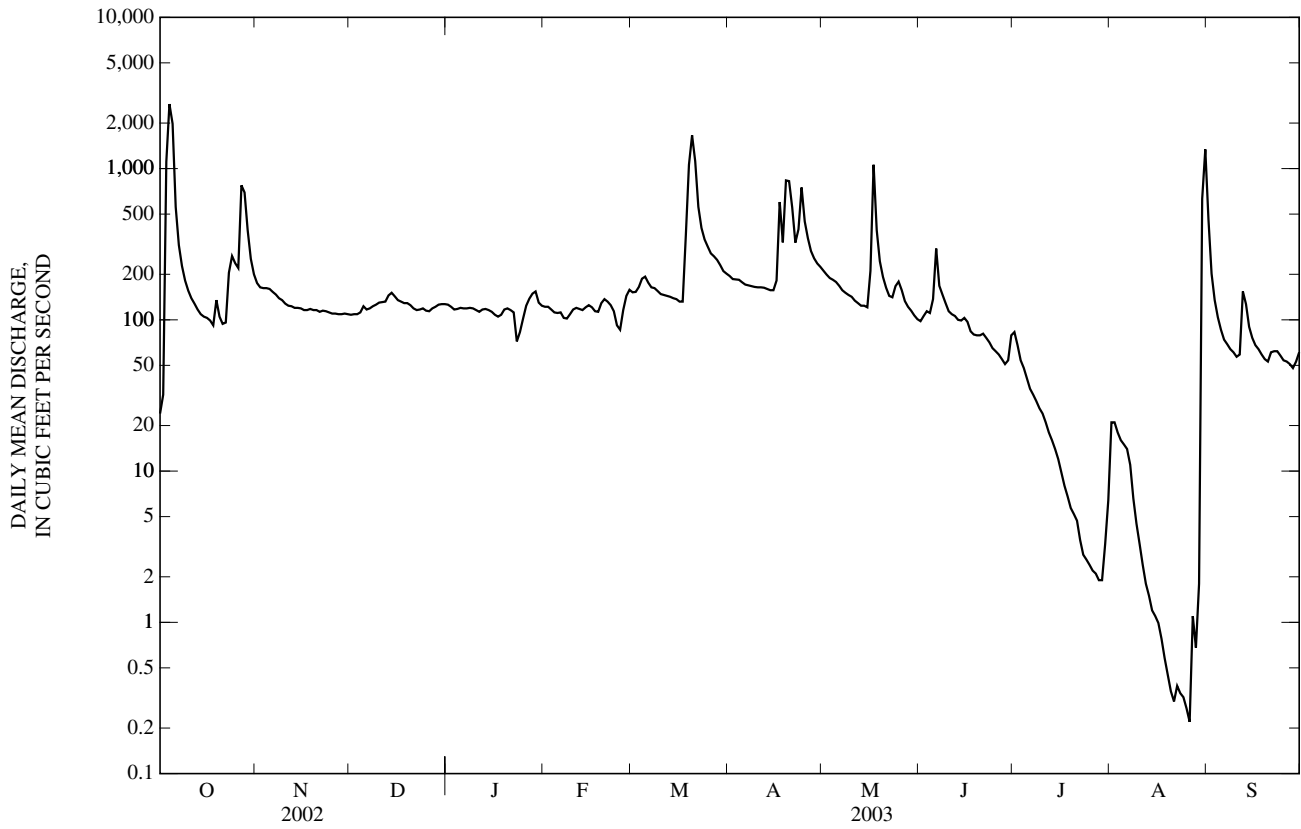
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

MEAN	146	120	104	108	136	187	226	272	242	113	106	109
MAX	1,083	627	334	322	913	932	1,032	1,549	1,226	588	970	887
(WY)	(1942)	(1997)	(1997)	(1998)	(1949)	(1987)	(1973)	(1938)	(1949)	(1996)	(1996)	(1949)
MIN	0.000	0.000	2.45	0.000	31.0	42.5	38.6	26.5	26.3	0.88	0.000	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1955)	(1955)	(1955)	(1963)	(1972)	(1946)	(1946)	(1939)

07149000 MEDICINE LODGE RIVER NEAR KIOWA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL MEAN	127		164		154	
HIGHEST ANNUAL MEAN					494	1949
LOWEST ANNUAL MEAN					36.5	1964
HIGHEST DAILY MEAN	2,670	Oct 4	2,670	Oct 4	9,660	Oct 22, 1941
LOWEST DAILY MEAN	3.5	Aug 11	0.22	Aug 26	0.00	Jul 7, 1939
ANNUAL SEVEN-DAY MINIMUM	5.8	Aug 5	0.31	Aug 20	0.00	Jul 7, 1939
MAXIMUM PEAK FLOW			3,930	Oct 3	16,000	Oct 22, 1941
MAXIMUM PEAK STAGE			8.12	Oct 3	12.10	Oct 12, 1973
INSTANTANEOUS LOW FLOW			0.01	Aug 26	0.00	at times
ANNUAL RUNOFF (AC-FT)	92,100		118,700		111,500	
10 PERCENT EXCEEDS	152		258		269	
50 PERCENT EXCEEDS	96		119		87	
90 PERCENT EXCEEDS	26		7.5		13	

e Estimated





07151500 CHIKASKIA RIVER NEAR CORBIN, KS

LOCATION.--Lat 37°07'44", long 97°36'04", in NW 1/4 SW 1/4 SW 1/4 sec.36, T.33 S., R.3 W., Sumner County, Hydrologic Unit 11060005, on right bank at downstream side of bridge on Kansas Highway 49, 1 mi upstream from Prairie Creek, 3 mi west of Corbin, and at mile 67.5.

DRAINAGE AREA.--794 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1950 to September 1965, October 1975 to current year.

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 3	1600	*12,300	*13.53	May 17	0400	3,760	8.16
Oct 28	0200	2,950	7.26	May 24	2300	4,140	8.52
Mar 19	1900	10,900	12.87	Jun 6	1900	4,840	9.16
Apr 20	1000	3,350	7.75	Aug 31	0000	5,840	9.97
Apr 24	1300	8,510	11.61	Sep 21	1700	3,830	8.24

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	416	165	148	135	176	335	426	210	98	24	504
2	100	373	162	141	132	201	318	553	305	90	35	312
3	8,490	359	161	136	130	270	303	364	519	77	25	282
4	7,970	341	e162	134	125	338	290	320	271	66	24	227
5	2,460	331	e163	132	122	245	276	295	359	61	25	180
6	1,160	319	e165	130	125	179	267	272	3,590	57	25	155
7	835	305	e167	128	111	175	261	255	1,260	53	22	138
8	586	294	172	131	109	175	248	242	561	50	20	125
9	495	286	177	132	139	164	237	231	434	52	17	115
10	447	276	179	130	141	156	235	217	370	55	16	106
11	414	266	174	127	139	157	234	204	336	66	16	113
12	391	254	171	129	137	161	229	191	304	54	16	935
13	362	246	173	133	134	158	221	184	275	49	15	333
14	338	239	177	135	161	150	215	183	251	46	14	221
15	319	230	174	134	191	146	209	181	235	42	15	182
16	305	223	162	134	158	143	226	1,380	219	40	14	154
17	297	217	155	115	138	156	240	2,270	202	39	14	135
18	290	210	152	e117	134	1,800	229	574	188	36	13	119
19	290	203	146	e120	163	9,120	320	413	177	34	13	108
20	295	195	140	e124	207	6,530	2,400	390	170	33	e12	97
21	280	194	136	135	173	2,300	877	315	165	32	e12	1,540
22	272	192	130	128	157	1,360	461	268	159	29	e12	645
23	307	189	134	86	151	844	748	279	149	29	e11	444
24	433	185	137	e96	93	643	6,170	1,910	135	30	e11	197
25	719	183	e135	e110	119	550	1,990	2,250	122	29	e10	149
26	466	179	119	e120	152	483	814	632	109	26	e10	131
27	866	174	148	e130	166	444	578	421	102	23	e9.8	114
28	2,210	171	144	e140	190	413	493	332	94	22	e9.4	103
29	1,250	170	171	e145	---	380	437	287	103	31	15	95
30	776	168	168	146	---	354	397	255	113	34	3,170	106
31	507	---	164	140	---	344	---	229	---	26	2,510	---
MEAN	1,095	246	158	129	144	926	675	527	383	45.5	199	269
MAX	8,490	416	179	148	207	9,120	6,170	2,270	3,590	98	3,170	1,540
MIN	6.8	168	119	86	93	143	209	181	94	22	9.4	95
AC-FT	67,310	14,650	9,690	7,910	8,000	56,960	40,180	32,380	22,780	2,790	12,210	16,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2003, BY WATER YEAR (WY)

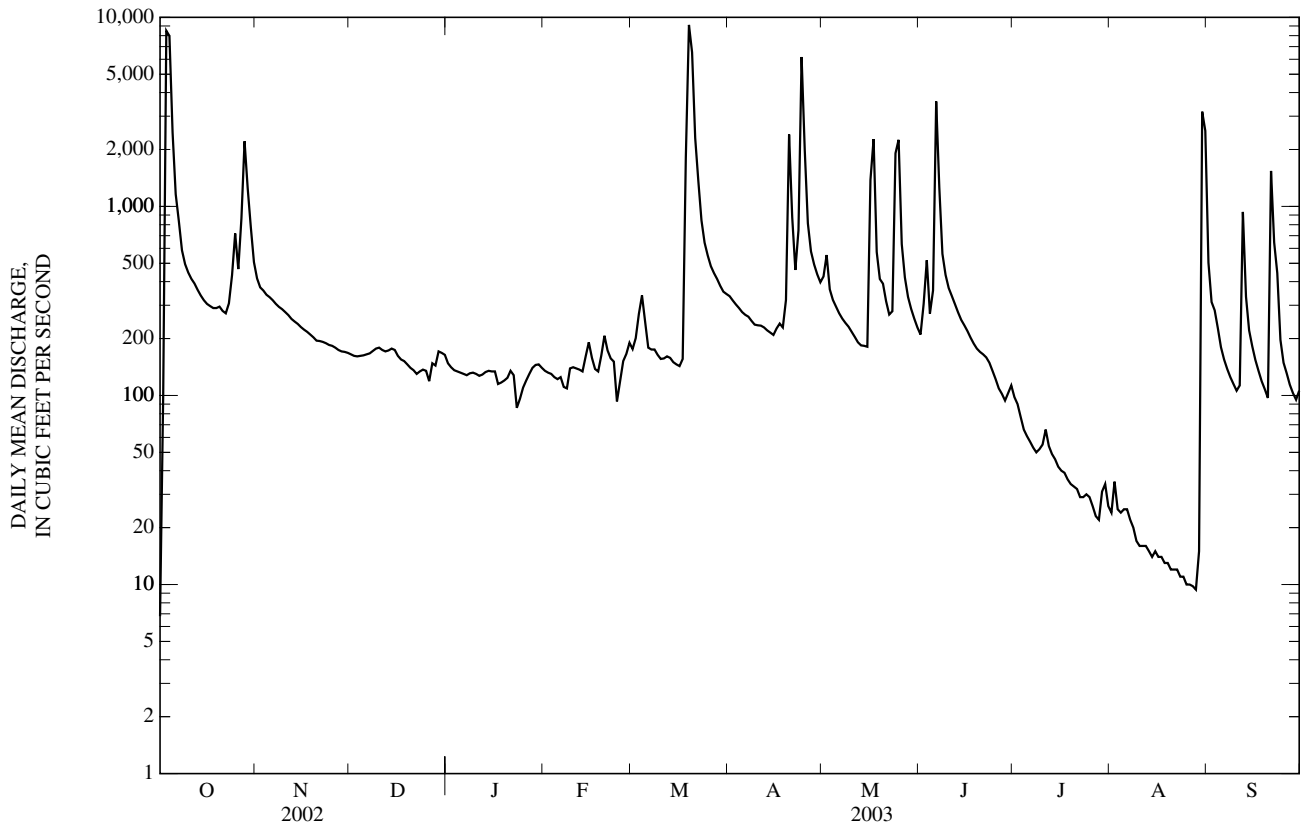
MEAN	241	241	134	122	173	345	293	487	457	240	114	193
MAX	1,894	1,923	467	365	752	1,907	1,184	2,690	2,055	1,496	428	1,172
(WY)	(1986)	(1999)	(1998)	(1998)	(2001)	(2000)	(1999)	(1993)	(1951)	(1951)	(1997)	(1977)
MIN	0.000	0.000	13.7	15.4	30.3	32.0	26.9	24.0	12.9	0.80	0.000	0.000
(WY)	(1957)	(1957)	(1955)	(1957)	(1957)	(1955)	(1955)	(1956)	(1953)	(1954)	(1956)	(1956)

ARKANSAS RIVER BASIN

07151500 CHIKASKIA RIVER NEAR CORBIN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1951 - 2003	
ANNUAL MEAN	237		402		254	
HIGHEST ANNUAL MEAN					609	1951
LOWEST ANNUAL MEAN					40.0	1954
HIGHEST DAILY MEAN	8,490	Oct 3	9,120	Mar 19	27,800	Oct 11, 1985
LOWEST DAILY MEAN	4.6	Aug 11	6.8	Oct 1	0.00	Jun 27, 1953
ANNUAL SEVEN-DAY MINIMUM	6.9	Aug 6	10	Aug 22	0.00	Sep 16, 1953
MAXIMUM PEAK FLOW			12,300	Oct 3	39,300	Oct 11, 1985
MAXIMUM PEAK STAGE			13.53	Oct 3	22.90	Nov 1, 1998
INSTANTANEOUS LOW FLOW			6.2	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	171,900		290,900		183,700	
10 PERCENT EXCEEDS	366		581		435	
50 PERCENT EXCEEDS	111		173		97	
90 PERCENT EXCEEDS	14		30		19	

e Estimated



07155590 CIMARRON RIVER NEAR ELKHART, KS

LOCATION.--Lat 37°07'30", long 101°53'50", in NW ¼ NW ¼ NW ¼ sec.4, T.34 S., R.42 W., Morton County, Hydrologic Unit 11040002, Cimarron National Grasslands, on left bank at downstream side of bridge on Kansas Highway 27, 8.0 mi north of Elkhart, and at mile 499.4.

DRAINAGE AREA.--2,899 mi<sup>2</sup>, of which 483 mi<sup>2</sup> does not contribute directly to surface runoff.

PERIOD OF RECORD.--April 1971 to current year.

REVISED RECORDS.--WDR KS-84-1: 1983.

GAGE.--Water-stage recorder. Datum of gage is 3,381.89 ft above NGVD of 1929.

REMARKS.--Records fair. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jun 6	1530	*96	*7.06	No peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18	0.00	0.00	0.01
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.01	0.01
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.2	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.01	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.01	0.02
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	3.28	0.000	0.001	0.001
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	45	0.00	0.01	0.02
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.6	195	0.00	0.04	0.08

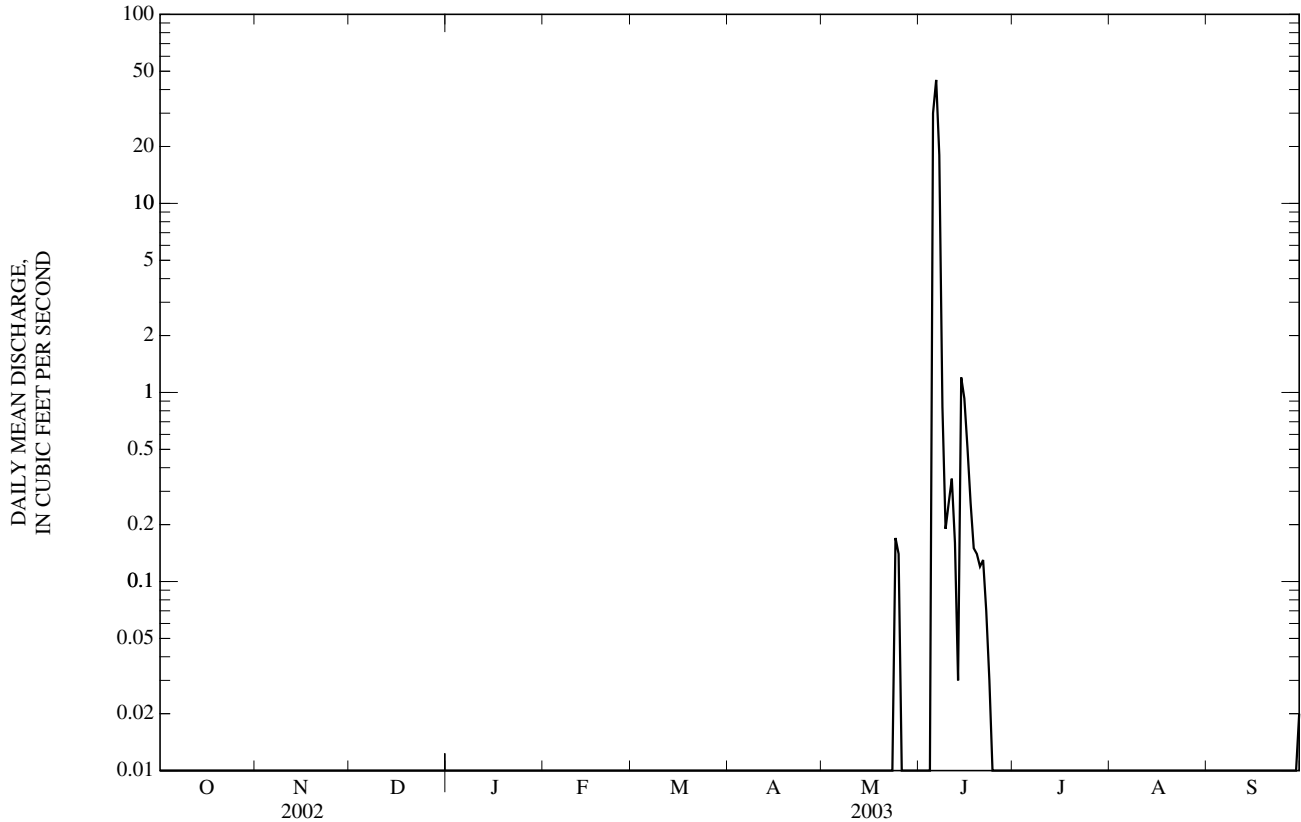
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

MEAN	0.053	0.053	0.22	0.35	0.26	0.63	5.88	32.6	26.6	12.4	29.5	7.35
MAX	1.12	1.52	6.88	10.3	7.06	16.9	107	519	368	113	239	102
(WY)	(1974)	(1998)	(1998)	(1998)	(1998)	(1998)	(1977)	(1977)	(1978)	(1977)	(1997)	(1973)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1972)	(1972)	(1972)	(1972)	(1972)	(1972)	(1972)	(1985)	(1983)	(1974)	(1978)	(1972)

ARKANSAS RIVER BASIN

07155590 CIMARRON RIVER NEAR ELKHART, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1972 - 2003	
ANNUAL MEAN	0.007		0.27		9.73	
HIGHEST ANNUAL MEAN					82.6	1977
LOWEST ANNUAL MEAN					0.000	1985
HIGHEST DAILY MEAN	0.58	Sep 10	45	Jun 6	6,190	May 26, 1977
LOWEST DAILY MEAN	0.00	Mar 13	0.00	Oct 1	0.00	Oct 1, 1971
ANNUAL SEVEN-DAY MINIMUM	0.00	Mar 13	0.00	Oct 1	0.00	Oct 1, 1971
MAXIMUM PEAK FLOW			96	Jun 6	21,500	May 26, 1977
MAXIMUM PEAK STAGE			7.06	Jun 6	9.17	May 26, 1977
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	4.8		196		7,050	
10 PERCENT EXCEEDS	0.01		0.00		1.0	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07157500 CROOKED CREEK NEAR ENGLEWOOD, KS

LOCATION.--Lat 37°01'54", long 100°12'29", in SE ¼ NW ¼ sec.1, T.35 S., R.27 W., Meade County, Hydrologic Unit 11040007, on right bank at downstream side of county highway bridge, 11.5 mi west of Englewood, and at mile 14.0.

DRAINAGE AREA.--1,157 mi<sup>2</sup>, of which 344 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--August 1942 to current year. Published as "near Nye" August 1942 to September 1995. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1211: 1950. WSP 1311: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 2,163.79 ft above NGVD of 1929. Prior to Sept. 12, 1942, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Extensive diversion for irrigation upstream from station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 17	0030	*1,910	*7.90	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	6.2	7.3	6.6	7.1	e6.8	5.9	7.4	26	42	3.9	4.5
2	3.4	6.2	7.2	6.4	7.1	6.8	5.7	7.3	25	30	3.7	4.0
3	5.5	6.1	e7.0	6.5	6.8	6.7	5.6	7.3	27	25	3.6	3.7
4	5.5	6.0	e7.2	6.5	6.7	6.5	5.5	7.3	25	21	3.4	3.5
5	4.6	5.8	e7.6	6.5	e6.6	6.1	5.6	6.9	25	18	3.3	3.3
6	4.3	5.8	7.9	6.4	e6.4	e5.8	5.7	6.4	26	16	3.1	2.9
7	4.1	5.8	7.9	6.5	e6.2	6.4	5.7	6.2	25	15	2.9	2.8
8	4.1	5.8	7.7	6.6	e6.4	6.1	5.6	5.8	23	14	2.8	3.0
9	4.2	6.0	7.7	6.7	e7.0	5.9	5.5	5.2	21	13	2.9	3.2
10	4.4	6.0	7.5	6.6	7.3	5.8	5.5	4.9	19	12	2.9	3.3
11	4.2	6.3	7.5	6.6	7.1	6.0	5.4	4.8	18	11	2.8	3.7
12	4.1	6.5	7.3	6.7	7.0	6.0	5.3	4.6	18	10	2.6	3.5
13	4.0	6.7	7.0	6.8	6.9	5.9	5.3	4.3	16	9.9	2.5	3.3
14	4.1	6.9	7.0	6.8	6.8	5.8	5.2	4.4	15	9.0	2.5	3.1
15	4.1	7.0	6.8	6.8	6.6	5.9	6.5	4.9	15	8.2	2.3	2.9
16	4.1	7.0	6.6	e6.6	6.6	5.8	7.5	464	14	7.5	2.2	2.8
17	4.2	7.2	6.5	e6.6	6.7	6.1	6.2	1,150	13	6.9	2.1	2.6
18	4.2	7.1	6.4	e6.8	6.7	6.3	6.0	239	12	6.3	e1.8	2.7
19	4.3	7.2	6.2	7.0	7.0	8.3	5.9	197	12	5.9	e1.5	e2.9
20	4.3	7.2	6.2	7.0	6.8	7.9	6.1	156	11	5.7	e1.3	e3.1
21	4.4	7.2	6.2	7.1	6.8	7.6	6.1	120	11	5.5	e1.1	3.5
22	4.5	7.4	6.1	6.8	6.8	7.2	6.1	93	10	5.0	e0.94	3.4
23	5.8	7.6	e5.8	6.0	e6.4	7.0	7.2	75	9.6	4.8	e0.81	3.5
24	6.3	7.8	e5.8	5.9	e5.8	6.9	7.2	60	9.2	4.7	e0.73	3.1
25	6.1	7.6	e5.8	7.7	e5.6	6.6	6.9	e47	8.8	4.4	e0.70	3.0
26	5.9	7.6	e5.8	7.6	e5.8	6.6	7.0	e43	e8.5	4.1	0.99	3.0
27	7.1	7.4	e6.5	7.2	e6.2	6.5	7.2	e38	8.2	3.9	1.3	2.8
28	6.8	7.7	7.0	7.3	e6.4	6.2	7.4	35	7.6	3.8	1.5	2.7
29	6.7	7.5	7.1	7.1	---	6.1	7.6	32	43	3.8	2.4	3.4
30	6.5	7.5	6.9	7.1	---	6.1	7.5	e29	98	4.7	4.5	4.5
31	6.2	---	6.7	7.2	---	6.0	---	27	---	4.2	4.9	---
MEAN	4.86	6.80	6.85	6.77	6.63	6.44	6.20	93.3	20.0	10.8	2.39	3.26
MAX	7.1	7.8	7.9	7.7	7.3	8.3	7.6	1,150	98	42	4.9	4.5
MIN	2.6	5.8	5.8	5.9	5.6	5.8	5.2	4.3	7.6	3.8	0.70	2.6
AC-FT	299	405	421	417	368	396	369	5,740	1,190	665	147	194

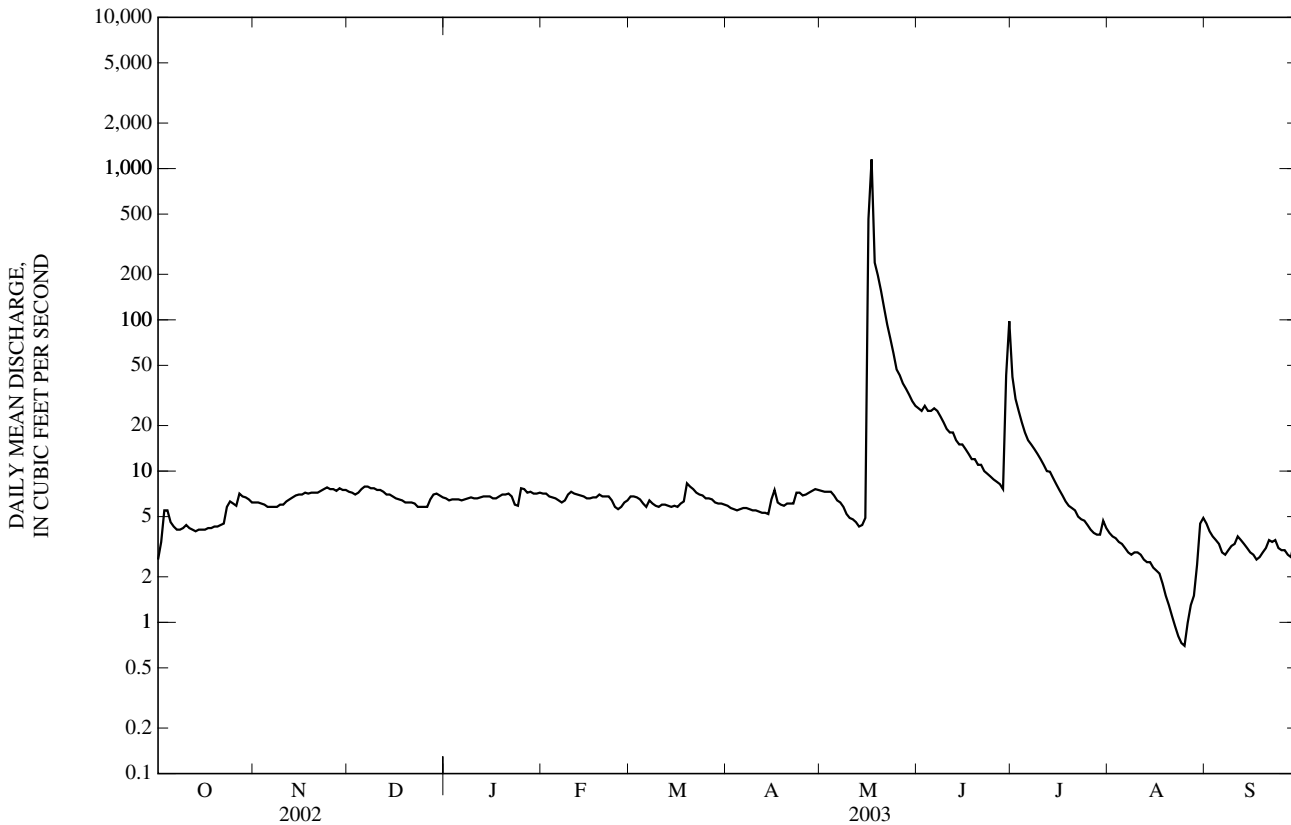
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

MEAN	24.9	17.2	14.1	15.1	16.8	26.1	37.8	72.4	39.1	33.2	29.6	26.0
MAX	463	176	32.6	34.1	74.9	528	582	1,233	325	375	453	224
(WY)	(1950)	(1972)	(1974)	(1954)	(1949)	(1973)	(1973)	(1955)	(1949)	(1950)	(1950)	(1950)
MIN	0.000	1.22	5.13	4.98	4.47	3.48	4.74	3.71	0.60	0.000	0.000	0.000
(WY)	(1957)	(1957)	(2002)	(2002)	(2002)	(2002)	(2002)	(1956)	(1956)	(1952)	(1956)	(1943)

07157500 CROOKED CREEK NEAR ENGLEWOOD, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL MEAN	5.10		14.7		29.4	
HIGHEST ANNUAL MEAN					176	1951
LOWEST ANNUAL MEAN					4.48	2002
HIGHEST DAILY MEAN	179	Aug 13	1,150	May 17	12,700	May 20, 1955
LOWEST DAILY MEAN	0.00	Jul 20	0.70	Aug 25	0.00	Jul 23, 1943
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 20	0.94	Aug 20	0.00	Jul 23, 1943
MAXIMUM PEAK FLOW			1,910	May 17	13,600	May 20, 1955
MAXIMUM PEAK STAGE			7.90	May 17	9.00	Aug 31, 1963
INSTANTANEOUS LOW FLOW			0.72	Aug 25	0.00	most years
ANNUAL RUNOFF (AC-FT)	3,690		10,610		21,330	
10 PERCENT EXCEEDS	7.2		16		32	
50 PERCENT EXCEEDS	4.5		6.4		11	
90 PERCENT EXCEEDS	1.3		3.1		2.3	

e Estimated



ARKANSAS RIVER BASIN

549

07157940 BLUFF CREEK NEAR BUTTERMILK, KS

LOCATION.--Lat 37°01'55", long 99°28'45", in NW ¼ sec.3, T.35 S., R.20 W., Comanche County, Hydrologic Unit 11040008, near left bank of county highway bridge, 2.2 mi north of Kansas-Oklahoma State line, 11.3 mi southwest of Buttermilk, and at mile 0.3.

DRAINAGE AREA.--657 mi<sup>2</sup>, of which 76 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--September 1973 to September 1979. October 2002 to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 1,700.33 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e60	36	24	29	28	37	45	51	33	6.4	0.71	1.7
2	e70	34	25	28	28	40	44	46	32	4.3	0.69	0.76
3	78	34	25	28	28	44	43	43	32	2.9	0.67	0.55
4	168	33	26	28	28	50	41	42	31	2.1	0.65	0.50
5	125	31	28	28	28	49	40	38	31	1.5	0.77	0.46
6	91	30	27	27	27	46	39	35	34	1.2	1.0	0.44
7	55	29	28	27	25	45	38	34	34	1.0	0.71	0.46
8	38	29	30	28	27	44	37	32	34	0.91	0.67	0.56
9	30	29	31	28	30	42	37	30	31	0.77	1.1	0.60
10	26	28	31	28	29	39	37	29	28	0.73	0.94	0.60
11	24	27	31	26	29	39	36	26	27	0.66	0.84	3.4
12	22	26	31	27	28	39	36	25	26	0.67	0.78	0.91
13	16	25	31	27	29	39	35	24	25	0.63	0.76	0.51
14	12	26	30	27	30	38	35	24	26	0.62	0.76	0.47
15	13	25	29	27	30	37	36	24	28	0.57	0.76	0.43
16	12	25	29	26	30	37	46	49	57	0.54	0.77	0.45
17	10	25	29	24	29	38	61	63	50	0.50	0.77	0.44
18	8.6	25	29	e26	28	45	50	e49	44	0.50	0.78	0.42
19	7.8	25	27	28	30	67	50	e45	40	0.37	0.75	0.38
20	7.7	25	27	28	31	97	62	e40	37	0.38	0.73	0.40
21	6.9	25	27	27	31	88	64	e39	33	e0.39	0.72	10
22	6.1	25	26	26	30	73	55	38	30	0.40	0.71	0.81
23	30	25	26	e18	e27	65	53	38	26	0.41	0.68	0.56
24	33	24	27	e17	e22	61	100	39	21	0.39	0.65	0.55
25	33	24	25	e17	e21	57	114	38	12	0.39	0.64	0.49
26	34	24	26	e18	e25	54	97	38	9.0	0.37	0.64	0.49
27	57	24	27	e20	e28	52	86	38	6.1	0.38	0.69	0.48
28	77	24	29	e24	e33	50	72	38	4.9	0.42	1.0	0.46
29	54	25	29	e30	---	48	64	38	8.7	2.6	0.87	0.47
30	45	24	30	28	---	46	57	37	11	1.7	45	0.47
31	39	---	29	28	---	45	---	36	---	1.3	11	---
MEAN	41.6	27.0	28.0	25.7	28.2	50.0	53.7	37.6	28.1	1.16	2.52	0.97
MAX	168	36	31	30	33	97	114	63	57	6.4	45	10
MIN	6.1	24	24	17	21	37	35	24	4.9	0.37	0.64	0.38
AC-FT	2,560	1,610	1,720	1,580	1,560	3,080	3,190	2,310	1,670	71	155	58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

MEAN	41.7	25.4	32.6	28.6	33.5	43.8	52.2	97.8	85.7	20.9	12.1	60.3
MAX	221	83.5	112	63.6	60.7	113	142	347	324	74.0	44.0	416
(WY)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1976)	(1978)	(1975)	(1975)	(1975)	(1973)
MIN	0.98	4.31	8.15	9.39	8.46	13.2	12.5	30.2	16.1	1.16	0.99	0.97
(WY)	(1979)	(1978)	(1978)	(1979)	(1978)	(1977)	(1979)	(1974)	(1979)	(2003)	(1976)	(2003)

07157940 BLUFF CREEK NEAR BUTTERMILK, KS—Continued

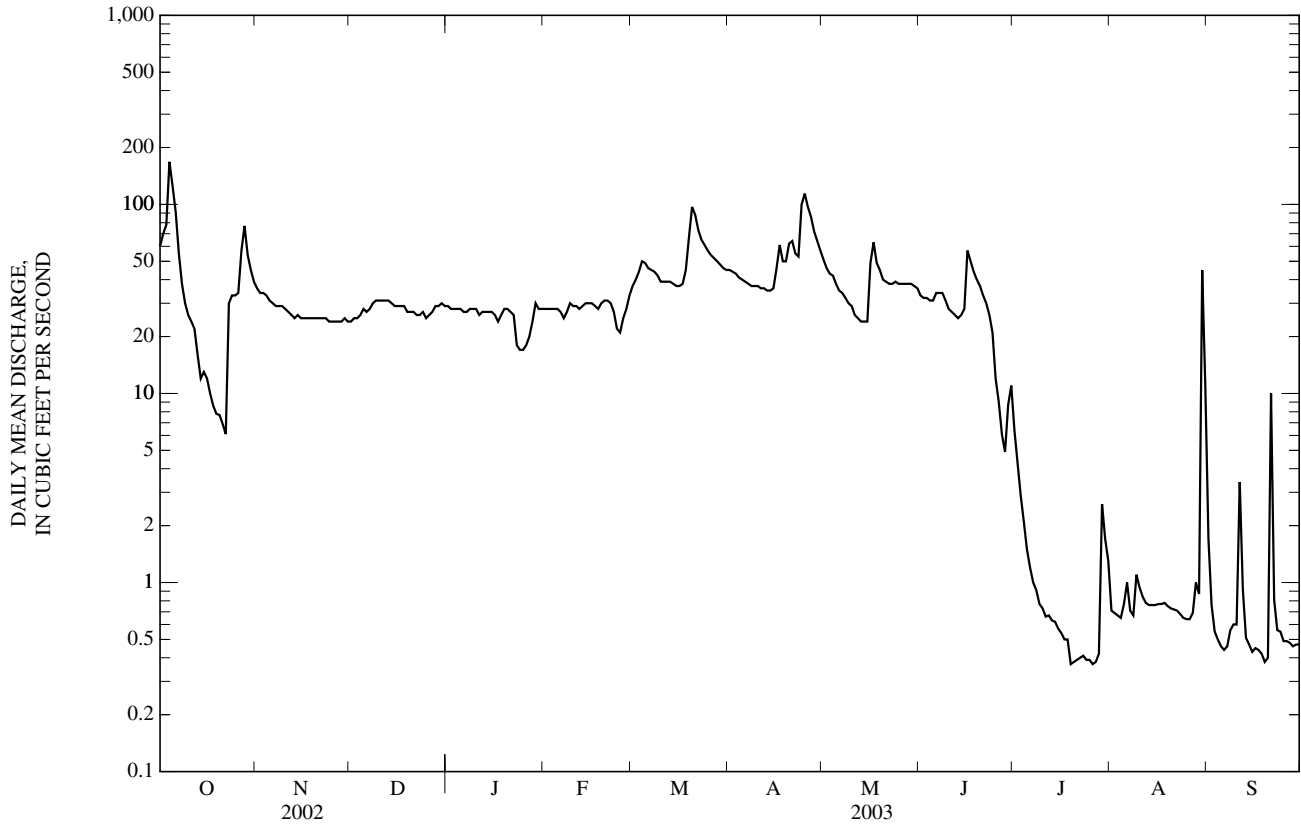
SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 1973 - 2003

ANNUAL MEAN	27.0		40.3	
HIGHEST ANNUAL MEAN			71.4	1974
LOWEST ANNUAL MEAN			17.6	1977
HIGHEST DAILY MEAN	168	Oct 4	6,260	Sep 26, 1973
LOWEST DAILY MEAN	0.37	Jul 19	0.00	Aug 6, 1977
ANNUAL SEVEN-DAY MINIMUM	0.39	Jul 19	0.00	Jun 26, 1979
MAXIMUM PEAK FLOW	181	Oct 4	16,000	Sep 26, 1973
MAXIMUM PEAK STAGE	8.74	Oct 4	14.35	Sep 26, 1973
INSTANTANEOUS LOW FLOW	0.22	Jul 20	0.00	Aug 6, 1977
ANNUAL RUNOFF (AC-FT)	19,570		29,220	
10 PERCENT EXCEEDS	50		71	
50 PERCENT EXCEEDS	28		18	
90 PERCENT EXCEEDS	0.59		1.1	

e Estimated





07166500 VERDIGRIS RIVER NEAR ALTOONA, KS

LOCATION.--Lat 37°29'26", long 95°40'49", in SE 1/4 NE 1/4 SW 1/4 sec.29, T.29 S., R.16 E., Wilson County, Hydrologic Unit 11070101, on left bank at downstream side of county highway bridge, 2.5 mi southwest of Altoona, 2.5 mi downstream from Big Cedar Creek, and at mile 227.9.

DRAINAGE AREA.--1,138 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 780.18 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 9, 1944, nonrecording gage at same site and datum.

REMARKS.--Records fair. Considerable regulation since 1960 by Toronto Lake (station 07165900), 43.6 mi upstream. Diversion from Altoona Reservoir upstream from station for municipal supply of Altoona and considerable diversion for irrigation upstream from station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.9	1.7	5.7	5.9	40	963	2,740	108	34	5.3	4,290
2	11	8.5	1.8	7.6	5.9	40	609	2,430	146	22	3.7	969
3	14	9.1	1.8	35	6.4	61	587	2,070	454	49	2.7	713
4	20	8.4	3.2	280	6.5	68	366	2,000	208	88	2.4	1,120
5	92	7.5	3.3	286	6.8	55	209	1,950	115	86	2.7	1,070
6	82	5.4	2.7	293	8.2	44	287	1,890	5,110	82	2.6	1,050
7	39	4.2	2.6	292	8.0	38	298	854	2,340	78	2.1	1,030
8	24	3.2	2.8	287	7.5	34	246	206	524	76	2.3	1,020
9	17	2.3	2.9	281	7.3	30	226	190	307	43	3.9	1,000
10	14	1.1	2.7	233	7.1	27	193	193	590	28	5.5	992
11	12	0.84	2.7	121	6.5	26	110	185	948	16	6.9	995
12	12	1.1	3.0	112	6.0	68	93	179	939	15	6.2	992
13	11	1.3	4.2	111	5.8	617	88	195	963	38	5.6	724
14	10	1.5	4.0	111	10	225	85	195	452	83	6.0	559
15	10	1.8	3.4	103	12	119	82	207	93	80	6.7	553
16	10	1.7	4.2	55	28	74	83	1,610	55	45	6.3	551
17	11	1.5	5.2	24	39	61	81	3,180	44	20	5.2	548
18	13	1.5	6.6	15	31	1,570	65	1,200	37	10	4.5	553
19	15	1.1	5.7	12	80	4,010	71	690	35	5.7	3.3	385
20	12	1.2	4.6	12	334	7,920	1,370	873	33	6.4	2.5	84
21	11	1.3	4.1	12	286	3,820	438	1,020	27	74	1.9	35
22	11	1.1	4.0	8.9	263	3,060	1,120	601	26	80	1.5	24
23	11	1.1	4.3	6.9	256	3,130	1,850	499	24	43	1.1	21
24	10	1.3	5.3	5.7	251	3,020	2,910	539	23	19	0.79	23
25	12	1.5	4.8	4.8	221	3,050	2,940	606	24	9.9	0.73	17
26	11	1.6	4.9	4.6	254	2,960	2,870	527	60	5.7	0.80	32
27	12	1.6	5.0	4.1	221	2,840	2,960	453	45	8.5	0.94	249
28	12	1.5	4.8	4.7	76	2,150	2,940	417	34	74	2.5	263
29	11	1.6	5.0	5.8	---	1,780	2,870	398	27	54	52	266
30	10	1.7	5.4	5.7	---	1,730	2,770	268	58	22	91	279
31	11	---	5.4	5.9	---	1,680	---	123	---	9.6	2,090	---
MEAN	18.2	2.91	3.94	88.6	87.5	1,431	993	919	462	42.1	75.2	680
MAX	92	9.9	6.6	293	334	7,920	2,960	3,180	5,110	88	2,090	4,290
MIN	10	0.84	1.7	4.1	5.8	26	65	123	23	5.7	0.73	17
AC-FT	1,120	173	242	5,450	4,860	87,960	59,070	56,510	27,470	2,590	4,620	40,480

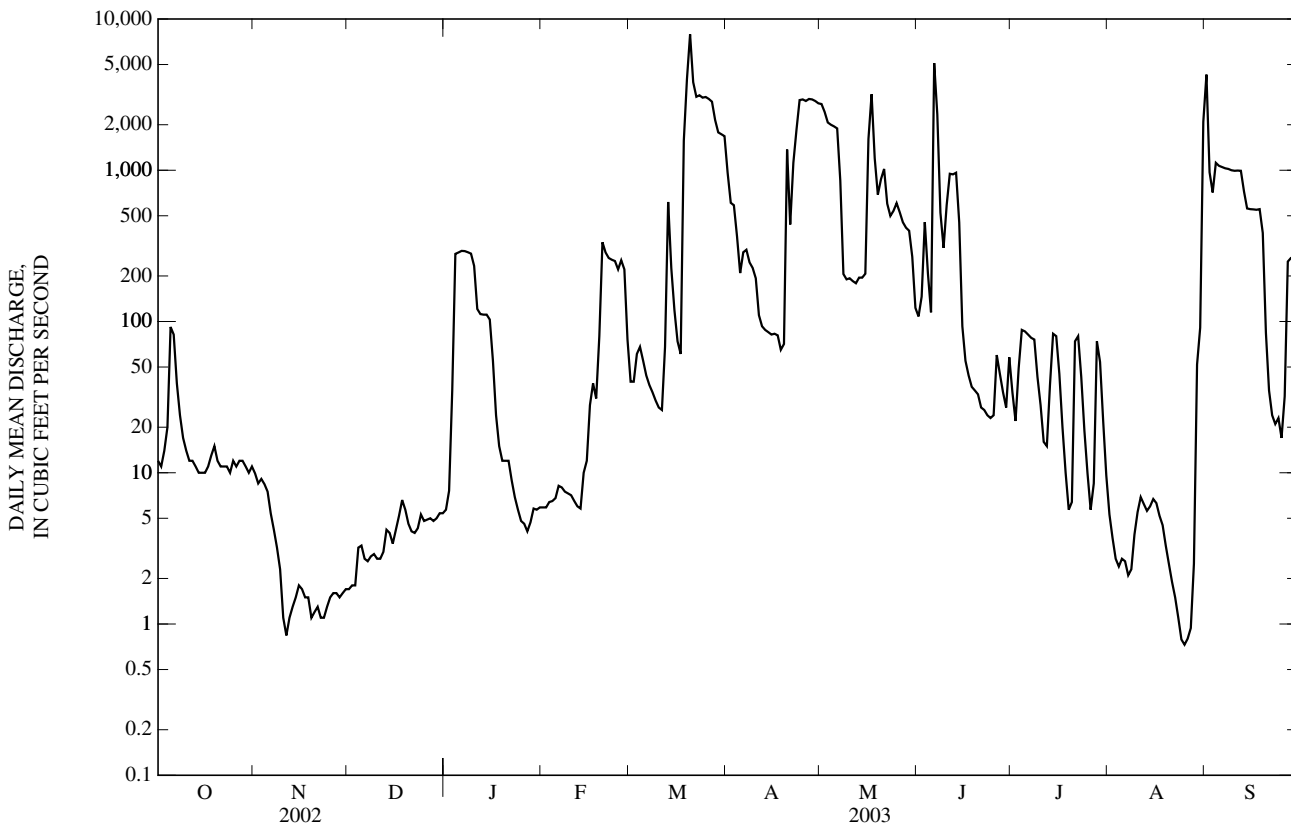
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

MEAN	681	882	569	389	612	1,131	1,169	1,213	1,436	546	279	521
MAX	6,663	6,814	3,297	2,242	2,083	5,062	4,684	6,826	4,841	2,945	1,943	5,119
(WY)	(1987)	(1999)	(1993)	(1973)	(1975)	(1973)	(1994)	(1961)	(1995)	(1992)	(1985)	(1961)
MIN	5.73	2.91	3.94	1.65	1.13	1.76	1.83	26.3	15.1	14.1	4.25	4.95
(WY)	(1995)	(2003)	(2003)	(1981)	(1981)	(1981)	(1981)	(1964)	(1988)	(1991)	(1984)	(1980)

07166500 VERDIGRIS RIVER NEAR ALTOONA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL MEAN	391		401		785	
HIGHEST ANNUAL MEAN					1,833	1999
LOWEST ANNUAL MEAN					65.4	1996
HIGHEST DAILY MEAN	8,850	May 8	7,920	Mar 20	32,800	Oct 3, 1986
LOWEST DAILY MEAN	0.84	Nov 11	0.73	Aug 25	0.00	Sep 19, 1980
ANNUAL SEVEN-DAY MINIMUM	1.2	Nov 18	1.1	Aug 21	0.00	Jul 29, 1984
MAXIMUM PEAK FLOW			8,230	Mar 20	a71,000	Jul 12, 1951
MAXIMUM PEAK STAGE			20.35	Mar 20	a31.09	Jul 12, 1951
INSTANTANEOUS LOW FLOW			0.72	Nov 11	0.00	at times
ANNUAL RUNOFF (AC-FT)	283,200		290,500		568,500	
10 PERCENT EXCEEDS	1,480		1,150		2,510	
50 PERCENT EXCEEDS	11		34		126	
90 PERCENT EXCEEDS	2.8		2.5		9.7	

a Maximum peak flow and stage recorded outside period of record and prior to Toronto Lake filling.



07167500 OTTER CREEK AT CLIMAX, KS

LOCATION.--Lat 37°42'30", long 96°13'30", in SW 1/4 SE 1/4 sec.8, T.27 S., R.11 E., Greenwood County, Hydrologic Unit 11070102, on right bank at downstream side of bridge on Kansas Highway 99, 0.5 mi south of Climax, 5.2 mi upstream from mouth, and 5.5 mi downstream from confluence of North and South Branches.

DRAINAGE AREA.--129 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 977.76 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	1600	5,940	14.76	Apr 24	0145	*6,770	*15.83

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.20	21	5.3	11	5.4	41	50	162	25	8.0	0.92	76
2	0.70	18	5.4	11	5.5	124	46	94	38	7.3	0.93	23
3	2.4	18	5.2	9.7	5.7	111	41	69	83	6.7	0.85	11
4	610	18	6.6	9.3	5.6	83	39	60	41	5.9	0.85	6.8
5	112	17	6.9	8.9	5.7	63	37	52	33	5.2	0.91	4.8
6	30	16	6.7	8.7	5.9	46	36	43	1,280	4.4	0.78	3.5
7	16	14	6.5	8.6	5.9	43	38	37	233	3.9	0.80	2.8
8	11	12	6.5	8.3	5.5	41	35	36	119	3.7	0.81	2.3
9	8.5	9.8	6.5	8.0	5.4	36	31	77	84	3.8	0.77	2.0
10	7.3	10	7.0	7.9	5.3	30	29	47	66	5.1	0.77	1.7
11	6.4	12	9.2	7.7	5.1	28	28	31	59	4.2	0.79	1.9
12	5.4	11	9.7	7.6	5.1	29	27	25	65	3.7	0.73	22
13	4.9	10	10	7.4	5.2	30	25	32	58	3.3	0.61	23
14	4.5	9.3	11	7.2	89	27	23	84	42	2.9	0.58	12
15	4.0	9.4	12	6.9	94	25	21	45	34	2.6	0.59	11
16	3.6	9.3	11	7.2	41	24	23	469	28	2.4	0.53	8.7
17	3.5	9.5	10	7.2	28	29	26	615	24	2.2	0.47	6.2
18	3.1	9.2	9.4	6.9	25	2,560	24	169	20	2.0	0.43	5.0
19	3.0	8.2	8.7	6.8	150	4,120	305	103	18	1.7	0.41	4.2
20	3.2	8.3	8.6	6.7	115	1,300	380	482	16	1.7	0.32	3.7
21	3.2	8.0	8.2	6.7	58	488	125	172	15	1.6	0.32	4.0
22	3.1	7.4	7.9	6.6	46	277	78	101	14	2.1	0.32	5.3
23	3.7	7.0	7.8	6.5	40	189	592	79	13	1.9	0.31	5.1
24	4.0	6.6	8.3	6.1	37	140	2,350	78	12	1.7	0.30	4.7
25	4.6	6.4	8.3	6.0	30	110	434	128	12	1.6	0.30	5.2
26	4.3	6.3	8.2	5.6	30	93	222	71	13	1.5	0.28	4.3
27	6.2	6.0	8.3	5.3	32	82	147	56	15	1.4	0.26	3.0
28	7.0	5.8	8.3	5.2	35	73	152	46	13	1.4	0.29	2.5
29	36	5.7	8.7	5.4	---	63	140	39	10	1.3	4.5	1.9
30	49	5.5	9.6	5.3	---	56	90	34	8.9	1.1	3.1	3.0
31	27	---	11	5.2	---	53	---	29	---	0.96	385	---
MEAN	31.9	10.5	8.28	7.32	32.9	336	186	115	83.1	3.14	13.2	9.02
MAX	610	21	12	11	150	4,120	2,350	615	1,280	8.0	385	76
MIN	0.20	5.5	5.2	5.2	5.1	24	21	25	8.9	0.96	0.26	1.7
AC-FT	1,960	624	509	450	1,830	20,660	11,100	7,070	4,940	193	811	537

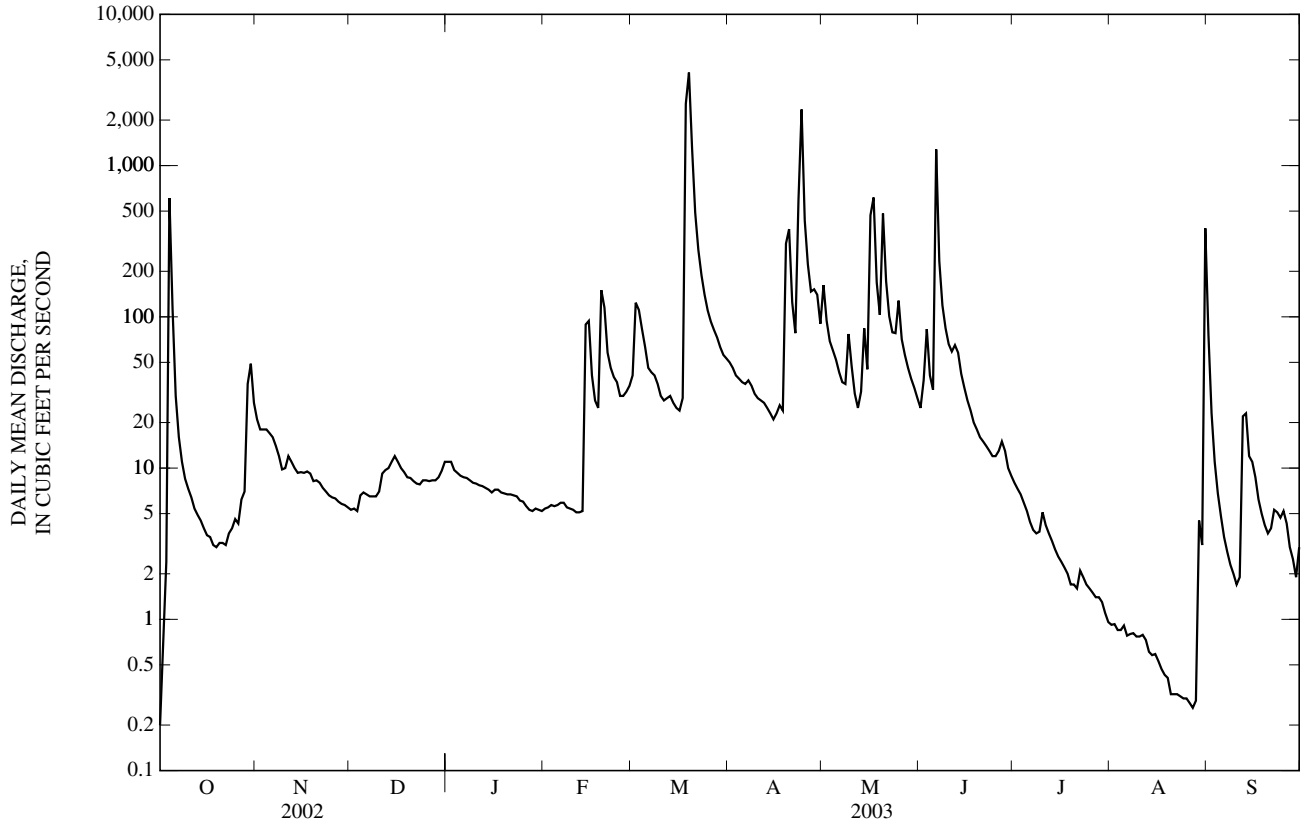
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

MEAN	52.4	85.1	43.1	36.9	66.1	119	147	133	152	71.1	19.4	55.7
MAX	644	1,068	255	235	370	689	1,325	762	857	798	200	596
(WY)	(1987)	(1999)	(1993)	(1973)	(1985)	(1973)	(1994)	(1961)	(1951)	(1976)	(1995)	(1961)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.96	0.087	0.000	0.000	0.000
(WY)	(1954)	(1954)	(1954)	(1954)	(1954)	(1956)	(1981)	(1996)	(1953)	(1953)	(1953)	(1953)

ARKANSAS RIVER BASIN

07167500 OTTER CREEK AT CLIMAX, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL MEAN	59.0		70.0		81.6	
HIGHEST ANNUAL MEAN					231	1999
LOWEST ANNUAL MEAN					0.55	1953
HIGHEST DAILY MEAN	2,720	May 24	4,120	Mar 19	21,700	Jul 3, 1976
LOWEST DAILY MEAN	0.20	Oct 1	0.20	Oct 1	0.00	Jun 12, 1953
ANNUAL SEVEN-DAY MINIMUM	0.24	Sep 25	0.29	Aug 22	0.00	Jun 12, 1953
MAXIMUM PEAK FLOW			6,770	Apr 24	107,000	Jul 3, 1976
MAXIMUM PEAK STAGE			15.83	Apr 24	31.47	Jul 3, 1976
INSTANTANEOUS LOW FLOW			0.16	Oct 2	0.00	at times
ANNUAL RUNOFF (AC-FT)	42,710		50,680		59,150	
10 PERCENT EXCEEDS	66		102		120	
50 PERCENT EXCEEDS	6.1		9.2		9.6	
90 PERCENT EXCEEDS	0.87		1.6		0.00	



07169500 FALL RIVER AT FREDONIA, KS

LOCATION.--Lat 37°30'30", long 95°50'00", in SW 1/4 SW 1/4 NW 1/4 sec.24, T.29 S., R.14 E., Wilson County, Hydrologic Unit 11070102, on right bank at downstream side of bridge on Kansas Highway 96, 0.8 mi upstream from Clear Creek, 1.0 mi downstream from Salt Creek, 1.0 mi south of Fredonia, and at mile 25.3.

DRAINAGE AREA.--827 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for October and November 1938, published in WSP 1311. Published as "near Fredonia" 1952-57.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1341: 1939-40.

GAGE.--Water-stage recorder. Datum of gage is 819.09 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 21, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable regulation since 1949 by Fall River Lake (station 07168000), 28.9 mi upstream, and during low flow by Fredonia City Water Reservoir, 1.0 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1904, that of Apr. 16, 1945.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	13	8.8	7.5	10	35	1,940	2,620	328	20	8.7	2,340
2	7.0	13	9.6	10	10	51	1,800	1,940	391	54	9.6	366
3	13	13	9.6	334	9.6	88	1,670	1,010	377	116	10	621
4	37	11	14	520	9.3	78	427	943	119	115	9.9	747
5	136	9.8	e13	523	9.3	57	262	931	288	113	9.9	715
6	49	10	e12	521	9.4	46	353	860	3,930	109	9.5	691
7	22	11	12	518	9.0	37	309	303	1,380	110	8.1	681
8	29	10	9.7	516	8.6	46	267	237	1,120	68	7.6	672
9	93	8.9	9.6	502	8.2	77	253	226	1,000	22	5.8	227
10	94	9.5	9.1	303	8.0	75	246	296	927	29	5.9	34
11	93	11	9.2	255	8.1	73	242	312	1,030	19	7.5	25
12	93	7.4	8.8	253	8.5	137	159	309	906	33	9.5	53
13	91	6.6	13	252	5.5	809	121	338	834	105	9.3	54
14	91	6.2	14	250	17	234	116	384	264	106	8.2	42
15	91	6.3	13	304	21	131	115	362	159	66	7.1	26
16	91	5.5	11	339	26	107	115	1,370	144	21	6.9	402
17	61	5.6	11	330	31	625	114	3,160	135	13	6.7	591
18	19	6.2	14	331	25	3,570	114	875	130	11	6.2	579
19	12	6.4	9.9	338	68	4,570	769	585	127	34	5.4	565
20	12	6.3	9.3	328	165	4,570	1,640	564	124	97	3.5	261
21	11	6.1	8.0	325	95	1,650	490	789	125	100	2.3	34
22	9.9	6.1	8.2	321	59	2,930	1,260	744	124	66	4.5	24
23	11	6.5	8.1	121	46	2,990	1,290	713	123	24	7.4	22
24	12	6.9	8.9	e21	36	2,960	2,300	764	120	18	7.0	19
25	16	6.8	8.7	e14	189	3,440	1,980	804	123	12	7.7	17
26	14	7.1	8.1	12	310	3,430	2,830	722	95	19	11	16
27	12	7.5	7.7	10	191	3,350	2,810	684	49	89	9.9	102
28	13	7.8	7.7	10	42	3,290	2,750	666	33	74	12	193
29	17	8.5	8.3	10	---	3,220	2,830	636	24	22	327	193
30	17	8.5	8.2	10	---	3,150	2,690	367	23	11	272	205
31	14	---	7.6	10	---	3,020	---	332	---	8.8	1,620	---
MEAN	41.6	8.28	10.0	245	51.2	1,576	1,075	801	485	55.0	78.6	351
MAX	136	13	14	523	310	4,570	2,830	3,160	3,930	116	1,620	2,340
MIN	7.0	5.5	7.6	7.5	5.5	35	114	226	23	8.8	2.3	16
AC-FT	2,560	493	615	15,070	2,850	96,890	63,990	49,280	28,860	3,380	4,830	20,860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	390	481	331	258	359	752	755	795	909	542	170	298
MAX	4,332	3,899	2,060	1,954	1,573	3,551	3,536	5,487	3,806	6,435	1,231	3,387
(WY)	(1987)	(1999)	(1993)	(1993)	(1987)	(1973)	(1970)	(1961)	(1957)	(1951)	(1950)	(1961)
MIN	4.77	4.79	6.96	3.84	2.05	1.59	0.91	18.7	10.3	10.9	5.78	0.91
(WY)	(1981)	(1955)	(1981)	(1981)	(1981)	(1981)	(1981)	(1967)	(1954)	(1955)	(1983)	(1980)

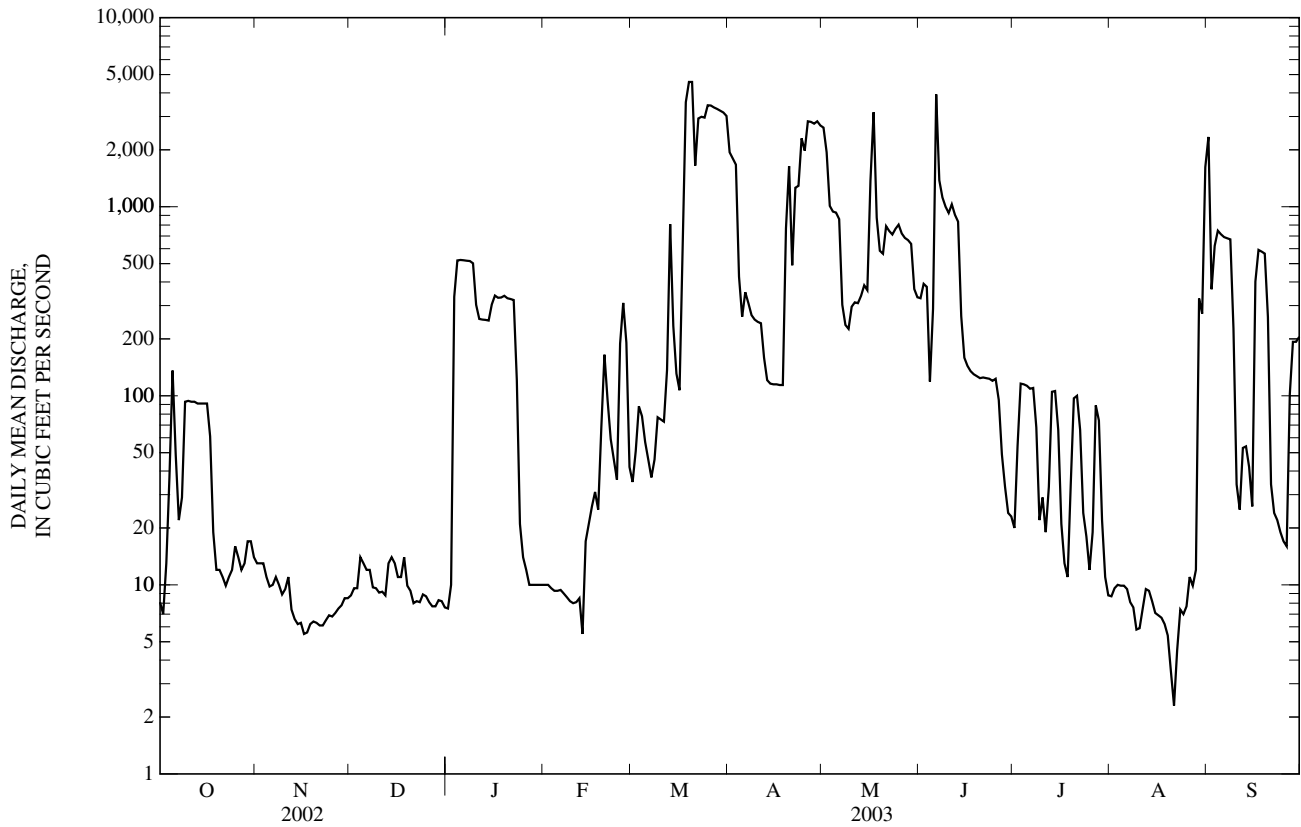
ARKANSAS RIVER BASIN

07169500 FALL RIVER AT FREDONIA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL MEAN	314		400		503	
HIGHEST ANNUAL MEAN					1,286	1999
LOWEST ANNUAL MEAN					16.5	1953
HIGHEST DAILY MEAN	9,880	May 24	4,570	Mar 19	26,300	Oct 3, 1986
LOWEST DAILY MEAN	5.5	Nov 16	2.3	Aug 21	0.00	Sep 9, 1980
ANNUAL SEVEN-DAY MINIMUM	6.0	Nov 16	5.1	Aug 16	0.00	May 1, 1981
MAXIMUM PEAK FLOW			6,900	Mar 20	a49,000	Apr 16, 1945
MAXIMUM PEAK STAGE			15.69	Mar 20	a36.17	Apr 16, 1945
INSTANTANEOUS LOW FLOW			2.0	Aug 21	0.00	at times
ANNUAL RUNOFF (AC-FT)	227,500		289,700		364,700	
10 PERCENT EXCEEDS	1,100		1,070		1,520	
50 PERCENT EXCEEDS	13		66		74	
90 PERCENT EXCEEDS	7.1		7.7		9.0	

e Estimated

a Maximum peak flow and stage recorded outside period of record from partial-record gage operated 1904-1949.



ARKANSAS RIVER BASIN

07169800 ELK RIVER AT ELK FALLS, KS

LOCATION.--Lat 37°22'32", long 96°11'07", in SW 1/4 SE 1/4 SE 1/4 sec.3, T.31 S., R.11 E., Elk County, Hydrologic Unit 11070104, on left bank at downstream side of bridge on U.S. Highway 160 in Elk Falls, 2.0 mi upstream from Wildcat Creek, and at mile 57.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--220 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 897.30 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	unknown	*6,210	*11.26	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.51	51	10	32	19	96	116	189	72	27	2.9	1,220
2	0.79	47	10	38	20	154	110	173	98	23	2.8	496
3	4.1	46	9.8	39	19	161	105	139	133	20	2.7	200
4	551	47	12	41	18	139	102	127	107	17	2.7	122
5	871	46	13	113	22	121	97	118	99	15	2.9	87
6	218	43	14	109	24	102	98	109	1,630	13	2.8	66
7	106	40	14	82	21	95	96	101	718	12	3.0	50
8	73	36	14	68	19	90	90	97	295	11	3.0	38
9	59	33	14	59	17	82	85	94	178	9.8	2.7	29
10	50	31	17	50	17	73	81	101	134	12	2.7	24
11	44	30	23	44	17	70	78	87	654	12	3.0	21
12	39	28	24	39	16	71	76	77	393	10	2.5	20
13	34	26	28	36	16	78	72	88	196	9.0	2.2	23
14	30	25	67	35	22	77	69	128	125	8.5	2.1	29
15	27	26	55	33	e44	71	66	116	96	7.6	2.0	26
16	25	24	44	33	74	66	68	603	79	6.7	1.9	22
17	23	24	38	31	61	65	75	2,260	69	5.9	1.8	19
18	20	23	34	29	53	2,330	72	813	61	5.5	1.5	17
19	19	22	29	27	319	e4,940	1,010	327	53	5.1	1.3	15
20	18	20	24	27	301	e3,600	1,160	274	82	4.8	1.1	13
21	20	18	22	27	167	1,980	421	211	55	4.6	1.1	13
22	17	17	20	26	129	897	223	160	45	5.1	1.1	19
23	16	15	20	22	109	453	159	133	41	4.8	0.93	23
24	15	14	22	20	100	285	1,490	341	35	4.4	0.80	19
25	16	13	24	18	86	228	791	512	34	4.3	0.73	15
26	19	13	23	18	81	186	357	208	107	4.1	0.68	13
27	24	12	22	17	84	162	235	145	75	3.9	0.78	10
28	22	11	21	18	88	146	185	118	48	3.6	0.95	8.7
29	37	11	24	19	---	133	160	102	39	3.5	38	7.7
30	73	11	29	19	---	124	144	90	32	3.3	207	7.3
31	62	---	33	20	---	120	---	80	---	3.0	1,690	---
MEAN	81.7	26.8	24.3	38.4	70.1	555	263	262	193	9.02	64.2	89.1
MAX	871	51	67	113	319	4,940	1,490	2,260	1,630	27	1,690	1,220
MIN	0.51	11	9.8	17	16	65	66	77	32	3.0	0.68	7.3
MED	25	24	22	32	34	124	104	128	89	6.7	2.2	22
AC-FT	5,020	1,590	1,500	2,360	3,890	34,110	15,650	16,110	11,470	554	3,950	5,300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

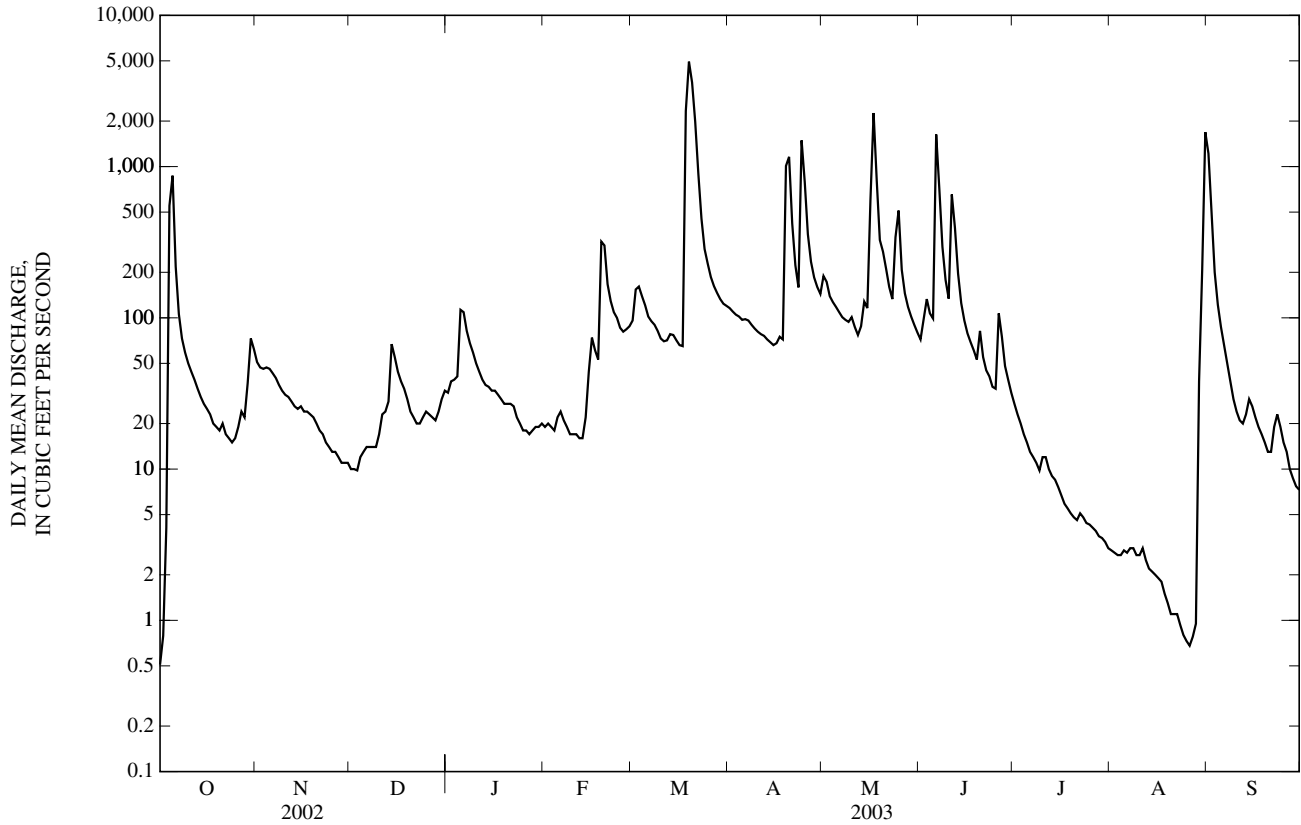
MEAN	112	152	105	78.4	135	246	246	268	282	109	29.1	49.0
MAX	1,410	954	488	394	554	1,247	1,227	1,232	1,287	2,080	208	381
(WY)	(1987)	(1999)	(1993)	(1973)	(1987)	(1973)	(1994)	(1993)	(1995)	(1976)	(1985)	(1986)
MIN	0.000	0.000	0.035	0.015	0.021	0.074	0.062	6.26	2.57	0.22	0.000	0.000
(WY)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1991)	(1996)	(1980)	(1980)	(1980)

ARKANSAS RIVER BASIN

07169800 ELK RIVER AT ELK FALLS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL MEAN	105		140		151	
HIGHEST ANNUAL MEAN					322	
LOWEST ANNUAL MEAN					6.17	
HIGHEST DAILY MEAN	6,510	May 24	4,940	Mar 19	47,500	Jul 3, 1976
LOWEST DAILY MEAN	0.03	Sep 12	0.51	Oct 1	0.00	Aug 26, 1970
ANNUAL SEVEN-DAY MINIMUM	0.13	Sep 8	0.85	Aug 22	0.00	Aug 26, 1970
MAXIMUM PEAK FLOW			6,210	Mar 19	200,000	Jul 3, 1976
MAXIMUM PEAK STAGE			11.26	Mar 19	34.85	Jul 3, 1976
INSTANTANEOUS LOW FLOW			0.45	Oct 1	0.00	at times
ANNUAL RUNOFF (AC-FT)	76,370		101,500		109,200	
10 PERCENT EXCEEDS	131		214		264	
50 PERCENT EXCEEDS	12		34		22	
90 PERCENT EXCEEDS	1.3		4.1		0.66	

e Estimated





07169800 ELK RIVER AT ELK FALLS, KS—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to May 1980, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
MAR 19...	1215	5,700	7.7	253	12.1	717	11,000
APR 28...	1140	150	8.0	369	18.9	46	18
MAY 20...	1200	300	7.7	342	19.3	66	54

## 07170500 VERDIGRIS RIVER AT INDEPENDENCE, KS

LOCATION.--Lat 37°13'24", long 95°40'43", in NW ¼ NE ¼ NE ¼ sec.32, T.32 S., R.16 E., Montgomery County, Hydrologic Unit 11070103, on left bank at downstream side of bridge on U.S. Highway 160, 1.0 mi east of Independence, 3.7 mi downstream from Elk River, and at mile 194.2.

DRAINAGE AREA.--2,892 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1895 to September 1904 (monthly figures only, published in WSP 1311), October 1921 to current year.

REVISED RECORDS.--WSP 977: 1922, 1927-29. WSP 1117: Drainage area. WSP 1341: 1923-25(M), 1939.

GAGE.--Water-stage recorder. Datum of gage is 716.63 ft above NGVD of 1929. Aug. 2, 1895, to Nov. 30, 1903, nonrecording gage at former mill dam 5.0 mi downstream and 2.5 mi northwest of Liberty, at datum about 4.00 ft lower. Apr. 20 to Sept. 25, 1904, nonrecording gage at Myrtle Street highway bridge 0.8 mi upstream at different datum. Nov. 14, 1921, to Sept. 30, 1929, nonrecording gage at Myrtle Street bridge at datum 0.87 ft higher than present datum. Oct. 1, 1929, to Dec. 25, 1933, nonrecording gage at site 400 ft upstream and present datum. Dec. 26, 1933, to Oct. 5, 1989, recording gage at site 400 ft upstream at present datum.

REMARKS.--Records good. Flow regulated since 1949 by Fall River Lake (station 07168000), since 1960 by Toronto Lake (station 07165900), and since 1966 by Elk City Lake (station 07170050). Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	79	42	76	113	356	5,080	7,770	1,190	318	132	8,490
2	46	80	43	77	114	316	3,430	6,310	782	222	123	4,820
3	70	79	43	79	111	329	3,000	4,810	752	208	117	2,150
4	70	74	54	430	110	397	1,970	4,060	849	375	117	3,340
5	70	71	56	813	109	388	838	4,000	829	421	118	4,150
6	242	67	58	822	112	340	817	3,700	10,600	416	119	4,050
7	206	63	56	827	111	307	1,170	2,280	12,600	395	116	3,990
8	133	59	61	822	112	285	1,420	797	6,060	361	115	3,930
9	104	53	69	815	112	269	1,320	566	5,150	189	112	3,810
10	120	46	65	773	156	329	1,280	574	4,350	423	122	3,370
11	153	44	62	539	370	495	1,040	595	3,320	173	118	2,620
12	152	43	60	420	371	497	510	587	2,280	97	116	1,080
13	151	44	73	412	371	2,310	412	2,130	2,110	74	116	989
14	150	45	71	407	341	1,390	366	1,160	2,000	130	116	701
15	147	42	67	405	201	876	347	842	1,000	293	116	640
16	148	38	65	456	199	681	356	6,340	776	270	117	617
17	146	38	66	411	212	541	352	13,400	693	189	117	1,020
18	143	37	105	368	249	2,760	328	5,630	433	147	112	1,100
19	114	37	101	360	287	7,100	264	2,330	223	129	47	1,080
20	93	37	81	367	451	12,700	2,300	2,840	204	123	17	785
21	82	38	75	351	724	12,200	2,320	5,090	197	165	15	335
22	75	40	70	351	623	7,090	2,220	4,700	191	274	16	154
23	71	40	67	373	576	7,980	3,990	4,380	181	271	21	111
24	73	41	71	224	555	7,850	5,150	4,560	176	194	21	92
25	81	41	70	160	527	7,930	7,170	4,910	171	153	21	79
26	79	41	67	135	632	8,410	6,130	4,480	207	137	22	71
27	82	41	68	121	764	8,090	6,810	4,240	325	126	73	163
28	85	41	67	117	594	7,690	6,660	4,110	247	145	200	451
29	91	42	70	114	---	6,910	6,780	3,380	225	250	3,080	561
30	88	42	88	113	---	6,720	6,560	1,710	531	209	2,240	575
31	81	---	83	114	---	6,400	---	1,290	---	156	3,980	---
MEAN	109	49.4	67.5	382	329	3,869	2,680	3,664	1,955	227	383	1,844
MAX	242	80	105	827	764	12,700	7,170	13,400	12,600	423	3,980	8,490
MIN	25	37	42	76	109	269	264	566	171	74	15	71
AC-FT	6,690	2,940	4,150	23,510	18,260	237,900	159,500	225,300	116,300	13,950	23,550	109,700

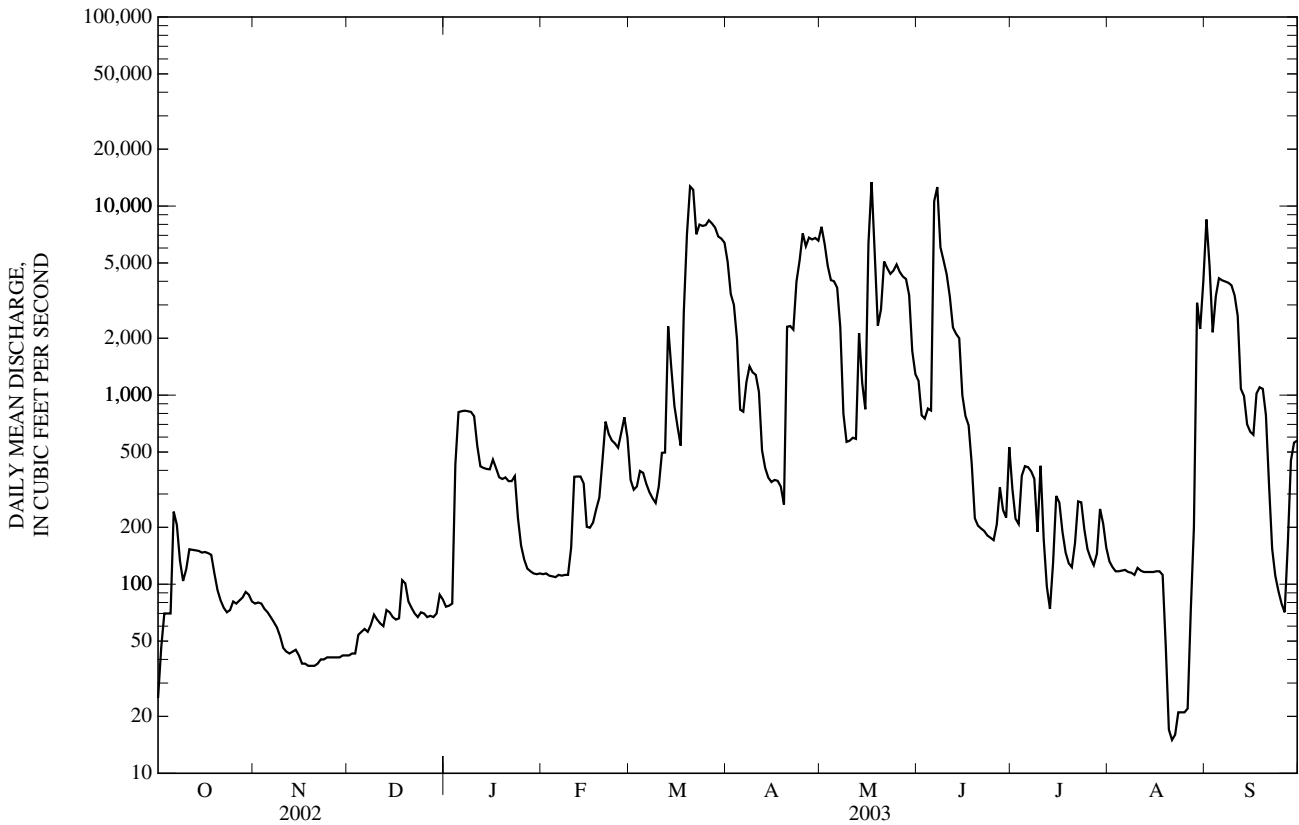
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

	1,814	2,250	1,565	1,279	1,731	3,334	3,247	3,308	3,947	1,740	673	784
MEAN	1,814	2,250	1,565	1,279	1,731	3,334	3,247	3,308	3,947	1,740	673	784
MAX	21,880	13,130	7,961	6,799	6,186	13,500	12,520	9,018	11,820	10,880	4,967	4,888
(WY)	(1987)	(1975)	(1993)	(1973)	(1975)	(1973)	(1988)	(1994)	(1995)	(1976)	(1985)	(1989)
MIN	18.3	23.1	28.0	16.8	16.7	18.5	13.6	214	67.1	26.6	20.9	13.2
(WY)	(1996)	(1981)	(1981)	(1981)	(1981)	(1981)	(1981)	(1992)	(1972)	(1980)	(1983)	(1980)

07170500 VERDIGRIS RIVER AT INDEPENDENCE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL MEAN	1,200		1,301		2,138	
HIGHEST ANNUAL MEAN					4,753	
LOWEST ANNUAL MEAN					199	
HIGHEST DAILY MEAN	24,200	May 9	13,400	May 17	103,000	Oct 4, 1986
LOWEST DAILY MEAN	9.8	Sep 8	15	Aug 21	1.5	Sep 25, 1980
ANNUAL SEVEN-DAY MINIMUM	12	Sep 3	19	Aug 20	4.4	Oct 13, 1991
MAXIMUM PEAK FLOW			15,800	May 17	a117,000	Apr 17, 1945
MAXIMUM PEAK STAGE			24.48	May 17	a47.60	May 19, 1943
INSTANTANEOUS LOW FLOW			14	Aug 22	0.00	at times
ANNUAL RUNOFF (AC-FT)	869,000		941,700		1,549,000	
10 PERCENT EXCEEDS	5,300		4,620		6,980	
50 PERCENT EXCEEDS	69		269		448	
90 PERCENT EXCEEDS	18		55		34	

a Maximum peak flow and stage recorded outside period of record and prior to Toronto Lake filling.



## ARKANSAS RIVER BASIN

07170700 BIG HILL CREEK NEAR CHERRYVALE, KS

LOCATION.--Lat 37°16'00", long 95°28'05", in SE 1/4 SE 1/4 sec.7, T.32 S., R.18 E., Labette County, Hydrologic Unit 11070103, on right bank at side of county highway bridge, 4.3 mi east of Cherryvale, and at mile 32.5.

DRAINAGE AREA.--37 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 795.93 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 6, 1958, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow completely regulated since 1981 by Big Hill Lake (station 07170695), 1,200 ft upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in 1951 reached a stage of 18.92 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.08	0.00	e0.02	e0.00	e0.04	1.3	35	9.4	e0.49	e0.00	e0.26
2	0.00	e0.08	0.00	e0.02	e0.00	e0.04	1.9	33	8.7	e0.40	e0.01	e0.01
3	0.00	e0.09	0.00	e0.02	e0.00	e0.04	2.2	27	7.1	e0.25	e0.00	e0.00
4	e0.04	e0.09	e0.00	e0.02	e0.00	e0.04	3.3	23	4.9	e0.35	e0.00	0.00
5	e0.08	e0.09	e0.00	e0.02	e0.00	e0.03	3.9	30	3.3	e0.30	e0.00	0.00
6	e0.08	e0.08	e0.00	e0.02	e0.00	e0.03	5.2	26	113	e0.15	e0.00	0.00
7	e0.07	e0.07	e0.00	e0.02	e0.00	e0.04	1.8	22	143	e0.10	e0.00	0.00
8	e0.07	e0.07	e0.00	e0.02	e0.00	e0.04	1.3	21	99	e0.10	e0.00	0.00
9	e0.07	e0.07	e0.00	e0.02	e0.00	e0.03	0.57	21	65	e0.11	e0.00	0.00
10	e0.06	e0.06	e0.00	e0.02	e0.00	e0.03	0.30	18	46	e0.15	e0.01	0.00
11	e0.06	e0.05	e0.00	e0.01	e0.00	e0.03	0.28	15	36	e0.09	e0.01	0.01
12	e0.06	e0.03	e0.09	e0.01	e0.00	e0.04	0.24	13	28	e0.09	e0.02	0.09
13	e0.06	e0.02	e0.12	e0.01	e0.04	e0.02	0.15	13	23	e0.16	e0.02	0.02
14	e0.05	e0.03	e0.08	e0.01	e0.07	e0.00	0.10	15	19	e0.12	e0.02	0.01
15	e0.04	e0.03	e0.07	e0.01	e0.05	e0.00	0.10	14	16	e0.08	e0.01	0.01
16	e0.03	e0.02	e0.07	e0.01	e0.03	e0.00	0.71	93	12	e0.08	e0.01	0.01
17	e0.03	e0.00	e0.07	e0.01	e0.03	e0.02	1.1	430	9.4	e0.08	e0.01	0.01
18	e0.03	e0.00	e0.07	e0.01	e0.04	e0.04	1.1	313	6.8	e0.08	e0.00	0.00
19	e0.04	e0.00	e0.05	e0.01	e0.06	e0.13	1.4	203	4.6	e0.07	e0.00	0.00
20	e0.04	0.00	e0.05	e0.01	0.04	e0.16	3.8	153	3.3	e0.07	e0.00	e0.04
21	e0.03	0.00	e0.04	e0.01	e0.04	e0.08	3.1	119	1.0	e0.06	e0.00	e0.10
22	e0.03	0.00	e0.03	e0.01	e0.04	e0.07	2.4	81	0.48	e0.05	e0.00	e0.10
23	e0.03	0.00	e0.03	e0.01	e0.04	e0.07	2.8	56	0.19	e0.05	e0.00	e0.08
24	e0.04	0.00	e0.03	e0.01	e0.04	e0.09	11	46	e0.12	e0.06	e0.00	e0.08
25	e0.07	0.00	e0.03	e0.01	e0.04	e0.16	17	43	e0.14	e0.06	e0.00	e0.07
26	e0.07	0.00	e0.02	e0.01	e0.04	1.4	17	34	e0.26	e0.04	e0.00	e0.06
27	e0.07	0.00	e0.02	e0.01	e0.04	0.64	15	27	e0.10	e0.03	e0.00	e0.05
28	e0.07	0.00	e0.02	e0.01	e0.04	1.6	13	22	e0.11	e0.02	e0.03	e0.04
29	e0.09	0.00	e0.02	e0.01	---	1.2	15	18	e0.14	e0.02	e0.20	e0.03
30	e0.10	0.00	e0.02	e0.01	---	0.88	13	15	e0.42	e0.01	e0.06	e0.10
31	e0.09	---	e0.02	e0.01	---	0.98	---	13	---	e0.01	e0.12	---
MEAN	0.052	0.032	0.031	0.013	0.024	0.26	4.67	64.3	22.0	0.12	0.017	0.039
MAX	0.10	0.09	0.12	0.02	0.07	1.6	17	430	143	0.49	0.20	0.26
MIN	0.00	0.00	0.00	0.01	0.00	0.00	0.10	13	0.10	0.01	0.00	0.00
AC-FT	3.2	1.9	1.9	0.8	1.3	16	278	3,950	1,310	7.4	1.1	2.3

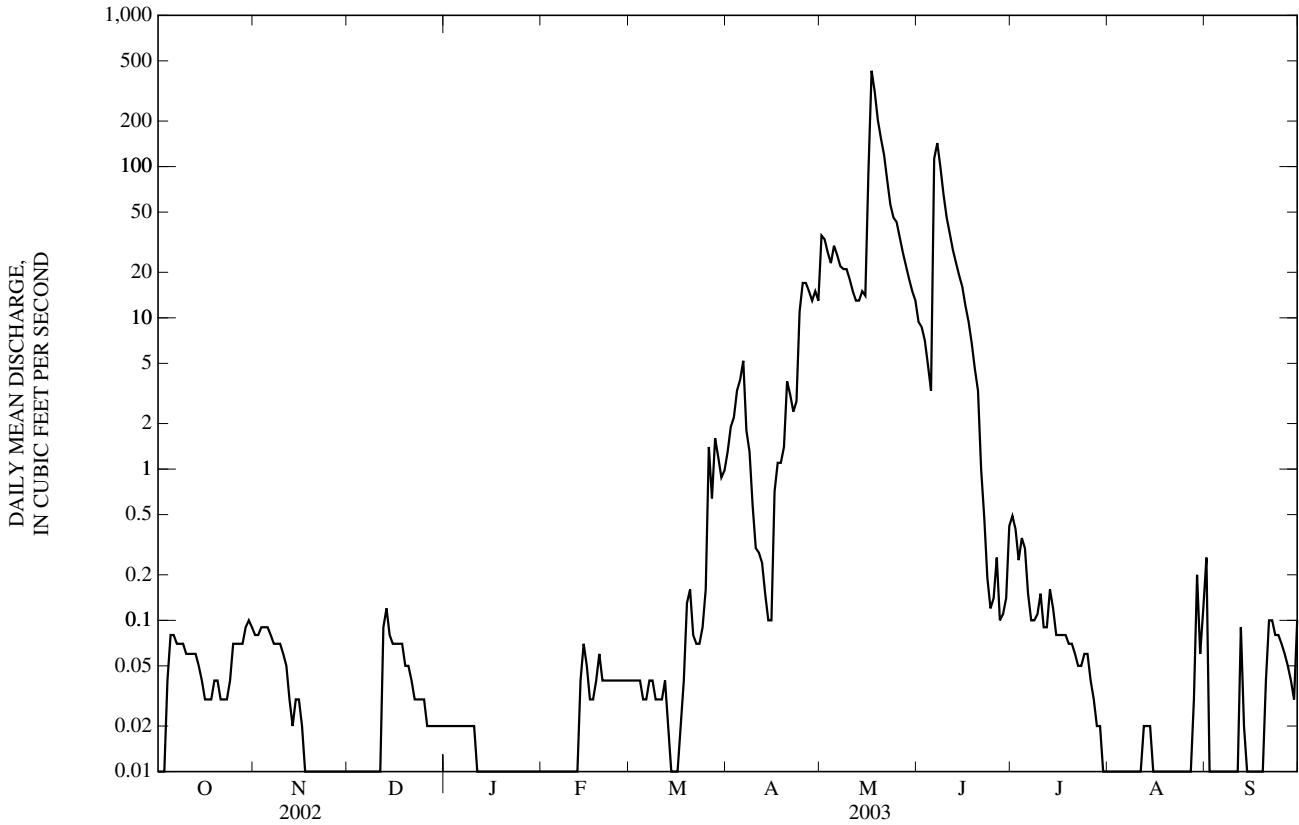
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

MEAN	23.2	26.9	16.7	17.4	19.7	39.6	35.0	46.4	43.8	23.6	6.32	15.0
MAX	384	151	143	145	164	228	219	269	219	403	97.4	123
(WY)	(1987)	(1993)	(1993)	(1973)	(1985)	(1973)	(1994)	(1961)	(1977)	(1976)	(1995)	(1993)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.000	0.000	0.000
(WY)	(1958)	(1964)	(1964)	(1964)	(1964)	(1964)	(1981)	(1982)	(1980)	(1963)	(1962)	(1963)

07170700 BIG HILL CREEK NEAR CHERRYVALE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL MEAN	20.5		7.70		26.1	
HIGHEST ANNUAL MEAN					70.0	1993
LOWEST ANNUAL MEAN					0.071	1982
HIGHEST DAILY MEAN	1,060	May 9	430	May 17	10,700	Jul 3, 1976
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1, 1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Nov 17	0.00	Oct 1, 1957
MAXIMUM PEAK FLOW			470	May 17	36,000	Jul 3, 1976
MAXIMUM PEAK STAGE			8.55	May 17	23.02	Jul 3, 1976
INSTANTANEOUS LOW FLOW			0.00	Oct 1	0.00	most years
ANNUAL RUNOFF (AC-FT)	14,840		5,570		18,940	
10 PERCENT EXCEEDS	28		15		48	
50 PERCENT EXCEEDS	0.05		0.04		0.99	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



## ARKANSAS RIVER BASIN

## 07170990 VERDIGRIS RIVER AT COFFEYVILLE, KS

LOCATION.--Lat 37°00'20", long 95°35'32", in NW ¼ NE ¼ NW ¼ sec.18, T.35 S., R.17 E., Montgomery County, Hydrologic Unit 11070103, on right bank at downstream side of county road 0.75 mi north Oklahoma State line, and at mile 162.5.

DRAINAGE AREA.--3,342 mi<sup>2</sup>.

PERIOD OF RECORD.--April 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 675.00 ft above NGVD of 1929.

REMARKS.--Records good. Flow regulated since 1949 by Fall River Lake (station 07168000), since 1960 by Toronto Lake (station 07165900), and since 1966 by Elk City Lake (station 07170050). Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	66	44	79	108	533	6,600	12,700	1,330	576	141	15,000
2	24	69	44	74	107	405	4,000	9,840	1,200	327	126	9,650
3	30	70	46	70	108	385	3,330	6,430	728	236	116	2,960
4	61	66	64	72	105	395	2,460	4,620	994	269	109	2,770
5	61	63	62	704	103	443	1,290	4,480	931	436	115	4,390
6	65	62	60	910	106	408	902	4,260	8,140	449	114	4,340
7	260	60	59	916	109	364	1,150	3,060	15,600	441	109	4,220
8	195	56	58	917	106	334	1,480	1,490	9,340	424	105	4,140
9	126	56	59	910	108	311	1,430	830	6,220	336	102	4,060
10	95	54	66	894	108	299	1,360	712	5,430	586	112	3,600
11	115	50	67	750	208	413	1,300	700	3,890	560	120	3,260
12	154	43	65	488	377	512	759	687	2,700	206	106	1,920
13	150	41	78	421	384	2,400	502	3,610	2,200	112	96	1,200
14	146	42	70	415	405	2,460	412	5,950	2,300	80	95	935
15	142	46	71	410	313	1,230	386	1,310	1,480	163	94	721
16	138	45	68	430	220	887	402	8,050	947	309	94	667
17	139	43	67	456	218	734	407	24,000	831	261	93	807
18	140	38	68	405	240	1,070	389	13,100	656	182	93	1,150
19	138	35	106	374	312	7,240	376	3,720	397	141	85	1,140
20	107	37	107	379	334	13,000	2,210	3,550	249	121	52	1,020
21	81	37	77	377	674	15,700	3,370	5,520	231	117	26	803
22	67	37	69	364	761	9,500	2,120	5,740	226	198	13	614
23	60	38	70	372	664	9,040	3,600	5,040	211	298	8.4	264
24	63	40	76	338	617	9,190	5,260	9,080	196	253	5.4	160
25	68	40	71	228	578	9,040	8,340	9,640	195	176	5.4	119
26	63	40	66	165	558	9,600	7,450	5,540	230	141	8.7	97
27	66	42	65	134	798	9,460	7,860	4,870	280	127	8.3	88
28	71	42	66	119	814	9,160	7,880	4,550	330	114	13	223
29	77	42	70	116	---	8,330	7,870	4,270	268	154	7,010	541
30	79	43	83	112	---	7,970	7,810	2,250	428	245	8,410	604
31	74	---	82	110	---	7,830	---	1,590	---	191	8,080	---
MEAN	99.4	48.1	68.5	404	341	4,472	3,090	5,522	2,272	265	828	2,382
MAX	260	70	107	917	814	15,700	8,340	24,000	15,600	586	8,410	15,000
MIN	24	35	44	70	103	299	376	687	195	80	5.4	88
AC-FT	6,110	2,860	4,210	24,810	18,930	275,000	183,900	339,600	135,200	16,320	50,910	141,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	99.4	48.1	68.5	404	341	4,472	1,730	7,522	4,317	359	443	1,233
MAX	99.4	48.1	68.5	404	341	4,472	3,090	9,521	6,362	452	828	2,382
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2003)	(2003)
MIN	99.4	48.1	68.5	404	341	4,472	371	5,522	2,272	265	58.1	83.7
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2002)	(2002)

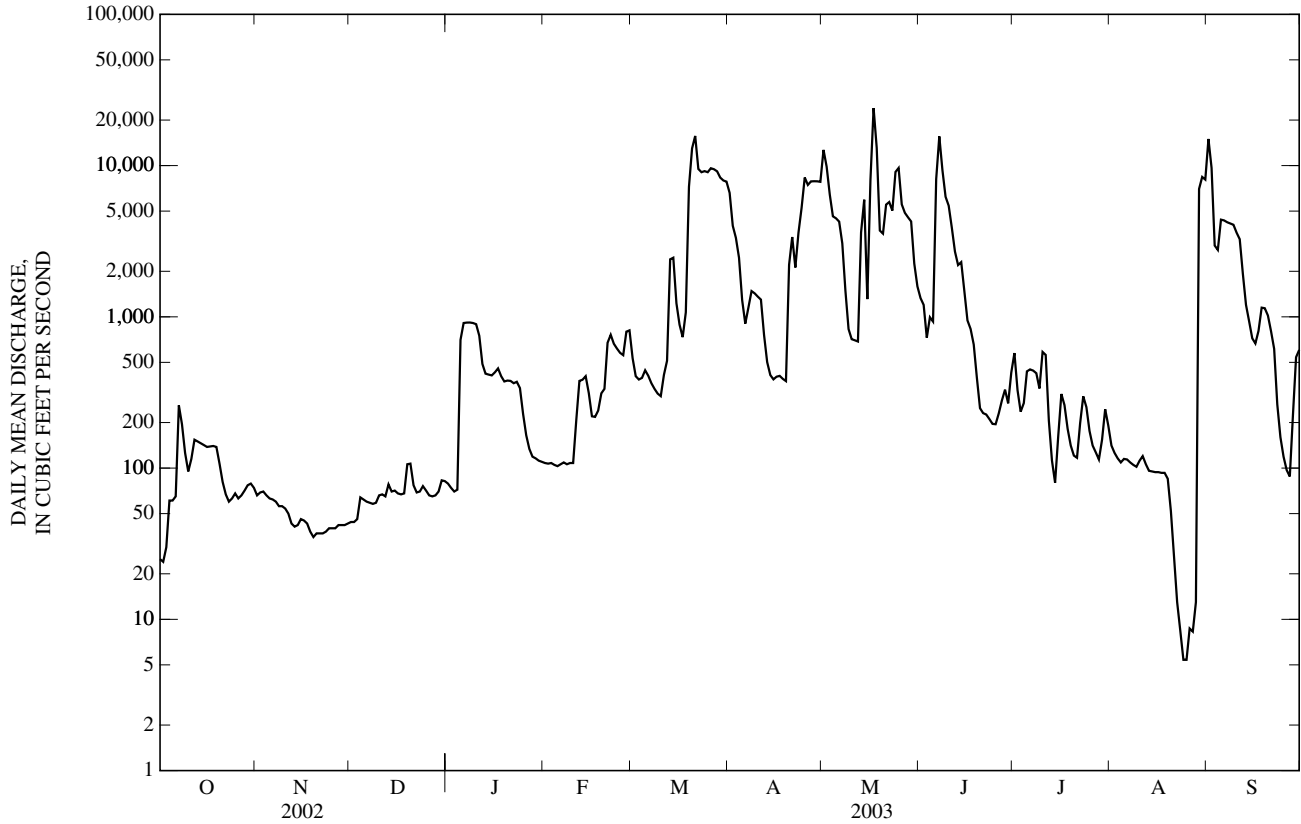
07170990 VERDIGRIS RIVER AT COFFEYVILLE, KS—Continued

SUMMARY STATISTICS

FOR 2003 WATER YEAR

WATER YEARS 2002 - 2003

ANNUAL MEAN	1,657		1,657	
HIGHEST ANNUAL MEAN			1,657	2003
LOWEST ANNUAL MEAN			1,657	2003
HIGHEST DAILY MEAN	24,000	May 17	31,100	May 9, 2002
LOWEST DAILY MEAN	5.4	Aug 24	4.5	Sep 11, 2002
ANNUAL SEVEN-DAY MINIMUM	8.9	Aug 22	6.4	Sep 7, 2002
MAXIMUM PEAK FLOW	25,000	May 17	31,900	May 9, 2002
MAXIMUM PEAK STAGE	23.82	May 17	23.82	May 17, 4005
INSTANTANEOUS LOW FLOW	4.5	Aug 24	3.9	Sep 11, 2002
ANNUAL RUNOFF (AC-FT)	1,200,000		1,200,000	
10 PERCENT EXCEEDS	6,300		6,300	
50 PERCENT EXCEEDS	309		309	
90 PERCENT EXCEEDS	55		55	



ARKANSAS RIVER BASIN

07172000 CANEY RIVER NEAR ELGIN, KS

LOCATION.--Lat 37°00'14", long 96°19'00", in NW ¼ NW ¼ SE ¼ sec.16, T.35 S., R.10 E., Chautauqua County, Hydrologic Unit 11070106, on right bank at upstream side of county highway bridge, 2 mi west of Elgin, and at mile 117.8.

DRAINAGE AREA.--445 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 763.32 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 13, 1961, at site 300 ft downstream at same datum. Prior to Apr. 6, 1989, at site on left bank at upstream side of county highway bridge at same datum.

REMARKS.--Records good. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 19	1100	17,700	13.86	May 16	1100	18,400	14.25
Apr 19	1600	10,300	9.56	May 24	2300	6,810	7.29
May 1	0700	9,840	9.26	Jun 6	0430	*30,600	*20.59
May 13	1700	7,420	7.70	Aug 31	1600	11,500	10.29

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	76	28	60	32	96	259	4,830	249	131	9.0	2,450
2	0.74	71	28	60	32	155	220	1,800	1,150	104	10	852
3	0.58	68	28	63	31	280	194	1,090	656	85	11	513
4	272	70	33	66	30	299	182	711	387	71	11	348
5	624	68	34	82	29	274	162	509	703	60	11	241
6	355	63	33	144	29	221	624	384	14,200	53	10	179
7	237	57	33	120	28	191	500	300	3,050	47	9.5	140
8	176	52	33	107	27	174	328	244	1,730	42	8.3	113
9	130	49	33	102	26	150	260	221	1,050	39	6.9	96
10	93	50	34	91	27	128	224	185	734	37	6.6	89
11	69	50	40	80	26	117	196	155	561	36	7.9	91
12	55	54	49	71	26	134	173	125	430	34	8.8	86
13	46	44	55	66	26	135	152	2,130	341	31	7.5	87
14	39	40	57	63	29	121	134	996	269	29	6.1	85
15	33	39	70	60	29	108	119	552	223	27	5.5	72
16	31	38	70	59	34	98	134	11,100	185	24	4.9	59
17	28	39	66	55	39	96	186	6,110	155	21	4.5	53
18	26	38	64	52	38	1,980	153	2,830	132	21	3.9	48
19	24	38	59	51	41	13,100	4,020	1,710	115	20	3.1	44
20	25	38	54	49	146	5,220	2,850	1,590	102	18	1.6	40
21	24	36	51	47	151	3,030	1,540	1,090	94	17	0.87	38
22	29	35	48	46	127	2,310	968	789	91	18	0.72	39
23	28	34	48	40	120	1,640	707	594	85	17	0.47	45
24	27	34	50	37	115	1,190	983	2,280	74	15	0.09	51
25	29	32	50	38	98	1,550	874	2,560	321	14	0.17	53
26	29	31	49	35	92	1,180	642	1,370	705	13	0.06	49
27	36	31	47	33	93	777	518	891	388	13	0.01	45
28	39	30	45	33	94	571	423	635	242	15	0.01	42
29	47	30	46	33	---	443	348	467	178	13	343	38
30	80	29	48	32	---	341	286	347	230	12	1,160	38
31	86	---	55	32	---	304	---	275	---	10	7,260	---
MEAN	87.7	45.5	46.4	61.5	57.7	1,175	612	1,576	961	35.1	288	204
MAX	624	76	70	144	151	13,100	4,020	11,100	14,200	131	7,260	2,450
MIN	0.58	29	28	32	26	96	119	125	74	10	0.01	38
AC-FT	5,390	2,710	2,850	3,780	3,200	72,230	36,420	96,930	57,180	2,160	17,680	12,150

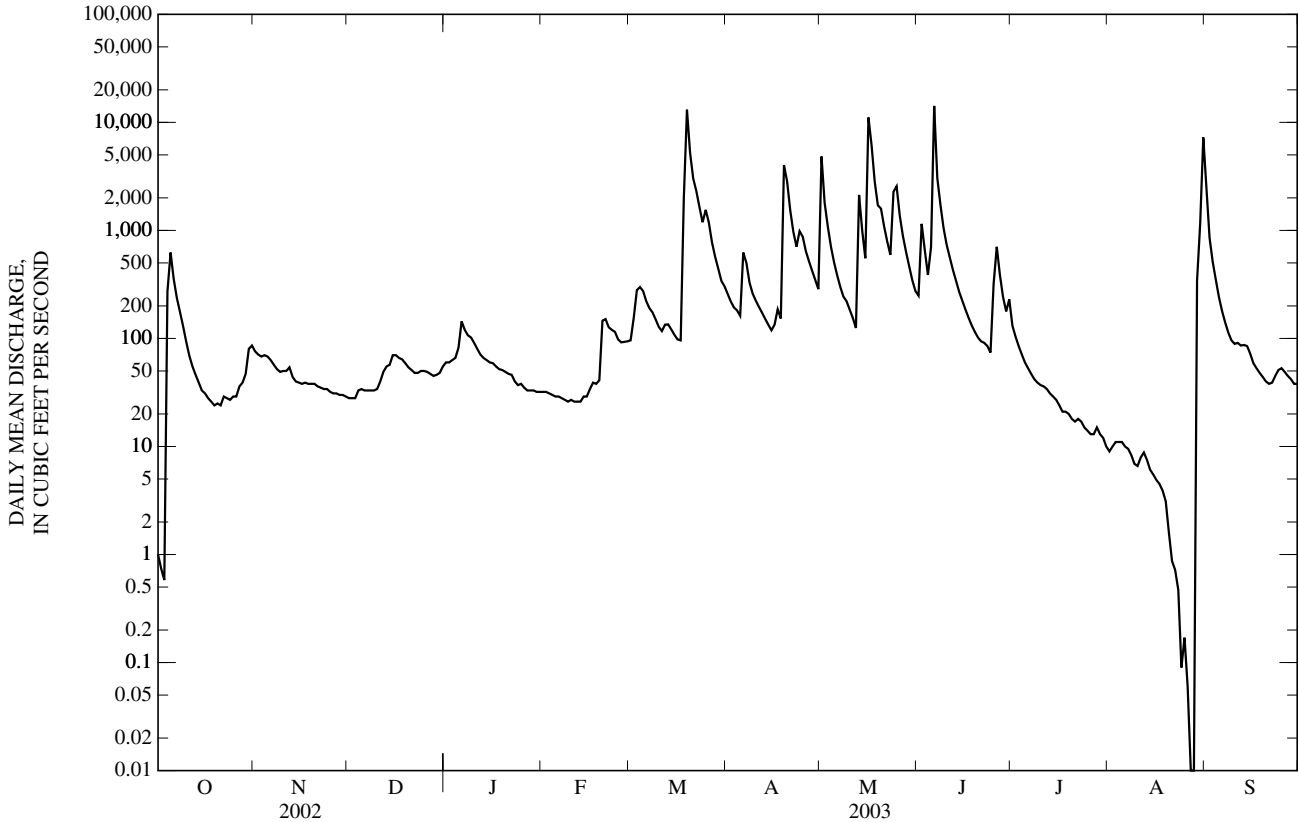
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	247	235	157	138	205	412	487	534	431	194	62.3	158
MAX	5,482	1,929	800	1,130	1,279	2,502	2,511	3,041	2,242	1,611	1,039	2,058
(WY)	(1987)	(1975)	(1993)	(1973)	(1987)	(1973)	(1944)	(1961)	(1957)	(1950)	(1950)	(1961)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.085	7.37	6.85	0.000	0.000	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1940)	(1940)	(1981)	(1956)	(1972)	(1954)	(1954)	(1953)



07172000 CANEY RIVER NEAR ELGIN, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL MEAN	142		432		272	
HIGHEST ANNUAL MEAN					891	
LOWEST ANNUAL MEAN					8.61	
HIGHEST DAILY MEAN	4,360	May 25	14,200	Jun 6	79,200	Oct 3, 1986
LOWEST DAILY MEAN	0.05	Sep 11	0.01	Aug 27	0.00	Oct 1, 1939
ANNUAL SEVEN-DAY MINIMUM	0.06	Sep 8	0.22	Aug 22	0.00	Oct 1, 1939
MAXIMUM PEAK FLOW			30,600	Jun 6	104,000	Oct 3, 1986
MAXIMUM PEAK STAGE			20.59	Jun 6	42.35	Oct 3, 1986
INSTANTANEOUS LOW FLOW			0.00	Aug 27	0.00	at times
ANNUAL RUNOFF (AC-FT)	102,900		312,700		196,700	
10 PERCENT EXCEEDS	257		922		526	
50 PERCENT EXCEEDS	18		63		40	
90 PERCENT EXCEEDS	0.20		14		0.07	



## ARKANSAS RIVER BASIN

## 07179500 NEOSHO RIVER AT COUNCIL GROVE, KS

LOCATION.--Lat 38°39'54", long 96°29'38", in NE ¼ NW ¼ sec.14, T.16 S., R.8 E., Morris County, Hydrologic Unit 11070201, on right bank at downstream side of bridge, 300 ft downstream from Mozler Creek, 1.0 mi upstream from Elm Creek, 1.7 mi downstream from Council Grove Lake, and at mile 448.0.

DRAINAGE AREA.--250 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1341: 1939-40(M), 1942.

GAGE.--Water-stage recorder. Concrete control since Jan. 8, 1997. Datum of gage is 1,205.63 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to June 7, 1940, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow completely regulated since 1964 by Council Grove Lake (station 07179400), 1.7 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1903 reached a stage of 37.3 ft at water plant, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

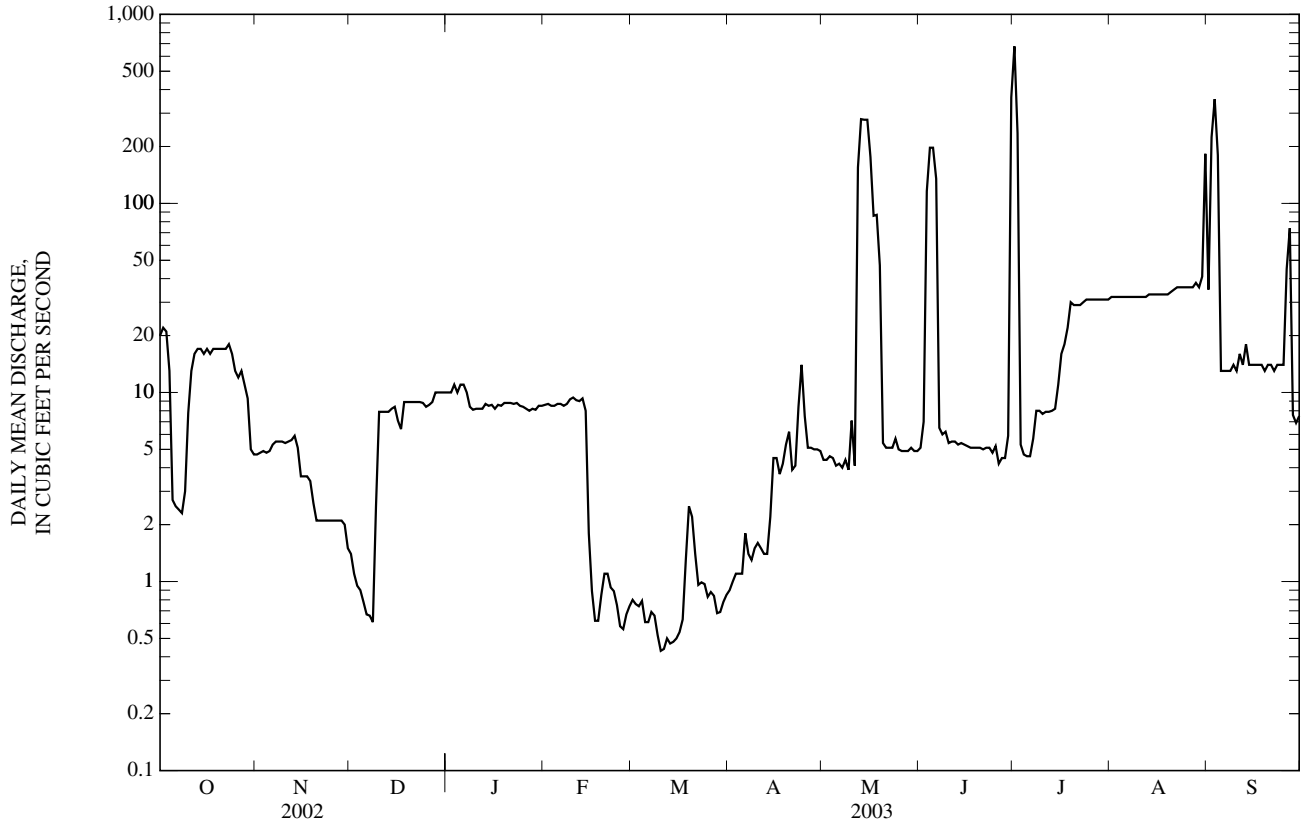
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	4.7	1.4	10	8.6	0.80	0.90	4.4	5.1	677	32	35
2	22	4.8	1.1	10	8.7	0.76	1.0	4.4	7.0	235	32	224
3	21	4.9	0.95	11	8.5	0.74	1.1	4.6	116	5.3	32	356
4	13	4.8	0.90	10	8.5	0.79	1.1	4.5	197	4.7	32	180
5	2.7	4.9	0.78	11	8.7	0.61	1.1	4.1	197	4.6	32	13
6	2.5	5.3	0.67	11	8.7	0.61	1.8	4.2	135	4.6	32	13
7	2.4	5.5	0.66	10	8.5	0.69	1.4	4.0	6.5	5.7	32	13
8	2.3	5.5	0.61	8.4	8.7	0.66	1.3	4.4	6.0	8.0	32	13
9	3.0	5.5	2.5	8.1	9.2	0.52	1.5	3.9	6.2	8.0	32	14
10	7.8	5.4	7.9	8.2	9.4	0.43	1.6	7.1	5.4	7.7	32	13
11	13	5.5	7.9	8.2	9.1	0.44	1.5	4.1	5.5	7.9	32	16
12	16	5.6	7.9	8.2	9.0	0.50	1.4	155	5.5	7.9	32	14
13	17	5.9	7.9	8.7	9.3	0.47	1.4	279	5.3	8.0	33	18
14	17	5.1	8.2	8.5	8.0	0.48	2.2	277	5.4	8.2	33	14
15	16	3.6	8.4	8.6	1.8	0.50	4.5	277	5.3	11	33	14
16	17	3.6	7.1	8.2	0.89	0.54	4.5	176	5.2	16	33	14
17	16	3.6	6.4	8.6	0.62	0.63	3.7	86	5.1	18	33	14
18	17	3.4	8.9	8.5	0.62	1.3	4.2	87	5.1	22	33	14
19	17	2.6	8.9	8.8	0.85	2.5	5.3	47	5.1	30	33	13
20	17	2.1	8.9	8.8	1.1	2.2	6.2	5.4	5.1	29	34	14
21	17	2.1	8.9	8.8	1.1	1.4	3.9	5.1	5.0	29	35	14
22	17	2.1	8.9	8.7	0.93	0.96	4.1	5.1	5.1	29	36	13
23	18	2.1	8.9	8.8	0.89	0.99	8.4	5.1	5.1	30	36	14
24	16	2.1	8.8	8.5	0.75	0.97	14	5.7	4.8	31	36	14
25	13	2.1	8.4	8.4	0.58	0.83	7.5	5.0	5.2	31	36	14
26	12	2.1	8.6	8.2	0.56	0.88	5.1	4.9	4.2	31	36	45
27	13	2.1	8.9	8.0	0.67	0.84	5.1	4.9	4.5	31	36	74
28	11	2.1	10	8.2	0.74	0.68	5.0	4.9	4.5	31	38	7.6
29	9.3	2.0	10	8.1	---	0.69	5.0	5.1	5.9	31	36	6.9
30	5.0	1.5	10	8.5	---	0.78	4.9	4.9	364	31	41	7.5
31	4.7	---	10	8.5	---	0.85	---	4.9	---	31	183	---
MEAN	12.8	3.75	6.43	8.89	4.82	0.84	3.69	48.2	38.1	46.9	38.6	41.0
MAX	22	5.9	10	11	9.4	2.5	14	279	364	677	183	356
MIN	2.3	1.5	0.61	8.0	0.56	0.43	0.90	3.9	4.2	4.6	32	6.9
AC-FT	785	223	395	546	268	52	220	2,960	2,270	2,890	2,380	2,440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

MEAN	109	62.9	58.3	52.8	61.2	116	195	222	240	209	71.4	75.7
MAX	1,387	852	718	503	579	702	1,424	1,387	1,656	2,858	1,103	984
(WY)	(1974)	(1999)	(1945)	(1973)	(1949)	(1973)	(1944)	(1993)	(1995)	(1951)	(1993)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.43	0.030	0.000	0.000	0.000
(WY)	(1939)	(1939)	(1939)	(1939)	(1939)	(1940)	(1940)	(1954)	(1956)	(1940)	(1939)	(1939)

07179500 NEOSHO RIVER AT COUNCIL GROVE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL MEAN	8.74		21.3		123	
HIGHEST ANNUAL MEAN					498	1951
LOWEST ANNUAL MEAN					5.37	1953
HIGHEST DAILY MEAN	23	Aug 3	677	Jul 1	34,000	Jul 11, 1951
LOWEST DAILY MEAN	0.61	Dec 8	0.43	Mar 10	0.00	Oct 1, 1938
ANNUAL SEVEN-DAY MINIMUM	0.81	Dec 2	0.48	Mar 9	0.00	Oct 1, 1938
MAXIMUM PEAK FLOW			709	Aug 31	121,000	Jul 11, 1951
MAXIMUM PEAK STAGE			10.52	Aug 31	36.29	Jul 11, 1951
INSTANTANEOUS LOW FLOW			0.40	Mar 9	0.00	at times
ANNUAL RUNOFF (AC-FT)	6,330		15,420		89,080	
10 PERCENT EXCEEDS	19		33		225	
50 PERCENT EXCEEDS	7.4		7.9		13	
90 PERCENT EXCEEDS	2.1		0.89		0.82	



## ARKANSAS RIVER BASIN

## 07179730 NEOSHO RIVER NEAR AMERICUS, KS

LOCATION.--Lat 38°28'01", long 96°15'01", in SW ¼ SW ¼ NW ¼ sec.24, T.18 S., R.10 E., Lyon County, Hydrologic Unit 11070201, on right bank, 0.1 mi below Ruggles Dam, 2.0 mi south of Americus, 12.5 mi upstream from Allen Creek, and 24.0 mi upstream from Cottonwood River.

DRAINAGE AREA.--622 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,106.99 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Apr. 10, 1989, to Nov. 1990 at site 0.4 mi upstream at present datum. Aug. 8, 1963, to Apr. 11, 1989, and Nov. 21, 1990, to current year, water-stage recorder at present site and datum.

REMARKS.--Records good. Flow moderately regulated since 1964 by Council Grove Lake (station 07179400). Low flow occasionally regulated by Ruggles Dam 0.1 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	73	10	19	16	15	33	201	42	445	24	3,130
2	21	47	10	18	16	15	32	170	98	654	26	348
3	38	35	9.7	18	16	15	31	148	257	194	26	384
4	85	30	9.4	18	16	16	30	151	235	32	26	427
5	133	27	8.9	18	15	15	28	138	269	21	27	241
6	46	23	8.7	18	15	14	30	112	266	17	26	69
7	20	21	8.6	18	14	14	30	99	258	15	24	54
8	13	20	8.6	18	14	14	30	99	89	14	24	46
9	10	17	8.4	18	14	13	28	103	60	18	25	41
10	8.4	16	8.3	17	15	13	26	558	57	19	24	38
11	7.6	15	15	15	15	12	25	881	48	18	29	85
12	8.2	15	19	15	14	12	25	239	44	18	29	480
13	12	14	18	15	13	12	24	326	40	17	27	572
14	16	14	18	15	25	12	24	391	40	16	28	637
15	16	14	18	15	129	12	23	368	35	16	27	251
16	16	14	e7.7	16	108	11	27	364	29	18	26	155
17	16	14	e2.5	15	49	13	30	261	27	19	25	122
18	16	13	16	15	34	47	33	196	26	16	26	107
19	16	13	15	15	28	64	1,180	189	24	12	25	76
20	16	13	16	17	25	447	3,620	147	22	16	24	66
21	16	12	17	16	22	422	926	127	20	26	24	62
22	16	12	17	15	20	158	322	94	21	31	26	61
23	25	11	17	12	19	102	378	78	25	29	28	57
24	29	11	17	13	18	82	4,200	76	23	27	28	54
25	48	11	17	14	14	68	3,900	85	28	24	28	47
26	41	10	17	15	15	58	853	91	29	23	28	41
27	86	10	18	14	14	51	410	69	60	18	27	42
28	102	10	18	15	14	45	299	58	33	14	33	107
29	125	10	18	15	---	41	250	53	29	14	65	52
30	63	10	20	16	---	37	228	49	87	15	166	33
31	50	---	19	16	---	34	---	45	---	23	4,270	---
MEAN	36.6	18.5	13.9	15.9	26.0	60.8	569	192	77.4	59.3	169	263
MAX	133	73	20	19	129	447	4,200	881	269	654	4,270	3,130
MIN	7.6	10	2.5	12	13	11	23	45	20	12	24	33
AC-FT	2,250	1,100	854	980	1,440	3,740	33,870	11,830	4,600	3,650	10,400	15,640

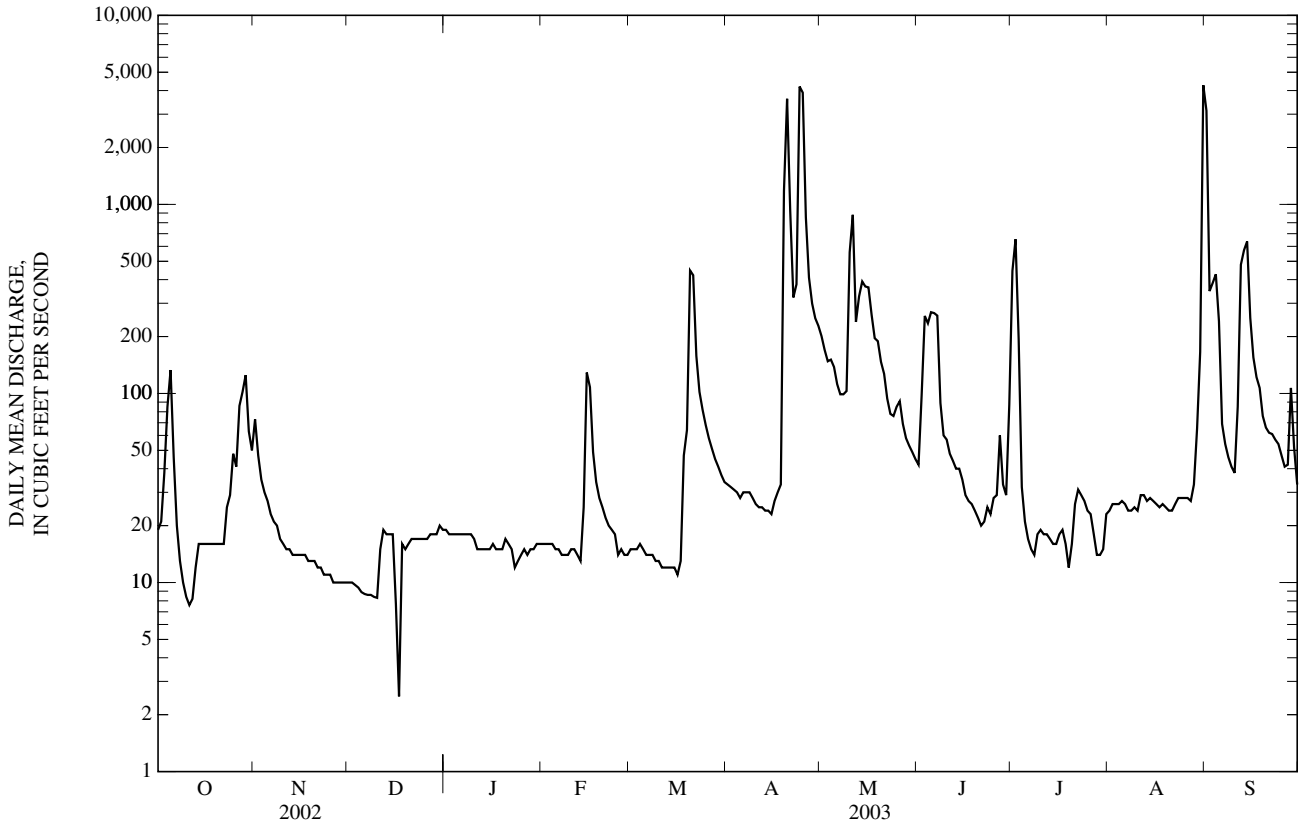
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	264	220	166	128	202	348	530	602	621	405	160	174
MAX	2,278	2,304	916	854	1,048	2,100	2,258	3,285	2,761	3,127	1,498	1,526
(WY)	(1974)	(1999)	(1974)	(1973)	(1973)	(1973)	(1999)	(1995)	(1995)	(1993)	(1993)	(1973)
MIN	2.41	6.90	5.87	3.73	3.64	6.87	11.1	24.4	15.9	12.5	12.5	10.7
(WY)	(1965)	(1967)	(1967)	(1967)	(1967)	(1967)	(1989)	(1967)	(1989)	(1964)	(1978)	(1980)

07179730 NEOSHO RIVER NEAR AMERICUS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL MEAN	69.8		125		318	
HIGHEST ANNUAL MEAN					1,106	1993
LOWEST ANNUAL MEAN					28.2	1989
HIGHEST DAILY MEAN	2,670	May 9	4,270	Aug 31	14,700	Nov 2, 1998
LOWEST DAILY MEAN	2.5	Dec 17	2.5	Dec 17	0.00	Oct 2, 1963
ANNUAL SEVEN-DAY MINIMUM	8.7	Dec 4	8.7	Dec 4	0.24	Oct 26, 1964
MAXIMUM PEAK FLOW			5,810	Sep 1	17,400	Jul 22, 1993
MAXIMUM PEAK STAGE			20.98	Sep 1	27.84	Jul 22, 1993
INSTANTANEOUS LOW FLOW			e0.00	Dec 16	0.00	at times
ANNUAL RUNOFF (AC-FT)	50,530		90,350		230,700	
10 PERCENT EXCEEDS	128		240		847	
50 PERCENT EXCEEDS	17		25		61	
90 PERCENT EXCEEDS	12		13		11	

e Estimated



## ARKANSAS RIVER BASIN

## 07179795 NORTH COTTONWOOD RIVER BELOW MARION LAKE, KS

LOCATION.--Lat 38°22'00", long 97°05'00", in SE ¼ NW ¼ SE ¼ sec.27, T.19 S., R.3 E., Marion County, Hydrologic Unit 11070202, on left bank, 0.25 mi downstream from outlet of dam, 1.6 mi upstream from South Cottonwood River, 3.0 mi northwest of Marion, and at mile 126.5.

DRAINAGE AREA.--200 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1968 to current year. Prior to Oct. 1, 1991, published as "Cottonwood River."

REVISED RECORDS.--WDR KS-77-1: 1976.

GAGE.--Water-stage recorder. Datum of gage is 1,296.57 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow completely regulated since 1968 by Marion Lake (station 07179794), 0.25 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	6.9	1.2	2.5	1.6	0.97	1.2	853	9.3	8.1	8.7	10
2	9.4	6.7	1.2	2.5	1.6	0.93	1.2	658	9.4	9.1	8.6	9.3
3	9.6	6.2	1.5	2.3	1.6	0.84	1.7	256	203	9.2	8.4	8.6
4	9.1	6.0	1.6	2.4	1.2	0.85	2.3	77	220	9.8	8.8	8.8
5	8.2	7.0	1.4	2.0	1.1	0.65	1.9	37	10	10	8.8	8.9
6	8.0	7.2	0.77	1.9	e0.90	1.0	1.9	10	11	10	8.9	9.0
7	7.4	6.4	0.60	1.7	e0.80	1.5	2.4	9.8	11	11	9.2	8.9
8	7.4	4.0	0.63	1.6	1.1	1.3	2.2	9.9	11	12	9.1	9.0
9	7.4	4.2	0.57	2.0	1.3	0.98	1.9	10	11	10	9.1	9.2
10	7.5	2.6	0.42	1.9	1.2	0.72	3.2	10	11	11	9.4	9.6
11	7.6	1.2	0.41	1.5	1.2	0.70	3.0	10	11	12	9.6	11
12	8.1	0.88	0.41	1.4	1.1	0.69	2.9	9.5	11	12	9.4	9.6
13	7.8	1.2	0.57	1.4	1.2	1.1	3.0	9.6	10	12	9.4	9.8
14	7.6	1.6	0.46	1.4	1.7	0.96	3.0	9.4	10	12	9.3	9.4
15	7.5	1.6	0.40	1.3	1.7	0.80	3.1	9.4	11	11	9.2	9.4
16	7.4	1.5	0.46	1.6	2.0	0.81	4.1	9.7	11	11	9.2	9.7
17	7.3	1.5	0.52	1.4	1.6	0.72	4.4	9.4	11	9.3	9.3	9.8
18	7.2	2.1	0.54	1.2	1.1	4.5	4.1	9.3	11	9.5	9.4	10
19	7.9	2.6	0.66	1.3	1.1	4.3	5.3	309	11	10	9.2	9.6
20	7.7	2.5	0.88	1.2	1.1	2.7	4.5	542	11	10	9.1	9.4
21	7.5	3.1	0.88	1.3	1.0	1.3	3.8	537	11	10	8.9	9.5
22	7.5	2.9	1.0	1.4	1.7	0.96	3.7	538	11	10	8.9	9.5
23	8.5	2.4	2.8	1.3	e1.3	0.84	5.1	372	14	10	8.8	9.0
24	8.9	3.2	2.9	1.3	e1.0	0.90	4.9	9.7	12	9.9	9.0	9.3
25	7.1	3.8	2.4	1.3	e0.90	1.3	4.2	9.5	12	9.7	9.4	9.4
26	6.6	3.1	2.2	1.2	e0.80	0.92	325	9.4	10	9.4	9.7	9.7
27	7.4	2.1	2.1	1.2	e0.80	1.3	523	9.4	9.3	9.5	9.9	10
28	7.0	1.6	2.0	1.4	0.93	2.4	718	9.3	10	8.2	10	11
29	6.4	1.4	2.0	1.4	---	2.0	844	9.2	11	9.3	10	13
30	8.0	1.5	2.4	1.5	---	1.2	842	9.2	8.7	8.5	11	9.7
31	8.0	---	2.6	1.5	---	1.1	---	9.4	---	8.5	11	---
MEAN	7.79	3.30	1.24	1.59	1.24	1.33	111	141	24.1	10.1	9.31	9.64
MAX	9.6	7.2	2.9	2.5	2.0	4.5	844	853	220	12	11	13
MIN	6.4	0.88	0.40	1.2	0.80	0.65	1.2	9.2	8.7	8.1	8.4	8.6
AC-FT	479	196	76	98	69	82	6,610	8,690	1,440	619	573	573

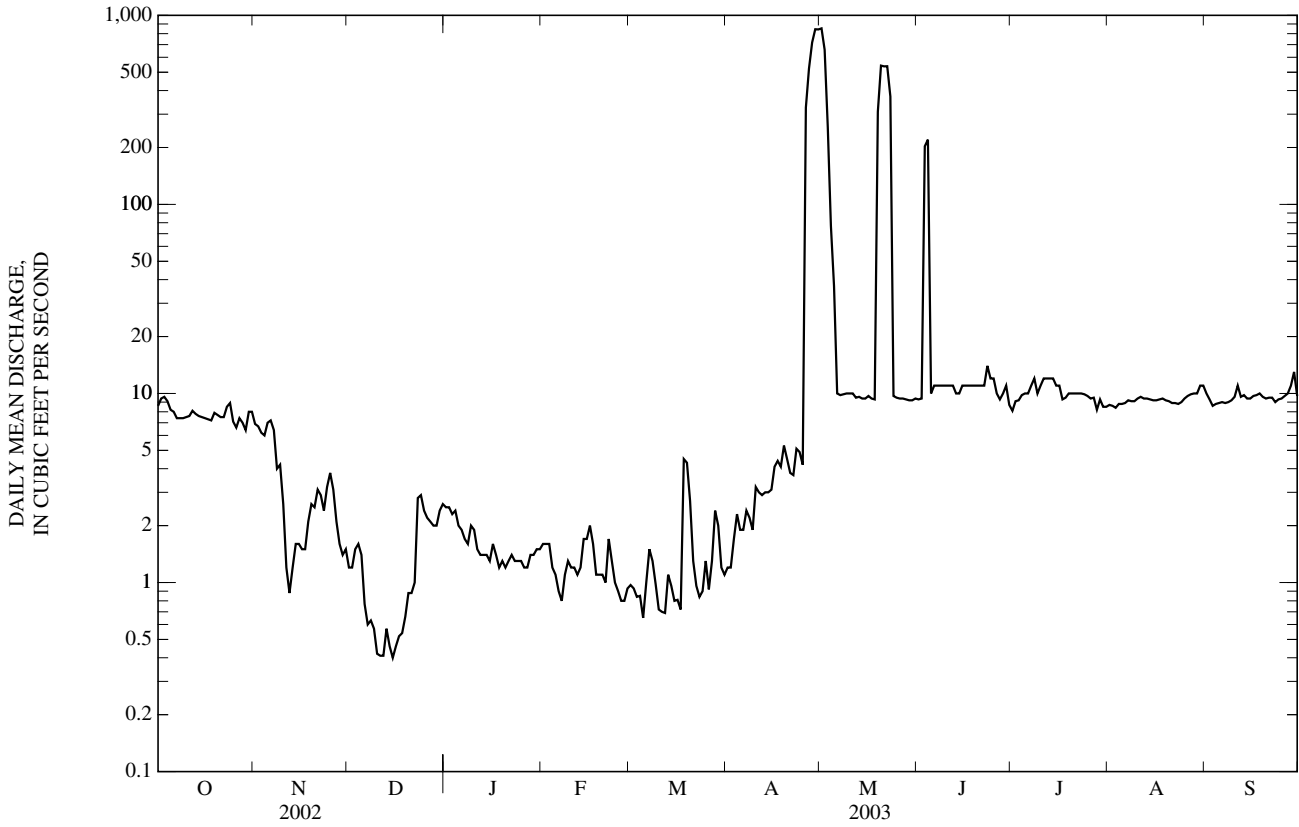
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	56.6	64.3	44.2	28.7	54.7	78.3	106	139	133	107	35.9	27.1
MEAN	56.6	64.3	44.2	28.7	54.7	78.3	106	139	133	107	35.9	27.1
MAX	692	549	469	229	411	703	559	1,035	860	997	528	191
(WY)	(1974)	(1999)	(1999)	(1973)	(1973)	(1973)	(1973)	(1993)	(1995)	(1993)	(1993)	(1985)
MIN	0.99	1.04	0.67	0.77	1.05	0.70	0.54	1.61	2.00	3.85	1.87	1.74
(WY)	(1969)	(1969)	(1969)	(1992)	(1992)	(1969)	(1969)	(1992)	(1992)	(1992)	(1992)	(1992)

07179795 NORTH COTTONWOOD RIVER BELOW MARION LAKE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL MEAN	22.4		26.9		72.9	
HIGHEST ANNUAL MEAN					322	1993
LOWEST ANNUAL MEAN					1.98	1992
HIGHEST DAILY MEAN	687	May 10	853	May 1	4,000	May 26, 1993
LOWEST DAILY MEAN	0.40	Dec 15	0.40	Dec 15	0.00	Oct 3, 1984
ANNUAL SEVEN-DAY MINIMUM	0.45	Dec 10	0.45	Dec 10	0.25	Mar 30, 1969
MAXIMUM PEAK FLOW			878	May 1	4,530	May 26, 1993
MAXIMUM PEAK STAGE			8.54	May 1	22.58	Dec 4, 1998
INSTANTANEOUS LOW FLOW			0.24	Jan 17	0.00	Oct 3, 1984
ANNUAL RUNOFF (AC-FT)	16,250		19,500		52,820	
10 PERCENT EXCEEDS	12		11		101	
50 PERCENT EXCEEDS	6.2		7.4		7.5	
90 PERCENT EXCEEDS	1.5		0.95		1.9	

e Estimated



## ARKANSAS RIVER BASIN

## 07180400 COTTONWOOD RIVER NEAR FLORENCE, KS

LOCATION.--Lat 38°14'10", long 96°52'37", in NW ¼ SW ¼ sec.10, T.21 S., R.5 E., Marion County, Hydrologic Unit 11070202, on left bank at downstream side of county highway bridge, 0.4 mi upstream from Martin Creek, 2.5 mi east of Florence, 3.3 mi downstream from Doyle Creek, and at mile 102.4.

DRAINAGE AREA.--754 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Datum of gage is 1,231.49 ft above NGVD of 1929. Since Aug. 10, 1965, auxiliary water-stage recorder 2.8 mi downstream at datum 1,219.49 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow moderately regulated since 1968 by Marion Lake (station 07179794), 24 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1872, 32.5 ft, July 11, 1951, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	112	36	36	31	29	72	1,160	110	113	33	1,240
2	23	73	35	35	32	30	70	1,060	118	84	32	234
3	53	57	34	34	32	30	69	663	144	73	31	108
4	379	47	34	34	31	31	69	272	430	65	30	68
5	406	41	35	33	30	31	67	240	205	58	27	55
6	108	39	35	33	30	30	68	167	134	56	27	49
7	55	39	36	32	27	30	69	145	192	52	26	47
8	38	38	37	33	28	30	66	140	137	50	27	44
9	33	38	36	33	31	29	64	137	116	50	28	42
10	30	37	36	32	30	28	63	420	103	52	27	41
11	29	35	36	31	29	28	65	324	100	50	32	1,760
12	28	33	37	31	30	28	64	204	104	52	31	1,840
13	28	32	39	30	30	28	63	199	95	49	27	477
14	29	36	39	31	47	28	62	275	96	48	23	224
15	29	37	40	30	54	29	61	188	92	46	24	130
16	29	35	38	29	49	29	63	649	84	43	24	96
17	29	36	37	30	41	30	62	745	81	40	24	85
18	29	37	37	34	37	92	63	297	78	38	24	77
19	30	36	35	32	35	1,440	369	232	73	38	23	71
20	28	36	36	33	33	2,980	1,560	1,150	78	35	19	67
21	28	35	34	33	32	1,010	642	894	81	37	20	70
22	28	35	32	30	31	303	237	724	77	41	21	92
23	36	34	32	e28	31	183	456	683	73	41	19	104
24	47	35	34	e29	29	140	3,770	303	72	39	20	74
25	81	35	34	31	29	117	4,480	494	77	37	20	63
26	201	34	35	31	29	104	1,110	277	440	33	18	59
27	196	35	37	30	29	96	937	176	156	30	20	54
28	535	35	35	32	29	89	895	148	91	30	24	52
29	232	35	35	33	---	82	1,120	133	787	29	41	51
30	111	36	36	32	---	76	1,080	124	322	28	67	56
31	108	---	36	33	---	73	---	115	---	32	2,020	---
MEAN	98.0	40.8	35.7	31.9	33.1	235	595	411	158	47.4	91.3	248
MAX	535	112	40	36	54	2,980	4,480	1,160	787	113	2,020	1,840
MIN	22	32	32	28	27	28	61	115	72	28	18	41
AC-FT	6,030	2,430	2,200	1,960	1,840	14,450	35,380	25,270	9,410	2,910	5,610	14,740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

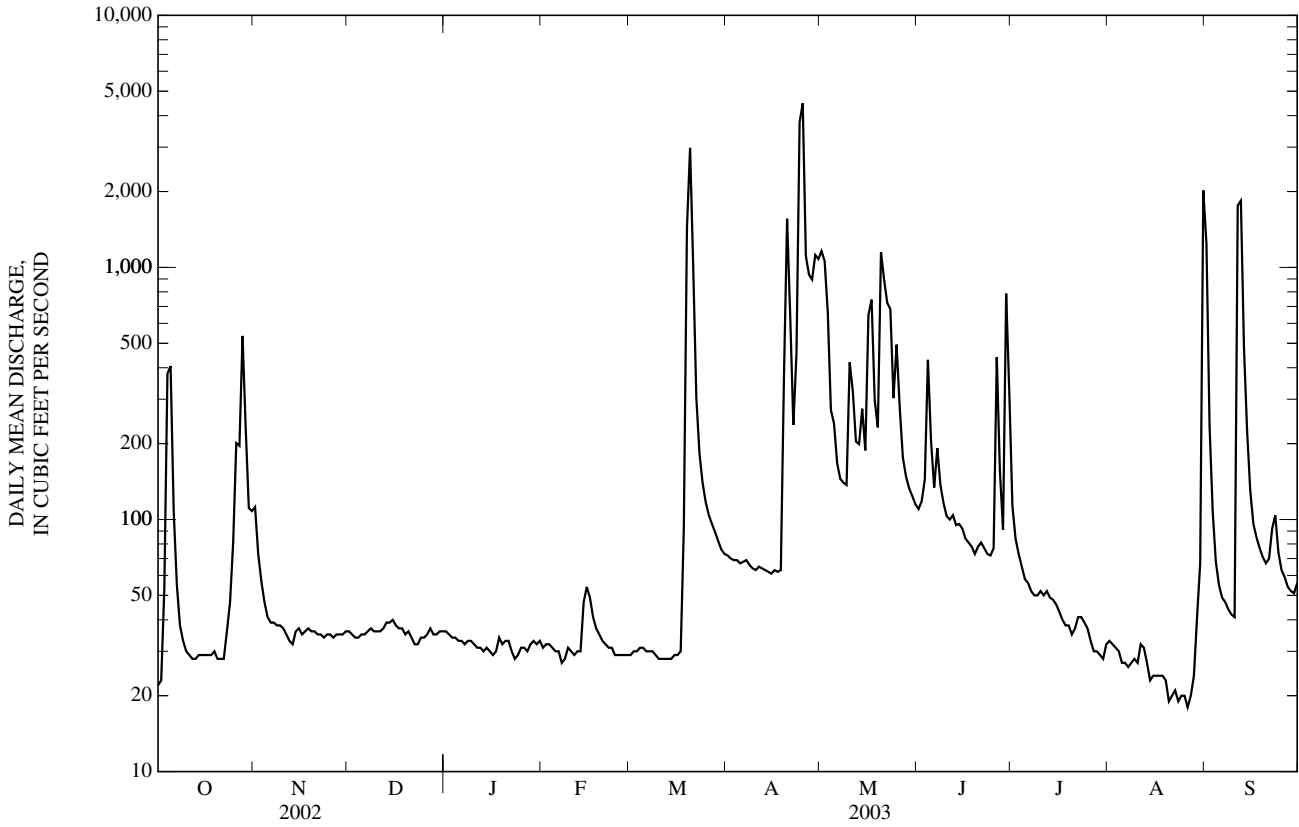
MEAN	270	309	158	133	224	374	416	552	680	355	148	221
MAX	2,203	4,356	755	728	1,308	3,251	1,533	4,981	3,691	4,044	833	1,755
(WY)	(1986)	(1999)	(1999)	(1962)	(1973)	(1973)	(1983)	(1993)	(1965)	(1993)	(1985)	(1962)
MIN	11.5	19.8	18.2	20.4	19.8	26.9	25.6	23.0	53.4	22.8	16.9	21.8
(WY)	(1965)	(1967)	(1992)	(1967)	(1967)	(1981)	(1981)	(1967)	(1991)	(1966)	(1991)	(1966)



07180400 COTTONWOOD RIVER NEAR FLORENCE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL MEAN	127		169		320	
HIGHEST ANNUAL MEAN					1,298	1993
LOWEST ANNUAL MEAN					39.9	1991
HIGHEST DAILY MEAN	3,040	Jun 13	4,480	Apr 25	47,800	Nov 2, 1998
LOWEST DAILY MEAN	20	Sep 8	18	Aug 26	4.8	Jun 28, 1991
ANNUAL SEVEN-DAY MINIMUM	21	Sep 7	20	Aug 20	6.9	Oct 8, 1964
MAXIMUM PEAK FLOW			5,130	Apr 25	73,700	Nov 2, 1998
MAXIMUM PEAK STAGE			16.04	Apr 25	28.81	Nov 2, 1998
INSTANTANEOUS LOW FLOW			17	Aug 26	4.4	Jun 28, 1991
ANNUAL RUNOFF (AC-FT)	91,990		122,200		231,600	
10 PERCENT EXCEEDS	194		342		645	
50 PERCENT EXCEEDS	35		39		81	
90 PERCENT EXCEEDS	27		28		28	

e Estimated



ARKANSAS RIVER BASIN

07180500 CEDAR CREEK NEAR CEDAR POINT, KS

LOCATION.--Lat 38°11'55", long 96°49'22", in NE ¼ SE ¼ NE ¼ sec.25, T.21 S., R.5 E., Chase County, Hydrologic Unit 11070202, on right bank at upstream side of county highway bridge, 4.0 mi south of Cedar Point, and at mile 9.4.

DRAINAGE AREA.--110 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 1211: 1944(M). WSP 1341: 1940-41, 1942(M), 1943, 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 1,262.50 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 28, 1944, nonrecording gage at present site and datum.

REMARKS.--Records good. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1929 reached a stage of 24.63 ft from floodmarks on house on left bank where flood in 1951 reached a stage of 25.7 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 11	1800	*3,290	*11.33			No peak greater than base discharge.	

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

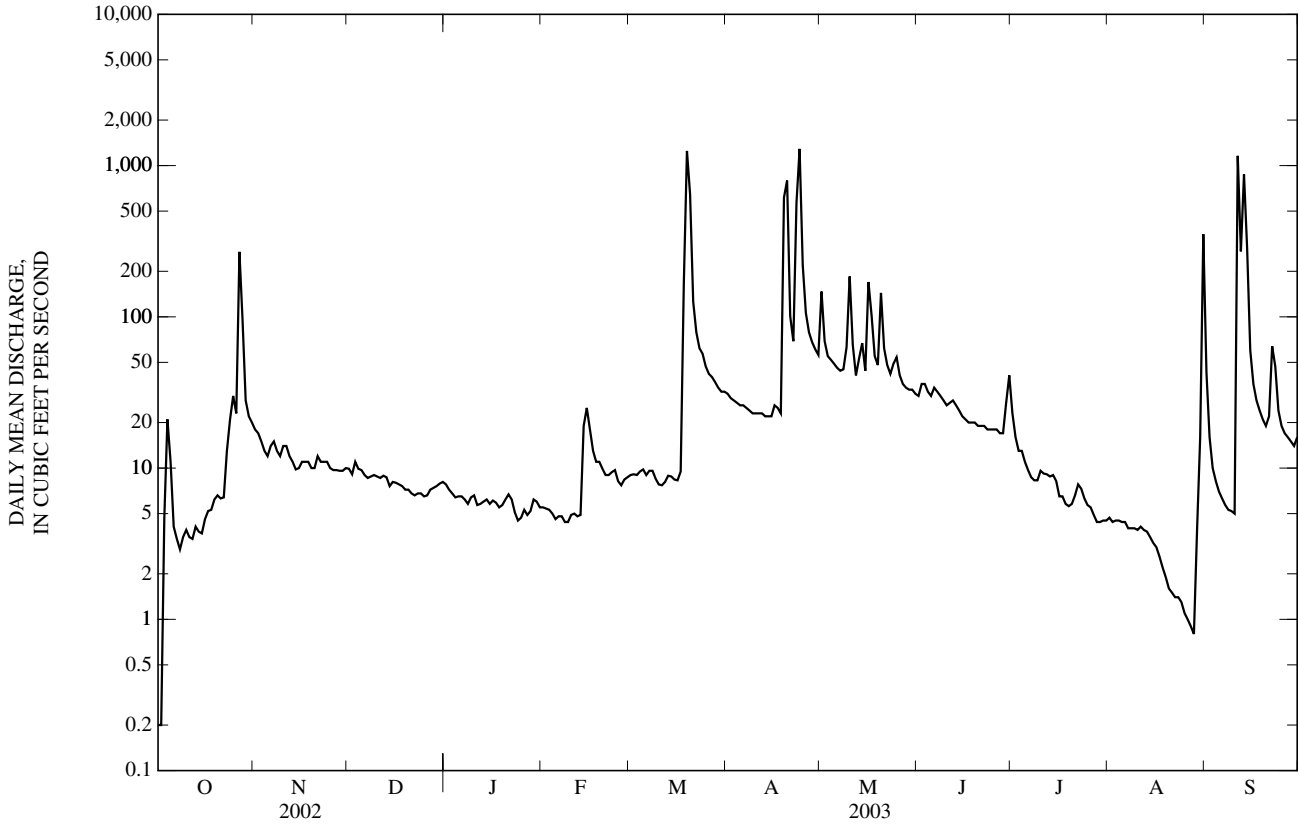
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.20	18	9.9	7.8	5.5	9.0	31	147	30	23	4.7	43
2	0.20	17	9.1	7.2	5.4	9.1	29	69	36	16	4.4	16
3	4.7	15	11	6.8	5.3	9.0	28	55	36	13	4.5	10
4	21	13	9.9	6.4	5.0	9.5	27	52	32	13	4.5	8.2
5	11	12	9.7	6.5	4.6	9.8	26	49	30	11	4.4	7.0
6	4.1	14	9.0	6.5	4.8	9.0	26	46	34	9.7	4.4	6.3
7	3.4	15	8.6	6.2	4.8	9.6	25	44	32	8.7	4.0	5.7
8	2.9	13	8.8	5.8	4.4	9.6	24	45	30	8.3	4.0	5.3
9	3.5	12	9.0	6.4	4.4	8.5	23	63	28	8.3	4.0	5.2
10	3.9	14	8.8	6.6	4.9	7.8	23	185	26	9.6	3.9	5.0
11	3.5	14	8.6	5.7	5.0	7.7	23	65	27	9.2	4.1	1,160
12	3.4	12	8.9	5.8	4.8	8.1	23	41	28	9.1	3.9	271
13	4.1	11	8.7	6.0	4.9	8.9	22	53	26	8.8	3.8	874
14	3.8	9.8	7.6	6.2	19	8.8	22	67	24	9.0	3.5	285
15	3.7	10	8.1	5.8	25	8.4	22	44	22	8.2	3.2	60
16	4.6	11	8.0	6.1	18	8.3	26	170	21	6.5	3.0	36
17	5.2	11	7.8	5.9	13	9.5	25	102	20	6.5	2.6	28
18	5.3	11	7.6	5.5	11	165	23	55	20	5.8	2.2	24
19	6.2	10	7.2	5.7	11	1,250	615	48	20	5.6	1.9	21
20	6.6	10	7.2	6.2	9.9	646	796	144	19	5.8	1.6	19
21	6.3	12	6.8	6.7	9.0	126	101	62	19	6.6	1.5	22
22	6.4	11	6.6	6.2	9.0	79	69	48	19	7.8	1.4	64
23	13	11	6.8	5.1	9.4	62	567	42	18	7.3	1.4	47
24	21	11	6.8	4.5	9.7	57	1,290	49	18	6.3	1.3	24
25	30	10	6.5	4.7	8.2	47	220	54	18	5.7	1.1	19
26	23	9.7	6.6	5.3	7.7	42	106	41	18	5.5	1.0	17
27	269	9.7	7.2	4.9	8.4	40	79	36	17	4.9	0.90	16
28	95	9.6	7.4	5.2	8.7	37	68	34	17	4.4	0.80	15
29	28	9.6	7.6	6.2	---	34	61	33	27	4.4	3.9	14
30	22	10	7.9	6.0	---	32	56	33	41	4.5	16	16
31	20	---	8.1	5.5	---	32	---	31	---	4.5	352	---
MEAN	20.5	11.9	8.12	5.98	8.60	90.3	149	64.7	25.1	8.29	14.6	105
MAX	269	18	11	7.8	25	1,250	1,290	185	41	23	352	1,160
MIN	0.20	9.6	6.5	4.5	4.4	7.7	22	31	17	4.4	0.80	5.0
MED	5.3	11	8.0	6.0	8.0	9.6	28	49	25	7.8	3.8	19
AC-FT	1,260	707	499	368	478	5,550	8,880	3,980	1,490	510	900	6,240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

MEAN	46.2	40.3	30.3	26.1	41.9	70.6	90.6	86.2	120	62.4	29.0	39.2
MAX	392	542	264	195	260	449	554	507	814	594	179	414
(WY)	(1986)	(1999)	(1945)	(1949)	(2001)	(1973)	(1944)	(1993)	(1965)	(1951)	(1995)	(1941)
MIN	0.000	0.000	0.000	0.000	0.000	0.44	0.58	0.006	0.000	0.000	0.000	0.000
(WY)	(1940)	(1954)	(1955)	(1940)	(1957)	(1956)	(1954)	(1955)	(1955)	(1954)	(1954)	(1953)

07180500 CEDAR CREEK NEAR CEDAR POINT, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL MEAN	23.1		42.6		56.8	
HIGHEST ANNUAL MEAN					159	1993
LOWEST ANNUAL MEAN					0.91	1954
HIGHEST DAILY MEAN	1,100	Jun 13	1,290	Apr 24	10,900	Jun 29, 1951
LOWEST DAILY MEAN	0.20	Oct 1	0.20	Oct 1	0.00	Jul 12, 1939
ANNUAL SEVEN-DAY MINIMUM	0.55	Sep 26	1.1	Aug 22	0.00	Jul 12, 1939
MAXIMUM PEAK FLOW			3,290	Sep 11	52,400	Jun 29, 1951
MAXIMUM PEAK STAGE			11.33	Sep 11	23.70	Jun 29, 1951
INSTANTANEOUS LOW FLOW			0.11	Oct 2	0.00	at times
ANNUAL RUNOFF (AC-FT)	16,750		30,860		41,170	
10 PERCENT EXCEEDS	30		58		75	
50 PERCENT EXCEEDS	6.4		9.8		16	
90 PERCENT EXCEEDS	2.1		4.4		1.9	



07182250 COTTONWOOD RIVER NEAR PLYMOUTH, KS

LOCATION.--Lat 38°23'51", long 96°21'21", in NE ¼ NE ¼ SE ¼ sec.13, T.19 S., R.9 E., Chase County. Hydrologic Unit 11070203, on right bank at upstream side of county highway bridge, 0.8 mi downstream from Buckeye Creek, 1.5 mi southwest of Plymouth, and at mile 39.2.

DRAINAGE AREA.--1,740 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,109.04 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow partially regulated since 1968 by Marion Lake (station 07179794), 87.3 mi upstream. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903, 37.8 ft, July 11, 1951, from information by local residents, discharge not determined.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 20	2000	6,270	20.73	Aug 31	1000	11,800	29.35
Apr 20	1000	7,620	23.13	Sep 13	1500	5,960	20.15
Apr 25	0000	*13,700	*31.62				

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	293	80	73	59	79	340	1,790	373	846	53	6,580
2	25	270	81	71	60	79	325	1,850	409	406	55	2,620
3	38	230	80	70	60	79	310	1,650	477	275	59	883
4	57	184	80	70	57	80	299	1,330	445	223	61	462
5	245	152	78	68	56	83	285	982	649	191	59	287
6	557	133	78	66	56	81	275	833	652	165	56	215
7	256	116	79	65	54	81	277	746	613	146	53	173
8	130	107	79	65	e53	81	266	686	540	134	52	148
9	82	103	79	64	51	79	254	784	455	123	51	131
10	60	103	79	63	52	76	244	2,210	369	119	51	118
11	49	99	80	61	53	74	239	1,920	374	122	55	427
12	44	95	79	60	53	74	232	1,060	657	118	53	4,030
13	39	92	79	60	53	74	227	853	838	112	52	5,270
14	36	90	78	60	106	74	216	821	506	107	54	3,250
15	34	86	79	59	136	73	208	844	373	102	52	1,480
16	31	89	80	e60	131	72	213	816	311	95	49	833
17	31	90	79	e59	130	73	219	1,240	275	90	45	652
18	34	90	80	56	119	326	211	1,360	249	84	43	522
19	35	87	77	59	104	1,820	2,050	897	232	80	42	439
20	34	86	74	63	93	5,690	7,200	785	219	77	40	387
21	33	83	74	e62	87	5,420	5,080	1,430	211	73	39	373
22	34	83	71	e62	82	2,380	1,950	1,340	211	71	39	420
23	42	85	70	e62	80	1,050	1,310	1,120	205	69	35	420
24	49	82	68	57	80	782	9,060	1,070	194	e72	34	485
25	77	81	66	61	e78	646	12,600	886	192	e69	33	370
26	106	79	e66	60	73	552	9,440	891	195	e66	28	305
27	353	77	69	59	76	497	4,140	756	457	e63	26	271
28	594	78	73	58	78	451	2,030	586	452	e61	29	244
29	851	79	75	57	---	406	1,750	490	701	59	45	224
30	544	80	75	59	---	373	1,790	438	1,030	56	629	224
31	334	---	74	60	---	355	---	400	---	55	10,600	---
MEAN	157	113	76.1	62.2	77.5	712	2,101	1,060	429	140	406	1,075
MAX	851	293	81	73	136	5,690	12,600	2,210	1,030	846	10,600	6,580
MIN	24	77	66	56	51	72	208	400	192	55	26	118
AC-FT	9,640	6,750	4,680	3,830	4,300	43,760	125,000	65,190	25,520	8,590	24,940	63,950

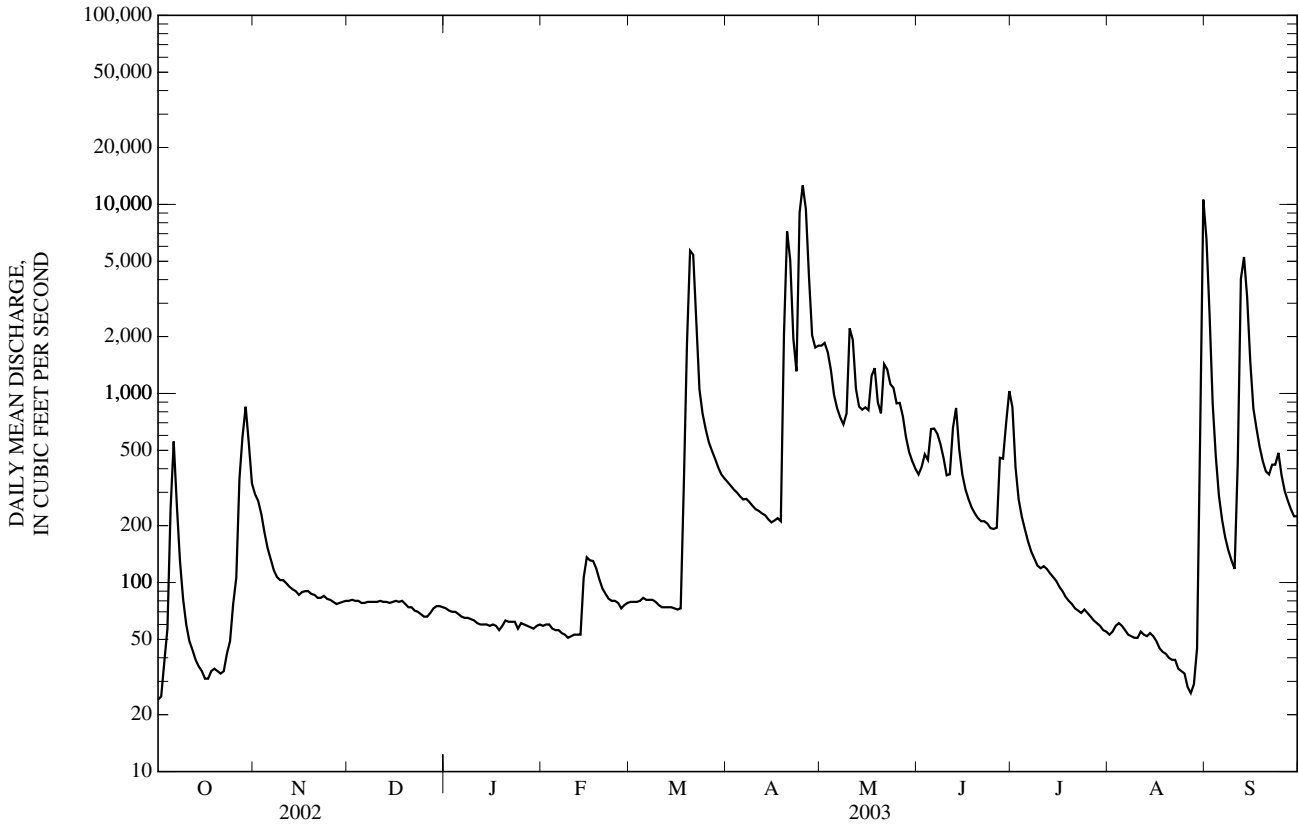
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

	705	768	459	365	663	1,091	1,357	1,468	1,831	853	408	486
MEAN	705	768	459	365	663	1,091	1,357	1,468	1,831	853	408	486
MAX (WY)	6,370 (1986)	8,861 (1999)	2,389 (1993)	1,727 (1974)	2,948 (1973)	7,548 (1973)	5,588 (1999)	8,608 (1993)	9,568 (1965)	7,881 (1993)	2,199 (1985)	2,654 (1965)
MIN (WY)	12.3 (1992)	29.5 (1981)	31.9 (1992)	38.0 (1981)	31.9 (1967)	43.0 (1981)	48.2 (1989)	51.2 (1967)	127 (1980)	42.0 (1980)	21.4 (1991)	20.6 (1980)

07182250 COTTONWOOD RIVER NEAR PLYMOUTH, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL MEAN	320		533		870	
HIGHEST ANNUAL MEAN					2,701	1993
LOWEST ANNUAL MEAN					121	1991
HIGHEST DAILY MEAN	5,400	Jun 14	12,600	Apr 25	73,500	Nov 2, 1998
LOWEST DAILY MEAN	22	Sep 12	24	Oct 1	8.7	Oct 21, 1964
ANNUAL SEVEN-DAY MINIMUM	25	Sep 26	32	Aug 22	11	Oct 18, 1964
MAXIMUM PEAK FLOW			13,700	Apr 25	92,900	Nov 2, 1998
MAXIMUM PEAK STAGE			31.62	Apr 25	36.78	Nov 2, 1998
INSTANTANEOUS LOW FLOW			24	Oct 1	8.7	Oct 21, 1964
ANNUAL RUNOFF (AC-FT)	231,400		386,200		630,400	
10 PERCENT EXCEEDS	790		1,050		1,890	
50 PERCENT EXCEEDS	67		92		256	
90 PERCENT EXCEEDS	35		52		46	

e Estimated



## ARKANSAS RIVER BASIN

## 07182510 NEOSHO RIVER AT BURLINGTON, KS

LOCATION.--Lat 38°11'40", long 95°44'10", in SE ¼ NW ¼ sec.26, T.21 S., R.15 E., Coffey County, Hydrologic Unit 11070204, on right bank at upstream side of county highway bridge at Burlington, 0.3 mi upstream from Rock Creek, and at mile 338.4.

DRAINAGE AREA.--3,042 mi<sup>2</sup>, includes that of Rock Creek.

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

GAGE.--Water-stage recorder. Datum of gage is 983.56 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow completely regulated since 1963 by John Redmond Reservoir (station 07182450), 5.3 mi upstream. Records include flow of Rock Creek. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	106	30	30	28	234	670	8,540	721	608	54	139
2	51	107	30	29	27	231	670	6,550	732	605	53	2,600
3	54	109	31	30	28	230	455	5,760	721	597	52	6,450
4	64	89	32	30	28	142	201	4,840	583	606	52	6,410
5	43	65	31	30	28	29	58	3,240	465	609	52	6,200
6	46	66	e31	30	28	28	58	5,610	513	606	52	5,950
7	90	67	e31	30	28	27	60	4,810	473	601	51	5,690
8	159	69	e31	29	27	28	276	1,420	467	547	53	5,430
9	160	70	e30	29	28	27	503	692	850	427	52	5,140
10	161	71	e28	29	28	36	417	2,120	1,270	424	52	4,850
11	129	72	e28	30	27	57	276	2,110	1,290	221	53	3,200
12	70	74	e28	30	28	66	275	3,310	1,310	42	52	1,960
13	67	77	e28	30	28	62	275	4,280	1,280	42	51	1,930
14	70	77	e28	29	41	57	274	4,120	1,240	43	52	2,020
15	69	76	30	30	29	56	168	3,960	1,220	43	51	3,590
16	71	75	29	e30	27	57	69	2,650	1,090	43	52	4,690
17	59	75	29	e30	28	60	63	1,220	992	43	52	4,540
18	21	63	29	30	128	82	65	1,220	828	43	52	3,440
19	22	43	29	29	242	75	85	1,220	632	44	52	1,410
20	20	44	29	29	242	987	95	2,290	617	44	52	420
21	26	43	30	29	242	3,460	2,220	3,170	602	43	52	406
22	48	43	30	29	242	4,400	5,900	1,860	594	46	51	566
23	54	44	31	29	245	4,390	6,030	734	589	46	51	694
24	51	44	30	29	243	4,270	6,510	542	593	46	52	645
25	64	44	30	29	247	3,320	7,030	545	612	46	51	340
26	109	45	30	29	239	1,800	8,000	548	655	46	51	97
27	111	40	30	29	236	949	8,400	1,060	526	47	51	82
28	115	33	30	29	236	539	9,380	1,460	390	46	61	88
29	115	33	30	28	---	415	9,940	1,440	450	47	72	78
30	108	30	29	29	---	413	9,540	1,040	528	46	61	44
31	107	---	29	28	---	553	---	724	---	47	1,640	---
MEAN	76.7	63.1	29.7	29.4	108	874	2,599	2,680	761	218	104	2,637
MAX	161	109	32	30	247	4,400	9,940	8,540	1,310	609	1,640	6,450
MIN	20	30	28	28	27	27	58	542	390	42	51	44
AC-FT	4,720	3,760	1,830	1,800	6,010	53,710	154,600	164,800	45,290	13,380	6,420	156,900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

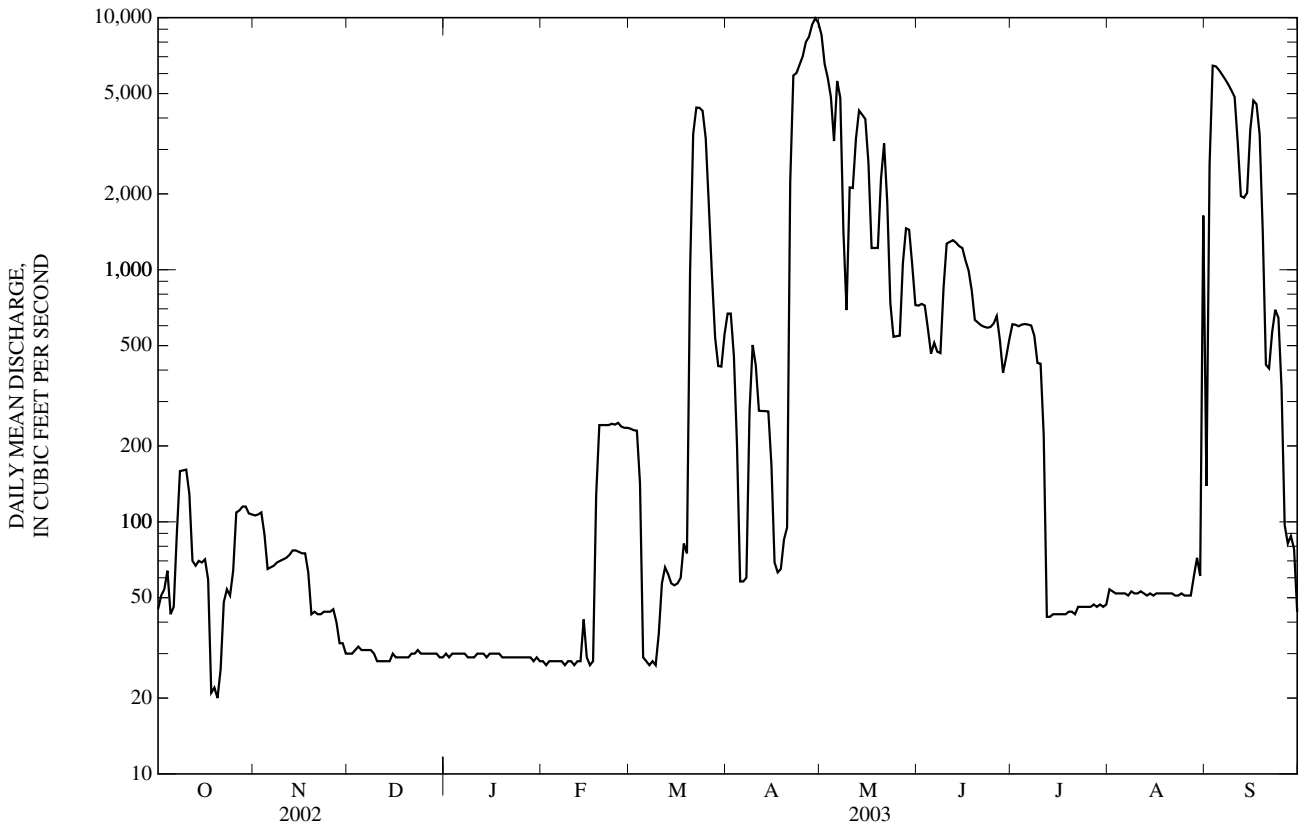
MEAN	1,344	1,413	1,077	751	969	1,807	2,372	2,619	3,299	2,058	985	677
MAX	11,540	15,410	6,925	3,578	5,363	7,637	8,191	9,790	12,890	7,332	10,330	3,771
(WY)	(1974)	(1999)	(1993)	(1973)	(1973)	(1973)	(1984)	(1999)	(1995)	(1969)	(1993)	(1985)
MIN	22.4	12.0	12.4	17.7	17.1	13.8	21.5	44.5	162	66.0	44.3	32.4
(WY)	(1989)	(1991)	(1991)	(1989)	(1989)	(1981)	(1981)	(1989)	(1988)	(1966)	(2002)	(1984)

07182510 NEOSHO RIVER AT BURLINGTON, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL MEAN	486		847		1,616	
HIGHEST ANNUAL MEAN					4,982 1993	
LOWEST ANNUAL MEAN					190 1991	
HIGHEST DAILY MEAN	5,550	Jun 18	9,940	Apr 29	23,300	Nov 6, 1998
LOWEST DAILY MEAN	18	Jan 1	20	Oct 20	0.86	Nov 28, 1980
ANNUAL SEVEN-DAY MINIMUM	19	Jan 8	28	Feb 2	4.2	Nov 22, 1980
MAXIMUM PEAK FLOW			10,200	Apr 28	a26,200	Sep 13, 1961
MAXIMUM PEAK STAGE			17.07	Apr 28	a31.53	Sep 13, 1961
INSTANTANEOUS LOW FLOW			18	Oct 18	0.00	Nov 28, 1980
ANNUAL RUNOFF (AC-FT)	351,700		613,200		1,171,000	
10 PERCENT EXCEEDS	1,900		3,270		5,220	
50 PERCENT EXCEEDS	45		70		385	
90 PERCENT EXCEEDS	21		29		26	

e Estimated

a Maximum peak flow and stage recorded outside period of record and prior to John Redmond Reservoir filling.



## ARKANSAS RIVER BASIN

## 07183000 NEOSHO RIVER NEAR IOLA, KS

LOCATION.--Lat 37°53'27", long 95°25'50", in SW ¼ NE ¼ NE ¼ sec.9, T.25 S., R.18 E., Allen County, Hydrologic Unit 11070204, on left bank 1.0 mi downstream from Elm Creek, 3.0 mi southwest of Iola, and at mile 287.4.

DRAINAGE AREA.--3,818 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1895 to December 1903 (published as "at Iola"), October 1917 to current year. Monthly discharge only for some periods, published in WSP 1311. Figures of daily discharge for August 1895 to January 1898, published in previous reports, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1037: 1819-24, 1926-29, 1935(M). WSP 1117: Drainage area. WSP 1311: 1895-98. WSP 1391: 1896(M), 1899, 1-02(M), 1903-04.

GAGE.--Water-stage recorder. Datum of gage is 914.77 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1917, nonrecording gage at tailgate of flume at mill dam, 4.8 mi upstream at datum 12.2 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Considerable regulation since 1963 by John Redmond Reservoir (station 07182450), 59.3 mi upstream. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	104	36	29	32	270	595	9,920	751	726	e50	13,900
2	44	104	36	32	31	269	707	8,960	794	722	e51	4,820
3	69	106	33	28	32	269	708	6,150	806	659	e52	4,820
4	144	104	e33	28	29	273	545	5,470	829	628	e53	6,300
5	108	104	e32	29	28	246	308	3,520	689	624	54	5,950
6	78	80	e30	28	30	130	175	4,230	1,990	617	55	5,580
7	49	62	e35	25	27	78	116	5,160	2,160	606	52	5,270
8	45	60	e40	26	29	66	97	4,030	1,020	598	52	4,990
9	107	63	e45	28	28	57	176	2,760	732	556	47	4,690
10	156	70	e50	26	28	54	523	2,020	1,050	461	48	4,410
11	156	67	50	25	30	56	481	2,440	1,360	443	58	4,090
12	154	70	50	25	29	70	345	2,270	1,370	333	56	2,390
13	97	72	58	26	29	155	328	3,530	1,370	124	52	1,930
14	62	78	50	28	99	235	324	3,820	1,310	74	49	1,990
15	58	86	48	27	425	214	325	3,700	1,270	62	46	2,180
16	59	83	47	e30	279	152	283	3,900	1,240	57	46	3,790
17	62	79	41	e28	149	124	143	3,600	1,080	55	44	4,060
18	62	79	39	31	100	246	94	1,870	991	52	47	3,880
19	63	79	36	31	89	867	184	1,480	819	51	47	2,740
20	42	73	34	32	234	3,210	548	1,860	652	53	48	1,150
21	29	56	33	28	273	2,650	902	3,180	630	53	48	519
22	22	46	33	26	274	4,120	3,380	3,160	617	53	49	479
23	20	46	33	26	271	4,450	5,400	1,580	610	50	50	581
24	39	49	36	23	275	4,390	e9,030	840	607	45	50	699
25	60	48	32	27	268	4,220	e11,000	659	630	43	50	652
26	55	49	30	28	276	2,920	e9,120	639	639	39	50	451
27	67	49	30	26	273	1,720	e8,620	625	660	e39	49	190
28	109	51	30	29	268	996	e8,310	1,190	559	e39	53	136
29	121	49	29	31	---	632	9,270	1,500	455	e60	117	120
30	130	45	31	31	---	500	9,320	1,490	644	e50	165	141
31	113	---	32	33	---	485	---	1,010	---	e49	3,750	---
MEAN	78.0	70.4	37.8	28.1	141	1,101	2,712	3,115	944	259	175	3,097
MAX	156	106	58	33	425	4,450	11,000	9,920	2,160	726	3,750	13,900
MIN	20	45	29	23	27	54	94	625	455	39	44	120
AC-FT	4,790	4,190	2,320	1,730	7,810	67,680	161,400	191,500	56,200	15,910	10,790	184,300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 2003, BY WATER YEAR (WY)

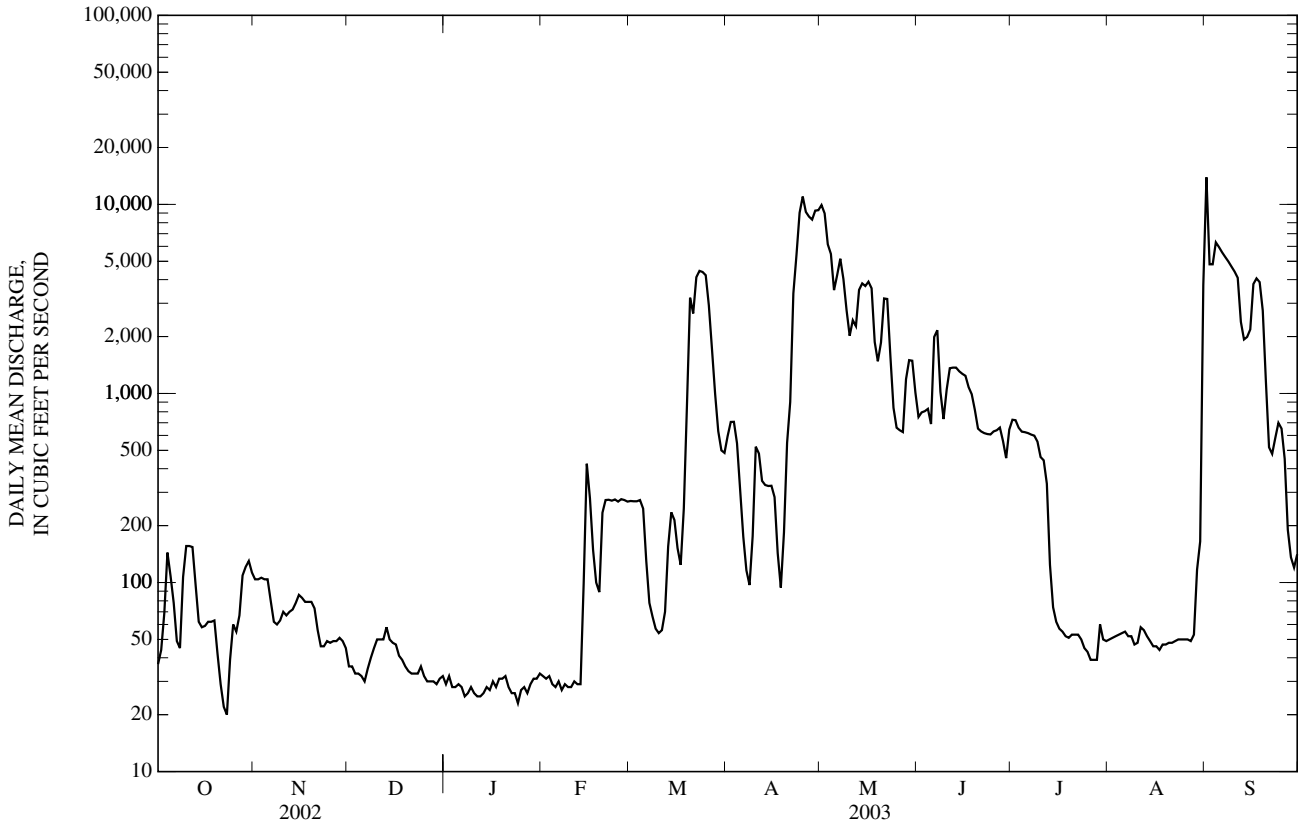
MEAN	1,521	1,446	996	801	1,021	1,929	2,874	3,026	3,654	2,546	1,120	1,358
MAX	15,890	18,520	9,116	4,773	6,994	11,010	19,580	14,270	15,390	43,540	10,700	11,140
(WY)	(1942)	(1999)	(1993)	(1993)	(1949)	(1973)	(1944)	(1938)	(1995)	(1951)	(1993)	(1951)
MIN	0.21	0.52	1.39	1.33	3.24	11.4	19.8	82.3	126	10.8	1.10	0.64
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1956)	(1981)	(1967)	(1933)	(1954)	(1936)	(1956)



07183000 NEOSHO RIVER NEAR IOLA, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1899 - 2003	
ANNUAL MEAN	650		979		1,859	
HIGHEST ANNUAL MEAN					6,635	1951
LOWEST ANNUAL MEAN					141	1956
HIGHEST DAILY MEAN	8,370	Jun 13	13,900	Sep 1	344,000	Jul 13, 1951
LOWEST DAILY MEAN	14	Jan 4	20	Oct 23	0.00	Aug 19, 1936
ANNUAL SEVEN-DAY MINIMUM	17	Jan 1	26	Jan 7	0.00	Aug 19, 1936
MAXIMUM PEAK FLOW			15,500	Sep 1	436,000	Jul 13, 1951
MAXIMUM PEAK STAGE			16.67	Sep 1	43.00	Jul 13, 1951
INSTANTANEOUS LOW FLOW			18	Oct 23	0.00	at times
ANNUAL RUNOFF (AC-FT)	470,800		708,600		1,347,000	
10 PERCENT EXCEEDS	2,850		3,720		5,180	
50 PERCENT EXCEEDS	55		106		400	
90 PERCENT EXCEEDS	28		30		34	

e Estimated



## ARKANSAS RIVER BASIN

## 07183500 NEOSHO RIVER NEAR PARSONS, KS

LOCATION.--Lat 37°20'24", long 95°06'35", in NE ¼ NW ¼ NE ¼ sec.21, T.31 S., R.21 E., Labette County, Hydrologic Unit 11070205, on right bank at downstream side of bridge on U.S. Highway 160, 0.4 mi upstream from Hickory Creek, 2.7 mi upstream from dam of Kansas Army Ammunition Plant, 8.0 mi east of Parsons, and at mile 204.1.

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--4,905 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only October 1921, published in WSP 1311.

REVISED RECORDS.--WSP 807: 1922-23. WSP 1391: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 810.25 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1929, nonrecording gage at bridge 0.5 mi downstream at datum 0.04 ft lower. Oct. 1, 1929, to Feb. 7, 1935, nonrecording gage, and Feb. 8, 1935, to Dec. 7, 1966, water-stage recorder at present site and datum. Dec. 8, 1966, to June 8, 1987, water-stage recorder 2.7 mi downstream at present datum.

REMARKS.--Records good. Flow moderately regulated since 1963 by John Redmond Reservoir (station 07182450), 139.6 mi upstream. Small diversion by the Kansas Army Ammunition Plant. Records include flow of Hickory Creek. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

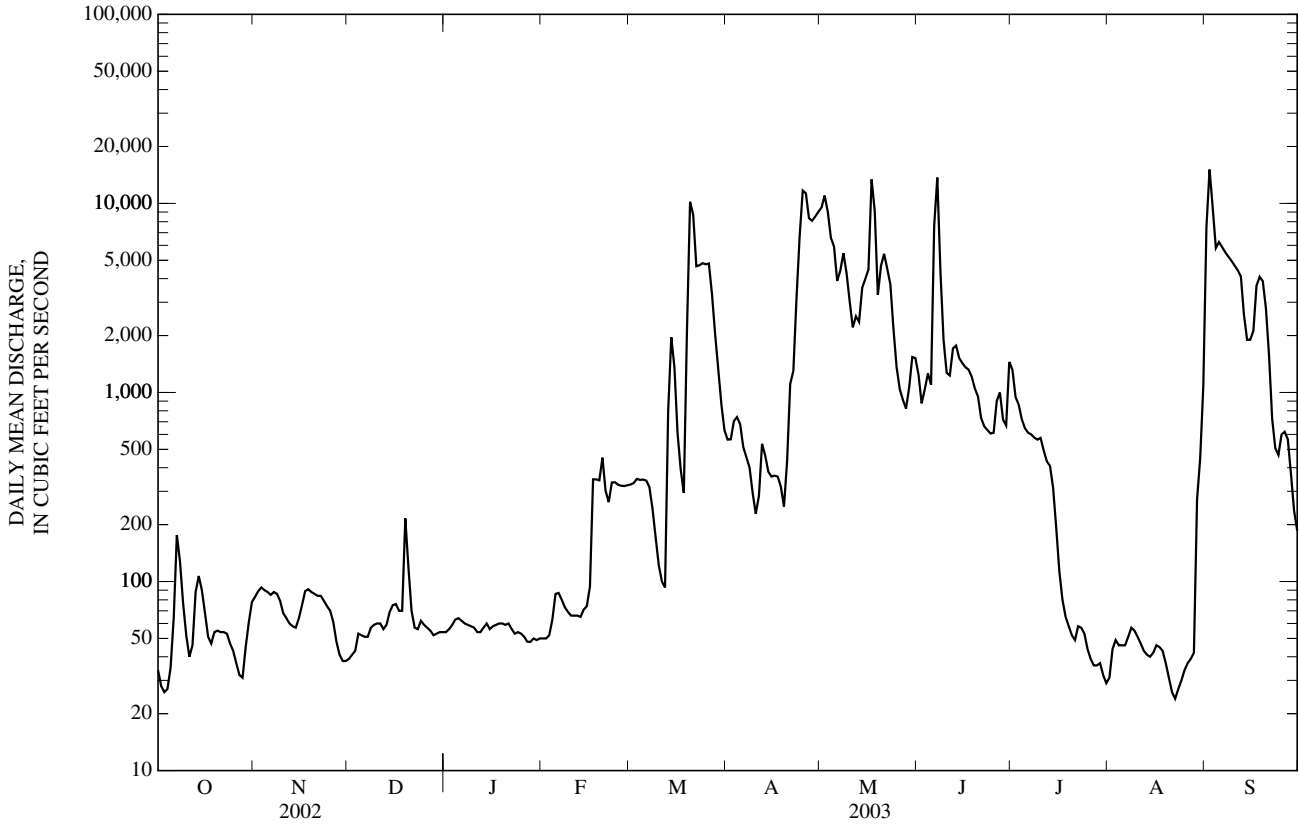
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	83	39	54	50	326	563	9,510	1,240	1,320	31	7,520
2	28	89	41	56	50	332	565	11,000	876	946	44	15,100
3	26	93	43	59	52	349	706	9,040	1,040	863	49	9,530
4	27	90	53	63	63	345	741	6,570	1,260	721	46	5,810
5	35	88	52	64	86	346	679	5,910	1,100	647	46	6,250
6	64	85	51	62	87	342	514	3,890	7,610	613	46	5,880
7	176	88	51	60	80	316	454	4,410	13,700	600	51	5,520
8	128	86	57	59	73	242	401	5,450	4,390	577	57	5,230
9	77	79	59	58	69	171	294	4,280	1,890	563	55	4,970
10	52	68	60	57	66	122	228	3,030	1,270	575	51	4,690
11	40	64	60	54	66	100	284	2,210	1,230	493	47	4,430
12	46	60	56	54	66	93	535	2,530	1,710	432	43	4,110
13	88	58	59	57	65	794	465	2,360	1,770	409	41	2,560
14	107	57	69	60	71	1,960	381	3,580	1,520	314	40	1,900
15	90	64	75	56	74	1,360	359	3,990	1,430	192	42	1,900
16	68	75	76	58	94	611	363	4,470	1,360	113	46	2,120
17	51	89	70	59	347	392	359	13,400	1,320	80	45	3,670
18	47	91	70	60	347	294	318	9,150	1,210	65	43	4,090
19	54	88	216	60	343	2,120	249	3,280	1,050	58	37	3,880
20	55	86	119	59	452	10,200	432	4,670	951	52	31	2,790
21	54	84	70	60	302	8,700	1,110	5,410	732	49	26	1,570
22	54	84	57	56	263	4,650	1,300	4,520	662	58	24	727
23	53	79	56	53	334	4,710	3,130	3,730	633	57	27	508
24	47	74	62	54	335	4,830	6,630	2,160	607	53	30	467
25	43	70	59	53	325	4,760	11,700	1,360	612	44	34	599
26	37	61	57	51	321	4,810	11,300	1,040	903	39	37	620
27	32	48	55	48	320	3,320	8,360	915	999	36	39	566
28	31	41	52	48	323	2,040	8,090	822	719	36	42	373
29	45	38	53	50	---	1,330	8,530	1,060	669	37	272	237
30	61	38	54	49	---	865	9,030	1,540	1,450	32	449	186
31	78	---	54	50	---	630	---	1,520	---	29	1,080	---
MEAN	59.0	73.3	64.7	56.2	183	1,983	2,602	4,413	1,864	326	95.2	3,593
MAX	176	93	216	64	452	10,200	11,700	13,400	13,700	1,320	1,080	15,100
MIN	26	38	39	48	50	93	228	822	607	29	24	186
AC-FT	3,630	4,360	3,980	3,450	10,160	121,900	154,900	271,400	110,900	20,040	5,850	213,800

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2003, BY WATER YEAR (WY)

MEAN	2,275	2,252	1,462	1,253	1,682	2,924	4,280	4,440	5,189	3,556	1,342	1,930
MAX	25,520	20,340	12,760	7,762	9,492	18,100	25,520	22,110	20,610	52,780	11,140	15,030
(WY)	(1987)	(1999)	(1993)	(1973)	(1949)	(1973)	(1927)	(1961)	(1995)	(1951)	(1993)	(1951)
MIN	0.000	0.000	0.000	0.000	0.000	8.10	18.6	282	210	10.8	0.000	0.90
(WY)	(1957)	(1957)	(1957)	(1957)	(1957)	(1957)	(1981)	(1967)	(1980)	(1954)	(1936)	(1956)

07183500 NEOSHO RIVER NEAR PARSONS, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1922 - 2003	
ANNUAL MEAN	1,306		1,277		2,716	
HIGHEST ANNUAL MEAN					8,611	1993
LOWEST ANNUAL MEAN					173	1953
HIGHEST DAILY MEAN	29,900	May 9	15,100	Sep 2	366,000	Jul 14, 1951
LOWEST DAILY MEAN	26	Oct 3	24	Aug 22	0.00	Aug 26, 1934
ANNUAL SEVEN-DAY MINIMUM	31	Sep 7	30	Aug 19	0.00	Aug 26, 1934
MAXIMUM PEAK FLOW			17,600	Jun 7	410,000	Jul 14, 1951
MAXIMUM PEAK STAGE			19.48	Jun 7	40.20	Jul 14, 1951
INSTANTANEOUS LOW FLOW			23	Aug 21	0.00	at times
ANNUAL RUNOFF (AC-FT)	945,300		924,300		1,967,000	
10 PERCENT EXCEEDS	4,380		4,570		7,980	
50 PERCENT EXCEEDS	88		122		581	
90 PERCENT EXCEEDS	37		43		41	



## ARKANSAS RIVER BASIN

07183500 NEOSHO RIVER NEAR PARSONS, KS—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-94, 2000 to September 2003 (discontinued).

REMARKS.--Unpublished records of intermittent sediment samples are available on the Internet at <http://ks.water.usgs.gov/nwis>. Sediment samples are collected only at selected flow conditions.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 deg C (00095)	Temperature, water, deg C (00010)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
FEB 20...	1300	441	537	6.0	17	20
MAY 01...	1345	9,370	254	18.5	394	9,960
JUN 18...	1345	1,210	471	26.0	60	197

07184000 LIGHTNING CREEK NEAR MCCUNE, KS

LOCATION.--Lat 37°16'54", long 95°01'56", in NE ¼ NE ¼ sec.7, T.32 S., R.22 E., Cherokee County, Hydrologic Unit 11070205, on right bank at downstream side of county highway bridge, 5.0 mi south of McCune, 13.0 mi southeast of Parsons, and at mile 12.6.

DRAINAGE AREA.--197 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to September 1946, October 1959 to current year.

REVISED RECORDS.--WDR KS-86-1: 1993. WDR KS-87-1: 1993.

GAGE.--Water-stage recorder. Datum of gage is 818.10 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 10, 1945, nonrecording gage and Mar. 10, 1945, to Sept. 30, 1946, water-stage recorder at present site and datum. Oct. 1, 1959, to May 26, 1960, water-stage recorder 100 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep 2	0600	*3,160	*14.15	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.02	0.00	0.00	1.1	0.68	1.9	14	21	6.5	2.8	0.02	2,660
2	0.02	0.00	0.00	0.98	0.73	1.7	11	18	6.4	1.8	0.01	2,590
3	0.03	0.00	0.00	0.90	0.69	1.5	8.3	14	7.5	1.3	0.00	303
4	0.02	0.00	0.00	1.1	0.61	1.4	6.6	13	21	0.99	0.00	92
5	0.02	0.00	0.00	1.0	0.58	5.4	5.2	16	16	0.73	0.00	42
6	0.01	0.00	0.00	0.94	0.54	8.0	9.1	51	13	0.53	0.02	24
7	0.00	0.00	0.00	0.81	0.53	6.2	26	31	135	0.44	0.01	16
8	0.00	0.00	0.00	0.85	0.52	4.7	26	20	71	0.31	0.00	11
9	0.00	0.00	0.00	0.75	0.57	3.2	19	23	32	0.21	0.00	7.2
10	0.00	0.00	0.00	0.68	0.59	2.3	13	19	19	0.41	0.00	5.2
11	e0.00	0.00	0.00	0.60	0.61	2.0	9.8	18	13	0.32	0.00	3.8
12	e0.00	0.00	0.00	0.64	0.62	2.0	7.2	11	11	0.29	0.00	3.2
13	e0.00	0.00	0.04	0.59	0.67	205	5.9	9.9	8.5	0.22	0.00	3.1
14	e0.00	0.00	0.19	0.63	0.87	291	5.2	8.7	6.1	0.18	0.00	2.3
15	e0.00	0.00	0.31	0.74	0.72	74	4.2	7.6	4.6	0.15	0.00	1.7
16	e0.00	0.00	0.37	0.85	0.85	35	3.9	68	3.5	0.10	0.00	1.4
17	e0.00	0.00	0.29	0.71	1.4	21	3.8	1,100	3.5	0.06	0.00	1.4
18	e0.00	0.00	0.19	0.66	1.7	13	3.5	771	3.4	0.04	0.00	1.5
19	0.00	0.00	0.18	0.65	5.9	39	4.3	140	2.7	0.03	0.00	1.4
20	0.00	0.00	0.19	0.64	19	1,080	231	482	2.0	0.02	0.00	1.3
21	0.00	0.00	0.19	0.61	50	639	127	606	1.6	0.01	0.00	1.2
22	0.00	0.00	0.18	0.56	23	141	44	117	1.3	0.10	0.00	1.1
23	0.00	0.00	0.24	0.52	13	71	25	59	1.1	0.21	0.00	0.79
24	0.00	0.00	0.48	0.48	7.7	41	244	37	1.1	0.25	0.00	1.1
25	0.00	0.00	0.62	0.48	4.9	30	290	30	1.1	0.19	0.00	2.2
26	0.00	0.00	0.59	0.48	3.8	24	113	27	2.5	0.14	0.00	1.9
27	0.00	0.00	0.62	0.38	2.9	20	61	21	4.3	0.09	0.00	1.2
28	0.00	0.00	0.79	0.46	2.2	19	36	16	12	0.07	0.00	0.86
29	0.00	0.00	1.3	0.53	---	21	24	13	7.4	0.06	6.1	0.75
30	0.00	0.00	1.5	0.58	---	23	18	11	4.6	0.04	83	0.92
31	0.00	---	1.3	0.66	---	17	---	8.2	---	0.02	341	---
MEAN	0.004	0.000	0.31	0.70	5.21	91.8	46.6	122	14.1	0.39	13.9	193
MAX	0.03	0.00	1.5	1.1	50	1,080	290	1,100	135	2.8	341	2,660
MIN	0.00	0.00	0.00	0.38	0.52	1.4	3.5	7.6	1.1	0.01	0.00	0.75
MED	0.00	0.00	0.19	0.65	0.79	20	14	21	6.2	0.19	0.00	2.0
AC-FT	0.2	0.00	19	43	289	5,640	2,770	7,510	838	24	853	11,470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

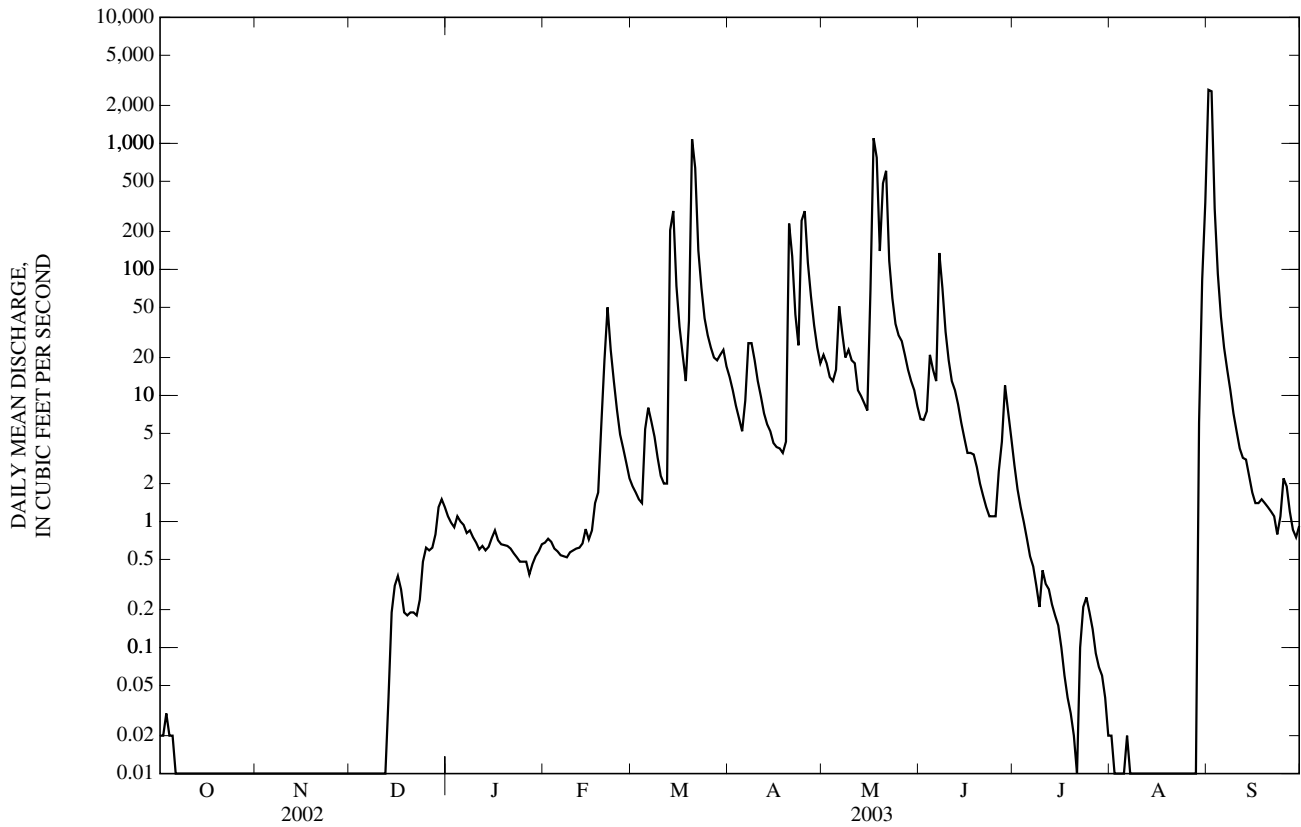
	181	172	110	99.5	133	197	247	292	283	92.4	39.8	147
MAX	2,924	907	751	516	1,033	1,091	1,700	2,227	1,612	1,418	488	2,102
(WY)	(1987)	(1975)	(1993)	(1946)	(1985)	(1973)	(1994)	(1943)	(1995)	(1992)	(1985)	(1993)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.18	7.58	0.55	0.001	0.000	0.000
(WY)	(1939)	(1939)	(1939)	(1939)	(1939)	(1964)	(1981)	(1988)	(1980)	(1991)	(1946)	(1946)

ARKANSAS RIVER BASIN

07184000 LIGHTNING CREEK NEAR MCCUNE, KS—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL MEAN	133		40.7		166	
HIGHEST ANNUAL MEAN					498	
LOWEST ANNUAL MEAN					18.0	
HIGHEST DAILY MEAN	8,880	May 9	2,660	Sep 1	42,400	Sep 25, 1993
LOWEST DAILY MEAN	0.00	Sep 7	0.00	Oct 7	0.00	Oct 1, 1938
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 7	0.00	Oct 7	0.00	Oct 1, 1938
MAXIMUM PEAK FLOW			3,160	Sep 2	67,500	Sep 25, 1993
MAXIMUM PEAK STAGE			14.15	Sep 2	19.79	Sep 25, 1993
INSTANTANEOUS LOW FLOW			0.00	Oct 6	0.00	most years
ANNUAL RUNOFF (AC-FT)	95,990		29,470		120,100	
10 PERCENT EXCEEDS	97		36		256	
50 PERCENT EXCEEDS	4.1		0.81		11	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



As the number of streams on which streamflow information is likely to be desired far exceeds the number of streamflow-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than streamflow-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or high-flow analyses, depending on the type of data collected.

#### High-flow stations

The following table contains annual maximum discharges for high-flow stations. A high-flow gage is a device that will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby complete-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lesser floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at high-flow stations

Station name and number (fig. 3)	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
Wolf River Basin								
Buttermilk Creek near Willis, KS (06815700)	Lat 39°45'16", long 95°27'02", in SW 1/4 SW1/4 sec.30, T.3 S., R.18 E, Brown County, Hydrologic Unit 10240005, at downstream side of county highway bridge, 3.6 mi northeast of Willis. Published as "South Branch Wolf Creek trib- utary" 1957-60, as "South Fork Wolf River tributary" 1961. Drain- age area is 3.74 mi <sup>2</sup> .	1957-03	2003	+	<213	6-08-84	20.18	6,000
Independence Creek Basin								
White Clay Creek at Atchison, KS (06818260)	Lat 39°33'33", long 95°07'38", in SW 1/4 NE1/4 sec.1, T.6 S., R.20 E., Atchison County, Hydrologic Unit 10240011, on right bank at center of highway bridge, on 10th Street in Atchison, and 0.15 mi downstream from Brewery Creek. Drainage area is 13.1 mi <sup>2</sup> .	1972-03	5-08-03	8.65	258	6-08-82	16.07	5,410
Kansas River Basin								
Long Branch Draw near Norcatatur, KS (06845100)	Lat 39°54'06", long 100°10'43", in SW 1/4 SW1/4 sec.6, T.2 S., R.25 W., Decatur-Norton County line, Hydro- logic Unit 10250011, on downstream side of county highway bridge, 4.7 mi north of Norcatatur. Drainage area is 31.7 mi <sup>2</sup> .	1957-03	4-24-03	+	165	6-15-57	26.40	2,680
Prairie Dog Creek tributary at Colby, KS (06847600)	Lat 39°23'28", long 101°02'43", in SW1/4 NW1/4 NE1/4 sec.6, T.8 S., R.33 W., Thomas County, Hydrologic Unit 10250015, at downstream side of bridge on Franklin Avenue in Colby. Prior to Mar. 31, 1971, at site 0.3 mi upstream at same datum. Drainage area is 7.53 mi <sup>2</sup> .	1957-03	8-10-03	12.11	119	6-18-75	27.44	4,300

+ Not determined.

< Maximum discharge less than value shown.

## Annual maximum discharge at high-flow stations

Station name and number (fig. 3)	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (feet)	Dis- charge (ft <sup>3</sup> /s)
Kansas River Basin--Continued								
Elk Creek at Clyde, KS (06856320)	Lat 39°35'28", long 97°23'26", in NW 1/4 SE1/4 sec.26, T.5 S., R.1 W., Republic County, Hydrologic Unit 10250017, at downstream side of State Highway 9 bridge, 1.2 mi up- stream from mouth. Drainage area is 73.4 mi <sup>2</sup> .	1970-03	2003	+	<606	9-26-73	15.30	6,000
						7-23-93	18.47	b
Big Creek trib- utary near Ogallah, KS (06863400)	Lat 38°56'00", long 99°44'33", in NW 1/4 SW1/4 sec.11, T.13 S., R.22 W., Trego County, Hydrologic Unit 110260007, at downstream side of bridge on State Highway 147, 4.0 mi southwest of Ogallah. Drainage area is 4.81 mi <sup>2</sup> .	1957-03	6-29-03	10.62	3.0	3-24-87	15.20	4,100
Big Creek trib- utary near Hays, KS (06863700)	Lat 38°51'08", long 99°14'48", in SE 1/4 NE1/4 sec.7, T.14 S., R.17 W., Ellis County, Hydrologic Unit 10260007, at downstream side of culvert on old U.S. Highway 40 at Toulon, 4.7 mi southeast of Hays. Drainage area is 6.19 mi <sup>2</sup> .	1957-03	9-11-03	11.32	307	5-29-59	13.10	1,100
Smoky Hill River tributary at Dorrance, KS (06864300)	Lat 38°50'52", long 98°35'44", in NE 1/4 SE1/4 sec.12, T.14 S., R.12 W., Russell County, Hydrologic Unit 10260006, at downstream end of culvert on old U.S. Highway 40 at Dorrance. Drainage area is 5.39 mi <sup>2</sup> .	1957-03	2003		no peak	9-03-75	14.62	2,400
Coon Creek trib- utary near Luray, KS (06868300)	Lat 39°10'30", long 98°42'02" in NW 1/4 NE1/4 sec.19, T.10 S., R.12 W., Osborne County, Hydrologic Unit 10260010, at downstream side of county highway bridge, 4.4 mi south- west of Luray. Drainage area is 6.53 mi <sup>2</sup> .	1957-03	9-11-03	19.39	1,200	7-02-82	21.13	4,210
Ash Creek trib- utary near Stockton, KS (06873300)	Lat 39°26'15", long 99°22'16" in SE 1/4 SW1/4 sec.18, T.7 S., R.18 W., Rooks County, Hydrologic Unit 10260014, at upstream end of cul- vert on old U.S. Highway 24, 5.3 mi west of Stockton. Drainage area is 0.89 mi <sup>2</sup> .	1957-03	6-29-03	+	1.0	5-12-93	15.54	530
Mud Creek at Abilene, KS (06877120)	Lat 38°55'47", long 97°13'39", in NE 1/4 NE1/4 sec.17, T.13 S., R.2 E., Dickinson County, Hydrologic Unit 10260008, at downstream side of bridge on old U.S. Highway 40 on north edge of Abilene. Drainage area is 87.0 mi <sup>2</sup> .	1970-03	2003	+	<1,790	11-04-98	17.73	15,000

b Backwater, discharge not determined.

+ Not determined.

&lt; Maximum discharge less than value shown.



## Annual maximum discharge at high-flow stations

Station name and number (fig. 3)	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
Kansas River Basin--Continued								
Mill Creek trib- utary near Washington, KS (06884300)	Lat 39°48'48", long 97°00'30", in SW 1/4 SW1/4 sec.5, T.3 S., R.4 E., Washington County, Hydrologic Unit 10270207, at downstream end of culvert on U.S. Highway 36, 2.2 mi east of Washington. Drainage area is 3.20 mi <sup>2</sup> .	1957-03	06-23-03	11.67	138	6-18-83	19.90	2,500
Cedar Creek near Manhattan, KS (06887200)	Lat 39°15'31", long 96°33'48", in NE 1/4 NE1/4 sec.19, T.9 S., R.8 E., Pottawatomie County, Hydrologic Unit 10270205, at downstream side of county highway bridge, 5.5 mi north of Manhattan. Drainage area is 13.4 mi <sup>2</sup> .	1957-03	5-08-03	11.69	484	6-27-99	23.61	12,000
Indian Creek near Topeka, KS (06889550)	Lat 39°07'27", long 95°39'05", in SE 1/4 SE1/4 NE1/4 sec.5, T.11 S., R. 16 E., Shawnee County, Hydrologic Unit 10270102, 3.0 mi north of Topeka, 2.7 mi upstream from Soldier Creek (new channel). Drainage area is 9.72 mi <sup>2</sup> .	1970-03	2003	+	<420	7-27-81 6-28-99	17.87 16.73	2,700 3,400
Shunganunga Creek at Topeka, KS (06889630)	Lat 39°01'54", long 95°40'57", in SW 1/4 SE1/4 SW1/4 sec.6, T.12 S., R. 16 E., Shawnee County, Hydrologic Unit 10270102, on downstream side of bridge on U.S. Highway 75, 700 ft north of 21st Street in Topeka. Drain- age area is 33.5 mi <sup>2</sup> .	1970-03	6-23-03	12.75	2,340	7-20-73 7-09-93	15.18 15.37	3,300 3,200
Naismith Creek at Lawrence, KS (06891650)	Lat 38°56'03", long 95°15'08", in NE 1/4 NE1/4 SW1/4 sec.12, T.13 S., R. 19 E., Douglas county, Hydrologic Unit 10270104, at downstream side of 27 Street bridge in Lawrence, 6 mi above mouth. Drainage area is 1.54 mi <sup>2</sup> .	1974-88, 2003	2003	+	+	6-24-77	15.80	2,500
Osage River Basin								
South Fork Pottawatomie Creek tributary near Garnett, KS (06914250)	Lat 38°14'00", long 95°14'52", in NW 1/4 SE1/4 sec.7, T.21 S., R.20 E., Anderson County, Hydrologic Unit 10290101, above culvert on U.S. Highway 59, 3.1 mi south of Garnett. Drainage area is 0.35 mi <sup>2</sup> .	1963-03	8-31-03	9.28	6.7	6-21-67	14.98	600
Big Bull Creek at Paola, KS (06915100)	Lat 38°34'36", long 94°53'44", in NW 1/4 NE1/4 NW1/4 sec.17, T.17 S., R.23 E., Miami County, Hydrologic Unit 10290102, on downstream side of bridge on county highway (exten- sion of Peoria Street), 0.5 mi west of of Paola, and 9.0 mi upstream from mouth. Drainage area is 230 mi <sup>2</sup> .	1970-03	2003		no peak	10-11-73	25.18	39,000

+ Not determined.

&lt; Maximum discharge less than value shown.

## Annual maximum discharge at high-flow stations

Station name and number (fig. 3)	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
Osage River Basin--Continued								
Marmaton River tributary near Fort Scott, KS (06917400)	Lat 37°47'26", long 94°47'47", in SE 1/4 SE1/4 SE1/4 sec.8, T.26 S., R. 24 E., Bourbon County, Hydrologic Unit 10290104, at downstream side of county highway bridge, 6.0 mi southwest of Fort Scott. Drainage area is 2.80 mi <sup>2</sup> .	1957-03	5-17-03	11.80	464	9-14-98	17.23	2,160
Arkansas River Basin								
White Woman Creek tributary near Selkirk, KS (07138600)	Lat 38°31'30", long 101°37'16", in SW 1/4 SW1/4 sec.34, T.17 S., R.39 W., Greeley County, Hydrologic Unit 11030002, at downstream side of county highway bridge, 5.6 mi northwest of Selkirk. Drainage area is 38.0 mi <sup>2</sup> , of which 7.59 mi <sup>2</sup> is contributing.	1957-03	2003		no peak	7-09-72	13.06	1,000
Arkansas River tributary near Dodge City, KS (07139700)	Lat 37°42'52", long 100°00'53", in SE 1/4 NE1/4 sec.11, T.27 S., R.25 W., Ford County, Hydrologic Unit 11030004, at downstream side of culvert on U.S. Highway 283, 2.6 mi south of Dodge City. Prior to Mar. 1, 1959, above culvert 175 ft north of present site at same datum. Rec- ords for 1957-58 discredited. Drainage area is 8.66 mi <sup>2</sup> .	1957-03	6-14-03	14.30	469	9-12-97	16.32	1,730
North Fork Walnut Creek near Ness City, KS (07141350)	Lat 38°28'49", long 99°59'28", in SW 1/4 SW1/4 SW1/4 sec.16, T.18 S., R.24 W., Ness County, Hydrologic Unit 11030007, at downstream side of bridge on Ness County Road 533 and 4.5 mi west and 2 mi north of Ness City. Drainage area is 470 mi <sup>2</sup> .	2003			no peak			
Little Cheyenne Creek tribu- tary near Claffin, KS (07143100)	Lat 38°27'25", long 98°32'08", in NE 1/4 SE1/4 sec.28, T.18 S., R.11 W., Barton County, Hydrologic Unit 11030011, at culvert on county high- way, 4.7 mi south of Claffin. Pub- lished as "Cheyenne Creek tributary" 1957-70. Drainage area is 1.48 mi <sup>2</sup> .	1957-03	10-04-02	16.95	440	6-22-81	12.82	570
Whitewater River tributary near Towanda, KS (07147020)	Lat 37°51'03", long 97°03'37", in NE 1/4 NE1/4 sec.26, T.25 S., R.3 E., Butler County, Hydrologic Unit 11030017, at culvert on county high- way, 5.0 mi northwest of Towanda. Drainage area is 0.17 mi <sup>2</sup> .	1963-03	9-11-03	14.86	165	6-09-95	16.59	540

## Annual maximum discharge at high-flow stations

Station name and number (fig. 3)	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
Arkansas River Basin--Continued								
Cedar Creek tributary near Cambridge, KS (07147990)	Lat 37°19'19", long 96°37'33", in NE 1/4 NE1/4 SE1/4 sec.26, T.31 S., R.7 E., Cowley County, Hydrologic Unit 11060001, at downstream side of bridge on U.S. Highway 160, 0.5 mi upstream from Cedar Creek, and 2.1 mi northeast of Cambridge. Pub- lished as "Grouse Creek tributary" 1961-63. Drainage area is 2.41 mi <sup>2</sup> .	1961-03	5-16-03	13.66	1,110	6-21-77	14.42	3,000
Cimarron River tributary near Satanta, KS (07156700)	Lat 37°16'15", long 100°55'36", in NW 1/4 NE1/4 sec.17, T.32 S., R.33 W., Seward County, Hydrologic Unit 11040006, 27 ft upstream from cul- vert under county highway, 12.0 mi southeast of Satanta. Prior to 1985, gage was located on the downstream side of culvert. Drainage area is 2.41 mi <sup>2</sup> .	1957-03	5-16-03	17.66	2,700	5-16-03	17.66	2,700
Sandy Creek near Yates Center, KS (07166200)	Lat 37°50'47", long 95°50'07", in NE 1/4 SW1/4 NE1/4 sec.26, T.25 S., R.14 E., Woodson County, Hydro- logic Unit 11070101, at downstream side of bridge on U.S. Highway 54, 6.0 mi southwest of Yates Center. Drainage area is 6.80 mi <sup>2</sup> .	1957-03	4-24-03	13.47	353	7-12-72	19.80	3,000

## MISCELLANEOUS SURFACE-WATER STATIONS

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Big Nemaha River Basin									
06814000 TURKEY C NR SENECA, KS (LAT 39 56 52N LONG 096 06 30W)									
OCT 2002					JUN 2003				
01...	0745	0.57	635	20.0	09...	1145	10	--	22.0
31...	0705	100	395	4.5	13...	0900	1,780	--	19.0
DEC					13...	1000	1,470	--	19.0
16...	0825	5.2	634	2.0	JUL				
FEB 2003					14...	1205	3.7	--	29.5
18...	1415	13	645	--	AUG				
MAR					13...	1045	0.34	--	23.5
31...	1015	5.4	558	11.0					
MAY									
01...	1400	13	--	15.5					
Kansas River Basin									
06827000 SF REPUBLICAN R NR CO-KS ST LINE, KS (LAT 39 40 20N LONG 102 00 40W)									
OCT 2002					MAY 2003				
22...	1350	5.7	566	9.0	29...	1440	7.8	505	27.0
NOV					JUL				
19...	0840	7.2	510	5.0	16...	1445	3.7	479	31.0
FEB 2003					AUG				
20...	1330	9.2	565	8.0	19...	1310	1.3	487	27.0
APR									
16...	1405	11	507	15.0					
06845000 SAPPAC NR OBERLIN, KS (LAT 39 48 45N LONG 100 32 00W)									
APR 2003					AUG 2003				
30...	1135	15	205	9.5	20...	0840	0.01	1,020	24.0
MAY									
01...	0945	4.1	343	11.0					
06845110 SAPPAC NR LYLE, KS (LAT 40 00 00N LONG 099 59 35W)									
OCT 2002					MAY 2003				
21...	1600	0.12	1,040	11.5	06...	1130	12	506	14.5
NOV					28...	1405	3.1	684	20.0
21...	1040	0.75	931	7.0	AUG				
FEB 2003					20...	1330	0.07	1,010	27.0
18...	1610	2.9	680	3.0					
APR									
15...	1335	2.5	730	21.0					
06846500 BEAVER C AT CEDAR BLUFFS, KS (LAT 39 59 06N LONG 100 33 35W)									
APR 2003									
17...	1435	31	212	9.0					
06847900 PRAIRIE DOG C AB KEITH SEBELIUS LAKE, KS (LAT 39 46 13N LONG 100 06 00W)									
OCT 2002					FEB 2003				
24...	0920	0.04	671	--	19...	1020	1.5	745	0.0
NOV					MAY				
20...	1505	0.17	700	8.0	28...	1125	2.4	861	18.5
06848500 PRAIRIE DOG C NR WOODRUFF, KS (LAT 39 59 09N LONG 099 28 39W)									
JAN 2003					MAY 2003				
10...	1200	1.5	1,040	0.0	23...	1325	1.4	925	17.0
FEB					JUL				
18...	1220	2.8	975	1.0	18...	1335	0.52	785	26.0
APR									
15...	0930	1.8	952	17.5					

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06853500 REPUBLICAN R NR HARDY, NE (LAT 39 59 33N LONG 097 55 53W)									
OCT 2002					MAY 2003				
04...	1130	149	420	13.5	20...	1430	120	653	22.0
23...	1040	31	747	3.0	JUN				
DEC					09...	1200	97	680	19.5
11...	0920	21	800	3.5	JUL				
FEB 2003					09...	1110	48	782	28.0
13...	1330	32	756	6.0	AUG				
21...	1125	104	701	6.5	20...	1400	62	622	32.0
APR					SEP				
09...	1130	59	669	10.0	22...	1230	32	700	24.0
06853800 WHITE ROCK C NR BURR OAK, KS (LAT 39 53 55N LONG 098 15 05W)									
NOV 2002					MAY 2003				
06...	1145	0.30	1,120	4.5	21...	0845	4.5	869	14.0
DEC					JUL				
10...	1305	0.52	1,330	2.0	03...	0845	0.15	637	25.0
FEB 2003					AUG				
12...	1430	1.6	1,170	1.0	20...	1100	0.71	571	24.5
APR									
08...	1435	3.1	846	7.0					
06856000 REPUBLICAN R AT CONCORDIA, KS (LAT 39 35 25N LONG 097 39 32W)									
OCT 2002					JUN 2003				
01...	1130	9.5	750	22.0	19...	1500	107	--	24.0
DEC					23...	1540	8,200	--	24.0
30...	1130	46	870	4.0	24...	1100	20,600	--	21.5
FEB 2003					25...	1200	4,150	--	21.0
10...	1215	38	1,040	0.5	JUL				
APR					01...	1825	597	--	25.5
01...	1245	119	890	8.5	16...	1415	161	--	25.5
MAY									
01...	1200	70	950	16.0					
20...	1315	148	860	17.0					
06856600 REPUBLICAN R AT CLAY CENTER, KS (LAT 39 21 20N LONG 097 07 34W)									
OCT 2002					MAY 2003				
01...	1325	3.4	--	23.5	01...	1415	98	895	15.0
DEC					20...	1100	153	841	17.0
30...	1400	56	840	4.0	28...	1245	747	610	19.0
FEB 2003					JUN				
10...	1450	57	960	5.0	09...	1550	166	860	19.0
APR					JUL				
01...	1500	127	905	10.0	01...	1450	1,760	--	26.0
					16...	1640	224	--	26.0
06857100 REPUBLICAN R BL MILFORD DAM, KS (LAT 39 04 15N LONG 096 52 00W)									
OCT 2002					APR 2003				
03...	1400	206	662	20.5	01...	1615	28	648	20.0
NOV					29...	1715	31	--	25.5
06...	1700	116	619	11.0	JUN				
DEC					11...	0855	13	--	22.5
11...	1250	146	639	6.0	JUL				
JAN 2003					16...	1145	23	--	27.5
08...	1145	68	656	8.0	AUG				
FEB					19...	1030	18	--	25.0
20...	1110	10	710	7.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06860000 SMOKY HILL R AT ELKADER, KS (LAT 38 47 33N LONG 100 51 19W)									
OCT 2002					MAY 2003				
30...	1355	0.14	2,100	2.0	27...	1305	1.6	1,380	23.5
DEC									
10...	1200	0.06	2,450	4.0					
06861000 SMOKY HILL R NR ARNOLD, KS (LAT 38 48 31N LONG 100 01 13W)									
OCT 2002					MAY 2003				
22...	1205	0.38	1,380	9.0	08...	1020	3.8	1,260	19.5
NOV					JUN				
19...	1200	0.58	1,320	7.5	13...	1000	23	947	20.0
DEC					JUL				
19...	1320	0.72	1,360	4.5	15...	1435	0.55	1,410	30.0
MAR 2003					SEP				
12...	1150	0.98	1,160	10.0	19...	0955	0.22	1,260	12.5
06862700 SMOKY HILL R NR SCHOENCHEN, KS (LAT 38 42 44N LONG 099 22 53W)									
OCT 2002					APR 2003				
09...	1540	0.77	1,430	22.0	11...	1425	5.3	1,610	19.0
15...	1025	0.90	1,530	11.5	24...	0910	35	--	10.0
NOV					MAY				
01...	1400	4.8	1,650	4.0	16...	0925	7.7	--	13.5
20...	1500	4.9	1,640	9.0	JUN				
JAN 2003					17...	0930	4.5	1,640	23.0
02...	0930	6.2	1,620	2.0	SEP				
FEB					12...	1025	108	616	18.0
20...	0915	5.6	1,540	6.0	16...	1035	7.8	1,650	20.0
MAR					24...	0910	2.4	1,540	17.0
17...	1330	5.4	1,590	12.0					
31...	1505	6.3	1,640	16.0					
06862850 SMOKY HILL R BL SCHOENCHEN, KS (LAT 38 42 46N LONG 099 17 30W)									
NOV 2002					JUN 2003				
01...	1445	0.35	1,830	4.0	17...	1435	4.3	1,180	30.5
22...	1530	2.9	1,710	9.0	JUL				
JAN 2003					07...	1310	0.11	1,490	31.0
03...	0950	4.9	1,650	0.0	SEP				
FEB					11...	1425	1,710	230	18.0
21...	1400	6.0	1,560	2.0	12...	1435	201	421	21.0
APR					16...	1305	11	1,460	23.0
04...	1340	5.5	1,660	16.0	24...	1410	2.2	1,460	20.5
24...	0920	34	1,320	12.5					
MAY									
19...	1340	7.5	1,510	17.0					
06863500 BIG C NR HAYS, KS (LAT 38 51 08N LONG 099 19 05W)									
OCT 2002					JUN 2003				
03...	1100	3.0	860	12.5	11...	1120	6.4	--	23.5
NOV					JUL				
18...	1450	2.7	1,180	7.5	03...	0920	22	--	24.0
JAN 2003					30...	0910	0.07	1,190	24.0
08...	1400	4.8	1,300	3.5	SEP				
31...	1400	6.6	1,320	3.5	12...	1400	44	262	19.0
MAR									
13...	0905	7.0	1,290	2.0					

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06864050 SMOKY HILL R NR BUNKER HILL, KS (LAT 38 47 38N LONG 098 46 50W)									
OCT 2002					JUN 2003				
31...	1005	19	2,480	0.0	05...	1050	496	436	19.0
JAN 2003					13...	1400	76	1,430	22.0
13...	1510	21	2,480	5.0	JUL				
MAR					11...	1040	11	3,420	27.0
11...	0925	25	2,450	3.0	16...	0850	6.4	4,070	23.5
MAY					AUG				
07...	0940	46	1,980	14.5	04...	1110	3.1	4,580	25.0
					SEP				
					12...	1100	3,160	238	19.0
06864500 SMOKY HILL R AT ELLSWORTH, KS (LAT 38 43 36N LONG 098 14 00W)									
OCT 2002					JUN 2003				
01...	1600	10	1,970	26.0	12...	1335	117	1,270	24.0
NOV					JUL				
19...	1145	20	2,030	2.5	16...	1235	18	2,180	28.5
JAN 2003					AUG				
13...	1100	34	2,040	1.0	06...	1015	8.0	1,950	27.0
FEB					25...	1120	5.7	1,870	29.0
28...	0800	32	2,270	0.0	SEP				
MAR					16...	1100	282	661	19.5
11...	1310	42	1,960	8.5					
MAY									
07...	1410	65	1,700	21.0					
06865500 SMOKY HILL R NR LANGLEY, KS (LAT 38 36 38N LONG 097 57 04W)									
OCT 2002					JUN 2003				
01...	1250	32	1,240	21.0	12...	0930	195	1,130	21.0
NOV					JUL				
12...	1500	54	1,140	5.5	17...	0730	98	1,150	26.0
FEB 2003					SEP				
27...	1240	39	1,330	2.5	17...	1000	73	1,180	21.0
APR									
24...	1120	126	1,090	13.0					
06866500 SMOKY HILL R NR MENTOR, KS (LAT 38 42 39N LONG 097 34 16W)									
OCT 2002					APR 2003				
03...	1105	67	1,050	15.0	03...	1255	168	1,100	19.0
NOV					JUL				
19...	1515	62	1,160	8.5	10...	1045	118	1,080	27.0
FEB 2003					AUG				
11...	1630	62	1,110	4.0	19...	1345	22	1,140	31.0
MAR									
20...	1510	2,330	254	9.5					
21...	0900	1,330	279	8.0					
25...	1320	215	991	14.0					
06866900 SALINE R NR WAKEENEY, KS (LAT 39 06 22N LONG 099 52 10W)									
NOV 2002					MAY 2003				
05...	1010	0.25	1,080	2.5	06...	1045	2.3	1,160	12.0
21...	1105	0.16	1,170	7.5	JUN				
MAR 2003					16...	1205	0.53	912	25.0
14...	1000	0.76	1,030	10.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06867000 SALINE R NR RUSSELL, KS (LAT 38 58 00N LONG 098 51 20W)									
OCT 2002					MAY 2003				
10...	1005	4.1	6,310	15.0	23...	1230	26	2,410	23.0
21...	0930	3.0	6,700	8.5	JUN				
NOV					05...	1320	61	1,420	22.0
07...	0950	7.0	5,490	6.5	JUL				
DEC					08...	1230	6.9	5,050	32.0
12...	1300	13	3,800	7.0	AUG				
FEB 2003					22...	1340	0.84	--	33.0
12...	1325	22	3,550	6.5	SEP				
APR					12...	1125	385	550	20.5
07...	1025	18	3,570	6.5					
06868200 SALINE R AT WILSON DAM, KS (LAT 38 58 35N LONG 098 29 20W)									
OCT 2002					MAY 2003				
21...	1315	5.2	2,450	17.0	23...	1000	15	2,610	20.0
DEC					JUL				
12...	1010	6.9	2,550	6.5	23...	1225	16	2,730	26.0
FEB 2003					AUG				
21...	1205	5.3	2,650	8.5	25...	1310	15	2,540	28.5
APR					SEP				
10...	1335	14	2,460	17.5	18...	1135	15	2,760	19.0
06869500 SALINE R AT TESCOTT, KS (LAT 39 00 15N LONG 097 52 26W)									
OCT 2002					MAY 2003				
02...	1115	16	--	19.0	21...	1150	39	--	18.0
NOV					JUL				
20...	1125	18	2,190	7.0	09...	1455	18	2,620	29.0
FEB 2003					AUG				
11...	1130	25	1,880	1.0	28...	1125	13	2,640	26.5
APR									
02...	1240	24	1,920	18.0					
06869950 MULBERRY C NR SALINA, KS (LAT 38 50 40N LONG 097 40 05W)									
OCT 2002					MAY 2003				
02...	1650	0.14	548	17.5	21...	1640	9.0	--	18.0
NOV					JUL				
21...	0900	1.1	550	6.5	09...	1635	0.10	550	30.0
FEB 2003					31...	1445	0.05	637	29.0
12...	1525	5.7	534	2.5	AUG				
MAR					28...	1630	0.06	--	29.5
21...	1115	122	288	7.0					
APR									
02...	1540	6.1	699	19.0					
06870200 SMOKY HILL R AT NEW CAMBRIA, KS (LAT 38 51 49N LONG 097 28 58W)									
OCT 2002					APR 2003				
03...	1400	103	1,140	16.5	03...	1555	199	1,180	19.0
NOV					JUL				
20...	1420	80	1,390	9.0	10...	1545	135	1,260	31.5
FEB 2003					AUG				
12...	1020	97	1,370	2.5	19...	1650	30	1,900	31.0
MAR									
21...	1130	2,200	289	10.0					



## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06870300 GYPSUM C NR GYPSUM, KS (LAT 38 39 11N LONG 097 25 10W)									
OCT 2002 03...	0900	115	263	15.5	APR 2003 03...	0945	13	772	17.5
NOV 19...	1340	5.3	761	7.5	MAY 22...	1050	19	--	19.0
FEB 2003 11...	1450	9.8	671	3.0	JUL 10...	0900	2.7	1,150	23.5
06871000 NF SOLOMON R AT GLADE, KS (LAT 39 40 40N LONG 099 18 30W)									
MAR 2003 14...	1400	6.7	1,060	17.0	APR 2003 30...	1405	8.2	926	16.0
06871500 BOW C NR STOCKTON, KS (LAT 39 33 46N LONG 099 17 04W)									
OCT 2002 16...	1145	0.16	2,400	8.0	FEB 2003 05...	1225	4.8	950	0.0
21...	1110	0.17	2,560	9.0	MAR 19...	1040	8.6	805	10.0
29...	1420	0.27	2,240	7.5	MAY 15...	0945	4.4	911	14.0
NOV 21...	1500	0.77	1,610	8.0	JUL 07...	1230	0.31	--	27.0
DEC 31...	1110	2.2	1,200	0.0	23...	1435	0.01	1,500	31.0
JAN 2003 23...	1445	1.8	1,240	0.0					
06872500 NF SOLOMON R AT PORTIS, KS (LAT 39 33 15N LONG 098 41 31W)									
OCT 2002 22...	1045	15	1,110	8.0	MAY 2003 01...	1045	645	341	13.5
DEC 10...	0915	18	1,170	2.0	21...	1155	24	1,100	17.0
FEB 2003 14...	1025	23	1,120	5.5	JUL 03...	1110	21	1,060	25.0
APR 08...	0940	23	1,040	6.5	AUG 20...	0750	27	953	23.0
					21...	1235	9.2	--	28.5
					SEP 24...	0835	9.7	940	16.5
06873000 SF SOLOMON R AB WEBSTER RE, KS (LAT 39 22 26N LONG 099 34 54W)									
DEC 2002 12...	1010	0.33	1,900	0.0	MAY 2003 06...	1545	12	1,080	22.0
MAR 2003 11...	1140	10	1,180	8.5					
06873460 SF SOLOMON R AT WOODSTON, KS (LAT 39 26 23N LONG 099 06 05W)									
OCT 2002 24...	1505	1.0	1,450	4.5	JUL 2003 01...	1040	19	1,340	25.0
DEC 09...	1100	2.0	1,610	2.0	AUG 18...	1115	19	1,490	24.5
JAN 2003 23...	1105	1.2	1,970	0.0	19...	0955	50	1,340	25.0
FEB 11...	1050	2.3	1,670	3.0	20...	1110	28	1,380	26.5
APR 30...	1045	3.1	1,500	16.0	22...	1025	14	1,310	25.0
					SEP 04...	1000	1.8	1,350	19.0

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06874000 SF SOLOMON R AT OSBORNE, KS (LAT 39 25 43N LONG 098 41 40W)									
OCT 2002					MAY 2003				
22...	0815	10	1,360	7.5	21...	1430	12	1,300	22.0
DEC 09...	1515	10	1,320	3.0	JUL 02...	1035	16	993	27.0
FEB 2003					AUG 19...	1525	26	1,140	26.5
14...	1300	15	1,370	5.5	SEP 24...	1045	7.4	1,150	17.0
APR 07...	1425	15	1,230	7.0					
06875900 SOLOMON R NR GLEN ELDER, KS (LAT 39 28 27N LONG 098 16 58W)									
NOV 2002					MAY 2003				
07...	0900	17	1,120	6.0	22...	1415	19	1,120	17.5
FEB 2003					JUL 23...	0935	102	1,030	25.5
11...	1515	18	1,200	3.0					
06876070 SOLOMON R NR SIMPSON, KS (LAT 39 22 05N LONG 097 55 44W)									
OCT 2002					JUL 2003				
22...	1600	24	1,840	8.5	23...	1225	53	1,220	26.0
DEC 11...	1415	26	1,830	4.0	AUG 21...	0840	77	1,170	26.5
FEB 2003					SEP 11...	1430	13,900	118	29.0
12...	1020	26	1,900	2.0	11...	1610	14,500	--	18.5
APR 10...	0925	24	1,720	11.5	12...	1055	9,010	--	15.0
MAY 22...	0950	24	1,430	18.5	23...	1220	34	1,410	20.5
06876700 SALT C NR ADA, KS (LAT 39 08 30N LONG 097 50 10W)									
OCT 2002					MAY 2003				
02...	0905	0.80	3,400	17.5	21...	0925	4.3	--	15.0
NOV 20...	0950	2.1	2,440	6.5	JUL 09...	1305	0.46	4,620	27.5
FEB 2003					AUG 28...	0930	0.32	4,780	23.5
11...	0930	4.1	1,250	0.5	SEP 15...	1230	1,600	--	20.5
APR 02...	1030	3.7	1,390	16.5					
06876900 SOLOMON R AT NILES, KS (LAT 38 58 08N LONG 097 28 34W)									
OCT 2002					JUL 2003				
02...	1455	39	--	18.0	10...	1345	45	1,530	30.0
NOV 21...	1055	45	2,280	7.5	AUG 28...	1445	31	1,470	29.0
FEB 2003					SEP 15...	1415	6,970	--	15.5
12...	0840	56	1,740	1.0					
MAR 31...	1220	52	1,990	14.0					
06877600 SMOKY HILL R AT ENTERPRISE, KS (LAT 38 54 24N LONG 097 07 12W)									
OCT 2002					MAY 2003				
04...	0945	362	1,540	--	07...	1320	327	--	19.5
NOV 13...	1345	164	2,180	22.0	JUL 02...	1400	538	--	30.0
FEB 2003					31...	1145	112	2,470	28.0
13...	0930	189	--	4.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

601

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06878000 CHAPMAN C NR CHAPMAN, KS (LAT 39 01 52N LONG 097 02 24W)									
OCT 2002					APR 2003				
04...	1215	9.7	1,100	16.0	25...	0955	765	392	--
NOV					MAY				
13...	1050	8.7	1,140	7.0	07...	1025	17	1,030	15.5
FEB 2003					JUL				
13...	1115	12	962	3.5	02...	1110	11	--	25.5
MAR					AUG				
20...	1500	38	817	8.0	05...	1540	4.2	--	27.0
31...	1525	12	1,060	17.0	27...	1040	1.8	1,160	26.0
06879100 KANSAS R AT FORT RILEY, KS (LAT 39 03 09N LONG 096 46 33W)									
OCT 2002					APR 2003				
03...	1125	427	1,750	19.0	28...	1630	2,530	499	17.0
NOV					JUN				
06...	1420	359	1,540	10.0	11...	1145	706	--	24.5
DEC					JUL				
11...	1015	335	1,810	4.5	16...	0835	254	--	26.0
JAN 2003					30...	1000	171	--	25.0
08...	1415	278	1,960	6.5	AUG				
FEB					19...	1300	120	--	29.0
20...	1500	293	1,600	7.5	SEP				
MAR					16...	1050	6,550	--	19.0
25...	1200	991	785	13.0					
06879650 KINGS C NR MANHATTAN, KS (LAT 39 06 07N LONG 096 35 42W)									
APR 2003					JUL 2003				
24...	1720	5.6	496	10.0	16...	1720	0.22	--	20.5
29...	0740	3.4	514	14.5					
JUN									
11...	1735	1.7	--	18.0					
06882510 BIG BLUE R AT MARYSVILLE, KS (LAT 39 50 32N LONG 096 39 39W)									
OCT 2002					JUN 2003				
01...	1315	137	616	24.5	10...	0950	305	--	23.0
31...	1040	327	726	7.5	13...	1145	9,110	--	13.0
DEC					13...	1355	8,340	--	13.0
16...	1225	203	748	4.5	JUL				
FEB 2003					14...	1650	106	--	29.5
19...	0715	285	--	-1.0	AUG				
APR					13...	1645	73	--	26.5
01...	0730	232	689	10.5					
30...	1550	259	582	14.0					
06884200 MILL C AT WASHINGTON, KS (LAT 39 48 50N LONG 097 02 20W)									
OCT 2002					MAY 2003				
01...	1720	1.3	470	24.0	01...	1045	8.9	573	14.5
NOV					JUN				
01...	0750	6.3	460	3.5	10...	1600	6.7	--	26.0
DEC					JUL				
17...	1230	6.6	541	5.5	02...	0840	84	--	22.0
FEB 2003					15...	0835	9.0	--	24.5
19...	1430	11	574	3.0	AUG				
MAR					14...	0800	2.5	--	20.0
31...	1605	6.8	491	14.5	SEP				
APR					17...	1030	24	--	20.0
25...	1620	37	559	15.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06884400 L BLUE R NR BARNES, KS (LAT 39 46 33N LONG 096 51 29W)									
OCT 2002					APR 2003				
01...	1535	55	697	26.5	30...	1200	192	586	20.5
31...	1540	202	532	6.0	JUN				
DEC					10...	1305	300	--	24.0
16...	1500	147	595	5.0	JUL				
FEB 2003					15...	1130	221	--	27.5
19...	1135	222	597	3.0	30...	1410	149	--	26.5
MAR					AUG				
31...	1330	153	576	16.0	14...	1015	111	--	22.0
06885500 BLACK VERMILLION R NR FRANKFORT, KS (LAT 39 41 03N LONG 096 26 15W)									
OCT 2002					APR 2003				
01...	1015	2.3	572	21.5	01...	1100	11	559	12.0
NOV					JUL				
01...	1215	15	517	5.0	15...	1620	2.1	--	31.0
DEC					30...	1650	1.3	--	26.0
17...	0830	9.5	577	4.0	AUG				
FEB 2003					13...	1255	0.91	--	28.0
19...	1735	14	551	1.0					
06887000 BIG BLUE R NR MANHATTAN, KS (LAT 39 14 14N LONG 096 34 16W)									
OCT 2002					MAR 2003				
03...	0815	399	486	19.0	25...	0700	86	481	8.5
NOV					APR				
05...	1425	1,070	--	11.5	29...	1250	105	483	27.0
DEC					JUN				
10...	1505	251	461	5.5	12...	0800	875	--	18.5
12...	0800	381	459	5.0	AUG				
FEB 2003					15...	1025	1,000	--	24.0
21...	1030	334	480	2.0					
06887500 KANSAS R AT WAMEGO, KS (LAT 39 11 52N LONG 096 18 16W)									
NOV 2002					JUN 2003				
26...	1215	711	880	3.0	10...	1400	2,310	670	19.0
DEC					AUG				
31...	1125	669	1,020	4.0	01...	1225	2,830	--	25.0
FEB 2003					29...	1145	1,340	--	28.0
19...	1230	669	1,040	5.0	SEP				
APR					18...	1140	5,840	--	18.5
22...	1500	710	1,020	20.0					
06888000 VERMILLION C NR WAMEGO, KS (LAT 39 21 00N LONG 096 13 10W)									
DEC 2002					JUN 2003				
18...	1050	7.9	--	4.0	30...	1705	6.5	--	24.5
FEB 2003					AUG				
19...	1500	9.5	674	5.0	19...	1030	0.50	--	29.0
APR									
21...	1210	150	371	15.0					
06888350 KANSAS R NR BELVUE, KS (LAT 39 11 15N LONG 096 08 50W)									
NOV 2002					JUN 2003				
27...	1120	743	800	5.0	10...	1130	2,260	700	19.0
FEB 2003					AUG				
20...	1430	635	1,100	5.0	22...	1350	1,010	--	30.0
APR					SEP				
02...	1430	549	1,020	13.0	18...	1335	6,180	--	18.5

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06888500 MILL C NR PAXICO, KS (LAT 39 03 44N LONG 096 10 52W)									
OCT 2002					APR 2003				
02...	1530	20	489	21.5	24...	1135	2,090	251	10.0
NOV					24...	1310	2,000	258	12.0
05...	1055	55	518	6.5	28...	1320	334	473	17.0
DEC					JUN				
10...	1030	25	647	1.5	12...	1245	55	--	23.5
FEB 2003					JUL				
21...	1325	35	630	4.5	17...	1300	13	--	27.0
MAR					AUG				
20...	1205	155	622	8.0	07...	1130	4.1	--	26.0
					27...	0815	2.2	--	28.0
06889000 KANSAS R AT TOPEKA, KS (LAT 39 04 00N LONG 095 38 58W)									
NOV 2002					APR 2003				
04...	1520	963	835	8.0	25...	0915	8,210	450	12.0
29...	1155	779	912	7.0	MAY				
JAN 2003					22...	1400	2,590	650	21.0
03...	1300	673	1,000	3.0	JUN				
FEB					20...	1315	3,350	--	24.0
12...	1140	706	968	4.0	SEP				
MAR					19...	1100	5,710	--	14.0
06...	1230	365	1,070	2.0					
06889170 SOLDIER C NR HOLTON, KS (LAT 39 26 03N LONG 095 56 31W)									
OCT 2002					APR 2003				
11...	1045	1.0	--	18.0	09...	1545	4.7	720	12.0
DEC					21...	1500	26	360	15.0
18...	1240	3.2	712	4.0	JUN				
FEB 2003					12...	1200	2.3	753	23.0
11...	1200	1.7	--	2.0	JUL				
					18...	1330	0.21	--	27.0
06889200 SOLDIER C NR DELIA, KS (LAT 39 12 08N LONG 095 52 25W)									
OCT 2002					APR 2003				
28...	1220	33	--	15.5	21...	1340	131	350	15.0
NOV					24...	1210	650	328	12.5
08...	1500	10	675	8.0	JUN				
MAR 2003					12...	1400	7.0	805	23.0
06...	1200	5.6	700	4.0	JUL				
20...	1015	106	--	8.0	25...	1515	0.77	615	30.0
06889500 SOLDIER C NR TOPEKA, KS (LAT 39 06 00N LONG 095 43 27W)									
NOV 2002					APR 2003				
04...	1045	21	--	8.0	24...	1500	1,210	267	15.0
FEB 2003					JUN				
12...	1510	9.4	740	8.0	30...	1140	23	--	24.0
MAR									
10...	1300	8.8	410	4.0					
06890100 DELAWARE R NR MUSCOTAH, KS (LAT 39 31 17N LONG 095 31 57W)									
OCT 2002					MAY 2003				
11...	1230	2.3	--	20.0	07...	1245	26	495	18.0
21...	1250	3.1	--	15.5	29...	1520	9.6	--	19.0
FEB 2003					JUL				
11...	1340	9.1	840	2.0	02...	1230	4.1	572	32.5
APR					11...	1150	0.59	--	28.5
09...	1345	20	700	12.0	18...	1210	0.06	--	27.0
16...	1400	8.3	580	15.0	28...	1545	0.04	--	27.0
29...	1440	233	295	15.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Kansas River Basin--Continued									
06891000 KANSAS R AT LECOMPTON, KS (LAT 39 03 07N LONG 095 23 15W)									
OCT 2002					JUN 2003				
10...	1350	985	967	20.0	30...	1400	3,490	--	24.0
MAR 2003					SEP				
07...	1340	828	1,080	4.0	19...	1245	6,100	--	18.5
MAY									
02...	1030	2,540	490	15.0					
06891260 WAKARUSA R NR RICHLAND, KS (LAT 38 53 31N LONG 095 35 40W)									
OCT 2002					APR 2003				
25...	1415	35	440	7.5	20...	1320	2,160	245	14.0
DEC					22...	1710	170	325	15.5
13...	1100	0.55	492	5.0	23...	1600	107	352	15.0
JAN 2003					MAY				
29...	1400	0.56	560	3.5	06...	1605	30	435	19.5
FEB					JUN				
13...	1030	0.69	548	4.0	10...	1200	12	--	22.0
21...	1025	4.7	534	4.0	AUG				
MAR					12...	1445	0.05	436	29.0
25...	1145	7.4	558	12.0					
06891500 WAKARUSA R NR LAWRENCE, KS (LAT 38 54 40N LONG 095 15 37W)									
OCT 2002					APR 2003				
15...	1025	3.8	--	12.5	16...	1440	25	389	21.0
NOV					JUN				
19...	1120	4.8	--	8.0	16...	1020	25	380	22.0
DEC					JUL				
13...	1100	3.5	409	4.0	30...	1220	0.67	--	26.0
FEB 2003									
18...	1000	3.8	--	5.0					
06892000 STRANGER C NR TONGANOXIE, KS (LAT 39 06 59N LONG 095 00 39W)									
OCT 2002					JUN 2003				
11...	1130	1.1	126	16.0	17...	1005	15	336	21.5
NOV					23...	1445	3,110	151	23.0
20...	1450	2.7	--	9.0	JUL				
JAN 2003					31...	1300	0.50	--	26.5
06...	1400	5.9	600	2.0	AUG				
FEB					20...	1130	0.07	--	28.0
20...	1040	13	--	3.0	SEP				
APR					12...	1300	1.7	433	21.5
15...	1010	4.7	587	20.0					
21...	1020	740	348	--					
23...	1020	73	--	24.0					
06892350 KANSAS R AT DESOTO, KS (LAT 38 59 00N LONG 094 57 52W)									
DEC 2002					MAR 2003				
26...	1345	383	--	1.0	11...	1005	1,100	--	7.0
JAN 2003									
21...	1300	317	1,030	0.5					
Blue River Basin									
06893080 BLUE R NR STANLEY, KS (LAT 38 48 45N LONG 094 40 31W)									
DEC 2002					APR 2003				
06...	1300	0.15	535	6.0	17...	1400	0.74	587	18.0
FEB 2003					JUN				
19...	1345	2.6	607	3.0	12...	1120	16	536	23.0

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Blue River Basin--Continued									
06893300 INDIAN C AT OVERLAND PARK, KS (LAT 38 56 30N LONG 094 40 10W)									
OCT 2002					APR 2003				
17...	1020	28	--	10.0	17...	1055	20	1,170	20.0
DEC 06...	1045	6.9	1,090	7.5	JUN 17...	1315	16	992	22.0
FEB 2003					AUG 05...	1040	7.3	979	26.5
19...	1130	13	1,330	7.0					
Osage River Basin									
06910800 MARAIS DES CYGNES R NR READING, KS (LAT 38 34 00N LONG 095 57 50W)									
NOV 2002					JUN 2003				
20...	1310	1.3	486	7.5	13...	1340	17	395	24.0
FEB 2003					SEP 12...	1420	34	--	21.5
11...	1415	1.2	389	7.0	15...	1315	84	--	19.0
APR 16...	1340	3.6	--	16.5					
24...	1110	3,290	--	13.0					
06911490 SALT C AT LYNDON, KS (LAT 38 36 07N LONG 095 41 05W)									
NOV 2002					JUN 2003				
13...	1430	0.19	510	10.0	09...	1410	7.5	--	22.0
FEB 2003					SEP 12...	1555	1.6	--	21.0
13...	1305	0.41	655	6.0					
APR 25...	1215	466	--	13.0					
06911900 DRAGOON C NR BURLINGAME, KS (LAT 38 42 30N LONG 095 50 20W)									
FEB 2003					AUG 2003				
11...	1140	1.1	570	4.0	25...	1230	0.01	--	32.0
APR 16...	1110	3.3	--	15.0					
24...	1000	2,070	--	12.5					
06912500 HUNDRED AND TEN MILE C NR QUENEMO, KS (LAT 38 38 41N LONG 095 33 34W)									
NOV 2002					JUN 2003				
20...	1530	15	337	9.0	09...	1130	112	334	20.0
FEB 2003					AUG 28...	1400	16	--	25.0
10...	1445	40	360	1.5					
APR 15...	1440	16	345	13.5					
06913000 MARAIS DES CYGNES R NR POMONA, KS (LAT 38 35 03N LONG 095 27 12W)									
NOV 2002					APR 2003				
05...	1315	43	400	8.0	15...	1105	38	405	17.5
DEC 06...	1430	68	372	3.0	25...	1105	3,160	--	13.0
FEB 2003					JUN 11...	1040	311	369	21.0
10...	1115	64	415	0.5	AUG 19...	1115	36	--	28.0
06913500 MARAIS DES CYGNES R NR OTTAWA, KS (LAT 38 37 07N LONG 095 16 04W)									
OCT 2002					APR 2003				
03...	1040	50	381	22.0	15...	1445	35	--	20.0
JAN 2003					25...	1025	4,160	--	13.0
08...	1500	57	409	5.0	JUN 16...	1330	307	401	24.0
MAR 06...	1440	56	--	4.0	AUG 04...	1140	29	--	26.0

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Osage River Basin--Continued									
06914100 POTTAWATOMIE C NR SCIPIO, KS (LAT 38 20 57N LONG 095 12 12W)									
OCT 2002					APR 2003				
02...	1230	0.05	399	24.0	01...	1350	4.3	444	17.0
31...	1215	0.80	--	7.5	30...	1230	58	323	--
NOV					JUN				
18...	1150	0.24	--	15.0	09...	1135	109	273	21.0
JAN 2003					26...	1030	1.1	373	20.5
08...	1150	0.26	513	8.0	JUL				
FEB					01...	1015	172	158	23.5
20...	1600	5.6	602	3.0	21...	1250	0.04	--	26.5
06914950 BIG BULL C NR EDGERTON, KS (LAT 38 45 12N LONG 094 58 34W)									
OCT 2002					APR 2003				
09...	1205	0.21	680	16.5	15...	1250	0.27	--	22.0
18...	1150	0.03	--	10.5	JUN				
FEB 2003					09...	1500	1.5	482	26.0
20...	1340	0.77	--	2.0	11...	1200	42	373	21.0
06914990 L BULL C NR SPRING HILL, KS (LAT 38 45 11N LONG 094 52 10W)									
OCT 2002					JUN 2003				
17...	1400	1.6	--	9.0	11...	1010	76	230	21.0
FEB 2003					AUG				
19...	1520	0.81	--	4.0	05...	1415	0.12	--	26.5
APR									
17...	1550	0.93	1,240	18.0					
06915000 BIG BULL C NR HILLSDALE, KS (LAT 38 38 12N LONG 094 53 29W)									
OCT 2002					JUN 2003				
03...	1325	15	347	22.0	12...	1355	20	363	22.0
DEC					AUG				
05...	1100	8.2	350	4.0	07...	1130	19	349	27.5
MAR 2003									
06...	1230	5.0	--	7.0					
06915800 MARAIS DES CYGNES R AT LA CYGNE, KS (LAT 38 20 43N LONG 094 46 19W)									
OCT 2002					APR 2003				
04...	1215	65	396	23.0	14...	1505	60	--	21.0
NOV					MAY				
21...	1535	48	424	9.0	06...	1010	1,990	--	19.5
JAN 2003					JUL				
14...	1040	67	420	1.0	08...	1125	550	331	28.0
MAR					AUG				
07...	1230	80	417	6.0	06...	1415	46	400	27.0
06916600 MARAIS DES CYGNES R NR KS-MO ST LINE, KS (LAT 38 13 21N LONG 094 40 04W)									
NOV 2002					APR 2003				
27...	1305	50	435	6.0	14...	1245	32	--	21.0
JAN 2003					AUG				
14...	1250	43	466	3.0	06...	1145	52	367	26.5
06917000 L OSAGE R AT FULTON, KS (LAT 38 01 09N LONG 094 42 48W)									
OCT 2002					MAY 2003				
09...	1720	0.13	399	16.5	15...	1310	32	420	22.0
NOV					JUN				
21...	1320	0.06	419	10.0	20...	1430	20	449	--
FEB 2003					AUG				
28...	1500	0.92	358	4.5	04...	1545	0.02	--	31.0
APR									
01...	1655	12	385	16.0					



## MISCELLANEOUS SURFACE-WATER STATIONS

607

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Osage River Basin--Continued									
06917240 MARMATON R NR UNIONTOWN, KS (LAT 37 50 08N LONG 094 58 52W)									
FEB 2003					JUN 2003				
28...	0930	2.3	407	2.0	20...	1230	5.7	452	--
APR 01...	1245	9.9	338	14.5	SEP 02...	1730	62	--	20.0
MAY 02...	1320	240	304	18.5					
06917380 MARMATON R NR MARMATON, KS (LAT 37 49 03N LONG 094 47 30W)									
OCT 2002					APR 2003				
09...	1530	0.09	390	21.0	01...	1440	34	337	15.0
NOV 20...	1650	0.04	--	12.0	JUN 17...	1420	30	447	--
FEB 2003					JUL 29...	1310	0.05	--	27.5
28...	1155	12	343	2.5					
Arkansas River Basin									
07137000 FRONTIER DITCH NR COOLIDGE, KS (LAT 38 02 18N LONG 102 02 19W)									
APR 2003									
21...	1635	27	4,300	19.5					
07137500 ARKANSAS R NR COOLIDGE, KS (LAT 38 01 34N LONG 102 00 41W)									
DEC 2002					MAY 2003				
09...	1435	59	--	9.0	23...	0900	28	4,350	17.0
JAN 2003					JUN 04...	0910	36	4,130	17.0
23...	1615	38	4,740	3.0	JUL 09...	0825	13	4,580	19.5
FEB 11...	0910	60	4,380	3.0	31...	1450	6.9	3,570	35.5
MAR 27...	1355	42	4,580	12.0	AUG 28...	0810	6.3	4,240	20.0
APR 23...	1310	31	4,430	19.0					
07138000 ARKANSAS R AT SYRACUSE, KS (LAT 37 57 58N LONG 101 45 23W)									
OCT 2002					APR 2003				
22...	1530	34	4,490	6.5	23...	1635	32	4,360	18.5
DEC 09...	1625	50	4,500	8.0	JUN 03...	1115	29	4,160	22.0
FEB 2003					JUL 31...	1155	2.2	3,500	32.0
11...	1250	54	4,810	6.5	AUG 27...	1015	1.4	3,190	23.0
MAR 28...	0940	49	4,560	4.5					
07138020 ARKANSAS R AT KENDALL, KS (LAT 37 55 48N LONG 101 32 56W)									
OCT 2002					JUN 2003				
23...	1000	28	4,050	5.0	03...	1410	30	3,640	25.0
DEC 02...	1430	48	4,170	10.5	JUL 10...	0955	24	3,970	22.0
FEB 2003					30...	1330	3.7	3,720	35.0
10...	1330	53	4,240	4.0	AUG 27...	0815	1.1	3,720	18.0
APR 02...	1015	46	3,790	13.0					
07138070 ARKANSAS R AT DEERFIELD, KS (LAT 37 58 11N LONG 101 07 42W)									
DEC 2002					APR 2003				
02...	1155	12	4,380	5.0	28...	1015	3.6	4,350	15.5
12...	1535	16	4,220	5.5	MAY 02...	1505	9.2	4,010	22.0
JAN 2003					JUN 02...	1605	3.8	3,020	33.0
29...	1505	5.1	4,130	6.0					
MAR 07...	1000	29	3,650	1.5					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07140000 ARKANSAS R NR KINSLEY, KS (LAT 37 55 33N LONG 099 22 31W)									
NOV 2002					APR 2003				
21...	1255	0.11	1,640	8.0	04...	1500	0.13	1,570	15.5
FEB 2003									
11...	1530	0.13	1,720	7.5					
07141175 BUCKNER C NR BURDETT, KS (LAT 38 09 45N LONG 099 38 33W)									
SEP 2003					SEP 2003				
02...	1400	120	203	--	19...	1100	15	222	16.0
08...	1115	46	235	20.0	23...	1505	2.1	265	20.0
07141200 PAWNEE R AT ROZEL, KS (LAT 38 12 00N LONG 099 20 50W)									
OCT 2002					SEP 2003				
16...	1100	0.56	288	6.0	08...	1450	68	197	20.5
JUN 2003					23...	1200	4.9	257	18.0
02...	1320	0.43	--	24.0					
AUG 29...	0940	335	115	20.5					
07141220 ARKANSAS R NR LARNED, KS (LAT 38 12 13N LONG 099 00 07W)									
SEP 2003					SEP 2003				
10...	1050	23	298	22.0	15...	1155	106	179	18.5
07141300 ARKANSAS R AT GREAT BEND, KS (LAT 38 21 11N LONG 098 45 50W)									
OCT 2002					JUN 2003				
02...	1120	1.8	950	17.0	11...	0825	4.1	936	19.0
NOV 01...	1230	2.8	964	4.0	JUL 02...	1355	2.1	934	28.5
20...	1020	2.5	1,010	5.0	18...	0945	1.1	1,160	25.5
DEC 17...	1045	2.9	1,060	7.0	AUG 12...	1400	0.39	--	27.0
FEB 2003					SEP 03...	1330	0.45	--	27.5
10...	1035	3.2	1,080	4.5	10...	1355	0.37	1,200	26.0
APR 04...	1050	4.0	1,030	16.0	16...	1105	0.48	--	20.0
28...	1050	5.2	986	17.0	19...	1045	16	364	14.0
07141770 WALNUT C NR ALEXANDER, KS (LAT 38 27 53N LONG 099 37 20W)									
OCT 2002					JUN 2003				
08...	1415	2.2	985	14.0	25...	1045	2.3	1,150	22.5
NOV 21...	1255	2.0	1,140	10.5	JUL 25...	1215	0.37	1,080	26.0
FEB 2003					AUG 15...	1005	0.13	1,110	25.0
05...	1000	3.7	1,270	1.5	SEP 17...	1105	1.4	1,200	22.0
MAR 26...	1155	5.6	1,350	13.5					
MAY 06...	1315	4.3	1,140	17.0					
07141780 WALNUT C AT NEKOMA, KS (LAT 38 28 07N LONG 099 22 07W)									
OCT 2002					APR 2003				
08...	0950	1.6	956	12.0	03...	1050	5.3	1,290	15.0
31...	1020	2.0	--	3.5	MAY 05...	1235	5.9	1,040	18.0
NOV 20...	1025	1.9	1,240	5.5	JUN 26...	1030	3.0	1,150	20.0
FEB 2003									
04...	1110	5.5	--	0.0					

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07141900 WALNUT C AT ALBERT, KS (LAT 38 27 40N LONG 099 00 50W)									
OCT 2002					APR 2003				
04...	1045	12	585	11.5	03...	1040	6.0	1,170	17.0
NOV					JUN				
21...	1040	0.19	1,300	7.0	03...	1015	51	353	18.0
FEB 2003									
10...	1440	4.5	1,410	0.5					
07142020 WALNUT C BLW CHEYENNE BTMS DV NR GREAT BEND, KS (LAT 38 25 08N LONG 098 45 53W)									
MAR 2003					MAY 2003				
07...	1400	0.14	1,290	3.0	05...	1345	0.12	1,150	28.0
APR					JUN				
04...	1340	0.11	1,170	18.5	11...	1400	0.19	642	28.0
07142300 RATTLESNAKE C NR MACKSVILLE, KS (LAT 37 52 18N LONG 098 52 33W)									
DEC 2002					JUN 2003				
23...	1125	3.6	567	2.0	24...	1430	2.6	--	29.0
MAR 2003					JUL				
05...	0945	4.4	--	0.0	11...	1040	0.05	630	27.0
MAY									
07...	1605	5.4	490	19.0					
07142575 RATTLESNAKE C NR ZENITH, KS (LAT 38 05 37N LONG 098 32 45W)									
OCT 2002					APR 2003				
01...	1255	5.3	9,030	25.0	14...	1145	22	5,220	17.5
NOV					MAY				
13...	1225	12	7,510	10.0	30...	0950	24	5,480	24.0
JAN 2003					JUL				
31...	1140	16	--	5.0	14...	1230	4.8	9,910	31.5
FEB					AUG				
26...	1110	16	5,600	0.0	20...	1220	2.2	10,500	30.0
MAR					SEP				
26...	1140	41	3,820	15.0	29...	1130	3.3	9,860	12.5
07142680 ARKANSAS R NR NICKERSON, KS (LAT 38 08 42N LONG 098 06 39W)									
OCT 2002					MAY 2003				
17...	1035	97	2,010	11.0	08...	1240	133	3,620	22.5
DEC					JUN				
02...	1050	77	2,920	8.0	23...	1450	98	3,020	32.5
MAR 2003					AUG				
06...	0950	73	3,610	0.5	05...	1240	45	2,380	32.0
07143300 COW C NR LYONS, KS (LAT 38 18 30N LONG 098 11 30W)									
OCT 2002					MAY 2003				
16...	1045	10	1,330	10.0	08...	0925	18	1,770	16.0
NOV					JUN				
29...	1255	8.3	2,000	8.0	24...	0930	10	1,740	24.0
MAR 2003					AUG				
06...	1305	8.6	2,110	1.0	05...	0905	3.5	1,930	23.0
07143330 ARKANSAS R NR HUTCHINSON, KS (LAT 37 56 47N LONG 097 46 29W)									
OCT 2002					JUN 2003				
17...	1415	244	2,350	14.5	23...	1025	169	2,430	28.0
DEC					AUG				
02...	1355	165	2,490	10.0	04...	1255	79	2,540	29.0
MAR 2003					20...	1035	66	2,550	27.0
07...	0950	141	2,600	5.0					
MAY									
13...	1325	273	2,620	18.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07143375 ARKANSAS R NR MAIZE, KS (LAT 37 46 53N LONG 097 23 33W)									
OCT 2002					MAR 2003				
22...	1105	234	2,190	12.0	14...	1525	142	2,820	18.0
NOV					APR				
14...	1000	207	--	10.0	16...	1505	281	2,260	19.5
DEC					MAY				
03...	1015	174	2,540	2.0	30...	1000	506	1,880	26.5
JAN 2003					JUL				
14...	1610	143	2,550	4.5	08...	1415	134	2,390	33.5
FEB					AUG				
19...	1355	150	2,710	13.0	20...	1115	32	1,590	30.0
07143665 L ARKANSAS R AT ALTA MILLS, KS (LAT 38 06 44N LONG 097 35 30W)									
OCT 2002					MAY 2003				
18...	1050	17	--	10.0	07...	1510	46	1,300	19.5
DEC					JUN				
05...	0930	13	2,290	1.0	24...	1500	25	1,180	28.5
JAN 2003					JUL				
15...	1120	10	2,440	1.0	25...	1045	6.7	1,630	24.5
MAR					AUG				
07...	1255	15	1,920	3.5	04...	0950	5.0	814	26.0
07143672 L ARKANSAS R AT HWY 50 NR HALSTEAD, KS (LAT 38 01 43N LONG 097 32 25W)									
OCT 2002					MAR 2003				
21...	1320	20	940	12.0	17...	1350	19	1,830	14.0
FEB 2003					JUL				
07...	1040	15	1,860	0.5	18...	1020	5.8	1,270	29.0
07144100 L ARKANSAS R NR SEDGWICK, KS (LAT 37 52 59N LONG 097 25 27W)									
OCT 2002					MAY 2003				
21...	1205	36	670	12.0	21...	1020	616	333	17.0
28...	0955	1,810	363	8.5	JUL				
JAN 2003					18...	1210	12	910	30.0
13...	1110	33	1,290	2.0	AUG				
MAR					22...	0915	4.6	880	27.0
17...	1100	38	1,230	15.5	SEP				
24...	1140	1,160	301	14.5	02...	1200	797	524	20.0
APR									
16...	1150	71	1,170	16.5					
07144200 L ARKANSAS R AT VALLEY CENTER, KS (LAT 37 49 56N LONG 097 23 16W)									
OCT 2002					APR 2003				
21...	1145	47	589	11.5	17...	1020	75	1,050	13.5
DEC					MAY				
05...	1315	44	1,000	3.5	27...	1455	857	338	22.5
JAN 2003					JUL				
17...	1105	50	1,440	1.0	08...	1040	31	726	26.5
MAR					AUG				
31...	1040	158	730	12.0	19...	1005	9.6	710	30.0
07144300 ARKANSAS R AT WICHITA, KS (LAT 37 38 41N LONG 097 20 06W)									
OCT 2002					JUN 2003				
29...	1345	2,590	640	9.0	18...	1000	354	1,900	30.5
DEC					JUL				
17...	1020	252	2,010	11.0	08...	1035	194	1,140	29.0
MAR 2003					29...	1345	95	1,910	32.5
03...	1445	215	2,080	9.0	AUG				
24...	1345	6,440	388	15.0	18...	1030	72	1,800	29.0
APR									
14...	1030	381	2,200	21.0					

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07144480 COWSKIN C AT 119TH ST AT WICHITA, KS (LAT 37 42 05N LONG 097 28 49W)									
OCT 2002					APR 2003				
04...	1335	1,080	100	18.0	11...	1125	4.6	816	13.5
25...	1050	96	330	6.0	MAY				
DEC					21...	1000	9.7	462	17.5
10...	1205	4.1	894	3.0	JUL				
FEB 2003					08...	1350	2.8	1,530	27.0
10...	1405	6.5	890	7.5	AUG				
12...	1410	6.7	950	9.0	14...	1030	2.3	1,630	24.0
MAR									
13...	0945	2.9	859	7.5					
07144550 ARKANSAS R AT DERBY, KS (LAT 37 32 34N LONG 097 16 31W)									
OCT 2002					JUN 2003				
30...	1430	1,850	670	7.0	20...	1110	442	1,710	26.0
DEC					AUG				
19...	1135	334	2,020	9.0	01...	1425	196	1,640	33.0
MAR 2003					SEP				
06...	1430	245	1,730	10.0	08...	1500	248	1,160	26.5
24...	1025	7,580	430	13.0					
MAY									
05...	1100	672	1,350	26.5					
07144780 NF NINNESCAH R AB CHENEY RE, KS (LAT 37 51 49N LONG 098 00 52W)									
OCT 2002					MAY 2003				
18...	1210	63	1,230	14.0	07...	1035	100	1,230	17.0
FEB 2003					30...	1155	159	1,010	27.0
04...	1300	78	1,280	1.5	JUL				
27...	1300	108	1,240	1.0	17...	1145	17	1,200	31.0
MAR					AUG				
20...	1020	3,030	398	8.0	19...	0940	8.9	1,090	27.0
25...	1200	292	987	13.5	SEP				
					03...	1000	59	1,370	23.0
07144795 NF NINNESCAH R AT CHENEY DAM, KS (LAT 37 43 17N LONG 097 47 39W)									
OCT 2002					APR 2003				
03...	1210	0.93	680	16.5	08...	0915	806	830	9.0
DEC					JUN				
19...	1000	0.17	990	2.0	12...	1050	0.72	827	22.0
JAN 2003					27...	1230	0.41	818	25.0
08...	1345	0.68	847	9.0	JUL				
FEB					17...	1320	0.40	850	32.5
05...	1345	276	881	2.5	AUG				
MAR					19...	1110	0.52	863	30.0
25...	0930	1,230	818	9.0					
07144910 SF NINNESCAH R NR PRATT, KS (LAT 37 38 16N LONG 098 43 14W)									
OCT 2002					JUN 2003				
04...	0950	907	101	14.0	24...	1110	8.1	474	24.5
15...	1410	11	425	15.0	JUL				
DEC					11...	1140	6.9	451	25.5
23...	1435	10	566	5.0	22...	1145	5.4	456	25.0
MAR 2003					AUG				
05...	1345	9.7	578	4.0	06...	0825	5.2	431	25.0
19...	1410	138	189	10.5	13...	1045	4.4	508	24.0
MAY									
06...	1505	10	510	19.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07145200 SF NINNESCAH R NR MURDOCK, KS (LAT 37 33 51N LONG 097 51 10W)									
OCT 2002					JUN 2003				
17...	1515	154	1,240	17.0	17...	1200	141	1,070	28.5
DEC 18...	1445	181	1,090	10.0	JUL 23...	1405	56	1,470	33.0
MAR 2003					AUG 07...	1405	55	1,390	33.0
13...	1140	169	1,120	10.0					
20...	1030	2,560	275	9.5					
MAY 06...	1035	202	934	18.5					
07145500 NINNESCAH R NR PECK, KS (LAT 37 27 26N LONG 097 25 20W)									
OCT 2002					JUN 2003				
25...	1620	696	635	6.0	24...	1420	172	910	30.0
DEC 20...	1350	235	650	8.0	JUL 31...	1430	47	1,230	32.5
MAR 2003					SEP 09...	1515	161	1,100	27.5
07...	1035	271	1,080	8.0					
24...	1405	1,960	780	15.0					
APR 28...	1340	1,760	800	19.0					
07145700 SLATE C AT WELLINGTON, KS (LAT 37 15 00N LONG 097 24 12W)									
OCT 2002					JUN 2003				
29...	1055	387	370	9.0	06...	1025	2,410	160	19.0
DEC 23...	1420	13	1,400	3.0	19...	1330	12	1,140	25.0
MAR 2003					JUL 30...	1510	3.2	1,360	29.0
10...	1445	20	1,030	7.0	SEP 10...	1350	5.3	693	24.0
APR 17...	1435	17	1,430	17.0					
30...	1350	33	1,140	23.0					
07146500 ARKANSAS R AT ARKANSAS CITY, KS (LAT 37 03 23N LONG 097 03 32W)									
NOV 2002					JUN 2003				
08...	1135	1,240	1,310	13.5	19...	0945	912	1,660	27.0
DEC 19...	1240	712	1,650	10.0	JUL 29...	1550	324	1,720	31.0
FEB 2003					SEP 16...	1335	1,870	520	24.0
13...	1420	815	1,390	8.0					
APR 30...	1005	3,690	870	21.0					
07146995 ROCK C NR POTWIN, KS (LAT 37 51 50N LONG 097 01 27W)									
OCT 2002					APR 2003				
25...	1050	1.2	1,130	6.0	15...	1125	0.25	1,570	18.5
28...	1310	27	174	8.0	28...	1625	6.2	524	20.5
29...	0955	10	201	8.5	MAY 28...	1355	3.2	610	20.0
31...	1010	2.5	302	6.5	JUN 06...	1210	92	259	18.5
NOV 20...	1110	0.14	1,010	6.0	JUL 09...	1030	0.17	1,100	25.5
DEC 06...	0955	0.13	1,440	0.5	25...	1400	0.05	1,660	23.5
FEB 2003					SEP 05...	1530	0.07	1,360	21.5
18...	1300	0.33	1,740	3.0	24...	1325	1.4	833	19.0
MAR 06...	1025	0.28	1,640	0.5					
19...	1240	166	156	11.5					

MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07147070 WHITEWATER R AT TOWANDA, KS (LAT 37 47 45N LONG 097 00 45W)									
OCT 2002					MAY 2003				
15...	1230	5.1	704	13.0	28...	1100	101	744	20.0
DEC 06...	1105	20	1,720	0.5	JUL 09...	1405	26	1,100	31.0
JAN 2003					23...	1035	16	1,360	24.0
13...	1410	16	1,760	3.5	AUG 18...	1110	7.0	1,540	26.5
MAR 10...	1345	15	1,450	6.5	27...	1400	4.3	1,450	26.5
APR 15...	1310	33	1,100	20.0					
07147800 WALNUT R AT WINFIELD, KS (LAT 37 13 27N LONG 096 59 40W)									
OCT 2002					APR 2003				
21...	1250	151	490	14.0	21...	1145	8,300	380	15.0
DEC 17...	1500	167	870	7.0	JUN 17...	1110	1,100	490	26.0
FEB 2003					JUL 28...	1015	95	770	31.0
12...	1130	108	950	4.0	SEP 15...	1210	7,040	200	19.0
MAR 21...	1035	19,600	270	10.0					
07149000 MEDICINE LODGE R NR KIOWA, KS (LAT 37 02 17N LONG 098 28 04W)									
OCT 2002					JUN 2003				
25...	1335	234	1,020	8.5	26...	1525	56	1,380	29.0
DEC 20...	1240	123	1,170	5.0	JUL 23...	1020	3.4	1,240	25.5
MAR 2003					AUG 07...	0900	12	1,410	25.5
04...	1130	182	1,170	8.0	14...	1130	1.3	--	27.5
MAY 05...	1510	178	1,290	26.0					
07151500 CHIKASKIA R NR CORBIN, KS (LAT 37 07 44N LONG 097 36 04W)									
OCT 2002					JUN 2003				
30...	1115	764	304	9.0	25...	1140	121	610	28.0
DEC 23...	1140	134	630	1.0	JUL 30...	1005	37	540	30.0
MAR 2003					AUG 28...	1145	9.4	373	32.0
10...	1135	155	590	6.0					
APR 17...	1140	243	640	15.0					
24...	1320	8,060	160	14.0					
07155590 CIMARRON R NR ELKHART, KS (LAT 37 07 30N LONG 101 53 50W)									
JUN 2003									
05...	1100	55	196	13.0					
07157500 CROOKED C NR ENGLEWOOD, KS (LAT 37 01 54N LONG 100 12 29W)									
OCT 2002					MAY 2003				
24...	1320	6.8	4,700	6.5	17...	1300	942	255	21.5
DEC 19...	0850	6.2	4,330	3.0	20...	1415	147	--	20.5
FEB 2003					29...	1230	32	3,200	27.0
13...	1020	6.8	4,300	6.0	JUL 24...	1135	4.9	3,690	26.0
APR 18...	1245	6.0	4,440	18.5	AUG 25...	1610	0.69	3,930	32.0

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07157940 BLUFF CREEK NR BUTTERMILK, KS (LAT 37 01 55N LONG 099 28 45W)									
OCT 2002					MAY 2003				
03...	1545	1,110	189	12.0	06...	0935	33	930	17.0
24...	1645	32	816	6.5	JUN				
DEC					25...	1720	11	1,160	32.5
19...	1145	26	930	5.5	JUL				
MAR 2003					22...	1615	0.40	2,390	33.5
04...	1525	51	--	6.0	AUG				
21...	1000	91	691	9.0	06...	1430	0.94	1,880	34.0
APR									
24...	1500	118	754	15.5					
07166500 VERDIGRIS R NR ALTOONA, KS (LAT 37 29 26N LONG 095 40 49W)									
OCT 2002					FEB 2003				
11...	1330	13	348	18.5	19...	1115	47	415	5.5
NOV					JUL				
18...	1640	1.5	410	10.0	18...	1445	9.0	--	34.0
07167500 OTTER C AT CLIMAX, KS (LAT 37 42 30N LONG 096 13 30W)									
OCT 2002					APR 2003				
02...	1340	0.21	528	26.0	09...	1015	30	469	9.0
NOV					28...	1030	113	439	19.0
19...	0900	8.0	486	7.0	JUN				
FEB 2003					19...	1500	18	499	--
21...	1300	57	424	7.5	JUL				
MAR					30...	1200	1.1	--	29.0
19...	1310	5,670	--	12.0	SEP				
20...	1015	1,290	242	9.0	03...	0830	13	--	19.0
07169500 FALL R AT FREDONIA, KS (LAT 37 30 30N LONG 095 50 00W)									
OCT 2002					MAR 2003				
03...	1525	13	408	25.0	19...	1350	5,040	171	12.0
NOV					APR				
18...	1425	6.2	527	12.0	09...	1300	244	407	11.5
DEC					JUN				
11...	1350	9.6	742	5.0	19...	1215	126	446	26.5
FEB 2003					JUL				
27...	1230	167	401	2.0	30...	0935	11	--	27.5
07169800 ELK R AT ELK FALLS, KS (LAT 37 22 32N LONG 096 11 07W)									
OCT 2002					JUN 2003				
22...	0940	18	350	12.0	17...	1705	67	430	27.0
DEC					JUL				
18...	0955	35	450	8.0	28...	1420	3.6	460	31.0
FEB 2003					SEP				
12...	1500	16	500	6.0	15...	1620	26	320	22.0
APR									
29...	1225	158	400	21.0					
07170500 VERDIGRIS R AT INDEPENDENCE, KS (LAT 37 13 24N LONG 095 40 40W)									
OCT 2002					JUN 2003				
03...	0845	70	393	22.5	19...	0915	225	348	--
NOV					AUG				
19...	1150	37	340	10.0	07...	1220	117	--	28.0
FEB 2003									
21...	0900	760	409	6.5					



MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07170700 BIG HILL C NR CHERRYVALE, KS (LAT 37 16 00N LONG 095 28 05W)									
FEB 2003					JUN 2003				
20...	1630	0.04	495	9.0	17...	1755	8.9	224	--
MAR 31...	1705	0.95	248	14.0	JUL 18...	0840	0.08	442	24.5
MAY 01...	1240	37	205	19.5					
20...	1415	145	207	20.5					
07170990 VERDIGRIS R AT COFFEYVILLE, KS (LAT 37 00 20N LONG 095 35 32W)									
OCT 2002					FEB 2003				
03...	1115	28	472	24.5	19...	1505	313	359	6.0
NOV 19...	1600	35	579	11.0	AUG 07...	1445	105	--	30.0
07172000 CANEY R NR ELGIN, KS (LAT 37 00 13N LONG 096 18 54W)									
OCT 2002					MAY 2003				
22...	1515	29	330	16.0	19...	1155	1,680	317	20.0
DEC 18...	1400	63	490	10.0	JUN 06...	1550	5,350	--	20.5
FEB 2003					18...	1340	135	440	28.5
13...	1000	25	460	6.0	JUL 29...	1010	12	400	31.0
MAR 20...	1240	4,450	270	10.0	SEP 16...	1000	60	380	22.0
APR 29...	1600	335	410	23.0					
07179500 NEOSHO R AT COUNCIL GROVE, KS (LAT 38 39 54N LONG 096 29 38W)									
NOV 2002					AUG 2003				
22...	1230	2.0	380	10.0	27...	1330	34	--	25.5
FEB 2003									
11...	1620	8.8	392	4.0					
07179730 NEOSHO R NR AMERICUS, KS (LAT 38 28 01N LONG 096 15 01W)									
DEC 2002					APR 2003				
03...	1345	9.4	445	3.5	25...	1440	3,760	--	13.5
FEB 2003					JUN 13...	1040	41	444	23.5
12...	1045	14	524	4.5					
07179795 N COTTONWOOD R BL MARION LK, KS (LAT 38 22 00N LONG 097 05 00W)									
OCT 2002					MAY 2003				
01...	1510	8.6	640	23.0	28...	1400	9.6	643	22.5
NOV 14...	0840	1.4	661	9.0	JUL 16...	1320	11	605	29.0
FEB 2003					AUG 27...	1405	9.8	634	27.0
10...	1430	1.1	675	5.0					
APR 01...	1745	1.1	681	17.0					
07180400 COTTONWOOD R NR FLORENCE, KS (LAT 38 14 10N LONG 096 52 37W)									
OCT 2002					MAY 2003				
01...	1120	22	1,040	22.5	29...	1125	132	--	21.5
NOV 14...	1045	34	907	8.0	JUL 11...	1120	50	973	27.0
FEB 2003					AUG 29...	1145	43	--	26.5
10...	1110	30	1,230	1.5					
APR 01...	1300	70	988	15.0					

## MISCELLANEOUS SURFACE-WATER STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003—Continued

Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Date	Time	Instantaneous discharge, cfs (00061)	Specific conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)
Arkansas River Basin--Continued									
07180500 CEDAR C NR CEDAR POINT, KS (LAT 38 11 55N LONG 096 49 22W)									
OCT 2002					APR 2003				
01...	0940	0.22	468	22.0	01...	1025	31	--	13.5
NOV 14...	1315	10	553	8.0	MAY 29...	0945	33	530	20.5
FEB 2003					JUL 16...	1045	6.4	494	27.5
10...	0925	5.0	528	2.0	AUG 29...	1335	4.2	488	26.5
MAR 19...	1735	1,230	--	10.0					
07182250 COTTONWOOD R NR PLYMOUTH, KS (LAT 38 23 51N LONG 096 21 21W)									
DEC 2002					JUN 2003				
03...	1140	78	770	3.0	12...	1230	623	700	22.0
FEB 2003					AUG 26...	1125	27	--	28.0
12...	0900	55	1,080	1.0	SEP 02...	1405	2,230	--	20.0
APR 21...	1315	4,750	--	14.5					
24...	1340	9,850	--	13.0					
07182510 NEOSHO R AT BURLINGTON, KS (LAT 38 11 40N LONG 095 44 10W)									
OCT 2002					JUN 2003				
11...	1055	166	442	17.5	16...	1225	970	508	24.0
NOV 18...	1130	67	476	10.5	JUL 31...	1250	48	--	29.0
FEB 2003									
21...	1545	244	488	6.0					
07183000 NEOSHO R NR IOLA, KS (LAT 37 53 27N LONG 095 25 50W)									
OCT 2002					APR 2003				
09...	1200	118	452	18.5	01...	0915	565	415	12.0
NOV 21...	0900	55	462	9.0	JUN 20...	0835	639	504	--
FEB 2003					AUG 04...	1225	49	--	31.0
27...	1600	273	424	2.0					
07183500 NEOSHO R NR PARSONS, KS (LAT 37 20 24N LONG 095 06 35W)									
OCT 2002					MAR 2003				
04...	1300	28	410	23.0	31...	1420	648	444	12.5
NOV 20...	1300	82	423	11.0	JUL 29...	1630	36	--	30.5
07184000 LIGHTNING C NR MCCUNE, KS (LAT 37 16 54N LONG 095 01 56W)									
OCT 2002					MAR 2003				
04...	1115	0.03	377	20.0	31...	1140	18	488	11.5
JAN 2003					MAY 20...	1100	105	351	18.0
02...	1415	0.98	445	3.5	JUN 18...	1715	3.2	428	--
FEB 20...	1000	5.7	862	5.5					

## GROUND-WATER LEVELS

617

## HARVEY COUNTY

WELL 24S 02W 16BAA 01 SITE NUMBER 375810097324301

24-2W-16BAA. (886) F. H. HAIBER. DRILLED, UNUSED, WATER-TABLE WELL IN SAND AND GRAVEL OF PLEISTOCENE AGE. DEPTH 57 FEET, DIAMETER 1.25 INCHES. MEASURING POINT, TOP OF PIPE, 0.8 FOOT ABOVE LSD. MEASURED BY CITY OF WICHITA.

ALTITUDE OF LAND SURFACE 1402.23 FEET

RECORDS AVAILABLE 1939 TO CURRENT YEAR.

HIGHEST WATER LEVEL 2.34 FEET BELOW LAND SURFACE DATUM AUG 21, 1939.

LOWEST WATER LEVEL 42.19 FEET BELOW LAND SURFACE DATUM OCT 01, 1992.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 02, 2002	25.05	JAN 31, 2003	23.82	APR 03, 2003	24.14	JUL 08, 2003	24.97
HIGHEST 23.82		JAN 31, 2003					
LOWEST 25.05		OCT 02, 2002					

WELL 24S 02W 28DDD 01 SITE NUMBER 375540097320901

24-2W-28DDD. (M-49) CITY OF WICHITA. DRILLED, WATER-TABLE WELL IN SAND AND GRAVEL OF PLEISTOCENE AGE. DEPTH 246 FEET, DIAMETER 18 INCHES. MEASURING POINT, TOP OF CASING, 1.5 FEET ABOVE LSD. MEASURED BY CITY OF WICHITA.

ALTITUDE OF LAND SURFACE 1403. FEET

RECORDS AVAILABLE 1958 TO CURRENT YEAR.

HIGHEST WATER LEVEL 22.48 FEET BELOW LAND SURFACE DATUM JUN 02, 1975.

LOWEST WATER LEVEL 87.01 FEET BELOW LAND SURFACE DATUM OCT. 01, 1994.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01, 2002	65.50	JAN 31, 2003	61.87	JUL 01, 2003	32.80		
JAN 02, 2003	30.28	APR 01	61.59				
HIGHEST 30.28		JAN 02, 2003					
LOWEST 65.50		OCT 01, 2002					

## SEDGWICK COUNTY

WELL 26S 01W 19ABA 01 SITE NUMBER 374659097280201

26-1W-19ABA. (805) CITY OF WICHITA. DRIVEN, WATER-TABLE OBSERVATION WELL IN SAND AND GRAVEL OF PLEISTOCENE AGE. DEPTH 38 FEET, DIAMETER 1.25 INCHES. MEASURING POINT, TOP OF PIPE, 3.3 FEET ABOVE LSD.

ALTITUDE OF LAND SURFACE 1351.7 FEET

RECORDS AVAILABLE 1938 TO CURRENT YEAR.

HIGHEST WATER LEVEL 1.57 FEET BELOW LAND SURFACE DATUM APR 01, 1980.

LOWEST WATER LEVEL 9.89 FEET BELOW LAND SURFACE DATUM SEP 30, 1968.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04, 2002	7.25	JAN 31, 2003	6.80	APR 08, 2003	5.87	JUL 11, 2003	5.11
HIGHEST 5.11		JUL 11, 2003					
LOWEST 7.25		OCT 04, 2002					

## GROUND-WATER LEVELS

## THOMAS COUNTY

WELL 08S 34W 01BAC 01 SITE NUMBER 392329101040201

8-34W-1BA. KS. AGRICULTURAL EXPERIMENT STATION. DRILLED, UNUSED, WATER-TABLE WELL IN OGALLALA FORMATION.  
DIAMETER 16 INCHES, DEPTH 160 FEET. MEASURING POINT, TOP OF 2 INCH PIPE, 2.72 FEET ABOVE LSD. MEASURED BY GMD 4.

ALTITUDE OF LAND SURFACE 3177. FEET

RECORDS AVAILABLE 1947 TO CURRENT YEAR.

HIGHEST WATER LEVEL 112.31 FEET BELOW LAND SURFACE DATUM MAY 20, 1954.

LOWEST WATER LEVEL 135.82 FEET BELOW LAND SURFACE DATUM SEP 19, 2003.

## WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21, 2002	136.96	JAN 17, 2003	135.75	APR 21, 2003	136.50	JUL 21, 2003	137.05
NOV 20	136.42	FEB 20	135.66	MAY 21	136.06	AUG 20	137.57
DEC 20	136.16	MAR 21	136.10	JUN 20	136.19	SEP 19	137.82
HIGHEST 135.66		FEB 20, 2003					
LOWEST 137.82		SEP 19, 2003					

## GROUND-WATER LEVELS

619

## DOUGLAS COUNTY

390006095132301. Local number 12S 20E 17CCB 01

LOCATION.--Lat 39°00'06", long 95°13'23", Hydrologic Unit 10270104, County Code 045, on east side of county road, 3.6 mi northeast of Lawrence.

AQUIFER.--Unconsolidated aquifer in Newman terrace deposits of Pleistocene age. Aquifer code: 112NWMN.

WELL CHARACTERISTICS.--Drilled observation well, diameter 10 in., depth 50 ft.

INSTRUMENTATION.--Float gage interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.--Datum of gage is NGVD of 1929. Measuring point east side of hole in top of box, elevation 835.81 ft, measuring point is 3.6 ft above land surface.

REMARKS.--Water level fluctuates with Kansas River stage and nearby pumping.

PERIOD OF RECORD.--1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 821.72 ft above NGVD of 1929, July 25, 1993; lowest, 807.64 ft above NGVD of 1929, Aug. 28, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 809.07 ft, Nov. 9, 10; minimum elevation, 807.64 ft, Aug. 28.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	809.02	e809.02	808.88	808.72	e808.65	808.61	808.51	808.81	808.60	808.99	808.21	807.73
2	809.00	e809.03	808.88	808.71	e808.64	808.61	808.49	808.79	808.60	808.99	808.20	807.73
3	809.00	e809.03	808.87	808.71	e808.64	808.61	808.49	808.77	808.69	808.96	808.19	807.76
4	809.01	e809.04	808.86	808.71	e808.63	808.61	808.48	808.75	808.72	808.92	808.16	807.80
5	809.01	e809.05	808.86	808.69	808.63	808.61	808.46	808.74	808.74	808.86	808.16	807.83
6	809.01	809.05	808.86	808.67	808.63	808.61	808.46	808.69	808.78	808.81	808.13	807.85
7	809.01	809.04	808.84	808.67	808.63	808.61	808.47	808.67	808.86	808.77	808.11	807.85
8	809.01	809.06	808.81	808.67	808.63	808.61	808.45	808.67	808.88	808.74	808.09	807.85
9	809.01	809.07	808.80	808.65	808.63	808.59	808.45	808.65	808.91	808.72	808.07	807.86
10	809.01	809.07	808.79	808.63	808.64	808.58	808.46	808.64	808.95	808.72	808.04	807.88
11	809.01	809.03	808.79	808.63	808.64	808.57	808.46	808.64	808.96	808.72	808.02	807.88
12	809.01	809.00	808.78	808.63	808.63	808.56	808.44	808.64	808.97	808.72	808.02	807.88
13	808.99	809.00	808.77	808.63	808.63	808.55	808.42	808.64	808.97	808.68	808.00	807.89
14	808.99	809.00	808.77	808.63	808.65	808.56	808.42	808.64	808.97	808.66	807.98	807.90
15	809.00	808.98	808.77	808.63	808.65	808.57	808.41	808.64	808.94	808.64	807.96	807.92
16	808.98	808.95	808.77	808.64	808.63	808.57	808.40	808.60	808.91	808.59	807.95	807.95
17	808.97	808.94	808.77	808.63	808.63	808.57	808.39	808.60	808.88	808.56	807.92	807.97
18	808.97	808.95	808.78	808.64	808.63	808.57	808.39	808.62	808.84	808.52	807.90	807.97
19	808.96	e808.93	808.77	808.64	808.63	808.57	808.41	808.64	808.81	808.50	807.88	807.97
20	808.95	e808.91	808.76	808.66	808.63	808.56	808.53	808.64	808.77	808.47	807.86	807.97
21	808.95	808.89	808.76	808.66	808.63	808.55	808.58	808.65	808.75	808.45	807.84	807.96
22	808.94	808.88	808.76	808.65	808.64	808.55	808.60	808.67	808.72	808.43	807.81	807.97
23	808.94	808.88	808.75	808.63	808.63	808.55	808.63	808.68	808.74	808.40	807.80	807.95
24	808.94	808.88	808.75	808.63	808.61	808.55	808.71	808.69	808.87	808.39	807.77	807.94
25	808.96	808.88	808.75	e808.63	808.61	808.54	808.76	808.70	808.92	808.36	807.73	807.90
26	808.96	808.88	808.74	e808.63	808.61	808.54	808.79	808.71	808.95	808.35	807.69	807.90
27	808.96	808.88	808.74	e808.64	808.62	808.56	808.81	808.71	808.97	808.33	807.66	807.86
28	808.99	808.88	808.74	e808.64	808.61	808.54	808.83	808.70	808.98	808.30	807.65	807.83
29	809.00	808.88	808.74	e808.64	---	808.52	808.83	808.68	808.99	808.28	807.64	807.80
30	e809.01	808.89	808.74	808.64	---	e808.52	808.84	808.67	808.99	808.25	807.65	807.79
31	e809.01	---	808.72	808.65	---	e808.51	---	808.64	---	808.23	807.73	---
MEAN	808.99	808.97	808.79	808.65	808.63	808.57	808.55	808.68	808.85	808.59	807.93	807.88
MAX	809.02	809.07	808.88	808.72	808.65	808.61	808.84	808.81	808.99	808.99	808.21	807.97
MIN	808.94	808.88	808.72	808.63	808.61	808.51	808.39	808.60	808.60	808.23	807.64	807.73

e Estimated

## GROUND-WATER LEVELS

## HARVEY COUNTY

380028097311001. Local number EB-145-A1

LOCATION.-- Lat 38°00'28", long 97°30'52", Hydrologic Unit 11030012, County Code 079, Halstead quadrangle, on the upstream side of the bridge, north of the levee on Halstead Road in Halstead. Owner: Ground-Water Management District # 2.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 50.65 ft, screened 40.6-50.6 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.-- Datum of gage is NGVD of 1929. Measuring point is top of PVC casing, elevation 1,392.87 ft, top of casing is 2.8 ft above land surface.

REMARKS.--Water level fluctuates with river stage and nearby pumping.

PERIOD OF RECORD.--October 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,382.63 ft above NGVD of 1929, Nov. 4, 1998; lowest, 1,366.10 ft above NGVD of 1929, July 22, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,378.46 ft, Apr. 27; minimum elevation, 1,371.07 ft, Nov. 1.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,372.99	1,371.07	1,374.50	1,374.57	1,374.66	1,374.72	1,376.02	1,376.67	1,376.46	1,374.74	1,373.01	1,373.32
2	1,372.98	1,373.96	1,374.53	1,374.43	1,374.76	1,374.60	1,376.00	1,376.51	1,376.46	1,374.84	1,372.92	1,373.42
3	1,373.85	1,374.33	1,374.34	1,374.49	1,374.54	1,374.79	1,375.91	1,376.50	1,376.69	1,374.65	1,372.76	1,373.29
4	1,375.32	1,374.45	1,374.41	1,374.53	1,374.39	1,374.88	1,375.43	1,376.66	1,376.76	e1,374.28	1,372.61	1,373.14
5	1,376.14	1,374.58	1,374.39	1,374.51	1,374.47	1,374.66	1,375.60	1,376.41	1,376.59	1,374.22	1,372.83	1,373.06
6	1,376.30	1,374.40	1,374.49	1,374.29	1,374.42	1,374.72	1,375.77	1,376.27	1,376.73	1,374.35	1,372.52	1,373.03
7	1,375.13	1,374.53	1,374.50	1,374.49	1,374.39	1,374.67	1,375.56	1,376.15	1,376.65	1,374.33	1,372.69	1,372.97
8	1,374.81	1,374.69	1,374.40	1,374.66	1,374.55	1,374.69	1,375.44	1,376.28	1,376.55	1,374.04	1,372.58	1,372.94
9	1,374.57	1,374.72	1,374.45	1,374.53	1,374.62	1,374.52	1,375.53	1,376.11	1,376.50	1,374.07	e1,372.74	1,372.90
10	1,374.43	1,374.48	1,374.56	1,374.40	1,374.55	1,374.64	1,375.60	1,376.14	1,376.46	e1,374.12	1,372.71	1,372.83
11	1,374.35	1,374.32	1,374.58	1,374.42	1,374.52	1,374.77	1,375.61	1,375.94	1,376.35	1,374.04	e1,372.80	1,373.46
12	1,374.17	1,374.29	1,374.56	1,374.48	1,374.45	1,374.80	1,375.48	1,375.80	1,376.32	1,373.75	1,372.48	1,373.66
13	1,374.03	1,374.48	1,374.54	1,374.52	1,374.54	1,374.57	1,375.47	1,375.89	1,376.19	1,373.72	1,372.46	1,374.02
14	1,374.19	1,374.51	1,374.55	1,374.40	1,374.85	1,374.71	1,375.50	1,376.42	1,375.95	1,373.69	1,372.29	1,373.81
15	1,374.11	1,374.40	1,374.61	1,374.56	1,374.57	1,374.80	1,375.56	1,376.26	1,375.76	1,373.59	1,372.44	1,373.68
16	1,374.11	1,374.41	1,374.60	1,374.41	1,374.51	1,374.81	1,375.66	1,376.89	1,375.80	1,373.29	1,372.50	1,373.62
17	1,374.08	1,374.57	1,374.78	1,374.42	1,374.65	1,374.84	1,375.33	1,377.45	1,375.81	1,373.21	1,372.30	1,373.54
18	1,374.15	1,374.46	1,374.61	1,374.56	1,374.67	1,374.89	1,375.42	1,377.50	1,375.58	1,373.42	e1,372.37	1,373.35
19	1,373.98	1,374.41	1,374.44	1,374.63	1,374.56	1,375.50	1,375.44	1,377.15	1,375.50	1,373.35	1,372.27	1,373.30
20	1,374.01	1,374.43	1,374.46	1,374.66	1,374.64	1,377.07	1,375.69	1,376.82	1,375.60	1,373.15	1,372.34	1,373.34
21	1,373.99	1,374.46	1,374.67	1,374.46	1,374.81	1,377.87	1,375.98	1,376.86	1,375.61	e1,373.08	1,372.35	1,373.35
22	1,373.93	1,374.45	1,374.40	1,374.37	1,374.74	1,378.28	1,376.07	1,376.78	1,375.56	1,373.15	1,372.30	1,373.59
23	1,373.97	1,374.47	1,374.43	1,374.31	1,374.66	1,378.08	1,376.09	1,376.73	e1,375.37	1,373.22	1,372.29	1,373.80
24	1,374.23	1,374.44	1,374.52	1,374.51	1,374.42	1,377.20	1,376.91	1,376.82	e1,375.28	1,373.16	1,372.24	1,373.70
25	1,374.52	1,374.35	1,374.48	1,374.59	1,374.58	1,376.68	1,377.60	1,377.18	1,375.21	1,373.20	1,372.28	1,373.65
26	1,374.51	1,374.39	1,374.44	1,374.39	1,374.71	1,376.56	1,378.19	1,377.38	1,375.18	1,372.99	1,372.29	1,373.75
27	1,374.73	1,374.43	1,374.48	1,374.61	1,374.72	1,376.60	1,378.00	1,377.05	1,375.24	1,373.08	1,372.23	1,373.54
28	1,375.05	1,374.44	1,374.55	1,374.68	1,374.69	1,376.15	1,377.27	1,376.89	1,375.11	e1,373.12	1,372.35	1,373.45
29	1,375.13	1,374.60	1,374.70	1,374.40	---	1,375.95	1,377.04	1,376.81	1,374.90	1,373.08	1,372.44	1,373.45
30	1,374.90	1,374.36	1,374.57	1,374.58	---	1,375.98	1,376.93	1,376.74	1,374.97	1,372.85	1,372.65	1,373.46
31	1,371.61	---	1,374.46	1,374.52	---	1,376.04	---	1,376.48	---	1,372.75	1,373.23	---
MEAN	1,374.33	1,374.33	1,374.52	1,374.50	1,374.59	1,375.58	1,376.07	1,376.63	1,375.90	1,373.63	1,372.53	1,373.41
MAX	1,376.30	1,374.72	1,374.78	1,374.68	1,374.85	1,378.28	1,378.19	1,377.50	1,376.76	1,374.84	1,373.23	1,374.02
MIN	1,371.61	1,371.07	1,374.34	1,374.29	1,374.39	1,374.52	1,375.33	1,375.80	1,374.90	1,372.75	1,372.23	1,372.83

e Estimated

## GROUND-WATER LEVELS

621

## HARVEY COUNTY

380028097311002. Local number EB-145-PD5

LOCATION.--Lat 38°00'28", long 97°31'07", Hydrologic Unit 11030012, County Code 079, Halstead quadrangle, on the upstream side of the bridge, north of the levee on Halstead Road in Halstead. Owner: Ground-Water Management District # 2.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 117.70 ft, screened 112.6-117.7 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.-- Datum of gage is NGVD of 1929. Measuring point is top of PVC casing, elevation 1,392.40 ft, top of casing is 2.00 ft above land surface.

REMARKS.--Water level fluctuates with river stage and nearby pumping.

PERIOD OF RECORD.--February 1996 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,381.35 ft above NGVD of 1929, Nov. 5, 1998; lowest, 1,356.52 ft above NGVD of 1929, July 22, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,377.68 ft, Apr. 27; minimum elevation, 1,365.50 ft, Nov. 1.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,372.54	1,365.50	1,374.21	1,374.34	1,374.42	1,374.48	1,375.93	1,376.69	1,376.52	1,374.25	1,372.39	1,372.52
2	1,372.52	1,373.74	1,374.30	1,374.19	1,374.52	1,374.36	1,375.87	1,376.51	1,376.52	1,374.46	1,372.22	1,372.61
3	1,373.09	1,374.11	1,374.08	1,374.24	1,374.33	1,374.55	1,375.82	1,376.50	1,376.55	1,374.25	1,371.90	1,372.57
4	1,373.93	1,374.21	1,374.16	1,374.30	1,374.15	1,374.65	1,375.16	1,376.66	1,376.61	1,373.73	1,371.67	1,372.51
5	1,374.50	1,374.38	1,374.13	1,374.27	1,374.22	1,374.42	1,375.51	1,376.43	1,376.55	1,373.86	1,372.17	1,372.47
6	1,374.88	1,374.18	1,374.23	1,374.05	1,374.20	1,374.47	1,375.69	1,376.29	1,376.68	e1,374.07	1,371.59	1,372.47
7	1,374.54	1,374.30	1,374.26	1,374.24	1,374.14	1,374.44	1,375.49	e1,376.17	1,376.67	1,373.95	1,371.96	1,372.42
8	1,374.37	1,374.48	1,374.16	1,374.41	1,374.31	1,374.48	1,375.35	1,376.29	1,376.59	1,373.48	1,371.66	1,372.40
9	1,374.20	1,374.51	1,374.20	1,374.31	1,374.38	1,374.27	1,375.43	1,376.12	1,376.54	e1,373.72	1,372.08	1,372.36
10	1,374.10	1,374.28	1,374.31	1,374.16	1,374.31	1,374.39	1,375.50	1,376.16	1,376.53	1,373.81	e1,372.04	1,372.30
11	1,374.03	1,374.10	1,374.34	1,374.18	1,374.29	1,374.53	1,375.52	1,375.91	1,376.40	1,373.60	1,372.12	1,372.81
12	1,373.90	1,374.04	1,374.30	1,374.23	1,374.21	1,374.56	1,375.39	1,375.72	1,376.37	1,373.17	1,371.53	1,373.20
13	1,373.72	1,374.23	1,374.29	1,374.29	1,374.30	1,374.34	1,375.37	1,375.82	1,376.23	1,373.10	1,371.58	1,373.29
14	1,373.89	1,374.28	1,374.30	1,374.16	1,374.60	1,374.47	1,375.39	1,376.04	1,375.73	1,373.20	1,371.35	1,373.20
15	1,373.82	1,374.17	1,374.35	1,374.30	1,374.34	1,374.57	1,375.46	1,376.10	1,375.50	1,373.05	1,371.69	1,373.16
16	1,373.80	1,374.16	1,374.35	1,374.19	1,374.25	1,374.58	1,375.60	1,376.58	1,375.76	1,372.61	1,371.73	1,373.15
17	1,373.79	1,374.32	1,374.52	1,374.18	1,374.39	1,374.62	1,375.22	1,376.94	1,375.74	1,372.64	1,371.31	1,373.09
18	1,373.86	1,374.26	1,374.38	1,374.33	1,374.42	1,374.66	1,375.28	1,377.09	1,375.25	1,372.97	e1,371.60	1,372.94
19	1,373.69	1,374.16	1,374.19	1,374.39	1,374.32	1,375.15	1,375.31	1,377.03	1,375.34	1,372.80	1,371.45	1,372.86
20	1,373.70	1,374.19	1,374.20	1,374.43	1,374.38	1,376.11	1,375.63	1,376.79	1,375.51	1,372.42	1,371.58	1,372.90
21	1,373.70	1,374.21	1,374.41	1,374.24	1,374.55	1,376.81	1,375.79	1,376.85	1,375.41	e1,372.48	e1,371.62	1,372.92
22	1,373.64	1,374.18	1,374.16	1,374.14	1,374.51	1,377.28	1,375.89	1,376.81	1,375.42	1,372.65	1,371.55	1,373.09
23	1,373.68	1,374.21	1,374.17	1,374.06	1,374.42	1,377.33	1,376.01	1,376.77	1,374.97	1,372.71	1,371.55	1,373.40
24	1,373.93	1,374.20	1,374.27	1,374.26	1,374.18	1,376.97	1,376.72	1,376.85	1,375.11	1,372.42	1,371.50	1,373.28
25	1,374.22	1,374.09	1,374.23	1,374.35	1,374.32	1,376.51	1,376.99	1,377.01	1,375.03	1,372.71	1,371.55	1,373.24
26	1,374.20	1,374.15	1,374.19	1,374.16	1,374.47	1,376.40	1,377.39	1,377.09	1,375.03	1,372.26	1,371.57	1,373.36
27	1,374.37	1,374.16	1,374.24	1,374.36	1,374.49	1,376.51	1,377.57	1,376.99	1,375.08	1,372.59	1,371.50	1,373.16
28	1,374.62	1,374.19	1,374.31	1,374.46	1,374.45	1,376.06	1,377.20	1,376.91	1,374.90	1,372.63	e1,371.68	1,373.05
29	1,374.73	1,374.35	1,374.46	1,374.17	---	1,375.84	1,377.02	1,376.86	1,374.49	1,372.49	1,371.75	1,373.05
30	1,374.58	1,374.11	1,374.36	1,374.33	---	1,375.87	1,376.93	1,376.81	1,374.72	1,372.00	1,371.96	1,373.08
31	1,365.98	---	1,374.21	1,374.29	---	1,375.94	---	1,376.55	---	1,371.87	1,372.48	---
MEAN	1,373.69	1,373.91	1,374.27	1,374.26	1,374.35	1,375.28	1,375.91	1,376.56	1,375.79	1,373.10	1,371.75	1,372.89
MAX	1,374.88	1,374.51	1,374.52	1,374.46	1,374.60	1,377.33	1,377.57	1,377.09	1,376.68	1,374.46	1,372.48	1,373.40
MIN	1,365.98	1,365.50	1,374.08	1,374.05	1,374.14	1,374.27	1,375.16	1,375.72	1,374.49	1,371.87	1,371.31	1,372.30

e Estimated

## GROUND-WATER LEVELS

## HARVEY COUNTY

380643097353001. Local number 07143665

LOCATION.--Lat 38°06'43", long 97°35'30", Hydrologic Unit 11030012, County Code 079, Halstead quadrangle, at the downstream side of the county bridge, 0.4 mi south of Alta Mills, 0.8 mi downstream from Sand Creek, and at mile 50.1. Owner: U.S. Geological Survey.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 40.1 ft, screened 30.1-40.1 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.--Datum of gage is NGVD of 1929. Measuring point is top of casing, elevation 1,416.97 ft, top of casing is 1.5 ft above land surface.

REMARKS.--Water level fluctuates with river stage.

PERIOD OF RECORD.--February 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,415.93 ft above NGVD of 1929, June 11, 1995; lowest, 1,391.41 ft above NGVD of 1929, Aug. 20, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,403.61 ft, Apr. 26; minimum elevation, 1,391.41 ft, Aug. 26.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,393.18	1,395.92	1,394.49	1,394.25	1,394.20	1,394.12	1,396.47	1,397.56	1,396.83	1,394.31	1,392.46	1,393.55
2	1,393.21	1,395.84	1,394.45	1,394.21	1,394.24	1,394.06	1,396.30	1,397.22	1,397.07	1,394.51	1,391.87	1,393.95
3	1,394.65	1,395.64	1,394.40	1,394.22	1,394.13	1,394.14	1,396.18	1,397.02	1,398.35	1,394.66	1,391.79	1,393.76
4	1,397.52	1,395.49	1,394.40	1,394.23	1,394.08	1,394.17	1,395.99	1,396.97	1,398.34	1,394.41	1,391.73	1,393.57
5	1,399.23	1,395.39	1,394.38	1,394.22	1,394.12	1,394.08	1,395.86	1,396.65	1,397.57	1,394.38	1,391.63	1,393.47
6	1,399.37	1,395.21	1,394.40	1,394.15	1,394.07	1,394.14	1,395.91	1,396.47	1,397.93	1,393.51	1,391.60	1,393.40
7	1,397.19	1,395.20	1,394.39	1,394.24	1,394.09	1,394.10	1,395.68	1,396.31	1,397.42	1,393.19	1,391.83	1,393.35
8	1,396.56	1,395.18	1,394.35	1,394.28	1,394.15	1,394.08	1,395.56	1,396.31	1,397.11	1,393.52	1,391.62	1,393.32
9	1,396.06	1,395.13	1,394.38	1,394.19	1,394.17	1,394.06	1,395.57	1,396.10	1,396.94	1,393.44	1,391.81	1,393.30
10	1,395.69	1,394.94	1,394.40	1,394.15	1,394.12	1,394.11	1,395.54	1,396.36	1,396.76	1,393.15	1,391.54	1,393.29
11	1,395.45	1,394.84	1,394.40	1,394.15	1,394.11	1,394.15	1,395.48	1,396.06	1,396.62	1,392.99	1,391.50	1,393.32
12	1,395.20	1,394.80	1,394.38	1,394.18	1,394.08	1,394.15	1,395.40	1,396.08	1,396.49	1,392.87	1,392.02	1,393.78
13	1,395.08	1,394.83	1,394.37	1,394.18	1,394.12	1,394.06	1,395.36	1,396.55	1,396.38	1,392.77	1,391.71	1,394.90
14	1,395.07	1,394.78	1,394.38	1,394.13	1,394.25	1,394.13	1,395.33	1,398.35	1,396.28	1,392.71	1,391.56	1,394.47
15	1,394.94	1,394.71	1,394.41	1,394.19	1,394.12	1,394.14	1,395.29	1,397.58	1,396.14	1,392.65	1,392.02	1,394.22
16	1,394.90	1,394.71	1,394.41	1,394.09	1,394.12	1,394.14	1,395.27	1,399.90	1,396.09	1,392.59	1,392.11	1,394.02
17	1,394.81	1,394.73	1,394.50	1,394.16	1,394.21	1,394.16	1,395.13	1,401.05	1,396.04	1,392.40	1,391.56	1,393.91
18	1,394.80	1,394.64	1,394.38	1,394.17	1,394.21	1,394.17	1,395.22	1,400.99	1,395.98	1,392.87	1,391.43	1,393.77
19	1,394.66	1,394.64	1,394.33	1,394.20	1,394.15	1,395.50	1,395.19	1,399.50	1,395.90	1,392.50	1,391.50	1,393.73
20	1,394.65	1,394.60	1,394.32	1,394.21	1,394.18	1,399.19	1,395.86	1,398.55	1,395.04	1,392.32	1,391.81	1,393.71
21	1,394.61	1,394.59	1,394.40	1,394.09	1,394.23	1,402.11	1,396.51	1,398.25	1,394.85	1,392.25	1,392.03	1,393.67
22	1,394.55	1,394.58	1,394.28	1,394.09	1,394.19	1,403.53	1,396.40	1,397.85	1,394.29	1,392.61	1,392.13	1,393.70
23	1,394.53	1,394.56	1,394.28	1,394.11	1,394.14	1,402.40	1,396.07	1,397.54	1,395.04	1,392.85	1,391.72	1,393.75
24	1,394.58	1,394.52	1,394.30	1,394.17	1,394.06	1,399.88	1,398.19	1,397.76	1,395.12	1,392.58	1,391.51	1,393.87
25	1,394.96	1,394.50	1,394.26	1,394.17	1,394.14	1,398.75	1,400.65	1,399.28	1,395.16	1,392.24	1,391.44	1,393.93
26	1,395.29	1,394.47	1,394.26	1,394.09	1,394.16	1,398.24	1,403.22	1,399.95	1,394.10	1,392.20	1,391.44	1,393.90
27	1,395.51	1,394.51	1,394.26	1,394.17	1,394.13	1,397.77	1,401.59	1,398.65	1,393.85	1,392.14	1,391.93	1,393.77
28	1,396.34	1,394.47	1,394.28	1,394.18	1,394.12	1,397.16	1,399.52	1,398.00	1,393.59	1,392.02	1,392.09	1,393.71
29	1,396.39	1,394.52	1,394.34	1,394.08	---	1,396.88	1,398.61	1,397.62	1,393.86	1,391.97	1,392.21	1,393.68
30	1,396.22	1,394.42	1,394.25	1,394.17	---	1,396.74	1,398.07	1,397.30	1,394.18	1,391.83	1,392.33	1,393.68
31	1,396.12	---	1,394.25	1,394.12	---	1,396.60	---	1,396.96	---	1,392.20	1,392.81	---
MEAN	1,395.53	1,394.88	1,394.36	1,394.17	1,394.15	1,396.09	1,396.71	1,397.77	1,395.98	1,392.92	1,391.83	1,393.75
MAX	1,399.37	1,395.92	1,394.50	1,394.28	1,394.25	1,403.53	1,403.22	1,401.05	1,398.35	1,394.66	1,392.81	1,394.90
MIN	1,393.18	1,394.42	1,394.25	1,394.08	1,394.06	1,394.06	1,395.13	1,396.06	1,393.59	1,391.83	1,391.43	1,393.29



## GROUND-WATER LEVELS

623

## RENO COUNTY

380842098063701. Local number 07142680

LOCATION.--Lat 38°08'42", long 98°06'37", Hydrologic Unit 11030011, County Code 155, Halstead quadrangle, on the upstream side of the bridge, north of Kansas Highway 96, west of Nickerson, and at mile 825.8. Owner: U.S. Geological Survey.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 47.0 ft, screened 37-47 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.--Datum of gage is NGVD of 1929. Measuring point is top of casing, elevation 1,603.68 ft, top of casing is 2.0 ft above land surface.

REMARKS.--Water level fluctuates with river stage.

PERIOD OF RECORD.--July 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,596.70 ft above NGVD of 1929, June 12, 2001; lowest, 1,590.64 ft above NGVD of 1929, Aug. 23, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,591.81 ft, Mar. 22; minimum elevation, 1,590.64 ft, Aug. 23.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,591.02	1,591.12	1,590.98	1,590.97	1,590.93	1,590.94	1,591.35	1,591.37	1,591.33	1,591.05	1,590.72	1,590.83
2	1,591.09	1,591.12	1,590.98	1,590.96	1,590.93	1,590.95	1,591.35	1,591.36	1,591.33	1,591.04	1,590.72	1,590.82
3	1,591.27	1,591.11	1,590.97	1,590.96	1,590.93	1,590.95	1,591.33	1,591.35	1,591.33	1,591.02	1,590.70	1,590.79
4	1,591.47	1,591.11	1,590.97	1,590.96	1,590.93	1,590.95	1,591.32	1,591.36	1,591.32	1,591.01	1,590.69	1,590.74
5	1,591.38	1,591.11	1,590.97	1,590.96	1,590.93	1,590.95	1,591.30	1,591.35	1,591.31	1,590.99	1,590.69	1,590.72
6	1,591.41	1,591.09	1,590.97	1,590.96	1,590.93	1,590.95	1,591.31	1,591.34	1,591.29	1,590.98	1,590.68	1,590.71
7	1,591.44	1,591.09	1,590.97	1,590.96	1,590.92	1,590.97	1,591.29	1,591.34	1,591.28	1,590.96	1,590.68	1,590.70
8	1,591.46	1,591.09	1,590.97	1,590.96	1,590.92	1,590.98	1,591.29	1,591.34	1,591.27	1,590.96	1,590.67	1,590.69
9	1,591.38	1,591.09	1,590.97	1,590.96	1,590.93	1,590.98	1,591.28	1,591.33	1,591.27	1,590.94	1,590.67	1,590.69
10	1,591.33	1,591.08	1,590.97	1,590.95	1,590.93	1,590.98	1,591.28	1,591.32	1,591.25	1,590.94	1,590.67	1,590.69
11	1,591.29	1,591.07	1,590.97	1,590.95	1,590.93	1,590.99	1,591.27	1,591.31	1,591.24	1,590.92	1,590.67	1,590.71
12	1,591.27	1,591.07	1,590.97	1,590.95	1,590.93	1,590.99	1,591.28	1,591.30	1,591.23	1,590.92	1,590.66	1,590.75
13	1,591.25	1,591.06	1,590.98	1,590.95	1,590.93	1,590.99	1,591.27	1,591.34	1,591.22	1,590.91	1,590.66	1,590.74
14	1,591.23	1,591.06	1,590.98	1,590.95	1,590.95	1,591.01	1,591.27	1,591.31	1,591.21	1,590.90	1,590.67	1,590.74
15	1,591.22	1,591.06	1,590.98	1,590.95	1,590.94	1,591.01	1,591.27	1,591.29	1,591.20	1,590.88	1,590.67	1,590.73
16	1,591.21	1,591.06	1,590.97	1,590.94	1,590.95	1,591.01	1,591.29	1,591.35	1,591.19	1,590.88	1,590.67	1,590.72
17	1,591.21	1,591.04	1,590.98	1,590.94	1,590.94	1,591.00	1,591.36	1,591.37	1,591.19	1,590.86	1,590.66	1,590.72
18	1,591.20	1,591.04	1,590.98	1,590.94	1,590.94	1,591.10	1,591.41	1,591.35	1,591.17	1,590.86	1,590.66	1,590.71
19	1,591.18	1,591.04	1,590.98	1,590.94	1,590.94	1,591.24	1,591.44	1,591.34	1,591.16	1,590.85	1,590.66	1,590.71
20	1,591.17	1,591.03	1,590.98	1,590.94	1,590.94	1,591.42	1,591.42	1,591.32	1,591.17	1,590.84	1,590.65	1,590.71
21	1,591.17	1,591.02	1,590.98	1,590.94	1,590.94	1,591.58	1,591.39	1,591.31	1,591.16	1,590.83	1,590.65	1,590.71
22	1,591.15	1,591.02	1,590.97	1,590.94	1,590.94	1,591.80	1,591.37	1,591.29	1,591.15	1,590.82	1,590.65	1,590.72
23	1,591.16	1,591.02	1,590.97	1,590.92	1,590.94	1,591.78	1,591.36	1,591.30	1,591.14	1,590.81	1,590.64	1,590.72
24	1,591.16	1,591.01	1,590.97	1,590.92	1,590.92	1,591.71	1,591.38	1,591.34	1,591.12	1,590.81	1,590.64	1,590.71
25	1,591.14	1,591.00	1,590.97	1,590.94	1,590.92	1,591.63	1,591.39	1,591.45	1,591.11	1,590.79	1,590.64	1,590.70
26	1,591.14	1,591.00	1,590.97	1,590.93	1,590.92	1,591.56	1,591.39	1,591.44	1,591.11	1,590.79	1,590.64	1,590.70
27	1,591.15	1,590.99	1,590.97	1,590.93	1,590.93	1,591.52	1,591.39	1,591.43	1,591.09	1,590.77	1,590.64	1,590.70
28	1,591.14	1,590.99	1,590.97	1,590.93	1,590.94	1,591.48	1,591.38	1,591.44	1,591.08	1,590.77	1,590.65	1,590.70
29	1,591.14	1,590.99	1,590.97	1,590.94	---	1,591.44	1,591.38	1,591.41	1,591.06	1,590.76	1,590.66	1,590.70
30	1,591.14	1,590.99	1,590.97	1,590.93	---	1,591.41	1,591.37	1,591.38	1,591.06	1,590.76	1,590.77	1,590.71
31	1,591.13	---	1,590.97	1,590.93	---	1,591.38	---	1,591.35	---	1,590.74	1,590.80	---
MEAN	1,591.23	1,591.05	1,590.97	1,590.94	1,590.93	1,591.21	1,591.34	1,591.35	1,591.20	1,590.88	1,590.67	1,590.72
MAX	1,591.47	1,591.12	1,590.98	1,590.97	1,590.95	1,591.80	1,591.44	1,591.45	1,591.33	1,591.05	1,590.80	1,590.83
MIN	1,591.02	1,590.99	1,590.97	1,590.92	1,590.92	1,590.94	1,591.27	1,591.29	1,591.06	1,590.74	1,590.64	1,590.69

## GROUND-WATER LEVELS

## SEDGWICK COUNTY

374956097231601. Local number 07144200

LOCATION.--Lat 37°49'56", long 97°23'16", Hydrologic Unit 11030012, County Code 173, Maize quadrangle, on right bank at downstream side of county highway bridge, 0.5 mi west of Valley Center, and at mile 15.6 from mouth. Owner: U.S. Geological Survey.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC.

WELL CHARACTERISTICS.--Drilled, unused water-table well, diameter 2 in., depth 50.0 ft, screened 40.0-50.0 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.--Datum of gage is NGVD of 1929. Measuring point is top of casing, elevation 1,349.63 ft, top of casing is 2.00 ft above land-surface datum.

REMARKS.--Water level fluctuates with river stage.

PERIOD OF RECORD.--October 1993 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 1,334.68 ft above NGVD of 1929, June 13, 1995; lowest, 1,327.59 ft above NGVD of 1929, Oct. 2, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,331.91 ft, Apr. 27; minimum elevation, 1,327.75 ft, Oct. 1.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,327.76	1,329.56	1,328.41	1,328.34	1,328.27	1,328.23	1,329.35	e1,330.16	1,329.63	1,328.74	1,328.00	1,329.37
2	1,327.76	1,329.42	1,328.41	1,328.33	1,328.28	1,328.22	1,329.29	1,330.02	1,329.56	1,328.69	1,327.99	1,329.19
3	1,327.91	1,329.29	1,328.40	1,328.32	1,328.26	1,328.22	1,329.25	1,329.87	1,329.79	1,328.65	1,327.97	1,329.11
4	1,329.65	1,329.17	1,328.40	1,328.32	1,328.26	1,328.23	1,329.19	1,329.77	1,330.25	1,328.60	1,327.97	1,328.87
5	1,330.39	1,329.08	1,328.39	1,328.31	1,328.26	1,328.22	1,329.13	1,329.64	1,330.08	1,328.57	1,327.96	1,328.67
6	1,330.62	1,328.99	1,328.39	1,328.31	1,328.25	1,328.23	1,329.11	1,329.55	1,329.84	1,328.53	1,327.94	1,328.53
7	1,330.43	1,328.92	1,328.39	1,328.31	1,328.25	1,328.21	1,329.06	1,329.48	1,329.84	1,328.49	1,327.93	1,328.44
8	1,329.65	1,328.88	1,328.39	1,328.32	1,328.26	1,328.21	1,329.02	1,329.44	1,329.66	1,328.45	1,327.90	1,328.37
9	1,329.34	1,328.83	1,328.39	1,328.31	1,328.24	1,328.20	1,329.00	1,329.38	1,329.54	1,328.42	1,327.89	1,328.32
10	1,329.14	1,328.78	1,328.40	1,328.31	1,328.24	1,328.21	1,328.97	1,329.33	1,329.48	1,328.43	1,327.88	1,328.28
11	1,329.00	1,328.72	1,328.39	1,328.30	1,328.23	1,328.21	1,328.95	1,329.40	1,329.40	1,328.39	1,327.88	1,329.13
12	1,328.88	1,328.68	1,328.39	1,328.30	1,328.23	1,328.21	1,328.93	1,329.38	1,329.34	1,328.37	1,327.87	1,330.60
13	1,328.79	1,328.66	1,328.39	1,328.30	1,328.22	1,328.20	1,328.91	1,329.36	1,329.29	1,328.33	1,327.87	1,330.17
14	1,328.73	e1,328.63	1,328.39	1,328.30	1,328.26	1,328.19	1,328.88	1,330.36	1,329.23	1,328.31	1,327.85	1,330.09
15	1,328.66	e1,328.60	1,328.39	1,328.30	1,328.29	1,328.19	1,328.87	1,330.27	1,329.18	1,328.28	1,327.86	1,329.64
16	1,328.62	1,328.59	1,328.40	1,328.29	1,328.27	1,328.19	1,328.86	1,330.64	1,329.14	1,328.25	1,327.85	1,329.36
17	1,328.57	1,328.56	1,328.41	1,328.32	1,328.27	1,328.19	1,328.84	1,331.57	1,329.10	1,328.23	1,327.84	1,329.17
18	1,328.53	1,328.55	1,328.40	1,328.31	1,328.27	1,328.24	1,328.83	1,331.57	1,329.05	1,328.22	1,327.85	1,329.03
19	1,328.52	1,328.53	1,328.38	e1,328.30	1,328.26	1,328.84	1,328.83	1,331.35	1,329.00	1,328.19	1,327.84	1,328.94
20	1,328.53	1,328.52	1,328.37	e1,328.29	1,328.26	1,330.58	1,330.39	1,330.97	1,328.97	1,328.16	1,327.84	1,328.87
21	1,328.48	1,328.50	1,328.37	e1,328.28	1,328.25	1,330.98	1,330.09	1,330.72	1,328.96	1,328.14	1,327.84	1,328.84
22	1,328.44	1,328.50	1,328.36	e1,328.27	1,328.24	1,331.16	1,330.03	1,330.38	1,328.92	1,328.14	1,327.83	1,329.16
23	1,328.45	1,328.48	1,328.36	1,328.23	1,328.24	1,331.27	1,329.79	1,330.16	1,328.93	1,328.12	1,327.82	1,329.68
24	1,329.10	1,328.46	1,328.35	1,328.34	1,328.22	1,330.96	1,331.07	1,330.01	1,328.87	1,328.12	1,327.81	1,329.40
25	1,329.30	1,328.46	1,328.35	1,328.31	1,328.26	1,330.33	1,331.46	1,330.72	1,328.83	1,328.11	1,327.81	1,329.21
26	1,329.30	1,328.44	1,328.35	1,328.27	1,328.25	1,330.08	1,331.79	1,331.14	1,328.81	1,328.08	1,327.80	1,329.11
27	1,329.46	1,328.44	1,328.35	1,328.30	1,328.23	1,329.90	1,331.90	1,330.94	1,328.80	1,328.04	1,327.81	1,328.98
28	1,330.42	1,328.43	1,328.35	1,328.29	1,328.23	1,329.70	1,331.20	1,330.36	1,328.76	1,328.03	1,327.81	1,328.89
29	1,330.31	1,328.43	1,328.36	1,328.27	---	1,329.58	1,330.69	1,330.07	1,328.73	1,328.02	1,327.82	1,328.82
30	1,329.96	1,328.41	1,328.34	1,328.27	---	e1,329.50	1,330.36	1,329.88	1,328.82	1,328.02	1,327.91	1,328.80
31	1,329.74	---	1,328.34	1,328.27	---	1,329.42	---	1,329.73	---	1,328.00	1,328.59	---
MEAN	1,329.11	1,328.72	1,328.38	1,328.30	1,328.25	1,329.04	1,329.67	1,330.18	1,329.26	1,328.29	1,327.90	1,329.10
MAX	1,330.62	1,329.56	1,328.41	1,328.34	1,328.29	1,331.27	1,331.90	1,331.57	1,330.25	1,328.74	1,328.59	1,330.60
MIN	1,327.76	1,328.41	1,328.34	1,328.23	1,328.22	1,328.19	1,328.83	1,329.33	1,328.73	1,328.00	1,327.80	1,328.28

e Estimated

## GROUND-WATER LEVELS

625

## SEDGWICK COUNTY

375259097252901. Local number EB-142

LOCATION.-- Lat 37°52'59", long 97°25'29", Hydrologic Unit 11030012, County Code 173, Sedgwick quadrangle, at the downstream side of the county bridge, 2.0 mi south of Sedgwick, 4.1 mi downstream from Sand Creek. Owner: U.S. Geological Survey.

AQUIFER.--Equus Beds. Aquifer code: 112PLSC.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 48.5 ft, screened 38.5-48.5 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.-- Datum of gage is NGVD of 1929. Measuring point is top of PVC casing, elevation 1,370.34 ft, top of casing is 1.5 ft above land surface.

REMARKS.--Water level fluctuates with river stage and nearby pumping.

PERIOD OF RECORD.--November 1993 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,359.52 ft above NGVD of 1929, Nov. 4, 1998; lowest, 1,344.40 ft above NGVD of 1929, Aug. 29, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,348.12 ft, Apr. 27; minimum elevation, 1,344.40 ft, Aug. 29.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,344.44	1,345.92	1,345.34	1,345.19	1,345.07	1,344.99	1,346.36	1,347.11	1,346.83	1,345.96	1,344.96	1,345.04
2	1,344.44	1,345.90	1,345.33	1,345.18	1,345.08	1,344.98	1,346.31	1,347.03	1,346.77	1,345.93	1,344.94	1,345.10
3	1,344.55	1,345.84	1,345.31	1,345.18	1,345.04	1,344.99	1,346.27	1,346.96	1,346.86	1,345.89	1,344.92	1,345.11
4	1,345.48	1,345.79	1,345.31	1,345.17	1,345.04	1,345.00	1,346.21	1,346.92	1,347.01	1,345.84	1,344.90	1,345.04
5	1,346.34	1,345.75	1,345.30	1,345.17	1,345.04	1,344.98	1,346.17	1,346.83	1,346.96	1,345.80	1,344.88	1,344.96
6	1,346.65	1,345.69	1,345.30	1,345.15	1,345.03	1,344.98	1,346.15	1,346.76	1,346.87	1,345.77	1,344.85	1,344.89
7	1,346.37	1,345.68	1,345.30	1,345.16	1,345.03	1,344.97	1,346.10	1,346.70	1,346.84	1,345.74	1,344.81	1,344.82
8	1,346.09	1,345.66	1,345.28	1,345.17	1,345.03	1,344.96	1,346.06	1,346.67	1,346.77	1,345.70	1,344.79	1,344.78
9	1,345.93	1,345.64	1,345.29	1,345.15	1,345.03	1,344.97	1,346.04	1,346.59	1,346.72	1,345.66	1,344.77	1,344.73
10	1,345.80	1,345.59	1,345.29	1,345.14	1,345.03	1,344.97	1,346.02	1,346.56	1,346.66	1,345.64	1,344.75	1,344.70
11	1,345.70	1,345.55	1,345.28	1,345.13	1,345.02	1,344.98	1,346.02	1,346.56	1,346.62	1,345.62	1,344.73	1,345.00
12	1,345.60	1,345.53	1,345.28	1,345.13	1,345.02	1,344.97	1,345.96	1,346.53	1,346.57	1,345.58	1,344.70	1,345.64
13	1,345.53	1,345.53	1,345.27	1,345.12	1,345.02	1,344.95	1,345.93	1,346.52	1,346.54	1,345.55	1,344.69	1,345.66
14	1,345.49	1,345.51	1,345.27	1,345.12	1,345.05	1,344.96	1,345.92	1,346.90	1,346.50	1,345.52	1,344.66	1,345.68
15	1,345.43	1,345.48	1,345.27	1,345.13	1,345.04	1,344.97	1,345.91	1,346.90	1,346.44	1,345.48	1,344.65	1,345.59
16	1,345.39	1,345.48	1,345.27	1,345.10	1,345.04	1,344.96	1,345.89	1,347.13	1,346.41	1,345.44	1,344.62	1,345.52
17	1,345.35	1,345.47	1,345.29	1,345.10	1,345.05	1,344.96	1,345.85	1,347.86	1,346.38	1,345.41	1,344.60	1,345.44
18	1,345.32	1,345.45	1,345.26	1,345.11	1,345.04	1,344.99	1,345.85	1,347.84	1,346.34	1,345.37	1,344.59	1,345.36
19	1,345.28	1,345.45	1,345.25	1,345.11	1,345.02	1,345.27	1,345.84	1,347.65	1,346.29	1,345.33	1,344.56	1,345.31
20	1,345.25	e1,345.42	1,345.25	1,345.11	1,345.03	1,346.81	1,346.38	1,347.51	1,346.26	1,345.30	1,344.55	1,345.28
21	1,345.22	1,345.41	1,345.26	1,345.09	1,345.04	1,347.43	1,346.38	1,347.42	1,346.24	1,345.27	1,344.53	1,345.25
22	1,345.20	1,345.41	1,345.23	1,345.08	1,345.02	1,347.69	1,346.42	1,347.27	1,346.21	1,345.24	1,344.51	1,345.41
23	1,345.20	1,345.40	1,345.23	1,345.08	1,345.02	1,347.79	1,346.38	1,347.15	1,346.19	1,345.22	1,344.49	1,345.62
24	1,345.34	1,345.38	1,345.22	1,345.10	1,344.99	1,347.35	1,346.89	1,347.07	1,346.15	1,345.21	1,344.47	1,345.61
25	1,345.46	1,345.37	1,345.21	1,345.09	1,345.00	1,347.06	1,347.41	1,347.30	1,346.12	1,345.17	1,344.45	1,345.59
26	1,345.53	1,345.36	1,345.21	1,345.07	1,345.00	1,346.92	1,347.91	1,347.47	1,346.08	1,345.13	1,344.44	1,345.58
27	1,345.63	1,345.36	1,345.20	1,345.09	1,345.00	1,346.80	1,348.10	1,347.40	1,346.06	1,345.11	1,344.43	1,345.51
28	1,345.99	1,345.35	1,345.20	1,345.08	1,344.99	1,346.65	1,347.61	1,347.22	1,346.02	1,345.07	1,344.42	1,345.45
29	1,346.04	1,345.35	1,345.22	1,345.06	---	1,346.54	1,347.40	1,347.09	1,346.00	1,345.05	1,344.41	1,345.41
30	1,345.98	1,345.33	1,345.19	1,345.07	---	1,346.47	1,347.25	1,347.00	1,346.01	1,345.02	1,344.47	1,345.39
31	1,345.96	---	1,345.19	1,345.06	---	1,346.41	---	1,346.89	---	1,344.99	1,344.80	---
MEAN	1,345.55	1,345.54	1,345.26	1,345.12	1,345.03	1,345.77	1,346.43	1,347.06	1,346.46	1,345.45	1,344.66	1,345.28
MAX	1,346.65	1,345.92	1,345.34	1,345.19	1,345.08	1,347.79	1,348.10	1,347.86	1,347.01	1,345.96	1,344.96	1,345.68
MIN	1,344.44	1,345.33	1,345.19	1,345.06	1,344.99	1,344.95	1,345.84	1,346.52	1,346.00	1,344.99	1,344.41	1,344.70

e Estimated

## GROUND-WATER LEVELS

## STAFFORD COUNTY

381119098435301. Local number 21S 13W 27DDDC01

LOCATION.--Lat 38°11'19", long 98°43'53", Hydrologic Unit 11030004, County Code 185, from Great Bend on Highway 281, go 12 mi south, then 0.75 mi east. Gage is in pasture on north side of dirt road.

AQUIFER.--Ogallala Formation. Aquifer code: 121OGLL.

WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in., depth 44 ft. Prior to Mar. 27, 2000, well was located 200 ft from current site and published under station number 381120098434802.

INSTRUMENTATION.--Submersible transducer interfaced to a data-collection platform/data logger with a 1-hour update interval.

DATUM.--Datum of gage is NGVD of 1929. Measuring point is top of PVC casing, elevation 1,880.57 ft, measuring point is 4.7 ft above land surface.

REMARKS.--Water level fluctuates with nearby pumping.

PERIOD OF RECORD.--2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1,871.55 ft above NGVD of 1929, May 10, 2000; lowest, 1,861.86 ft above NGVD of 1929, Sept. 28, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum, 1,864.46, June 9; minimum, 1,861.86, Sept. 28.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,863.13	1,863.96	1,864.06	1,864.05	1,864.03	1,863.96	1,864.34	1,864.35	1,864.43	1,863.78	1,862.70	1,862.04
2	1,863.13	1,863.99	1,864.05	1,864.02	1,864.06	1,863.93	1,864.33	1,864.34	1,864.44	1,863.74	1,862.68	1,862.03
3	1,863.18	1,863.98	1,864.04	1,864.04	1,864.00	1,863.96	1,864.34	1,864.36	1,864.44	1,863.70	1,862.66	1,862.01
4	1,863.37	1,864.00	1,864.04	1,864.04	1,863.99	1,863.97	1,864.32	1,864.40	1,864.44	1,863.66	1,862.63	1,862.01
5	1,863.57	1,864.00	1,864.04	1,864.04	1,863.99	1,863.95	1,864.30	1,864.36	1,864.44	1,863.62	1,862.61	1,861.99
6	1,863.67	1,863.99	1,864.06	1,864.00	1,863.97	1,863.96	1,864.35	1,864.33	1,864.45	1,863.58	1,862.59	1,861.98
7	1,863.74	1,864.01	1,864.06	1,864.03	1,863.98	1,863.93	1,864.30	1,864.32	1,864.44	1,863.54	1,862.58	1,861.97
8	1,863.80	1,864.03	1,864.04	1,864.05	1,863.99	1,863.90	1,864.28	1,864.36	1,864.44	1,863.49	1,862.55	1,861.97
9	1,863.82	1,864.04	1,864.05	1,864.03	1,864.01	1,863.88	1,864.30	1,864.31	1,864.45	1,863.46	1,862.53	1,861.95
10	1,863.85	1,864.01	1,864.07	1,864.01	1,864.00	1,863.91	1,864.32	1,864.28	1,864.43	1,863.40	1,862.51	1,861.95
11	1,863.87	1,863.99	1,864.08	1,864.02	1,863.98	1,863.93	1,864.33	1,864.21	1,864.42	1,863.36	1,862.49	1,861.95
12	1,863.86	1,863.98	1,864.07	1,864.02	1,863.95	1,863.93	1,864.32	1,864.18	1,864.38	1,863.31	1,862.47	1,861.96
13	1,863.86	1,864.02	1,864.07	1,864.03	1,863.95	1,863.87	1,864.33	1,864.16	1,864.34	1,863.27	1,862.45	1,861.95
14	1,863.89	1,864.02	1,864.07	1,864.00	1,863.99	1,863.91	1,864.33	1,864.14	1,864.31	1,863.23	1,862.42	1,861.95
15	1,863.89	1,864.01	1,864.08	1,864.04	1,863.94	1,863.92	1,864.35	1,864.12	1,864.29	1,863.19	1,862.39	1,861.94
16	1,863.90	1,864.01	1,864.07	1,863.99	1,863.93	1,863.93	1,864.35	1,864.12	1,864.28	1,863.15	1,862.37	1,861.92
17	1,863.90	1,864.04	1,864.10	1,864.00	1,863.96	1,863.94	1,864.31	1,864.11	1,864.26	1,863.11	1,862.37	1,861.92
18	1,863.91	1,864.02	1,864.07	1,864.02	1,863.96	1,863.94	1,864.36	1,864.15	1,864.24	1,863.08	1,862.34	1,861.91
19	1,863.88	1,864.03	1,864.04	1,864.04	1,863.93	1,864.00	1,864.35	1,864.12	1,864.21	1,863.06	1,862.32	1,861.91
20	1,863.89	1,864.02	1,864.05	1,864.04	1,863.95	1,864.09	1,864.32	1,864.09	1,864.20	1,863.03	1,862.30	1,861.91
21	1,863.89	1,864.03	1,864.08	1,864.01	1,863.98	1,864.17	1,864.31	1,864.12	1,864.18	1,863.00	1,862.27	1,861.90
22	1,863.88	1,864.04	1,864.04	1,863.99	1,863.97	1,864.21	1,864.34	1,864.13	1,864.16	1,862.97	1,862.24	1,861.89
23	1,863.88	1,864.04	1,864.04	1,863.98	1,863.95	1,864.25	1,864.37	1,864.15	1,864.11	1,862.95	1,862.22	1,861.90
24	1,863.89	1,864.03	1,864.05	1,864.01	1,863.91	1,864.28	1,864.38	1,864.24	1,864.04	1,862.93	1,862.20	1,861.89
25	1,863.91	1,864.03	1,864.05	1,864.02	1,863.94	1,864.27	1,864.35	1,864.33	1,863.98	1,862.90	1,862.19	1,861.89
26	1,863.90	1,864.02	1,864.04	1,863.98	1,863.96	1,864.30	1,864.35	1,864.37	1,863.92	1,862.87	1,862.17	1,861.88
27	1,863.92	1,864.05	1,864.04	1,864.02	1,863.96	1,864.32	1,864.37	1,864.39	1,863.90	1,862.83	1,862.15	1,861.87
28	1,863.94	1,864.04	1,864.05	1,864.03	1,863.95	1,864.28	1,864.36	1,864.41	1,863.86	1,862.80	1,862.14	1,861.87
29	1,863.96	1,864.06	1,864.08	1,863.99	---	1,864.27	1,864.37	1,864.43	1,863.82	1,862.77	1,862.11	1,861.86
30	1,863.95	1,864.03	1,864.05	1,864.02	---	1,864.30	1,864.38	1,864.43	1,863.80	1,862.74	1,862.10	1,861.86
31	1,863.96	---	1,864.04	1,864.00	---	1,864.32	---	1,864.41	---	1,862.72	1,862.07	---
MEAN	1,863.78	1,864.02	1,864.06	1,864.02	1,863.97	1,864.06	1,864.34	1,864.27	1,864.24	1,863.20	1,862.38	1,861.93
MAX	1,863.96	1,864.06	1,864.10	1,864.05	1,864.06	1,864.32	1,864.38	1,864.43	1,864.45	1,863.78	1,862.70	1,862.04
MIN	1,863.13	1,863.96	1,864.04	1,863.98	1,863.91	1,863.87	1,864.28	1,864.09	1,863.80	1,862.72	1,862.07	1,861.86

CHEMICAL QUALITY OF PRECIPITATION

627

KANSAS RIVER BASIN

384021100545400 SCOTT LAKE STATE PARK, KS

(National Atmospheric Deposition Program/National Trends Network station)

LOCATION.--Lat 3840"21", long 100°54'54", in SW ¼ SW ¼ SE ¼ sec.12, T.16 S., R.33 W., Scott County, Hydrologic Unit 10260004, 14 mi north of Scott City, and 1 mi south of Scott Lake.

PERIOD OF RECORD.--March 1984 to current year.

INSTRUMENTATION.--The sample collector is an Aerochem Metrics Wet/Dry Precipitation Collector and a recording rain gage (with event recorder).

REMARKS.--Chemical analyses of rainfall collected in wet-dry automatic sampler. Data collected in cooperation with Kansas Department of Wildlife and Parks. Chemical analyses from National Atmospheric Deposition Program, National Trends Network Analytical Laboratory. If a sufficient volume of sample is collected, specific conductance and pH are measured in the field before the composite sample is sent in for analysis.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Precipitation total, in/wk (00046)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (00095)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)
OCT 01-08	0.82	6.3	6.3	10	11	1	0.39	0.03	0.07	0.0	0.04	8	0.1
OCT 08-15	0.06	6.6	6.5	20	20	2	0.56	0.03	0.05	0.0	0.03	4	0.1
OCT 22-29	0.64	4.8	5.3	12	13		0.08	0.01	0.01	0.0	0.01	10	M
OCT 29-NOV 05	--	5.0	5.7	4	6	--	0.01	<0.003	<0.003	--	<0.003	--	M
NOV 12-19	--	5.0	5.1	9	10		0.08	0.01	M	0.0	0.01	7	0.5
DEC 03-10	0.05	--	5.9	7	--	1	0.51	0.03	0.01	0.0	0.01	2	0.1
DEC 17-26	0.02	--	5.9	10	--		0.20	0.01	0.01	0.0	0.05	17	0.1
FEB 11-18	0.01	--	6.7	22	--		0.18	0.01	0.05	0.0	0.04	12	0.1
FEB 18-25	0.36	5.7	6.1	12	11	2	0.67	0.04	0.05	0.0	0.06	6	0.1
FEB 25-MAR 04	0.16	5.2	5.7	8	8		0.16	0.01	0.01	0.0	0.03	13	0.1
MAR 11-18	--	--	6.3	12	--	3	0.91	0.09	0.11	0.1	0.23	15	0.3
MAR 18-25	1.26	5.2	5.4	9	10		0.13	0.01	0.01	0.0	0.02	11	M
MAR 25-APR 01	0.02	--	5.8	7	--		0.10	0.01	<0.003	0.0	0.01	--	M
APR 01-08	--	--	6.7	19	--	3	1.10	0.08	0.07	0.0	0.11	7	0.1
APR 15-22	1.14	6.9	7.0	18	18	5	2.00	0.12	0.14	0.0	0.12	4	0.1
APR 22-29	0.64	6.2	6.5	10	10	1	0.52	0.04	0.04	0.0	0.05	7	0.1
APR 29-MAY 05	0.74	6.8	7.0	12	17	3	1.07	0.07	0.04	0.0	0.05	3	0.1
MAY 05-13	0.50	6.3	6.4	12	11	1	0.38	0.03	0.02	0.0	0.03	5	0.1
MAY 13-20	1.74	6.1	5.8	7	6		0.15	0.01	0.02	0.0	0.04	16	0.1
MAY 20-27	0.49	6.2	6.3	10	10		0.25	0.02	0.02	0.0	0.02	5	M
MAY 27-JUN 03	0.43	6.2	6.7	12	11		0.31	0.03	0.04	0.0	0.02	5	0.1
JUN 03-10	1.39	6.0	6.3	6	11		0.08	0.01	0.01	--	<0.003	--	M
JUN 10-17	0.02	--	6.3	19	--	1	0.41	0.04	0.04	0.0	0.11	16	0.2
JUN 17-24	0.22	6.2	6.4	13	13	1	0.48	0.04	0.07	0.0	0.04	5	0.1
JUN 24-JUL 01	1.16	6.0	6.5	10	9	1	0.42	0.03	0.07	0.0	0.04	6	0.1
JUL 01-08	0.19	5.9	6.1	14	14	2	0.79	0.06	0.11	0.0	0.10	9	0.2
JUL 29-AUG 05	0.19	6.0	6.8	30	29	4	1.34	0.10	0.16	0.0	0.07	3	0.2

## CHEMICAL QUALITY OF PRECIPITATION

## KANSAS RIVER BASIN—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L (71846)	Nitrate water, fltrd, mg/L (71851)	Phos- phate, water, fltrd, mg/L (00653)	Sample volume, mL (32002)
OCT 01-08	1.1	0.80	0.964	<0.01	1,500
OCT 08-15	1.6	1.85	2.66	<0.01	110
OCT 22-29	1.0	0.81	1.98	<0.01	1,000
OCT 29- NOV 05	0.1	0.15	0.448	<0.01	1,100
NOV 12-19	0.6	0.46	1.66	<0.01	110
DEC 03-10	0.2	0.29	1.93	<0.01	50
DEC 17-26	0.6	0.84	2.35	<0.01	58
FEB 11-18	1.3	2.56	3.76	<0.04	23
FEB 18-25	1.0	0.83	1.66	<0.01	210
FEB 25- MAR 04	0.3	0.61	1.59	<0.01	210
MAR 11-18	1.3	0.34	0.828	<0.04	--
MAR 18-25	1.3	0.67	1.24	<0.01	2,100
MAR 25- APR 01	0.6	0.67	0.561	<0.01	42
APR 01-08	1.7	1.40	3.17	<0.01	210
APR 15-22	1.0	0.17	<0.010	<0.01	2,000
APR 22-29	1.3	0.67	1.23	<0.01	1,100
APR 29- MAY 05	0.6	0.73	1.31	<0.01	1,300
MAY 05-13	0.8	1.06	1.85	<0.01	880
MAY 13-20	0.8	0.56	0.974	<0.01	3,200
MAY 20-27	0.9	1.08	1.18	<0.01	970
MAY 27- JUN 03	0.6	1.32	1.57	<0.01	800
JUN 03-10	0.4	0.68	0.867	<0.01	2,400
JUN 10-17	1.2	2.06	3.48	<0.01	41
JUN 17-24	0.9	1.22	1.55	<0.01	630
JUN 24- JUL 01	0.8	0.80	1.16	<0.01	1,800
JUL 01-08	0.9	1.00	1.51	<0.01	290
JUL 29- AUG 05	2.0	2.55	6.13	<0.01	300

CHEMICAL QUALITY OF PRECIPITATION

KANSAS RIVER BASIN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Precipitation total, in/wk (00046)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (00095)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)
AUG 05-12	0.80	5.5	6.2	9	10		0.26	0.02	0.04	0.0	0.01	3	0.1
AUG 12-19	0.64	5.8	6.4	11	11	1	0.44	0.03	0.06	0.0	0.05	8	0.1
AUG 19-26	1.05	5.9	6.6	15	14	3	0.96	0.07	0.13	0.0	0.08	6	0.1
AUG 26-SEP 01	0.74	5.6	5.9	6	10		0.12	0.01	0.02	0.0	M	2	M
SEP 01-09	0.05	5.3	5.9	13	13	1	0.50	0.03	0.03	0.0	0.01	2	0.1
SEP 09-16	0.30	5.9	6.4	8	8	1	0.42	0.04	0.05	0.0	0.07	11	0.1
SEP 30-OCT 07	0.03	--	6.1	24	--	3	1.15	0.10	0.10	0.0	0.07	5	0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L (71846)	Nitrate water, fltrd, mg/L (71851)	Phosphate, water, fltrd, mg/L (00653)	Sample volume, mL (32002)
AUG 05-12	0.7	0.86	1.77	<0.01	1,400
AUG 12-19	1.0	0.94	1.51	<0.01	1,100
AUG 19-26	1.4	0.82	2.11	<0.01	1,800
AUG 26-SEP 01	0.5	0.54	1.11	<0.01	1,200
SEP 01-09	1.1	0.98	2.77	<0.01	79
SEP 09-16	0.7	0.59	1.16	<0.01	500
SEP 30-OCT 07	2.7	1.61	4.67	<0.02	50

## CHEMICAL QUALITY OF PRECIPITATION

## OSAGE RIVER BASIN

373903094481300 FARLINGTON STATE FISH HATCHERY, KS

(National Atmospheric Deposition Program/National Trends Network station)

LOCATION.--Lat 37°39'03", long 94°48'13", in NW ¼ NW ¼ SE ¼ sec.32, T.27 S., R.24 E., Crawford County, Hydrologic Unit 10290104, 3 mi northwest of Farlington, and 0.5 mi northwest of Farlington Lake.

PERIOD OF RECORD.--March 1984 to current year.

INSTRUMENTATION.--The sample collector is an Aerochem Metrics Wet/Dry Precipitation Collector and a recording rain gage (with event recorder).

REMARKS.--Chemical analyses of rainfall collected in wet-dry automatic sampler. Data collected in cooperation with Kansas Department of Wildlife and Parks. Chemical analyses from National Atmospheric Deposition Program, National Trends Network Analytical Laboratory. If a sufficient volume of sample is collected, specific conductance and pH are measured in the field before the composite sample is sent in for analysis.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Precipitation total, in/wk (00046)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (00095)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)
OCT 01-07	0.87	--	4.8	12	--		0.14	0.02	0.01	0.1	0.09	32	0.1
OCT 07-14	0.03	--	4.8	32	--	2	0.88	0.05	0.03	0.0	0.02	2	0.1
OCT 14-22	0.21	5.1	5.4	20	20	2	0.77	0.05	0.04	0.0	0.07	6	0.1
OCT 22-29	1.05	4.5	4.6	16	16		0.14	0.01	M	0.0	0.01	6	M
OCT 29-NOV 05	0.24	--	4.5	23	24		0.11	0.01	M	0.0	0.01	7	M
NOV 12-19	0.46	4.6	4.7	14	15		0.24	0.01	0.01	0.0	0.02	7	0.1
DEC 03-10	0.81	5.8	6.1	4	4	2	0.45	0.19	M	0.0	M	0.0	M
DEC 10-17	0.33	4.5	4.6	19	23		0.12	0.01	0.01	0.0	0.03	17	M
DEC 17-24	1.57	6.5	6.4	12	12	3	1.24	0.07	0.05	0.1	0.28	15	0.1
DEC 24-31	0.06	5.7	5.7	5	4		0.17	0.01	M	0.0	0.02	8	M
DEC 31 2002-2003													
JAN 07 2003	0.56	5.5	5.4	5	4		0.19	0.01	0.01	0.0	0.01	4	M
JAN 14-21	0.27	5.0	5.1	10	9	1	0.47	0.03	0.01	0.0	0.01	1	M
JAN 28-FEB 03	0.07	--	6.5	17	--	2	0.81	0.04	0.07	0.0	0.06	5	0.1
FEB 03-11	0.10	4.7	5.0	19	21	2	0.61	0.04	0.02	0.0	0.06	8	0.1
FEB 11-18	1.42	4.7	4.8	10	12		0.07	0.01	0.01	0.0	0.02	15	M
FEB 18-25	1.03	5.3	5.5	6	4		0.12	0.01	<0.003	0.0	0.01	--	M
FEB 25-MAR 04	0.27	4.5	4.7	18	18		0.21	0.03	0.01	0.1	0.16	35	0.2
MAR 04-11	0.22	5.6	6.3	18	18	2	0.87	0.06	0.06	0.0	0.04	3	0.1
MAR 11-18	0.76	5.5	5.8	14	14	1	0.53	0.04	0.04	0.2	0.58	45	0.1
MAR 18-25	1.94	4.8	5.1	12	11		0.18	0.01	0.02	0.0	0.02	6	M
MAR 25-APR 01	0.45	5.9	6.4	15	14	2	0.72	0.04	0.03	0.0	0.04	4	M
APR 01-08	0.64	5.4	6.0	8	8	1	0.46	0.04	0.04	0.0	0.07	11	0.1
APR 15-22	0.97	6.6	6.9	27	26	7	2.69	0.18	0.18	0.0	0.24	6	0.3
APR 22-29	1.36	5.9	6.4	10	10	1	0.51	0.04	0.06	0.0	0.04	5	0.1
APR 29-MAY 06	1.34	6.2	6.4	15	14	2	0.83	0.07	0.10	0.0	0.13	10	0.2
MAY 06-13	0.20	6.0	6.3	20	20	3	1.05	0.11	0.15	0.1	0.50	25	0.6
MAY 13-20	4.09	5.2	5.3	8	8		0.21	0.02	0.04	0.0	0.04	13	0.1



## CHEMICAL QUALITY OF PRECIPITATION

631

## OSAGE RIVER BASIN—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L (71846)	Nitrate water, fltrd, mg/L (71851)	Phos- phate, water, fltrd, mg/L (00653)	Sample volume, mL (32002)
OCT 01-07	1.4	0.36	0.936	<0.01	1,500
OCT 07-14	5.5	1.87	4.17	<0.01	55
OCT 14-22	2.6	1.26	3.89	<0.01	350
OCT 22-29	1.3	0.28	1.56	<0.01	1,700
OCT 29- NOV 05	1.7	0.49	2.23	<0.01	340
NOV 12-19	1.3	0.28	1.34	<0.01	800
DEC 03-10	0.2	0.06	0.540	<0.01	1,400
DEC 10-17	1.7	0.73	2.51	<0.01	580
DEC 17-24	1.5	0.36	1.03	<0.01	2,600
DEC 24-31	0.5	0.25	0.640	<0.01	160
DEC 31 2002- JAN 07 2003	0.3	0.14	0.883	<0.01	960
JAN 14-21	0.4	0.24	2.49	<0.01	500
JAN 28- FEB 03	1.9	1.31	3.28	<0.01	120
FEB 03-11	1.6	0.89	4.29	<0.01	180
FEB 11-18	1.0	0.33	0.898	<0.01	2,400
FEB 18-25	0.3	0.20	0.619	<0.01	1,800
FEB 25- MAR 04	1.0	0.28	2.25	<0.01	480
MAR 04-11	2.7	1.26	2.96	<0.01	380
MAR 11-18	2.4	1.03	1.70	<0.01	1,400
MAR 18-25	1.2	0.50	1.42	<0.01	3,400
MAR 25- APR 01	1.4	1.09	2.28	<0.01	700
APR 01-08	1.0	0.37	0.879	<0.01	1,100
APR 15-22	2.9	0.61	1.59	<0.01	1,700
APR 22-29	1.3	0.67	1.22	<0.01	2,300
APR 29- MAY 06	2.0	0.94	1.59	<0.01	2,300
MAY 06-13	3.0	1.13	2.35	<0.01	350
MAY 13-20	1.0	0.39	0.865	<0.01	7,000

## CHEMICAL QUALITY OF PRECIPITATION

## OSAGE RIVER BASIN—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Precipitation total, in/wk (00046)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, uS/cm 25 degC (00095)	Hardness, water, unfltrd mg/L as CaCO <sub>3</sub> (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)
MAY 20-27	0.35	5.0	5.2	7	8		0.17	0.01	M	0.0	0.01	2	M
MAY 27-JUN 03	1.12	4.8	5.0	12	14		0.26	0.02	0.02	0.0	0.02	6	0.1
JUN 03-10	1.21	5.6	5.8	6	6		0.15	0.01	0.01	0.0	0.01	3	M
JUN 10-17	0.09	5.8	6.1	22	22	4	1.48	0.07	0.06	0.0	0.07	4	0.2
JUN 17-24	0.07	4.6	4.7	33	34	5	1.78	0.09	0.08	0.0	0.05	2	0.5
JUN 24-JUL 01	0.91	5.1	5.1	10	9	1	0.40	0.03	0.03	0.1	0.13	19	0.2
JUL 01-08	0.54	5.7	6.0	12	12	2	0.81	0.07	0.07	0.0	0.10	8	0.2
JUL 08-15	0.64	4.9	6.3	16	21	3	1.22	0.07	0.05	0.0	0.05	3	0.1
JUL 15-22	0.64	4.9	6.3	16	21	3	1.22	0.07	0.05	0.0	0.05	3	0.1
JUL 29-AUG 05	1.51	5.8	6.7	14	14	3	1.20	0.05	0.04	0.0	0.06	4	0.1
AUG 05-12	0.40	5.9	6.5	13	14	4	1.32	0.07	0.02	0.0	0.05	3	0.1
AUG 12-19	0.06	4.6	4.6	23	21	3	1.06	0.07	0.03	0.0	0.01	0.0	0.1
AUG 26-SEP 01	7.34	4.9	5.0	7	6		0.06	0.01	0.01	0.0	0.02	21	0.1
SEP 01-02	0.56	5.2	5.5	2	3	--	0.01	<0.003	M	--	<0.003	--	<0.005
SEP 02-09	0.41	5.0	5.2	8	8		0.18	0.02	0.02	0.1	0.09	26	0.1
SEP 09-16	0.41	5.0	5.2	8	8		0.18	0.02	0.02	0.1	0.09	26	0.1
SEP 16-23	0.72	4.3	4.4	22	22		0.20	0.01	0.02	0.0	0.04	12	0.1
SEP 23-30	0.44	6.0	7.2	22	22	7	2.65	0.09	0.04	0.0	0.04	1	0.1
SEP 30-OCT 07	1.04	4.7	4.9	12	12		0.25	0.02	0.02	0.0	0.01	3	M

## CHEMICAL QUALITY OF PRECIPITATION

633

## OSAGE RIVER BASIN—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L (71846)	Nitrate water, fltrd, mg/L (71851)	Phos- phate, water, fltrd, mg/L (00653)	Sample volume, mL (32002)
MAY 20-27	0.5	0.24	1.04	<0.01	600
MAY 27- JUN 03	3.2	0.68	2.19	<0.01	1,900
JUN 03-10	0.7	0.47	0.760	<0.01	2,100
JUN 10-17	2.8	1.36	4.47	<0.01	160
JUN 17-24	4.7	1.16	4.09	<0.01	100
JUN 24- JUL 01	1.1	0.23	1.18	<0.01	1,600
JUL 08-15	1.4	0.65	2.32	<0.01	950
JUL 15-22	1.9	0.94	2.45	<0.01	1,000
JUL 29- AUG 05	1.2	0.82	2.36	<0.01	2,500
AUG 05-12	1.6	0.59	1.64	<0.01	720
AUG 12-19	3.1	0.41	2.09	<0.01	94
AUG 26- SEP 01	0.5	0.10	0.538	<0.01	12,000
SEP 01-02	0.2	0.05	0.155	<0.01	920
SEP 09-16	0.9	0.38	1.14	<0.01	650
SEP 16-23	1.9	0.28	1.61	<0.01	1,200
SEP 23-30	1.7	0.74	1.83	<0.01	750
SEP 30- OCT 07	1.5	0.38	1.19	<0.01	1,800



- A**
- Abilene, Mud Creek at ..... 590
- Access to USGS water data ..... 35
- Achilles, South Fork Sappa Creek near ..... 65-66
- Acid neutralizing capacity,  
definition of ..... 36
- Acre-foot, definition of ..... 36
- Ada, Salt Creek near ..... 149-150,600
- Adenosine triphosphate, definition of ..... 36
- Adjusted discharge, definition of ..... 36
- Albert, Walnut Creek at ..... 409-411,609
- Alexander, Walnut Creek near ..... 401-402,608
- Algal growth potential, definition of ..... 36
- Alkalinity, definition of ..... 36
- Alta Mills, Little Arkansas River at ..... 14,441-442,610
- Altoona, Verdigris River near ..... 551-552,614
- Americus, Neosho River near ..... 570-571,615
- Annual runoff, definition of ..... 36
- Annual 7-day minimum, definition of ..... 36
- Arkansas City, Arkansas River at ..... 10,529-531,612
- Arkansas River, at Arkansas City  
surface-water record ..... 10,529-530  
water-quality record ..... 531,612
- at Deerfield ..... 381-382,607
- at Derby ..... 483-484,611
- at Dodge City ..... 385-386
- at Garden City ..... 383-384
- at Great Bend ..... 14,397-398,608
- at Kendall ..... 379-380,607
- at Syracuse ..... 377-378,607
- at Wichita ..... 479-480,610
- near Coolidge  
surface-water record ..... 10,369-370  
water-quality record ..... 371-376,607
- near Hutchinson ..... 437-438,609
- near Kinsley ..... 14,387-388,608
- near Larned ..... 395-396,608
- near Maize ..... 439-440,610
- near Nickerson ..... 433-434,609
- tributary near Dodge City ..... 592
- Arkansas River Basin,  
high-flow partial-record stations in ..... 591-593  
miscellaneous surface-water  
stations in ..... 607-616  
surface-water stations in ..... 368-588
- Arnold, Smoky Hill River near ..... 97-98,596
- Aroclor, definition of ..... 36
- Artificial substrate, definition of ..... 36
- Ash Creek tributary near Stockton ..... 590
- Ash mass, definition of ..... 37
- Aspect, definition of ..... 37
- Atchison, White Clay Creek at ..... 589
- B**
- Bacteria, definition of ..... 37
- Bankfull stage, definition of ..... 37
- Barnes, Little Blue River near ..... 13,167-168,602
- Base discharge, definition of ..... 37
- Base flow, definition of ..... 37
- Bazine, Wet Walnut Watershed Structure  
No. 39 near ..... 399-400
- Beaver Creek, at Cedar Bluffs ..... 12,73-74,594  
at Ludell ..... 71-72
- Bed material, definition of ..... 37
- Bedload, definition of ..... 37
- Bedload discharge, definition of ..... 37
- Belvue, Kansas River near ..... 11,195-196,602
- Benthic organisms, definition of ..... 37
- Big Blue River, at Marysville ..... 14,163-164,601  
near Manhattan ..... 174-175,602
- Big Bull Creek, at Paola ..... 591  
near Edgerton ..... 11,349-350,606  
near Hillsdale ..... 355-356,606
- Big Creek, near Hays ..... 105-106,596  
tributary near Hays ..... 590  
tributary near Ogallah ..... 590
- Big Hill Creek near Cherryvale ..... 562-563,615
- Big Nemaha River Basin,  
miscellaneous surface-water  
stations in ..... 594  
surface-water station in ..... 61-62
- Biochemical oxygen demand,  
definition of ..... 37
- Biomass, definition of ..... 37
- Biomass pigment ratio, definition of ..... 37
- Black Vermillion River near Frankfort  
surface-water record ..... 169-170  
water-quality record ..... 171,602
- Blue-green algae, definition of ..... 37
- Blue River Basin,  
miscellaneous surface-water  
stations in ..... 604-605  
surface-water stations in ..... 326-329
- Blue River near Stanley ..... 326-327,604
- Bluff Creek near Buttermilk ..... 549-550,614
- Bottom material, definition of ..... 38
- Bow Creek near Stockton ..... 135-136,599
- Buckner Creek near Burdett ..... 391-392,608
- Bulk electrical conductivity, definition of ..... 38
- Bunker Hill, Smoky Hill River near ..... 107-108,597
- Burdett, Buckner Creek near ..... 391-392,608  
Pawnee River near ..... 389-390
- Burlingame, Dragoon Creek near ..... 13,336-338,605
- Burlington, Neosho River at ..... 580-581,616
- Burr Oak, White Rock Creek near ..... 83-84,595
- Buttermilk, Bluff Creek near ..... 549-550,614
- Buttermilk Creek near Willis ..... 589
- C**
- Cambridge, Cedar Creek tributary near ..... 593
- Canadian Geodetic Vertical Datum 1928,  
definition of ..... 38
- Caney River near Elgin ..... 566-567,615
- Cedar Bluff Reservoir near Ellis ..... 99-100
- Cedar Bluffs, Beaver Creek at ..... 12,73-74,594
- Cedar Creek, at Highway 56 at Olathe  
surface-water record ..... 256-257  
water-quality record ..... 17,258-272  
below Olathe Lake near Olathe ..... 290-291
- Cedar Creek near Cedar Point ..... 576-577,616
- Cedar Creek, near DeSoto  
surface-water record ..... 292-293  
water-quality record ..... 17,294-308  
near Manhattan ..... 591
- Cedar Creek tributary near Cambridge ..... 593
- Cedar Point, Cedar Creek near ..... 576-577,616
- Cell volume, definition of ..... 38
- Cells/volume, definition of ..... 38
- Cfs-day, definition of ..... 38
- Channel bars, definition of ..... 38
- Chapman, Chapman Creek near ..... 14,157-158,601
- Chapman Creek near Chapman ..... 14,157-158,601
- Chemical oxygen demand,  
definition of ..... 38
- Chemical quality of precipitation ..... 627-633
- Cheney, Cheney Reservoir near ..... 17,502-518
- Cheney Dam, North Fork Ninescah  
River at ..... 519-520,611
- Cheney Reservoir, North Fork  
Ninescah River above ..... 17,485-501,611
- Cheney Reservoir near Cheney  
surface-water record ..... 502-503  
water-quality record ..... 17,504-518
- Cherryvale, Big Hill Creek near ..... 562-563,615
- Chikaskia River near Corbin ..... 543-544,613
- Cimarron River, near Elkhart ..... 545-546,613  
tributary near Satanta ..... 593
- Claffin, Little Cheyenne Creek tributary  
near ..... 592
- Clay Center, Republican River at ..... 10,14,89-90,595
- Climax, Otter Creek at ..... 553-554,614
- Clinton Lake near Lawrence ..... 233-234
- Clostridium perfringens*, definition of ..... 38

Clyde, Elk Creek at.....	590	Dry weight, definition of.....	40
Coffeyville, Verdigris River at.....	564-565,615	<b>E</b>	
Colby, Prairie Dog Creek tributary at.....	589	Edgerton, Big Bull Creek near.....	11,349-350,606
Coliphages, definition of.....	38	Elgin, Caney River near.....	566-567,615
Color unit, definition of.....	38	Elk Creek at Clyde.....	590
Colorado-Kansas State line, South Fork Republican River near.....	63-64,594	Elk Falls, Elk River at.....	557-559,614
Comparison of water year monthly and annual mean streamflow to long- term median of monthly and annual mean streamflow at selected streamflow-gaging stations.....	12-13	Elk River, at Elk Falls surface-water record.....	557-558
Concordia, Republican River at.....	11,14,87-88,595	water-quality record.....	559,614
Confined aquifer, definition of.....	38	Elkader, Smoky Hill River at.....	12,95-96,596
Contents, definition of.....	39	Elkhart, Cimarron River near.....	545-546,613
Continuous-record station, definition of.....	39	Ellis, Cedar Bluff Reservoir near.....	99-100
Control, definition of.....	39	Ellsworth, Smoky Hill River at.....	14,109-110,597
Control structure, definition of.....	39	Embeddedness, definition of.....	40
Coolidge, Arkansas River near.....	10,369-376,607	Englewood, Crooked Creek near.....	12,547-548,613
Frontier Ditch near.....	368,607	Enterprise, Smoky Hill River at.....	10,154-156,600
Coon Creek tributary near Luray.....	590	Enterococcus bacteria, definition of.....	40-41
Cooperation.....	2	EPT Index, definition of.....	41
Corbin, Chikaskia River near.....	543-544,613	<i>Escherichia coli</i> ( <i>E. coli</i> ), definition of.....	41
Cottonwood River, near Florence near Plymouth.....	574-575,615 578-579,616	Estimated (E) concentration value, definition of.....	41
Council Grove, Neosho River at.....	568-569,615	Euglenoids, definition of.....	41
Cow Creek near Lyons.....	435-436,609	Example of site numbers for wells.....	20
Cowskin Creek at 119th Street at Wichita.....	481-482,611	Explanation of, stage- and water-records.....	22-28
Crooked Creek near Englewood.....	12,547-548,613	elevation and water discharge accuracy of field data and computed results.....	27-28
Cubic foot per second, definition of.....	39	data collection and computation.....	22-23
Cubic foot per second-day, definition of.....	39	data presentation.....	23-27
Cubic foot per second per square mile, definition of.....	39	identifying estimated daily discharge.....	27
<b>D</b>			
Daily mean suspended-sediment concentration, definition of.....	39	other data records available.....	28
Daily-record station, definition of.....	39	ground-water-level records.....	32-34
Data collection platform, definition of.....	39	data collection and computation.....	33
Data logger, definition of.....	39	data presentation.....	33-34
Datum, definition of.....	39	site identification numbers.....	32
Deerfield, Arkansas River at.....	381-382,607	station-identification numbers.....	19-20
Definition of terms.....	36-54	downstream order and station number.....	19
Degrees, conversion of Celsius (°C) to Fahrenheit (°F).....	16	numbering system for wells and miscellaneous sites.....	19
Delaware River, below Perry Dam.....	11,227-228	surface-water quality.....	29-32
near Muscotah surface-water record.....	11,222-223	accuracy of records.....	29
water-quality record.....	224,603	arrangement of records.....	30
Delia, Soldier Creek near.....	11,218-219,603	classification of records.....	29
Derby, Arkansas River at.....	483-484,611	data presentation.....	31-32
DeSoto, Cedar Creek near.....	17,292-308	laboratory measurements.....	31
Kansas River at.....	10,17,239-255,604	onsite measurements and sample collection.....	30
Diatoms, definition of.....	39	remark codes.....	32
Diel, definition of.....	39	sediment.....	30-31
Discharge, at partial-record stations.....	589-593	water temperature.....	30
Discharge or flow, definition of.....	40	water-quality records.....	28-29
Discontinued streamflow-gaging stations.....	XIII-XVI	collection and examination of data.....	28
Discontinued water-quality streamflow- gaging stations.....	XVII-XIX	water analysis.....	28-29
Dissolved, definition of.....	40	Extractable organic halides, definition of.....	41
Dissolved oxygen, definition of.....	40	<b>F</b>	
Dissolved-solids concentration, definition of.....	40	Factors for conversion of chemical constituents in milligrams or micro- grams per liter to milliequivalents per liter.....	16
Diversity index, definition of.....	40	Fall River at Fredonia.....	555-556,614
Dodge City, Arkansas River at.....	385-386	Farlington State Fish Hatchery.....	630-633
Arkansas River tributary near.....	592	Fecal coliform bacteria, definition of.....	41
Dorrance, Smoky Hill River tributary at.....	590	Fecal streptococcal bacteria, definition of.....	41
Douglas County, ground-water levels in.....	18,619	Fire algae, definition of.....	41
Dragoon Creek near Burlingame surface-water record.....	13,336-337	Florence, Cottonwood River near.....	574-575,615
water-quality record.....	338,605	Flow-duration percentiles, definition of.....	41
Drainage area, definition of.....	40	Fort Riley, Kansas River at.....	11,159-160,601
Drainage basin, definition of.....	40	Fort Scott, Marmaton River tributary near.....	592
Dry mass, definition of.....	40	Frankfort, Black Vermillion River near.....	169-171,602
		Fredonia, Fall River at.....	555-556,614
		Frontier Ditch near Coolidge.....	368,607
		Fulton, Little Osage River at.....	362-363,606

**G**

Gage datum, definition of ..... 41-42  
 Gage height, definition of ..... 42  
 Gage values, definition of ..... 42  
 Gaging station, definition of ..... 42  
 Garden City, Arkansas River at ..... 383-384  
 Garnett, South Fork Pottawatomie  
     Creek tributary near ..... 591  
 Gas chromatography/flare ionization  
     detector, definition of ..... 42  
 Geomorphic channel units,  
     definition of ..... 42  
 Glade, North Fork Solomon River at ..... 133-134,599  
 Glen Elder, Solomon River near ..... 145-146,600  
 Great Bend, Arkansas River at ..... 14,397-398,608  
     Walnut Creek below Cheyenne  
         Bottoms Diversion near ..... 412-413,609  
 Green algae, definition of ..... 42  
 Ground-water levels by county ..... 617-626  
 Ground-water-level records,  
     explanation of ..... 32-34  
     measured daily ..... 619-626  
     measured quarterly or annually ..... 617-618  
 Ground-water records ..... 617-626  
 Gypsum, Gypsum Creek near ..... 131-132,599  
 Gypsum Creek near Gypsum ..... 131-132,599

**H**

Habitat, definition of ..... 42  
 Habitat quality index, definition of ..... 42  
 Halstead, Little Arkansas River at  
     Highway 50 near ..... 17,443-459,610  
 Hardness, definition of ..... 42  
 Hardy, NE, Republican River near ..... 81-82,595  
 Harvey County, ground-water levels in ..... 18,617,620-622  
 Hays, Big Creek near ..... 105-106,596  
     Big Creek tributary near ..... 590  
 High-flow stations, maximum stage and  
     discharge, made at partial-record  
     stations in ..... 589-593  
 High tide, definition of ..... 42  
 Hillsdale, Big Bull Creek near ..... 355-356,606  
     Hillsdale Lake near ..... 353-354  
 Hillsdale Lake near Hillsdale ..... 353-354  
 Hilsenhoff's Biotic Index, definition of ..... 42  
 Holton, Soldier Creek near ..... 216-217,603  
 Horizontal datum, definition of ..... 42  
 Hundred and Ten Mile Creek near  
     Quenemo ..... 341-342,605  
     Hutchinson, Arkansas River near ..... 437-438,609  
 Hydrologic Benchmark Network,  
     explanation of ..... 20  
 Hydrologic conditions, summary of ..... 7-18  
     ground water ..... 17-18  
     surface water ..... 7-17  
     surface-water quality ..... 16-17  
 Hydrologic index stations, definition of ..... 43  
 Hydrologic unit, definition of ..... 43

**I**

Inch, definition of ..... 43  
 Independence, Verdigris River at ..... 560-561,614  
 Independence Creek Basin, high-flow  
     partial-record station in ..... 589  
 Indian Creek at Overland Park ..... 328-329,605  
 Indian Creek near Topeka ..... 591  
 Instantaneous discharge, definition of ..... 43  
 International Boundary Commission Survey  
     Datum, definition of ..... 43  
 Introduction ..... 1-2  
 Iola, Neosho River near ..... 582-583,616  
 Island, definition of ..... 43

**J**

Junction City, Milford Lake near ..... 91-92

**K**

Kanopolis, Kanopolis Lake near ..... 111-112  
 Kanopolis Lake near Kanopolis ..... 111-112  
 Kansas-Missouri State line,  
     Marais des Cygnes River near ..... 359-361,606  
 Kansas River, at DeSoto  
     surface-water record ..... 10,239-240  
     water-quality record ..... 17,241-255,604  
     at Fort Riley ..... 11,159-160,601  
     at Lecompton ..... 229-230,604  
     at Topeka  
         surface-water record ..... 199-200  
         water-quality record ..... 17,201-215,603  
     at Wamego  
         surface-water record ..... 176-177  
         water-quality record ..... 17,178-192,602  
     near Belvue ..... 11,195-196,602  
 Kansas River Basin,  
     high-flow partial-record stations in ..... 589-591  
     miscellaneous surface-water  
         stations ..... 594-604  
     in precipitation, chemical quality of ..... 627-629  
     surface-water stations in ..... 63-325  
 Keith Sebelius Lake, near Norton ..... 77-78  
     Prairie Dog Creek above ..... 75-76,594  
 Kendall, Arkansas River at ..... 379-380,607  
 Kings Creek near Manhattan ..... 161-162,601  
 Kinsley, Arkansas River near ..... 14,387-388,608  
 Kiowa, Medicine Lodge River near ..... 12,541-542,613

**L**

Laboratory reporting level,  
     definition of ..... 43  
 La Cygne, Marais des Cygnes River at ..... 357-358,606  
 Lakes or reservoirs:  
     Arkansas River Basin  
         Cheney Reservoir near Cheney ..... 502-518  
     Kansas River Basin  
         Cedar Bluff Reservoir near Ellis ..... 99-100  
         Clinton Lake near Lawrence ..... 233-234  
         Kanopolis Lake near Kanopolis ..... 111-112  
         Lovewell Reservoir near Lovewell ..... 85-86  
         Milford Lake near Junction City ..... 91-92  
         Olathe Lake near Olathe ..... 273-289  
         Perry Lake near Perry ..... 225-226  
         Tuttle Creek Lake near Manhattan ..... 172-173  
         Wilson Lake near Wilson ..... 121-122  
     Osage River Basin  
         Hillsdale Lake near Hillsdale ..... 353-354  
         Melvern Lake near Melvern ..... 332-333  
         Pomona Lake near Quenemo ..... 339-340  
     Land-surface datum, definition of ..... 43  
     Langley, Smoky Hill River near ..... 113-114,597  
     Larned, Arkansas River near ..... 395-396,608  
     Latent heat flux, definition of ..... 43  
     Lawrence, Clinton Lake near ..... 233-234  
     Naismith Creek at ..... 591  
     Wakarusa River near ..... 11,235-236,604  
     Lecompton, Kansas River at ..... 229-230,604  
     Lightning Creek near McCune ..... 13,587-588,616  
     Light-attenuation coefficient, definition of ..... 43  
     Lipid, definition of ..... 43  
     Little Arkansas River, at Alta Mills ..... 14,441-442,610  
         at Highway 50 near Halstead  
             surface-water record ..... 443-444  
             water-quality record ..... 17,445-459,610  
         at Valley Center ..... 13,14,477-478,610  
         near Sedgwick  
             surface-water record ..... 11,460-461  
             water-quality record ..... 17,462-476,610  
     Little Blue River near Barnes ..... 13,167-168,602  
     Little Bull Creek near Spring Hill ..... 11,351-352,606  
     Little Cheyenne Creek tributary near  
         Clafin ..... 592  
     Little Osage River at Fulton ..... 362-363,606

- Long-term method detection level,  
definition of ..... 43
- Long Branch Draw near Norcatu..... 589
- Lovewell, Lovewell Reservoir near ..... 85-86
- Lovewell Reservoir near Lovewell ..... 85-86
- Lower Mississippi River Basin,  
surface-water stations in ..... 368-588
- Lowest annual daily mean streamflow ..... 14
- Low tide, definition of ..... 44
- Ludell, Beaver Creek at ..... 71-72
- Luray, Coon Creek tributary near ..... 590
- Lyle, Sappa Creek near ..... 69-70,594
- Lyndon, Salt Creek at ..... 334-335,605
- Lyons, Cow Creek near ..... 435-436,609
- M**
- Macksville, Rattlesnake Creek near ..... 14,414-415,609
- Macrophytes, definition of ..... 44
- Maize, Arkansas River near ..... 439-440,610
- Manhattan, Big Blue River near ..... 174-175,602
- Cedar Creek near ..... 591
- Kings Creek near ..... 161-162,601
- Tuttle Creek Lake near ..... 172-173
- Map of Kansas, complete-record  
surface-water stations ..... 3
- ground-water-level observation  
    wells per county ..... 6
- partial-record streamflow-gaging  
    stations ..... 5
- reporting areas of the National  
    Weather Service ..... 7
- water-quality and suspended  
    sediment stations ..... 4
- Marais des Cygnes River, at La Cygne ..... 357-358,606
- near Kansas-Missouri State line  
    surface-water record ..... 359-360
- water-quality record ..... 361,606
- near Ottawa ..... 345-346,605
- near Pomona ..... 343-344,605
- near Reading ..... 330-331,605
- Marion Lake, North Cottonwood River  
below ..... 572-573,615
- Marmaton, Marmaton River near ..... 366-367,607
- Marmaton River, at Uniontown ..... 364-365,607
- near Marmaton ..... 366-367,607
- tributary near Fort Scott ..... 592
- Marysville, Big Blue River at ..... 14,163-164,601
- McCune, Lightning Creek near ..... 13,587-588,616
- Mean concentration of suspended  
sediment, definition of ..... 44
- Mean daily steamflow compared with  
normal range ..... 10
- Mean discharge, definition of ..... 44
- Mean high or low tide, definition of ..... 44
- Mean sea level, definition of ..... 44
- Measuring point, definition of ..... 44
- Medicine Lodge River near Kiowa ..... 12,541-542,613
- Megahertz, definition of ..... 44
- Melvern Lake near Melvern ..... 332-333
- Melvern, Melvern Lake near ..... 332-333
- Membrane filter, definition of ..... 44
- Mentor, Smoky Hill River near ..... 115-116,597
- Metamorphic stage, definition of ..... 44
- Method detection limit, definition of ..... 44
- Method of Cubatures, definition of ..... 44
- Methylene blue active substances,  
definition of ..... 44
- Micrograms per gram, definition of ..... 44
- Micrograms per kilogram, definition of ..... 45
- Micrograms per liter, definition of ..... 45
- Microsiemens per centimeter,  
definition of ..... 45
- Milford Dam, Republican River below ..... 11,93-94,595
- Milford Lake near Junction City ..... 91-92
- Mill Creek, at Johnson Drive, Shawnee  
surface-water record ..... 309-310
- water-quality record ..... 17,311-325
- at Washington ..... 165-166,601
- near Paxico ..... 197-198,603
- tributary near Washington ..... 591
- Milligrams per liter, definition of ..... 45
- Minimum desirable streamflow ..... 11,14
- Minimum reporting level, definition of ..... 45
- Miscellaneous site, definition of ..... 45
- Miscellaneous surface-water stations ..... 594-616
- Missouri River Basin, surface-water  
records in ..... 61-367
- Most probable number, definition of ..... 45
- Mud Creek at Abilene ..... 590
- Mulberry Creek near Salina ..... 127-128,598
- Multiple-plate samplers, definition of ..... 45
- Murdock, South Fork Ninnescah River  
near ..... 523-524,612
- Muscotah, Delaware River near ..... 11,222-224,603
- N**
- Naismith Creek at Lawrence ..... 591
- Nanograms per liter, definition of ..... 45
- National Atmospheric Deposition Program  
(NADP), explanation of ..... 21
- National Geodetic Vertical Datum of  
1929, definition of ..... 45
- National Streamflow Information Program  
(NSIP), explanation of ..... 21
- National Stream-Quality Accounting  
Network (NASQAN), explanation of ..... 20-21
- National Trends Network (NADP/NTN),  
explanation of ..... 21
- National Water Information System,  
(NWIS), explanation of ..... 32
- National Water-Quality Assessment  
(NAWQA), explanation of ..... 21
- Natural substrate, definition of ..... 45
- Nekoma, Walnut Creek at ..... 405-406,608
- Wet Walnut Watershed Structure  
    No. 17 near ..... 403-404
- Nekton, definition of ..... 45
- Neosho River, at Burlington ..... 580-581,616
- at Council Grove ..... 568-569,615
- near Americus ..... 570-571,615
- near Iola ..... 582-583,616
- near Parsons  
    surface-water record ..... 10,14,584-585
- water-quality record ..... 586,616
- Nephelometric turbidity unit, definition of ..... 45
- Ness City, North Fork Walnut Creek near ..... 592
- New Cambria, Smoky Hill River at ..... 129-130,598
- Nickerson, Arkansas River near ..... 433-434,609
- Niles, Solomon River at ..... 151-153,600
- Ninnescah River, near Peck ..... 525-526,612
- North Fork, above Cheney Reservoir  
    surface-water record ..... 485-486
- water-quality record ..... 17,487-501,611
- at Cheney Dam ..... 519-520,611
- South Fork, near Murdock ..... 523-524,612
- near Pratt ..... 14,521-522,611
- Norcatu, Long Branch Draw near ..... 589
- North American Datum of 1927 (NAD 27),  
definition of ..... 45
- North American Datum of 1983 (NAD 83),  
definition of ..... 45
- North American Vertical Datum of  
1988 (NAVD 88), definition of ..... 46
- North Cottonwood River below  
Marion Lake ..... 572-573,615
- Norton, Keith Sebelius Lake near ..... 77-78
- Number of days less than minimum  
desirable streamflow ..... 14
- Numbering system for  
wells and miscellaneous sites ..... 19
- O**
- Oberlin, Sappa Creek near ..... 67-68,594
- Ogallah, Big Creek tributary near ..... 590



Olathe, Cedar Creek at Highway 56 at ..... 17,256-272  
 Cedar Creek below Olathe Lake near ..... 290-291  
 Olathe Lake near ..... 17,273-289  
 Olathe Lake near Olathe  
     surface-water record ..... 273-274  
     water-quality record ..... 17,275-289  
 Open or screened interval, definition of ..... 46  
 Organic carbon, definition of ..... 46  
 Organic mass or volatile mass,  
     definition of ..... 46  
 Organism count/area, definition of ..... 46  
 Organism count/volume, definition of ..... 46  
 Organochlorine compounds, definition of ..... 46  
 Osage River Basin,  
     high-flow partial-record stations in ..... 591-592  
     miscellaneous surface-water stations  
         in ..... 605-607  
         precipitation, chemical quality of ..... 630-633  
         surface-water stations in ..... 330-367  
 Osborne, South Fork Solomon River at ..... 143-144,600  
 Otis, Wet Walnut Watershed Structure  
     No. 2 near ..... 407-408  
 Ottawa, Marais des Cygnes River near ..... 345-346,605  
 Otter Creek at Climax ..... 553-554,614  
 Overland Park, Indian Creek at ..... 328-329,605

**P**

Paola, Big Bull Creek at ..... 591  
 Parameter code, definition of ..... 46  
 Parsons, Neosho River near ..... 10,14,584-586,616  
 Partial-record station, definition of ..... 46  
 Particle size, definition of ..... 46  
 Particle-size classification, definition of ..... 46  
 Pawnee River, at Rozel ..... 393-394,608  
     near Burdett ..... 389-390  
 Paxico, Mill Creek near ..... 197-198,603  
 Peak flow (peak stage), definition of ..... 47  
 Peck, Ninnescah River near ..... 525-526,612  
 Percent composition or percent of total,  
     definition of ..... 47  
 Percent shading, definition of ..... 47  
 Periodic-record station, definition of ..... 47  
 Periphyton, definition of ..... 47  
 Perry, Perry Lake near ..... 225-226  
 Perry Dam, Delaware River below ..... 11,227-228  
 Perry Lake near Perry ..... 225-226  
 Pesticides, definition of ..... 47  
 pH, definition of ..... 47  
 Phytoplankton, definition of ..... 47  
 Picocurie, definition of ..... 47  
 Plankton, definition of ..... 47  
 Plymouth, Cottonwood River near ..... 578-579,616  
 Polychlorinated biphenyls,  
     definition of ..... 47  
 Polychlorinated naphthalenes,  
     definition of ..... 47  
 Pomona Lake near Quenemo ..... 339-340  
 Pomona, Marais des Cygnes River  
     near ..... 343-344,605  
 Pool, definition of ..... 47  
 Portis, North Fork Solomon River at ..... 137-138,599  
 Pottawatomie Creek, near Scipio ..... 347-348,606  
     South Fork, tributary near Garnett ..... 591  
 Potwin, Rock Creek near ..... 532-535,612  
 Prairie Dog Creek, above Keith  
     Sebelius Lake ..... 75-76,594  
     near Woodruff ..... 79-80,594  
     tributary at Colby ..... 589  
 Pratt, South Fork Ninnescah River near ..... 14,521-522,611  
 Precipitation, chemical quality of ..... 627-633  
 Precipitation, departure from normal ..... 8  
 Precipitation, water years 2001-2003 ..... 8  
 Primary productivity, definition of ..... 48  
 Primary productivity (carbon method),  
     definition of ..... 48  
 Primary productivity (oxygen method),  
     definition of ..... 48

**Q**

Quenemo, Hundred and Ten Mile  
 Creek near ..... 341-342,605  
 Pomona Lake near ..... 339-340

**R**

Radioisotopes, definition of ..... 48  
 Rattlesnake Creek, near Macksville ..... 14,414-415,609  
     near Zenith  
         surface-water record ..... 416-417  
         water-quality record ..... 17,418-432,609  
 Reach, definition of ..... 48  
 Reading, Marais des Cygnes River near ..... 330-331,605  
 Records, explanation of ..... 22-34  
 Record low streamflows at  
     selected stations ..... 11  
 Recoverable from bed (bottom) material,  
     definition of ..... 48  
 Recurrence interval, definition of ..... 48  
 References ..... 59  
 Reno County, ground-water levels in ..... 623  
 Reports referenced ..... 59  
 Replicate samples, definition of ..... 49  
 Republican River, at Clay Center  
     streamflow less than Kansas  
         minimum standards ..... 14  
     surface-water record ..... 10,89-90  
     water-quality record ..... 595  
     at Concordia  
         streamflow less than Kansas  
             minimum standards ..... 14  
         surface-water record ..... 11,87-88  
         water-quality record ..... 595  
     below Milford Dam ..... 11,93-94,595  
     near Hardy, NE ..... 81-82,595  
     South Fork, near Colorado-Kansas  
         State line ..... 63-64,594  
 Reservoirs: See Lakes or reservoirs  
 Return period, definition of ..... 49  
 Richland, Wakarusa River near ..... 15,231-232,604  
 Riffle, definition of ..... 49  
 River mileage, definition of ..... 49  
 Rock Creek near Potwin ..... 532-535,612  
 Rozel, Pawnee River at ..... 393-394,608  
 Run, definition of ..... 49  
 Runoff, definition of ..... 49  
 Russell, Saline River near ..... 12,119-120,598

**S**

Salina, Mulberry Creek near ..... 127-128,598  
 Saline River, at Tescott ..... 125-126,598  
     at Wilson Dam ..... 123-124,598  
     near Russell ..... 12,119-120,598  
     near WaKeeney ..... 117-118,597  
 Salt Creek at Lyndon ..... 334-335,605  
 Salt Creek near Ada ..... 149-150,600  
 Sandy Creek near Yates Center ..... 593  
 Sappa Creek, near Lyle ..... 69-70,594  
     near Oberlin ..... 67-68,594  
     South Fork, near Achilles ..... 65-66  
 Satanta, Cimarron River tributary near ..... 593  
 Schoenchen, Smoky Hill River below ..... 103-104,596  
     Smoky Hill River near ..... 101-102,596  
 Scipio, Pottawatomie Creek near ..... 347-348,606  
 Scott Lake State Park ..... 627-629  
 Sea level, definition of ..... 49  
 Sedgwick, Little Arkansas River near ..... 11,17,460-476,610  
 Sedgwick County, ground-water levels  
     in ..... 617,624-625  
 Sediment, definition of ..... 49  
 Selkirk, White Woman Creek tributary  
     near ..... 592  
 Seneca, Turkey Creek near ..... 13,61-62,594  
 Sensible heat flux, definition of ..... 49  
 Seven-day 10-year low flow,  
     definition of ..... 49

- Shawnee, Mill Creek at Johnson Drive..... 17,309-325  
 Shelves, definition of ..... 49  
 Shunganunga Creek at Topeka..... 591  
 Simpson, Solomon River near ..... 147-148,600  
 Slate Creek at Wellington ..... 527-528,612  
 Smoky Hill River, at Elkader ..... 12,95-96,596  
   at Ellsworth..... 14,109-110,597  
   at Enterprise  
     surface-water record..... 10,154-155  
     water-quality record..... 156,600  
   at New Cambria..... 129-130,598  
   below Schoenchen ..... 103-104,596  
   near Arnold..... 97-98,596  
   near Bunker Hill ..... 107-108,597  
   near Langley ..... 113-114,597  
   near Mentor ..... 115-116,597  
   near Schoenchen..... 101-102,596  
   tributary at Dorrance..... 590  
 Sodium-adsorption ratio (SAR),  
   definition of..... 49  
 Soil heat flux, definition of ..... 49  
 Soil-water content, definition of ..... 49  
 Soldier Creek, near Delia..... 11,218-219,603  
   near Holton ..... 216-217,603  
   near Topeka ..... 220-221,603  
 Solomon River, at Niles  
   surface-water record..... 151-152  
   water-quality record..... 153,600  
   near Glen Elder..... 145-146,600  
   near Simpson ..... 147-148,600  
   North Fork, at Glade..... 133-134,599  
   at Portis ..... 137-138,599  
   South Fork, above Webster Reservoir ..... 139-140,599  
   at Osborne ..... 143-144,600  
   at Woodston ..... 141-142,599  
 Special networks and programs ..... 20-21  
 Specific electrical conductance  
   (conductivity), definition of ..... 49-50  
 Spring Hill, Little Bull Creek near..... 11,351-352,606  
 Stable isotope ratio, definition of ..... 50  
 Stage, definition of ..... 50  
 Stage-discharge relation, definition of ..... 50  
 Stafford County, ground-water levels in ..... 626  
 Stanley, Blue River near..... 326-327,604  
 Station identification numbers,  
   explanation of ..... 19  
 Stockton, Ash Creek tributary near..... 590  
   Bow Creek near ..... 135-136,599  
 Stranger Creek near Tonganoxie..... 237-238,604  
 Streamflow, definition of ..... 50  
 Substrate, definition of ..... 50  
 Substrate embeddedness class,  
   definition of ..... 50  
 Surface area of a lake, definition of ..... 50  
 Surface-water quality, explanation of ..... 16-17  
 Surficial bed material, definition of ..... 50  
 Surrogate, definition of ..... 50  
 Suspended, definition of ..... 50  
 Suspended, recoverable, definition of ..... 50  
 Suspended sediment, definition of ..... 50  
 Suspended-sediment concentration,  
   definition of ..... 51  
 Suspended-sediment discharge,  
   definition of ..... 51  
 Suspended-sediment load,  
   definition of ..... 51  
 Suspended solids, total residue at  
   105 °C concentration, definition of ..... 51  
 Suspended, total, definition of ..... 51  
 Synoptic studies, definition of ..... 51  
 Syracuse, Arkansas River at..... 377-378,607
- T**
- Taxa (Species) richness, definition of ..... 51  
 Taxonomy, definition of ..... 51  
 Techniques of water-resources investigations  
   of U.S. Geological Survey ..... 55-59
- Temperatures, conversion of Celsius  
   (°C) to Fahrenheit (°F) ..... 16  
 Terms, definition of ..... 36-54  
 Tescott, Saline River at ..... 125-126,598  
 Thalweg, definition of ..... 51  
 Thermograph, definition of ..... 51  
 Thomas County, ground-water levels  
   in ..... 18,618  
 Time-weighted average, definition of ..... 52  
 Tonganoxie, Stranger Creek near ..... 237-238,604  
 Tons per acre-foot (T/acre-ft),  
   definition of ..... 52  
 Tons per day (T/day, tons/d), definition of ..... 52  
 Topeka, Indian Creek near..... 591  
   Kansas River at ..... 17,199-215,603  
   Shunganunga Creek at ..... 591  
   Soldier Creek near..... 220-221,603  
 Total, definition of ..... 52  
 Total coliform bacteria, definition of ..... 52  
 Total discharge, definition of ..... 52  
 Total in bottom material, definition of ..... 52  
 Total length (fish), definition of ..... 52  
 Total load, definition of ..... 52  
 Total organism count, definition of ..... 52  
 Total recoverable, definition of ..... 52  
 Total sediment discharge, definition of ..... 53  
 Total sediment load or total load,  
   definition of ..... 53  
 Towanda, Whitewater River at ..... 14,536-537,613  
   Whitewater River tributary near..... 592  
 Transect, definition of ..... 53  
 Turbidity, definition of ..... 53  
 Turkey Creek near Seneca..... 13,61-62,594  
 Tuttle Creek Lake near Manhattan ..... 172-173
- U**
- Ultraviolet (UV) absorbance (absorption),  
   definition of ..... 53  
 Unconfined aquifer, definition of ..... 53  
 Uniontown, Marmaton River at ..... 364-365,607  
 USGS nation Streamflow Information  
   Program (NSIP), explanation of ..... 21
- V**
- Valley Center, Little Arkansas River at ..... 13-14,477-478,610  
 Vermillion Creek near Wamego ..... 193-194,602  
 Verdigris River, at Coffeyville..... 564-565,615  
   at Independence ..... 560-561,614  
   near Altoona..... 551-552,614  
 Vertical datum, definition of ..... 53  
 Volatile organic compounds (VOCs),  
   definition of ..... 53
- W**
- Wakarusa River, near Lawrence ..... 11,235-236,604  
   near Richland ..... 15,231-232,604  
 WaKeeney, Saline River near ..... 117-118,597  
 Walnut Creek, at Albert  
   surface-water record..... 409-410  
   water-quality record ..... 411,609  
   at Nekoma ..... 405-406,608  
   below Cheyenne Bottoms Diversion  
     near Great Bend ..... 412-413,609  
     near Alexander ..... 401-402,608  
     North Fork, near Ness City ..... 592  
 Walnut River at Winfield..... 538-539  
   surface-water record..... 540,613  
   water-quality record ..... 17,176-192,602  
   Vermillion Creek near ..... 193-194,602  
 Washington, Mill Creek at..... 165-166,601  
   Mill Creek tributary near ..... 591  
 Water-level trend at selected  
   water-level observation wells ..... 18  
 Water data, access to USGS ..... 35  
 Water-quality standards, days exceeded ..... 17

INDEX

Water-resources data (WRD), definition		Whitewater River, at Towanda.....	14,536-537,613
of .....	53	tributary near Towanda .....	592
Water-supply papers (WSP), definition		Wichita, Arkansas River at .....	479-480,610
of .....	54	Cowskin Creek at 119th Street at.....	481-482,611
Water table, definition of.....	53	Willis, Buttermilk Creek near.....	589
Water-table aquifer, definition of .....	53	Wilson, Wilson Lake near .....	121-122
Water year, definition of.....	53	Wilson Dam, Saline River at .....	123-124,598
Watershed.....	53	Wilson Lake near Wilson .....	121-122
WDR, definition of.....	53	Winfield, Walnut River at .....	538-540,613
Webster Reservoir, South Fork		Wolf River Basin, high-flow	
Solomon River above.....	139-140,599	partial-record station in .....	589
Wellington, Slate Creek at .....	527-528,612	Woodruff, Prairie Dog Creek near.....	79-80,594
Weighted average, definition of .....	54	Woodston, South Fork Solomon River	
Wet mass, definition of .....	54	at .....	141-142,599
Wet Walnut Watershed Structure		WSP, definition of.....	54
No. 2 near Otis.....	407-408		
Wet Walnut Watershed Structure			
No. 17 near Nekoma .....	403-404		
Wet Walnut Watershed Structure			
No. 39 near Bazine .....	399-400		
Wet weight, definition of.....	54		
White Clay Creek at Atchison .....	589		
White Rock Creek near Burr Oak.....	83-84,595		
White Woman Creek tributary near			
Selkirk.....	592		

**Y**

Yates Center, Sandy Creek near .....	593
--------------------------------------	-----

**Z**

Zenith, Rattlesnake Creek near .....	17,416-432,609
Zooplankton, definition of.....	54

# Conversion Factors

<b>Multiply</b>	<b>By</b>	<b>To obtain</b>
<b>Length</b>		
inch (in.)	$2.54 \times 10^1$	millimeter (mm)
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter (m)
mile (mi)	$1.609 \times 10^0$	kilometer (km)
<b>Area</b>		
acre	$4.047 \times 10^3$	square meter (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometer (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometer (km <sup>2</sup> )
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer (km <sup>2</sup> )
<b>Volume</b>		
gallon (gal)	$3.785 \times 10^0$	liter (L)
	$3.785 \times 10^{-3}$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^0$	cubic decimeter (dm <sup>3</sup> )
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^{-2}$	cubic meter (m <sup>3</sup> )
	$2.832 \times 10^1$	cubic decimeter (dm <sup>3</sup> )
cubic-foot-per-second-per-day [(ft <sup>3</sup> /s/d)]	$2.447 \times 10^3$	cubic meter (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
acre-foot (acre-ft)	$1.223 \times 10^3$	cubic meter (m <sup>3</sup> )
	$1.223 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
	$1.223 \times 10^{-6}$	cubic kilometer (km <sup>3</sup> )
<b>Flow rate</b>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter (L/s)
	$2.832 \times 10^{-2}$	cubic meter per second (m <sup>3</sup> /s)
	$2.832 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second (L/s)
	$6.309 \times 10^{-5}$	cubic meter per second (m <sup>3</sup> /s)
	$6.309 \times 10^{-2}$	cubic decimeter per second (dm <sup>3</sup> /s)
million gallons per day (Mgal/d)	$4.381 \times 10^{-2}$	cubic meter per second
	$4.381 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
<b>Mass</b>		
ton, short (2,000 lb)	$9.072 \times 10^{-1}$	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$



1879–2004