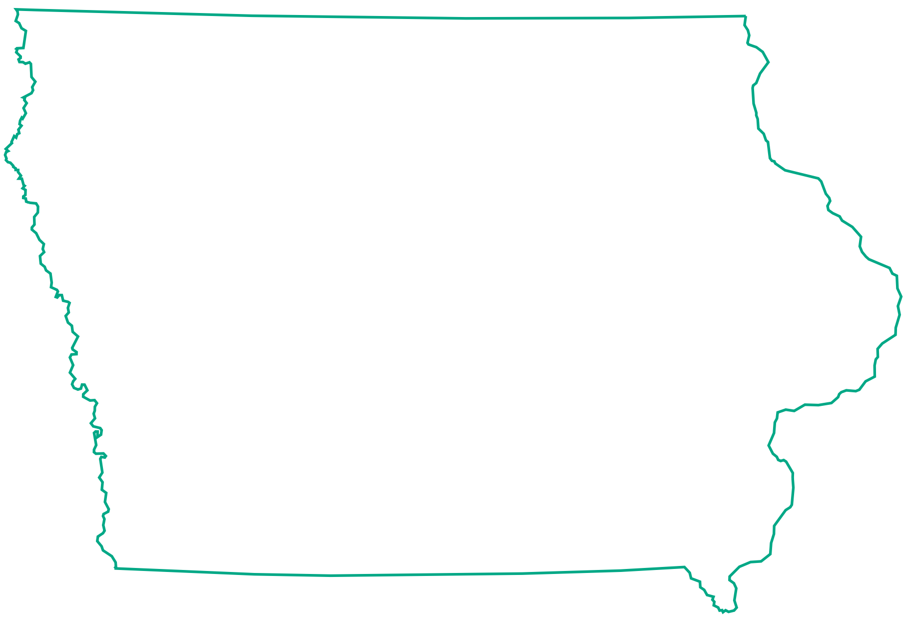
Prepared in cooperation with the Iowa Department of Natural Resources-Iowa Geological Survey, Iowa Department of Transportation; and other Federal agencies.

Water Resources Data
Iowa
Water Year 2005



Water-Data Report IA-05-01

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

Calendar for Water Year 2005

2004

October

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2005

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Water Resources Data
Iowa
Water Year 2005

By Greg M. Nalley, Joseph G. Gorman, Robert D. Goodrich, Greg R. Littin, S. Michael Linhart, Von E. Miller, and Kevin S. Housel

Water-Data Report IA-05-1

Prepared in cooperation with the Iowa Department of Natural Resources–Geological Survey; Iowa Department of Transportation; and Federal agencies

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

U.S. Department of the Interior
Gale A. Norton, Secretary

U.S. Geological Survey
Patrick Leahy, Acting Director

U.S. Geological Survey
P.O. Box 1240
Iowa City, Iowa 52244
(319) 337-4191

Information about the U.S. Geological Survey (USGS) Iowa Water Science Center is available on the Internet at http://ia.water.usgs.gov/.

Information about all USGS reports and products is available by calling 1-888-ASK-USGS or on the Internet via the World Wide Web at http://www.usgs.gov/.

Additional earth science information is available by accessing the USGS home page at http://www.usgs.gov/.

Preface

This volume of the annual hydrologic data report of Iowa 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 quality of water provide the hydrologic information needed by local, State, and Federal agencies, and the public 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 U. S. Geological Survey policy and established guidelines.

Personnel in charge of the field units are:

Joseph G. Gorman, Western Field Unit

Robert D. Goodrich, Eastern Field Unit

The data were collected, computed and processed by the following personnel:

J.F. Cerveny
D.E. Christiansen
D.T. Conell
A.R. Conkling
A.L. Donnelly
D.A. Eash
E.D. Fischer
J.D. Garrett
J.S. Hansen
J.W. Harms
K.S. Housel
R.L. Kopish
S.M. Linhart
J.C. McVay
V.E. Miller
J.F. Nania
J.A. Nason
M.J. Noon
D.J. Schnoebelen
M.K. Segreto
P.K. Smith
J.R. Sondag
S.R. Strader
S.A. Thul
C.D. Van Schepen

This report was prepared in cooperation with the State of Iowa and with other agencies under the general supervision of Greg M. Nalley, Chief Hydrologic Surveillence Section, and Rob G. Middlemis-Brown, U. S. Geological Survey Iowa Water Science Center Director.

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13. ABSTRACT *(Maximum 200 words)*
Water resources data for Iowa for the 2005 water year consists of records of stage, discharge, and water quality of streams; stage, and/or contents of lakes and reservoirs; ground-water levels and water quality of ground-water wells and precipitation. This report volume contains discharge records for 136 gaging stations; stage or contents for 9 lakes and reservoirs and 6 streams; water quality for 18 stream-gaging stations; sediment records for 7 stream-gaging stations; precipitation record for 7 precipitation stations; peak-flow data for 88 crest-stage partial-record stations; water levels for 24 ground-water observation wells; water-quality data for 154 municipal wells; and precipitation-quality data from 2 precipitation sites.

14. SUBJECT TERMS
*Iowa, *Hydrologic data, *Surface water, *Water quality, Flow rates, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Sampling sites, Water levels, Water analyses, Data collection.

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ILLUSTRATIONS

FIGURES

TABLES

Table:

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

[d, discharge; c, chemical; p, precipitation; s, sediment; t, temperature; e, elevation, gage height, or contents]

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Iowa have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

[(d), discharge station; (e), elevation (stage only) station; *, currently operated as crest-stage partial-record station]

Station name	Station number	Drainage area (mi^2)	Period of record
Upper Iowa River near Decorah, Ia. (d)	05388000	568	1913-14; 1919-27, 1933-51
Paint Creek at Waterville, Ia. (d)	05388500	42.8	1952-73
Sny Magill Creek near Clayton, Ia. (d)	05411400	27.6	1992-01
Turkey River at Spillville, Ia. (d)	05411600	177	1957-73; 1978-91
Big Springs near Elkader, Ia. (d)	05411950	103	1938; 1982-83; 1988-95
Turkey River at Elkader, Ia. (d)	05412000	891	1932-42
Unnamed Creek near Luana, Ia. (d)	05412056	1.15	1986-92
Silver Creek near Luana, Ia (d)	05412060	4.39	1986-98
Roberts Creek at St. Olaf, Ia. (d)	05412100	70.7	1986-01
Little Maquoketa River near Durango, Ia. (d)	05414500	130	1934-82
Maquoketa River near Manchester, Ia. (d)	05417000	305	1933-73
Maquoketa River near Delhi, Ia. (d)	05417500	347	1933-40
Bear Creek near Monmouth, Ia. (d)	05417700	61.3	1957-76
Maquoketa River above North Fork Maquoketa River near Maquoketa, Ia. (d)	05418000	938	1913-14
North Fork Maquoketa River at Fulton, Ia. (d)	05418450	516	1977-91
Elk River near Almont, Ia. (d)	05420300	55.9	1995-97
Wapsipinicon River near Elma, Ia. (d)	05420560	95.2	1958-92
Wapsipinicon River near Tripoli, Ia (d)	05420680	343	1996-98; 2001-04
Wapsipinicon River at Stone City, Ia. (d)	05421500	1,324	1903-14
Crow Creek at Eldridge, Ia. (d)	05422420	2.20	1977-82
Crow Creek at Mt. Joy, Ia. (d)	05422450	6.90	1977-82
Pine Creek near Muscatine, Ia. (d)	05448150	38.9	1975-82
Eagle Lake Inlet near Britt, Ia. (e)	05448285	3.83	1975-80
Eagle Lake Outlet near Britt, Ia. (e)	05448290	11.3	1975-80
West Branch (West Fork) Iowa River near Klemme, Ia. (d)	05448500	112	1948-58
East Branch (East Fork) Iowa River near Klemme, Ia. (d)	05449000	133	1948-76; 1977-95
Iowa River near Iowa Falls, Ia. (d)	05450000	665	1911-14
Upper Pine Lake at Eldora, Ia. (e)	05450500	14.9	1936-70
Lower Pine Lake at Eldora, Ia. (e)	05451000	15.9	1936-70
Iowa River near Belle Plaine, Ia. (d)	05452500	2,455	1939-59
Lake Macbride near Solon, Ia. (e)	05453500	27.0	1937-71
Ralston Creek at Iowa City, Ia. (d)	05455000	3.01	1924-87
Cedar River at Mitchell, Ia. (d)	05457500	826	1933-42
Shell Rock River near Northwood, Ia. (d)	05459000	300	1945-86
Shell Rock River at Marble Rock, Ia. (d)	05460500	1,318	1933-53
Shell Rock River at Greene, Ia. (d)	05461000	1,357	1933-42
Flood Creek near Powersville, Ia (d)	05461390	127	1996-98
Shell Rock River near Clarksville, Ia. (d)	05461500	1,626	1915-27; 1932-34
Fourmile Creek near Lincoln, Ia. (d)	05464130	13.8	1962-67; 1969-74; 1976-80
Half Mile Creek near Gladbrook, Ia. (d)	05464133	1.33	1962-67; 1969-74; 1976-80
Fourmile Creek near Traer, Ia. (d)	05464137	19.5	1962-74; 1975-80
Prairie Creek at Fairfax, Ia. (d)	05464640	178	1966-82
Lake Keomah near Oskaloosa, Ia. (e)	05472000	3.06	1936-71
Skunk River at Coppock, Ia. (d)	05473000	2,916	1913-44
Big Creek near Mount Pleasant, Ia. (d)	05473500	106	1955-79

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record
Des Moines River at Estherville (d)	05476500*	1,372	1951-95
East Fork Des Moines River near Burt, Ia. (d)	05478000	462	1951-74
Des Moines River near Fort Dodge, Ia. (d)	05479500	3,753	1911-13
Lizard Creek near Clare, Ia. (d)	05480000	257	1940-82
Des Moines River near Boone, Ia. (d)	05481500	5,511	1920-68
North Raccoon River near Newell, Ia. (d)	05482135*	233	1982-95
Storm Lake at Storm Lake, Ia. (e)	05482140	28.3	1970-75
Big Cedar Creek near Varina, Ia. (d)	05482170	80.0	1960-91
East Fork Hardin Creek near Churdan, Ia. (d)	05483000	24.0	1953-91
Hazelbrush Creek near Maple River, Ia. (d)	05483343	9.22	1990-94
Springbrook Lake near Guthrie Center, Ia. (e)	05483460	5.18	1936-71
Raccoon River at Des Moines, Ia. (e)	05485000	3,628	1902-03
Lake Ahquabi near Indianola, Ia. (e)	05487000	4.93	1936-71
White Breast Creek near Knoxville, Ia. (d)	05488000	380	1945-62
South Coal Creek near Bussey, Ia. (d)	05489090	12.9	1977-81
Muchakinock Creek near Eddyville, Ia (d)	05489190	70.2	1975-79
Lake Wapello near Drakesville, Ia. (e)	05490000	7.75	1936-71
Sugar Creek near Keokuk, Ia. (d)	05491000	105	1922-31; 1958-73
Fox River at Cantril, Ia. (d)	05494500	161	1940-51
Rock River at Rock Rapids, Ia. (d)	06483270	788	1959-74
Dry Creek at Hawarden, Ia. (d)	06484000	48.4	1948-69
West Branch Floyd River near Struble, Ia. (d)	06600300*	108	1955-95
Monona-Harrison Ditch near Blencoe, IA (d)	06602410	4,440	1939-42
Loon Creek near Orleans, Ia. (d)	06603920	31.0	1971-74
Spirit Lake Outlet at Orleans, Ia. (e)	06604100	75.6	1971-74
Milford Creek at Milford, Ia. (d)	06604400	146	1971-74
Little Sioux River at Spencer, Ia. (d)	06605100	990	1936-42
Little Sioux River at Gillett Grove, Ia. (d)	06605600	1,334	1958-73
Little Sioux River near Kennebeck, Ia. (d)	06606700	2,738	1939-69
Odebolt Creek near Arthur, Ia. (d)	06607000	39.3	1957-75
Maple River at Turin, Ia. (d)	06607300	725	1939-41
Little Sioux River near Blencoe, Ia. (d)	06607510	4,440	1939-42
Steer Creek near Magnolia, Ia. (d)	06609200	9.26	1963-69
Thompson Creek near Woodbine, Ia. (d)	06609590	6.97	1963-69
Willow Creek near Logan, Ia. (d)	06609600	129	1972-75
Indian Creek at Council Bluffs, Ia. (d)	06610500	6.92	1954-76
Mosquito Creek near Earling, Ia. (d)	06610520	32.0	1965-79
Waubonsie Creek near Bartlett, Ia. (d)	06806000	30.4	1946-69
West Nishnabotna River at Harlan, Ia. (d)	06807320	316	1977-82
West Nishnabotna River at (near) White Cloud, Ia. (d)	06807500	967	1918-24
Mule Creek near Malvern, Ia. (d)	06808000	10.6	1954-69
Spring Valley Creek near Tabor, Ia. (d)	06808200	7.6	1955-64
Davids Creek near Hamlin, Ia. (d)	06809000	26.0	1952-73
Tarkio River at Stanton, Ia. (d)	06811840*	49.3	1958-91
Tarkio River at Blanchard, Ia. (d)	06812000	200	1934-40
West Nodaway River at Villisca, Ia. (d)	06816500	342	1918-25
Platte River near Diagonal, Ia. (d)	06818750*	217	1969-91
East Fork One Hundred and Two River near Bedford, Ia. (d)	06819190	92.1	1959-83
Elk River near Decatur City, Ia. (d)	06897950*	52.5	1968-94
Weldon River near Leon, Ia. (d)	06898400	104	1959-91
Honey Creek near Russell, Ia. (d)	06903500	13.2	1952-62
Chariton River near Centerville, Ia. (d)	06904000	708	1938-59

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following water-quality stations have been discontinued in Iowa. Continuous daily records of water temperature, specific conductance, or sediment and monthly or periodic samples of chemical quality or biological data were collected and published for the period of record shown for each station.

[Type of record: Chem.–chemical quality, Cond.–specific conductance, Temp.–water temperature, Sed.–sediment, Bio.–biological; *, periodic data available subsequent to period of daily record]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
Upper Iowa River at Decorah, Ia.	05387500	511	Sed. Temp.	1963-68 1963-83
Upper Iowa River near Dorchester, Ia.	05388250	770	Sed., Temp.*, Cond.*	1975-81
Paint Creek at Waterville, Ia.	05388500	42.8	Temp. Sed.	1952-56 1952-57
Bloody Run Creek nr Marquette, Ia.	05389400	34.1	Sed., Temp., Cond.	1992-04
Mississippi River at McGregor, Ia.	05389500	67,500	Sed., Temp., Cond.	1975-04
Unnamed Creek near Luana	05412056	1.15	Chem.	1986-92
Sny Magill Creek near Clayton, Ia.	05411400	27.6	Sed., Temp., Cond.	1992-01
Mississippi River at Dubuque, Ia.	05414700	81,600	Chem.	1969-73
Maquoketa River at Manchester, Ia	05416900	275	Sed., Temp., Cond.	2000-02
Maquoketa River nr Maquoketa, Ia.	05418500	1,553	Sed., Temp., Cond.	1978-81, 1995-97, 2000-04
Elk River near Almont, Ia	05420300	55.9	Sed., Temp., Cond.	1995-97
Mississippi River at Clinton, Ia	05420500	85,600	Sed.	1995-97
Wapsipinicon River near Tripoli, Ia	05420860	343	Chem.	1996-98, 2001-04
Wapsipinicon River at Independence, Ia.	05421000	1,048	Cond.* Temp.*, Sed.*	1968-70 1967-70
Crow Creek at Bettendorf, Ia.	05422470	17.8	Cond.*, Temp.*, Sed.	1978-82
Iowa River near Rowan, Ia.	05449500	429	Temp.*, Sed.* Chem.	1957-62, 1996-98, 2001-04
Iowa River at Marshalltown, Ia	05451500	1,532	Temp., Sed.	1988-95
Iowa River at Iowa City, Ia.	05454500	3,271	Chem.. Temp.*, Sed. Cond.	1906-07; 1944-54 1944-87 1968-87
Ralston Creek at Iowa City, Ia.	05455000	3.01	Cond Sed. Temp.	1968-87 1952-87 1967-87
Flood Creek near Powersville, Ia	05461390	127	Chem.	1996-98
Shell Rock River at Shell Rock, Ia.	05462000	1,746	Temp.*	1953-68
Cedar River at Cedar Falls, Ia	05463050	4,734	Chem.	1975-79; 1984; 1986-1995
Cedar River near (at) Gilbertville, Ia.	05464020	5,234	Chem.	1971; 1975-81
Fourmile Creek near Lincoln, Ia.	05464130	13.78	Chem., Temp., Sed.	1969-74
Half Mile Creek near Gladbrook, Ia.	05464133	1.33	Chem., Temp., Sed.	1969-74
Fourmile Creek near Traer, Ia.	05464137	19.51	Chem., Temp., Sed.	1969-74
Wolf Creek near Dysart, Ia	05464220	299	Chem.	1996-98
Cedar River near Palo, Ia.	05464450	6,380	Chem.	1975-79
Cedar River at Cedar Rapids, Ia.	05464500	6,510	Chem.* Temp.* Sed.	1906-07; 1944-54 1944-54 1943-54
Cedar River near Bertram, Ia.	05464760	6,955	Chem.	1975-81
Iowa River at Wapello, Ia	05465500	12, 499	Chem.	1977-95
Mississippi River at Burlington, Ia.	05469720	114,000	Chem.	1969-73
South Skunk River at Colfax, Ia	05471050	803	Cond.*, Temp.*, Sed.	1989-93
Mississippi River at Keokuk, Ia.	05474500	119,000	Chem.	1974-87
Des Moines River at Fort Dodge, Ia.	05480500	4,190	Chem.	1972-73
Des Moines River nr Saylorville, Ia.	05481650	5,841	Sed., Temp., Cond.	1962-04

DISCONTINUED SURFACE-WATER-QUALITY STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
Des Moines River at 2nd Avenue at Des Moines, Ia.	05482000	6,245	Chem. Temp.*, Sed.	1954-55 1954-61
East Fork Hardin Creek near Churdan, Ia.	05483000	24.0	Temp.*, Sed.*	1952-57
Hazelbrush Creek near Maple River, Ia	05483343	9.22	Cond., Temp., Sed.	1991-94
Middle Raccoon River near Bayard, Ia.	05483450	375	Cond.*, Temp.*, Sed.	1979-85
Middle Raccoon River at Panora, Ia.	05483600	440	Cond.*, Temp.*, Sed.	1979-85
Raccoon River at Van Meter, Ia	05484500	3,441	Chem. Bio.	1974-79; 1986-94 1974-79
Raccoon River at Des Moines, Ia.	05485000	3,590	Chem., Temp.	1945-47
Des Moines River below Raccoon River at Des Moines, Ia.	05485500	9,879	Chem.* Temp.*, Sed.	1944-45 1944-47
Des Moines River below Des Moines, Ia.	05485520	9,901	Chem.	1971; 1974-81
Middle River near Indianola, Ia.	05486490	503	Temp.*, Sed.	1962-67
White Breast Creek near Dallas, Ia.	05487980	342	Chem. Temp.*, Sed.	1969-73 1967-73
Big Sioux River at Sioux City, Ia.	06485950	9,410	Chem.	1969-73
Floyd River at James, Ia.	06600500	886	Temp.*, Sed., Cond.*	1968-73
Floyd River at Sioux City, Ia.	06600520	921	Chem.	1969-73
Missouri River at Decatur, Neb.	06601200	316,160	Chem.	1974-81
Spirit Lake near Orleans, Ia.	06604000	75.6	Temp.	1968-75
Little Sioux River at Correctionville, Ia.	06606600	2,500	Chem.* Temp.* Sed.	1954-55 1951-62 1950-62
Little Sioux River near Kennebec, Ia.	06606700	2,738	Temp. Sed.	1951-55 1950-57
Little Sioux River at River Sioux, Ia.	06607513	3,600	Chem.	1969-73
Soldier River near Mondamin, Ia.	06608505	440	Chem.	1970-73
Steer Creek near Magnolia, Ia.	06609200	9.26	Temp., Sed., Cond.	1963-69
Thompson Creek near Woodbine, Ia.	06609590	6.97	Temp., Sed., Cond.	1963-69
Willow Creek near Logan, Ia.	06609600	129	Cond., Temp. Sed.	1972-75 1971-75
Missouri River at Omaha, Nebr.	06610000	322,800	Temp.,* Cond.* Sed.	1969-86; 1991-03 1971-76; 1991-03
Mule Creek near Malvern, Ia.	06808000	10.6	Temp. Sed.	1958-69 1954-69
Davids Creek near Hamlin, Ia.	06809000	26.0	Temp.* Sed.	1952-53; 1965-68 1952-68
East Nishnabotna River at Red Oak, Ia.	06809500	894	Temp.*, Sed., Cond.*	1962-73
Nishnabotna River above Hamburg, Ia.	06810000	2,806	Chem. Temp.*, Cond. Bio.	1979-93 1979-81 1979-81
Nodaway River at Clarinda	06817000	762	Cond.*, Temp.*, Sed.	1976-92
Platte River near Diagonal, Ia.	06818750	217	Chem.	1969-73
Elk Creek near Decatur City, Ia.	06897950	52.5	Bio. Chem.	1970-72 1968-94
Thompson River at Davis City, Ia.	06898000	701	Chem. Temp.*, Sed., Cond.*	1967-73 1968-73
Weldon River near Leon, Ia.	06898400	104	Chem.	1968-73
Chariton River near Chariton, Ia.	06903400	182	Temp.*, Sed., Cond.*	1969-73
Honey Creek near Russell, Ia.	06903500	13.2	Sed.	1952-62
Chariton River near Rathbun, Ia.	06903900	549	Temp.*, Sed.*, Cond.*	1962-69

Water Resources Data, Iowa, Water Year 2005

By Greg M. Nalley, Joseph G. Gorman, Robert D. Goodrich, Greg R. Littin, S. Michael Linhart, Von E. Miller, and Kevin S. Housel

Introduction

The Water Resources Discipline of the U.S. Geological Survey (USGS), in cooperation with State, county, municipal, and other Federal agencies, obtains a large amount of data pertaining to the water resources of Iowa each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make this data readily available to interested parties outside of the U.S. Geological Survey, the data is published annually in this report series entitled “Water Resources Data - Iowa” as part of the National Water Data System.

Water-resources data for water year 2005 for Iowa consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground water and preciptitation water quality. This report contains stage or discharge records for 136 gaging stations; stage records for 9 lakes and reservoirs; water-quality records for 18 gaging stations; sediment records for 7 gaging stations; peak-flow data for 88 crest-stage partial-record stations; precipitation data collected at 6 gaging stations and 1 precipitation site; water levels for 24 ground-water observation wells; water-quality data from 154 municipal wells; and precipitation-quality data from 2 precipitation sites. Additional water data were collected at various sites not included in the systematic data-collection program and are published as miscellaneous measurements and analyses.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled “Surface Water Supply of the United States.” Through September 30, 1960, these water-supply papers were published in an annual series; during 1961–65 and 1966–70, they were published in 5-year series. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled “Quality of Surface Waters of the United States.” Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled “Ground-Water Levels in the United States.” Water-supply papers may be consulted in the libraries of the principal cities in the United States, or they may be purchased from Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225.

For water years 1961 through 1970, streamflow data were released by the U.S. Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official U.S. Geological Survey reports on a State-boundary basis. These official reports carry an identification number consisting of the two-letter State postal abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as “U.S. Geological Survey Water-Data Report IA-05-1.” These water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information for ordering specific reports may be obtained from the U.S. Geological Survey Iowa Water Science Center Director at the address given on the back of the title page or by telephone, (319) 337-4191.

Cooperation

The U.S. Geological Survey has had cooperative agreements with various governmental agencies in the State of Iowa for the systematic collection of streamflow records since 1914, ground-water levels since 1935, and water-quality records since 1943. During water year 2005, the agencies that assisted through cooperative agreements were:

Iowa Department of Natural Resources–Geological Survey
Iowa Department of Transportation
Iowa Highway Research Board

Iowa State University
University of Iowa, Institute of Hydraulic Research
University of Iowa, Hygienic Laboratory
University of Iowa

Appanoose County Board of Supervisors
Buchanan County Emergency Management
Davis County Board of Supervisors
Fremont County Board of Supervisors
Lake Panorama Association
Van Buren County Board of Supervisors

City of Ames
City of Bettendorf
City of Burlington
City of Cedar Falls
City of Cedar Rapids
City of Charles City
City of Clear Lake
City of Clinton
City of Coralville
City of Davenport
City of Decorah Water Department
City of Des Moines
City of Des Moines Water Works
City of Fort Dodge
City of Iowa City
City of Marshalltown
City of Milford
City of Sioux City
City of Waterloo Water Pollution Control Plant
City of Waverly
City of West Des Moines

Services and financial assistance were provided by the U.S. Army Corps of Engineers in collecting streamflow records for 73 stream-gaging stations. Data were provided by NOAA-National Weather Service, U.S. Department of Commerce, and the U.S. Geological Survey Biological Resources Discipline. The following organizations aided in collecting records and are acknowledged in the respective station descriptions:

Milford Municipal Utilities
Central Iowa Energy Cooperative
Ameren-Union Electric Company

Summary of Hydrologic Conditions

Precipitation

For water year 2005 (October 1, 2004 to September 30, 2005) climatological conditions were well below normal. Recorded precipitation for the year ranged from +5.05 inches above normal in the North Central Iowa Climatological District to -8.16 inches less than normal in the East Central Iowa Climatological District (fig. 1). Precipitation recorded for the State averaged 31.59 inches, which was -2.49 inches below normal or 93 percent of the normal 34.08 inches for 1971-00 (table 1). Overall, water year 2005 was the 59th driest and 15th warmest for 132 years of record. [In this summary of hydrologic conditions, all data and statistics pertaining to precipitation and temperature in Iowa were provided by Harry Hillaker, State Climatologist, Iowa Department of Agriculture and Land Stewardship, (oral and written commun., 2005).]

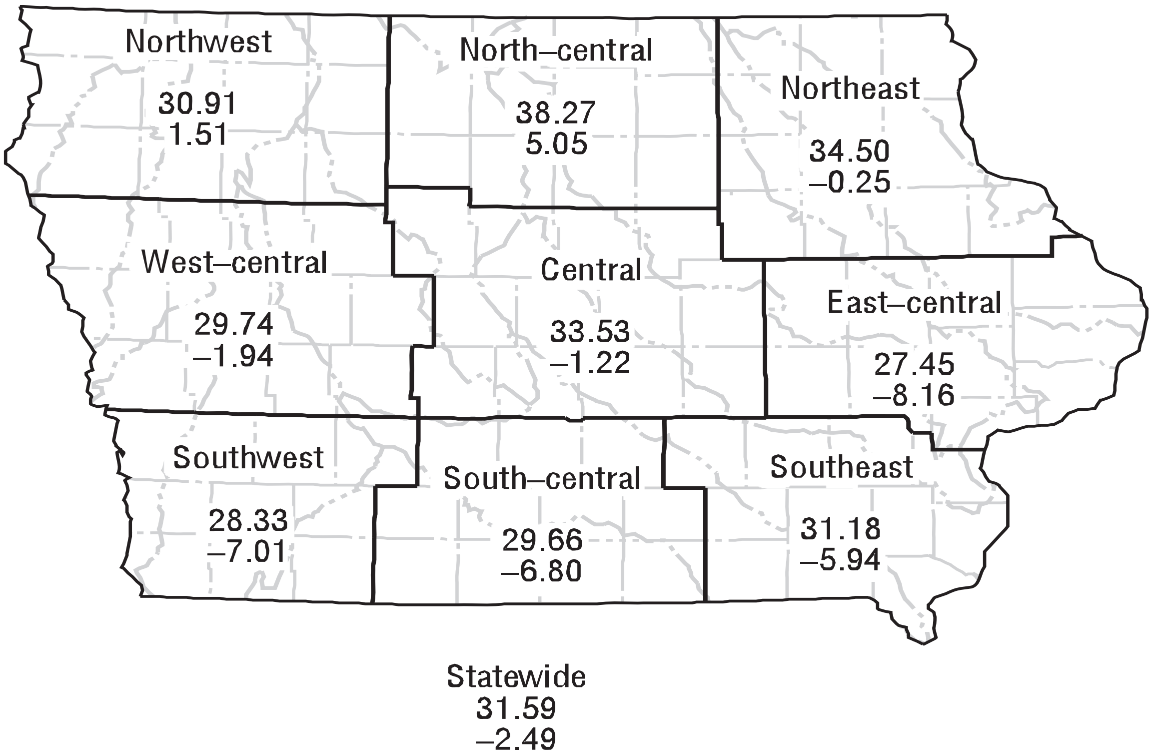


Figure 1. Water year 2005 precipitation record for the National Weather Service's designated Climatological Districts [upper value: average precipitation for the water year, in inches; lower value: deviation from long-term average (1971-2000), in inches;] source: Harry Hillaker, State Climatologist, Iowa Department of Agriculture and Land Stewardship, written commun., 2005).

Table 1. Monthly and annual precipitation during the 2005 water year as a percentage of normal precipitation (1971-2000).
[Source: Harry Hillaker, State Climatologist, Iowa Department of Agriculture and Land Stewardship, written commun., 2005]

National Weather Service Climatological District	2004			2005									
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Annual
Northwest	48	116	17	80	210	40	117	127	129	78	56	224	105
North-central	62	89	36	131	194	67	131	136	133	99	86	195	115
Northeast	116	82	68	173	127	55	65	82	121	106	96	128	99
West-central	38	180	24	95	239	41	136	107	134	66	61	70	94
Central	67	114	45	121	160	58	111	100	127	90	75	98	96
East-central	150	102	62	199	97	45	63	67	62	46	70	75	77
Southwest	31	82	37	124	240	42	116	95	107	91	65	16	80
South-central	59	79	50	165	145	36	126	72	119	72	74	43	81
Southeast	176	92	61	198	114	38	98	48	93	47	78	75	84
Statewide	83	104	47	147	161	47	107	93	116	78	74	101	93

Surface water

Streamflow

The water year 2005 runoff at Cedar Rapids was 2,974,000 acre-feet, which is 234,000 acre-feet more than the mean annual runoff for the period of record (104 yrs), 2,740,000 acre-feet. The water year 2005 runoff at Fort Dodge was 1,754,000 acre-feet, which is 468,000 acre-feet more than the mean for the period of record (74 yrs), 1,286,000 acre-feet. The water year 2005 runoff at Hamburg was 757,900 acre-feet, which is 147,500 acre-feet less than the mean for the period of record (79 yrs), 905,400 acre-feet. The annual period-of-record runoffs at the index stations are shown in figure 2.

The locations of the active continuous-record gaging stations and crest-stage gaging stations for water year 2005 are shown in figure 3.

Suspended Sediment

Daily suspended-sediment discharge data (hereafter referred to as sediment discharge) were collected at 7 streamflow-gaging stations in Iowa during the 2005 water year. Two stations have 25 years or more of record: 05465500 Iowa River at Wapello, and 05474000 Skunk River at Augusta; two stations on the Missouri River have 15 years or more of record: 06486000 Missouri River at Sioux City, Nebraska and 06807000 Missouri River at Nebraska City, Nebraska; three stations in central Iowa have 10 years of record: 05471040 Squaw Creek near Colfax, 05487540 Walnut Creek near Prairie City, and 05487550 Walnut Creek near Vandalia. The locations of active sediment and surface water-quality stations are shown in figure 4. The peak daily sediment discharge on 4 of 7 stations occurred in May, after significant rain events.

Sediment discharges for Iowa River at Wapello and Skunk River at Augusta in southeast Iowa were indicative of the below-normal precipitation in central and eastern Iowa. The Iowa River basin drainage includes parts of the Southeast, East-central, Central, Northeast, and North-central Climatological Districts, and drains an area nearly three times as large as the Skunk Basin. These districts had about 94.2 percent of normal precipitation. Wapello had an annual sediment discharge of 1.13 million tons and represents 45.4 percent of the 27-year mean sediment discharge of 2.49 million tons.

The headwaters of the Skunk River basin are in central Iowa and flow is southeasterly to the confluence with the Mississippi River. A substantial part of the drainage basin is located in the Southeast Climatological District. The annual precipitation for this district was 84 percent of normal for water year 2005. The 2005 annual sediment discharge for Skunk River at Augusta was 1.02 million tons and represents 39.5 percent of the 30-year mean sediment discharge of 2.58 million tons.

The annual sediment discharge for the three stations located in central Iowa with less than approximately 20 square miles of drainage reflect precipitation patterns on small drainage basins. The annual sediment discharge for Squaw Creek near Colfax was 5,668 tons. Sixty-two percent of Squaw Creek's annual sediment discharge was measured in May. The annual sediment discharge for Walnut Creek near Prairie City was 809.8 tons, while Walnut Creek near Vandalia was 6,803 tons. Vandalia has a drainage area approximately three times the size of Prairie City, but had about 8.4 times the amount of sediment discharge of Prairie City.

The two Missouri River stations have large drainage areas, which the sediment discharges reflect. The annual sediment discharge at Sioux City was 3.78 million tons, which was 33 percent of the 16-year mean of 11.3 million tons. The annual sediment discharge at Nebraska City was 14.3 million tons, which was 49 percent of the 19-year mean of 29.0 million tons.

Ground-Water-Level Observation Network

The ground-water monitoring network in Iowa provides a historical record of the water-level changes in the State's most important aquifers. The locations of the 24 wells monitored on an intermittent basis in Iowa during water year 2005 are shown in figure 5.

In this report, records of water levels are presented for a network of observation wells. However, many other water levels are measured through Federal, State, and local agency cooperative projects and entered into computer storage. Information for specific projects may be obtained from the U.S. Geological Survey Iowa Water Science Center Director or via the world wide web using the following universal resource locator address: *http://iowa.usgs.gov/*.

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. The principal identification number for a specific well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

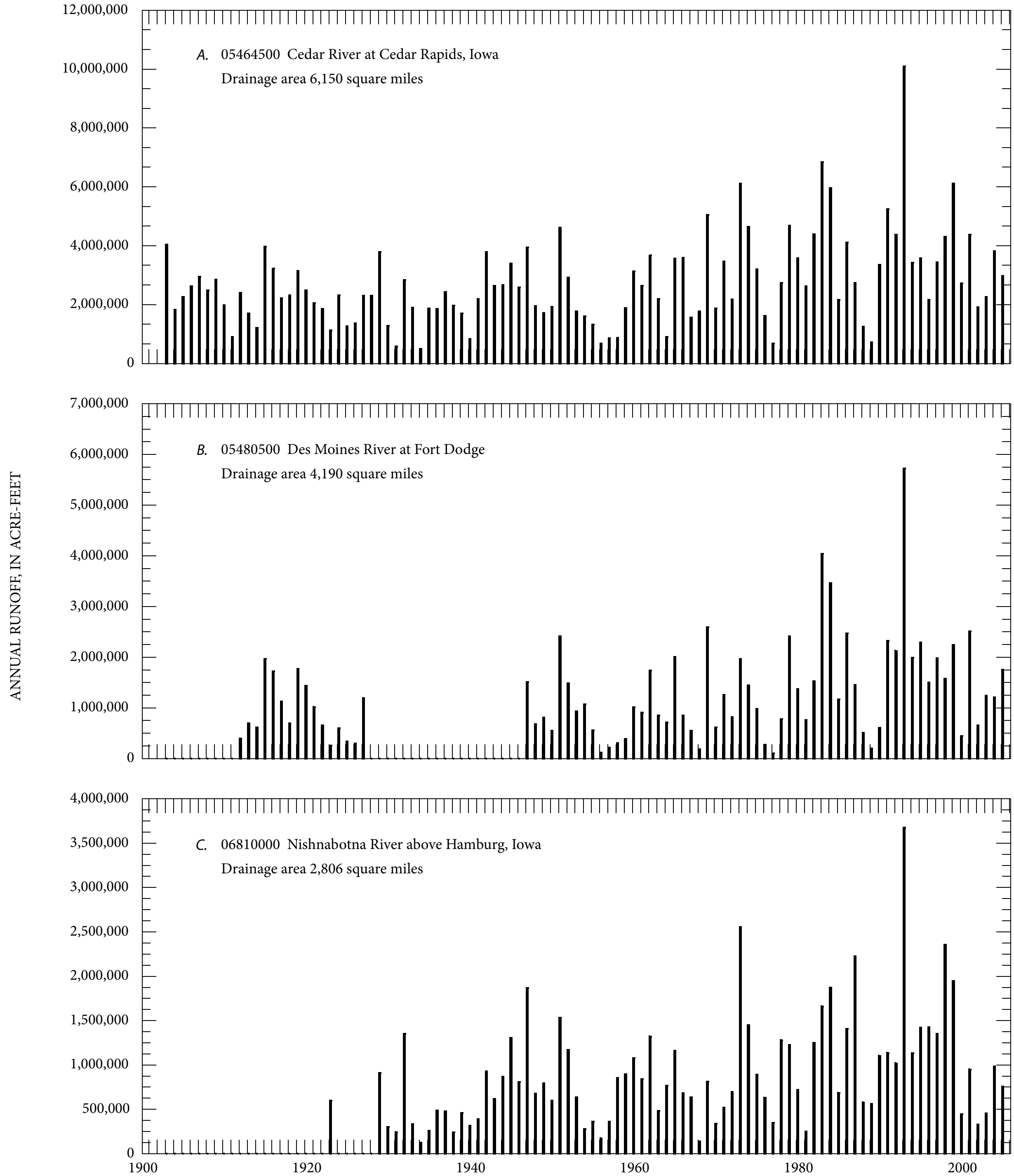


Figure 2. Annual runoff for period of record at index stations.

Water-level records are obtained from direct measurements with a steel tape or from an airline. The water-level measurements in this report are provided in feet with reference to land-surface datum. Land-surface datum is a datum plane that is approximately at land surface at each well. The measuring point is the height above or below the land-surface datum and the point where the water level is measured. Both the measuring point and land-surface datum are provided for each well.

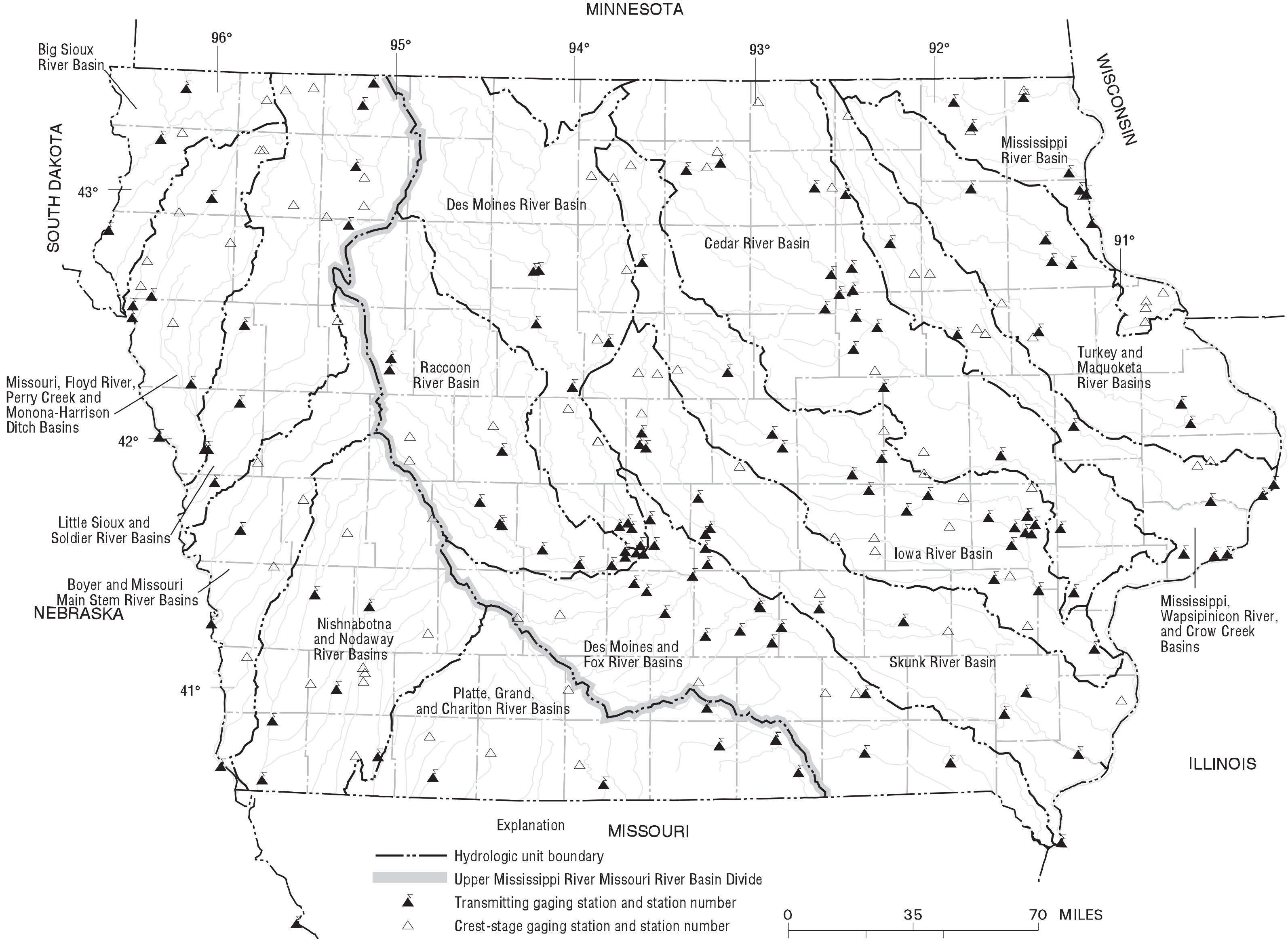


Figure 3. Location of continuous-record and crest-stage gaging stations in Iowa, water year 2005. See drainage-basin maps for gaging-station identification.

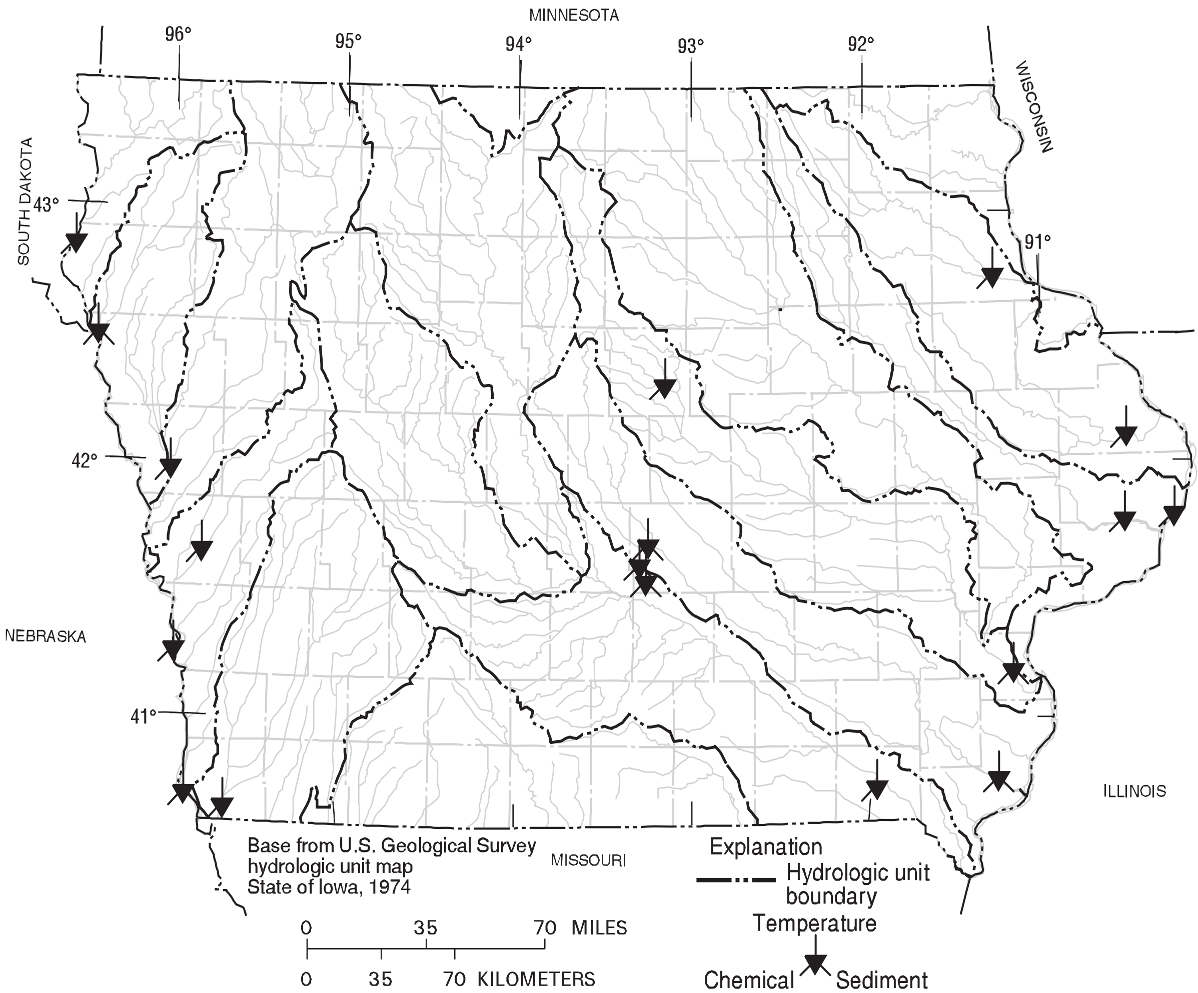


Figure 4. Location of active sediment and surface-water quality stations in Iowa, water year 2005

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement to a depth of water of several hundred feet, the error of 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 to a tenth of a foot or a larger unit.

Ground-water supplies in Iowa are withdrawn from unconsolidated and bedrock aquifers. There are three types of unconsolidated aquifers: (1) alluvial aquifers, which consist of sand-and-gravel deposits associated with present-day fluvial systems; (2) glacial-drift aquifers, which consist of shallow, discontinuous, permeable lenses of sand and gravel interbedded with less-permeable glacial drift; and (3) buried-channel aquifers. Buried-channel aquifers are formed in areas where coarse sand and gravel were deposited in bedrock valleys and overlain by a layer of glacial drift.

One well completed in an unconsolidated aquifer recorded a new low historical water level during the 2005 water year (table 2).

Table 2. Historical low-water level measured during water year 2005 in wells completed in unconsolidated aquifers.

[Water+-level measurements in feet below land surface.]

County	Well number	Aquifer type	New historical low water level	Date measured	Previous historical low water level	Date measured
Muscatine	412120091080401	Holocene	19.46	08/17/2005	18.13	11/20/2003

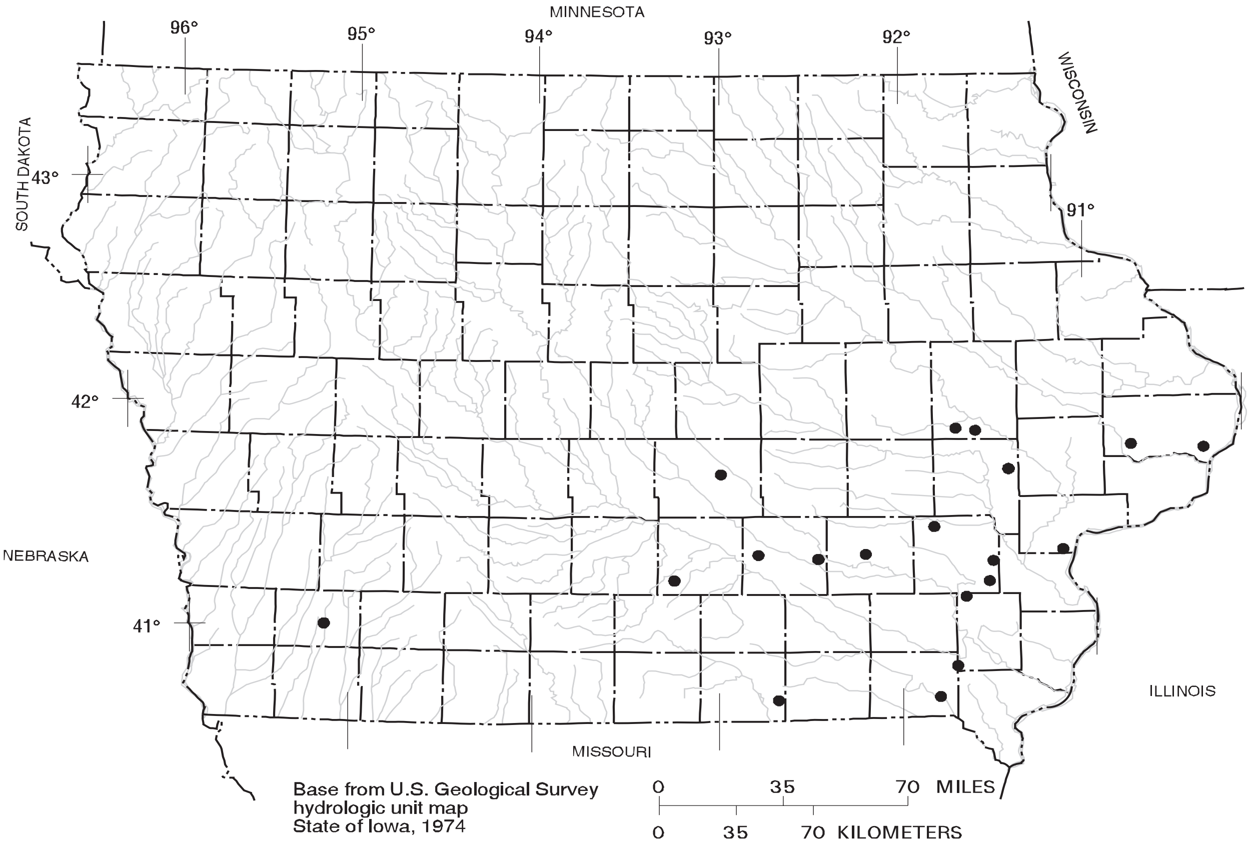


Figure 5. Location of wells in the ground-water-level observation network, water year 2005.

The five major bedrock-aquifer units in Iowa are the Cambrian-Ordovician, Silurian-Devonian, Mississippian, Pennsylvanian, and Dakota. The Cambrian-Ordovician aquifer system consists of aquifers in sandstone of Early Cambrian age and dolomite and sandstone of Late Cambrian to Early Ordovician age. The Dresbach is the basal aquifer of the Cambrian-Ordovician aquifer system and is present locally in northeastern and east-central Iowa. Overlying the Dresbach aquifer is the more spatially extensive Jordan-St. Peter aquifer. A confining shale unit separates the Jordan-St. Peter aquifer from the Galena aquifer, the uppermost aquifer in the Cambrian-Ordovician aquifer system. Overlying the Cambrian-Ordovician aquifer system is the Silurian-Devonian aquifer, which yields water from fractures in Silurian dolomite and Devonian limestone. Overlying the Silurian-Devonian aquifer is the Mississippian aquifer, which is composed of limestone and dolomite of Mississippian age and underlies about 60 percent of Iowa. Overlying the Mississippian aquifer are discontinuous lenses of sandstone in the Cherokee and Kansas City Groups of Pennsylvanian age, which form small, localized aquifers. The Dakota aquifer is the youngest bedrock-aquifer unit in the State and yields water from sandstone of Cretaceous age in northwest and western Iowa.

Two wells completed in bedrock aquifers recorded a historical low water levels (table 3).

Table 3. Historical low-water level measured during water year 2005 in wells completed in bedrock aquifers.

[Water+-level measurements in feet below land surface]

County	Well number	Aquifer type	New historical low water level	Date measured	Previous historical low water level	Date measured
Appanoose	404103092404001	Cambrian-Ordovician	395.09	08/15/2005	394.23	08/20/2004
Muscatine	412120091080402	Silurian-Devonian	19.44	08/17/2005	18.06	11/20/2003

Surface-Water Quality

Surface-water-quality data were collected in Iowa during water year 2005 at two National Stream-Quality Accounting Network (NASQAN) stations. The NASQAN stations in Iowa are the Mississippi River at Clinton (05420500) and Missouri River at Omaha (06610000). The combined drainage area of the two stations is approximately 408,000 sq. mi. Land use throughout the two drainage basins is primarily agricultural. Fourteen water samples were collected at Missouri River at Omaha, and twelve water samples were collected at Mississippi River at Clinton during the 2005 water year.

Nearly all the samples collected at the two stations contained detectable concentrations of agricultural chemicals. Dissolved nitrite plus nitrate as nitrogen (hereafter referred to as nitrate) were common during the 2005 water year, with all samples containing concentrations greater than the detection level of 0.05 mg/L (milligrams per liter).

Nitrate concentrations at Clinton ranged from <0.06 mg/L on August 16, to 3.88 mg/L, on June 8. Nitrate concentrations at Omaha ranged from 0.11 mg/L on September 7 to 3.02 mg/L, on April 19. Nitrate concentrations in water samples did not exceed 10 mg/L, which is the U.S. Environmental Protection Agency (USEPA), Maximum Contaminate Level (MCL) for public drinking water (USEPA, 1990), Maximum contaminant levels, subpart B of part 141, National primary drinking water regulations: U.S. Code of Federal Regulations, Title 40, Parts 100 to 149, revised as of July 1, 1990, p.553-677). Pesticide analysis were completed for 26 water samples collected at the two NASQAN stations. Atrazine and metolachlor, two of the most commonly used herbicides in Iowa, were detected throughout the year at both NASQAN stations. Some of the detections of herbicide concentrations were at very low detection limits and are marked with an "E" code for an estimated value. An "E" code means the compound was detected but that the value is approaching quantifiable limits. Acetochlor was detected seven times at Omaha and six times at Clinton. The largest herbicide concentration was 7.53 μg/L (micrograms per liter) of atrazine in the water sample collected from the Missouri River on May 14. The largest overall concentration of acetochlor, alachlor, atrazine, cyanazine, and metolachlor in a single event was also at the Missouri River on May 14. This water sample had 3.82 μg/L of acetochlor, <0.010 μg/L of alachlor, 7.53 μg/L of atrazine, <0.018 μg/L of cyanazine, and 0.823 μg/L of metolachlor. The only herbicide that exceeded USEPA MCL's (USEPA,1992, Fact sheet: EPA 570/9-91-012FS, December 1992) was atrazine at the Missouri River site.

The USEPA MCL for atrazine is 3.0 mg/L. The Missouri River at Omaha had atrazine above the MCL on May 14, with a value of 7.53 μg/L. Herbicide concentrations were generally larger in samples collected during May, June, and July, than in samples collected at other times during 2005 water year. Water samples collected in October through February had the lowest overall concentrations of the five herbicides (atrazine, alachlor, acetochlor, cyanazine, and metolachlor) during the 2005 water year.

Ground-Water Quality

The Iowa ground-water-quality monitoring program has been operated since 1982 by the U.S. Geological Survey in cooperation with the Iowa Department of Natural Resources, Geological Survey Bureau. The purpose of the program is twofold: (1) provide consistent and representative data describing the chemical water quality of the principal aquifers of the State; and (2) determine possible trends in both water quality and spatial distribution of water quality.

The ground-water-quality monitoring program was initiated to continue a program begun in 1950 by the State Health Department that consisted of periodic, nonspecific sampling of untreated water from municipal supply wells. Each year, approximately 250 wells, primarily municipal supply, were randomly-selected for sampling between April and November. Between 1985 and 1989, the emphasis of the program was on the analysis of nitrate and herbicide concentrations in samples from wells less than 200 feet deep. Because of the random pattern of sampling both spatially (different wells each year) and seasonally (different times during the year), trends in ground-water quality were difficult to determine from the data. Therefore, in 1990, to provide year-to-year continuity of data and a more statistically sound basis for the study of long-term water-quality trends, a sampling strategy based on a random selection of wells weighted by aquifer vulnerability was implemented. Aquifer vulnerability was determined by the frequency of atrazine detections in water samples collected from wells in the respective aquifers. In 1990 and 1991, a fixed network of 50 wells was selected to be sampled annually, and approximately 200 wells continued to be selected on a rotational basis.

In 1992, the investigation of water-quality trends became the primary focus of the program, and a 10-year work plan was designed to eliminate spatial and seasonal variance, yet allow flexibility within the schedule to address additional data needs. For sampling site selection in 1992, the well inventory was divided into categories based on aquifer type and again on well depth for surficial aquifers, and into categories designated "vulnerable to contamination" and "not vulnerable to contamination" based on the map Groundwater Vulnerability Regions of Iowa (Hoyer, B.E., and Hallberg, G.R., 1991, Special Map Series 11: Iowa Department of Natural Resources, scale 1:500,000) for bedrock aquifers. Vulnerability was determined by the combination and interpretation of factors including geologic and soil data, thickness of Quaternary cover, proximity to agricultural injection wells and sinkholes through which contaminants can be introduced to the aquifer, and evaluation of historical ground water and well contamination. A total of 90 sites were selected for sampling from a well inventory comprising approximately 1,640 public supply wells. From the 90 sites in the fixed network, 45 wells from two surficial aquifer types were selected to be sampled annually. The other 45 wells (from the bedrock aquifers) were selected to be sampled on a rotational schedule based on aquifer vulnerability to contamination. The wells determined to be vulnerable to contamination would be sampled every 2 years and those wells categorized as not vulnerable to contamination would be sampled every 4 years. All 90 wells were sampled in the first 2 years (1992 and 1993) and the sampling rotation began in 1994. In 2001, the sampling rotation was suspended in favor of sampling all 90 wells annually. Each year since 2001, up to 60 additional randomly-selected wells have been sampled from one of the five aquifer systems within the State. The sampling effort during the 2005 water year included 56 wells from the Cambrian-Ordovician system and is the fourteenth consecutive year that ground-water-quality trend data have been collected for this program.

Ground-Water Monitoring Network

During the 2005 water year, a total of 154 ground-water samples were collected from municipal wells located throughout the State (fig. 6). Ground water from 145 of these wells was sampled as part of the Iowa ground-water-quality monitoring (GWQM)

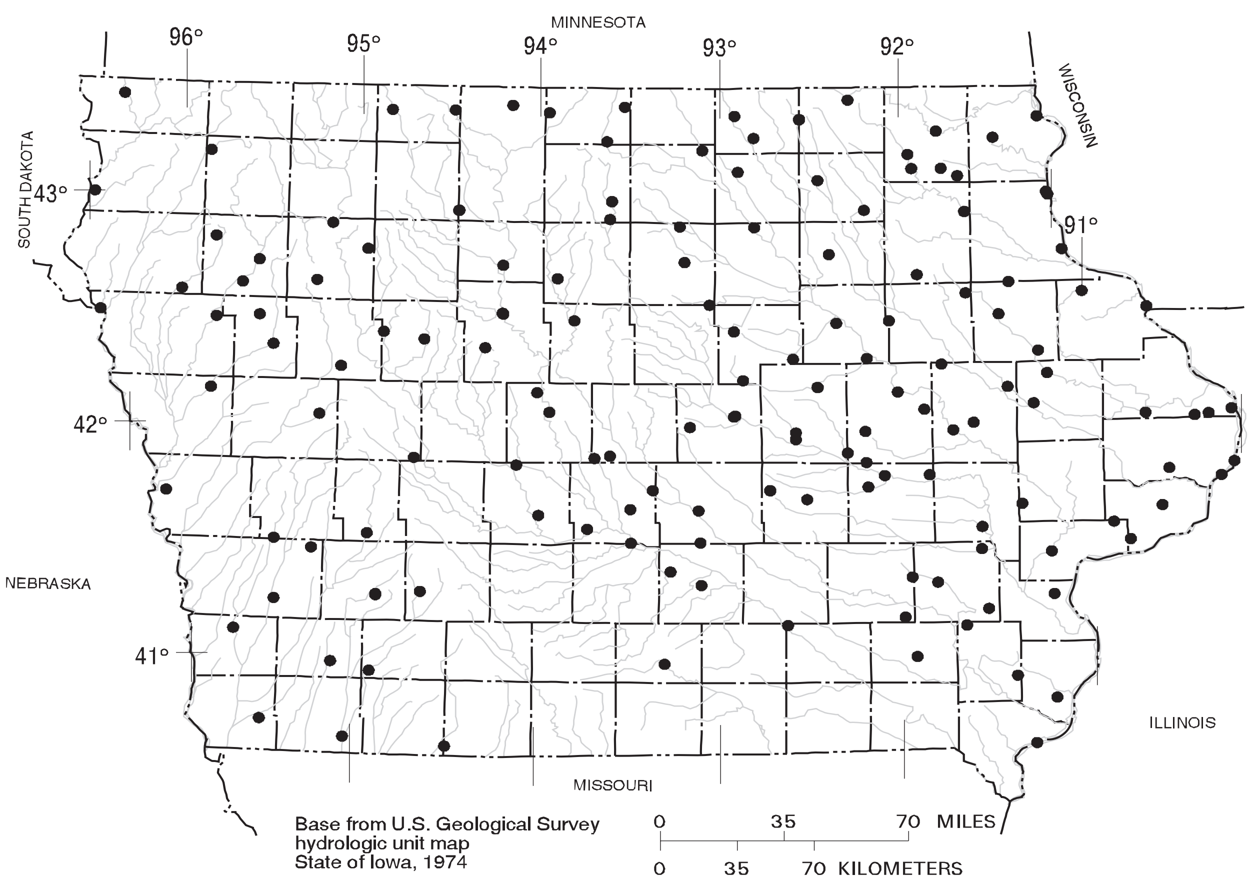


Figure 6. Location of active ground-water-quality monitoring wells, water year 2005.

program to determine water-quality trends. Thirty-nine of the 154 samples were collected using the National Water Quality Assessment (NAWQA) program protocols; 30 for use with the Major Aquifers Study (MAS) and 9 as part of the NAWQA trends network.

Samples were collected during June through September 2005. All samples were analyzed for common ions and nutrients. One-hundred twenty-one samples were analyzed for herbicides and 61 samples were analyzed for trace metals. In addition, most samples were analyzed for volatile organic compounds (VOCs) and radiochemistry. However, in a few cases only samples from wells less than 300 feet deep were analyzed for VOCs and those from wells deeper than 300 feet were analyzed for radiochemistry. Results for all constituent analyses are published in this report. Discussion of analytical results will be limited to the nitrogen species, nitrate and ammonia; and herbicides.

A summary of results for nutrient and herbicide analyses are listed by compound in table 4. Nitrate was detected in 44 of the 145 samples and ammonia was detected in 105 of the 145 samples analyzed for these compounds. One or more herbicides were detected in 17 of the 121 samples. The laboratory minimum reporting level (MRL) for ammonia and nitrate is 0.05 mg/L. The MRL's for the herbicides listed below are 0.05 mg/L. The MRL is the lowest concentration reliably measured by the laboratory.

Table 4. Summary of nitrogen species and herbicides detected in samples from the Ground-Water-Quality Monitoring Network, water year 2005
[µg/L, micrograms per liter; mg/L, milligrams per liter; <, less than detection limit]

Compound	Number of samples analyzed	Number of samples in which compound was detected	Median value	Maximum concentration detected
Acetochlor	122	2	< 0.05 µg/L	2.0 µg/L
Ammonia	145	105	0.42mg/L	7.2 mg/L
Alachlor	122	1	< 0.05 µg/L	0.1 µg/L
Atrazine	122	11	< 0.05 µg/L	0.3 µg/L
Butylate	122	0	< 0.05 µg/L	< 0.05 µg/L
Cyanazine	122	0	< 0.05 µg/L	< 0.05 µg/L
Desethylatrazine	93	0	< 0.05 µg/L	< 0.05 µg/L
Desisopropylatrazine	93	8	< 0.05 µg/L	0.2 µg/L
Metolachlor	122	7	< 0.05 µg/L	3.8 µg/L
Metribuzin	122	0	< 0.05 µg/L	< 0.05 µg/L
Nitrate	145	44	< 0.05 mg/L	21.0 mg/L
Prometone	122	1	< 0.05 µg/L	0.7 µg/L
Trifluralin	122	0	< 0.05 µg/L	< 0.05 µg/L

Concentrations of nitrate greater than or equal to 3.0 mg/L generally can be attributed to human activities, whereas concentrations less than 3.0 mg/L may indicate ambient concentrations from naturally occurring soil nitrogen or geologic deposits (Madison, R.J., and Brunett, J.O., 1984, Overview of the occurrence of nitrate in ground water of the United States, in National Water Summary 1984 -- Water quality trends: U.S. Geological Survey Water-Supply Paper 2275, p. 93-105). Nitrate concentrations were greater than or equal to 3.0 mg/L in 25 of 145 samples. The median concentration for the 25 samples with detections above 3.0 mg/L was 6.5 mg/L. Concentrations in 6 samples exceeded 10 mg/L, which is the U.S. Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for public drinking water. The median nitrate concentration for all samples was less than 0.05 mg/L. The maximum nitrate concentration detected was 21 mg/L. Of the 44 samples with detectable nitrate concentrations, 53 percent were from wells less than 100 ft. deep and 20 percent were from wells greater than 300 ft. deep.

Nine commonly used herbicides and two atrazine degradation products (desethylatrazine and desisopropylatrazine) were analyzed during the 2005 water year. Atrazine was the most commonly detected herbicides (34 percent), followed by desisopropylatrazine (28 percent) and metolachlor (24 percent). No sample contained herbicide concentrations that exceeded the MCL or proposed MCL of any of the analytes. The largest concentration of any herbicide compound detected was a metolachlor concentration of 3.8 mg/L. No detectable amounts of butylate, cyanazine, deethylatrazine, metribuzin or trifluralin were found in any of the samples.

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 indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates 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 05454500, which appears just to the left of the station name, includes a 2-digit part number "05" plus the 6-digit (or 8-digit) downstream order number "454500." 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 fig. 7). 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.

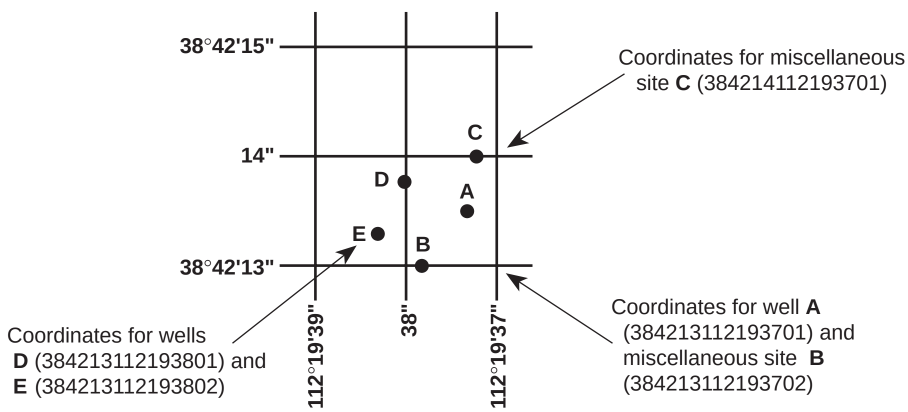


Figure 7. System for numbering wells and miscellaneous sites (latitude and longitude).

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://ny.cf.er.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 2005, sampling was reduced to

27 index stations so that a network of five 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 re-mobilization 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 provides 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 for collaboration 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/.

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.

Explanation of Stage- and Water Discharge Records

Data Collection and Computation

The base data collected at gaging stations (fig. 3) 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 that are 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, the stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations 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/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 USGS Water Science Center (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-day10-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^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to three significant figures above 1,000 ft^3/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 USGS Water Science Center. 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 USGS Water Science Center (see address that is shown on the back of the title page of this report).

Explanation of Precipitation Records

Data Collection and Computation

Rainfall data generally are collected using electronic data loggers that measure the rainfall in 0.01-inch increments every 15 minutes using either a tipping-bucket rain gage or a collection well gage. Twenty-four hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight of the previous day to midnight of the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by this symbol “---” in the table.

Data Presentation

Precipitation records collected at surface-water gaging stations are identified with the same station number and name as the stream-gaging station. Where a surface-water daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

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

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

INSTRUMENTATION.—Information on the type of rainfall collection system is given.

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

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 TWRIs. The website for theTWRIs 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 4.

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 onsite when the samples are collected. 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 onsite measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. The website for these TWRIs islisted in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS Water Science Center (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 USGS Water Science Center.

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 are 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 TWRIs, 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 remarks 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.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a nondetection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte either was not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of “E.” These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this USGS Water Science Center are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the USGS Water Science Center.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected by this USGS Water Science Center are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.
Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.
Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).
Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.
Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.
Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample**.**
Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent Samples--A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.
Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.
Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

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 Indentification 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 TWRIs referred to in the Onsite 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 ground-water samples for selected unstable constituents. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The TWRI publications may be accessed from http://water.usgs.gov/pubs/twri. 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. Well locations are shown and each well is identified by its local well or county well number on a map in this report (fig. 5).

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 affect 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.

Ground-Water Quality Data

Data Collection and Computation

The ground-water-quality data is this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS Water Science Center (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed onsite. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

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 USGS Water Science Center (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 (g/m^3), and periphyton and benthic organisms in grams per square meter (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 (mm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter ($cells/cm^2$) or biovolume per square centimeter (mm^3/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 (mm^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:

$$\text{sphere } 4/3\ pr^3 \quad \text{cone } 1/3\ pr^2h \quad \text{cylinder } pr^2h.$$

pi (p) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (mm^3/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 warm-blooded 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 bound-aries. 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, ft^3/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, $[(ft^3/s)/d]$) 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, $(ft^3/s)/mi^2$] 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 (mm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter ($cells/cm^2$) or biovolume per square centimeter (mm^3/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 $CaCO_3$) 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:

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

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 feacalis, Streptococcus feacium, 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”)

Filtered pertains to constituents in a water sample passed through a filter of specified pore diameter, most commonly 0.45 micrometer or less for inorganic analytes and 0.7 micrometer for organic analytes.

Filtered, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that has passed through a filter has been extracted. Complete recovery is not achieved by the extraction procedure and thus the analytical determination represents something less than 95 percent of the total constituent concentration in the sample. To achieve comparability of analytical data, equivalent extraction procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

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 (mm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter ($cells/cm^2$) or biovolume per square centimeter (mm^3/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 ($CaCO_3$).

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:

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

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, l 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 code is a one-character code that identifies the analytical or field method used to determine a value stored in the National Water Information System (NWIS).

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, mg/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, mg/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, mg/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, mS/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, 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, 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.

Nonfilterable refers to the portion of the total residue retained by a filter.

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^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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 (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{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 [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/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 [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/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 is the amount of a given constituent that is in solution after a representative water sample has been extracted or digested. Complete recovery is not achieved by the extraction or digestion and thus the determination represents something less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different 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. Runoff 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”)

Salinity is the total quantity of dissolved salts, measured by weight in parts per thousand. Values in this report are calculated from specific conductance and temperature. Seawater has an average salinity of about 35 parts per thousand (for additional information, refer to: Miller, R.L., Bradford, W.L., and Peters, N.E., 1988, Specific conductance: theoretical considerations and application to analytical quality control: U.S. Geological Survey Water-Supply Paper 2311, 16 p.)

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 is the amount (concentration) of undissolved material in a water-sediment mixture. Most commonly refers to that material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer filter has been extracted or digested. Complete recovery is not achieved by the extraction or digestion procedures and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also “Suspended”)

Suspended sediment is sediment carried in suspension by the turbulent components of the fluid or by the Brownian movement (a law of physics). (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^3/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 hydro-logic 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 hierarchial 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:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

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 an expression of the optical properties of a liquid that causes light rays to be scattered and absorbed rather than transmitted in straight lines through water. Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms, organic acids, and dyes (ASTM International, 2003, D1889–00 Standard test method for turbidity of water, *in* ASTM International, Annual Book of ASTM Standards, Water and Environmental Technology, v. 11.01: West Conshohocken, Pennsylvania, 6 p.). The color of water, whether resulting from dissolved compounds or suspended particles, can affect a turbidity measurement. To ensure that USGS turbidity data can be understood and interpreted properly within the context of the instrument used and site conditions encountered, data from each instrument type are stored and reported in the National Water Information System (NWIS) using parameter codes and measurement reporting units that are specific to the instrument type, with specific instruments designated by the method code. The respective measurement units, many of which also are in use internationally, fall into two categories: (1) the designations NTU, NTRU, BU, AU, and NTMU signify the use of a broad spectrum incident light in the wavelength range of 400-680 nanometers (nm), but having different light detection configurations; (2) The designations FNU, FNRU, FBU, FAU, and FNMU generally signify an incident light in the range between 780-900 nm, also with varying light detection configurations. These reporting units are equivalent when measuring a calibration solution (for example, formazin or polymer beads), but their respective instruments may not produce equivalent results for environmental samples. Specific reporting units are as follows:

NTU (Nephelometric Turbidity Units): white or broadband [400-680 nm] light source, 90 degree detection angle, one detector.

NTRU (Nephelometric Turbidity Ratio Units): white or broadband [400-680 nm] light source, 90 degree detection angle, multiple detectors with ratio compensation.

BU (Backscatter Units): white or broadband [400-680 nm] light source, 30 ± 15 degree detection angle (backscatter).

AU (Attenuation Units): white or broadband [400-680 nm] light source, 180 degree detection angle (attenuation).

NTMU (Nephelometric Turbidity Multibeam Units): white or broadband [400-680 nm] light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

FNU (Formazin Nephelometric Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, one detector.

FNRU (Formazin Nephelometric Ratio Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, multiple detectors, ratio compensation.

FBU (Formazin Backscatter Units): near infrared [780-900 nm] or monochrome light source, 30±15 degree detection angle.

FAU (Formazin Attenuation Units): near infrared [780-900 nm] light source, 180 degree detection angle.

FNMU (Formazin Nephelometric Multibeam Units): near infrared [780-900 nm] or monochrome light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

For more information please see http://water.usgs.gov/owq/FieldManual/Chapter6/6.7_contents.html.

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")

Unfiltered pertains to the constituents in an unfiltered, representative water-suspended sediment sample.

Unfiltered, recoverable is the amount of a given constituent in a representative water-suspended sediment sample that has been extracted or digested. Complete recovery is not achieved by the extraction or digestion treatment and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

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.

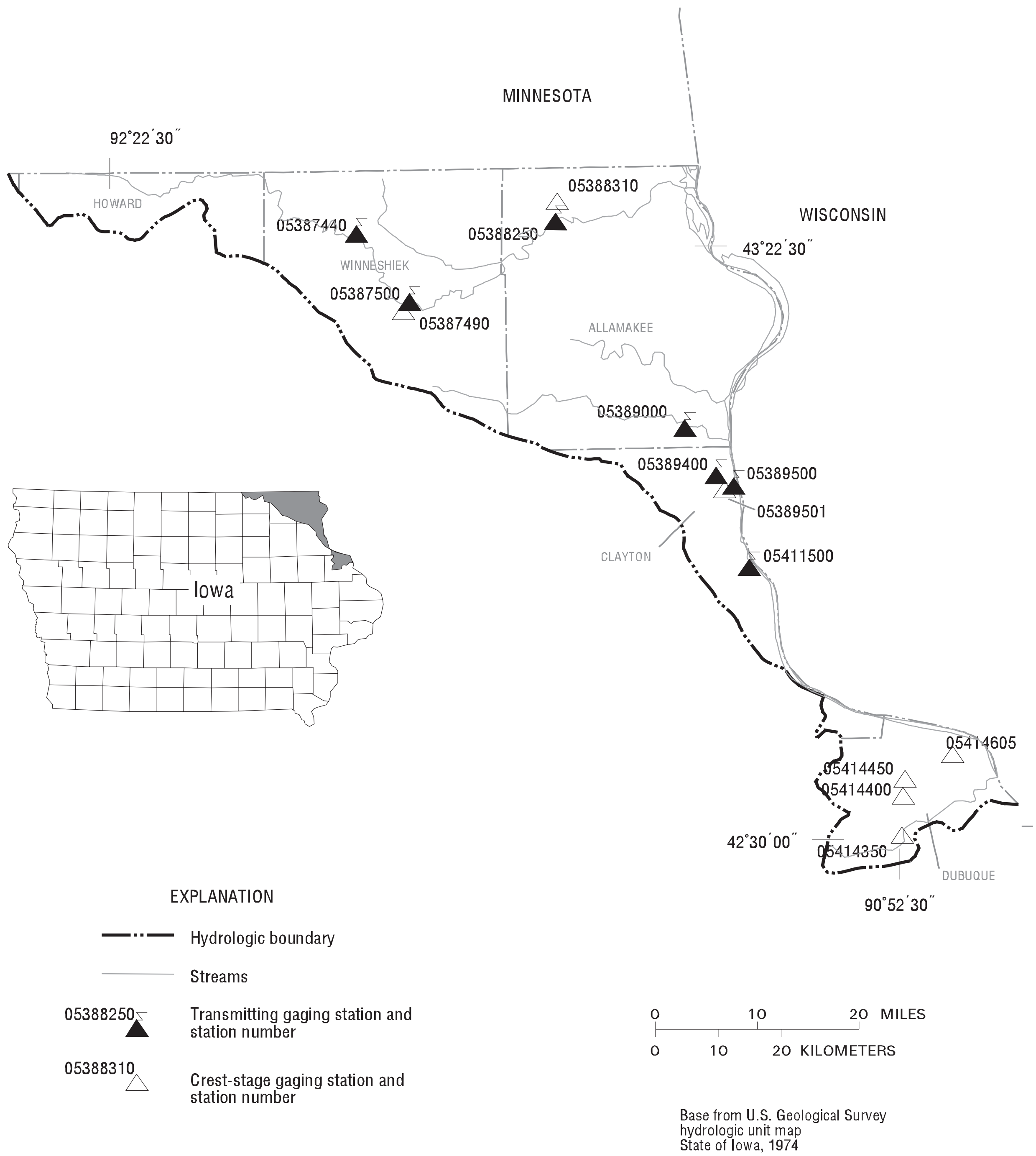


Figure 8. Locations of active continous-record and crest-stage gaging stations in the Mississippi River drainage basin (northeast Iowa).

Gaging Stations

Crest Stage Gaging Stations

05387440 UPPER IOWA RIVER AT BLUFFTON, IA

LOCATION.--Lat 43°24'25", long 91°53'56", in SW¼ SW¼ NE¼ sec.10, T.99 N., R.9 W., Winneshiek County, Hydrologic Unit 07060002, on left bank 10 ft downstream of bridge on County Highway W20, 0.5 mi upstream of Silver Creek, 16.9 mi (revised) upstream from Decorah, and 73.9 mi upstream from mouth.

DRAINAGE AREA.--367 mi^2.

PERIOD OF RECORD.--September 1957 to July 1977; low-flow measurement site: Stage only records from October 20, 1999 to September 30, 2002: Discharge records from October 1, 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 945.50 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 27, 1961, discharge 20,200 ft^3/s; Flood of June 21, 1954, discharge 13,600 ft^3/s; on basis of peak flow at Decorah gage, downstream 11.0 miles.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	337	206	e143	e101	138	911	310	307	355	521	195
2	199	313	227	e165	e103	131	673	291	301	325	467	188
3	184	324	201	e146	e101	129	563	283	290	303	424	185
4	176	350	208	e131	e112	141	510	281	282	287	383	187
5	173	326	200	e103	e123	235	483	279	285	273	346	188
6	174	308	203	e77	e616	463	455	279	290	258	318	181
7	169	285	201	e91	e1,250	636	427	267	283	245	293	175
8	186	255	209	e118	e811	368	419	274	324	235	274	178
9	179	243	228	e134	e356	266	406	278	639	224	259	185
10	169	239	252	e129	e236	236	388	280	620	203	287	186
11	158	221	264	e131	e202	214	366	292	619	169	298	184
12	153	208	281	e135	e173	179	371	322	699	166	289	183
13	150	192	268	e126	e345	161	482	529	575	157	293	189
14	152	191	e195	e109	e1,410	156	541	833	512	156	293	220
15	150	193	e174	e97	e1,610	148	472	757	466	149	272	197
16	147	190	e219	e86	e922	145	418	649	423	147	253	193
17	139	194	e196	e79	e408	141	397	574	396	149	238	185
18	138	185	e170	e83	e333	152	381	527	368	145	243	182
19	133	189	e129	e92	305	125	373	546	342	144	232	221
20	130	196	e85	e95	279	156	548	637	327	152	236	259
21	128	214	e120	e93	244	140	1,230	578	306	181	222	274
22	129	249	e86	e84	222	136	840	542	290	178	215	240
23	134	251	e65	e82	198	157	650	503	279	174	212	216
24	129	241	e61	e101	184	204	561	453	264	174	207	218
25	124	229	e83	e105	180	289	481	406	280	3,780	203	335
26	116	227	e101	e103	164	525	437	382	300	2,870	202	775
27	115	232	e114	e88	163	748	400	367	391	1,850	206	997
28	122	231	e163	e82	155	1,150	372	351	470	1,120	205	787
29	153	231	e151	e96	---	1,640	350	345	420	847	205	653
30	175	208	e152	e101	---	2,040	327	337	394	696	205	631
31	295	---	e162	e99	---	1,810	---	313	---	608	198	---
TOTAL	4,887	7,252	5,374	3,304	11,306	13,159	15,232	13,065	11,742	16,720	8,499	8,987
MEAN	158	242	173	107	404	424	508	421	391	539	274	300
MAX	295	350	281	165	1,610	2,040	1,230	833	699	3,780	521	997
MIN	115	185	61	77	101	125	327	267	264	144	198	175
AC-FT	9,690	14,380	10,660	6,550	22,430	26,100	30,210	25,910	23,290	33,160	16,860	17,830
CFSM	0.43	0.66	0.47	0.29	1.10	1.16	1.38	1.15	1.07	1.47	0.75	0.82
IN.	0.50	0.74	0.54	0.33	1.15	1.33	1.54	1.32	1.19	1.69	0.86	0.91

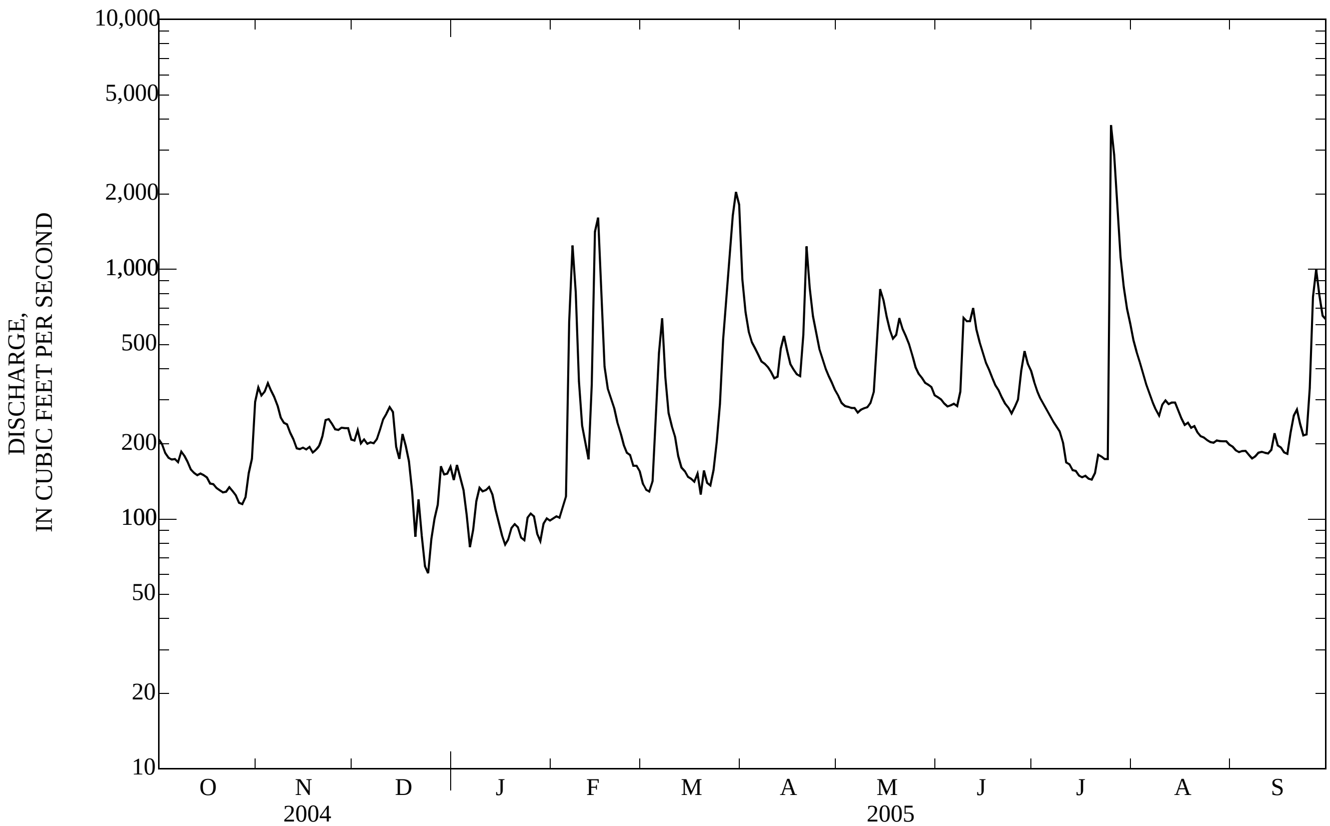
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	93.2	122	89.8	64.3	167	290	239	616	552	467	201	263
MAX	158	242	173	107	404	424	508	989	1,082	685	274	444
(WY)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2004)	(2004)	(2004)	(2005)	(2004)
MIN	47.4	52.0	46.0	42.4	47.8	86.5	92.8	421	183	178	66.5	44.5
(WY)	(2004)	(2004)	(2004)	(2003)	(2004)	(2003)	(2004)	(2005)	(2003)	(2003)	(2003)	(2003)

05387440 UPPER IOWA RIVER AT BLUFFTON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2003 - 2005	
ANNUAL TOTAL	140,008		119,527			
ANNUAL MEAN	383		327		264	
HIGHEST ANNUAL MEAN					347	2004
LOWEST ANNUAL MEAN					118	2003
HIGHEST DAILY MEAN	5,300	May 23	3,780	Jul 25	5,300	May 23, 2004
LOWEST DAILY MEAN	35	Jan 18	61	Dec 24 a	29	Dec 12, 2003
ANNUAL SEVEN-DAY MINIMUM	38	Jan 29	86	Dec 20	36	Jan 17, 2003
MAXIMUM PEAK FLOW			7,820	Jul 25	7,820	Jul 25, 2005
MAXIMUM PEAK STAGE			12.24	Jul 25	12.24	Jul 25, 2005
ANNUAL RUNOFF (AC-FT)	277,700		237,100		191,300	
ANNUAL RUNOFF (CFSM)	1.04		0.892		0.720	
ANNUAL RUNOFF (INCHES)	14.19		12.12		9.78	
10 PERCENT EXCEEDS	1,060		611		547	
50 PERCENT EXCEEDS	192		231		143	
90 PERCENT EXCEEDS	45		121		45	

a Ice effected
e Estimated



05387500 UPPER IOWA RIVER AT DECORAH, IA

LOCATION.--Lat 43°18'18", long 91°47'43", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.16, T.98 N., R.8 W., Winneshiek County, Hydrologic Unit 07060002, on right bank 1,200 ft upstream of bridge on College Drive, 0.8 mi downstream from Dry Run Creek Cutoff, 3.0 mi upstream from Trout Run, and 57.0 mi upstream from mouth.

DRAINAGE AREA.--511 mi^2.

PERIOD OF RECORD.--Discharge records from August 1951 to September 1983, October 1, 2002 to current year; Stage only records from October 20, 1999 to September 30, 2002.

GAGE.--Water-stage recorder. Datum of gage is 850.00 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood known, probably since at least 1913, occurred May 29, 1941, at site of former gaging station near Decorah, 4 miles downstream, discharge, 28,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	414	257	197	137	185	1,200	329	341	404	666	212
2	265	382	266	217	138	172	907	311	322	358	599	202
3	260	382	255	201	136	172	752	295	304	327	524	195
4	256	425	248	193	139	177	645	280	297	307	470	201
5	249	411	244	170	154	283	588	268	300	292	417	193
6	247	374	243	131	e847	593	549	260	295	e285	379	187
7	248	346	241	151	e1,810	1,140	508	259	289	e277	347	181
8	256	325	246	173	e1,180	633	485	256	e343	e270	332	190
9	241	300	265	180	751	389	449	258	e743	e258	317	195
10	234	287	297	170	502	307	415	256	786	e237	349	189
11	228	280	313	168	360	273	392	331	740	211	371	185
12	223	268	331	170	323	245	422	341	849	200	371	182
13	219	252	326	e167	599	221	494	698	707	194	364	194
14	220	242	279	e146	2,120	206	592	1,010	577	186	365	255
15	216	235	252	e139	e2,280	200	530	994	521	182	347	224
16	212	230	330	e134	e1,250	191	473	857	473	177	316	209
17	207	230	306	e132	817	189	425	758	410	170	297	200
18	206	228	288	e133	544	195	389	697	359	175	312	191
19	199	233	228	140	452	182	381	672	339	168	299	242
20	195	249	e141	138	375	180	423	783	313	178	292	297
21	193	257	e175	138	318	188	1,220	750	300	244	281	316
22	191	292	e146	124	281	196	921	688	275	257	269	282
23	191	301	e120	e120	254	254	734	628	268	221	263	260
24	185	297	e111	135	236	328	631	570	254	226	255	268
25	183	282	e125	135	226	424	562	516	277	3,850	245	364
26	183	272	e153	135	219	772	511	481	311	4,150	237	888
27	178	277	e189	e121	209	1,050	460	461	366	2,680	241	1,270
28	176	272	220	e119	199	1,460	412	432	519	1,540	240	1,110
29	189	273	211	133	---	1,780	374	409	493	1,150	233	908
30	225	266	214	132	---	2,290	349	386	442	935	233	859
31	308	---	219	134	---	2,380	---	364	---	e779	223	---
TOTAL	6,849	8,882	7,239	4,676	16,856	17,255	17,193	15,598	12,813	20,888	10,454	10,649
MEAN	221	296	234	151	602	557	573	503	427	674	337	355
MAX	308	425	331	217	2,280	2,380	1,220	1,010	849	4,150	666	1,270
MIN	176	228	111	119	136	172	349	256	254	168	223	181
AC-FT	13,580	17,620	14,360	9,270	33,430	34,230	34,100	30,940	25,410	41,430	20,740	21,120
CFSM	0.43	0.58	0.46	0.30	1.18	1.09	1.12	0.98	0.84	1.32	0.66	0.69
IN.	0.50	0.65	0.53	0.34	1.23	1.26	1.25	1.14	0.93	1.52	0.76	0.78

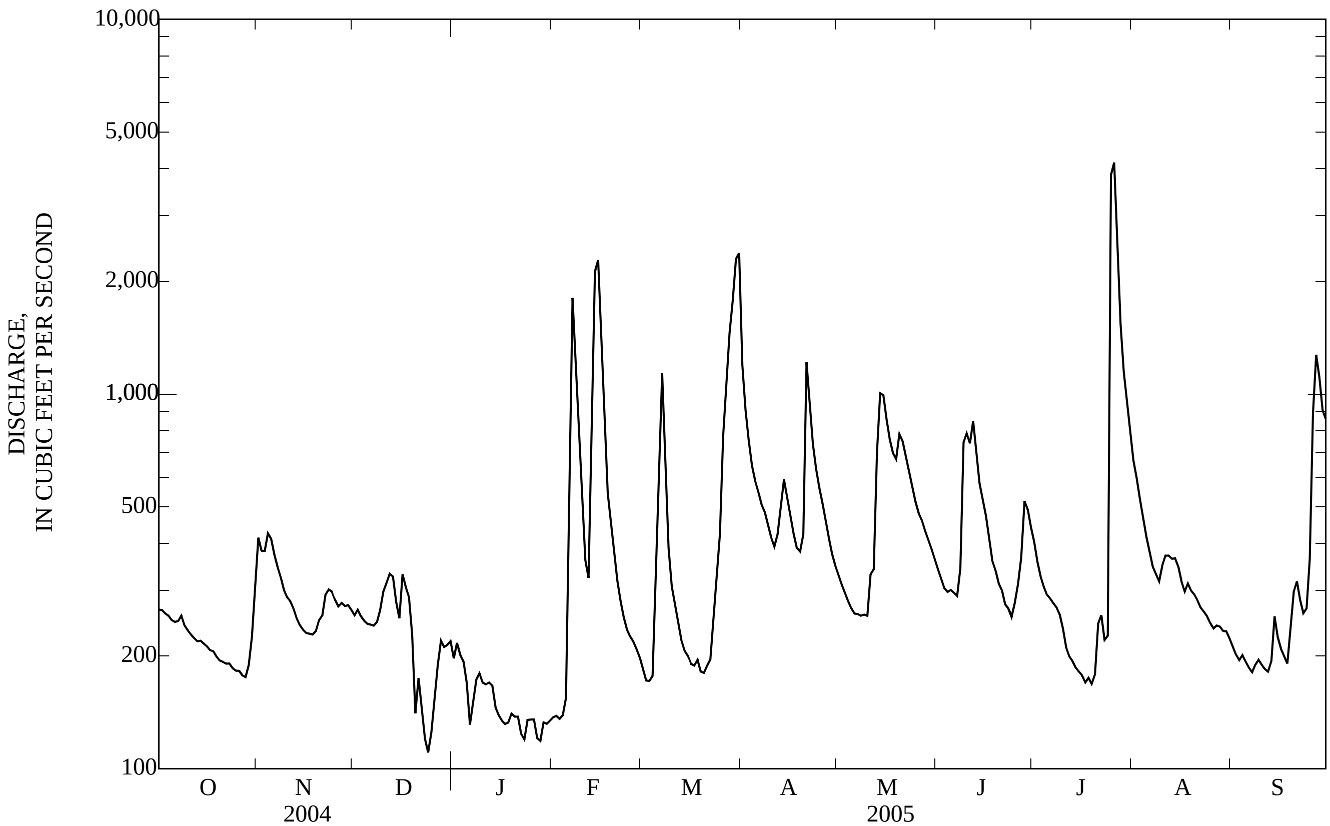
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	238	212	158	130	170	672	606	447	453	338	249	276
MAX	896	1,111	940	662	789	1,937	2,067	1,453	1,652	1,096	1,353	1,305
(WY)	(1973)	(1983)	(1983)	(1973)	(1966)	(1961)	(1965)	(1973)	(1969)	(2004)	(1953)	(1965)
MIN	37.2	43.2	40.2	25.7	25.2	72.6	89.6	81.6	64.5	53.0	44.8	39.6
(WY)	(1959)	(1965)	(1959)	(1959)	(1959)	(1968)	(1957)	(1958)	(1958)	(1958)	(1958)	(1958)

05387500 UPPER IOWA RIVER AT DECORAH, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	190,938		149,352			
ANNUAL MEAN	522		409		329	
HIGHEST ANNUAL MEAN					845	1983
LOWEST ANNUAL MEAN					96.7	1958
HIGHEST DAILY MEAN	7,380	May 23	4,150	Jul 26	15,000	Mar 27, 1961
LOWEST DAILY MEAN	43	Jan 18	111	Dec 24 a	22	Feb 2, 1959
ANNUAL SEVEN-DAY MINIMUM	48	Jan 13	127	Jan 22	22	Feb 1, 1959
MAXIMUM PEAK FLOW			7,090	Jul 25	20,200	Mar 27, 1961
MAXIMUM PEAK STAGE			8.76	Jul 25	13.08	Mar 27, 1961
ANNUAL RUNOFF (AC-FT)	378,700		296,200		238,300	
ANNUAL RUNOFF (CFSM)	1.02		0.801		0.644	
ANNUAL RUNOFF (INCHES)	13.90		10.87		8.75	
10 PERCENT EXCEEDS	1,370		764		653	
50 PERCENT EXCEEDS	252		275		157	
90 PERCENT EXCEEDS	58		170		61	

a Ice affected.
e Estimated



05388250 UPPER IOWA RIVER NEAR DORCHESTER, IA

LOCATION.--Lat 43°25'16", long 91°30'31", in SW$\frac{1}{4}$ NW$\frac{1}{4}$ sec.1, T.99 N., R.6 W., Allamakee County, Hydrologic Unit 07060002, on right bank at upstream side of bridge on State Highway 76, 650 ft upstream from Mineral Creek, 0.5 mi upstream from Bear Creek, 3.5 mi south of Dorchester, and 18.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--770 mi^2.

PERIOD OF RECORD.--September 1936 to September 1938 and October 1939 to June 1975(discharge measurements only), October 1938 to September 1939, July 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660.00 ft. above NGVD of 1929. Prior to Jan. 6, 1938, nonrecording gage on old bridge at site 0.2 mi upstream at datum 5.91 ft. higher. Jan. 6, 1938 to Apr. 26, 1948, nonrecording gage at datum 60.00 ft. lower, Apr. 27, 1948 to August 1963, nonrecording gage on old bridge and August 1963 to June 1975 nonrecording gage on new bridge at same datum.

REMARKS.--Records are considered good except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1941, reached a stage of 21.8 ft., from flood profile, discharge, 30,400 ft^3/s on basis of slope-area determination of peak flow.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	402	458	389	e294	e276	342	1,540	496	672	557	972	354
2	406	520	382	e306	e278	323	1,110	477	662	527	887	343
3	391	493	389	e293	e272	308	927	461	644	e480	805	e337
4	381	502	377	e285	e274	309	820	440	672	e453	747	e342
5	372	519	371	e272	e304	351	760	424	738	432	682	e328
6	366	501	379	e246	e748	657	721	420	842	420	619	e316
7	364	465	375	e249	e2,420	1,470	684	412	900	396	580	307
8	368	443	367	e286	e1,450	928	657	408	902	376	554	314
9	365	428	375	e308	e1,010	676	633	409	e923	359	513	338
10	354	410	398	e297	e716	546	609	408	e989	342	e493	326
11	345	398	416	e290	e581	486	583	496	e968	326	536	314
12	341	390	436	e294	545	442	600	521	e1,040	307	560	311
13	337	378	446	e294	618	402	611	684	e849	295	534	310
14	336	363	e352	e282	2,240	376	684	971	755	291	515	340
15	338	355	e345	e271	2,790	357	704	1,130	705	283	507	387
16	336	350	e363	e266	1,990	347	651	1,060	660	279	479	350
17	327	347	e415	e266	1,170	336	617	977	616	272	449	334
18	323	345	e393	e271	826	344	585	922	578	273	463	321
19	319	359	e307	e284	686	348	579	907	543	267	467	370
20	316	374	e260	e282	599	316	594	916	513	270	438	441
21	312	365	e281	e279	535	322	845	953	486	377	420	434
22	312	380	e262	e266	479	357	1,170	907	463	440	402	438
23	315	408	e243	e260	439	423	922	846	443	427	392	404
24	310	410	e230	e271	410	548	794	794	440	371	387	393
25	305	408	e252	e279	391	553	702	747	445	2,090	384	454
26	309	399	e275	e275	381	748	657	716	489	6,100	389	651
27	316	409	e295	e256	372	1,020	616	709	514	3,290	382	1,010
28	304	406	e311	e259	363	1,210	571	684	567	2,080	374	1,120
29	312	398	e293	e270	---	1,360	535	660	664	1,530	362	975
30	341	398	e298	e269	---	1,980	511	649	733	1,240	354	883
31	364	---	e305	e272	---	2,300	---	637	---	1,080	356	---
TOTAL	10,587	12,379	10,580	8,592	23,163	20,485	21,992	21,241	20,415	26,230	16,002	13,545
MEAN	342	413	341	277	827	661	733	685	680	846	516	452
MAX	406	520	446	308	2,790	2,300	1,540	1,130	1,040	6,100	972	1,120
MIN	304	345	230	246	272	308	511	408	440	267	354	307
AC-FT	21,000	24,550	20,990	17,040	45,940	40,630	43,620	42,130	40,490	52,030	31,740	26,870
CFSM	0.44	0.54	0.44	0.36	1.07	0.86	0.95	0.89	0.88	1.10	0.67	0.59
IN.	0.51	0.60	0.51	0.42	1.12	0.99	1.06	1.03	0.99	1.27	0.77	0.65

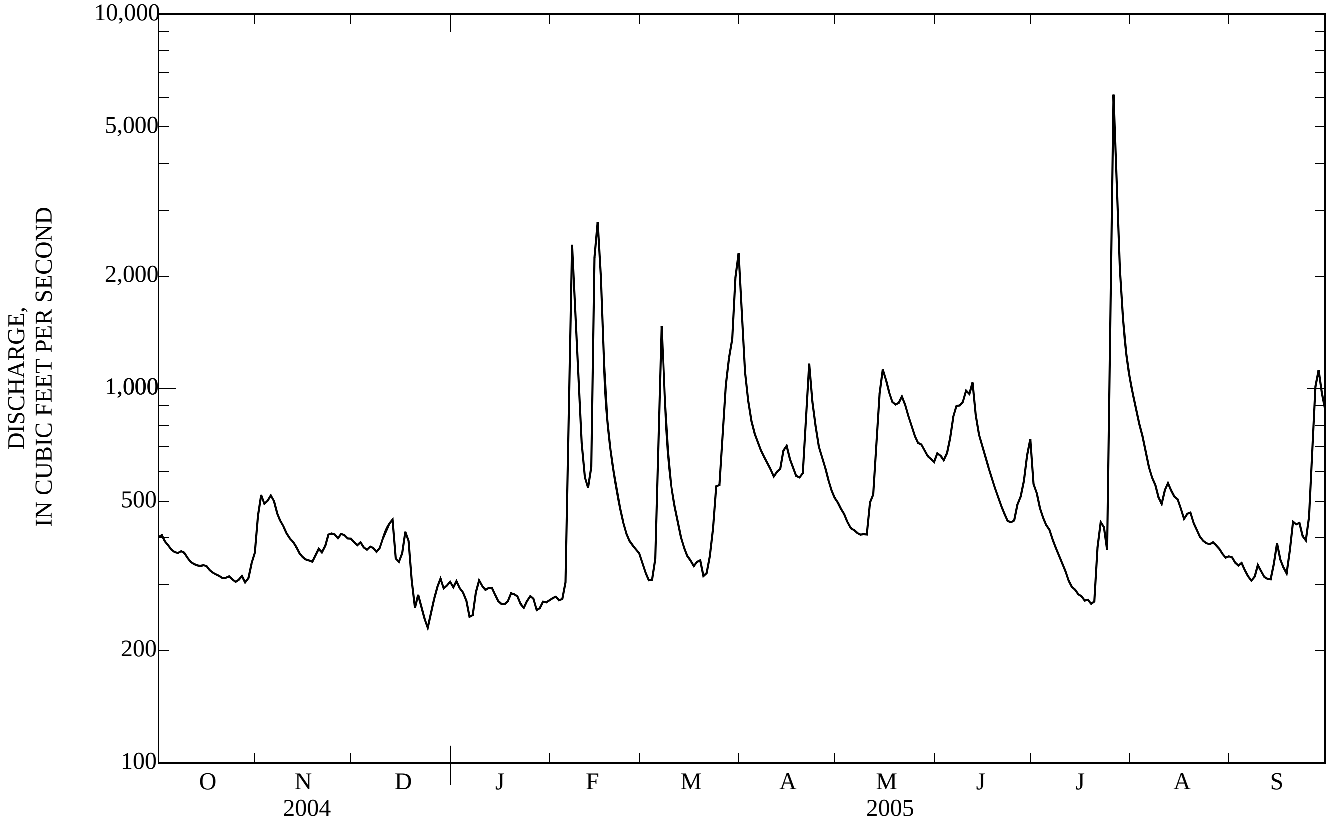
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	394	416	335	249	396	950	1,029	850	900	692	560	444
MAX	2,045	1,476	1,421	836	1,400	1,922	3,973	2,066	3,538	3,318	3,702	1,334
(WY)	(1987)	(1983)	(1983)	(1983)	(1984)	(1983)	(1993)	(1991)	(2000)	(1993)	(1993)	(1986)
MIN	116	125	99.9	96.7	112	221	225	175	123	92.9	112	77.5
(WY)	(1990)	(1990)	(1990)	(1977)	(1978)	(2003)	(1977)	(1977)	(1977)	(1939)	(1989)	(1939)

05388250 UPPER IOWA RIVER NEAR DORCHESTER, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1939 - 2005	
ANNUAL TOTAL	237,026		205,211			
ANNUAL MEAN	648		562		604	
HIGHEST ANNUAL MEAN					1,726	1993
LOWEST ANNUAL MEAN					178	1977
HIGHEST DAILY MEAN	8,430	May 23	6,100	Jul 26	15,100	Aug 17, 1993
LOWEST DAILY MEAN	93	Jan 30	230	Dec 24 a	30	Sep 23, 1939
ANNUAL SEVEN-DAY MINIMUM	97	Jan 27	258	Dec 20	49	Sep 20, 1939
MAXIMUM PEAK FLOW			8,340	Jul 26	22,000	Aug 17, 1993
MAXIMUM PEAK STAGE			14.48	Jul 26	20.00	Aug 17, 1993
ANNUAL RUNOFF (AC-FT)	470,100		407,000		437,400	
ANNUAL RUNOFF (CFSM)	0.841		0.730		0.784	
ANNUAL RUNOFF (INCHES)	11.45		9.91		10.65	
10 PERCENT EXCEEDS	1,510		927		1,290	
50 PERCENT EXCEEDS	394		410		361	
90 PERCENT EXCEEDS	112		283		138	

a Ice affected
e Estimated



05389000 YELLOW RIVER NEAR ION, IA

LOCATION.--Lat 43°06'43", long 91°15'54", in SE¼ SW¼ sec.24, T.96 N., R.4 W., Allamakee County, Hydrologic Unit 07060000, on left bank 5 ft downstream from County Road X36 bridge, 7.5 mi northwest of McGregor, and 9.7 mi upstream from mouth at Mississippi River.

DRAINAGE AREA.--211 mi^2.

PERIOD OF RECORD.--October 1934 to September 1951; September 1957 to July 1977 as low-flow measurement site; October 1, 2004 to current year.

GAGE.--Water-stage recorder. Datum of gage is 661.866 ft above NGVD of 1929. Prior to September 30, 1951, datum at 664.65 ft above datum of 1912.

REMARKS.--Records are considered good except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	62	52	47	35	76	91	61	54	83	79	69
2	69	64	52	50	35	71	86	60	54	75	76	66
3	65	62	51	49	35	68	81	60	54	73	73	65
4	63	61	52	49	38	68	78	58	56	73	78	68
5	62	59	51	45	40	162	77	55	58	71	72	66
6	62	58	55	44	366	442	75	56	53	68	70	64
7	62	56	55	47	1,120	636	72	56	51	66	69	62
8	65	55	54	48	268	216	69	55	51	64	68	63
9	64	54	54	46	166	139	67	55	51	61	67	64
10	62	54	55	44	122	120	67	53	52	60	66	62
11	62	54	54	43	107	111	67	57	52	58	69	59
12	62	53	53	44	98	100	78	59	54	58	115	57
13	63	52	51	42	292	88	84	63	55	e57	98	59
14	61	52	42	23	1,400	84	77	70	54	e57	77	58
15	63	52	50	23	760	78	73	66	52	e57	70	57
16	62	52	46	22	284	75	71	62	51	e56	66	56
17	61	54	46	22	172	77	72	60	50	e55	64	55
18	61	54	46	21	134	77	71	60	49	54	197	56
19	61	56	32	21	119	73	72	64	50	52	296	74
20	60	57	42	21	111	69	77	65	48	54	161	93
21	61	55	44	22	102	91	81	60	48	67	125	69
22	62	54	42	30	95	174	78	59	47	96	106	63
23	64	54	42	30	89	152	76	58	47	74	95	61
24	62	53	42	33	86	136	73	57	47	65	88	61
25	61	52	41	33	84	102	73	55	61	179	84	63
26	63	52	43	33	90	98	73	54	80	242	82	102
27	67	56	42	32	90	94	70	54	106	155	83	88
28	63	55	43	34	84	96	67	55	88	112	79	78
29	64	54	43	34	---	94	64	56	81	98	75	76
30	65	53	46	33	---	94	62	56	83	89	71	73
31	62	---	47	35	---	95	---	55	---	84	71	---
TOTAL	1,949	1,659	1,468	1,100	6,422	4,056	2,222	1,814	1,737	2,513	2,890	2,007
MEAN	62.9	55.3	47.4	35.5	229	131	74.1	58.5	57.9	81.1	93.2	66.9
MAX	69	64	55	50	1,400	636	91	70	106	242	296	102
MIN	60	52	32	21	35	68	62	53	47	52	64	55
AC-FT	3,870	3,290	2,910	2,180	12,740	8,050	4,410	3,600	3,450	4,980	5,730	3,980
CFSM	0.28	0.25	0.21	0.16	1.04	0.59	0.34	0.26	0.26	0.37	0.42	0.30
IN.	0.33	0.28	0.25	0.19	1.08	0.68	0.37	0.31	0.29	0.42	0.49	0.34

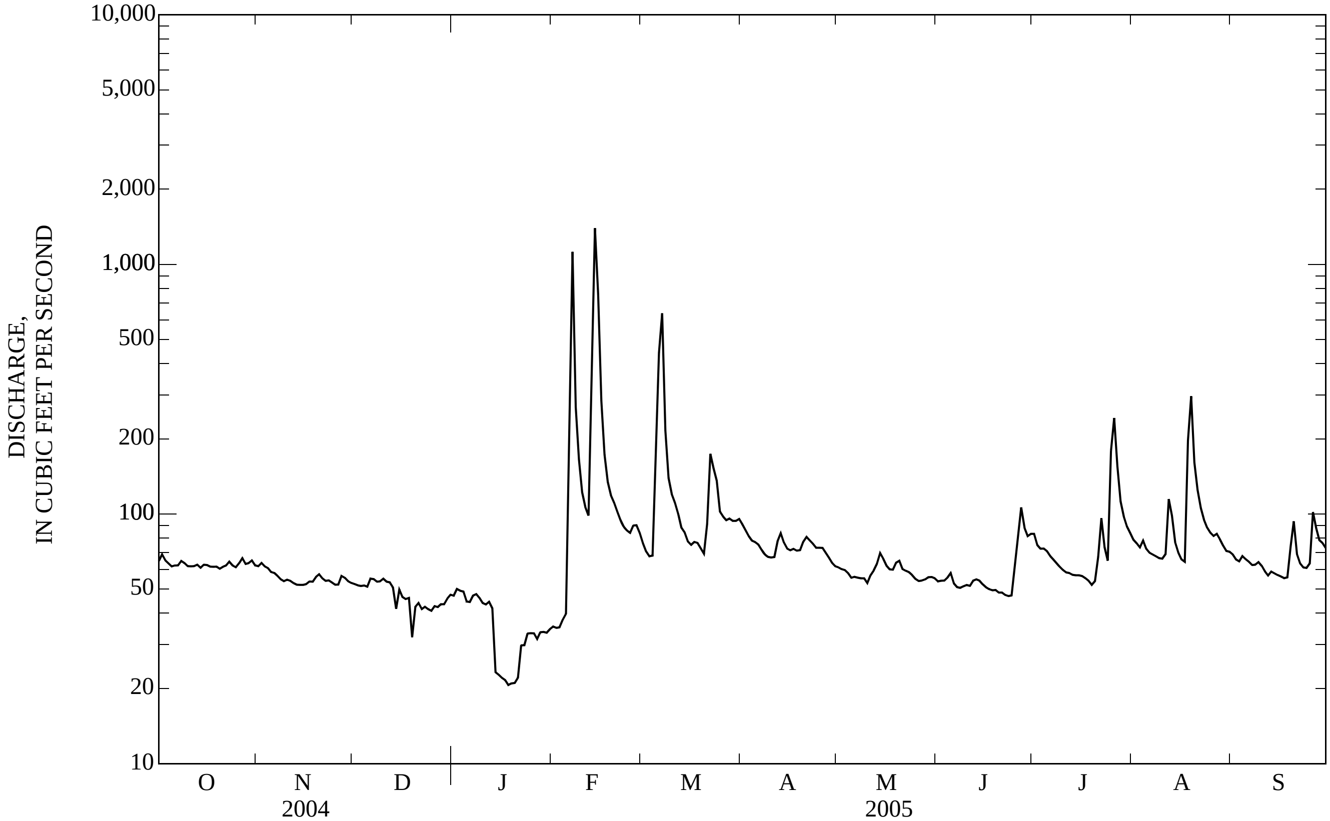
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	60.5	63.0	47.9	69.9	130	367	174	132	220	132	145	102
MAX	148	132	89.4	390	344	894	757	432	692	325	396	349
(WY)	(1943)	(1943)	(1943)	(1946)	(1938)	(1950)	(1951)	(1941)	(1944)	(1951)	(1943)	(1938)
MIN	25.6	21.1	19.9	23.1	21.4	123	74.1	29.6	25.1	29.7	24.8	24.8
(WY)	(1938)	(1938)	(1938)	(1940)	(1940)	(1938)	(2005)	(1940)	(1940)	(1936)	(1937)	(1937)

SUMMARY STATISTICS	FOR 2005 WATER YEAR		WATER YEARS 1935 - 2005	
ANNUAL TOTAL	29,837			
ANNUAL MEAN	81.7		137	
HIGHEST ANNUAL MEAN			238	1951
LOWEST ANNUAL MEAN			69.8	1940
HIGHEST DAILY MEAN	1,400	Feb 14	9,810	Mar 26, 1950
LOWEST DAILY MEAN	21	Jan 18 a	14	Dec 14, 1939
ANNUAL SEVEN-DAY MINIMUM	22	Jan 15	18	Dec 21, 1937
MAXIMUM PEAK FLOW	2,240	Feb 14	18,500	May 29, 1941
MAXIMUM PEAK STAGE	9.22	Feb 14	15.20	May 29, 1941
INSTANTANEOUS LOW FLOW	14	Dec 19 b	14	Dec 30, 1939 c
ANNUAL RUNOFF (AC-FT)	59,180		99,260	
ANNUAL RUNOFF (CFSM)	0.370		0.620	
ANNUAL RUNOFF (INCHES)	5.02		8.42	
10 PERCENT EXCEEDS	102		230	
50 PERCENT EXCEEDS	62		63	
90 PERCENT EXCEEDS	44		28	

05389000 YELLOW RIVER NEAR ION, IA—Continued

a Also Jan. 19, 20.
b Result of freeze-up.
c Also Dec. 19, 2004, which is a result of freeze-up.
e Estimated.



05389400 BLOODY RUN CREEK NEAR MARQUETTE, IA

LOCATION.--Lat 43°02'27", long 91°12'23", in Basil Giard Claim #1, sec.16, T.95 N., R.3 W., Clayton County, Hydrologic Unit 07060001, on right bank 50 ft downstream from State Highway 18 bridge, 1.5 mi west of Marquette, and 1.5 mi upstream from mouth at Mississippi River.

DRAINAGE AREA.--34.1 mi^2.

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 624.818 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	12	10	12	11	17	12	9.4	9.8	11	8.0	9.2
2	13	13	9.9	13	11	16	11	9.9	9.7	11	7.9	9.0
3	10	12	9.9	12	11	16	11	9.6	9.6	10	7.7	8.9
4	9.7	11	10	11	11	17	10	9.8	9.5	10	8.0	9.1
5	9.5	11	10	11	11	59	10	9.9	13	10	8.0	9.1
6	9.6	11	12	11	89	79	9.6	10	11	9.7	7.8	9.0
7	9.8	11	12	11	127	59	9.2	10	10	9.8	7.8	9.2
8	10	10	11	11	33	24	8.9	11	10	9.6	7.7	9.3
9	10	9.8	11	11	18	17	8.9	12	10	10	7.8	9.4
10	9.9	9.7	11	11	14	17	8.9	11	10	9.9	7.9	9.2
11	10	9.1	11	11	12	15	9.3	13	9.5	9.4	8.5	9.1
12	9.9	9.0	11	12	12	15	13	13	9.4	9.3	9.6	9.2
13	10	9.5	10	11	110	e15	12	13	9.9	9.1	8.9	9.4
14	10	9.5	9.9	10	212	e15	10	12	9.7	9.1	8.5	9.4
15	10	10	10	10	97	e14	10	11	9.0	8.9	8.2	9.2
16	10	10	11	10	52	14	10	11	9.0	9.1	8.1	9.1
17	11	9.9	10	10	35	14	11	11	9.0	9.0	8.1	9.1
18	11	9.9	11	10	26	14	10	11	9.3	8.8	55	9.1
19	11	10	9.9	11	23	13	10	11	9.0	8.6	17	26
20	11	11	10	11	23	13	9.5	12	8.8	8.7	12	11
21	11	10	11	12	21	18	8.4	11	8.8	10	11	9.4
22	11	9.7	10	12	20	15	8.5	10	8.7	9.9	10	9.1
23	12	9.9	9.9	11	19	13	8.4	10	8.6	8.9	9.7	8.8
24	12	9.5	9.6	11	19	13	8.4	10	8.9	8.7	9.5	8.9
25	11	9.5	9.7	12	19	13	8.6	10	9.3	8.6	9.4	9.2
26	12	9.7	9.9	11	21	13	9.1	10	13	9.3	9.7	9.9
27	14	11	10	11	19	13	9.3	10	12	8.8	9.7	9.2
28	12	11	11	11	19	13	9.4	10	9.7	8.3	9.5	9.4
29	12	10	11	11	---	13	9.9	9.8	9.9	8.2	9.4	9.8
30	14	10	11	11	---	13	9.3	10	15	8.1	9.7	9.3
31	12	---	11	11	---	13	---	9.9	---	8.0	9.4	---
TOTAL	338.2	308.7	324.7	344	1,095	613	293.6	331.3	299.1	287.8	329.5	295.0
MEAN	10.9	10.3	10.5	11.1	39.1	19.8	9.79	10.7	9.97	9.28	10.6	9.83
MAX	14	13	12	13	212	79	13	13	15	11	55	26
MIN	9.5	9.0	9.6	10	11	13	8.4	9.4	8.6	8.0	7.7	8.8
AC-FT	671	612	644	682	2,170	1,220	582	657	593	571	654	585
CFSM	0.32	0.30	0.31	0.33	1.15	0.58	0.29	0.31	0.29	0.27	0.31	0.29
IN.	0.37	0.34	0.35	0.37	1.19	0.67	0.32	0.36	0.33	0.31	0.36	0.32

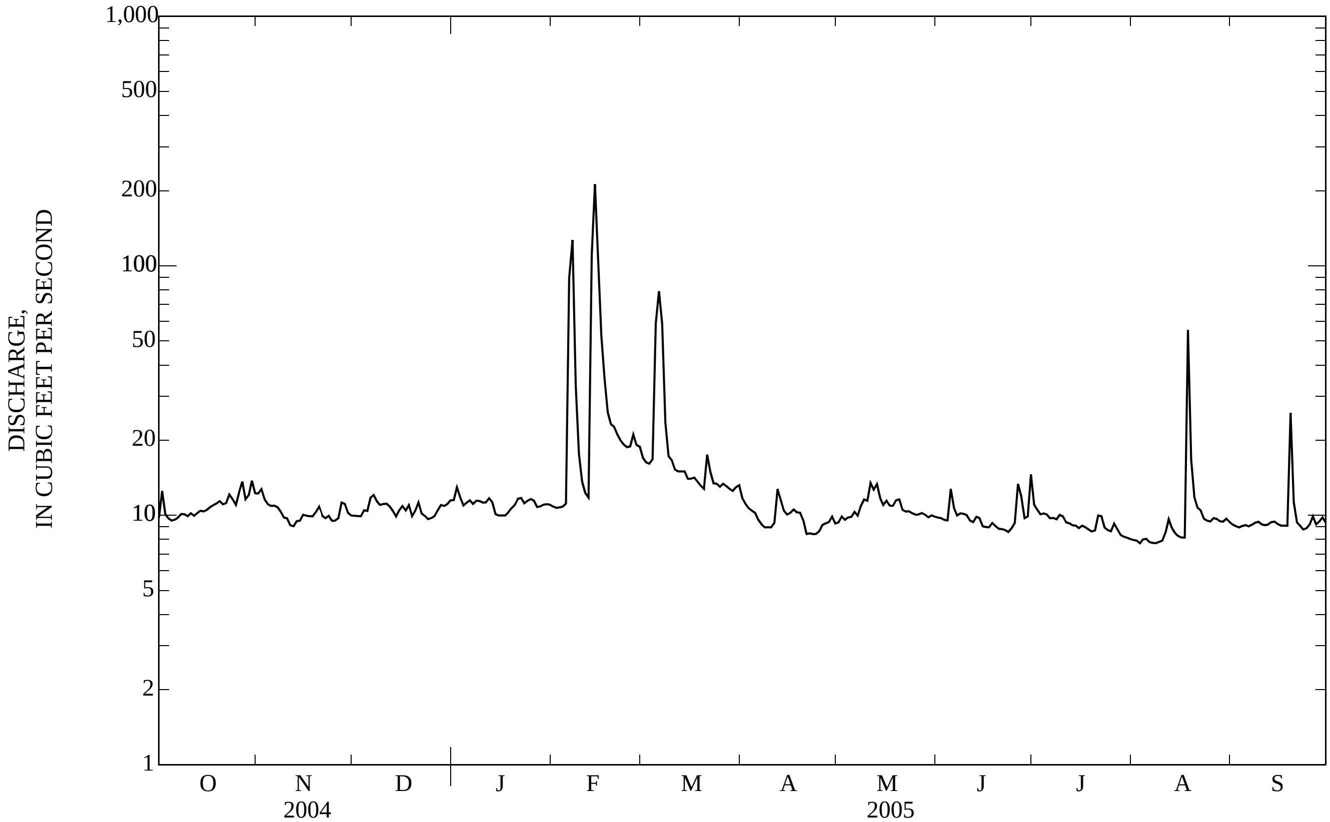
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.7	19.5	16.5	15.0	21.8	27.0	23.5	33.3	27.0	24.0	22.7	19.9
MAX	30.9	35.3	26.0	22.3	39.1	87.6	55.3	106	55.4	54.2	48.9	36.4
(WY)	(1994)	(1992)	(1992)	(1992)	(2005)	(1993)	(1993)	(2004)	(1993)	(1993)	(1993)	(1993)
MIN	9.03	10.3	9.55	8.96	11.3	14.0	9.79	10.7	9.97	9.28	10.6	8.62
(WY)	(2004)	(2005)	(2004)	(2004)	(2001)	(2003)	(2005)	(2005)	(2005)	(2005)	(2005)	(2004)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1992 - 2005	
ANNUAL TOTAL	7,739.7		4,859.9			
ANNUAL MEAN	21.1		13.3		22.4	
HIGHEST ANNUAL MEAN					42.1	1993
LOWEST ANNUAL MEAN					12.8	2003
HIGHEST DAILY MEAN	1,800	May 23	212	Feb 14	1,800	May 23, 2004
LOWEST DAILY MEAN	7.4	Feb 13	7.7	Aug 3 a	6.8	Jan 20, 2001
ANNUAL SEVEN-DAY MINIMUM	7.6	Feb 12	7.8	Aug 3	7.6	Feb 12, 2004
MAXIMUM PEAK FLOW			580	Feb 13	4,620	May 23, 2004
MAXIMUM PEAK STAGE			6.49	Feb 13	12.38	May 23, 2004
INSTANTANEOUS LOW FLOW			7.5	Aug 3 b	6.0	Feb 15, 1997
ANNUAL RUNOFF (AC-FT)	15,350		9,640		16,240	
ANNUAL RUNOFF (CFSM)	0.620		0.390		0.657	
ANNUAL RUNOFF (INCHES)	8.44		5.30		8.92	
10 PERCENT EXCEEDS	21		15		33	
50 PERCENT EXCEEDS	10		10		19	
90 PERCENT EXCEEDS	8.5		8.9		10	

05389400 BLOODY RUN CREEK NEAR MARQUETTE, IA—Continued

a Also Aug. 8.
b Also Aug. 6-9.
e Estimated



05389400 BLOODY RUN CREEK NEAR MARQUETTE, IA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--December 1991 to current year.

INSTRUMENTATION.--Tipping bucket rain gage.

REMARKS.--Water years 1992-1995 in files at the District office. Records good except for winter period, which is poor due to intermittent snow accumulation and subsequent melting.

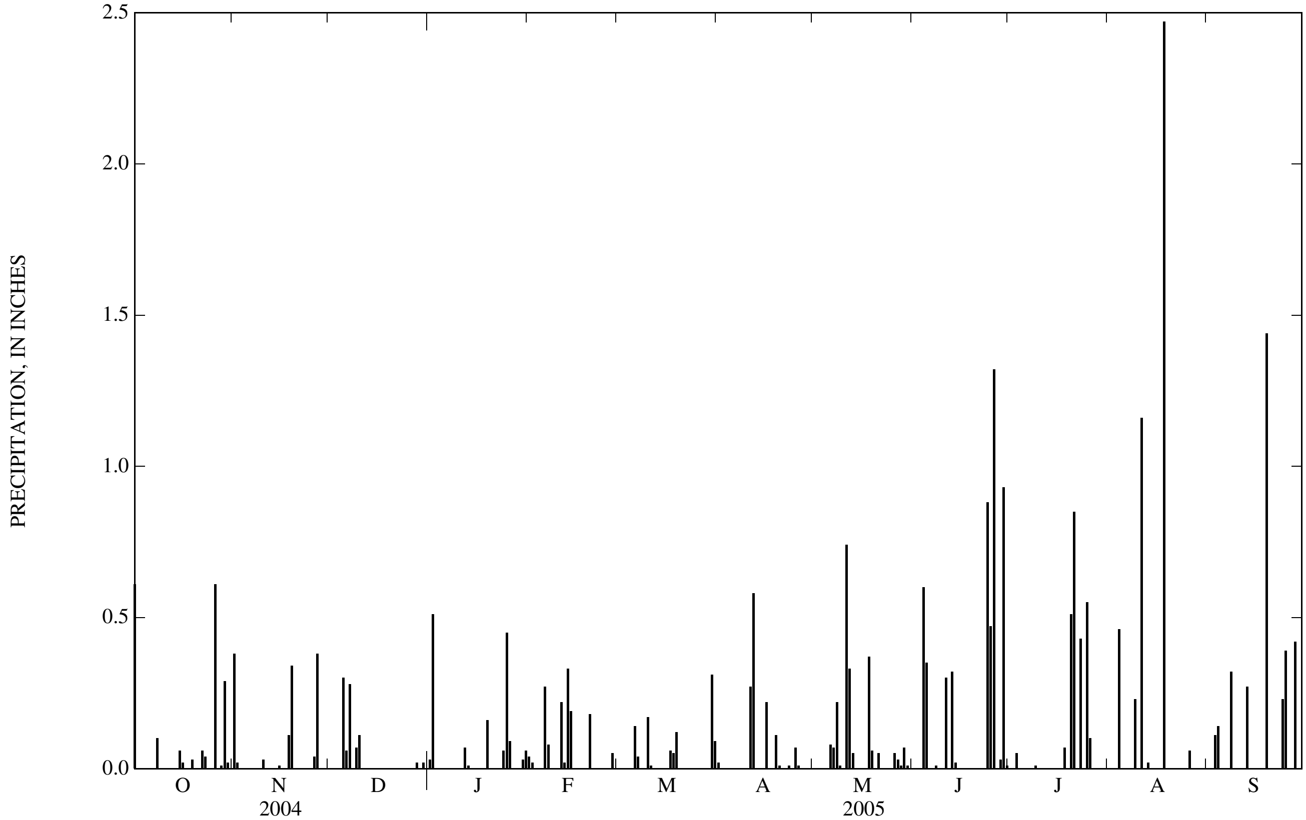
EXTREME FOR PERIOD OF RECORD.--Maximum daily accumulation, 3.07 in., Nov. 3, 2003.

EXTREME FOR CURRENT YEAR.--Maximum daily accumulation, 2.47 in., on Aug. 18.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.61	0.38	0.00	0.03	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00
2	0.00	0.02	0.00	0.51	0.02	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	0.05	0.00	0.11
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.46	0.14
5	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00
6	0.00	0.00	0.06	0.00	0.27	0.14	0.00	0.08	0.00	0.00	0.00	0.00
7	0.00	0.00	0.28	0.00	0.08	0.04	0.00	0.07	0.00	0.00	0.00	0.00
8	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.01	0.00	0.00	0.32
9	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.23	0.00
10	0.00	0.03	0.11	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.22	0.01	0.27	0.74	0.30	0.00	1.16	0.00
12	0.00	0.00	0.00	0.07	0.02	0.00	0.58	0.33	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.01	0.33	0.00	0.00	0.05	0.32	0.00	0.02	0.27
14	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.02	0.00	0.00	0.00
15	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.02	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.11	0.00	0.00	0.00	0.05	0.00	0.37	0.00	0.07	2.47	0.00
19	0.03	0.34	0.00	0.16	0.00	0.12	0.11	0.06	0.00	0.00	0.00	1.44
20	0.00	0.00	0.00	0.00	0.18	0.00	0.01	0.00	0.00	0.51	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.85	0.00	0.00
22	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.43	0.00	0.00
24	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.23
25	0.00	0.00	0.00	0.45	0.00	0.00	0.07	0.00	0.47	0.55	0.00	0.39
26	0.61	0.04	0.00	0.09	0.00	0.00	0.01	0.05	1.32	0.10	0.06	0.00
27	0.00	0.38	0.00	0.00	0.05	0.00	0.00	0.03	0.00	0.00	0.00	0.00
28	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.42
29	0.29	0.00	0.00	0.00	---	0.00	0.00	0.07	0.93	0.00	0.00	0.00
30	0.02	0.00	0.02	0.03	---	0.31	0.00	0.01	0.01	0.00	0.00	0.00
31	0.00	---	0.00	0.06	---	0.09	---	0.00	---	0.00	0.00	---
TOTAL	1.85	1.31	0.86	1.47	1.40	0.99	1.30	2.15	5.24	2.57	4.40	3.32
MEAN	0.06	0.04	0.03	0.05	0.05	0.03	0.04	0.07	0.17	0.08	0.14	0.11
MAX	0.61	0.38	0.30	0.51	0.33	0.31	0.58	0.74	1.32	0.85	2.47	1.44
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

05389400 BLOODY RUN CREEK NEAR MARQUETTE, IA—Continued



05389500 MISSISSIPPI RIVER AT MCGREGOR, IA

LOCATION.--Lat 43°01'37", long 91°10'21", in SE1/4 SE1/4 sec.22, T.95 N., R.3 W., Clayton County, Hydrologic Unit 07060001, on right bank in city park at east end of Main Street in McGregor, 2.6 mi upstream from Wisconsin River, 4.3 mi downstream from Yellow River, and at mile 633.4 upstream from Ohio River.

DRAINAGE AREA.--67,500 mi^2, approximately.

PERIOD OF RECORD.--August 1936 to current year.

REVISED RECORDS.--WDR IA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 604.84 ft above NGVD of 1929. Prior to June 1, 1937, and since June 2, 1939, auxiliary water-stage recorder; June 1, 1937 to June 1, 1939, auxiliary nonrecording gage 14.1 mi upstream in tailwater of dam 9, at datum 5.30 ft lower.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Minor flow regulation caused by navigation dams. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1828, 25.38 ft. of on Apr. 24, 1965; Maximum discharge since at least 1828, 276,000 cfs on Apr. 24, 1965.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42,400	40,100	27,800	e23,900	e20,500	25,100	71,400	66,700	58,900	60,900	20,100	18,200
2	42,500	43,300	26,600	e24,900	e20,400	25,000	74,100	64,100	57,500	58,100	18,500	17,500
3	42,400	45,500	26,400	e25,900	e20,400	23,400	78,300	59,200	56,500	54,700	20,100	15,300
4	42,200	47,900	26,500	e26,300	e20,800	21,900	84,300	54,900	55,700	52,000	22,400	16,000
5	39,000	48,700	28,100	e26,200	e21,800	21,600	90,100	50,500	55,800	49,900	23,200	17,300
6	36,300	48,700	27,100	e25,400	e22,200	22,900	94,700	47,700	54,800	48,900	22,500	20,200
7	36,000	48,100	24,400	e23,200	e25,300	28,800	96,600	46,300	53,500	48,800	19,500	22,300
8	36,700	45,500	19,600	e23,400	e33,600	32,700	95,800	43,200	52,000	47,800	18,400	25,000
9	37,400	42,700	21,000	e22,700	e37,400	35,900	94,200	40,000	52,500	45,500	18,300	24,400
10	36,500	40,800	27,400	e21,200	e38,900	37,800	92,100	37,600	55,100	43,000	17,300	22,200
11	33,800	40,500	30,800	e20,600	e35,200	37,400	90,500	39,300	60,000	41,800	20,200	20,900
12	31,600	40,500	30,900	e20,700	e30,100	34,900	89,600	40,300	64,000	39,400	22,200	18,800
13	31,400	38,600	30,500	e20,600	e30,800	30,800	88,600	41,600	66,000	37,600	23,200	18,500
14	31,300	37,400	26,300	e20,400	e31,200	29,700	87,300	42,900	66,300	35,300	20,500	22,300
15	30,300	33,600	25,300	e20,500	e36,000	27,600	84,700	44,400	66,300	33,100	15,600	24,900
16	28,700	32,500	22,800	e20,600	e42,300	26,300	81,700	46,500	65,800	32,200	14,800	25,400
17	28,100	31,500	21,100	e19,000	e46,600	25,500	79,000	48,000	65,700	32,400	15,900	26,500
18	27,900	30,800	19,800	e18,600	e45,900	24,700	77,200	48,800	65,800	30,500	15,800	27,800
19	28,000	29,600	e19,400	e16,000	e36,800	26,100	76,500	52,500	68,400	25,900	19,900	28,700
20	25,000	30,400	e18,400	e15,900	e33,900	26,700	76,300	55,000	69,900	23,600	20,800	28,200
21	24,000	32,000	e17,700	e16,200	e28,500	26,800	76,000	56,200	71,300	26,200	19,500	26,600
22	26,000	32,800	e17,400	e17,500	e26,700	23,700	77,000	58,300	71,100	30,400	18,900	24,900
23	27,300	32,600	e17,900	e18,700	e26,900	24,000	78,100	59,300	70,900	31,000	19,900	25,900
24	27,800	31,700	e18,300	e18,300	e28,100	25,100	78,400	60,300	70,800	26,200	19,200	26,100
25	27,700	30,000	e18,300	e18,700	28,700	26,500	78,900	61,900	70,900	25,200	16,600	28,300
26	28,500	29,800	e18,400	e20,400	26,000	30,600	79,900	62,700	70,000	30,400	16,400	34,100
27	30,100	32,500	e17,800	e20,500	23,100	35,100	79,900	62,300	66,100	36,000	17,900	36,700
28	29,100	33,700	e16,400	e20,700	24,200	40,900	78,300	60,500	64,100	35,300	20,400	38,300
29	30,300	33,700	e16,900	e20,700	---	48,600	75,600	59,200	62,400	32,300	21,000	38,900
30	35,300	31,600	e19,900	e20,700	---	59,200	71,700	59,300	62,100	28,500	21,200	38,800
31	39,100	---	e22,300	e20,500	---	68,000	---	59,100	---	23,000	20,500	---
TOTAL	1,012,700	1,117,100	701,500	648,900	842,300	973,300	2,476,800	1,628,600	1,890,200	1,165,900	600,700	759,000
MEAN	32,670	37,240	22,630	20,930	30,080	31,400	82,560	52,540	63,010	37,610	19,380	25,300
MAX	42,500	48,700	30,900	26,300	46,600	68,000	96,600	66,700	71,300	60,900	23,200	38,900
MIN	24,000	29,600	16,400	15,900	20,400	21,600	71,400	37,600	52,000	23,000	14,800	15,300
AC-FT	2,009,000	2,216,000	1,391,000	1,287,000	1,671,000	1,931,000	4,913,000	3,230,000	3,749,000	2,313,000	1,191,000	1,505,000
CFSM	0.48	0.55	0.34	0.31	0.45	0.47	1.22	0.78	0.93	0.56	0.29	0.37
IN.	0.56	0.62	0.39	0.36	0.46	0.54	1.36	0.90	1.04	0.64	0.33	0.42

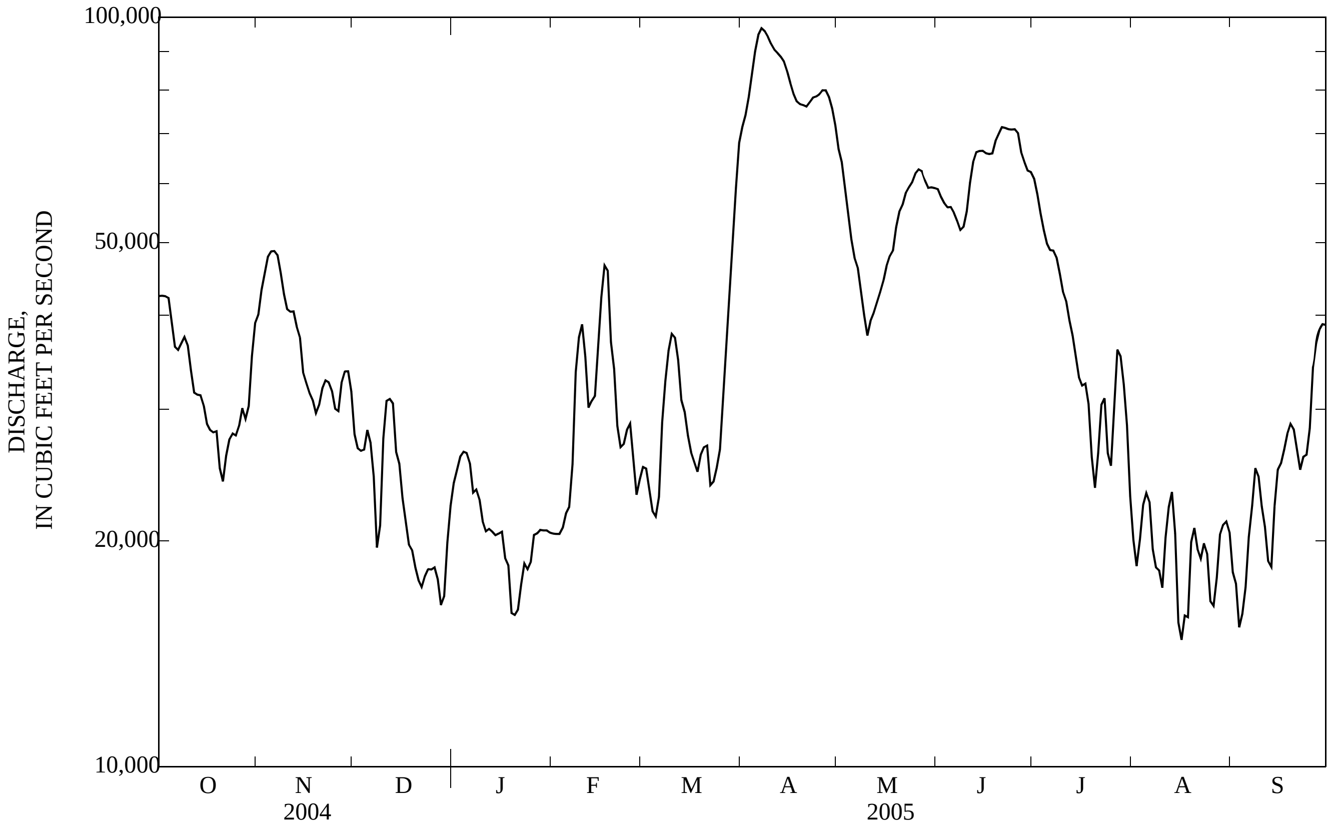
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28,760	29,400	22,420	19,430	20,320	39,100	75,690	62,250	50,830	41,640	28,180	28,750
MAX	114,600	64,840	59,200	35,700	48,540	103,800	164,800	138,700	112,600	142,200	84,430	72,890
(WY)	(1987)	(1983)	(1992)	(1983)	(1984)	(1983)	(1965)	(2001)	(1993)	(1993)	(1993)	(1986)
MIN	9,874	10,870	9,506	7,665	9,934	13,190	27,780	18,240	13,420	11,220	10,330	10,650
(WY)	(1937)	(1938)	(1937)	(1940)	(1940)	(1940)	(1990)	(1977)	(1988)	(1988)	(1964)	(1940)

05389500 MISSISSIPPI RIVER AT MCGREGOR, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1936 - 2005	
ANNUAL TOTAL	13,645,800		13,817,000			
ANNUAL MEAN	37,280		37,850		37,280	
HIGHEST ANNUAL MEAN					64,720	1993
LOWEST ANNUAL MEAN					17,400	1977
HIGHEST DAILY MEAN	114,000	Jun 17	96,600	Apr 7	276,000	Apr 24, 1965
LOWEST DAILY MEAN	13,000	Jan 28	14,800	Aug 16	6,200	Dec 9, 1936
ANNUAL SEVEN-DAY MINIMUM	13,100	Jan 24	17,300	Jan 18	6,490	Dec 7, 1936
MAXIMUM PEAK FLOW			97,100	Apr 7	276,000	Apr 24, 1965
MAXIMUM PEAK STAGE			14.10	Apr 10	25.38	Apr 24, 1965
ANNUAL RUNOFF (AC-FT)	27,070,000		27,410,000		27,010,000	
ANNUAL RUNOFF (CFSM)	0.552		0.561		0.552	
ANNUAL RUNOFF (INCHES)	7.52		7.61		7.50	
10 PERCENT EXCEEDS	70,000		69,900		75,700	
50 PERCENT EXCEEDS	32,400		30,800		27,900	
90 PERCENT EXCEEDS	15,000		18,900		13,400	

e Estimated



05411500 MISSISSIPPI RIVER AT CLAYTON, IA

LOCATION.--Lat 42°54'13", long 91°08'45", NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.1, T.93 N., R.3 W., Clayton County, Hydrologic Unit 07060003, 6 mi below the Wisconsin River, and at mile 624.8 upstream from Ohio River.

DRAINAGE AREA.--79,200 mi^2.

PERIOD OF RECORD.--April 1930 to June 1936, January 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 602.60 ft above NGVD of 1929.

REMARKS.--Records are considered good. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

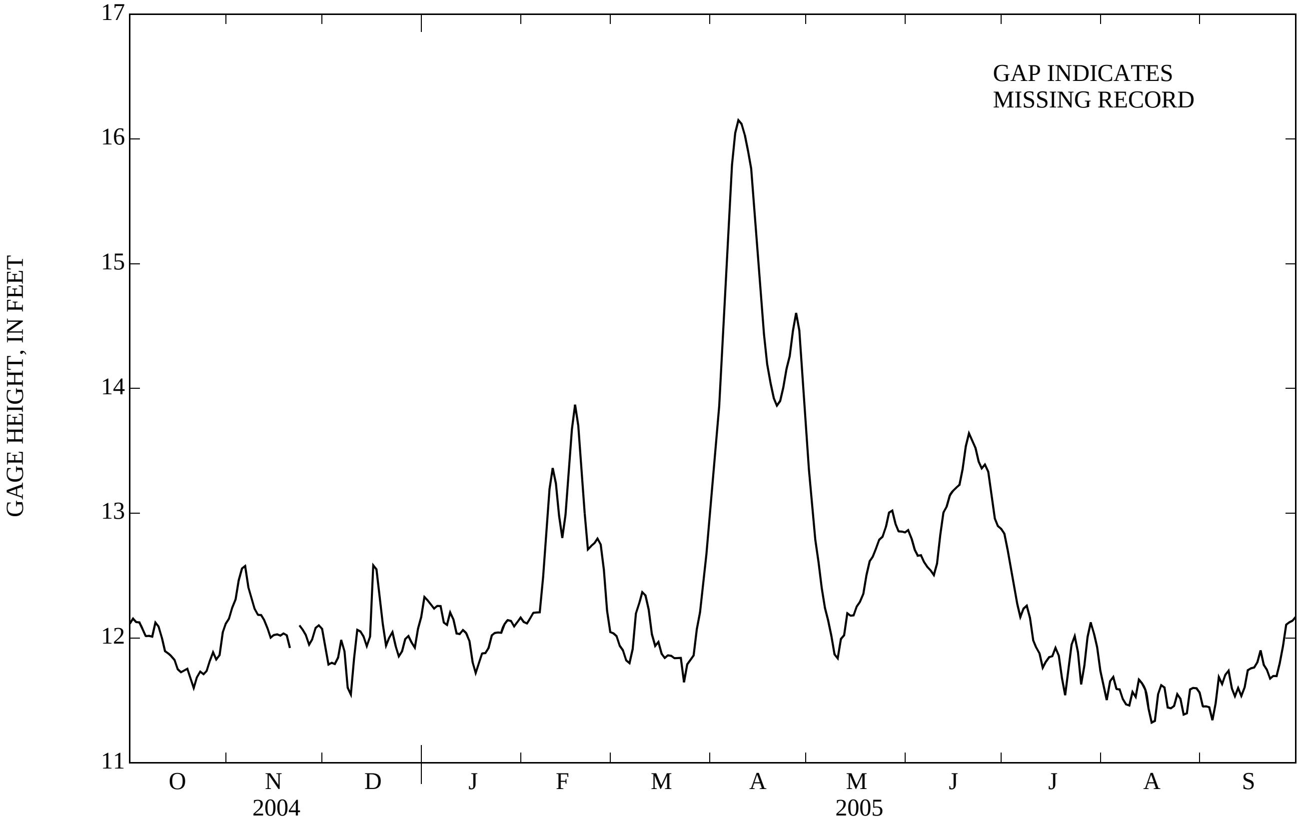
EXTREMES FOR CURRENT WATER YEAR.--Maximum gage height 16.22 ft on Apr. 10; minimum gage height 11.24 ft on Aug. 17 & Sept. 5.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height 25.48 ft Apr. 20, 2001; minimum gage height 11.11 ft Aug. 20, 2003.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.11	12.16	11.93	12.33	12.13	12.04	13.28	13.35	12.86	12.83	11.62	11.45
2	12.15	12.24	11.79	12.30	12.12	12.01	13.55	13.07	12.80	12.71	11.50	11.45
3	12.13	12.31	11.80	12.27	12.16	11.93	13.86	12.78	12.71	12.56	11.65	11.44
4	12.12	12.46	11.79	12.23	12.20	11.90	14.32	12.61	12.66	12.42	11.69	11.34
5	12.07	12.55	11.84	12.26	12.20	11.82	14.87	12.40	12.66	12.28	11.59	11.48
6	12.01	12.57	11.98	12.25	12.20	11.80	15.39	12.24	12.61	12.17	11.59	11.68
7	12.02	12.41	11.89	12.12	12.49	11.91	15.79	12.14	12.57	12.23	11.51	11.63
8	12.01	12.32	11.60	12.10	12.86	12.19	16.05	12.02	12.54	12.26	11.47	11.70
9	12.12	12.23	11.55	12.21	13.19	12.27	16.15	11.87	12.50	12.16	11.46	11.74
10	12.09	12.18	11.83	12.15	13.36	12.37	16.12	11.84	12.60	11.98	11.57	11.60
11	12.00	12.18	12.06	12.04	13.24	12.34	16.03	11.99	12.82	11.92	11.53	11.53
12	11.89	12.14	12.05	12.03	12.98	12.23	15.91	12.02	13.00	11.87	11.66	11.60
13	11.88	12.08	12.01	12.06	12.80	12.03	15.76	12.20	13.05	11.76	11.64	11.53
14	11.85	12.00	11.93	12.04	12.99	11.93	15.48	12.18	13.14	11.81	11.59	11.60
15	11.82	12.02	12.01	11.98	13.30	11.97	15.14	12.18	13.18	11.84	11.44	11.74
16	11.75	12.03	12.58	11.81	13.67	11.87	14.75	12.25	13.20	11.85	11.32	11.76
17	11.72	12.02	12.55	11.72	13.87	11.84	14.43	12.29	13.22	11.92	11.33	11.76
18	11.74	12.04	12.34	11.80	13.70	11.86	14.19	12.35	13.35	11.86	11.55	11.80
19	11.75	12.02	12.11	11.87	13.37	11.86	14.04	12.51	13.54	11.68	11.62	11.90
20	11.68	11.92	11.94	11.88	13.00	11.84	13.92	12.61	13.64	11.54	11.60	11.78
21	11.60	---	12.00	11.92	12.71	11.84	13.86	12.65	13.58	11.73	11.44	11.74
22	11.68	---	12.05	12.02	12.74	11.84	13.90	12.72	13.53	11.94	11.44	11.67
23	11.73	12.10	11.94	12.04	12.76	11.64	14.01	12.79	13.41	12.01	11.45	11.69
24	11.71	12.06	11.85	12.04	12.80	11.79	14.16	12.81	13.36	11.89	11.55	11.69
25	11.73	12.02	11.89	12.04	12.75	11.82	14.26	12.89	13.39	11.63	11.51	11.80
26	11.82	11.95	11.99	12.11	12.54	11.86	14.46	13.00	13.33	11.77	11.38	11.93
27	11.88	11.99	12.01	12.14	12.22	12.07	14.60	13.02	13.16	12.01	11.39	12.10
28	11.83	12.08	11.96	12.13	12.05	12.20	14.46	12.92	12.96	12.12	11.59	12.12
29	11.86	12.10	11.92	12.09	---	12.43	14.10	12.85	12.90	12.04	11.60	12.14
30	12.04	12.07	12.07	12.12	---	12.67	13.76	12.85	12.87	11.92	11.60	12.17
31	12.12	---	12.17	12.16	---	12.97	---	12.84	---	11.74	11.56	---
MEAN	11.90	---	11.98	12.07	12.80	12.04	14.69	12.52	13.04	12.01	11.53	11.72
MAX	12.15	---	12.58	12.33	13.87	12.97	16.15	13.35	13.64	12.83	11.69	12.17
MIN	11.60	---	11.55	11.72	12.05	11.64	13.28	11.84	12.50	11.54	11.32	11.34

05411500 MISSISSIPPI RIVER AT CLAYTON, IA—Continued



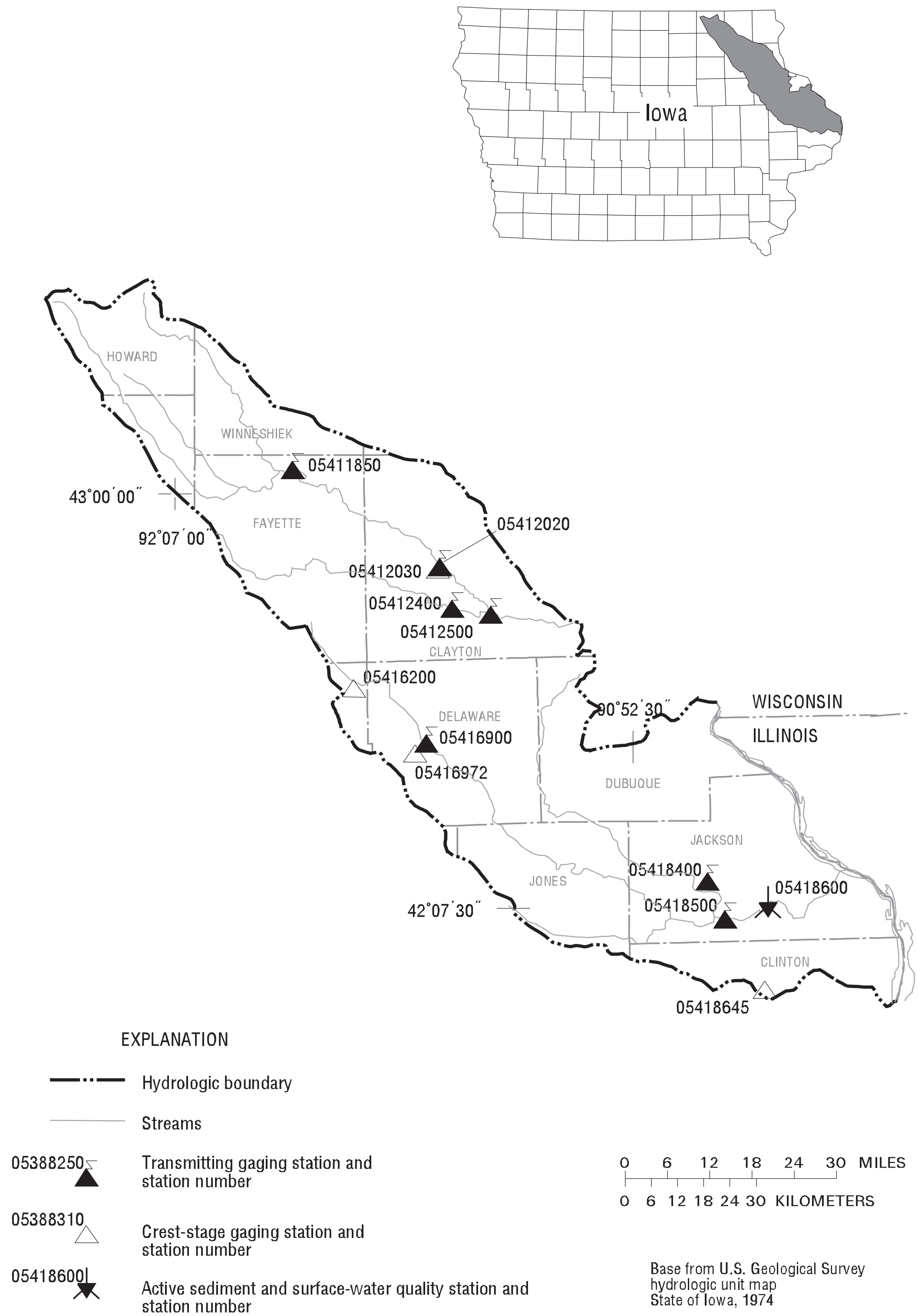


Figure 9. Locations of active continous-record and crest-stage gaging stations in the Turkey River and Maquoketa River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

05411850 TURKEY RIVER NEAR ELDORADO, IA

LOCATION.--Lat 43°03'15", long 91°48'32", in NW$\frac{1}{4}$ SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.8, T.95 N., R.8 W., Fayette County, Hydrologic Unit 07060004, on left bank 5 ft downstream of bridge on County Highway B40, 3.6 mi downstream of confluence with the Little Turkey River, 3.4 mi upstream of Dry Branch Creek, 1.4 mi east of Eldorado, and 83.6 mi upstream from mouth.

DRAINAGE AREA.--641 mi^2.

PERIOD OF RECORD.--September 27, 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 890.00 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1991, gage height 18.78 ft, discharge 17,600 cfs.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	197	229	e181	e137	228	1,160	330	371	620	304	174
2	170	215	274	e188	e133	237	907	317	356	527	254	165
3	160	216	241	e181	e131	225	742	301	339	460	216	161
4	155	224	209	e168	e134	217	656	284	333	418	223	164
5	152	226	207	e135	e155	276	607	269	348	380	190	166
6	152	221	215	e133	e693	451	574	259	337	341	173	164
7	153	216	212	e128	e1,490	856	542	246	334	310	166	160
8	156	202	210	e134	e1,020	772	508	247	362	281	161	162
9	159	191	217	e145	e800	476	478	249	928	257	159	173
10	156	186	248	e153	e609	403	455	250	1,730	228	194	167
11	153	183	264	e151	e457	367	414	287	1,210	207	418	165
12	149	177	277	e153	e360	324	470	418	1,110	190	514	160
13	147	173	250	e160	e573	284	594	1,050	979	180	640	e158
14	152	170	e206	e170	e1,600	279	674	2,240	783	173	633	e195
15	151	170	e201	e162	e2,830	255	601	1,750	681	170	478	326
16	149	170	e221	e150	e2,030	238	549	1,210	586	166	388	e332
17	146	171	e276	e135	e1,050	234	520	954	513	161	325	e265
18	146	172	e283	e126	e788	233	487	813	466	162	762	e228
19	146	176	e178	e128	e635	240	476	779	426	157	794	e480
20	145	193	e184	e125	e573	226	521	745	388	162	523	706
21	146	197	e194	e129	e475	238	692	707	358	267	417	776
22	147	211	e188	e128	e368	246	661	696	335	360	349	625
23	150	223	e176	e122	312	262	591	660	311	316	301	526
24	149	221	e164	e129	317	369	520	601	285	238	261	474
25	148	212	e166	e135	317	422	479	548	328	205	233	510
26	150	212	e177	e137	292	466	456	515	409	299	215	1,230
27	155	230	e186	e133	288	596	432	490	868	671	232	2,390
28	152	229	e201	e136	275	697	389	469	1,040	741	252	1,880
29	154	226	e209	e142	---	820	361	447	796	522	228	1,240
30	169	221	e211	e145	---	708	346	423	685	414	195	1,040
31	182	---	e206	e142	---	798	---	395	---	349	181	---
MEAN	154	201	215	145	673	401	562	611	600	320	335	512
MAX	182	230	283	188	2,830	856	1,160	2,240	1,730	741	794	2,390
MIN	145	170	164	122	131	217	346	246	285	157	159	158
AC-FT	9,440	11,960	13,250	8,890	37,370	24,680	33,450	37,590	35,690	19,700	20,590	30,470
CFSM	0.24	0.31	0.34	0.23	1.05	0.63	0.88	0.95	0.94	0.50	0.52	0.80
IN.	0.28	0.35	0.39	0.26	1.09	0.72	0.98	1.10	1.04	0.58	0.60	0.89

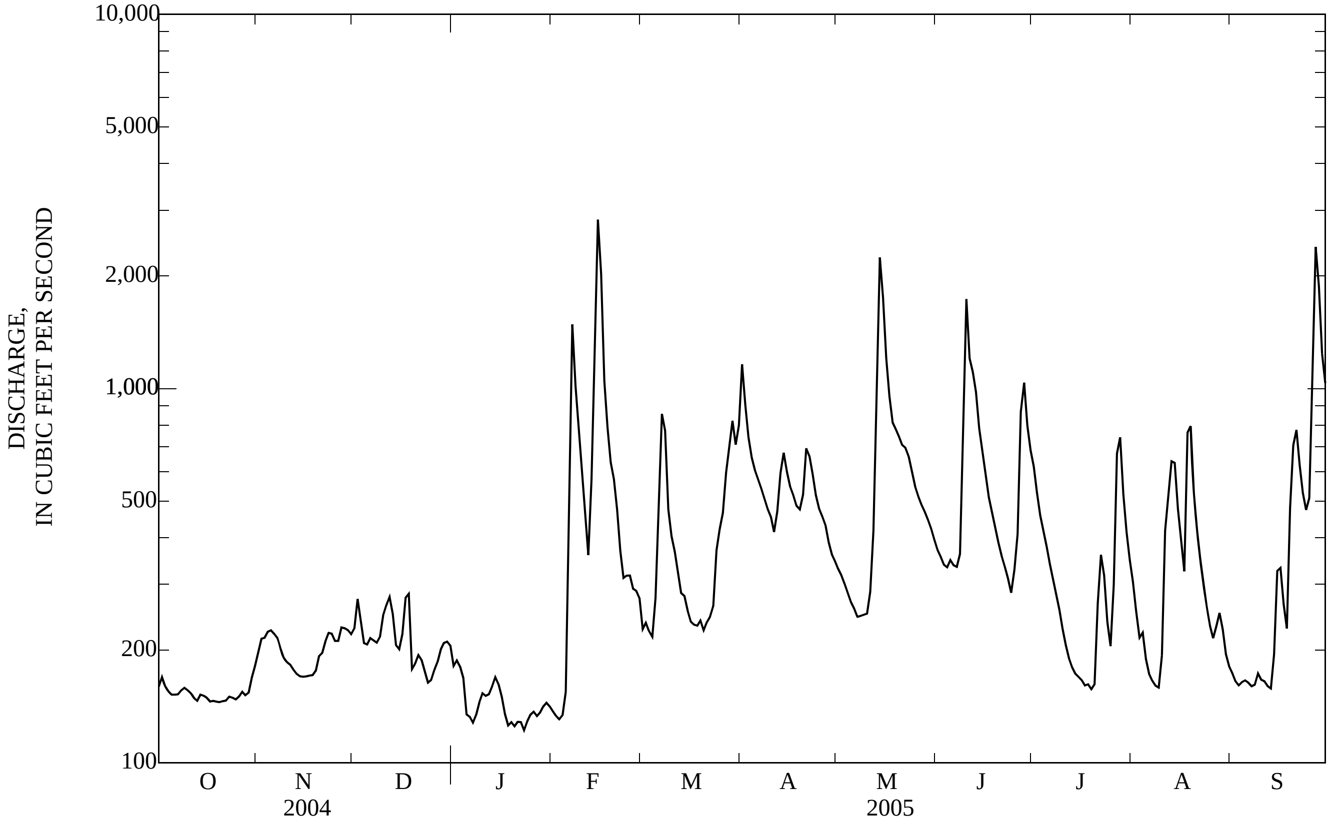
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	139	163	127	92.5	227	439	845	1,319	697	610	252	217
MAX	188	270	215	145	673	883	2,764	2,826	1,398	1,978	394	512
(WY)	(2002)	(2001)	(2005)	(2005)	(2005)	(2001)	(2001)	(2004)	(2004)	(2004)	(2004)	(2005)
MIN	59.2	77.6	62.3	38.2	44.1	144	277	526	286	229	93.6	61.8
(WY)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2002)	(2003)	(2001)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2000 - 2005	
ANNUAL MEAN	702		391		428	
HIGHEST ANNUAL MEAN					671	2004
LOWEST ANNUAL MEAN					199	2003
HIGHEST DAILY MEAN	17,800	May 23	2,830	Feb 15 a	17,800	May 23, 2004
LOWEST DAILY MEAN	25	Jan 18	122	Jan 23 a	25	Jan 18, 2004
ANNUAL SEVEN-DAY MINIMUM	26	Jan 25	127	Jan 18	26	Jan 25, 2004
MAXIMUM PEAK FLOW			4,660	Feb 15 a	19,700	May 23, 2004
MAXIMUM PEAK STAGE			12.52	Feb 15	19.61	May 23, 2004
ANNUAL RUNOFF (AC-FT)	509,500		283,100		310,200	
ANNUAL RUNOFF (CFSM)	1.09		0.610		0.668	
ANNUAL RUNOFF (INCHES)	14.91		8.28		9.08	
10 PERCENT EXCEEDS	1,490		774		873	
50 PERCENT EXCEEDS	221		255		178	
90 PERCENT EXCEEDS	38		150		65	

05411850 TURKEY RIVER NEAR ELDORADO, IA—Continued

a Ice affected.
e Estimated.



05412020 TURKEY RIVER ABOVE FRENCH HOLLOW CREEK AT ELKADER, IA

LOCATION.--Lat 42°50'36", long 91°24'04", in NW¼ SE¼ sec.26, T.93 N., R.05 W., Clayton County, Hydrologic Unit 07060004, on left bank 5 ft downstream of bridge on State Highway 13, 100 ft upstream from mouth of French Hollow Creek, and 39.1 mi upstream from mouth.

DRAINAGE AREA.--903 mi^2.

PERIOD OF RECORD.--August 28, 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 694.93 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1991, gage height 27.32 ft. and discharge 38,300cfs.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	296	302	256	201	364	1,030	449	491	782	381	283
2	303	322	302	266	199	355	1,150	431	464	707	345	271
3	300	328	323	255	199	352	976	417	447	611	312	261
4	285	327	328	244	202	368	865	404	437	543	318	259
5	277	329	315	e213	238	469	781	390	450	492	296	257
6	270	332	332	e210	875	594	739	381	429	452	268	256
7	269	328	332	e207	1,930	960	690	379	420	412	252	251
8	274	317	324	e218	1,140	1,080	644	381	420	376	243	255
9	270	305	323	238	945	848	603	373	453	349	238	269
10	271	299	333	238	772	676	567	370	1,310	327	243	265
11	267	292	344	223	612	605	541	402	1,500	306	274	258
12	264	285	355	223	515	549	584	422	1,150	288	488	255
13	261	278	344	235	790	485	624	636	1,190	276	525	250
14	266	273	264	e245	2,200	452	739	1,560	1,020	265	684	247
15	267	270	262	e229	3,630	439	766	2,030	885	255	622	253
16	264	270	304	e214	2,590	417	706	1,590	778	248	515	344
17	258	275	342	e196	1,760	402	695	1,270	687	240	444	349
18	261	277	366	e185	1,070	395	642	1,090	613	239	824	321
19	263	286	e237	e190	802	392	601	1,010	551	233	1,070	515
20	259	295	e276	e188	758	381	609	954	502	234	817	567
21	257	295	e292	e191	650	395	679	909	461	311	631	778
22	258	298	e275	e191	567	400	817	884	425	371	525	793
23	261	311	e258	e186	469	397	764	855	397	393	455	658
24	255	315	e243	e197	451	432	688	797	375	348	407	579
25	252	312	e247	e200	443	512	629	727	376	298	371	548
26	259	309	e255	e203	e453	547	588	671	477	328	347	642
27	279	328	e265	e199	e454	615	570	635	559	357	331	1,630
28	270	337	281	e201	e369	744	536	609	1,030	697	332	2,090
29	267	327	279	e203	---	834	499	585	1,030	670	335	1,690
30	275	322	281	208	---	898	468	555	891	517	315	1,250
31	280	---	279	204	---	836	---	519	---	432	296	---
TOTAL	8,350	9,138	9,263	6,656	25,284	17,193	20,790	22,685	20,218	12,357	13,504	16,644
MEAN	269	305	299	215	903	555	693	732	674	399	436	555
MAX	303	337	366	266	3,630	1,080	1,150	2,030	1,500	782	1,070	2,090
MIN	252	270	237	185	199	352	468	370	375	233	238	247
AC-FT	16,560	18,130	18,370	13,200	50,150	34,100	41,240	45,000	40,100	24,510	26,790	33,010
CFSM	0.30	0.34	0.33	0.24	1.00	0.61	0.77	0.81	0.75	0.44	0.48	0.61
IN.	0.34	0.38	0.38	0.27	1.04	0.71	0.86	0.93	0.83	0.51	0.56	0.69

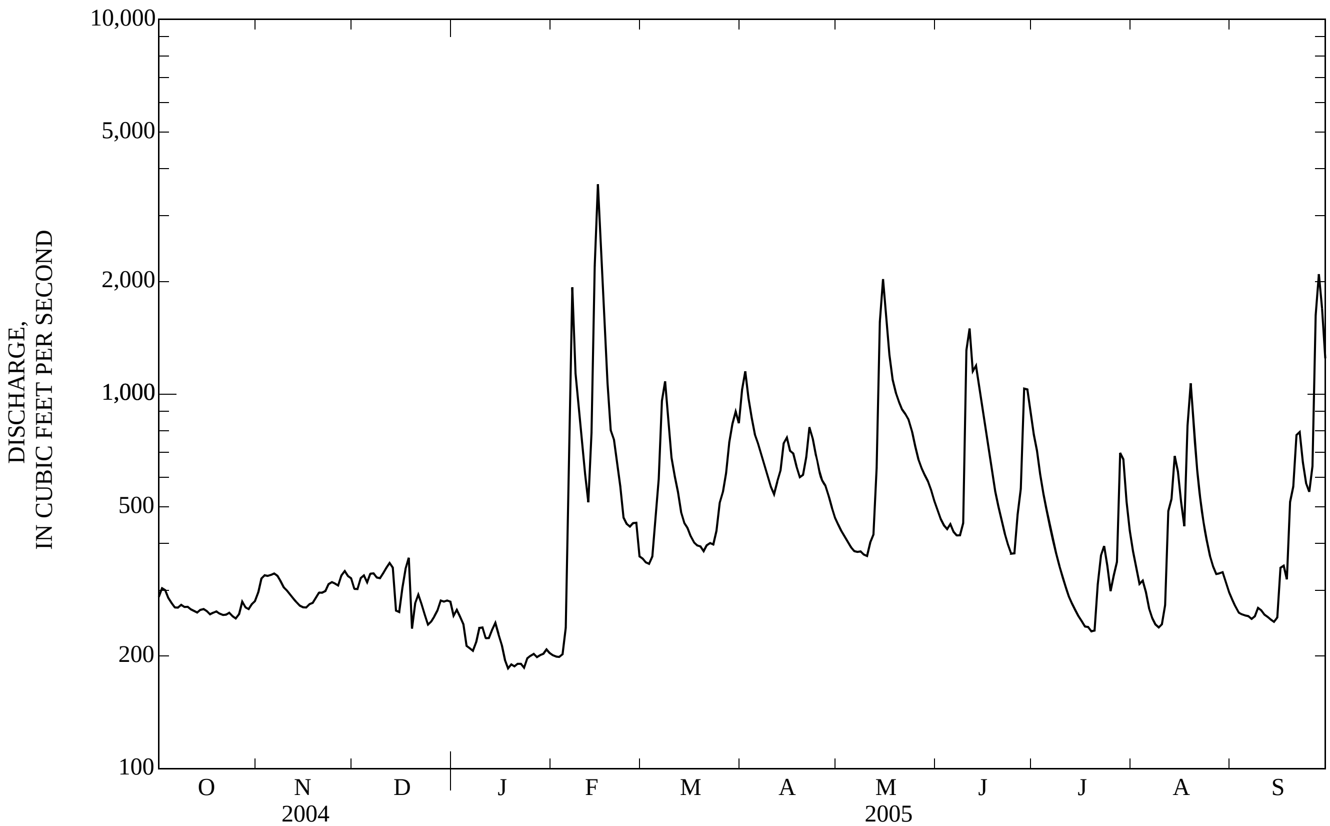
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	246	232	212	151	355	516	504	1,571	1,015	932	453	316
MAX	380	305	299	218	903	959	693	3,688	2,103	2,503	644	555
(WY)	(2002)	(2005)	(2005)	(2002)	(2005)	(2004)	(2005)	(2004)	(2004)	(2004)	(2004)	(2005)
MIN	118	147	111	85.3	77.8	212	346	721	462	388	175	125
(WY)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)

05412020 TURKEY RIVER ABOVE FRENCH HOLLOW CREEK AT ELKADER, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2001 - 2005	
ANNUAL TOTAL	362,558		182,082			
ANNUAL MEAN	991		499		544	
HIGHEST ANNUAL MEAN					949	2004
LOWEST ANNUAL MEAN					303	2003
HIGHEST DAILY MEAN	26,200	May 23	3,630	Feb 15	26,200	May 23, 2004
LOWEST DAILY MEAN	60	Jan 29	185	Jan 18 a	53	Jan 23, 2003
ANNUAL SEVEN-DAY MINIMUM	64	Jan 25	190	Jan 17	56	Jan 21, 2003
MAXIMUM PEAK FLOW			4,730	Feb 15	33,300	May 23, 2004
MAXIMUM PEAK STAGE			10.22	Feb 15	25.57	May 23, 2004
ANNUAL RUNOFF (AC-FT)	719,100		361,200		393,900	
ANNUAL RUNOFF (CFSM)	1.10		0.552		0.602	
ANNUAL RUNOFF (INCHES)	14.94		7.50		8.18	
10 PERCENT EXCEEDS	2,120		884		924	
50 PERCENT EXCEEDS	350		368		312	
90 PERCENT EXCEEDS	88		240		117	

a Ice affected
e Estimated



05412400 VOLGA RIVER AT LITTLEPORT, IA

LOCATION.--Lat 42°45'15", long 91°22'10", in NE¼ NE¼ SE¼ sec.25, T.92 N., R.5 W., Clayton County, Hydrologic Unit 07060004, on left bank 10 ft downstream of bridge on County Highway X21, 9.3 mi upstream from confluence with the Turkey River, and 8.0 mi southeast of Elkader.

DRAINAGE AREA.--348 mi^2.

PERIOD OF RECORD.--September 1957 to July 1977 as miscellaneous low-flow site. September 19, 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 677.00 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 17, 1999 reached a stage of 25.36 ft, approximate discharge 30,000 cfs. (from indirect measurement at Mederville, 2.5 miles upstream of Littleport)

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	104	101	e84	e53	159	155	144	135	455	106	112
2	107	125	100	e114	e60	144	155	137	128	399	97	99
3	95	117	98	e107	e58	136	152	132	123	335	89	89
4	86	111	98	e94	e59	140	145	126	123	294	89	86
5	81	106	99	e87	e69	172	140	120	152	259	92	83
6	81	104	120	e80	e375	213	137	116	136	226	80	76
7	82	101	128	e81	e804	366	131	117	117	200	76	70
8	86	96	121	e84	522	324	121	122	109	179	73	69
9	87	94	120	e83	383	243	114	118	112	162	71	83
10	83	97	125	e74	279	209	110	112	109	146	82	77
11	81	92	123	e81	242	193	109	141	104	132	90	70
12	81	88	120	e86	231	175	154	154	101	119	110	64
13	83	87	e109	e63	415	153	180	176	99	110	104	63
14	84	89	e79	e102	1,420	143	177	291	102	103	92	58
15	88	87	e79	e91	1,390	134	171	354	100	96	84	56
16	86	89	e99	e60	827	125	166	312	92	92	76	56
17	86	89	e123	e49	495	123	194	283	85	88	71	55
18	85	90	e139	e43	359	121	209	261	78	90	717	54
19	90	103	e64	e40	305	126	205	253	73	95	1,260	111
20	88	112	e92	e40	273	118	200	241	70	93	763	107
21	85	102	e100	e43	238	121	193	224	64	147	524	76
22	86	102	e82	e49	219	119	234	230	60	270	403	73
23	92	102	e75	e66	195	118	247	217	57	204	327	60
24	90	98	e60	e70	180	119	235	205	58	157	278	60
25	86	96	e76	e47	175	120	222	191	110	132	241	84
26	94	97	e81	e63	177	119	212	180	117	184	211	95
27	118	105	e91	e63	176	118	202	173	713	202	189	97
28	106	113	e95	e63	185	120	181	168	659	188	171	135
29	106	107	e92	e60	---	123	163	160	529	154	154	137
30	109	105	e94	e51	---	131	152	152	465	131	139	124
31	104	---	e96	e54	---	151	---	143	---	117	125	---
TOTAL	2,800	3,008	3,079	2,172	10,164	4,876	5,166	5,753	4,980	5,559	6,984	2,479
MEAN	90.3	100	99.3	70.1	363	157	172	186	166	179	225	82.6
MAX	118	125	139	114	1,420	366	247	354	713	455	1,260	137
MIN	81	87	60	40	53	118	109	112	57	88	71	54
AC-FT	5,550	5,970	6,110	4,310	20,160	9,670	10,250	11,410	9,880	11,030	13,850	4,920
CFSM	0.26	0.29	0.29	0.20	1.04	0.45	0.49	0.53	0.48	0.52	0.65	0.24
IN.	0.30	0.32	0.33	0.23	1.09	0.52	0.55	0.61	0.53	0.59	0.75	0.26

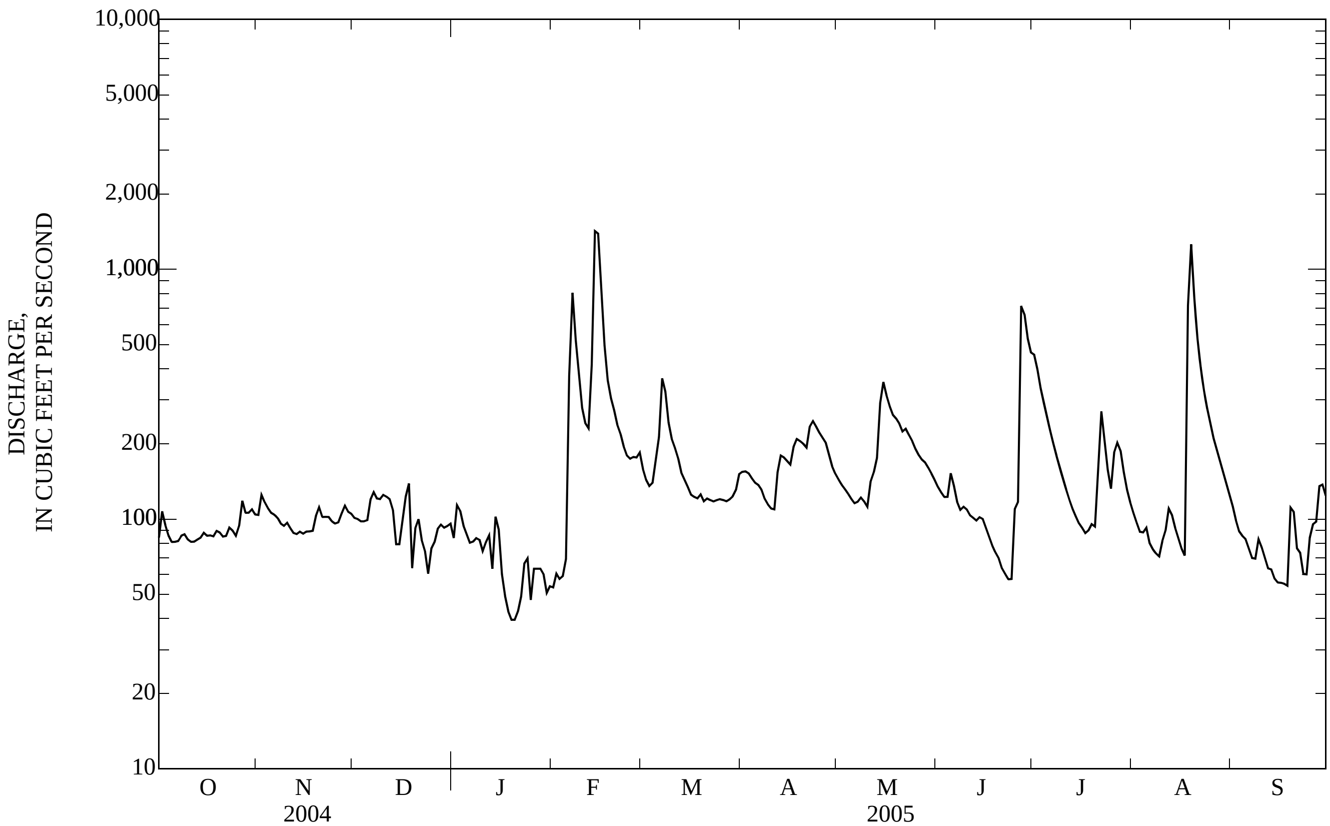
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2005, BY WATER YEAR (WY)

MEAN	99.8	103	78.3	56.5	154	281	267	554	462	345	149	107
MAX	186	144	150	89.2	363	649	590	1,422	938	821	225	246
(WY)	(2002)	(2002)	(2002)	(2002)	(2005)	(2001)	(2001)	(2004)	(2004)	(2004)	(2005)	(2001)
MIN	47.5	68.4	43.7	30.4	42.6	81.0	103	186	166	121	63.5	52.2
(WY)	(2004)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2005)	(2005)	(2002)	(2003)	(2003)

05412400 VOLGA RIVER AT LITTLEPORT, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2000 - 2005	
ANNUAL TOTAL	142,354		57,020			
ANNUAL MEAN	389		156		222	
HIGHEST ANNUAL MEAN					380	2004
LOWEST ANNUAL MEAN					138	2003
HIGHEST DAILY MEAN	13,600	May 23	1,420	Feb 14	13,600	May 23, 2004
LOWEST DAILY MEAN	36	Jan 18	40	Jan 19 a	20	Jan 22, 2003
ANNUAL SEVEN-DAY MINIMUM	41	Jan 4	46	Jan 16	22	Jan 17, 2003
MAXIMUM PEAK FLOW			1,770	Feb 14	21,000	May 23, 2004
MAXIMUM PEAK STAGE			2.56	Feb 14	21.98	May 23, 2004
ANNUAL RUNOFF (AC-FT)	282,400		113,100		160,600	
ANNUAL RUNOFF (CFSM)	1.12		0.449		0.637	
ANNUAL RUNOFF (INCHES)	15.22		6.10		8.66	
10 PERCENT EXCEEDS	824		260		431	
50 PERCENT EXCEEDS	148		111		119	
90 PERCENT EXCEEDS	46		69		47	

a also January 20, Ice affected.
e Estimated



05412500 TURKEY RIVER AT GARBER, IA

LOCATION.--Lat 42°44'24", long 91°15'42", in SE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.36, T.92 N., R.4 W., Clayton County, Hydrologic Unit 07060004, on right bank 10 ft upstream from bridge on County Highway C43, 800 ft upstream from Wayman Creek, 1,000 ft southeast of Garber, 2,000 ft downstream from Elk Creek, 1.0 mi downstream from Volga River, and 21.2 mi upstream from mouth.

DRAINAGE AREA.--1,545 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1913 to November 1916, May 1919 to September 1927, April 1929 to September 1930, October 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1922-25 (M), 1927 (M). WSP 1438: Drainage area; WDR IA-95-1: location.

GAGE.--Water-stage recorder. Datum of gage is 634.46 ft. above NGVD of 1929. Prior to Feb. 7, 1935, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, that of May 17, 1999.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	485	434	e414	e309	665	1,130	651	609	1,190	600	365
2	449	526	415	e433	e340	603	1,430	631	582	1,080	564	343
3	449	e521	430	e428	e326	574	1,250	611	560	931	538	320
4	432	e507	442	e411	e326	576	1,110	592	550	815	517	309
5	420	e499	439	e368	e450	705	1,010	575	582	716	503	308
6	419	e494	465	e354	e1,450	998	954	565	564	640	463	319
7	422	e483	490	e349	e3,570	1,730	905	564	535	598	432	311
8	435	e466	476	e374	2,280	1,680	836	562	521	558	393	307
9	445	e451	469	e383	1,730	1,370	783	555	534	523	371	334
10	445	e437	474	e383	1,390	1,050	742	542	997	490	386	334
11	448	e423	477	e374	1,170	883	714	586	1,670	459	412	319
12	449	e411	484	e354	1,010	787	778	613	1,290	427	546	311
13	452	e401	477	e363	1,600	687	865	709	1,240	401	690	315
14	444	e394	e397	e425	5,350	635	941	1,500	1,150	378	765	297
15	450	e385	e394	e411	6,360	614	1,030	2,590	993	364	833	291
16	452	e393	e464	e397	4,520	594	965	2,180	868	350	699	347
17	446	e396	e504	e346	3,020	579	991	1,760	770	336	629	399
18	443	e399	e532	e323	1,920	569	975	1,480	682	329	1,670	382
19	453	e420	e411	e309	1,500	575	898	1,350	630	328	2,830	525
20	448	e434	e433	e298	1,350	561	873	1,260	591	331	2,070	629
21	439	e428	e456	e304	1,180	562	886	1,170	556	393	1,450	743
22	441	e426	e447	e306	1,070	570	1,140	1,140	522	627	1,140	892
23	452	e435	e428	e326	927	574	1,140	1,090	493	589	896	749
24	450	e430	e419	e321	843	576	1,040	1,010	478	580	739	656
25	447	429	e405	e297	803	614	955	929	554	508	649	627
26	481	429	e414	e304	793	669	897	858	621	577	596	657
27	520	452	e425	e304	763	695	851	800	1,130	584	558	1,350
28	487	465	e439	e306	767	824	792	753	1,560	800	511	2,540
29	467	456	e447	e306	---	944	733	714	1,600	957	488	2,210
30	482	447	e436	e298	---	1,080	683	677	1,340	764	457	1,620
31	481	---	e436	e301	---	1,060	---	639	---	654	415	---
TOTAL	13,953	13,322	13,859	10,870	47,117	24,603	28,297	29,656	24,772	18,277	23,810	19,109
MEAN	450	444	447	351	1,683	794	943	957	826	590	768	637
MAX	520	526	532	433	6,360	1,730	1,430	2,590	1,670	1,190	2,830	2,540
MIN	405	385	394	297	309	561	683	542	478	328	371	291
AC-FT	27,680	26,420	27,490	21,560	93,460	48,800	56,130	58,820	49,140	36,250	47,230	37,900
CFSM	0.29	0.29	0.29	0.23	1.09	0.51	0.61	0.62	0.53	0.38	0.50	0.41
IN.	0.34	0.32	0.33	0.26	1.13	0.59	0.68	0.71	0.60	0.44	0.57	0.46

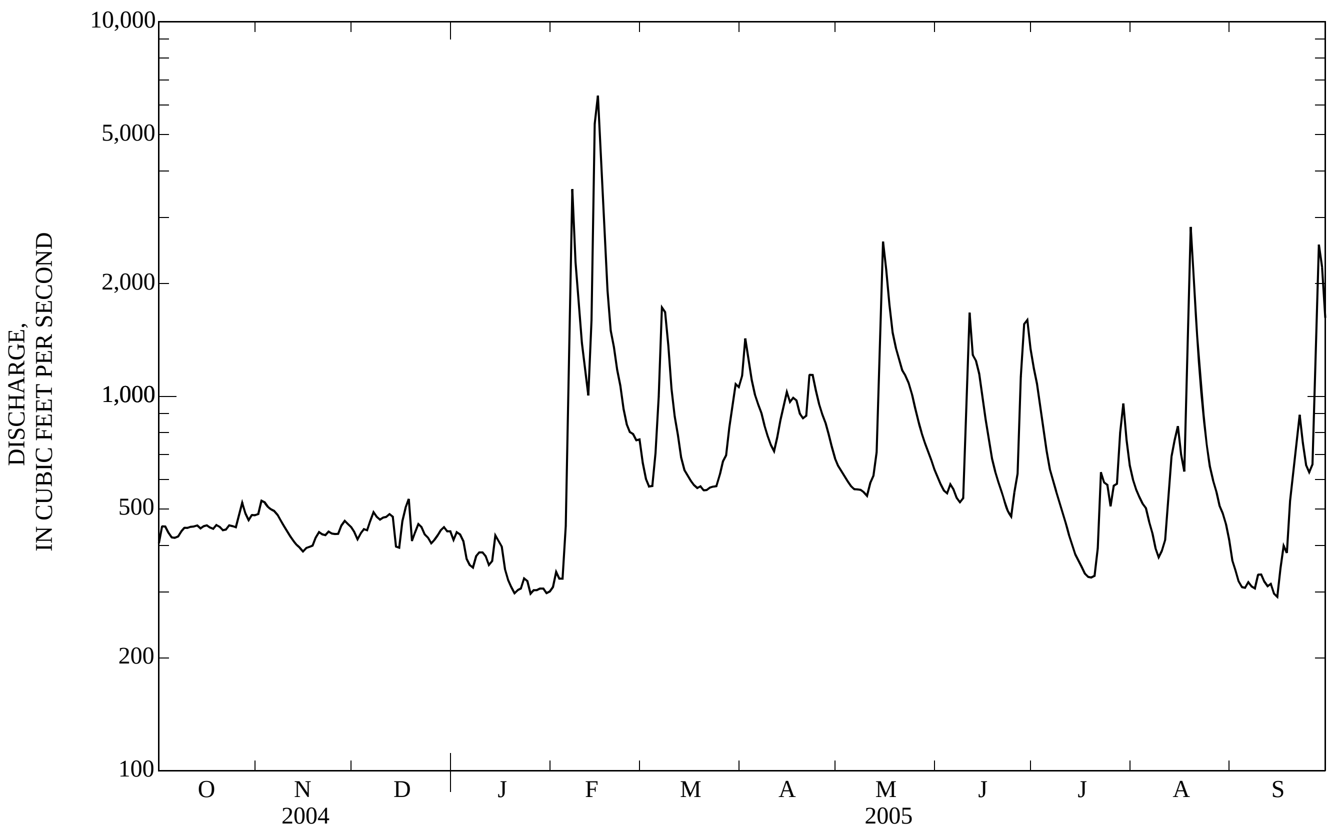
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	568	608	475	497	822	1,974	1,701	1,420	1,431	1,011	848	632
MAX	2,527	2,834	2,889	3,306	4,265	4,832	6,382	6,038	5,316	5,772	5,119	3,011
(WY)	(1987)	(1962)	(1983)	(1916)	(1922)	(1979)	(1951)	(2004)	(1947)	(1993)	(1993)	(1938)
MIN	88.2	92.2	78.5	62.0	60.9	188	288	95.7	103	121	140	108
(WY)	(1950)	(1950)	(1959)	(1940)	(1959)	(1934)	(1957)	(1934)	(1934)	(1936)	(1964)	(1958)

05412500 TURKEY RIVER AT GARBER, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1913 - 2005	
ANNUAL TOTAL	576,702		267,645			
ANNUAL MEAN	1,576		733		1,002	
HIGHEST ANNUAL MEAN					2,905	1993
LOWEST ANNUAL MEAN					249	1934
HIGHEST DAILY MEAN	52,200	May 23	6,360	Feb 15	52,200	May 23, 2004
LOWEST DAILY MEAN	142	Jan 28	291	Sep 15	49	Jan 28, 1940
ANNUAL SEVEN-DAY MINIMUM	149	Jan 25	302	Jan 25	51	Jan 25, 1940
MAXIMUM PEAK FLOW			7,750	Feb 15	66,700	May 23, 2004
MAXIMUM PEAK STAGE			15.54	Feb 7 a	32.80	May 23, 2004
INSTANTANEOUS LOW FLOW			283	Sep 15		
ANNUAL RUNOFF (AC-FT)	1,144,000		530,900		726,200	
ANNUAL RUNOFF (CFSM)	1.02		0.475		0.649	
ANNUAL RUNOFF (INCHES)	13.89		6.44		8.82	
10 PERCENT EXCEEDS	3,340		1,270		2,120	
50 PERCENT EXCEEDS	606		550		530	
90 PERCENT EXCEEDS	178		345		173	

a Ice effected
e Estimated



05412500 TURKEY RIVER AT GARBER, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.-- 1957-1962, March 2004 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
18...	1030	439	165	738	12.4	108	8.2	578	8.0	252	308	--	17.2
NOV													
16...	0901	365	150	750	12.9	106	8.2	586	6.1	235	287	--	19.0
DEC													
06...	0955	461	168	740	12.9	99	8.1	560	3.0	229	279	--	19.5
JAN													
10...	0940	665	--	748	14.0	98	8.0	614	.1	244	297	--	18.6
FEB													
09...	0952	1,780	160	742	13.8	97	7.7	347	.1	116	141	--	12.4
MAR													
14...	1000	638	190	745	12.8	97	8.2	558	2.8	212	257	--	16.5
APR													
11...	0948	708	190	740	8.9	93	7.9	560	15.8	210	252	--	20.3
MAY													
09...	1015	555	--	741	10.3	116	8.2	534	19.7	211	254	--	18.6
JUN													
06...	0930	566	169	740	9.2	107	8.2	522	21.4	189	230	--	18.9
JUL													
12...	1105	423	--	746	10.4	128	8.4	511	24.8	167	200	--	20.2
AUG													
08...	0943	386	160	746	10.3	123	8.4	432	23.1	182	222	--	19.3
SEP													
06...	1130	305	162	--	11.0	--	8.3	533	23.4	210	250	--	19.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
18...	5.8	26.2	<.04	5.07	.014	.08	.009	.015	.028	5.20	5.38	.6	<.1
NOV													
16...	3.6	27.4	<.04	6.44	.009	.09	.006	.012	.033	6.38	6.39	.7	<.1
DEC													
06...	5.3	28.0	E.02	6.98	.012	.10	.018	.029	.047	6.98	6.97	.7	<.1
JAN													
10...	9.5	28.3	.05	6.18	.012	.06	.042	.047	.055	6.50	6.96	.5	<.1
FEB													
09...	7.1	15.0	1.06	3.45	.030	.85	.663	.74	.99	5.59	6.24	10.6	.4
MAR													
14...	10.0	25.4	.04	5.79	.014	.09	.111	.107	.161	6.26	5.96	1.0	<.1
APR													
11...	6.3	27.5	<.04	7.26	.013	.22	.044	.063	.127	7.64	7.92	1.9	.2
MAY													
09...	2.1	25.7	<.04	2.33	.019	.19	<.012	.008	.054	4.02	5.35	1.2	<.1
JUN													
06...	3.7	25.1	<.04	5.31	.020	.27	<.030	.014	.088	5.71	6.45	2.0	<.1
JUL													
12...	4.3	26.8	<.04	5.85	.017	.40	<.030	.009	.090	6.04	6.69	3.2	<.1
AUG													
08...	3.7	25.5	<.04	2.92	.027	.83	<.012	.007	.112	3.41	4.15	6.1	<.1
SEP													
06...	5.0	27.6	<.04	3.80	.016	.12	E.015	.025	.063	3.89	4.11	.80	<.1

05412500 TURKEY RIVER AT GARBER, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT 18...	.6	1.6	2.4	4.7	<.006	E.075	E.005	<.005	<.005	.112	<.050	<.010	<.004
NOV 16...	.7	1.5	26.4	.7	<.006	E.067	<.006	<.005	<.005	.093	<.050	<.010	<.004
DEC 06...	.7	1.4	2.4	2.6	<.006	E.048	<.006	<.005	<.005	.073	<.050	<.010	<.004
JAN 10...	.5	1.3	39.5	13.4	<.006	E.058	<.006	<.005	<.005	.075	<.050	<.010	<.004
FEB 09...	10.2	11.8	13.6	9.7	<.006	E.038	.020	<.005	<.005	.133	<.050	<.010	<.004
MAR 14...	1.0	3.9	1.0	1.0	<.006	E.046	.009	<.005	<.005	.074	<.050	<.010	<.004
APR 11...	1.8	4.6	6.5	13.3	<.006	E.055	<.006	<.005	<.005	.058	<.050	<.010	<.004
MAY 09...	1.2	2.4	13.2	24.9	<.006	E.070	.061	E.001	<.005	.130	<.050	<.010	<.004
JUN 06...	2.0	2.7	16.7	29.8	<.006	E.182	.510	<.005	<.005	1.97	<.050	<.010	<.004
JUL 12...	3.2	2.3	--	--	<.006	E.113	<.006	<.005	<.005	.237	<.050	<.010	<.004
AUG 08...	6.0	2.4	--	--	<.006	E.064	<.006	<.005	<.005	.132	<.050	<.010	<.004
SEP 06...	.80	2.1	10.3	27.6	<.006	E.023	<.006	<.005	<.005	.085	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT 18...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.200	<.02	<.004	<.009	<.005
NOV 16...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN 10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB 09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR 14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR 11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY 09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL 12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG 08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

05412500 TURKEY RIVER AT GARBER, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
18...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
NOV													
16...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
DEC													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
JAN													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.010	<.006	<.003	<.007
FEB													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.033	<.006	<.003	<.007
MAR													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.060	<.006	<.003	<.007
APR													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.013	<.006	<.003	<.007
MAY													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.030	<.006	<.003	<.007
JUN													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.407	<.006	<.003	<.007
JUL													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007
AUG													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.009	<.006	<.003	<.007
SEP													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.008	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
18...	<.015	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	E.004	<.02	<.034
NOV													
16...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.010	<.02	<.034
DEC													
06...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
10...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
09...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAR													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
09...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.005	<.02	<.034
JUN													
06...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.050	<.02	.014	<.02	<.034
JUL													
12...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.005	<.02	<.034
AUG													
08...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.006	<.02	<.034
SEP													
06...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

05412500 TURKEY RIVER AT GARBER, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)	Number of sam-pling points, count (00063)
OCT						
18...	<.02	<.010	<.006	<.009	86	10
NOV						
16...	<.02	<.010	<.006	<.009	80	10
DEC						
06...	<.02	<.010	<.006	<.009	67	10
JAN						
10...	<.02	<.010	<.006	<.009	73	--
FEB						
09...	<.02	<.010	<.006	<.009	150	4
MAR						
14...	<.02	<.010	<.006	<.009	37	10
APR						
11...	<.02	<.010	<.006	<.009	53	11
MAY						
09...	<.02	<.010	<.006	<.009	71	12
JUN						
06...	<.02	<.010	<.006	<.009	80	11
JUL						
12...	<.02	<.010	<.006	<.009	--	10
AUG						
08...	<.02	<.010	<.006	<.009	48	10
SEP						
06...	<.02	<.010	<.006	<.009	80	11

05416900 MAQUOKETA RIVER AT MANCHESTER, IA

LOCATION.--Lat 42°28'12", long 91°26'54", in SW$\frac{1}{4}$ SW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.33, T.89 N., R.5 E., Delaware County, Hydrologic Unit 07060006, on left bank, 10 ft downstream of east bound bridge of Highway 20, 1.5 mi upstream of Sand Creek, 1.5 mi downstream of dam in Manchester, and 113.3 mi upstream from mouth.

DRAINAGE AREA.--275 mi^2.

PERIOD OF RECORD.--April 26, 2000 to December 16, 2002; June 23, 2003 to current year.

GAGE.--Water-stage recorder. Datum of gage is 895.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	71	76	e72	61	139	138	116	100	215	81	54
2	56	76	75	e75	61	132	135	112	97	184	76	53
3	52	76	75	e70	61	128	130	108	95	165	73	52
4	50	75	75	e65	62	126	126	104	98	148	69	52
5	49	72	75	e59	63	128	123	100	113	134	65	52
6	50	72	84	e55	82	139	127	98	127	122	63	51
7	50	70	94	e40	362	210	128	103	119	115	61	50
8	54	67	96	e33	270	240	116	107	114	105	58	52
9	53	67	94	e33	199	184	111	101	112	97	56	53
10	51	68	93	e33	144	170	109	98	108	92	60	51
11	52	68	88	e31	123	159	106	108	105	88	58	50
12	52	67	88	e29	109	149	134	111	101	87	60	49
13	53	66	79	e53	418	139	148	132	99	87	59	50
14	56	67	e69	e79	1,720	134	151	173	99	85	57	50
15	55	69	e71	e75	1,420	125	144	179	95	84	54	49
16	56	70	e72	e63	692	121	138	162	91	82	53	50
17	56	71	e70	e58	376	119	139	149	89	81	53	49
18	55	75	e72	e55	285	119	135	150	88	81	66	49
19	57	81	e68	e54	253	126	134	181	89	81	151	51
20	58	84	e70	e55	219	120	131	159	84	83	170	50
21	57	81	e70	e55	196	117	123	148	84	e100	100	48
22	59	79	e68	e62	184	117	131	144	84	e177	80	48
23	64	80	e66	e61	169	119	171	137	84	e130	72	48
24	60	77	e67	61	160	118	191	130	82	e106	66	54
25	59	75	e68	62	155	120	177	123	115	e88	63	56
26	70	75	e67	62	156	119	166	122	158	114	61	53
27	80	81	e67	62	157	120	151	117	185	154	60	51
28	73	80	e69	60	155	125	136	113	234	141	57	52
29	73	77	e65	62	---	126	127	111	253	108	56	52
30	75	76	e68	62	---	131	121	107	266	92	54	51
31	71	---	e70	61	---	140	---	104	---	85	54	---
TOTAL	1,807	2,213	2,329	1,757	8,312	4,259	4,097	3,907	3,568	3,511	2,166	1,530
MEAN	58.3	73.8	75.1	56.7	297	137	137	126	119	113	69.9	51.0
MAX	80	84	96	79	1,720	240	191	181	266	215	170	56
MIN	49	66	65	29	61	117	106	98	82	81	53	48
AC-FT	3,580	4,390	4,620	3,490	16,490	8,450	8,130	7,750	7,080	6,960	4,300	3,030
CFSM	0.21	0.27	0.27	0.21	1.08	0.50	0.50	0.46	0.43	0.41	0.25	0.19
IN.	0.24	0.30	0.32	0.24	1.12	0.58	0.55	0.53	0.48	0.47	0.29	0.21

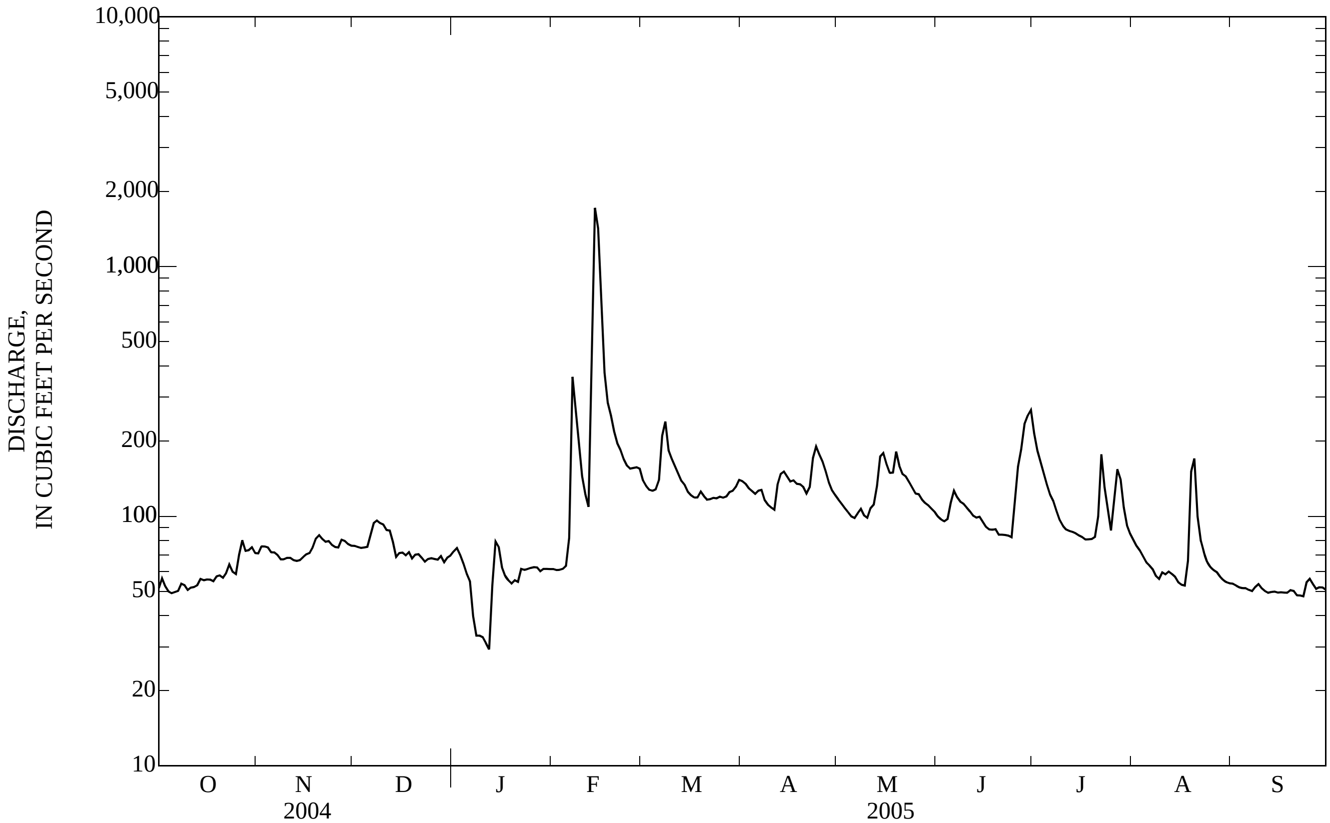
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2005, BY WATER YEAR (WY)

MEAN	109	143	110	78.1	179	377	267	515	652	278	128	110
MAX	230	281	173	115	297	645	474	1,258	1,005	540	210	302
(WY)	(2002)	(2004)	(2002)	(2002)	(2005)	(2001)	(2001)	(2004)	(2000)	(2003)	(2001)	(2001)
MIN	58.3	73.8	43.4	52.0	115	137	137	126	119	113	69.9	51.0
(WY)	(2005)	(2005)	(2001)	(2001)	(2001)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2000 - 2005	
ANNUAL TOTAL	116,458		39,456			
ANNUAL MEAN	318		108		235	
HIGHEST ANNUAL MEAN					342	2004
LOWEST ANNUAL MEAN					108	2005
HIGHEST DAILY MEAN	14,800	May 23	1,720	Feb 14	14,800	May 23, 2004
LOWEST DAILY MEAN	48	Sep 29	29	Jan 12 a	23	Dec 4, 2002
ANNUAL SEVEN-DAY MINIMUM	51	Sep 29	36	Jan 7	33	Dec 3, 2002
MAXIMUM PEAK FLOW			1,820	Feb 14	26,000	May 23, 2004
MAXIMUM PEAK STAGE			9.22	Feb 14	21.66	May 23, 2004
ANNUAL RUNOFF (AC-FT)	231,000		78,260		170,100	
ANNUAL RUNOFF (CFSM)	1.16		0.393		0.854	
ANNUAL RUNOFF (INCHES)	15.75		5.34		11.60	
10 PERCENT EXCEEDS	686		159		446	
50 PERCENT EXCEEDS	105		82		136	
90 PERCENT EXCEEDS	60		52		59	

05416900 MAQUOKETA RIVER AT MANCHESTER, IA—Continued

a Ice affected.
e Estimated



05418400 NORTH FORK MAQUOKETA RIVER NEAR FULTON, IA

LOCATION.--Lat 42°09'52", long 90°43'45", in SW$\frac{1}{4}$ SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.16, T.85 N., R.2 E., Jackson County, Hydrologic Unit 07060006, on right downstream bank at County Highway E17, 0.25 mi upstream from Prairie Creek, 7.0 mi northeast of Maquoketa, 12.4 mi upstream from mouth, and 42.4 mi upstream from mouth of Maquoketa River.

DRAINAGE AREA.--505 mi^2.

PERIOD OF RECORD.--April 29, 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 679.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood, Aug. 18, 1981, reached a stage of 17.26 ft, discharge, 10,700 ft^3/s, at site and datum 3.5 miles downstream, in use prior to Oct. 1, 1991.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	200	226	209	e188	e165	279	227	191	193	179	e133	e108
2	217	231	208	e206	e205	263	220	190	190	165	e127	e102
3	208	227	207	e196	e145	255	220	189	188	161	130	e102
4	199	e228	208	e186	e105	252	219	187	194	166	131	e107
5	191	e232	208	e171	e245	254	217	186	278	179	127	e111
6	188	e229	225	e164	e964	265	217	186	291	164	122	e114
7	190	e220	250	e147	e2,240	294	240	197	248	159	e117	112
8	214	e214	276	e154	1,440	348	249	201	247	164	e105	111
9	209	e211	279	e153	709	302	229	205	244	154	e102	126
10	200	e209	267	e147	469	267	219	196	237	140	e116	123
11	194	e209	257	e154	382	260	215	199	241	139	e130	117
12	196	e205	249	e160	395	251	235	213	232	139	e210	110
13	199	e201	237	e170	1,160	238	266	219	208	141	215	111
14	199	e202	208	e202	3,140	234	263	222	204	144	157	107
15	200	e206	e194	e280	1,860	227	248	217	195	143	141	103
16	200	e210	e212	e410	1,070	221	238	207	185	143	131	106
17	197	e211	e206	e516	691	220	237	205	178	140	126	105
18	198	e210	e220	e475	492	222	234	201	174	134	159	106
19	203	e217	e205	e418	423	237	230	223	172	129	248	112
20	202	e226	e197	e341	396	240	226	255	171	132	219	118
21	202	e221	e190	e259	404	227	219	258	170	146	196	120
22	211	e216	e172	e227	390	226	228	246	167	144	161	116
23	379	e210	e159	e206	370	225	229	237	164	138	138	110
24	291	210	e139	e206	319	220	214	226	163	136	134	111
25	236	209	e139	e223	297	222	210	215	160	e141	135	125
26	236	210	e148	e235	291	223	213	212	229	e149	e137	189
27	334	220	e145	e227	295	221	211	209	255	e163	e137	174
28	289	223	e149	e218	292	225	203	207	228	e178	e136	145
29	260	215	e151	e230	---	230	197	206	202	e153	e134	135
30	251	209	e159	e218	---	235	194	203	198	e142	e129	130
31	233	---	e172	e225	---	237	---	199	---	e139	e122	---
TOTAL	6,926	6,467	6,245	7,312	19,354	7,620	6,767	6,507	6,206	4,644	4,505	3,566
MEAN	223	216	201	236	691	246	226	210	207	150	145	119
MAX	379	232	279	516	3,140	348	266	258	291	179	248	189
MIN	188	201	139	147	105	220	194	186	160	129	102	102
AC-FT	13,740	12,830	12,390	14,500	38,390	15,110	13,420	12,910	12,310	9,210	8,940	7,070
CFSM	0.44	0.43	0.40	0.47	1.37	0.49	0.45	0.42	0.41	0.30	0.29	0.24
IN.	0.51	0.48	0.46	0.54	1.43	0.56	0.50	0.48	0.46	0.34	0.33	0.26

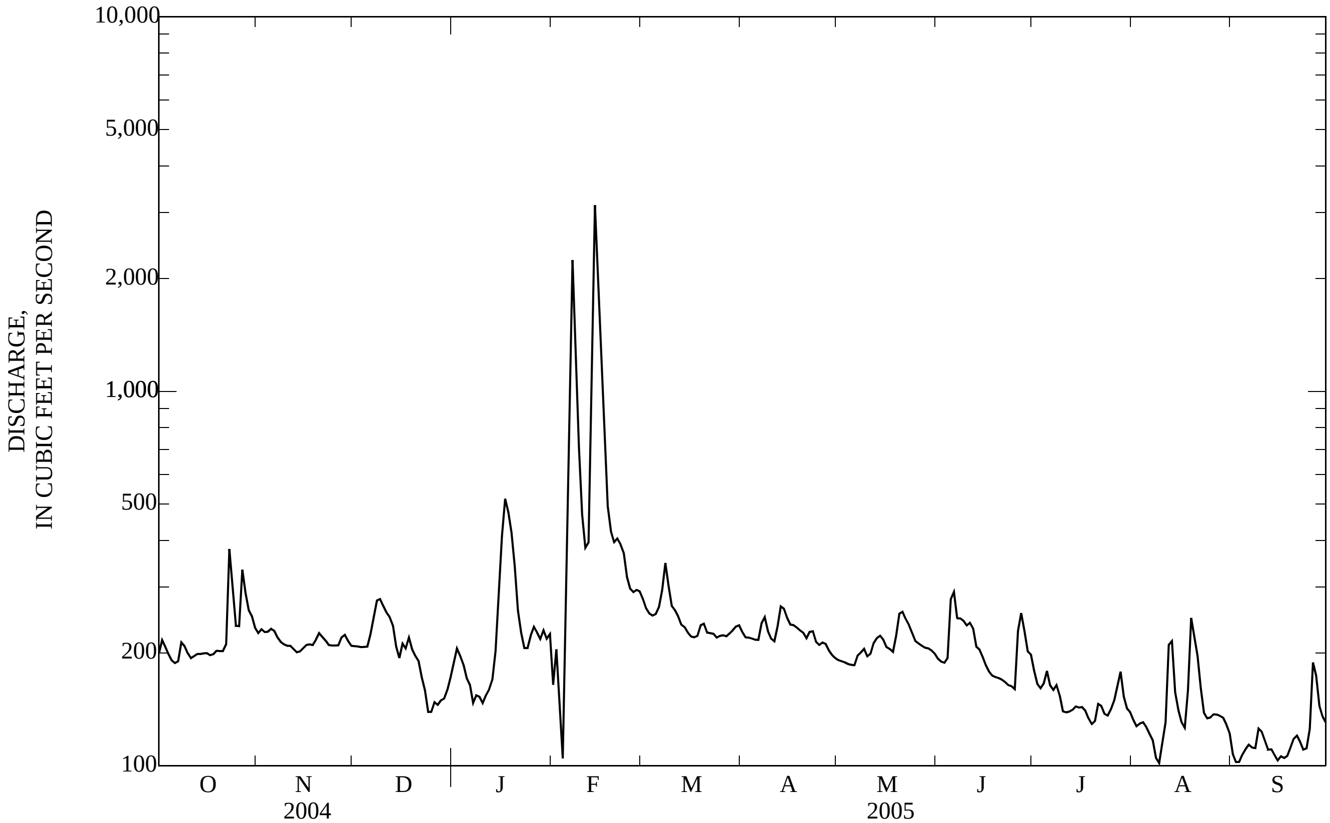
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	292	279	198	172	395	398	408	530	916	416	382	258
MAX	490	428	274	236	691	800	857	1,179	2,667	595	1,217	432
(WY)	(1999)	(2004)	(2004)	(2005)	(2005)	(2001)	(1999)	(1999)	(2002)	(2002)	(2002)	(2002)
MIN	148	182	64.5	85.3	195	223	185	210	207	150	145	119
(WY)	(2004)	(2001)	(2001)	(2000)	(2002)	(2000)	(2003)	(2005)	(2005)	(2005)	(2005)	(2005)

05418400 NORTH FORK MAQUOKETA RIVER NEAR FULTON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1998 - 2005	
ANNUAL TOTAL	146,606		86,119			
ANNUAL MEAN	401		236		386	
HIGHEST ANNUAL MEAN					585	2002
LOWEST ANNUAL MEAN					236	2005
HIGHEST DAILY MEAN	5,970	May 23	3,140	Feb 14	20,200	Jun 5, 2002
LOWEST DAILY MEAN	139	Dec 24	102	Aug 9	44	Dec 5, 2000 a
ANNUAL SEVEN-DAY MINIMUM	147	Dec 23	107	Sep 12	56	Dec 21, 2000
MAXIMUM PEAK FLOW			3,420	Feb 14	22,600	Jun 5, 2002
MAXIMUM PEAK STAGE			10.79	Feb 14	19.87	Jun 5, 2002
INSTANTANEOUS LOW FLOW					129	Oct 11, 2003
ANNUAL RUNOFF (AC-FT)	290,800		170,800		280,000	
ANNUAL RUNOFF (CFSM)	0.793		0.467		0.765	
ANNUAL RUNOFF (INCHES)	10.80		6.34		10.40	
10 PERCENT EXCEEDS	719		284		649	
50 PERCENT EXCEEDS	265		207		256	
90 PERCENT EXCEEDS	194		129		148	

a Ice affected
e Estimated



05418500 MAQUOKETA RIVER NEAR MAQUOKETA, IA

LOCATION.--Lat 42°05'00", long 90°37'58", in SW1/4 NE1/4 sec.17, T.84 N., R.3 E., Jackson County, Hydrologic Unit 07060006, on right downstream bank at State Highway 62 bridge, 900 ft upstream from Prairie Creek, 2.0 mi northeast of Maquoketa, 2.2 mi downstream from North Fork, and 27.6 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,553 mi^2.

PERIOD OF RECORD.--September 1913 to current year. Prior to October 1939, published as "below North Fork near Maquoketa". Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 405: 1914. WSP 1438: Drainage area. WSP 1508: 1914-17, 1919-25, 1926 (M), 1929, 1933-34 (M), 1943.

GAGE.--Water-stage recorder. Datum of gage is 625.96 ft. above NGVD of 1929. Prior to July 14, 1924, nonrecording gage, and July 15, 1924 to Sept. 30, 1972, recording gage at site 300 ft. upstream from State Highway 62 bridge at datum 10.00 ft. higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Diurnal fluctuation caused by power plant 4 mi upstream of station. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood, probably in 1903, reached a stage of 23.5 ft., discharge, 43,000 ft.3/s, at datum in use prior to Oct. 1, 1972.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	504	627	566	e364	e459	913	696	645	566	699	439	353
2	543	651	574	e372	e534	852	740	626	556	671	435	340
3	555	645	570	e405	e534	808	725	612	545	629	409	332
4	527	650	570	e424	e553	648	723	596	549	617	409	342
5	503	636	570	e366	e928	554	721	585	636	606	389	349
6	457	620	622	e359	e2,630	756	714	575	870	595	365	347
7	466	591	707	e366	e5,080	837	728	572	740	563	348	339
8	544	580	809	e366	4,010	872	784	558	671	538	354	361
9	536	546	829	e372	2,050	953	760	652	644	507	358	343
10	514	585	813	e359	1,440	901	729	604	627	484	338	348
11	486	572	775	e359	1,170	822	719	636	639	470	399	354
12	478	515	718	e366	1,160	799	769	599	636	454	441	345
13	490	501	682	e372	2,460	751	830	662	592	450	538	342
14	501	516	e557	e476	8,000	708	860	666	573	444	443	337
15	498	574	e433	e594	5,900	689	841	686	579	434	395	329
16	504	504	e463	e848	3,810	673	822	701	557	421	377	329
17	492	550	e476	e907	2,490	661	811	700	538	399	395	329
18	493	577	e463	e861	1,750	658	801	683	518	393	417	324
19	498	593	e437	e770	1,430	679	790	699	506	398	465	327
20	483	720	e407	e698	1,330	687	780	751	487	385	573	324
21	478	918	e372	e587	1,280	667	755	813	478	408	516	339
22	508	646	e330	e561	1,210	650	764	783	476	409	512	358
23	829	626	e326	e541	1,120	653	761	747	463	399	479	333
24	774	605	e313	e555	1,040	651	742	716	455	403	428	338
25	597	585	e331	e548	988	662	741	679	446	413	403	378
26	629	576	e326	e548	965	658	773	652	608	425	396	415
27	952	614	e346	e531	946	671	761	630	671	431	395	440
28	837	618	e361	e513	947	677	726	622	745	453	389	389
29	697	636	e346	e509	---	691	694	611	697	427	368	353
30	711	581	e364	e493	---	777	667	599	711	440	365	347
31	635	---	e373	e498	---	715	---	589	---	442	360	---
TOTAL	17,719	18,158	15,829	15,888	56,214	22,693	22,727	20,249	17,779	14,807	12,898	10,484
MEAN	572	605	511	513	2,008	732	758	653	593	478	416	349
MAX	952	918	829	907	8,000	953	860	813	870	699	573	440
MIN	457	501	313	359	459	554	667	558	446	385	338	324
AC-FT	35,150	36,020	31,400	31,510	111,500	45,010	45,080	40,160	35,260	29,370	25,580	20,800
CFSM	0.37	0.39	0.33	0.33	1.29	0.47	0.49	0.42	0.38	0.31	0.27	0.23
IN.	0.42	0.43	0.38	0.38	1.35	0.54	0.54	0.49	0.43	0.35	0.31	0.25

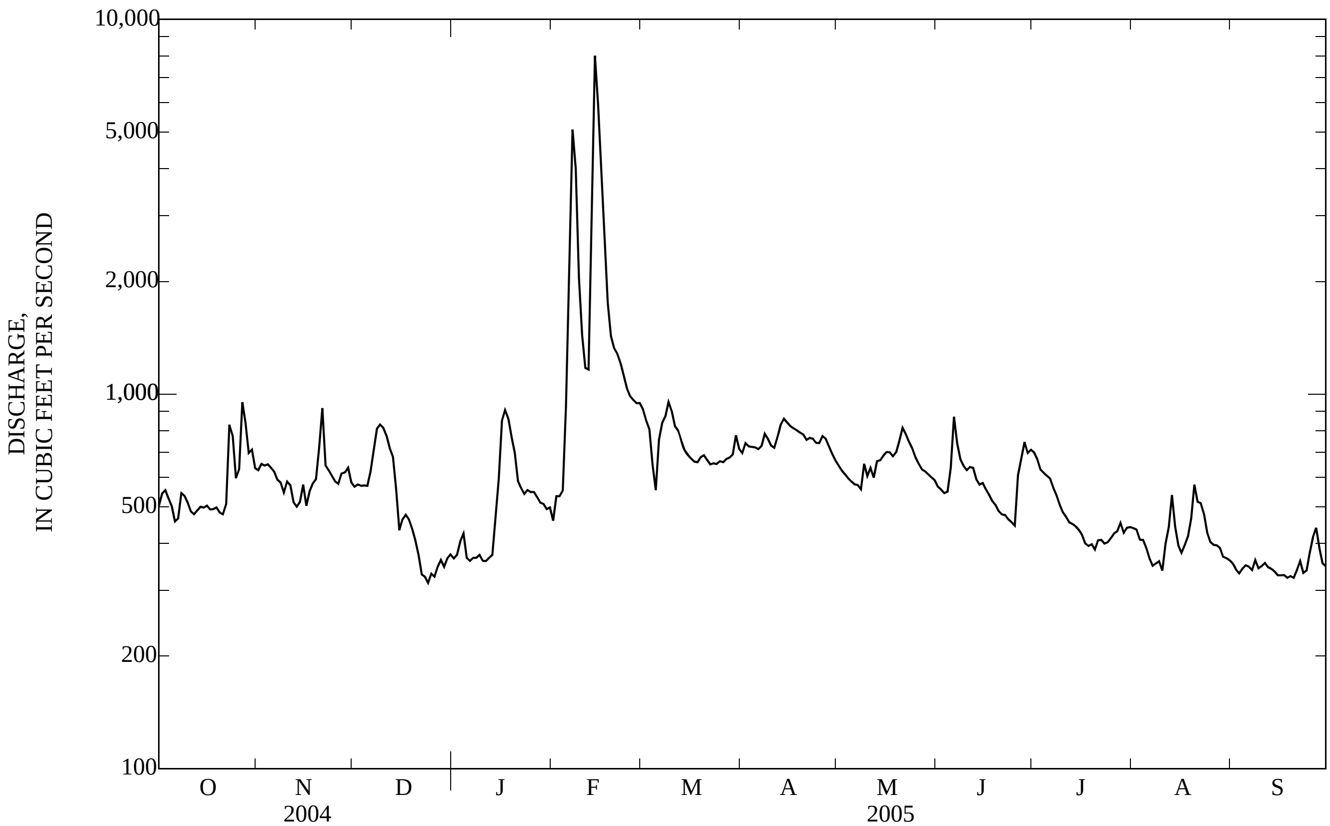
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	738	791	653	676	1,107	1,827	1,373	1,282	1,546	1,081	839	870
MAX	2,486	4,983	2,397	2,851	4,161	4,798	4,843	4,267	6,670	8,835	3,340	3,074
(WY)	(1987)	(1962)	(1983)	(1960)	(1971)	(1993)	(1973)	(1974)	(1947)	(1993)	(1924)	(1981)
MIN	210	198	168	150	196	241	305	198	170	177	227	182
(WY)	(1957)	(1959)	(2001)	(1940)	(1936)	(1934)	(1934)	(1934)	(1934)	(1936)	(1958)	(1958)

05418500 MAQUOKETA RIVER NEAR MAQUOKETA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1914 - 2005	
ANNUAL TOTAL	475,177		245,445			
ANNUAL MEAN	1,298		672		1,064	
HIGHEST ANNUAL MEAN					2,874	1993
LOWEST ANNUAL MEAN					306	1958
HIGHEST DAILY MEAN	14,100	May 25	8,000	Feb 14	45,900	Jun 5, 2002
LOWEST DAILY MEAN	313	Dec 24	313	Dec 24	105	Feb 11, 1936
ANNUAL SEVEN-DAY MINIMUM	333	Dec 22	328	Sep 14	105	Feb 11, 1936
MAXIMUM PEAK FLOW			8,840	Feb 14	48,000	Jun 27, 1944
MAXIMUM PEAK STAGE			21.27	Feb 14	24.70	Jun 27, 1944 a
ANNUAL RUNOFF (AC-FT)	942,500		486,800		770,800	
ANNUAL RUNOFF (CFSM)	0.836		0.433		0.685	
ANNUAL RUNOFF (INCHES)	11.38		5.88		9.31	
10 PERCENT EXCEEDS	2,480		844		2,000	
50 PERCENT EXCEEDS	834		573		661	
90 PERCENT EXCEEDS	504		359		301	

a Datum in use prior to Oct. 1, 1972.
e Estimated



05418600 MAQUOKETA RIVER NEAR SPRAGUEVILLE, IA
(Large River Mass Contaminents Station)

LOCATION.--Lat 42°06'04", long 90°31'04", in NE¼ NW¼ NE¼ sec.8, T.84 N., R.4 E., Jackson County, Hydrologic Unit 07060006, at bridge on County Road E23Y, 2.0 mi downstream of Dark Hollow Creek, 1.5 mi upstream of Brush Creek, 6 mi northwest of Spragueville, and 19.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,632 mi^2 (approximate).

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
18...	1330	E495	200	738	12.6	112	8.3	597	8.7	271	331	--	15.9
NOV													
17...	0710	E366	200	747	12.2	104	8.2	613	7.6	265	324	--	16.5
DEC													
06...	1340	E624	260	740	12.4	100	8.0	590	4.7	278	339	--	15.7
JAN													
10...	1435	E356	--	744	14.8	104	8.1	633	.1	270	327	--	18.5
FEB													
09...	1410	E1,920	260	722	13.0	95	7.8	386	.5	117	143	--	15.9
MAR													
14...	1420	E683	260	743	12.8	101	8.5	605	4.2	239	288	--	17.6
APR													
11...	1325	E720	208	720	11.6	125	8.5	582	16.0	230	273	--	19.9
MAY													
09...	1625	E695	167	741	13.3	151	8.4	543	20.0	230	273	--	16.0
JUN													
06...	1445	E864	260	--	8.8	--	8.2	558	25.0	230	259	11	16.5
JUL													
12...	1615	E444	--	746	12.6	161	8.5	510	26.5	175	210	--	17.2
AUG													
08...	1350	E360	122	748	11.5	147	8.4	537	26.7	227	277	--	16.5
SEP													
08...	1100	E333	130	--	9.4	--	8.2	566	21.7	234	272	6	16.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
18...	9.0	25.8	<.04	5.34	.012	.13	.051	.061	.084	5.46	5.75	.9	<.1
NOV													
17...	9.9	25.4	<.04	6.13	E.007	.10	.058	.068	.096	6.24	6.32	.7	<.1
DEC													
06...	10.0	24.2	E.03	6.27	.009	.29	.056	.068	.156	6.34	6.71	2.6	<.1
JAN													
10...	12.4	27.0	.06	6.84	.011	.25	.086	.098	.163	7.26	7.36	2.0	<.1
FEB													
09...	8.2	16.5	1.31	4.24	.028	1.30	.684	.79	1.36	6.89	8.37	9.9	.2
MAR													
14...	11.2	27.1	<.04	6.55	.017	.12	.116	.124	.188	6.81	6.93	1.0	<.1
APR													
11...	4.2	26.8	<.04	5.37	.023	.41	.037	.055	.173	5.88	6.33	2.7	<.1
MAY													
09...	4.0	23.2	<.04	4.45	.033	.52	<.012	.010	.176	4.95	5.57	3.4	<.1
JUN													
06...	8.0	24.1	<.04	4.84	.035	.89	.032	.071	.40	5.40	6.69	8.1	.2
JUL													
12...	5.0	25.6	<.04	2.99	.028	.91	<.030	.009	.187	3.48	4.05	7.9	.8
AUG													
08...	8.1	24.4	<.04	2.40	.032	.75	E.009	.023	.190	3.04	3.31	5.2	<.1
SEP													
08...	7.5	25.4	<.04	3.12	.020	.39	E.028	.042	.162	3.46	3.59	2.8	<.1

05418600 MAQUOKETA RIVER NEAR SPRAGUEVILLE, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT 18...	.9	1.4	1.8	5.3	<.006	E.088	E.005	<.005	<.005	.096	<.050	<.010	<.004
NOV 17...	.7	1.2	1.8	1.8	<.006	E.069	<.006	<.005	<.005	.091	<.050	<.010	<.004
DEC 06...	2.5	.9	4.8	5.5	<.006	E.052	.047	<.010	<.005	.099	<.050	<.010	<.004
JAN 10...	2.0	1.5	3.4	6.8	<.006	E.068	<.006	<.005	<.005	.079	<.050	<.010	<.004
FEB 09...	9.7	11.7	19.3	11.8	<.006	E.044	.023	<.005	<.005	.138	<.050	<.010	<.004
MAR 14...	1.0	2.0	1.6	2.5	<.006	E.054	<.006	<.005	<.005	.068	<.050	<.010	<.004
APR 11...	2.6	2.4	15.9	43.4	<.006	E.062	<.006	<.005	<.005	.066	<.050	<.010	<.004
MAY 09...	3.4	2.3	19.1	60.8	<.006	E.083	.115	E.002	<.005	.238	<.050	<.010	<.004
JUN 06...	7.9	2.9	52.8	74.7	<.006	E.189	1.56	<.005	<.005	3.55	<.050	<.010	<.004
JUL 12...	7.1	3.1	E27.8	E81.3	<.006	E.073	.008	<.005	<.005	.144	<.050	<.010	<.004
AUG 08...	5.1	2.4	--	--	<.006	E.062	<.006	<.005	<.005	.084	<.050	<.010	<.004
SEP 08...	2.7	1.7	20.9	57.8	<.006	E.068	<.006	<.005	<.005	.067	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT 18...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.020	<.02	<.004	<.009	<.005
NOV 17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN 10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB 09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR 14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR 11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY 09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN 06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL 12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG 08...	<.041	<.020	E.003	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP 08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

05418600 MAQUOKETA RIVER NEAR SPRAGUEVILLE, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
18...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
NOV													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
DEC													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.019	<.006	<.003	<.007
JAN													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007
FEB													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.040	<.006	<.003	<.007
MAR													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.016	<.006	<.003	<.007
APR													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
MAY													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.092	<.006	<.003	<.007
JUN													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.305	<.006	<.003	<.007
JUL													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.020	<.006	<.003	<.007
AUG													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	E.006	<.006	<.003	<.007
SEP													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	E.006	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
18...	<.015	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
06...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
10...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
09...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.010	<.02	<.034
MAR													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
09...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	E.004	<.02	<.034
JUN													
06...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.100	<.02	.009	<.02	<.034
JUL													
12...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034
AUG													
08...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
08...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

05418600 MAQUOKETA RIVER NEAR SPRAGUEVILLE, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)	Number of sam-pling points, count (00063)
OCT						
18...	<.02	<.010	<.006	<.009	95	10
NOV						
17...	<.02	<.010	<.006	<.009	97	10
DEC						
06...	<.02	<.010	<.006	<.009	137	10
JAN						
10...	<.02	<.010	<.006	<.009	112	--
FEB						
09...	<.02	<.010	<.006	<.009	1,020	5
MAR						
14...	<.02	<.010	<.006	<.009	156	10
APR						
11...	<.02	<.010	<.006	<.009	70	11
MAY						
09...	<.02	<.010	<.006	<.009	128	10
JUN						
06...	<.02	<.010	<.006	<.009	343	10
JUL						
12...	<.02	<.010	<.006	<.009	--	12
AUG						
08...	<.02	<.010	<.006	<.009	64	10
SEP						
08...	<.02	<.010	<.006	<.009	126	11

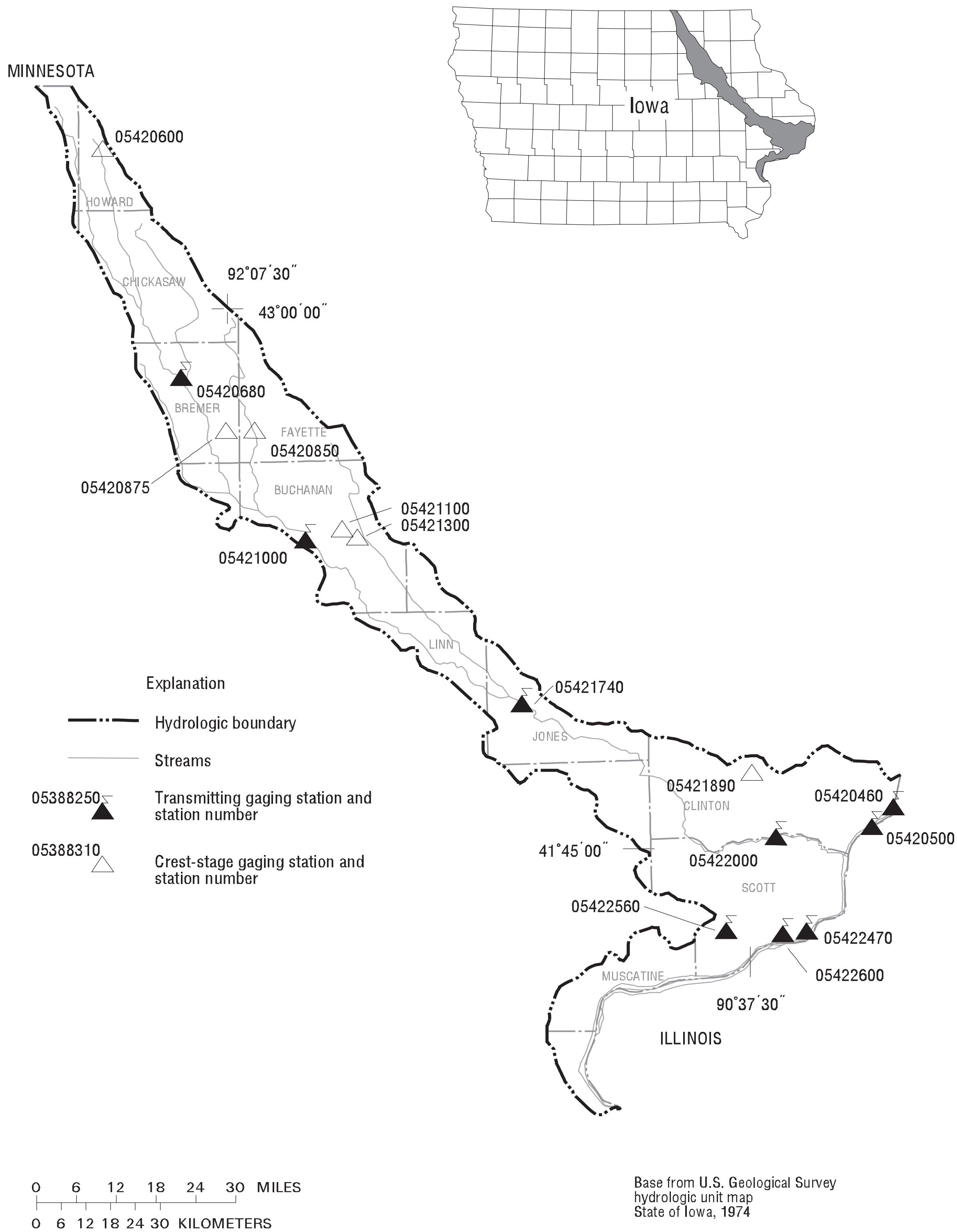


Figure 10. Locations of active continous-record and crest-stage gaging stations in the Mississippi River and Wapsipinicon River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

05420460 BEAVER SLOUGH AT THIRD STREET CLINTON, IA

LOCATION.--Lat 41°49'38", long 90°11'25", in SW1/4 SE1/4 NW1/4 sec.18, T.81 N., R.7 E., Clinton County, Hydrologic Unit 07080101, at river end of 3rd Street, at downstream end of ADM repair dock, 10.3 mi upstream from Wapsipinicon River, 4.8 mi upstream from Camanche gage, 5.9 mi downstream from Lock and Dam 13, and at mile 516.6 upstream from Ohio River.

DRAINAGE AREA.--85,600 mi^2, approximately, at Fulton-Lyons Bridge at Clinton.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 562.68 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Minor flow regulation caused by navigation dams. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11,900	10,900	9,910	8,950	e6,240	7,700	19,100	21,400	16,100	16,600	7,610	5,610
2	12,100	13,000	9,360	10,600	e6,310	6,840	20,000	20,800	15,500	16,100	6,770	4,560
3	11,900	13,400	10,100	11,500	e7,440	6,720	19,900	18,900	15,000	15,500	5,380	4,180
4	11,600	14,100	9,580	11,200	e8,660	7,700	19,900	17,400	14,700	15,000	5,690	4,120
5	11,700	14,000	8,930	10,800	e8,880	8,660	21,100	15,600	14,700	14,400	6,500	3,760
6	11,300	14,100	8,930	12,100	9,220	9,190	23,200	14,200	15,000	13,800	6,620	3,930
7	11,000	14,900	10,800	12,000	12,300	10,300	24,000	13,800	14,900	13,300	6,210	5,140
8	10,700	15,100	9,770	11,300	13,400	11,300	25,900	13,400	14,900	12,900	5,470	5,520
9	10,400	13,900	7,200	10,400	13,000	11,400	26,900	12,700	14,900	12,600	5,520	5,500
10	10,200	12,600	8,760	9,310	11,500	11,900	28,100	11,800	14,900	12,400	5,400	5,690
11	10,100	12,200	10,900	9,120	11,400	12,400	28,300	11,200	14,800	11,800	5,300	5,880
12	10,200	11,800	11,400	9,480	11,800	12,300	28,300	11,300	15,000	11,700	5,900	5,460
13	10,100	10,800	10,700	9,890	11,900	11,200	28,600	11,700	15,900	10,800	6,670	4,910
14	9,500	10,500	9,430	e9,840	14,300	8,740	28,300	12,500	16,800	10,000	6,640	4,750
15	9,410	10,300	e9,600	e8,400	16,400	9,700	27,600	13,200	17,400	8,830	6,380	5,630
16	9,190	10,400	e8,880	e6,460	16,200	8,640	26,400	13,200	18,000	8,520	4,890	5,650
17	8,590	9,910	7,130	e5,860	15,400	8,160	25,200	13,300	18,100	8,280	3,990	6,290
18	8,280	9,980	8,330	e5,640	13,000	7,900	24,700	13,400	18,000	8,230	4,240	6,470
19	8,330	9,700	e6,000	e5,350	12,900	8,420	23,600	13,500	18,000	8,280	5,270	6,890
20	8,470	9,940	e5,520	e4,940	14,400	9,480	22,000	14,400	18,100	7,250	6,430	7,040
21	8,230	10,200	e5,880	e4,920	12,000	8,660	20,700	15,000	18,700	5,930	6,720	7,040
22	7,870	9,860	e6,000	e4,990	8,590	8,040	20,700	15,500	18,800	6,190	6,170	7,290
23	8,540	9,840	e6,000	e5,810	8,880	8,660	21,000	15,900	18,900	8,090	5,630	7,040
24	9,020	11,700	e5,880	e6,070	8,520	8,620	21,400	16,000	18,300	9,650	4,980	7,040
25	8,660	11,000	e5,830	e5,860	9,190	7,870	21,400	16,200	18,200	10,000	4,910	7,080
26	8,500	10,100	e5,950	e5,810	9,770	8,230	21,700	17,300	18,500	8,690	4,890	7,610
27	8,740	10,700	e6,190	e6,190	9,840	9,220	21,900	17,500	18,900	8,780	4,520	9,610
28	9,530	11,300	e6,310	e6,360	8,740	10,600	22,500	17,600	18,600	9,020	4,450	9,540
29	9,600	11,500	e6,480	e6,290	---	11,900	22,600	17,400	17,600	9,380	4,580	9,640
30	9,790	11,100	e7,200	e6,240	---	13,200	22,400	17,100	17,000	9,410	5,630	10,200
31	10,600	---	e7,750	e6,310	---	15,500	---	16,900	---	8,520	6,030	---
TOTAL	304,050	348,830	250,700	247,990	310,180	299,150	707,400	470,100	504,200	329,950	175,390	189,070
MEAN	9,808	11,630	8,087	8,000	11,080	9,650	23,580	15,160	16,810	10,640	5,658	6,302
MAX	12,100	15,100	11,400	12,100	16,400	15,500	28,600	21,400	18,900	16,600	7,610	10,200
MIN	7,870	9,700	5,520	4,920	6,240	6,720	19,100	11,200	14,700	5,930	3,990	3,760
AC-FT	603,100	691,900	497,300	491,900	615,200	593,400	1,403,000	932,400	1,000,000	654,500	347,900	375,000
CFSM	0.11	0.14	0.09	0.09	0.13	0.11	0.28	0.18	0.20	0.12	0.07	0.07
IN.	0.13	0.15	0.11	0.11	0.13	0.13	0.31	0.20	0.22	0.14	0.08	0.08

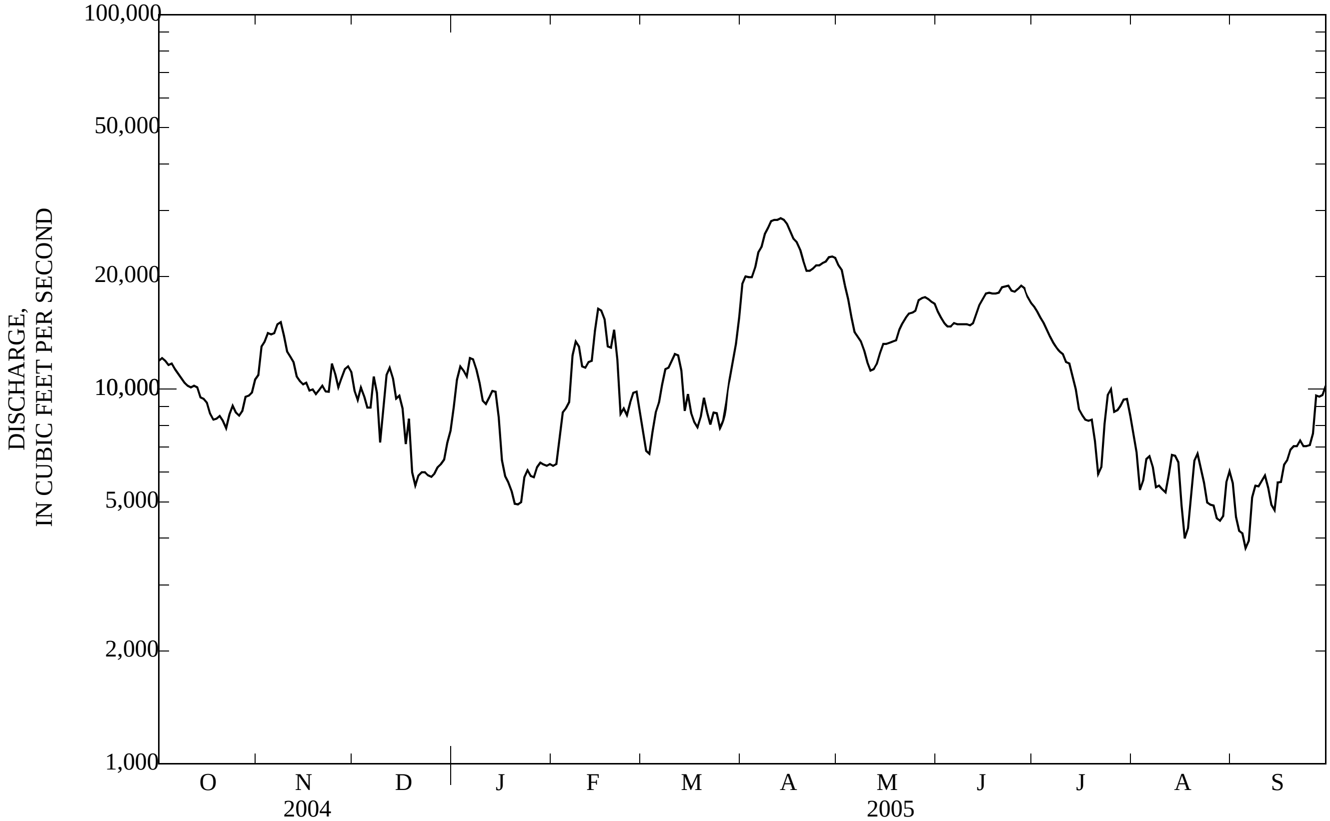
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10,480	11,490	9,020	8,390	9,592	13,880	26,530	24,730	21,060	18,280	12,170	10,430
MAX	17,900	18,320	11,680	12,780	14,510	19,900	43,980	42,580	35,240	49,690	28,330	21,640
(WY)	(2003)	(1996)	(1997)	(1995)	(1994)	(1995)	(1997)	(2001)	(1993)	(1993)	(1993)	(1993)
MIN	4,486	6,140	4,751	3,771	5,016	9,474	10,350	11,590	13,010	10,640	5,371	4,277
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2001)	(2000)	(2000)	(1997)	(2005)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1993 - 2005	
ANNUAL TOTAL	4,654,410		4,137,010			
ANNUAL MEAN	12,720		11,330		14,680	
HIGHEST ANNUAL MEAN					23,060	1993
LOWEST ANNUAL MEAN					10,720	2000
HIGHEST DAILY MEAN	41,000	Jun 20	28,600	Apr 13	61,600	Apr 23, 2001
LOWEST DAILY MEAN	3,380	Jan 26	3,760	Sep 5	2,820	Sep 8, 2003
ANNUAL SEVEN-DAY MINIMUM	3,470	Jan 25	4,460	Sep 2	3,250	Sep 5, 2003
MAXIMUM PEAK FLOW			29,500	Apr 12		
MAXIMUM PEAK STAGE			17.59	Apr 12		
ANNUAL RUNOFF (AC-FT)	9,232,000		8,206,000		10,640,000	
ANNUAL RUNOFF (CFSM)	0.149		0.132		0.171	
ANNUAL RUNOFF (INCHES)	2.02		1.80		2.33	
10 PERCENT EXCEEDS	26,600		18,700		26,600	
50 PERCENT EXCEEDS	10,700		10,000		11,900	
90 PERCENT EXCEEDS	4,370		5,650		6,290	

05420460 BEAVER SLOUGH AT THIRD STREET CLINTON, IA—Continued

e Estimated



05420500 MISSISSIPPI RIVER AT CLINTON, IA

(National stream-quality accounting network station)

LOCATION.--Lat 41°46'50", long 90°15'07", in NW$\frac{1}{4}$ sec.34, T.81 N., R.6 E., Clinton County, Hydrologic Unit 07080101, on right bank at end of Eighth Avenue in Camanche, 5.0 mi upstream from Wapsipinicon River, 6.4 mi downstream from Clinton, 10.6 mi downstream from Lock and Dam 13, and at mile 511.8 upstream from Ohio River.

DRAINAGE AREA.--85,600 mi^2, approximately, at Fulton-Lyons Bridge at Clinton.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to August 1873 (fragmentary), October 1873 to current year (October 1932 to September 1939, published as "at Le Claire"), (June 1873 to December 1932 published in the Iowa State Planning Board report "Stream-flow records of Iowa, 1873-1932").

REVISED RECORDS.--WDR IA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 562.68 ft above NGVD of 1929. June 6, 1969 to Sept. 16, 1988, water-stage recorder at site 400 ft upstream at same datum. Auxiliary water-stage recorder at Lock and Dam 13 since Oct. 1, 1958. See WSP 1728 for history of changes prior to Oct. 1, 1955.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Minor flow regulation caused by navigation dams. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1828, that of Apr. 28, 1965.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49,700	45,600	41,300	37,300	e26,000	32,100	79,400	89,100	66,900	69,300	31,700	26,700
2	50,500	54,000	39,000	44,200	e26,300	28,500	83,500	86,600	64,700	67,000	28,200	21,700
3	49,400	55,700	42,100	48,100	e31,000	28,000	83,100	78,600	62,700	64,500	22,400	19,900
4	48,300	58,700	39,900	46,800	e36,100	32,100	83,000	72,300	61,400	62,300	23,700	19,600
5	48,600	58,200	37,200	44,900	e37,000	36,100	87,900	65,100	61,200	59,800	27,100	17,900
6	46,900	58,900	37,200	50,400	38,400	38,300	96,500	59,000	62,600	57,300	27,600	18,700
7	45,800	62,200	45,200	50,200	51,100	43,100	100,000	57,500	62,100	55,300	27,000	24,500
8	44,500	62,800	40,700	47,200	55,900	47,000	108,000	55,900	61,900	53,700	23,800	26,300
9	43,400	57,800	30,000	43,200	54,300	47,500	112,000	52,900	61,900	52,500	24,000	26,200
10	42,600	52,500	36,500	38,800	47,800	49,400	117,000	49,000	62,100	51,800	23,500	27,100
11	42,000	50,800	45,400	38,000	47,400	51,800	118,000	46,700	61,600	49,100	24,100	28,000
12	42,400	49,300	47,400	39,500	49,200	51,400	118,000	47,000	62,300	48,600	26,800	26,000
13	42,100	44,900	44,500	41,200	49,500	46,600	119,000	48,600	66,100	44,900	30,300	23,400
14	39,600	43,900	39,300	e41,000	59,600	36,400	118,000	52,000	70,100	41,700	30,200	22,600
15	39,200	43,000	e40,000	e35,000	68,300	40,400	115,000	55,200	72,400	36,800	29,000	26,800
16	38,300	43,500	e37,000	e26,900	67,600	36,000	110,000	55,100	74,800	35,500	23,300	26,900
17	35,800	41,300	29,700	e24,400	64,300	34,000	105,000	55,300	75,300	34,500	19,000	28,600
18	34,500	41,600	34,700	e23,500	54,200	32,900	103,000	55,800	75,200	34,300	20,200	29,400
19	34,700	40,400	e25,000	e22,300	53,900	35,100	98,500	56,100	74,800	34,500	25,100	31,300
20	35,300	41,400	e23,000	e20,600	59,900	39,500	91,600	60,100	75,400	30,200	30,600	32,000
21	34,300	42,600	e24,500	e20,500	50,100	36,100	86,400	62,300	77,900	24,700	32,000	32,000
22	32,800	41,100	e25,000	e20,800	35,800	33,500	86,300	64,400	78,500	25,800	29,400	31,700
23	35,600	41,000	e25,000	e24,200	37,000	36,100	87,700	66,200	78,700	33,700	26,800	30,600
24	37,600	48,700	e24,500	e25,300	35,500	35,900	89,200	66,800	76,400	40,200	23,700	30,600
25	36,100	46,000	e24,300	e24,400	38,300	32,800	89,300	67,300	75,800	41,700	23,400	30,800
26	35,400	42,100	e24,800	e24,200	40,700	34,300	90,600	69,400	76,900	36,200	23,300	33,100
27	36,400	44,600	e25,800	e25,800	41,000	38,400	91,300	70,300	78,800	36,600	21,500	41,800
28	39,700	47,100	e26,300	e26,500	36,400	44,100	93,800	70,500	77,300	37,600	21,200	41,500
29	40,000	47,800	e27,000	e26,200	---	49,500	94,300	70,000	73,200	39,100	21,800	41,900
30	40,800	46,100	e30,000	e26,000	---	54,900	93,500	68,500	71,000	39,200	26,800	42,500
31	44,100	---	e32,300	e26,300	---	64,400	---	67,700	---	35,500	28,700	---
TOTAL	1,266,400	1,453,600	1,044,600	1,033,700	1,292,600	1,246,200	2,948,900	1,941,300	2,100,000	1,373,900	796,200	860,100
MEAN	40,850	48,450	33,700	33,350	46,160	40,200	98,300	62,620	70,000	44,320	25,680	28,670
MAX	50,500	62,800	47,400	50,400	68,300	64,400	119,000	89,100	78,800	69,300	32,000	42,500
MIN	32,800	40,400	23,000	20,500	26,000	28,000	79,400	46,700	61,200	24,700	19,000	17,900
AC-FT	2,512,000	2,883,000	2,072,000	2,050,000	2,564,000	2,472,000	5,849,000	3,851,000	4,165,000	2,725,000	1,579,000	1,706,000
CFSM	0.48	0.57	0.39	0.39	0.54	0.47	1.15	0.73	0.82	0.52	0.30	0.33
IN.	0.55	0.63	0.45	0.45	0.56	0.54	1.28	0.84	0.91	0.60	0.35	0.37

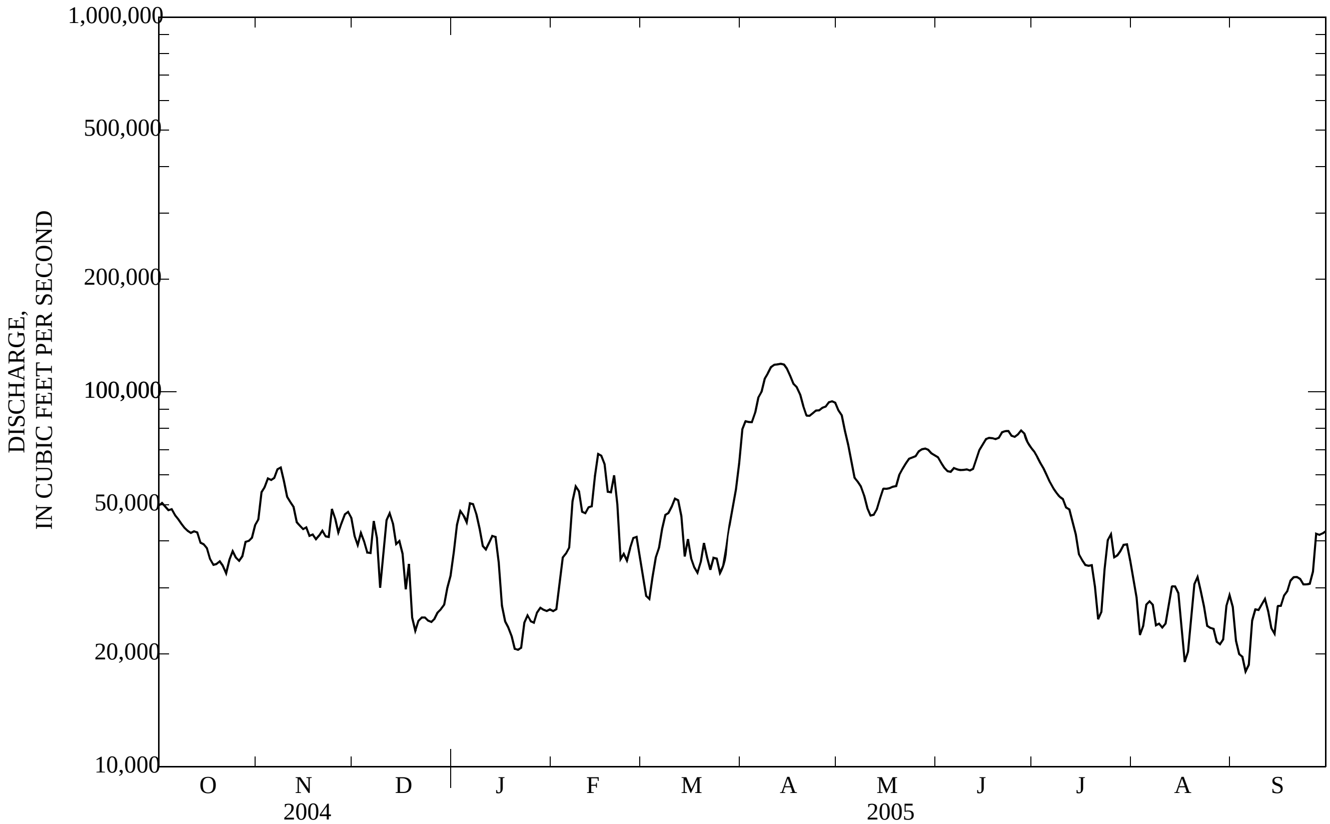
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1874 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	40,720	39,270	28,010	25,840	28,320	50,430	89,850	82,470	69,850	56,190	37,770	37,970
MAX	203,600	146,800	73,590	54,100	65,680	127,500	175,900	212,400	182,100	198,900	113,400	92,380
(WY)	(1882)	(1882)	(1882)	(1973)	(1966)	(1973)	(1997)	(1888)	(1892)	(1993)	(1993)	(1938)
MIN	13,490	13,760	11,120	11,390	14,000	17,600	26,040	23,190	15,420	14,690	12,460	13,870
(WY)	(1934)	(1934)	(1934)	(1890)	(1893)	(1934)	(1931)	(1977)	(1988)	(1988)	(1936)	(1933)

05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1874 - 2005	
ANNUAL TOTAL	19,431,100		17,357,500			
ANNUAL MEAN	53,090		47,550		48,930	
HIGHEST ANNUAL MEAN					94,690	1882
LOWEST ANNUAL MEAN					18,870	1934
HIGHEST DAILY MEAN	171,000	Jun 20	119,000	Apr 13	307,000	Apr 28, 1965
LOWEST DAILY MEAN	14,700	Jan 26	17,900	Sep 5	6,500	Dec 25, 1933
ANNUAL SEVEN-DAY MINIMUM	15,100	Jan 25	21,200	Sep 2	7,430	Dec 24, 1933
MAXIMUM PEAK FLOW			123,000	Apr 12		
MAXIMUM PEAK STAGE			14.78	Apr 12	24.65	Apr 28, 1965
ANNUAL RUNOFF (AC-FT)	38,540,000		34,430,000		35,450,000	
ANNUAL RUNOFF (CFSM)	0.620		0.556		0.572	
ANNUAL RUNOFF (INCHES)	8.44		7.54		7.77	
10 PERCENT EXCEEDS	111,000		78,100		95,000	
50 PERCENT EXCEEDS	44,500		41,900		37,800	
90 PERCENT EXCEEDS	19,000		24,600		19,000	

e Estimated



05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

(National stream-quality accounting network station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to September 1987, October 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conduc- tance, wat unf lab, uS/cm 25 degC (90095)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, air, deg C (00020)	Temper- ature, water, deg C (00010)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
OCT													
19...	1030	28,300	745	11.0	102	8.0	8.1	379	416	11.1	10.5	200	48.0
DEC													
01...	1000	39,400	755	13.3	99	8.3	E7.8	380	412	2.5	2.5	190	44.0
FEB													
23...	1025	E37,000	752	11.4	79	7.4	7.8	356	396	.5	.1	170	40.0
MAR													
24...	0955	37,200	743	15.4	121	8.2	8.3	386	414	3.0	4.2	180	43.6
APR													
11...	1030	120,000	742	11.4	112	7.9	7.6	265	288	--	13.1	120	29.5
MAY													
10...	1100	E49,000	743	14.9	157	8.5	8.4	367	409	21.0	16.5	200	47.5
24...	1050	70,300	745	8.7	92	8.0	8.2	357	393	22.0	17.0	180	41.2
JUN													
08...	1045	E76,400	745	6.4	78	8.0	8.1	430	478	--	24.1	230	50.8
20...	1030	76,400	755	5.6	67	7.7	8.0	383	421	25.0	23.6	200	48.2
JUL													
15...	1000	E36,800	751	11.8	153	8.4	8.5	433	452	31.0	27.8	210	49.0
AUG													
16...	1045	24,500	750	12.4	156	8.9	8.9	397	412	--	26.1	190	42.4
SEP													
07...	1000	25,800	754	7.6	93	8.6	--	--	425	29.4	24.5	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka- linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon- ate, wat flt incrm. titr., field, mg/L (00452)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, tons/ acre-ft (70303)
OCT													
19...	19.5	3.07	.3	10.0	165	150	179	--	15.8	.2	12.9	24.4	.34
DEC													
01...	18.3	2.54	.3	10.8	160	159	193	--	16.3	.1	11.1	28.7	.35
FEB													
23...	16.2	5.23	.4	11.5	143	134	162	--	18.6	.2	10.6	21.6	.33
MAR													
24...	17.9	3.84	.4	13.5	154	146	175	--	22.0	.2	9.00	21.6	.35
APR													
11...	11.7	4.27	.4	9.98	101	97	117	--	14.6	.1	7.99	16.0	.23
MAY													
10...	19.0	2.81	.3	9.03	139	139	163	4	15.6	.2	4.59	36.0	.34
24...	18.8	2.72	.3	9.65	136	138	164	--	15.7	.2	3.97	32.7	.32
JUN													
08...	23.9	2.75	.3	9.78	159	157	192	--	17.8	.2	6.49	45.3	.39
20...	20.5	2.40	.3	9.81	147	144	175	--	15.5	.2	10.1	36.8	.35
JUL													
15...	21.0	2.07	.3	9.88	162	158	191	--	15.1	.2	9.78	44.1	.39
AUG													
16...	20.3	2.38	.3	10.5	158	158	163	14	16.4	.2	.39	33.7	.34
SEP													
07...	--	--	--	--	--	148	179	--	--	--	--	--	--

05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)
OCT													
19...	253	--	--	--	--	--	--	--	--	.9	6.8	<2	E.15
DEC													
01...	255	.53	.61	.06	2.03	.012	.045	.058	.083	.7	5.6	--	--
FEB													
23...	240	1.3	1.5	.46	2.06	.016	.142	.173	.26	1.5	8.7	--	--
MAR													
24...	260	.62	.95	E.03	1.86	.015	.027	.053	.153	1.8	5.4	--	--
APR													
11...	167	.56	1.5	<.04	1.14	.019	.026	E.051	.26	5.4	14.0	2	E.10
MAY													
10...	251	.67	1.1	<.04	2.42	.021	.007	.023	.106	2.7	18.4	--	--
24...	236	.60	.92	<.04	1.71	.013	.020	<.004	E.123	2.3	6.7	--	--
JUN													
08...	287	.60	.92	<.04	3.88	.045	.038	.047	.130	2.2	9.7	--	--
20...	258	.68	.93	.07	2.40	.068	.083	.094	.189	2.4	8.5	--	--
JUL													
15...	284	.68	1.0	<.04	1.66	.021	.070	.095	.151	1.8	8.4	--	--
AUG													
16...	253	.59	1.2	<.04	<.06	<.008	.061	.100	.19	4.1	8.1	9	.29
SEP													
07...	--	.62	1.0	<.04	.08	E.004	.080	.114	.20	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)
OCT													
19...	1.3	46	<.06	33	<.04	<.8	.253	1.2	E6	<.08	5.6	6.1	1.6
DEC													
01...	.8	--	--	23	--	--	--	--	21	--	4.7	--	--
FEB													
23...	.6	--	--	19	--	--	--	--	84	--	3.4	--	--
MAR													
24...	.6	--	--	28	--	--	--	--	46	--	4.1	--	--
APR													
11...	.6	36	<.06	23	<.04	<.8	.150	3.3	43	.17	2.9	1.0	.7
MAY													
10...	.9	--	--	29	--	--	--	--	15	--	6.8	--	--
24...	.9	--	--	35	--	--	--	--	13	--	6.3	--	--
JUN													
08...	1.1	--	--	31	--	--	--	--	7	--	9.4	--	--
20...	1.2	--	--	29	--	--	--	--	10	--	8.7	--	--
JUL													
15...	2.0	--	--	29	--	--	--	--	<6	--	9.1	--	--
AUG													
16...	2.7	39	<.06	28	<.04	<.8	.285	6.0	E5	.36	6.6	2.4	1.2
SEP													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--

05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)
OCT													
19...	2.32	.6	<.2	104	1.9	E.5	<.006	E.038	.009	<.005	<.005	89.6	.071
DEC													
01...	--	.7	--	81.7	.8	--	<.006	E.015	<.006	<.005	<.005	96.5	.035
FEB													
23...	--	.4	--	74.7	1.0	--	<.006	E.016	<.006	<.005	<.005	98.6	.036
MAR													
24...	--	.4	--	85.1	.7	--	<.006	E.017	<.010	<.005	<.005	87.5	.033
APR													
11...	2.16	E.4	<.2	62.3	1.6	12.3	<.006	E.017	.011	<.005	<.005	100	.043
MAY													
10...	--	1.1	--	117	1.5	--	<.006	E.021	.041	<.005	<.005	87.2	.064
24...	--	.8	--	99.9	2.4	--	<.006	E.023	.045	<.005	<.005	91.8	.092
JUN													
08...	--	1.2	--	134	2.0	--	<.006	E.021	.306	<.005	<.005	106	.167
20...	--	.9	--	112	2.0	--	<.006	E.050	.173	<.005	<.005	109	.400
JUL													
15...	--	.9	--	131	3.0	--	<.006	E.036	.016	<.005	<.005	98.3	.274
AUG													
16...	3.40	.6	<.2	99.4	3.2	26.3	<.006	E.031	<.006	<.005	<.005	92.8	.156
SEP													
07...	--	--	--	--	--	--	<.006	E.012	<.006	<.005	<.005	92.9	.113

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Diazinon-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)
OCT													
19...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	94.8	<.009	<.02
DEC													
01...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	104	<.009	<.02
FEB													
23...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	118	<.009	<.02
MAR													
24...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	92.0	<.009	<.02
APR													
11...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	105	<.009	<.02
MAY													
10...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	104	<.009	<.02
24...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	109	<.009	<.02
JUN													
08...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	120	<.009	<.02
20...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	121	<.009	<.02
JUL													
15...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	109	<.009	<.02
AUG													
16...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	111	<.009	<.02
SEP													
07...	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	98.3	<.009	<.02

05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
OCT													
19...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.028	<.006	<.003	<.007	<.003
DEC													
01...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.037	<.006	<.003	<.007	<.003
FEB													
23...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.047	<.006	<.003	<.007	<.003
MAR													
24...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.107	<.006	<.003	<.007	<.003
APR													
11...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.102	<.006	<.003	<.007	<.003
MAY													
10...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.051	<.006	<.003	<.007	<.003
24...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.049	<.006	<.003	<.007	<.003
JUN													
08...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.112	<.006	<.003	<.007	<.003
20...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.135	<.006	<.003	<.007	<.003
JUL													
15...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.052	<.006	<.003	<.007	<.003
AUG													
16...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.015	<.006	<.003	<.007	<.003
SEP													
07...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.007	<.006	<.003	<.007	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)
OCT													
19...	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02
DEC													
01...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02
FEB													
23...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.009	<.02	<.034	<.02
MAR													
24...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.007	<.02	<.034	<.02
APR													
11...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02
MAY													
10...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	E.004	<.02	<.034	<.02
24...	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	E.004	<.02	<.034	<.02
JUN													
08...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02
20...	<.010	<.004	<.022	<.011	M	<.004	<.025	<.020	<.02	.009	<.02	<.034	<.02
JUL													
15...	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.006	<.02	<.034	<.02
AUG													
16...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02
SEP													
07...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02

05420500 MISSISSIPPI RIVER AT CLINTON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment dis- charge, tons/d (80155)
OCT							
19...	<.010	<.006	<.009	1.83	99	25	1,910
DEC							
01...	<.010	<.006	<.009	--	99	13	1,380
FEB							
23...	<.010	<.006	<.009	--	98	42	--
MAR							
24...	<.010	<.006	<.009	--	96	17	1,710
APR							
11...	<.010	<.006	<.009	.61	98	139	45,000
MAY							
10...	<.010	<.006	<.009	--	91	43	--
24...	<.010	<.006	<.009	--	100	51	9,680
JUN							
08...	<.010	<.006	<.009	--	99	49	--
20...	<.010	<.006	<.009	--	100	563	116,000
JUL							
15...	<.010	<.006	<.009	--	--	17	--
AUG							
16...	<.010	<.006	<.009	1.32	93	32	2,120
SEP							
07...	<.010	<.006	<.009	--	98	37	2,580

05420680 WAPSIPINICON RIVER NEAR TRIPOLI, IA

LOCATION.--Lat 42°50'10", long 92°15'26", in NW$\frac{1}{4}$ SW$\frac{1}{4}$ SW$\frac{1}{4}$ sec. 27, T.93 N., R.12 W., Bremer County, Hydrologic Unit 07080102, on left downstream bank 40 ft from bridge on State Highway 93, 1.0 mi upstream from mouth of East Fork Wapsipinicon River, 2.0 mi north of Tripoli, and 208.0 mi upstream from mouth.

DRAINAGE AREA.--343 mi^2.

PERIOD OF RECORD.--September 1957 to July 1977 (operated as a partial-record low flow measurement site). Discharge records April 1996 to September 1998; October 1, 2000 to September 30, 2004. Stage-only records May 13 to September 30, 2000; October 1, 2004 to current year.

REVISIONS.--WDR-IA-98-1: 1997(M)

GAGE.--Water stage recorder. Datum of gage is 1,000 ft above NGVD of 1929, from map.

REMARKS.--Records are considered good. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station.

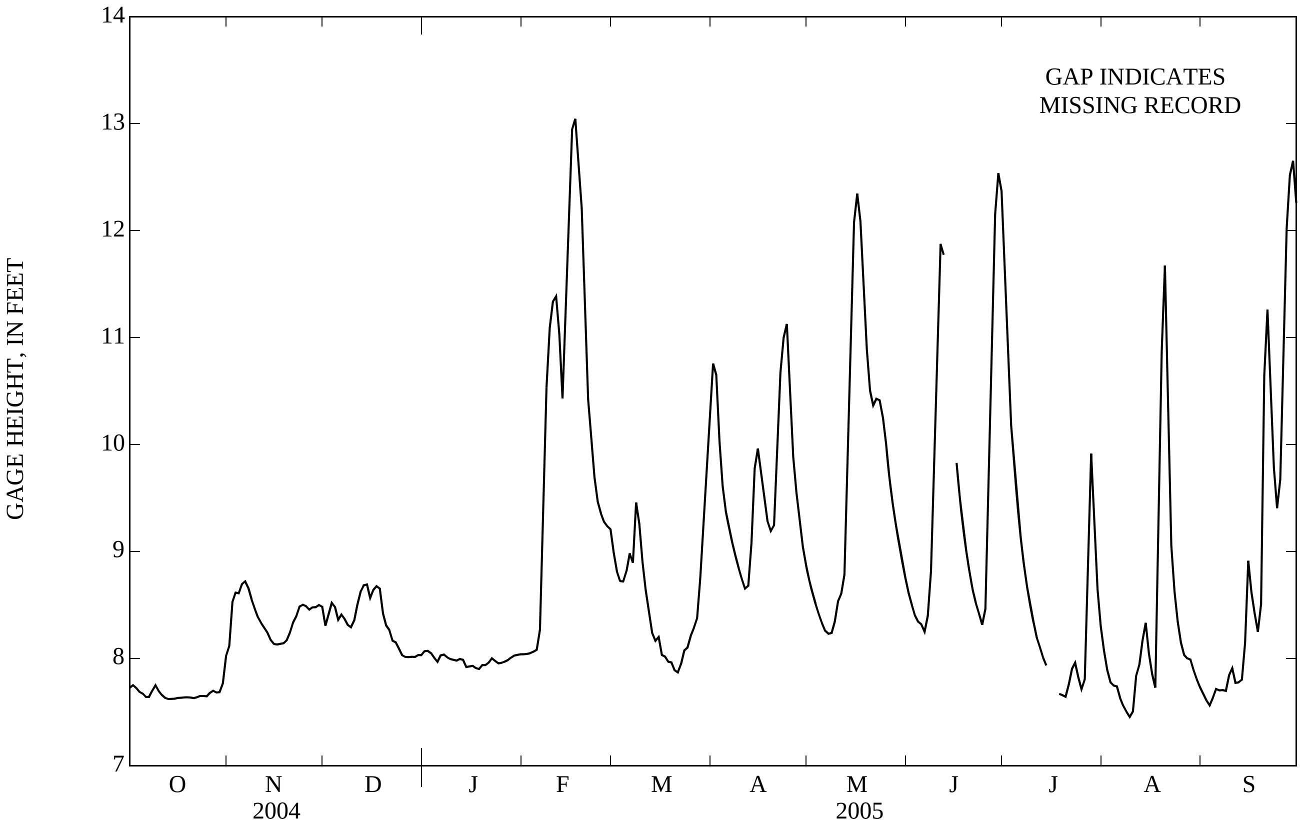
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1, 1969, discharge about 18,900 ft^3/s, gage height 17.26 ft: Flood of May 17, 1999, discharge 3,900 ft^3/s, gage height 14.39 ft; Flood of July 21, 1999, discharge 19,400 ft^3/s, gage height 18.50 ft.

EXTREMES FOR CURRENT YEAR.-- Maximum instantaneous gage height of 13.17 ft., on Feb. 17; Minimum instantaneous gage height of 7.43 ft., on Aug. 9.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.73	8.11	8.31	8.07	8.04	8.99	10.76	8.73	8.61	11.73	8.08	7.67
2	7.75	8.53	8.41	8.07	8.04	8.82	10.65	8.62	8.50	10.85	7.90	7.61
3	7.73	8.62	8.52	8.05	8.05	8.72	10.03	8.51	8.40	10.18	7.78	7.56
4	7.69	8.61	8.48	8.01	8.06	8.72	9.61	8.41	8.34	9.77	7.75	7.63
5	7.67	8.70	8.36	7.97	8.08	8.82	9.37	8.33	8.32	9.43	7.74	7.71
6	7.64	8.72	8.41	8.03	8.27	8.98	9.23	8.26	8.25	9.13	7.63	7.70
7	7.64	8.66	8.37	8.04	9.16	8.90	9.08	8.23	8.40	8.87	7.56	7.71
8	7.70	8.55	8.31	8.01	10.54	9.46	8.96	8.24	8.82	8.67	7.50	7.70
9	7.75	8.47	8.29	8.00	11.09	9.26	8.85	8.35	9.86	8.50	7.45	7.84
10	7.70	8.38	8.35	7.99	11.34	8.90	8.74	8.53	11.07	8.34	7.51	7.91
11	7.66	8.33	8.50	7.98	11.39	8.64	8.65	8.60	11.88	8.20	7.83	7.77
12	7.63	8.28	8.62	8.00	11.03	8.43	8.68	8.78	11.77	8.11	7.94	7.78
13	7.62	8.24	8.68	7.99	10.43	8.24	9.08	10.28	---	8.01	8.17	7.80
14	7.62	8.17	8.69	7.92	11.40	8.17	9.78	11.33	---	7.94	8.33	8.15
15	7.62	8.14	8.56	7.93	12.30	8.20	9.96	12.08	---	---	8.05	8.91
16	7.63	8.13	8.64	7.93	12.94	8.03	9.72	12.35	9.83	---	7.86	8.62
17	7.63	8.14	8.68	7.91	13.04	8.02	9.50	12.09	9.50	---	7.73	8.42
18	7.64	8.14	8.65	7.90	12.65	7.97	9.29	11.47	9.24	7.67	9.11	8.25
19	7.64	8.17	8.42	7.94	12.21	7.96	9.19	10.89	9.01	7.66	10.87	8.51
20	7.63	8.24	8.31	7.94	11.31	7.89	9.25	10.50	8.82	7.64	11.67	10.65
21	7.63	8.34	8.27	7.96	10.43	7.87	10.00	10.36	8.65	7.76	9.97	11.26
22	7.64	8.40	8.17	8.00	10.02	7.95	10.67	10.43	8.52	7.90	9.05	10.55
23	7.65	8.49	8.15	7.98	9.69	8.08	11.00	10.41	8.42	7.96	8.63	9.79
24	7.65	8.50	8.09	7.96	9.47	8.10	11.13	10.25	8.32	7.82	8.34	9.41
25	7.65	8.49	8.03	7.96	9.36	8.21	10.47	10.0	8.46	7.71	8.15	9.68
26	7.68	8.46	8.02	7.97	9.28	8.28	9.88	9.69	9.68	7.80	8.03	11.01
27	7.70	8.48	8.01	7.98	9.24	8.37	9.55	9.46	11.21	8.70	8.00	12.03
28	7.68	8.48	8.02	8.01	9.21	8.75	9.28	9.25	12.16	9.92	7.99	12.52
29	7.69	8.50	8.02	8.03	---	9.26	9.05	9.09	12.54	9.33	7.89	12.65
30	7.76	8.49	8.03	8.03	---	9.81	8.88	8.92	12.37	8.65	7.80	12.26
31	8.02	---	8.03	8.04	---	10.27	---	8.75	---	8.30	7.73	---
MEAN	7.68	8.40	8.34	7.99	10.22	8.58	9.61	9.65	---	---	8.26	9.10
MAX	8.02	8.72	8.69	8.07	13.04	10.27	11.13	12.35	---	---	11.67	12.65
MIN	7.62	8.11	8.01	7.90	8.04	7.87	8.65	8.23	---	---	7.45	7.56

05420680 WAPSIPINICON RIVER NEAR TRIPOLI, IA—Continued



05420680 WAPSIPINICON RIVER NEAR TRIPOLI, IA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--April 10, 1996 to September 30, 1998; June 1, 2000 to current year.

INSTRUMENTATION.--Tipping bucket rain gage.

REMARKS.--Records good except for winter period, which is poor due to intermittent snow accumulation and subsequent melting.

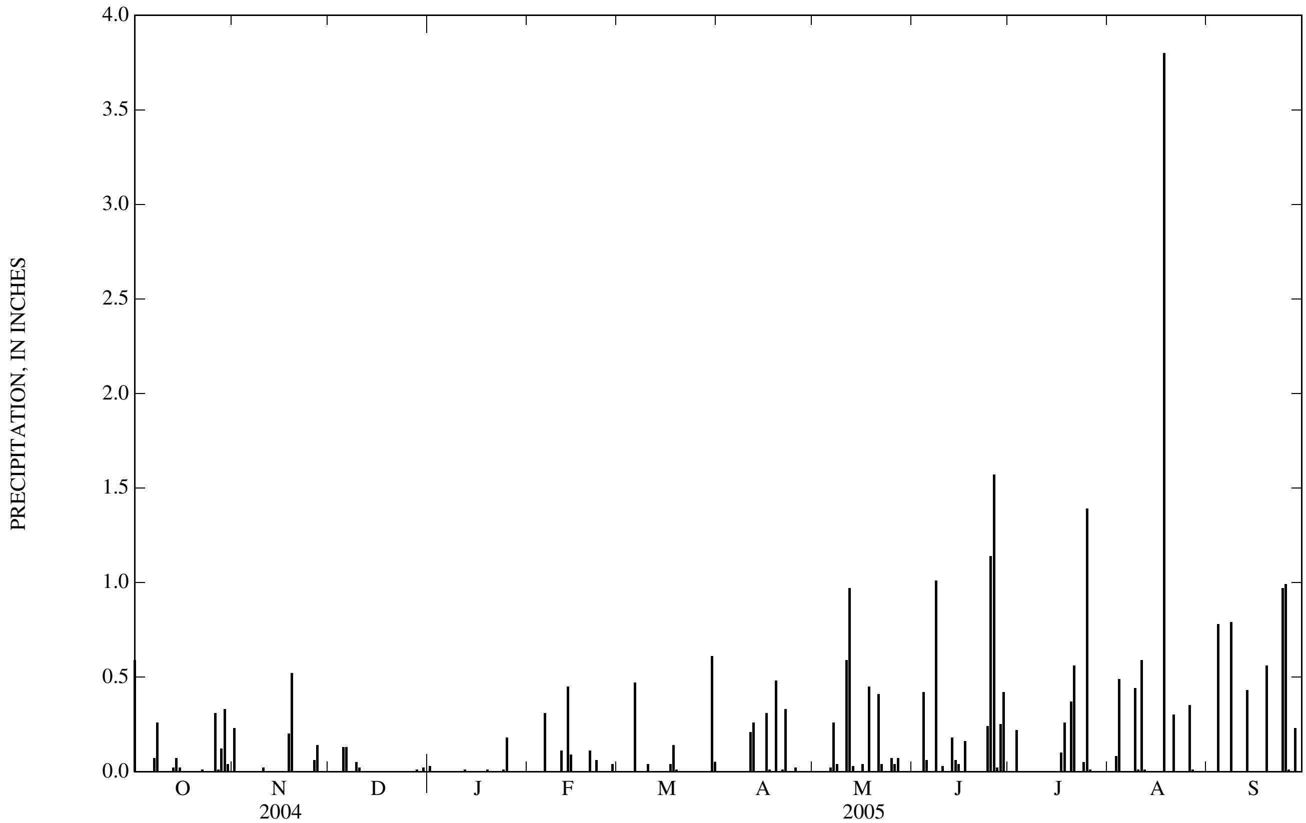
EXTREME FOR PERIOD OF RECORD.--Maximum daily accumulation 3.80 in., Aug. 18, 2005.

EXTREME FOR CURRENT YEAR.--Maximum daily accumulation, 3.80 in., Aug. 18, 2005.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.59	0.23	0.00	0.03	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	0.22	0.08	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.49	0.78
5	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
6	0.00	0.00	0.13	0.00	0.31	0.47	0.00	0.02	0.00	0.00	0.00	0.00
7	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
8	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.04	1.01	0.00	0.00	0.79
9	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00
10	0.00	0.02	0.02	0.00	0.00	0.04	0.00	0.00	0.03	0.00	0.01	0.00
11	0.00	0.00	0.00	0.00	0.11	0.00	0.21	0.59	0.00	0.00	0.59	0.00
12	0.00	0.00	0.00	0.01	0.00	0.00	0.26	0.97	0.00	0.00	0.01	0.00
13	0.02	0.00	0.00	0.00	0.45	0.00	0.00	0.03	0.18	0.00	0.00	0.43
14	0.07	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.06	0.00	0.00	0.00
15	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.04	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.16	0.10	0.00	0.00
18	0.00	0.20	0.00	0.00	0.00	0.14	0.00	0.45	0.00	0.26	3.80	0.00
19	0.00	0.52	0.00	0.01	0.00	0.01	0.48	0.00	0.00	0.00	0.00	0.56
20	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.37	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.41	0.00	0.56	0.30	0.00
22	0.01	0.00	0.00	0.00	0.06	0.00	0.33	0.04	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	0.01	0.00	0.00	0.00	0.00	0.24	0.05	0.00	0.97
25	0.00	0.00	0.00	0.18	0.00	0.00	0.02	0.07	1.14	1.39	0.00	0.99
26	0.31	0.06	0.00	0.00	0.00	0.00	0.00	0.04	1.57	0.01	0.35	0.01
27	0.01	0.14	0.00	0.00	0.04	0.00	0.00	0.07	0.02	0.00	0.01	0.00
28	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.23
29	0.33	0.00	0.00	0.00	---	0.00	0.00	0.00	0.42	0.00	0.00	0.00
30	0.04	0.00	0.02	0.00	---	0.61	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.05	---	0.00	---	0.00	0.00	---
TOTAL	1.85	1.17	0.36	0.24	1.17	1.36	1.63	3.03	5.60	2.96	6.08	4.76
MEAN	0.06	0.04	0.01	0.01	0.04	0.04	0.05	0.10	0.19	0.10	0.20	0.16
MAX	0.59	0.52	0.13	0.18	0.45	0.61	0.48	0.97	1.57	1.39	3.80	0.99
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

05420680 WAPSIPINICON RIVER NEAR TRIPOLI, IA—Continued



05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IA

LOCATION.--Lat 42°27'49", long 91°53'42", in SE1/4 sec.4, T.88 N., R.9 W., Buchanan County, Hydrologic Unit 07080102, on right bank at Sixth Street in Independence, 1,800 ft downstream from dam at abandoned hydroelectric plant, 4.9 mi downstream from Otter Creek, 9.7 mi upstream from Pine Creek, and 158 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,048 mi^2.

PERIOD OF RECORD.--July 1933 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1938-39, 1940 (M), 1947.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 882.85 ft above NGVD of 1929. Prior to May 24, 1941 nonrecording gage in tailrace of powerplant 1,800 ft upstream at datum 80.00 ft lower.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1901, that of May 18, 1999.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	161	259	180	112	577	715	682	683	3,350	393	260
2	165	192	255	185	113	552	829	624	628	3,300	328	232
3	155	197	241	185	112	518	970	579	579	3,020	284	203
4	151	244	254	185	115	511	1,010	539	551	2,290	250	200
5	143	244	267	165	119	514	905	503	548	1,530	217	216
6	141	255	299	143	156	526	794	482	519	1,130	204	201
7	136	265	300	145	498	688	712	480	485	904	191	213
8	142	260	290	150	629	761	648	482	474	756	176	207
9	134	255	299	146	528	735	593	476	516	654	162	214
10	130	251	298	140	527	751	561	462	663	559	161	212
11	131	229	288	143	596	699	531	501	887	482	174	222
12	132	214	371	149	646	615	541	553	1,090	421	199	224
13	133	204	357	153	793	535	556	804	1,270	372	226	205
14	130	195	270	137	1,990	487	597	1,330	1,430	265	231	185
15	129	197	269	136	2,630	449	710	1,660	1,380	275	242	172
16	121	193	258	127	2,130	429	820	1,870	1,120	273	255	207
17	112	190	290	127	2,050	411	862	2,020	921	249	224	319
18	110	201	327	131	1,970	402	817	2,130	779	262	251	325
19	121	227	256	109	1,970	414	782	2,230	670	230	855	296
20	121	243	247	106	2,090	396	767	2,090	585	227	1,340	266
21	116	237	226	108	1,980	373	757	1,710	515	266	1,420	326
22	117	241	202	109	1,590	362	881	1,470	455	316	1,470	613
23	127	250	187	105	1,160	361	1,260	1,380	409	307	1,190	815
24	116	245	162	107	903	371	1,380	1,360	371	293	757	867
25	116	248	161	110	791	397	1,370	1,310	449	329	569	722
26	124	254	173	110	716	408	1,350	1,210	855	486	473	646
27	131	283	165	108	694	426	1,180	1,090	2,210	569	427	789
28	130	265	163	108	656	441	968	981	e3,460	462	397	1,110
29	139	269	163	108	---	459	841	890	3,440	493	356	1,290
30	157	263	166	108	---	533	750	814	3,380	584	326	1,480
31	140	---	178	110	---	631	---	741	---	497	291	---
TOTAL	4,130	6,972	7,641	4,133	28,264	15,732	25,457	33,453	31,322	25,151	14,039	13,237
MEAN	133	232	246	133	1,009	507	849	1,079	1,044	811	453	441
MAX	180	283	371	185	2,630	761	1,380	2,230	3,460	3,350	1,470	1,480
MIN	110	161	161	105	112	361	531	462	371	227	161	172
AC-FT	8,190	13,830	15,160	8,200	56,060	31,200	50,490	66,350	62,130	49,890	27,850	26,260
CFSM	0.13	0.22	0.24	0.13	0.96	0.48	0.81	1.03	1.00	0.77	0.43	0.42
IN.	0.15	0.25	0.27	0.15	1.00	0.56	0.90	1.19	1.11	0.89	0.50	0.47

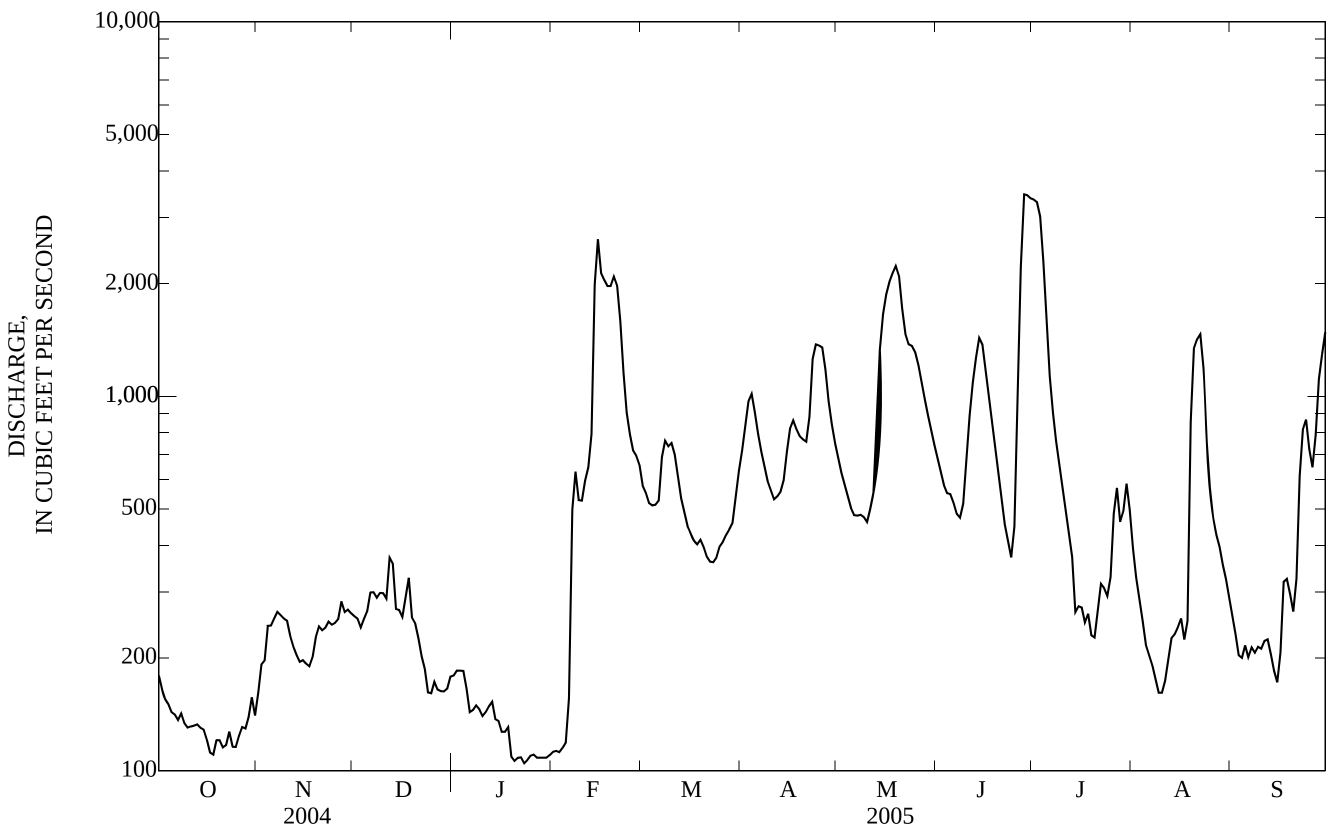
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	379	432	295	217	358	1,374	1,346	1,058	1,039	747	537	361
MAX	2,306	2,280	1,962	1,411	1,698	3,201	5,578	4,436	4,721	4,836	5,443	1,940
(WY)	(1973)	(1992)	(1992)	(1946)	(1984)	(1986)	(1993)	(2004)	(1947)	(1993)	(1993)	(1981)
MIN	29.3	42.2	26.9	12.6	19.0	68.4	198	45.3	12.4	18.9	21.5	20.5
(WY)	(1989)	(1977)	(1977)	(1977)	(1956)	(1934)	(1957)	(1934)	(1934)	(1936)	(1934)	(1976)

05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1934 - 2005	
ANNUAL TOTAL	357,889		209,531			
ANNUAL MEAN	978		574		680	
HIGHEST ANNUAL MEAN					2,304	1993
LOWEST ANNUAL MEAN					74.5	1934
HIGHEST DAILY MEAN	21,100	May 24	3,460	Jun 28 a	28,000	May 18, 1999
LOWEST DAILY MEAN	45	Feb 4	105	Jan 23	7.0	Oct 1, 1933 b
ANNUAL SEVEN-DAY MINIMUM	46	Feb 4	108	Jan 19	7.1	Jan 24, 1977
MAXIMUM PEAK FLOW			3,530	Jun 28	31,100	May 18, 1999
MAXIMUM PEAK STAGE			7.37	Jun 28	22.35	May 18, 1999
ANNUAL RUNOFF (AC-FT)	709,900		415,600		492,400	
ANNUAL RUNOFF (CFSM)	0.933		0.548		0.649	
ANNUAL RUNOFF (INCHES)	12.70		7.44		8.81	
10 PERCENT EXCEEDS	2,270		1,340		1,670	
50 PERCENT EXCEEDS	320		362		274	
90 PERCENT EXCEEDS	85		131		53	

a Estimated due to power outage.
b Many days in 1934 when power plant shut down; Jan. 25-30, 1977.
e Estimated.



05421740 WAPSIPINICON RIVER AT ANAMOSA, IA

LOCATION.--Lat 42°05'00", long 91°16'02", in SW¼ NW¼ SW¼ sec.13, T.84 N., R.4 W., Jones County, Hydrologic Unit 07080103, on left bank, 6 ft upstream of bridge on Shaw Road, 2.2 mi downstream from dam at Anamosa, 1.1 mi downstream from mouth of Dutch Creek and Fawn Creek, and 92.7 mi upstream from mouth.

DRAINAGE AREA.--1,575 mi^2.

PERIOD OF RECORD.--July 10, 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 755.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station. Precipitation records are not published, but are available.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods occurred on July 21, 1968; discharge about 20,000 cfs, gage height 22.90 ft: May 18, 1999; no gage height or discharge was determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	251	255	346	e320	e259	929	721	1,070	1,060	3,150	640	403
2	275	260	340	e328	e256	848	793	979	990	3,130	560	370
3	266	265	332	e332	e319	850	875	909	918	3,110	479	342
4	259	303	327	e328	e339	796	990	850	865	3,140	413	327
5	245	305	318	e297	e421	759	1,100	796	920	2,910	368	333
6	241	325	356	e289	e886	733	1,120	748	854	2,240	330	303
7	233	332	395	e286	e1,260	760	1,060	727	816	1,690	301	289
8	231	334	407	e296	1,160	812	963	719	768	1,380	281	281
9	233	342	399	e301	1,280	946	878	708	746	1,170	267	300
10	230	343	393	e305	1,270	940	826	673	723	1,030	258	289
11	171	342	387	e308	1,110	929	785	708	766	908	285	275
12	243	333	e403	e313	1,020	900	800	743	917	805	376	267
13	235	316	e399	e304	1,500	827	790	818	1,090	718	294	271
14	211	301	354	e402	2,180	759	795	982	1,300	643	295	271
15	223	295	e342	e465	2,400	692	797	1,370	1,460	581	307	255
16	225	296	e329	e398	2,820	650	845	1,710	1,510	488	306	247
17	222	295	e369	e380	3,000	613	951	1,920	1,420	472	312	236
18	144	293	e416	e378	2,810	591	1,020	2,060	1,260	457	341	253
19	218	324	e363	e381	2,570	584	1,030	2,220	1,100	415	325	325
20	225	335	e316	e387	2,360	572	983	2,430	967	411	431	333
21	221	341	e300	e384	2,260	557	955	2,440	843	404	989	311
22	172	345	e297	e384	2,230	540	948	2,260	749	421	1,280	287
23	246	344	e289	e395	2,090	530	991	1,970	675	437	1,370	345
24	196	337	e269	e400	1,790	518	1,240	1,770	605	453	1,380	559
25	233	337	e274	e406	1,510	533	1,510	1,680	566	429	1,090	767
26	239	334	e290	e374	1,270	546	1,570	1,640	620	444	833	798
27	239	349	e282	e315	1,160	559	1,570	1,550	812	499	683	678
28	246	351	e288	e322	1,040	574	1,500	1,450	1,450	627	584	655
29	239	360	e288	e315	---	592	1,320	1,340	2,370	641	525	844
30	215	348	e301	e315	---	613	1,180	1,230	2,990	573	486	1,060
31	260	---	e313	e298	---	659	---	1,140	---	613	445	---
TOTAL	7,087	9,640	10,482	10,706	42,570	21,711	30,906	41,610	32,130	34,389	16,834	12,274
MEAN	229	321	338	345	1,520	700	1,030	1,342	1,071	1,109	543	409
MAX	275	360	416	465	3,000	946	1,570	2,440	2,990	3,150	1,380	1,060
MIN	144	255	269	286	256	518	721	673	566	404	258	236
AC-FT	14,060	19,120	20,790	21,240	84,440	43,060	61,300	82,530	63,730	68,210	33,390	24,350
CFSM	0.15	0.20	0.21	0.22	0.97	0.44	0.65	0.85	0.68	0.70	0.34	0.26
IN.	0.17	0.23	0.25	0.25	1.01	0.51	0.73	0.98	0.76	0.81	0.40	0.29

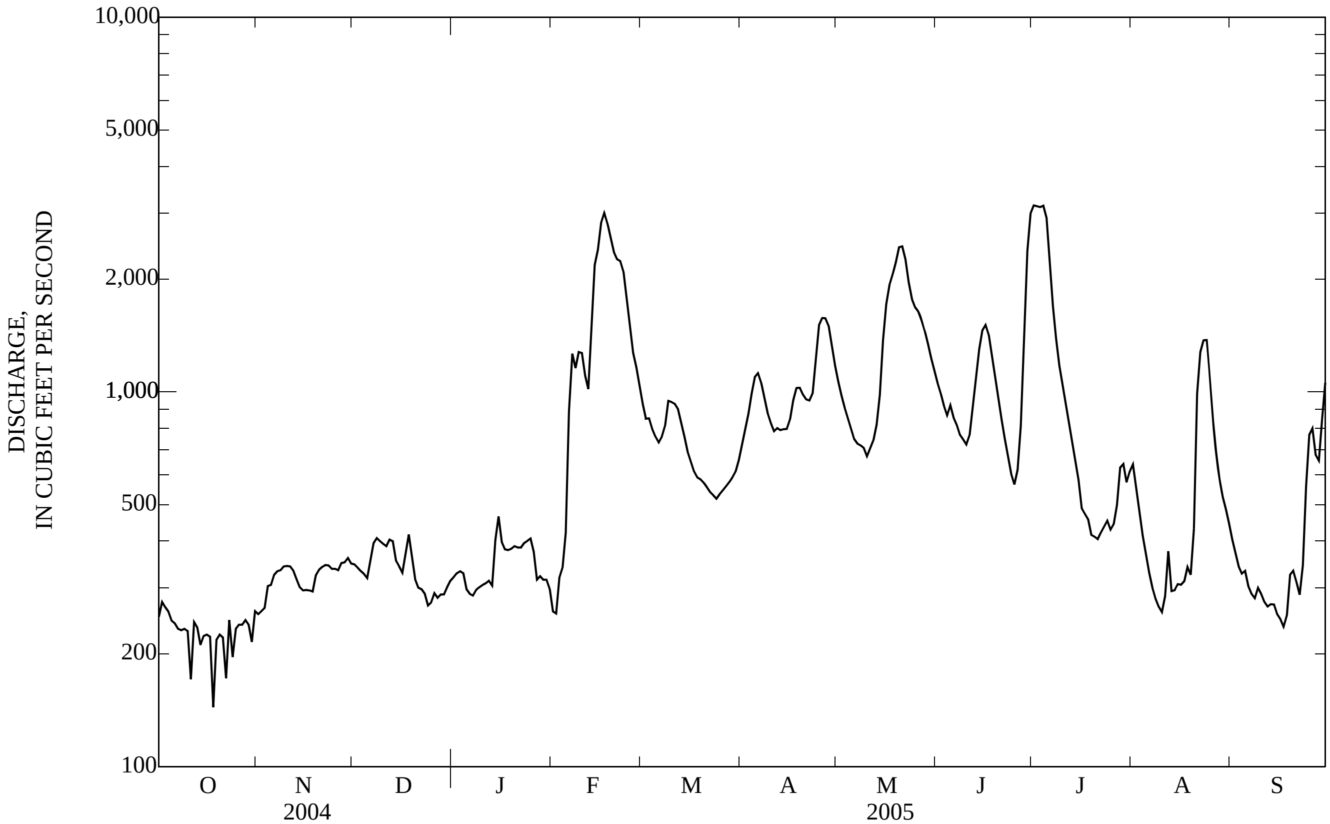
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	233	424	314	261	713	1,011	954	3,350	2,390	1,552	516	295
MAX	339	687	426	345	1,520	2,104	1,340	5,376	4,852	1,916	696	409
(WY)	(2003)	(2004)	(2004)	(2005)	(2005)	(2004)	(2004)	(2004)	(2004)	(2004)	(2002)	(2005)
MIN	132	263	176	134	83.6	228	491	1,342	1,071	1,109	276	146
(WY)	(2004)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2005)	(2005)	(2005)	(2003)	(2003)

05421740 WAPSIPINICON RIVER AT ANAMOSA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2002 - 2005	
ANNUAL TOTAL	556,197		270,339			
ANNUAL MEAN	1,520		741		998	
HIGHEST ANNUAL MEAN					1,549	2004
LOWEST ANNUAL MEAN					702	2003
HIGHEST DAILY MEAN	21,700	May 26	3,150	Jul 1	21,700	May 26, 2004
LOWEST DAILY MEAN	144	Oct 18	144	Oct 18	73	Feb 17, 2003
ANNUAL SEVEN-DAY MINIMUM	180	Jan 29	203	Oct 18	75	Feb 16, 2003
MAXIMUM PEAK FLOW			3,760	Feb 18	22,000	May 26, 2004
MAXIMUM PEAK STAGE			10.11	Feb 18	22.73	May 26, 2004
ANNUAL RUNOFF (AC-FT)	1,103,000		536,200		722,800	
ANNUAL RUNOFF (CFSM)	0.965		0.470		0.634	
ANNUAL RUNOFF (INCHES)	13.14		6.39		8.61	
10 PERCENT EXCEEDS	3,300		1,510		2,240	
50 PERCENT EXCEEDS	496		499		413	
90 PERCENT EXCEEDS	224		260		145	

e Estimated



05422000 WAPSIPINICON RIVER NEAR DE WITT, IA

LOCATION.--Lat 41°46'01", long 90°32'05", in SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.6, T.80 N., R.4 E., Clinton County, Hydrologic Unit 07080103, on left bank 5 ft upstream from bridge on Highway 956, 0.9 mi downstream from Silver Creek, 4.0 mi south of water tower in De Witt, 6.2 mi upstream from Brophy Creek, and 18.2 mi upstream from mouth.

DRAINAGE AREA.--2,330 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1308: 1937 (M). WSP 1438: Drainage area. WSP 1708: 1951.

GAGE.--Water-stage recorder. Datum of gage is 598.81 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	459	687	675	e517	e399	1,670	911	1,540	1,570	2,500	690	587
2	477	760	654	e510	e399	1,510	941	1,410	1,480	2,900	708	551
3	462	841	636	e549	e516	1,380	1,000	1,310	1,390	3,040	722	520
4	440	788	620	e556	e750	1,320	1,080	1,220	1,340	3,100	675	501
5	418	738	610	e510	e1,740	1,280	1,170	1,150	1,340	3,160	618	477
6	406	707	659	e494	e2,870	1,210	1,310	1,100	1,450	3,130	572	457
7	393	667	880	e494	e3,610	1,200	1,440	1,030	1,430	2,740	535	441
8	426	625	1,260	e500	e3,520	1,200	1,480	994	1,280	2,160	505	424
9	429	596	1,240	e513	2,340	1,180	1,390	1,010	1,220	1,750	479	416
10	402	579	1,120	e533	1,620	1,230	1,300	969	1,160	1,490	487	402
11	381	580	1,010	e530	1,400	1,330	1,220	1,090	1,160	1,310	498	399
12	375	564	925	e595	1,430	1,310	1,250	1,410	1,190	1,180	531	395
13	362	541	869	e683	1,620	1,260	1,390	1,480	1,170	1,090	503	381
14	357	522	809	e869	4,330	1,210	1,320	1,680	1,270	1,010	512	368
15	399	502	e684	e922	4,800	1,130	1,250	1,550	1,390	928	453	365
16	361	483	e658	e765	3,660	1,070	1,220	1,600	1,520	862	429	366
17	359	477	e664	e696	3,580	1,020	1,210	1,900	1,620	798	427	356
18	370	485	e680	e647	3,740	979	1,250	2,180	1,650	721	428	346
19	373	520	e605	e654	3,460	960	1,340	2,370	1,520	675	408	335
20	356	575	e441	e650	3,240	930	1,380	2,530	1,360	659	472	330
21	337	636	e435	e664	3,150	892	1,360	2,670	1,230	632	495	361
22	383	606	e464	e660	2,970	874	1,340	2,820	1,130	609	500	385
23	473	599	e467	e647	2,880	870	1,310	2,780	1,030	594	802	385
24	610	594	e474	e660	2,750	852	1,250	2,530	959	587	1,070	389
25	554	572	e461	e654	2,530	891	1,310	2,290	894	593	1,210	421
26	521	553	e487	e594	2,260	935	1,600	2,140	840	614	1,220	547
27	813	569	e503	e555	1,990	940	1,790	2,040	833	613	1,040	715
28	1,130	651	e481	e555	1,820	937	1,810	1,980	864	598	879	778
29	913	699	e487	e555	---	934	1,800	1,890	1,010	622	764	743
30	813	685	e458	e499	---	926	1,700	1,790	1,730	704	684	729
31	777	---	e497	e438	---	926	---	1,680	---	733	629	---
TOTAL	15,329	18,401	20,913	18,668	69,374	34,356	40,122	54,133	38,030	42,102	19,945	13,870
MEAN	494	613	675	602	2,478	1,108	1,337	1,746	1,268	1,358	643	462
MAX	1,130	841	1,260	922	4,800	1,670	1,810	2,820	1,730	3,160	1,220	778
MIN	337	477	435	438	399	852	911	969	833	587	408	330
AC-FT	30,410	36,500	41,480	37,030	137,600	68,150	79,580	107,400	75,430	83,510	39,560	27,510
CFSM	0.21	0.26	0.29	0.26	1.06	0.47	0.57	0.75	0.54	0.58	0.28	0.20
IN.	0.24	0.29	0.33	0.30	1.10	0.55	0.64	0.86	0.61	0.67	0.32	0.22

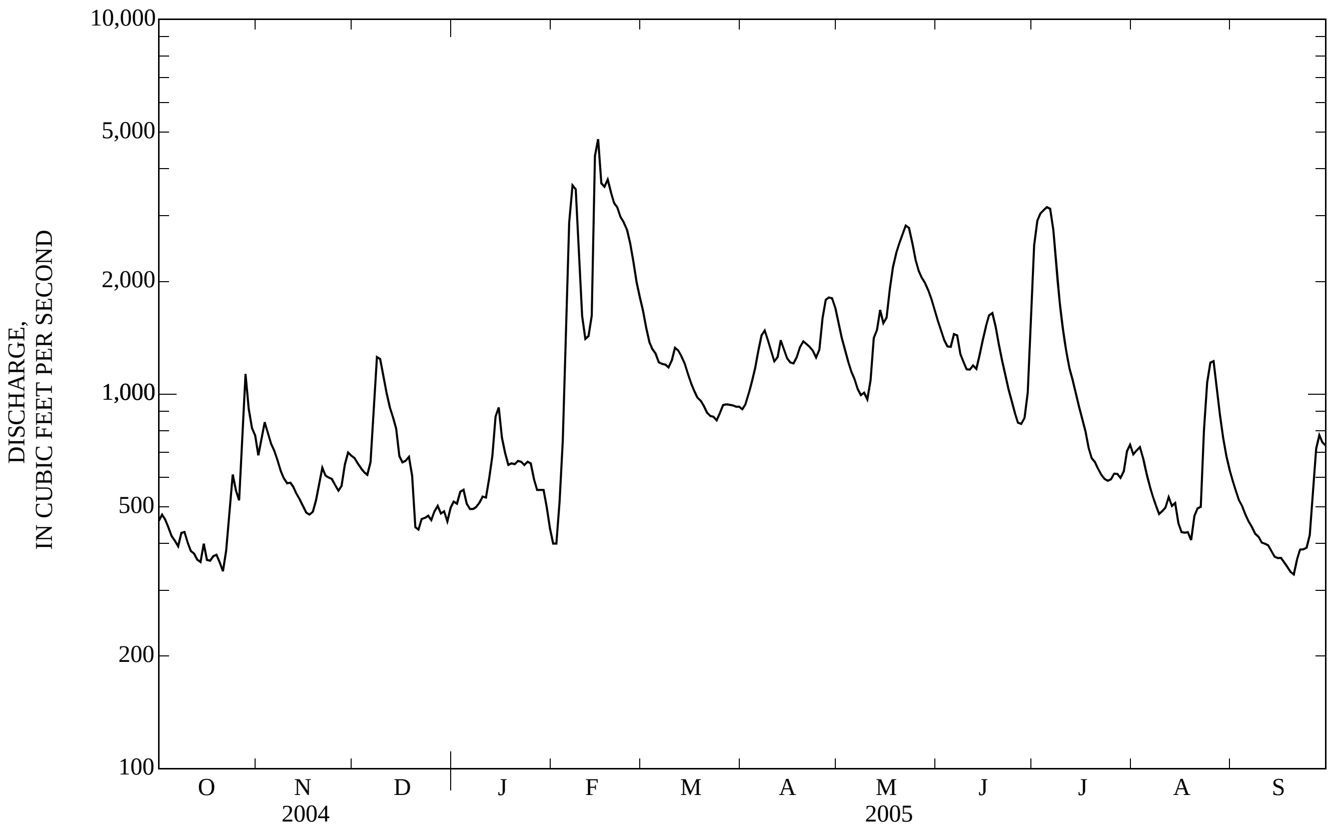
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	912	1,097	899	809	1,265	2,916	2,975	2,490	2,561	1,799	1,134	999
MAX	3,549	6,435	4,945	4,086	3,798	7,137	9,768	6,854	10,950	14,280	8,550	5,647
(WY)	(1973)	(1962)	(1983)	(1946)	(1984)	(1986)	(1993)	(1999)	(1947)	(1993)	(1993)	(1993)
MIN	137	159	104	59.4	104	301	453	323	234	165	103	133
(WY)	(1977)	(1965)	(1977)	(1977)	(1940)	(1954)	(1977)	(1977)	(1977)	(1936)	(1936)	(1976)

05422000 WAPSIPINICON RIVER NEAR DE WITT, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1935 - 2005	
ANNUAL TOTAL	838,131		385,243			
ANNUAL MEAN	2,290		1,055		1,655	
HIGHEST ANNUAL MEAN					5,461	1993
LOWEST ANNUAL MEAN					374	1989
HIGHEST DAILY MEAN	30,100	May 30	4,800	Feb 15	30,100	May 30, 2004
LOWEST DAILY MEAN	256	Feb 17	330	Sep 20	46	Jan 22, 1977
ANNUAL SEVEN-DAY MINIMUM	308	Feb 12	351	Sep 15	47	Jan 18, 1977
MAXIMUM PEAK FLOW			5,370	Feb 15	31,500	May 30, 2004
MAXIMUM PEAK STAGE			10.43	Feb 15	14.19	Jun 17, 1990
INSTANTANEOUS LOW FLOW			318	Oct 21		
ANNUAL RUNOFF (AC-FT)	1,662,000		764,100		1,199,000	
ANNUAL RUNOFF (CFSM)	0.980		0.452		0.708	
ANNUAL RUNOFF (INCHES)	13.35		6.13		9.62	
10 PERCENT EXCEEDS	4,990		1,980		3,920	
50 PERCENT EXCEEDS	882		802		916	
90 PERCENT EXCEEDS	374		423		240	

e Estimated



05422000 WAPSIPINICON RIVER NEAR DE WITT, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan- taneous dis- charge, cfs (00061)	Stream width, feet (00004)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon- ate, wat flt incrm. titr., field, mg/L (00452)	Chlor- ide, water, fltrd, mg/L (00940)
OCT													
18...	1520	369	190	738	13.2	117	8.4	476	8.7	196	221	8	20.4
NOV													
17...	0845	478	220	747	11.8	106	8.3	499	9.5	188	230	--	20.7
DEC													
06...	1615	670	200	740	12.7	103	8.1	495	5.2	186	227	--	21.8
JAN													
10...	1750	672	--	743	13.7	97	8.1	560	.2	197	239	--	22.6
FEB													
09...	1650	2,060	--	727	13.6	101	7.8	361	1.1	108	131	.--	15.8
MAR													
14...	1705	1,190	200	746	13.0	102	8.1	474	4.3	156	188	.--	21.2
APR													
11...	1630	1,210	225	739	10.5	112	8.5	420	17.0	126	150	--	22.3
MAY													
11...	0935	1,030	213	742	8.5	96	8.0	390	20.0	119	142	--	21.4
JUN													
06...	1730	1,530	235	740	13.0	168	8.8	360	26.9	92	99	6	22.0
JUL													
13...	0945	1,110	--	745	7.6	93	8.4	359	24.8	85	102	.--	23.6
AUG													
10...	0945	493	170	746	7.6	97	8.6	290	26.6	86	102	--	20.3
SEP													
08...	1500	412	206	--	9.9	--	9.0	312	25.6	98	102	8	22.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
18...	6.0	27.1	<.04	2.48	.008	.36	.008	.016	.074	2.67	3.03	2.1	<.1
NOV													
17...	7.2	28.0	<.04	4.19	E.007	.20	.024	.033	.079	4.30	4.28	1.2	<.1
DEC													
06...	7.2	28.4	.04	5.26	.009	.20	.023	.032	.128	5.84	5.77	2.1	.2
JAN													
10...	10.3	30.4	.08	6.17	.013	.06	.042	.047	.077	6.51	6.58	.5	<.1
FEB													
09...	8.5	17.6	.49	4.38	.020	.58	.391	.46	.68	5.62	6.27	4.4	<.1
MAR													
14...	9.5	28.3	<.04	5.70	.012	.15	.064	.072	.148	5.93	6.06	1.3	<.1
APR													
11...	E.2	25.2	<.04	4.83	.017	1.19	<.006	.015	.27	5.54	6.55	9.1	1.8
MAY													
11...	.5	24.0	<.04	4.14	.030	1.39	<.012	.011	.26	4.41	5.81	12.3	1.6
JUN													
06...	E.1	23.2	<.04	5.62	.027	2.04	<.030	.007	.38	5.88	8.26	22.4	2.5
JUL													
13...	2.8	21.9	<.04	5.63	.044	1.37	<.030	.019	.25	5.83	7.61	9.4	1.1
AUG													
10...	3.0	22.0	<.04	.12	E.004	1.56	<.04	.013	.33	.59	2.18	12.3	5.0
SEP													
08...	1.9	24.1	<.04	<.06	<.008	1.05	<.030	.009	.21	.38	1.39	10.2	.6

05422000 WAPSIPINICON RIVER NEAR DE WITT, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
18...	2.1	2.1	6.7	29.4	<.006	E.067	.006	<.005	<.005	.119	<.050	<.010	<.004
NOV													
17...	1.2	1.9	7.1	7.1	<.006	E.053	<.010	<.005	<.005	.100	<.050	<.010	<.004
DEC													
06...	1.9	1.8	9.4	7.1	<.006	E.041	.010	<.005	<.005	.062	<.050	<.010	<.004
JAN													
10...	.5	1.7	1.6	2.6	<.006	E.050	.011	<.005	<.005	.069	<.050	<.010	<.004
FEB													
09...	4.3	8.3	6.4	4.1	<.006	E.036	.079	<.005	<.005	.259	<.050	<.010	<.004
MAR													
14...	1.3	2.2	1.9	2.2	E.001	E.034	.021	E.004	<.005	.056	<.050	<.010	<.004
APR													
11...	7.3	2.8	36.3	92.9	<.006	E.057	.017	<.005	<.005	.076	<.050	<.010	<.004
MAY													
11...	10.7	3.9	31.4	110	<.006	E.101	1.42	E.004	<.005	.930	<.050	<.010	<.004
JUN													
06...	19.9	2.5	63.6	191	<.006	E.096	.104	<.005	<.005	.398	<.050	<.010	<.004
JUL													
13...	8.2	3.4	--	--	<.006	E.174	.008	<.005	<.005	.442	<.050	<.010	<.004
AUG													
10...	7.3	3.2	--	--	<.006	E.095	<.006	<.005	<.005	.178	<.050	<.010	<.004
SEP													
08...	9.6	3.2	53.5	102	<.006	E.022	<.006	<.005	<.005	.094	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
18...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN													
06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
10...	<.041	<.020	.010	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

05422000 WAPSIPINICON RIVER NEAR DE WITT, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
18...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.028	<.006	<.003	<.007
NOV													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.043	<.006	<.003	<.007
DEC													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.034	<.006	<.003	<.007
JAN													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.035	<.006	<.003	<.007
FEB													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.520	<.006	<.003	<.007
MAR													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.057	<.006	<.003	<.007
APR													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.041	<.006	<.003	<.007
MAY													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.130	<.006	<.003	<.007
JUN													
06...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.052	<.006	<.003	<.007
JUL													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.059	<.006	<.003	<.007
AUG													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.026	<.006	<.003	<.007
SEP													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.021	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
18...	<.015	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
06...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
10...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
09...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.005	<.02	<.034
MAR													
14...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
11...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.010	<.02	<.034
JUN													
06...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.039	<.02	<.034
JUL													
13...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.009	<.02	<.034
AUG													
10...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
08...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

05422000 WAPSIPINICON RIVER NEAR DE WITT, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)	Number of sampling points, count (00063)
OCT						
18...	<.02	<.010	<.006	<.009	57	10
NOV						
17...	<.02	<.010	<.006	<.009	30	10
DEC						
06...	<.02	<.010	<.006	<.009	216	10
JAN						
10...	<.02	<.010	<.006	<.009	83	--
FEB						
09...	<.02	<.010	<.006	<.009	--	--
MAR						
14...	<.02	<.010	<.006	<.009	43	10
APR						
11...	<.02	<.010	<.006	<.009	131	11
MAY						
11...	<.02	<.010	<.006	<.009	141	11
JUN						
06...	<.02	<.010	<.006	<.009	1,450	--
JUL						
13...	<.02	<.010	<.006	<.009	122	--
AUG						
10...	<.02	<.010	<.006	<.009	218	11
SEP						
08...	<.02	<.010	<.006	<.009	66	10

05422470 CROW CREEK AT BETTENDORF, IA

LOCATION.--Lat 41°33'04", long 90°27'18", in NW1/4 NW1/4 sec.24, T.78 N., R.4 E., Scott County, Hydrologic Unit 07080101, on left bank 200 ft upstream from bridge on Valley Road (old U.S. Highway 67), 3.5 mi east of U.S. Highway 6, and 0.7 mi upstream from mouth.

DRAINAGE AREA.--17.8 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 576.23 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	19	6.7	5.7	e6.3	12	8.8	4.5	5.8	3.5	0.21	0.31
2	4.7	18	5.9	e8.2	e9.0	12	8.6	4.5	5.5	1.8	0.18	0.30
3	1.9	8.7	5.5	e19	e18	11	8.4	4.5	5.4	1.8	0.17	0.36
4	1.4	13	5.3	14	e25	10	8.8	4.4	5.9	1.9	0.16	0.68
5	1.1	8.3	5.3	7.9	e19	9.9	9.1	4.3	12	2.1	0.15	0.50
6	1.1	6.5	20	9.6	28	9.9	9.7	4.2	6.3	2.1	0.14	1.0
7	1.5	5.7	22	7.2	42	11	9.3	4.4	5.2	2.0	0.14	0.45
8	15	5.0	15	6.0	25	9.8	8.4	4.3	5.1	2.0	0.13	0.47
9	5.4	4.9	12	5.7	20	9.1	7.5	12	4.5	2.1	0.13	0.78
10	2.2	4.8	10	5.4	17	10	7.7	5.7	4.0	1.8	0.18	0.66
11	1.6	4.6	10	5.6	15	9.8	7.9	35	3.6	1.4	7.1	0.42
12	1.5	4.6	8.9	23	14	9.1	19	13	3.7	1.6	14	0.36
13	1.4	4.3	7.7	e26	35	8.8	11	31	4.1	1.7	5.7	0.44
14	1.4	4.4	e7.2	e14	47	8.0	8.9	18	4.7	2.0	2.2	4.8
15	1.8	4.4	6.9	e9.4	31	7.5	9.2	14	5.1	e1.9	1.2	0.64
16	1.6	4.7	6.9	e8.2	25	7.7	9.6	12	3.9	e1.5	0.73	0.51
17	1.8	4.7	e6.8	e7.9	21	7.8	9.8	11	3.5	e0.97	0.53	0.33
18	1.8	6.1	6.6	e8.1	19	7.9	9.4	9.9	3.2	e1.3	1.7	0.27
19	1.8	21	e6.5	e8.5	17	8.2	9.2	10	2.9	e1.8	e1.1	0.27
20	2.3	8.9	5.9	e8.6	21	7.0	10	9.2	3.0	4.8	e2.3	0.25
21	1.9	5.8	5.8	e7.6	18	6.6	10	8.7	2.5	e3.1	e0.98	0.24
22	5.5	4.6	5.5	e6.1	15	6.7	14	8.6	2.2	e2.0	0.74	0.21
23	34	4.4	e5.4	e5.7	14	8.9	11	8.1	2.0	e1.7	0.46	0.19
24	6.5	4.0	e5.6	e6.4	14	9.3	7.3	7.8	1.8	e1.3	0.39	0.25
25	3.4	3.7	e5.5	e7.9	13	21	7.8	7.5	1.5	e1.2	0.55	0.56
26	17	3.6	e5.6	e7.0	12	13	8.3	7.0	1.6	14	2.6	0.36
27	14	18	e5.2	e5.5	13	11	6.8	6.8	1.6	e7.0	0.79	0.27
28	6.0	11	5.9	e4.5	14	10	5.4	6.8	1.4	e3.3	0.52	1.2
29	4.6	7.5	5.0	e3.5	---	9.6	5.0	6.6	1.3	e2.1	0.45	2.7
30	9.2	7.0	5.7	e3.7	---	12	4.8	6.5	6.7	0.68	0.38	0.34
31	5.9	---	5.4	e4.1	---	9.5	---	6.0	---	0.34	0.35	---
TOTAL	161.8	231.2	241.7	270.0	567.3	304.1	270.7	296.3	120.0	76.79	46.36	20.12
MEAN	5.22	7.71	7.80	8.71	20.3	9.81	9.02	9.56	4.00	2.48	1.50	0.67
MAX	34	21	22	26	47	21	19	35	12	14	14	4.8
MIN	1.1	3.6	5.0	3.5	6.3	6.6	4.8	4.2	1.3	0.34	0.13	0.19
AC-FT	321	459	479	536	1,130	603	537	588	238	152	92	40
CFSM	0.29	0.43	0.44	0.49	1.14	0.55	0.51	0.54	0.22	0.14	0.08	0.04
IN.	0.34	0.48	0.51	0.56	1.19	0.64	0.57	0.62	0.25	0.16	0.10	0.04

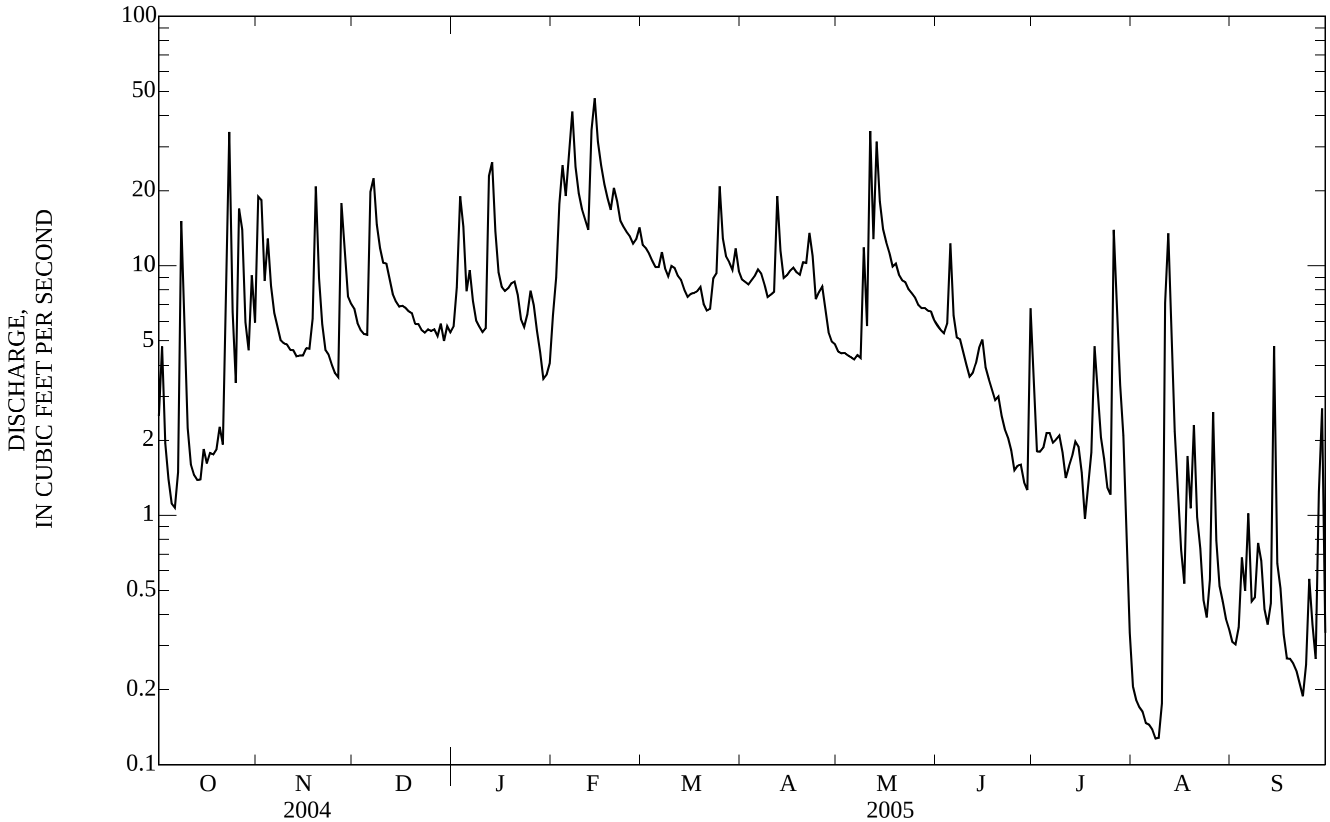
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.76	10.7	11.0	7.14	13.4	20.5	20.5	25.5	26.7	13.7	13.4	6.52
MAX	50.9	45.4	44.1	25.0	42.1	54.6	61.3	111	157	65.4	99.8	34.7
(WY)	(1982)	(1993)	(1983)	(1988)	(1985)	(1979)	(1983)	(1996)	(1990)	(1992)	(1990)	(1992)
MIN	0.67	1.19	0.77	1.09	0.76	3.45	2.33	1.68	3.17	0.74	0.85	0.49
(WY)	(1989)	(1990)	(1990)	(2000)	(1989)	(1989)	(1989)	(1989)	(1988)	(1988)	(1978)	(1988)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1978 - 2005	
ANNUAL TOTAL	4,898.81		2,606.37			
ANNUAL MEAN	13.4		7.14		14.9	
HIGHEST ANNUAL MEAN					31.7	1990
LOWEST ANNUAL MEAN					3.35	1989
HIGHEST DAILY MEAN	259	May 30	47	Feb 14	1,660	Jun 16, 1990
LOWEST DAILY MEAN	0.40	Feb 13	0.13	Aug 8 a	0.13	Aug 16, 1988
ANNUAL SEVEN-DAY MINIMUM	0.43	Feb 8	0.15	Aug 3	0.15	Aug 3, 2005
MAXIMUM PEAK FLOW			84	Jan 12 b	7,700	Jun 16, 1990
MAXIMUM PEAK STAGE			4.38	Jan 12 b	11.03	Jun 16, 1990
INSTANTANEOUS LOW FLOW			0.10	Aug 8 a	0.06	Aug 18, 1988
ANNUAL RUNOFF (AC-FT)	9,720		5,170		10,800	
ANNUAL RUNOFF (CFSM)	0.752		0.401		0.837	
ANNUAL RUNOFF (INCHES)	10.24		5.45		11.38	
10 PERCENT EXCEEDS	31		15		32	
50 PERCENT EXCEEDS	6.0		5.7		6.9	
90 PERCENT EXCEEDS	1.0		0.51		1.3	

05422470 CROW CREEK AT BETTENDORF, IA—Continued

a Also Aug. 9.
b Also May 11.
e Estimated.



05422560 DUCK CREEK AT 110th AVENUE, DAVENPORT, IA

LOCATION.--Lat 41°33'24", long 90°41'15", in NW$\frac{1}{4}$ SW$\frac{1}{4}$, sec.13, T.78 N., R.2 E., Scott County, Hydrologic Unit 07080101, on left bank 20 ft downstream from the bridge on County Road Y48 (110th Street), 0.3 mi downstream from unnamed creek, 3 mi west of Davenport, and 13.95 mi upstream from mouth.

DRAINAGE AREA.--16.1 mi^2.

PERIOD OF RECORD.--March 1994 to current year.

GAGE.--Water stage recorder. Datum of gage is 659.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharge, which is poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	7.1	6.5	e4.9	e6.7	12	10	6.6	5.8	3.2	0.28	e0.06
2	1.4	11	6.0	e8.8	e9.3	11	10	6.3	5.7	3.4	0.43	e0.06
3	1.2	8.9	5.9	e24	e16	11	10	6.1	5.6	3.3	0.57	e0.05
4	1.1	9.0	5.9	e15	e22	11	9.9	5.9	5.7	3.0	0.50	e0.05
5	1.1	8.0	5.6	e7.6	e14	10	9.8	6.3	5.9	3.1	e0.29	e0.05
6	1.2	7.5	11	e8.8	22	10	9.4	6.3	5.2	2.7	e0.20	e0.04
7	1.2	6.4	15	e5.6	33	9.9	9.2	6.2	4.9	1.8	e0.13	e0.03
8	2.3	5.6	15	e4.6	21	8.9	8.8	6.0	5.0	1.7	e0.11	e0.08
9	1.2	5.5	14	e4.4	16	8.4	9.0	7.1	5.3	1.3	e0.13	e0.07
10	0.88	5.4	12	e4.4	13	8.7	9.0	7.0	4.9	1.1	e0.35	e0.05
11	0.75	4.9	11	e4.8	12	8.1	9.1	23	4.6	1.6	e1.1	e0.03
12	0.70	4.5	10	e11	11	7.5	14	15	4.2	2.0	e1.3	e0.02
13	0.64	4.3	8.5	e23	31	7.1	13	26	4.0	1.8	e0.86	e0.59
14	0.63	4.2	e7.0	e13	46	7.2	11	25	3.9	1.3	e0.49	e0.35
15	0.71	4.2	e6.9	e9.1	35	6.9	11	19	3.7	1.1	e0.30	e0.20
16	0.79	4.3	e7.2	e8.6	29	7.2	10	16	3.8	1.1	e0.35	e0.15
17	0.89	4.1	e6.6	e7.9	25	7.2	10	14	4.2	1.0	e0.42	e0.11
18	0.83	4.1	e6.9	e8.8	21	7.8	9.5	13	4.0	0.58	e1.4	e0.07
19	0.85	6.0	e5.8	e8.5	19	7.7	9.1	12	3.9	0.75	e0.63	e0.14
20	0.82	5.2	e6.7	e7.4	20	7.3	8.7	11	3.5	1.3	e1.7	e0.07
21	0.78	4.6	e6.9	e6.7	17	7.4	8.2	10	3.7	1.2	e0.84	e0.04
22	e1.5	4.6	e5.2	e6.1	16	7.7	8.4	9.6	3.5	0.85	e0.48	e0.07
23	6.0	4.7	e4.7	e5.7	15	8.3	7.7	8.9	3.2	0.72	e0.21	e0.11
24	2.5	4.4	e4.3	e6.8	15	8.6	7.5	8.2	3.1	0.50	e0.21	e0.67
25	1.8	4.2	e4.5	e8.3	14	13	7.7	7.8	3.2	0.27	e1.5	e0.32
26	7.2	4.2	e4.7	e7.3	13	13	7.5	7.5	3.1	0.43	e0.77	e0.15
27	8.3	7.2	e5.1	e5.8	13	12	7.2	7.2	3.0	0.61	e0.30	e0.09
28	5.1	7.2	e5.3	e4.7	13	12	6.6	6.8	3.3	0.28	e0.23	e1.0
29	4.1	6.6	e4.1	e3.9	---	12	6.7	6.6	3.2	0.17	e0.16	e0.43
30	7.3	6.5	e4.5	e3.6	---	12	6.8	6.5	3.8	0.13	e0.10	e0.24
31	5.4	---	e4.7	e4.3	---	11	---	6.0	---	0.09	e0.07	---
TOTAL	70.37	174.4	227.5	253.4	538.0	291.9	274.8	322.9	126.9	42.38	16.41	5.39
MEAN	2.27	5.81	7.34	8.17	19.2	9.42	9.16	10.4	4.23	1.37	0.53	0.18
MAX	8.3	11	15	24	46	13	14	26	5.9	3.4	1.7	1.0
MIN	0.63	4.1	4.1	3.6	6.7	6.9	6.6	5.9	3.0	0.09	0.07	0.02
MED	1.2	5.3	6.5	7.3	16	8.7	9.1	7.5	4.0	1.1	0.35	0.08
AC-FT	140	346	451	503	1,070	579	545	640	252	84	33	11
CFSM	0.14	0.36	0.46	0.51	1.19	0.58	0.57	0.65	0.26	0.08	0.03	0.01
IN.	0.16	0.40	0.53	0.59	1.24	0.67	0.63	0.75	0.29	0.10	0.04	0.01

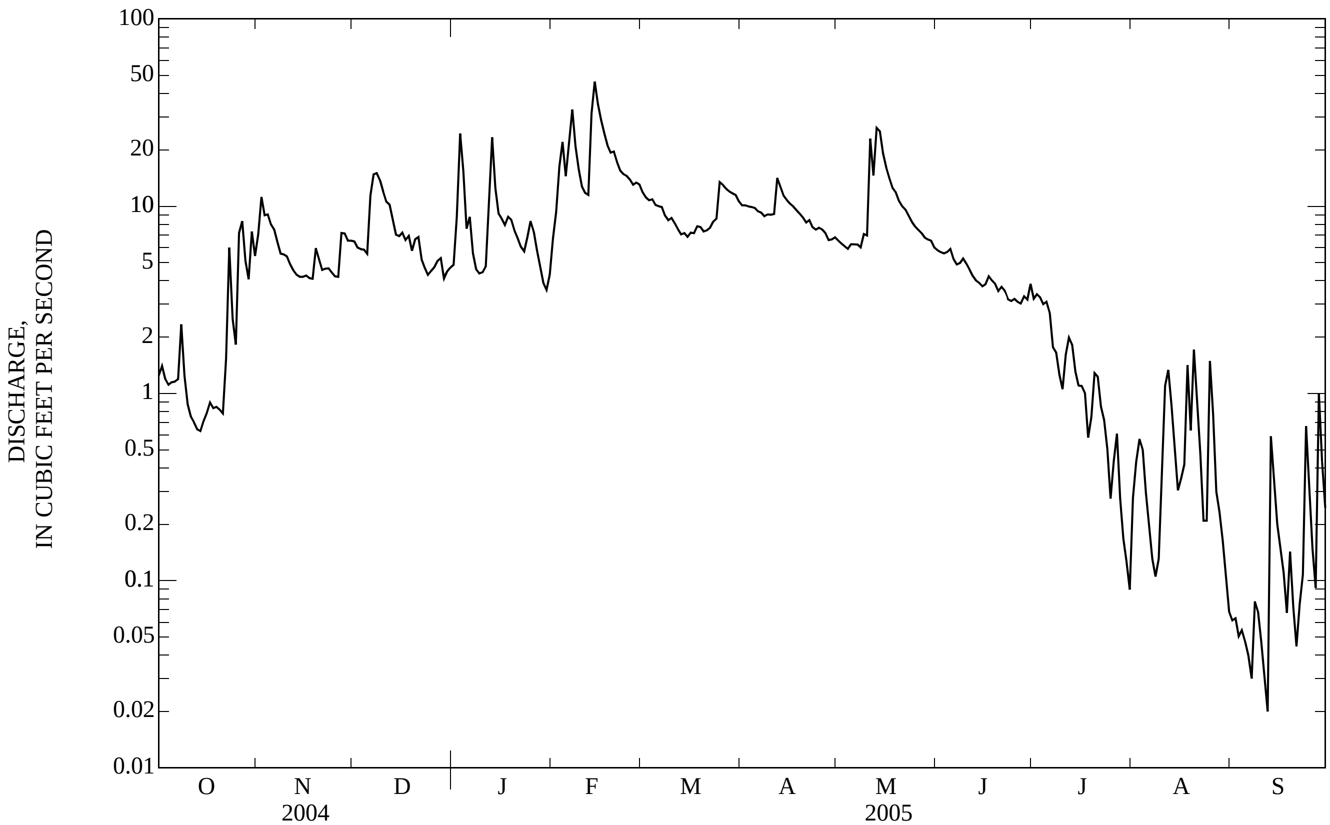
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.22	4.36	3.50	3.92	15.2	14.1	18.5	33.7	24.6	8.94	3.48	1.99
MAX	38.0	23.2	10.1	10.8	45.1	50.1	39.4	68.8	44.2	23.3	14.5	8.53
(WY)	(1999)	(1999)	(1999)	(1999)	(2001)	(1998)	(1998)	(1996)	(2000)	(2002)	(2002)	(1998)
MIN	0.26	0.41	0.74	0.73	2.53	2.94	2.60	10.4	4.23	1.37	0.53	0.18
(WY)	(2004)	(2004)	(1997)	(1997)	(2003)	(2003)	(1996)	(2005)	(2005)	(2005)	(2005)	(2005)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	4,410.46		2,344.35			
ANNUAL MEAN	12.1		6.42		11.5	
HIGHEST ANNUAL MEAN					17.5	1998
LOWEST ANNUAL MEAN					4.64	2003
HIGHEST DAILY MEAN	435	May 30	46	Feb 14	648	May 28, 1996
LOWEST DAILY MEAN	0.59	Jan 31	0.02	Sep 12	0.02	Sep 12, 2005
ANNUAL SEVEN-DAY MINIMUM	0.66	Feb 10	0.05	Sep 6	0.05	Sep 6, 2005
MAXIMUM PEAK FLOW			68	Jan 3 a	1,870	May 28, 1996
MAXIMUM PEAK STAGE			7.49	Feb 3	18.44	May 28, 1996
ANNUAL RUNOFF (AC-FT)	8,750		4,650		8,340	
ANNUAL RUNOFF (CFSM)	0.748		0.399		0.715	
ANNUAL RUNOFF (INCHES)	10.19		5.42		9.71	
10 PERCENT EXCEEDS	23		13		26	
50 PERCENT EXCEEDS	6.0		5.6		4.1	
90 PERCENT EXCEEDS	1.1		0.24		0.77	

05422560 DUCK CREEK AT 110th AVENUE, DAVENPORT, IA—Continued

a Ice affected
e Estimated



05422600 DUCK CREEK AT DUCK CREEK GOLF COURSE, DAVENPORT, IA

LOCATION.--Lat 41°32'46", long 90°31'26", in SW1/4 SE1/4, NW1/4, sec.20, T.78 N., R.4 E., Scott County, Hydrologic Unit 07080101, on right bank 500 ft upstream from Kimberly Road, 100 ft upstream of golf cart bridge, 0.5 mi downstream from Pheasant Creek, and 4.45 mi upstream from mouth.

DRAINAGE AREA.--53.0 mi^2.

PERIOD OF RECORD.--November 1993 to current year.

GAGE.--Water stage recorder. Datum of gage is 597.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	83	e21	e76	e27	32	26	15	16	10	1.0	0.22
2	10	47	19	e54	e37	29	25	15	15	6.2	1.3	0.21
3	4.3	24	18	e79	e83	28	25	15	15	5.6	1.5	0.12
4	3.3	48	17	e53	e116	28	24	14	e14	5.7	1.4	3.1
5	2.9	22	27	e34	e81	27	24	14	e52	5.7	1.3	1.5
6	2.7	20	82	e41	100	27	23	14	15	5.2	0.80	0.53
7	6.7	17	84	e18	148	32	24	14	14	5.5	0.56	0.23
8	72	15	45	e13	85	25	22	14	16	5.1	0.36	2.8
9	7.8	14	39	e13	67	24	22	54	15	4.7	0.70	2.5
10	4.3	14	36	e13	52	28	21	16	14	3.9	1.8	0.77
11	3.4	14	34	e14	48	25	22	193	13	3.3	41	0.27
12	2.5	13	29	e60	45	24	108	45	12	4.0	45	0.13
13	2.3	12	26	e90	137	22	33	153	11	4.3	5.8	26
14	2.4	12	e20	e41	169	21	26	68	12	4.4	2.3	10
15	3.2	12	e21	e32	108	20	23	48	12	4.1	1.3	4.2
16	2.7	12	e21	e28	86	21	22	40	10	3.8	1.4	4.0
17	2.7	12	e20	e24	e64	21	22	36	9.3	2.7	1.7	1.3
18	3.0	36	e20	e24	58	21	22	32	9.0	3.3	13	0.83
19	4.6	61	e18	e25	52	21	21	38	8.2	3.5	5.2	2.2
20	3.3	23	e19	e26	76	19	20	28	8.0	11	16	1.0
21	3.2	16	e19	e25	53	18	19	26	8.5	6.6	3.4	0.45
22	35	15	e15	e25	43	19	29	e24	8.4	4.7	1.3	1.2
23	133	15	e14	e24	39	33	21	23	7.9	4.2	0.85	1.5
24	13	13	e14	e26	37	43	18	21	7.9	3.2	0.72	8.5
25	7.4	13	e14	e29	35	79	21	20	7.8	2.6	20	5.9
26	91	12	e15	e28	33	38	21	20	6.3	68	12	1.7
27	41	83	e15	e26	38	34	18	19	6.1	16	4.3	0.92
28	16	29	e17	e25	40	33	16	18	8.6	5.4	1.4	24
29	13	26	e15	e23	---	31	16	18	7.2	3.4	0.88	7.8
30	29	23	e17	e22	---	34	16	18	55	2.5	0.46	2.5
31	14	---	e18	e23	---	29	---	16	---	1.5	0.33	---
TOTAL	560.7	756	789	1,034	1,957	886	750	1,089	414.2	220.1	189.06	116.38
MEAN	18.1	25.2	25.5	33.4	69.9	28.6	25.0	35.1	13.8	7.10	6.10	3.88
MAX	133	83	84	90	169	79	108	193	55	68	45	26
MIN	2.3	12	14	13	27	18	16	14	6.1	1.5	0.33	0.12
AC-FT	1,110	1,500	1,560	2,050	3,880	1,760	1,490	2,160	822	437	375	231
CFSM	0.34	0.48	0.48	0.63	1.32	0.54	0.47	0.66	0.26	0.13	0.12	0.07
IN.	0.39	0.53	0.55	0.73	1.37	0.62	0.53	0.76	0.29	0.15	0.13	0.08

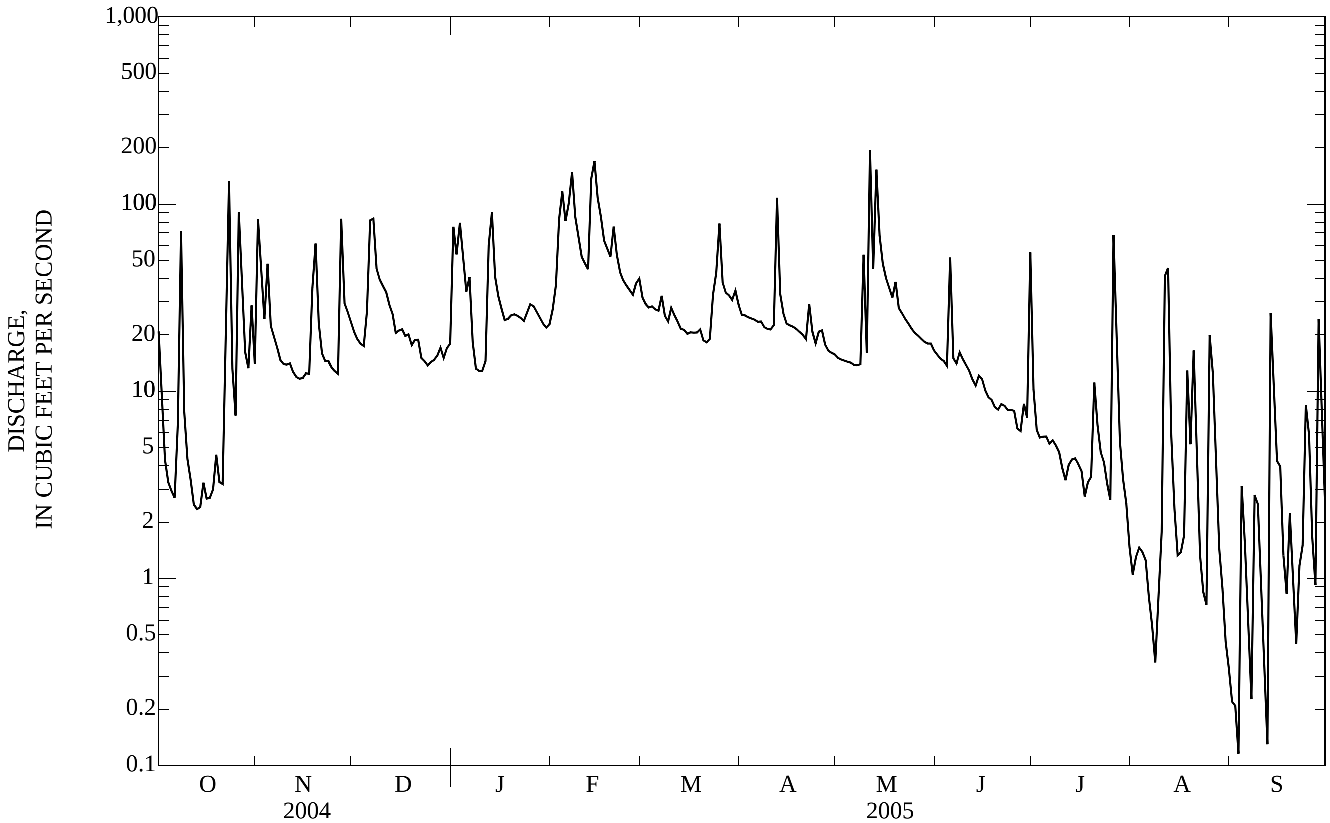
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.2	17.4	13.3	15.4	54.7	49.3	68.0	120	90.9	38.7	21.7	14.6
MAX	125	68.3	33.1	38.6	173	143	141	250	177	100	41.5	35.1
(WY)	(1999)	(1999)	(1999)	(1999)	(2001)	(1998)	(1998)	(1996)	(2000)	(2002)	(2002)	(1998)
MIN	3.26	4.84	3.74	4.59	5.34	13.5	16.5	35.1	13.8	7.10	6.10	3.88
(WY)	(1995)	(2000)	(1997)	(2000)	(2003)	(2003)	(1996)	(2005)	(2005)	(2005)	(2005)	(2005)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	16,068.4		8,761.44			
ANNUAL MEAN	43.9		24.0		43.7	
HIGHEST ANNUAL MEAN					61.8	1998
LOWEST ANNUAL MEAN					22.7	2003
HIGHEST DAILY MEAN	1,270	May 30	193	May 11	2,910	Jun 4, 2002
LOWEST DAILY MEAN	2.3	Oct 13	0.12	Sep 3	0.12	Sep 3, 2005
ANNUAL SEVEN-DAY MINIMUM	2.7	Oct 12	0.52	Aug 28	0.52	Aug 28, 2005
MAXIMUM PEAK FLOW			919	Jan 1 a	7,310	Jun 4, 2002
MAXIMUM PEAK STAGE			7.72	Jan 1	16.34	Jun 4, 2002
INSTANTANEOUS LOW FLOW			0.05	Sep 13	0.05	Sep 13, 2005
ANNUAL RUNOFF (AC-FT)	31,870		17,380		31,690	
ANNUAL RUNOFF (CFSM)	0.828		0.453		0.825	
ANNUAL RUNOFF (INCHES)	11.28		6.15		11.21	
10 PERCENT EXCEEDS	91		53		94	
50 PERCENT EXCEEDS	20		18		16	
90 PERCENT EXCEEDS	3.5		1.7		3.5	

05422600 DUCK CREEK AT DUCK CREEK GOLF COURSE, DAVENPORT, IA—Continued

a Ice effected.
e Estimated.



05422600 DUCK CREEK AT DUCK CREEK GOLF COURSE, DAVENPORT, IA—Continued

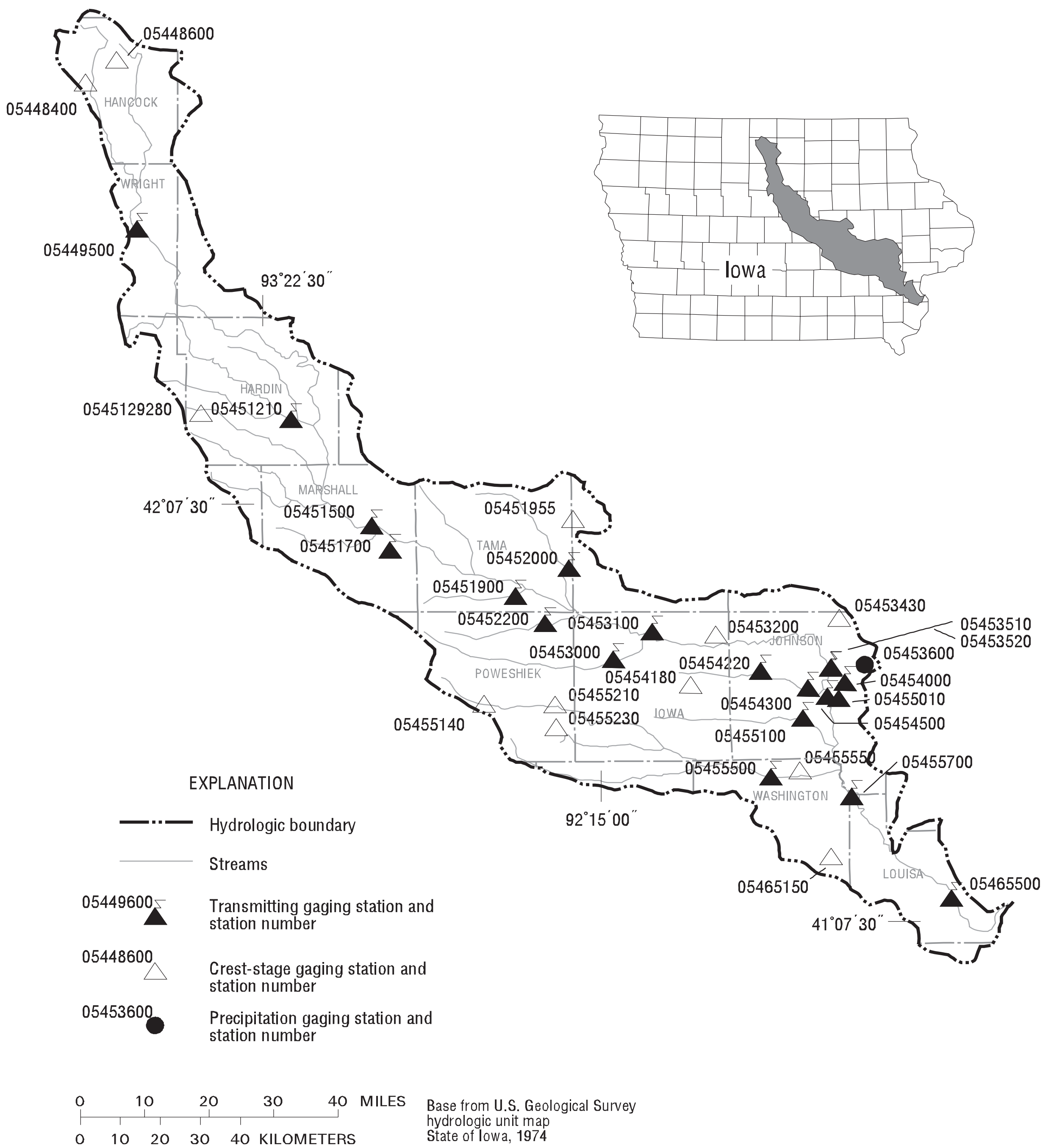


Figure 11. Locations of active continous-record and crest-stage gaging stations in the Iowa River drainage basin (excluding the Cedar River drainage basin).

Gaging Stations

Crest Stage Gaging Stations

05449500 IOWA RIVER NEAR ROWAN, IA

LOCATION.--Lat 42°45'36", long 93°37'18", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.25, T.92 N., R.24 W., Wright County, Hydrologic Unit 07080207, on left bank 10 ft downstream from bridge on County Highway C38, 0.9 mi downstream from drainage ditch 123, 3.8 mi northwest of Rowan, 10.7 mi downstream from confluence of East and West Branches, and 313.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--429 mi^2.

PERIOD OF RECORD.--October 1940 to September 1976, June 1977 to current year.

REVISED RECORDS.--WSP 1308: 1942-43 (M). WSP 1438: Drainage area. WDR IA-80-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 1,143.35 ft above NGVD of 1929. Prior to Oct. 14, 1948, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	70	e73	e75	e38	e77	321	361	457	893	98	63
2	67	72	e88	e67	e45	e107	323	332	433	706	89	60
3	65	77	e76	e67	e51	e100	281	306	409	594	79	57
4	60	85	e86	e64	e140	e111	251	283	389	520	83	55
5	60	87	e76	e59	e132	e109	229	263	374	445	89	51
6	54	81	81	e48	e121	e92	210	252	352	385	81	52
7	56	78	78	e54	e108	e92	189	510	329	334	73	51
8	56	75	81	e53	e116	e72	172	1,280	359	292	67	60
9	57	67	80	e64	e112	e70	160	1,490	640	263	66	68
10	56	67	83	e58	e106	93	152	1,550	740	238	86	70
11	53	68	83	e58	e118	92	158	1,570	687	214	101	57
12	53	65	77	e60	e134	e76	504	1,580	601	190	122	56
13	53	62	e62	e48	e258	e56	1,040	1,830	513	172	107	57
14	56	60	e54	e36	e838	77	1,220	2,200	455	158	101	59
15	56	61	e64	e34	e762	78	1,180	2,240	413	145	86	59
16	57	61	e82	e35	e552	91	930	1,960	371	134	75	55
17	55	61	e74	e33	e415	85	659	1,600	343	123	68	53
18	52	63	e73	e37	e348	76	534	1,390	316	132	333	50
19	52	67	e67	e41	e294	65	480	1,230	291	119	484	84
20	53	71	e83	e42	257	69	674	1,100	272	119	293	158
21	53	83	e72	e37	206	87	1,020	959	306	138	195	123
22	50	92	e63	e29	171	93	1,250	876	334	144	144	98
23	53	91	e53	e27	158	91	1,340	953	315	126	119	85
24	56	e87	e51	e33	152	91	1,250	968	286	111	106	84
25	53	e79	e69	e39	143	104	1,050	855	747	110	96	318
26	51	82	e58	e35	132	113	794	744	1,510	186	92	902
27	48	87	e58	e33	e121	127	626	693	2,130	168	90	1,130
28	52	85	e60	e35	e100	158	513	645	1,760	136	86	1,070
29	55	e79	e67	e38	---	181	444	588	1,440	118	77	778
30	69	e70	e80	e41	---	191	397	532	1,180	106	72	557
31	73	---	e76	e43	---	229	---	488	---	103	66	---
TOTAL	1,746	2,233	2,228	1,423	6,128	3,153	18,351	31,628	18,752	7,622	3,724	6,420
MEAN	56.3	74.4	71.9	45.9	219	102	612	1,020	625	246	120	214
MAX	73	92	88	75	838	229	1,340	2,240	2,130	893	484	1,130
MIN	48	60	51	27	38	56	152	252	272	103	66	50
AC-FT	3,460	4,430	4,420	2,820	12,150	6,250	36,400	62,730	37,190	15,120	7,390	12,730
CFSM	0.13	0.18	0.17	0.11	0.52	0.24	1.46	2.44	1.50	0.59	0.29	0.51
IN.	0.16	0.20	0.20	0.13	0.55	0.28	1.63	2.81	1.67	0.68	0.33	0.57

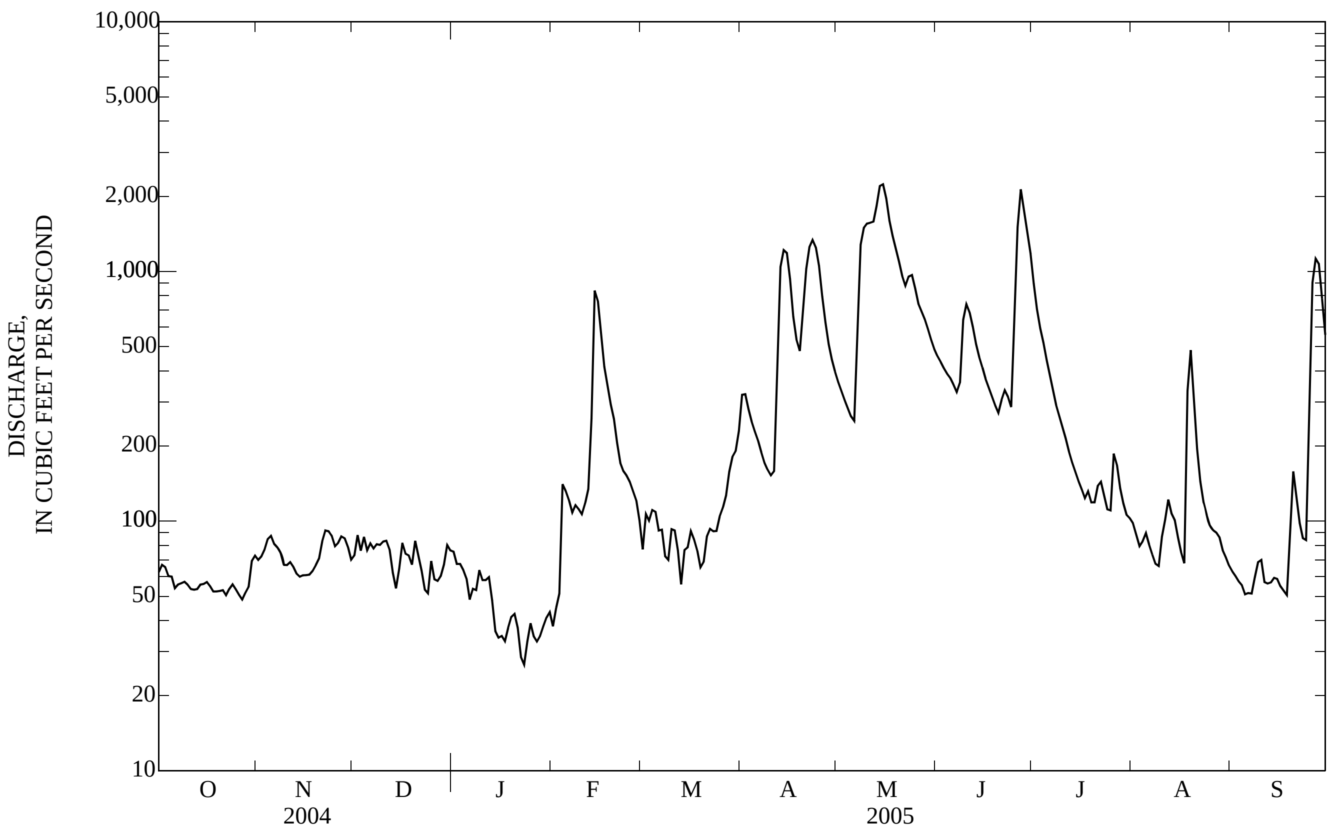
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	135	130	85.9	55.1	114	381	491	407	501	309	163	138
MAX	720	695	588	298	931	1,415	2,439	1,793	2,452	1,922	1,684	1,213
(WY)	(1987)	(1993)	(1983)	(1983)	(1984)	(1973)	(1965)	(1991)	(1984)	(1993)	(1979)	(1965)
MIN	8.14	9.49	5.62	3.63	3.54	23.9	32.4	44.3	19.2	5.36	5.14	3.98
(WY)	(1990)	(1990)	(1990)	(1959)	(1959)	(1968)	(1957)	(1989)	(1989)	(1977)	(1977)	(1977)

05449500 IOWA RIVER NEAR ROWAN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	104,234		103,408			
ANNUAL MEAN	285		283		244	
HIGHEST ANNUAL MEAN					869	1993
LOWEST ANNUAL MEAN					30.4	1956
HIGHEST DAILY MEAN	5,110	May 24	2,240	May 15	7,640	Jun 21, 1954
LOWEST DAILY MEAN	20	Jan 8	27	Jan 23 a	2.2	Sep 11, 1977
ANNUAL SEVEN-DAY MINIMUM	22	Jan 5	33	Jan 22	2.9	Sep 8, 1977
MAXIMUM PEAK FLOW			2,280	May 14	8,460	Jun 21, 1954
MAXIMUM PEAK STAGE			11.25	May 14	14.88	Jun 21, 1954
INSTANTANEOUS LOW FLOW					2.2	Sep 11, 1977
ANNUAL RUNOFF (AC-FT)	206,700		205,100		176,500	
ANNUAL RUNOFF (CFSM)	0.681		0.678		0.583	
ANNUAL RUNOFF (INCHES)	9.28		9.20		7.92	
10 PERCENT EXCEEDS	752		845		623	
50 PERCENT EXCEEDS	82		92		87	
90 PERCENT EXCEEDS	29		53		18	

a Ice affected.
e Estimated.



05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA

LOCATION.--Lat 42°18'55", long 93°09'07", in SE¼ NW¼ SW¼ sec.26, T.87 N., R.20 W., Hardin County, Hydrologic Unit 07080207, located 15 ft from the left bank downstream side of the bridge on county road, 5.5 mi upstream from mouth, and 2.0 mi NE of New Providence.

DRAINAGE AREA.--224 mi^2 (revised).

WATER DISCHARGE RECORDS

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

GAGE.--Water stage recorder. Datum of gage is 945 ft above NGVD of 1929, from map.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	11	e16	e14	e11	e56	e80	130	137	904	90	7.8
2	5.5	14	e14	e12	e11	e64	e72	123	132	642	79	7.7
3	4.9	13	e14	e11	e38	e62	e66	117	128	544	67	6.8
4	4.7	12	e14	e11	e94	e66	64	111	127	478	56	6.5
5	5.0	12	e14	e8.8	e137	76	62	107	126	e346	48	6.4
6	4.9	11	18	e7.3	e118	68	61	104	117	e272	42	6.3
7	5.5	13	17	e7.8	e96	e62	55	119	109	e234	38	6.3
8	6.7	12	17	e8.5	e92	e52	51	123	159	e204	34	7.6
9	5.4	10	17	e10	e106	e48	49	113	224	e179	31	10
10	4.7	9.4	16	e9.5	e106	68	49	105	163	e168	28	9.4
11	4.4	9.0	16	e12	e125	67	59	108	139	e151	32	8.1
12	4.5	8.9	19	e11	e133	e49	630	131	128	135	39	6.8
13	4.7	9.7	e14	e10	e216	e40	958	950	120	111	31	6.8
14	4.7	9.2	e12	e7.0	e674	e36	659	1,310	118	95	29	7.9
15	4.8	9.1	e16	e6.2	e1,690	e35	449	1,010	113	82	26	6.6
16	4.8	9.6	e17	e5.7	e1,320	57	342	677	108	70	24	6.0
17	4.9	9.9	e15	e5.2	e1,110	55	294	533	103	61	22	6.8
18	5.1	12	e14	e6.9	971	54	253	449	99	64	22	7.1
19	5.4	18	e11	e9.8	876	56	236	388	92	54	20	6.0
20	5.8	17	e13	e13	766	53	242	336	87	64	17	5.2
21	5.9	16	e11	e13	465	49	230	295	98	98	16	4.8
22	6.4	15	e10	e12	233	49	242	269	93	92	14	4.2
23	6.6	15	e9.9	e11	141	48	290	241	90	74	12	4.1
24	6.3	14	e9.1	e11	118	50	295	218	84	61	12	5.4
25	6.0	15	e10	e13	111	62	251	202	249	55	11	14
26	7.9	14	e10	e12	e95	70	220	194	694	116	12	21
27	8.6	16	e9.9	e11	e79	80	187	182	983	342	13	25
28	7.8	15	e10	e10	e71	87	161	174	1,250	248	11	37
29	8.0	15	e11	e11	---	92	148	160	1,260	162	9.7	27
30	11	16	e15	e11	---	94	138	149	1,110	124	8.9	21
31	9.3	---	e18	e11	---	e88	---	142	---	109	8.2	---
TOTAL	185.6	380.8	427.9	312.7	10,003	1,893	6,893	9,270	8,440	6,339	902.8	305.6
MEAN	5.99	12.7	13.8	10.1	357	61.1	230	299	281	204	29.1	10.2
MAX	11	18	19	14	1,690	94	958	1,310	1,260	904	90	37
MIN	4.4	8.9	9.1	5.2	11	35	49	104	84	54	8.2	4.1
AC-FT	368	755	849	620	19,840	3,750	13,670	18,390	16,740	12,570	1,790	606
CFSM	0.03	0.06	0.06	0.05	1.59	0.27	1.03	1.33	1.26	0.91	0.13	0.05
IN.	0.03	0.06	0.07	0.05	1.66	0.31	1.14	1.54	1.40	1.05	0.15	0.05

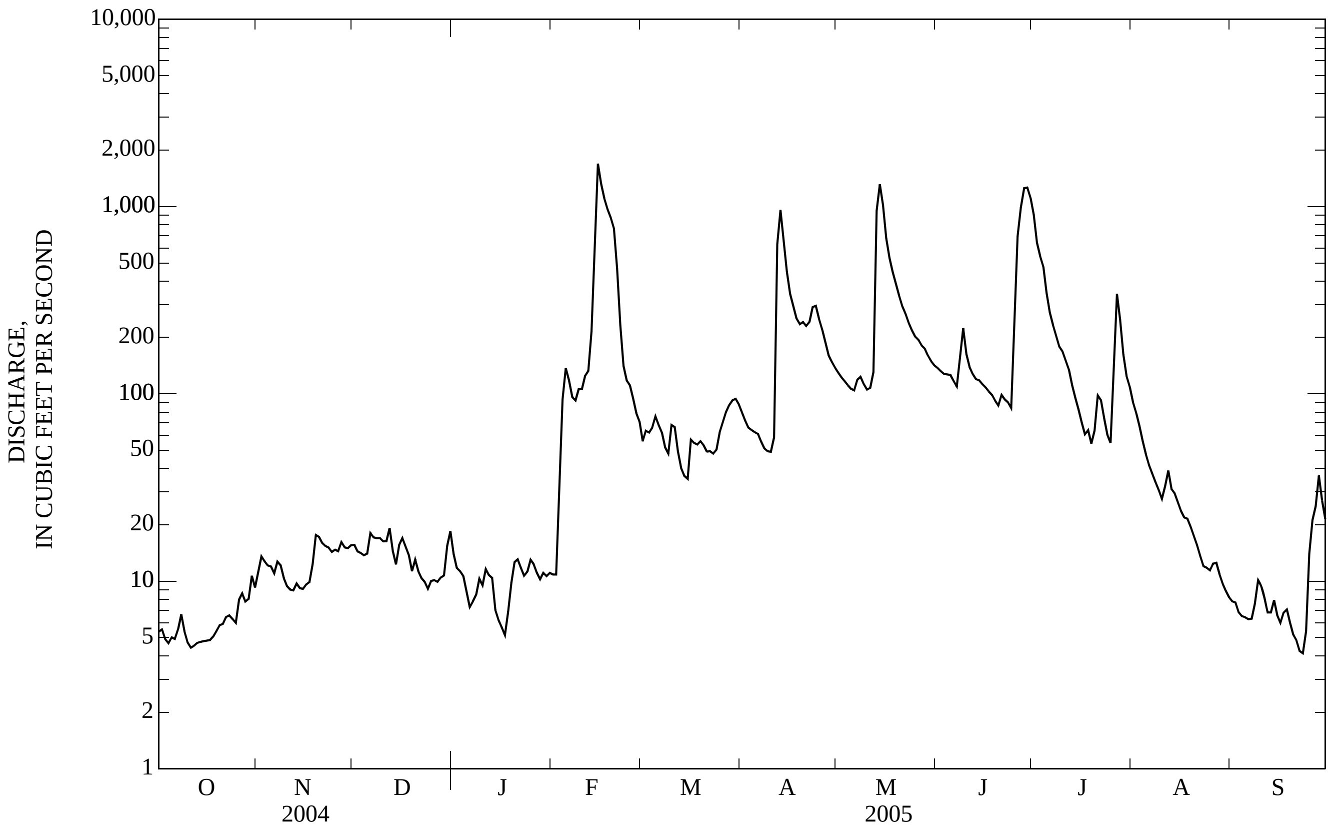
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.4	49.3	34.2	22.8	115	143	203	339	412	174	42.6	19.6
MAX	157	199	119	65.7	357	386	513	643	1,173	414	161	79.4
(WY)	(2003)	(1997)	(1997)	(1997)	(2005)	(2001)	(1999)	(1999)	(1998)	(1998)	(2002)	(2002)
MIN	2.59	4.90	5.03	4.63	7.51	8.73	7.17	13.1	153	59.9	12.5	3.51
(WY)	(2000)	(2000)	(2000)	(2001)	(2001)	(2000)	(2000)	(2000)	(2003)	(1996)	(2000)	(2000)

05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	39,855.4		45,353.4			
ANNUAL MEAN	109		124		139	
HIGHEST ANNUAL MEAN					218	1998
LOWEST ANNUAL MEAN					36.6	2000
HIGHEST DAILY MEAN	1,790	May 25	1,690	Feb 15 a	2,920	Jun 30, 1998
LOWEST DAILY MEAN	2.0	Jan 30	4.1	Sep 23	1.7	Sep 13, 2000
ANNUAL SEVEN-DAY MINIMUM	2.8	Jan 29	4.7	Oct 10	1.9	Sep 11, 2000
MAXIMUM PEAK FLOW			1,900	Feb 15	3,550	Jun 21, 1998
MAXIMUM PEAK STAGE			8.95	Feb 15 a	11.59	Jun 21, 1998
INSTANTANEOUS LOW FLOW			3.8	Sep 23	1.7	Sep 26, 1999 b
ANNUAL RUNOFF (AC-FT)	79,050		89,960		100,500	
ANNUAL RUNOFF (CFSM)	0.486		0.555		0.619	
ANNUAL RUNOFF (INCHES)	6.62		7.53		8.41	
10 PERCENT EXCEEDS	274		279		360	
50 PERCENT EXCEEDS	19		39		49	
90 PERCENT EXCEEDS	5.2		6.5		4.9	

a Ice effected.
b Also Oct. 3, 2000 and Oct. 8, 2003.
e Estimated.



05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA—Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Gage height, feet (00065)	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)
OCT													
05...	0815	1.95	4.8	--	753	9.6	81	7.8	568	9.0	7.4	250	301
DEC													
01...	1030	2.35	17	5.8	735	--	--	8.2	654	1.0	.2	250	300
FEB													
02...	1110	2.99	10	--	742	14.0	99	7.8	708	3.0	.2	276	333
APR													
04...	1044	2.93	63	--	729	11.6	113	8.0	629	19.5	12.0	201	241
JUN													
02...	0930	3.44	132	--	738	12.5	135	8.1	712	26.0	17.4	214	261
AUG													
02...	0915	3.02	80	20	737	7.1	88	8.3	760	30.0	23.9	271	323

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	Atrazine, water, fltrd, ug/L (39632)
OCT													
05...	--	19.0	29.6	<.04	.47	E.004	.014	.041	<.006	E.014	<.006	<.005	.045
DEC													
01...	--	27.8	40.5	<.04	2.50	.021	.010	.030	<.006	E.016	<.006	<.005	.029
FEB													
02...	--	23.2	41.0	.18	4.17	.041	.017	.038	<.006	E.013	<.006	<.005	.017
APR													
04...	--	32.9	35.0	<.04	10.7	.081	<.006	.021	<.006	E.028	.011	<.005	.052
JUN													
02...	.--	28.2	27.6	<.04	19.8	.042	E.004	.027	<.006	E.036	.038	<.005	.114
AUG													
02...	--	27.9	26.9	E.02	14.2	.029	.074	.161	<.006	E.047	.020	E.006	.138

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)
OCT													
05...	<.050	<.010	<1	--	<.5	<.006	--	<.003	<.5	<.009	--	--	--
DEC													
01...	<.050	<.010	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--	--	--
FEB													
02...	<.050	<.010	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--	--	--
APR													
04...	<.050	<.010	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--	--	--
JUN													
02...	<.050	<.010	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.005
AUG													
02...	<.050	<.010	<.041	<.020	E.007	<.006	E.005	<.003	<.005	<.009	<.02	<.004	<.005

05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Fonofos water, fltrd, ug/L (04095)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)
OCT													
05...	<.003	<.027	<.015	M	<.006	--	<.022	<.011	<.5	<.004	--	--	<.02
DEC													
01...	<.003	<.027	<.015	.049	<.006	--	<.022	<.011	<.01	<.004	--	--	<.02
FEB													
02...	<.003	<.027	<.015	.033	<.006	--	<.022	<.011	<.01	<.004	--	--	<.02
APR													
04...	<.003	<.027	<.015	.161	<.006	--	<.022	<.011	<.01	<.004	--	--	<.02
JUN													
02...	<.003	<.027	<.015	.130	<.006	<.003	<.022	<.011	<.01	<.004	<.011	<.02	<.02
AUG													
02...	<.003	<.027	<.015	.226	E.006	<.003	<.022	<.011	.01	<.004	<.011	<.02	<.02

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT					
05...	<.02	<.01	--	<.009	83
DEC					
01...	<.02	<.01	--	<.009	28
FEB					
02...	<.02	<.01	--	<.009	18
APR					
04...	<.02	<.01	--	<.009	35
JUN					
02...	<.02	<.01	<.010	<.009	134
AUG					
02...	<.02	<.01	<.010	<.009	102

05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA—Continued

PRECIPITATION RECORDS

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

INSTRUMENTATION.-- Tipping bucket rain gage.

REMARKS.-- Estimated totals Oct. 1, Feb. 8-10, and Aug. 21, 22. Records good except for estimated days and winter period, which is poor due to intermittent snow accumulation and subsequent melting.

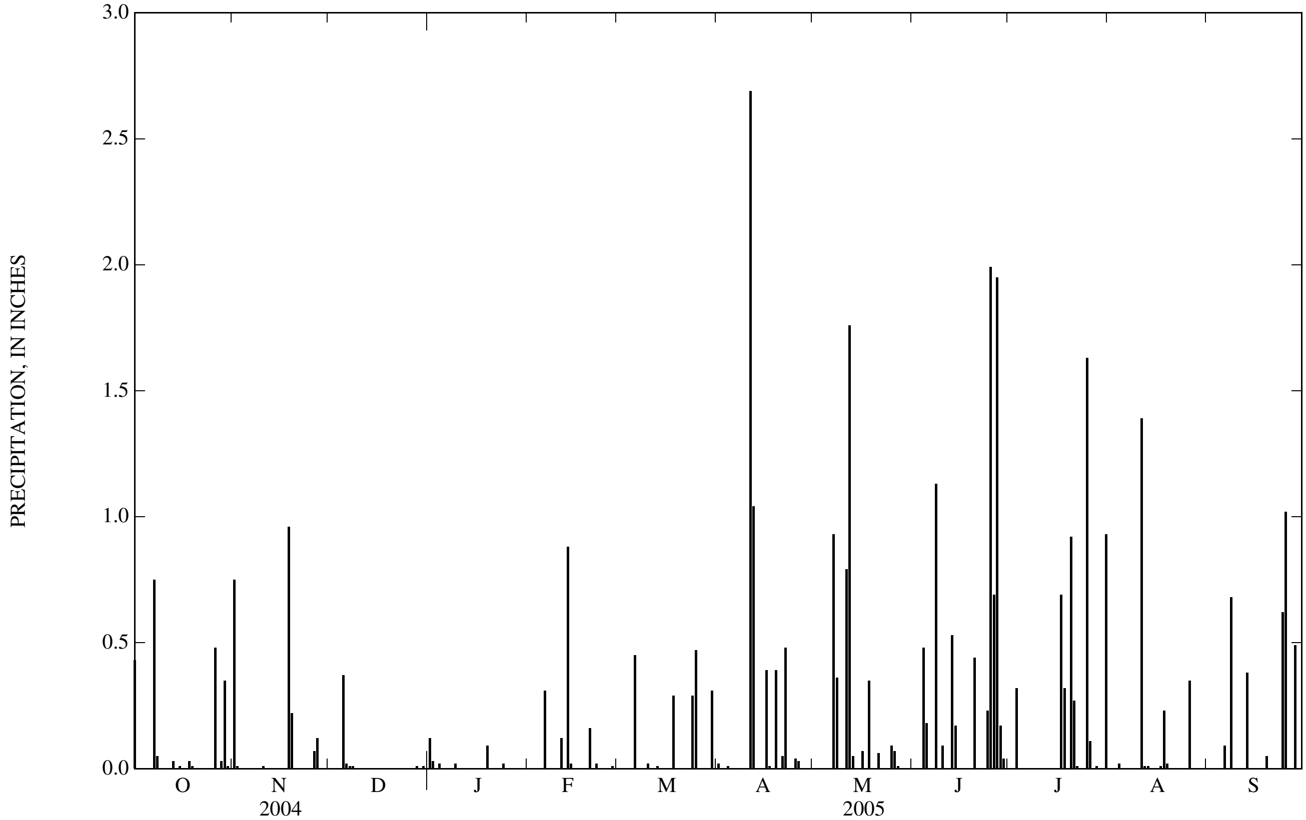
EXTREME FOR PERIOD OF RECORD.-- Maximum daily accumulation, 5.37 in., June 21, 1997.

EXTREME FOR CURRENT YEAR.-- Maximum daily accumulation 2.69 in., April 11.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.43	0.75	0.00	0.12	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
2	0.00	0.01	0.00	0.03	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	0.32	0.00	0.00
4	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.48	0.00	0.02	0.00
5	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00
6	0.00	0.00	0.02	0.00	0.31	0.45	0.00	0.00	0.00	0.00	0.00	0.09
7	0.75	0.00	0.01	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
8	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.36	1.13	0.00	0.00	0.68
9	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.09	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.12	0.00	2.69	0.79	0.00	0.00	1.39	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	1.04	1.76	0.00	0.00	0.01	0.00
13	0.03	0.00	0.00	0.00	0.88	0.01	0.00	0.05	0.53	0.00	0.01	0.38
14	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.17	0.00	0.00	0.00
15	0.01	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	0.39	0.07	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.69	0.01	0.00
18	0.03	0.96	0.00	0.00	0.00	0.29	0.00	0.35	0.00	0.32	0.23	0.00
19	0.01	0.22	0.00	0.09	0.00	0.00	0.39	0.00	0.00	0.00	0.02	0.05
20	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.44	0.92	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.00	0.27	0.00	0.00
22	0.00	0.00	0.00	0.00	0.02	0.00	0.48	0.00	0.00	0.01	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	0.02	0.00	0.29	0.00	0.00	0.23	0.00	0.00	0.62
25	0.00	0.00	0.00	0.00	0.00	0.47	0.04	0.09	1.99	1.63	0.00	1.02
26	0.48	0.07	0.00	0.00	0.00	0.00	0.03	0.07	0.69	0.11	0.35	0.00
27	0.00	0.12	0.00	0.00	0.01	0.00	0.00	0.01	1.95	0.00	0.00	0.00
28	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.17	0.01	0.00	0.49
29	0.35	0.00	0.00	0.00	---	0.00	0.00	0.00	0.04	0.00	0.00	0.00
30	0.01	0.00	0.01	0.00	---	0.31	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.93	0.00	---
TOTAL	2.18	2.14	0.43	0.30	1.52	1.84	5.15	4.54	8.09	5.21	2.04	3.33
MAX	0.75	0.96	0.37	0.12	0.88	0.47	2.69	1.76	1.99	1.63	1.39	1.02
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

05451210 SOUTH FORK IOWA RIVER NORTHEAST OF NEW PROVIDENCE, IA—Continued



05451500 IOWA RIVER AT MARSHALLTOWN, IA

LOCATION.--Lat 42°03'57", long 92°54'27", in SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.23, T.84 N., R.18 W., Marshall County, Hydrologic Unit 07080208, on right bank 10 ft downstream from bridge on State Highway 14, 1,500 ft upstream from Burnett Creek, 2.2 mi upstream from Linn Creek, and 212.7 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,532 mi^2.

PERIOD OF RECORD.--October 1902 to September 1903, October 1914 to September 1927, October 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1915-18, 1919 (M), 1920, 1921-23 (M), 1924-27, 1933, 1934 (M), 1936, 1938, 1947 (M).

GAGE.--Water-stage recorder. Datum of gage is 853.10 ft above NGVD of 1929. See WSP 1728 for history of changes prior to Sept. 21, 1934.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	221	e273	e240	e155	e502	609	1,530	1,510	6,410	673	170
2	185	299	e272	e217	e176	e529	607	1,430	1,440	5,060	613	160
3	185	334	e257	e210	e193	e513	641	1,360	1,360	4,010	561	153
4	175	308	e270	e200	e319	e513	686	1,300	1,320	e3,270	485	150
5	167	285	e282	e195	e502	529	672	1,260	1,280	e2,870	437	139
6	165	278	305	e175	e701	511	642	1,210	1,210	e2,520	397	135
7	167	272	318	e177	e923	524	608	1,460	1,150	e2,230	372	132
8	176	260	310	e175	e740	511	573	1,650	1,140	e1,960	354	220
9	184	252	306	e180	e679	482	547	1,630	1,490	e1,710	333	247
10	167	246	301	e169	e640	477	527	1,850	1,480	e1,480	311	220
11	163	240	297	e170	e664	475	539	2,200	1,480	e1,280	374	177
12	163	232	e267	e170	e684	453	1,580	2,660	1,520	e1,080	445	168
13	164	224	e232	e155	e1,200	429	3,560	5,230	1,490	960	439	165
14	160	219	e208	e144	e2,390	439	3,340	6,370	1,640	878	397	171
15	166	217	e219	e140	e2,200	412	2,880	5,960	1,460	800	386	165
16	163	213	e237	e143	e1,860	410	2,670	5,360	1,320	733	355	180
17	160	211	e234	e143	e1,640	403	2,610	4,950	1,230	675	333	164
18	165	228	e230	e144	e1,530	406	2,480	4,610	1,150	666	316	153
19	169	277	e222	e148	e1,300	424	2,220	4,280	1,070	614	309	137
20	166	333	e258	e149	1,160	410	1,970	3,760	1,010	575	321	112
21	165	337	e286	e143	1,000	388	1,810	3,350	995	652	541	104
22	162	326	e271	e135	884	378	1,830	3,030	1,000	630	517	102
23	163	322	e263	e140	793	372	2,200	2,680	961	574	407	168
24	160	318	e255	e143	748	387	2,430	2,430	963	537	338	184
25	161	315	e271	e145	713	441	2,560	2,240	1,430	517	286	207
26	183	313	e257	e146	666	492	2,570	2,190	3,060	638	266	244
27	191	320	e256	e144	e629	528	2,440	2,120	3,820	812	260	296
28	186	311	e259	e143	e579	553	2,170	1,980	5,100	1,040	233	586
29	182	302	e260	e140	---	567	1,910	1,840	6,750	861	211	846
30	183	292	e265	e141	---	585	1,670	1,710	7,120	724	208	943
31	187	---	e249	e143	---	617	---	1,600	---	677	182	---
TOTAL	5,320	8,305	8,190	5,007	25,668	14,660	51,551	85,230	57,949	47,443	11,660	6,998
MEAN	172	277	264	162	917	473	1,718	2,749	1,932	1,530	376	233
MAX	191	337	318	240	2,390	617	3,560	6,370	7,120	6,410	673	943
MIN	160	211	208	135	155	372	527	1,210	961	517	182	102
AC-FT	10,550	16,470	16,240	9,930	50,910	29,080	102,300	169,100	114,900	94,100	23,130	13,880
CFSM	0.11	0.18	0.17	0.11	0.60	0.31	1.12	1.79	1.26	1.00	0.25	0.15
IN.	0.13	0.20	0.20	0.12	0.62	0.36	1.25	2.07	1.41	1.15	0.28	0.17

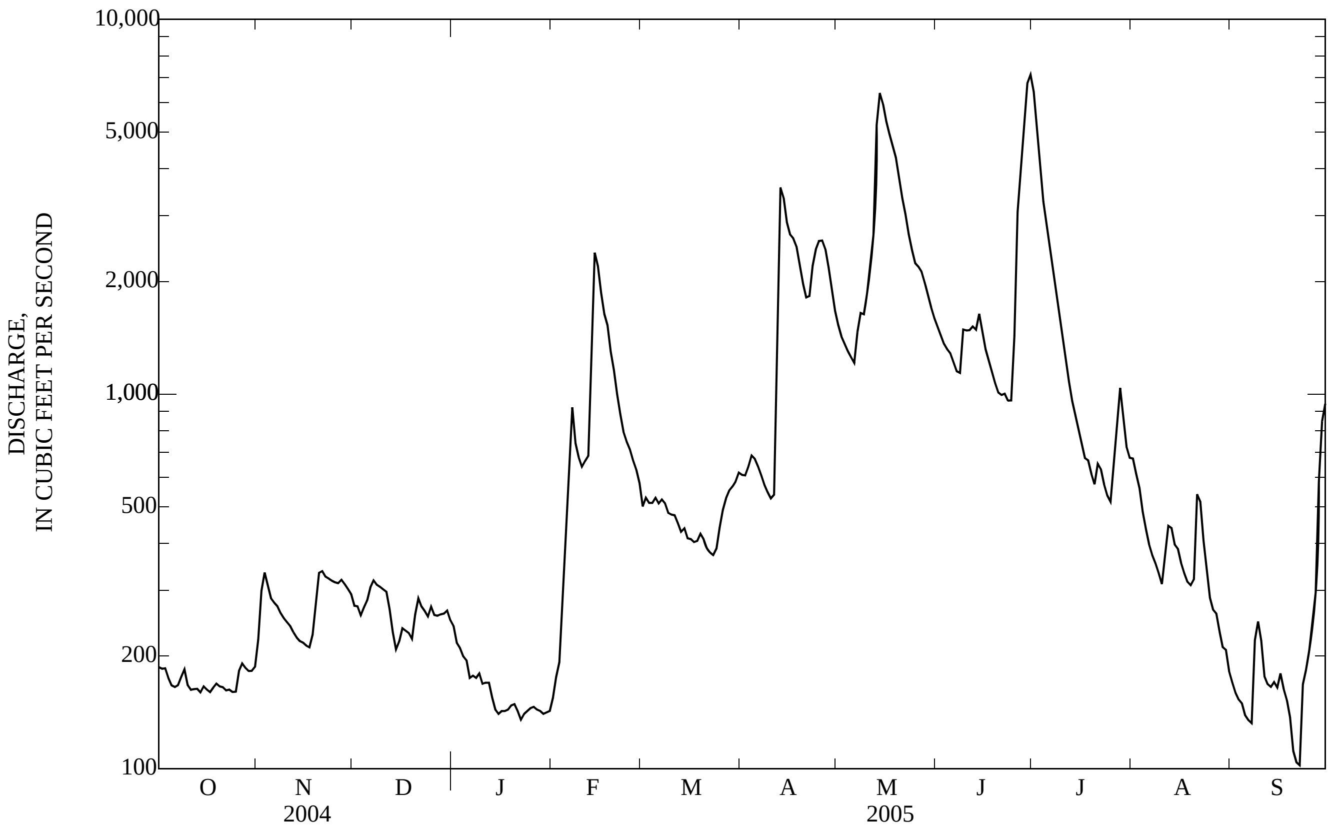
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	487	487	354	296	620	1,538	1,496	1,401	1,812	1,054	560	481
MAX	2,721	2,593	2,139	2,231	3,424	4,206	6,796	5,559	7,619	8,389	7,062	3,362
(WY)	(1987)	(1973)	(1983)	(1973)	(1915)	(1973)	(1965)	(1991)	(1918)	(1993)	(1993)	(1993)
MIN	39.2	46.2	31.0	10.2	20.9	98.4	99.3	49.9	16.0	41.8	35.9	27.5
(WY)	(1940)	(1940)	(1990)	(1977)	(1940)	(1934)	(1934)	(1934)	(1934)	(1977)	(1934)	(1939)

05451500 IOWA RIVER AT MARSHALLTOWN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1903 - 2005	
ANNUAL TOTAL	346,312		327,981			
ANNUAL MEAN	946		899		882	
HIGHEST ANNUAL MEAN					3,456	1993
LOWEST ANNUAL MEAN					77.3	1934
HIGHEST DAILY MEAN	8,210	May 26	7,120	Jun 30	39,400	Jun 4, 1918
LOWEST DAILY MEAN	66	Jan 5	102	Sep 22	4.7	Jan 25, 1977
ANNUAL SEVEN-DAY MINIMUM	68	Jan 5	134	Sep 17	5.2	Jan 20, 1977
MAXIMUM PEAK FLOW			7,240	Jun 30	42,000	Jun 4, 1918
MAXIMUM PEAK STAGE			17.13	Jun 30	20.77	Aug 17, 1993
INSTANTANEOUS LOW FLOW			95	Sep 21		
ANNUAL RUNOFF (AC-FT)	686,900		650,600		639,100	
ANNUAL RUNOFF (CFSM)	0.618		0.587		0.576	
ANNUAL RUNOFF (INCHES)	8.41		7.96		7.82	
10 PERCENT EXCEEDS	2,330		2,230		2,170	
50 PERCENT EXCEEDS	394		410		395	
90 PERCENT EXCEEDS	95		163		77	

e Estimated



05451700 TIMBER CREEK NEAR MARSHALLTOWN, IA

LOCATION.--Lat 42°00'32", long 92°51'08", in SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.8, T.83 N., R.17 W., Marshall County, Hydrologic Unit 07080208, on left bank 20 ft upstream from bridge on Shady Oaks Road, 3.6 mi (revised) upstream from mouth, and 3.0 mi southeast of Marshalltown.

DRAINAGE AREA.--118 mi^2.

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

REVISED RECORDS.--WSP 1708: 1950-55, 1957-59.

GAGE.--Water stage recorder. Datum of gage is 849.44 ft above NGVD of 1929. Prior to Oct. 1, 1991 at site 1/8 mile upstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of 16.8 ft, discharge, 5,700 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	26	e33	e40	e30	e62	50	81	147	183	111	17
2	26	62	34	e38	e34	e65	50	79	141	141	60	16
3	24	47	34	e37	e51	e53	49	76	134	116	51	15
4	23	42	34	e34	e126	e58	49	74	144	119	45	14
5	22	36	33	e30	e281	59	48	71	223	121	40	14
6	22	34	47	e19	e241	58	47	70	176	104	38	14
7	22	32	47	e30	e180	61	49	74	156	98	36	14
8	23	30	44	e30	e94	e51	47	70	170	91	34	46
9	22	29	44	e43	e98	e51	47	67	206	86	32	57
10	21	29	43	e37	e58	55	46	64	172	80	30	26
11	20	29	41	e39	e74	53	51	260	277	76	80	20
12	20	27	40	e39	e80	e50	275	469	208	72	78	19
13	20	26	e33	e28	596	e53	256	2,320	196	69	48	18
14	20	26	e47	e20	562	e44	188	931	300	65	40	18
15	21	26	e39	e18	263	46	156	610	200	61	35	18
16	21	27	e42	e18	189	47	140	475	176	59	32	17
17	20	27	e39	e17	152	46	131	402	161	55	30	16
18	21	29	e38	e18	128	47	117	358	148	64	29	15
19	25	46	e30	e26	114	46	109	360	138	56	28	14
20	23	57	e44	e31	109	43	104	301	126	53	35	14
21	22	52	e37	e28	100	43	97	278	123	61	29	13
22	22	49	e30	e20	90	42	114	258	118	59	25	12
23	22	46	e25	e22	85	42	117	236	111	51	23	11
24	20	42	e32	e26	81	43	114	219	104	46	22	13
25	19	40	e33	e28	78	53	111	206	142	44	23	24
26	21	40	e37	e28	74	58	106	199	245	106	24	19
27	26	41	e34	e25	e70	55	98	188	148	69	24	14
28	23	38	e35	e22	e65	55	91	179	153	53	21	14
29	23	36	e39	e21	---	54	88	168	152	48	19	16
30	28	35	e48	e23	---	54	84	161	225	46	19	12
31	24	---	e43	e26	---	54	---	152	---	70	17	---
TOTAL	692	1,106	1,179	861	4,103	1,601	3,029	9,456	5,120	2,422	1,158	550
MEAN	22.3	36.9	38.0	27.8	147	51.6	101	305	171	78.1	37.4	18.3
MAX	28	62	48	43	596	65	275	2,320	300	183	111	57
MIN	19	26	25	17	30	42	46	64	104	44	17	11
AC-FT	1,370	2,190	2,340	1,710	8,140	3,180	6,010	18,760	10,160	4,800	2,300	1,090
CFSM	0.19	0.31	0.32	0.24	1.24	0.44	0.86	2.59	1.45	0.66	0.32	0.16
IN.	0.22	0.35	0.37	0.27	1.29	0.50	0.95	2.98	1.61	0.76	0.37	0.17

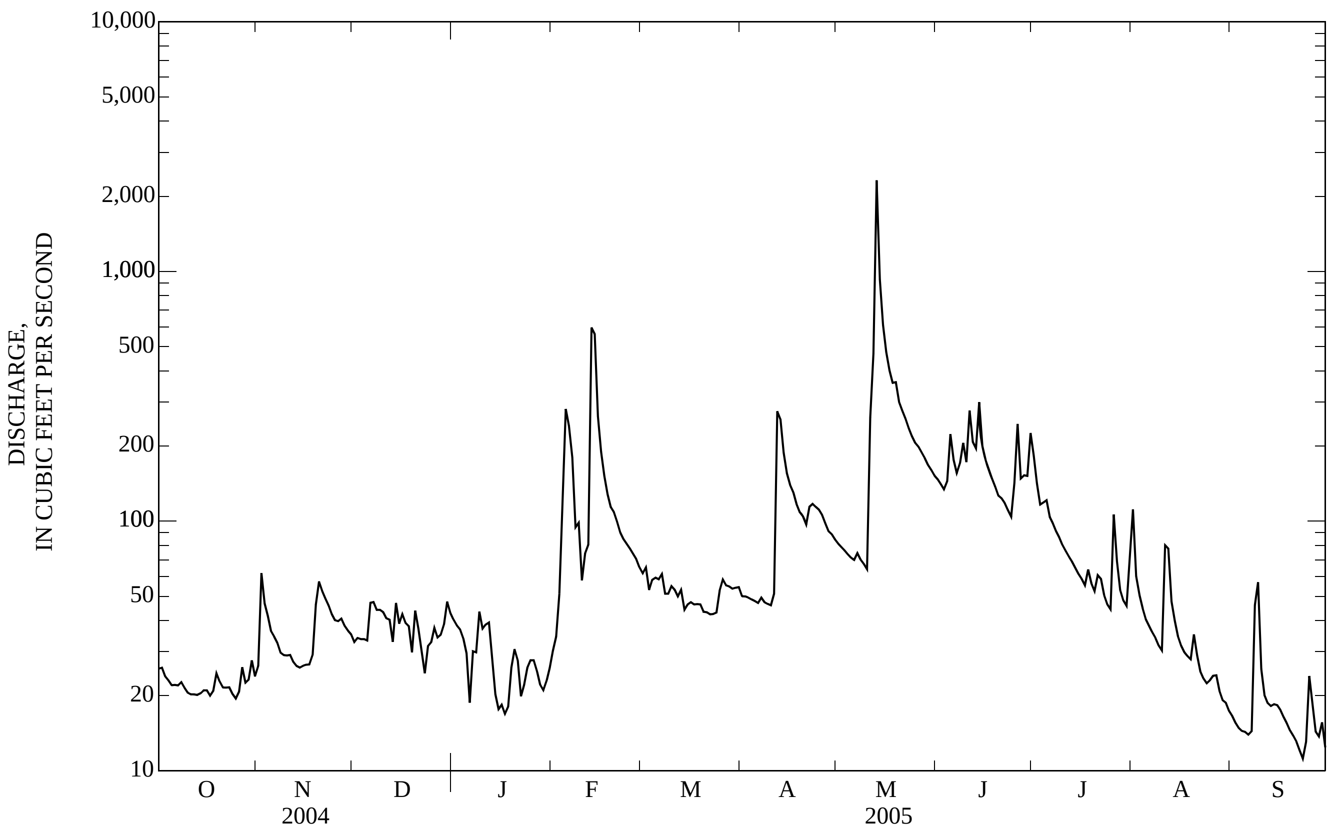
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	34.8	40.1	34.3	34.1	85.5	138	108	137	156	93.5	56.9	36.4
MAX	286	265	183	200	351	597	385	447	704	866	635	341
(WY)	(1987)	(1984)	(1984)	(1973)	(1971)	(1979)	(1993)	(1974)	(1998)	(1993)	(1993)	(1986)
MIN	0.76	1.11	0.60	0.05	3.07	5.11	2.84	3.08	1.09	1.03	1.16	1.21
(WY)	(1951)	(1951)	(1956)	(1977)	(1954)	(1956)	(1956)	(1977)	(1977)	(1956)	(1956)	(1950)

05451700 TIMBER CREEK NEAR MARSHALLTOWN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1950 - 2005	
ANNUAL TOTAL	42,714.2		31,277			
ANNUAL MEAN	117		85.7		79.4	
HIGHEST ANNUAL MEAN					299	1993
LOWEST ANNUAL MEAN					2.84	1956
HIGHEST DAILY MEAN	3,010	May 23	2,320	May 13	6,570	Aug 16, 1977
LOWEST DAILY MEAN	9.2	Jan 5	11	Sep 23	0.00	Jul 24, 1956 a
ANNUAL SEVEN-DAY MINIMUM	15	Jan 1	13	Sep 18	0.00	Oct 4, 1956
MAXIMUM PEAK FLOW			2,950	May 13	12,000	Aug 16, 1977
MAXIMUM PEAK STAGE			14.26	May 13	17.69	Aug 16, 1977
INSTANTANEOUS LOW FLOW			10	Sep 24	0.00	Jul 24, 1956
ANNUAL RUNOFF (AC-FT)	84,720		62,040		57,540	
ANNUAL RUNOFF (CFSM)	0.989		0.726		0.673	
ANNUAL RUNOFF (INCHES)	13.47		9.86		9.15	
10 PERCENT EXCEEDS	175		181		174	
50 PERCENT EXCEEDS	68		46		32	
90 PERCENT EXCEEDS	23		20		3.4	

a Several days in July, Oct. 1956, Feb., July 1977.
e Estimated.



05451900 RICHLAND CREEK NEAR HAVEN, IA

LOCATION.--Lat 41°53'58", long 92°28'27", in SE¼ NE¼ sec.21, T.82 N., R.14 W., Tama County, Hydrologic Unit 07080208, on right bank 5 ft upstream from bridge on county highway, 0.5 mi northeast of Haven, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--56.1 mi^2.

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

REVISED RECORDS.--WSP 1708: 1950-55, 1956 (M), 1957, 1958 (M), 1959.

GAGE.--Water-stage recorder. Datum of gage is 788.69 ft above NGVD of 1929. Prior to Oct. 1, 1971, at datum 10.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1918 reached a stage of 24.3 ft present datum, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	16	21	e12	e16	34	25	19	51	27	14	2.9
2	19	26	20	e14	e17	30	25	18	49	25	12	2.5
3	18	22	20	e11	e25	29	24	18	46	25	11	2.3
4	17	23	20	e12	e92	29	24	16	50	111	10	2.3
5	17	21	20	e11	e201	27	23	16	66	54	9.7	2.2
6	17	21	39	e12	155	27	49	15	47	38	9.2	2.2
7	17	19	34	e11	117	28	74	16	44	33	8.6	2.3
8	17	18	31	e12	60	26	42	15	57	30	7.9	15
9	16	18	30	e13	45	25	31	14	54	29	7.2	19
10	16	18	29	e12	e44	26	23	13	46	26	6.6	4.3
11	16	18	28	e14	e48	25	21	553	46	24	14	3.2
12	16	18	27	e16	37	24	99	407	42	22	11	3.2
13	16	17	e22	e16	312	24	77	1,130	42	21	9.4	3.3
14	17	17	e18	e14	229	22	55	314	48	20	9.0	3.5
15	17	17	e20	e13	131	22	44	234	41	19	7.8	3.1
16	16	17	e23	e14	e92	21	39	198	38	18	6.9	3.1
17	16	16	e19	e14	65	21	36	175	36	17	6.2	3.1
18	16	17	e20	e14	56	21	31	156	35	19	6.0	3.0
19	18	26	e18	e15	51	21	28	147	33	17	5.5	3.1
20	16	28	e24	e18	49	20	27	126	31	16	5.4	3.3
21	15	26	e26	e18	44	19	24	118	31	16	4.9	3.1
22	15	25	e23	e17	40	19	34	107	30	15	4.3	3.0
23	15	24	e18	e17	38	19	29	94	28	14	4.2	2.9
24	15	24	e17	e18	37	19	27	85	26	13	4.0	35
25	14	23	e18	e21	35	26	26	80	28	13	3.9	21
26	17	23	e18	e20	34	33	25	75	33	16	3.9	14
27	16	23	e19	e19	34	29	23	69	27	15	4.1	9.1
28	15	21	e20	e18	33	27	21	66	37	13	3.5	9.5
29	14	21	e16	e17	---	26	20	61	31	12	3.3	10
30	18	21	e18	e16	---	27	19	58	31	12	3.1	8.5
31	16	---	e20	e15	---	27	---	54	---	13	3.0	---
TOTAL	507	624	696	464	2,137	773	1,045	4,467	1,204	743	219.6	203.0
MEAN	16.4	20.8	22.5	15.0	76.3	24.9	34.8	144	40.1	24.0	7.08	6.77
MAX	19	28	39	21	312	34	99	1,130	66	111	14	35
MIN	14	16	16	11	16	19	19	13	26	12	3.0	2.2
AC-FT	1,010	1,240	1,380	920	4,240	1,530	2,070	8,860	2,390	1,470	436	403
CFSM	0.29	0.37	0.40	0.27	1.36	0.44	0.62	2.57	0.72	0.43	0.13	0.12
IN.	0.34	0.41	0.46	0.31	1.42	0.51	0.69	2.96	0.80	0.49	0.15	0.13

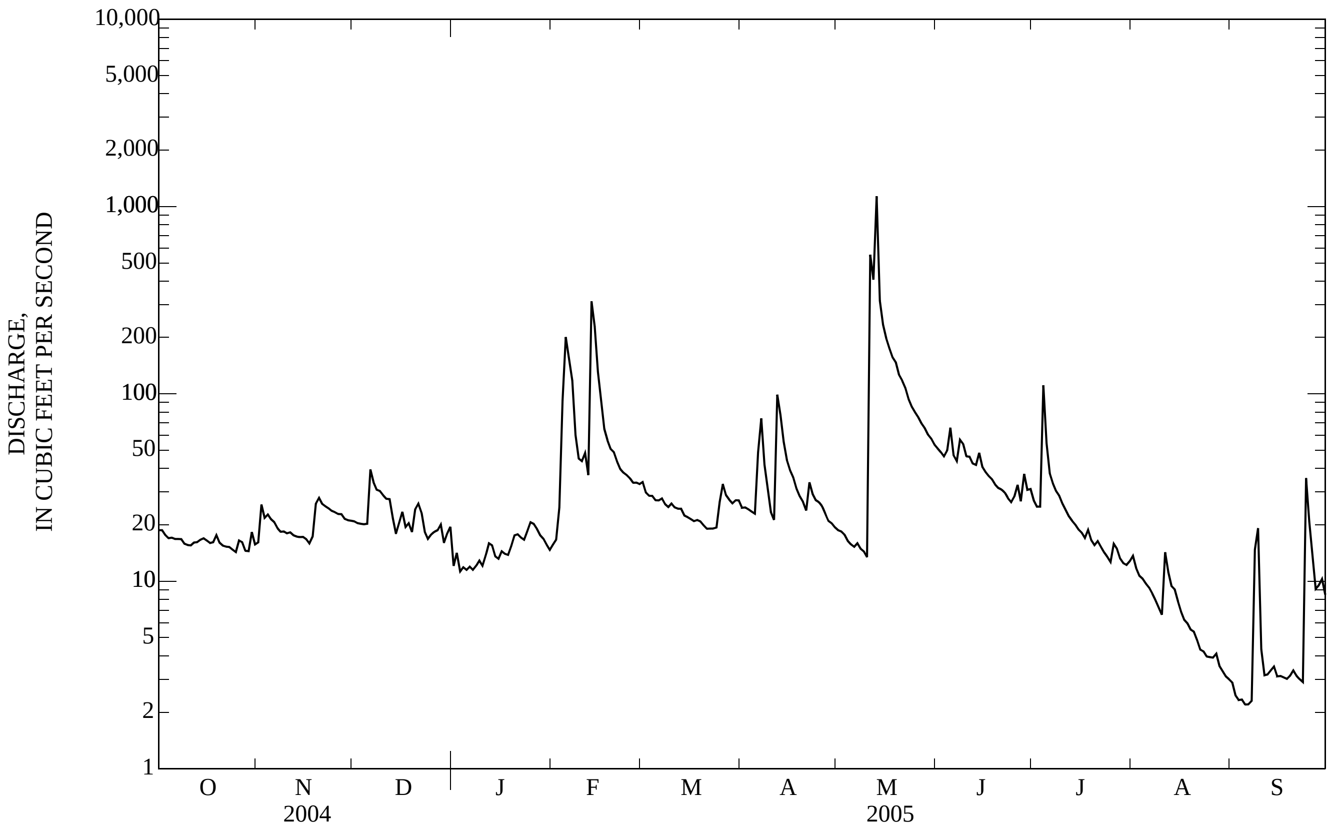
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.7	22.4	16.8	18.7	42.6	65.5	56.1	64.5	67.3	44.1	31.5	19.0
MAX	105	122	85.8	104	165	270	323	337	270	463	427	159
(WY)	(1987)	(1984)	(1983)	(1960)	(1965)	(1979)	(1991)	(1974)	(1990)	(1993)	(1993)	(1993)
MIN	0.24	0.31	0.25	0.02	0.32	1.05	0.85	2.04	0.25	0.66	0.76	0.58
(WY)	(1957)	(1951)	(1957)	(1977)	(1989)	(1956)	(1956)	(1956)	(1956)	(1977)	(1955)	(1950)

05451900 RICHLAND CREEK NEAR HAVEN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1950 - 2005	
ANNUAL TOTAL	14,716.4		13,082.6			
ANNUAL MEAN	40.2		35.8		38.8	
HIGHEST ANNUAL MEAN					162	1993
LOWEST ANNUAL MEAN					2.49	1956
HIGHEST DAILY MEAN	899	Aug 27	1,130	May 13	2,880	Aug 16, 1977
LOWEST DAILY MEAN	2.1	Aug 23	2.2	Sep 5 a	0.00	Jan 22, 1977 b
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 19	2.4	Sep 1	0.00	Jan 22, 1977
MAXIMUM PEAK FLOW			2,370	May 13	12,200	Apr 12, 1991
MAXIMUM PEAK STAGE			21.02	May 13	26.71	Apr 12, 1991
INSTANTANEOUS LOW FLOW			1.7	Sep 5		
ANNUAL RUNOFF (AC-FT)	29,190		25,950		28,100	
ANNUAL RUNOFF (CFSM)	0.717		0.639		0.691	
ANNUAL RUNOFF (INCHES)	9.76		8.68		9.39	
10 PERCENT EXCEEDS	64		56		80	
50 PERCENT EXCEEDS	22		20		14	
90 PERCENT EXCEEDS	8.9		6.4		1.4	

a Also Sept. 9.
b Also Jan. 23 to Feb. 2, 1977, July 9 and 10, 1959.
e Estimated.



05452000 SALT CREEK NEAR ELBERON, IA

LOCATION.--Lat 41°57'51", long 92°18'47", in $NW^1/_4$ $NW^1/_4$ sec.36, T.83 N., R.13 W., Tama County, Hydrologic Unit 07080208, on left bank 20 ft upstream from bridge on U.S. Highway 30, 2.0 mi upstream from Hog Run, 3.0 mi south of Elberon, and 10 mi (revised) upstream from mouth.

DRAINAGE AREA.--201 mi^2.

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

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1946.

GAGE.--Water-stage recorder. Datum of gage is 781.58 ft above NGVD of 1929 (Iowa Highway Commission bench mark). Prior to Oct. 15, 1945 and June 14, 1947 to Feb. 10, 1949, nonrecording gage on upstream side of bridge at present datum.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1944 reached a stage of 19.9 ft, from floodmark at downstream side of bridge, discharge, about 30,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	37	50	e52	e37	82	66	97	142	206	53	20
2	28	57	50	e49	e38	87	66	95	137	175	49	19
3	26	59	49	e45	e41	80	65	94	132	160	46	19
4	25	56	49	e44	e80	81	65	90	137	184	43	19
5	24	52	48	e46	e251	78	63	88	245	167	41	20
6	24	49	72	e40	e419	76	83	87	185	142	39	21
7	25	45	77	e39	e307	85	235	96	159	131	36	20
8	27	41	71	e39	215	78	163	102	154	123	34	23
9	25	40	70	e41	149	74	138	94	153	116	32	27
10	24	40	67	e38	121	76	126	90	142	108	30	24
11	24	40	63	e44	125	75	119	336	137	102	41	21
12	25	38	62	e41	114	71	221	342	131	97	45	20
13	25	37	46	e39	628	65	236	1,100	126	93	35	20
14	26	36	e38	e37	1,130	67	184	624	154	88	32	19
15	27	37	e48	e38	372	62	163	437	150	85	30	18
16	27	37	e48	e42	228	64	153	355	134	81	28	18
17	26	37	e41	e38	175	61	150	311	126	77	27	18
18	26	38	e43	e41	148	62	139	283	120	76	27	17
19	30	56	e44	e44	137	62	135	275	114	71	26	17
20	29	71	e52	e46	131	58	131	246	108	68	28	16
21	27	66	e53	e45	122	57	126	231	105	73	28	16
22	28	63	e47	e44	112	56	135	223	102	71	24	15
23	29	60	e43	e42	106	57	132	206	99	65	24	15
24	28	57	e38	e44	102	57	127	193	95	61	24	17
25	26	55	e37	e46	99	68	124	184	101	57	23	23
26	33	55	e39	e48	94	75	121	179	131	67	24	25
27	37	56	e45	e46	94	74	114	172	124	68	23	20
28	35	54	e48	e40	94	73	107	166	298	59	22	19
29	35	51	e41	e39	---	71	104	159	368	55	21	20
30	44	51	e44	e37	---	72	101	153	259	54	20	18
31	40	---	e50	e35	---	75	---	146	---	52	20	---
TOTAL	881	1,471	1,573	1,309	5,669	2,179	3,892	7,254	4,568	3,032	975	584
MEAN	28.4	49.0	50.7	42.2	202	70.3	130	234	152	97.8	31.5	19.5
MAX	44	71	77	52	1,130	87	236	1,100	368	206	53	27
MIN	24	36	37	35	37	56	63	87	95	52	20	15
AC-FT	1,750	2,920	3,120	2,600	11,240	4,320	7,720	14,390	9,060	6,010	1,930	1,160
CFSM	0.14	0.24	0.25	0.21	1.01	0.35	0.65	1.16	0.76	0.49	0.16	0.10
IN.	0.16	0.27	0.29	0.24	1.05	0.40	0.72	1.34	0.85	0.56	0.18	0.11

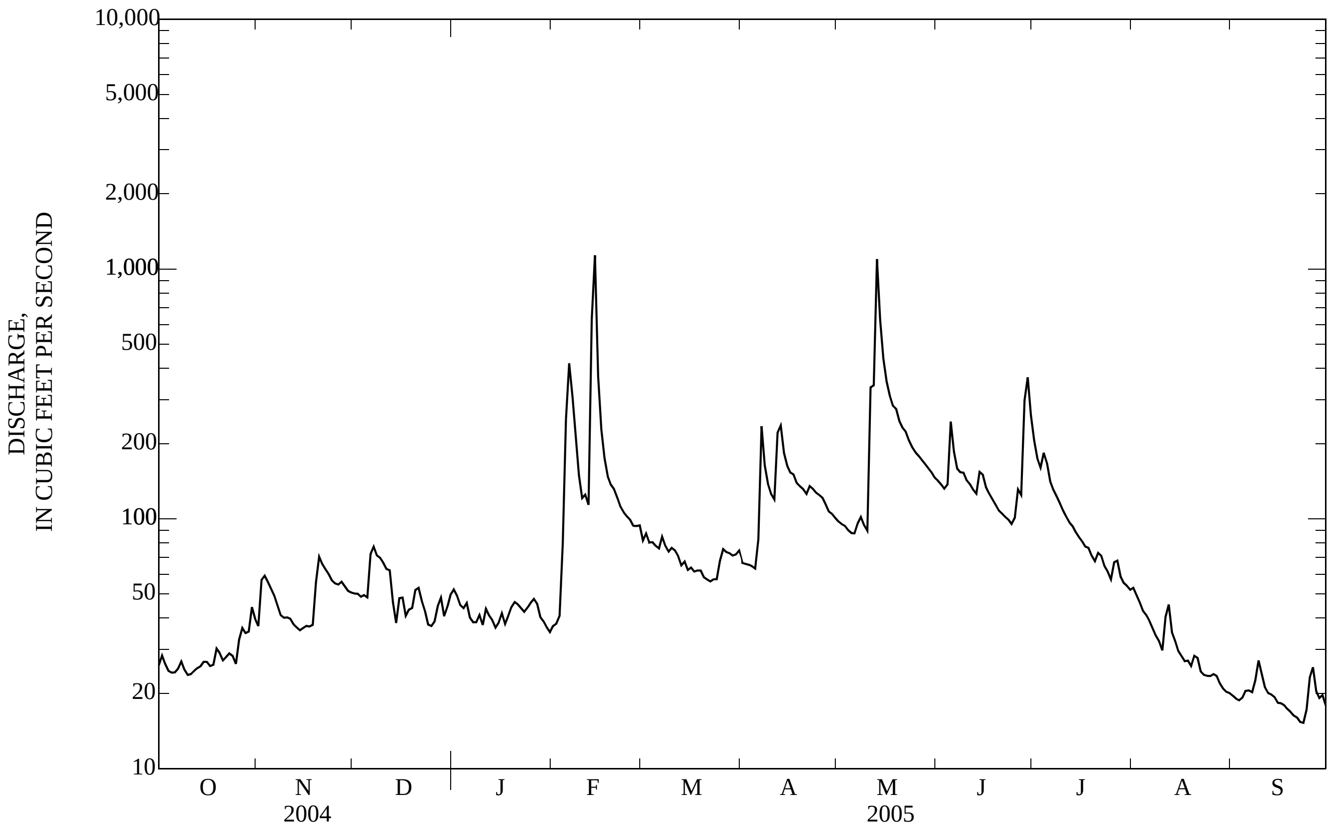
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.4	78.6	62.0	68.4	138	255	188	201	262	189	97.5	63.3
MAX	250	425	314	337	607	844	652	573	1,826	1,803	1,157	440
(WY)	(1978)	(1983)	(1983)	(1973)	(1982)	(1993)	(1983)	(1982)	(1947)	(1993)	(1993)	(1993)
MIN	4.85	4.08	2.29	1.14	7.02	11.7	11.0	5.75	7.79	3.84	5.65	5.43
(WY)	(1951)	(1951)	(1977)	(1977)	(1977)	(1954)	(1989)	(1977)	(1977)	(1989)	(1949)	(1950)

05452000 SALT CREEK NEAR ELBERON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	46,761		33,387			
ANNUAL MEAN	128		91.5		139	
HIGHEST ANNUAL MEAN					569	1993
LOWEST ANNUAL MEAN					23.2	1989
HIGHEST DAILY MEAN	2,320	May 24	1,130	Feb 14	14,000	Jul 9, 1993
LOWEST DAILY MEAN	18	Jan 30	15	Sep 22 a	0.85	Jan 31, 1977
ANNUAL SEVEN-DAY MINIMUM	20	Jan 29	16	Sep 18	0.95	Jan 25, 1977
MAXIMUM PEAK FLOW			1,680	Feb 14	41,800	Jul 9, 1993
MAXIMUM PEAK STAGE			14.57	Feb 14	20.85	Jul 9, 1993
INSTANTANEOUS LOW FLOW			14	Sep 23 b		
ANNUAL RUNOFF (AC-FT)	92,750		66,220		100,500	
ANNUAL RUNOFF (CFSM)	0.636		0.455		0.690	
ANNUAL RUNOFF (INCHES)	8.65		6.18		9.38	
10 PERCENT EXCEEDS	227		175		278	
50 PERCENT EXCEEDS	66		57		54	
90 PERCENT EXCEEDS	25		24		9.8	

a Also Sep. 23.
b Also Sep. 24.
e Estimated.



05452200 WALNUT CREEK NEAR HARTWICK, IA

LOCATION.--Lat 41°50'06", long 92°23'10", in SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.8, T.81 N, R.13 W., Poweshiek County, Hydrologic Unit 07080208, on right bank 5 ft downstream from bridge on County Highway V21, 1.2 mi downstream from North Walnut Creek, 4.0 mi northwest of Hartwick, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--70.9 mi^2.

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

REVISED RECORDS.--WSP 1558: 1950 (P), 1951-57.

GAGE.--Water-stage recorder. Datum of gage is 786.59 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of 17.7 ft, from information by local residents, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	22	21	e17	e20	41	39	35	29	17	19	e3.7
2	22	34	21	e20	22	37	38	33	27	16	17	e3.4
3	21	29	21	e16	29	35	37	32	26	16	16	e3.4
4	19	35	21	e16	147	37	36	30	29	402	15	e3.4
5	19	32	21	e16	240	34	35	29	47	136	14	e3.2
6	19	30	52	e17	174	34	57	28	30	83	13	e3.3
7	20	26	47	e17	130	35	214	29	27	67	12	e3.5
8	20	24	42	e17	78	32	128	27	36	57	11	e14
9	18	24	42	e17	61	31	96	26	35	50	11	17
10	18	23	39	e16	59	32	75	24	30	45	10	8.9
11	17	23	36	e19	63	31	68	382	28	41	17	6.7
12	18	21	35	e20	54	30	195	357	25	38	13	6.3
13	18	21	31	e21	440	31	155	1,180	24	36	11	6.1
14	18	21	e23	e20	261	29	120	293	26	34	11	5.9
15	17	21	e27	e19	148	28	99	188	23	32	9.4	5.7
16	16	21	e28	e20	107	27	87	147	22	31	8.6	5.9
17	16	21	e25	e20	86	27	79	121	20	29	8.2	5.6
18	16	22	e26	e19	72	27	70	103	19	31	8.1	5.6
19	19	33	e24	e22	65	27	64	91	19	27	7.6	5.6
20	17	32	e30	e23	64	25	60	77	18	26	7.4	5.7
21	16	28	e32	e24	56	25	54	70	18	26	7.0	6.0
22	17	28	e27	e23	51	25	68	62	17	24	6.8	5.5
23	17	27	e22	e22	49	25	60	55	17	23	6.5	5.4
24	15	25	e19	e24	47	26	55	50	16	22	6.5	80
25	15	24	e20	e25	45	35	52	46	19	21	6.6	18
26	23	24	e21	e25	42	41	50	43	23	24	7.0	10
27	21	24	e21	e24	43	38	45	39	18	22	6.9	8.1
28	19	22	e27	e22	42	36	42	37	34	20	6.1	8.1
29	21	22	e23	e21	---	35	40	34	21	19	e4.4	8.0
30	29	22	e25	e20	---	37	37	32	19	18	e3.9	6.5
31	21	---	e28	e18	---	43	---	30	---	18	e3.8	---
TOTAL	585	761	877	620	2,695	996	2,255	3,730	742	1,451	304.8	278.5
MEAN	18.9	25.4	28.3	20.0	96.2	32.1	75.2	120	24.7	46.8	9.83	9.28
MAX	29	35	52	25	440	43	214	1,180	47	402	19	80
MIN	15	21	19	16	20	25	35	24	16	16	3.8	3.2
AC-FT	1,160	1,510	1,740	1,230	5,350	1,980	4,470	7,400	1,470	2,880	605	552
CFSM	0.27	0.36	0.40	0.28	1.36	0.45	1.06	1.70	0.35	0.66	0.14	0.13
IN.	0.31	0.40	0.46	0.33	1.41	0.52	1.18	1.96	0.39	0.76	0.16	0.15

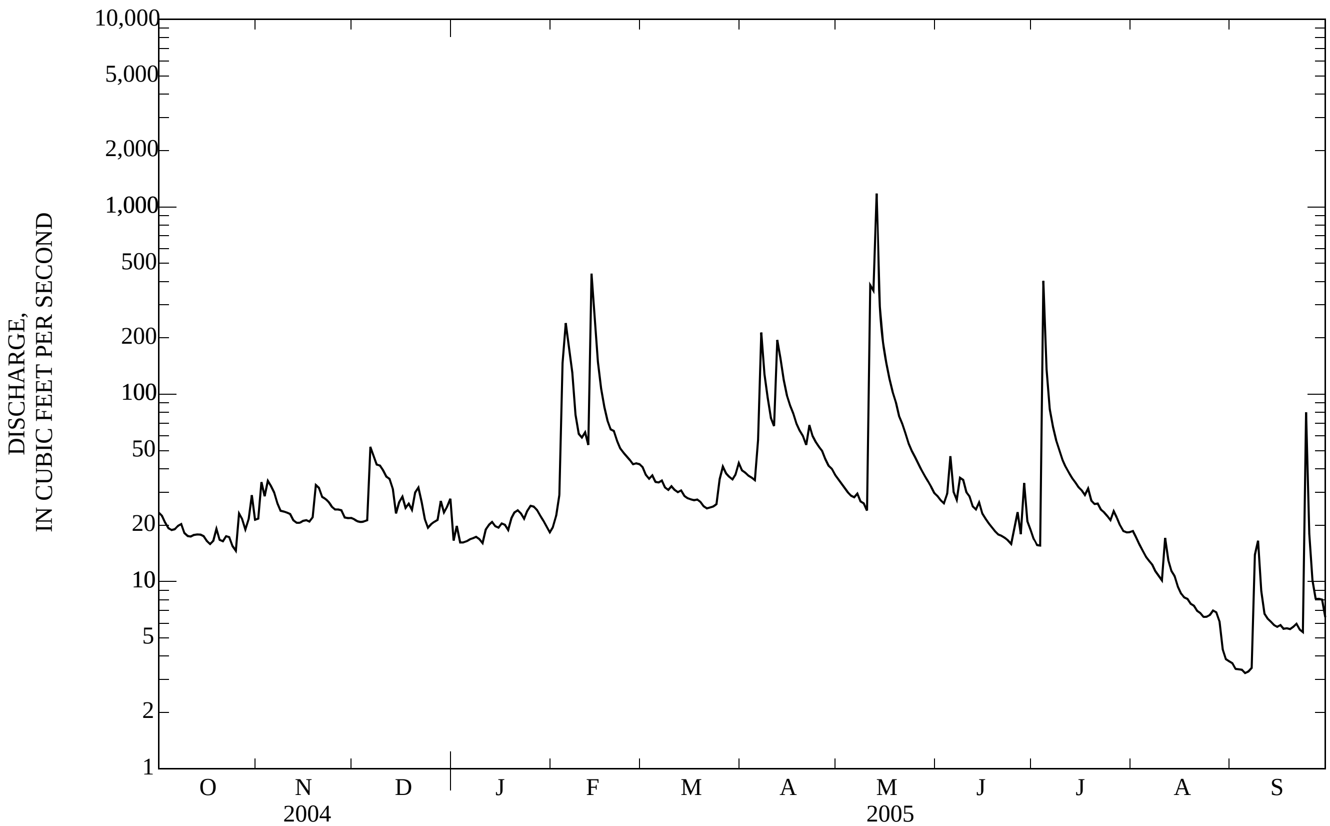
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2005, BY WATER YEAR (WY)

MEAN	18.9	27.1	22.3	24.7	50.6	81.4	74.0	81.1	82.2	54.1	36.3	23.4
MAX	137	171	109	179	191	300	365	452	450	461	498	185
(WY)	(1987)	(1984)	(1993)	(1960)	(1971)	(1993)	(1991)	(1974)	(1990)	(1993)	(1993)	(1993)
MIN	0.00	0.29	0.06	0.01	1.40	1.64	1.03	1.62	0.76	1.01	0.38	0.28
(WY)	(1957)	(1956)	(1977)	(1956)	(1954)	(1954)	(1957)	(1977)	(1956)	(1954)	(1955)	(1953)

05452200 WALNUT CREEK NEAR HARTWICK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1950 - 2005	
ANNUAL TOTAL	21,126.9		15,295.3			
ANNUAL MEAN	57.7		41.9		47.9	
HIGHEST ANNUAL MEAN					200	1993
LOWEST ANNUAL MEAN					4.76	1956
HIGHEST DAILY MEAN	2,190	Aug 27	1,180	May 13	4,840	Jul 2, 1983
LOWEST DAILY MEAN	6.8	Aug 23	3.2	Sep 5	0.00	Jul 31, 1954
ANNUAL SEVEN-DAY MINIMUM	8.4	Aug 19	3.4	Sep 1	0.00	Aug 27, 1955 a
MAXIMUM PEAK FLOW			3,270	May 13	7,900	Apr 29, 1991
MAXIMUM PEAK STAGE			14.03	May 13	16.93	Apr 29, 1991
ANNUAL RUNOFF (AC-FT)	41,910		30,340		34,730	
ANNUAL RUNOFF (CFSM)	0.814		0.591		0.676	
ANNUAL RUNOFF (INCHES)	11.08		8.03		9.19	
10 PERCENT EXCEEDS	91		70		102	
50 PERCENT EXCEEDS	29		25		17	
90 PERCENT EXCEEDS	13		8.1		1.5	

a Many days in 1954-57 and 1977.
e Estimated.



05453000 BIG BEAR CREEK AT LADORA, IA

LOCATION.--Lat 41°44'58", long 92°10'55", in SW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.7, T.80 N., R.11 W., Iowa County, Hydrologic Unit 07080208, on left bank 10 ft downstream from bridge on County Highway V52, 0.4 mi south of Ladora, 1.2 mi downstream from Coats Creek, 2.8 mi upstream from Little Bear Creek, and 8.1 mi upstream from mouth.

DRAINAGE AREA.--189 mi^2.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1966, published as "Bear Creek at Ladora".

REVISED RECORDS.--WSP 1308: 1947 (M). WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 744.94 ft above NGVD of 1929. Oct. 1945 to June 26, 1946, non-recording gage and June 27, 1946 to Sept. 30, 1980, water-stage recorder at datum 10.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	40	50	e73	e44	95	105	132	127	81	42	13
2	41	47	51	e60	e58	100	99	128	121	76	41	12
3	33	53	48	e51	e88	91	95	124	118	75	34	12
4	28	59	49	e46	e246	90	92	118	124	225	31	13
5	27	64	48	e43	e660	85	87	115	288	395	28	12
6	28	58	99	e33	e403	82	97	113	181	173	27	12
7	28	52	108	e31	e302	84	338	111	152	135	26	12
8	30	46	91	e32	e223	77	267	107	155	118	24	15
9	28	45	87	e35	176	75	217	104	173	107	23	43
10	25	44	82	e33	141	80	192	98	150	97	e26	21
11	25	44	75	e39	150	80	179	231	145	89	28	15
12	26	43	74	e56	153	77	456	619	132	84	33	13
13	27	41	66	e54	717	72	528	1,530	124	77	25	12
14	27	42	e41	e45	769	77	385	e838	154	71	23	12
15	29	42	e53	e43	393	71	321	e567	131	64	22	12
16	28	42	e54	e41	272	73	281	e441	120	61	21	13
17	27	41	e50	e39	218	71	256	384	112	57	20	12
18	27	41	e53	e38	187	72	230	355	109	61	19	12
19	29	63	e48	e43	170	71	207	339	106	62	19	11
20	31	73	e54	e49	163	69	193	290	101	52	18	10
21	28	65	e56	e49	152	68	180	264	100	53	17	10
22	32	62	e49	e47	135	68	231	248	97	55	17	9.8
23	31	61	e44	e47	126	68	229	226	90	48	16	9.9
24	27	58	e43	e50	121	69	198	208	82	44	16	12
25	26	55	e45	e54	116	89	193	194	79	41	16	17
26	31	56	e47	e52	109	99	187	183	136	49	16	16
27	45	56	e50	e50	107	91	171	171	100	53	16	14
28	39	53	e53	e49	107	88	154	162	99	43	15	13
29	40	52	e50	e47	---	85	148	149	101	38	14	14
30	46	52	e58	e46	---	87	140	142	88	36	14	13
31	47	---	e62	e44	---	122	---	133	---	35	13	---
TOTAL	970	1,550	1,838	1,419	6,506	2,526	6,456	8,824	3,795	2,655	700	415.7
MEAN	31.3	51.7	59.3	45.8	232	81.5	215	285	126	85.6	22.6	13.9
MAX	47	73	108	73	769	122	528	1,530	288	395	42	43
MIN	25	40	41	31	44	68	87	98	79	35	13	9.8
AC-FT	1,920	3,070	3,650	2,810	12,900	5,010	12,810	17,500	7,530	5,270	1,390	825
CFSM	0.17	0.27	0.31	0.24	1.23	0.43	1.14	1.51	0.67	0.45	0.12	0.07
IN.	0.19	0.31	0.36	0.28	1.28	0.50	1.27	1.74	0.75	0.52	0.14	0.08

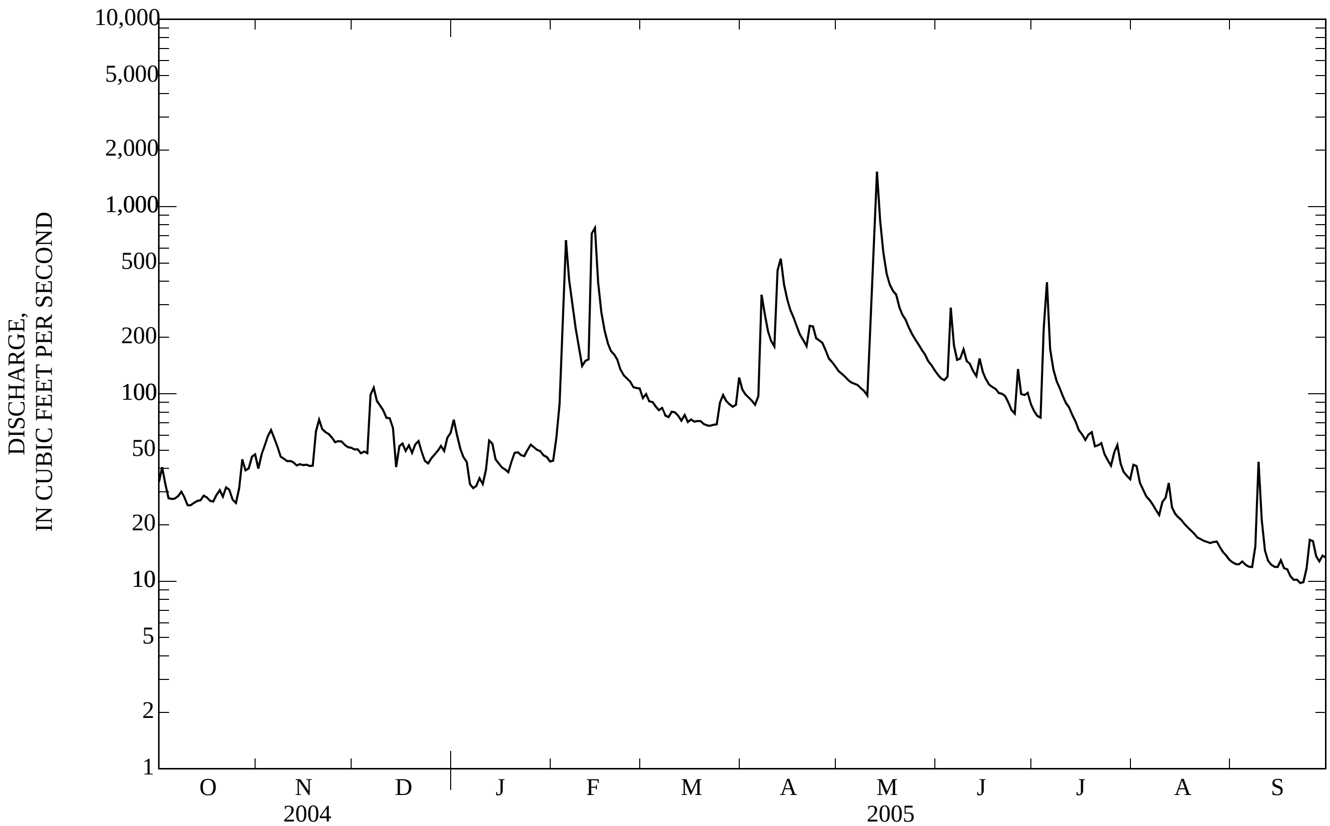
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	56.9	72.1	60.4	69.9	123	232	195	219	228	138	88.6	69.6
MAX	375	341	294	432	543	895	704	1,185	1,136	1,011	1,537	559
(WY)	(1987)	(1993)	(1983)	(1960)	(1971)	(1979)	(1973)	(1974)	(1947)	(1993)	(1993)	(1993)
MIN	0.49	1.68	0.33	0.02	2.07	5.99	4.17	2.25	2.94	5.00	2.36	1.34
(WY)	(1957)	(1956)	(1956)	(1977)	(1977)	(1957)	(1956)	(1956)	(1956)	(1988)	(1955)	(1956)

05453000 BIG BEAR CREEK AT LADORA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	45,163		37,654.7			
ANNUAL MEAN	123		103		129	
HIGHEST ANNUAL MEAN					516	1993
LOWEST ANNUAL MEAN					8.26	1956
HIGHEST DAILY MEAN	1,660	May 25	1,530	May 13	9,480	Mar 30, 1960
LOWEST DAILY MEAN	24	Jan 30	9.8	Sep 22	0.00	Jan 22, 1956 a
ANNUAL SEVEN-DAY MINIMUM	27	Jan 29	11	Sep 17	0.00	Jan 22, 1956
MAXIMUM PEAK FLOW			2,340	May 13	10,500	Mar 30, 1960
MAXIMUM PEAK STAGE			19.37	May 13	15.32	Sep 8, 1977 b
INSTANTANEOUS LOW FLOW			8.7	Sep 22		
ANNUAL RUNOFF (AC-FT)	89,580		74,690		93,660	
ANNUAL RUNOFF (CFSM)	0.653		0.546		0.684	
ANNUAL RUNOFF (INCHES)	8.89		7.41		9.29	
10 PERCENT EXCEEDS	253		220		278	
50 PERCENT EXCEEDS	72		60		47	
90 PERCENT EXCEEDS	29		17		6.0	

a Also Jan. 23 to Feb. 8, 1956, Jan. 19 to Feb. 3, 1977.
b Datum in use prior to Oct. 1, 1980.
e Estimated.



05453100 IOWA RIVER AT MARENGO, IA

LOCATION.--Lat 41°48'46", long 92°03'53", in SE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.24, T.81 N., R.11 W., Iowa County, Hydrologic Unit 07080208, on left bank 5 ft upstream from bridge on County Highway V66, 1.0 mi downstream from Big Bear Creek, 0.8 mi north of Marengo, 4.6 mi upstream from Hilton Creek, and 134.1 mi (revised) upstream from mouth.

DRAINAGE AREA.--2,794 mi^2.

PERIOD OF RECORD.--October 1956 to current year. Monthly discharge only for some periods, published in WSP 1728.

REVISED RECORDS.--WSP 1558: 1957.

GAGE.--Water-stage recorder. Datum of gage is 720.52 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	485	469	642	e552	e362	1,350	1,160	2,400	2,650	5,400	1,130	440
2	503	479	627	e542	e406	1,270	1,160	2,160	2,500	5,540	1,150	425
3	477	551	615	e527	e417	1,210	1,150	2,000	2,370	5,710	1,110	409
4	463	653	610	e501	e641	1,210	1,150	1,880	2,280	6,000	1,000	391
5	442	704	604	e495	e1,340	1,170	1,170	1,790	2,630	6,730	927	377
6	435	678	721	e485	e2,070	1,130	1,210	1,720	2,660	6,000	861	357
7	430	636	848	e476	e2,580	1,120	1,780	1,680	2,390	4,260	808	340
8	436	598	856	e462	e2,310	1,110	1,840	1,700	2,210	3,400	764	335
9	432	577	838	e454	e1,950	1,080	1,590	1,950	2,170	2,900	723	415
10	417	561	818	e451	e1,750	1,060	1,440	1,990	2,220	2,540	694	462
11	413	554	790	e454	e1,630	1,040	1,370	2,510	2,470	2,270	716	478
12	407	539	766	e451	e1,580	1,020	1,670	4,910	2,500	2,110	739	409
13	400	526	729	e448	e2,310	976	2,390	6,500	2,470	1,930	813	367
14	396	512	e553	e438	4,230	950	3,760	7,290	2,480	1,780	786	334
15	393	506	e443	e423	4,550	913	4,520	7,680	2,750	1,640	745	316
16	389	505	e509	e411	4,260	906	4,210	7,870	2,710	1,520	685	307
17	384	503	e557	e393	3,910	886	3,870	7,830	2,390	1,410	659	302
18	384	503	e592	e386	3,440	879	3,710	7,850	2,190	1,340	641	296
19	396	571	e540	e379	3,090	866	3,540	8,000	2,040	1,290	610	291
20	404	640	e559	e378	2,810	855	3,300	8,090	1,910	1,230	584	279
21	405	683	e586	e379	2,470	849	3,000	7,980	1,820	1,170	562	271
22	422	720	e557	e374	2,160	830	2,850	7,320	1,740	1,140	552	263
23	420	729	e540	e378	1,930	e834	2,780	5,970	1,710	1,170	604	255
24	393	712	e543	e377	1,770	e848	2,800	4,930	1,670	1,140	652	277
25	382	698	e532	e382	1,640	e851	3,100	4,320	1,620	1,060	610	394
26	403	687	e537	e379	1,560	e887	3,260	3,860	1,870	1,030	568	372
27	453	683	e543	e373	1,480	e935	3,300	3,580	2,850	1,090	534	359
28	454	675	e566	e369	1,420	e1,010	3,210	3,410	4,180	1,200	517	361
29	472	671	e569	e369	---	e1,050	2,990	3,240	4,910	1,240	499	392
30	472	658	e586	e360	---	1,070	2,690	3,020	5,250	1,340	480	501
31	491	---	e571	e360	---	1,150	---	2,820	---	1,230	459	---
TOTAL	13,253	18,181	19,347	13,206	60,066	31,315	75,970	138,250	75,610	77,810	22,182	10,775
MEAN	428	606	624	426	2,145	1,010	2,532	4,460	2,520	2,510	716	359
MAX	503	729	856	552	4,550	1,350	4,520	8,090	5,250	6,730	1,150	501
MIN	382	469	443	360	362	830	1,150	1,680	1,620	1,030	459	255
AC-FT	26,290	36,060	38,370	26,190	119,100	62,110	150,700	274,200	150,000	154,300	44,000	21,370
CFSM	0.15	0.22	0.22	0.15	0.77	0.36	0.91	1.60	0.90	0.90	0.26	0.13
IN.	0.18	0.24	0.26	0.18	0.80	0.42	1.01	1.84	1.01	1.04	0.30	0.14

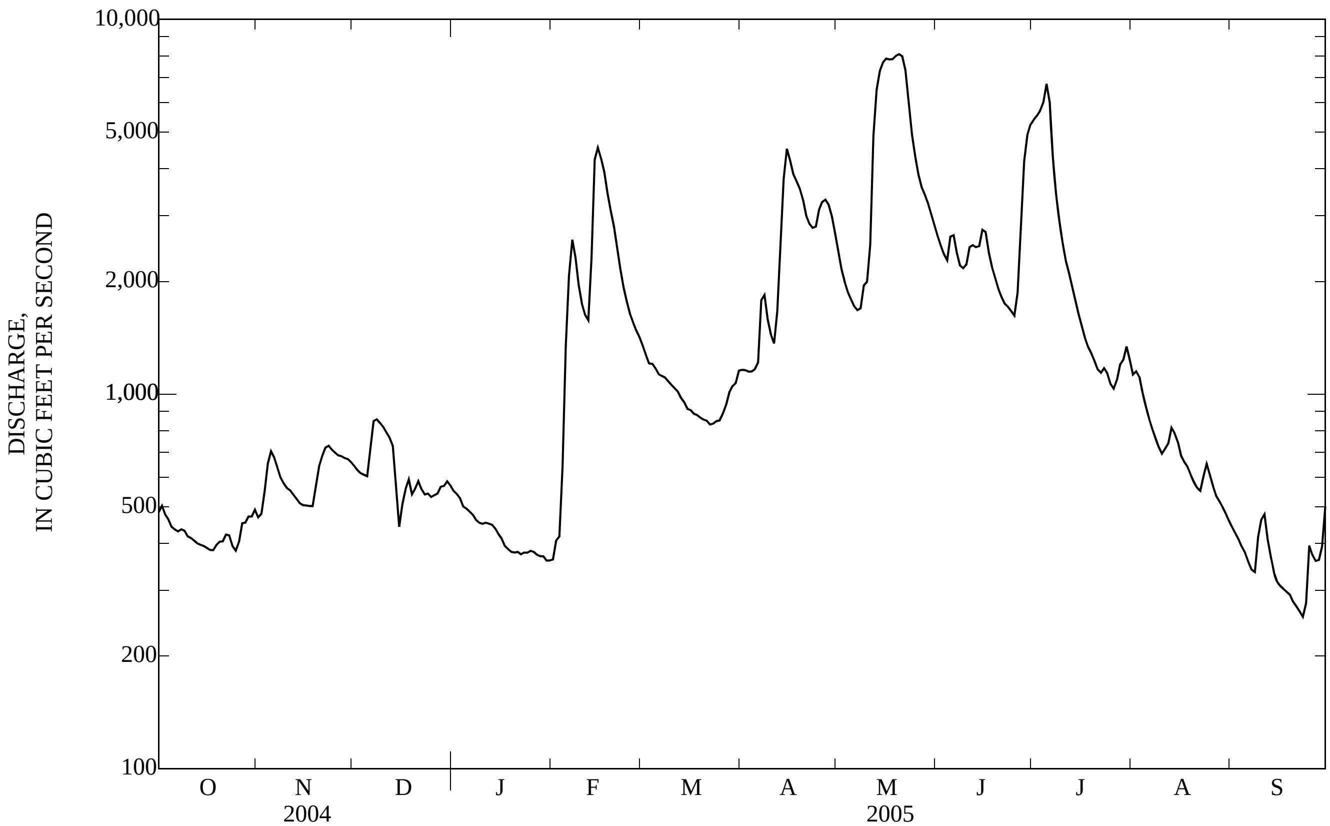
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	975	1,112	920	789	1,365	3,038	3,243	3,123	3,419	2,673	1,460	966
MAX	5,078	3,878	3,633	4,194	5,424	8,227	11,310	9,340	9,287	19,620	15,290	7,901
(WY)	(1987)	(1973)	(1983)	(1973)	(1984)	(1979)	(1993)	(1991)	(1998)	(1993)	(1993)	(1993)
MIN	80.8	90.0	63.0	31.3	79.0	256	259	179	114	116	108	123
(WY)	(1957)	(1957)	(1990)	(1977)	(1977)	(1964)	(1977)	(1977)	(1977)	(1977)	(1989)	(1988)

05453100 IOWA RIVER AT MARENGO, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1957 - 2005	
ANNUAL TOTAL	677,075		555,965			
ANNUAL MEAN	1,850		1,523		1,925	
HIGHEST ANNUAL MEAN					7,192	1993
LOWEST ANNUAL MEAN					283	1989
HIGHEST DAILY MEAN	14,300	May 31	8,090	May 20	35,600	Jul 12, 1993
LOWEST DAILY MEAN	331	Feb 18	255	Sep 23	24	Jan 29, 1977
ANNUAL SEVEN-DAY MINIMUM	352	Feb 12	276	Sep 18	25	Jan 28, 1977
MAXIMUM PEAK FLOW			8,130	May 20	38,000	Jul 19, 1993
MAXIMUM PEAK STAGE			15.55	May 20	20.31	Jul 19, 1993
INSTANTANEOUS LOW FLOW			247	Sep 24		
ANNUAL RUNOFF (AC-FT)	1,343,000		1,103,000		1,394,000	
ANNUAL RUNOFF (CFSM)	0.662		0.545		0.689	
ANNUAL RUNOFF (INCHES)	9.01		7.40		9.36	
10 PERCENT EXCEEDS	4,020		3,480		4,800	
50 PERCENT EXCEEDS	970		848		980	
90 PERCENT EXCEEDS	389		385		218	

e Estimated



05453510 CORALVILLE LAKE NEAR CORALVILLE, IA

LOCATION.--Lat 41°43'29", long 91°31'40", in SW1/4 NE1/4 sec.22, T.80 N., R.6 W., Johnson County, Hydrologic Unit 07080208, at outlet works at left end of Coralville Dam on Iowa River, 2.3 mi upstream from Rapid Creek, 4.3 mi northeast of Coralville post office, and 81.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--3,115 mi^2.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is at NGVD 0f 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in 1957. Storage began in September 1958. Releases controlled by three gates, 8.33 ft wide and 20 ft high, into forechamber of 23-ft diameter concrete conduit through dam. Inlet invert elevation at 646.0 ft. No dead storage. Maximum design discharge through gates is 20,000 ft^3/s. Ungated spillway is concrete overflow section 500 ft in length at elevation 712 ft above sea level, contents, 469,000 acre-ft, surface area, 24,800 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Normal operation will lower the elevation from 683 ft. (surface area 5,430 acres) on Feb. 15 to 679 ft (surface area 3,270 acres) on Mar 1, maintaining 679 ft. Mar. 1 to June 15, 683 ft June 15 to Sept. 15, 686 ft. (surface area 7,000 acres) Sept. 15 to Dec. 15, and 683 ft Dec. 15 to Feb. 15, with a minimum release of 150 ft^3/s and maximum release of 10,000 ft^3/s Dec. 15 to May 1 and 6,000 ft^3/s May 1 to Dec. 15. Prior to October 1, 2000 published as contents in acre feet, and as elevation in feet NGVD thereafter.

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

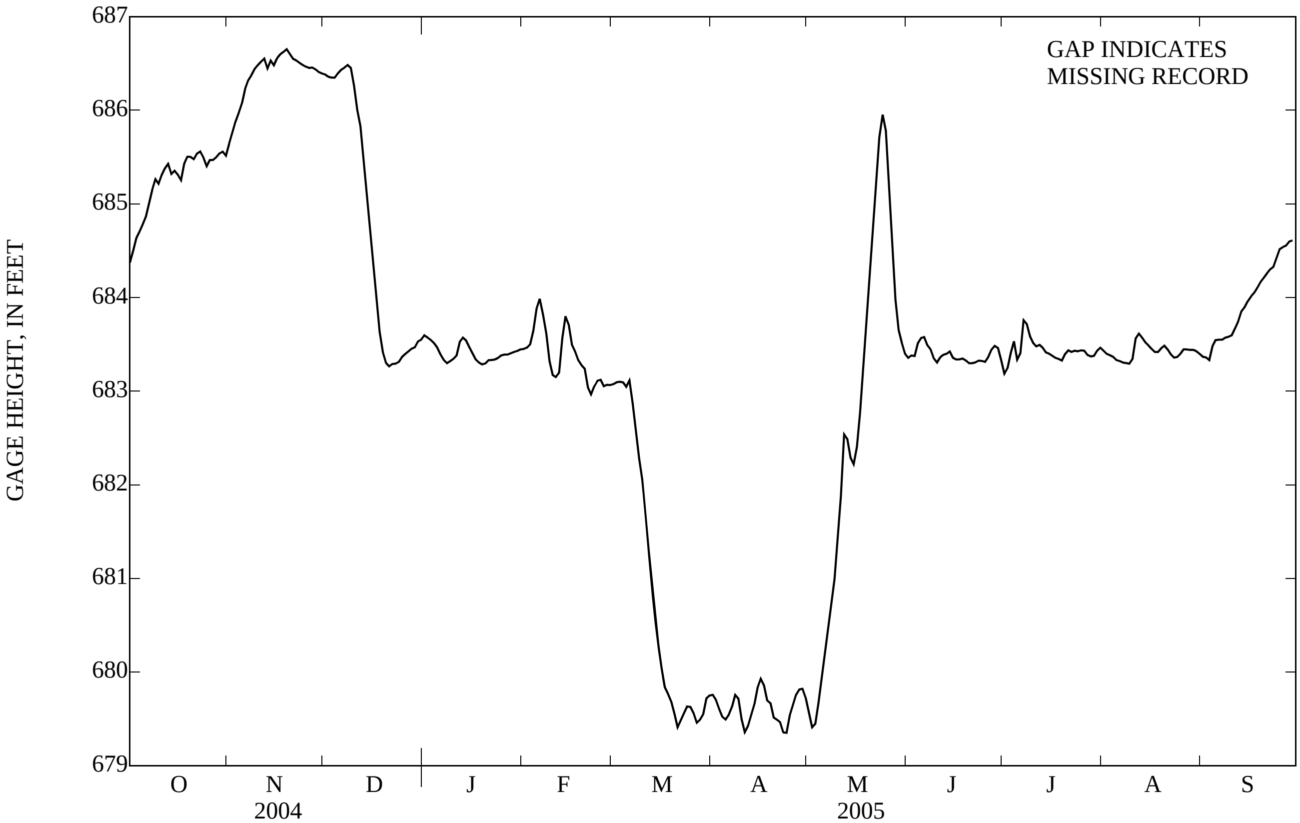
EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 716.71 ft July 24, 1993; minimum elevation, 658.77 ft Mar. 10, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 686.66 ft on Nov. 20; minimum elevation, 679.32 ft on Apr. 24.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684.17	685.50	686.39	683.55	683.45	683.06	679.74	679.69	683.37	683.29	683.47	683.39
2	684.44	685.69	686.38	683.61	683.45	683.08	679.76	679.52	683.35	683.15	683.42	683.36
3	684.51	685.78	686.35	683.56	683.47	683.10	679.68	679.37	683.39	683.28	683.39	683.36
4	684.67	685.91	686.35	683.54	683.51	683.10	679.58	679.47	683.37	683.45	683.38	683.32
5	684.71	685.99	686.35	683.50	683.69	683.09	679.50	679.74	683.56	683.56	683.36	683.53
6	684.80	686.10	686.41	683.45	683.94	683.03	679.49	680.02	683.57	683.26	683.32	683.55
7	684.88	686.27	686.44	683.37	684.00	683.14	679.56	680.26	683.58	683.45	683.32	683.55
8	685.05	686.34	686.46	683.32	683.75	682.78	679.65	680.51	683.46	683.86	683.30	683.55
9	685.18	686.39	686.49	683.29	683.57	682.51	679.79	680.78	683.44	683.67	683.30	683.58
10	685.29	686.46	686.44	683.33	683.24	682.21	679.69	681.06	683.32	683.56	683.29	683.58
11	685.19	686.49	686.20	683.35	683.15	682.00	679.43	681.56	683.30	683.50	683.36	683.60
12	685.35	686.53	685.94	683.39	683.15	681.61	679.33	681.99	683.38	683.47	683.63	683.69
13	685.39	686.56	685.79	683.57	683.21	681.20	679.45	682.72	683.39	683.50	683.61	683.76
14	685.44	686.41	685.38	683.57	683.68	680.90	679.57	682.41	683.40	683.45	683.56	683.88
15	685.28	686.57	684.97	683.53	683.84	680.50	679.68	682.25	683.43	683.40	683.51	683.90
16	685.38	686.45	684.54	683.45	683.67	680.21	679.88	682.21	683.33	683.40	683.48	683.98
17	685.29	686.59	684.16	683.39	683.44	679.98	679.94	682.47	683.34	683.37	683.44	684.02
18	685.24	686.60	683.85	683.32	683.42	679.79	679.83	682.88	683.34	683.35	683.41	684.06
19	685.49	686.63	683.56	683.30	683.30	679.76	679.65	683.42	683.35	683.34	683.42	684.12
20	685.51	686.66	683.37	683.28	683.27	679.66	679.67	683.89	683.32	683.32	683.47	684.18
21	685.50	686.58	683.28	683.30	683.23	679.52	679.46	684.41	683.29	683.42	683.49	684.22
22	685.47	686.54	683.26	683.34	682.98	679.37	679.50	684.90	683.30	683.44	683.43	684.27
23	685.56	686.53	683.30	683.33	682.96	679.52	679.45	685.41	683.31	683.41	683.38	684.31
24	685.56	686.50	683.29	683.34	683.08	679.57	679.32	685.81	683.33	683.44	683.35	684.33
25	685.47	686.48	683.32	683.36	683.12	679.65	679.36	686.00	683.32	683.42	683.37	684.45
26	685.38	686.46	683.38	683.39	683.12	679.62	679.59	685.71	683.31	683.44	683.41	684.54
27	685.50	686.45	683.40	683.39	683.03	679.54	679.66	685.03	683.38	683.43	683.46	684.54
28	685.46	686.46	683.43	683.39	683.08	679.43	679.79	684.39	683.46	683.37	683.44	684.56
29	685.51	686.43	683.46	683.41	---	679.51	679.82	683.84	683.49	683.37	683.44	684.61
30	685.55	686.40	683.47	683.42	---	679.56	679.82	683.59	683.45	683.38	683.44	684.61
31	685.56	---	683.55	683.43	---	679.77	---	683.49	---	683.45	683.42	---
MEAN	685.22	686.36	684.81	683.41	683.39	680.96	679.62	682.54	683.39	683.43	683.42	683.95
MAX	685.56	686.66	686.49	683.61	684.00	683.14	679.94	686.00	683.58	683.86	683.63	684.61
MIN	684.17	685.50	683.26	683.28	682.96	679.37	679.32	679.37	683.29	683.15	683.29	683.32

05453510 CORALVILLE LAKE NEAR CORALVILLE, IA—Continued



05453520 IOWA RIVER BELOW CORALVILLE DAM NEAR CORALVILLE, IA

LOCATION.--Lat 41°43'19", long 91°31'41", in SW$^1/_4$ NE$^1/_4$ sec.22, T.80 N., R.6 W., Johnson County, Hydrologic Unit 07080208, on left bank about 1200 ft downstream of Coralville Dam control house, 2.3 mi upstream from Rapid Creek, 4.3 mi northeast of Coralville Post Office, and 80.6 mi (revised) upstream from mouth.

DRAINAGE AREA.--3,115 mi^2.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records are considered good. U.S. Army Corps of Engineers data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

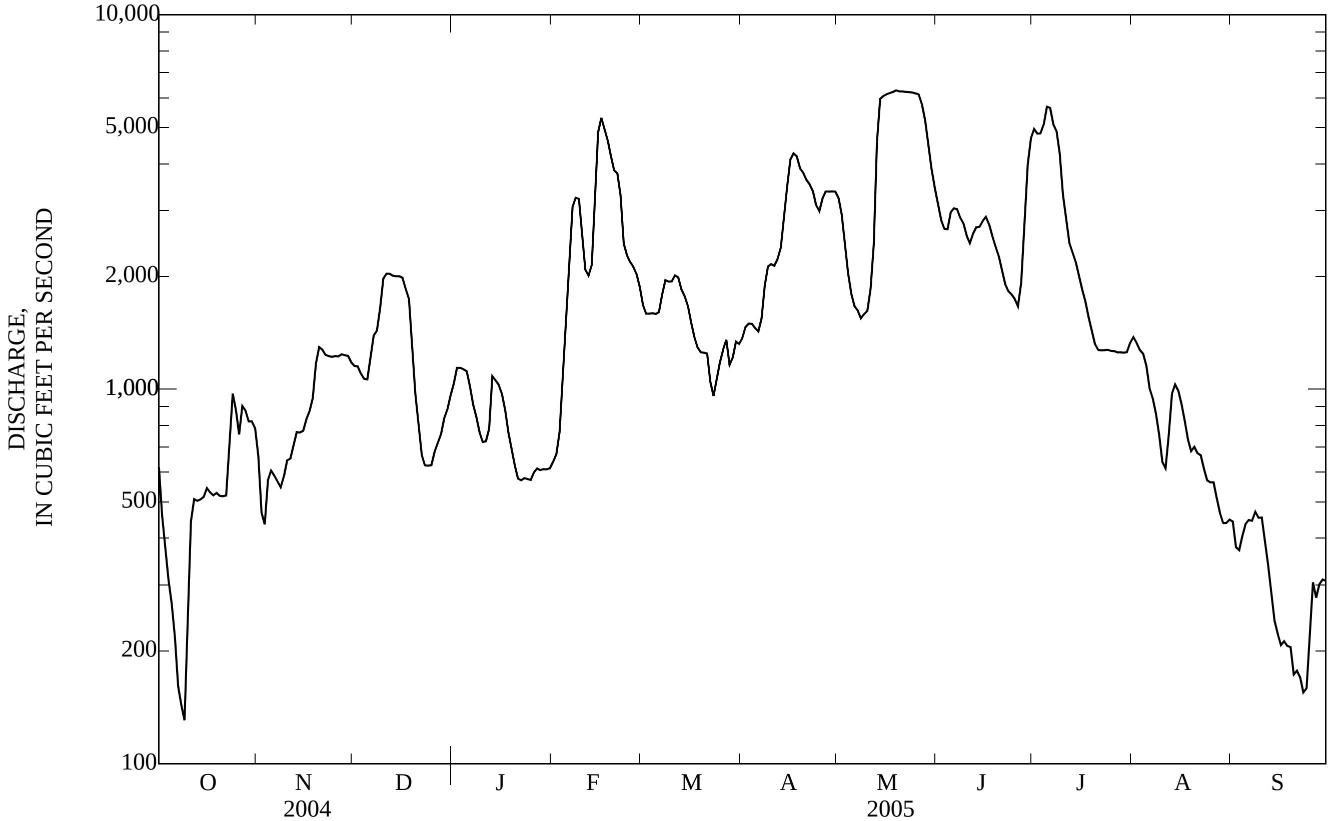
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	619	663	1,150	1,030	639	1,680	1,370	3,240	3,130	4,950	1,380	443
2	459	468	1,150	1,140	670	1,590	1,460	2,920	2,830	4,810	1,330	378
3	374	435	1,100	1,140	767	1,590	1,500	2,450	2,680	4,820	1,270	372
4	309	570	1,070	1,130	1,070	1,590	1,490	2,030	2,670	5,090	1,240	405
5	267	606	1,060	1,120	1,440	1,590	1,460	1,800	2,970	5,680	1,150	436
6	217	587	1,220	1,020	2,100	1,610	1,430	1,660	3,040	5,630	1,010	447
7	161	566	1,390	910	3,060	1,790	1,540	1,620	3,020	5,100	945	445
8	143	546	1,430	843	3,240	1,950	1,890	1,550	2,860	4,890	860	470
9	131	584	1,650	768	3,220	1,940	2,120	1,590	2,760	4,250	755	453
10	244	645	1,970	722	2,610	1,940	2,160	1,620	2,570	3,300	639	454
11	444	652	2,030	726	2,080	2,010	2,140	1,850	2,450	2,850	615	389
12	508	708	2,030	784	2,010	1,990	2,220	2,430	2,600	2,460	754	338
13	503	768	2,010	1,080	2,140	1,850	2,380	4,580	2,700	2,320	970	285
14	508	766	2,000	1,060	3,120	1,770	2,840	5,960	2,710	2,190	1,030	240
15	515	773	2,000	1,030	4,860	1,670	3,480	6,060	2,810	2,010	989	222
16	544	830	1,980	972	5,300	1,510	4,100	6,130	2,880	1,850	912	207
17	530	873	1,850	880	4,940	1,380	4,260	6,170	2,760	1,720	822	212
18	520	946	1,740	767	4,620	1,290	4,190	6,220	2,560	1,560	733	206
19	528	1,170	1,320	695	4,190	1,250	3,880	6,270	2,400	1,430	682	205
20	519	1,300	971	627	3,840	1,250	3,780	6,240	2,270	1,320	701	173
21	517	1,270	809	577	3,770	1,240	3,620	6,240	2,080	1,270	674	177
22	520	1,230	668	571	3,290	1,050	3,520	6,220	1,910	1,270	666	170
23	709	1,220	626	579	2,450	959	3,380	6,210	1,830	1,270	612	155
24	973	1,220	624	575	2,280	1,070	3,100	6,200	1,790	1,270	570	159
25	879	1,230	626	572	2,190	1,180	2,990	6,160	1,740	1,260	564	221
26	757	1,220	679	598	2,120	1,270	3,230	6,120	1,670	1,260	564	305
27	902	1,240	717	613	2,030	1,350	3,370	5,770	1,920	1,250	511	277
28	876	1,230	757	608	1,880	1,160	3,370	5,220	2,880	1,250	467	301
29	820	1,230	834	611	---	1,210	3,370	4,530	3,980	1,250	439	310
30	820	1,180	881	610	---	1,340	3,370	3,870	4,670	1,260	439	307
31	786	---	962	614	---	1,320	---	3,450	---	1,330	448	---
TOTAL	16,602	26,726	39,304	24,972	75,926	46,389	83,010	132,380	79,140	82,170	24,741	9,162
MEAN	536	891	1,268	806	2,712	1,496	2,767	4,270	2,638	2,651	798	305
MAX	973	1,300	2,030	1,140	5,300	2,010	4,260	6,270	4,670	5,680	1,380	470
MIN	131	435	624	571	639	959	1,370	1,550	1,670	1,250	439	155
AC-FT	32,930	53,010	77,960	49,530	150,600	92,010	164,700	262,600	157,000	163,000	49,070	18,170
CFSM	0.17	0.29	0.41	0.26	0.87	0.48	0.89	1.37	0.85	0.85	0.26	0.10
IN.	0.20	0.32	0.47	0.30	0.91	0.55	0.99	1.58	0.95	0.98	0.30	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,010	1,093	1,259	711	1,688	2,897	3,122	3,912	4,418	4,795	2,600	1,471
MAX	4,012	2,771	4,229	1,723	3,006	6,587	7,776	9,347	7,203	20,610	18,500	13,050
(WY)	(1994)	(1993)	(1993)	(1993)	(1997)	(1993)	(1993)	(1993)	(1993)	(1993)	(1993)	(1993)
MIN	172	156	230	231	346	426	445	412	2,334	1,389	581	241
(WY)	(2004)	(2000)	(2000)	(2000)	(2003)	(2000)	(2000)	(2000)	(2003)	(2002)	(1997)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1993 - 2005	
ANNUAL TOTAL	790,572		640,522			
ANNUAL MEAN	2,160		1,755		2,419	
HIGHEST ANNUAL MEAN					7,910	1993
LOWEST ANNUAL MEAN					866	2000
HIGHEST DAILY MEAN	6,580	Mar 7	6,270	May 19	25,000	Jul 21, 1993
LOWEST DAILY MEAN	131	Oct 9	131	Oct 9	129	Oct 26, 1999
ANNUAL SEVEN-DAY MINIMUM	210	Oct 4	178	Sep 18	141	Oct 23, 1999
MAXIMUM PEAK FLOW			6,350	May 20	25,800	Jul 19, 1993
MAXIMUM PEAK STAGE			54.58	May 20	63.95	Jul 19, 1993
ANNUAL RUNOFF (AC-FT)	1,568,000		1,270,000		1,752,000	
ANNUAL RUNOFF (CFSM)	0.693		0.563		0.777	
ANNUAL RUNOFF (INCHES)	9.44		7.65		10.55	
10 PERCENT EXCEEDS	5,870		3,920		6,030	
50 PERCENT EXCEEDS	1,260		1,260		1,260	
90 PERCENT EXCEEDS	476		444		278	

05453520 IOWA RIVER BELOW CORALVILLE DAM NEAR CORALVILLE, IA—Continued



05453600 RAPID CREEK BELOW MORSE, IA

LOCATION.--Lat 41°43'45", long 91°25'38", in NE corner of sec.21, T.80 N., R.5 W., Johnson County, Hydrologic Unit 07080209, at bridge on county highway, 1.5 miles southwest of Morse.

DRAINAGE AREA.--8.12 mi^2.

PERIOD OF RECORD.--Operated May 1951 to September 1992 as a crest-stage partial record station. March 1994 to current year.

GAGE.--Tipping bucket rain gage.

REMARKS.--Estimated totals Nov. 11. Estimated values taken from U.S. Geological Survey gaging station 05454000, Rapid Creek nr Iowa City. Records good except for estimated days and winter period, which is poor due to intermittent snow accumulation and subsequent melting.

EXTREME FOR PERIOD OF RECORD.--Maximum daily accumulation, 2.65 in., May 9, 1996, June 13, 2000.

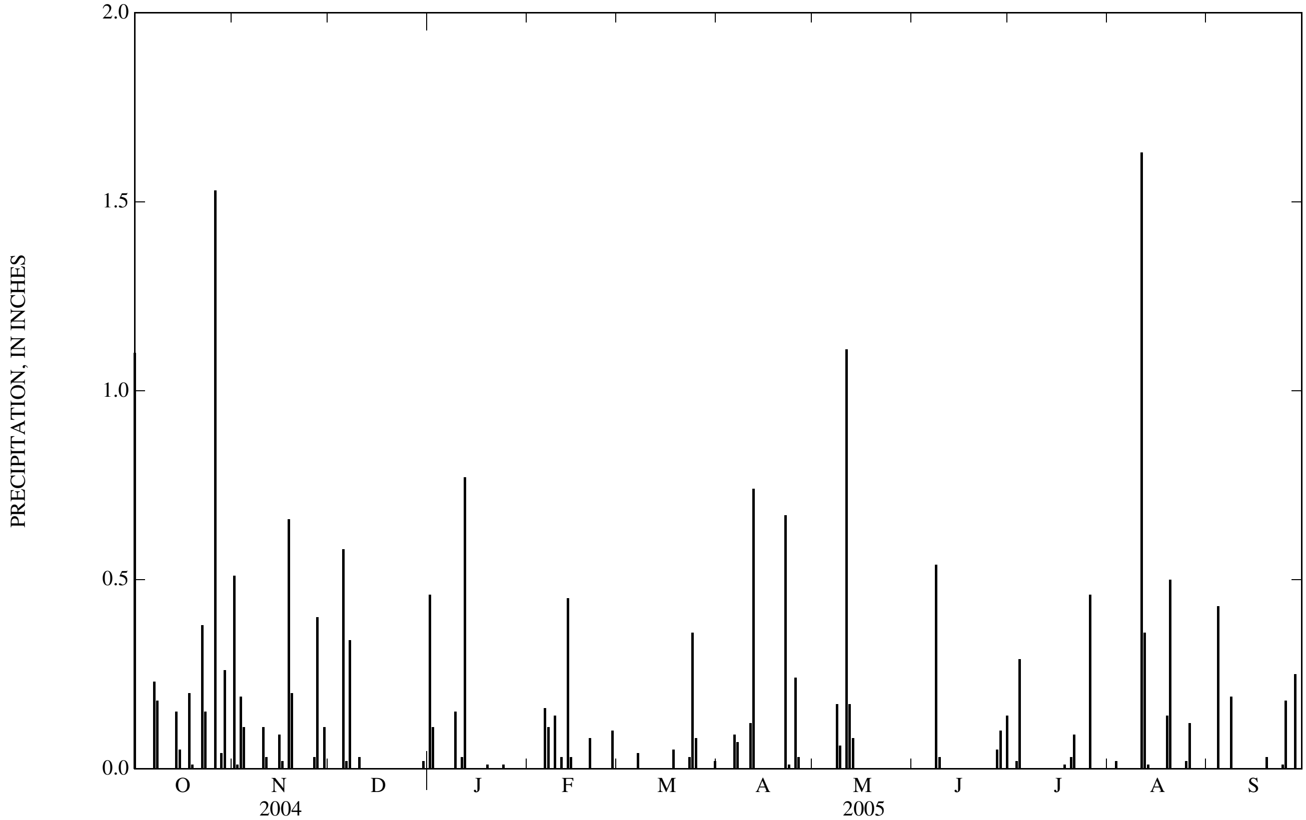
EXTREME FOR CURRENT YEAR.--Maximum daily accumulation, 1.63 in., August 11.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.10	0.51	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.01	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.19	0.00	0.00	0.00	0.00	---	0.00	---	0.02	0.02	0.00
4	0.00	0.11	0.00	0.00	0.00	0.00	---	0.00	---	0.29	e0.00	0.43
5	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	---	0.00	e0.00	0.00
6	0.00	0.00	0.02	0.00	0.16	e0.00	0.09	0.00	---	0.00	e0.00	0.00
7	0.23	0.00	0.34	0.00	0.11	e0.04	0.07	0.00	0.00	0.00	e0.00	0.00
8	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.54	0.00	e0.00	0.19
9	0.00	0.00	0.00	0.15	e0.14	0.00	0.00	0.06	0.03	0.00	e0.00	0.00
10	0.00	0.11	0.03	0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.03	0.00	0.03	0.03	e0.00	0.12	1.11	0.00	0.00	1.63	0.00
12	0.00	0.00	0.00	0.77	0.00	e0.00	0.74	0.17	0.00	0.00	0.36	0.00
13	0.00	0.00	0.00	0.00	0.45	e0.00	0.00	0.08	---	0.00	0.01	0.00
14	0.15	0.00	0.00	0.00	0.03	0.00	0.00	0.00	---	0.00	0.00	0.00
15	0.05	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.02	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
18	0.20	0.66	0.00	0.00	0.00	0.05	---	---	0.00	0.01	0.00	0.00
19	0.01	0.20	0.00	0.01	0.00	0.00	---	---	0.00	0.00	0.14	0.03
20	0.00	0.00	0.00	0.00	0.08	0.00	0.00	---	0.00	0.03	0.50	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.09	0.00	0.00
22	0.38	0.00	0.00	0.00	0.00	0.00	0.67	---	0.00	0.00	0.00	0.00
23	0.15	0.00	0.00	0.00	0.00	0.03	0.01	---	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.01	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.01
25	0.00	0.00	0.00	0.00	0.00	0.08	0.24	0.00	0.00	0.00	0.02	0.18
26	1.53	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.46	0.12	0.00
27	0.00	0.40	0.00	0.00	0.10	0.00	0.00	0.00	0.05	0.00	0.00	0.00
28	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.25
29	0.26	0.11	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.02	0.00	---	0.00	0.00	0.00	0.14	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.02	---	0.00	---	0.00	e0.00	---
TOTAL	4.28	2.47	0.99	1.54	1.10	0.58	---	---	---	0.90	2.80	1.09
MEAN	0.14	0.08	0.03	0.05	0.04	0.02	---	---	---	0.03	0.09	0.04
MAX	1.53	0.66	0.58	0.77	0.45	0.36	---	---	---	0.46	1.63	0.43
MIN	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---	0.00	0.00	0.00

e Estimated

05453600 RAPID CREEK BELOW MORSE, IA—Continued



05454000 RAPID CREEK NEAR IOWA CITY, IA

LOCATION.--Lat 41°42'00", long 91°29'15", in NE¼ NE¼ sec.36. T.80 N., R.6 W., Johnson County, Hydrologic Unit 07080209, on left bank 80 ft upstream from bridge on State Highway 1, 3.5 mi northeast of Iowa City, and 5.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--25.3 mi^2.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1558: 1941 (M), 1943 (P), 1944 (M), 1946. WSP 1708: 1951 (P), 1952. WDR IA-67-1: Drainage area.

GAGE.--Water-stage recorder and concrete control with sharp-crested weir. Datum of gage is 673.72 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with telephone modem, and U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	22	21	15	11	16	13	10	7.7	3.9	0.19	0.14
2	9.0	33	20	40	16	17	13	9.9	7.2	3.6	0.14	0.03
3	5.3	30	19	20	58	15	13	9.7	6.9	3.6	0.14	0.01
4	4.3	30	19	17	149	15	12	9.4	8.6	4.3	0.07	0.05
5	3.4	28	18	11	135	14	12	9.1	36	4.1	0.06	0.04
6	3.2	26	39	e9.5	99	14	12	8.9	20	3.3	0.03	0.01
7	3.1	22	46	e9.4	105	16	12	8.8	15	2.9	0.02	0.03
8	4.6	19	43	e9.9	43	14	11	8.6	15	2.7	0.02	0.03
9	3.8	18	38	e11	30	13	11	9.4	16	2.2	0.01	0.03
10	3.1	17	33	e11	26	14	10	8.3	15	1.9	0.01	0.01
11	2.9	16	28	13	30	14	11	28	13	1.6	1.1	0.01
12	3.0	15	26	54	26	13	27	24	12	1.4	1.6	0.00
13	3.1	14	22	92	147	12	22	23	11	1.2	0.63	0.00
14	3.2	13	e18	e31	94	11	18	25	12	1.2	0.31	0.00
15	3.7	13	20	e17	52	11	17	22	11	1.1	0.17	0.00
16	3.1	14	20	e13	39	11	16	19	9.5	0.99	0.10	0.00
17	2.9	13	18	e11	31	11	15	18	8.6	0.91	0.08	0.00
18	2.7	14	18	e11	28	11	14	16	7.9	0.78	0.05	0.00
19	3.3	34	e13	e15	24	11	13	16	7.3	0.69	0.03	0.00
20	3.1	31	16	e14	25	10	13	14	7.0	0.72	0.14	0.00
21	2.8	26	15	e13	23	10	12	13	7.0	0.68	0.56	0.00
22	3.2	24	e12	e11	20	11	16	13	6.6	0.70	0.35	0.00
23	7.1	22	e9.5	e10	19	11	13	12	6.2	0.61	0.09	0.00
24	5.9	20	e9.2	e11	18	12	12	11	5.6	0.52	0.05	0.00
25	4.8	18	e11	13	18	19	13	10	4.9	0.44	0.04	0.00
26	43	18	13	14	17	19	13	10	4.9	0.51	0.04	0.00
27	48	22	12	12	17	18	12	9.7	4.5	0.76	0.04	0.00
28	31	22	13	11	17	17	11	9.5	4.9	0.60	0.02	0.00
29	26	21	12	11	---	16	11	9.5	4.8	0.40	0.03	0.00
30	26	22	14	11	---	16	10	9.5	4.8	0.30	0.03	0.00
31	22	---	13	11	---	15	---	8.6	---	0.23	0.19	---
TOTAL	295.8	637	628.7	552.8	1,317	427	408	412.9	300.9	48.84	6.34	0.39
MEAN	9.54	21.2	20.3	17.8	47.0	13.8	13.6	13.3	10.0	1.58	0.20	0.01
MAX	48	34	46	92	149	19	27	28	36	4.3	1.6	0.14
MIN	2.7	13	9.2	9.4	11	10	10	8.3	4.5	0.23	0.01	0.00
AC-FT	587	1,260	1,250	1,100	2,610	847	809	819	597	97	13	0.8
CFSM	0.38	0.84	0.80	0.70	1.86	0.54	0.54	0.53	0.40	0.06	0.01	0.00
IN.	0.43	0.94	0.92	0.81	1.94	0.63	0.60	0.61	0.44	0.07	0.01	0.00

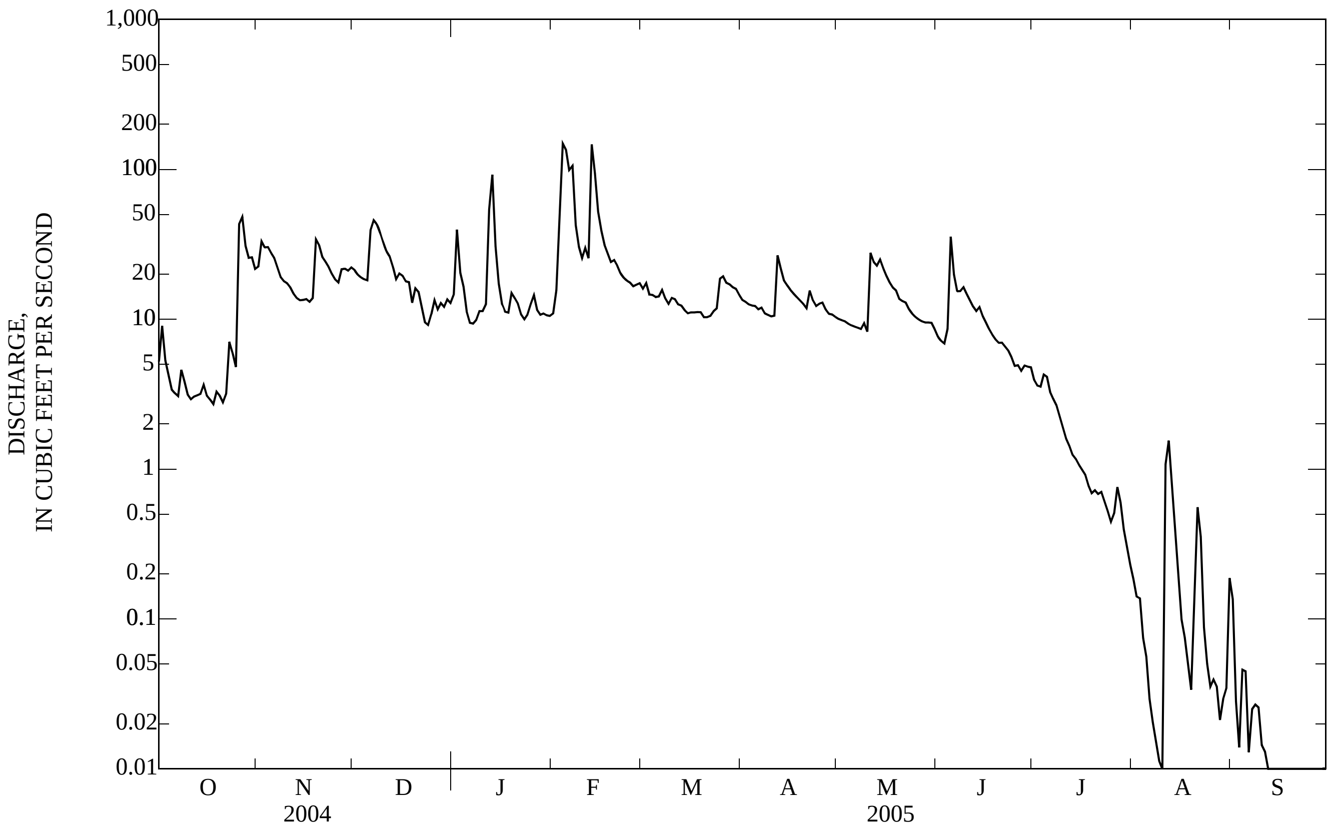
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.61	10.2	9.04	9.48	22.4	28.9	24.0	27.3	25.4	15.5	11.4	7.57
MAX	83.5	84.0	66.6	56.8	77.5	106	98.6	167	134	105	176	66.6
(WY)	(1999)	(1993)	(1983)	(1946)	(1953)	(1979)	(1973)	(1974)	(1990)	(1969)	(1993)	(1965)
MIN	0.00	0.00	0.00	0.00	0.22	0.42	1.25	1.13	0.21	0.00	0.03	0.00
(WY)	(1954)	(1956)	(1956)	(1940)	(1989)	(1956)	(1956)	(1977)	(1956)	(1957)	(1955)	(1955)

05454000 RAPID CREEK NEAR IOWA CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1938 - 2005	
ANNUAL TOTAL	7,643.2		5,035.67			
ANNUAL MEAN	20.9		13.8		16.5	
HIGHEST ANNUAL MEAN					63.8	1993
LOWEST ANNUAL MEAN					1.09	1957
HIGHEST DAILY MEAN	247	Mar 5	149	Feb 4	1,720	May 17, 1986
LOWEST DAILY MEAN	1.0	Jan 29	0.00	Sep 12 a	0.00	Many years
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 24	0.00	Sep 12	0.00	Many years
MAXIMUM PEAK FLOW			426	Feb 4	6,700	Aug 10, 1993
MAXIMUM PEAK STAGE			7.44	Feb 4	15.61	Aug 10, 1993
ANNUAL RUNOFF (AC-FT)	15,160		9,990		11,970	
ANNUAL RUNOFF (CFSM)	0.825		0.545		0.653	
ANNUAL RUNOFF (INCHES)	11.24		7.40		8.88	
10 PERCENT EXCEEDS	43		26		35	
50 PERCENT EXCEEDS	15		11		5.1	
90 PERCENT EXCEEDS	3.3		0.04		0.10	

a Also Sept. 13-30.
e Estimated.



05454220 CLEAR CREEK NEAR OXFORD, IA

LOCATION.--Lat 41°43'06", long 91°44'24", in SW1/4 SE1/4 SE1/4 sec.23, T.80 N., R.8 W., Johnson County, Hydrologic Unit 07080209, on left bank 15 ft downstream of bridge on NW Eagle Avenue, 0.2 mi west of Kent Park, 2.6 mi upstream of Buffalo Creek, 2.8 mi east of Oxford, 4.2 mi west of Tiffin, and 16.1 mi upstream from mouth.

DRAINAGE AREA.--58.4 mi^2.

PERIOD OF RECORD.--November 1993 to current year.

GAGE.--Water stage recorder. Datum of gage is 696.50 ft., above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station. Precipitation records are not published, but are available.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	22	23	e25	e17	34	25	34	30	14	2.6	1.5
2	17	29	22	e24	e25	32	25	33	29	13	2.5	1.4
3	8.8	27	22	e21	e57	29	25	31	29	13	2.4	1.3
4	7.7	30	22	e17	e173	30	24	30	28	15	2.1	9.5
5	7.3	30	22	e16	e151	28	24	29	112	15	2.1	4.9
6	7.2	29	59	e14	115	28	23	29	49	12	2.0	1.6
7	7.2	26	65	e14	129	29	52	28	38	12	2.0	0.89
8	8.8	24	63	e14	71	26	44	28	36	11	1.8	7.8
9	8.0	23	56	e16	54	25	37	28	35	11	1.6	26
10	7.4	23	49	e15	46	26	34	26	31	9.7	1.4	3.3
11	7.2	23	42	e19	53	26	35	49	30	8.5	12	1.4
12	8.1	21	41	e31	43	25	172	54	28	8.4	25	1.0
13	8.8	20	36	e41	181	25	156	127	27	7.9	6.0	0.97
14	11	20	e23	e25	186	23	114	120	28	7.3	4.3	0.92
15	12	21	e27	e18	114	22	93	89	27	6.7	3.9	0.85
16	11	21	e29	e14	84	22	82	74	25	6.5	3.2	0.89
17	11	21	e24	e12	68	21	73	64	24	6.1	2.7	0.95
18	12	22	e27	e14	58	21	64	58	27	5.5	2.5	0.76
19	16	41	e23	e15	52	21	59	57	24	4.9	2.3	0.76
20	15	41	e25	e18	52	20	54	49	23	4.6	2.6	0.76
21	15	32	e27	e17	47	19	49	46	22	4.9	2.2	0.75
22	16	30	e21	e16	42	19	68	45	20	4.8	2.0	0.79
23	18	29	e17	e15	40	20	56	41	18	4.4	2.2	0.82
24	16	27	e15	e16	39	20	50	37	17	3.7	2.2	2.1
25	17	25	e15	e19	38	31	48	35	17	3.5	2.2	2.3
26	24	25	e16	e19	35	30	48	35	20	5.5	2.2	1.2
27	29	26	e17	e17	36	28	43	34	17	4.9	2.4	0.95
28	22	24	e20	e17	35	27	39	33	17	3.3	2.1	1.1
29	23	23	e18	e15	---	26	38	32	17	2.9	1.9	0.99
30	21	23	e22	e14	---	28	36	33	16	2.9	1.7	1.0
31	20	---	e24	e14	---	29	---	30	---	2.7	1.6	---
TOTAL	425.5	778	912	562	2,041	790	1,690	1,438	861	235.6	107.7	79.45
MEAN	13.7	25.9	29.4	18.1	72.9	25.5	56.3	46.4	28.7	7.60	3.47	2.65
MAX	29	41	65	41	186	34	172	127	112	15	25	26
MIN	7.2	20	15	12	17	19	23	26	16	2.7	1.4	0.75
AC-FT	844	1,540	1,810	1,110	4,050	1,570	3,350	2,850	1,710	467	214	158
CFSM	0.24	0.44	0.50	0.31	1.25	0.44	0.96	0.79	0.49	0.13	0.06	0.05
IN.	0.27	0.50	0.58	0.36	1.30	0.50	1.08	0.92	0.55	0.15	0.07	0.05

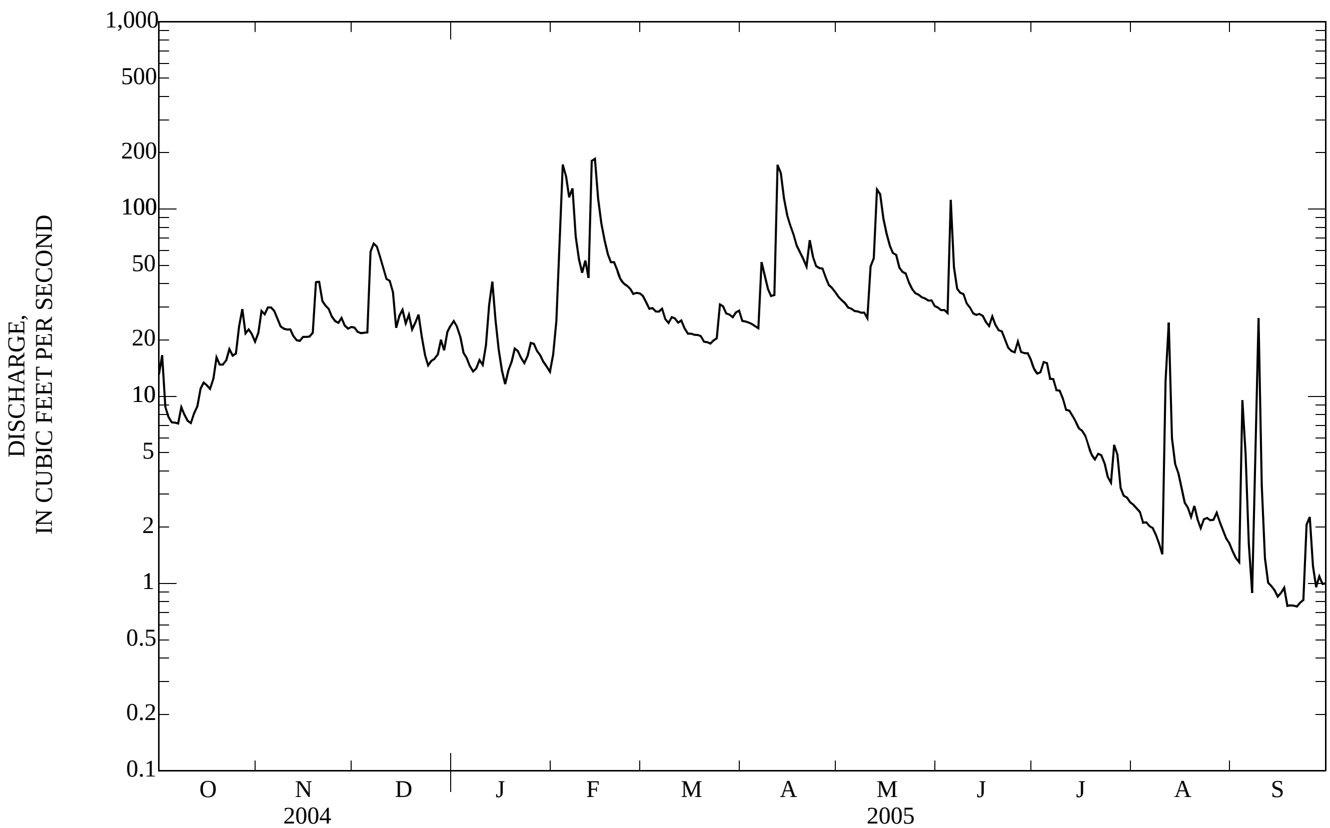
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.4	17.4	12.6	15.0	48.9	50.5	53.1	87.5	64.6	27.5	17.1	7.24
MAX	153	74.4	29.4	35.2	129	152	113	269	120	77.0	63.3	29.4
(WY)	(1999)	(1999)	(2005)	(1998)	(2001)	(2001)	(1998)	(1996)	(2001)	(2000)	(2004)	(1998)
MIN	1.09	2.30	2.07	3.04	6.00	5.71	8.16	15.0	17.5	7.60	2.94	1.35
(WY)	(2004)	(2000)	(2000)	(2000)	(2000)	(2000)	(1996)	(2000)	(2003)	(2005)	(2003)	(1999)

05454220 CLEAR CREEK NEAR OXFORD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	14,742.9		9,920.25			
ANNUAL MEAN	40.3		27.2		35.2	
HIGHEST ANNUAL MEAN					56.4	1999
LOWEST ANNUAL MEAN					15.9	2003
HIGHEST DAILY MEAN	704	Aug 28	186	Feb 14	2,400	May 10, 1996
LOWEST DAILY MEAN	3.4	Aug 23	0.75	Sep 21	0.67	Oct 2, 2003
ANNUAL SEVEN-DAY MINIMUM	5.2	Aug 18	0.80	Sep 17	0.71	Sep 28, 2003
MAXIMUM PEAK FLOW			340	Feb 4 a	4,230	May 10, 1996
MAXIMUM PEAK STAGE			7.88	Feb 4	14.89	May 10, 1996
INSTANTANEOUS LOW FLOW			0.60	Sep 8	0.60	Sep 8, 2005
ANNUAL RUNOFF (AC-FT)	29,240		19,680		25,520	
ANNUAL RUNOFF (CFSM)	0.690		0.465		0.603	
ANNUAL RUNOFF (INCHES)	9.39		6.32		8.20	
10 PERCENT EXCEEDS	77		54		81	
50 PERCENT EXCEEDS	23		22		15	
90 PERCENT EXCEEDS	8.7		2.2		2.4	

a Ice affected.
e Estimated.



05454300 CLEAR CREEK NEAR CORALVILLE, IA

LOCATION.--Lat 41°40'36", long 91°35'55", in NE1/4 SE1/4 sec.1, T.79 N., R.7 W., Johnson County, Hydrologic Unit 07080209, on left bank about 15 ft upstream from bridge on county highway, 1.1 mi west of post office in Coralville, 1.5 mi downstream from Deer Creek, and 2.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--98.1 mi^2.

PERIOD OF RECORD.--October 1952 to current year. Monthly discharge only for some periods, published in WSP 1728.

REVISED RECORDS.--WDR IA-93-1: 1974 (M), 1982 (M), 1990 (M).

GAGE.--Water-stage recorder. Datum of gage is 647.48 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Jan. 7, 1957, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are fair. U.S. Geological Survey data collection platform with telephone modem and U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	41	42	e68	e31	55	43	52	38	22	5.5	4.5
2	45	50	40	e58	e45	58	42	51	36	20	5.6	3.6
3	29	46	40	e48	e102	53	40	48	35	21	5.2	3.8
4	24	49	39	e43	e302	54	39	45	43	24	4.9	13
5	22	46	44	e39	e297	51	38	43	151	25	4.6	18
6	21	45	84	e27	209	50	38	42	82	21	4.5	6.6
7	21	41	100	e26	218	52	52	41	53	19	4.7	4.9
8	24	37	97	e26	128	48	59	40	51	17	5.0	11
9	23	36	83	e27	97	45	50	42	50	16	5.1	28
10	22	35	74	e25	83	49	47	40	44	15	5.3	10
11	21	36	66	e33	86	49	49	97	43	e14	25	5.7
12	21	34	63	e95	80	46	171	81	41	e13	38	4.2
13	21	32	58	e135	243	41	188	121	40	12	18	3.5
14	22	32	e40	e62	277	45	129	139	39	11	9.3	3.3
15	23	32	e45	e38	164	40	108	102	38	11	7.9	2.9
16	22	32	e46	e31	122	41	93	88	36	10	7.5	2.7
17	21	32	e42	e28	101	40	86	79	34	9.9	7.1	2.6
18	21	40	e45	e27	89	40	79	72	32	8.9	6.4	2.6
19	23	73	e40	e32	83	40	73	71	30	8.2	6.0	2.9
20	23	71	e44	e34	84	38	69	63	30	7.7	7.3	2.3
21	22	56	e45	e33	78	37	64	59	28	7.7	5.7	2.3
22	25	50	e39	e31	70	37	88	58	27	7.4	5.3	2.1
23	25	48	e33	e30	67	38	77	54	26	6.7	5.2	2.2
24	23	45	e31	e33	66	41	67	50	25	6.2	5.1	3.6
25	21	43	e33	e35	64	58	67	48	23	6.2	5.1	4.5
26	36	41	e34	e35	61	54	67	46	24	11	5.5	3.8
27	47	48	e34	e33	61	49	62	45	25	9.3	5.5	3.1
28	39	44	e40	e31	63	47	57	44	30	6.9	5.5	3.8
29	37	42	e35	e30	---	44	56	44	28	5.5	5.2	3.0
30	38	42	e46	e28	---	45	54	42	25	5.1	5.0	2.9
31	33	---	e51	e27	---	48	---	40	---	5.1	5.0	---
TOTAL	838	1,299	1,553	1,248	3,371	1,433	2,152	1,887	1,207	382.8	241.0	167.4
MEAN	27.0	43.3	50.1	40.3	120	46.2	71.7	60.9	40.2	12.3	7.77	5.58
MAX	47	73	100	135	302	58	188	139	151	25	38	28
MIN	21	32	31	25	31	37	38	40	23	5.1	4.5	2.1
AC-FT	1,660	2,580	3,080	2,480	6,690	2,840	4,270	3,740	2,390	759	478	332
CFSM	0.28	0.44	0.51	0.41	1.23	0.47	0.73	0.62	0.41	0.13	0.08	0.06
IN.	0.32	0.49	0.59	0.47	1.28	0.54	0.82	0.72	0.46	0.15	0.09	0.06

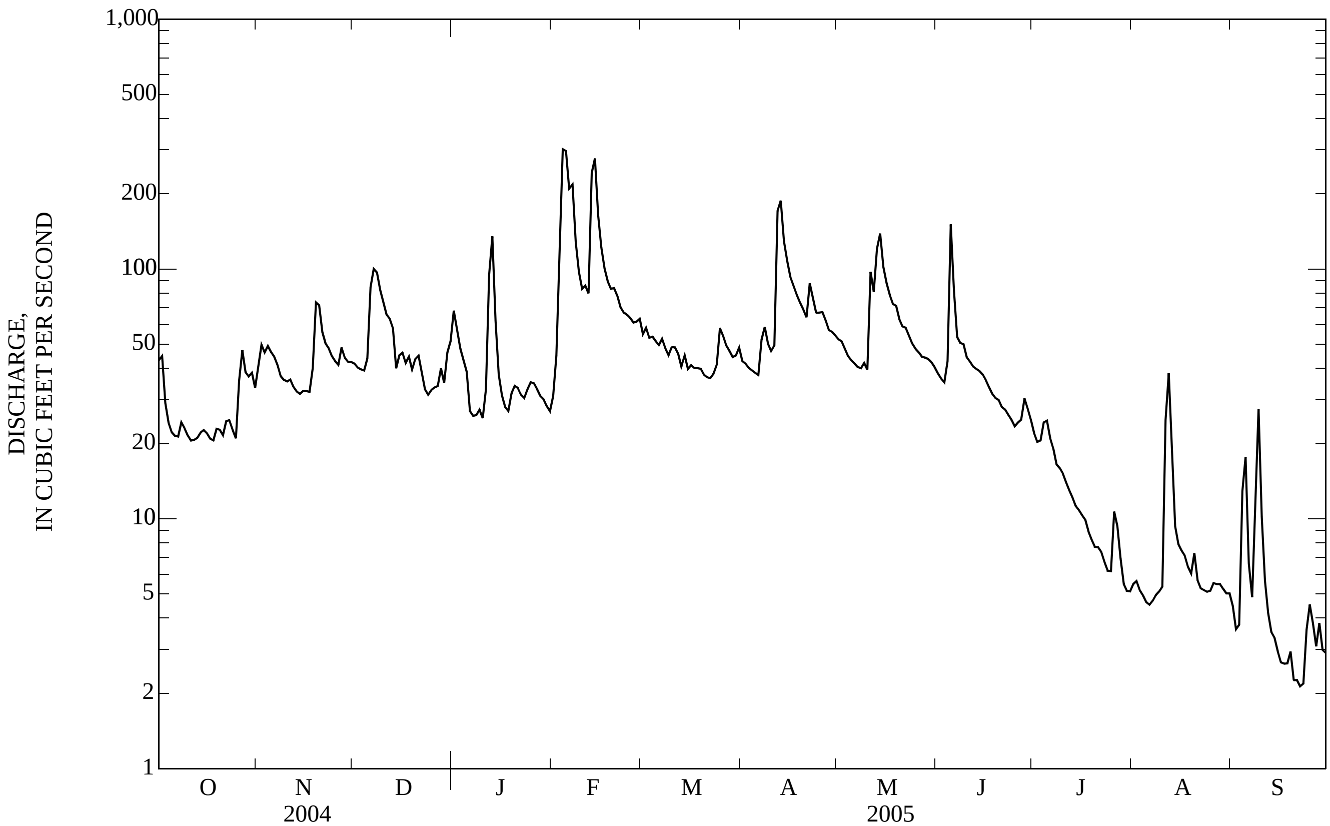
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	33.1	43.3	37.6	38.4	72.8	110	99.7	110	104	86.5	57.8	40.8
MAX	261	246	162	206	243	402	452	589	566	991	759	337
(WY)	(1999)	(1962)	(1993)	(1960)	(2001)	(1979)	(1973)	(1974)	(1990)	(1993)	(1993)	(1965)
MIN	0.55	0.95	0.54	0.10	2.79	4.49	4.15	3.79	0.83	1.69	1.94	0.69
(WY)	(1958)	(1956)	(1956)	(1977)	(1954)	(1954)	(1956)	(1956)	(1956)	(1954)	(1953)	(1953)

05454300 CLEAR CREEK NEAR CORALVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	23,236.3		15,779.2			
ANNUAL MEAN	63.5		43.2		69.4	
HIGHEST ANNUAL MEAN					327	1993
LOWEST ANNUAL MEAN					6.57	1957
HIGHEST DAILY MEAN	835	Mar 5	302	Feb 4 a	7,310	Jun 17, 1990
LOWEST DAILY MEAN	9.3	Aug 23	2.1	Sep 22	0.00	Jan 18, 1977
ANNUAL SEVEN-DAY MINIMUM	13	Aug 9	2.4	Sep 17	0.00	Jan 18, 1977
MAXIMUM PEAK FLOW			500	Feb 4 a	10,200	Jun 17, 1990
MAXIMUM PEAK STAGE			7.00	Feb 4 a	16.36	Jun 17, 1990
INSTANTANEOUS LOW FLOW			1.9	Sep 22 b		
ANNUAL RUNOFF (AC-FT)	46,090		31,300		50,260	
ANNUAL RUNOFF (CFSM)	0.647		0.441		0.707	
ANNUAL RUNOFF (INCHES)	8.81		5.98		9.61	
10 PERCENT EXCEEDS	122		82		143	
50 PERCENT EXCEEDS	40		38		27	
90 PERCENT EXCEEDS	18		5.2		3.2	

a Ice affected
b Also Sept. 23.
e Estimated



05454500 IOWA RIVER AT IOWA CITY, IA

LOCATION.--Lat 41°39'24", long 91°32'27", in SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.9, T.79 N., R.6 W., Johnson County, Hydrologic Unit 07080209, on right bank 25 ft downstream from Hydraulics Laboratory of University of Iowa in Iowa City, 175 ft downstream from University Dam, 0.8 mi upstream from Ralston Creek, 3.6 mi downstream from Clear Creek, and 72.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--3,271 mi^2.

PERIOD OF RECORD.--June 1903 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 29.00 ft above Iowa City datum, and 617.27 ft above NGVD of 1929. Oct. 1, 1934 to Sept. 30, 1972, at datum 10.00 ft higher. See WSP 1708 for history of changes prior to Oct. 1, 1934.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Slight fluctuation at low stages caused by powerplant above station. Flow regulated by Coralville Lake (station 05453510), 9.1 mi upstream, since Sept. 17, 1958. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry and U.S. Geological Survey data collection platform with telephone modem backup at station.Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,500 ft^3/s June 8, 1918, gage height, 19.6 ft, from graph based on gage readings, site and datum then in use; minimum daily discharge, 29 ft^3/s Oct. 21, 22, 1916, regulated.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 17, 1881, reached a stage of 21.1 ft, from floodmarks at site and datum in use 1913-21, from information by local resident, discharge, 51,000 ft^3/s. Maximum stage known since at least 1850, about 3 ft higher than that of July 17, 1881, occurred in June 1851, discharge, 70,000 ft^3/s, estimated

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	602	701	971	815	528	1,730	1,380	3,090	3,340	4,880	1,350	524
2	492	578	968	932	561	1,620	1,460	2,850	3,050	4,820	1,340	490
3	397	495	938	928	630	1,610	1,510	2,500	2,860	4,720	1,260	428
4	335	602	889	907	961	1,610	1,520	2,130	2,840	4,970	1,210	403
5	296	629	891	883	1,420	1,600	1,490	1,890	3,120	5,410	1,170	415
6	258	617	1,070	818	1,780	1,600	1,440	1,740	3,230	5,810	1,040	397
7	225	605	1,270	733	2,650	1,680	1,510	1,710	3,170	5,230	925	386
8	219	587	1,360	684	3,060	1,860	1,760	1,650	3,080	4,870	883	398
9	207	605	1,430	629	3,000	1,860	2,000	1,630	2,930	4,550	789	484
10	250	680	1,780	588	2,640	1,860	2,060	1,660	2,810	3,480	724	469
11	414	729	1,880	590	1,990	1,880	2,060	1,900	2,630	3,030	706	e408
12	492	711	1,870	657	1,880	1,920	2,280	2,300	2,670	2,640	756	e350
13	493	707	1,850	966	2,080	1,820	2,380	3,620	2,820	2,380	875	e298
14	493	708	1,820	863	2,700	1,730	2,650	5,820	2,830	2,300	976	e245
15	493	712	1,820	833	4,360	1,670	3,120	6,080	2,880	2,080	977	e222
16	490	740	1,820	795	5,400	1,550	3,930	6,170	2,980	1,910	920	e213
17	489	777	1,730	722	5,190	1,430	4,290	6,210	2,920	1,780	840	e207
18	486	831	1,600	637	4,670	1,340	4,280	6,230	2,740	1,630	756	e205
19	499	1,090	1,290	572	4,280	1,270	3,940	6,290	2,580	1,490	696	e196
20	496	1,220	822	546	3,800	1,260	3,730	6,280	2,450	1,380	693	e156
21	497	1,200	679	506	3,600	1,260	3,610	6,250	2,300	1,270	690	e159
22	505	1,100	556	501	3,320	1,150	3,460	6,260	2,100	1,240	675	e157
23	593	1,080	513	490	2,470	955	3,330	6,210	1,990	1,240	659	e157
24	781	1,060	508	495	2,210	1,050	3,040	6,200	1,900	1,230	620	e159
25	831	1,060	509	496	2,150	1,220	2,830	6,170	1,850	1,220	605	e228
26	713	1,050	538	512	2,070	1,300	2,940	6,140	1,760	1,230	638	e345
27	851	1,090	579	526	2,020	1,370	3,180	5,940	1,790	1,240	650	e349
28	842	1,080	593	516	1,900	1,240	3,170	5,400	2,560	1,220	610	343
29	762	1,070	651	515	---	1,250	3,180	4,730	3,630	1,210	561	339
30	768	1,030	690	513	---	1,350	3,170	4,030	4,410	1,210	542	338
31	740	---	734	516	---	1,360	---	3,610	---	1,240	534	---
TOTAL	16,009	25,144	34,619	20,684	73,320	46,405	80,700	132,690	82,220	82,910	25,670	9,468
MEAN	516	838	1,117	667	2,619	1,497	2,690	4,280	2,741	2,675	828	316
MAX	851	1,220	1,880	966	5,400	1,920	4,290	6,290	4,410	5,810	1,350	524
MIN	207	495	508	490	528	955	1,380	1,630	1,760	1,210	534	156
AC-FT	31,750	49,870	68,670	41,030	145,400	92,040	160,100	263,200	163,100	164,500	50,920	18,780
CFSM	0.16	0.26	0.34	0.20	0.80	0.46	0.82	1.31	0.84	0.82	0.25	0.10
IN.	0.18	0.29	0.39	0.24	0.83	0.53	0.92	1.51	0.94	0.94	0.29	0.11

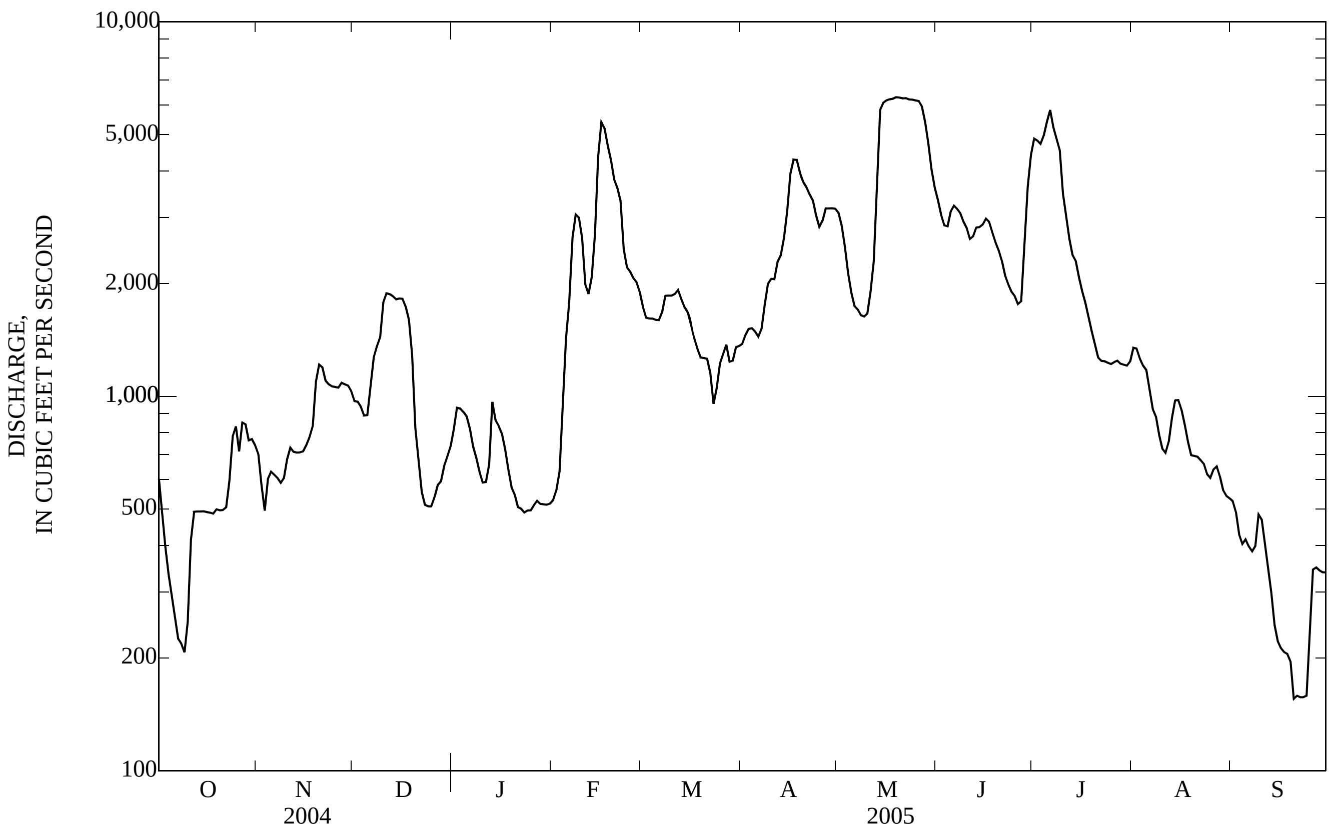
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,107	1,397	1,385	1,017	1,734	3,304	3,653	3,311	3,669	3,471	2,120	1,376
MAX	4,277	5,395	4,580	5,381	5,789	7,988	9,764	9,763	11,590	22,220	20,060	13,760
(WY)	(1994)	(1987)	(1983)	(1973)	(1973)	(1971)	(1979)	(1993)	(1991)	(1993)	(1993)	(1993)
MIN	135	121	130	141	125	366	348	184	99.1	72.8	162	147
(WY)	(1990)	(1967)	(1989)	(1990)	(1977)	(1977)	(1989)	(1977)	(1977)	(1977)	(1989)	(1976)

05454500 IOWA RIVER AT IOWA CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005 a	
ANNUAL TOTAL	806,495		629,839			
ANNUAL MEAN	2,204		1,726		2,297	
HIGHEST ANNUAL MEAN					8,502	1993
LOWEST ANNUAL MEAN					304	1989
HIGHEST DAILY MEAN	7,310	Mar 7	6,290	May 19	26,200	Jul 21, 1993
LOWEST DAILY MEAN	207	Oct 9	156	Sep 20 e	49	Aug 1, 1977 b
ANNUAL SEVEN-DAY MINIMUM	256	Oct 4	170	Sep 18	50	Jul 31, 1977
MAXIMUM PEAK FLOW			6,310	May 20	28,200	Aug 10, 1993
MAXIMUM PEAK STAGE			16.64	May 20	28.52	Aug 10, 1993
ANNUAL RUNOFF (AC-FT)	1,600,000		1,249,000		1,664,000	
ANNUAL RUNOFF (CFSM)	0.674		0.528		0.702	
ANNUAL RUNOFF (INCHES)	9.17		7.16		9.54	
10 PERCENT EXCEEDS	5,920		3,850		5,960	
50 PERCENT EXCEEDS	1,280		1,240		1,280	
90 PERCENT EXCEEDS	496		478		223	

a Post regulation.
b Also Aug. 2, 1977.
e Estimated.



05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IA

LOCATION.--Lat 41°39'05", long 91°30'27", in SW$^1/_4$ NE$^1/_4$ sec.14, T.79 N., R.6 W., Johnson County, Hydrologic Unit 07080209, on right bank 60 ft downstream from bridge on Muscatine Avenue in Iowa City, 1.3 mi (revised) upstream from mouth, and 3.1 mi upstream from mouth of Ralston Creek.

DRAINAGE AREA.--2.94 mi^2.

PERIOD OF RECORD.--Discharge records from October 1963 to September 1995. Stage-only records from October 29, 1996 to current year.

REVISED RECORDS.--WDR IA-66-1: Drainage area.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 678.03 ft above NGVD of 1929.

REMARKS.--Records are considered good. Minor regulation from retention dam 2 miles upstream may affect peaks. U.S. Geological Survey data collection platform with telephone modem at the station.

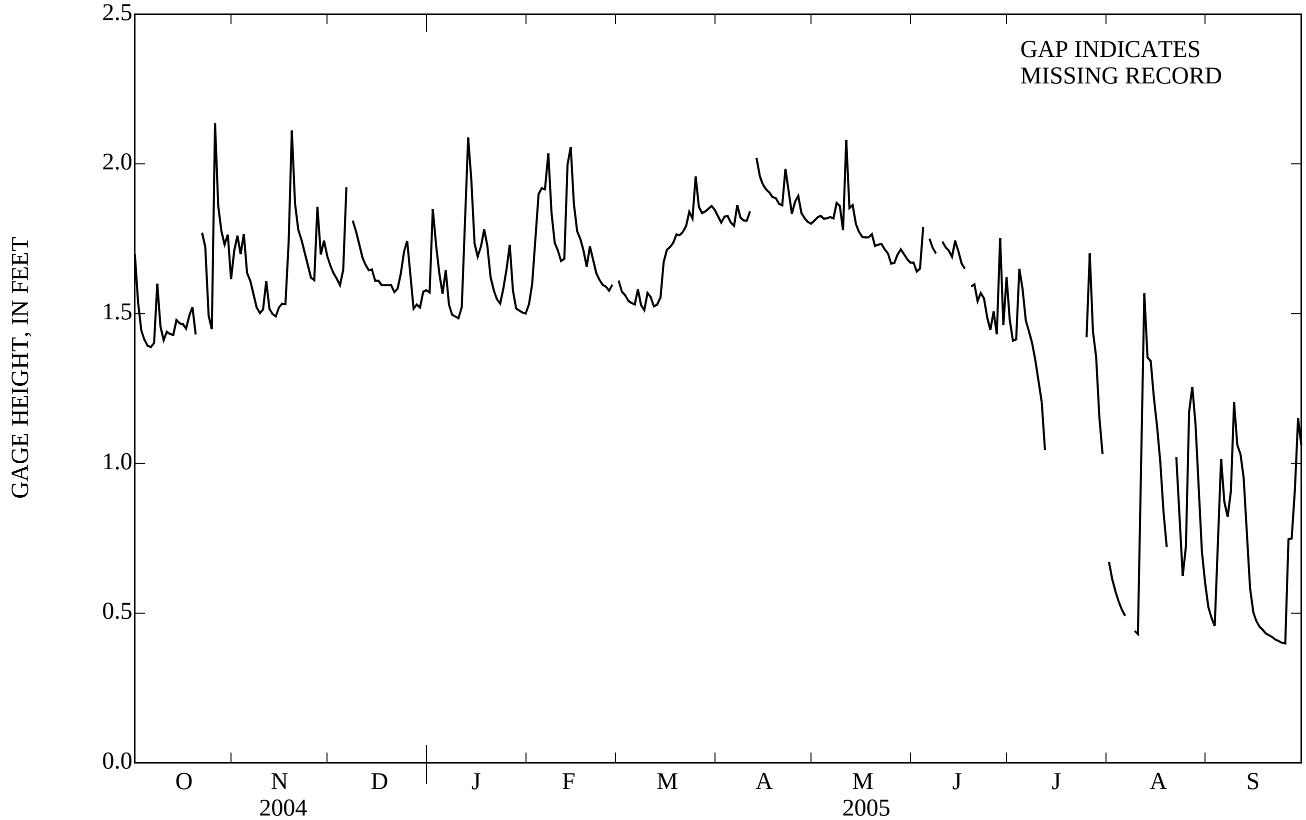
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 14, 1962, reached a stage of 10.5 ft, from flood profile, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum instantaneous gage height 3.49 ft on October 26. Minimum gage height of 0.39 ft. on September 24,25.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.70	1.71	1.66	1.57	1.53	1.61	1.82	1.81	1.67	1.48	0.67	0.52
2	1.54	1.76	1.63	1.85	1.60	1.57	1.80	1.82	1.64	1.41	0.61	0.48
3	1.44	1.70	1.62	1.73	1.75	1.56	1.82	1.83	1.65	1.41	0.57	0.46
4	1.41	1.77	1.60	1.63	1.90	1.54	1.83	1.82	1.79	1.65	0.54	0.70
5	1.39	1.64	1.65	1.57	1.92	1.53	1.80	1.82	---	1.58	0.51	1.01
6	1.39	1.61	1.92	1.64	1.91	1.53	1.79	1.82	1.75	1.48	0.49	0.87
7	1.40	1.56	---	1.53	2.03	1.58	1.86	1.82	1.72	1.44	---	0.82
8	1.60	1.52	1.81	1.50	1.84	1.53	1.82	1.87	1.70	1.40	---	0.91
9	1.46	1.50	1.78	1.49	1.74	1.51	1.81	1.86	---	1.34	0.44	1.20
10	1.41	1.51	1.73	1.48	1.71	1.57	1.81	1.78	1.74	1.28	0.43	1.06
11	1.44	1.61	1.69	1.52	1.68	1.56	1.84	2.08	1.72	1.20	1.19	1.03
12	1.43	1.52	1.66	1.84	1.68	1.52	---	1.85	1.71	1.04	1.57	0.95
13	1.43	1.50	1.64	2.09	2.00	1.53	2.02	1.86	1.69	---	1.35	0.74
14	1.48	1.49	1.65	1.94	2.06	1.55	1.96	1.80	1.74	---	1.34	0.58
15	1.47	1.52	1.61	1.73	1.86	1.67	1.93	1.77	1.71	---	1.22	0.50
16	1.46	1.53	1.61	1.69	1.78	1.71	1.91	1.76	1.67	---	1.12	0.47
17	1.45	1.53	1.59	1.72	1.75	1.72	1.90	1.75	1.65	---	1.00	0.45
18	1.49	1.74	1.59	1.78	1.71	1.74	1.89	1.75	---	---	0.84	0.44
19	1.52	2.11	1.60	1.73	1.66	1.76	1.88	1.77	1.59	---	0.72	0.43
20	1.43	1.87	1.59	1.62	1.72	1.76	1.87	1.73	1.60	---	---	0.43
21	---	1.78	1.57	1.58	1.68	1.77	1.86	1.73	1.54	---	---	0.42
22	1.77	1.75	1.58	1.55	1.64	1.79	1.98	1.73	1.57	---	1.02	0.41
23	1.72	1.70	1.63	1.53	1.61	1.84	1.91	1.72	1.55	---	0.83	0.41
24	1.49	1.66	1.70	1.58	1.60	1.82	1.83	1.70	1.49	---	0.62	0.40
25	1.45	1.62	1.74	1.65	1.59	1.96	1.87	1.67	1.45	1.42	0.72	0.40
26	2.14	1.61	1.62	1.73	1.58	1.86	1.89	1.67	1.51	1.70	1.17	0.75
27	1.86	1.86	1.52	1.58	1.60	1.84	1.84	1.70	1.43	1.44	1.25	0.75
28	1.77	1.70	1.53	1.52	---	1.84	1.82	1.71	1.75	1.35	1.13	0.91
29	1.73	1.74	1.52	1.51	---	1.85	1.81	1.70	1.46	1.15	0.89	1.15
30	1.76	1.69	1.57	1.50	---	1.86	1.80	1.68	1.62	1.03	0.70	1.06
31	1.61	---	1.58	1.50	---	1.85	---	1.67	---	---	0.60	---
MEAN	---	1.66	---	1.64	---	1.69	---	1.78	---	---	---	0.69
MAX	---	2.11	---	2.09	---	1.96	---	2.08	---	---	---	1.20
MIN	---	1.49	---	1.48	---	1.51	---	1.67	---	---	---	0.40

05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IA—Continued



05455100 OLD MANS CREEK NEAR IOWA CITY, IA

LOCATION.--Lat 41°36'23", long 91°36'56", in SE¼ SW¼ NW¼ sec.36, T.79 N., R.7 W., Johnson County, Hydrologic Unit 07080209, on left bank 10 ft downstream from bridge on County Highway W62, 5 mi southwest of Iowa City, 5.9 mi upstream of Dirty Face Creek, and 8.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--201 mi^2.

PERIOD OF RECORD.--October 1950 to September 1964, published in WSP 1914. Annual maximum, water years 1965-84. Occasional low-flow measurements, water years 1964-77; October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 637.49 ft above NGVD of 1929. Prior to Nov. 16, 1984, nonrecording gage at same site at datum 2.00 ft higher. Prior to Oct. 1, 1987, at datum 2.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

COOPERATION.--Gage height record and discharge measurements for water years 1951-64 were collected by the U.S. Army Corps of Engineers and computed by the U.S. Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 13,500 ft^3/s, on the basis of contracted-opening of peak flow, June 15, 1982, gage height, 17.25 ft, present datum.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	49	72	e70	74	101	75	108	72	43	8.0	3.8
2	51	79	70	e66	105	103	73	105	69	40	7.3	3.6
3	36	75	67	e61	276	98	73	101	67	40	7.0	3.6
4	25	75	66	e54	666	97	71	94	73	43	6.5	4.1
5	22	81	65	e49	632	92	70	91	239	45	5.8	5.4
6	20	75	154	e36	436	87	67	88	174	39	5.7	10
7	21	67	197	e33	486	92	114	86	117	36	e5.2	4.9
8	22	59	196	e33	271	85	163	83	102	35	e5.0	4.5
9	23	56	159	e31	191	80	119	84	120	33	4.5	11
10	20	54	140	e36	150	82	105	79	104	e29	4.3	14
11	18	53	122	e54	153	84	98	119	97	25	5.2	3.9
12	18	51	115	e86	176	79	372	149	90	24	11	2.2
13	18	47	106	e229	535	68	525	270	84	22	23	1.9
14	18	47	e57	e168	658	76	330	380	83	20	7.5	1.7
15	20	46	e64	e128	368	67	257	252	83	19	5.6	2.1
16	20	45	e66	e99	258	69	218	202	75	18	4.9	1.8
17	19	44	e61	e95	204	66	194	179	70	17	4.6	1.7
18	20	44	e63	e92	174	66	173	160	66	15	4.5	1.8
19	e22	97	e58	e97	157	66	157	157	63	13	4.3	1.9
20	e21	123	e63	e95	155	62	143	139	60	13	4.4	1.7
21	21	95	e65	e90	156	59	130	127	57	13	4.2	1.7
22	20	84	e57	e88	132	59	227	125	56	13	4.1	1.7
23	25	80	e51	e85	125	61	210	114	54	12	4.0	1.6
24	23	75	e48	e88	121	63	156	105	52	10	3.9	1.6
25	23	72	e51	e90	117	95	146	98	48	9.5	4.0	1.8
26	38	69	e53	e89	112	105	149	94	48	11	4.0	2.7
27	66	73	e55	e86	110	93	136	90	47	18	4.0	2.0
28	52	74	e60	e83	113	86	122	86	47	13	4.0	2.1
29	53	69	e52	e81	---	82	117	83	47	9.7	4.0	1.9
30	59	72	e57	e79	---	79	113	81	47	8.8	3.8	1.8
31	50	---	e60	e74	---	86	---	76	---	8.4	3.9	---
TOTAL	886	2,030	2,570	2,545	7,111	2,488	4,903	4,005	2,411	695.4	178.2	104.5
MEAN	28.6	67.7	82.9	82.1	254	80.3	163	129	80.4	22.4	5.75	3.48
MAX	66	123	197	229	666	105	525	380	239	45	23	14
MIN	18	44	48	31	74	59	67	76	47	8.4	3.8	1.6
AC-FT	1,760	4,030	5,100	5,050	14,100	4,930	9,730	7,940	4,780	1,380	353	207
CFSM	0.14	0.34	0.41	0.41	1.26	0.40	0.81	0.64	0.40	0.11	0.03	0.02
IN.	0.16	0.38	0.48	0.47	1.32	0.46	0.91	0.74	0.45	0.13	0.03	0.02

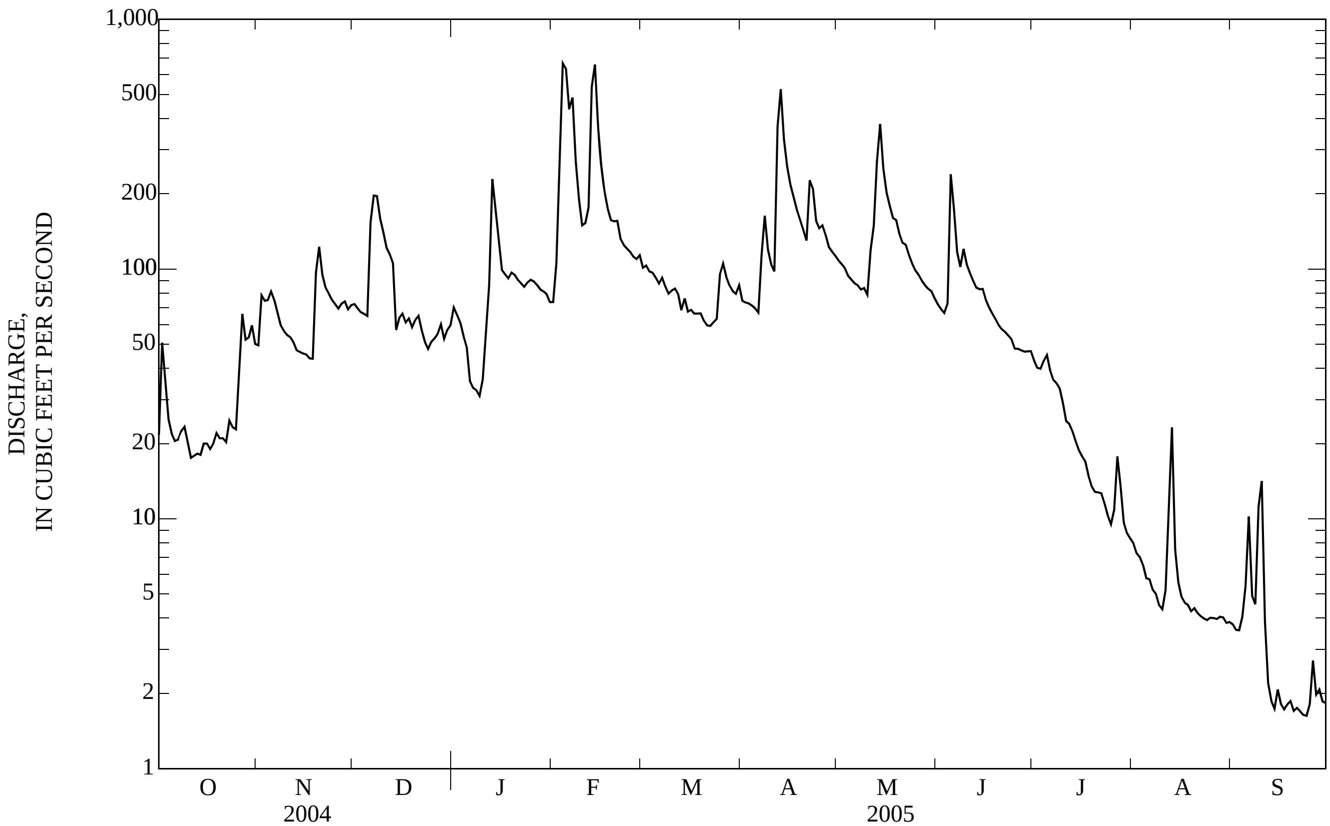
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.5	86.7	53.7	59.7	128	235	167	228	188	144	97.3	56.1
MAX	541	636	337	436	536	793	625	1,071	907	1,515	1,190	598
(WY)	(1999)	(1962)	(1993)	(1960)	(2001)	(1962)	(1993)	(1996)	(1990)	(1993)	(1993)	(1993)
MIN	0.21	0.39	0.35	0.26	2.50	2.12	1.29	4.97	5.34	1.43	2.97	0.36
(WY)	(1958)	(1956)	(1956)	(1956)	(1954)	(1954)	(1956)	(1956)	(1956)	(1954)	(1988)	(1957)

05455100 OLD MANS CREEK NEAR IOWA CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1951 - 2005	
ANNUAL TOTAL	42,770		29,927.1			
ANNUAL MEAN	117		82.0		125	
HIGHEST ANNUAL MEAN					607	1993
LOWEST ANNUAL MEAN					10.3	1954
HIGHEST DAILY MEAN	1,460	Mar 5	666	Feb 4	8,780	Jul 6, 1993
LOWEST DAILY MEAN	12	Jan 30	1.6	Sep 23 a	0.10	Sep 6, 1957
ANNUAL SEVEN-DAY MINIMUM	14	Jan 29	1.7	Sep 18	0.10	Sep 6, 1957
MAXIMUM PEAK FLOW			1,090	Feb 4	13,000	Jul 6, 1993
MAXIMUM PEAK STAGE			8.59	Feb 4	17.61	Jul 6, 1993
INSTANTANEOUS LOW FLOW			1.6	Sep 15 b		
ANNUAL RUNOFF (AC-FT)	84,830		59,360		90,780	
ANNUAL RUNOFF (CFSM)	0.581		0.408		0.623	
ANNUAL RUNOFF (INCHES)	7.92		5.54		8.47	
10 PERCENT EXCEEDS	264		159		274	
50 PERCENT EXCEEDS	67		66		40	
90 PERCENT EXCEEDS	19		4.3		2.2	

a Also Sep. 24.
b Also Sep. 22-25.
e Estimated.



05455500 ENGLISH RIVER AT KALONA, IA

LOCATION.--Lat 41°28'11", long 91°42'52", in SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.13, T.77 N., R.8 W., Washington County, Hydrologic Unit 07080209, on right bank 30 ft upstream from bridge on State Highway 1, 0.8 mi south of Kalona, 1.1 mi upstream from Camp Creek, 4.5 mi downstream from Smith Creek, and 17.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--573 mi^2.

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

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1940 (M), 1941. WSP 1708: 1956, 1957 (P), 1958 (P).

GAGE.--Water-stage recorder. Datum of gage is 633.45 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 27, 1939, nonrecording gage 30 ft downstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1930 reached a stage of 19.9 ft, from floodmark, from information by local residents, discharge, 18,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	101	107	e152	e118	262	201	268	126	70	29	8.2
2	45	174	99	e142	e182	231	189	249	115	64	29	7.6
3	55	139	100	e128	e444	238	180	237	106	60	30	7.4
4	48	159	97	e117	e1,380	226	173	222	105	64	29	7.7
5	38	175	98	e109	e1,860	220	165	207	206	67	25	7.8
6	32	173	218	e90	e1,630	207	158	197	462	88	24	11
7	31	147	350	e80	1,350	208	178	190	302	76	23	8.7
8	33	120	392	e77	861	201	559	183	221	64	22	8.9
9	35	106	303	e71	544	185	417	177	260	61	20	9.7
10	34	97	256	e74	383	175	329	167	335	60	17	12
11	33	95	220	e84	366	183	287	175	265	59	18	12
12	38	90	198	e190	357	176	758	241	233	54	22	9.6
13	39	84	175	e601	893	150	1,340	561	218	51	24	7.2
14	35	79	e84	e251	2,700	152	938	1,470	194	50	22	6.8
15	32	76	e110	e162	1,480	151	686	890	191	48	18	6.6
16	31	77	e118	e117	899	137	564	633	175	46	15	e6.2
17	30	78	e112	e109	634	138	489	514	146	42	14	e6.1
18	31	80	e118	e112	500	138	432	436	133	39	16	e5.9
19	38	143	e114	e129	418	136	386	401	122	38	14	6.5
20	46	182	e125	e127	406	134	351	379	111	40	16	5.2
21	49	168	e130	e117	405	125	316	317	101	43	15	4.9
22	50	150	e117	e111	358	125	453	289	97	39	12	4.9
23	55	137	e104	e112	330	133	688	260	95	37	11	4.6
24	48	125	e98	e128	317	139	543	227	87	38	10	5.5
25	47	115	e103	e134	308	241	453	205	80	33	10	5.7
26	126	107	e105	e129	286	309	439	190	74	34	11	6.6
27	169	117	e108	e122	273	276	407	177	70	39	11	7.6
28	101	126	e124	e115	283	244	349	165	72	41	12	8.1
29	98	114	e114	e115	---	222	312	156	71	41	11	7.9
30	120	110	e128	e106	---	205	290	149	77	36	9.6	6.7
31	108	---	e136	e101	---	213	---	139	---	32	9.0	---
TOTAL	1,706	3,644	4,661	4,212	19,965	5,880	13,030	10,071	4,850	1,554	548.6	223.6
MEAN	55.0	121	150	136	713	190	434	325	162	50.1	17.7	7.45
MAX	169	182	392	601	2,700	309	1,340	1,470	462	88	30	12
MIN	30	76	84	71	118	125	158	139	70	32	9.0	4.6
MED	39	116	117	117	412	185	396	227	124	46	16	7.3
AC-FT	3,380	7,230	9,250	8,350	39,600	11,660	25,850	19,980	9,620	3,080	1,090	444
CFSM	0.10	0.21	0.26	0.24	1.24	0.33	0.76	0.57	0.28	0.09	0.03	0.01
IN.	0.11	0.24	0.30	0.27	1.29	0.38	0.84	0.65	0.31	0.10	0.04	0.01

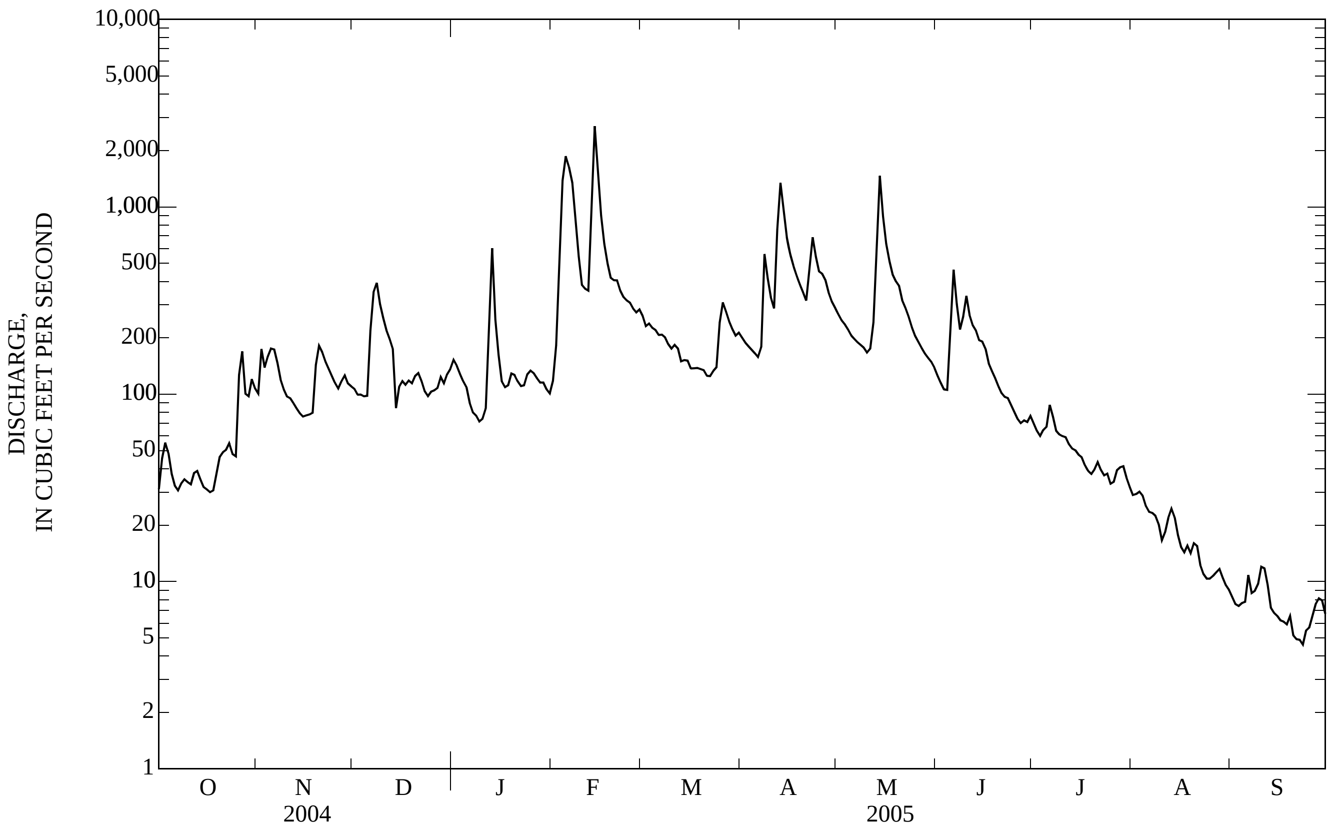
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	159	238	178	200	366	685	626	679	587	394	257	219
MAX	1,274	2,060	1,085	1,429	1,066	2,957	2,736	3,529	2,570	4,207	3,696	3,169
(WY)	(1999)	(1962)	(1983)	(1946)	(1984)	(1979)	(1973)	(1974)	(1990)	(1993)	(1993)	(1965)
MIN	2.98	2.38	2.19	0.76	13.8	10.8	5.35	9.62	21.7	7.31	6.34	3.10
(WY)	(1954)	(1956)	(1956)	(1977)	(1954)	(1954)	(1956)	(1956)	(1940)	(1954)	(1955)	(1955)

05455500 ENGLISH RIVER AT KALONA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	114,952		70,345.2			
ANNUAL MEAN	314		193		382	
HIGHEST ANNUAL MEAN					1,721	1993
LOWEST ANNUAL MEAN					41.7	1954
HIGHEST DAILY MEAN	4,040	Mar 5	2,700	Feb 14	22,300	Jul 6, 1993
LOWEST DAILY MEAN	21	Aug 23	4.6	Sep 23	0.66	Feb 5, 1977
ANNUAL SEVEN-DAY MINIMUM	28	Sep 24	5.3	Sep 19	0.68	Feb 1, 1977
MAXIMUM PEAK FLOW			3,050	Feb 14	36,100	Jul 6, 1993
MAXIMUM PEAK STAGE			11.71	Feb 14	22.55	Jul 6, 1993
INSTANTANEOUS LOW FLOW			4.3	Sep 23		
ANNUAL RUNOFF (AC-FT)	228,000		139,500		276,800	
ANNUAL RUNOFF (CFSM)	0.547		0.336		0.666	
ANNUAL RUNOFF (INCHES)	7.45		4.56		9.04	
10 PERCENT EXCEEDS	838		411		850	
50 PERCENT EXCEEDS	129		117		118	
90 PERCENT EXCEEDS	38		12		12	

e Estimated



05455700 IOWA RIVER NEAR LONE TREE, IA

LOCATION.--Lat 41°25'26", long 91°28'43", in NW1/4 NE1/4 sec.6, T.76 N., R.5 W., Louisa County, Hydrologic Unit 07080209, on left bank 30 ft downstream from tri-county bridge on County Highway W66, 5 mi southwest of Lone Tree, 6.2 mi downstream from English River, and 46.6 mi (revised) upstream from mouth.

DRAINAGE AREA.--4,293 mi^2.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 588.16 ft above NGVD of 1929. Prior to Dec. 28, 1956, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are fair. Flow regulated by Coralville Lake (station 05453510), 36.1 mi upstream, since Sept. 17, 1958. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 25, 1944, reached a stage of 19.94 ft, discharge not determined, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	651	930	1,230	1,200	775	2,430	1,800	4,070	3,940	5,430	1,320	545
2	687	991	1,200	1,280	939	2,180	1,850	3,770	3,560	5,510	1,340	525
3	552	861	1,180	1,150	1,450	2,120	1,940	3,330	3,270	5,350	1,270	456
4	485	834	1,120	e1,120	2,780	2,120	1,940	2,810	3,240	5,570	1,220	432
5	429	936	1,110	e1,110	4,120	2,110	1,920	2,420	3,490	5,900	1,200	471
6	387	915	1,370	e1,050	4,040	2,080	1,840	2,200	4,140	6,590	1,070	433
7	355	888	1,860	e999	4,970	2,110	1,840	2,120	3,950	5,970	937	426
8	342	809	2,200	e939	5,260	2,380	2,310	2,040	3,730	5,410	905	443
9	333	759	2,040	e864	4,430	2,360	2,850	1,980	3,450	5,160	807	523
10	312	782	2,310	e839	3,890	2,330	2,830	2,000	3,420	4,020	741	461
11	384	861	2,470	e833	2,780	2,350	2,770	2,220	3,130	3,340	714	430
12	490	847	2,410	903	2,610	2,450	3,250	2,570	3,050	2,860	771	361
13	511	814	2,340	1,940	3,160	2,300	4,580	3,830	3,220	2,500	852	326
14	515	808	2,160	e1,580	6,490	2,140	4,510	7,760	3,180	2,440	939	289
15	522	801	2,090	e1,200	7,410	2,100	4,480	7,970	3,180	2,220	917	262
16	517	806	2,250	e1,120	7,560	1,960	5,140	7,650	3,360	2,020	884	251
17	518	849	2,200	e1,020	7,000	1,810	5,480	7,500	3,320	1,880	820	236
18	520	873	2,000	e901	6,070	1,710	5,430	7,440	3,090	1,720	756	231
19	531	1,230	1,460	e841	5,650	1,610	5,120	7,450	2,870	1,550	693	236
20	531	1,570	e1,110	e801	5,000	1,570	4,780	7,450	2,700	1,440	701	226
21	533	1,590	e917	e773	4,770	1,560	4,680	7,320	2,540	1,320	686	204
22	539	1,430	e775	e764	4,620	1,540	4,520	7,290	2,310	1,290	665	201
23	594	1,380	e746	e749	3,620	1,280	4,790	7,190	2,180	1,280	657	204
24	707	1,330	e721	e751	3,030	1,320	4,450	7,170	2,090	1,260	615	212
25	884	1,290	e719	e754	2,960	1,680	4,000	7,080	2,050	1,270	608	217
26	814	1,270	e782	e767	2,820	1,940	4,040	7,030	1,970	1,290	619	275
27	1,280	1,310	e851	e767	2,760	1,970	4,320	6,910	1,900	1,300	666	359
28	1,140	1,360	e895	e754	2,640	1,960	4,260	6,320	2,450	1,250	612	363
29	969	1,320	e967	e751	---	1,710	4,190	5,660	3,770	1,240	571	419
30	981	1,310	e1,070	e758	---	1,760	4,140	4,830	4,750	1,240	552	406
31	957	---	e1,160	e760	---	1,830	---	4,260	---	1,230	551	---
TOTAL	18,970	31,754	45,713	30,038	113,604	60,770	110,050	159,640	93,300	90,850	25,659	10,423
MEAN	612	1,058	1,475	969	4,057	1,960	3,668	5,150	3,110	2,931	828	347
MAX	1,280	1,590	2,470	1,940	7,560	2,450	5,480	7,970	4,750	6,590	1,340	545
MIN	312	759	719	749	775	1,280	1,800	1,980	1,900	1,230	551	201
AC-FT	37,630	62,980	90,670	59,580	225,300	120,500	218,300	316,600	185,100	180,200	50,890	20,670
CFSM	0.14	0.25	0.34	0.23	0.95	0.46	0.85	1.20	0.72	0.68	0.19	0.08
IN.	0.16	0.28	0.40	0.26	0.98	0.53	0.95	1.38	0.81	0.79	0.22	0.09

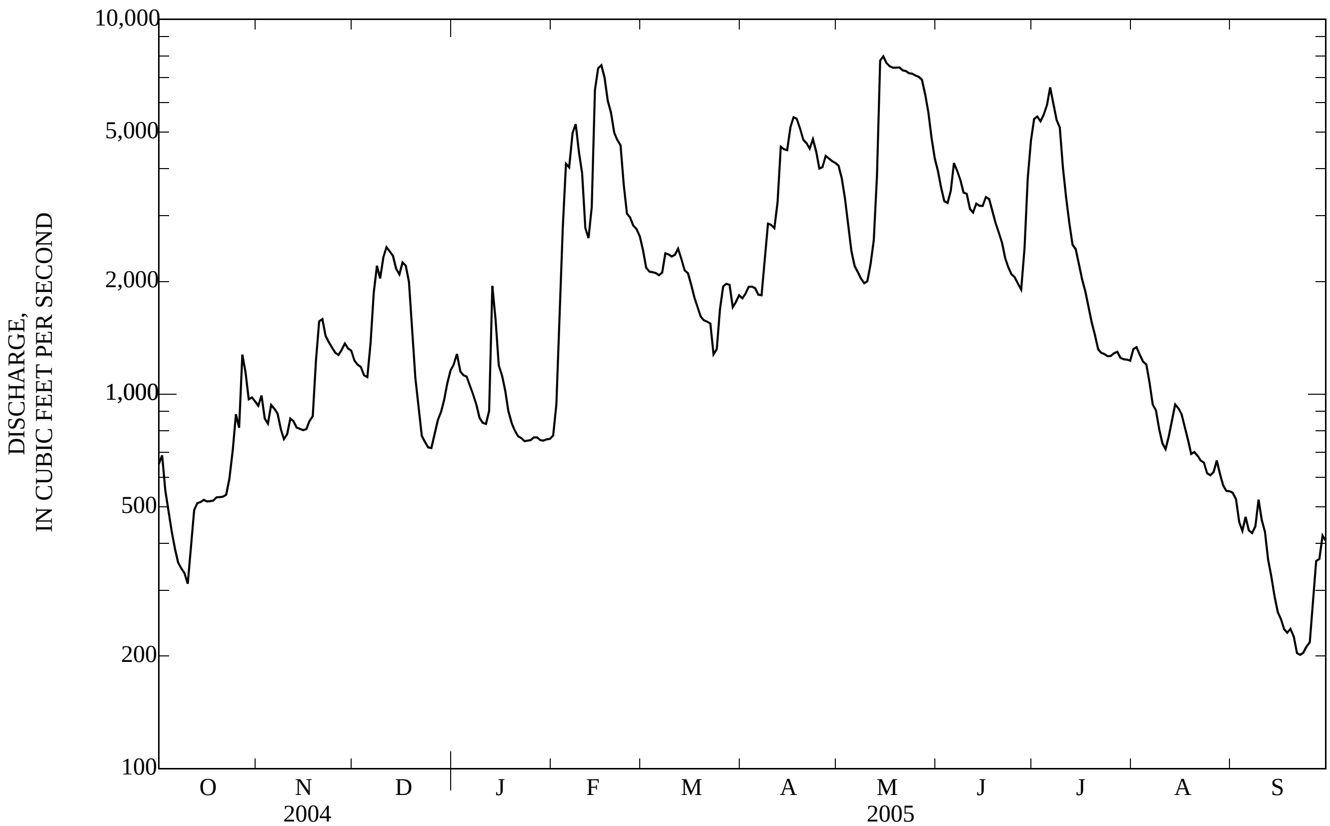
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,487	1,905	1,815	1,426	2,415	4,586	4,933	4,664	4,760	4,361	2,718	1,927
MAX	6,115	6,347	6,678	7,814	7,205	10,410	12,230	14,030	13,150	30,320	26,150	18,150
(WY)	(1994)	(1962)	(1983)	(1973)	(1973)	(1993)	(1979)	(1993)	(1974)	(1993)	(1993)	(1993)
MIN	192	190	168	154	158	539	533	282	147	180	186	210
(WY)	(1989)	(1967)	(1989)	(1977)	(1977)	(1977)	(1989)	(1977)	(1977)	(1977)	(1989)	(1988)

05455700 IOWA RIVER NEAR LONE TREE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005 a	
ANNUAL TOTAL	1,031,781		790,771			
ANNUAL MEAN	2,819		2,166		3,085	
HIGHEST ANNUAL MEAN					11,900	1993
LOWEST ANNUAL MEAN					483	1989
HIGHEST DAILY MEAN	12,600	Mar 6	7,970	May 15	55,100	Jul 7, 1993
LOWEST DAILY MEAN	312	Oct 10	201	Sep 22	69	Aug 4, 1977
ANNUAL SEVEN-DAY MINIMUM	363	Oct 5	214	Sep 19	75	Jul 30, 1977
MAXIMUM PEAK FLOW			8,510	May 14	57,100	Jul 7, 1993
MAXIMUM PEAK STAGE			11.80	May 14	22.94	Jul 7, 1993
ANNUAL RUNOFF (AC-FT)	2,047,000		1,568,000		2,235,000	
ANNUAL RUNOFF (CFSM)	0.657		0.505		0.719	
ANNUAL RUNOFF (INCHES)	8.94		6.85		9.76	
10 PERCENT EXCEEDS	7,030		5,050		7,450	
50 PERCENT EXCEEDS	1,760		1,440		1,740	
90 PERCENT EXCEEDS	579		503		323	

a Post regulation.
e Estimated.



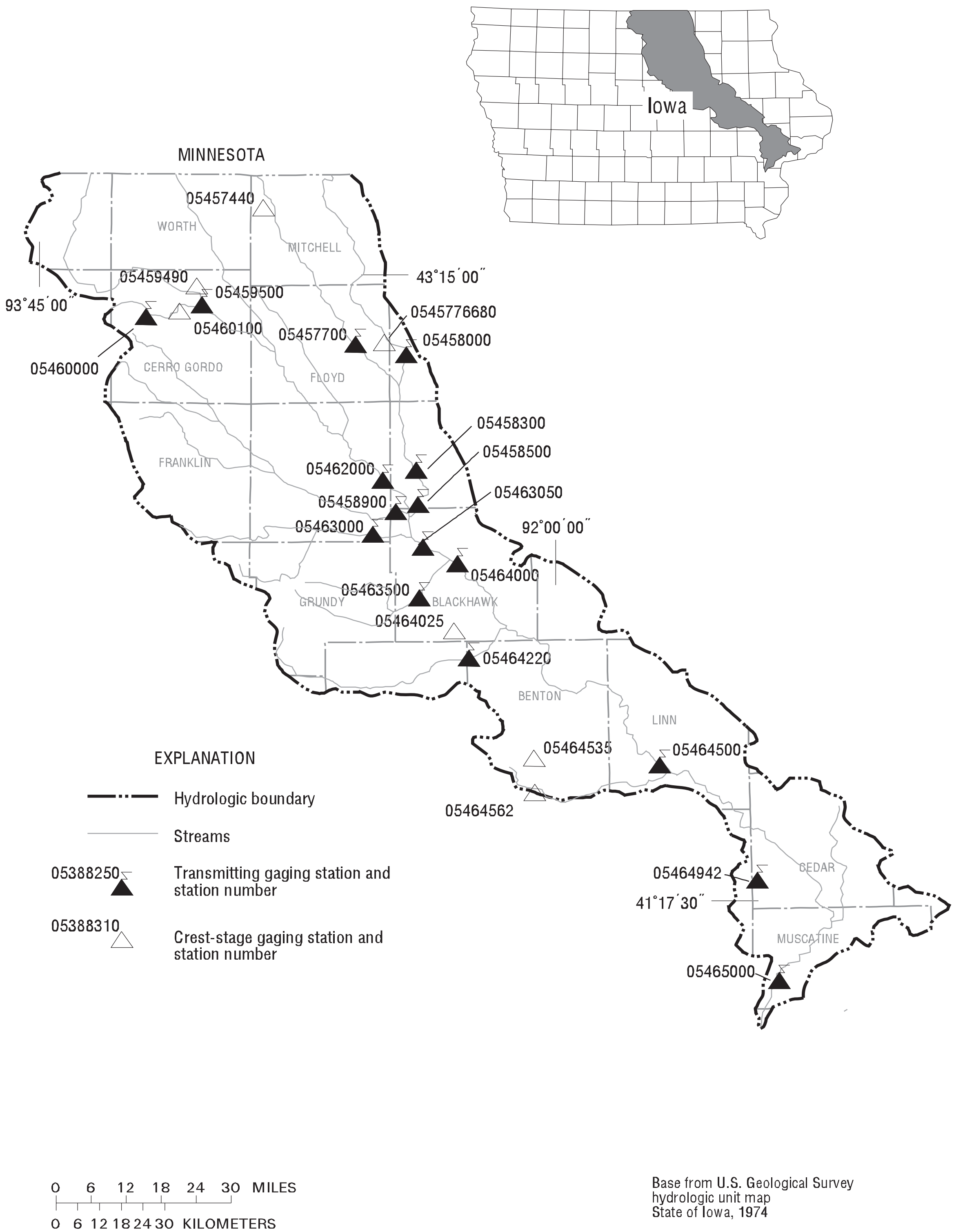


Figure 12. Locations of active continous-record and crest-stage gaging stations in the Cedar River drainage basin .

IOWA RIVER BASIN
(CEDAR RIVER BASIN)

Gaging Stations

Crest Stage Gaging Stations

05457700 CEDAR RIVER AT CHARLES CITY, IA

LOCATION.--Lat 43°03'45", long 92°40'23", in SE1/4 NE1/4, sec.12, T.95 N., R.16 W., Floyd County, Hydrologic Unit 07080201, on right bank 800 ft downstream from bridge on U.S. Highway 18 (Brantingham Street) in Charles City, 10.6 mi upstream from Gizzard Creek, and at mile 231.3 (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--1,054 mi^2.

PERIOD OF RECORD.--Discharge records from October 1964 to September 1995; October 1, 2000 to current year. Stage-only records from October 1995 to September 2000.

GAGE.--Water-stage recorder. Datum of gage is 973.02 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station. Precipitation records are not published, but are available. Occasional minor regulation by dam 0.2 mi upstream from gage. Daily wire-weight gage readings available in district office for period Sept. 13, 1945 to June 30, 1954, at same site and datum. Discharge not published for this period because of extreme regulation of streamflow by power dam 0.2 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1961, reached a stage of 21.6 ft, from flood marks, discharge, 29,200 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,240	640	e400	e404	e273	607	3,170	963	886	1,190	392	280
2	1,170	651	e486	e374	e295	539	2,630	909	846	1,060	373	273
3	1,260	712	e478	e366	e351	518	1,790	871	801	1,000	353	268
4	1,240	773	501	e346	e409	511	1,500	837	779	1,090	399	287
5	1,080	761	501	e335	e394	490	1,370	797	773	1,220	340	327
6	958	736	509	e328	e548	485	1,300	779	779	909	326	380
7	894	705	510	e351	e1,850	517	1,310	786	727	800	315	320
8	822	661	532	e337	e1,500	595	1,280	835	862	731	310	320
9	771	600	579	e365	e908	657	1,220	918	997	687	318	382
10	729	579	634	e330	e692	510	1,140	943	1,230	642	330	367
11	679	580	648	e334	e548	461	e1,130	963	1,230	595	347	334
12	649	551	668	e335	e474	424	e1,170	1,190	1,130	531	419	307
13	625	526	e542	e320	e858	377	1,580	2,100	1,030	500	481	317
14	623	503	e310	e276	e3,250	362	1,690	2,490	963	472	379	343
15	605	490	e329	e271	4,480	370	1,490	2,190	874	441	339	308
16	584	488	e471	e274	3,640	356	1,270	1,840	814	433	317	295
17	563	488	e433	e279	e1,790	349	1,180	1,600	757	421	306	283
18	539	491	e416	e283	e1,060	360	1,060	1,470	704	452	498	278
19	520	495	e342	e303	e883	381	1,030	1,600	660	484	391	506
20	501	525	e434	e318	1,000	306	3,060	2,220	630	439	395	463
21	488	568	e424	e300	968	356	2,770	2,170	655	485	345	378
22	441	586	e414	e256	869	349	2,340	2,100	864	495	312	328
23	501	611	e402	e268	788	353	1,980	1,880	851	474	296	315
24	478	610	e386	e275	733	370	1,660	1,620	757	439	287	353
25	464	587	e441	e288	714	382	1,460	1,410	798	447	284	853
26	437	560	e416	e281	702	433	1,340	1,300	1,470	677	295	2,970
27	425	587	e411	e273	663	542	1,250	1,210	1,560	716	302	4,330
28	422	580	e412	e273	631	945	1,170	1,140	2,320	613	352	3,380
29	467	e560	e415	e275	---	2,970	1,090	1,070	2,050	531	351	2,260
30	541	e508	e422	e276	---	5,030	1,020	997	1,450	463	318	1,760
31	625	---	e416	e280	---	3,140	---	937	---	419	295	---
TOTAL	21,341	17,712	14,282	9,574	31,271	24,045	47,450	42,135	30,247	19,856	10,765	23,565
MEAN	688	590	461	309	1,117	776	1,582	1,359	1,008	641	347	786
MAX	1,260	773	668	404	4,480	5,030	3,170	2,490	2,320	1,220	498	4,330
MIN	422	488	310	256	273	306	1,020	779	630	419	284	268
AC-FT	42,330	35,130	28,330	18,990	62,030	47,690	94,120	83,570	59,990	39,380	21,350	46,740
CFSM	0.65	0.56	0.44	0.29	1.06	0.74	1.50	1.29	0.96	0.61	0.33	0.75
IN.	0.75	0.63	0.50	0.34	1.10	0.85	1.67	1.49	1.07	0.70	0.38	0.83

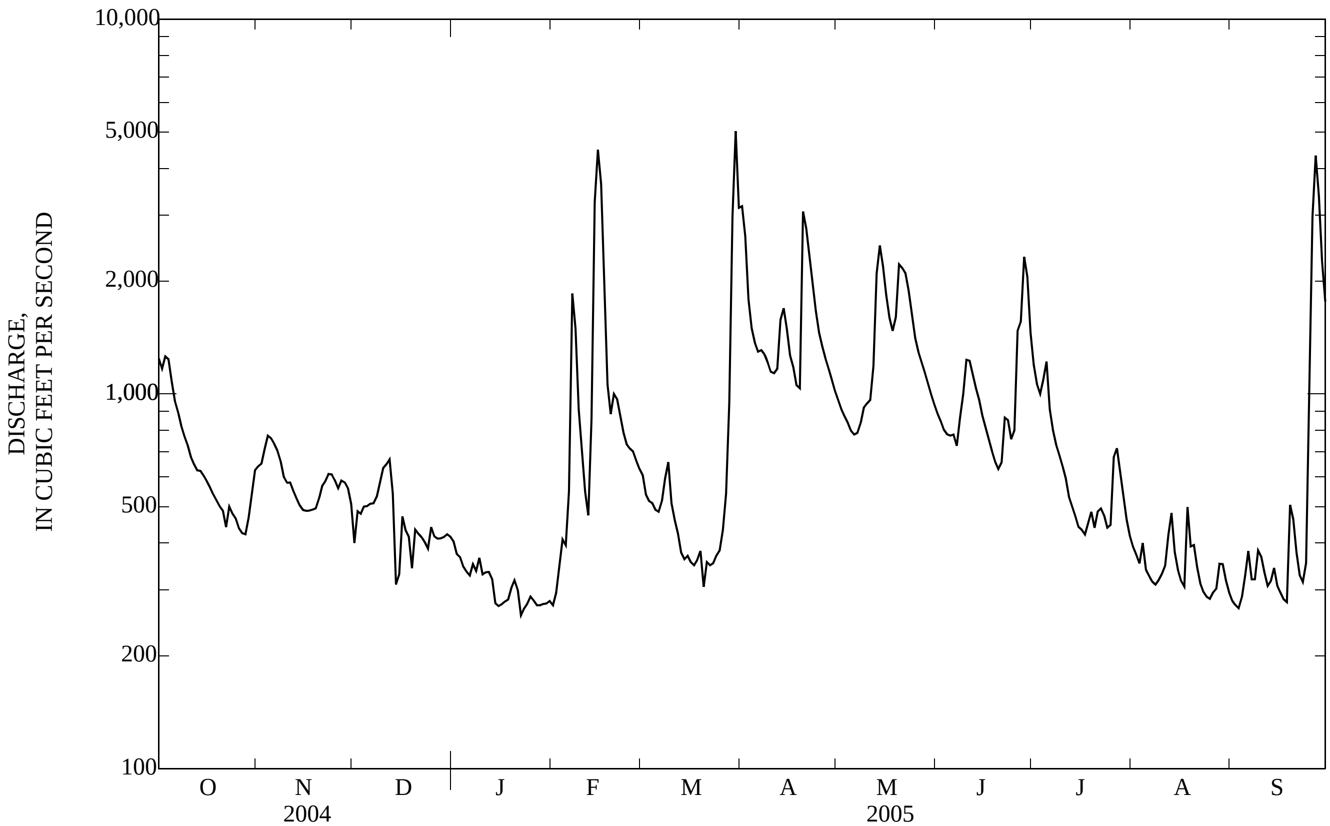
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	557	487	355	275	386	1,218	1,541	1,113	1,048	849	660	581
MAX	2,339	1,639	1,396	888	1,707	3,388	6,010	3,434	4,071	3,009	4,704	2,987
(WY)	(1987)	(1983)	(1983)	(1973)	(1984)	(1997)	(2001)	(1991)	(1993)	(1993)	(1993)	(2004)
MIN	126	97.7	85.4	86.3	127	176	251	197	130	159	114	116
(WY)	(1977)	(1977)	(1990)	(1990)	(1990)	(1968)	(1968)	(1977)	(1977)	(1988)	(1988)	(1976)

05457700 CEDAR RIVER AT CHARLES CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	412,814		292,243			
ANNUAL MEAN	1,128		801		763	
HIGHEST ANNUAL MEAN					2,048	1993
LOWEST ANNUAL MEAN					159	1977
HIGHEST DAILY MEAN	18,600	Sep 17	5,030	Mar 30	22,100	Aug 17, 1993
LOWEST DAILY MEAN	106	Jan 19	256	Jan 22 a	60	Nov 23, 1976 b
ANNUAL SEVEN-DAY MINIMUM	119	Jan 18	273	Jan 22	65	Dec 17, 1989
MAXIMUM PEAK FLOW			5,500	Mar 30	31,200	Jul 21, 1999
MAXIMUM PEAK STAGE			8.67	Mar 30	22.81	Jul 21, 1999
INSTANTANEOUS LOW FLOW					45	Nov 17, 1989
ANNUAL RUNOFF (AC-FT)	818,800		579,700		552,700	
ANNUAL RUNOFF (CFSM)	1.07		0.760		0.724	
ANNUAL RUNOFF (INCHES)	14.57		10.31		9.84	
10 PERCENT EXCEEDS	2,430		1,570		1,620	
50 PERCENT EXCEEDS	542		548		380	
90 PERCENT EXCEEDS	167		309		162	

a Ice affected.
b Also Jan. 7, 1978.
e Estimated.



05458000 LITTLE CEDAR RIVER NEAR IONIA, IA

LOCATION.--Lat 43°02'00", long 92°30'12", in SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.21, T.95 N., R.14 W., Chickasaw County, Hydrologic Unit 07080201, on left bank 12 ft downstream from bridge on County Highway B57, 2.4 mi west of Ionia, 7.6 mi downstream from Beaver Creek, and 7.6 mi (revised) upstream from mouth.

DRAINAGE AREA.--306 mi^2.

PERIOD OF RECORD.--October 1954 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1708: 1959.

GAGE.--Water-stage recorder. Datum of gage is 973.35 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1954, reached a stage of 11.37 ft, discharge, 4,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	210	e105	81	45	96	482	208	208	442	107	54
2	137	198	e140	76	46	96	376	190	191	381	92	50
3	133	220	e117	77	48	85	317	174	177	343	84	49
4	125	249	131	71	50	101	275	157	169	319	90	53
5	120	235	125	65	55	109	255	143	171	275	71	53
6	114	206	125	57	189	111	245	135	166	216	69	55
7	112	183	126	56	e376	151	232	143	159	170	71	51
8	109	160	135	57	e340	173	225	190	524	137	69	57
9	105	158	148	57	e315	132	210	229	440	119	71	57
10	101	161	167	58	e252	108	197	231	370	105	96	61
11	97	164	191	57	e186	99	198	281	377	96	87	55
12	93	163	206	57	e171	91	217	591	362	86	101	56
13	91	161	e176	e46	e342	e66	390	1,040	337	82	110	61
14	89	162	e48	e36	e905	e56	437	1,090	306	76	99	70
15	89	162	e61	e33	e849	e65	389	822	273	68	85	65
16	87	161	e119	e34	e610	71	352	650	232	61	73	60
17	85	161	e93	e35	e449	68	312	549	201	56	66	55
18	82	162	e79	e35	e332	68	274	494	174	57	330	53
19	80	159	e53	40	e290	66	255	494	154	53	136	e327
20	77	156	e68	43	e256	61	812	513	147	54	108	e262
21	75	154	e65	44	e204	63	1,530	529	143	63	88	e195
22	74	153	e59	43	e158	73	851	543	142	65	78	139
23	75	151	e56	43	e139	76	614	514	136	58	76	114
24	75	149	e54	42	e139	98	497	456	130	53	72	114
25	73	146	76	42	e131	102	431	386	201	52	67	545
26	68	146	75	44	e121	118	389	358	e747	285	68	1,150
27	68	144	73	44	127	190	351	336	e814	351	67	1,010
28	67	142	70	45	122	321	303	311	1,220	265	65	919
29	71	139	69	46	---	517	259	279	812	188	62	679
30	93	e114	74	45	---	823	231	252	564	148	59	554
31	180	---	80	45	---	938	---	226	---	124	57	---
TOTAL	2,985	5,029	3,164	1,554	7,247	5,192	11,906	12,514	10,047	4,848	2,774	7,023
MEAN	96.3	168	102	50.1	259	167	397	404	335	156	89.5	234
MAX	180	249	206	81	905	938	1,530	1,090	1,220	442	330	1,150
MIN	67	114	48	33	45	56	197	135	130	52	57	49
AC-FT	5,920	9,980	6,280	3,080	14,370	10,300	23,620	24,820	19,930	9,620	5,500	13,930
CFSM	0.31	0.55	0.33	0.16	0.85	0.55	1.30	1.32	1.09	0.51	0.29	0.77
IN.	0.36	0.61	0.38	0.19	0.88	0.63	1.45	1.52	1.22	0.59	0.34	0.85

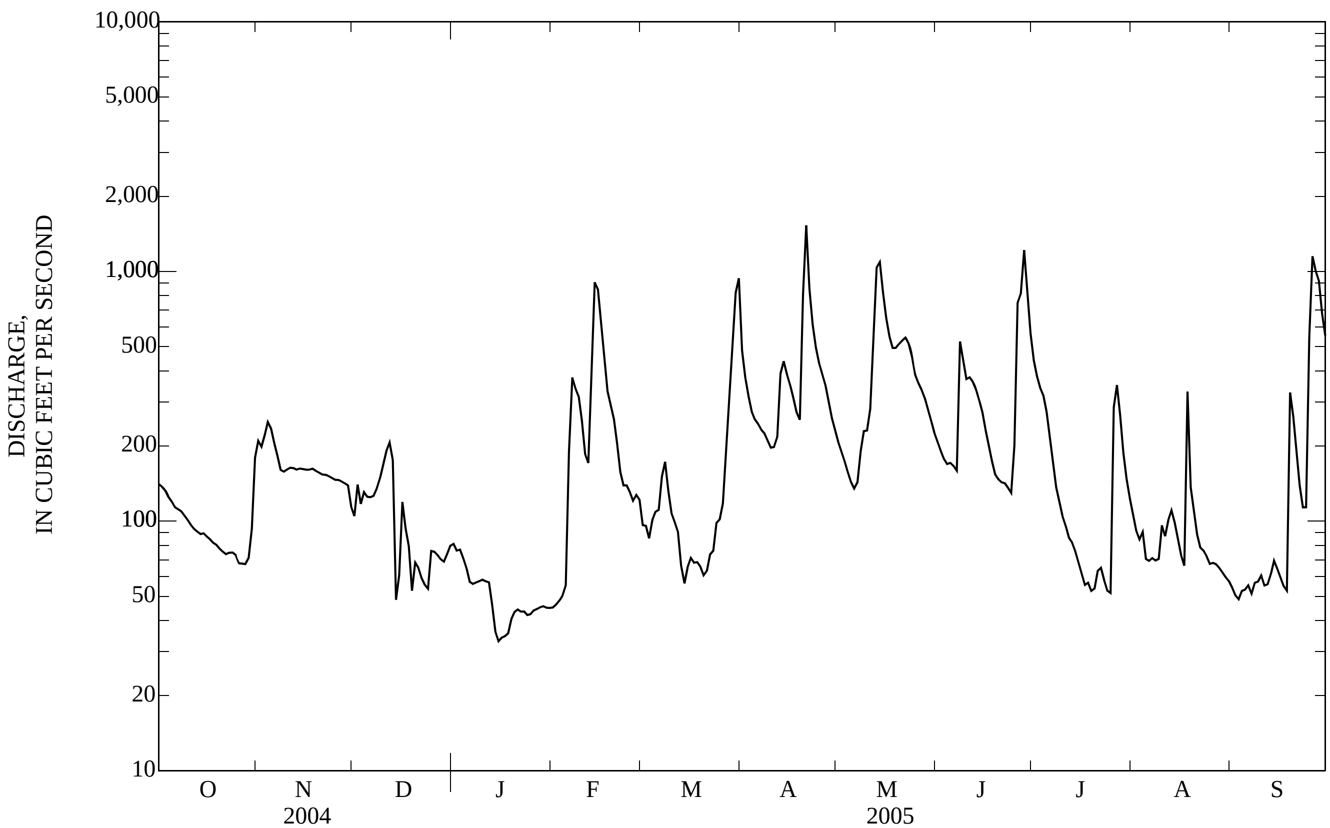
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	135	117	75.2	47.1	86.0	348	368	266	296	215	166	137
MAX	902	632	503	265	644	1,056	1,636	906	1,199	1,317	1,744	807
(WY)	(1987)	(1983)	(1983)	(1973)	(1984)	(1961)	(2001)	(1991)	(2000)	(1999)	(1993)	(1965)
MIN	9.64	12.4	4.93	4.20	3.40	34.5	47.3	30.5	18.4	14.2	7.23	12.7
(WY)	(1990)	(1990)	(1990)	(1959)	(1959)	(1964)	(1957)	(1958)	(1989)	(1964)	(1989)	(1988)

05458000 LITTLE CEDAR RIVER NEAR IONIA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1955 - 2005	
ANNUAL TOTAL	110,594		74,283			
ANNUAL MEAN	302		204		188	
HIGHEST ANNUAL MEAN					584	1993
LOWEST ANNUAL MEAN					32.0	1977
HIGHEST DAILY MEAN	6,690	May 23	1,530	Apr 21	9,930	Mar 27, 1961
LOWEST DAILY MEAN	13	Jan 9	33	Jan 15	3.0	Feb 4, 1959 a
ANNUAL SEVEN-DAY MINIMUM	15	Jan 5	37	Jan 14	3.0	Feb 3, 1959
MAXIMUM PEAK FLOW			1,740	Apr 21	14,000	Aug 16, 1993
MAXIMUM PEAK STAGE			7.75	Feb 15	18.99	Aug 16, 1993
INSTANTANEOUS LOW FLOW					3.0	Feb 4, 1959
ANNUAL RUNOFF (AC-FT)	219,400		147,300		136,400	
ANNUAL RUNOFF (CFSM)	0.987		0.665		0.616	
ANNUAL RUNOFF (INCHES)	13.44		9.03		8.36	
10 PERCENT EXCEEDS	608		466		396	
50 PERCENT EXCEEDS	125		131		73	
90 PERCENT EXCEEDS	20		54		20	

a Also Feb. 5-9, 1959.
e Estimated.



05458300 CEDAR RIVER AT WAVERLY, IA

LOCATION.--Lat 42°44'14", long 92°28'12", in NE$\frac{1}{4}$ NW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.35, T.92 N., R.14 W., Butler County, Hydrologic Unit 07080201, in middle of the County Highway V-14 bridge on the north edge of Waverly, and at mile 194.9 upstream from mouth of Cedar River.

DRAINAGE AREA.--1,547 mi^2.

PERIOD OF RECORD.--August 30, 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 892.64 ft above NGVD of 1929.

REMARKS.--Records are considered fair, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,190	850	e606	e567	e308	e811	e4,060	1,160	1,290	e2,700	e753	e530
2	1,110	935	e496	e516	e332	e745	e3,440	1,100	1,170	e2,200	e702	e508
3	1,070	829	e624	e524	e381	e693	e3,020	1,010	e1,140	e1,810	e703	e476
4	1,290	1,140	e623	e494	e438	e724	e2,310	999	e1,070	e1,490	e675	e482
5	1,330	1,230	e679	e442	e418	e695	e2,010	967	e1,090	e1,550	e729	e493
6	1,270	1,010	694	e411	e462	e677	e1,860	907	e1,030	e1,650	e612	e495
7	1,150	968	686	e452	e605	709	e1,710	945	e1,170	1,280	e599	e593
8	762	925	742	e414	e1,190	688	e1,580	1,020	920	1,150	e566	e553
9	837	889	726	e439	2,190	747	e1,490	e1,130	1,550	1,090	e541	e567
10	947	835	751	e387	2,120	824	e1,390	e1,150	e1,720	e959	e619	e573
11	1,150	763	849	e405	1,690	774	e1,340	e1,100	e1,730	e914	e639	e569
12	934	730	e901	e417	1,190	661	e1,370	e1,290	e1,730	e845	e587	e554
13	774	706	e895	e364	1,110	624	e1,350	e2,170	e1,520	e758	648	e523
14	674	710	e615	e309	2,130	567	e1,860	e3,050	e1,460	e712	e712	e542
15	527	678	e509	e303	e3,660	542	e2,180	e3,580	e1,370	e687	e631	e547
16	724	656	e536	e309	e4,920	534	e2,020	e3,170	e1,230	e632	606	e542
17	703	683	e632	e311	6,340	e525	e1,770	e2,660	e1,130	e586	e556	e492
18	887	666	e591	e314	5,220	e518	e1,530	e2,440	e1,050	e629	e805	e472
19	932	691	e570	e339	3,140	e517	1,390	e2,310	e955	e612	1,830	e469
20	840	678	e520	e362	2,200	e535	e1,510	e2,320	895	e656	691	e784
21	733	665	e578	e333	1,860	e467	2,720	e2,670	830	e720	676	793
22	573	725	e573	e270	1,610	e462	e3,900	e2,890	e838	e709	626	672
23	579	744	e560	e291	e1,220	e436	e3,010	e2,830	e1,010	e746	e597	625
24	627	748	e551	e309	e1,110	e430	e2,490	e2,620	e1,010	e705	e544	e562
25	701	e735	e626	e462	e1,030	e472	2,160	e2,320	e1,140	734	e532	e669
26	595	e708	e584	e422	e953	e484	1,860	e2,110	e2,160	e814	e569	e1,320
27	789	e737	e559	e377	e948	e505	1,700	e1,880	e3,810	1,000	e552	e2,640
28	717	e722	e560	e365	e827	e614	1,530	e1,790	e3,510	e1,150	e585	e4,280
29	660	e707	e570	e353	---	e998	1,370	1,660	e4,040	e1,030	e559	e4,490
30	788	e673	e584	e340	---	e2,360	1,280	1,550	e4,280	e952	e585	e3,180
31	862	---	e584	e340	---	e4,690	---	1,390	---	e819	e587	---
TOTAL	26,725	23,736	19,574	11,941	49,602	25,028	61,210	58,188	47,848	32,289	20,616	29,995
MEAN	862	791	631	385	1,772	807	2,040	1,877	1,595	1,042	665	1,000
MAX	1,330	1,230	901	567	6,340	4,690	4,060	3,580	4,280	2,700	1,830	4,490
MIN	527	656	496	270	308	430	1,280	907	830	586	532	469
AC-FT	53,010	47,080	38,830	23,680	98,390	49,640	121,400	115,400	94,910	64,050	40,890	59,500
CFSM	0.56	0.51	0.41	0.25	1.15	0.52	1.32	1.21	1.03	0.67	0.43	0.65
IN.	0.64	0.57	0.47	0.29	1.19	0.60	1.47	1.40	1.15	0.78	0.50	0.72

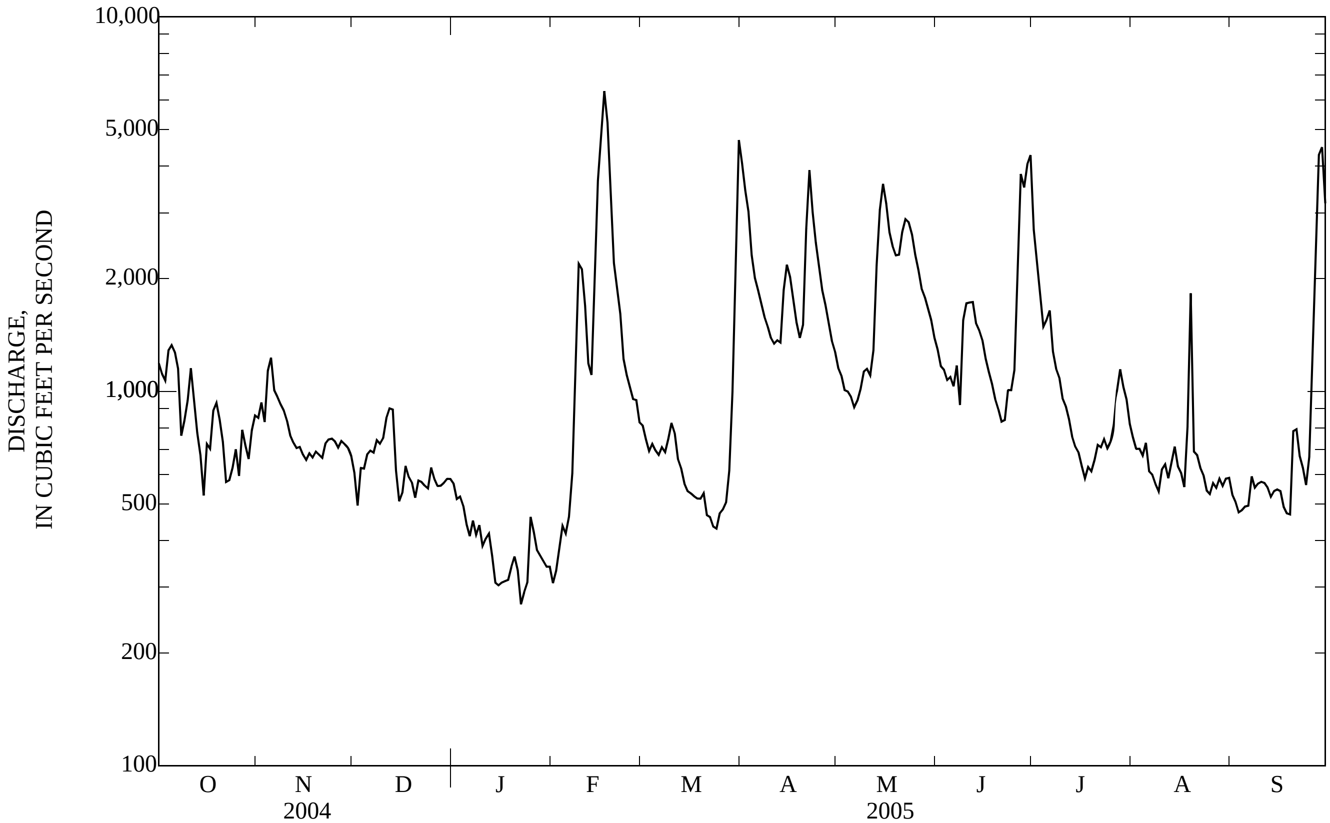
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	500	448	392	312	589	706	2,278	2,555	1,810	1,342	727	945
MAX	862	791	631	422	1,772	1,064	7,454	4,340	2,634	2,930	1,275	3,125
(WY)	(2005)	(2005)	(2005)	(2001)	(2005)	(2004)	(2001)	(2001)	(2001)	(2004)	(2004)	(2004)
MIN	246	284	267	220	231	364	523	794	1,053	420	407	293
(WY)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2004)	(2002)	(2002)	(2002)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2000 - 2005	
ANNUAL TOTAL	532,998		406,752			
ANNUAL MEAN	1,456		1,114		1,059	
HIGHEST ANNUAL MEAN					1,584	2001
LOWEST ANNUAL MEAN					527	2002
HIGHEST DAILY MEAN	23,300	Sep 18	6,340	Feb 17	23,400	Apr 14, 2001
LOWEST DAILY MEAN	197	Jan 28	270	Jan 22 a	181	Jan 11, 2003
ANNUAL SEVEN-DAY MINIMUM	202	Jan 24	317	Jan 18	202	Jan 24, 2004
MAXIMUM PEAK FLOW			7,010	Feb 17	25,600	Apr 14, 2001
MAXIMUM PEAK STAGE			7.43	Feb 17	13.16	Sep 18, 2004
ANNUAL RUNOFF (AC-FT)	1,057,000		806,800		767,200	
ANNUAL RUNOFF (CFSM)	0.941		0.720		0.685	
ANNUAL RUNOFF (INCHES)	12.82		9.78		9.30	
10 PERCENT EXCEEDS	2,570		2,240		2,190	
50 PERCENT EXCEEDS	762		747		512	
90 PERCENT EXCEEDS	240		465		262	

05458300 CEDAR RIVER AT WAVERLY, IA—Continued

a Ice effected.
e Estimated.



05458500 CEDAR RIVER AT JANESVILLE, IA

LOCATION.--Lat 42°38'54", long 92°27'54", in NE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.35, T.91 N., R.14 W., Bremer County, Hydrologic Unit 07080201, on left bank 300 ft downstream from bridge on county highway at Janesville, 3.6 mi upstream from West Fork Cedar River, and at mile 182.6 (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--1,661 mi^2.

PERIOD OF RECORD.--October 1904 to Sept. 1906, October 1914 to September 1927, October 1932 to September 1942, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as "Red Cedar River at Janesville", 1905-06.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1906 (M), 1915-16 (M), 1917, 1918-19 (M), 1920-27, 1933-37 (M), 1940-42 (M), WDR IA-97-1:1996.

GAGE.--Water-stage recorder. Datum of gage is 868.26 ft above NGVD of 1929. Prior to July 26, 1919, nonrecording gage at site 1,000 ft downstream at datum 4.0 ft lower. July 26, 1919 to Sept. 30, 1927, Nov. 14, 1932 to Sept 30, 1942, and Apr. 26, 1946 to Nov. 10, 1949, nonrecording gage at county bridge 300 ft upstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Diurnal fluctuation during low water caused by powerplant at Waverly, 10 mi upstream. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1945, reached a stage of 16.2 ft, from floodmark at site 300 ft upstream, discharge, 34,300 ft^3/s. Flood of Mar. 16, 1929, reached a stage of about 16 ft, from information by City of Waterloo, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,630	849	e670	e609	e342	e809	4,310	1,320	1,340	2,820	787	549
2	1,520	926	e522	e559	e379	e743	3,670	1,260	1,240	2,250	716	526
3	1,420	904	e659	e566	e428	700	3,290	1,150	1,190	1,880	717	497
4	1,580	903	e657	e547	e485	722	2,510	1,100	1,120	1,570	694	503
5	1,720	1,040	703	e515	e462	696	2,190	1,040	1,140	1,640	753	509
6	1,440	1,040	708	e478	e500	678	2,010	950	1,070	1,750	624	508
7	1,380	990	696	e512	e647	724	1,850	975	1,190	1,400	614	613
8	1,040	937	728	e463	e1,260	758	1,720	1,020	963	1,220	578	567
9	968	911	721	e492	e2,590	803	1,620	1,170	1,600	1,110	550	582
10	1,050	868	740	e429	e2,450	871	1,510	1,190	1,780	972	635	585
11	1,400	828	818	e448	e1,860	849	1,440	1,130	1,780	923	662	581
12	1,160	786	897	e456	e1,400	773	1,480	1,360	1,780	860	605	566
13	852	771	909	e400	e1,280	714	1,460	2,320	1,580	771	656	545
14	771	731	715	e347	e2,530	671	2,000	3,270	1,510	726	749	563
15	681	716	e553	e334	e3,990	635	2,310	3,810	1,430	697	646	567
16	813	686	e579	e337	e5,210	622	2,120	3,420	1,280	647	614	562
17	822	682	e678	e341	e6,820	601	1,850	2,870	1,150	600	570	512
18	799	682	e635	e345	e5,510	579	1,630	2,610	1,070	638	822	494
19	775	711	e616	e371	e3,540	573	1,530	2,400	969	622	2,230	492
20	778	712	e529	e391	e2,530	600	1,630	2,400	908	665	1,080	878
21	758	707	e378	e362	e2,170	554	3,160	2,820	836	732	772	898
22	726	723	e321	e295	1,870	554	4,130	2,980	843	714	756	748
23	709	764	e525	e310	1,260	520	3,420	2,920	1,010	756	678	670
24	730	793	e606	e321	1,080	517	2,810	2,710	1,020	711	606	621
25	704	e779	e551	e395	1,020	571	2,460	2,390	1,150	767	597	724
26	711	e740	e547	e468	944	579	2,190	2,190	2,250	837	616	1,560
27	652	e766	e603	e392	941	602	1,960	1,920	3,910	1,050	580	3,200
28	691	e745	e600	e362	e830	718	1,760	1,830	3,620	1,190	610	4,700
29	658	e733	e609	e359	---	1,210	1,560	1,690	4,140	1,050	576	4,870
30	690	e710	e622	e356	---	2,650	1,450	1,570	4,360	973	597	3,470
31	754	---	e616	e359	---	4,920	---	1,440	---	846	599	---
TOTAL	30,382	24,133	19,711	12,919	54,328	27,516	67,030	61,225	49,229	33,387	22,289	32,660
MEAN	980	804	636	417	1,940	888	2,234	1,975	1,641	1,077	719	1,089
MAX	1,720	1,040	909	609	6,820	4,920	4,310	3,810	4,360	2,820	2,230	4,870
MIN	652	682	321	295	342	517	1,440	950	836	600	550	492
AC-FT	60,260	47,870	39,100	25,620	107,800	54,580	133,000	121,400	97,650	66,220	44,210	64,780
CFSM	0.59	0.48	0.38	0.25	1.17	0.53	1.35	1.19	0.99	0.65	0.43	0.66
IN.	0.68	0.54	0.44	0.29	1.22	0.62	1.50	1.37	1.10	0.75	0.50	0.73

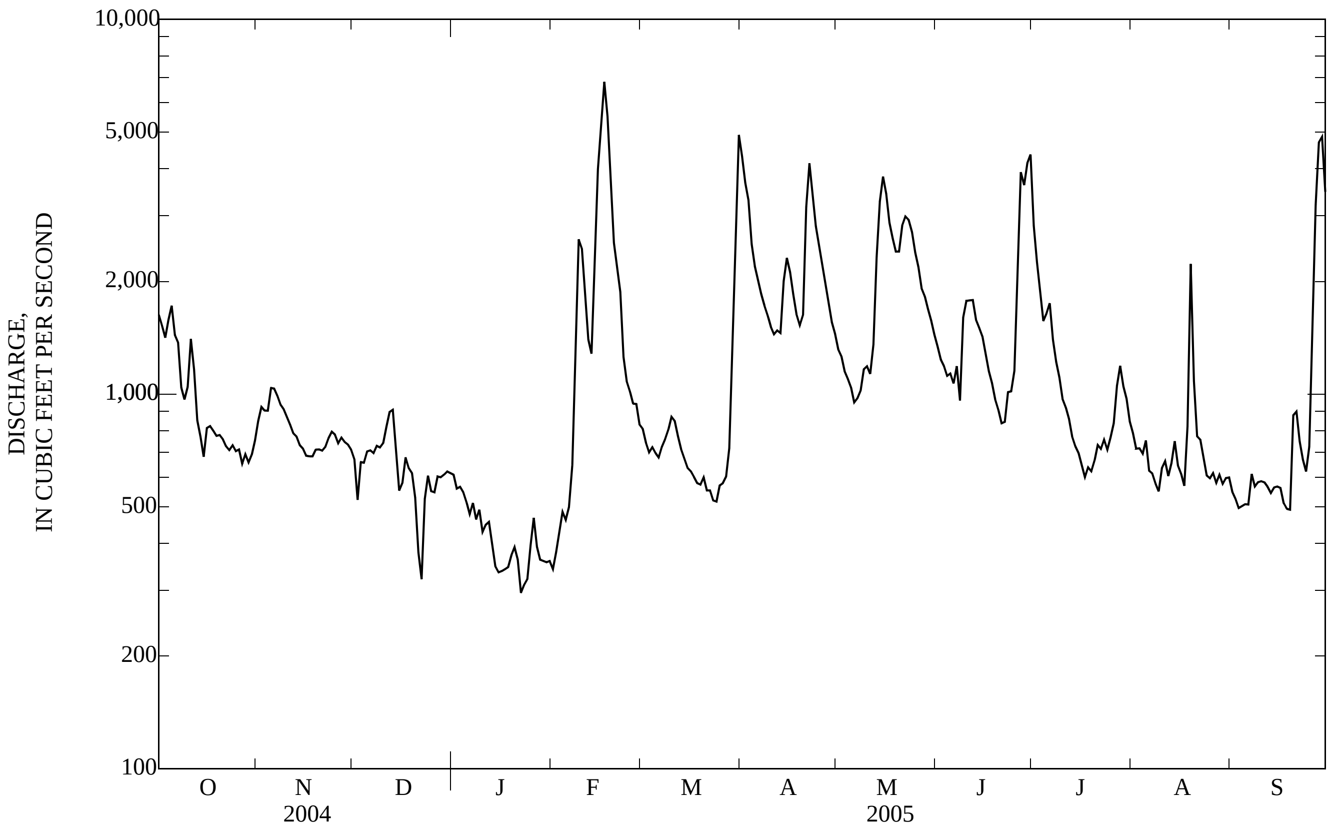
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	618	583	435	345	557	1,777	1,870	1,350	1,405	1,098	794	660
MAX	3,793	2,672	2,404	1,293	3,393	4,851	8,966	5,668	6,223	6,328	7,762	3,537
(WY)	(1987)	(1983)	(1983)	(1983)	(1984)	(1973)	(1993)	(1991)	(1993)	(1999)	(1993)	(2004)
MIN	101	121	75.2	80.3	61.2	124	247	134	95.2	84.7	83.6	117
(WY)	(1935)	(1934)	(1934)	(1917)	(1959)	(1934)	(1957)	(1934)	(1934)	(1934)	(1934)	(1934)

05458500 CEDAR RIVER AT JANESVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1905 - 2005	
ANNUAL TOTAL	598,310		434,809			
ANNUAL MEAN	1,635		1,191		959	
HIGHEST ANNUAL MEAN					3,454	1993
LOWEST ANNUAL MEAN					187	1934
HIGHEST DAILY MEAN	20,900	May 24	6,820	Feb 17 a	38,800	Jul 22, 1999
LOWEST DAILY MEAN	197	Jan 28	295	Jan 22 a	28	Oct 21, 1922
ANNUAL SEVEN-DAY MINIMUM	204	Jan 24	342	Jan 18	50	Feb 1, 1918
MAXIMUM PEAK FLOW			7,370	Feb 17 a	42,200	Jul 22, 1999
MAXIMUM PEAK STAGE			8.37	Feb 17 a	17.15	Jul 22, 1999
ANNUAL RUNOFF (AC-FT)	1,187,000		862,400		694,600	
ANNUAL RUNOFF (CFSM)	0.984		0.717		0.577	
ANNUAL RUNOFF (INCHES)	13.40		9.74		7.84	
10 PERCENT EXCEEDS	3,430		2,480		2,110	
50 PERCENT EXCEEDS	778		775		482	
90 PERCENT EXCEEDS	242		502		166	

a Ice effected.
e Estimated.



05458900 WEST FORK CEDAR RIVER AT FINCHFORD, IA

LOCATION.--Lat 42°37'46", long 92°32'36", in SW1/4 SE1/4 sec.6, T.90 N., R.14 W., Black Hawk County, Hydrologic Unit 07080204, on left bank 100 ft downstream from bridge on County Highway C55 at Finchford, 3.2 mi upstream from Shell Rock River, and 5.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--846 mi^2.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1955, published as "West Fork Shell Rock River at Finchford".

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1946 (M), 1947.

GAGE.--Water-stage recorder. Datum of gage is 867.54 ft above NGVD of 1929. Prior to June 10, 1955, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. An authorized diversion of 2,100 acre-ft is made into Big Marsh, 16 mi upstream from gage, each year between September 1 and November 15. Net effect on daily flows at gage is unknown. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1929 reached a stage of about 14 ft, from information by local resident, discharge, about 12,800 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	131	e124	e85	e43	e344	291	507	795	6,010	424	202
2	102	137	e130	e76	e86	e280	307	482	737	4,790	405	159
3	100	140	e120	e73	e126	e272	326	461	691	3,860	387	142
4	99	145	151	e70	e169	333	321	444	661	3,230	383	134
5	98	144	155	e67	e151	318	309	430	653	2,750	351	131
6	100	141	156	e65	e175	296	296	418	619	2,260	337	134
7	98	135	155	e71	e222	291	281	427	577	1,860	311	130
8	108	130	155	e68	e333	292	265	472	557	1,610	287	135
9	102	127	154	e80	e531	284	250	948	613	1,390	267	149
10	e105	115	e151	e70	e466	274	239	1,500	924	1,320	256	167
11	e109	111	e146	e75	e333	273	241	1,630	1,110	1,230	253	176
12	e98	114	e140	e76	e242	269	275	1,430	967	1,050	255	165
13	91	116	e118	e68	e190	256	399	1,690	833	910	264	159
14	91	116	e69	e54	e397	239	934	2,320	764	806	255	145
15	93	116	e89	e50	e813	242	1,010	2,810	709	723	238	161
16	92	115	e129	e51	e1,290	230	854	3,190	657	652	216	187
17	e93	113	e110	e52	e1,860	233	743	3,250	597	605	205	168
18	91	115	e95	e53	e1,430	229	673	2,940	547	569	233	153
19	94	134	e60	e63	e1,170	225	637	2,410	508	537	344	140
20	92	153	e46	e65	e1,000	223	638	2,120	483	518	937	133
21	91	162	e32	e60	e916	216	606	2,080	473	495	976	174
22	87	167	e57	e50	e809	212	712	1,940	484	480	671	312
23	87	160	e74	e55	e633	209	901	1,810	497	459	509	283
24	87	154	e62	e59	e550	215	1,080	1,830	482	435	431	250
25	87	153	e58	e63	476	222	972	1,720	585	434	384	272
26	94	151	e84	e63	440	226	852	1,480	1,940	492	355	440
27	94	157	e81	e60	416	231	755	1,300	4,210	605	323	1,070
28	96	162	e82	e56	398	236	663	1,170	5,670	687	316	1,610
29	98	163	e87	e56	---	241	593	1,060	8,860	577	296	1,860
30	109	e145	e95	e56	---	255	542	957	7,870	496	259	1,990
31	122	---	e90	e59	---	275	---	870	---	449	222	---
TOTAL	2,999	4,122	3,255	1,969	15,665	7,941	16,965	46,096	45,073	42,289	11,350	11,331
MEAN	96.7	137	105	63.5	559	256	566	1,487	1,502	1,364	366	378
MAX	122	167	156	85	1,860	344	1,080	3,250	8,860	6,010	976	1,990
MIN	87	111	32	50	43	209	239	418	473	434	205	130
AC-FT	5,950	8,180	6,460	3,910	31,070	15,750	33,650	91,430	89,400	83,880	22,510	22,480
CFSM	0.11	0.16	0.12	0.08	0.66	0.30	0.67	1.76	1.78	1.61	0.43	0.45
IN.	0.13	0.18	0.14	0.09	0.69	0.35	0.75	2.03	1.98	1.86	0.50	0.50

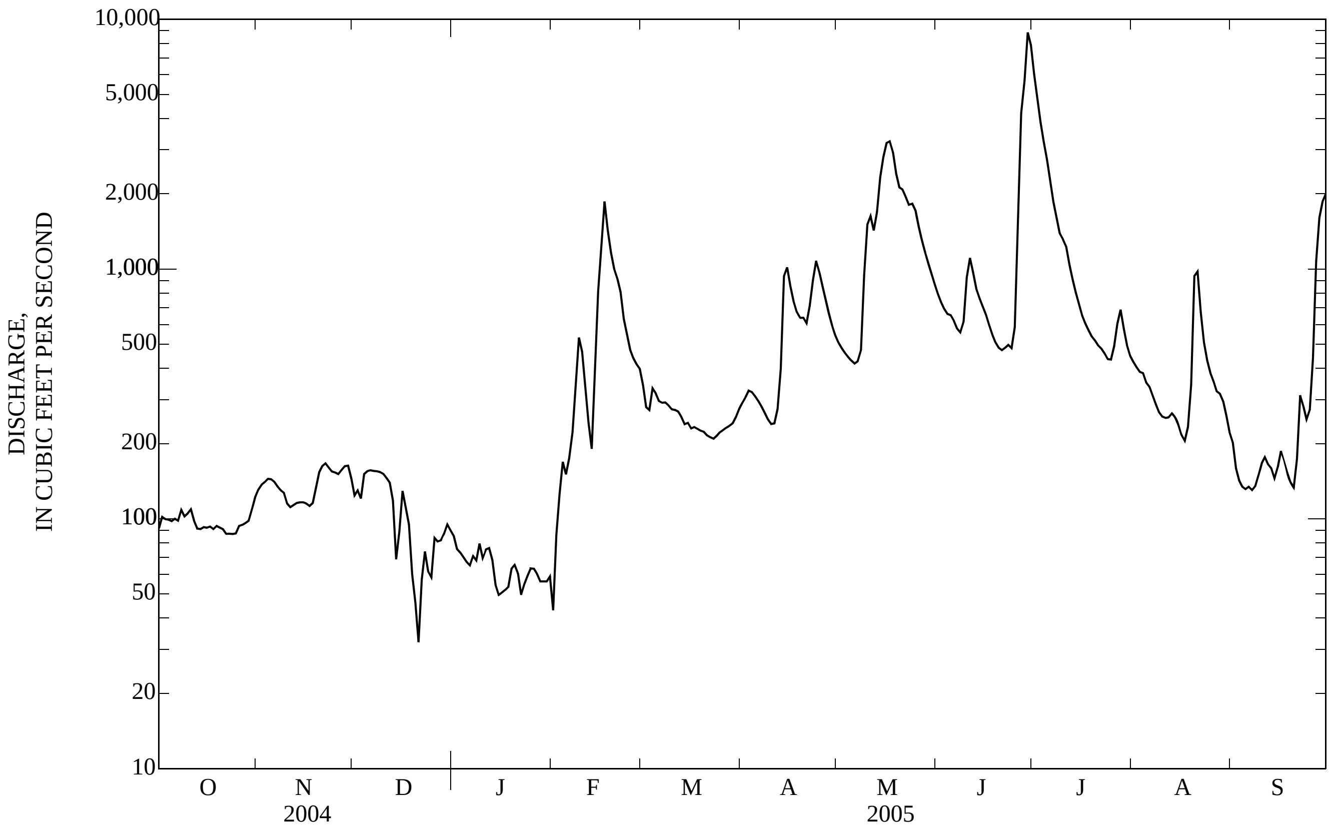
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	309	308	244	166	305	968	1,034	908	1,042	754	382	301
MAX	1,412	1,502	1,165	995	2,303	2,456	4,170	3,472	3,358	3,995	3,023	2,149
(WY)	(1973)	(1973)	(1983)	(1973)	(1984)	(1961)	(1965)	(1999)	(1984)	(1993)	(1993)	(1965)
MIN	14.9	22.3	14.2	9.35	6.37	86.2	81.8	80.1	39.5	26.6	15.2	16.9
(WY)	(1990)	(1959)	(1959)	(1959)	(1959)	(1954)	(1957)	(1957)	(1977)	(1977)	(1989)	(1989)

05458900 WEST FORK CEDAR RIVER AT FINCHFORD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	206,210		209,055			
ANNUAL MEAN	563		573		561	
HIGHEST ANNUAL MEAN					1,800	1993
LOWEST ANNUAL MEAN					65.5	1956
HIGHEST DAILY MEAN	11,300	May 25	8,860	Jun 29	25,100	Jun 27, 1951
LOWEST DAILY MEAN	32	Dec 21	32	Dec 21 a	5.9	Feb 26, 1959 b
ANNUAL SEVEN-DAY MINIMUM	56	Dec 19	55	Jan 14	6.1	Feb 23, 1959
MAXIMUM PEAK FLOW			9,220	Jun 29	31,900	Jun 27, 1951
MAXIMUM PEAK STAGE			14.42	Jun 29	18.45	Jul 29, 1990
INSTANTANEOUS LOW FLOW					5.9	Feb 26, 1959
ANNUAL RUNOFF (AC-FT)	409,000		414,700		406,200	
ANNUAL RUNOFF (CFSM)	0.666		0.677		0.663	
ANNUAL RUNOFF (INCHES)	9.07		9.19		9.01	
10 PERCENT EXCEEDS	1,410		1,350		1,370	
50 PERCENT EXCEEDS	162		256		242	
90 PERCENT EXCEEDS	85		76		50	

a Ice effected.
b Also Feb. 27, 1959.
e Estimated.



05459500 WINNEBAGO RIVER AT MASON CITY, IA

LOCATION.--Lat 43°09'54", long 93°11'33", in NE¼ NW¼ sec.3, T.96 N., R.20 W., Cerro Gordo County, Hydrologic Unit 07080203, on right bank 650 ft upstream from Thirteenth Street Bridge in Mason City, 0.1 mi downstream from Calmus Creek, 1.0 mi upstream from Willow Creek, and 20.2 mi (revised) upstream from confluence with Shell Rock River.

DRAINAGE AREA.--526 mi^2.

PERIOD OF RECORD.--October 1932 to current year. Prior to December 1932, monthly discharge only, published in WSP 1308. Prior to October 1959, published as "Lime Creek at Mason City".

REVISED RECORDS.--WSP 825: 1935-36. WSP 1438: Drainage area. WSP 1558: 1933-37, 1943 (M), 1945, 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,069.59 ft above NGVD of 1929. Prior to Oct. 15, 1934, nonrecording gage at datum 6.47 ft lower. Oct. 15 to Nov. 6, 1934, nonrecording gage at different datum, and Nov. 7, 1934, to Mar. 22, 1935, nonrecording gage at present datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	774	374	e226	e130	80	e250	982	704	751	587	172	80
2	736	436	e230	e118	80	e262	877	654	705	513	156	74
3	689	473	e223	e115	96	e254	809	614	658	515	143	68
4	636	461	235	e106	167	e258	e750	580	631	610	135	82
5	593	421	227	e99	e295	e248	699	551	612	517	126	77
6	558	382	233	e91	e400	e231	641	542	605	488	119	75
7	527	343	255	e97	e363	233	593	573	578	465	111	71
8	504	297	265	e95	353	210	565	674	643	437	105	142
9	480	280	272	e103	314	192	553	766	835	416	100	241
10	454	275	277	e98	270	185	519	847	771	357	103	172
11	428	258	276	e101	242	194	491	1,500	765	316	123	134
12	408	241	272	e101	242	177	983	1,970	704	279	165	112
13	388	231	e252	e89	447	e146	1,320	2,480	642	256	234	111
14	375	223	e189	e74	e1,040	e139	1,230	2,280	614	234	290	99
15	370	219	e209	e71	e945	e145	1,150	1,980	580	215	248	89
16	357	219	e231	e72	e714	168	1,050	1,710	547	195	188	81
17	339	219	e192	e74	e634	162	947	1,490	519	178	152	76
18	326	220	e173	e75	e561	157	844	1,360	491	182	183	74
19	318	231	e92	e84	e505	121	2,120	1,440	459	170	174	315
20	305	284	e125	e88	e464	150	3,670	1,330	443	182	161	254
21	284	306	e120	e84	e436	158	2,350	1,340	635	226	157	173
22	279	309	e115	e75	e398	184	2,110	1,720	678	259	137	141
23	310	312	e111	e82	e386	174	1,830	1,500	627	230	121	126
24	289	290	e108	e86	e389	175	1,510	1,320	574	201	111	118
25	272	270	e135	e86	e347	188	1,300	1,210	622	191	104	557
26	258	258	e126	e86	e312	228	1,160	1,140	919	303	108	1,120
27	259	267	e124	e82	e316	394	1,030	1,050	1,040	287	116	916
28	257	274	e125	e79	e283	741	920	1,000	995	283	107	805
29	297	265	e128	e80	---	865	831	930	841	277	95	740
30	377	e242	e136	e84	---	792	768	863	692	238	88	646
31	390	---	e133	82	---	1,080	---	799	---	201	83	---
TOTAL	12,837	8,880	5,815	2,787	11,079	8,861	34,602	36,917	20,176	9,808	4,415	7,769
MEAN	414	296	188	89.9	396	286	1,153	1,191	673	316	142	259
MAX	774	473	277	130	1,040	1,080	3,670	2,480	1,040	610	290	1,120
MIN	257	219	92	71	80	121	491	542	443	170	83	68
AC-FT	25,460	17,610	11,530	5,530	21,980	17,580	68,630	73,220	40,020	19,450	8,760	15,410
CFSM	0.79	0.56	0.36	0.17	0.75	0.54	2.19	2.26	1.28	0.60	0.27	0.49
IN.	0.91	0.63	0.41	0.20	0.78	0.63	2.45	2.61	1.43	0.69	0.31	0.55

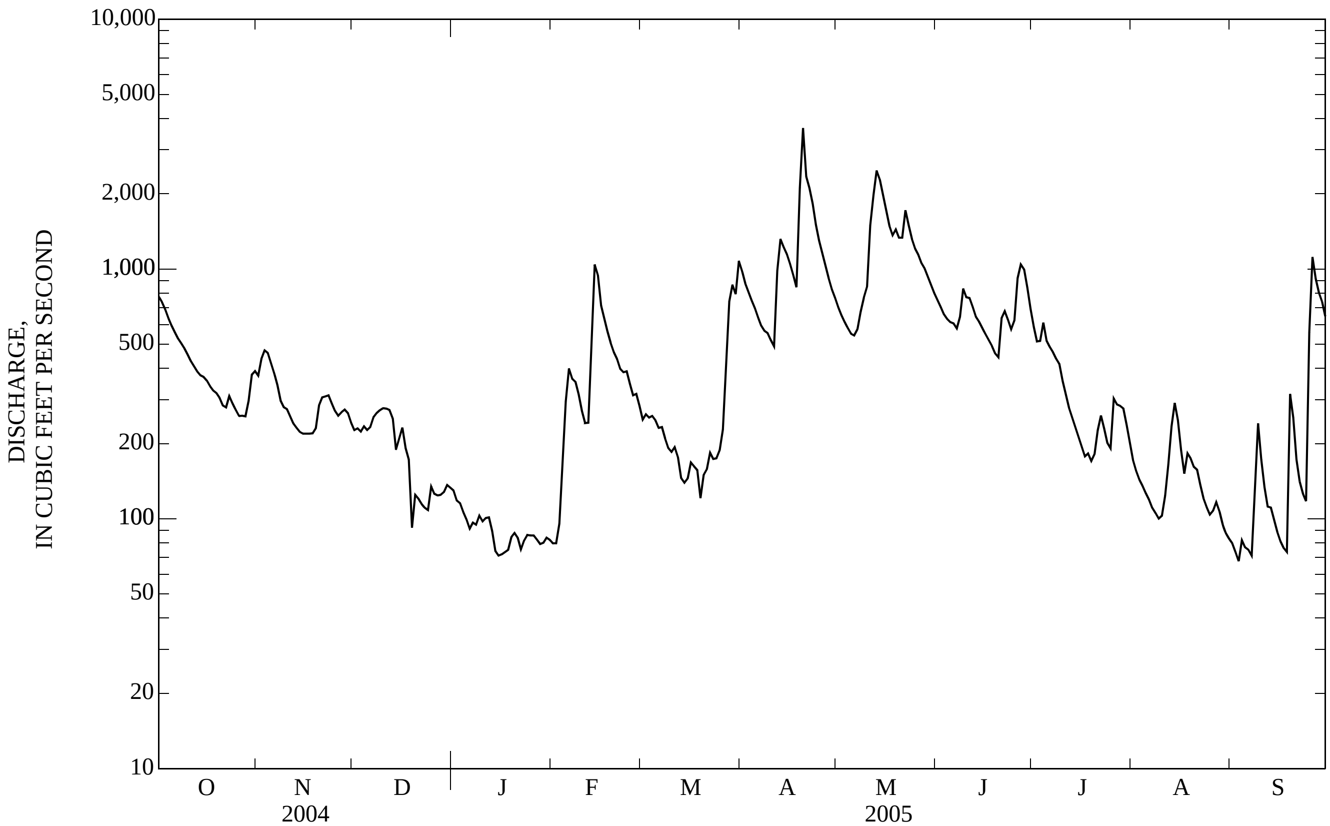
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	176	168	110	73.9	123	501	619	464	510	328	224	191
MAX	840	811	724	378	1,002	1,707	2,880	1,807	2,160	1,915	2,054	1,188
(WY)	(1966)	(1942)	(1983)	(1983)	(1984)	(1973)	(1965)	(1991)	(1993)	(1993)	(1979)	(2004)
MIN	11.3	12.7	7.45	6.61	7.50	17.6	61.0	16.1	21.9	7.29	4.89	12.6
(WY)	(1935)	(1934)	(1934)	(1977)	(1959)	(1934)	(1957)	(1934)	(1934)	(1934)	(1934)	(1933)

05459500 WINNEBAGO RIVER AT MASON CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1933 - 2005	
ANNUAL TOTAL	203,013		163,946			
ANNUAL MEAN	555		449		291	
HIGHEST ANNUAL MEAN					947	1993
LOWEST ANNUAL MEAN					28.1	1934
HIGHEST DAILY MEAN	7,550	May 22	3,670	Apr 20	9,370	Mar 27, 1961
LOWEST DAILY MEAN	18	Jan 22	68	Sep 3	1.2	Aug 19, 1989
ANNUAL SEVEN-DAY MINIMUM	23	Jan 18	75	Sep 1	3.1	Dec 29, 1933
MAXIMUM PEAK FLOW			5,610	Apr 19	10,800	Mar 30, 1933
MAXIMUM PEAK STAGE			10.84	Apr 19	15.70	Mar 30, 1933
INSTANTANEOUS LOW FLOW			65	Sep 3 a	0.86	Aug 18, 1988 b
ANNUAL RUNOFF (AC-FT)	402,700		325,200		210,800	
ANNUAL RUNOFF (CFSM)	1.05		0.854		0.553	
ANNUAL RUNOFF (INCHES)	14.36		11.59		7.51	
10 PERCENT EXCEEDS	1,320		988		740	
50 PERCENT EXCEEDS	268		277		116	
90 PERCENT EXCEEDS	33		94		21	

a Also Sep. 4.
b Also Aug. 19, 1988.
e Estimated.



05460000 CLEAR LAKE AT CLEAR LAKE, IA

LOCATION.--Lat 43°08'05", long 93°23'01", in SE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.13, T.96 N., R.22 W., Cerro Gordo County, Hydrologic Unit 07080203, at the public bathing beach in the town of Clear Lake, near dam across Clear Creek.

DRAINAGE AREA.--22.6 mi^2.

PERIOD OF RECORD.--May 1933 to current year. No winter records 1933-52. Record fragmentary November 1952 to June 1959.

GAGE.--Water-stage recorder. Datum of gage is 1,222.24 ft above NGVD of 1929, and 4.60 ft below crest of spillway of dam at outlet. See WSP 1708 for history of changes prior to June 25, 1959.

REMARKS.--Records are considered good. Lake is formed by concrete dam on Clear Creek with ungated overflow spillway 50 ft long at elevation 1,226.84 ft above sea level. Dam constructed in 1903. A previous outlet works had been constructed in 1887. Lake is used for conservation and recreation. Area of lake is approximately 3,600 acres. U.S. Geological Survey data collection platform with satellite telemetry at station.

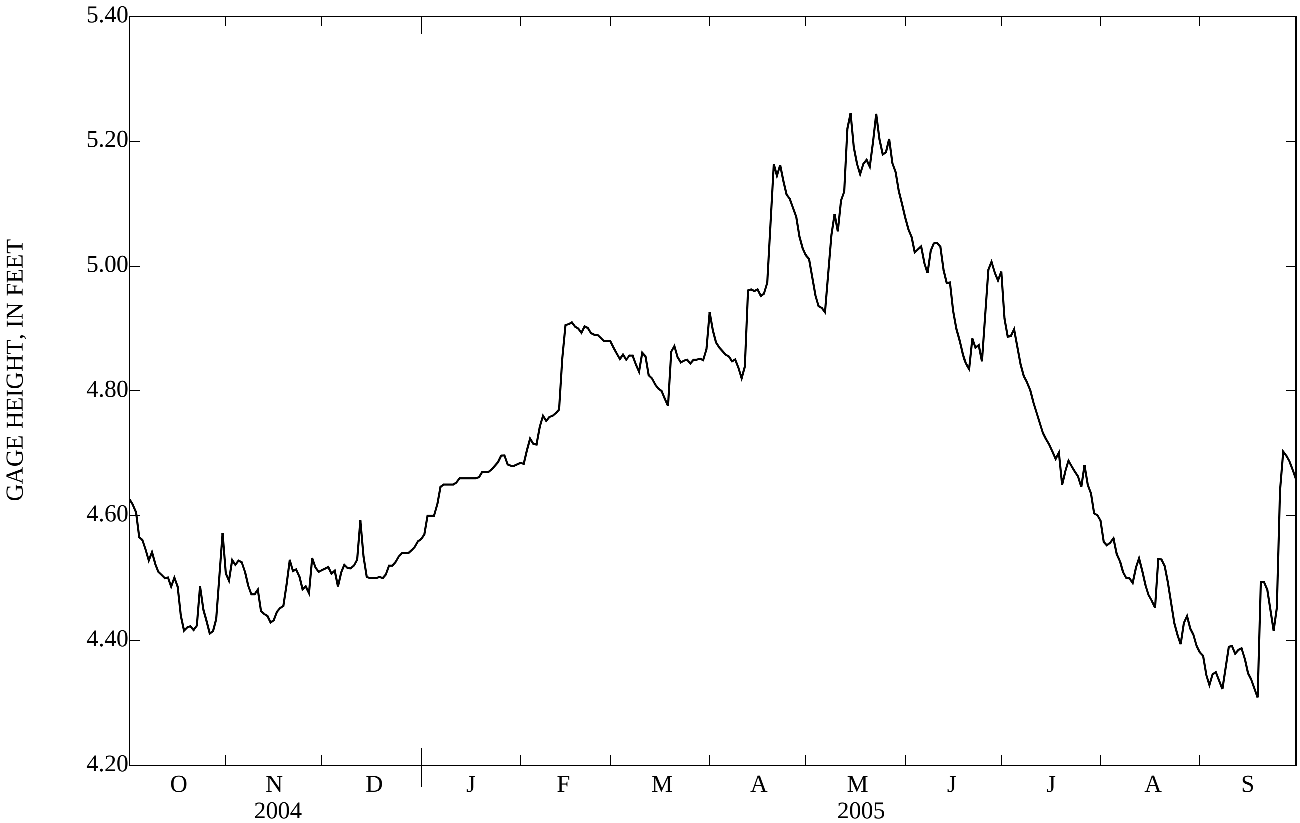
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.94 ft July 3, 1951; minimum observed, 0.76 ft Oct. 26, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.31 ft on May 14,; minimum, 4.25 ft on Sept. 4.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.63	4.50	4.51	4.57	4.68	4.87	4.90	5.01	5.06	4.92	4.56	4.38
2	4.62	4.53	4.52	4.60	4.70	4.86	4.88	4.98	5.05	4.89	4.55	4.35
3	4.61	4.52	4.51	4.60	4.72	4.85	4.87	4.95	5.02	4.89	4.56	4.33
4	4.57	4.53	4.51	4.60	4.72	4.86	4.86	4.94	5.03	4.90	4.56	4.35
5	4.56	4.53	4.49	4.62	4.71	4.85	4.86	4.93	5.03	4.87	4.54	4.35
6	4.55	4.51	4.51	4.65	4.74	4.86	4.86	4.93	5.00	4.84	4.53	4.34
7	4.53	4.49	4.52	4.65	4.76	4.86	4.85	4.99	4.99	4.82	4.51	4.32
8	4.54	4.47	4.52	4.65	4.75	4.84	4.85	5.05	5.02	4.81	4.50	4.36
9	4.52	4.47	4.52	4.65	4.76	4.83	4.84	5.08	5.04	4.80	4.50	4.39
10	4.51	4.48	4.52	4.65	4.76	4.86	4.82	5.06	5.04	4.78	4.49	4.39
11	4.51	4.45	4.53	4.65	4.76	4.86	4.84	5.10	5.03	4.77	4.52	4.38
12	4.50	4.44	4.59	4.66	4.77	4.83	4.96	5.12	4.99	4.75	4.53	4.38
13	4.50	4.44	4.53	4.66	4.85	4.82	4.96	5.22	4.97	4.73	4.51	4.39
14	4.49	4.43	4.50	4.66	4.91	4.81	4.96	5.24	4.97	4.72	4.49	4.37
15	4.50	4.43	4.50	4.66	4.91	4.80	4.96	5.19	4.93	4.71	4.47	4.35
16	4.49	4.45	4.50	4.66	4.91	4.80	4.95	5.16	4.90	4.70	4.46	4.34
17	4.44	4.45	4.50	4.66	4.90	4.79	4.96	5.15	4.88	4.69	4.45	4.32
18	4.42	4.46	4.50	4.66	4.90	4.78	4.97	5.16	4.86	4.70	4.53	4.31
19	4.42	4.49	4.50	4.67	4.89	4.86	5.08	5.17	4.84	4.65	4.53	4.49
20	4.42	4.53	4.51	4.67	4.90	4.87	5.16	5.16	4.84	4.67	4.52	4.49
21	4.42	4.51	4.52	4.67	4.90	4.85	5.14	5.20	4.88	4.69	4.49	4.48
22	4.42	4.51	4.52	4.67	4.89	4.85	5.16	5.24	4.87	4.68	4.46	4.45
23	4.49	4.50	4.53	4.68	4.89	4.85	5.14	5.20	4.87	4.67	4.43	4.42
24	4.45	4.48	4.53	4.69	4.89	4.85	5.11	5.18	4.85	4.66	4.41	4.45
25	4.43	4.49	4.54	4.70	4.88	4.84	5.11	5.18	4.92	4.65	4.39	4.64
26	4.41	4.48	4.54	4.70	4.88	4.85	5.09	5.20	4.99	4.68	4.43	4.70
27	4.41	4.53	4.54	4.68	4.88	4.85	5.08	5.17	5.01	4.65	4.44	4.70
28	4.43	4.52	4.54	4.68	4.88	4.85	5.05	5.15	4.99	4.64	4.42	4.69
29	4.50	4.51	4.55	4.68	---	4.85	5.03	5.12	4.98	4.60	4.41	4.67
30	4.57	4.51	4.56	4.68	---	4.87	5.02	5.10	4.99	4.60	4.39	4.66
31	4.51	---	4.56	4.68	---	4.93	---	5.08	---	4.59	4.38	---
MEAN	4.50	4.49	4.52	4.66	4.82	4.85	4.98	5.11	4.96	4.73	4.48	4.44
MAX	4.63	4.53	4.59	4.70	4.91	4.93	5.16	5.24	5.06	4.92	4.56	4.70
MIN	4.41	4.43	4.49	4.57	4.68	4.78	4.82	4.93	4.84	4.59	4.38	4.31

05460000 CLEAR LAKE AT CLEAR LAKE, IA—Continued



05462000 SHELL ROCK RIVER AT SHELL ROCK, IA

LOCATION.--Lat 42°42'43", long 92°34'58", in NW¼ NE¼ sec.11, T.91 N., R.15 W., Butler County, Hydrologic Unit 07080202 on right bank 400 ft upstream from bridge on County Highway C45 in Shell Rock, 2.2 mi downstream from Curry Creek, and 10.7 mi (revised) upstream from confluence with West Fork Cedar River.

DRAINAGE AREA.--1,746 mi^2.

PERIOD OF RECORD.--June 1953 to current year. Prior to July 1953, monthly discharge only, published in WSP 1728.

REVISED RECORDS.--WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Rockfill dam since Oct. 19, 1957. Datum of gage is 885.34 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1856 reached a stage of 17.7 ft at bridge 400 ft downstream, from information provided by U.S. Army Corps of Engineers, discharge, about 45,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,540	1,110	978	e622	e310	727	2,770	1,890	2,030	4,070	834	471
2	2,410	1,110	e879	e577	e350	670	2,690	1,710	1,880	2,980	762	456
3	2,260	1,180	e945	e579	e399	e623	2,500	1,580	1,710	2,430	721	440
4	2,100	1,300	e940	e543	e453	e675	2,360	1,450	1,610	2,410	717	441
5	1,930	1,270	966	e509	e443	721	2,240	1,350	1,610	2,740	683	454
6	1,780	1,230	963	e465	e574	702	2,100	1,270	1,510	2,290	641	453
7	1,650	1,190	970	e497	e1,000	691	1,940	1,280	1,430	2,020	602	435
8	1,560	1,130	997	e446	1,860	699	1,760	1,450	1,410	1,790	576	451
9	1,430	1,080	1,040	e474	1,270	676	1,640	1,850	1,620	1,780	554	571
10	1,350	1,050	1,070	e414	1,110	651	1,510	2,000	2,000	2,110	559	695
11	1,270	1,020	1,070	e438	1,020	628	1,400	2,100	1,930	1,730	556	607
12	1,200	991	1,070	e446	950	621	1,430	3,360	1,850	1,520	582	538
13	1,140	968	e896	e389	1,090	593	2,740	4,640	1,700	1,360	637	519
14	1,090	938	e450	e335	3,030	544	3,290	6,050	1,580	1,240	684	551
15	1,060	919	e356	e325	4,420	558	3,050	5,710	1,470	1,150	715	520
16	1,040	839	e386	e327	4,060	539	2,850	4,860	1,380	1,080	675	482
17	994	906	e552	e334	2,990	544	2,650	4,170	1,280	1,010	609	462
18	973	915	e526	e338	2,430	545	2,450	3,670	1,200	975	912	442
19	942	939	e506	e359	2,120	557	2,310	3,550	1,090	910	1,680	465
20	903	973	e469	e378	1,930	485	4,220	3,690	993	889	1,260	1,140
21	872	1,030	e399	e348	1,720	493	7,270	3,560	1,040	940	927	1,080
22	846	1,080	e347	e269	1,480	614	5,450	3,940	1,550	967	776	815
23	839	1,100	e553	e280	1,300	598	4,760	4,530	1,550	1,020	697	677
24	847	1,090	e631	e284	1,160	587	4,160	4,060	1,380	981	628	652
25	834	1,060	e578	e303	1,080	604	3,530	3,550	1,690	923	588	953
26	824	1,030	e573	e404	968	616	3,100	3,210	3,860	1,020	569	3,610
27	798	1,020	e619	e344	922	669	2,770	2,960	5,940	1,220	579	4,630
28	778	1,030	e614	e327	847	877	2,490	2,760	5,460	1,190	562	3,930
29	799	1,040	e622	e325	---	1,890	2,250	2,590	7,040	1,080	541	3,320
30	897	1,020	e636	e323	---	2,440	2,050	2,380	5,140	998	516	3,030
31	1,030	---	e627	e324	---	2,310	---	2,190	---	923	489	---
TOTAL	38,986	31,558	22,228	12,326	41,286	24,147	85,730	93,360	65,933	47,746	21,831	33,290
MEAN	1,258	1,052	717	398	1,474	779	2,858	3,012	2,198	1,540	704	1,110
MAX	2,540	1,300	1,070	622	4,420	2,440	7,270	6,050	7,040	4,070	1,680	4,630
MIN	778	839	347	269	310	485	1,400	1,270	993	889	489	435
AC-FT	77,330	62,600	44,090	24,450	81,890	47,900	170,000	185,200	130,800	94,700	43,300	66,030
CFSM	0.72	0.60	0.41	0.23	0.84	0.45	1.64	1.72	1.26	0.88	0.40	0.64
IN.	0.83	0.67	0.47	0.26	0.88	0.51	1.83	1.99	1.40	1.02	0.47	0.71

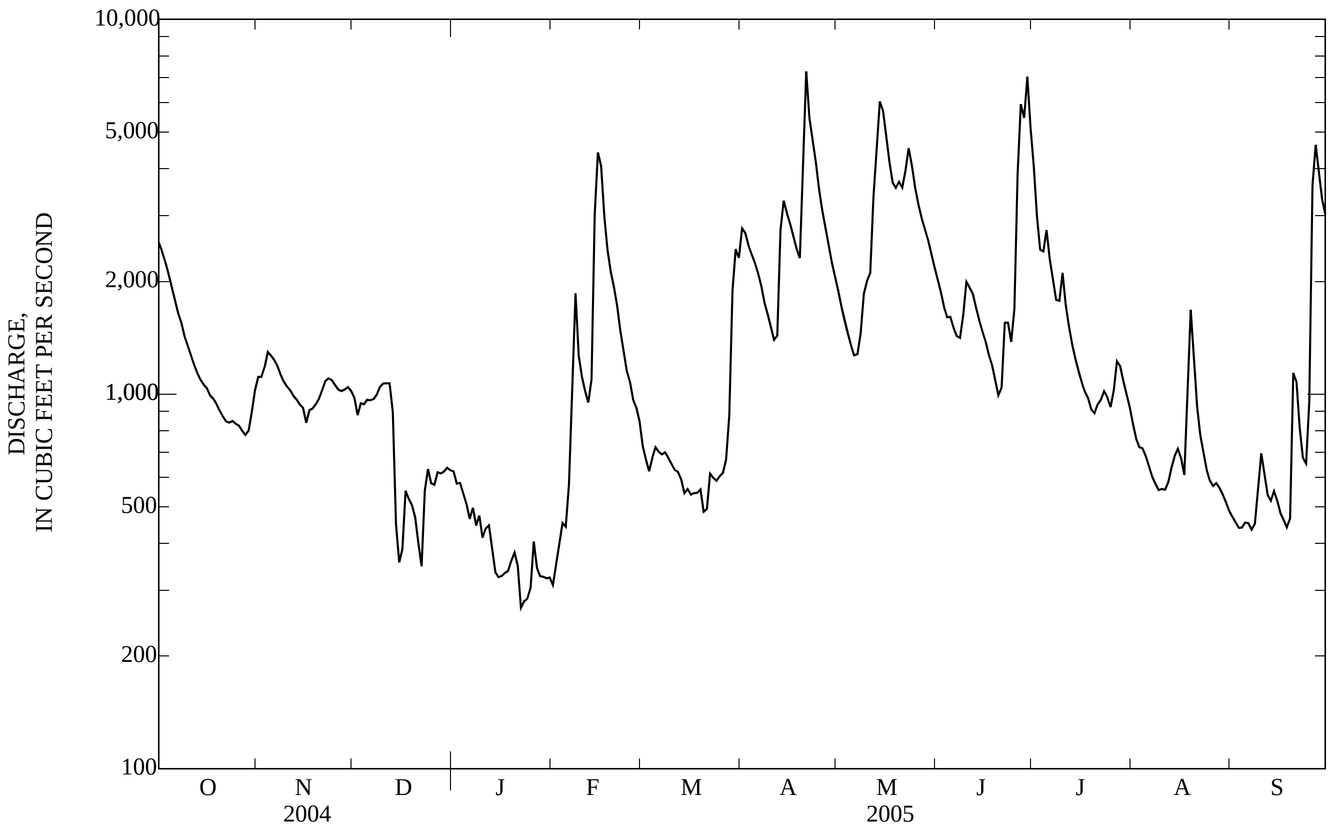
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	737	681	511	343	505	1,578	2,091	1,785	1,844	1,370	910	738
MAX	2,544	2,326	2,381	1,375	2,833	5,426	8,540	5,889	6,239	6,461	5,637	2,862
(WY)	(1987)	(1983)	(1983)	(1983)	(1984)	(1992)	(1965)	(1991)	(1993)	(1993)	(1979)	(2004)
MIN	74.1	77.7	39.8	45.6	44.7	193	226	243	138	114	66.7	96.6
(WY)	(1990)	(1990)	(1990)	(1959)	(1959)	(1968)	(1957)	(1958)	(1977)	(1977)	(1989)	(1989)

05462000 SHELL ROCK RIVER AT SHELL ROCK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1954 - 2005	
ANNUAL TOTAL	626,075		518,421			
ANNUAL MEAN	1,711		1,420		1,093	
HIGHEST ANNUAL MEAN					3,231	1993
LOWEST ANNUAL MEAN					171	1977
HIGHEST DAILY MEAN	23,900	May 24	7,270	Apr 21	32,100	Mar 28, 1961
LOWEST DAILY MEAN	142	Feb 5	269	Jan 22 a	27	Dec 22, 1989
ANNUAL SEVEN-DAY MINIMUM	146	Jan 31	316	Jan 22	29	Dec 16, 1989
MAXIMUM PEAK FLOW			7,700	Apr 21	33,500	Mar 28, 1961
MAXIMUM PEAK STAGE			11.92	Apr 21	16.73	Jul 22, 1999
ANNUAL RUNOFF (AC-FT)	1,242,000		1,028,000		791,600	
ANNUAL RUNOFF (CFSM)	0.980		0.813		0.626	
ANNUAL RUNOFF (INCHES)	13.34		11.05		8.50	
10 PERCENT EXCEEDS	3,620		3,040		2,570	
50 PERCENT EXCEEDS	996		1,010		545	
90 PERCENT EXCEEDS	172		451		162	

a Ice affected.
e Estimated.



05463000 BEAVER CREEK AT NEW HARTFORD, IA

LOCATION.--Lat 42°34'22", long 92°37'04", in SE1/4 SE1/4 sec.28, T.90 N., R.15 W., Butler County, Hydrologic Unit 07080205, on right bank 5 ft from right end of bridge on County Highway T55, 0.2 mi north of New Hartford, and 9.9 mi (revised) upstream from mouth.

DRAINAGE AREA.--347 mi^2.

PERIOD OF RECORD.--October 1945 to current year. Prior to April 1948, monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1948-49. WSP 1708: 1947 (M).

GAGE.--Water-stage recorder. Datum of gage is 882.44 ft. above NGVD of 1929. Prior to July 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	83	e88	e71	e43	e139	158	254	210	1,810	182	45
2	65	89	e98	e62	e58	e155	156	238	201	1,210	167	43
3	64	110	e87	e58	e87	e144	155	225	194	871	151	42
4	60	115	e92	e55	e122	160	151	214	194	746	138	e40
5	59	109	e88	e49	e113	153	146	205	198	615	126	e39
6	58	105	95	e37	e160	147	140	198	184	511	118	e39
7	58	99	101	e42	e353	155	132	203	174	447	110	e38
8	68	92	99	e41	e305	147	126	223	175	397	104	39
9	69	86	99	e54	e247	140	122	235	198	e354	98	48
10	64	85	99	e43	e229	142	120	224	216	e315	93	50
11	62	83	96	e47	e213	140	121	217	205	e279	93	41
12	63	80	95	e48	e220	134	150	222	190	e250	99	40
13	68	78	e45	e39	e454	e115	411	669	179	224	94	41
14	72	77	e30	e28	e928	e106	421	1,230	186	203	86	47
15	73	77	e73	e26	e1,530	e113	335	1,050	179	182	81	44
16	74	77	e83	e26	e1,200	120	286	772	166	165	77	41
17	71	76	e72	e28	616	117	262	630	154	150	73	39
18	69	76	e71	e31	461	116	237	542	146	143	80	38
19	69	87	e63	e38	389	120	230	495	138	132	77	38
20	69	113	e74	e40	339	114	247	443	130	130	69	37
21	67	124	e65	e36	301	110	237	404	128	143	63	36
22	67	121	e57	e28	264	108	339	392	136	130	60	35
23	68	118	e47	e32	241	108	806	356	132	114	58	34
24	67	113	e44	e38	227	108	736	327	124	109	56	37
25	64	108	e61	e39	216	113	560	308	184	192	55	48
26	66	107	e51	e41	205	122	464	296	1,010	554	56	69
27	69	108	e48	e39	197	128	391	276	1,540	537	59	70
28	68	105	e53	e41	e178	133	331	261	1,290	352	55	62
29	70	99	e59	e44	---	136	298	247	1,500	273	51	57
30	77	e87	e78	e47	---	138	273	233	1,740	231	49	53
31	87	---	e73	e48	---	154	---	219	---	200	47	---
TOTAL	2,086	2,887	2,284	1,296	9,896	4,035	8,541	11,808	11,401	11,969	2,725	1,330
MEAN	67.3	96.2	73.7	41.8	353	130	285	381	380	386	87.9	44.3
MAX	87	124	101	71	1,530	160	806	1,230	1,740	1,810	182	70
MIN	58	76	30	26	43	106	120	198	124	109	47	34
AC-FT	4,140	5,730	4,530	2,570	19,630	8,000	16,940	23,420	22,610	23,740	5,410	2,640
CFSM	0.19	0.28	0.21	0.12	1.02	0.38	0.82	1.10	1.10	1.11	0.25	0.13
IN.	0.22	0.31	0.24	0.14	1.06	0.43	0.92	1.27	1.22	1.28	0.29	0.14

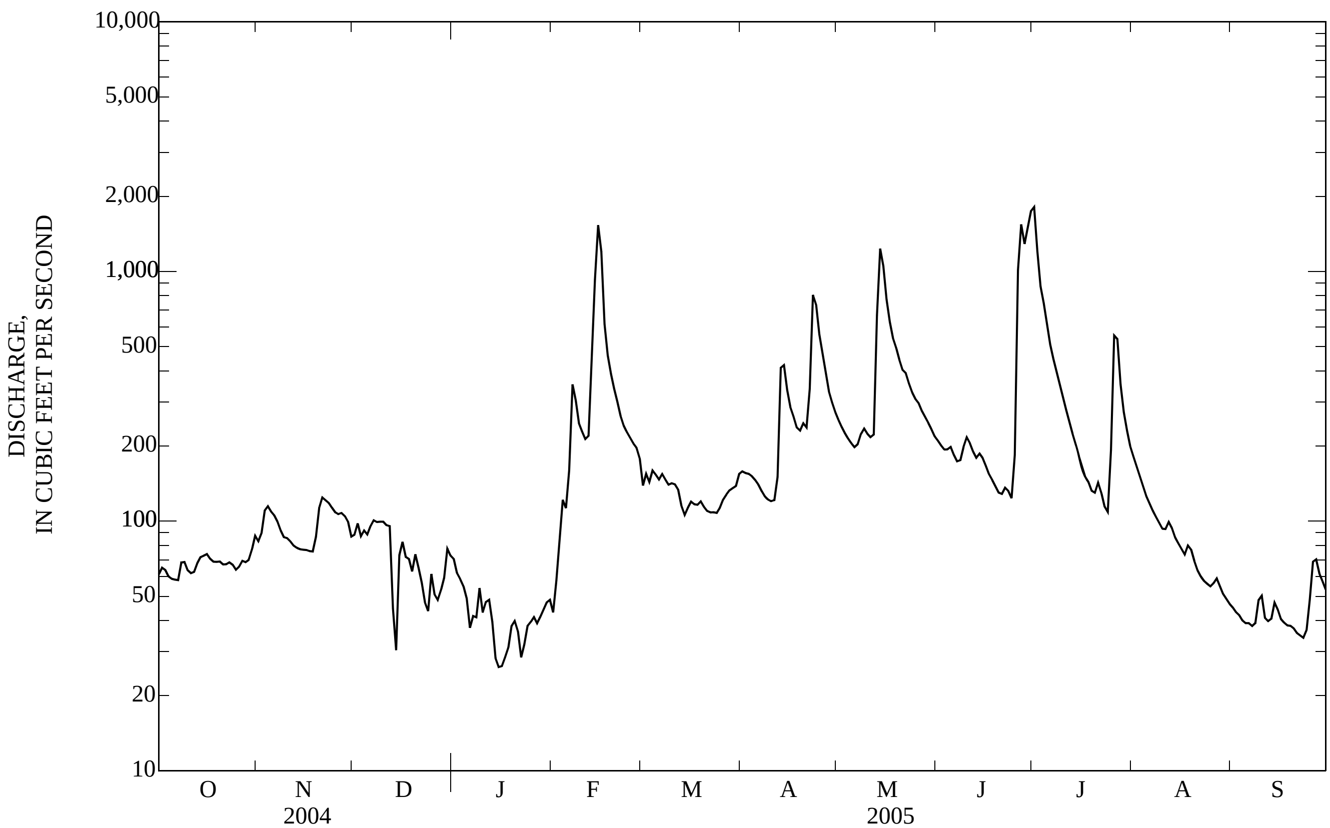
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	116	121	84.1	70.6	154	441	376	358	431	283	143	105
MAX	495	673	514	403	651	1,606	1,578	1,606	2,213	1,686	1,368	1,028
(WY)	(1987)	(1973)	(1983)	(1946)	(1983)	(1993)	(1993)	(1991)	(1947)	(1993)	(1993)	(1965)
MIN	4.98	8.80	7.13	2.88	3.84	28.1	33.8	23.2	12.5	4.47	4.22	6.02
(WY)	(1957)	(1957)	(1990)	(1956)	(1956)	(1954)	(1954)	(1977)	(1956)	(1956)	(1989)	(1988)

05463000 BEAVER CREEK AT NEW HARTFORD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	95,320		70,258			
ANNUAL MEAN	260		192		224	
HIGHEST ANNUAL MEAN					874	1993
LOWEST ANNUAL MEAN					21.8	1956
HIGHEST DAILY MEAN	4,780	May 23	1,810	Jul 1	16,300	Jun 13, 1947
LOWEST DAILY MEAN	20	Jan 22	26	Jan 15 a	2.0	Sep 30, 1989
ANNUAL SEVEN-DAY MINIMUM	24	Jan 19	31	Jan 13	2.3	Jan 19, 1956
MAXIMUM PEAK FLOW			2,070	Feb 16 b	18,000	Jun 13, 1947
MAXIMUM PEAK STAGE			9.89	Jun 29	13.50	Jun 13, 1947
ANNUAL RUNOFF (AC-FT)	189,100		139,400		162,000	
ANNUAL RUNOFF (CFSM)	0.751		0.555		0.645	
ANNUAL RUNOFF (INCHES)	10.22		7.53		8.76	
10 PERCENT EXCEEDS	588		394		490	
50 PERCENT EXCEEDS	118		113		89	
90 PERCENT EXCEEDS	37		42		18	

a Also Jan. 26, ice affected.
b Ice affected.
e Estimated.



05463050 CEDAR RIVER AT CEDAR FALLS, IA

LOCATION.--Lat 42°32'20", long 92°26'58", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.12, T.89 N., R.14 W., Black Hawk County, Hydrologic Unit 07080205, at bridge on U.S. Highway 20 at Cedar Falls, 1.1 mi upstream from Dry Run, and at mile 170.7 (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--4,734 mi^2.

PERIOD OF RECORD.--October 1975 to September 1979, May 1984 to September 1985, October 1986 to September 1995; water quality data. October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 855.00 ft above NGVD of 1929.

REMARKS.--Records are considered good. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station. Precipitation records are not published, but are available.

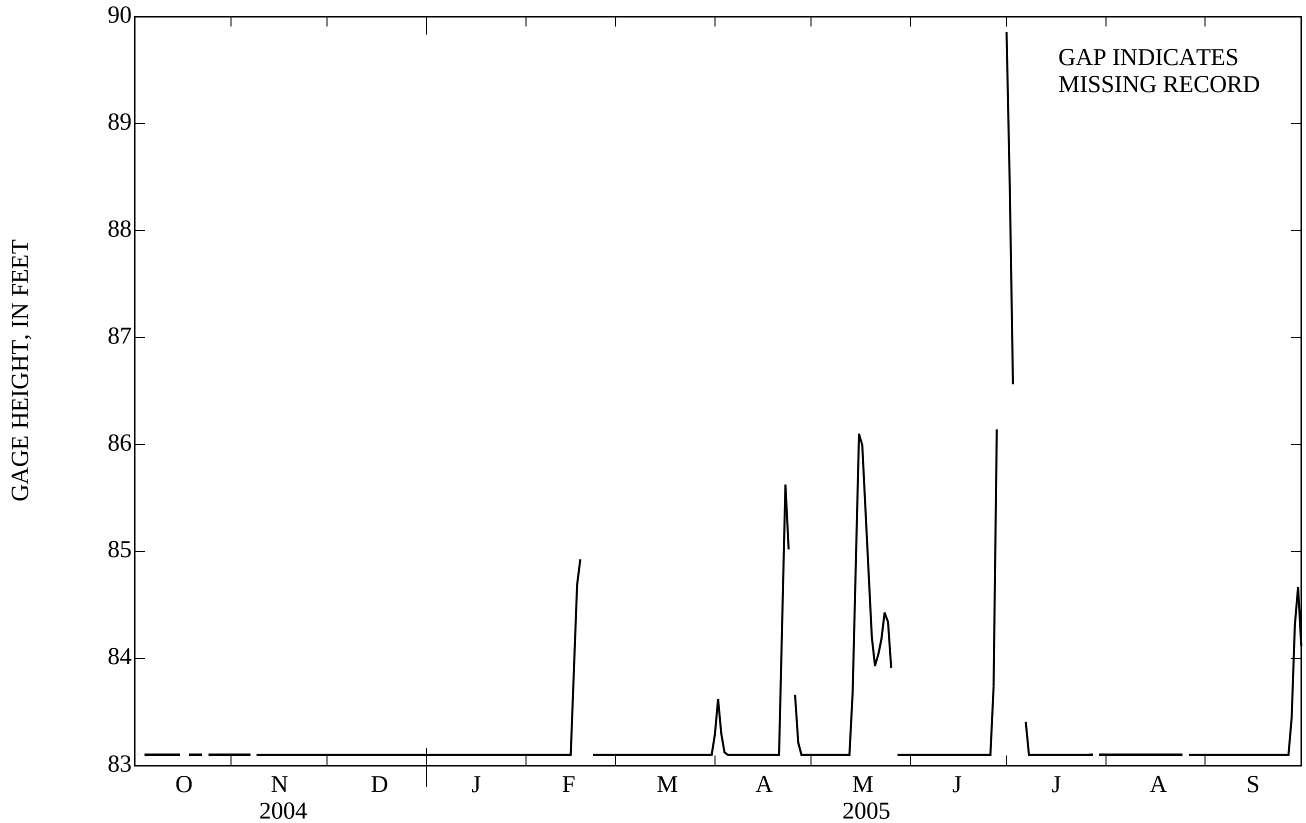
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height 94.99 ft on May 25, 2004.

EXTREMES FOR CURRENT YEAR.--Maximum gage height 90.08 ft on June 30, 2005.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	83.10	83.10	83.10	83.10	83.10	83.62	83.10	83.10	88.43	83.10	83.10
2	83.10	83.10	83.10	83.10	83.10	83.10	83.30	83.10	83.10	86.56	83.10	83.10
3	---	83.10	83.10	83.10	83.10	83.10	83.12	83.10	83.10	---	83.10	83.10
4	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	---	83.10	83.10
5	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	---	83.10	83.10
6	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.41	83.10	83.10
7	83.10	---	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
8	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
9	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
11	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
12	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10
13	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.68	83.10	83.10	83.10	83.10
14	83.10	83.10	83.10	83.10	83.10	83.10	83.10	84.91	83.10	83.10	83.10	83.10
15	83.10	83.10	83.10	83.10	83.81	83.10	83.10	86.10	83.10	83.10	83.10	83.10
16	---	83.10	83.10	83.10	84.69	83.10	83.10	86.00	83.10	83.10	83.10	83.10
17	---	83.10	83.10	83.10	84.93	83.10	83.10	85.38	83.10	83.10	83.10	83.10
18	83.10	83.10	83.10	83.10	---	83.10	83.10	84.80	83.10	83.10	83.10	83.10
19	83.10	83.10	83.10	83.10	---	83.10	83.10	84.20	83.10	83.10	83.10	83.10
20	83.10	83.10	83.10	83.10	---	83.10	83.10	83.93	83.10	83.10	83.10	83.10
21	83.10	83.10	83.10	83.10	83.10	83.10	84.16	84.03	83.10	83.10	83.10	83.10
22	83.10	83.10	83.10	83.10	83.10	83.10	85.63	84.18	83.10	83.10	83.10	83.10
23	---	83.10	83.10	83.10	83.10	83.10	85.02	84.43	83.10	83.10	83.10	83.10
24	83.10	83.10	83.10	83.10	83.10	83.10	---	84.35	83.10	83.10	83.10	83.10
25	83.10	83.10	83.10	83.10	83.10	83.10	83.66	83.91	83.10	83.10	---	83.10
26	83.10	83.10	83.10	83.10	83.10	83.10	83.21	---	83.74	83.10	83.10	83.10
27	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	86.14	83.10	83.10	83.45
28	83.10	83.10	83.10	83.10	83.10	83.10	83.10	83.10	---	---	83.10	84.32
29	83.10	83.10	83.10	83.10	---	83.10	83.10	83.10	---	83.10	83.10	84.67
30	83.10	83.10	83.10	83.10	---	83.10	83.10	83.10	89.86	83.10	83.10	84.12
31	83.10	---	83.10	83.10	---	83.29	---	83.10	---	83.10	83.10	---
MEAN	---	---	83.10	83.10	---	83.11	---	---	---	---	---	83.24
MAX	---	---	83.10	83.10	---	83.29	---	---	---	---	---	84.67
MIN	---	---	83.10	83.10	---	83.10	---	---	---	---	---	83.10

05463050 CEDAR RIVER AT CEDAR FALLS, IA—Continued



05463500 BLACK HAWK CREEK AT HUDSON, IA

LOCATION.--Lat 42°24'28", long 92°27'47", in SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.27, T.88 N., R.14 W., Black Hawk County, Hydrologic Unit 07080205, on left bank 35 ft from bridge on State Highway 58, 0.2 mi northwest of Chicago and Great Western Railway tracks at the west edge of Hudson, 4.5 mi upstream from Prescotts Creek, and 12.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--April 1952 to September 30, 1995. October 2001 to current year.

REVISED RECORDS.--WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 865.03 ft. above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e24	36	e40	e34	e28	e102	119	135	120	1,950	100	25
2	e28	42	e47	e28	e42	e114	124	128	114	1,020	95	23
3	e27	45	e40	e25	e66	e108	122	123	106	741	88	23
4	e26	47	e45	e23	e92	114	116	117	105	634	83	23
5	e24	44	e44	e21	e83	107	110	111	120	546	77	23
6	25	42	52	e16	e128	101	105	108	110	477	74	22
7	25	39	56	e19	e320	110	98	109	103	426	71	21
8	27	36	56	e20	e276	111	93	109	101	385	68	23
9	28	34	56	e30	e225	101	91	109	103	348	64	32
10	27	34	56	e20	e203	101	91	108	97	314	61	29
11	26	35	54	e25	e190	99	90	112	94	284	61	23
12	27	32	52	e26	e199	93	106	127	89	259	79	21
13	27	31	e22	e20	e428	e75	141	512	85	238	81	21
14	28	31	e17	e13	e890	e72	157	1,010	99	219	68	21
15	30	32	e36	e11	e1,510	e69	148	694	129	203	57	21
16	30	34	e47	e12	e1,150	74	141	511	109	187	46	21
17	30	39	e35	e13	e546	71	141	421	98	173	42	20
18	30	39	e33	e14	e412	70	133	366	90	166	42	20
19	31	50	e25	e20	e334	72	127	333	83	155	50	20
20	33	62	e35	e21	e294	69	137	293	77	146	42	20
21	33	70	e30	e17	247	65	141	263	73	155	37	19
22	32	68	e26	e11	205	65	168	251	71	135	34	18
23	34	64	e21	e14	184	66	281	227	67	123	33	18
24	33	59	e19	e19	170	66	281	205	63	115	32	22
25	31	53	e27	e20	160	72	240	189	127	111	32	33
26	34	56	e23	e22	151	89	213	180	807	128	32	41
27	42	57	e21	e23	143	110	187	168	1,610	169	33	31
28	40	54	e25	e25	e129	114	165	159	2,120	133	30	28
29	38	51	e30	e29	---	113	152	148	2,830	116	e28	28
30	40	e38	e39	e33	---	112	143	138	3,070	108	e26	26
31	37	---	e36	e34	---	114	---	127	---	102	e24	---
TOTAL	947	1,354	1,145	658	8,805	2,819	4,361	7,591	12,870	10,266	1,690	716
MEAN	30.5	45.1	36.9	21.2	314	90.9	145	245	429	331	54.5	23.9
MAX	42	70	56	34	1,510	114	281	1,010	3,070	1,950	100	41
MIN	24	31	17	11	28	65	90	108	63	102	24	18
AC-FT	1,880	2,690	2,270	1,310	17,460	5,590	8,650	15,060	25,530	20,360	3,350	1,420
CFSM	0.10	0.15	0.12	0.07	1.04	0.30	0.48	0.81	1.42	1.09	0.18	0.08
IN.	0.12	0.17	0.14	0.08	1.08	0.35	0.54	0.93	1.58	1.26	0.21	0.09

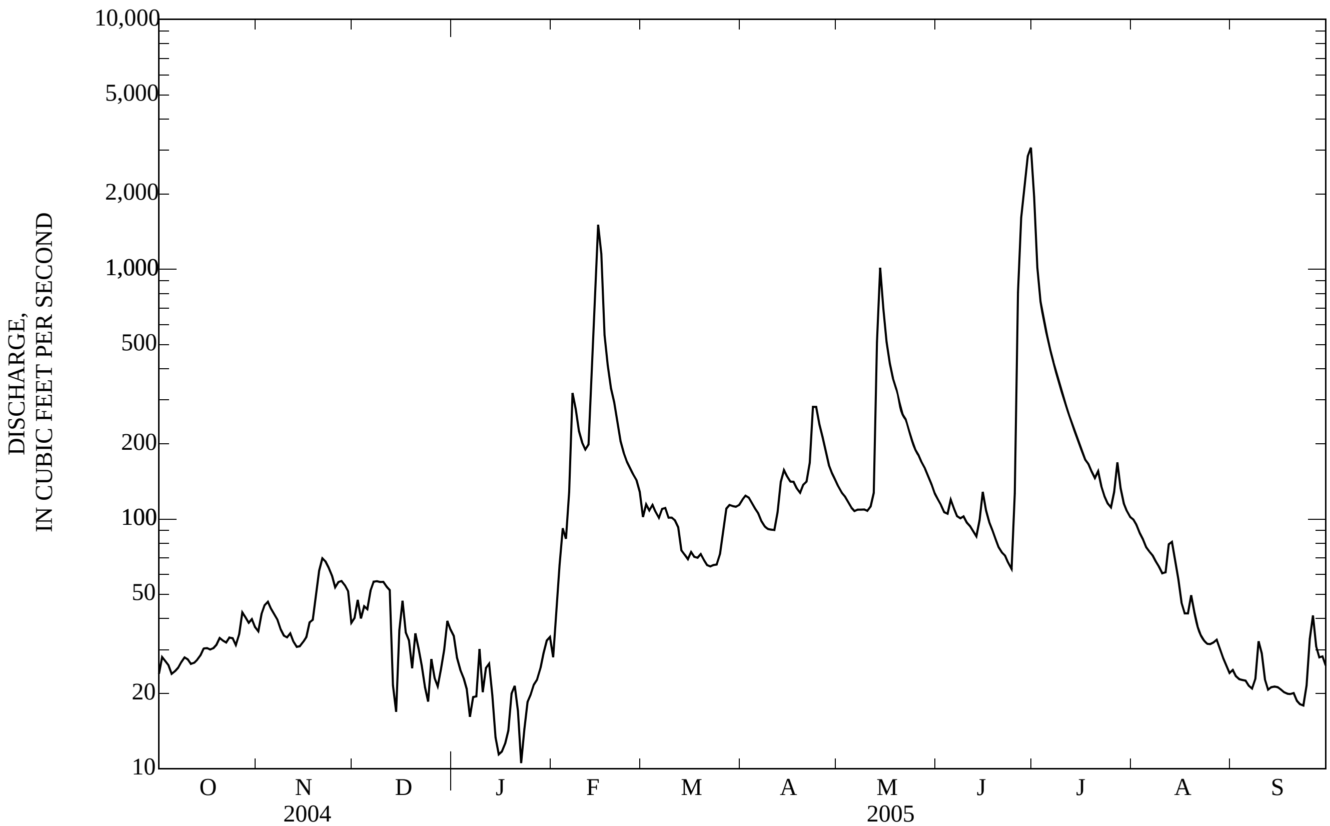
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

MEAN	94.1	106	83.9	67.8	145	362	307	294	330	252	123	85.4
MAX	440	359	418	463	564	1,280	1,173	1,036	1,403	1,705	1,134	735
(WY)	(1966)	(1973)	(1983)	(1973)	(1984)	(1993)	(1991)	(1991)	(1990)	(1993)	(1993)	(1965)
MIN	5.37	7.45	3.78	2.34	3.07	15.9	20.5	22.9	10.2	5.33	2.38	7.18
(WY)	(1990)	(1956)	(1990)	(1956)	(1956)	(1954)	(1956)	(1977)	(1956)	(1989)	(1989)	(1989)

05463500 BLACK HAWK CREEK AT HUDSON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	69,743		53,222			
ANNUAL MEAN	191		146		188	
HIGHEST ANNUAL MEAN					697	1993
LOWEST ANNUAL MEAN					18.4	1956
HIGHEST DAILY MEAN	5,450	May 23	3,070	Jun 30	11,300	Jul 9, 1969
LOWEST DAILY MEAN	14	Jan 22	11	Jan 15 a	0.12	Jan 26, 1977
ANNUAL SEVEN-DAY MINIMUM	18	Jan 18	15	Jan 13	0.32	Jan 23, 1977
MAXIMUM PEAK FLOW			3,470	Jun 30	19,300	Jul 9, 1969
MAXIMUM PEAK STAGE			15.33	Jun 30	18.23	Jul 9, 1969
ANNUAL RUNOFF (AC-FT)	138,300		105,600		135,900	
ANNUAL RUNOFF (CFSM)	0.629		0.481		0.619	
ANNUAL RUNOFF (INCHES)	8.56		6.53		8.41	
10 PERCENT EXCEEDS	447		268		430	
50 PERCENT EXCEEDS	64		68		75	
90 PERCENT EXCEEDS	26		22		15	

a Also Jan. 22, ice affected.
e Estimated.



05464000 CEDAR RIVER AT WATERLOO, IA

LOCATION.--Lat 42°29'44", long 92°20'03", in NW1/4 NW1/4 sec.25, T.89 N., R.13 W., Black Hawk County, Hydrologic Unit 07080205, on left bank at foot of East Seventh Street, 0.3 mi upstream from Eleventh Street bridge in Waterloo, 1.1 mi downstream from Black Hawk Creek, and at mile 162.3 (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--5,146 mi^2.

PERIOD OF RECORD.--October 1940 to current year. Prior to April 1941, monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1950.

GAGE.--Water-stage recorder. Datum of gage is 824.14 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Slight diurnal fluctuation during low flow caused by powerplant upstream from station. U.S. National Weather Service Limited Automatic Remote Collector (LARC) and U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 16, 1929, reached a stage of about 20 ft, determined by U. S. Army Corps of Engineers, from information by City of Waterloo, discharge, 65,000 ft^3/s. Flood of Apr. 2, 1933, reached a stage of about 19.5 ft from information by City of Waterloo, discharge, 61,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,090	2,420	e2,080	1,690	e1,030	3,290	8,280	5,110	5,440	20,800	2,920	1,550
2	4,860	2,580	e1,980	1,690	e1,090	3,090	7,760	4,830	5,190	16,100	2,700	1,440
3	4,610	2,560	e2,070	1,680	e1,150	2,730	7,380	4,520	4,900	12,000	2,440	1,330
4	4,440	2,640	e2,110	1,650	e1,270	2,880	6,470	4,350	4,820	9,960	2,390	1,270
5	4,550	2,800	e2,210	1,480	e1,260	2,930	5,800	4,200	4,830	9,060	2,350	1,270
6	4,280	2,870	2,400	1,470	e1,410	2,840	5,510	4,040	4,680	8,690	2,130	1,300
7	4,030	2,810	2,330	1,610	e1,920	2,860	5,170	3,990	4,510	7,580	2,010	1,340
8	3,890	2,670	2,320	1,470	e3,330	2,800	4,740	4,030	4,400	6,760	1,940	1,490
9	3,350	2,550	2,400	1,470	e4,090	2,840	4,590	4,430	4,530	6,120	1,820	1,470
10	3,260	2,460	2,450	1,490	e4,060	2,900	4,460	5,180	5,370	5,810	1,800	1,630
11	3,380	2,350	e2,420	1,410	e3,390	2,890	4,290	5,470	5,660	5,460	2,060	1,690
12	3,400	2,260	e2,510	1,370	e2,920	2,760	4,380	6,000	5,630	4,960	2,020	1,570
13	2,940	2,170	e2,500	1,380	e2,830	2,610	4,590	8,000	5,380	4,640	1,930	1,470
14	2,570	2,120	e1,900	e1,350	6,010	2,460	6,300	10,900	5,100	3,890	2,040	1,440
15	2,450	2,060	e1,450	e1,340	9,170	2,360	7,050	13,200	4,910	3,910	2,090	1,440
16	2,360	2,020	e1,690	e1,340	e10,800	2,300	6,870	13,200	4,710	3,730	1,950	1,440
17	2,440	1,950	e1,910	e1,340	11,100	2,260	6,380	12,100	4,430	3,480	1,850	1,370
18	2,380	2,110	e1,870	e1,370	9,950	2,230	5,890	10,900	4,180	3,380	2,100	1,290
19	2,380	2,240	e1,810	1,250	7,960	2,250	5,810	9,670	3,990	3,190	3,640	1,310
20	2,290	2,280	e1,460	1,210	6,530	2,210	5,340	9,010	3,780	3,190	4,290	1,540
21	2,200	2,300	e1,110	1,030	5,570	2,090	8,540	9,020	3,570	3,170	3,530	2,580
22	2,190	2,390	e1,080	e970	5,220	2,090	11,800	9,260	3,700	3,120	3,030	2,360
23	2,070	2,490	e1,330	e992	4,780	2,170	11,000	9,580	4,080	3,090	2,550	2,030
24	2,050	2,520	e1,440	e1,010	4,500	2,110	10,000	9,570	4,110	3,070	2,230	1,900
25	2,220	e2,400	e1,320	e1,030	4,210	2,190	8,810	8,840	4,600	3,170	1,990	1,950
26	1,890	e2,380	e1,280	1,110	3,980	2,230	7,760	8,010	8,210	3,690	1,910	3,340
27	1,960	e2,410	e1,310	1,090	3,840	2,280	7,020	7,340	13,100	3,960	1,880	6,940
28	1,940	e2,350	e1,490	e1,070	3,720	2,500	6,320	6,860	17,500	4,170	1,790	8,740
29	2,020	e2,240	1,590	e1,050	---	3,280	5,870	6,540	19,500	3,910	1,770	9,470
30	2,070	e2,110	1,600	e1,050	---	5,020	5,440	6,160	23,200	3,600	1,720	8,790
31	2,110	---	1,690	e1,050	---	7,240	---	5,660	---	3,230	1,650	---
TOTAL	91,670	71,510	57,110	40,512	127,090	86,690	199,620	229,970	198,010	180,890	70,520	76,750
MEAN	2,957	2,384	1,842	1,307	4,539	2,796	6,654	7,418	6,600	5,835	2,275	2,558
MAX	5,090	2,870	2,510	1,690	11,100	7,240	11,800	13,200	23,200	20,800	4,290	9,470
MIN	1,890	1,950	1,080	970	1,030	2,090	4,290	3,990	3,570	3,070	1,650	1,270
AC-FT	181,800	141,800	113,300	80,360	252,100	171,900	395,900	456,100	392,800	358,800	139,900	152,200
CFSM	0.57	0.46	0.36	0.25	0.88	0.54	1.29	1.44	1.28	1.13	0.44	0.50
IN.	0.66	0.52	0.41	0.29	0.92	0.63	1.44	1.66	1.43	1.31	0.51	0.55

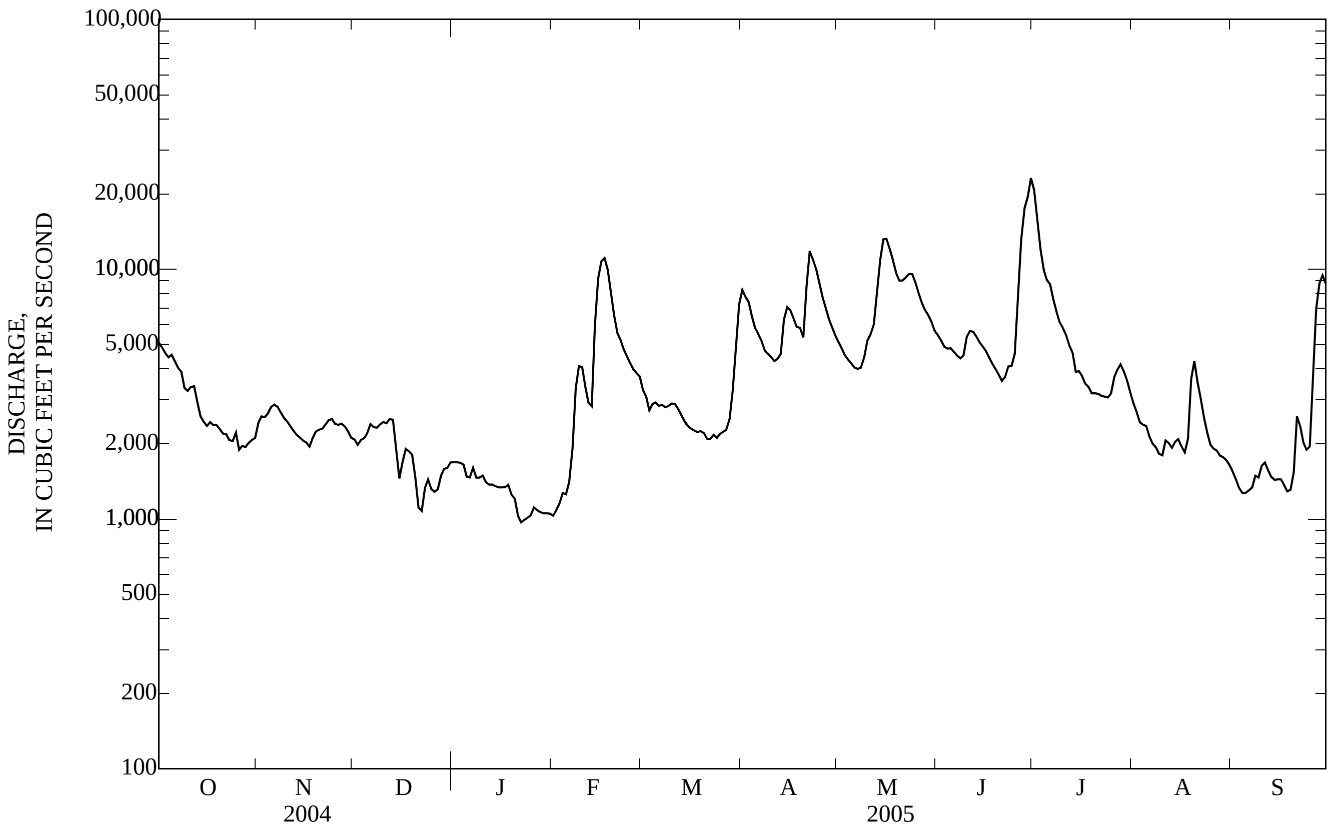
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2,104	2,038	1,527	1,212	1,792	5,409	6,279	5,012	5,487	4,207	2,727	2,101
MAX	8,499	7,434	6,891	5,479	9,448	13,760	24,940	19,010	18,320	21,210	18,770	9,258
(WY)	(1987)	(1973)	(1983)	(1973)	(1984)	(1973)	(1993)	(1991)	(1993)	(1993)	(1993)	(1993)
MIN	364	370	266	252	188	687	741	732	474	455	328	387
(WY)	(1990)	(1990)	(1990)	(1959)	(1959)	(1964)	(1957)	(1977)	(1977)	(1989)	(1989)	(1955)

05464000 CEDAR RIVER AT WATERLOO, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	1,704,479		1,430,342			
ANNUAL MEAN	4,657		3,919		3,329	
HIGHEST ANNUAL MEAN					10,580	1993
LOWEST ANNUAL MEAN					636	1977
HIGHEST DAILY MEAN	57,100	May 25	23,200	Jun 30	74,000	Mar 29, 1961
LOWEST DAILY MEAN	552	Jan 26	970	Jan 22 a	152	Jan 28, 1959
ANNUAL SEVEN-DAY MINIMUM	584	Jan 13	1,030	Jan 21	173	Feb 13, 1959
MAXIMUM PEAK FLOW			23,700	Jun 30	76,700	Mar 29, 1961
MAXIMUM PEAK STAGE			12.46	Jun 30	21.86	Mar 29, 1961
ANNUAL RUNOFF (AC-FT)	3,381,000		2,837,000		2,412,000	
ANNUAL RUNOFF (CFSM)	0.905		0.762		0.647	
ANNUAL RUNOFF (INCHES)	12.32		10.34		8.79	
10 PERCENT EXCEEDS	9,290		8,090		7,620	
50 PERCENT EXCEEDS	2,800		2,760		1,820	
90 PERCENT EXCEEDS	685		1,370		578	

a Ice affected.
e Estimated.



05464220 WOLF CREEK NEAR DYSART, IA

LOCATION.--Lat 42°15'06", long 92°17'55", in SE$\frac{1}{4}$ NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.24, T.86 N., R.13 W., Tama County, Hydrologic Unit 07080205, on bank 20 ft upstream of right bank side of bridge on County Highway V37, 5.0 mi north of Dysart, and 12.1 mi (revised) upstream from mouth.

DRAINAGE AREA.--299 mi^2.

PERIOD OF RECORD.--October 24, 1995 to September 30, 1998. May 16, 2001 to current year.

GAGE.--Water stage recorder. Datum of gage is 835 ft above NGVD of 1929, from map.

REMARKS.--Records are considered good, except for those estimated daily discharges, which is poor. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station. Precipitation records are not published, but are available.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	43	49	e35	e37	104	113	142	219	2,210	116	34
2	44	67	52	e31	e38	109	110	139	214	847	112	33
3	36	88	51	e30	e41	109	110	134	208	654	104	32
4	31	71	52	e23	e45	102	108	129	209	569	97	33
5	29	59	52	e22	e53	99	107	127	277	497	91	32
6	29	54	59	e16	e324	94	108	127	234	443	86	31
7	31	50	69	e14	e610	103	104	139	214	405	84	31
8	33	45	67	e14	e320	104	99	169	207	373	80	33
9	32	43	66	e19	206	99	97	173	209	339	76	43
10	31	43	66	e15	158	100	98	168	201	309	69	43
11	30	42	62	e25	135	97	99	176	195	286	74	33
12	32	40	61	e23	121	93	121	221	188	274	87	30
13	32	38	e42	e21	451	83	154	966	183	261	78	29
14	31	38	e28	e19	1,850	89	163	1,050	211	245	72	29
15	31	38	e37	e22	1,120	81	156	743	243	231	68	28
16	31	41	e40	e28	492	84	154	592	216	217	64	28
17	30	42	e33	e24	341	82	157	508	201	204	60	29
18	30	43	e38	e25	271	81	153	449	190	193	58	28
19	31	50	e31	e32	229	83	144	417	181	180	57	27
20	31	63	e37	e36	204	79	148	376	171	169	58	26
21	30	70	e38	e37	190	77	155	350	165	173	54	26
22	30	68	e29	e36	169	76	164	335	160	165	49	25
23	32	65	e22	e31	156	77	182	312	154	152	46	24
24	30	61	e18	e35	148	77	185	291	147	144	44	28
25	28	55	e19	e39	143	84	183	277	188	135	44	38
26	30	57	e22	e40	136	93	180	270	779	178	44	36
27	39	60	e25	e39	130	112	168	260	701	198	45	33
28	40	56	e31	e38	126	120	156	252	1,140	152	43	32
29	39	53	e26	e37	---	125	151	242	1,960	135	41	33
30	42	52	e28	e36	---	126	146	234	2,390	125	39	31
31	40	---	e33	e35	---	121	---	224	---	118	37	---
TOTAL	1,020	1,595	1,283	877	8,244	2,963	4,173	9,992	11,955	10,581	2,077	938
MEAN	32.9	53.2	41.4	28.3	294	95.6	139	322	398	341	67.0	31.3
MAX	44	88	69	40	1,850	126	185	1,050	2,390	2,210	116	43
MIN	28	38	18	14	37	76	97	127	147	118	37	24
AC-FT	2,020	3,160	2,540	1,740	16,350	5,880	8,280	19,820	23,710	20,990	4,120	1,860
CFSM	0.11	0.18	0.14	0.09	0.98	0.32	0.47	1.08	1.33	1.14	0.22	0.10
IN.	0.13	0.20	0.16	0.11	1.03	0.37	0.52	1.24	1.49	1.32	0.26	0.12

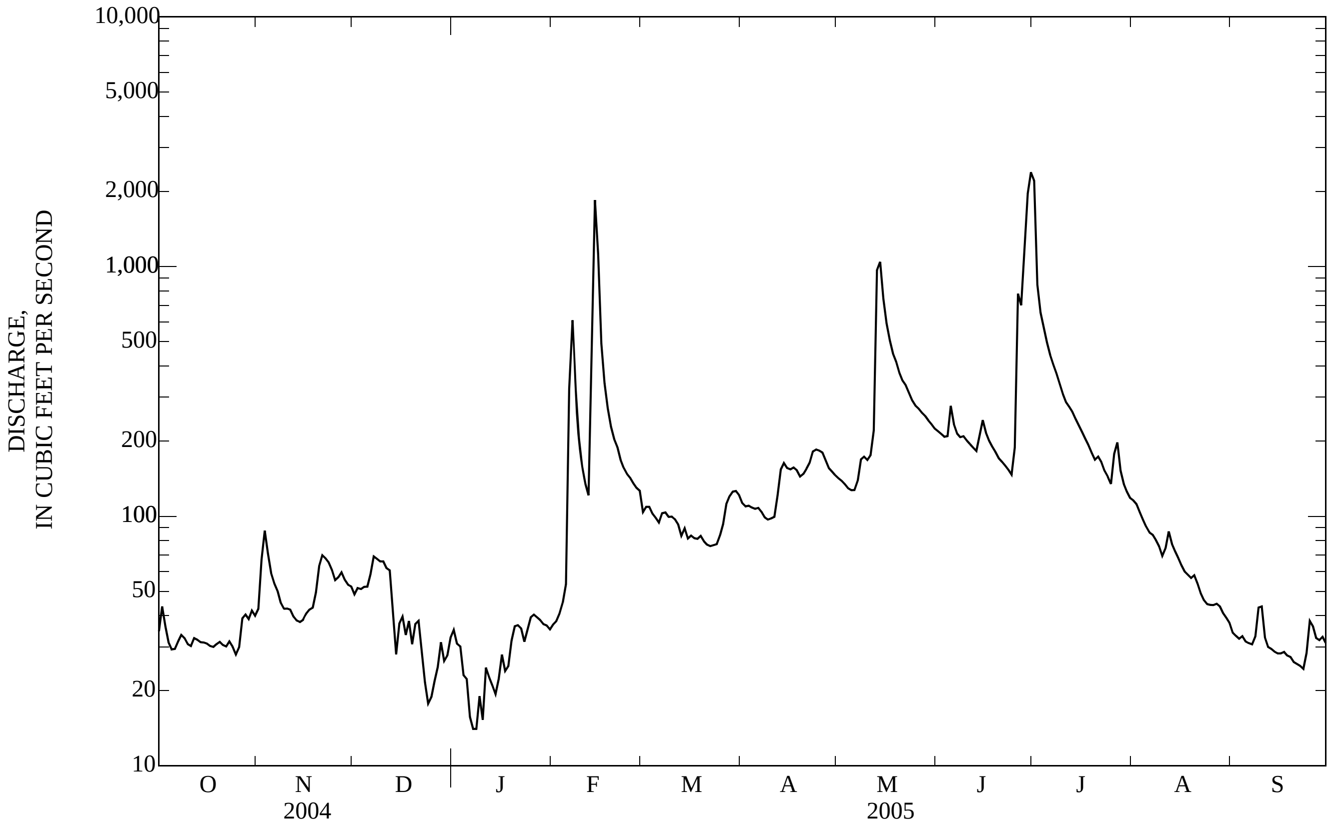
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	81.5	60.1	50.5	38.4	193	169	188	389	523	225	74.4	35.8
MAX	267	101	119	92.6	513	440	695	975	1,773	584	163	62.9
(WY)	(1999)	(1997)	(1998)	(1998)	(1997)	(1998)	(1998)	(2004)	(1998)	(1998)	(1998)	(1998)
MIN	17.3	29.6	17.2	13.4	21.0	34.5	43.7	121	116	52.5	44.6	20.3
(WY)	(2004)	(2002)	(1996)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)	(2002)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	77,167		55,698			
ANNUAL MEAN	211		153		180	
HIGHEST ANNUAL MEAN					394	1998
LOWEST ANNUAL MEAN					50.1	2002
HIGHEST DAILY MEAN	8,360	May 23	2,390	Jun 30	8,360	May 23, 2004
LOWEST DAILY MEAN	18	Dec 24	14	Jan 7 a	7.1	Jan 15, 2002
ANNUAL SEVEN-DAY MINIMUM	21	Jan 29	18	Jan 4	8.8	Jan 13, 2002
MAXIMUM PEAK FLOW			2,850	Jul 1	14,500	May 23, 2004
MAXIMUM PEAK STAGE			8.86	Jul 1	17.39	May 23, 2004
ANNUAL RUNOFF (AC-FT)	153,100		110,500		130,200	
ANNUAL RUNOFF (CFSM)	0.705		0.510		0.601	
ANNUAL RUNOFF (INCHES)	9.60		6.93		8.17	
10 PERCENT EXCEEDS	385		281		358	
50 PERCENT EXCEEDS	70		78		74	
90 PERCENT EXCEEDS	25		29		21	

05464220 WOLF CREEK NEAR DYSART, IA—Continued

a Also Jan. 8.
e Estimated.



05464500 CEDAR RIVER AT CEDAR RAPIDS, IA

LOCATION.--Lat 41°58'19", long 91°40'01", in SE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.28, T.83 N., R.7 W., Linn County, Hydrologic Unit 07080205, on right bank 400 ft upstream from bridge on Eighth Avenue in Cedar Rapids, 2.7 mi upstream from Prairie Creek, and at mile 85.4 (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--6,510 mi^2.

PERIOD OF RECORD.--October 1902 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 955: 1924. WSP 1308: 1904, 1906-13, 1915, 1917, 1919-24, 1928, 1930,. WSP 1438: Drainage area. WSP 1558: 1915-18 (M), 1920 (M), 1922 (M), 1929, 1933, 1943.

GAGE.--Water-stage recorder. Datum of gage is 700.47 ft above NGVD of 1929. Prior to Aug. 20, 1920, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow affected by city hydroelectric dam 0.5 mile upstream since June 1979. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. and U.S. Geological Survey data collection platform with telephone modem at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1851 reached a stage of about 20 ft, discharge, 65,000 ft^3/s, estimated.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,460	2,230	2,200	e1,820	1,230	3,640	5,560	5,390	5,920	19,700	3,460	1,950
2	5,180	2,400	2,210	e1,820	1,250	3,310	7,520	4,980	5,570	23,600	3,230	1,900
3	4,780	2,550	2,190	e1,840	1,280	3,190	7,680	4,630	5,300	25,600	3,040	1,810
4	4,480	2,650	1,970	e1,750	1,340	2,960	7,240	4,330	5,090	21,200	2,850	1,900
5	4,240	2,620	2,100	e1,670	1,470	2,830	6,590	4,060	5,320	14,900	2,740	1,750
6	4,210	2,650	2,210	e1,630	2,300	2,890	5,690	3,970	5,140	11,200	2,660	1,720
7	4,130	2,720	2,370	e1,690	3,160	2,950	5,440	3,800	4,870	9,800	2,610	1,710
8	3,880	2,650	2,290	1,350	3,330	2,920	5,170	3,730	4,610	8,680	2,430	1,710
9	3,700	2,580	2,250	1,410	3,470	2,860	4,720	3,680	4,540	7,520	2,300	1,810
10	3,390	2,500	2,280	1,530	3,880	2,880	4,340	3,830	4,400	6,730	2,280	1,830
11	3,140	2,430	2,270	1,540	3,650	2,890	4,220	4,990	5,030	6,210	2,400	1,800
12	3,100	2,330	2,330	e1,540	3,570	2,830	4,410	5,590	5,440	5,880	2,450	1,920
13	3,220	2,240	2,390	e1,730	4,110	2,740	4,440	6,210	5,500	5,400	2,500	1,880
14	3,060	2,170	2,080	e1,630	5,870	2,630	4,360	8,590	5,460	5,050	2,330	1,750
15	2,790	2,130	1,700	e1,580	7,240	2,510	5,410	10,900	5,160	4,620	2,310	1,760
16	2,580	2,090	1,660	e1,590	7,890	2,400	6,700	12,600	4,920	4,210	2,350	1,780
17	2,460	2,030	1,800	e1,580	11,200	2,330	6,910	14,000	4,710	4,070	2,320	1,690
18	2,450	2,060	e1,950	e1,570	13,400	2,290	6,500	14,300	4,420	3,860	2,280	1,720
19	2,490	2,190	e1,910	1,500	12,300	2,290	5,980	13,300	4,150	3,720	2,300	1,640
20	2,440	2,290	1,350	1,470	10,900	2,270	5,650	12,100	3,910	3,560	2,740	1,620
21	2,370	2,270	1,060	e1,370	8,620	2,180	5,440	10,800	3,690	3,730	4,040	1,590
22	2,410	2,220	e1,090	e1,320	7,320	2,150	6,770	10,100	3,500	3,460	3,540	2,040
23	2,380	2,250	e1,340	e1,410	6,310	2,070	10,100	10,300	3,390	3,520	3,130	2,420
24	2,280	2,280	e1,450	e1,430	5,000	2,190	11,700	10,200	3,690	3,360	2,860	2,390
25	2,190	2,300	e1,330	1,380	4,620	2,250	11,300	10,600	3,930	3,310	2,600	2,370
26	2,320	2,290	e1,300	1,350	4,420	2,210	10,200	10,100	4,370	3,510	2,410	2,270
27	2,450	2,360	e1,320	e1,290	4,120	2,270	8,550	9,000	6,580	3,760	2,290	2,340
28	2,160	2,340	e1,490	e1,240	3,870	2,280	7,310	8,150	10,600	3,910	2,200	4,570
29	2,160	2,290	e1,720	1,210	---	2,420	6,470	7,340	13,400	4,130	2,120	7,000
30	2,220	2,230	e1,740	1,230	---	2,660	5,860	6,850	16,500	4,060	2,070	8,250
31	2,210	---	e1,810	1,230	---	3,670	---	6,390	---	3,730	2,040	---
TOTAL	96,330	70,340	57,160	46,700	147,120	81,960	198,230	244,810	169,110	235,990	80,880	70,890
MEAN	3,107	2,345	1,844	1,506	5,254	2,644	6,608	7,897	5,637	7,613	2,609	2,363
MAX	5,460	2,720	2,390	1,840	13,400	3,670	11,700	14,300	16,500	25,600	4,040	8,250
MIN	2,160	2,030	1,060	1,210	1,230	2,070	4,220	3,680	3,390	3,310	2,040	1,590
MED	2,580	2,290	1,910	1,530	4,120	2,630	6,230	7,340	4,980	4,210	2,430	1,820
AC-FT	191,100	139,500	113,400	92,630	291,800	162,600	393,200	485,600	335,400	468,100	160,400	140,600
CFSM	0.48	0.36	0.28	0.23	0.81	0.41	1.02	1.21	0.87	1.17	0.40	0.36
IN.	0.55	0.40	0.33	0.27	0.84	0.47	1.13	1.40	0.97	1.35	0.46	0.41

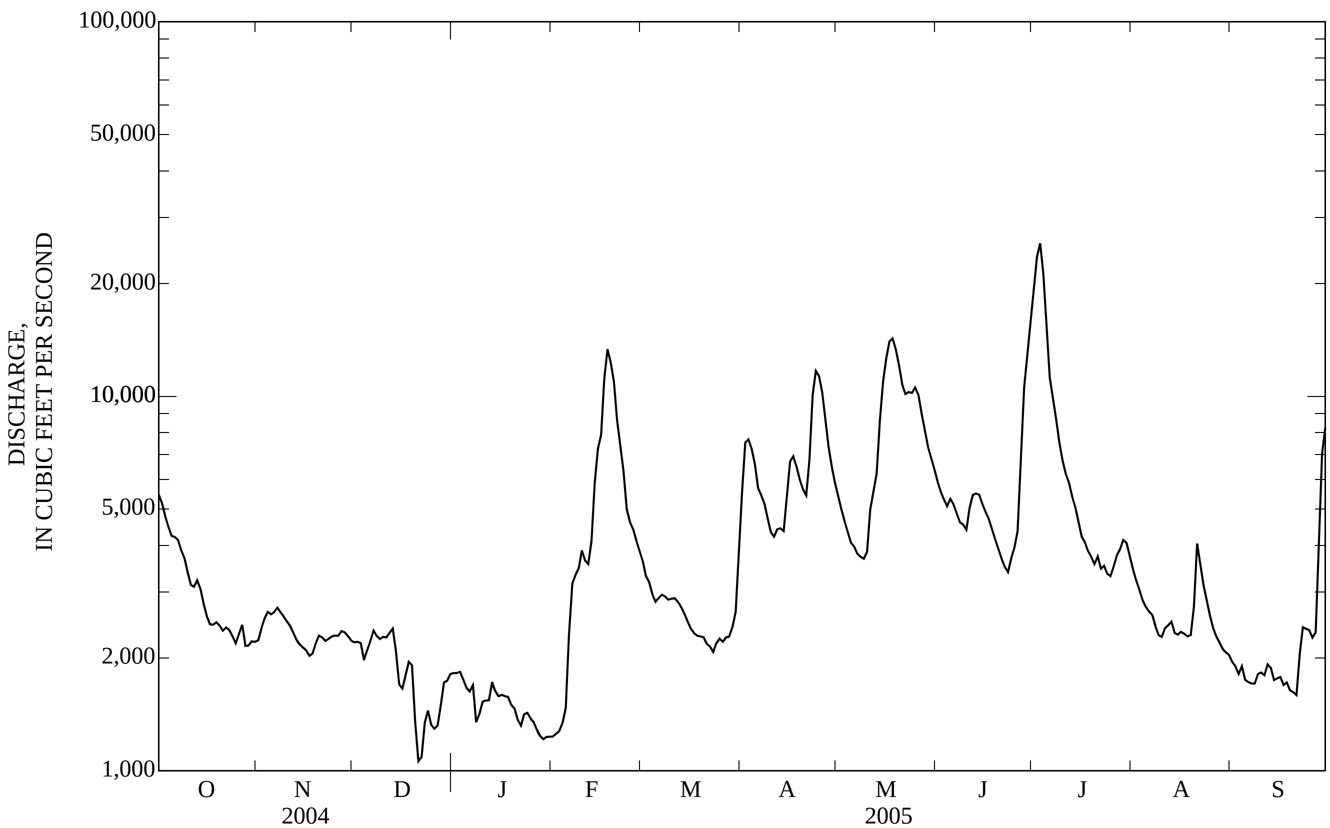
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2,348	2,410	1,849	1,566	2,485	6,549	6,840	5,506	5,989	4,385	3,010	2,424
MAX	10,570	9,327	8,675	8,529	12,230	17,420	35,320	24,500	23,420	33,910	28,700	13,990
(WY)	(1987)	(1973)	(1983)	(1973)	(1984)	(1929)	(1993)	(1991)	(1947)	(1993)	(1993)	(1993)
MIN	463	410	290	299	304	664	1,045	527	350	533	377	466
(WY)	(1990)	(1990)	(1990)	(1911)	(1940)	(1934)	(1957)	(1934)	(1934)	(1989)	(1934)	(1934)

05464500 CEDAR RIVER AT CEDAR RAPIDS, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1903 - 2005	
ANNUAL TOTAL	2,037,259		1,499,520			
ANNUAL MEAN	5,566		4,108		3,783	
HIGHEST ANNUAL MEAN					15,130	1993
LOWEST ANNUAL MEAN					689	1934
HIGHEST DAILY MEAN	61,800	May 27	25,600	Jul 3	71,500	Mar 31, 1961
LOWEST DAILY MEAN	337	Jan 5	1,060	Dec 21	140	Nov 18, 1989 a
ANNUAL SEVEN-DAY MINIMUM	577	Feb 13	1,240	Jan 28 b	224	Dec 20, 1989
MAXIMUM PEAK FLOW			26,200	Jul 3	73,000	Mar 31, 1961
MAXIMUM PEAK STAGE			10.43	Jul 3	20.00	Mar 18, 1929
ANNUAL RUNOFF (AC-FT)	4,041,000		2,974,000		2,740,000	
ANNUAL RUNOFF (CFSM)	0.855		0.631		0.581	
ANNUAL RUNOFF (INCHES)	11.64		8.57		7.90	
10 PERCENT EXCEEDS	12,600		8,190		8,420	
50 PERCENT EXCEEDS	3,280		2,790		2,180	
90 PERCENT EXCEEDS	742		1,590		690	

a Result of accidental gage operation at hydroelectric dam upstream.
b Ice affected.
e Estimated.



05464942 HOOVER CREEK AT HOOVER NATIONAL HISTORIC SITE AT WEST BRANCH, IA

LOCATION.--Lat 41°40'10", long 91°21'02", in NW¼ NE¼ NE¼ sec.7, T.79 N., R.4 W., Cedar County, Hydrologic Unit 07080206, on right bank, at footbridge about 0.25 mi upstream of Hoover Presidental Library, at Hoover National Historic Site, at West Branch.

DRAINAGE AREA.--2.58 mi^2.

PERIOD OF RECORD.--April 27, 2000 to September 30, 2005.

GAGE.--Water-stage recorder. Datum of gage is 704.890 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1967 reached a stage of 6.52 ft , discharge 1,500 ft^3/s from indirect discharge measurement, based on floodmarks at Downey Street bridge 1,100 ft downstream; flood of August 16, 1993 reached a stage of 10.41 ft, discharge 1,650 ft^3/s from indirect discharge measurement, based on floodmarks at Hoover National Historic Site.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.89	1.7	1.6	1.3	0.96	e1.7	1.3	0.92	0.52	0.43	0.00	0.00
2	0.51	1.8	1.6	1.5	1.6	1.6	1.3	0.91	0.50	0.43	0.00	0.00
3	0.41	1.7	1.5	1.4	5.4	e1.6	1.2	0.87	0.50	0.43	0.00	0.00
4	0.35	1.7	1.5	1.2	9.5	1.5	1.2	0.83	0.62	0.57	0.00	0.31
5	0.35	1.6	1.8	e1.1	7.0	1.4	1.2	0.80	0.66	0.41	0.00	0.02
6	0.29	1.5	2.9	e1.1	5.0	1.5	1.2	0.76	0.54	0.38	0.00	0.00
7	0.27	1.4	3.4	e1.0	5.5	1.5	1.2	0.74	0.52	0.35	0.00	0.00
8	0.29	1.3	3.0	1.00	3.2	1.4	1.1	0.82	0.58	0.33	0.00	0.06
9	0.19	1.2	2.8	1.0	2.6	e1.4	1.1	0.85	0.55	0.30	0.00	0.02
10	0.16	1.2	2.4	0.99	2.2	1.5	1.1	0.83	0.53	0.28	0.00	0.00
11	e0.15	1.2	2.2	1.0	2.3	1.4	1.1	1.3	0.53	0.26	0.22	0.00
12	e0.15	1.1	2.1	4.8	2.3	1.4	2.1	0.84	0.53	0.23	0.25	0.00
13	e0.14	1.1	1.8	e3.0	11	e1.3	1.5	0.93	0.51	0.22	0.03	0.26
14	0.16	1.0	1.7	e2.0	5.0	1.3	1.4	0.92	0.55	0.22	0.02	0.39
15	0.46	1.0	1.7	e1.6	3.6	e1.3	1.3	0.92	0.49	0.19	0.01	0.01
16	0.52	0.99	1.6	e1.4	3.0	1.3	1.2	0.88	0.47	0.19	0.01	0.00
17	0.57	0.97	1.5	e1.3	2.7	1.3	1.1	0.83	0.45	0.16	0.01	0.01
18	0.64	1.2	1.5	1.4	2.4	1.3	1.1	0.80	0.44	0.12	0.05	0.00
19	0.62	1.9	e1.5	1.3	2.2	1.2	0.99	0.75	0.43	0.10	0.00	0.02
20	0.58	1.7	e1.4	1.2	2.3	1.1	0.93	0.72	0.42	0.09	0.03	0.00
21	0.57	1.6	e1.3	1.1	2.1	1.1	0.88	0.72	0.42	0.11	0.00	0.00
22	0.69	1.6	e1.2	1.0	2.0	1.1	1.1	0.68	0.43	0.07	0.00	0.00
23	0.71	1.5	e1.1	1.0	1.9	1.2	0.88	0.65	0.43	0.05	0.00	0.00
24	0.63	1.4	e1.1	1.0	1.9	1.3	0.96	0.63	0.45	0.05	0.00	0.00
25	0.63	1.3	e1.1	1.1	1.8	1.6	1.1	0.61	0.42	0.02	0.00	0.00
26	1.8	1.3	1.2	1.1	1.7	1.5	0.96	0.60	0.43	0.12	0.04	0.00
27	1.5	1.7	1.1	e1.1	1.8	1.5	0.91	0.61	0.41	0.05	0.00	0.00
28	1.3	1.6	1.2	e1.0	1.7	1.5	0.98	0.60	0.44	0.03	0.00	0.05
29	1.3	1.7	1.2	0.95	---	1.5	0.93	0.60	0.45	0.02	0.00	0.01
30	1.3	1.7	1.2	0.91	---	1.4	0.92	0.57	0.48	e0.01	0.00	0.00
31	1.1	---	1.2	0.88	---	1.3	---	0.53	---	e0.01	0.00	---
TOTAL	19.23	42.66	52.4	41.73	94.66	43.0	34.24	24.02	14.70	6.23	0.67	1.16
MEAN	0.62	1.42	1.69	1.35	3.38	1.39	1.14	0.77	0.49	0.20	0.02	0.04
MAX	1.8	1.9	3.4	4.8	11	1.7	2.1	1.3	0.66	0.57	0.25	0.39
MIN	0.14	0.97	1.1	0.88	0.96	1.1	0.88	0.53	0.41	0.01	0.00	0.00
AC-FT	38	85	104	83	188	85	68	48	29	12	1.3	2.3
CFSM	0.24	0.55	0.66	0.52	1.31	0.54	0.44	0.30	0.19	0.08	0.01	0.01
IN.	0.28	0.62	0.76	0.60	1.36	0.62	0.49	0.35	0.21	0.09	0.01	0.02

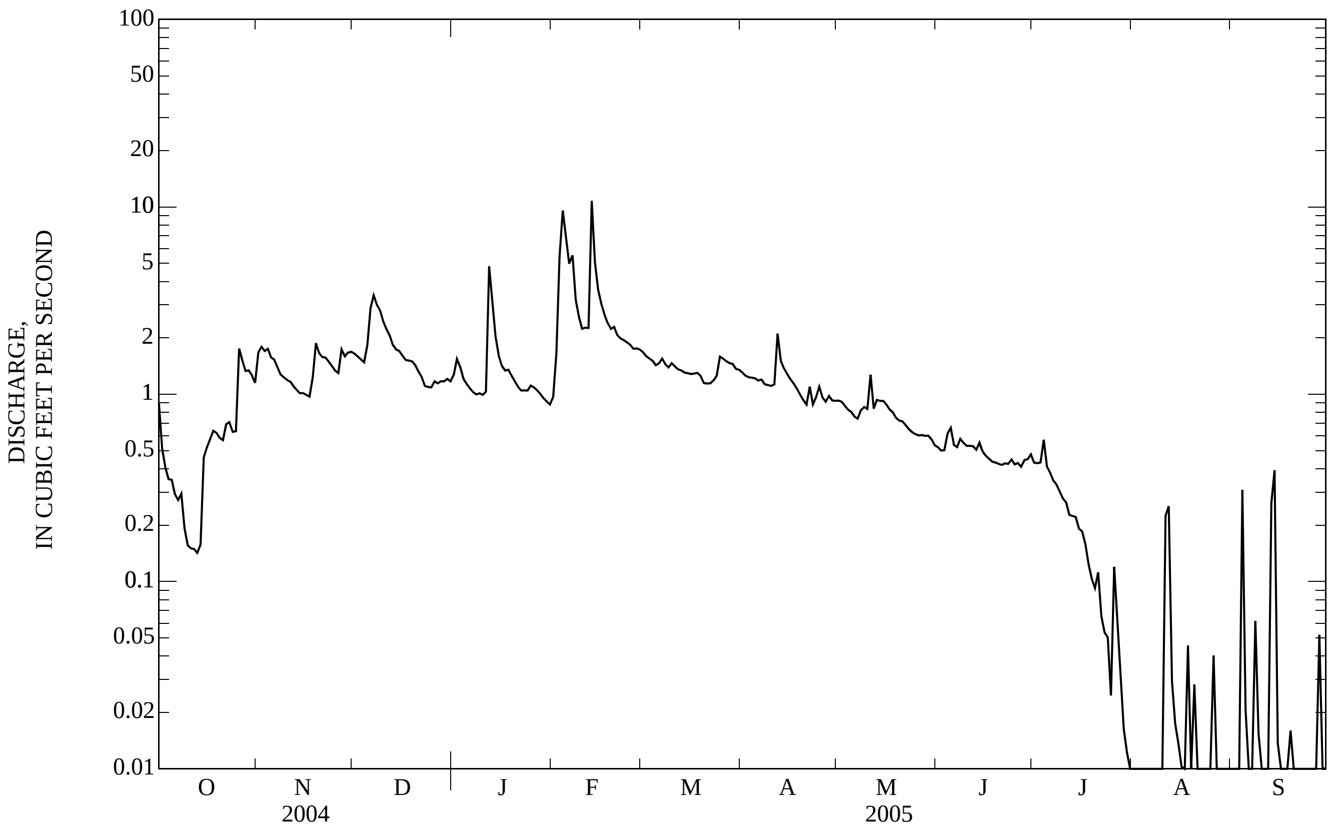
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.94	0.79	0.92	0.72	2.65	2.78	2.13	3.76	2.81	1.38	0.76	0.26
MAX	2.75	1.42	1.69	1.35	7.46	5.28	3.92	7.60	5.51	2.26	2.89	0.60
(WY)	(2003)	(2005)	(2005)	(2005)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2004)
MIN	0.06	0.38	0.22	0.40	0.26	1.10	0.44	0.77	0.49	0.20	0.02	0.04
(WY)	(2004)	(2001)	(2001)	(2003)	(2003)	(2003)	(2003)	(2005)	(2005)	(2005)	(2005)	(2005)

05464942 HOOVER CREEK AT HOOVER NATIONAL HISTORIC SITE AT WEST BRANCH, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2000 - 2005	
ANNUAL TOTAL	623.69		374.70			
ANNUAL MEAN	1.70		1.03		1.62	
HIGHEST ANNUAL MEAN					2.68	2001
LOWEST ANNUAL MEAN					0.98	2003
HIGHEST DAILY MEAN	12	Mar 26	11	Feb 13	78	May 31, 2000
LOWEST DAILY MEAN	0.14	Oct 13	0.00	Aug 1	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	0.18	Oct 8	0.00	Aug 1	0.00	Sep 4, 2003
MAXIMUM PEAK FLOW			41	Feb 4	207	May 31, 2000
MAXIMUM PEAK STAGE			4.05	Feb 4	7.45	Aug 23, 2002
ANNUAL RUNOFF (AC-FT)	1,240		743		1,180	
ANNUAL RUNOFF (CFSM)	0.660		0.398		0.630	
ANNUAL RUNOFF (INCHES)	8.99		5.40		8.55	
10 PERCENT EXCEEDS	3.4		1.8		3.6	
50 PERCENT EXCEEDS	1.3		0.93		0.83	
90 PERCENT EXCEEDS	0.56		0.00		0.09	

a Many days in Aug. & Sep.
e Estimated.



05465000 CEDAR RIVER NEAR CONESVILLE, IA

LOCATION.--Lat 41°24'33", long 91°17'25", in SW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.2, T.76 N., R.4 W., Muscatine County, Hydrologic Unit 07080206, on right bank 10 ft downstream from bridge on County Highway G28, 3.4 mi northeast of Conesville, 5.2 mi downstream from Wapsinonoc Creek, and 10.8 mi (revised) upstream from mouth of Cedar River.

DRAINAGE AREA.--7,785 mi^2.

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

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1708: 1956.

GAGE.--Water-stage recorder. Datum of gage is 581.95 ft above NGVD of 1929. Prior to Feb. 2, 1940, and Apr. 11, 1952, to July 1, 1954, nonrecording gage, Feb. 2, 1940, to Apr. 10, 1952, and July 2, 1954, to Sept. 16, 1963, water-stage recorder, at site 150 ft downstream on left bank at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1929 reached a stage of 15.8 ft, from information by local residents to U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,620	2,830	2,840	e2,290	e1,560	4,790	3,540	6,560	7,140	14,600	3,710	2,230
2	6,280	3,000	2,760	e2,180	e1,760	4,550	4,690	6,070	6,760	17,300	3,510	2,170
3	5,980	3,140	2,720	e2,080	e1,960	4,340	6,310	5,690	6,370	19,900	3,260	2,120
4	5,480	3,260	2,730	e2,070	e2,580	4,080	7,160	5,370	6,090	22,600	3,100	2,090
5	5,100	3,380	2,610	e2,040	e3,740	3,990	7,020	5,100	6,030	23,800	2,960	2,140
6	4,790	3,350	2,690	e2,020	e4,440	3,790	6,710	4,840	6,360	20,100	2,770	2,220
7	4,620	3,280	3,270	e1,990	e4,790	3,790	6,160	4,690	6,110	12,600	2,730	1,930
8	4,720	3,230	3,680	e1,900	e4,910	3,790	5,890	4,590	5,740	10,400	2,660	1,920
9	4,450	3,180	3,660	e1,720	5,020	3,720	5,670	4,460	5,480	9,230	2,590	1,880
10	4,160	3,090	3,420	e1,750	4,490	3,700	5,370	e4,430	5,340	8,030	2,500	1,940
11	3,910	3,000	3,260	e1,790	4,330	3,680	5,070	e5,040	5,170	7,160	2,510	1,950
12	3,580	2,900	3,160	e1,940	4,330	3,670	5,130	6,330	5,390	6,540	2,730	1,930
13	3,450	2,800	3,090	e2,410	4,500	3,610	5,450	7,050	5,810	6,160	2,820	1,930
14	3,490	2,690	2,990	e3,210	7,750	3,530	5,410	7,760	5,970	5,710	2,640	1,980
15	3,480	2,600	2,880	e2,690	8,880	3,420	5,290	9,290	6,040	5,260	2,540	1,920
16	3,270	2,560	2,610	e2,460	8,650	3,320	5,530	10,700	5,800	5,000	2,410	1,870
17	2,980	2,540	2,270	e2,080	8,770	3,240	6,420	12,100	5,500	4,510	2,370	1,820
18	2,820	2,510	2,270	e2,370	10,300	3,140	6,840	13,700	5,290	4,340	2,390	1,830
19	2,730	2,640	2,260	e2,110	12,700	3,110	6,670	14,600	5,050	4,090	2,330	1,820
20	2,770	2,900	e2,120	e1,660	12,100	3,070	6,310	13,800	4,790	3,960	2,330	1,770
21	2,720	2,980	e1,420	e1,650	11,000	3,000	5,990	12,400	4,570	3,810	2,680	1,710
22	2,700	2,940	e1,140	e1,580	9,380	2,940	5,960	11,200	4,370	3,710	3,310	1,680
23	2,810	2,860	e1,580	e1,490	8,080	2,910	6,160	10,500	4,170	3,730	3,700	1,680
24	2,910	2,810	e1,630	e1,650	7,260	2,880	8,470	10,400	4,010	3,600	3,350	2,120
25	2,690	2,770	e1,430	e1,700	6,270	3,000	10,400	10,300	4,050	3,480	3,180	2,350
26	2,620	2,770	e1,420	e1,640	5,600	3,200	10,700	10,400	4,260	3,440	2,980	2,400
27	3,080	2,830	e1,480	e1,590	5,300	3,160	10,100	10,200	4,780	3,510	2,800	2,390
28	3,460	2,930	e1,670	e1,560	5,060	3,130	8,930	9,490	5,590	3,610	2,560	2,230
29	3,090	2,960	e2,010	e1,500	---	3,100	7,900	8,770	8,760	3,740	2,450	2,770
30	2,890	2,920	e2,120	e1,500	---	3,110	7,180	8,080	12,100	3,880	2,350	5,380
31	2,850	---	e2,260	e1,540	---	3,260	---	7,560	---	3,930	2,280	---
TOTAL	116,500	87,650	75,450	60,160	175,510	108,020	198,430	261,470	172,890	251,730	86,500	64,170
MEAN	3,758	2,922	2,434	1,941	6,268	3,485	6,614	8,435	5,763	8,120	2,790	2,139
MAX	6,620	3,380	3,680	3,210	12,700	4,790	10,700	14,600	12,100	23,800	3,710	5,380
MIN	2,620	2,510	1,140	1,490	1,560	2,880	3,540	4,430	4,010	3,440	2,280	1,680
AC-FT	231,100	173,900	149,700	119,300	348,100	214,300	393,600	518,600	342,900	499,300	171,600	127,300
CFSM	0.48	0.38	0.31	0.25	0.80	0.45	0.85	1.08	0.74	1.04	0.36	0.27
IN.	0.56	0.42	0.36	0.29	0.84	0.52	0.95	1.25	0.83	1.20	0.41	0.31

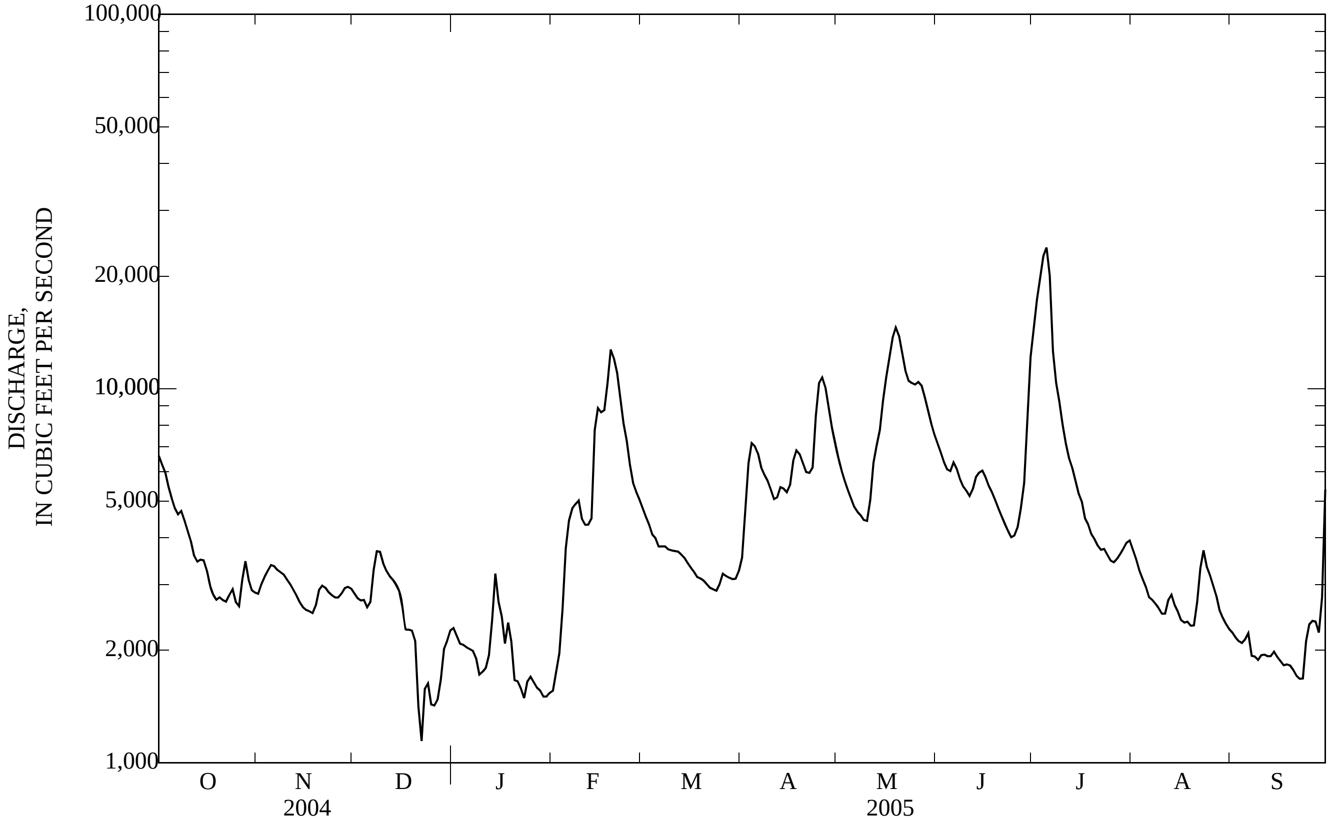
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

MEAN	3,095	3,268	2,560	2,334	3,237	7,814	9,385	7,862	8,417	6,583	4,185	3,273
MAX	12,380	10,240	11,110	11,860	12,000	17,590	36,790	24,440	27,780	42,110	34,190	19,530
(WY)	(1987)	(1973)	(1983)	(1973)	(1984)	(1948)	(1993)	(1991)	(1993)	(1993)	(1993)	(1993)
MIN	599	590	429	365	359	1,056	1,244	1,219	768	815	700	620
(WY)	(1957)	(1956)	(1990)	(1977)	(1940)	(1954)	(1957)	(1940)	(1977)	(1989)	(1989)	(1955)

05465000 CEDAR RIVER NEAR CONESVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	2,458,627		1,658,480			
ANNUAL MEAN	6,718		4,544		5,172	
HIGHEST ANNUAL MEAN					18,710	1993
LOWEST ANNUAL MEAN					1,176	1956
HIGHEST DAILY MEAN	69,200	May 29	23,800	Jul 5	69,800	Apr 6, 1993
LOWEST DAILY MEAN	899	Jan 6	1,140	Dec 22 a	250	Nov 28, 1955
ANNUAL SEVEN-DAY MINIMUM	958	Jan 29	1,440	Dec 21	329	Jan 30, 1940
MAXIMUM PEAK FLOW			24,200	Jul 5	74,000	Apr 6, 1993
MAXIMUM PEAK STAGE			13.56	Jul 5	17.11	Apr 6, 1993
ANNUAL RUNOFF (AC-FT)	4,877,000		3,290,000		3,747,000	
ANNUAL RUNOFF (CFSM)	0.863		0.584		0.664	
ANNUAL RUNOFF (INCHES)	11.75		7.92		9.02	
10 PERCENT EXCEEDS	14,600		8,760		11,800	
50 PERCENT EXCEEDS	3,960		3,420		3,150	
90 PERCENT EXCEEDS	1,140		1,920		960	

a Ice affected.
e Estimated.



05465500 IOWA RIVER AT WAPELLO, IA

LOCATION.--Lat 41°10'41", long 91°10'55", in NW$^1/_4$ SE$^1/_4$ sec.27, T.74 N., R.3 W., Louisa County, Hydrologic Unit 07080209, on right bank, 1200 ft downstream from bridge on State Highway 99 at east edge of Wapello, 13.9 mi (revised) downstream from Cedar River, and 15.2 mi (revised) upstream from mouth.

DRAINAGE AREA.--12,499 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1917, 1923-30, 1932. WSP 1438: Drainage area. WSP 1558: 1918, 1923-25 (M), 1929. WSP 1708: 1955(P), 1956. WDR IA-95-1:location.

GAGE.--Water-stage recorder. Datum of gage is 538.17 ft above NGVD of 1929; Oct. 1, 1914 to Apr. 15, 1934, nonrecording gage and Apr. 16, 1934 to Sept. 30, 1972, water-stage recorder at datum 10.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by Coralville Lake (station 05453510) 67.3 mi upstream, since Sept. 17, 1958. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum instantaneous discharge, 111,000 ft^3/s, July 8, 1993, gage height, 29.53 ft; minimum daily discharge, 300 ft^3/s, Nov. 28, 1955.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8,210	4,810	5,220	e4,030	e2,810	8,100	5,300	11,300	12,400	16,700	5,350	2,860
2	7,670	4,880	5,090	e4,170	e3,050	7,640	5,620	10,500	11,500	19,400	5,210	2,800
3	7,310	5,110	4,980	e4,040	e3,900	7,170	6,710	9,690	10,700	21,500	5,010	2,720
4	6,770	5,130	4,910	e3,800	e4,830	6,820	8,430	8,930	10,100	23,700	4,740	2,630
5	6,230	5,150	4,860	e3,860	e6,790	6,520	9,420	8,200	9,910	26,500	4,520	2,590
6	5,800	5,290	4,860	e3,770	9,750	6,330	9,540	7,570	10,000	28,900	4,350	2,630
7	5,460	5,250	5,200	e3,500	10,300	6,110	9,230	7,070	10,500	26,400	4,110	2,610
8	5,400	5,130	6,150	e3,400	11,500	6,060	8,700	6,780	10,400	19,800	3,930	2,460
9	5,350	5,030	6,810	e3,480	12,100	6,170	8,650	6,600	9,990	16,700	3,820	2,500
10	5,070	4,920	6,830	e3,510	10,800	6,160	8,760	6,400	9,520	14,700	3,700	2,480
11	4,800	4,830	6,750	e3,590	9,630	6,110	8,500	6,310	9,230	12,200	3,540	2,480
12	4,580	4,800	6,710	e3,750	8,620	6,100	8,300	6,790	8,890	10,800	3,560	2,480
13	4,410	4,720	6,550	e4,210	8,310	6,120	8,840	8,560	9,000	9,820	3,700	2,390
14	4,310	4,610	6,410	e5,220	10,000	5,980	9,960	11,000	9,360	9,160	3,790	2,350
15	4,360	4,510	6,230	e5,550	15,400	5,790	10,100	14,900	9,520	8,580	3,760	2,350
16	4,320	4,420	6,070	e4,580	17,700	5,620	10,000	17,300	9,570	7,960	3,660	2,280
17	4,150	4,360	5,810	e3,900	17,900	5,410	10,900	18,700	9,470	7,460	3,520	2,190
18	3,950	4,350	5,510	e3,650	17,700	5,200	12,100	20,100	9,200	6,860	3,470	2,120
19	3,830	4,410	5,350	e3,500	18,500	5,020	12,700	21,300	8,820	6,500	3,430	2,120
20	3,740	4,740	5,100	e3,240	19,600	4,880	12,300	21,900	8,370	6,130	3,340	2,110
21	3,760	5,230	e3,900	e2,920	18,800	4,770	11,600	21,500	7,940	5,890	3,310	2,060
22	3,780	5,430	e3,100	e2,820	17,500	4,680	11,200	20,400	7,540	5,600	3,480	1,990
23	4,000	5,350	e2,610	e2,680	15,700	4,640	11,000	19,300	7,110	5,440	4,020	e1,940
24	4,100	5,210	e2,930	e2,720	13,400	4,480	11,700	18,500	6,740	5,350	4,210	e1,900
25	4,220	5,120	e2,930	e2,990	11,500	4,540	13,600	18,200	6,450	5,220	3,910	e2,310
26	4,300	e5,000	e2,770	e3,030	10,100	4,980	15,200	18,100	6,380	5,130	3,750	e2,540
27	4,670	e5,010	e2,850	e2,960	9,080	5,350	15,600	18,100	6,460	5,150	3,550	e2,680
28	5,250	e5,130	e3,030	e2,750	8,530	5,410	15,000	17,600	6,770	5,150	3,390	2,760
29	5,430	e5,270	e3,390	e2,750	---	5,360	13,700	16,600	8,590	5,190	3,190	2,560
30	5,050	5,260	e3,590	e2,740	---	5,220	12,300	15,400	12,700	5,240	3,060	3,440
31	4,870	---	e3,870	e2,760	---	5,180	---	13,700	---	5,320	2,950	---
TOTAL	155,150	148,460	150,370	109,870	323,800	177,920	314,960	427,300	273,130	358,450	119,330	73,330
MEAN	5,005	4,949	4,851	3,544	11,560	5,739	10,500	13,780	9,104	11,560	3,849	2,444
MAX	8,210	5,430	6,830	5,550	19,600	8,100	15,600	21,900	12,700	28,900	5,350	3,440
MIN	3,740	4,350	2,610	2,680	2,810	4,480	5,300	6,310	6,380	5,130	2,950	1,900
AC-FT	307,700	294,500	298,300	217,900	642,300	352,900	624,700	847,500	541,800	711,000	236,700	145,500
CFSM	0.40	0.40	0.39	0.28	0.93	0.46	0.84	1.10	0.73	0.93	0.31	0.20
IN.	0.46	0.44	0.45	0.33	0.96	0.53	0.94	1.27	0.81	1.07	0.36	0.22

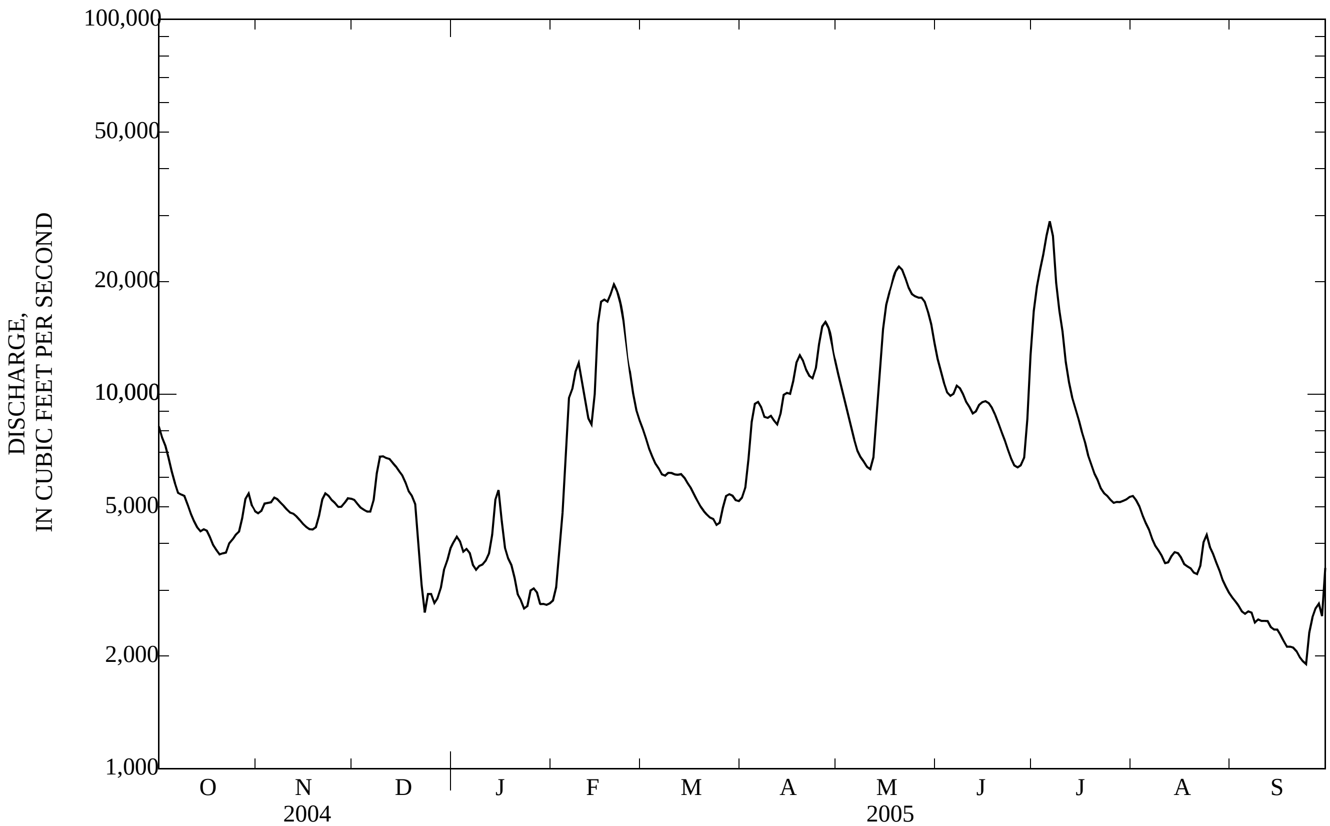
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5,329	5,891	5,122	4,286	6,186	13,100	15,830	14,070	14,230	12,380	7,726	5,865
MAX	17,200	16,080	18,150	20,420	17,080	26,130	45,840	33,030	36,630	77,320	61,750	37,270
(WY)	(1987)	(1993)	(1983)	(1973)	(1984)	(1982)	(1993)	(1993)	(1993)	(1993)	(1993)	(1993)
MIN	926	882	664	533	661	2,273	2,536	1,709	1,022	1,019	873	982
(WY)	(1990)	(1990)	(1990)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1989)	(1989)	(1988)

05465500 IOWA RIVER AT WAPELLO, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005 a	
ANNUAL TOTAL	3,655,180		2,632,070			
ANNUAL MEAN	9,987		7,211		9,176	
HIGHEST ANNUAL MEAN					30,550	1993
LOWEST ANNUAL MEAN					1,908	1989
HIGHEST DAILY MEAN	63,500	May 31	28,900	Jul 6	106,000	Jul 8, 1993
LOWEST DAILY MEAN	1,520	Jan 8	1,900	Sep 24	460	Jan 21, 1977
ANNUAL SEVEN-DAY MINIMUM	1,800	Jan 6	2,030	Sep 18	470	Jan 20, 1977
MAXIMUM PEAK FLOW			29,400	Jul 6	111,000	Jul 8, 1993
MAXIMUM PEAK STAGE			19.62	Jul 6	29.53	Jul 7, 1993
ANNUAL RUNOFF (AC-FT)	7,250,000		5,221,000		6,648,000	
ANNUAL RUNOFF (CFSM)	0.799		0.577		0.734	
ANNUAL RUNOFF (INCHES)	10.88		7.83		9.97	
10 PERCENT EXCEEDS	22,200		14,900		21,000	
50 PERCENT EXCEEDS	6,400		5,350		5,860	
90 PERCENT EXCEEDS	2,080		2,810		1,780	

a Post regulation.
e Estimated.



05465500 IOWA RIVER AT WAPELLO, IA—Continued

WATER-QUALITY RECORDS

LOCATION -- Samples collected from a boat about 0.75 mile downstream of gage.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1978 to current year.
WATER TEMPERATURE: January 1978 to current year.
SUSPENDED-SEDIMENT DISCHARGE: April 1978 to current year.

REMARKS.--During periods of ice effect samples are collected in open water channel or through ice cover. Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 920 microsiemens Dec. 17, 1988; minimum daily, 168 microsiemens June 21, 1990.
WATER TEMPERATURES: Maximum daily, 33.0°C July 25, 1987; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,970 mg/L June 25, 1981; minimum daily mean, 1 mg/L Jan. 21, 22, 1981.
SEDIMENT LOADS: Maximum daily 604,000 tons June 20, 1990; minimum daily, 4.7 tons Dec. 23, 24, 1989.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 625 microsiemens Feb. 1; minimum daily, 445 microsiemens Apr. 5.
WATER TEMPERATURES: Maximum daily, 20°C, June 1; minimum daily, 0.1°C Feb. 1.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 563 mg/L July 6; minimum daily mean, 16 mg/L Jan. 25-31.
SEDIMENT LOADS: Maximum daily, 44,000 tons July 6; minimum daily, 118 tons Jan. 30.

EXTREMES FOR CURRENT YEAR.--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Gage height, feet (00065)	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)
OCT													
07...	0930	12.86	5,470	--	755	10.1	100	8.5	540	15.0	14.4	190	224
NOV													
04...	1110	12.56	5,070	--	751	12.1	111	8.5	574	13.0	10.8	204	239
DEC													
02...	1010	12.54	5,030	--	741	14.1	106	7.9	613	2.0	2.5	199	239
JAN													
04...	0935	12.91	5,850	--	751	14.2	100	8.0	540	2.0	.5	173	210
FEB													
01...	0930	11.83	3,730	9.5	754	13.6	94	7.9	662	1.0	.1	213	257
MAR													
03...	0935	13.64	7,170	--	750	13.5	98	8.0	584	2.0	1.6	218	266
APR													
05...	0922	14.40	9,760	--	740	9.5	95	8.1	434	17.0	14.1	126	151
MAY													
03...	0919	14.67	9,670	--	750	11.0	98	8.5	591	--	9.4	199	239
JUN													
01...	0935	15.46	12,000	--	746	8.8	99	8.2	602	24.0	20.0	189	224
JUL													
05...	1030	18.98	26,600	43	748	7.2	85	7.9	468	--	23.0	130	--
AUG													
04...	0950	12.63	4,740	--	748	9.0	118	8.9	448	28.0	28.2	120	124
SEP													
01...	0925	11.59	2,860	--	747	10.1	125	9.1	408	--	24.8	100	8

05465500 IOWA RIVER AT WAPELLO, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
OCT													
07...	--	25.6	35.0	<.04	3.41	E.005	.117	.28	<.006	E.037	.006	<.005	--
NOV													
04...	5	32.4	39.1	<.04	4.39	.021	.128	.34	<.006	E.053	E.006	<.005	<.005
DEC													
02...	--	31.6	40.4	<.04	5.00	.024	.078	.192	<.006	E.041	.022	<.005	--
JAN													
04...	--	29.1	33.5	.17	5.96	.032	.137	.38	<.006	E.038	.027	<.005	<.005
FEB													
01...	--	39.5	44.0	.14	5.21	.042	.146	.035	<.006	E.035	E.006	<.005	--
MAR													
03...	.--	30.3	34.9	.10	6.50	.014	.180	.28	<.006	E.037	.021	<.005	<.005
APR													
05...	--	22.8	25.4	<.04	4.93	.016	.087	.41	<.006	E.042	1.12	<.005	--
MAY													
03...	--	26.8	30.0	<.04	9.57	.009	.070	.26	<.006	E.047	.098	<.005	<.005
JUN													
01...	--	25.6	29.8	<.04	9.73	.012	.054	.29	<.006	E.069	.107	E.004	--
JUL													
05...	--	17.3	17.3	<.04	9.99	.053	.199	.38	<.006	E.196	.134	.006	<.005
AUG													
04...	11	31.3	34.7	<.04	2.70	.040	.009	.26	<.006	E.060	.013	<.010	--
SEP													
01...	8	38.9	38.8	<.04	.51	.024	<.006	.34	<.006	E.043	<.006	<.005	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)
OCT													
07...	.093	<.050	<.010	--	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--
NOV													
04...	.114	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02
DEC													
02...	.134	<.050	<.010	--	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--
JAN													
04...	.065	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02
FEB													
01...	.053	<.050	<.010	--	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--
MAR													
03...	.048	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02
APR													
05...	.068	<.050	<.010	--	<.041	--	<.005	<.006	--	<.003	<.005	<.009	--
MAY													
03...	.123	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02
JUN													
01...	.459	<.050	<.010	--	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02
JUL													
05...	1.13	<.050	<.010	<.004	<.041	E.049	<.005	<.006	<.018	<.003	<.005	<.009	<.02
AUG													
04...	.158	<.050	<.010	--	<.041	<.020	.010	<.006	<.018	E.002	<.005	<.009	<.02
SEP													
01...	.098	<.050	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02

05465500 IOWA RIVER AT WAPELLO, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
OCT													
07...	--	--	--	<.003	--	--	<.027	<.015	.047	<.006	--	--	--
NOV													
04...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.036	<.006	<.003	<.007	<.003
DEC													
02...	--	--	--	<.003	--	--	<.027	<.015	.023	<.006	--	--	--
JAN													
04...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.031	<.006	<.003	<.007	<.003
FEB													
01...	--	--	--	<.003	--	--	<.027	<.015	.021	<.006	--	--	--
MAR													
03...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.329	<.006	<.003	<.007	<.003
APR													
05...	--	--	--	<.003	--	--	<.027	<.015	1.22	<.006	--	--	--
MAY													
03...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.116	<.006	<.003	<.007	<.003
JUN													
01...	<.004	--	<.005	<.003	--	--	<.027	<.015	.146	<.006	<.003	--	--
JUL													
05...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.273	.007	<.003	<.007	<.005
AUG													
04...	<.004	--	<.005	<.003	--	--	<.027	<.015	.045	<.006	<.003	--	--
SEP													
01...	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.021	<.006	<.003	<.007	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)
OCT													
07...	--	--	<.022	<.011	<.01	<.004	--	--	--	<.02	--	<.02	.01
NOV													
04...	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--
DEC													
02...	--	--	<.022	<.011	<.01	<.004	--	--	--	<.02	--	<.02	<.01
JAN													
04...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--
FEB													
01...	--	--	<.022	<.011	<.01	<.004	--	--	--	<.02	--	<.02	<.01
MAR													
03...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--
APR													
05...	--	--	<.022	<.011	<.01	<.004	--	--	--	<.02	--	<.02	<.01
MAY													
03...	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--
JUN													
01...	--	--	<.022	<.011	E.01	<.004	--	<.011	<.02	<.02	--	<.02	<.01
JUL													
05...	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--
AUG													
04...	--	--	<.022	<.011	.01	<.004	--	<.011	<.02	<.02	--	<.02	.02
SEP													
01...	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.02	<.034	<.02	--

05465500 IOWA RIVER AT WAPELLO, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT				
07...	--	--	<.009	43
NOV				
04...	<.010	<.006	<.009	596
DEC				
02...	--	--	<.009	67
JAN				
04...	<.010	<.006	<.009	158
FEB				
01...	--	--	<.009	16
MAR				
03...	<.010	<.006	<.009	44
APR				
05...	--	--	<.009	196
MAY				
03...	<.010	<.006	<.009	102
JUN				
01...	<.010	--	<.009	133
JUL				
05...	<.010	<.006	<.009	493
AUG				
04...	<.010	--	<.009	72
SEP				
01...	<.010	<.006	<.009	71

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan-taneous dis-charge, cfs (00061)	Temper-ature, water, deg C (00010)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment dis-charge, tons/d (80155)
OCT						
07...	1030	5,470	14.4	46	94	1,390
NOV						
04...	1050	5,070	10.8	94	43	589
DEC						
02...	1100	5,030	2.5	91	23	312
MAR						
03...	1115	7,170	--	94	50	968
MAY						
03...	0945	9,670	10.0	81	74	1,930
JUL						
05...	1033	26,600	23.0	24	493	35,400
AUG						
04...	1100	4,740	28.1	92	82	1,050

05465500 IOWA RIVER AT WAPELLO, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Bed sediment, dry svd sve dia percent <.063mm (80164)	Bed sediment, dry svd sve dia percent <.125mm (80165)	Bed sediment, dry svd sve dia percent <.25mm (80166)	Bed sediment, dry svd sve dia percent <.5 mm (80167)	Bed sediment, dry svd sve dia percent <1 mm (80168)	Bed sediment, dry svd sve dia percent <2 mm (80169)	Bed sediment, dry svd sve dia percent <4 mm (80170)	Bed sediment, dry svd sve dia percent <8 mm (80171)	Bed sediment, dry svd sve dia percent <16 mm (80172)	Bed sediment, dry svd sve dia percent <128 mm (80175)
OCT											
07...	1045	.0	.0	4	35	79	89	97	100	100	100
NOV											
04...	1050	.0	2	5	23	58	81	94	98	100	100
DEC											
02...	1100	1	3	8	35	75	87	95	99	100	100
APR											
05...	1000	.0	.0	9	61	80	87	94	99	100	100
MAY											
03...	0945	.0	1	13	55	77	86	94	98	100	100
JUN											
01...	1000	.0	.0	4	35	73	90	98	100	100	100
JUL											
05...	1033	.0	.0	3	37	69	85	94	98	100	100
AUG											
04...	1100	.0	.0	3	30	70	90	98	98	100	100

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	625	---	---	---	613	---	---	---
2	---	---	592	---	---	---	---	---	---	---	451	---
3	---	---	---	---	---	580	---	599	---	---	---	---
4	---	594	---	551	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	445	---	---	468	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	556	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

05465500 IOWA RIVER AT WAPELLO, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	0.1	---	---	---	20.0	---	---	---
2	---	---	2.4	---	---	---	---	---	---	---	28.1	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	10.8	---	0.5	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	14.1	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	14.4	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

05465500 IOWA RIVER AT WAPELLO, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	45	998	62	805	68	958	27	294	18	137	76	1,670
2	53	1,100	56	731	68	929	26	293	28	231	59	1,230
3	51	1,010	49	677	67	898	25	273	39	411	49	942
4	49	897	52	720	65	859	25	256	64	835	49	899
5	47	790	57	791	63	822	22	229	110	2,020	48	839
6	45	703	55	785	61	795	20	204	157	4,160	47	795
7	40	586	53	750	59	832	18	170	187	5,210	45	748
8	35	516	51	706	77	1,280	17	156	206	6,410	44	724
9	34	490	49	665	100	1,830	17	160	215	7,030	43	717
10	33	445	47	624	99	1,830	17	161	192	5,620	42	698
11	31	402	45	586	94	1,720	17	165	167	4,350	41	673
12	30	366	43	556	90	1,630	17	172	142	3,310	40	652
13	28	335	41	522	85	1,510	17	193	137	3,080	38	636
14	27	313	39	486	81	1,390	17	240	178	4,850	38	608
15	26	304	37	450	76	1,280	17	255	244	10,200	37	584
16	25	289	35	418	71	1,170	17	210	322	15,400	37	565
17	24	266	33	388	67	1,050	17	179	331	16,000	37	541
18	23	243	32	381	62	924	17	168	301	14,400	37	517
19	22	225	43	516	58	836	17	161	315	15,800	37	497
20	21	216	57	725	54	740	17	149	357	18,900	36	481
21	25	252	70	988	50	527	17	134	332	16,900	36	468
22	29	293	80	1,180	44	368	17	129	289	13,700	36	457
23	33	352	80	1,160	38	268	17	123	245	10,400	37	466
24	37	405	79	1,110	33	261	17	125	202	7,320	43	524
25	41	466	77	1,070	30	237	16	129	159	4,930	50	614
26	50	584	76	1,030	30	224	16	131	128	3,470	57	766
27	61	770	74	1,000	29	223	16	128	111	2,710	62	896
28	72	1,020	72	997	29	237	16	119	93	2,160	61	884
29	80	1,170	71	1,010	28	256	16	119	---	---	58	843
30	75	1,020	70	994	28	271	16	118	---	---	56	789
31	68	900	---	---	27	282	16	119	---	---	54	752
TOTAL	---	17,726	---	22,821	---	26,437	---	5,462	---	199,944	---	22,475

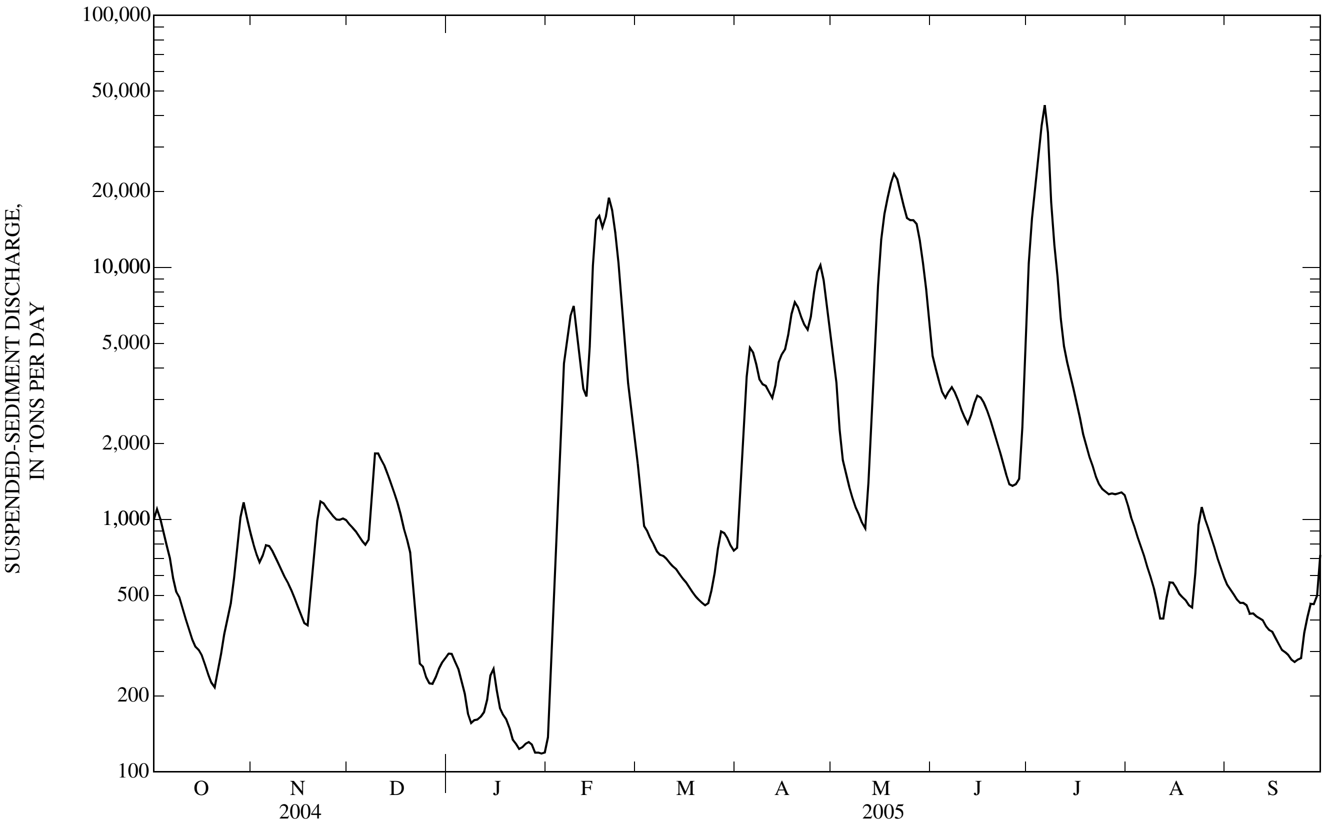
05465500 IOWA RIVER AT WAPELLO, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	54	771	147	4,510	133	4,460	230	10,400	79	1,140	71	550
2	84	1,280	123	3,490	127	3,960	296	15,600	72	1,020	70	527
3	123	2,240	87	2,270	122	3,540	363	21,200	69	935	69	505
4	161	3,690	71	1,720	117	3,200	430	27,500	66	851	68	482
5	189	4,810	69	1,520	114	3,040	507	36,400	64	780	67	467
6	179	4,600	66	1,350	119	3,210	563	44,000	61	718	66	467
7	166	4,130	64	1,220	118	3,350	476	34,200	59	649	65	457
8	153	3,600	61	1,120	114	3,190	337	18,200	56	594	64	423
9	148	3,440	59	1,050	110	2,970	272	12,300	52	538	63	424
10	143	3,390	56	972	106	2,730	231	9,170	47	472	62	413
11	139	3,200	54	922	102	2,550	190	6,270	42	405	61	406
12	136	3,040	76	1,400	100	2,400	168	4,880	42	405	60	399
13	143	3,420	113	2,620	106	2,590	159	4,210	49	489	59	378
14	156	4,200	151	4,510	114	2,880	150	3,710	55	563	57	365
15	166	4,530	209	8,480	121	3,100	142	3,290	55	562	56	359
16	175	4,740	275	12,900	118	3,050	134	2,880	54	538	55	340
17	185	5,420	322	16,300	114	2,910	126	2,530	54	508	54	321
18	199	6,520	348	18,900	109	2,720	118	2,180	53	492	53	304
19	212	7,280	374	21,500	105	2,500	112	1,960	52	478	52	298
20	209	6,950	398	23,500	100	2,270	107	1,770	51	457	51	290
21	203	6,360	385	22,400	96	2,060	103	1,630	50	448	50	278
22	196	5,920	362	19,900	92	1,870	98	1,480	65	611	51	272
23	191	5,670	338	17,600	87	1,680	94	1,380	87	951	53	278
24	201	6,380	315	15,700	83	1,510	92	1,320	99	1,120	55	282
25	218	7,990	312	15,400	79	1,380	91	1,290	95	1,010	57	356
26	234	9,580	316	15,400	79	1,360	91	1,260	92	929	60	411
27	241	10,200	304	14,900	79	1,380	91	1,270	88	847	64	463
28	220	8,910	269	12,800	80	1,450	91	1,260	85	774	62	462
29	195	7,230	233	10,400	98	2,320	90	1,270	81	699	72	498
30	171	5,720	196	8,170	163	5,650	90	1,280	78	642	78	724
31	---	---	160	5,960	---	---	87	1,250	74	590	---	---
TOTAL	---	155,211	---	288,884	---	81,280	---	277,340	---	21,215	---	12,199

YEAR 1,130,994

05465500 IOWA RIVER AT WAPELLO, IA—Continued



05465500 IOWA RIVER AT WAPELLO, IA—Continued

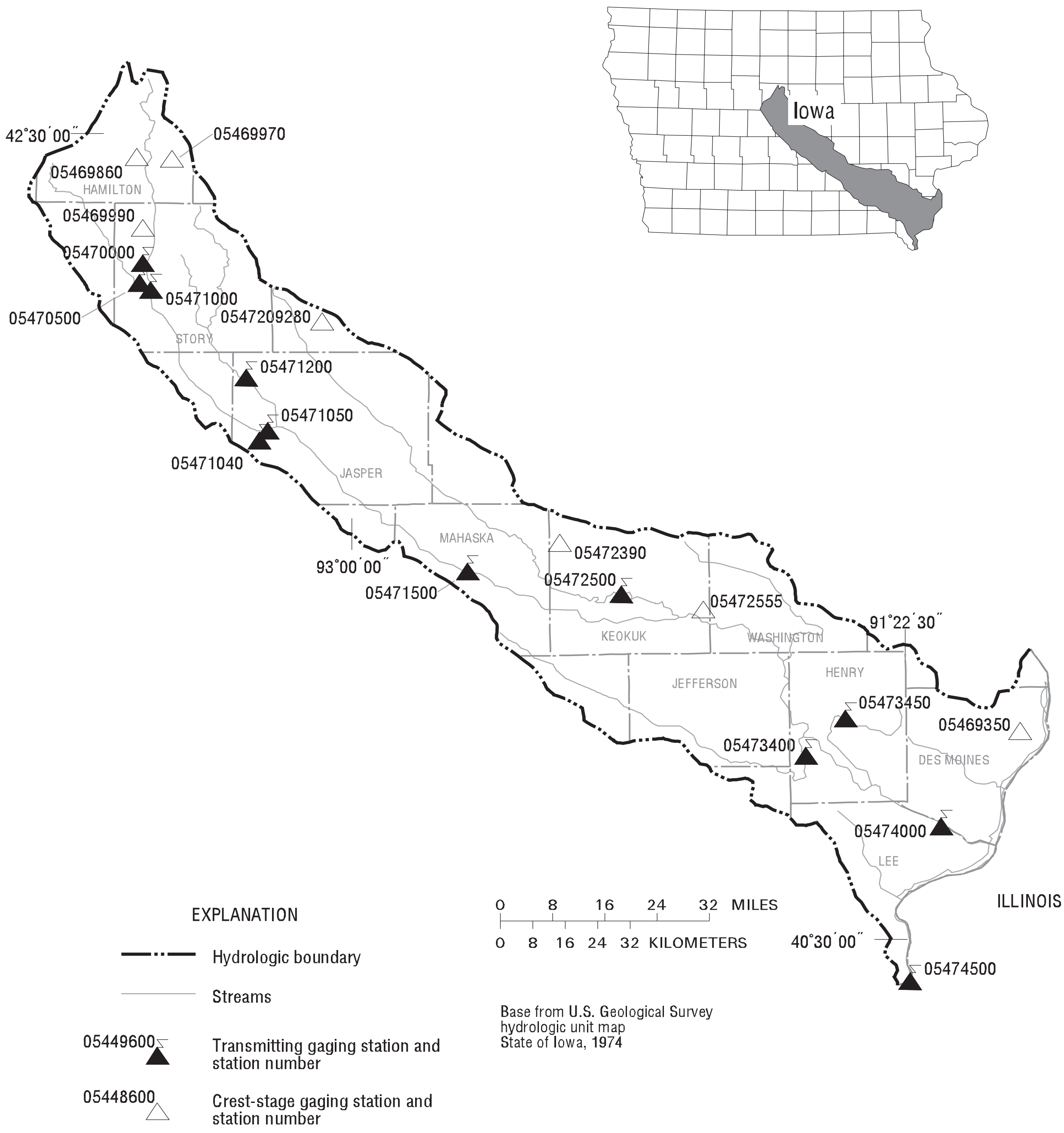


Figure 13. Locations of active continous-record and crest-stage gaging stations in the Skunk River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

05470000 SOUTH SKUNK RIVER NEAR AMES, IA

LOCATION.--Lat 42°04'06", long 93°37'09", in NW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.23, T.84 N., R.24 W., Story County, Hydrologic Unit 07080105, on left bank 2.5 mi north of Ames, 3.5 mi downstream from Keigley Branch, 5.2 mi upstream from Squaw Creek, 132.7 mi upstream from the confluence with the North Skunk River, and at mile 227.4 (revised) upstream from mouth of Skunk River.

DRAINAGE AREA.--315 mi^2.

PERIOD OF RECORD.--July 1920 to September 1927, October 1932 to September 1995, October 1, 1996 to current year. Monthly discharge only for some periods, published in WSP 1308. Prior to October 1966, published as "Skunk River near Ames".

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1308: 1921, 1925-26, 1934-35 (M), 1937 (M), 1939 (M), 1947-50 (M). WDR IA-67-1: 1965. WDR IA-74-1: 1973 (P).

GAGE.--Water-stage recorder. Concrete control since July 21, 1934 to Oct. 1, 2003. Datum of gage is 888.61 ft above NGVD of 1929 (Iowa Highway Commission benchmark). Prior to Aug. 25, 1921, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 17, 1996 reached about 14,000 ft^3/s, from rating curve extension, gage height 15.89 ft, from highwater mark.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	22	e27	e23	22	e99	105	191	183	456	65	8.8
2	9.8	36	e31	e22	22	e110	104	186	180	306	67	7.7
3	10	37	e29	e21	26	e104	107	183	175	249	60	8.2
4	8.8	35	e31	e19	32	e105	108	181	176	216	52	7.8
5	8.8	31	e28	e18	47	105	107	181	171	183	45	6.2
6	12	30	37	e17	e96	110	102	182	164	162	41	6.3
7	9.0	31	40	e19	e151	101	98	353	158	149	38	5.6
8	10	29	39	e19	e168	100	94	294	157	137	36	7.4
9	9.1	27	40	e25	e134	98	95	250	153	127	35	22
10	8.7	26	42	e20	e129	94	96	228	148	141	49	12
11	11	23	41	e22	e94	92	121	229	145	e149	62	10
12	9.6	20	38	e19	e77	86	984	302	141	e124	62	8.8
13	8.9	18	e33	e17	e137	77	1,290	1,930	137	e103	52	7.9
14	7.9	18	e28	e17	851	e79	740	2,010	138	88	45	10
15	9.5	20	e31	e14	736	81	505	1,120	130	80	40	13
16	8.4	22	e32	e14	389	79	398	759	123	72	32	10
17	7.9	24	e29	e16	268	80	361	575	119	67	27	6.1
18	8.7	28	e29	e16	215	79	333	464	117	68	26	6.6
19	9.2	38	e29	e23	184	79	308	409	113	60	27	5.6
20	11	40	e20	e24	172	76	306	352	109	59	35	6.4
21	11	41	e21	e23	157	75	291	315	115	82	22	6.0
22	12	41	e22	e19	145	74	302	304	122	90	16	5.4
23	12	40	e22	e21	137	77	338	278	117	77	13	3.9
24	12	36	e21	e24	134	75	316	252	111	66	12	3.7
25	14	33	e25	e26	133	87	288	236	343	59	14	5.0
26	14	35	e20	e24	125	105	264	226	967	68	20	42
27	22	39	e18	e24	e112	119	241	217	936	110	24	47
28	14	35	e21	24	e114	122	222	212	790	102	16	43
29	17	32	e22	22	---	123	210	210	682	81	13	37
30	21	e27	e28	22	---	120	201	196	482	68	12	29
31	19	---	e26	22	---	117	---	186	---	63	9.8	---
TOTAL	355.4	914	900	636	5,007	2,928	9,035	13,011	7,602	3,862	1,067.8	398.4
MEAN	11.5	30.5	29.0	20.5	179	94.5	301	420	253	125	34.4	13.3
MAX	22	41	42	26	851	123	1,290	2,010	967	456	67	47
MIN	7.9	18	18	14	22	74	94	181	109	59	9.8	3.7
AC-FT	705	1,810	1,790	1,260	9,930	5,810	17,920	25,810	15,080	7,660	2,120	790
CFSM	0.04	0.10	0.09	0.07	0.57	0.30	0.96	1.33	0.80	0.40	0.11	0.04
IN.	0.04	0.11	0.11	0.08	0.59	0.35	1.07	1.54	0.90	0.46	0.13	0.05

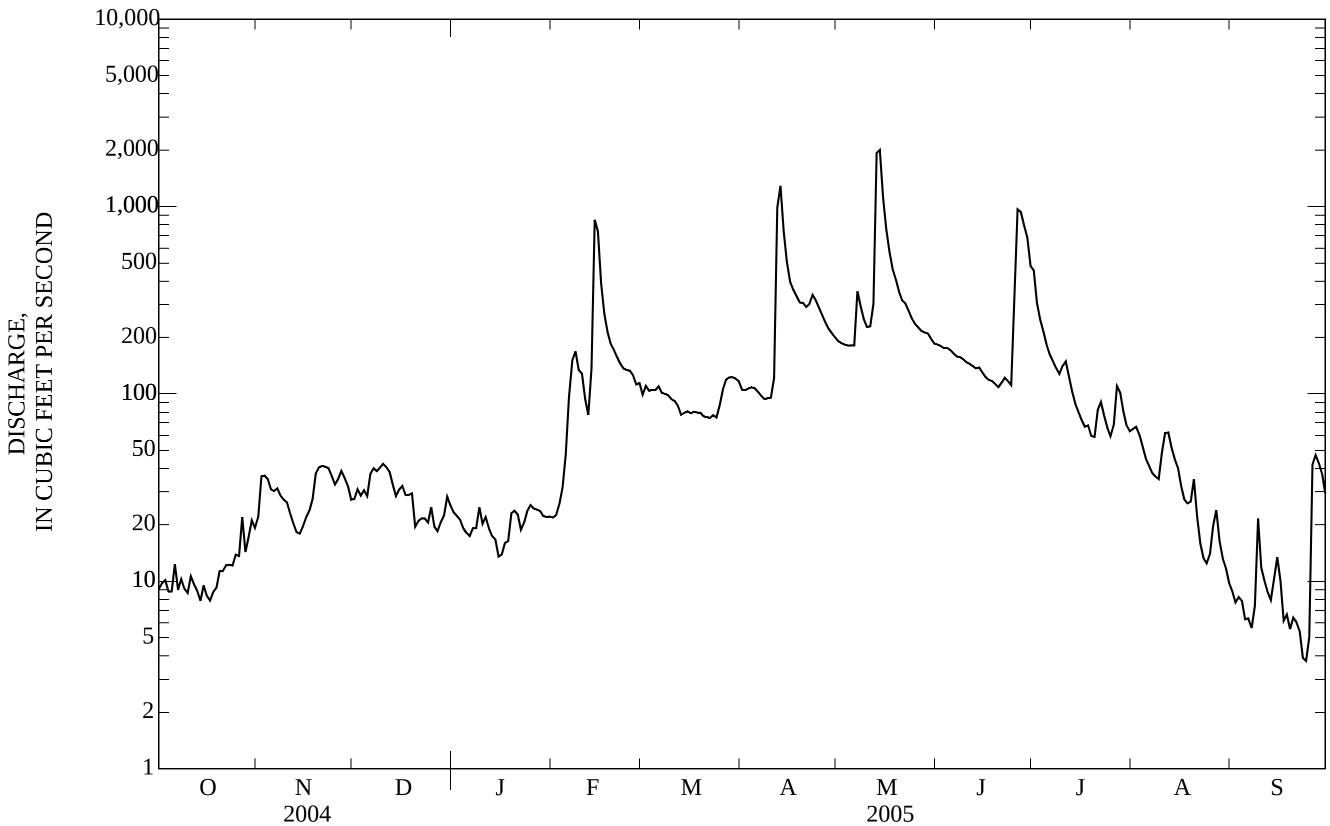
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	90.9	94.7	67.9	47.8	117	304	278	291	386	222	109	90.6
MAX	723	726	537	315	623	1,034	1,208	1,193	1,900	2,628	1,782	577
(WY)	(1987)	(1973)	(1983)	(1973)	(1984)	(1979)	(1965)	(1944)	(1947)	(1993)	(1993)	(1926)
MIN	0.12	0.14	0.00	0.00	0.31	6.35	5.44	2.28	0.01	0.02	0.09	0.08
(WY)	(1954)	(1956)	(1977)	(1977)	(1956)	(1981)	(2000)	(1934)	(1977)	(1977)	(1934)	(1976)

05470000 SOUTH SKUNK RIVER NEAR AMES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1921 - 2005	
ANNUAL TOTAL	68,318.5		45,716.6			
ANNUAL MEAN	187		125		175	
HIGHEST ANNUAL MEAN					752	1993
LOWEST ANNUAL MEAN					5.58	1956
HIGHEST DAILY MEAN	2,360	May 25	2,010	May 14	8,980	Jul 9, 1993
LOWEST DAILY MEAN	7.9	Oct 14	3.7	Sep 24	0.00	Jun 20, 1934 a
ANNUAL SEVEN-DAY MINIMUM	8.6	Oct 13	5.1	Sep 19	0.00	Jun 20, 1934
MAXIMUM PEAK FLOW			2,310	May 14	11,200	Aug 16, 1993
MAXIMUM PEAK STAGE			8.59	May 14	14.23	Aug 16, 1993 b
INSTANTANEOUS LOW FLOW			3.2	Sep 23	0.00	Jun 20, 1934
ANNUAL RUNOFF (AC-FT)	135,500		90,680		126,800	
ANNUAL RUNOFF (CFSM)	0.593		0.398		0.556	
ANNUAL RUNOFF (INCHES)	8.07		5.40		7.55	
10 PERCENT EXCEEDS	441		292		427	
50 PERCENT EXCEEDS	48		52		57	
90 PERCENT EXCEEDS	12		10		2.5	

a Many days in 1934, 1953-56, 1976-77.
b From previous site and datum of gage.
e Estimated.



05470500 SQUAW CREEK AT AMES, IA

LOCATION.--Lat 42°01'23", long 93°37'49", in NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.10, T.83 N., R.24 W., Story County, Hydrologic Unit 07080105, on left bank 65 ft downstream from Lincoln Way Bridge in Ames, 0.2 mi downstream from College Creek, and 2.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--204 mi^2.

PERIOD OF RECORD.--May 1919 to September 1927, May 1965 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: Drainage area, 1920-22 (M), 1923, 1924-25 (M), 1926, 1927 (M), WDR IA-66-1: 1965, WDR IA-71-1: 1970 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 881.00 ft. above NGVD of 1929 (levels by Iowa State University). Prior to Mar. 11, 1925, nonrecording gage at site 0.6 mi upstream at different datum. Mar. 11, 1925 to Apr. 30, 1927, nonrecording gage at site 65 ft. upstream at datum about 4 ft. higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 4, 1918 reached a stage of 14.5 ft. from floodmarks, site and datum used 1919-25, discharge, 6,900 ft^3/s. Flood of Mar. 1, 1965 reached a stage of 10.7 ft. from graph based on gage readings, at present site and datum, discharge, 4,200 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	34	e14	16	15	e79	71	99	128	187	23	4.9
2	8.4	22	e16	19	16	e84	71	96	123	146	22	4.4
3	6.1	18	e14	15	19	e77	73	93	120	126	16	3.8
4	8.1	15	18	11	26	77	73	89	124	114	12	3.2
5	7.2	13	21	9.3	63	72	72	88	118	97	10	2.9
6	5.6	12	24	9.0	e135	75	68	87	107	88	8.5	2.9
7	7.7	10	20	16	e124	75	63	95	102	82	7.6	2.4
8	6.1	8.8	19	22	e85	63	61	90	116	73	6.6	41
9	4.8	7.6	19	22	e77	62	62	88	118	67	8.0	17
10	2.2	9.3	19	18	e68	65	62	85	112	59	47	12
11	1.9	8.1	18	15	e60	61	124	128	107	52	295	7.7
12	1.8	7.0	18	15	e66	58	527	231	102	46	178	5.0
13	2.2	6.5	11	14	e238	50	466	1,120	106	41	109	25
14	2.6	6.2	10	e16	914	e52	298	820	105	36	65	15
15	2.9	5.7	15	e13	424	51	235	494	95	32	45	11
16	3.5	5.4	15	e14	292	52	203	367	88	28	32	7.7
17	4.2	5.5	15	e16	221	49	182	306	84	25	25	6.1
18	2.7	25	16	e16	179	56	168	274	80	42	20	5.3
19	3.4	28	12	e17	155	50	165	245	74	26	48	6.7
20	3.5	24	e13	e19	148	44	165	220	73	30	26	5.1
21	3.6	23	e13	e16	130	43	150	206	84	41	13	4.2
22	5.0	22	e15	e14	117	43	167	196	78	25	10	3.5
23	5.7	22	e21	e16	109	43	151	181	71	21	8.1	2.9
24	6.4	20	e20	e19	107	47	145	169	66	16	7.0	5.5
25	6.5	19	e16	e14	103	67	143	163	274	20	6.7	29
26	11	20	e11	e13	97	69	136	159	482	35	55	25
27	7.4	25	e10	14	96	81	123	152	272	22	15	32
28	5.3	20	e9.3	14	e89	85	111	146	227	16	9.2	32
29	9.6	18	e9.9	14	---	84	108	139	208	14	7.6	23
30	10	16	e14	14	---	88	104	133	194	12	6.5	21
31	6.9	---	17	15	---	81	---	128	---	36	5.6	---
TOTAL	179.3	476.1	483.2	475.3	4,173	1,983	4,547	6,887	4,038	1,655	1,147.4	367.2
MEAN	5.78	15.9	15.6	15.3	149	64.0	152	222	135	53.4	37.0	12.2
MAX	17	34	24	22	914	88	527	1,120	482	187	295	41
MIN	1.8	5.4	9.3	9.0	15	43	61	85	66	12	5.6	2.4
AC-FT	356	944	958	943	8,280	3,930	9,020	13,660	8,010	3,280	2,280	728
CFSM	0.03	0.08	0.08	0.08	0.73	0.31	0.74	1.09	0.66	0.26	0.18	0.06
IN.	0.03	0.09	0.09	0.09	0.76	0.36	0.83	1.26	0.74	0.30	0.21	0.07

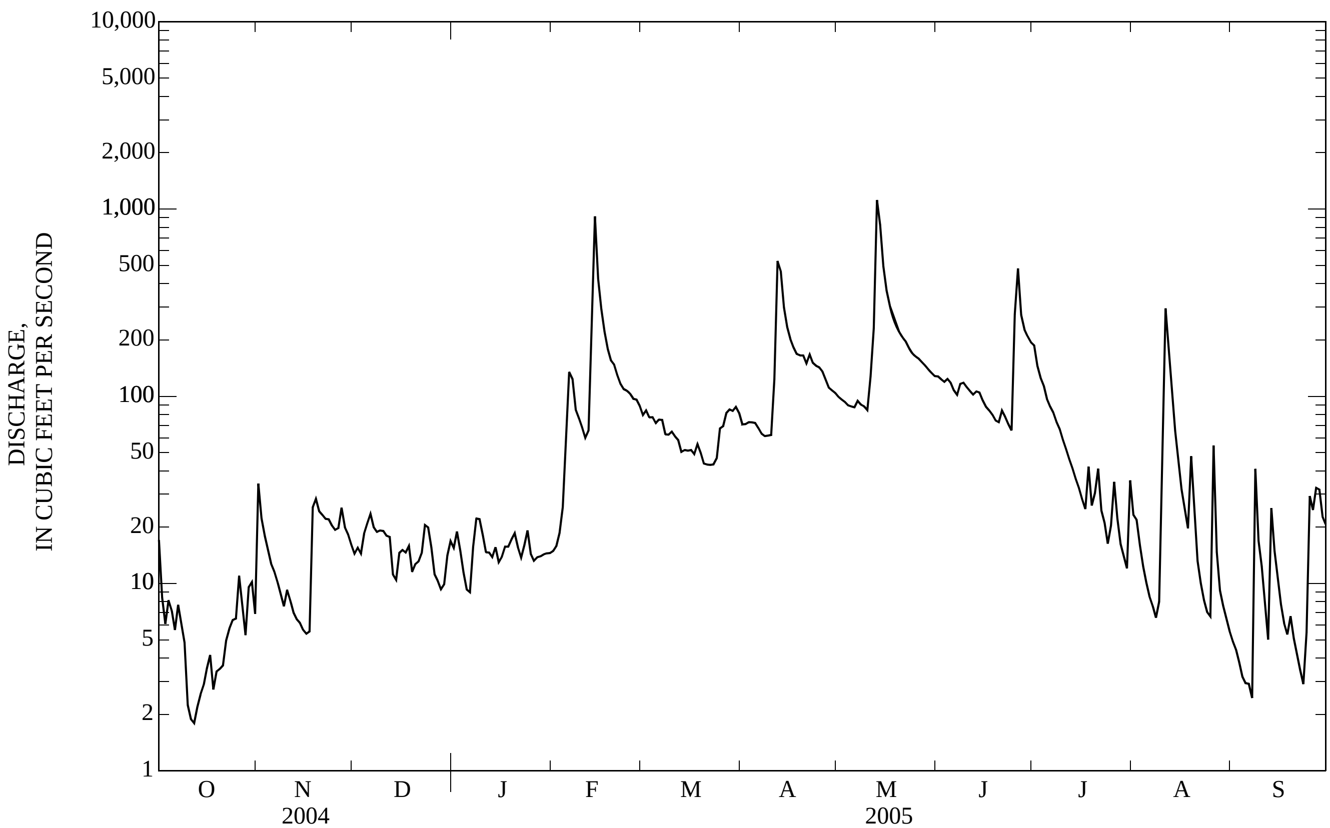
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	73.6	78.4	56.4	37.3	96.2	201	214	241	312	172	79.9	74.0
MAX	505	491	372	275	465	777	796	817	1,107	2,128	1,177	568
(WY)	(1974)	(1973)	(1983)	(1973)	(1973)	(1979)	(1999)	(1990)	(1975)	(1993)	(1993)	(1926)
MIN	0.30	0.63	0.00	0.00	0.09	2.51	4.32	1.42	2.97	3.61	0.95	0.07
(WY)	(2001)	(1967)	(1977)	(1977)	(1977)	(1981)	(1977)	(1981)	(1977)	(1927)	(1989)	(1971)

05470500 SQUAW CREEK AT AMES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1920 - 2005	
ANNUAL TOTAL	50,714.7		26,411.5			
ANNUAL MEAN	139		72.4		137	
HIGHEST ANNUAL MEAN					528	1993
LOWEST ANNUAL MEAN					13.6	1981
HIGHEST DAILY MEAN	1,960	May 25	1,120	May 13	12,200	Jul 9, 1993
LOWEST DAILY MEAN	1.8	Oct 12	1.8	Oct 12	0.00	Many years
ANNUAL SEVEN-DAY MINIMUM	2.4	Oct 10	2.4	Oct 10	0.00	Oct 7, 1971
MAXIMUM PEAK FLOW			1,570	Feb 14	24,300	Jul 9, 1993
MAXIMUM PEAK STAGE			4.97	Feb 14	18.54	Jul 9, 1993
INSTANTANEOUS LOW FLOW			1.5	Oct 12	0.00	Many years
ANNUAL RUNOFF (AC-FT)	100,600		52,390		98,980	
ANNUAL RUNOFF (CFSM)	0.679		0.355		0.670	
ANNUAL RUNOFF (INCHES)	9.25		4.82		9.10	
10 PERCENT EXCEEDS	369		166		335	
50 PERCENT EXCEEDS	28		26		44	
90 PERCENT EXCEEDS	7.3		6.1		1.8	

a ALso Oct. 13.
e Estimated.



05471000 SOUTH SKUNK RIVER BELOW SQUAW CREEK NEAR AMES, IA

LOCATION.--Lat 42°00'24", long 93°35'43", in NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.13, T.83 N., R.24 W., Story County, Hydrologic Unit 07080105, on right bank 500 ft downstream from bridge on county highway, 0.2 mi downstream from Squaw Creek, 200 ft upstream from bridge on U.S. Highway 30, 2 mi southeast of Ames, 127 mi upstream from the confluence with the North Skunk River, and at mile 221.7 (revised) upstream from mouth of Skunk River.

DRAINAGE AREA.--556 mi^2.

PERIOD OF RECORD.--October 1952 to December 1979, October 1991 to current year. Prior to October 1966, published as "Skunk River below Squaw Creek near Ames".

REVISED RECORDS.--WDR IA-95-1: Location.

GAGE.--Water-stage recorder. Datum of gage is 857.10 ft above NGVD of 1929. Prior to Oct. 1, 1973, at datum 10.00 ft higher. Prior to Oct. 1991, at site 500 ft upstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Low flows are affected by pumpage by City of Ames from surficial aquifer and do not represent the natural flow of the stream. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1944, reached a stage of 13 ft, from floodmarks, discharge, 10,000 ft^3/s, datum then in use.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	77	e45	e34	e29	e172	223	304	345	738	87	14
2	18	61	e49	e33	e39	e201	216	288	332	551	88	11
3	15	57	e45	e32	e70	e190	215	277	318	459	75	10
4	15	52	e48	e29	e76	e196	213	267	320	400	61	9.2
5	13	45	e48	e27	e133	194	211	259	313	345	50	8.0
6	12	41	62	e27	e249	189	199	255	290	302	43	7.5
7	16	39	56	e28	e275	e190	182	423	273	271	37	7.0
8	11	39	55	e29	e259	e170	176	390	293	241	32	63
9	10	36	54	e33	e254	e170	172	344	285	221	29	42
10	7.9	35	55	e30	e249	178	172	314	268	213	77	26
11	7.6	36	53	e32	e288	176	275	380	256	231	428	18
12	9.3	32	51	e29	e279	e165	1,270	516	244	193	276	14
13	7.5	28	e46	e27	e572	e141	1,680	2,710	247	168	181	40
14	6.7	28	e40	e26	1,530	e156	1,100	2,630	247	148	127	26
15	7.6	27	e43	e23	1,140	e159	840	1,640	226	130	100	26
16	6.3	26	e44	e24	738	158	705	1,210	207	113	81	17
17	6.0	26	e44	e25	556	157	632	992	195	100	67	11
18	5.9	57	e45	e27	450	164	581	871	186	116	54	10
19	5.7	67	e46	e31	386	160	539	778	175	91	89	10
20	6.7	61	e36	e30	359	146	530	696	167	88	79	7.8
21	8.4	64	e37	e29	323	141	493	637	175	118	46	7.7
22	7.0	61	e38	e27	291	140	523	599	178	132	34	6.0
23	6.7	61	e38	e28	271	139	531	551	168	106	28	5.8
24	6.3	59	e37	e32	264	144	509	513	157	85	24	8.6
25	7.1	56	e40	e34	254	188	474	485	530	78	22	49
26	23	56	e34	e33	241	201	437	467	1,310	113	74	47
27	21	65	e31	e32	e224	234	391	441	1,150	141	42	68
28	15	59	e33	e32	e206	244	354	419	1,000	146	27	69
29	15	54	e35	e30	---	245	336	395	947	109	21	54
30	26	e46	e38	e29	---	254	322	374	733	88	19	46
31	24	---	e36	e29	---	246	---	356	---	110	16	---
TOTAL	375.7	1,451	1,362	911	10,005	5,608	14,501	20,781	11,535	6,345	2,414	738.6
MEAN	12.1	48.4	43.9	29.4	357	181	483	670	384	205	77.9	24.6
MAX	29	77	62	34	1,530	254	1,680	2,710	1,310	738	428	69
MIN	5.7	26	31	23	29	139	172	255	157	78	16	5.8
AC-FT	745	2,880	2,700	1,810	19,840	11,120	28,760	41,220	22,880	12,590	4,790	1,470
CFSM	0.02	0.09	0.08	0.05	0.64	0.33	0.87	1.21	0.69	0.37	0.14	0.04
IN.	0.03	0.10	0.09	0.06	0.67	0.38	0.97	1.39	0.77	0.42	0.16	0.05

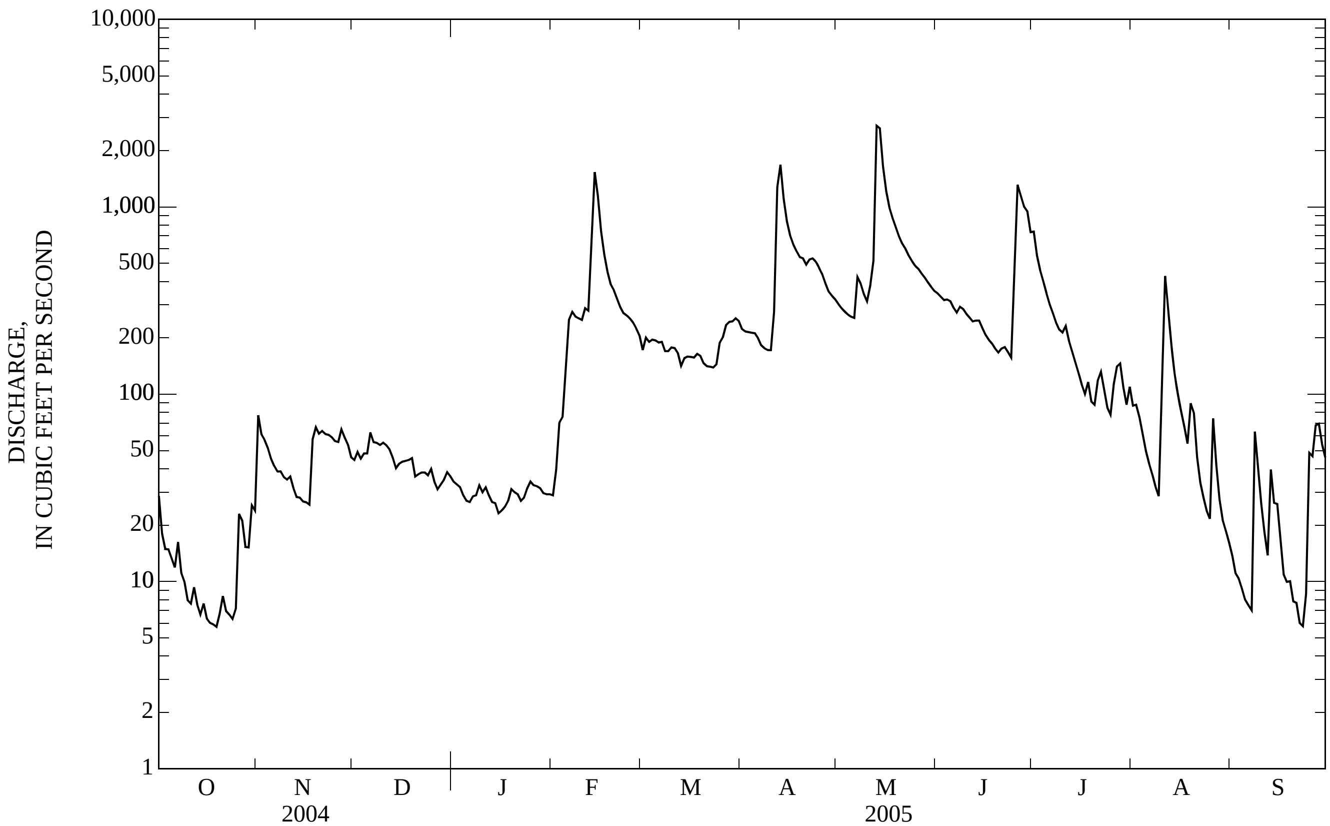
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

MEAN	152	167	113	76.5	183	514	529	562	790	483	264	148
MAX	1,079	1,270	438	599	919	2,026	2,037	1,421	2,818	5,220	3,921	1,157
(WY)	(1974)	(1973)	(1997)	(1973)	(1973)	(1979)	(1965)	(1974)	(1998)	(1993)	(1993)	(1993)
MIN	0.00	0.00	0.00	0.00	0.00	8.71	3.62	6.71	0.00	0.00	0.03	0.03
(WY)	(1957)	(1977)	(1977)	(1956)	(1956)	(1956)	(1956)	(1967)	(1977)	(1956)	(1956)	(2000)

05471000 SOUTH SKUNK RIVER BELOW SQUAW CREEK NEAR AMES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	124,920.7		76,027.3			
ANNUAL MEAN	341		208		332	
HIGHEST ANNUAL MEAN					1,475	1993
LOWEST ANNUAL MEAN					5.95	1956
HIGHEST DAILY MEAN	4,660	May 25	2,710	May 13	20,500	Jul 9, 1993
LOWEST DAILY MEAN	5.7	Oct 19	5.7	Oct 19	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	6.4	Oct 14	6.4	Oct 14	0.00	Jan 11, 1954
MAXIMUM PEAK FLOW			3,110	May 13	26,500	Jul 9, 1993
MAXIMUM PEAK STAGE			17.29	May 13	25.57	Jun 27, 1975
INSTANTANEOUS LOW FLOW			3.0	Sep 23	0.00	Dec 17, 1953
ANNUAL RUNOFF (AC-FT)	247,800		150,800		240,300	
ANNUAL RUNOFF (CFSM)	0.614		0.375		0.597	
ANNUAL RUNOFF (INCHES)	8.36		5.09		8.11	
10 PERCENT EXCEEDS	888		514		804	
50 PERCENT EXCEEDS	80		87		104	
90 PERCENT EXCEEDS	22		15		1.3	

e Estimated



05471040 SQUAW CREEK NEAR COLFAX, IA

LOCATION.--Lat 41°39'33", long 93°16'14", in NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.15, T.79 N., R.21 W., Jasper County, Hydrologic Unit 07080105, on right bank at downstream side of bridge on County Road S44 Ave. W., 2 mi southwest of Colfax.

DRAINAGE AREA.--18.4 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--May 1995 to September 30, 2005 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 785.96 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	9.9	4.3	4.0	e2.9	14	8.6	18	20	12	e6.9	e1.1
2	3.5	17	4.3	4.2	e3.3	11	8.6	17	19	11	e6.5	e1.0
3	3.2	8.0	4.3	3.9	e7.5	11	8.4	16	18	11	e6.0	e0.95
4	3.1	8.1	4.3	e3.2	e12	11	8.3	15	21	36	e5.7	e0.89
5	3.2	6.6	4.4	e2.5	e8.1	11	8.3	15	59	24	e5.4	e0.84
6	3.2	5.9	8.4	e2.4	e7.7	11	7.9	14	33	19	e5.1	e0.79
7	3.4	5.1	6.8	e2.5	e6.5	11	9.7	14	28	17	e4.5	e0.74
8	3.7	4.7	6.1	e2.5	e5.8	10	9.0	13	125	16	e4.1	e0.93
9	3.3	4.6	6.1	e2.8	e5.1	10	8.8	13	76	15	e3.9	e0.92
10	2.9	4.4	5.7	e3.1	e4.5	10	8.9	12	54	13	e3.2	e0.59
11	3.1	4.4	5.4	e3.3	e3.9	9.9	32	106	48	13	e3.4	e0.54
12	3.4	4.1	5.4	e3.3	e6.0	9.8	180	195	42	12	e3.6	e0.49
13	3.2	4.0	4.1	e3.2	92	10	76	428	53	11	e3.1	e0.44
14	3.3	3.9	e4.0	e2.6	61	9.1	55	139	85	10	e3.4	0.54
15	3.3	3.9	e4.4	e2.4	39	9.2	43	97	46	9.5	e2.9	0.62
16	3.1	3.9	4.9	e2.2	28	8.9	36	76	41	9.0	e2.7	0.48
17	2.9	3.9	4.5	e2.1	23	9.2	31	64	37	8.8	e2.6	0.41
18	3.3	4.5	e4.0	e2.3	19	9.2	27	58	33	15	e2.3	0.56
19	7.2	7.6	e2.6	e2.6	18	8.6	25	54	31	9.1	e2.1	0.35
20	4.1	7.3	e3.9	e2.6	18	8.3	24	49	29	8.7	e2.0	0.34
21	3.8	6.3	e3.5	e2.6	15	8.5	22	47	29	10	e1.9	0.36
22	3.7	6.0	e3.2	e2.5	14	8.7	56	44	27	8.8	e1.7	0.48
23	3.6	5.6	e3.0	e2.5	14	8.9	40	41	24	e8.5	e1.7	0.36
24	3.3	5.2	e2.8	e2.7	13	9.3	34	35	20	e8.1	e1.6	0.69
25	3.2	5.0	e3.0	e3.0	13	12	31	31	21	e8.0	e1.7	0.63
26	4.1	5.0	e3.5	e3.4	12	11	28	29	19	11	e1.5	0.55
27	4.5	5.2	4.0	e2.9	12	11	24	27	17	e8.7	e1.5	0.41
28	4.0	4.6	4.4	e2.6	12	10	22	25	21	e8.1	e1.2	0.71
29	4.4	4.5	4.3	e2.6	---	9.4	21	24	16	e7.4	e1.2	0.75
30	6.7	4.5	5.3	e2.5	---	9.5	19	23	15	e7.2	e1.2	0.56
31	4.4	---	4.3	e2.6	---	9.1	---	21	---	e7.4	e1.1	---
TOTAL	115.6	173.7	139.2	87.6	476.3	309.6	912.5	1,760	1,107	373.3	95.7	19.02
MEAN	3.73	5.79	4.49	2.83	17.0	9.99	30.4	56.8	36.9	12.0	3.09	0.63
MAX	7.2	17	8.4	4.2	92	14	180	428	125	36	6.9	1.1
MIN	2.9	3.9	2.6	2.1	2.9	8.3	7.9	12	15	7.2	1.1	0.34
AC-FT	229	345	276	174	945	614	1,810	3,490	2,200	740	190	38
CFSM	0.20	0.31	0.24	0.15	0.92	0.54	1.65	3.09	2.01	0.65	0.17	0.03
IN.	0.23	0.35	0.28	0.18	0.96	0.63	1.84	3.56	2.24	0.75	0.19	0.04

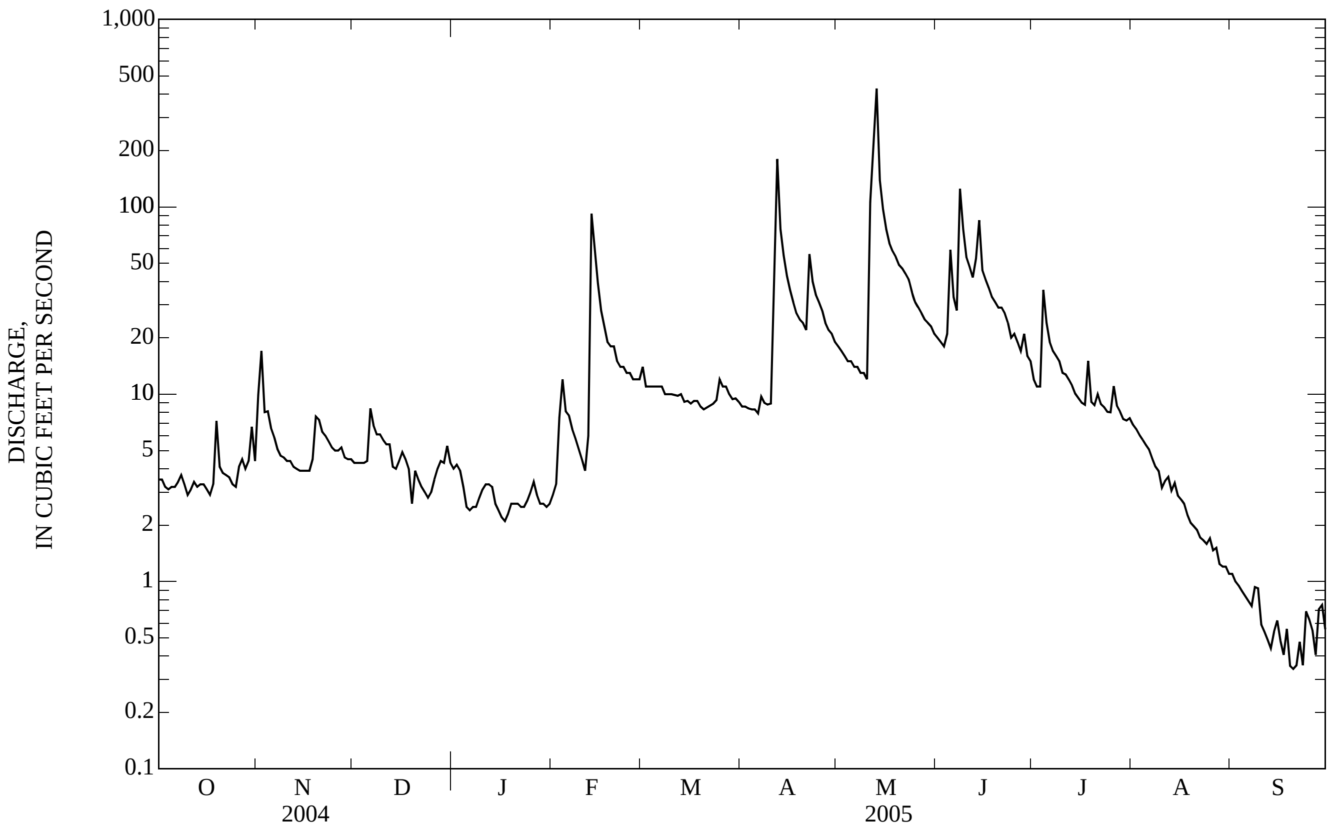
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.53	5.57	3.93	3.56	16.0	14.8	15.2	36.9	31.3	14.8	6.09	1.87
MAX	8.91	16.2	9.33	9.52	65.0	48.4	45.4	65.7	83.0	34.3	15.8	4.19
(WY)	(1998)	(2004)	(1998)	(1998)	(1996)	(2001)	(1998)	(1996)	(1998)	(1998)	(1999)	(2004)
MIN	0.64	1.02	0.82	0.84	1.51	1.81	3.03	13.5	12.5	6.78	1.90	0.63
(WY)	(2004)	(2001)	(2001)	(2002)	(2002)	(2002)	(2000)	(2001)	(1997)	(2001)	(2001)	(2005)

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	6,143.5		5,569.52			
ANNUAL MEAN	16.8		15.3		12.9	
HIGHEST ANNUAL MEAN					25.4	1998
LOWEST ANNUAL MEAN					5.05	2002
HIGHEST DAILY MEAN	262	Feb 20	428	May 13	847	Jun 18, 1998
LOWEST DAILY MEAN	1.3	Aug 27	0.34	Sep 20	0.27	Jan 1, 2002
ANNUAL SEVEN-DAY MINIMUM	2.9	Sep 23	0.41	Sep 17	0.37	Dec 29, 2001
MAXIMUM PEAK FLOW			1,430	May 12	7,020	Jun 18, 1998
MAXIMUM PEAK STAGE			12.83	May 12	13.94	Jun 18, 1998
INSTANTANEOUS LOW FLOW			0.14	Sep 21	0.00	Sep 11, 2003
ANNUAL RUNOFF (AC-FT)	12,190		11,050		9,380	
ANNUAL RUNOFF (CFSM)	0.912		0.829		0.703	
ANNUAL RUNOFF (INCHES)	12.42		11.26		9.56	
10 PERCENT EXCEEDS	30		34		29	
50 PERCENT EXCEEDS	10		6.8		5.0	
90 PERCENT EXCEEDS	3.5		1.6		1.0	

e Estimated



05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1995 to September 30, 2005 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1995 to September 30, 2005 (discontinued).
WATER TEMPERATURES: May 1995 to September 30, 2005 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: May 1995 to September 30, 2005 (discontinued).

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 680 microsiemens Jan. 4, 2002; minimum daily, 170 microsiemens May 24, 1996.
WATER TEMPERATURES: Maximum daily, 32.0°C July 29, 1999; minimum daily, 0.0°C many days during winter.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,270 mg/L May 24, 1996; minimum daily mean, 6.0 mg/L Apr. 22, 1996.
SEDIMENT LOADS: Maximum daily, 11,400 tons June 18, 1998; minimum daily, 0.01 tons Jan. 6, 7, 1996, Oct. 4, 8, 2001, Oct. 6, 9, 2003, and Sept. 27, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 621 microsiemens Sept. 11; minimum daily, 305 microsiemens June 8.
WATER TEMPERATURES: Maximum daily, 28.0°C July 25; minimum daily, 0.0°C many days during winter.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,180 mg/L May 13; minimum daily mean, 11 mg/L Sept. 27.
SEDIMENT LOADS: Maximum daily, 1,910 tons May 13; minimum daily, 0.01 tons Sept. 27.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	592	549	416	---	545	---	489	539	559	508	594	502
2	597	579	460	499	---	---	533	466	504	442	593	525
3	494	582	506	473	475	---	541	555	447	437	490	---
4	557	---	442	443	450	---	529	---	503	529	577	---
5	572	548	489	483	---	---	489	505	554	572	496	599
6	591	---	568	479	---	---	505	---	543	579	572	543
7	563	---	532	489	546	---	533	---	519	462	590	592
8	---	503	446	---	526	468	538	551	305	---	556	---
9	---	450	464	415	---	545	517	546	537	---	576	---
10	559	---	419	502	533	493	522	551	547	---	---	---
11	509	---	486	451	543	479	---	471	519	---	---	621
12	584	---	503	433	---	554	498	437	539	---	---	560
13	591	459	415	420	448	500	537	398	558	---	---	566
14	530	---	460	437	525	482	548	---	541	---	---	586
15	598	422	427	352	541	485	538	543	---	---	---	531
16	---	431	435	448	541	479	547	546	---	---	---	556
17	---	450	437	504	545	464	548	546	---	588	---	441
18	556	470	436	444	550	521	552	545	---	611	---	459
19	568	573	---	442	531	460	551	550	---	515	---	528
20	589	479	440	477	---	532	539	554	---	535	---	584
21	604	436	454	---	---	543	553	550	---	541	594	---
22	587	489	445	---	---	506	539	550	---	530	604	---
23	---	438	446	484	---	---	549	553	---	491	532	---
24	599	483	430	474	---	---	554	549	---	578	495	---
25	600	---	---	492	---	533	555	548	---	525	479	578
26	574	455	423	542	---	540	553	543	568	539	521	574
27	601	---	475	562	---	514	548	554	564	589	553	617
28	595	502	406	501	---	497	487	544	538	530	567	554
29	574	413	412	472	---	563	567	---	---	572	513	572
30	---	432	406	425	---	529	565	560	460	504	455	586
31	---	---	417	442	---	504	---	557	---	557	619	---

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	11.0	4.0	---	0.0	---	13.0	7.0	17.0	22.0	24.0	23.0
2	12.0	10.0	5.0	3.0	---	---	13.0	9.0	19.0	22.0	25.0	22.0
3	15.0	8.4	4.0	1.0	4.0	---	14.0	13.0	19.0	19.0	27.0	---
4	13.0	10.0	5.0	0.0	5.0	---	17.0	---	20.0	20.0	25.0	---
5	12.0	10.0	5.0	0.0	---	---	18.0	16.0	18.0	22.0	24.0	23.0
6	15.0	---	6.0	0.0	---	---	18.0	---	21.0	22.0	24.0	23.0
7	14.0	---	6.0	0.0	2.0	---	14.0	---	21.0	23.0	25.0	21.0
8	---	9.0	5.0	---	1.0	5.0	13.0	18.0	16.0	---	26.0	---
9	---	10.0	6.0	0.0	---	5.0	18.0	17.0	19.0	---	27.0	---
10	15.0	---	5.0	0.0	0.0	5.0	18.0	19.0	19.0	---	---	---
11	13.0	7.0	5.0	0.0	3.0	3.0	---	14.0	19.0	---	---	23.0
12	13.0	6.0	5.0	0.0	---	1.0	11.0	10.0	19.0	---	---	24.0
13	12.0	5.0	1.0	0.0	4.0	4.0	12.0	11.0	20.0	---	---	---
14	10.0	---	1.0	0.0	7.0	5.0	14.0	---	17.0	---	---	21.0
15	9.0	8.0	0.0	0.0	5.0	7.0	14.0	13.0	---	---	---	16.0
16	---	12.0	0.0	0.0	4.0	10.0	12.0	14.0	---	---	---	19.0
17	---	14.0	0.0	0.0	5.0	8.0	16.0	16.0	---	25.0	---	20.0
18	9.0	12.0	0.0	0.0	5.0	6.0	16.0	12.0	---	24.0	---	23.0
19	10.0	11.0	---	0.0	5.0	3.0	16.0	18.0	---	24.0	---	23.0
20	11.0	9.0	0.0	0.0	---	8.0	15.0	13.0	---	26.0	---	21.0
21	12.0	8.0	0.0	---	---	7.0	11.0	13.0	---	26.0	25.0	---
22	14.0	8.0	0.0	---	---	4.0	12.0	18.0	---	26.0	25.0	---
23	---	7.0	0.0	0.0	---	---	12.0	18.0	---	26.0	21.0	---
24	15.0	5.0	0.0	0.0	---	---	13.0	18.0	---	26.0	20.0	---
25	14.0	---	---	0.0	---	5.0	11.0	15.0	---	28.0	23.0	19.0
26	12.0	8.0	0.0	0.0	---	8.0	9.0	17.0	23.0	20.0	24.0	18.0
27	13.0	---	0.0	0.0	---	11.0	10.0	16.0	22.0	22.0	25.0	19.0
28	14.0	5.0	0.0	0.0	---	13.0	10.0	17.0	22.0	23.0	24.0	14.0
29	20.0	5.0	0.0	0.0	---	14.0	10.0	---	---	21.0	24.0	13.0
30	---	4.0	0.0	0.0	---	14.0	10.0	17.0	22.0	23.0	25.0	15.0
31	---	---	0.0	0.0	---	13.0	---	17.0	---	21.0	24.0	---

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

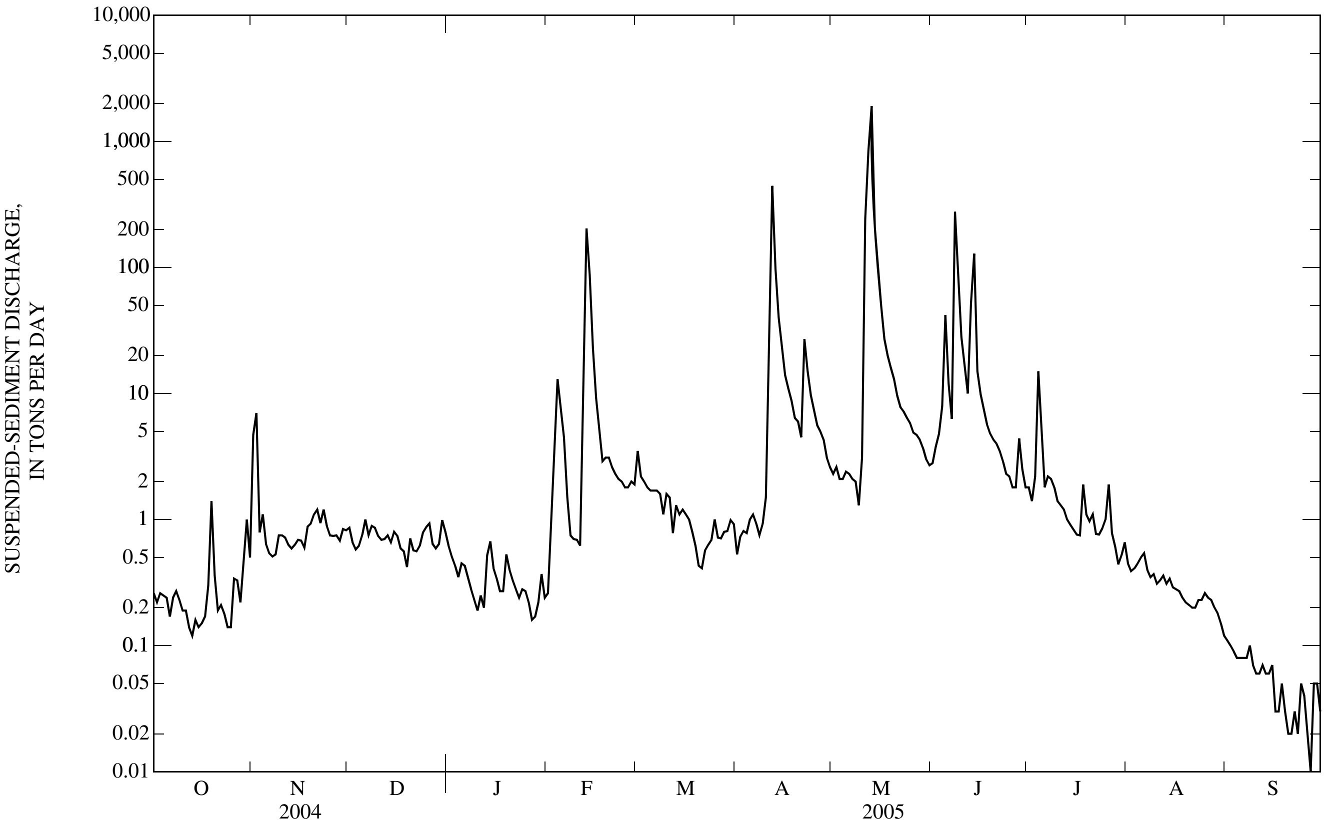
Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	28	0.26	147	4.7	73	0.86	58	0.62	33	0.26	90	3.5
2	24	0.22	123	7.0	58	0.66	45	0.51	113	1.0	72	2.2
3	30	0.26	37	0.79	50	0.58	40	0.43	223	4.5	64	2.0
4	29	0.25	51	1.1	54	0.62	40	0.35	412	13	60	1.8
5	27	0.24	36	0.64	63	0.75	66	0.45	354	7.7	56	1.7
6	20	0.17	34	0.54	46	1.0	67	0.43	215	4.5	56	1.7
7	26	0.24	37	0.51	41	0.75	52	0.35	84	1.5	58	1.7
8	28	0.27	41	0.53	54	0.89	41	0.28	48	0.75	58	1.6
9	26	0.23	60	0.75	52	0.86	31	0.23	51	0.70	42	1.1
10	24	0.19	64	0.75	48	0.74	23	0.19	57	0.69	60	1.6
11	22	0.19	61	0.72	47	0.69	28	0.25	59	0.62	55	1.5
12	16	0.14	58	0.63	48	0.70	22	0.20	383	6.2	30	0.78
13	14	0.12	55	0.59	68	0.75	60	0.52	784	204	45	1.3
14	18	0.16	59	0.63	61	0.66	95	0.67	503	87	46	1.1
15	16	0.14	65	0.69	67	0.80	63	0.41	206	23	50	1.2
16	17	0.15	64	0.68	56	0.74	58	0.34	119	9.2	47	1.1
17	21	0.17	57	0.60	48	0.59	47	0.27	85	5.3	40	1.0
18	31	0.30	72	0.88	52	0.56	43	0.27	55	2.9	32	0.80
19	68	1.4	46	0.93	60	0.42	76	0.53	64	3.1	27	0.62
20	33	0.36	56	1.1	67	0.71	57	0.40	65	3.1	19	0.43
21	19	0.19	71	1.2	60	0.57	47	0.33	62	2.6	18	0.41
22	21	0.21	58	0.94	65	0.56	41	0.28	59	2.3	24	0.57
23	19	0.18	79	1.2	77	0.62	36	0.24	57	2.1	26	0.63
24	16	0.14	63	0.89	105	0.79	38	0.28	55	2.0	27	0.69
25	16	0.14	55	0.75	107	0.87	33	0.27	53	1.8	31	1.0
26	29	0.34	54	0.74	98	0.93	24	0.22	56	1.8	23	0.72
27	27	0.33	54	0.75	59	0.64	20	0.16	61	2.0	24	0.71
28	20	0.22	55	0.68	50	0.59	24	0.17	59	1.9	29	0.80
29	37	0.48	70	0.84	56	0.64	31	0.22	---	---	32	0.81
30	56	1.0	68	0.82	69	0.99	55	0.37	---	---	38	0.99
31	42	0.50	---	---	69	0.80	34	0.24	---	---	37	0.92
TOTAL	---	9.19	---	33.57	---	22.33	---	10.48	---	395.52	---	36.98

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	APRIL Mean concentration (mg/l)	APRIL Load (tons/day)	MAY Mean concentration (mg/l)	MAY Load (tons/day)	JUNE Mean concentration (mg/l)	JUNE Load (tons/day)	JULY Mean concentration (mg/l)	JULY Load (tons/day)	AUGUST Mean concentration (mg/l)	AUGUST Load (tons/day)	SEPTEMBER Mean concentration (mg/l)	SEPTEMBER Load (tons/day)
1	23	0.53	47	2.3	51	2.8	54	1.8	24	0.45	37	0.11
2	31	0.73	56	2.6	74	3.8	46	1.4	22	0.39	36	0.10
3	36	0.81	49	2.1	96	4.8	75	2.2	25	0.41	35	0.09
4	34	0.78	51	2.1	129	7.9	147	15	29	0.45	35	0.08
5	46	1.0	59	2.4	235	42	72	5.0	34	0.50	34	0.08
6	52	1.1	59	2.3	134	12	35	1.8	39	0.54	39	0.08
7	35	0.93	57	2.1	83	6.3	48	2.2	33	0.40	42	0.08
8	31	0.75	55	2.0	518	276	49	2.1	32	0.35	40	0.10
9	39	0.92	37	1.3	421	93	44	1.8	35	0.37	38	0.07
10	65	1.5	96	3.1	190	28	39	1.4	36	0.31	39	0.06
11	573	67	759	244	131	17	37	1.3	36	0.33	42	0.06
12	884	444	1,170	849	92	10	36	1.2	37	0.36	52	0.07
13	460	98	1,180	1,910	222	52	35	1.0	37	0.31	51	0.06
14	268	40	548	208	423	129	34	0.91	37	0.34	40	0.06
15	199	23	399	106	118	15	32	0.83	37	0.29	39	0.07
16	142	14	234	49	90	9.9	31	0.76	38	0.28	23	0.03
17	131	11	157	27	76	7.5	32	0.75	38	0.27	30	0.03
18	120	8.8	128	20	63	5.7	47	1.9	38	0.24	34	0.05
19	96	6.4	113	16	57	4.8	46	1.1	38	0.22	28	0.03
20	92	6.0	102	13	54	4.3	41	0.97	39	0.21	20	0.02
21	76	4.5	75	9.6	51	4.0	42	1.1	39	0.20	20	0.02
22	178	27	65	7.8	48	3.5	32	0.77	44	0.20	21	0.03
23	137	15	66	7.2	45	2.9	33	0.76	50	0.23	20	0.02
24	105	9.7	69	6.4	42	2.3	39	0.85	54	0.23	24	0.05
25	89	7.4	68	5.8	39	2.2	48	1.0	57	0.26	21	0.04
26	75	5.6	63	4.9	36	1.8	63	1.9	59	0.24	15	0.02
27	76	5.0	65	4.7	40	1.8	33	0.78	58	0.23	11	0.01
28	71	4.3	63	4.3	79	4.4	28	0.61	61	0.20	25	0.05
29	54	3.1	56	3.7	58	2.5	22	0.44	57	0.18	23	0.05
30	50	2.6	49	3.0	47	1.8	27	0.52	47	0.15	21	0.03
31	---	---	48	2.7	---	---	33	0.66	39	0.12	---	---
TOTAL	---	811.45	---	3,524.4	---	759.0	---	54.81	---	9.26	---	1.65
YEAR	5,668.64											

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued



05471040 SQUAW CREEK NEAR COLFAX, IA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--July 1995 to September 30, 2005 (discontinued).

INSTRUMENTATION.--Tipping bucket rain gage.

REMARKS.--Records good except for winter period, which is poor due to intermittent snow accumulation and subsequent melting.

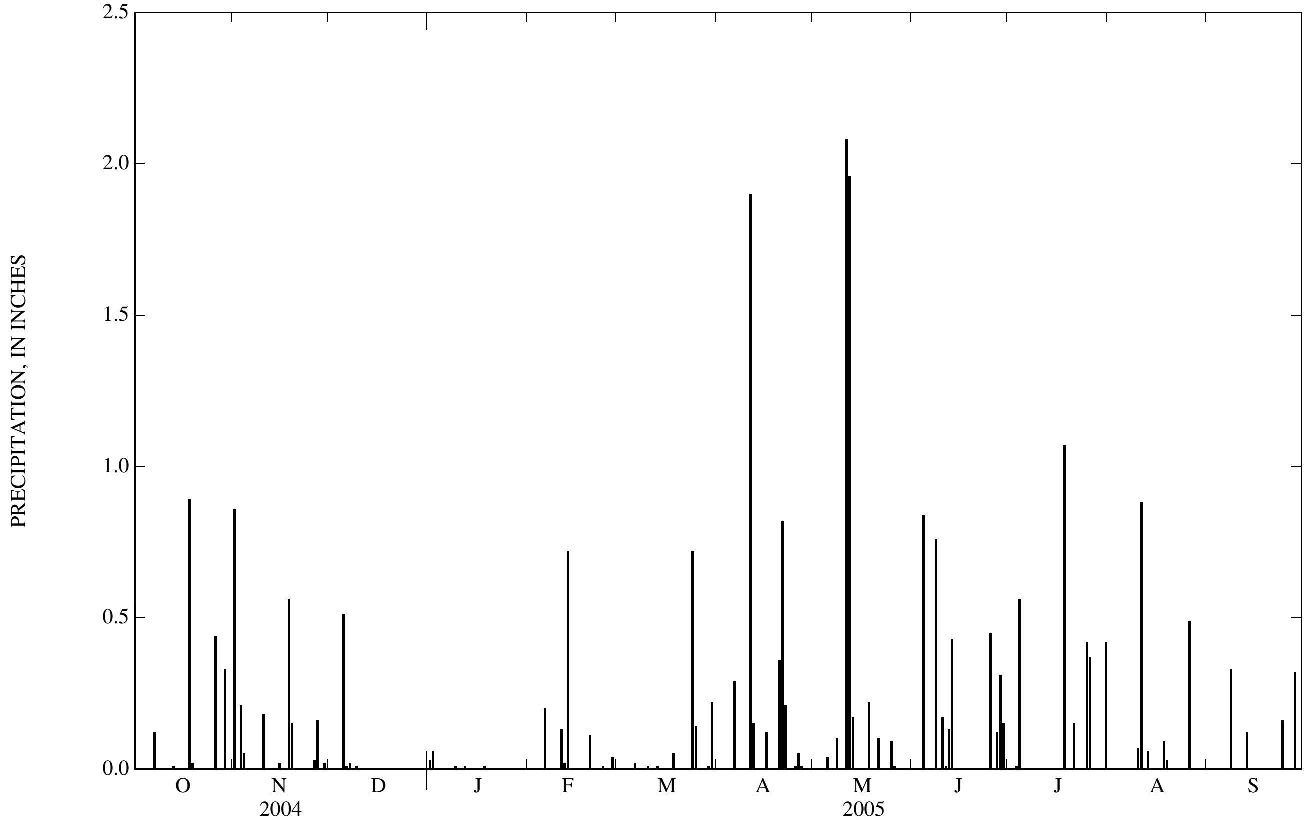
EXTREMES FOR PERIOD OF RECORD.--Maximum daily accumulation, 3.25 in., November 3, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 2.08 in., May 11.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.55	0.86	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.56	0.00	0.00
5	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
6	0.00	0.00	0.01	0.00	0.20	0.02	0.29	0.00	0.00	0.00	0.00	0.00
7	0.12	0.00	0.02	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	0.10	0.76	0.00	0.00	0.33
9	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.18	0.00	0.00	0.00	0.01	0.00	0.00	0.17	0.00	0.07	0.00
11	0.00	0.00	0.00	0.00	0.13	0.00	1.90	2.08	0.01	0.00	0.88	0.00
12	0.00	0.00	0.00	0.01	0.02	0.00	0.15	1.96	0.13	0.00	0.00	0.00
13	0.01	0.00	0.00	0.00	0.72	0.01	0.00	0.17	0.43	0.00	0.06	0.12
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	0.02	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	0.12	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	0.89	0.56	0.00	0.01	0.00	0.05	0.00	0.22	0.00	1.07	0.09	0.00
19	0.02	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
20	0.00	0.00	0.00	0.00	0.11	0.00	0.36	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.10	0.00	0.15	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.21	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	0.01	0.72	0.00	0.00	0.00	0.00	0.00	0.16
25	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.09	0.45	0.42	0.00	0.00
26	0.44	0.03	0.00	0.00	0.00	0.00	0.05	0.01	0.00	0.37	0.49	0.00
27	0.00	0.16	0.00	0.00	0.04	0.00	0.01	0.00	0.12	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.32
29	0.33	0.02	0.00	0.00	---	0.01	0.00	0.00	0.15	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.22	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.42	0.00	---
TOTAL	2.36	2.24	0.55	0.12	1.23	1.18	3.92	4.77	3.37	3.00	1.62	0.93
MEAN	0.08	0.07	0.02	0.00	0.04	0.04	0.13	0.15	0.11	0.10	0.05	0.03
MAX	0.89	0.86	0.51	0.06	0.72	0.72	1.90	2.08	0.84	1.07	0.88	0.33
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

05471040 SQUAW CREEK NEAR COLFAX, IA—Continued



05471050 SOUTH SKUNK RIVER AT COLFAX, IA

LOCATION.--Lat 41°40'53", long 93°14'47", in NE1/4 NE1/4 SW1/4 sec.1, T.79 N., R.21 W., Jasper County, Hydrologic Unit 07080105, on left bank 15 ft downstream of bridge on State Highway 117 at north edge of Colfax, 1 mi downstream from Sugar Creek, 2.8 mi upstream from Indian Creek, 95.1 mi upstream from the confluence with the North Skunk River, and at mile 189.8 (revised) upstream from mouth of Skunk River.

DRAINAGE AREA.--803 mi^2.

PERIOD OF RECORD.--June 1974 to June 1977, partial-record low-flow measurement site; October 1985 to current year.

REVISED RECORDS.--Daily discharge for Aug. 26, 27, and Sept. 6-30, 2000.

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with stallite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	e107	e172	e124	e96	e376	320	591	618	1,040	153	48
2	83	e176	e181	e117	e94	e382	295	559	591	916	128	44
3	86	e220	e160	e116	e109	e375	288	535	566	754	121	43
4	70	e197	e168	e111	e136	e374	287	514	570	721	105	41
5	68	e173	e168	e98	e177	366	283	496	603	658	90	39
6	69	e166	e191	e84	e233	349	280	483	539	e550	77	37
7	68	e160	e201	e89	e324	349	269	482	499	e484	68	37
8	74	e152	e194	e87	e326	334	250	653	699	e443	59	39
9	68	e145	e177	e95	e319	311	252	593	652	e420	52	59
10	61	e138	171	e88	e341	307	243	538	561	e376	49	61
11	59	e132	162	e91	e340	307	280	1,100	522	e356	221	43
12	58	e123	e157	e96	e269	299	1,440	1,480	487	361	690	40
13	58	e114	e122	e86	e500	e264	2,690	4,420	493	323	429	38
14	57	e112	e77	e65	1,290	e257	2,130	4,460	608	296	320	40
15	56	e112	e120	e64	2,180	261	1,510	3,590	516	270	255	44
16	53	e109	e170	e64	1,570	258	1,220	2,640	460	247	215	40
17	50	e104	e169	e65	1,110	252	1,040	2,060	420	221	188	38
18	51	e114	e149	e66	872	251	946	1,710	389	245	167	36
19	e53	e157	e113	e73	748	259	877	1,530	365	223	142	34
20	e54	e212	e145	e79	689	245	1,010	1,330	343	186	224	33
21	e54	e228	e139	e77	639	232	1,020	1,210	326	183	222	32
22	e55	e216	e132	e69	580	225	1,290	1,130	329	190	136	31
23	e55	e211	e123	e72	538	224	1,170	1,040	323	199	108	30
24	e53	e205	e123	e80	515	225	1,040	957	302	166	93	37
25	e53	e202	e131	e89	500	264	944	888	914	140	85	40
26	e70	e202	e123	e95	477	309	867	849	2,270	158	89	49
27	e82	e208	e121	e92	456	319	788	799	1,940	175	122	68
28	e75	e200	e123	e89	441	342	708	758	1,610	181	100	98
29	e71	e184	e128	e86	---	346	660	718	1,420	196	74	116
30	e72	e170	e137	e89	---	343	624	681	1,180	154	62	112
31	e77	---	e129	e93	---	352	---	644	---	141	54	---
TOTAL	1,983	4,949	4,576	2,689	15,869	9,357	25,021	39,438	21,115	10,973	4,898	1,447
MEAN	64.0	165	148	86.7	567	302	834	1,272	704	354	158	48.2
MAX	86	228	201	124	2,180	382	2,690	4,460	2,270	1,040	690	116
MIN	50	104	77	64	94	224	243	482	302	140	49	30
AC-FT	3,930	9,820	9,080	5,330	31,480	18,560	49,630	78,230	41,880	21,760	9,720	2,870
CFSM	0.08	0.21	0.18	0.11	0.71	0.38	1.04	1.58	0.88	0.44	0.20	0.06
IN.	0.09	0.23	0.21	0.12	0.74	0.43	1.16	1.83	0.98	0.51	0.23	0.07

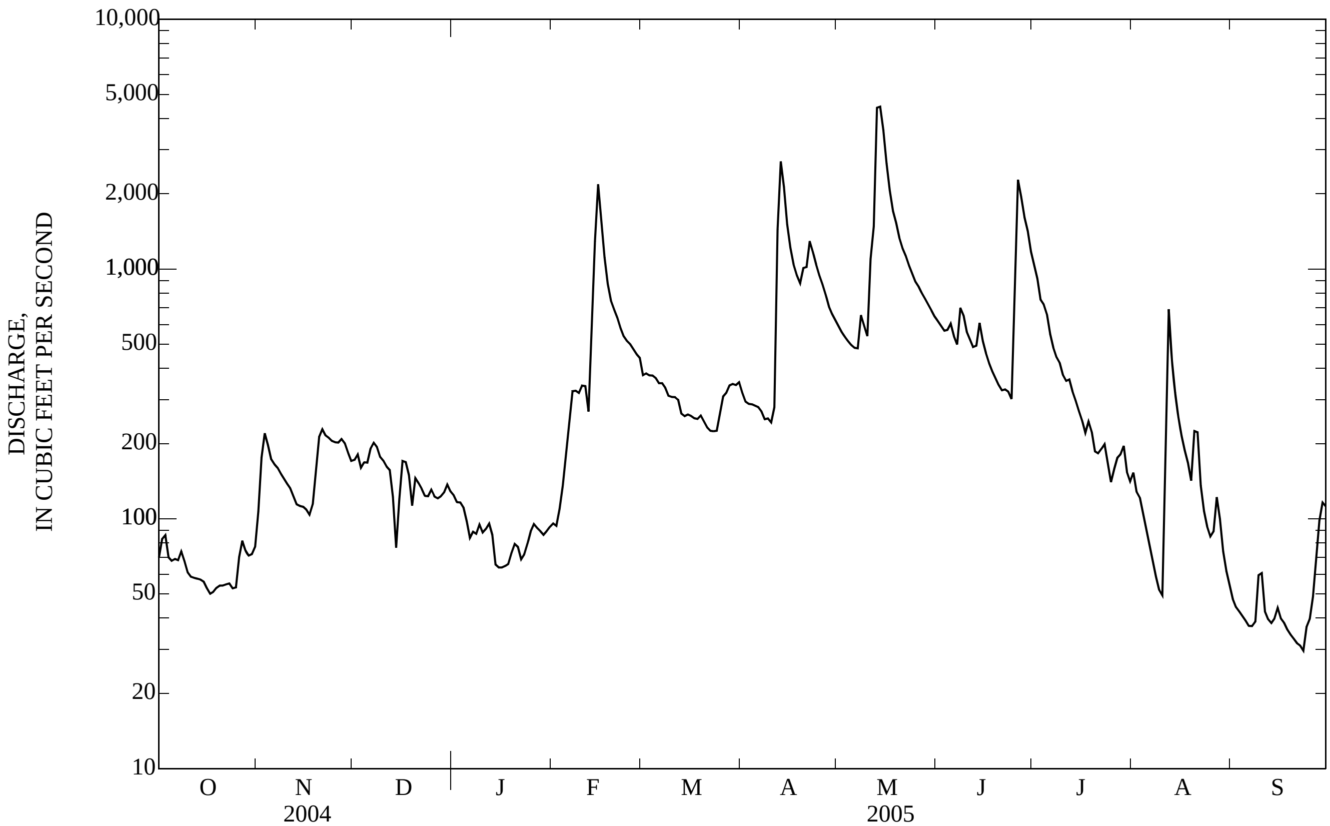
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	263	256	225	145	320	716	815	1,147	1,294	907	447	251
MAX	1,807	981	626	451	849	2,094	2,435	2,481	3,844	5,640	3,549	1,911
(WY)	(1987)	(1997)	(1993)	(1992)	(1997)	(1993)	(1991)	(1991)	(1998)	(1993)	(1993)	(1993)
MIN	11.9	17.5	12.4	12.3	16.2	77.5	57.0	113	96.7	31.8	12.6	6.75
(WY)	(1989)	(1989)	(1989)	(1989)	(1990)	(2000)	(2000)	(2000)	(1988)	(1988)	(1988)	(1988)

05471050 SOUTH SKUNK RIVER AT COLFAX, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1986 - 2005	
ANNUAL TOTAL	221,252		142,315			
ANNUAL MEAN	605		390		567	
HIGHEST ANNUAL MEAN					1,831	1993
LOWEST ANNUAL MEAN					69.6	1989
HIGHEST DAILY MEAN	8,290	May 24	4,460	May 14	13,100	Jul 12, 1993
LOWEST DAILY MEAN	36	Jan 22	30	Sep 23	1.4	Aug 18, 1988
ANNUAL SEVEN-DAY MINIMUM	43	Jan 19	33	Sep 18	3.2	Sep 8, 1988
MAXIMUM PEAK FLOW			4,590	May 14	14,200	Jul 12, 1993
MAXIMUM PEAK STAGE			15.78	May 14	21.53	Jul 12, 1993
INSTANTANEOUS LOW FLOW			29	Sep 22 a	1.2	Aug 18, 1988 b
ANNUAL RUNOFF (AC-FT)	438,900		282,300		410,400	
ANNUAL RUNOFF (CFSM)	0.753		0.486		0.706	
ANNUAL RUNOFF (INCHES)	10.25		6.59		9.59	
10 PERCENT EXCEEDS	1,350		945		1,370	
50 PERCENT EXCEEDS	251		200		240	
90 PERCENT EXCEEDS	63		55		37	

a Also Sep. 23.
b Also Aug. 19, 1988.
e Estimated.



05471200 INDIAN CREEK NEAR MINGO, IA

LOCATION.--Lat 41°48'19", long 93°18'33", in NW1/4 NW1/4 sec.28, T.81 N., R.21 W., Jasper County, Hydrologic Unit 07080105, on left bank 20 ft downstream from bridge on State Highway 117, 0.7 mi downstream from Wolf Creek, 2.2 mi upstream from Byers Branch, 2.9 mi northwest of Mingo, and 11.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--276 mi^2.

PERIOD OF RECORD.--May 1958 to September 1975; October 1985 to current year.

REVISED RECORDS.--WSP 1728: 1958 (M), 1959 (M).

GAGE.--Water-stage recorder. Datum of gage is 810.47 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 20, 1944, reached a stage of 21.4 ft, from information by local resident, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	56	e71	e82	e39	e174	158	231	193	420	44	30
2	25	245	e69	e76	e52	e181	158	219	179	355	38	27
3	23	244	e66	e75	e72	e161	157	209	177	311	33	25
4	18	191	e66	e71	e148	e162	154	197	185	308	29	23
5	16	155	e66	e64	e204	159	153	188	188	282	25	22
6	16	133	89	e50	e244	152	148	187	180	244	22	20
7	16	116	95	e53	e264	158	139	216	177	220	19	19
8	18	97	90	e52	e280	144	131	419	193	199	17	20
9	21	88	92	e59	e277	135	129	345	238	180	16	29
10	18	85	92	e51	e267	135	129	291	218	163	18	28
11	16	85	81	e54	e280	136	148	550	204	146	277	23
12	16	72	79	e54	e333	130	1,130	1,140	190	132	454	20
13	16	63	e68	e45	e452	e116	1,130	3,170	198	119	272	18
14	16	58	e46	e30	877	e114	817	1,720	292	108	182	21
15	17	55	e86	e29	704	109	635	970	241	99	137	23
16	16	54	e115	e30	575	103	538	768	207	91	108	23
17	16	52	e107	e31	468	103	474	640	189	82	89	22
18	17	61	e108	e32	394	103	426	544	174	98	76	22
19	18	131	e68	e38	345	104	391	497	160	78	66	21
20	18	167	e108	e42	319	98	475	444	148	64	91	22
21	18	158	e101	e40	292	95	415	401	150	64	70	29
22	19	145	e91	e33	264	94	562	370	146	59	57	21
23	19	135	e81	e36	247	92	458	334	134	54	50	14
24	17	120	e79	e39	240	93	406	308	123	48	45	22
25	17	108	e88	e42	232	117	371	288	1,060	43	42	29
26	33	102	e77	e43	219	144	342	273	2,010	52	53	40
27	41	e98	e73	e40	e203	169	305	257	832	52	63	33
28	34	91	e76	e39	e195	181	273	241	716	43	47	31
29	34	e78	e80	e36	---	178	257	227	617	38	40	33
30	35	e69	e93	e39	---	177	245	213	523	36	36	31
31	42	---	e85	e42	---	178	---	201	---	37	32	---
TOTAL	663	3,312	2,586	1,447	8,486	4,195	11,254	16,058	10,242	4,225	2,548	741
MEAN	21.4	110	83.4	46.7	303	135	375	518	341	136	82.2	24.7
MAX	42	245	115	82	877	181	1,130	3,170	2,010	420	454	40
MIN	16	52	46	29	39	92	129	187	123	36	16	14
AC-FT	1,320	6,570	5,130	2,870	16,830	8,320	22,320	31,850	20,320	8,380	5,050	1,470
CFSM	0.08	0.40	0.30	0.17	1.10	0.49	1.36	1.88	1.24	0.49	0.30	0.09
IN.	0.09	0.45	0.35	0.20	1.14	0.57	1.52	2.16	1.38	0.57	0.34	0.10

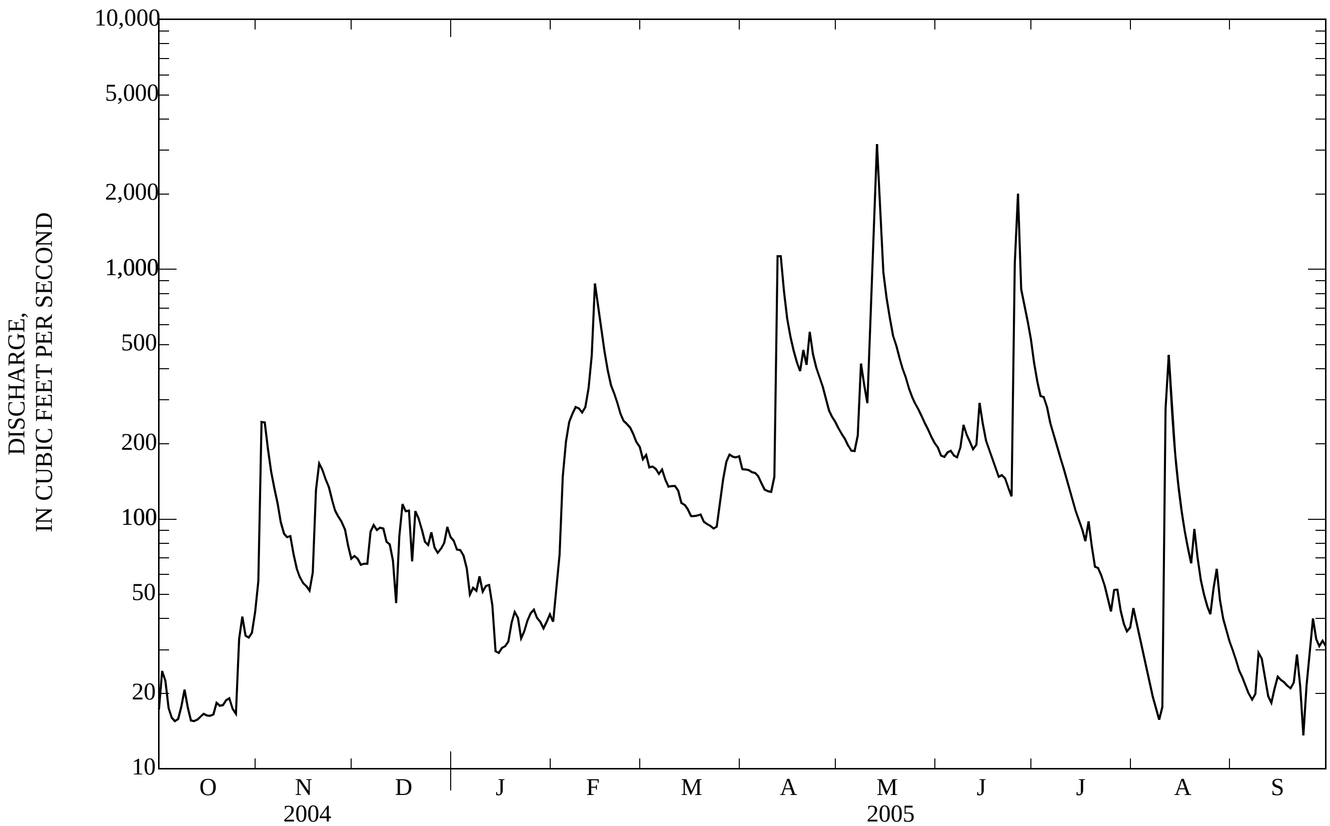
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	97.8	93.3	75.0	55.5	121	289	271	399	482	299	139	79.5
MAX	689	549	319	289	619	816	834	1,114	1,732	2,809	1,500	678
(WY)	(1987)	(1973)	(1973)	(1973)	(1971)	(1993)	(1965)	(2004)	(1998)	(1993)	(1993)	(1993)
MIN	1.11	4.12	2.05	1.87	2.25	10.9	8.07	5.58	10.9	3.49	1.44	0.91
(WY)	(1972)	(1968)	(1990)	(1968)	(1967)	(1968)	(1989)	(1967)	(1989)	(1988)	(1988)	(1988)

05471200 INDIAN CREEK NEAR MINGO, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005	
ANNUAL TOTAL	85,948		65,757			
ANNUAL MEAN	235		180		200	
HIGHEST ANNUAL MEAN					751	1993
LOWEST ANNUAL MEAN					11.9	1989
HIGHEST DAILY MEAN	8,680	May 23	3,170	May 13	12,000	Jul 10, 1993
LOWEST DAILY MEAN	14	Jan 22	14	Sep 23	0.01	Aug 18, 1989
ANNUAL SEVEN-DAY MINIMUM	16	Sep 25	16	Oct 11	0.15	Aug 16, 1989
MAXIMUM PEAK FLOW			4,130	May 13	23,500	Jun 4, 1991
MAXIMUM PEAK STAGE			13.44	May 13	19.16	Jun 4, 1991
INSTANTANEOUS LOW FLOW			13	Sep 23		
ANNUAL RUNOFF (AC-FT)	170,500		130,400		145,200	
ANNUAL RUNOFF (CFSM)	0.851		0.653		0.726	
ANNUAL RUNOFF (INCHES)	11.58		8.86		9.86	
10 PERCENT EXCEEDS	390		403		468	
50 PERCENT EXCEEDS	96		98		69	
90 PERCENT EXCEEDS	19		22		5.2	

e Estimated



05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IA

LOCATION.--Lat 41°21'21", long 92°39'26", in NW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.25, T.76 N., R.16 W., Mahaska County, Hydrologic Unit 07080105, on left bank downstream from bridge on U.S. Highway 63, 0.3 mi downstream from Painter Creek, 4.0 mi north of Oskaloosa, 51.2 mi upstream from confluence with North Skunk River, and at mile 145.9 (revised) upstream from mouth of Skunk River.

DRAINAGE AREA.--1,635 mi^2.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1966, published as "Skunk River near Oskaloosa". Prior to October 1948, monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WDR IA-95-1: Location.

GAGE.--Water-stage recorder. Datum of gage is 685.50 ft above NGVD of 1929. Prior to Nov. 21, 1947, nonrecording gage at site and datum. November 21, 1947 to May 3, 1995, gage located upstream 400 ft, at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 25.8 ft, from floodmarks, discharge, 37,000 ft^3/s, from rating curve extended above 18,000 ft^3/s on basis of velocity-area study.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	198	376	e421	e322	900	760	1,420	1,110	2,270	405	194
2	181	253	369	e419	e384	859	707	1,330	e1,040	2,060	384	182
3	188	435	366	e404	e499	851	669	1,250	e955	1,850	365	173
4	187	557	365	e367	e634	837	656	1,190	e962	1,740	344	167
5	174	504	368	e350	e849	798	647	1,160	1,400	1,810	332	159
6	169	443	453	e314	e1,080	758	653	1,100	e1,210	1,510	324	150
7	174	407	473	e296	e863	726	905	1,090	e999	e1,300	316	146
8	176	373	466	e287	e694	712	750	1,110	1,390	e1,170	310	e151
9	174	340	449	e299	e581	688	671	1,520	2,790	e1,100	304	e170
10	169	328	448	e290	e498	690	654	1,370	1,630	e1,000	306	e164
11	165	325	434	e314	e455	675	663	1,490	1,810	e844	319	e181
12	162	314	424	e375	e418	657	2,550	4,140	1,270	749	604	e161
13	157	306	398	e358	e1,550	621	5,210	6,650	1,110	715	1,550	e148
14	159	290	e319	e300	3,230	599	5,310	8,580	1,300	655	1,080	e141
15	158	286	e313	e278	3,670	572	3,850	9,560	1,490	603	793	e138
16	157	285	e320	e259	3,560	574	2,990	8,510	1,100	561	623	e142
17	154	286	e314	e243	2,640	586	2,550	6,270	903	523	445	e146
18	155	286	e323	e247	2,080	569	2,250	4,690	795	522	371	e146
19	204	319	e297	e253	1,740	542	2,040	3,970	714	583	334	e146
20	210	416	e313	e259	1,550	542	1,990	3,410	658	514	309	e135
21	173	510	e268	e262	1,430	529	2,490	2,960	597	447	352	e126
22	168	493	e255	e266	1,310	518	2,630	2,650	561	461	433	e118
23	171	477	e242	e268	1,200	520	3,480	2,370	568	429	324	e111
24	164	461	e229	e275	1,140	522	2,700	2,150	535	419	286	e112
25	159	436	e251	e302	1,090	590	2,400	1,970	513	380	267	e125
26	162	424	e265	e327	1,050	674	2,200	1,850	3,470	394	254	e115
27	179	425	e278	e322	997	709	1,990	1,730	4,820	474	251	e167
28	201	417	e304	e316	963	732	1,790	1,590	3,340	418	271	e213
29	207	407	e334	e312	---	757	1,640	1,450	2,970	379	266	e192
30	208	391	e371	e317	---	747	1,520	1,340	2,700	387	224	199
31	208	---	e396	e317	---	776	---	1,220	---	371	206	---
TOTAL	5,450	11,392	10,781	9,617	36,477	20,830	59,315	91,090	44,710	26,638	12,952	4,618
MEAN	176	380	348	310	1,303	672	1,977	2,938	1,490	859	418	154
MAX	210	557	473	421	3,670	900	5,310	9,560	4,820	2,270	1,550	213
MIN	154	198	229	243	322	518	647	1,090	513	371	206	111
AC-FT	10,810	22,600	21,380	19,080	72,350	41,320	117,700	180,700	88,680	52,840	25,690	9,160
CFSM	0.11	0.23	0.21	0.19	0.80	0.41	1.21	1.80	0.91	0.53	0.26	0.09
IN.	0.12	0.26	0.25	0.22	0.83	0.47	1.35	2.07	1.02	0.61	0.29	0.11

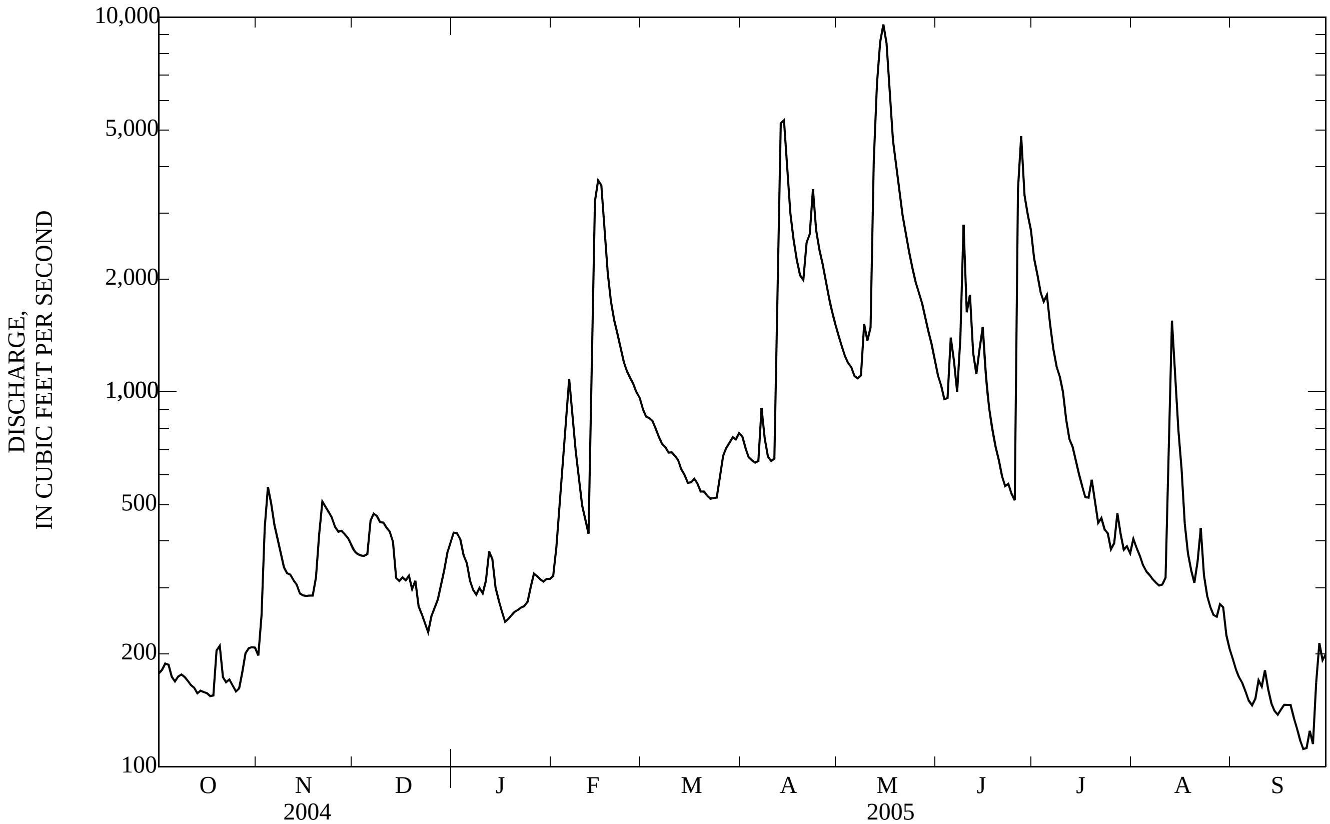
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	477	533	438	439	809	1,579	1,604	1,787	2,145	1,409	642	452
MAX	3,646	3,576	2,322	3,906	3,587	4,841	5,366	6,168	9,222	11,770	7,772	5,140
(WY)	(1987)	(1984)	(1983)	(1973)	(1973)	(1979)	(1983)	(1974)	(1947)	(1993)	(1993)	(1993)
MIN	8.47	14.5	7.55	5.30	42.9	45.9	42.1	74.2	39.4	27.3	43.3	27.8
(WY)	(1957)	(1957)	(1956)	(1956)	(1954)	(1954)	(1956)	(1956)	(1977)	(1977)	(1988)	(1956)

05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	444,043		333,870			
ANNUAL MEAN	1,213		915		1,026	
HIGHEST ANNUAL MEAN					3,884	1993
LOWEST ANNUAL MEAN					40.1	1956
HIGHEST DAILY MEAN	11,500	May 28	9,560	May 15	20,400	Jul 15, 1993
LOWEST DAILY MEAN	154	Oct 17	111	Sep 23	1.8	Oct 11, 1956
ANNUAL SEVEN-DAY MINIMUM	157	Oct 12	120	Sep 20	2.0	Oct 7, 1956
MAXIMUM PEAK FLOW			9,810	May 15	20,700	Jul 15, 1993
MAXIMUM PEAK STAGE			20.71	May 15	24.78	Jul 15, 1993
ANNUAL RUNOFF (AC-FT)	880,800		662,200		743,400	
ANNUAL RUNOFF (CFSM)	0.742		0.559		0.628	
ANNUAL RUNOFF (INCHES)	10.10		7.60		8.53	
10 PERCENT EXCEEDS	2,550		2,170		2,540	
50 PERCENT EXCEEDS	542		453		440	
90 PERCENT EXCEEDS	202		170		59	

e Estimated



05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IA

LOCATION.--Lat 41°18'03", long 92°12'16", in NE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.14, T.75 N., R.12 W., Keokuk County, Hydrologic Unit 07080106, on right bank 10 ft downstream from bridge on State Highway 149, 1.2 mi downstream from Cedar Creek, 2.2 mi south of Sigourney, 4.0 mi upstream from Bridge Creek, 19.6 mi (revised) upstream from confluence with South Skunk River, and 114.3 mi upstream from mouth of the Skunk River.

DRAINAGE AREA.--730 mi^2.

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

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1946-47 (M).

GAGE.--Water stage recorder. Datum of gage is 651.53 ft above NGVD of 1929. Prior to June 10, 1953, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 22.8 ft, from floodmark, discharge, 14,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	97	113	e152	e141	360	273	471	430	341	114	40
2	66	109	111	e126	e186	328	263	443	395	360	130	36
3	71	100	108	e123	e301	316	245	418	375	309	160	34
4	71	151	110	e115	e404	327	242	397	367	289	125	31
5	69	200	110	e105	e562	307	236	369	501	314	102	30
6	61	183	174	e89	e792	297	227	338	647	481	91	29
7	57	161	242	e94	e668	291	280	322	600	356	82	27
8	59	135	281	e94	e558	284	602	308	512	299	76	30
9	60	118	244	e119	e468	264	507	298	897	268	69	41
10	59	109	215	e114	e370	252	411	293	1,280	242	64	34
11	58	104	197	e129	e328	258	370	283	880	221	67	34
12	53	102	187	e160	e302	252	600	542	1,150	202	89	45
13	51	99	173	e203	e849	235	2,120	2,000	829	186	85	33
14	49	98	e112	e160	e1,830	215	1,840	2,830	693	172	127	25
15	50	91	e108	e137	2,670	211	1,250	3,070	730	160	101	20
16	51	91	e117	e116	2,090	214	e1,000	3,060	739	152	84	19
17	51	93	e114	e112	1,130	208	e886	1,910	582	142	73	19
18	55	96	e125	e114	855	207	e798	1,430	521	133	68	18
19	90	103	e98	e130	692	200	e713	1,260	471	133	60	17
20	105	112	e123	e138	622	196	e625	1,140	430	158	77	17
21	91	153	e111	e132	598	191	e572	978	398	145	54	18
22	86	179	e95	e124	557	182	e598	880	375	122	57	16
23	75	165	e85	e124	501	181	772	814	355	133	86	13
24	69	152	e75	e134	466	184	922	726	336	140	59	13
25	66	142	e85	e145	447	240	762	651	317	115	48	13
26	63	133	e90	e165	426	277	706	601	301	109	45	14
27	63	131	e103	e154	408	320	658	579	428	113	45	30
28	75	129	e113	e143	392	316	597	547	548	159	45	54
29	90	125	e121	e134	---	295	551	502	392	165	47	41
30	110	118	e139	e135	---	282	513	478	377	127	47	36
31	93	---	e156	e135	---	271	---	460	---	112	45	---
TOTAL	2,125	3,779	4,235	4,055	19,613	7,961	20,139	28,398	16,856	6,358	2,422	827
MEAN	68.5	126	137	131	700	257	671	916	562	205	78.1	27.6
MAX	110	200	281	203	2,670	360	2,120	3,070	1,280	481	160	54
MIN	49	91	75	89	141	181	227	283	301	109	45	13
AC-FT	4,210	7,500	8,400	8,040	38,900	15,790	39,950	56,330	33,430	12,610	4,800	1,640
CFSM	0.09	0.17	0.19	0.18	0.96	0.35	0.92	1.25	0.77	0.28	0.11	0.04
IN.	0.11	0.19	0.22	0.21	1.00	0.41	1.03	1.45	0.86	0.32	0.12	0.04

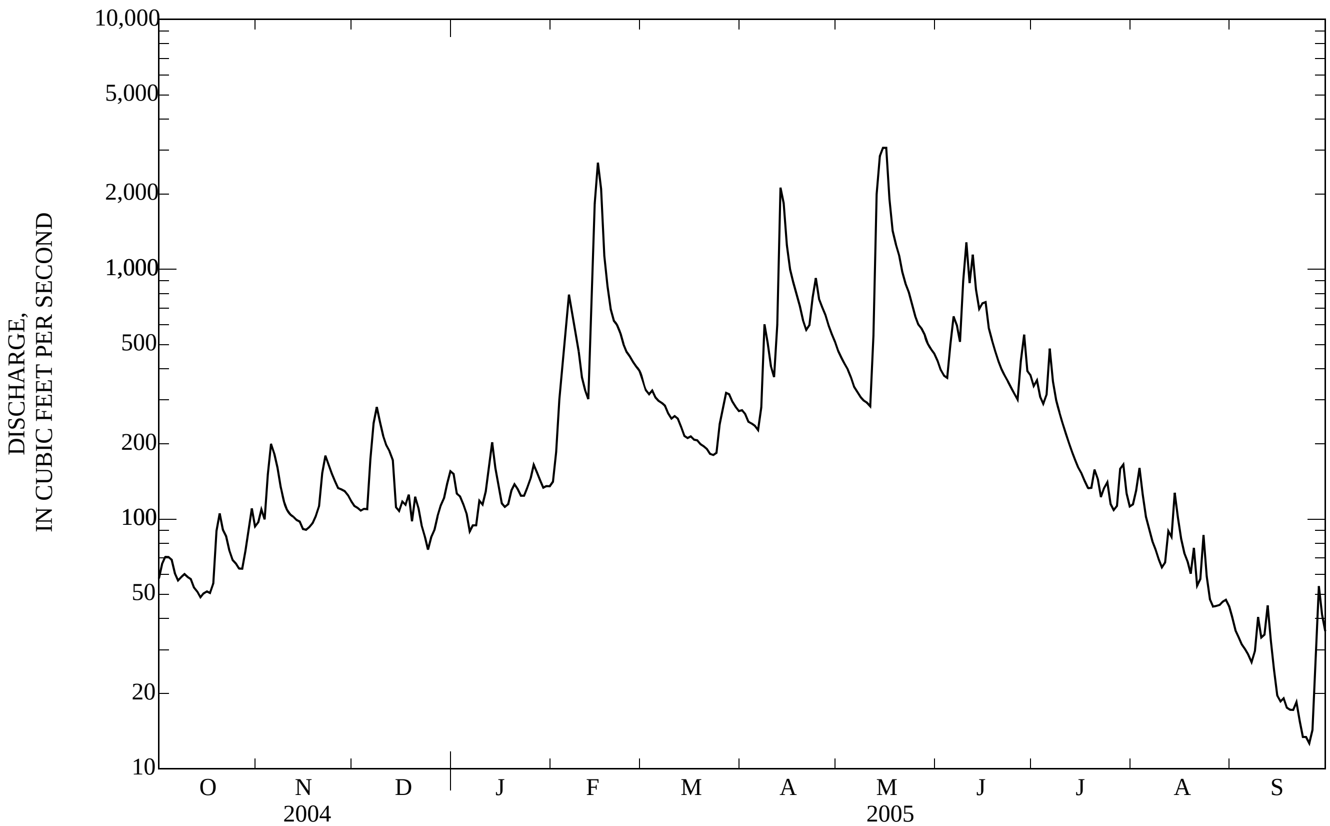
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	216	279	218	246	419	835	759	837	796	535	280	267
MAX	1,603	1,890	1,208	1,767	1,311	2,996	2,826	4,170	4,145	5,098	3,668	2,708
(WY)	(1987)	(1962)	(1983)	(1946)	(1973)	(1979)	(1993)	(1974)	(1947)	(1993)	(1993)	(1993)
MIN	0.13	3.38	2.58	2.26	12.8	17.0	11.2	14.4	20.1	11.2	7.90	4.35
(WY)	(1957)	(1957)	(1956)	(1954)	(1954)	(1954)	(1956)	(1956)	(1977)	(1977)	(1955)	(1956)

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	150,780		116,768			
ANNUAL MEAN	412		320		474	
HIGHEST ANNUAL MEAN					2,041	1993
LOWEST ANNUAL MEAN					27.7	1956
HIGHEST DAILY MEAN	3,160	May 28	3,070	May 15	23,200	Mar 31, 1960
LOWEST DAILY MEAN	49	Oct 14	13	Sep 23	0.10	Oct 7, 1956
ANNUAL SEVEN-DAY MINIMUM	51	Oct 12	15	Sep 20	0.10	Oct 7, 1956
MAXIMUM PEAK FLOW			3,240	May 16	27,500	Mar 31, 1960
MAXIMUM PEAK STAGE			13.64	May 16	25.33	Mar 31, 1960
INSTANTANEOUS LOW FLOW			12	Sep 25		
ANNUAL RUNOFF (AC-FT)	299,100		231,600		343,200	
ANNUAL RUNOFF (CFSM)	0.564		0.438		0.649	
ANNUAL RUNOFF (INCHES)	7.68		5.95		8.82	
10 PERCENT EXCEEDS	935		709		1,150	
50 PERCENT EXCEEDS	206		160		165	
90 PERCENT EXCEEDS	78		49		20	

e Estimated



05473400 CEDAR CREEK NEAR OAKLAND MILLS, IA

LOCATION.--Lat 40°55'31", long 91°40'27", in SE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.28, T.71 N., R.7 W., Henry County, Hydrologic Unit 07080107, on left bank 30 ft upstream from bridge on County Highway H46, 3.0 mi west of Oakland Mills, 2.9 mi upstream from Wolf Creek, and 4.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--530 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1957 to 1977. July 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 565.07 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Occasional high-water measurements were made by U.S. Army Corps of Engineers in 1965, 1966, 1970, and 1974 and by U.S. Geological Survey in 1966 and 1967. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 22, 1973 reached a stage of 24.09 ft, discharge not determined. Flood of June 1905 reached a stage approximately 2 feet higher from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	450	131	e87	e130	223	137	156	70	45	10	4.8
2	15	1,090	115	e122	e181	175	117	139	60	48	7.8	3.7
3	17	789	105	e190	e324	160	106	128	55	41	6.7	3.1
4	23	567	96	e595	e537	145	103	120	63	36	6.2	2.7
5	32	682	100	e307	e755	137	103	112	208	33	5.3	2.1
6	25	444	556	e159	969	132	110	104	520	32	5.1	2.0
7	23	318	1,130	e116	1,420	122	170	101	289	28	4.3	2.3
8	30	243	1,070	e89	2,000	132	159	100	170	24	3.6	4.0
9	40	179	543	e86	1,180	122	131	100	659	22	3.5	4.4
10	36	151	384	e85	775	101	113	101	977	20	3.6	13
11	29	144	315	e113	605	97	109	96	460	18	4.6	19
12	26	128	243	e254	651	104	777	99	383	16	8.4	22
13	22	108	204	e840	e1,450	94	1,440	153	561	15	18	15
14	20	95	e135	e455	e2,830	85	777	369	393	13	30	9.4
15	21	88	e106	e263	2,470	76	465	429	230	12	41	7.7
16	20	85	e103	e209	1,120	71	345	273	164	11	26	8.9
17	20	86	e95	e186	711	68	276	200	128	10	19	7.0
18	20	92	e93	e169	493	71	235	170	106	9.0	14	3.6
19	22	104	e81	e168	370	73	207	161	93	8.2	12	7.9
20	47	131	e85	e164	318	73	185	164	82	8.7	23	11
21	53	123	e86	e165	333	67	170	132	73	8.0	18	7.1
22	82	102	e79	e165	346	59	172	108	66	8.2	18	6.5
23	597	88	e71	e159	311	66	672	98	62	7.4	13	6.0
24	235	87	e60	e165	279	83	665	93	58	6.6	13	4.5
25	112	88	e60	e163	264	139	398	84	52	6.2	14	4.1
26	153	81	e62	e163	245	220	312	77	48	10	11	4.6
27	994	90	e64	e154	221	225	270	75	43	16	7.9	4.1
28	576	138	e77	e146	216	185	225	69	42	28	6.6	5.1
29	293	133	e72	e138	---	168	187	68	40	20	9.7	e14
30	381	124	e78	e134	---	156	169	73	43	19	7.3	e8.6
31	781	---	e80	e124	---	150	---	77	---	14	5.5	---
TOTAL	4,758	7,028	6,479	6,333	21,504	3,779	9,305	4,229	6,198	593.3	376.1	218.2
MEAN	153	234	209	204	768	122	310	136	207	19.1	12.1	7.27
MAX	994	1,090	1,130	840	2,830	225	1,440	429	977	48	41	22
MIN	13	81	60	85	130	59	103	68	40	6.2	3.5	2.0
AC-FT	9,440	13,940	12,850	12,560	42,650	7,500	18,460	8,390	12,290	1,180	746	433
CFSM	0.29	0.44	0.39	0.38	1.44	0.23	0.58	0.26	0.39	0.04	0.02	0.01
IN.	0.33	0.49	0.45	0.44	1.50	0.26	0.65	0.30	0.43	0.04	0.03	0.02

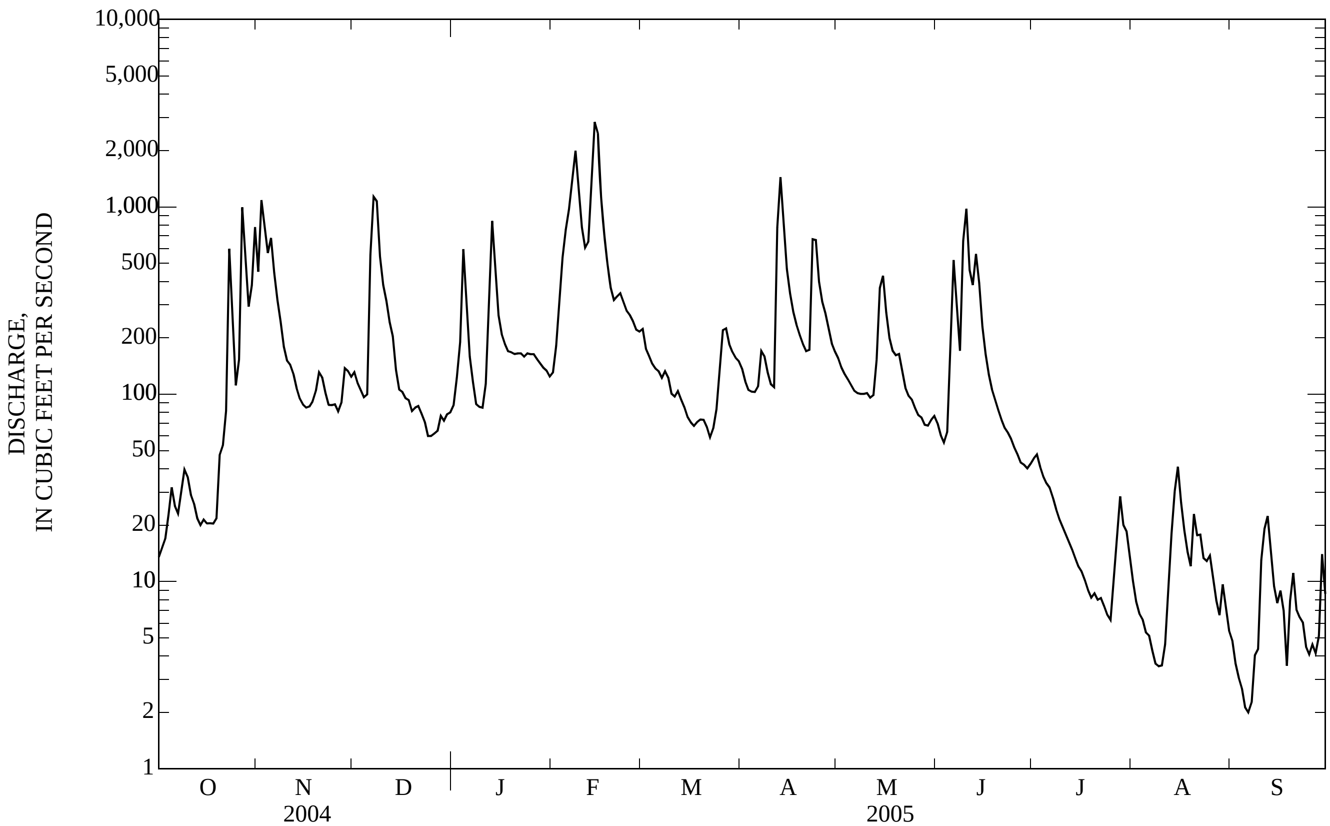
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2005, BY WATER YEAR (WY)

MEAN	217	265	213	99.2	340	582	580	712	605	499	174	192
MAX	1,711	1,340	1,364	545	1,091	1,987	1,863	3,116	2,199	4,565	2,186	1,245
(WY)	(1987)	(1993)	(1983)	(1993)	(1985)	(1979)	(1983)	(1996)	(1990)	(1993)	(1993)	(1986)
MIN	3.55	5.45	4.43	7.25	6.36	25.6	34.3	21.6	14.6	3.52	4.23	4.63
(WY)	(2004)	(2003)	(1990)	(2003)	(1989)	(2000)	(2000)	(2000)	(1988)	(1988)	(2003)	(2002)

05473400 CEDAR CREEK NEAR OAKLAND MILLS, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1978 - 2005	
ANNUAL TOTAL	101,289		70,800.6			
ANNUAL MEAN	277		194		373	
HIGHEST ANNUAL MEAN					1,424	1993
LOWEST ANNUAL MEAN					44.5	2003
HIGHEST DAILY MEAN	5,920	Jun 1	2,830	Feb 14 a	11,500	May 28, 1996
LOWEST DAILY MEAN	13	Sep 29	2.0	Sep 6	0.42	Sep 17, 1988
ANNUAL SEVEN-DAY MINIMUM	14	Sep 25	2.8	Sep 2	0.55	Sep 14, 1988
MAXIMUM PEAK FLOW			4,370	Feb 15	12,300	May 28, 1996
MAXIMUM PEAK STAGE			15.25	Feb 14	21.27	Jul 9, 1993
ANNUAL RUNOFF (AC-FT)	200,900		140,400		270,300	
ANNUAL RUNOFF (CFSM)	0.519		0.364		0.700	
ANNUAL RUNOFF (INCHES)	7.07		4.94		9.51	
10 PERCENT EXCEEDS	655		527		852	
50 PERCENT EXCEEDS	79		98		74	
90 PERCENT EXCEEDS	24		7.9		7.4	

a Ice effected.
e Estimated.



05473450 BIG CREEK NEAR MT. PLEASANT, IA

LOCATION.--Lat 45°00'26", long 91°33'05", in NW$\frac{1}{4}$ SE$\frac{1}{4}$ sec.28, T.72 N., R.6 W., Henry County, Hydrologic Unit 07080107, on right bank 20 ft upstream from bridge on old U.S. highway 218 (Mt. Pleasant business route) about 2 mi north of Mt. Pleasant, 1.6 mi upstream from Brandy Wine Creek, 2.3 mi upstream from Lynn Creek, and 27.4 mi upstream from mouth.

DRAINAGE AREA.--58 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1957 to 1977. Oct. 1, 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 643.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 21, 1973, discharge 9,580 ft^3/s, on basis of contracted-opening measurement.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	143	55	19	e18	34	25	26	13	5.6	0.27	0.11
2	2.2	248	46	31	e17	28	24	24	13	4.3	0.15	0.09
3	2.0	148	42	96	e18	25	24	23	13	3.4	0.11	0.09
4	1.6	141	40	162	e20	25	24	21	19	4.3	0.11	0.06
5	1.4	119	40	115	e25	24	24	20	67	4.4	0.10	0.02
6	1.5	95	146	e74	32	22	24	20	59	3.3	0.09	0.00
7	1.7	73	181	e58	76	27	24	21	37	2.6	0.09	0.00
8	7.6	52	152	e35	68	23	21	20	69	2.2	0.07	0.28
9	2.3	45	108	e33	44	18	20	19	157	1.7	0.06	1.5
10	2.1	43	86	e34	36	19	20	19	92	1.3	0.15	0.48
11	1.7	37	65	39	33	21	21	17	62	1.2	0.62	0.26
12	1.5	30	59	63	34	19	98	19	49	1.1	0.63	0.21
13	1.2	25	47	166	197	16	156	86	40	0.95	1.2	0.21
14	1.1	23	e35	e88	283	15	98	122	34	0.88	0.77	0.20
15	1.3	22	e37	e65	177	13	70	75	27	0.81	0.51	0.20
16	1.1	23	35	e43	128	14	54	52	22	0.77	0.30	0.45
17	1.1	23	29	e36	94	15	47	43	19	0.71	0.24	0.43
18	1.7	24	30	e33	69	15	42	37	18	0.68	0.21	0.33
19	4.1	68	e29	e36	54	16	38	34	15	0.67	0.20	0.83
20	2.6	74	e29	e36	51	13	35	30	12	0.81	1.5	0.79
21	2.4	48	e28	e35	52	12	31	25	11	1.5	0.81	0.47
22	48	40	e22	e33	51	13	37	25	11	1.2	0.47	0.35
23	221	39	e21	e32	49	15	94	22	9.4	0.90	0.29	0.30
24	122	34	e20	e35	48	18	94	22	8.5	0.84	0.21	0.25
25	68	30	e23	e37	46	61	72	21	7.6	0.81	0.20	0.30
26	103	26	e25	e36	41	77	57	21	6.8	5.9	0.21	0.44
27	199	40	e26	e34	38	59	43	18	6.1	5.6	0.19	0.39
28	115	65	e28	e28	41	51	34	17	6.1	1.8	0.17	0.62
29	97	52	e26	e24	---	43	32	15	5.8	1.0	0.14	1.0
30	139	54	27	e22	---	38	29	14	7.3	0.60	0.11	0.45
31	107	---	24	e20	---	34	---	15	---	0.40	0.12	---
TOTAL	1,262.6	1,884	1,561	1,598	1,840	823	1,412	943	916.6	62.23	10.30	11.11
MEAN	40.7	62.8	50.4	51.5	65.7	26.5	47.1	30.4	30.6	2.01	0.33	0.37
MAX	221	248	181	166	283	77	156	122	157	5.9	1.5	1.5
MIN	1.1	22	20	19	17	12	20	14	5.8	0.40	0.06	0.00
AC-FT	2,500	3,740	3,100	3,170	3,650	1,630	2,800	1,870	1,820	123	20	22
CFSM	0.70	1.08	0.87	0.89	1.13	0.46	0.81	0.52	0.53	0.03	0.01	0.01
IN.	0.81	1.21	1.00	1.02	1.18	0.53	0.91	0.60	0.59	0.04	0.01	0.01

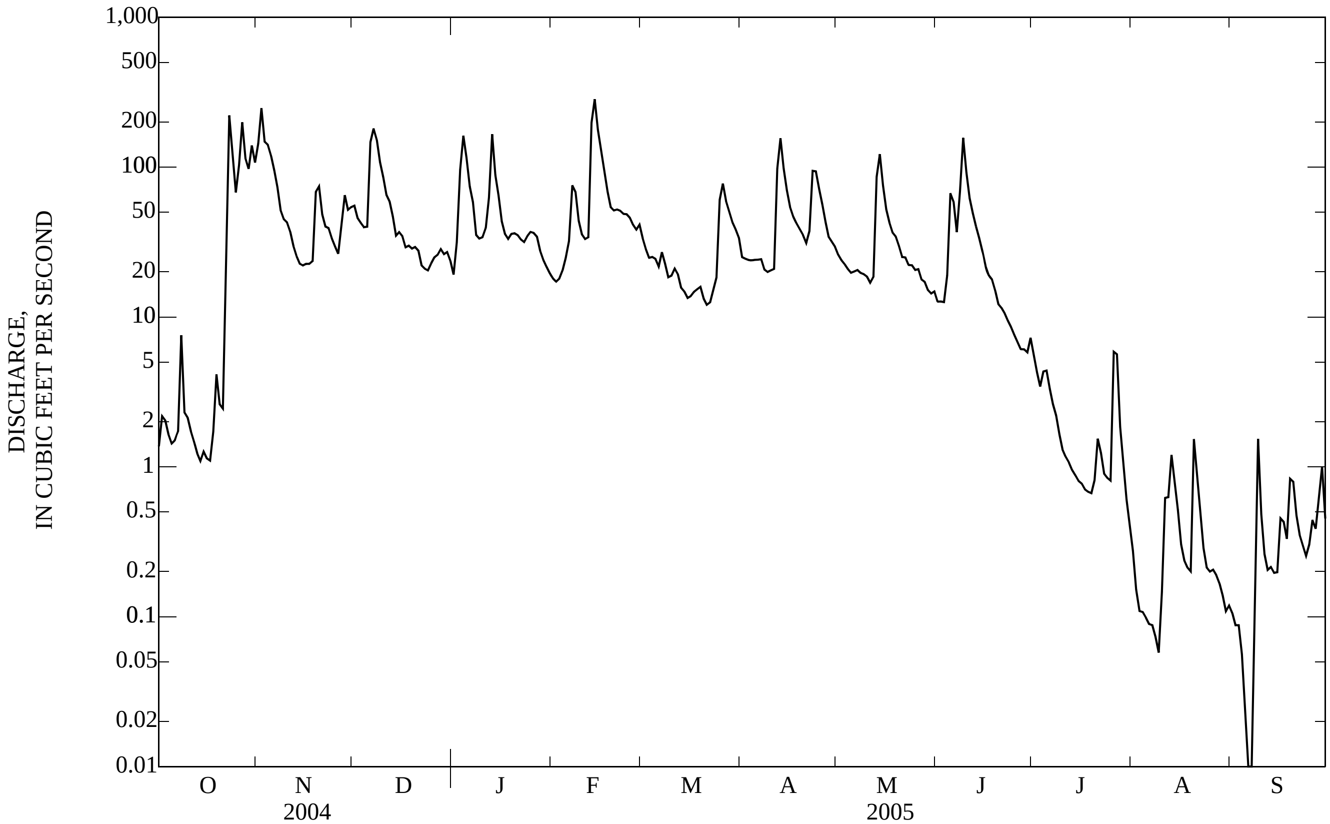
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.5	20.6	15.4	23.1	66.9	63.7	71.9	84.2	72.6	15.1	3.08	2.08
MAX	110	78.6	50.4	83.0	215	176	201	221	141	49.1	8.61	8.41
(WY)	(1999)	(1999)	(2005)	(1998)	(2001)	(1998)	(1998)	(2001)	(2002)	(2000)	(1998)	(1998)
MIN	0.20	0.63	0.68	0.50	3.91	6.40	5.81	26.2	22.1	2.01	0.23	0.13
(WY)	(2004)	(2003)	(2000)	(2003)	(2003)	(2003)	(2003)	(2000)	(2003)	(2005)	(2003)	(2002)

05473450 BIG CREEK NEAR MT. PLEASANT, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	13,419.7		12,323.84			
ANNUAL MEAN	36.7		33.8		38.2	
HIGHEST ANNUAL MEAN					68.1	1998
LOWEST ANNUAL MEAN					12.1	2003
HIGHEST DAILY MEAN	473	Mar 5	283	Feb 14	1,600	Mar 31, 1998
LOWEST DAILY MEAN	1.1	Oct 14	0.00	Sep 6	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 25	0.05	Sep 1	0.02	Aug 19, 2003
MAXIMUM PEAK FLOW			368	Feb 14	2,450	Jun 1, 2002
MAXIMUM PEAK STAGE			6.00	Feb 14	14.29	Feb 9, 2001
ANNUAL RUNOFF (AC-FT)	26,620		24,440		27,660	
ANNUAL RUNOFF (CFSM)	0.632		0.582		0.658	
ANNUAL RUNOFF (INCHES)	8.61		7.90		8.94	
10 PERCENT EXCEEDS	101		87		91	
50 PERCENT EXCEEDS	20		23		10	
90 PERCENT EXCEEDS	1.5		0.30		0.44	

e Estimated



05474000 SKUNK RIVER AT AUGUSTA, IA

LOCATION.--Lat 40°45'13", long 91°16'37", in NE¼ NE¼ sec.26, T.69 N., R.4 W., Des Moines County, Hydrologic Unit 07080107, on left bank 300 ft upstream from bridge on County Road X38 at Augusta, 2.0 mi upstream from Long Creek, and 10.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--4,303 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September to November 1913, October 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1915 (M), 1919-27 (M), 1932-34 (M), 1936, 1937-38 (M), 1942 (M). WSP 1438: Drainage area. WDR IA-71-1: 1966 (M).

GAGE.--Water-stage recorder. Datum of gage is 521.24 ft above NGVD of 1929. Prior to Nov. 15, 1913, nonrecording gage at site 400 ft upstream at datum about 0.7 ft higher. May 27, 1915 to Jan. 14, 1935, nonrecording gage at site 400 ft upstream at present datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1903, reached a stage of about 21 ft, discharge, about 45,000 ft^3/s. Stage and discharge for flood of April 1973 are believed to be the greatest since 1851.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	1,890	1,090	678	e945	2,430	2,060	3,370	2,470	3,730	702	373
2	323	2,630	1,020	757	e964	2,300	1,960	3,130	2,310	3,420	664	364
3	325	2,870	954	1,100	e1,230	2,140	1,880	2,920	2,150	3,080	641	323
4	316	2,370	888	2,420	e1,710	2,010	1,840	2,750	2,090	2,720	628	311
5	327	2,190	865	e2,250	e2,170	1,920	1,780	2,600	2,220	2,460	638	288
6	343	2,140	1,660	e1,770	e2,690	1,900	1,770	2,480	2,540	2,180	629	270
7	343	1,910	2,760	e1,510	3,480	1,860	1,880	2,380	2,930	2,140	580	264
8	417	1,610	3,780	e1,330	4,300	1,790	1,830	2,300	2,980	2,160	538	273
9	436	1,340	3,060	e1,220	4,050	1,760	1,850	2,250	4,180	1,880	510	383
10	368	1,140	2,290	e1,140	3,070	1,650	2,200	2,190	4,730	1,670	493	309
11	348	1,030	1,900	e1,100	2,350	1,580	2,110	2,240	5,360	1,510	499	258
12	332	942	1,630	1,100	2,240	1,540	3,360	2,460	4,470	1,380	530	308
13	319	859	1,410	2,600	3,770	1,500	5,130	2,860	4,530	1,280	647	299
14	302	792	1,200	e4,070	10,400	1,450	5,810	4,770	4,300	1,200	686	308
15	292	754	980	e5,150	11,900	1,370	6,940	6,920	3,290	1,130	676	270
16	275	733	826	e4,270	8,950	1,300	6,580	7,460	2,900	1,080	1,230	278
17	265	727	e718	e3,710	8,250	1,260	6,130	7,560	2,970	1,020	1,130	247
18	269	733	e632	e3,380	6,720	1,240	5,460	7,540	2,790	968	924	226
19	274	889	e599	e3,060	5,290	1,250	4,780	7,540	2,420	905	801	298
20	287	947	e546	e2,800	4,400	1,240	4,320	8,060	2,180	855	783	291
21	314	990	e527	e2,530	3,940	1,200	3,970	7,790	2,000	838	689	259
22	412	945	e513	e2,320	3,660	1,150	3,860	7,000	1,830	860	644	236
23	1,510	925	e508	e2,110	3,380	1,160	5,010	5,880	1,700	831	573	224
24	1,510	1,000	e504	e1,930	3,130	1,170	6,020	4,770	1,590	755	481	215
25	877	982	499	e1,740	2,910	1,420	5,800	4,140	1,510	714	529	202
26	798	946	504	e1,590	2,740	1,940	5,300	3,710	1,450	745	537	210
27	1,610	1,040	536	e1,440	2,600	2,370	4,740	3,380	1,360	799	464	200
28	2,730	1,140	533	e1,300	2,510	2,290	4,390	3,140	1,720	747	414	203
29	1,650	1,120	523	e1,150	---	2,210	4,000	2,960	4,050	715	383	198
30	1,370	1,150	559	e1,050	---	2,180	3,660	2,800	4,170	739	359	224
31	1,850	---	643	e1,010	---	2,130	---	2,630	---	761	353	---
TOTAL	21,104	38,734	34,657	63,585	113,749	52,710	116,420	131,980	85,190	45,272	19,355	8,112
MEAN	681	1,291	1,118	2,051	4,062	1,700	3,881	4,257	2,840	1,460	624	270
MAX	2,730	2,870	3,780	5,150	11,900	2,430	6,940	8,060	5,360	3,730	1,230	383
MIN	265	727	499	678	945	1,150	1,770	2,190	1,360	714	353	198
AC-FT	41,860	76,830	68,740	126,100	225,600	104,600	230,900	261,800	169,000	89,800	38,390	16,090
CFSM	0.16	0.30	0.26	0.48	0.94	0.39	0.90	0.99	0.66	0.34	0.14	0.06
IN.	0.18	0.33	0.30	0.55	0.98	0.45	1.00	1.14	0.73	0.39	0.17	0.07

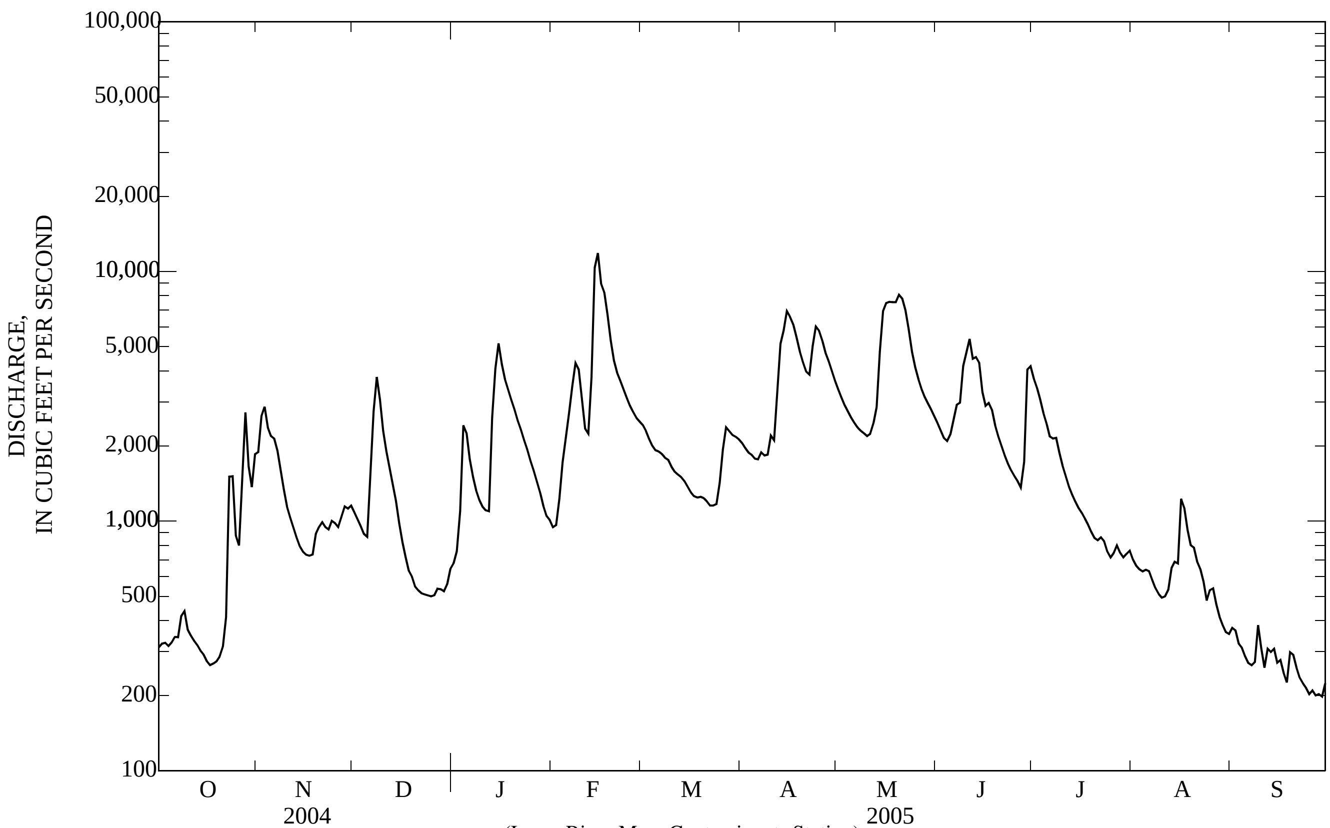
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,336	1,516	1,246	1,278	2,351	4,294	4,099	4,178	4,417	2,822	1,639	1,553
MAX	11,560	10,020	8,387	8,090	7,306	16,560	18,770	16,780	19,800	26,860	18,550	15,460
(WY)	(1987)	(1962)	(1983)	(1946)	(1984)	(1979)	(1973)	(1996)	(1947)	(1993)	(1993)	(1926)
MIN	15.5	20.5	21.2	21.3	56.5	191	104	92.5	130	122	25.8	71.4
(WY)	(1957)	(1957)	(1957)	(1940)	(1940)	(1957)	(1956)	(1934)	(1977)	(1988)	(1934)	(1953)

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1915 - 2005	
ANNUAL TOTAL	942,227		730,868			
ANNUAL MEAN	2,574		2,002		2,559	
HIGHEST ANNUAL MEAN					10,200	1993
LOWEST ANNUAL MEAN					152	1934
HIGHEST DAILY MEAN	22,100	Jun 2	11,900	Feb 15	62,600	Apr 23, 1973
LOWEST DAILY MEAN	215	Jan 7	198	Sep 29	7.0	Aug 27, 1934
ANNUAL SEVEN-DAY MINIMUM	281	Oct 14	207	Sep 23	7.4	Aug 26, 1934
MAXIMUM PEAK FLOW			12,600	Feb 15	66,800	Apr 23, 1973
MAXIMUM PEAK STAGE			11.39	Feb 15	27.05	Apr 23, 1973
INSTANTANEOUS LOW FLOW			188	Sep 28 a	7.0	Aug 7, 1934
ANNUAL RUNOFF (AC-FT)	1,869,000		1,450,000		1,854,000	
ANNUAL RUNOFF (CFSM)	0.597		0.464		0.593	
ANNUAL RUNOFF (INCHES)	8.13		6.31		8.06	
10 PERCENT EXCEEDS	5,800		4,350		6,700	
50 PERCENT EXCEEDS	1,650		1,500		1,060	
90 PERCENT EXCEEDS	409		318		150	

a Also Sep. 29.
e Estimated.



(Large River Mass Contaminents Station)

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER QUALITY RECORDS

LOCATION.--Samples collected at bridge on State Highway 394, 300 ft downstream from gage.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1975 to current year.

REMARKS.--During periods of ice effect, sediment samples are collected in open water channel. Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 950 microsiemens Dec. 20, 1979, Feb. 12, 1980; minimum daily, 149 microsiemens Mar. 6, 1993.
WATER TEMPERATURES: Maximum daily, 34.0°C July 20, 1980, Aug. 15-17, 1988, July 10-13, 1989, and July 15, 1995, and July 30, 1999, July 21, 23, and Aug. 10, 2005; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,550 mg/L June 25, 1981; minimum daily mean, 1 mg/L Mar. 8, 9, 12, 1978, Jan. 5, 6, 1984.
SEDIMENT LOADS: Maximum daily, 499,000 tons Mar. 21, 1978; minimum daily, 0.93 tons Feb. 11, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 682 microsiemens Dec. 29; minimum daily, 353 microsiemens Feb. 15 and May 16.
WATER TEMPERATURES: Maximum daily, 34.0°C July 21, 23, Aug. 10; minimum daily, 0.0°C many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,070 mg/L May 16; minimum daily mean, 14 mg/L Dec. 4.
SEDIMENT LOADS: Maximum daily, 59,000 tons Feb. 15; minimum daily, 15 tons Sept. 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT						
13...	1045	316	--	97	45	38
NOV						
17...	1200	718	--	96	29	56
FEB						
23...	1015	3,440	2.8	92	203	1,890
MAR						
29...	1015	2,220	10.3	96	68	408
APR						
15...	1155	7,630	14.0	96	1,870	38,600
MAY						
10...	1000	2,200	19.0	97	86	511
JUN						
20...	1130	2,270	24.5	99	369	2,260
JUL						
26...	1225	712	30.0	94	82	158
SEP						
07...	1045	260	24.5	85	40	28

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Bed sediment, dry svd sve dia percent <.063mm (80164)	Bed sediment, dry svd sve dia percent <.125mm (80165)	Bed sediment, dry svd sve dia percent <.25mm (80166)	Bed sediment, dry svd sve dia percent <.5 mm (80167)	Bed sediment, dry svd sve dia percent <1 mm (80168)	Bed sediment, dry svd sve dia percent <2 mm (80169)	Bed sediment, dry svd sve dia percent <4 mm (80170)	Bed sediment, dry svd sve dia percent <8 mm (80171)	Bed sediment, dry svd sve dia percent <16 mm (80172)
FEB										
23...	1015	.0	.0	11	86	94	98	100	100	100
MAR										
29...	1030	.0	.0	10	62	92	95	96	96	100
MAY										
10...	1000	.0	.0	2	38	83	96	99	100	100
JUN										
20...	1130	.0	4	34	72	91	97	99	100	100

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	471	436	519	585	486	597	595	611	603	546	404	421
2	484	546	565	609	544	608	607	617	618	580	425	431
3	497	434	611	608	570	602	605	623	651	588	464	459
4	501	472	614	579	516	621	599	613	644	592	381	471
5	496	482	499	485	455	619	589	600	622	611	381	498
6	504	499	461	479	361	630	601	618	606	587	414	488
7	511	535	496	507	362	572	602	615	596	625	396	494
8	507	554	462	517	369	598	605	624	571	629	434	513
9	564	565	484	530	412	619	609	594	416	590	366	495
10	520	581	519	572	428	624	612	614	444	604	373	506
11	530	600	547	586	461	610	570	600	515	602	381	488
12	534	602	561	593	505	630	455	619	411	621	386	487
13	515	614	601	497	460	612	453	591	492	605	382	557
14	511	627	585	457	359	625	507	577	501	622	420	507
15	541	629	600	453	353	611	480	470	508	570	415	561
16	539	580	612	536	404	610	508	353	545	552	506	569
17	530	570	573	520	424	606	575	421	572	516	560	558
18	553	572	620	466	505	620	591	459	574	485	457	549
19	544	533	653	464	526	624	601	495	566	458	409	531
20	550	551	609	481	574	616	608	531	563	465	529	561
21	551	604	673	517	571	623	605	568	591	427	498	571
22	555	587	564	---	587	621	610	580	600	415	445	574
23	469	567	533	---	589	606	604	589	600	412	406	564
24	411	613	540	---	593	614	505	597	606	419	414	572
25	446	611	625	528	594	605	571	603	596	421	446	571
26	491	562	545	449	598	599	543	611	572	400	426	591
27	508	588	649	450	605	573	579	618	565	401	407	617
28	412	590	663	392	612	567	594	615	576	397	425	609
29	380	598	682	497	---	569	600	622	601	389	436	641
30	428	603	652	509	---	578	610	629	537	399	422	631
31	477	---	637	539	---	580	---	604	---	396	402	---

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
19...	0845	274	160	741	10.3	94	8.5	525	10.0	179	219	--	28.6
NOV													
17...	1130	718	242	747	11.8	106	8.3	620	9.8	221	269	--	28.1
DEC													
08...	1150	3,870	320	750	13.9	111	7.9	420	4.9	145	177	--	22.1
JAN													
12...	1340	981	--	733	14.6	107	8.1	587	.9	187	226	.--	29.8
FEB													
07...	1340	3,350	305	742	10.9	78	7.8	361	.6	103	125	.--	16.4
MAR													
15...	1313	1,380	370	750	12.6	100	8.1	638	4.7	205	247	--	27.6
APR													
15...	0915	7,630	315	754	8.4	82	7.6	482	14.0	136	165	.--	22.0
MAY													
10...	0930	2,200	293	744	10.0	111	8.3	608	19.3	240	286	--	24.2
JUN													
08...	1345	3,020	--	740	6.9	86	8.1	568	25.1	177	216	--	21.6
JUL													
14...	0905	1,210	--	746	9.2	118	8.6	631	27.1	201	234	5	23.5
AUG													
09...	0930	517	214	746	8.2	105	9.1	356	26.9	100	13	13	25.7
SEP													
07...	1015	260	218	754	8.6	105	8.6	476	24.8	144	163	6	29.6

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, wat flt by anal ysis, mg/L (62854)	Total nitro-gen, wat unf by anal ysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
19...	<.2	60.1	<.04	<.06	<.008	.99	<.006	.007	.108	.23	.97	6.0	<.1
NOV													
17...	13.4	45.3	<.04	6.31	.013	.11	.135	.144	.174	6.36	6.58	1.1	<.1
DEC													
08...	11.5	31.3	.13	5.13	.034	.41	.181	.20	.54	5.94	6.64	3.5	<.1
JAN													
12...	11.6	47.4	.12	5.99	.016	.10	.098	.105	.142	6.42	6.49	.7	<.1
FEB													
07...	9.1	25.5	.57	3.63	.048	.64	.365	.42	.86	4.78	5.99	5.4	.2
MAR													
15...	13.0	46.1	<.04	7.16	.010	.14	.063	.103	.154	8.17	7.49	1.1	<.1
APR													
15...	11.2	29.5	.11	9.39	.149	3.71	.078	.128	.90	10.7	13.3	33.6	1.0
MAY													
10...	11.3	36.9	<.04	8.50	.011	.44	.061	.113	.20	9.35	9.26	3.2	<.1
JUN													
08...	14.4	30.3	<.04	9.59	.042	1.36	.106	.150	.50	10.1	12.3	8.7	.1
JUL													
14...	16.6	33.1	<.04	8.78	.014	.88	.181	.21	.33	8.79	9.53	5.5	<.1
AUG													
09...	<.2	38.9	<.04	.25	.023	1.99	<.012	.022	.28	.90	2.65	12.3	<.1
SEP													
07...	4.1	49.1	<.04	<.06	<.008	.58	.026	.051	.21	.44	1.02	4.3	<.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
19...	6.0	2.9	24.7	106	<.006	E.034	.007	<.005	<.005	.452	<.050	<.010	<.004
NOV													
17...	1.0	2.6	3.1	2.1	<.006	E.056	<.020	<.005	<.005	.118	<.050	<.010	<.004
DEC													
08...	3.4	6.1	19.5	21.9	<.006	E.038	.013	<.005	<.005	.106	<.050	<.010	<.004
JAN													
12...	.7	2.9	.9	2.8	<.006	E.040	<.006	<.005	<.005	.126	<.050	<.010	<.004
FEB													
07...	5.2	7.9	13.1	8.9	<.006	E.032	.021	<.005	<.005	.082	<.050	<.010	<.004
MAR													
15...	1.1	2.8	2.7	3.9	<.006	E.028	E.003	<.005	<.005	.050	<.050	<.010	<.004
APR													
15...	32.5	5.7	34.5	32.9	<.006	E.061	.073	<.005	<.005	.559	<.050	<.010	<.004
MAY													
10...	3.2	2.7	7.8	28.4	<.006	E.046	.085	.005	<.005	.315	<.050	<.010	<.004
JUN													
08...	8.6	4.4	14.1	18.6	<.006	E.622	1.22	.036	<.005	8.88	<.050	<.010	<.004
JUL													
14...	5.5	2.7	--	--	<.006	E.082	.012	<.005	<.005	.520	<.050	<.010	<.004
AUG													
09...	12.2	4.7	--	--	<.006	E.049	.009	<.005	<.005	.272	<.050	<.010	<.004
SEP													
07...	4.2	4.5	30.2	51.5	<.006	E.012	<.006	<.005	<.005	.156	<.050	<.010	<.004

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT 19...	<.041	<.020	<.005	<.006	<.018	<.003	E.004	<.005	<.009	<.02	<.004	<.009	<.005
NOV 17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC 08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN 12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB 07...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR 15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR 15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY 10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN 08...	<.041	<.020	<.010	<.006	<.020	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL 14...	<.041	<.020	<.005	<.006	<.030	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG 09...	<.041	<.020	.011	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP 07...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT 19...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.031	<.006	<.003	<.007
NOV 17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.062	<.006	<.003	<.007
DEC 08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.071	<.006	<.003	<.007
JAN 12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.038	<.006	<.003	<.007
FEB 07...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.079	<.006	<.003	<.007
MAR 15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.049	<.006	<.003	<.007
APR 15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.201	<.010	<.003	<.007
MAY 10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.245	<.006	<.003	<.007
JUN 08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.716	.036	<.003	<.007
JUL 14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.108	<.006	<.003	<.007
AUG 09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.089	<.006	<.003	<.007
SEP 07...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.033	<.006	<.003	<.007

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)
OCT													
19...	<.006	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	E.004	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
08...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
12...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
07...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAR													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
15...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.010	<.02	<.034
MAY													
10...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	E.003	<.02	<.034
JUN													
08...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	.031	<.02	<.034
JUL													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.010	<.02	<.034
AUG													
09...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
07...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)	Number of sampling points, count (00063)
OCT							
19...	<.02	<.010	<.006	<.009	22	16	10
NOV							
17...	<.02	<.010	<.006	<.009	--	--	10
DEC							
08...	<.02	<.010	<.006	<.009	390	4,080	10
JAN							
12...	<.02	<.010	<.006	<.009	18	48	4
FEB							
07...	<.02	<.010	<.006	<.009	380	3,440	10
MAR							
15...	<.02	<.010	<.006	<.009	31	116	9
APR							
15...	<.02	<.010	<.006	<.009	1,890	38,900	10
MAY							
10...	<.02	<.010	<.006	<.009	128	760	11
JUN							
08...	<.02	<.010	<.006	<.009	380	3,100	6
JUL							
14...	<.02	<.010	<.006	<.009	132	431	--
AUG							
09...	<.02	<.010	<.006	<.009	68	95	9
SEP							
07...	<.02	<.010	<.006	<.009	39	27	10

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	13.0	4.0	4.0	1.0	2.0	13.0	11.0	21.0	28.0	29.0	29.0
2	23.0	11.0	6.0	4.0	1.0	3.0	13.0	10.0	22.0	26.0	30.0	29.0
3	---	11.0	4.0	3.0	3.0	3.0	14.0	12.0	22.0	25.0	28.0	30.0
4	---	11.0	4.0	2.0	3.0	5.0	15.0	14.0	22.0	24.0	31.0	24.0
5	18.0	11.0	4.0	2.0	5.0	---	16.0	14.0	24.0	26.0	30.0	30.0
6	18.0	12.0	5.0	2.0	4.0	6.0	14.0	16.0	22.0	27.0	27.0	29.0
7	18.0	10.0	4.0	1.0	3.0	4.0	16.0	18.0	27.0	28.0	30.0	29.0
8	20.0	9.0	5.0	1.0	3.0	5.0	16.0	18.0	26.0	26.0	32.0	25.0
9	21.0	9.0	5.0	1.0	2.0	4.0	16.0	20.0	25.0	29.0	32.0	30.0
10	19.0	10.0	5.0	1.0	2.0	4.0	16.0	20.0	23.0	27.0	34.0	30.0
11	19.0	12.0	4.0	1.0	3.0	3.0	16.0	21.0	25.0	27.0	33.0	30.0
12	16.0	8.0	4.0	1.0	2.0	3.0	13.0	18.0	25.0	27.0	29.0	30.0
13	17.0	8.0	3.0	1.0	3.0	4.0	15.0	18.0	26.0	28.0	25.0	28.0
14	15.0	7.0	3.0	0.0	4.0	4.0	15.0	17.0	23.0	30.0	20.0	27.0
15	14.0	8.0	3.0	1.0	5.0	5.0	14.0	15.0	25.0	31.0	27.0	---
16	11.0	8.0	2.0	0.0	2.0	5.0	15.0	14.0	26.0	32.0	28.0	25.0
17	13.0	12.0	3.0	0.0	4.0	8.0	16.0	15.0	25.0	33.0	28.0	26.0
18	13.0	11.0	3.0	0.0	4.0	9.0	17.0	15.0	25.0	31.0	32.0	26.0
19	12.0	11.0	4.0	1.0	3.0	5.0	16.0	18.0	25.0	30.0	30.0	24.0
20	13.0	9.0	2.0	0.0	4.0	7.0	18.0	15.0	26.0	28.0	29.0	28.0
21	13.0	8.0	3.0	1.0	4.0	8.0	16.0	---	27.0	34.0	29.0	28.0
22	16.0	7.0	1.0	---	4.0	8.0	15.0	15.0	29.0	32.0	31.0	29.0
23	16.0	8.0	1.0	---	4.0	5.0	15.0	18.0	30.0	34.0	27.0	26.0
24	16.0	4.0	2.0	---	3.0	9.0	13.0	20.0	31.0	33.0	25.0	30.0
25	17.0	5.0	2.0	1.0	---	4.0	13.0	20.0	27.0	33.0	24.0	26.0
26	15.0	6.0	2.0	0.0	4.0	5.0	14.0	21.0	32.0	26.0	27.0	22.0
27	15.0	5.0	2.0	1.0	4.0	7.0	12.0	20.0	32.0	27.0	31.0	25.0
28	15.0	6.0	2.0	0.0	3.0	9.0	12.0	21.0	30.0	28.0	30.0	20.0
29	16.0	4.0	2.0	1.0	---	10.3	11.0	20.0	30.0	28.0	31.0	20.0
30	14.0	4.0	2.0	1.0	---	12.0	11.0	21.0	30.0	29.0	30.0	22.0
31	14.0	---	4.0	0.0	---	13.0	---	21.0	---	25.0	30.0	---

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	49	41	202	1,030	71	209	77	142	39	100	92	604
2	48	42	214	1,520	51	141	57	118	32	83	108	671
3	48	42	225	1,740	21	54	140	451	29	96	83	482
4	52	44	173	1,110	14	34	292	1,920	73	337	96	522
5	47	41	118	698	54	130	227	1,570	132	773	75	390
6	43	40	93	539	302	1,400	108	516	231	1,680	70	357
7	39	36	91	472	301	2,220	60	245	553	5,200	92	462
8	49	55	80	350	352	3,590	33	119	935	10,800	80	386
9	52	61	51	187	234	1,960	43	142	468	5,260	59	283
10	48	48	57	174	141	880	32	98	219	1,840	54	242
11	43	40	56	157	106	547	19	56	134	856	50	213
12	38	34	32	83	62	273	79	260	136	832	71	297
13	44	38	21	48	48	181	202	1,420	640	7,350	44	178
14	37	30	19	40	42	136	180	1,980	1,990	57,200	32	124
15	32	25	16	33	22	61	73	1,020	1,830	59,000	35	130
16	24	18	18	35	15	33	28	323	1,510	36,600	34	120
17	26	19	50	98	33	64	41	411	1,670	37,300	36	122
18	28	20	72	144	32	55	70	639	1,160	21,300	38	129
19	28	21	125	302	50	81	92	760	625	9,050	35	120
20	36	28	113	287	41	60	100	756	360	4,300	30	100
21	44	37	52	139	127	181	108	738	487	5,170	27	87
22	65	86	42	107	141	195	110	689	349	3,460	27	83
23	400	1,670	46	115	121	166	110	627	228	2,090	24	74
24	340	1,430	25	67	104	142	109	568	196	1,660	20	64
25	145	357	20	53	89	120	106	498	163	1,280	33	130
26	124	279	36	91	99	134	72	309	174	1,290	55	291
27	430	1,970	36	100	80	116	56	218	120	845	108	698
28	582	4,360	30	93	65	94	45	158	85	577	100	623
29	280	1,290	25	76	53	75	36	112	---	---	84	504
30	189	697	27	82	61	92	31	88	---	---	96	562
31	216	1,100	---	---	50	87	27	74	---	---	108	618
TOTAL	---	13,999	---	9,970	---	13,511	---	17,025	---	276,329	---	9,666

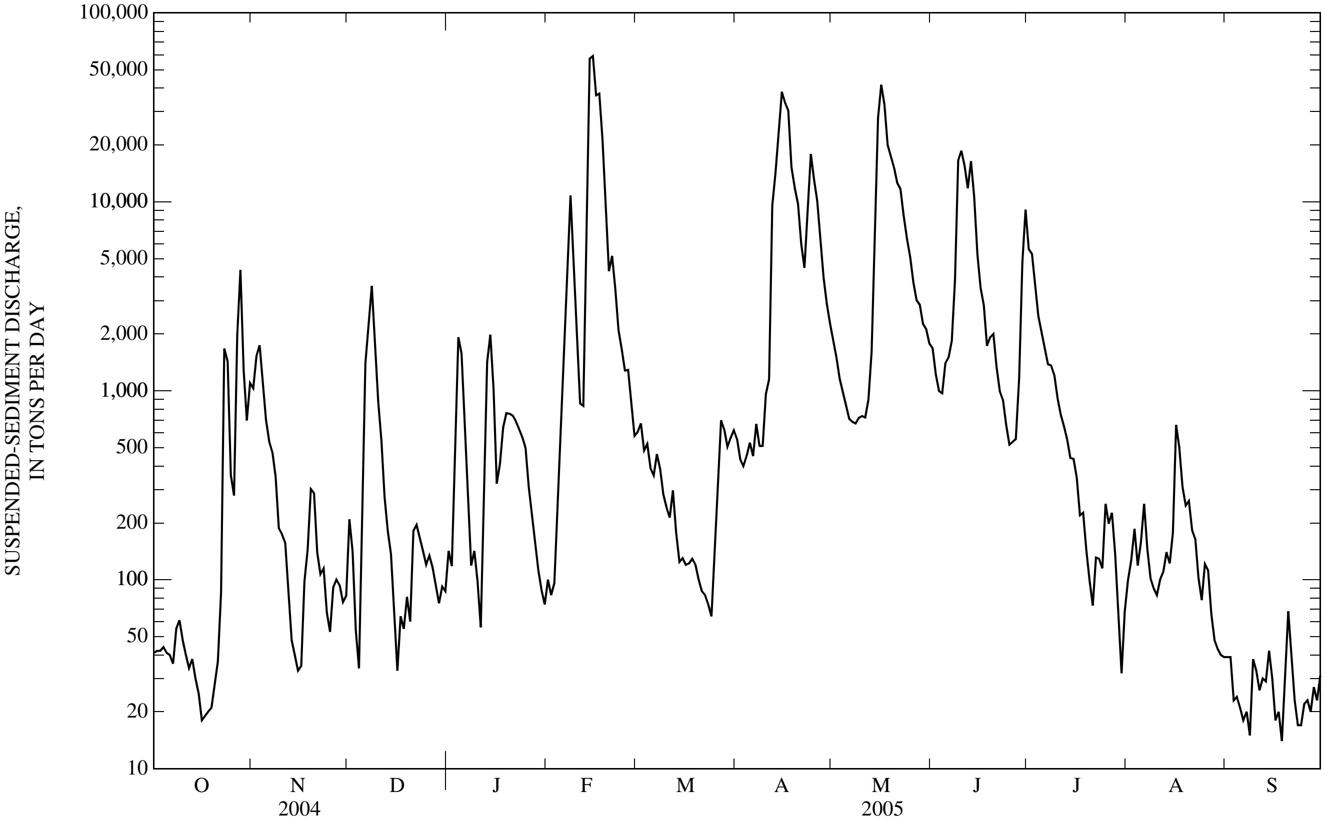
05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	100	555	204	1,860	252	1,680	556	5,620	52	99	39	39
2	82	434	177	1,500	196	1,220	574	5,310	70	126	39	39
3	78	399	147	1,160	172	998	446	3,730	108	186	26	23
4	91	452	133	989	172	970	338	2,480	70	119	29	24
5	111	531	120	841	233	1,400	307	2,040	92	158	27	21
6	94	451	106	710	219	1,500	287	1,690	148	252	25	18
7	131	667	107	684	233	1,840	238	1,380	93	146	28	20
8	103	510	108	672	476	3,860	234	1,360	70	102	20	15
9	102	511	118	719	1,430	16,500	237	1,210	65	90	36	38
10	161	961	124	734	1,460	18,600	202	913	62	83	40	33
11	203	1,150	119	722	1,070	15,500	183	747	74	100	37	26
12	979	9,540	135	897	979	11,800	175	649	77	110	37	30
13	1,030	14,200	208	1,620	1,330	16,400	160	553	80	140	36	29
14	1,480	23,400	549	7,600	893	10,600	136	441	66	122	51	42
15	2,040	38,200	1,480	27,800	593	5,290	143	436	96	178	42	30
16	1,880	33,500	2,070	41,600	447	3,500	119	347	197	658	24	18
17	1,840	30,500	1,600	32,700	354	2,840	79	219	163	499	30	20
18	1,020	15,200	983	20,000	228	1,730	87	226	124	310	23	14
19	912	11,800	857	17,400	296	1,920	58	143	114	247	41	34
20	831	9,720	697	15,200	339	2,000	43	99	124	261	86	68
21	557	5,980	599	12,600	246	1,330	32	73	98	183	53	38
22	429	4,470	621	11,700	201	996	56	131	94	164	37	23
23	708	9,810	531	8,460	194	892	57	129	66	102	29	17
24	1,100	17,900	494	6,360	152	658	57	115	60	78	30	17
25	835	13,100	455	5,090	127	518	131	252	84	121	41	22
26	704	10,100	372	3,740	137	536	99	198	77	112	41	23
27	487	6,260	329	3,010	151	555	105	226	53	66	36	20
28	333	3,950	336	2,850	241	1,170	67	137	43	48	49	27
29	266	2,880	282	2,260	429	4,770	34	66	42	43	43	23
30	229	2,270	281	2,120	806	9,090	16	32	41	40	51	31
31	---	---	250	1,780	---	---	33	68	41	39	---	---
TOTAL	---	269,401	---	235,378	---	140,663	---	31,020	---	4,982	---	822

YEAR 1,022,766

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued



05474500 MISSISSIPPI RIVER AT KEOKUK, IA

LOCATION.--Lat 40°23'37", long 91°22'27", in SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.30, T.65 N., R.4 W., Lee County, Hydrologic Unit 07080104, near right bank in tailwater of dam and powerplant of Union Electric Co. at Keokuk, 0.2 mi upstream from bridge on U.S. Highway 136, 2.7 mi upstream from Des Moines River, and at mile 364.2 upstream from Ohio River.

DRAINAGE AREA.--119,000 mi^2, approximately.

PERIOD OF RECORD.--January 1878 to current year.

GAGE.--Water-stage recorder. Datum of gage is 477.41 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Jan. 1, 1878 to May 1913, nonrecording gage at Galland (formerly Nashville), 8 mi upstream; zero of gage was set to low-water mark of 1864, or 496.52 ft above sea level.

REMARKS.--Discharge computed from records of operation of turbines in powerplant and spillway gates in dam. Minor flow regulation caused by powerplant since 1913 and navigation dams. Records for May 1913 to September 1937 adjusted for change in contents in Keokuk Reservoir, those after September 1937 unadjusted.

COOPERATION.--Records provided by Ameren-Union Electric Co.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1851, reached a stage of 21.0 ft, present site and datum, estimated as 13.5 ft at Galland, discharge, 360,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59,000	65,400	60,200	43,500	39,900	68,700	86,800	117,000	91,900	96,300	44,000	35,000
2	63,700	71,800	61,300	43,900	41,400	62,200	97,900	117,000	90,600	97,600	37,000	29,800
3	57,600	69,200	55,700	48,900	41,700	62,800	108,000	111,000	83,600	98,400	31,700	21,900
4	62,000	75,300	47,800	60,400	42,100	51,500	109,000	105,000	83,300	99,000	27,100	21,500
5	61,700	72,000	52,100	66,600	47,400	48,100	107,000	93,300	82,200	97,200	31,200	20,300
6	60,500	79,000	53,600	52,800	56,900	49,600	110,000	86,700	85,900	96,000	34,900	20,800
7	58,200	80,300	57,800	40,600	65,400	51,000	120,000	80,700	81,900	94,400	33,800	22,300
8	56,800	79,900	64,600	39,400	76,000	56,600	120,000	75,800	81,600	89,000	30,600	29,600
9	55,200	73,700	65,500	43,100	83,500	65,900	127,000	78,700	91,800	77,600	27,200	33,200
10	52,500	75,700	59,600	45,200	88,600	67,600	129,000	75,100	86,800	75,000	27,000	32,100
11	53,200	71,400	52,000	48,300	88,500	66,700	136,000	71,100	88,900	73,100	27,900	31,600
12	52,500	65,000	59,200	51,100	82,500	72,300	145,000	67,300	85,600	65,500	32,100	32,200
13	50,900	63,700	59,900	54,500	81,300	70,800	147,000	82,000	83,800	63,300	34,900	29,100
14	48,500	59,500	60,800	45,900	95,900	71,100	147,000	73,500	82,700	57,800	38,800	26,700
15	45,600	58,300	60,700	47,500	108,000	68,000	148,000	81,200	88,600	55,600	34,400	28,400
16	43,500	58,400	53,000	44,800	119,000	58,600	148,000	88,000	91,000	52,600	30,400	32,000
17	41,600	53,900	48,500	42,900	122,000	58,500	143,000	95,000	96,400	46,800	26,300	32,200
18	42,600	52,100	44,700	41,700	121,000	57,200	138,000	94,000	95,200	45,200	21,400	32,100
19	42,900	55,900	47,700	41,900	116,000	50,500	136,000	93,000	93,200	42,900	22,400	32,000
20	42,600	52,700	32,700	41,600	106,000	48,400	130,000	98,600	91,000	40,600	34,000	35,000
21	39,500	53,400	24,800	41,000	110,000	55,200	125,000	104,000	90,200	33,700	37,500	37,300
22	39,200	52,400	21,200	40,400	105,000	53,600	129,000	103,000	90,800	34,700	41,600	35,200
23	49,100	52,600	21,700	38,600	93,100	53,900	119,000	102,000	88,900	35,700	35,100	35,000
24	51,600	56,500	26,800	36,800	81,000	52,100	112,000	101,000	91,500	42,500	29,700	34,100
25	48,700	52,400	28,100	37,200	76,500	53,500	120,000	103,000	90,200	47,400	29,900	33,400
26	47,600	56,600	29,000	38,100	74,700	53,400	123,000	103,000	86,800	48,200	26,700	34,400
27	55,600	61,600	32,800	40,800	69,900	55,800	120,000	99,000	87,400	45,600	28,000	42,100
28	56,300	59,000	32,900	41,700	73,000	59,000	120,000	102,000	91,900	45,300	25,800	48,600
29	56,000	62,000	33,200	40,500	---	64,100	123,000	100,000	93,700	45,400	25,600	49,200
30	48,900	63,500	38,700	39,800	---	74,100	122,000	98,900	94,800	45,900	27,700	48,000
31	57,000	---	37,400	40,600	---	77,100	---	94,300	---	49,800	34,400	---
TOTAL	1,600,600	1,903,200	1,424,000	1,380,100	2,306,300	1,857,900	3,745,700	2,894,200	2,662,200	1,938,100	969,100	975,100
MEAN	51,630	63,440	45,940	44,520	82,370	59,930	124,900	93,360	88,740	62,520	31,260	32,500
MAX	63,700	80,300	65,500	66,600	122,000	77,100	148,000	117,000	96,400	99,000	44,000	49,200
MIN	39,200	52,100	21,200	36,800	39,900	48,100	86,800	67,300	81,600	33,700	21,400	20,300
AC-FT	3,175,000	3,775,000	2,825,000	2,737,000	4,575,000	3,685,000	7,430,000	5,741,000	5,280,000	3,844,000	1,922,000	1,934,000
CFSM	0.43	0.53	0.39	0.37	0.69	0.50	1.05	0.78	0.75	0.53	0.26	0.27
IN.	0.50	0.59	0.45	0.43	0.72	0.58	1.17	0.90	0.83	0.61	0.30	0.30

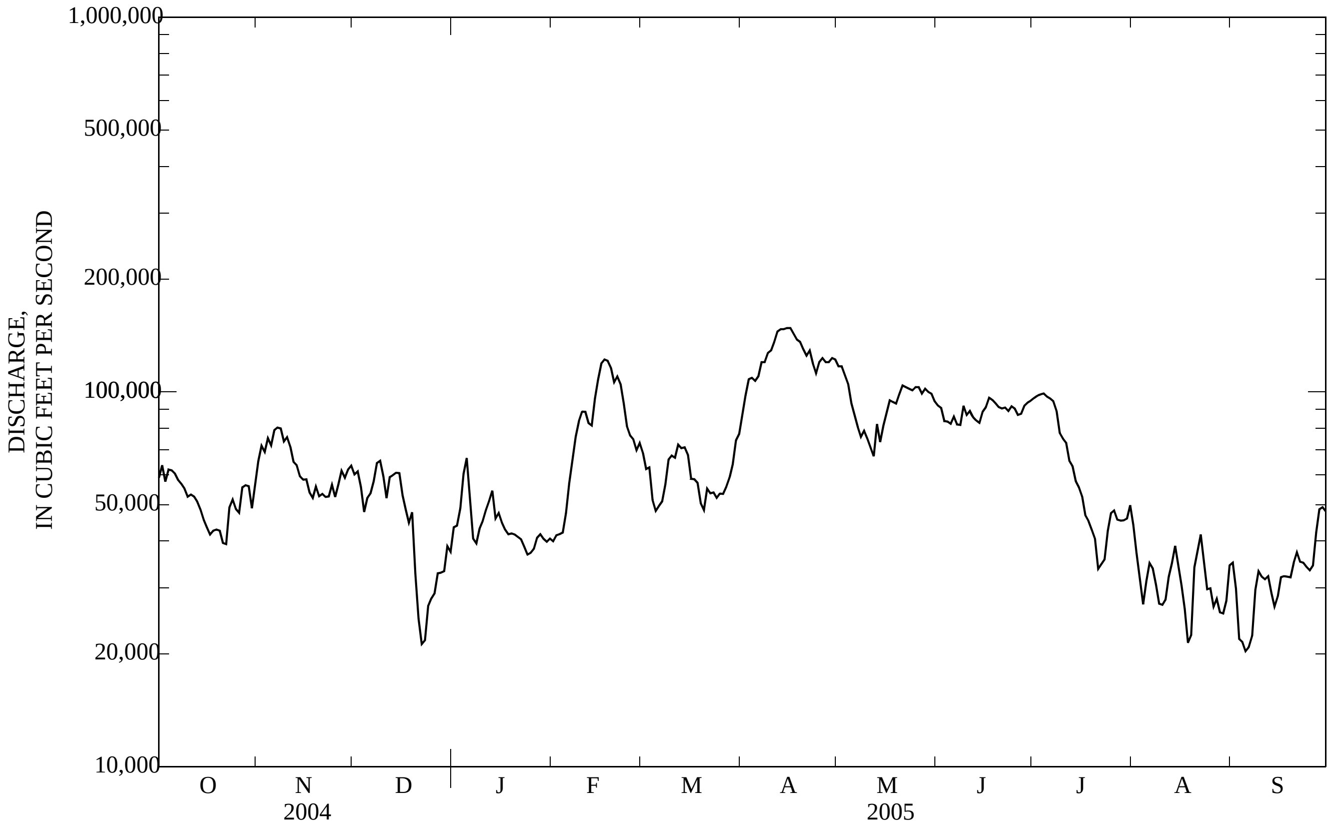
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1879 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	50,910	51,200	38,760	36,100	43,050	80,230	119,700	109,500	95,390	75,110	49,630	47,270
MAX	221,100	211,300	125,600	101,600	95,620	185,400	250,100	260,700	227,300	385,800	223,000	163,300
(WY)	(1882)	(1882)	(1983)	(1973)	(1984)	(1973)	(1993)	(1888)	(1892)	(1993)	(1993)	(1993)
MIN	16,060	16,020	13,450	14,650	15,790	21,780	32,930	27,600	17,400	16,280	13,030	15,530
(WY)	(1934)	(1934)	(1934)	(1940)	(1899)	(1934)	(1895)	(1934)	(1934)	(1988)	(1936)	(1976)

05474500 MISSISSIPPI RIVER AT KEOKUK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1879 - 2005	
ANNUAL TOTAL	27,953,900		23,656,500			
ANNUAL MEAN	76,380		64,810		66,440	
HIGHEST ANNUAL MEAN					162,500	1993
LOWEST ANNUAL MEAN					21,540	1934
HIGHEST DAILY MEAN	262,000	Jun 3	148,000	Apr 15	434,000	Jul 10, 1993
LOWEST DAILY MEAN	16,800	Jan 7	20,300	Sep 5	5,000	Dec 27, 1933
ANNUAL SEVEN-DAY MINIMUM	21,900	Jan 6	23,700	Sep 2	8,270	Dec 25, 1933
MAXIMUM PEAK FLOW					446,000	Jul 10, 1993
MAXIMUM PEAK STAGE					27.58	Jul 10, 1993 a
ANNUAL RUNOFF (AC-FT)	55,450,000		46,920,000		48,140,000	
ANNUAL RUNOFF (CFSM)	0.642		0.545		0.558	
ANNUAL RUNOFF (INCHES)	8.74		7.40		7.59	
10 PERCENT EXCEEDS	156,000		107,000		133,000	
50 PERCENT EXCEEDS	60,400		57,200		51,000	
90 PERCENT EXCEEDS	28,000		32,000		23,000	

a From floodmark.



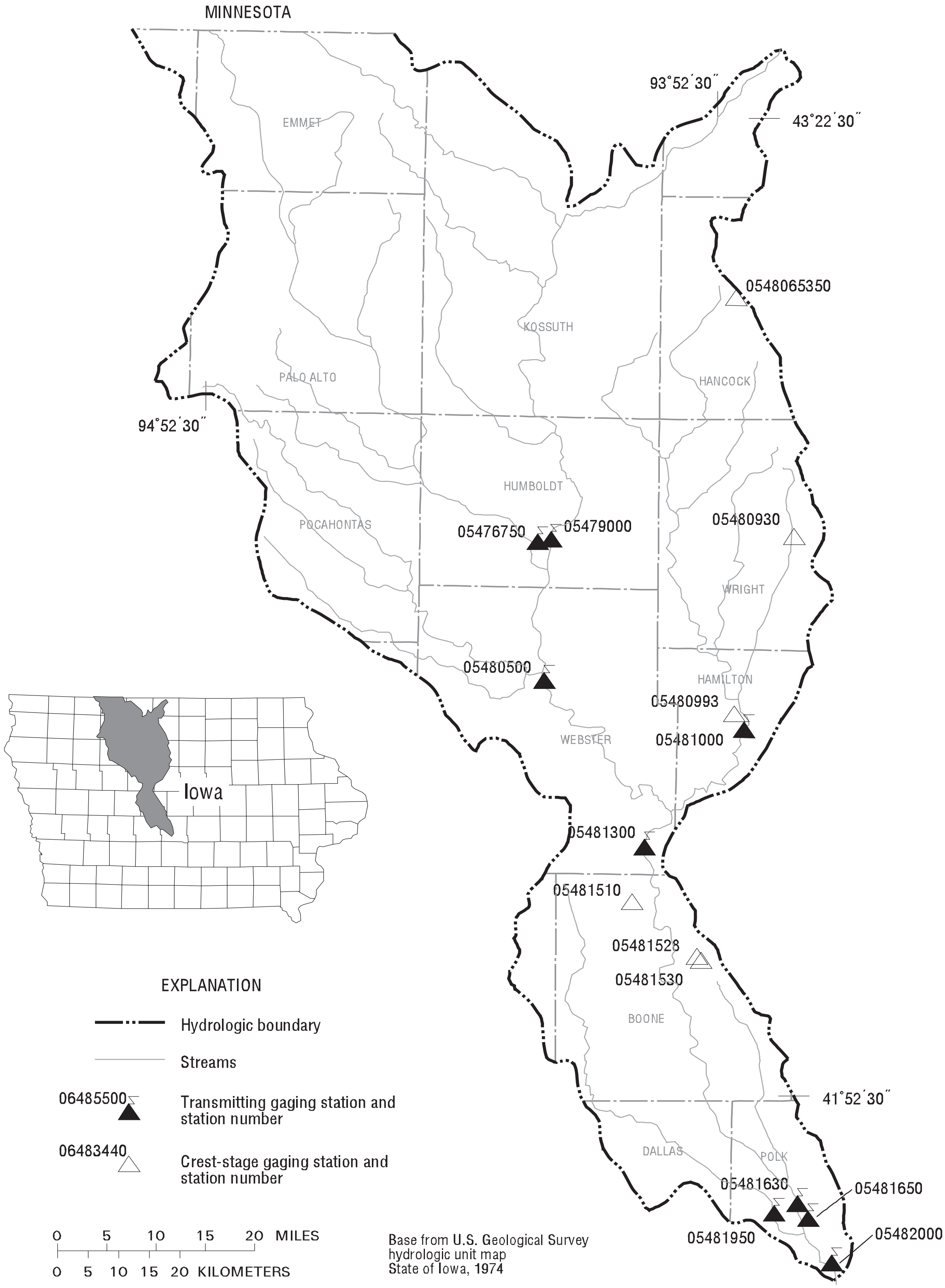


Figure 14. Locations of active continous-record and crest-stage gaging stations in the Upper Des Moines River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

05476750 DES MOINES RIVER AT HUMBOLDT, IA

LOCATION.--Lat 42°43'10", long 94°13'13", in SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.1, T.91 N., R.29 W., Humboldt County, Hydrologic Unit 07100002 on left bank 5 ft downstream from First Avenue in City of Humboldt, 0.84 mi downstream of Reasoner Dam, about 700 ft downstream from City of Humboldt water plant, 3.2 mi upstream from Indian Creek, 4.1 mi (revised) upstream from East Fork Des Moines River, and 323.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--2,256 mi^2.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1970, published as "West Fork Des Moines River at Humboldt".

GAGE.--Water stage recorder. Datum of gage is 1,053.54 ft above NGVD of 1929. Prior to Oct. 3, 1966, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Daily nonrecording gage readings made from Mar. 7, 1940 to Sept. 30, 1964, but discharge not published for this period because of extreme regulation at dam 700 ft upstream from gage. Power generation and streamflow regulation discontinued August 1964. Low-flow discharges occasionally affected by minor regulation at Reasoner Dam. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1947, reached a stage of 12.2 ft, discharge, 11,000 ft^3/s at present site and datum.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,970	744	e746	e342	231	427	1,540	1,860	2,450	1,800	767	248
2	1,870	756	728	e324	241	508	1,470	1,780	2,350	1,700	687	222
3	1,810	786	734	e308	253	552	1,380	1,700	2,260	1,600	610	205
4	1,710	822	755	e295	269	511	1,310	1,620	2,200	1,460	572	191
5	1,610	816	758	e287	315	474	1,250	1,550	2,180	1,320	503	180
6	1,490	791	762	e274	e293	461	1,210	1,510	2,150	1,270	445	180
7	1,410	770	746	e315	e269	464	1,170	1,540	2,110	1,180	411	184
8	1,370	721	739	339	e283	460	1,160	2,210	2,120	1,130	389	194
9	1,530	695	715	321	e232	452	1,130	3,600	2,240	1,030	383	221
10	1,570	667	707	309	e284	447	1,120	4,380	2,400	1,040	358	272
11	1,440	647	689	297	e267	484	1,150	4,280	3,120	963	376	302
12	1,340	616	680	294	e307	474	1,300	4,220	3,350	937	374	315
13	1,270	599	585	e278	e403	421	1,910	4,850	3,240	892	368	313
14	1,220	571	e386	e274	e761	385	2,340	5,760	3,000	828	344	294
15	1,170	549	e413	e265	e1,710	397	2,370	6,190	2,810	778	313	272
16	1,100	553	e381	e253	e1,580	430	2,340	6,120	2,620	727	292	280
17	1,050	570	e355	e232	e1,080	444	2,340	6,090	2,530	697	278	362
18	1,000	582	e334	e217	e913	452	2,390	5,960	2,410	663	279	476
19	967	615	e315	226	e844	429	2,510	5,360	2,290	578	251	609
20	932	676	e373	206	806	362	2,940	4,710	2,190	557	276	676
21	915	876	e342	206	754	380	2,970	4,270	2,110	539	436	669
22	907	948	e324	e204	694	440	3,020	3,960	2,340	500	487	627
23	896	938	e317	207	670	448	3,210	3,750	2,450	485	428	603
24	883	903	e309	198	629	454	3,060	3,600	2,230	526	373	673
25	810	864	e336	197	622	502	2,750	3,430	2,280	570	331	727
26	770	838	e328	e190	582	564	2,560	3,210	2,500	568	309	1,290
27	730	828	e334	e184	569	695	2,370	3,140	2,310	602	292	2,400
28	728	816	e320	e179	574	885	2,210	3,070	2,200	603	309	2,920
29	765	839	e336	e208	---	1,190	2,060	2,920	2,120	619	321	3,210
30	750	e787	e365	226	---	1,400	1,950	2,730	1,950	712	309	3,360
31	743	---	e353	228	---	1,490	---	2,570	---	805	280	---
TOTAL	36,726	22,183	15,565	7,883	16,435	17,482	60,490	111,940	72,510	27,679	12,151	22,475
MEAN	1,185	739	502	254	587	564	2,016	3,611	2,417	893	392	749
MAX	1,970	948	762	342	1,710	1,490	3,210	6,190	3,350	1,800	767	3,360
MIN	728	549	309	179	231	362	1,120	1,510	1,950	485	251	180
AC-FT	72,850	44,000	30,870	15,640	32,600	34,680	120,000	222,000	143,800	54,900	24,100	44,580
CFSM	0.53	0.33	0.22	0.11	0.26	0.25	0.89	1.60	1.07	0.40	0.17	0.33
IN.	0.61	0.37	0.26	0.13	0.27	0.29	1.00	1.85	1.20	0.46	0.20	0.37

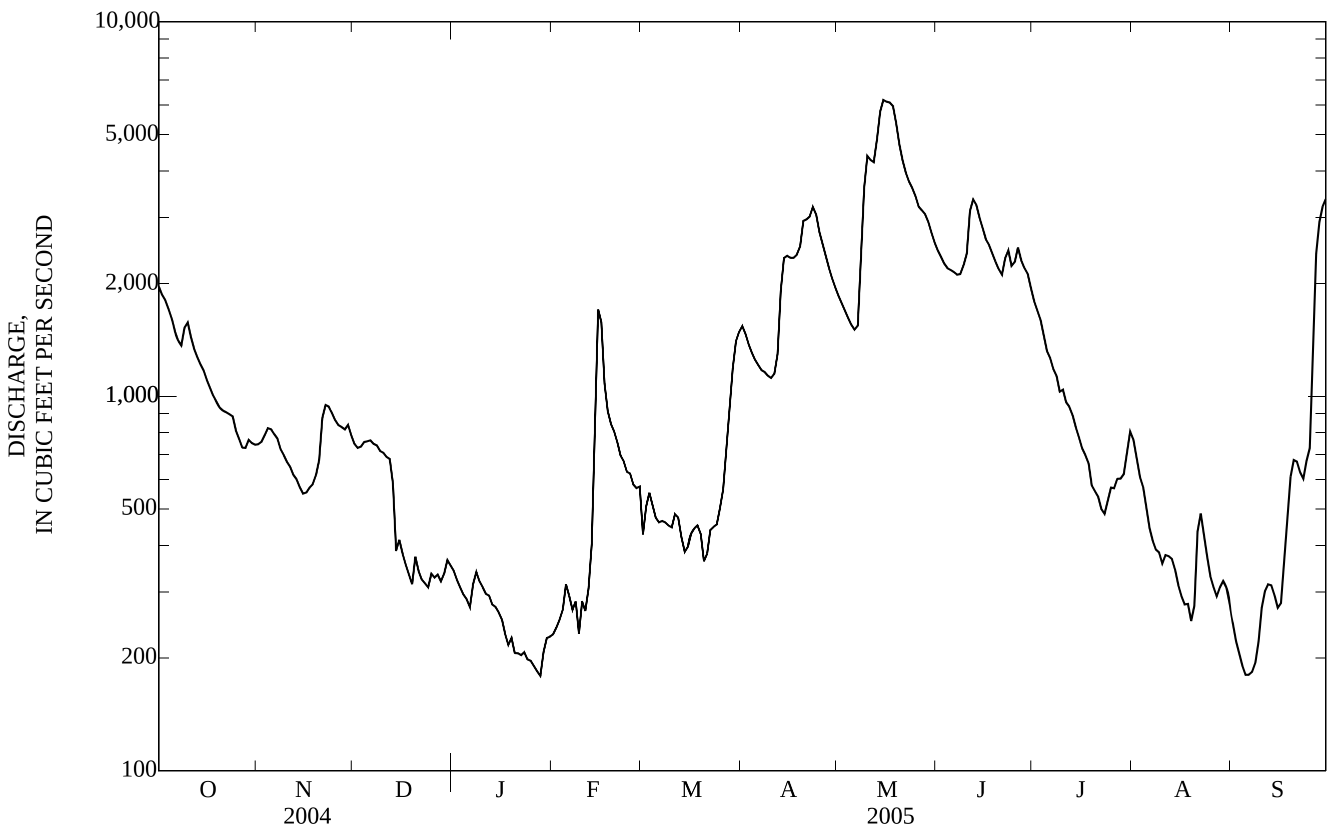
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	607	622	400	225	324	1,207	2,629	2,027	1,996	1,556	675	535
MAX	3,768	2,656	1,675	1,078	1,570	5,110	8,454	6,428	9,126	11,540	4,477	3,097
(WY)	(1987)	(1980)	(1983)	(1983)	(1983)	(1983)	(1969)	(2001)	(1993)	(1993)	(1993)	(1979)
MIN	20.4	28.8	19.9	13.5	19.8	78.9	94.4	77.6	72.3	81.0	42.4	30.1
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1968)	(1968)	(1968)	(1977)	(1976)	(1976)	(1976)

05476750 DES MOINES RIVER AT HUMBOLDT, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	375,755		423,519			
ANNUAL MEAN	1,027		1,160		1,068	
HIGHEST ANNUAL MEAN					4,136	1993
LOWEST ANNUAL MEAN					74.3	1977
HIGHEST DAILY MEAN	5,140	May 25	6,190	May 15	17,800	Apr 14, 1969
LOWEST DAILY MEAN	48	Jan 30	179	Jan 28 a	13	Nov 12, 1976
ANNUAL SEVEN-DAY MINIMUM	52	Feb 9	194	Sep 3	13	Jan 12, 1977
MAXIMUM PEAK FLOW			6,270	May 15	19,000	Jul 13, 1993
MAXIMUM PEAK STAGE			8.92	May 15	15.40	Apr 14, 1969
INSTANTANEOUS LOW FLOW			169	Sep 6	13	Jan 12, 1977
ANNUAL RUNOFF (AC-FT)	745,300		840,000		774,100	
ANNUAL RUNOFF (CFSM)	0.455		0.514		0.474	
ANNUAL RUNOFF (INCHES)	6.20		6.98		6.43	
10 PERCENT EXCEEDS	2,600		2,660		2,830	
50 PERCENT EXCEEDS	676		727		443	
90 PERCENT EXCEEDS	67		273		69	

a Ice affected.
e Estimated.



05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IA

LOCATION.--Lat 42°43'25", long 94°11'36", in NW$\frac{1}{4}$ SE$\frac{1}{4}$ sec.6, T.91 N., R.28 W., Humboldt County, Hydrologic Unit 07100003, on right bank 50 ft upstream from old mill dam, in city park at east edge of Dakota City, 500 ft upstream from bridge on County Highway P56, 0.6 mi downstream from bridge on State Highway 3, 3.7 mi (revised) upstream from confluence with Des Moines River, and 322.6 mi (revised) upstream from mouth of Des Moines River.

DRAINAGE AREA.--1,308 mi^2.

PERIOD OF RECORD.--March 1940 to current year. Prior to October 1954, published as "near Hardy".

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1944, 1945-47 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,038.71 ft above NGVD of 1929. Prior to Oct. 1, 1954, nonrecording gage at site 8 mi upstream at different datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1938 reached a stage of 17.4 ft, discharge, about 22,000 ft^3/s, site and datum in use during the period 1940-54.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,600	511	470	e227	e106	e208	1,260	1,390	2,460	1,400	303	146
2	1,530	493	463	e217	e111	e273	1,290	1,290	2,330	1,260	256	123
3	1,470	479	454	e202	e120	314	1,280	1,210	2,200	1,130	217	105
4	1,420	470	451	e191	e134	312	1,220	1,140	2,080	1,020	199	93
5	1,400	478	442	e181	e163	297	1,120	1,090	1,970	940	206	83
6	1,380	493	434	e168	e146	293	1,030	1,050	1,860	912	182	79
7	1,350	489	421	e196	e140	278	949	1,090	1,760	852	159	74
8	1,300	474	413	e215	e163	260	889	1,690	1,730	776	147	84
9	1,240	453	409	e196	e121	244	843	2,380	1,820	733	139	97
10	1,160	421	407	e178	e165	220	822	3,170	1,880	676	130	144
11	1,090	401	405	e169	e144	216	819	4,140	2,230	623	129	333
12	1,040	391	427	e167	e168	233	874	4,800	2,560	553	151	485
13	1,020	368	e358	e150	e224	212	1,150	5,590	2,530	491	236	408
14	1,010	348	e206	e141	e540	190	1,490	6,610	2,430	444	350	307
15	1,030	338	e234	e135	e983	174	1,670	6,590	2,330	409	450	250
16	1,000	328	e223	e122	e919	200	1,800	6,170	2,180	391	378	219
17	954	324	e212	e110	e705	216	1,900	5,680	2,010	369	293	196
18	896	328	e195	e105	e623	229	1,960	5,240	1,830	351	263	176
19	832	340	e183	e120	e592	208	1,920	4,780	1,650	324	216	162
20	783	349	e212	e104	e553	183	2,120	4,420	1,510	297	187	174
21	739	366	e198	e105	e518	153	2,300	4,130	1,510	301	173	281
22	690	419	e193	e102	e487	180	2,390	3,990	1,470	287	173	252
23	655	489	e187	e111	e460	213	2,550	3,810	1,450	284	156	212
24	627	522	e179	e103	e417	249	2,460	3,600	1,480	284	137	207
25	610	518	e208	e103	406	255	2,330	3,470	1,610	281	123	246
26	580	498	e196	e98	400	265	2,210	3,380	2,090	317	119	645
27	547	497	e210	e94	362	289	2,050	3,230	2,030	277	137	1,400
28	523	491	e195	e88	341	369	1,870	3,070	1,860	334	165	1,650
29	515	478	e214	e104	---	591	1,690	2,900	1,680	451	148	1,940
30	514	461	e240	e109	---	905	1,530	2,750	1,540	391	213	2,420
31	508	---	e234	e106	---	1,110	---	2,600	---	339	178	---
TOTAL	30,013	13,015	9,273	4,417	10,211	9,339	47,786	106,450	58,070	17,497	6,313	12,991
MEAN	968	434	299	142	365	301	1,593	3,434	1,936	564	204	433
MAX	1,600	522	470	227	983	1,110	2,550	6,610	2,560	1,400	450	2,420
MIN	508	324	179	88	106	153	819	1,050	1,450	277	119	74
AC-FT	59,530	25,820	18,390	8,760	20,250	18,520	94,780	211,100	115,200	34,710	12,520	25,770
CFSM	0.74	0.33	0.23	0.11	0.28	0.23	1.22	2.63	1.48	0.43	0.16	0.33
IN.	0.85	0.37	0.26	0.13	0.29	0.27	1.36	3.03	1.65	0.50	0.18	0.37

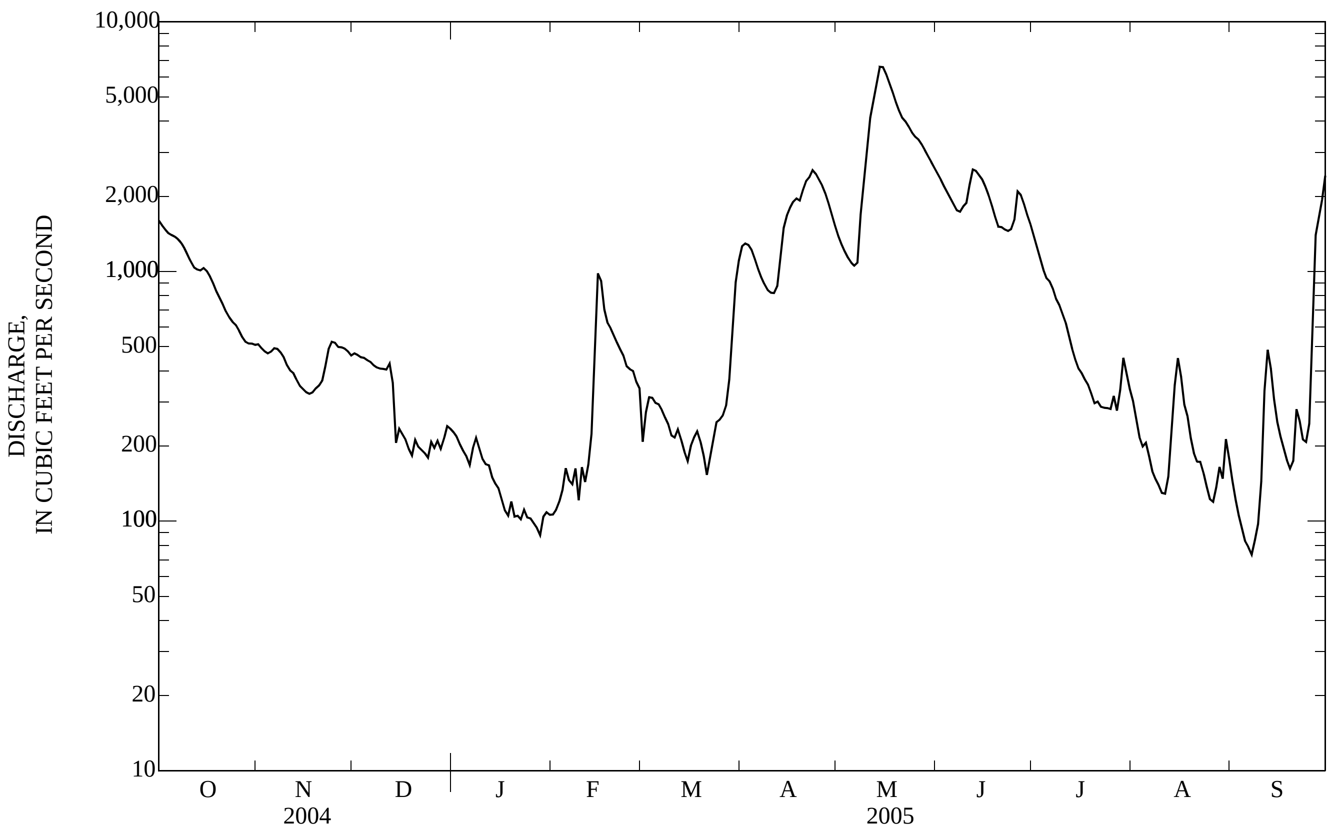
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	316	314	216	122	230	878	1,561	1,265	1,405	901	391	331
MAX	1,713	2,042	1,340	836	1,602	4,033	14,300	12,850	8,143	6,777	4,114	2,666
(WY)	(1983)	(1942)	(1992)	(1992)	(1984)	(1983)	(2001)	(2001)	(2001)	(1993)	(1979)	(1979)
MIN	12.0	14.2	8.45	5.12	10.4	39.4	58.8	75.7	36.3	13.7	15.5	7.40
(WY)	(1959)	(1959)	(1977)	(1977)	(1959)	(1968)	(1977)	(1977)	(1977)	(1977)	(1976)	(1976)

05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	249,344		325,375			
ANNUAL MEAN	681		891		661	
HIGHEST ANNUAL MEAN					3,559	2001
LOWEST ANNUAL MEAN					29.7	1977
HIGHEST DAILY MEAN	6,690	May 26	6,610	May 14	21,000	May 4, 2001
LOWEST DAILY MEAN	18	Jan 7	74	Sep 7	4.8	Jan 11, 1977 a
ANNUAL SEVEN-DAY MINIMUM	20	Jan 5	88	Sep 3	4.8	Jan 8, 1977
MAXIMUM PEAK FLOW			6,690	May 14	18,800	Jun 21, 1954
MAXIMUM PEAK STAGE			16.46	May 14	24.02	Jun 21, 1954
INSTANTANEOUS LOW FLOW			70	Sep 7	4.8	Jan 11, 1977
ANNUAL RUNOFF (AC-FT)	494,600		645,400		479,200	
ANNUAL RUNOFF (CFSM)	0.521		0.682		0.506	
ANNUAL RUNOFF (INCHES)	7.09		9.25		6.87	
10 PERCENT EXCEEDS	1,770		2,220		1,740	
50 PERCENT EXCEEDS	330		421		213	
90 PERCENT EXCEEDS	31		138		25	

a Also Jan. 12-14, 1977.
e Estimated.



05480500 DES MOINES RIVER AT FORT DODGE, IA

LOCATION.--Lat 42°30'22", long 94°12'04", in NW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.19, T.89 N., R.28 W., Webster County, Hydrologic Unit 07100004, on right bank 400 ft upstream from Soldier Creek, 1,800 ft downstream from Illinois Central Railroad bridge in Fort Dodge, 2,000 ft downstream from Lizard Creek, and 303.2 mi (revised) upstream from mouth.

DRAINAGE AREA.--4,190 mi^2.

PERIOD OF RECORD.--April 1905 to July 1906 (no winter records), October 1913 to September 1927 (published as "at Kalo"), October 1946 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1308: 1924, 1925 (M).

GAGE.--Water-stage recorder. Datum of gage is 969.38 ft above NGVD of 1929. See WSP 1728 for history of changes prior to Dec. 8, 1949.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Occasional minor regulation caused by dam 0.8 mi upstream from gage. U.S. Army Corps of Engineers data collection platform with satellite telemetry and City of Fort Dodge gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,340	1,450	e1,530	e606	e327	e833	3,180	3,720	5,170	5,250	1,340	528
2	3,150	1,440	1,530	e568	e349	e963	3,250	3,540	4,950	4,770	1,180	470
3	3,020	1,460	1,480	e540	e429	e1,110	3,120	3,340	4,740	4,320	1,030	430
4	2,890	1,510	1,500	e514	e517	e1,100	2,940	3,140	4,590	3,950	942	393
5	2,760	1,540	1,500	e494	e496	1,080	2,750	2,970	4,450	3,670	876	362
6	2,630	1,550	1,500	e469	e481	1,020	2,570	2,850	4,340	3,330	797	341
7	2,500	1,560	1,470	e484	e450	1,010	2,420	3,000	4,230	3,100	720	344
8	2,430	1,520	1,440	e486	e468	983	2,330	3,780	4,200	2,870	662	405
9	2,450	1,460	1,410	e502	e457	949	2,240	5,830	4,320	2,590	636	425
10	2,500	1,430	1,390	e482	e451	937	2,200	7,910	4,560	2,470	618	465
11	2,330	1,380	1,370	e473	e447	935	2,230	9,180	6,780	2,290	641	637
12	2,190	1,340	1,380	e480	e511	966	2,410	9,890	8,410	2,090	645	898
13	2,090	1,290	1,320	e444	e716	e835	3,260	11,800	7,840	1,960	684	883
14	2,040	1,250	e1,070	e432	e1,600	e781	4,100	13,800	6,910	1,800	761	751
15	2,030	1,210	e789	e424	e3,230	e767	4,320	13,800	6,300	1,690	867	658
16	1,980	1,200	e801	e418	e3,070	e829	4,380	13,100	5,720	1,570	821	601
17	1,890	1,190	e766	e406	e2,500	881	4,410	12,300	5,310	1,470	703	625
18	1,810	1,210	e738	e389	e2,310	899	4,450	11,700	4,960	1,510	693	706
19	1,730	1,280	e703	e399	e2,180	908	4,520	10,700	4,640	1,350	600	821
20	1,660	1,290	e721	e409	e2,010	790	4,940	9,720	4,410	1,320	548	912
21	1,620	1,480	e685	e386	e1,830	711	5,320	8,960	4,380	1,250	627	1,020
22	1,570	1,670	e644	e349	e1,590	799	5,420	8,340	4,370	1,200	744	1,010
23	1,530	1,750	e615	e322	e1,530	874	5,900	7,760	4,470	1,100	717	932
24	1,500	e1,770	e606	e324	1,420	906	5,700	7,450	4,340	1,090	643	e1,000
25	1,440	e1,720	e626	e339	1,320	980	5,250	7,110	8,940	1,120	590	e1,250
26	1,360	1,690	e614	e302	1,240	1,020	4,930	6,880	20,000	1,350	549	e1,750
27	1,310	1,680	e618	e281	1,220	1,180	4,630	6,740	13,100	1,240	517	3,900
28	1,290	1,630	e605	e264	e1,180	1,430	4,360	6,480	8,650	1,190	575	4,630
29	1,320	e1,630	e618	e283	---	1,890	4,110	6,120	7,030	1,300	554	5,170
30	1,380	e1,590	e650	e305	---	2,540	3,890	5,760	6,110	1,310	621	5,820
31	1,370	---	e637	e312	---	2,880	---	5,430	---	1,450	599	---
TOTAL	63,110	44,170	31,326	12,886	34,329	33,786	115,530	233,100	188,220	66,970	22,500	38,137
MEAN	2,036	1,472	1,011	416	1,226	1,090	3,851	7,519	6,274	2,160	726	1,271
MAX	3,340	1,770	1,530	606	3,230	2,880	5,900	13,800	20,000	5,250	1,340	5,820
MIN	1,290	1,190	605	264	327	711	2,200	2,850	4,200	1,090	517	341
AC-FT	125,200	87,610	62,140	25,560	68,090	67,010	229,200	462,400	373,300	132,800	44,630	75,640
CFSM	0.49	0.35	0.24	0.10	0.29	0.26	0.92	1.79	1.50	0.52	0.17	0.30
IN.	0.56	0.39	0.28	0.11	0.30	0.30	1.03	2.07	1.67	0.59	0.20	0.34

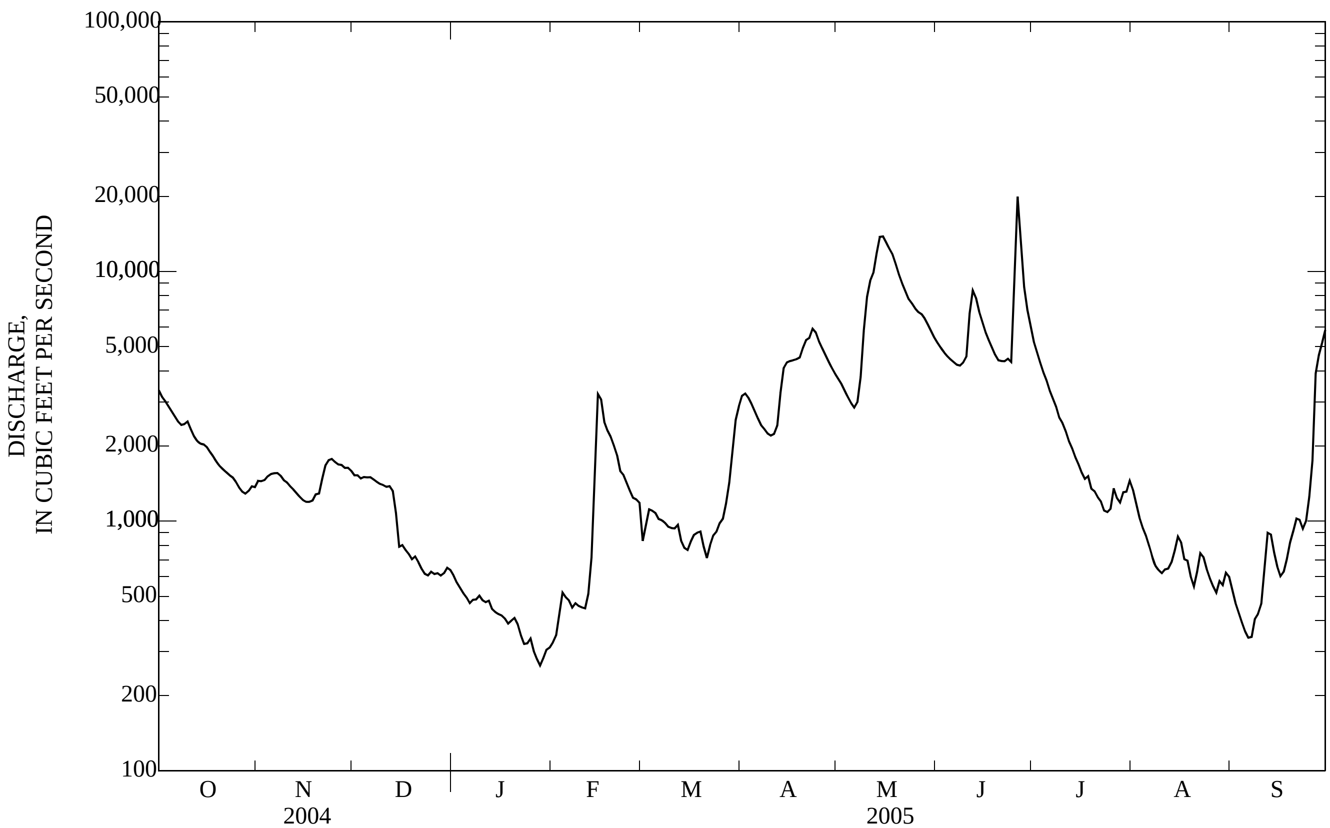
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	905	864	604	381	782	2,486	4,109	3,184	3,549	2,421	1,090	910
MAX	6,120	4,447	3,698	2,257	4,352	11,070	17,530	12,490	16,150	21,530	9,264	6,206
(WY)	(1987)	(1983)	(1983)	(1983)	(1984)	(1983)	(1993)	(2001)	(1993)	(1993)	(1993)	(1979)
MIN	32.8	54.5	34.7	24.0	35.5	141	224	149	138	75.2	69.0	49.9
(WY)	(1957)	(1959)	(1977)	(1977)	(1959)	(1968)	(2000)	(1926)	(1977)	(1926)	(1976)	(1976)

05480500 DES MOINES RIVER AT FORT DODGE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1914 - 2005	
ANNUAL TOTAL	732,467		884,064			
ANNUAL MEAN	2,001		2,422		1,775	
HIGHEST ANNUAL MEAN					7,882	1993
LOWEST ANNUAL MEAN					143	1977
HIGHEST DAILY MEAN	14,400	May 24	20,000	Jun 26	35,100	Apr 8, 1965
LOWEST DAILY MEAN	89	Feb 8	264	Jan 28 a	14	Nov 3, 1955
ANNUAL SEVEN-DAY MINIMUM	92	Feb 8	296	Jan 26	23	Jan 13, 1977
MAXIMUM PEAK FLOW			23,700	Jun 26	35,600	Apr 8, 1965
MAXIMUM PEAK STAGE			12.61	Jun 26	19.62	Jun 23, 1947
INSTANTANEOUS LOW FLOW					14	Nov 3, 1955
ANNUAL RUNOFF (AC-FT)	1,453,000		1,754,000		1,286,000	
ANNUAL RUNOFF (CFSM)	0.478		0.578		0.424	
ANNUAL RUNOFF (INCHES)	6.50		7.85		5.76	
10 PERCENT EXCEEDS	4,710		5,710		4,750	
50 PERCENT EXCEEDS	1,280		1,420		660	
90 PERCENT EXCEEDS	117		470		108	

a Ice affected.
e Estimated.



05481000 BOONE RIVER NEAR WEBSTER CITY, IA

LOCATION.--Lat 42°25'57", long 93°48'20", in NW$^1/_4$ SE$^1/_4$ sec.18, T.88 N., R.25 W., Hamilton County, Hydrologic Unit 07100005, on right bank 100 ft upstream from bridge on State Highway 17, 2.5 mi south of Webster City, 3.2 mi downstream from Brewers Creek, and 21.2 mi upstream from mouth at Des Moines River.

DRAINAGE AREA.--844 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1308: 1940 (M), WSP 1708: 1956.

GAGE.--Water-stage recorder. Datum of gage is 989.57 ft above NGVD of 1929. Prior to June 26, 1940, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1896, 19.1 ft about June 10, 1918, from floodmarks, from information by local resident, discharge, 21,500 ft^3/s. Flood of June 18, 1932, reached a stage of 16.0 ft, discharge, 15,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	65	e65	e59	e30	e133	229	782	693	2,030	355	49
2	51	88	e80	e52	e42	e148	257	725	647	1,620	266	45
3	45	83	e64	e51	e110	e140	285	668	608	1,310	204	42
4	43	71	e78	e46	e181	e148	281	623	580	1,090	164	38
5	45	64	e75	e40	e174	148	266	584	552	908	143	36
6	43	67	89	e26	e164	142	254	560	505	e804	151	36
7	42	67	88	e31	e150	e143	236	569	468	e726	158	35
8	42	66	84	e30	e157	e108	218	939	466	e642	130	51
9	39	66	81	e42	e153	e105	207	1,870	532	e507	122	61
10	40	68	81	e34	e148	112	200	2,400	900	402	142	53
11	41	68	81	e37	e155	108	265	2,880	942	348	174	51
12	40	62	83	e37	e170	e98	1,320	2,770	875	301	177	51
13	39	53	e61	e27	e787	e72	1,840	3,320	874	265	166	70
14	39	51	e56	e16	e1,920	e73	1,840	3,770	794	237	138	51
15	37	49	e71	e15	1,810	e79	1,700	3,700	687	212	119	42
16	37	49	79	e16	1,100	91	1,390	3,140	605	186	106	36
17	38	49	e67	e15	774	94	1,130	2,440	541	166	95	32
18	37	56	e65	e18	583	97	987	2,000	490	191	86	31
19	39	68	e53	e27	493	92	929	1,750	443	167	181	33
20	40	72	e64	e29	427	83	967	1,520	407	236	254	30
21	42	70	e55	e26	331	77	1,310	1,340	418	237	172	30
22	42	67	e45	e17	287	78	1,860	1,200	420	206	126	44
23	47	73	e36	e16	255	94	2,030	1,110	412	173	100	45
24	47	e72	e34	e24	252	102	1,850	1,040	383	172	86	57
25	44	e70	e51	e31	223	111	1,670	943	1,720	217	77	133
26	45	74	e39	e27	212	113	1,410	906	6,840	707	71	214
27	46	82	e38	e25	e204	121	1,200	916	8,320	502	65	817
28	49	80	e41	e26	e170	134	1,030	899	5,200	387	60	962
29	53	e76	e45	e29	---	146	919	831	3,470	292	61	796
30	61	e64	e66	e31	---	175	846	764	2,570	231	58	585
31	49	---	e62	e34	---	211	---	739	---	323	54	---
TOTAL	1,351	2,010	1,977	934	11,462	3,576	28,926	47,698	42,362	15,795	4,261	4,556
MEAN	43.6	67.0	63.8	30.1	409	115	964	1,539	1,412	510	137	152
MAX	61	88	89	59	1,920	211	2,030	3,770	8,320	2,030	355	962
MIN	37	49	34	15	30	72	200	560	383	166	54	30
MED	42	68	65	29	208	108	977	1,040	607	301	130	47
AC-FT	2,680	3,990	3,920	1,850	22,730	7,090	57,370	94,610	84,030	31,330	8,450	9,040
CFSM	0.05	0.08	0.08	0.04	0.49	0.14	1.14	1.82	1.67	0.60	0.16	0.18
IN.	0.06	0.09	0.09	0.04	0.51	0.16	1.27	2.10	1.87	0.70	0.19	0.20

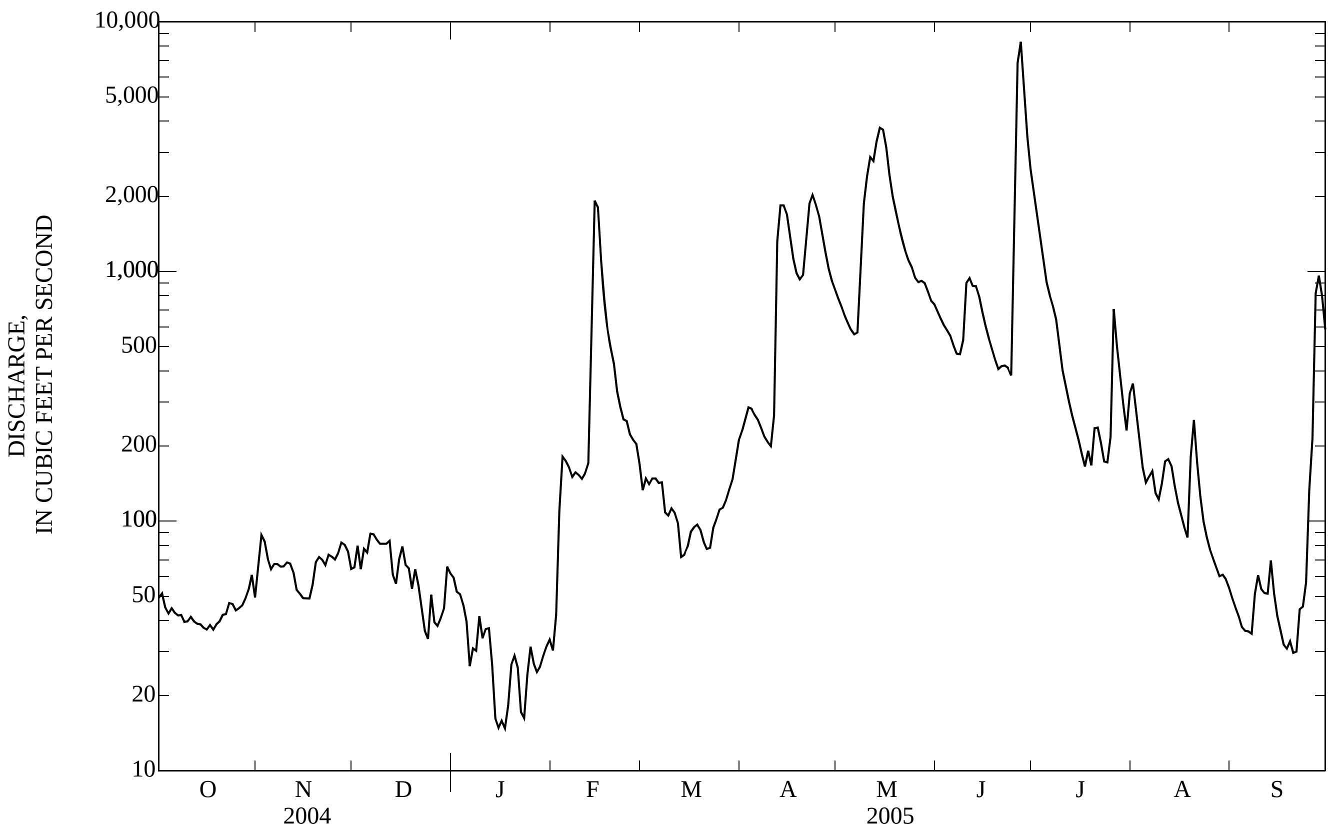
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	236	213	142	95.3	245	778	936	898	1,090	596	256	203
MAX	1,771	1,395	1,181	568	1,847	2,826	4,307	4,315	4,239	4,715	2,942	2,501
(WY)	(1987)	(1993)	(1983)	(1983)	(1984)	(1973)	(1965)	(1991)	(1984)	(1993)	(1993)	(1965)
MIN	6.66	11.0	4.62	0.32	3.60	32.5	33.7	46.0	14.1	8.66	9.79	6.48
(WY)	(1950)	(1950)	(1977)	(1977)	(1950)	(1968)	(1957)	(1968)	(1977)	(1977)	(1949)	(1976)

05481000 BOONE RIVER NEAR WEBSTER CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	196,951.8		164,908			
ANNUAL MEAN	538		452		474	
HIGHEST ANNUAL MEAN					1,861	1993
LOWEST ANNUAL MEAN					36.1	1956
HIGHEST DAILY MEAN	12,700	May 25	8,320	Jun 27	19,500	Jun 22, 1954
LOWEST DAILY MEAN	9.8	Feb 8	15	Jan 15 a	0.00	Feb 7, 1977
ANNUAL SEVEN-DAY MINIMUM	12	Feb 13	19	Jan 13	0.01	Feb 1, 1977
MAXIMUM PEAK FLOW			9,520	Jun 26	20,300	Jun 22, 1954
MAXIMUM PEAK STAGE			12.64	Jun 26	18.55	Jun 22, 1954
INSTANTANEOUS LOW FLOW					0.00	Feb 7, 1977
ANNUAL RUNOFF (AC-FT)	390,700		327,100		343,700	
ANNUAL RUNOFF (CFSM)	0.638		0.535		0.562	
ANNUAL RUNOFF (INCHES)	8.68		7.27		7.64	
10 PERCENT EXCEEDS	1,300		1,200		1,220	
50 PERCENT EXCEEDS	90		121		139	
90 PERCENT EXCEEDS	22		37		17	

a Also Jan. 17, ice affected.
e Estimated



05481300 DES MOINES RIVER NEAR STRATFORD, IA

LOCATION.--Lat 42°15'07", long 93°59'48", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.21, T.86 N., R.27 W., Webster County, Hydrologic Unit 07100004, on right bank 6 ft downstream from bridge on State Highway 175, 0.1 mi downstream from Skillet Creek, 4.0 mi southwest of Stratford, 7.3 mi downstream from Boone River, and 265.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--5,452 mi^2.

PERIOD OF RECORD.--October 1967 to current year in reports of U.S. Geological Survey. Replacement station for 05481500 "near Boone", which operated April 1920 to September 1968. Records not necessarily equivalent.

GAGE.--Water-stage recorder. Datum of gage is 894.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Occasional minor regulation caused by dam at Fort Dodge. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1903, reached a stage of 25.4 ft, from high-water mark, site and datum then in use, discharge, 43,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,640	1,440	e1,580	e689	e410	e1,190	3,060	4,850	6,790	9,290	2,200	609
2	3,410	1,540	e1,570	e647	e431	e1,290	3,300	4,500	6,440	7,890	1,850	544
3	3,220	e1,560	e1,540	e680	e519	e1,410	3,320	4,230	6,110	6,720	1,510	495
4	3,080	e1,580	e1,550	e620	e620	e1,440	3,230	3,970	5,830	5,820	1,270	455
5	2,930	e1,610	e1,540	e580	e607	1,440	3,100	3,760	5,600	5,070	1,120	414
6	2,790	e1,620	e1,530	e559	e620	1,370	2,920	3,600	5,360	4,460	1,020	379
7	2,650	e1,620	1,500	e589	e547	1,350	2,740	3,690	5,130	4,060	954	364
8	2,550	e1,590	1,460	e584	e599	1,310	2,610	3,830	4,980	3,680	877	420
9	2,460	e1,530	1,440	e607	e530	1,260	2,510	6,320	4,970	3,370	821	619
10	2,650	e1,480	1,410	e586	e539	1,250	2,430	9,790	5,490	3,030	900	591
11	2,630	e1,440	1,400	e581	e547	1,230	2,470	12,300	6,620	2,820	855	602
12	2,450	e1,400	1,370	e586	e775	1,230	3,440	13,400	9,920	2,560	950	732
13	2,310	e1,350	1,360	e535	e1,450	e1,150	4,790	15,700	10,300	2,360	879	915
14	2,220	e1,310	1,200	e509	e3,590	e1,080	5,840	19,300	9,030	2,160	884	892
15	2,170	e1,280	e854	e483	e4,920	e1,060	6,380	21,000	8,050	1,990	902	780
16	2,140	e1,250	e887	e478	e4,560	1,070	6,270	20,300	7,290	1,840	945	711
17	2,060	e1,240	e854	e465	e3,670	1,110	6,030	18,300	6,560	1,710	876	668
18	1,970	e1,260	e822	e447	e3,340	1,150	5,890	16,600	6,050	1,750	788	684
19	1,880	e1,320	e787	e460	e3,180	1,180	5,990	15,300	5,550	1,610	768	737
20	1,810	e1,350	e815	e470	3,050	1,140	6,280	13,500	5,090	1,660	790	814
21	1,740	e1,520	e771	e427	2,700	1,050	7,350	12,000	4,970	1,720	754	874
22	1,700	e1,710	e723	e380	2,340	1,000	8,020	11,100	4,830	1,500	765	941
23	1,660	e1,800	e687	e360	2,140	1,060	8,950	10,400	4,970	1,370	804	922
24	1,610	e1,820	e669	e362	2,110	1,140	9,110	9,750	4,900	1,250	754	899
25	1,570	e1,770	e694	e373	1,940	1,220	8,420	9,330	8,470	1,280	695	1,060
26	1,520	e1,730	e669	e348	1,870	1,240	7,650	9,060	19,600	1,920	652	1,210
27	1,460	e1,720	e687	e307	1,710	1,280	6,950	8,800	29,700	2,070	619	2,210
28	1,420	e1,670	e663	e285	e1,440	1,410	6,270	8,620	22,600	1,720	590	4,560
29	1,400	e1,680	e692	e343	---	1,660	5,720	8,180	14,800	1,550	623	5,450
30	1,420	e1,640	e733	e356	---	2,180	5,260	7,700	11,500	1,530	608	6,050
31	1,390	---	e710	e370	---	2,810	---	7,200	---	1,700	648	---
TOTAL	67,910	45,830	33,167	15,066	50,754	40,760	156,300	316,380	257,500	91,460	28,671	36,601
MEAN	2,191	1,528	1,070	486	1,813	1,315	5,210	10,210	8,583	2,950	925	1,220
MAX	3,640	1,820	1,580	689	4,920	2,810	9,110	21,000	29,700	9,290	2,200	6,050
MIN	1,390	1,240	663	285	410	1,000	2,430	3,600	4,830	1,250	590	364
AC-FT	134,700	90,900	65,790	29,880	100,700	80,850	310,000	627,500	510,800	181,400	56,870	72,600
CFSM	0.40	0.28	0.20	0.09	0.33	0.24	0.96	1.87	1.57	0.54	0.17	0.22
IN.	0.46	0.31	0.23	0.10	0.35	0.28	1.07	2.16	1.76	0.62	0.20	0.25

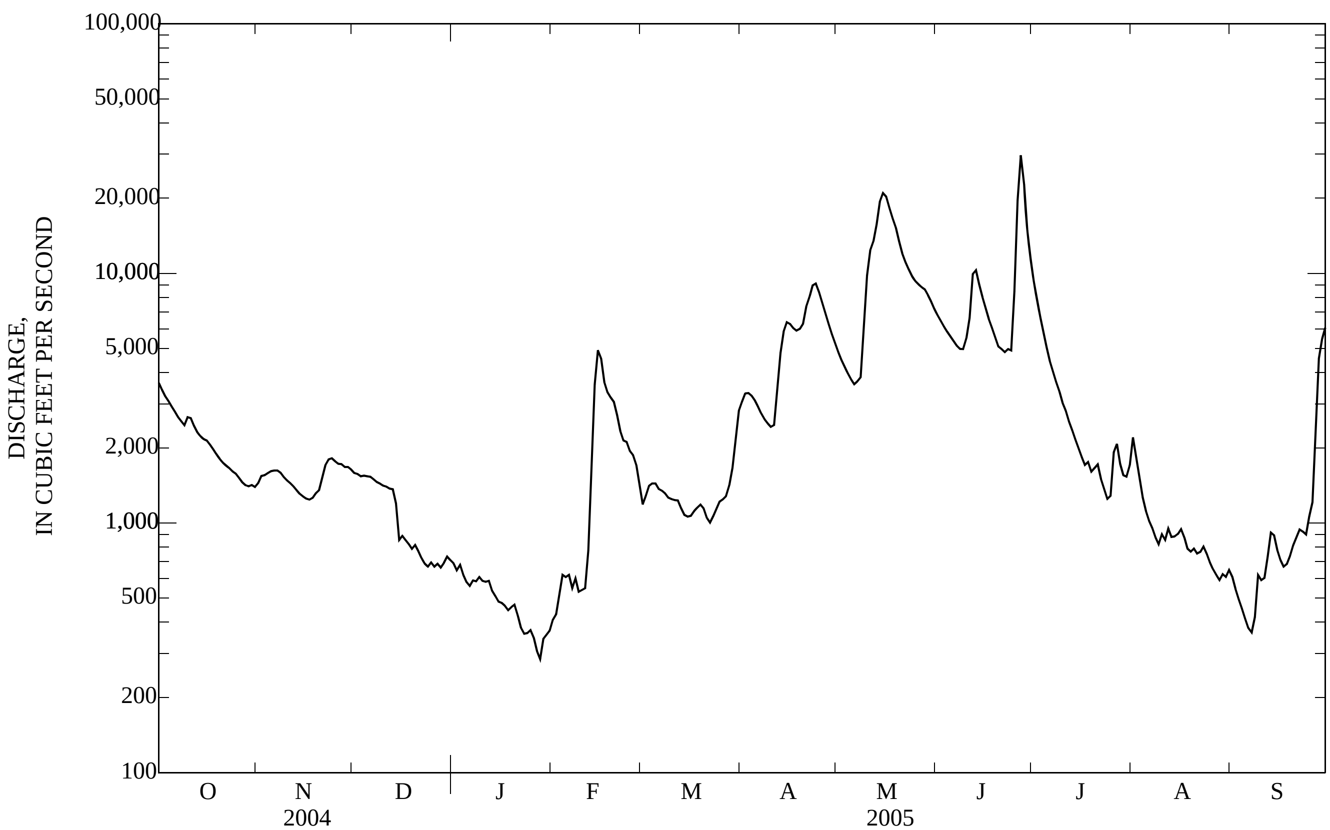
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,586	1,611	1,181	712	1,218	4,023	6,372	5,903	6,159	4,329	1,912	1,309
MAX	8,763	5,745	5,267	3,267	7,061	13,920	22,020	17,120	21,310	27,250	13,500	7,546
(WY)	(1987)	(1993)	(1983)	(1992)	(1984)	(1983)	(1993)	(2001)	(1993)	(1993)	(1993)	(1993)
MIN	69.4	96.3	44.4	18.7	57.7	204	348	296	177	156	122	69.5
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1968)	(2000)	(1968)	(1977)	(1977)	(1976)	(1976)

05481300 DES MOINES RIVER NEAR STRATFORD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1968 - 2005	
ANNUAL TOTAL	984,652		1,140,399			
ANNUAL MEAN	2,690		3,124		3,031	
HIGHEST ANNUAL MEAN					10,400	1993
LOWEST ANNUAL MEAN					254	1977
HIGHEST DAILY MEAN	27,900	May 25	29,700	Jun 27	41,400	Apr 2, 1993
LOWEST DAILY MEAN	102	Feb 9	285	Jan 28 a	13	Jan 23, 1977 b
ANNUAL SEVEN-DAY MINIMUM	106	Feb 7	339	Jan 24	14	Jan 22, 1977
MAXIMUM PEAK FLOW			30,900	Jun 27	423,000	Apr 2, 1993
MAXIMUM PEAK STAGE			21.21	Jun 27	25.68	Apr 2, 1993
INSTANTANEOUS LOW FLOW					13	Jan 23, 1977
ANNUAL RUNOFF (AC-FT)	1,953,000		2,262,000		2,196,000	
ANNUAL RUNOFF (CFSM)	0.493		0.573		0.556	
ANNUAL RUNOFF (INCHES)	6.72		7.78		7.55	
10 PERCENT EXCEEDS	6,110		7,780		8,270	
50 PERCENT EXCEEDS	1,520		1,550		1,300	
90 PERCENT EXCEEDS	135		583		188	

a Ice affected.
b Also Jan. 24, 1977.
e Estimated.



05481630 SAYLORVILLE LAKE NEAR SAYLORVILLE, IA

LOCATION.--Lat 41°42'13", long 93°41'21", in SE 1/4 SW 1/4 sec.30, T.80 N., R.24 W., Polk County, Hydrologic Unit 07100004, in control tower of Saylorville Dam, 3.2 mi northwest of Saylorville, 4.4 mi (revised) upstream from Beaver Creek, and 205.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--5,823 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD 0f 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in 1976. Storage began in April 1977. Release controlled at intake structure to forechamber of 22 ft diameter concrete conduit through dam. Ungated chute spillway 430 ft in length at right end of dam at elevation 884 ft, contents, 570,000 acre-ft. Conservation pool at elevation 836 ft, contents, 90,000 acre-ft, surface area, 5,950 acres. Flood pool elevation at 890 ft, contents, 586,000 acre-ft, surface area, 16,700 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Storage tables for water years 1985-1986 published as day second-feet instead of acre-feet storage. Prior to October 1, 2000 published as contents in acre feet, and as elevation in feet NGVD thereafter.

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

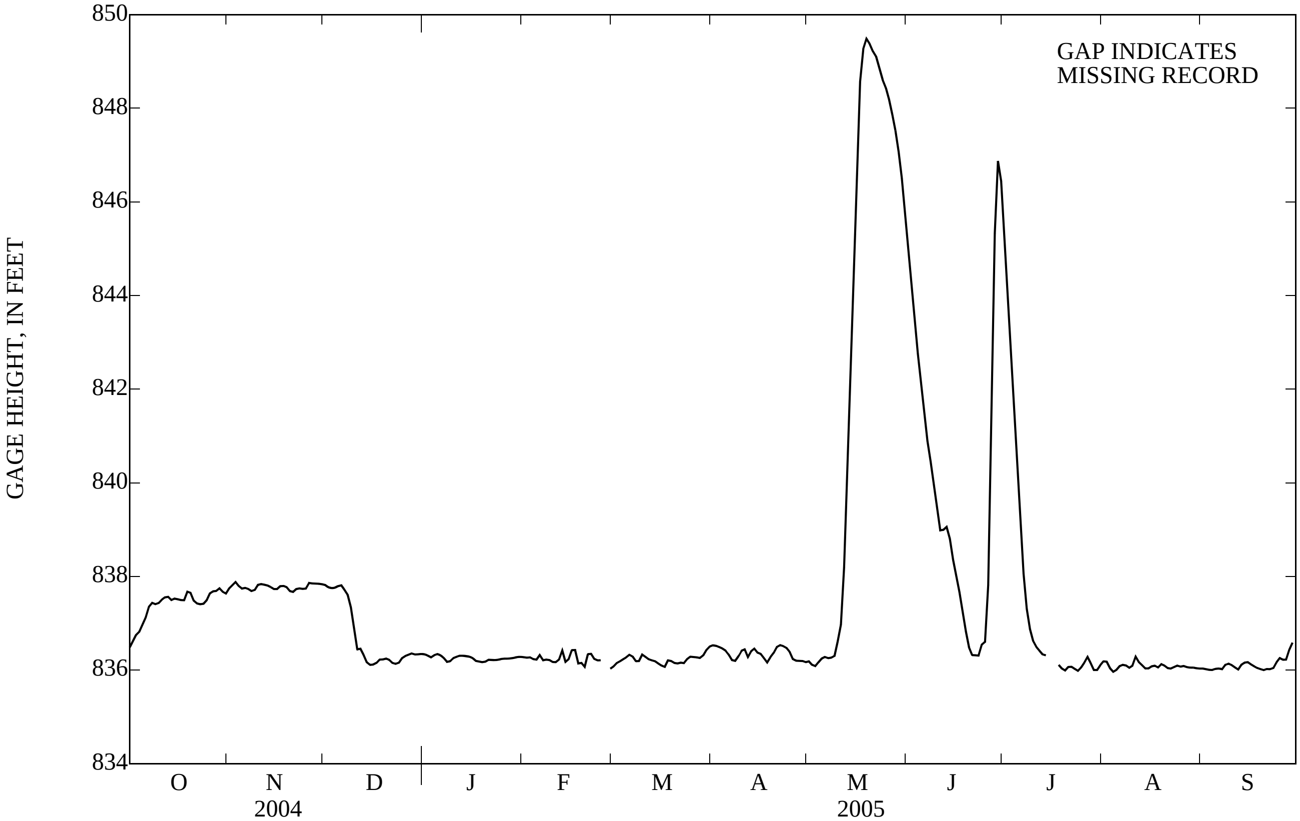
EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 892.03 ft July 13, 1993; minimum elevation, 832.61 ft Jan. 19, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 849.51 ft on May 20; minimum elevation, 835.95 ft on Aug. 5.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836.30	837.63	837.83	836.34	836.28	836.00	836.51	836.16	845.65	846.23	836.13	836.03
2	836.54	837.78	837.81	836.33	836.27	836.10	836.53	836.19	844.98	844.99	836.20	836.03
3	836.64	837.82	837.75	836.30	836.26	836.16	836.51	836.08	844.18	843.36	836.17	836.01
4	836.79	837.90	837.75	836.26	836.27	836.19	836.48	836.08	843.35	842.14	835.99	836.00
5	836.83	837.76	837.76	836.33	836.22	836.24	836.45	836.19	842.56	840.89	835.95	836.00
6	837.02	837.73	837.80	836.34	836.22	836.28	836.40	836.26	841.97	839.77	836.02	836.03
7	837.16	837.76	837.81	836.30	836.35	836.34	836.30	836.28	841.31	838.73	836.10	836.03
8	837.41	837.72	837.68	836.24	836.16	836.27	836.18	836.24	840.75	837.83	836.11	836.01
9	837.44	837.67	837.58	836.15	836.24	836.16	836.20	836.27	840.35	837.13	836.09	836.14
10	837.39	837.72	837.26	836.20	836.20	836.20	836.32	836.31	839.81	836.79	836.03	836.13
11	837.44	837.85	836.80	836.27	836.16	836.37	836.44	836.71	839.38	836.56	836.11	836.09
12	837.52	837.83	836.32	836.28	836.17	836.25	836.44	837.05	838.85	836.47	836.34	836.04
13	837.56	837.82	836.50	836.31	836.24	836.22	836.22	838.58	839.04	836.39	836.11	836.00
14	837.56	837.80	836.26	836.30	836.47	836.20	836.46	841.60	839.06	836.31	836.10	836.15
15	837.47	837.76	836.13	836.29	836.07	836.18	836.45	844.06	838.72	836.31	836.01	836.16
16	837.54	837.72	836.10	836.28	836.28	836.12	836.34	846.03	838.24	---	836.04	836.17
17	837.50	837.73	836.12	836.24	836.47	836.08	836.34	847.75	837.95	---	836.09	836.10
18	837.49	837.81	836.16	836.18	836.41	836.06	836.22	848.84	837.57	836.16	836.09	836.07
19	837.49	837.79	836.24	836.18	836.05	836.25	836.14	849.41	837.13	836.09	836.04	836.03
20	837.73	837.76	836.22	836.16	836.18	836.17	836.32	849.51	836.73	836.01	836.15	836.01
21	837.62	837.66	836.25	836.18	836.03	836.14	836.38	849.33	836.40	835.98	836.07	835.99
22	837.43	837.67	836.20	836.23	836.44	836.14	836.53	849.18	836.29	836.09	836.03	836.03
23	837.42	837.75	836.13	836.21	836.31	836.16	836.53	849.08	836.32	836.06	836.03	836.01
24	837.40	837.74	836.13	836.21	836.21	836.14	836.50	848.79	836.30	836.01	836.07	836.05
25	837.42	837.73	836.16	836.22	836.20	836.26	836.46	848.55	836.62	835.97	836.10	836.20
26	837.51	837.74	836.28	836.24	836.21	836.29	836.36	848.40	836.59	836.08	836.06	836.27
27	837.68	837.90	836.30	836.24	---	836.27	836.19	848.12	838.22	836.18	836.09	836.20
28	837.68	837.83	836.33	836.24	836.11	836.27	836.20	847.79	842.43	836.31	836.05	836.23
29	837.69	837.85	836.36	836.25	---	836.25	836.19	847.43	846.29	836.09	836.05	836.50
30	837.76	837.84	836.32	836.26	---	836.33	836.19	846.95	847.07	835.97	836.05	836.61
31	837.64	---	836.34	836.28	---	836.46	---	846.35	---	836.01	836.03	---
MEAN	837.36	837.77	836.73	836.25	---	836.21	836.36	842.95	840.00	---	836.08	836.11
MAX	837.76	837.90	837.83	836.34	---	836.46	836.53	849.51	847.07	---	836.34	836.61
MIN	836.30	837.63	836.10	836.15	---	836.00	836.14	836.08	836.29	---	835.95	835.99

05481630 SAYLORVILLE LAKE NEAR SAYLORVILLE, IA—Continued



05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA

LOCATION.--Lat 41°40'50", long 93°40'05", SW$\frac{1}{4}$ NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.5, T.79 N., R.24 W., Polk County, Hydrologic Unit 07100004, on left bank 5 ft upstream of Fisher Bridge on County Highway R6F, 2.0 mi west of Saylorville, 2.1 mi downstream from Rock Creek, 2.3 mi downstream from Saylorville Dam, 2.2 mi (revised) upstream from Beaver Creek, and 203.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--5,841 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 787.42 ft above NGVD of 1929 (levels by U. S. Army Corps of Engineers). Prior to Aug. 6, 1970, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by Saylorville Lake (Station 05481630) 2.3 mi upstream since Apr. 12, 1977. U.S. Army Corps of Engineers data collection platform with satellite telemetry and U.S. National Weather Service Limited Automatic Remote Collector (LARC) at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,400 ft^3/s Apr. 10, 1965, gage height, 24.02 ft; minimum daily discharge, 13 ft^3/s Jan. 25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1893, 24.5 ft June 24, 1954, from floodmarks, discharge, 60,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,220	1,630	1,760	1,080	600	1,710	2,780	5,280	9,660	15,000	1,910	678
2	2,960	1,650	1,760	1,080	e578	1,560	3,210	4,980	9,370	13,900	2,200	677
3	2,800	1,650	1,680	1,080	e592	1,560	3,440	4,660	9,320	12,500	2,280	635
4	2,670	1,820	1,630	969	e673	1,560	3,540	4,150	9,030	10,700	1,870	557
5	2,420	e1,880	1,630	869	e813	1,570	3,550	3,890	8,220	9,300	1,400	478
6	2,230	1,690	e1,750	866	e864	1,660	3,530	3,840	7,740	8,210	1,140	448
7	2,090	e1,650	e1,880	e863	e1,310	1,710	3,350	3,850	7,310	7,240	1,110	450
8	2,190	e1,660	e1,990	e849	e1,280	1,710	2,970	3,840	7,040	6,200	1,140	446
9	2,450	e1,570	e2,370	683	e1,210	1,460	2,530	4,330	7,010	5,050	1,130	520
10	2,300	e1,440	2,770	563	e1,140	1,280	2,500	6,920	6,940	4,160	1,070	628
11	2,190	e1,420	2,590	e609	e1,150	1,500	3,050	10,500	7,410	3,530	1,220	652
12	2,220	e1,420	1,780	e683	e1,130	1,530	3,870	12,300	8,260	3,110	1,690	655
13	2,240	e1,420	1,220	e666	e1,220	1,440	4,140	10,500	9,760	2,860	1,460	655
14	2,270	e1,420	1,210	e608	2,570	1,440	5,060	9,970	10,600	2,450	1,240	800
15	2,120	e1,420	1,020	e455	3,630	1,440	6,240	13,400	10,300	2,740	1,080	901
16	2,020	e1,340	816	e485	4,630	1,400	6,690	14,900	9,210	2,310	968	903
17	2,040	e1,240	761	e475	5,510	1,300	6,570	15,300	8,300	2,040	1,050	821
18	2,060	e1,340	759	e488	5,520	1,230	6,360	15,500	7,720	2,040	1,110	763
19	1,810	e1,590	e744	e498	4,230	1,290	6,030	15,700	7,200	2,010	1,040	761
20	1,630	1,700	e802	480	3,790	1,350	6,100	15,300	6,450	1,900	1,100	759
21	2,280	1,560	e803	452	3,040	1,360	6,680	14,100	5,800	1,820	1,080	762
22	2,060	1,460	e823	e429	3,160	1,270	7,670	12,700	5,120	1,790	888	865
23	1,850	1,630	e1,000	e400	3,090	1,210	8,420	12,000	4,960	1,780	774	852
24	1,740	1,750	e965	e414	2,490	1,210	9,060	11,400	4,940	1,680	802	803
25	e1,540	1,760	e922	452	2,260	1,310	9,210	10,600	6,450	1,510	900	990
26	e1,280	1,760	e879	457	2,190	1,490	8,690	10,300	8,520	1,430	883	1,200
27	e1,370	1,760	e851	460	2,180	1,560	7,700	10,200	11,500	1,580	837	1,270
28	e1,530	1,760	e902	462	2,030	1,580	6,820	10,200	14,300	2,330	743	2,040
29	e1,570	1,750	e1,010	465	---	1,600	6,240	10,200	15,500	2,220	677	3,850
30	e1,510	1,760	1,080	466	---	1,830	5,780	10,100	15,700	1,760	677	4,910
31	e1,480	---	1,080	535	---	2,220	---	10,000	---	1,660	678	---
TOTAL	64,140	47,900	41,237	19,341	62,880	46,340	161,780	300,910	259,640	136,810	36,147	30,729
MEAN	2,069	1,597	1,330	624	2,246	1,495	5,393	9,707	8,655	4,413	1,166	1,024
MAX	3,220	1,880	2,770	1,080	5,520	2,220	9,210	15,700	15,700	15,000	2,280	4,910
MIN	1,280	1,240	744	400	578	1,210	2,500	3,840	4,940	1,430	677	446
AC-FT	127,200	95,010	81,790	38,360	124,700	91,920	320,900	596,900	515,000	271,400	71,700	60,950
CFSM	0.35	0.27	0.23	0.11	0.38	0.26	0.92	1.66	1.48	0.76	0.20	0.18
IN.	0.41	0.31	0.26	0.12	0.40	0.30	1.03	1.92	1.65	0.87	0.23	0.20

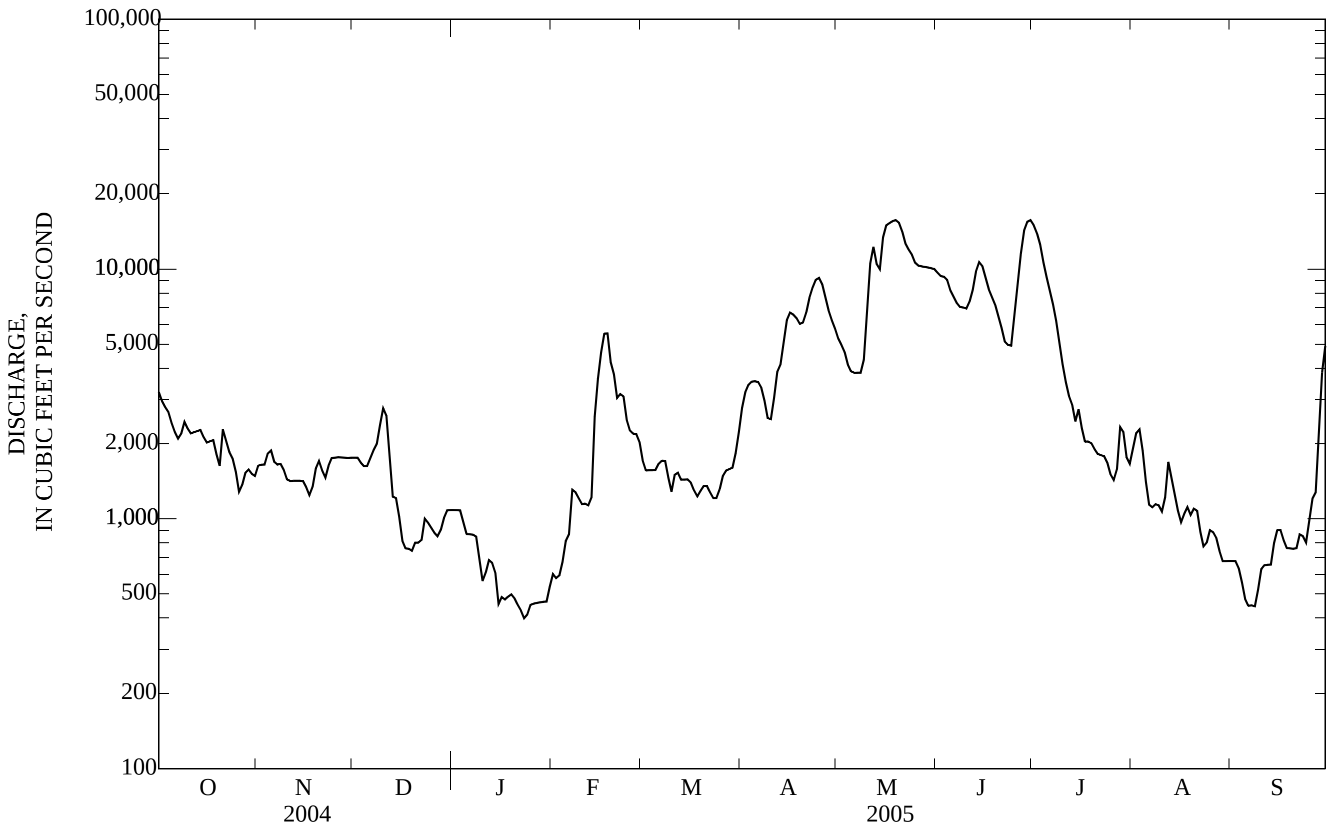
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,699	1,903	1,577	870	1,466	4,036	6,554	6,641	7,316	6,424	2,913	1,923
MAX	7,161	6,210	5,345	3,605	6,591	13,800	17,790	18,170	19,540	32,820	15,440	13,450
(WY)	(1987)	(1987)	(1983)	(1983)	(1984)	(1983)	(1993)	(1993)	(1991)	(1993)	(1993)	(1993)
MIN	194	190	205	190	204	362	365	741	877	254	212	199
(WY)	(1990)	(1990)	(1990)	(1991)	(2000)	(1981)	(2000)	(2000)	(1988)	(1988)	(1989)	(2003)

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1978 - 2005 a	
ANNUAL TOTAL	1,135,059		1,207,854			
ANNUAL MEAN	3,101		3,309		3,617	
HIGHEST ANNUAL MEAN					11,320	1993
LOWEST ANNUAL MEAN					487	1989
HIGHEST DAILY MEAN	15,300	May 31	15,700	May 19 b	44,300	Jul 21, 1993
LOWEST DAILY MEAN	206	Feb 17	400	Jan 23 c	144	Nov 29, 1977
ANNUAL SEVEN-DAY MINIMUM	207	Feb 12	438	Jan 21	165	Mar 5, 1978
MAXIMUM PEAK FLOW			15,800	May 19 b	45,700	Jul 21, 1993
MAXIMUM PEAK STAGE			13.61	May 19	24.22	Jul 21, 1993
ANNUAL RUNOFF (AC-FT)	2,251,000		2,396,000		2,621,000	
ANNUAL RUNOFF (CFSM)	0.531		0.567		0.619	
ANNUAL RUNOFF (INCHES)	7.23		7.69		8.41	
10 PERCENT EXCEEDS	8,540		9,250		10,700	
50 PERCENT EXCEEDS	1,780		1,710		1,760	
90 PERCENT EXCEEDS	246		675		230	

a Post regulation
b Also June 30.
c Ice affected.
e Estimated.



05481950 BEAVER CREEK NEAR GRIMES, IA

LOCATION.--Lat 41°41'18", long 93°44'06", in SW1/4 SW1/4 sec.35, T.80 N., R.25 W., Polk County, Hydrologic Unit 07100004, on left bank 10 ft upstream from bridge on Northwest 70th Avenue, 0.5 mi downstream from Little Beaver Creek, 2.5 mi east of Grimes, and 6.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--358 mi^2.

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

REVISED RECORDS.--WDR IA-77-1: 1974 (P), WDR IA-95-1:location.

GAGE.--Water stage recorder. Datum of gage is 806.98 ft above NGVD of 1929. Prior to Aug. 31, 1966, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	27	e64	e46	e68	e125	123	233	213	196	19	6.4
2	11	63	e67	e48	e61	e144	120	221	209	174	19	5.8
3	11	68	e64	e46	e64	e131	124	219	202	159	18	5.3
4	11	69	e72	e43	e72	e143	128	208	200	210	e14	5.1
5	e12	65	e69	e39	e81	143	132	200	205	188	e13	4.8
6	11	59	76	e33	e99	137	122	195	192	149	e12	4.8
7	11	57	73	e50	e135	138	116	191	181	133	e12	4.7
8	11	54	72	e41	e168	133	109	184	221	119	e11	10
9	10	52	70	e45	e158	124	107	182	369	106	10	11
10	9.9	49	69	e41	e128	124	109	179	331	95	9.7	6.1
11	10	53	70	e46	e136	125	126	423	293	85	43	5.5
12	11	53	69	e52	e152	123	224	813	274	76	48	4.5
13	10	49	e53	e35	e206	e96	307	1,840	288	69	87	9.4
14	10	45	e50	e33	e387	e104	339	2,340	317	64	62	13
15	10	43	e64	e31	e782	e100	297	1,840	284	58	38	14
16	9.9	41	e66	e31	e594	109	271	1,100	251	53	26	9.1
17	9.9	39	e56	e38	e425	107	260	746	235	44	20	7.1
18	11	41	e54	e42	e344	107	248	630	220	71	16	5.9
19	12	62	e41	e53	e307	107	242	533	205	56	13	5.3
20	11	75	e46	e52	e284	102	316	457	191	43	40	4.6
21	11	92	e44	e54	e261	97	467	427	182	43	14	4.0
22	11	98	e43	e54	e246	96	497	400	174	35	12	3.7
23	11	93	e35	e66	237	96	485	358	167	30	10	3.1
24	12	88	e30	e68	e220	97	429	325	154	25	9.3	6.1
25	12	84	e56	e60	e212	111	387	301	513	20	8.9	5.5
26	14	80	e50	e68	e204	116	357	285	354	29	8.8	6.7
27	16	80	e50	e58	e189	126	318	269	300	29	8.6	7.9
28	13	77	e55	e56	e166	130	283	254	268	25	7.7	12
29	12	74	e50	e58	---	132	263	238	239	19	7.5	13
30	14	72	e62	e62	---	134	248	227	228	16	7.3	11
31	13	---	e54	e62	---	132	---	216	---	18	7.0	---
TOTAL	352.7	1,902	1,794	1,511	6,386	3,689	7,554	16,034	7,460	2,437	631.8	215.4
MEAN	11.4	63.4	57.9	48.7	228	119	252	517	249	78.6	20.4	7.18
MAX	16	98	76	68	782	144	497	2,340	513	210	87	14
MIN	9.9	27	30	31	61	96	107	179	154	16	7.0	3.1
AC-FT	700	3,770	3,560	3,000	12,670	7,320	14,980	31,800	14,800	4,830	1,250	427
CFSM	0.03	0.18	0.16	0.14	0.64	0.33	0.70	1.44	0.69	0.22	0.06	0.02
IN.	0.04	0.20	0.19	0.16	0.66	0.38	0.78	1.67	0.78	0.25	0.07	0.02

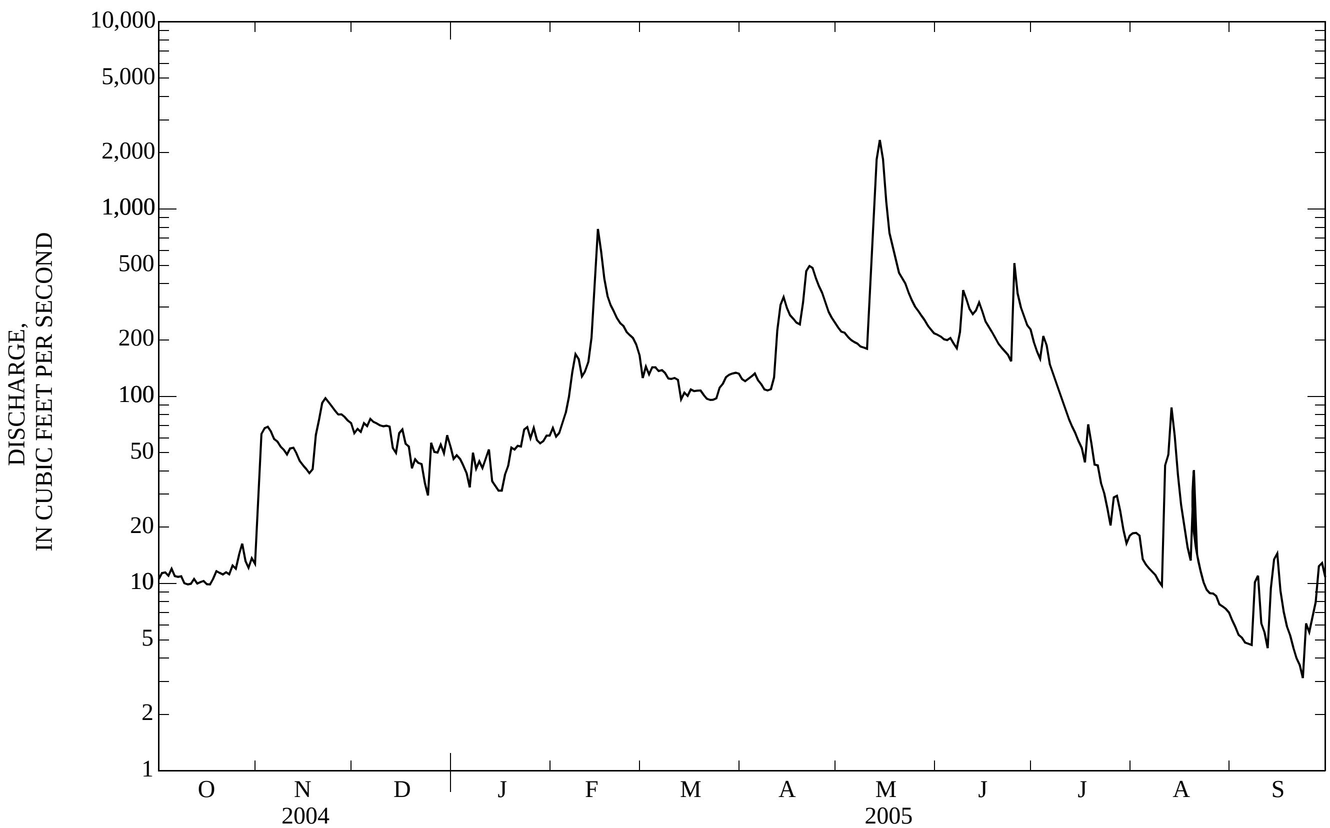
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	90.9	110	91.6	57.3	120	335	364	448	459	276	103	66.3
MAX	724	655	486	305	526	1,171	1,275	1,419	1,434	2,160	695	654
(WY)	(1974)	(1973)	(1983)	(1974)	(1973)	(1979)	(1965)	(1974)	(1998)	(1993)	(1993)	(1993)
MIN	0.06	0.63	0.77	0.00	0.35	3.98	3.26	1.11	1.41	0.24	0.73	0.26
(WY)	(1989)	(1967)	(1977)	(1977)	(1977)	(1981)	(1981)	(1981)	(1977)	(1977)	(1988)	(1988)

05481950 BEAVER CREEK NEAR GRIMES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	92,325.6		49,966.9			
ANNUAL MEAN	252		137		210	
HIGHEST ANNUAL MEAN					575	1993
LOWEST ANNUAL MEAN					17.3	1981
HIGHEST DAILY MEAN	6,410	May 24	2,340	May 14	11,500	Jul 10, 1993
LOWEST DAILY MEAN	8.2	Jan 22	3.1	Sep 23	0.00	Sep 8, 1970 a
ANNUAL SEVEN-DAY MINIMUM	10	Oct 10	4.6	Sep 19	0.00	Oct 7, 1971
MAXIMUM PEAK FLOW			2,530	May 14	14,300	Jul 10, 1993
MAXIMUM PEAK STAGE			11.19	May 14	16.58	Jul 10, 1993
INSTANTANEOUS LOW FLOW			2.8	Sep 23		
ANNUAL RUNOFF (AC-FT)	183,100		99,110		152,300	
ANNUAL RUNOFF (CFSM)	0.705		0.382		0.587	
ANNUAL RUNOFF (INCHES)	9.59		5.19		7.98	
10 PERCENT EXCEEDS	504		300		536	
50 PERCENT EXCEEDS	80		69		68	
90 PERCENT EXCEEDS	13		10		2.3	

a Also Sept. 11-13, 1970, Sept. 17, 18, Oct. 7-17, 1971, and many days during 1977.
e Estimated.



05482000 DES MOINES RIVER AT SECOND AVENUE AT DES MOINES, IA

LOCATION.--Lat 41°36'45", long 93°37'15", in NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.34, T.79 N., R.24 W., Polk County, Hydrologic Unit 07100004, on right bank 5 ft upstream from 2nd Avenue or State Highway 60 bridge in Des Moines, 1.8 mi upstream from Des Moines Electric Company dam, 2.8 mi upstream from Raccoon River, 4.5 mi downstream from Beaver Creek, and 195.9 mi upstream from mouth.

DRAINAGE AREA.--6,245 mi^2.

PERIOD OF RECORD.--October 1902 to August 1903, October 1914 to February 1915 (gage heights and discharge measurements only); March 1915 to September 1961, October 1996 to current year.

REVISED RECORDS-- WSP 1308: 1915-19, 1921, 1923, 1933, 1943(M). WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 773.68 ft above NGVD of 1929 and at city datum. Prior to August 21, 1941, staff, chain, or recording gages at several sites within 3 mi of present site at various datums.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by Saylorville Dam 6.8 mi. upstream, since Apr. 12, 1977. U.S. Army Corps of Engineers rain gage, U.S. Geological Survey data collection platform with satellite telemetry, and U.S. Weather Service Limited Automated Remote Collector (LARC) at station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge 60,200 ft^3/sec on June 24, 1954, gage height 30.16; minimum unregulated daily discharge 24 ft^3/sec Jan. 29, 30, 1940.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,820	1,650	1,790	e1,090	594	1,850	e2,810	5,850	10,400	16,100	e1,950	e682
2	3,400	1,640	1,800	e1,090	597	1,590	3,240	5,510	10,000	14,900	e2,200	e683
3	3,190	1,630	1,720	1,080	598	1,610	3,470	5,240	9,940	13,600	e2,320	e633
4	3,000	1,820	1,620	999	690	1,580	3,590	4,760	9,720	11,700	e1,890	548
5	2,770	1,920	1,640	876	844	e1,580	3,600	4,450	8,930	9,990	e1,440	502
6	2,500	1,690	1,750	e871	882	e1,680	3,570	4,360	8,330	8,730	e1,170	483
7	2,370	1,660	1,880	e857	1,220	e1,730	3,370	4,380	7,930	7,670	e1,140	486
8	2,390	1,670	1,960	e845	e1,310	e1,740	3,000	4,370	7,730	6,550	e1,150	571
9	2,740	1,580	2,390	e697	e1,220	e1,500	2,480	4,690	7,740	5,360	e1,150	581
10	2,560	1,460	2,870	578	e1,150	e1,310	2,420	6,690	7,650	4,280	e1,070	648
11	2,380	1,440	2,860	618	e1,150	e1,530	3,160	10,900	8,020	e3,680	e1,240	661
12	2,380	1,440	2,170	688	e1,130	e1,560	4,260	12,900	8,860	e3,210	e1,810	669
13	2,370	1,440	1,270	671	e1,210	e1,460	4,500	12,800	10,200	e2,970	1,600	711
14	2,370	1,440	1,250	e610	e2,570	e1,460	5,300	11,600	11,300	e2,560	1,260	806
15	2,200	1,440	1,120	e458	e4,330	e1,470	6,610	14,700	11,000	e2,830	1,110	943
16	e2,060	1,360	860	e493	e5,420	e1,420	7,270	16,200	9,850	e2,400	e985	937
17	e2,090	1,260	794	e481	6,370	e1,320	7,120	16,500	8,780	e2,100	e1,050	896
18	e2,120	1,360	787	e495	6,460	e1,260	6,910	16,700	8,100	e2,090	e1,140	817
19	e1,940	1,610	e768	e502	5,370	e1,320	6,540	16,700	7,480	e2,050	e1,060	819
20	e1,800	1,720	e822	e481	4,700	e1,370	6,610	16,300	6,600	e1,950	e1,110	849
21	2,410	1,600	e820	e455	3,950	e1,370	7,350	15,200	6,030	e1,870	e1,090	856
22	2,210	1,440	e839	e433	3,730	e1,290	8,500	13,700	5,210	e1,850	866	928
23	1,860	1,600	e1,020	e404	3,920	e1,230	9,240	12,800	5,030	e1,840	735	989
24	1,710	1,800	e971	e419	3,000	e1,250	9,820	12,200	5,000	e1,720	e806	1,010
25	1,560	1,810	e936	e454	2,670	e1,380	10,100	11,400	6,850	e1,560	e902	1,090
26	1,300	1,800	e889	e460	2,530	e1,540	9,520	11,000	8,860	e1,500	e889	1,340
27	1,380	1,820	e867	e461	2,510	e1,600	8,550	11,000	11,800	e1,640	e844	1,440
28	1,540	1,800	e916	e463	2,300	e1,630	7,520	10,900	14,800	e2,390	e748	2,220
29	1,610	1,790	e1,010	e467	---	e1,650	6,860	10,800	16,200	2,380	e686	4,450
30	1,540	1,800	e1,070	e467	---	e1,880	6,340	10,700	16,600	e1,790	e684	5,410
31	1,520	---	e1,100	538	---	e2,270	---	10,600	---	e1,690	e684	---
TOTAL	69,090	48,490	42,559	19,501	72,425	47,430	173,630	325,900	274,940	144,950	36,779	33,658
MEAN	2,229	1,616	1,373	629	2,587	1,530	5,788	10,510	9,165	4,676	1,186	1,122
MAX	3,820	1,920	2,870	1,090	6,460	2,270	10,100	16,700	16,600	16,100	2,320	5,410
MIN	1,300	1,260	768	404	594	1,230	2,420	4,360	5,000	1,500	684	483
AC-FT	137,000	96,180	84,420	38,680	143,700	94,080	344,400	646,400	545,300	287,500	72,950	66,760
CFSM	0.36	0.26	0.22	0.10	0.41	0.24	0.93	1.68	1.47	0.75	0.19	0.18
IN.	0.41	0.29	0.25	0.12	0.43	0.28	1.03	1.94	1.64	0.86	0.22	0.20

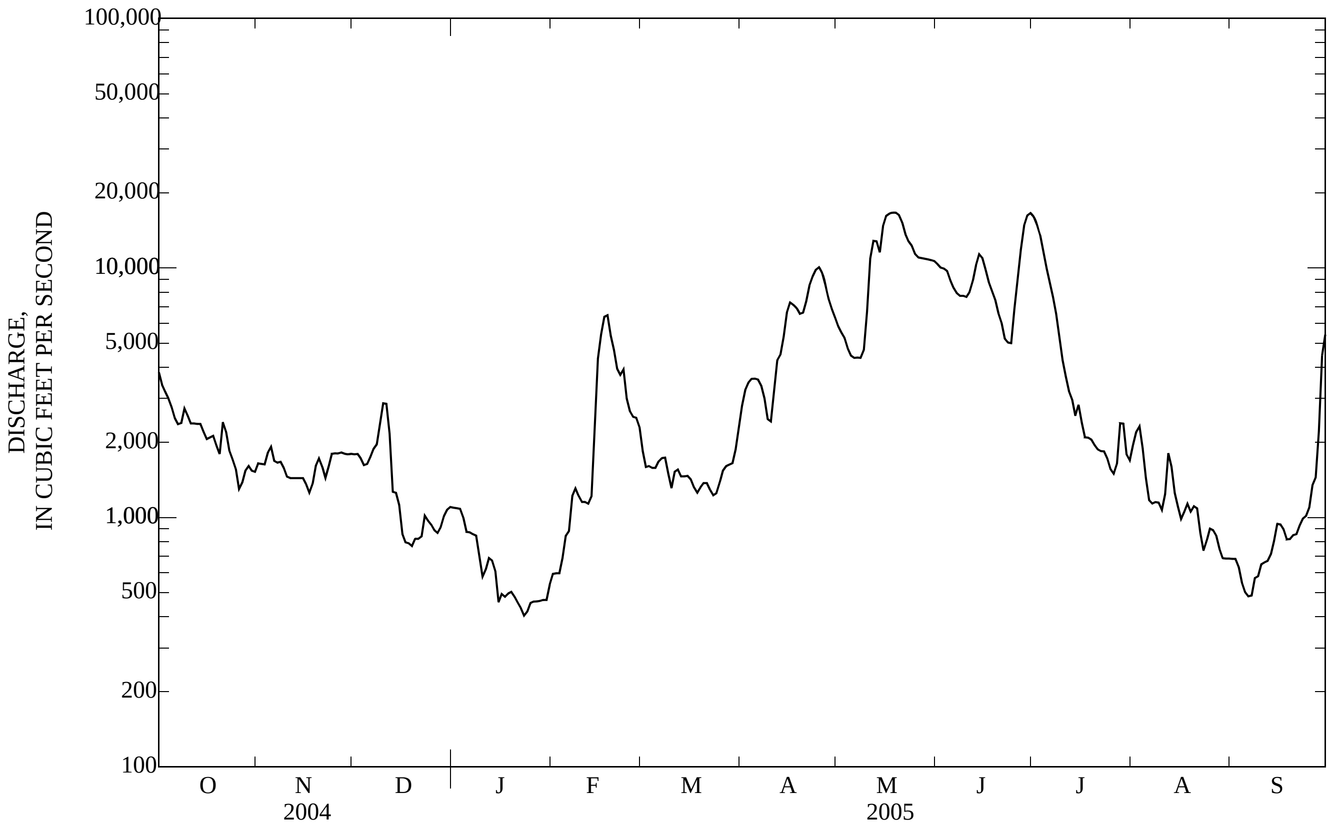
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	871	1,138	1,110	543	1,378	3,271	6,729	8,023	8,246	6,338	1,926	818
MAX	2,613	2,871	2,696	1,231	2,775	9,385	15,940	15,050	13,760	9,524	3,549	3,166
(WY)	(2003)	(1997)	(1997)	(1997)	(1997)	(1997)	(2001)	(2001)	(2001)	(2003)	(2002)	(2004)
MIN	208	212	226	245	217	492	413	797	3,142	922	685	213
(WY)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2002)	(2002)	(2003)	(2003)

05482000 DES MOINES RIVER AT SECOND AVENUE AT DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005 a	
ANNUAL TOTAL	1,293,942		1,289,352			
ANNUAL MEAN	3,535		3,532		3,372	
HIGHEST ANNUAL MEAN					5,301	2001
LOWEST ANNUAL MEAN					948	2000
HIGHEST DAILY MEAN	17,300	May 31	16,700	May 18 b	18,300	Apr 16, 2001
LOWEST DAILY MEAN	222	Feb 13	404	Jan 23 c	160	Sep 18, 2000
ANNUAL SEVEN-DAY MINIMUM	224	Feb 7	441	Jan 21	190	Dec 17, 1999
MAXIMUM PEAK FLOW			16,800	May 18	18,500	Apr 17, 2001
MAXIMUM PEAK STAGE			19.84	May 18	20.41	Apr 17, 2001
INSTANTANEOUS LOW FLOW					160	Sep 18, 2000
ANNUAL RUNOFF (AC-FT)	2,567,000		2,557,000		2,443,000	
ANNUAL RUNOFF (CFSM)	0.566		0.566		0.540	
ANNUAL RUNOFF (INCHES)	7.71		7.68		7.34	
10 PERCENT EXCEEDS	9,590		9,960		11,100	
50 PERCENT EXCEEDS	1,960		1,790		1,370	
90 PERCENT EXCEEDS	274		684		229	

a Post regulation.
b Also May 19.
c Ice affected.
e Estimated



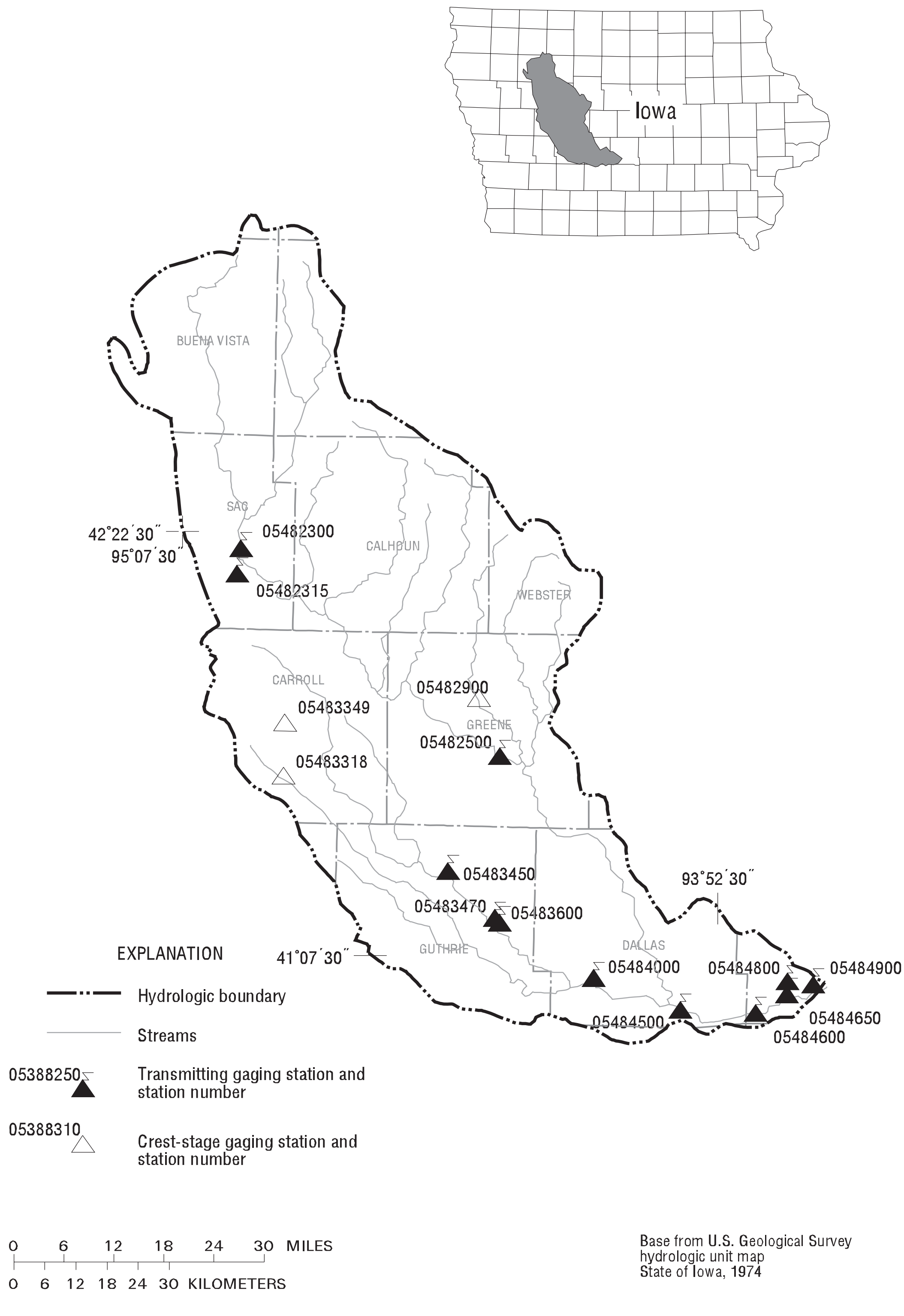


Figure 15. Locations of active continous-record and crest-stage gaging stations in the Raccoon River drainage basin.

DES MOINES RIVER BASIN
(RACCOON RIVER BASIN)

Gaging Stations

Crest Stage Gaging Stations

05482300 NORTH RACCOON RIVER NEAR SAC CITY, IA

LOCATION.--Lat 42°21'16", long 94°59'26", in NW$\frac{1}{4}$ NW$\frac{1}{4}$ sec.13, T.87 N., R.36 W., Sac County, Hydrologic Unit 07100006, on right bank 5 ft downstream from bridge on county highway, 2.1 mi upstream from Indian Creek, 0.3 mi upstream from Drainage Ditch 73, 4.6 mi south of Sac City, 135.9 mi (revised) upstream from mouth, and 166.4 mi (revised) upstream from mouth of Raccoon River.

DRAINAGE AREA.--700 mi^2.

PERIOD OF RECORD.--June 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,146.03 ft above NGVD of 1929. Prior to Oct. 1, 1987 at site 1.7 miles downstream at datum 1.43 ft lower.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1954, reached a stage of 15.61 ft, from floodmark, discharge, 7,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	90	e103	e100	e58	e131	159	314	593	2,500	92	31
2	76	88	e114	e89	e61	e158	152	300	576	1,970	86	31
3	73	104	e110	e89	e76	e175	152	282	540	1,590	79	35
4	67	113	e111	e82	e108	160	149	268	520	1,290	80	39
5	65	105	e106	e79	e94	147	146	257	594	1,070	75	38
6	62	97	e111	e65	e108	136	142	252	580	898	71	42
7	62	92	106	e78	e70	139	147	249	538	748	64	45
8	62	86	103	e71	e68	137	182	257	575	639	60	51
9	63	80	99	e77	e61	127	174	537	897	557	57	59
10	61	79	99	e83	e55	131	168	515	1,050	475	67	52
11	57	79	96	e74	e73	135	178	592	3,460	406	76	45
12	58	74	91	e78	e88	132	268	1,350	2,530	351	78	43
13	58	73	e78	e76	e166	122	680	3,060	1,850	309	78	44
14	57	72	e73	e68	e1,030	126	713	3,050	1,500	276	66	44
15	57	71	e94	e57	1,780	132	565	2,400	1,240	247	58	44
16	57	71	e101	e53	1,020	128	469	1,800	1,050	221	53	43
17	56	72	e101	e53	630	117	409	1,450	884	201	51	43
18	55	77	e94	e55	449	118	369	1,240	761	225	50	43
19	54	91	e70	e61	345	119	449	1,100	654	204	48	42
20	56	108	e91	e64	309	114	1,190	963	568	187	46	43
21	56	199	e84	e61	278	118	1,010	854	512	236	44	42
22	56	191	e68	e55	243	115	835	784	475	197	41	41
23	57	170	e64	e54	228	118	1,020	714	433	168	39	39
24	56	153	e62	e55	221	126	883	644	389	150	38	39
25	54	137	e83	e57	204	136	718	622	2,340	138	37	63
26	52	134	e80	e64	203	136	618	1,070	7,220	138	38	78
27	52	135	e84	e56	190	141	510	1,110	7,110	133	37	79
28	55	126	e88	e58	174	150	426	932	5,540	117	35	65
29	56	e121	e90	e59	---	157	378	797	4,300	108	34	55
30	60	e102	e117	e57	---	168	344	706	3,260	101	33	49
31	59	---	e103	e60	---	173	---	640	---	101	32	---
TOTAL	1,846	3,190	2,874	2,088	8,390	4,222	13,603	29,109	52,539	15,951	1,743	1,407
MEAN	59.5	106	92.7	67.4	300	136	453	939	1,751	515	56.2	46.9
MAX	77	199	117	100	1,780	175	1,190	3,060	7,220	2,500	92	79
MIN	52	71	62	53	55	114	142	249	389	101	32	31
AC-FT	3,660	6,330	5,700	4,140	16,640	8,370	26,980	57,740	104,200	31,640	3,460	2,790
CFSM	0.09	0.15	0.13	0.10	0.43	0.19	0.65	1.34	2.50	0.74	0.08	0.07
IN.	0.10	0.17	0.15	0.11	0.45	0.22	0.72	1.55	2.79	0.85	0.09	0.07

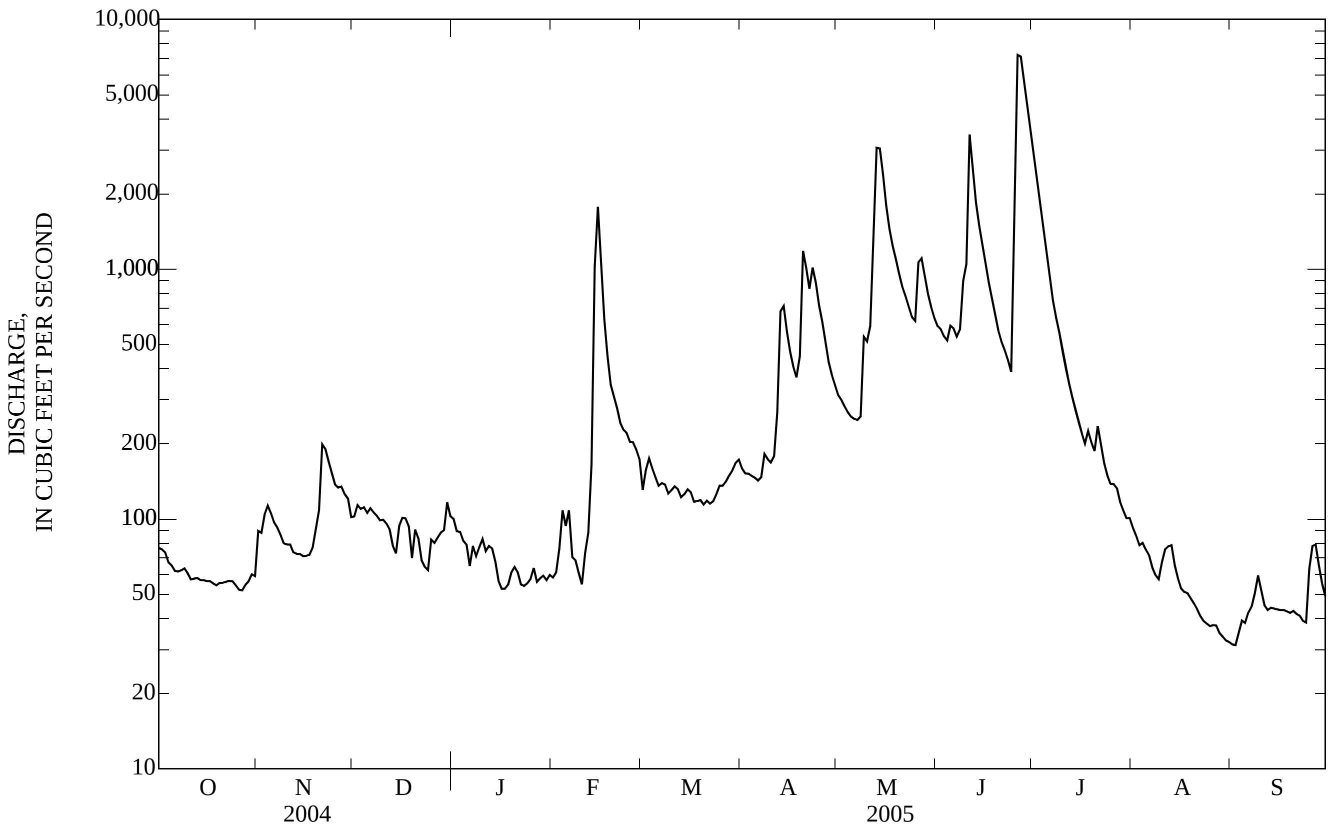
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	226	204	132	89.6	176	613	763	681	868	504	232	212
MAX	1,782	1,005	641	498	1,038	2,723	2,726	2,077	3,344	3,096	1,188	1,966
(WY)	(1983)	(1984)	(1983)	(1983)	(1984)	(1983)	(1983)	(1991)	(1984)	(1993)	(1993)	(1962)
MIN	6.39	9.44	4.39	0.87	1.16	27.2	22.7	28.2	24.7	23.0	9.29	7.80
(WY)	(1959)	(1959)	(1959)	(1977)	(1959)	(1968)	(2000)	(2000)	(1977)	(1977)	(1976)	(1976)

05482300 NORTH RACCOON RIVER NEAR SAC CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005	
ANNUAL TOTAL	123,152		136,962			
ANNUAL MEAN	336		375		392	
HIGHEST ANNUAL MEAN					1,331	1983
LOWEST ANNUAL MEAN					25.3	1977
HIGHEST DAILY MEAN	5,100	Jun 17	7,220	Jun 26	12,400	Mar 23, 1979
LOWEST DAILY MEAN	12	Jan 28	31	Sep 1	0.00	Jan 30, 1977
ANNUAL SEVEN-DAY MINIMUM	15	Jan 25	33	Aug 28	0.01	Jan 29, 1977
MAXIMUM PEAK FLOW			8,110	Jun 26	13,100	Mar 23, 1979
MAXIMUM PEAK STAGE			19.03	Jun 26	20.14	Jun 17, 1990
INSTANTANEOUS LOW FLOW			30	Sep 2		
ANNUAL RUNOFF (AC-FT)	244,300		271,700		283,900	
ANNUAL RUNOFF (CFSM)	0.481		0.536		0.560	
ANNUAL RUNOFF (INCHES)	6.54		7.28		7.61	
10 PERCENT EXCEEDS	953		912		1,010	
50 PERCENT EXCEEDS	102		108		131	
90 PERCENT EXCEEDS	24		51		18	

e Estimated



05482315 BLACK HAWK LAKE AT LAKE VIEW, IA

LOCATION.--Lat 42°18'15", long 95°02'30", in NW$^1\!/_4$ SE$^1\!/_4$ sec.33, T.87 N., R.36 W., Sac County, Hydrologic Unit 07100006, on south shore across from swimming beach at Lake View and 2 mi upstream from lake outlet.

DRAINAGE AREA.--23.3 mi^2.

PERIOD OF RECORD.--April 1970 to September 1975; April 1978 to September 1992, October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,213.50 ft above NGVD of 1929 and 7.00 ft below crest of spillway of dam at outlet. Prior to June 25, 1970, nonrecording gage at lake outlet. Prior to Jan. 22, 2001, at datum 5.0 ft higher.

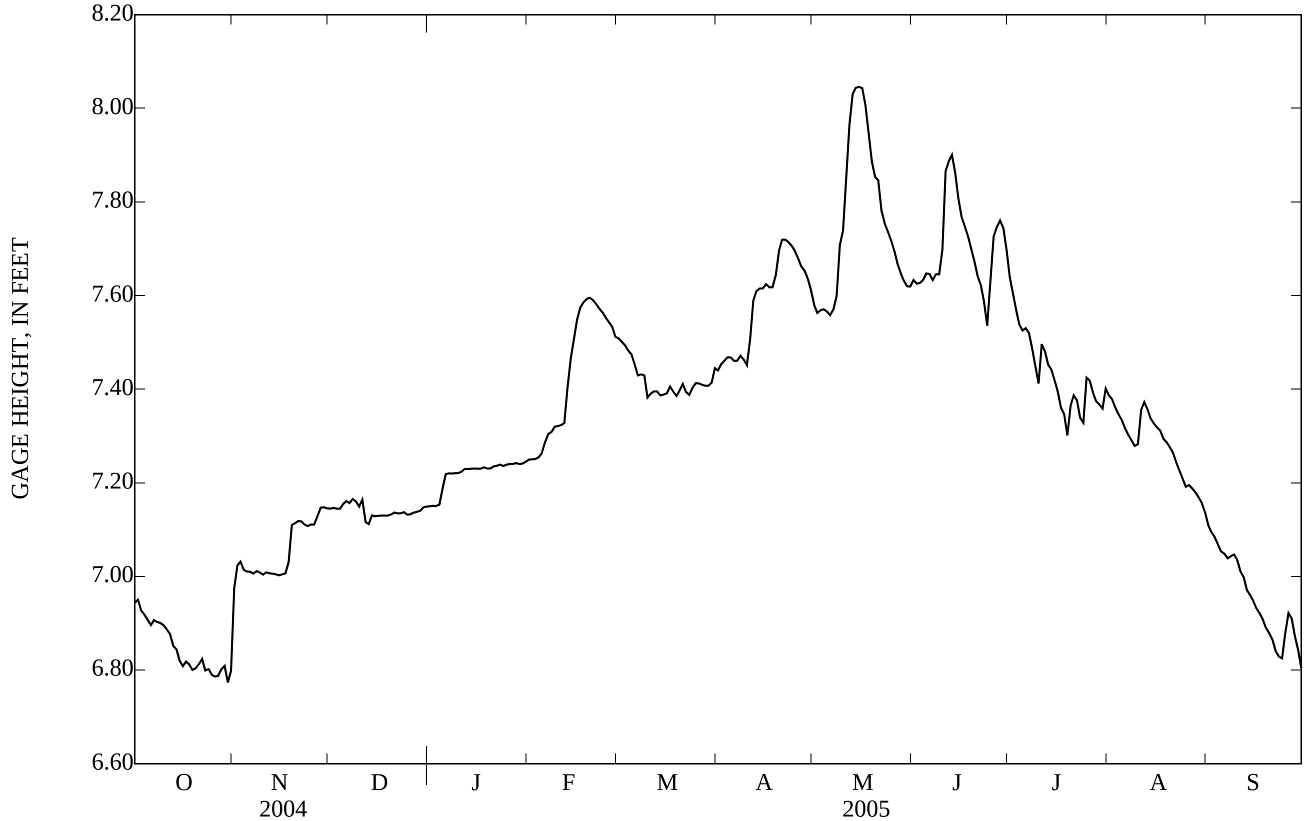
REMARKS.--Gage height was considered reliable for the year. Lake is formed by concrete dam with ungated overflow spillway at elevation 1,220.50 ft. above sea level. Lake is used for conservation and recreation. Area of lake is approximately 957 acres. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 4.34 ft June 22, 1996, datum then in use; minimum, 4.91 ft Jan. 25, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.07 ft on May 14,16; minimum, 6.70 ft on Oct. 30.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.94	6.98	7.14	7.15	7.25	7.51	7.44	7.58	7.63	7.64	7.39	7.11
2	6.95	7.02	7.15	7.15	7.25	7.50	7.45	7.56	7.63	7.61	7.38	7.09
3	6.93	7.03	7.14	7.15	7.25	7.49	7.46	7.57	7.63	7.57	7.36	7.08
4	6.92	7.01	7.14	7.15	7.25	7.48	7.47	7.57	7.63	7.54	7.35	7.07
5	6.91	7.01	7.15	7.19	7.26	7.47	7.47	7.57	7.65	7.53	7.33	7.05
6	6.90	7.01	7.16	7.22	7.29	7.45	7.46	7.56	7.65	7.53	7.32	7.05
7	6.91	7.01	7.16	7.22	7.30	7.43	7.46	7.57	7.63	7.52	7.30	7.04
8	6.90	7.01	7.17	7.22	7.31	7.43	7.47	7.60	7.65	7.49	7.29	7.04
9	6.90	7.01	7.16	7.22	7.32	7.43	7.46	7.71	7.65	7.45	7.28	7.05
10	6.90	7.00	7.15	7.22	7.32	7.38	7.45	7.74	7.70	7.41	7.28	7.03
11	6.89	7.01	7.16	7.22	7.32	7.39	7.51	7.84	7.87	7.50	7.36	7.01
12	6.88	7.01	7.12	7.23	7.33	7.39	7.59	7.96	7.89	7.48	7.37	7.00
13	6.85	7.01	7.11	7.23	7.40	7.39	7.61	8.03	7.90	7.45	7.36	6.97
14	6.84	7.00	7.13	7.23	7.46	7.39	7.61	8.04	7.86	7.44	7.34	6.96
15	6.82	7.00	7.13	7.23	7.51	7.39	7.62	8.05	7.81	7.42	7.33	6.95
16	6.81	7.00	7.13	7.23	7.55	7.39	7.62	8.04	7.77	7.39	7.32	6.93
17	6.82	7.01	7.13	7.23	7.57	7.41	7.62	8.01	7.75	7.36	7.31	6.92
18	6.81	7.03	7.13	7.23	7.59	7.39	7.62	7.94	7.73	7.35	7.29	6.91
19	6.80	7.11	7.13	7.23	7.59	7.39	7.64	7.89	7.70	7.30	7.29	6.89
20	6.80	7.11	7.13	7.23	7.60	7.40	7.70	7.85	7.67	7.36	7.28	6.88
21	6.81	7.12	7.14	7.24	7.59	7.41	7.72	7.85	7.64	7.39	7.26	6.86
22	6.82	7.12	7.13	7.24	7.58	7.39	7.72	7.78	7.62	7.38	7.24	6.84
23	6.80	7.11	7.13	7.24	7.57	7.39	7.71	7.75	7.59	7.34	7.23	6.83
24	6.80	7.11	7.14	7.24	7.56	7.40	7.71	7.74	7.54	7.33	7.21	6.82
25	6.79	7.11	7.13	7.24	7.55	7.41	7.69	7.72	7.63	7.42	7.19	6.88
26	6.79	7.11	7.13	7.24	7.54	7.41	7.68	7.70	7.72	7.42	7.19	6.92
27	6.79	7.13	7.14	7.24	7.53	7.41	7.66	7.67	7.75	7.39	7.19	6.91
28	6.80	7.15	7.14	7.24	7.51	7.41	7.65	7.65	7.76	7.37	7.18	6.87
29	6.81	7.15	7.14	7.24	---	7.41	7.64	7.63	7.74	7.37	7.17	6.84
30	6.77	7.15	7.15	7.24	---	7.41	7.61	7.62	7.70	7.36	7.16	6.80
31	6.80	---	7.15	7.24	---	7.44	---	7.62	---	7.40	7.14	---
MEAN	6.85	7.05	7.14	7.22	7.43	7.42	7.58	7.76	7.70	7.44	7.28	6.95
MAX	6.95	7.15	7.17	7.24	7.60	7.51	7.72	8.05	7.90	7.64	7.39	7.11
MIN	6.77	6.98	7.11	7.15	7.25	7.38	7.44	7.56	7.54	7.30	7.14	6.80


GAGE HEIGHT, IN FEET
8.20
8.00
7.80
7.60
7.40
7.20
7.00
6.80
6.60
O
N
D
J
F
M
A
M
J
J
A
S
2004
2005

05482500 NORTH RACCOON RIVER NEAR JEFFERSON, IA

LOCATION.--Lat 41°59'17", long 94°22'36", in SW¼ NW¼ sec.20, T.83 N., R.30 W., Greene County, Hydrologic Unit 07100006, on right bank 20 ft downstream from bridge on State Highway 4, 0.1 mi downstream from Drainage Ditch 33 and 40, 1.9 mi south of Jefferson, 4.7 mi upstream from Hardin Creek, 62.6 mi (revised) upstream from mouth, and 92.6 mi (revised) upstream from mouth of Raccoon River.

DRAINAGE AREA.--1,619 mi^2.

PERIOD OF RECORD.--March 1940 to current year. Prior to April 1940, monthly discharge only, published in WSP 1308. Prior to October 1955, published as "Raccoon River near Jefferson".

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1940 (M), 1950-51.

GAGE.--Water-stage recorder. Datum of gage is 967.09 ft above NGVD of 1929. Prior to Apr. 22, 1946, nonrecording gage at site 4 mi upstream at different datum. Apr. 22 to June 25, 1946, nonrecording gage, June 26, 1946 to Sept. 30, 1955, water-stage recorder, Oct. 1, 1955 to Apr. 30, 1958, nonrecording gage, at present site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	124	e179	e116	e75	e384	460	925	1,230	8,380	435	102
2	118	154	e190	e105	e81	394	458	864	1,200	4,740	395	97
3	115	186	e186	e105	e95	423	439	819	1,150	3,500	355	94
4	112	185	e186	e98	e129	458	432	791	1,120	2,890	316	92
5	105	177	e181	e95	e115	431	420	764	1,090	2,480	286	88
6	105	186	185	e81	e127	401	400	746	1,070	2,190	271	90
7	102	176	178	e95	e90	364	375	737	1,070	1,970	256	96
8	102	159	172	e87	e92	340	355	748	1,050	1,730	246	112
9	98	153	167	e94	e85	335	363	883	1,080	1,540	233	120
10	98	154	163	e100	e75	319	395	1,360	1,250	1,390	219	120
11	98	141	155	e90	e94	298	410	1,610	2,340	1,240	278	130
12	98	126	154	e95	e107	292	450	1,710	5,680	1,110	294	129
13	92	122	e125	e93	e182	279	555	3,290	6,650	1,000	304	124
14	85	119	e82	e84	e1,020	259	851	4,950	5,070	917	302	105
15	82	116	e105	e73	e2,500	249	1,110	5,120	3,580	835	285	96
16	76	117	e113	e69	2,670	263	1,040	4,160	2,820	768	270	96
17	77	123	e108	e69	1,970	269	947	3,250	2,390	709	255	94
18	81	130	e101	e71	1,350	262	867	2,740	2,090	700	246	93
19	81	141	e86	e78	1,060	239	828	2,410	1,810	665	238	94
20	82	143	e107	e81	894	234	987	2,160	1,600	681	236	83
21	83	161	e100	e78	789	228	1,650	1,960	1,430	709	223	85
22	e84	175	e84	e71	715	219	2,030	1,790	1,300	827	198	81
23	e85	246	e81	e70	641	225	1,910	1,660	1,200	828	174	79
24	e86	251	e78	e71	595	219	1,970	1,530	1,110	783	168	97
25	e86	235	e100	e74	566	240	1,820	1,410	1,080	e693	e152	121
26	e84	223	e97	e80	537	251	1,580	1,350	2,340	e637	e144	108
27	e84	216	e101	e72	512	257	1,400	1,510	5,790	e577	e141	128
28	87	207	e104	e74	482	263	1,230	1,820	7,760	e534	e134	160
29	99	201	e107	e76	---	278	1,090	1,630	10,600	511	e125	157
30	96	179	e133	e73	---	290	1,000	1,460	11,200	450	114	141
31	87	---	e119	e76	---	355	---	1,290	---	421	106	---
TOTAL	2,906	5,026	4,027	2,594	17,648	9,318	27,822	57,447	89,150	46,405	7,399	3,212
MEAN	93.7	168	130	83.7	630	301	927	1,853	2,972	1,497	239	107
MAX	138	251	190	116	2,670	458	2,030	5,120	11,200	8,380	435	160
MIN	76	116	78	69	75	219	355	737	1,050	421	106	79
AC-FT	5,760	9,970	7,990	5,150	35,000	18,480	55,180	113,900	176,800	92,040	14,680	6,370
CFSM	0.06	0.10	0.08	0.05	0.39	0.19	0.57	1.14	1.84	0.92	0.15	0.07
IN.	0.07	0.12	0.09	0.06	0.41	0.21	0.64	1.32	2.05	1.07	0.17	0.07

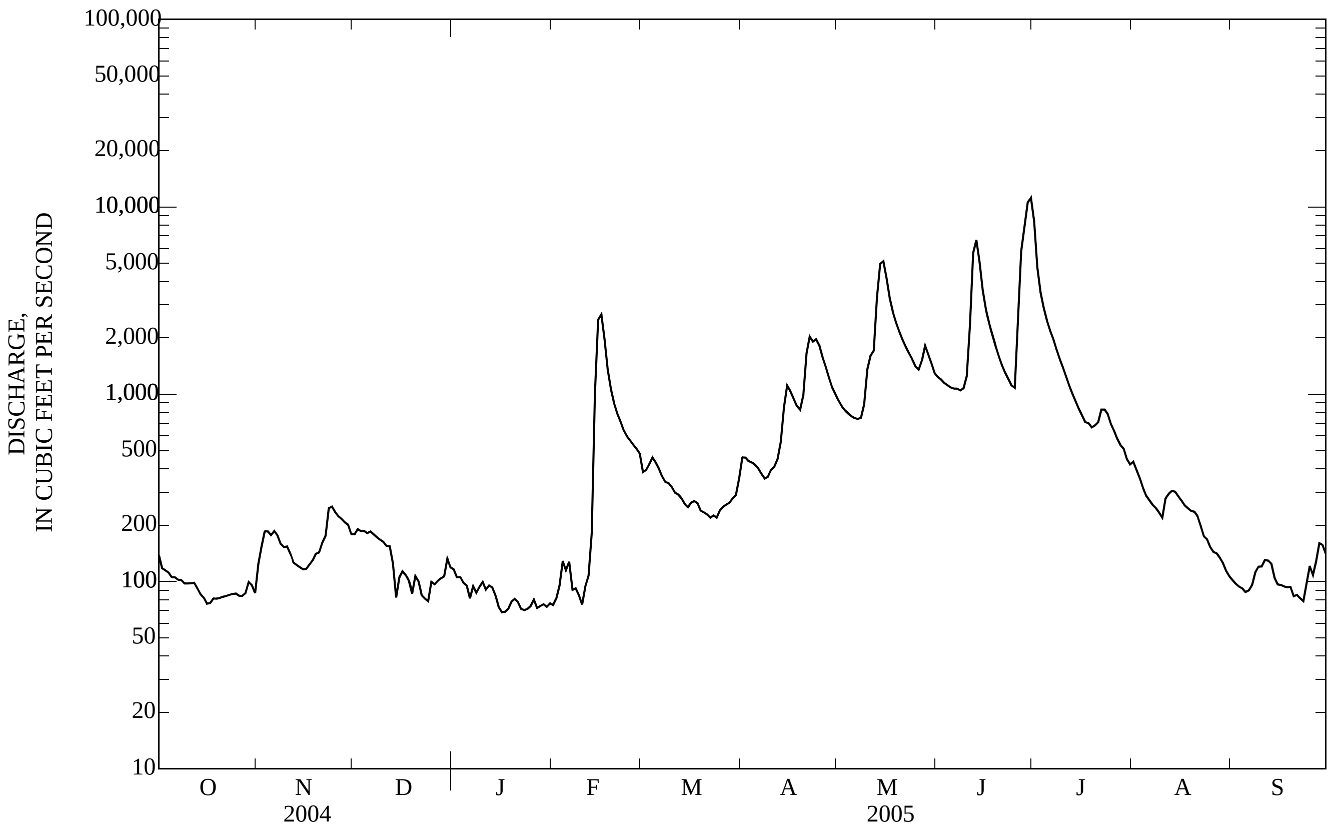
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	413	373	265	195	402	1,245	1,487	1,488	1,896	1,073	498	374
MAX	3,654	2,011	1,228	1,045	2,407	4,990	5,650	4,702	6,831	7,584	3,007	2,823
(WY)	(1974)	(1974)	(1974)	(1973)	(1984)	(1983)	(1983)	(1984)	(1984)	(1993)	(1993)	(1962)
MIN	5.04	19.8	13.4	3.58	6.89	68.5	46.3	48.4	61.9	18.1	12.1	16.6
(WY)	(1957)	(1956)	(1977)	(1977)	(1977)	(1956)	(1956)	(2000)	(1977)	(1956)	(1956)	(1955)

05482500 NORTH RACCOON RIVER NEAR JEFFERSON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	315,955		272,954			
ANNUAL MEAN	863		748		810	
HIGHEST ANNUAL MEAN					2,615	1993
LOWEST ANNUAL MEAN					32.8	1956
HIGHEST DAILY MEAN	11,000	Jun 20	11,200	Jun 30	23,200	Jun 24, 1947
LOWEST DAILY MEAN	27	Jan 5	69	Jan 16 a	0.60	Oct 5, 1956
ANNUAL SEVEN-DAY MINIMUM	41	Jan 3	73	Jan 22	0.91	Oct 4, 1956
MAXIMUM PEAK FLOW			11,700	Jun 30	29,100	Jun 23, 1947
MAXIMUM PEAK STAGE			15.76	Jun 30	22.30	Jun 23, 1947
ANNUAL RUNOFF (AC-FT)	626,700		541,400		586,500	
ANNUAL RUNOFF (CFSM)	0.533		0.462		0.500	
ANNUAL RUNOFF (INCHES)	7.26		6.27		6.79	
10 PERCENT EXCEEDS	2,180		1,820		2,040	
50 PERCENT EXCEEDS	194		236		288	
90 PERCENT EXCEEDS	61		84		44	

a Also Jan. 17, ice affected.
e Estimated.



05483450 MIDDLE RACCOON RIVER NEAR BAYARD, IA

LOCATION.--Lat 41°46'43", long 94°29'33", in SW¼ SW¼ sec.32, T.81 N., R.31 W., Guthrie County, Hydrologic Unit 07100007, on left bank 15 ft downstream from bridge on State Highway 25, 0.2 mi downstream from Battle Run Creek, 1.8 mi upstream from Springbrook Creek, 5.8 mi southeast of Bayard, 10.3 mi upstream from dam at Lake Panorama, 30.2 mi upstream from mouth, 78.0 mi upstream from mouth of Raccoon River, and at mile 279.2 upstream from mouth of Des Moines River.

DRAINAGE AREA.--375 mi^2.

PERIOD OF RECORD.--March 1979 to current year. Occasional low-flow measurements, water years 1976, 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,040.00 ft above NGVD of 1929. Prior to June 23, 1979, nonrecording gage at present site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with telephone modem and U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/ WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 3, 1973 reached a stage of 21.63 ft, from contracted-opening measurement, discharge, 14,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	50	e44	e61	e50	e96	233	235	207	217	66	31
2	33	91	e52	e48	e73	e104	185	223	204	186	58	30
3	32	73	55	e47	e106	e109	166	214	196	168	54	29
4	30	55	55	e35	e94	109	151	221	197	162	52	29
5	30	48	53	e31	e85	103	149	215	189	131	49	28
6	29	46	54	e20	e103	97	143	199	173	118	47	28
7	30	43	54	e28	e57	98	126	192	170	113	45	29
8	29	42	51	e27	e54	93	115	184	192	105	43	35
9	33	41	49	e43	e47	86	111	180	232	98	41	32
10	30	42	49	e37	e44	85	109	233	212	90	40	29
11	31	50	48	e41	e58	85	120	269	800	83	78	28
12	30	49	46	e40	e63	84	154	555	666	76	149	27
13	31	43	e31	e29	e157	74	215	1,140	462	71	75	28
14	32	42	e23	e19	902	75	213	818	401	66	58	30
15	31	41	e34	e17	540	77	198	615	350	63	52	30
16	32	41	e44	e19	333	77	189	504	317	59	47	28
17	35	41	e43	e21	269	76	183	442	292	54	44	28
18	37	49	e39	e23	227	76	168	399	265	76	42	27
19	37	69	e23	e33	193	75	167	367	241	66	41	28
20	38	83	e45	e35	179	69	391	332	224	52	40	28
21	42	66	e40	e31	164	66	534	315	212	54	39	26
22	41	57	e31	e21	149	69	538	307	200	52	39	26
23	41	54	e23	e22	138	68	509	280	186	49	38	26
24	37	52	e23	e27	136	69	424	270	170	45	37	29
25	36	50	e45	e46	135	82	374	260	196	43	37	38
26	37	49	e42	e42	128	89	339	261	252	96	36	59
27	36	53	e48	e42	124	80	314	246	230	186	35	52
28	36	57	e50	e45	120	77	287	237	215	83	35	38
29	38	e53	e50	e43	---	77	266	228	206	68	33	34
30	46	e43	e79	e47	---	81	249	216	249	63	33	31
31	40	---	e63	e54	---	164	---	206	---	66	32	---
TOTAL	1,070	1,573	1,386	1,074	4,728	2,670	7,320	10,363	8,106	2,859	1,515	941
MEAN	34.5	52.4	44.7	34.6	169	86.1	244	334	270	92.2	48.9	31.4
MAX	46	91	79	61	902	164	538	1,140	800	217	149	59
MIN	29	41	23	17	44	66	109	180	170	43	32	26
AC-FT	2,120	3,120	2,750	2,130	9,380	5,300	14,520	20,560	16,080	5,670	3,010	1,870
CFSM	0.09	0.14	0.12	0.09	0.45	0.23	0.65	0.89	0.72	0.25	0.13	0.08
IN.	0.11	0.16	0.14	0.11	0.47	0.26	0.73	1.03	0.80	0.28	0.15	0.09

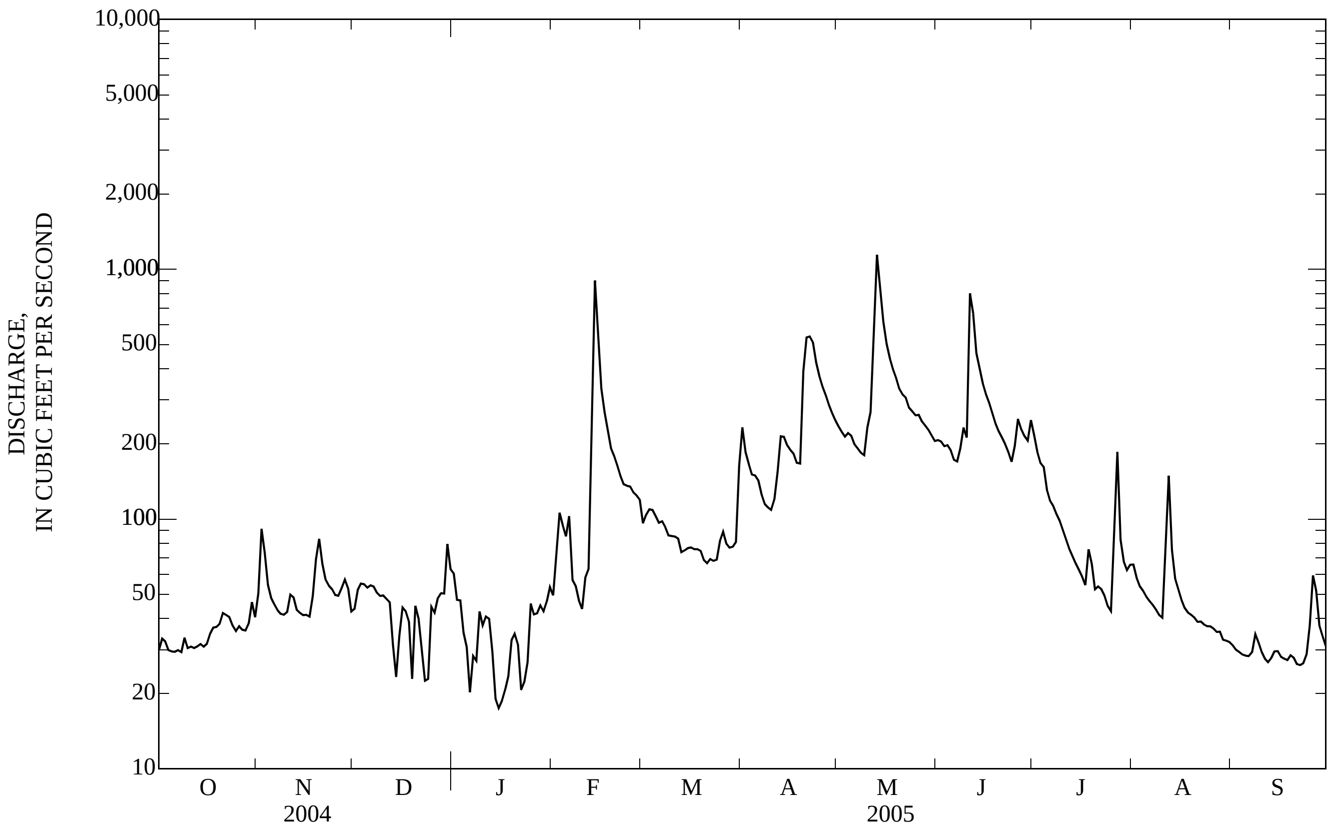
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2005, BY WATER YEAR (WY)

MEAN	106	109	107	80.8	177	279	363	482	513	389	170	97.5
MAX	587	376	347	175	645	907	1,035	993	1,667	2,653	673	466
(WY)	(1987)	(1993)	(1993)	(1993)	(1983)	(1993)	(1991)	(1984)	(1990)	(1993)	(1993)	(1993)
MIN	20.1	18.3	12.5	13.8	27.4	23.3	22.9	51.6	77.0	40.2	32.1	18.8
(WY)	(1981)	(1981)	(1981)	(1981)	(1990)	(1981)	(1981)	(1981)	(2000)	(1980)	(2000)	(1980)

05483450 MIDDLE RACCOON RIVER NEAR BAYARD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1980 - 2005	
ANNUAL TOTAL	86,188		43,605			
ANNUAL MEAN	235		119		240	
HIGHEST ANNUAL MEAN					677	1993
LOWEST ANNUAL MEAN					54.1	1981
HIGHEST DAILY MEAN	5,590	May 23	1,140	May 13	18,100	Jul 9, 1993
LOWEST DAILY MEAN	22	Jan 5	17	Jan 15 a	5.5	Jun 13, 1981
ANNUAL SEVEN-DAY MINIMUM	29	Jan 4	23	Jan 13	7.3	Jun 8, 1981
MAXIMUM PEAK FLOW			1,460	Feb 14	27,500	Jul 9, 1993
MAXIMUM PEAK STAGE			15.09	Feb 14	29.02	Jul 9, 1993
ANNUAL RUNOFF (AC-FT)	171,000		86,490		173,600	
ANNUAL RUNOFF (CFSM)	0.628		0.319		0.639	
ANNUAL RUNOFF (INCHES)	8.55		4.33		8.68	
10 PERCENT EXCEEDS	475		263		537	
50 PERCENT EXCEEDS	66		58		105	
90 PERCENT EXCEEDS	31		30		32	

a Ice affected.
e Estimated.



05483470 LAKE PANORAMA AT PANORA, IOWA

LOCATION.--Lat 41°41'44", long 94°22'53", in SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.31, T.80 N., R.30 W., Guthrie County, Hydrologic Unit 07100007, in gate control building of dam on Middle Raccoon River, 0.5 mi upstream from State Highway 44, 1.0 mi west of Panora, 4.4 mi upstream from Bay Branch, 67.7 mi upstream from mouth of Raccoon River, and at mile 268.8 upstream from mouth of Des Moines River.

DRAINAGE AREA.--433 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft above NGVD of 1929.

REMARKS.--Gage height record is considered reliable for the entire year, except Aug.31 to Sep. 5. Lake is formed by earthfill dam with 100 ft bascule gate and concrete chute spillway, and 300 ft earthen emergency spillway. Low-flow outlet is 30-inch conduit and gate valve through dam. Dam was completed in August, 1970 and began filling April 27, 1971. Total storage, 60,000 acre-ft, surface area, 2,900 acres, at top of dam, elevation 1,068 ft. Storage unknown at top of spillway, elevation 1,048 ft. Normal storage, 19,700 acre-ft, surface area, 1,270 acres with bascule gate closed, elevation 1,045 ft. Dead storage unknown with bascule gate open, elevation 1,036 ft. Present lake classification is utility (industrial) but is also used for recreation. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

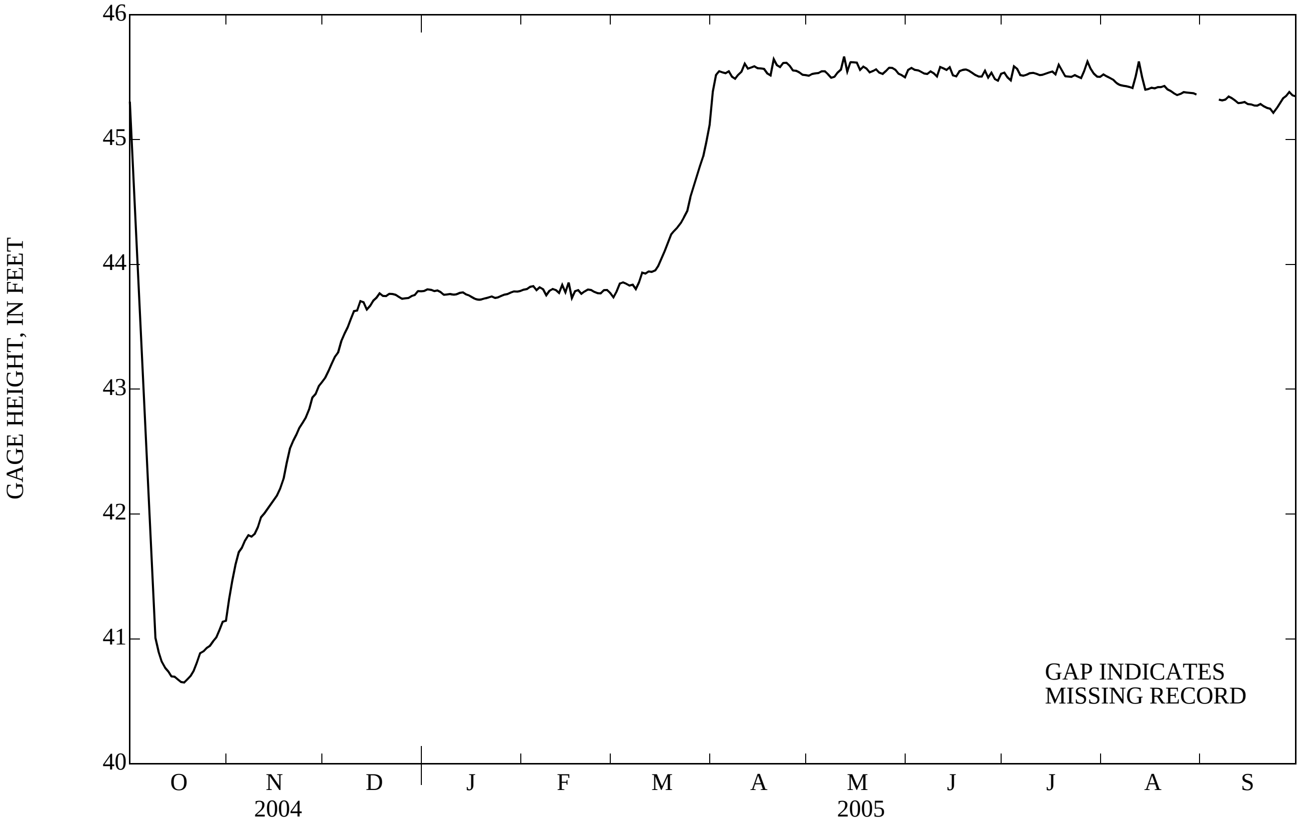
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 50.68 ft July 9, 1993; minimum, 40.62 ft on Oct. 18, 2005 (due to work on spillway).

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 45.91 ft on May 12; minimum recorded, 40.62 ft on Oct. 18, 2005 (due to work on spillway).

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45.30	41.32	43.09	43.79	43.80	43.73	45.38	45.51	45.56	45.53	45.52	---
2	44.76	41.47	43.14	43.80	43.80	43.78	45.52	45.53	45.57	45.50	45.51	---
3	44.14	41.60	43.20	43.80	43.82	43.85	45.55	45.53	45.56	45.47	45.49	---
4	43.53	41.69	43.26	43.79	43.82	43.85	45.54	45.53	45.55	45.59	45.48	---
5	42.88	41.73	43.29	43.79	43.79	43.84	45.53	45.55	45.54	45.57	45.45	---
6	42.26	41.79	43.38	43.78	43.82	43.83	45.55	45.55	45.53	45.52	45.44	45.32
7	41.76	41.83	43.44	43.76	43.80	43.84	45.50	45.52	45.52	45.51	45.43	45.31
8	41.38	41.82	43.49	43.76	43.75	43.80	45.49	45.49	45.55	45.52	45.43	45.32
9	41.01	41.84	43.56	43.76	43.79	43.85	45.52	45.50	45.53	45.53	45.42	45.34
10	40.90	41.89	43.62	43.76	43.80	43.93	45.54	45.54	45.50	45.53	45.41	45.33
11	40.81	41.97	43.63	43.76	43.79	43.93	45.61	45.56	45.58	45.53	45.51	45.31
12	40.77	42.00	43.70	43.77	43.77	43.94	45.57	45.66	45.57	45.52	45.63	45.29
13	40.74	42.04	43.70	43.78	43.84	43.94	45.58	45.54	45.56	45.52	45.50	45.29
14	40.70	42.08	43.64	43.76	43.78	43.95	45.59	45.62	45.58	45.53	45.40	45.30
15	40.70	42.11	43.67	43.75	43.85	43.99	45.57	45.62	45.51	45.54	45.40	45.28
16	40.67	42.15	43.71	43.73	43.73	44.05	45.57	45.62	45.51	45.54	45.41	45.28
17	40.65	42.20	43.73	43.72	43.78	44.11	45.57	45.56	45.55	45.52	45.41	45.27
18	40.65	42.28	43.77	43.72	43.79	44.17	45.53	45.58	45.56	45.60	45.42	45.27
19	40.67	42.41	43.75	43.72	43.76	44.24	45.51	45.57	45.56	45.55	45.42	45.28
20	40.70	42.52	43.75	43.73	43.78	44.27	45.64	45.54	45.55	45.51	45.43	45.27
21	40.74	42.58	43.76	43.73	43.80	44.30	45.60	45.55	45.53	45.50	45.40	45.25
22	40.81	42.63	43.76	43.74	43.79	44.33	45.58	45.56	45.52	45.50	45.39	45.25
23	40.88	42.69	43.76	43.73	43.78	44.38	45.61	45.54	45.50	45.52	45.37	45.21
24	40.90	42.73	43.74	43.73	43.77	44.43	45.61	45.52	45.50	45.50	45.36	45.25
25	40.93	42.77	43.72	43.75	43.77	44.54	45.59	45.55	45.55	45.49	45.37	45.29
26	40.94	42.84	43.73	43.76	43.79	44.62	45.55	45.57	45.50	45.55	45.38	45.33
27	40.98	42.93	43.73	43.76	43.79	44.70	45.55	45.57	45.53	45.62	45.38	45.35
28	41.01	42.96	43.75	43.77	43.77	44.79	45.54	45.56	45.49	45.57	45.37	45.38
29	41.07	43.02	43.75	43.78	---	44.86	45.52	45.53	45.47	45.53	45.37	45.35
30	41.14	43.06	43.78	43.78	---	44.98	45.52	45.52	45.53	45.50	45.36	45.35
31	41.14	---	43.78	43.79	---	45.12	---	45.50	---	45.50	---	---
MEAN	41.47	42.23	43.61	43.76	43.79	44.19	45.55	45.55	45.54	45.53	---	---
MAX	45.30	43.06	43.78	43.80	43.85	45.12	45.64	45.66	45.58	45.62	---	---
MIN	40.65	41.32	43.09	43.72	43.73	43.73	45.38	45.49	45.47	45.47	---	---

05483470 LAKE PANORAMA AT PANORA, IOWA—Continued



05483600 MIDDLE RACCOON RIVER AT PANORA, IA

LOCATION.--Lat 41°41'14", long 94°22'15", in NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.5, T.79 N., R.30 W., Guthrie County, Hydrologic Unit 07100007, on left bank 15 ft downstream from bridge on Soldier Trail, 0.2 mi southwest of Panora, 1.5 mi upstream from Andy's Branch, 1.6 mi downstream from Lake Panorama, 18.2 mi(revised) upstream from mouth, 66.1 mi upstream from mouth of Raccoon River, and at mile 267.2 upstream from mouth of Des Moines River.

DRAINAGE AREA.--440 mi^2.

PERIOD OF RECORD.--June 1958 to current year.

REVISED RECORDS.--WDR IA-74-1: 1973 (P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 991.20 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. City of Panora diverts approximately 100 acre-ft/yr upstream of station. Flow regulated by dam on Lake Panorama since August 1970. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm. U.S. Geological Survey data collection platform with telephone modem at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1953, reached a stage of 14.3 ft, from floodmark, discharge, about 14,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	30	26	e55	48	90	82	223	207	240	83	30
2	467	27	32	e42	47	77	133	206	218	215	80	26
3	391	26	30	e41	55	101	153	208	221	181	76	24
4	406	26	47	e32	85	111	159	207	217	207	71	22
5	416	27	45	e28	104	107	165	212	213	201	64	18
6	369	27	34	e18	113	107	172	212	190	168	59	20
7	308	27	39	e25	109	109	147	207	168	145	56	28
8	284	27	31	e25	79	78	117	197	243	130	52	25
9	173	28	31	46	78	59	111	180	270	130	51	27
10	99	25	43	47	88	79	117	217	234	127	50	27
11	83	25	36	46	95	72	159	540	756	122	83	28
12	66	25	41	46	104	79	213	1,410	827	112	201	23
13	58	26	32	e26	223	78	182	1,640	447	99	178	31
14	48	26	24	e17	755	66	206	970	466	92	96	25
15	40	26	23	e15	664	60	194	640	396	87	48	20
16	37	25	28	e16	325	55	192	577	320	89	52	17
17	35	30	e28	e18	226	51	191	478	288	86	50	13
18	26	30	e25	e20	207	51	180	442	274	126	51	26
19	19	32	e18	36	186	55	172	409	259	123	51	34
20	17	41	e36	36	159	52	801	344	252	108	61	27
21	16	55	e31	36	152	60	676	322	245	98	64	21
22	20	33	e24	e24	148	60	801	325	227	76	51	20
23	23	28	e16	e27	142	54	501	298	201	73	36	18
24	24	25	e16	38	138	58	481	267	188	76	34	51
25	26	26	e34	38	120	62	412	261	411	70	35	68
26	26	28	31	41	115	53	361	265	258	102	40	78
27	27	26	33	41	128	54	312	251	271	161	41	73
28	27	28	33	42	122	44	301	251	279	137	39	72
29	24	30	35	47	---	48	268	245	231	91	37	58
30	23	20	47	49	---	53	252	239	253	81	35	45
31	24	---	57	46	---	50	---	205	---	82	31	---
TOTAL	3,762	855	1,006	1,064	4,815	2,133	8,211	12,448	9,030	3,835	1,956	995
MEAN	121	28.5	32.5	34.3	172	68.8	274	402	301	124	63.1	33.2
MAX	467	55	57	55	755	111	801	1,640	827	240	201	78
MIN	16	20	16	15	47	44	82	180	168	70	31	13
AC-FT	7,460	1,700	2,000	2,110	9,550	4,230	16,290	24,690	17,910	7,610	3,880	1,970
CFSM	0.28	0.06	0.07	0.08	0.39	0.16	0.62	0.91	0.68	0.28	0.14	0.08
IN.	0.32	0.07	0.09	0.09	0.41	0.18	0.69	1.05	0.76	0.32	0.17	0.08

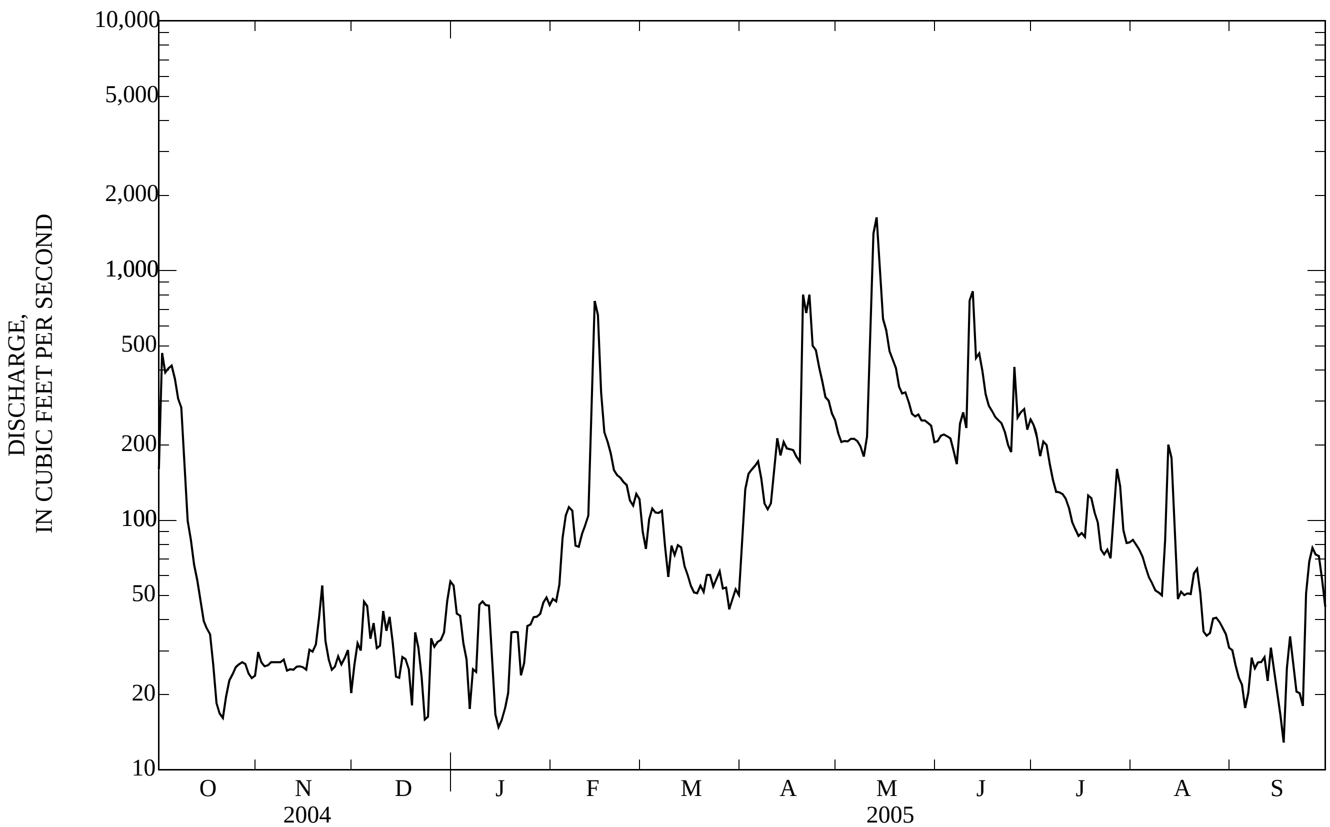
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	122	133	116	93.9	207	355	370	511	483	374	161	126
MAX	670	588	356	439	838	1,479	1,222	1,458	1,646	2,731	668	528
(WY)	(1987)	(1973)	(1993)	(1973)	(1971)	(1979)	(1984)	(1974)	(1990)	(1993)	(1996)	(1973)
MIN	19.5	12.8	7.60	6.95	27.8	20.2	26.4	20.0	9.40	5.56	22.2	19.3
(WY)	(1981)	(1971)	(1971)	(1971)	(1972)	(1981)	(1977)	(1977)	(1977)	(1977)	(1971)	(1980)

05483600 MIDDLE RACCOON RIVER AT PANORA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1971 - 2005 a	
ANNUAL TOTAL	96,575		50,110			
ANNUAL MEAN	264		137		254	
HIGHEST ANNUAL MEAN					701	1973
LOWEST ANNUAL MEAN					38.6	1977
HIGHEST DAILY MEAN	6,410	May 23	1,640	May 13	17,500	Jul 10, 1993
LOWEST DAILY MEAN	16	Oct 21	13	Sep 17	0.00	Jun 9, 1977 b
ANNUAL SEVEN-DAY MINIMUM	21	Oct 18	21	Oct 18	3.1	Jul 8, 1977
MAXIMUM PEAK FLOW			3,710	May 12	22,400	Jul 9, 1993
MAXIMUM PEAK STAGE			8.68	May 12	20.04	Jul 9, 1993
INSTANTANEOUS LOW FLOW			9.9	Sep 16 c		
ANNUAL RUNOFF (AC-FT)	191,600		99,390		184,300	
ANNUAL RUNOFF (CFSM)	0.600		0.312		0.578	
ANNUAL RUNOFF (INCHES)	8.16		4.24		7.86	
10 PERCENT EXCEEDS	535		304		562	
50 PERCENT EXCEEDS	82		66		103	
90 PERCENT EXCEEDS	27		25		31	

a Post regulation.
b Also June 10, 1977, result of gate operations at Lake Panorama.
c Also Sep. 17.
e Estimated.



05484000 SOUTH RACCOON RIVER AT REDFIELD, IA

LOCATION.--Lat 41°35'22", long 94°09'04", in SW1/4 NE1/4 sec.2, T.78 N., R.29 W., Dallas County, Hydrologic Unit 07100007, on right bank 20 ft upstream from bridge on H Avenue, 3.4 mi downstream from bridge on U.S. Highway 6, 3.4 mi downstream from Middle Raccoon River, 14.3 mi upstream from mouth, 44.6 mi upstream from mouth of Raccoon River, and at mile 245.6 upstream from mouth of Des Moines River.

DRAINAGE AREA.--994 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1940, WDR IA-87-1:datum.

GAGE.--Water-stage recorder. Datum of gage is 888.88 ft above NGVD of 1929. Prior to June 12, 1946, nonrecording gage, June 12, 1946 to Sept. 30, 1986, water-stage recorder at site 2.4 mi upstream at datum 7.55 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	123	77	e108	e111	223	188	727	524	532	171	94
2	444	172	83	e96	e111	206	232	662	505	424	166	92
3	473	128	92	e95	e126	225	274	644	505	383	156	90
4	461	107	90	e87	e144	250	288	623	520	654	147	89
5	458	101	99	e82	e174	234	276	608	507	669	140	88
6	462	98	109	e71	e177	234	274	599	459	424	133	85
7	383	95	102	e79	e176	227	266	586	418	348	130	88
8	343	91	96	e79	e145	221	231	567	531	303	123	93
9	333	90	90	e95	e150	171	206	538	673	275	122	94
10	139	94	89	e89	e154	173	219	541	606	259	122	92
11	121	106	89	e91	e163	191	284	4,600	1,210	248	202	87
12	109	102	85	e91	e171	180	435	6,840	1,520	231	388	87
13	105	95	e66	e80	e324	179	392	10,500	1,020	213	336	91
14	98	90	e49	e70	e1,520	173	399	3,820	989	201	223	120
15	95	92	e62	e69	1,360	162	377	2,330	819	194	147	97
16	89	92	e69	e70	811	164	361	1,740	670	183	128	89
17	88	94	e68	e72	532	158	368	1,440	591	183	124	86
18	92	104	e65	e75	476	154	344	1,230	556	229	122	84
19	89	130	e54	e84	434	156	334	1,140	508	245	120	87
20	86	133	e79	e86	386	148	4,270	1,000	482	201	127	93
21	86	124	e76	e85	356	148	3,200	869	471	205	123	86
22	89	118	e68	e78	332	157	3,120	836	448	194	125	83
23	92	101	e63	e81	308	153	2,360	753	410	168	112	81
24	87	95	e63	e90	296	157	1,630	673	375	164	106	85
25	85	90	e79	e109	292	188	1,310	632	729	150	106	101
26	92	90	e76	e104	257	188	1,170	644	813	185	109	112
27	93	103	e83	e105	272	176	1,010	606	550	245	111	112
28	93	97	e87	e108	272	174	919	571	560	268	106	116
29	97	93	e89	e107	---	167	856	568	507	200	103	106
30	94	92	e100	e110	---	175	785	548	610	169	100	85
31	89	---	e110	e108	---	190	---	520	---	170	98	---
TOTAL	5,607	3,140	2,507	2,754	10,030	5,702	26,378	47,955	19,086	8,517	4,526	2,793
MEAN	181	105	80.9	88.8	358	184	879	1,547	636	275	146	93.1
MAX	473	172	110	110	1,520	250	4,270	10,500	1,520	669	388	120
MIN	85	90	49	69	111	148	188	520	375	150	98	81
AC-FT	11,120	6,230	4,970	5,460	19,890	11,310	52,320	95,120	37,860	16,890	8,980	5,540
CFSM	0.18	0.11	0.08	0.09	0.36	0.19	0.88	1.56	0.64	0.28	0.15	0.09
IN.	0.21	0.12	0.09	0.10	0.38	0.21	0.99	1.79	0.71	0.32	0.17	0.10

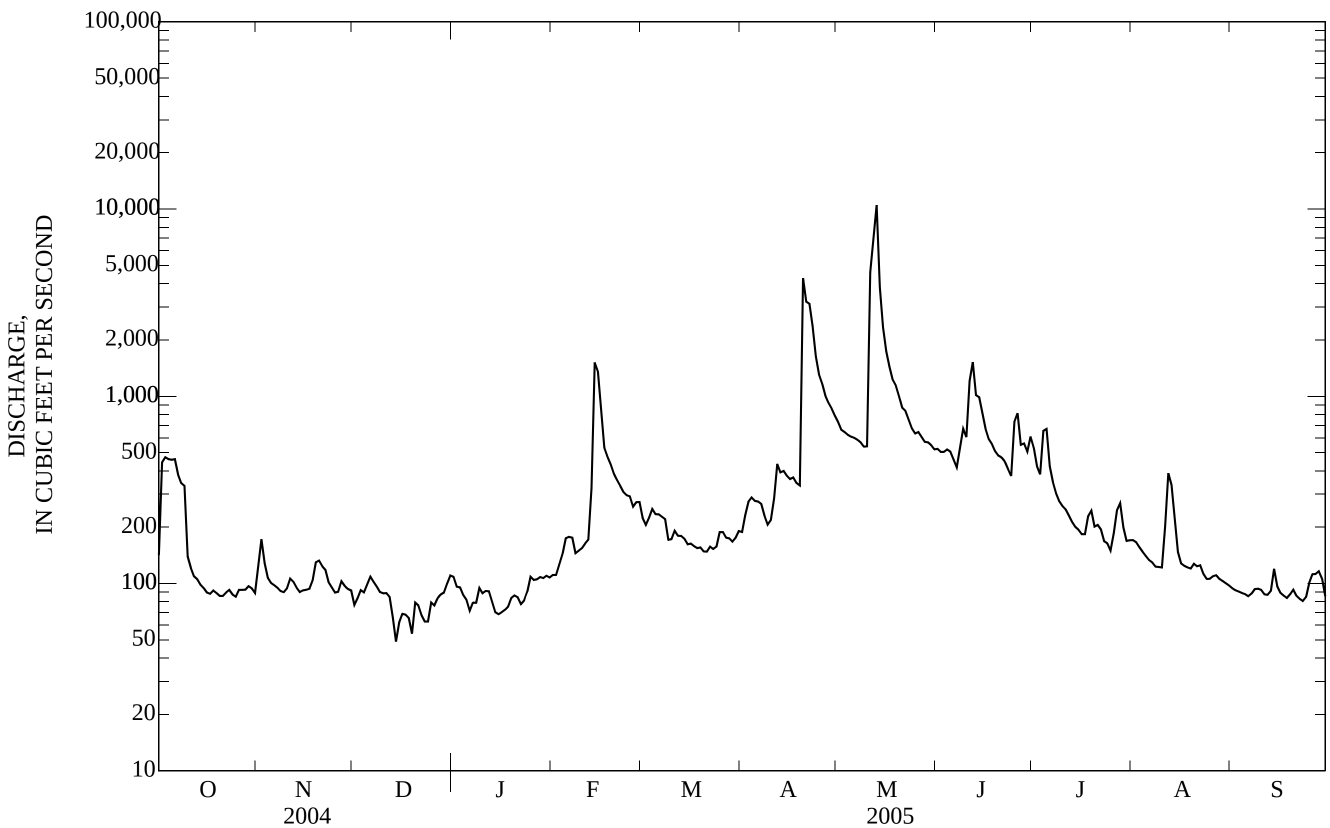
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	229	229	188	170	386	806	752	937	1,025	639	363	273
MAX	1,501	1,162	826	565	1,785	3,112	2,474	3,113	5,017	5,494	2,745	1,385
(WY)	(1987)	(1973)	(1993)	(1983)	(1971)	(1979)	(1984)	(2004)	(1947)	(1993)	(1993)	(1993)
MIN	28.6	36.2	32.4	30.4	35.5	74.2	50.0	62.9	43.2	57.4	37.8	36.0
(WY)	(1941)	(1956)	(1956)	(1950)	(1956)	(1981)	(1956)	(1967)	(1977)	(1954)	(1955)	(1955)

05484000 SOUTH RACCOON RIVER AT REDFIELD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	233,710		138,995			
ANNUAL MEAN	639		381		500	
HIGHEST ANNUAL MEAN					1,632	1993
LOWEST ANNUAL MEAN					91.4	1968
HIGHEST DAILY MEAN	21,500	May 23	10,500	May 13	33,600	Jul 10, 1993
LOWEST DAILY MEAN	49	Dec 14	49	Dec 14	17	Aug 4, 1977
ANNUAL SEVEN-DAY MINIMUM	62	Dec 13	62	Dec 13	20	Jan 24, 1954
MAXIMUM PEAK FLOW			15,600	May 13	44,000	Jul 10, 1993
MAXIMUM PEAK STAGE			17.14	May 13	29.04	Jul 2, 1958
INSTANTANEOUS LOW FLOW			34	Dec 13 a		
ANNUAL RUNOFF (AC-FT)	463,600		275,700		362,100	
ANNUAL RUNOFF (CFSM)	0.642		0.383		0.503	
ANNUAL RUNOFF (INCHES)	8.75		5.20		6.83	
10 PERCENT EXCEEDS	1,350		673		1,100	
50 PERCENT EXCEEDS	215		157		200	
90 PERCENT EXCEEDS	79		85		61	

a Also Dec. 14, result of freeze-up.
e Estimated.



05484500 RACCOON RIVER AT VAN METER, IA

LOCATION.--Lat 41°32'02", long 93°56'59", in SW1/4 SW1/4 sec.22, T.78 N., R.27 W., Dallas County, Hydrologic Unit 07100006, on right bank 10 ft downstream from bridge on County Highway R16, 0.3 mi northeast of Van Meter, 0.7 mi upstream from small left bank tributary, 1.2 mi (revised) downstream from confluence of North and South Raccoon Rivers, and 29.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--3,441 mi^2.

PERIOD OF RECORD.--April 1915 to current year. Prior to October 1934, monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1927 (M), WSP 1438: Drainage area, WSP 1508: 1915 (M), 1925 (M), 1926, 1933 (M), 1939 (M), 1947 (M), 1949 (M).

GAGE.--Water-stage recorder. Datum of gage is 841.16 ft above NGVD of 1929. See WSP 1308 for history of changes prior to Aug. 8, 1934.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	344	302	398	e332	e324	e1,050	716	2,070	2,210	10,000	623	237
2	448	433	391	e339	e331	e977	800	1,900	2,120	10,400	607	225
3	614	388	422	e335	e341	993	883	1,790	2,070	6,590	587	213
4	566	396	426	e323	e416	1,000	900	1,700	2,030	5,210	541	206
5	557	411	442	e293	e532	987	886	1,630	1,980	4,540	495	198
6	560	397	473	e273	e719	966	881	1,570	1,870	3,520	463	190
7	513	382	451	e292	e822	932	865	1,520	1,770	2,940	437	188
8	470	372	435	e286	e822	897	811	1,490	1,940	2,550	418	199
9	438	361	420	e304	e701	836	768	1,460	2,250	2,230	400	218
10	347	355	409	e299	e628	796	746	1,530	2,110	1,960	388	222
11	295	366	399	e302	e634	802	841	7,150	2,350	1,740	502	212
12	287	364	391	e303	e544	779	1,040	9,860	4,550	1,540	691	207
13	277	340	e363	e252	e652	756	1,120	16,900	6,990	1,370	709	232
14	269	319	e205	e218	e1,920	726	1,220	10,300	7,760	1,240	571	270
15	260	315	e218	e207	e3,210	707	1,400	9,540	6,700	1,120	494	244
16	251	312	e291	e204	e4,260	687	1,660	8,660	5,190	1,020	426	212
17	245	310	e296	e200	e4,090	682	1,660	7,420	4,230	929	395	198
18	252	328	e283	e211	e3,430	681	1,530	6,280	3,550	977	372	193
19	259	379	e226	e230	e2,590	678	1,420	5,520	3,060	912	355	191
20	244	408	e195	e234	2,280	656	4,920	4,730	2,700	829	355	195
21	242	401	e263	e237	1,940	630	5,810	4,100	2,430	830	342	191
22	247	417	e252	e221	1,710	622	5,800	3,710	2,220	802	327	177
23	247	420	e246	e220	1,540	618	6,020	3,330	2,000	828	310	169
24	242	431	e236	e242	1,420	622	4,710	3,010	1,820	814	291	184
25	238	464	e262	e262	1,340	675	4,220	2,760	1,970	728	281	201
26	263	459	e248	e265	1,250	693	3,760	2,620	2,570	734	281	225
27	266	469	e253	e255	1,210	684	3,220	2,470	3,170	772	279	260
28	259	455	e274	e262	1,170	675	2,810	2,460	6,500	813	270	251
29	262	442	e289	e276	---	671	2,520	2,740	7,640	791	263	254
30	253	437	e300	e285	---	683	2,250	2,560	8,720	690	256	256
31	246	---	e316	e297	---	709	---	2,360	---	646	248	---
TOTAL	10,261	11,633	10,073	8,259	40,826	23,870	66,187	135,140	106,470	70,065	12,977	6,418
MEAN	331	388	325	266	1,458	770	2,206	4,359	3,549	2,260	419	214
MAX	614	469	473	339	4,260	1,050	6,020	16,900	8,720	10,400	709	270
MIN	238	302	195	200	324	618	716	1,460	1,770	646	248	169
AC-FT	20,350	23,070	19,980	16,380	80,980	47,350	131,300	268,100	211,200	139,000	25,740	12,730
CFSM	0.10	0.11	0.09	0.08	0.42	0.22	0.64	1.27	1.03	0.66	0.12	0.06
IN.	0.11	0.13	0.11	0.09	0.44	0.26	0.72	1.46	1.15	0.76	0.14	0.07

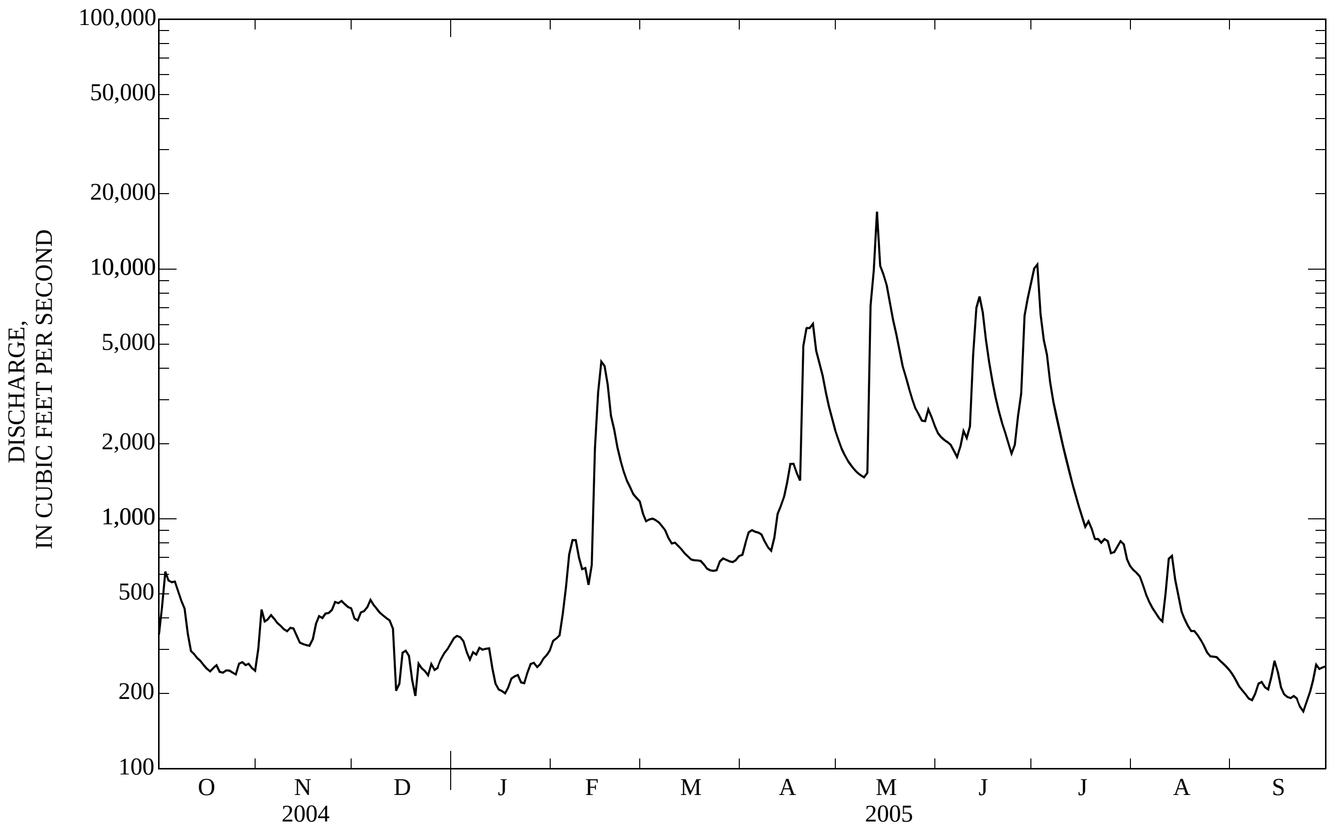
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	803	753	560	479	977	2,569	2,608	2,774	3,337	1,930	991	838
MAX	6,840	4,774	3,085	3,461	5,438	10,480	10,630	9,257	13,970	17,260	7,414	7,222
(WY)	(1974)	(1973)	(1983)	(1932)	(1984)	(1979)	(1983)	(1984)	(1947)	(1993)	(1993)	(1926)
MIN	48.6	51.5	31.0	17.2	31.5	146	125	121	112	68.1	28.1	43.1
(WY)	(1940)	(1938)	(1938)	(1940)	(1940)	(1931)	(1956)	(1934)	(1977)	(1936)	(1936)	(1939)

05484500 RACCOON RIVER AT VAN METER, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1916 - 2005	
ANNUAL TOTAL	747,930		502,179			
ANNUAL MEAN	2,044		1,376		1,552	
HIGHEST ANNUAL MEAN					5,717	1993
LOWEST ANNUAL MEAN					166	1956
HIGHEST DAILY MEAN	27,500	May 24	16,900	May 13	57,500	Jul 10, 1993
LOWEST DAILY MEAN	68	Jan 5	169	Sep 23	10	Jan 22, 1940 a
ANNUAL SEVEN-DAY MINIMUM	112	Jan 29	186	Sep 18	10	Jan 22, 1940
MAXIMUM PEAK FLOW			19,300	May 13	70,100	Jul 10, 1993
MAXIMUM PEAK STAGE			17.08	May 13	26.34	Jul 10, 1993
INSTANTANEOUS LOW FLOW			164	Sep 23 b	10	Jan 22, 1940
ANNUAL RUNOFF (AC-FT)	1,484,000		996,100		1,125,000	
ANNUAL RUNOFF (CFSM)	0.594		0.400		0.451	
ANNUAL RUNOFF (INCHES)	8.09		5.43		6.13	
10 PERCENT EXCEEDS	5,150		3,530		3,940	
50 PERCENT EXCEEDS	627		566		600	
90 PERCENT EXCEEDS	210		235		118	

a Also Jan. 23-31, 1940.
b Also Sept. 24.
e Estimated.



05484600 RACCOON RIVER NEAR WEST DES MOINES, IA

LOCATION.--Lat 41°31'54", long 93°46'54", in SE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.30, T.78 N., R.25 W., Polk County, Hydrologic Unit 07100006, on right bank, 0.4 mi upstream of bridge on Interstate 35, and 14.3 mi (revised) upstream from mouth of Raccoon River.

DRAINAGE AREA.--3,500 mi^2.

PERIOD OF RECORD.--July 19, 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 782.967 ft above NGVD of 1929.

REMARKS.--Records are considered good. Discharge not published, low-flow use only. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station. Precipitation records are not published, but are available.

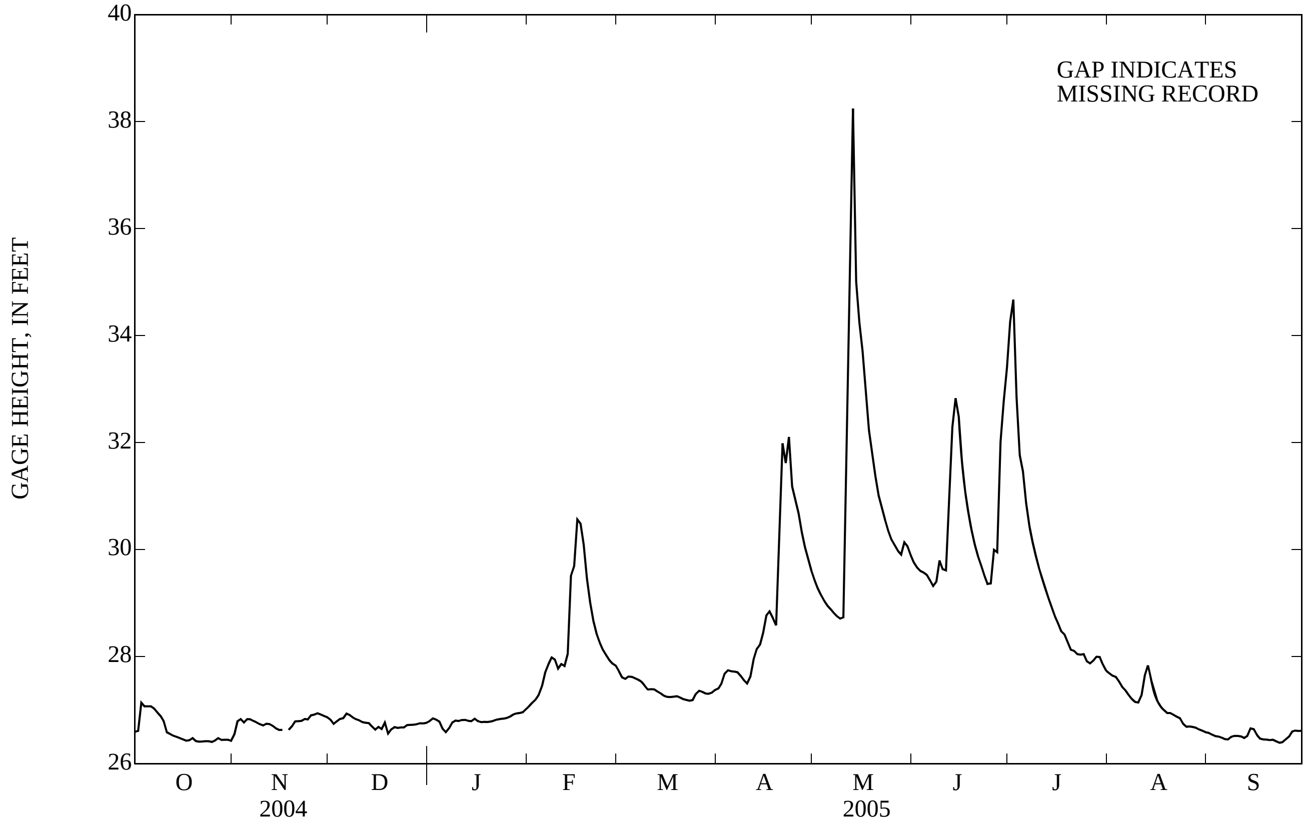
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 44.19 ft. on May 24, 2004; minimum gage height, 26.14 ft. on Dec. 5, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 39.10 ft. on May 13; minimum gage height, 26.36 ft. on Sep. 23 & 24.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.59	26.54	26.82	26.80	27.07	27.72	27.40	29.43	29.76	34.26	27.69	26.57
2	26.61	26.79	26.74	26.84	27.14	27.61	27.50	29.28	29.66	34.67	27.64	26.54
3	27.14	26.83	26.79	26.82	27.20	27.58	27.68	29.15	29.60	32.85	27.62	26.51
4	27.07	26.77	26.83	26.78	27.28	27.63	27.74	29.04	29.57	31.76	27.53	26.50
5	27.07	26.83	26.85	26.65	27.44	27.62	27.73	28.96	29.53	31.46	27.43	26.48
6	27.07	26.83	26.93	26.59	27.70	27.59	27.72	28.89	29.43	30.87	27.37	26.46
7	27.03	26.79	26.91	26.66	27.86	27.57	27.71	28.82	29.32	30.45	27.28	26.45
8	26.95	26.77	26.86	26.77	27.98	27.53	27.64	28.75	29.40	30.15	27.20	26.50
9	26.89	26.74	26.83	26.80	27.94	27.46	27.56	28.71	29.79	29.89	27.15	26.52
10	26.79	26.71	26.81	26.80	27.78	27.38	27.49	28.73	29.63	29.66	27.14	26.52
11	26.58	26.74	26.77	26.81	27.86	27.39	27.62	31.78	29.61	29.47	27.28	26.51
12	26.55	26.74	26.76	26.82	27.82	27.39	27.94	33.93	30.84	29.28	27.64	26.48
13	26.52	26.71	26.76	26.80	28.05	27.35	28.14	38.25	32.29	29.09	27.83	26.52
14	26.50	26.66	26.69	26.79	29.51	27.31	28.22	35.01	32.83	28.92	27.57	26.66
15	26.47	26.63	26.63	26.84	29.68	27.27	28.45	34.24	32.48	28.76	27.37	26.64
16	26.45	26.63	26.69	26.79	30.56	27.25	28.77	33.71	31.64	28.62	27.16	26.53
17	26.43	---	26.64	26.77	30.48	27.24	28.84	32.95	31.08	28.47	27.06	26.47
18	26.43	26.63	26.77	26.78	30.08	27.25	28.73	32.23	30.69	28.41	27.00	26.45
19	26.47	26.70	26.56	26.78	29.46	27.26	28.58	31.81	30.36	28.27	26.94	26.45
20	26.42	26.79	26.64	26.78	29.01	27.23	30.14	31.38	30.09	28.13	26.95	26.44
21	26.41	26.79	26.68	26.80	28.67	27.20	31.98	31.02	29.88	28.10	26.91	26.44
22	26.41	26.80	26.66	26.82	28.43	27.19	31.62	30.78	29.71	28.04	26.87	26.41
23	26.42	26.83	26.68	26.83	28.26	27.18	32.10	30.56	29.52	28.03	26.85	26.39
24	26.42	26.82	26.68	26.84	28.12	27.19	31.18	30.35	29.36	28.04	26.74	26.40
25	26.40	26.90	26.72	26.85	28.03	27.30	30.93	30.18	29.37	27.91	26.69	26.45
26	26.43	26.91	26.72	26.87	27.94	27.36	30.68	30.08	30.00	27.87	26.69	26.50
27	26.47	26.94	26.72	26.91	27.87	27.34	30.33	29.98	29.95	27.92	26.68	26.60
28	26.44	26.91	26.74	26.94	27.83	27.31	30.05	29.91	32.02	28.00	26.67	26.61
29	26.44	26.89	26.75	26.94	---	27.30	29.83	30.14	32.78	27.99	26.64	26.61
30	26.44	26.86	26.75	26.96	---	27.32	29.61	30.06	33.40	27.85	26.61	26.61
31	26.42	---	26.76	27.02	---	27.38	---	29.90	---	27.74	26.59	---
MEAN	26.60	---	26.75	26.81	28.32	27.38	29.00	30.90	30.45	29.38	27.12	26.51
MAX	27.14	---	26.93	27.02	30.56	27.72	32.10	38.25	33.40	34.67	27.83	26.66
MIN	26.40	---	26.56	26.59	27.07	27.18	27.40	28.71	29.32	27.74	26.59	26.39

05484600 RACCOON RIVER NEAR WEST DES MOINES, IA—Continued



05484650 RACCOON RIVER AT 63RD STREET, DES MOINES, IA

LOCATION.--Lat 41°33'49", long 93°42'13", in SW¼ NE¼ sec.14, T.78 N., R.25 W., Polk County, Hydrologic Unit 07100006, on left bank, at upstream side of bridge on State Highway 28, 2.9 mi upstream from Walnut Creek, 8.6 mi upstream from mouth of Raccoon River, and 210.0 mi upstream from mouth of Des Moines River.

DRAINAGE AREA.-- 3,529 mi^2.

PERIOD OF RECORD.-- October 1991 to current year. October 1991 to September 1996 gage height record only.

GAGE.--Water-stage recorder. Datum of gage is 773.91 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. National Weather Service Limited Automatic Remote Collector (LARC) and U.S. Army Corps of Engineers rain gage and U.S. Geological Survey data collection platform with satellite telelmetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	294	370	e453	e341	e335	e1,140	669	2,290	3,020	e9,160	753	220
2	294	446	e433	e348	e341	e1,030	693	2,150	2,910	e9,690	703	216
3	597	485	e457	e344	e358	e994	857	2,030	2,840	7,570	670	212
4	581	429	e482	e333	e429	e1,070	903	1,940	2,800	5,180	616	202
5	586	466	514	e304	e547	e1,070	883	1,830	2,760	4,730	565	192
6	596	462	595	e280	e783	e1,060	874	1,720	2,650	3,950	528	175
7	586	435	569	e298	e971	e1,040	865	1,600	2,540	3,460	503	168
8	531	422	528	e294	e1,020	988	790	1,500	2,600	3,130	472	221
9	482	404	505	e315	e966	936	708	1,420	3,000	2,870	440	187
10	441	385	486	e308	e836	846	650	1,410	2,810	2,640	419	188
11	329	419	465	e312	e871	834	783	5,060	2,730	2,450	530	184
12	318	402	452	e315	e820	812	1,070	8,850	3,860	2,290	742	175
13	307	378	e390	e264	e1,210	778	1,240	20,300	6,120	2,130	966	206
14	290	348	e209	e226	e2,400	746	1,280	13,900	7,220	1,980	760	249
15	280	332	e226	e213	e3,610	701	1,470	10,400	6,800	1,790	588	254
16	266	329	e300	e213	4,670	672	1,830	9,280	5,290	1,590	477	215
17	260	330	e304	e203	4,440	658	1,930	7,870	4,420	1,410	422	192
18	268	347	e291	e216	e3,750	667	1,780	6,510	3,910	1,610	381	175
19	311	408	e236	e235	e3,050	666	1,590	5,740	3,560	1,380	356	169
20	264	456	e207	e243	e2,600	651	2,940	5,090	3,270	1,230	350	168
21	249	465	e269	e247	e2,240	614	5,920	4,570	3,050	1,240	337	169
22	239	465	e257	e231	e1,940	605	4,960	4,250	2,890	1,100	320	172
23	240	491	e250	e229	e1,710	603	5,760	3,980	2,700	1,070	316	163
24	239	484	e241	e247	e1,590	630	4,290	3,720	2,550	1,070	293	167
25	234	533	e268	e266	e1,510	712	3,900	3,530	2,590	969	272	175
26	260	551	e256	e272	e1,420	710	3,610	3,400	3,060	969	267	186
27	265	581	e261	e266	e1,290	673	3,250	3,290	2,930	958	264	215
28	248	564	e280	e275	e1,260	653	2,940	3,180	5,480	999	258	250
29	250	543	e295	e288	---	643	2,680	3,370	6,930	1,000	246	239
30	253	524	e306	e297	---	644	2,470	3,330	8,010	913	236	233
31	235	---	e324	e311	---	665	---	3,170	---	802	227	---
TOTAL	10,593	13,254	11,109	8,534	46,967	24,511	63,585	150,680	115,300	81,330	14,277	5,937
MEAN	342	442	358	275	1,677	791	2,120	4,861	3,843	2,624	461	198
MAX	597	581	595	348	4,670	1,140	5,920	20,300	8,010	9,690	966	254
MIN	234	329	207	203	335	603	650	1,410	2,540	802	227	163
AC-FT	21,010	26,290	22,030	16,930	93,160	48,620	126,100	298,900	228,700	161,300	28,320	11,780
CFSM	0.10	0.13	0.10	0.08	0.48	0.22	0.60	1.38	1.09	0.74	0.13	0.06
IN.	0.11	0.14	0.12	0.09	0.50	0.26	0.67	1.59	1.22	0.86	0.15	0.06

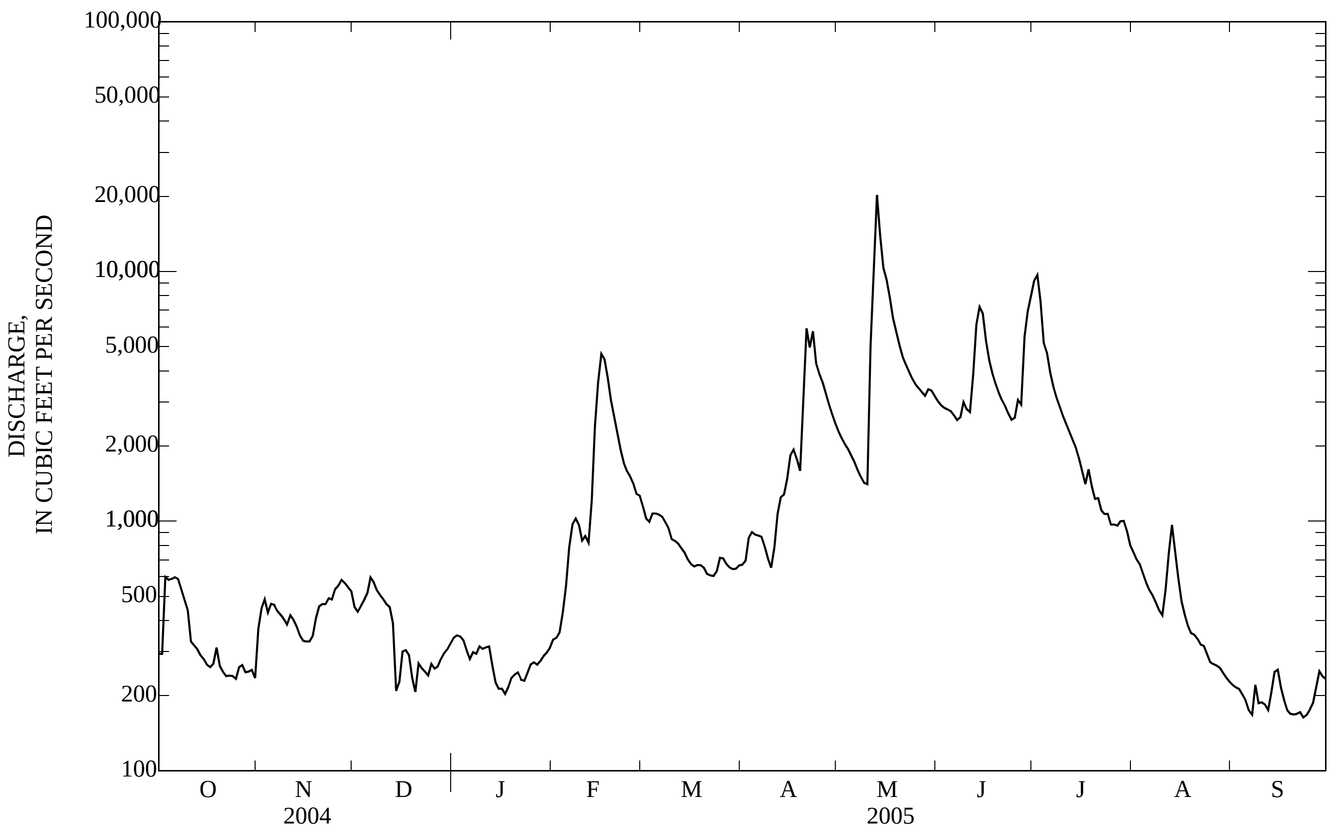
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	531	704	567	419	1,102	2,140	3,357	5,074	4,941	3,053	1,048	383
MAX	1,286	2,484	1,873	1,236	3,205	4,914	9,591	7,830	12,460	7,560	2,220	694
(WY)	(2003)	(1997)	(1997)	(1997)	(1997)	(2001)	(1999)	(1999)	(1998)	(1998)	(1998)	(1998)
MIN	124	246	148	200	211	407	281	334	603	714	339	164
(WY)	(2001)	(2001)	(2001)	(2001)	(2001)	(2000)	(2000)	(2000)	(2000)	(2002)	(2000)	(2000)

05484650 RACCOON RIVER AT 63RD STREET, DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	794,556		546,077			
ANNUAL MEAN	2,171		1,496		1,945	
HIGHEST ANNUAL MEAN					3,352	1998
LOWEST ANNUAL MEAN					375	2000
HIGHEST DAILY MEAN	29,500	May 24	20,300	May 13	36,300	Jun 16, 1998
LOWEST DAILY MEAN	89	Jan 5	163	Sep 23	80	Dec 25, 2000
ANNUAL SEVEN-DAY MINIMUM	125	Jan 29	169	Sep 18	94	Dec 20, 2000
MAXIMUM PEAK FLOW			23,500	May 13	40,300	Jun 16, 1998
MAXIMUM PEAK STAGE			35.35	May 13	40.77	Jul 11, 1993
INSTANTANEOUS LOW FLOW			149	Sep 23 a		
ANNUAL RUNOFF (AC-FT)	1,576,000		1,083,000		1,409,000	
ANNUAL RUNOFF (CFSM)	0.615		0.424		0.551	
ANNUAL RUNOFF (INCHES)	8.38		5.76		7.49	
10 PERCENT EXCEEDS	5,090		3,790		5,030	
50 PERCENT EXCEEDS	592		603		695	
90 PERCENT EXCEEDS	220		232		224	

a Also Sept 24.
e Estimated.



05484800 WALNUT CREEK AT DES MOINES, IA

LOCATION.--Lat 41°35'14", long 93°42'11", in SW¼ SE¼ sec.2, T.78 N., R.25 W., Polk County, Hydrologic Unit 07100006, on left bank, 25 ft downstream from bridge on 63rd Street in Des Moines, and 2.2 mi upstream from mouth.

DRAINAGE AREA.--78.4 mi^2.

PERIOD OF RECORD.--October 1971 to current year.

REVISED RECORDS.--WDR IA-73-1: 1972. WDR IA-75-1: 1973-74.

GAGE.--Water-stage recorder. Datum of gage is 801.04 ft above NGVD of 1929 (levels by Iowa Natural Resources Council).

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. National Weather Service Limited Automatic Remote Collector (LARC) and U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	101	10	e7.7	e18	e16	18	35	72	68	20	2.0
2	4.0	47	10	e10	e15	e20	17	34	70	63	16	1.7
3	1.9	21	9.9	e8.2	e17	e17	18	32	69	61	22	1.6
4	1.9	18	11	e6.1	e19	22	18	31	92	597	12	2.9
5	2.0	11	23	e4.5	e22	21	19	31	85	145	9.4	11
6	2.5	7.8	32	e2.9	e33	19	23	31	68	88	7.5	2.8
7	3.2	6.1	18	e10	e40	21	18	31	65	74	6.7	2.1
8	4.4	4.9	16	e7.0	e31	18	16	30	222	66	6.1	62
9	5.8	4.9	17	e11	e25	17	16	30	205	60	5.4	26
10	7.3	9.4	12	e8.1	e16	17	16	29	119	55	12	11
11	13	29	10	e9.8	e19	18	135	681	106	51	136	5.2
12	19	11	9.3	e13	e26	17	135	797	121	47	43	3.2
13	24	7.0	e3.6	e7.2	e178	e10	52	1,670	133	43	26	34
14	29	5.9	e2.7	e5.1	e99	e13	40	342	135	40	19	26
15	30	5.5	e9.1	e3.4	e59	e11	36	242	90	37	15	11
16	31	5.7	e11	e3.4	e45	e15	44	192	79	34	13	5.8
17	33	6.2	e7.7	e6.1	e38	16	37	160	73	30	10	3.7
18	50	31	e6.7	e7.5	e35	21	32	167	69	192	9.0	2.7
19	22	40	e3.4	e15	34	18	32	158	66	48	7.4	2.4
20	4.4	22	e5.7	e13	37	15	95	122	63	35	12	2.1
21	2.1	16	e4.4	e14	31	14	125	113	62	156	13	1.9
22	1.9	15	e6.1	e12	28	14	187	102	61	40	8.0	1.6
23	2.1	13	e3.1	e18	26	16	80	93	58	27	5.1	1.6
24	2.2	12	e1.3	e19	28	49	61	88	56	21	4.0	28
25	1.7	10	e7.2	e14	26	62	56	88	304	18	3.6	6.4
26	35	10	e5.6	e20	24	29	51	88	139	104	8.4	5.1
27	9.7	31	e5.2	e16	24	23	45	82	99	34	5.0	4.0
28	5.2	17	e10	e14	23	22	41	78	100	21	3.0	27
29	11	13	e9.1	e15	---	22	39	76	82	17	2.8	15
30	11	11	e14	e16	---	30	37	75	78	16	2.4	6.5
31	4.1	---	e11	e15	---	22	---	72	---	26	2.2	---
TOTAL	389.4	542.4	305.1	332.0	1,016	645	1,539	5,800	3,041	2,314	465.0	316.3
MEAN	12.6	18.1	9.84	10.7	36.3	20.8	51.3	187	101	74.6	15.0	10.5
MAX	50	101	32	20	178	62	187	1,670	304	597	136	62
MIN	1.7	4.9	1.3	2.9	15	10	16	29	56	16	2.2	1.6
AC-FT	772	1,080	605	659	2,020	1,280	3,050	11,500	6,030	4,590	922	627
CFSM	0.16	0.23	0.13	0.14	0.46	0.27	0.65	2.39	1.29	0.95	0.19	0.13
IN.	0.18	0.26	0.14	0.16	0.48	0.31	0.73	2.75	1.44	1.10	0.22	0.15

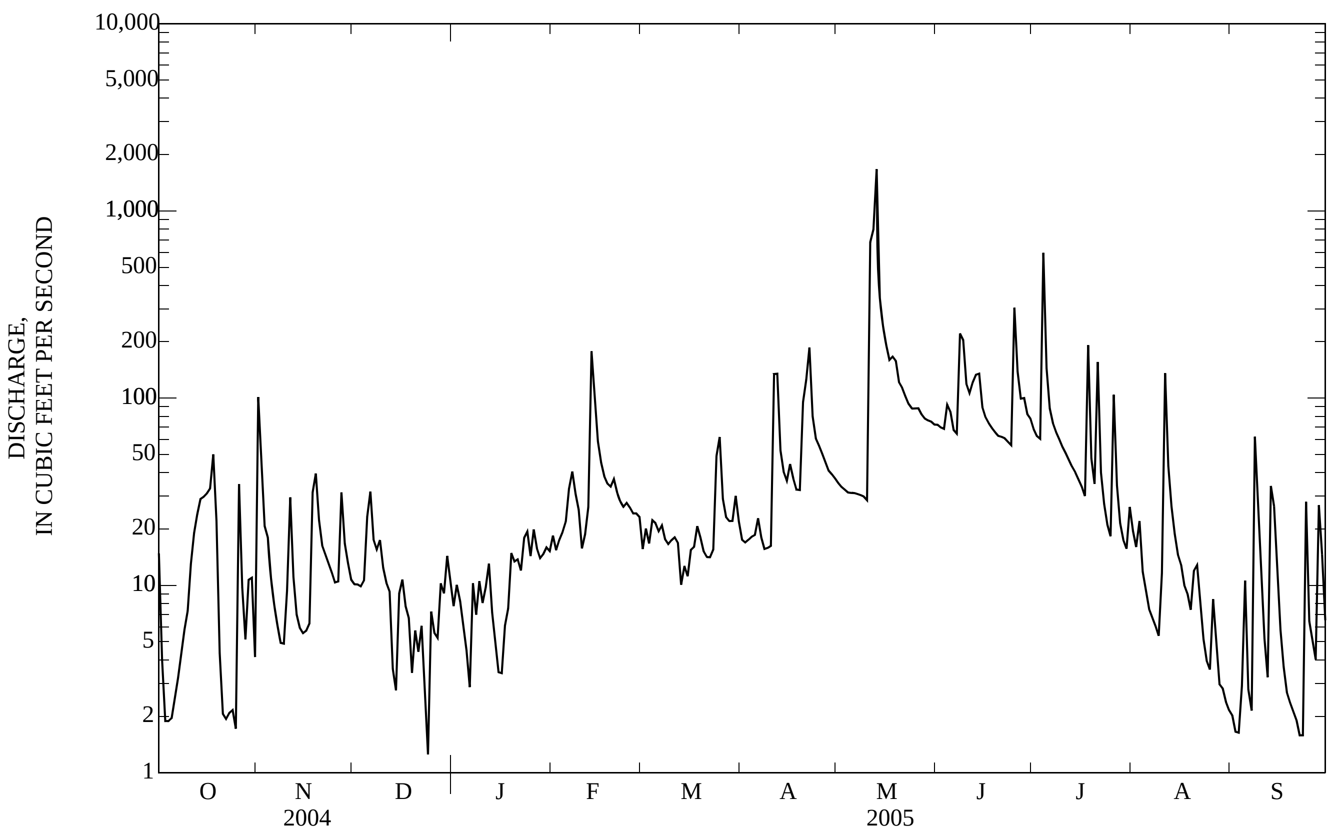
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.1	35.4	27.5	20.5	41.5	69.2	94.8	128	116	78.1	43.5	28.1
MAX	166	147	119	123	178	214	310	390	385	427	329	214
(WY)	(1974)	(1973)	(1983)	(1974)	(1973)	(1990)	(1973)	(1996)	(1990)	(1993)	(1993)	(1993)
MIN	1.33	0.88	0.17	0.00	0.48	3.17	2.72	6.36	7.62	2.96	2.10	0.57
(WY)	(1972)	(1977)	(1977)	(1977)	(1977)	(1981)	(1981)	(1977)	(1977)	(1985)	(2003)	(1976)

05484800 WALNUT CREEK AT DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1972 - 2005	
ANNUAL TOTAL	21,463.54		16,705.2			
ANNUAL MEAN	58.6		45.8		59.4	
HIGHEST ANNUAL MEAN					158	1993
LOWEST ANNUAL MEAN					10.3	1989
HIGHEST DAILY MEAN	1,690	May 25	1,670	May 13	4,520	Jul 1, 1973
LOWEST DAILY MEAN	0.63	Sep 23	1.3	Dec 24 a	0.00	Jan 3, 1977 b
ANNUAL SEVEN-DAY MINIMUM	0.75	Sep 20	2.2	Aug 29	0.00	Jan 3, 1977 b
MAXIMUM PEAK FLOW			2,830	May 12	12,500	May 10, 1986
MAXIMUM PEAK STAGE			12.35	May 12	18.32	May 10, 1986
INSTANTANEOUS LOW FLOW			1.1	Oct 25		
ANNUAL RUNOFF (AC-FT)	42,570		33,130		43,020	
ANNUAL RUNOFF (CFSM)	0.748		0.584		0.757	
ANNUAL RUNOFF (INCHES)	10.18		7.93		10.29	
10 PERCENT EXCEEDS	121		97		139	
50 PERCENT EXCEEDS	26		18		22	
90 PERCENT EXCEEDS	4.0		3.7		2.4	

a Ice affected.
b Many days in 1977, Aug. 21, 1994, many days in 2000, and Aug. 14, 2001.
e Estimated.



05484900 RACCOON RIVER AT FLEUR DRIVE, DES MOINES, IA

LOCATION.--Lat 41°34'54", long 93°38'34", in NW1/4 NE1/4 sec.8, T.78 N., R.24 W., Polk County, Hydrologic Unit 07100006, on downstream side of Fleur Drive bridge (SW 18th St.) attached to handrail 465 ft from right edge of bridge, 3.0 mi downstream from Walnut Creek, 2.6 mi upstream from mouth, and 204.1 mi upstream from mouth of Des Moines River.

DRAINAGE AREA.-- 3,625 mi^2.

PERIOD OF RECORD.-- June 1984 to current year; June 1984 to September 1996 gage-height record only.

GAGE.--Water-stage recorder. Datum of gage is 780.70 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Discharges are affected by withdrawal by Des Moines Water Works. U.S. Geological Survey data collection platform with satellite telemetry and U.S. National Weather Service Limited Automatic Remote Collector (LARC) at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	500	481	e346	e342	1,180	689	2,430	3,300	9,250	856	239
2	316	508	424	e353	e349	1,050	726	2,260	3,180	9,750	800	229
3	584	479	428	e348	e356	990	860	2,120	3,100	8,040	758	222
4	615	421	471	e337	e451	1,030	933	2,010	3,100	6,080	680	217
5	621	437	486	e310	e588	1,030	938	1,920	3,060	5,250	622	222
6	611	436	603	e288	e835	1,000	936	1,850	2,910	4,450	582	201
7	611	407	543	e303	e996	974	923	1,790	2,780	3,900	533	206
8	533	384	e511	e299	e1,050	921	879	1,730	3,040	3,510	489	347
9	467	370	e491	e320	e982	871	816	1,680	3,500	3,200	456	275
10	431	354	e476	e313	e858	797	771	1,660	3,210	2,900	457	228
11	e325	425	e457	e317	e919	792	1,010	5,170	3,110	2,660	715	213
12	e312	372	446	e319	e889	793	1,360	9,470	4,080	2,430	793	200
13	e298	353	e397	e271	e1,360	753	1,310	20,600	6,120	2,220	952	246
14	e284	321	e218	e236	e2,660	726	1,310	15,800	7,380	2,030	818	297
15	e268	305	e233	e223	3,700	690	1,460	11,500	7,110	1,850	667	288
16	e259	304	e311	e220	4,720	665	1,750	10,300	5,590	1,710	548	253
17	e253	305	e315	e213	e4,550	646	1,880	8,810	4,810	1,550	472	232
18	e260	352	e297	e227	e3,960	651	1,770	7,190	4,310	1,940	439	223
19	340	443	e239	e244	e3,220	651	1,640	6,200	3,930	1,530	409	200
20	e258	443	e211	e252	2,760	625	2,490	5,520	3,600	1,400	395	188
21	e246	444	e269	e254	2,250	589	5,730	5,010	3,350	1,590	368	180
22	e234	436	e262	e240	1,950	572	5,040	4,630	3,150	1,310	331	161
23	e235	460	e248	e236	1,740	575	5,470	4,320	2,950	1,230	325	144
24	e235	458	e244	e254	1,600	630	4,450	4,050	2,760	1,220	301	202
25	e232	496	e270	e272	1,480	773	4,110	3,830	3,170	1,070	307	168
26	312	529	e260	e282	1,390	709	3,850	3,710	3,420	1,210	319	181
27	285	582	e270	e274	1,300	692	3,490	3,580	3,260	1,080	305	208
28	259	547	e287	e281	1,260	676	3,120	3,450	5,570	1,070	295	285
29	264	518	e302	e292	---	666	2,840	3,640	7,280	1,070	283	260
30	302	498	e311	e303	---	677	2,610	3,650	8,470	976	253	241
31	249	---	e329	e317	---	687	---	3,460	---	905	240	---
TOTAL	10,825	12,887	11,090	8,744	48,515	24,081	65,161	163,340	124,600	88,381	15,768	6,756
MEAN	349	430	358	282	1,733	777	2,172	5,269	4,153	2,851	509	225
MAX	621	582	603	353	4,720	1,180	5,730	20,600	8,470	9,750	952	347
MIN	232	304	211	213	342	572	689	1,660	2,760	905	240	144
AC-FT	21,470	25,560	22,000	17,340	96,230	47,760	129,200	324,000	247,100	175,300	31,280	13,400
CFSM	0.10	0.12	0.10	0.08	0.48	0.21	0.60	1.45	1.15	0.79	0.14	0.06
IN.	0.11	0.13	0.11	0.09	0.50	0.25	0.67	1.68	1.28	0.91	0.16	0.07

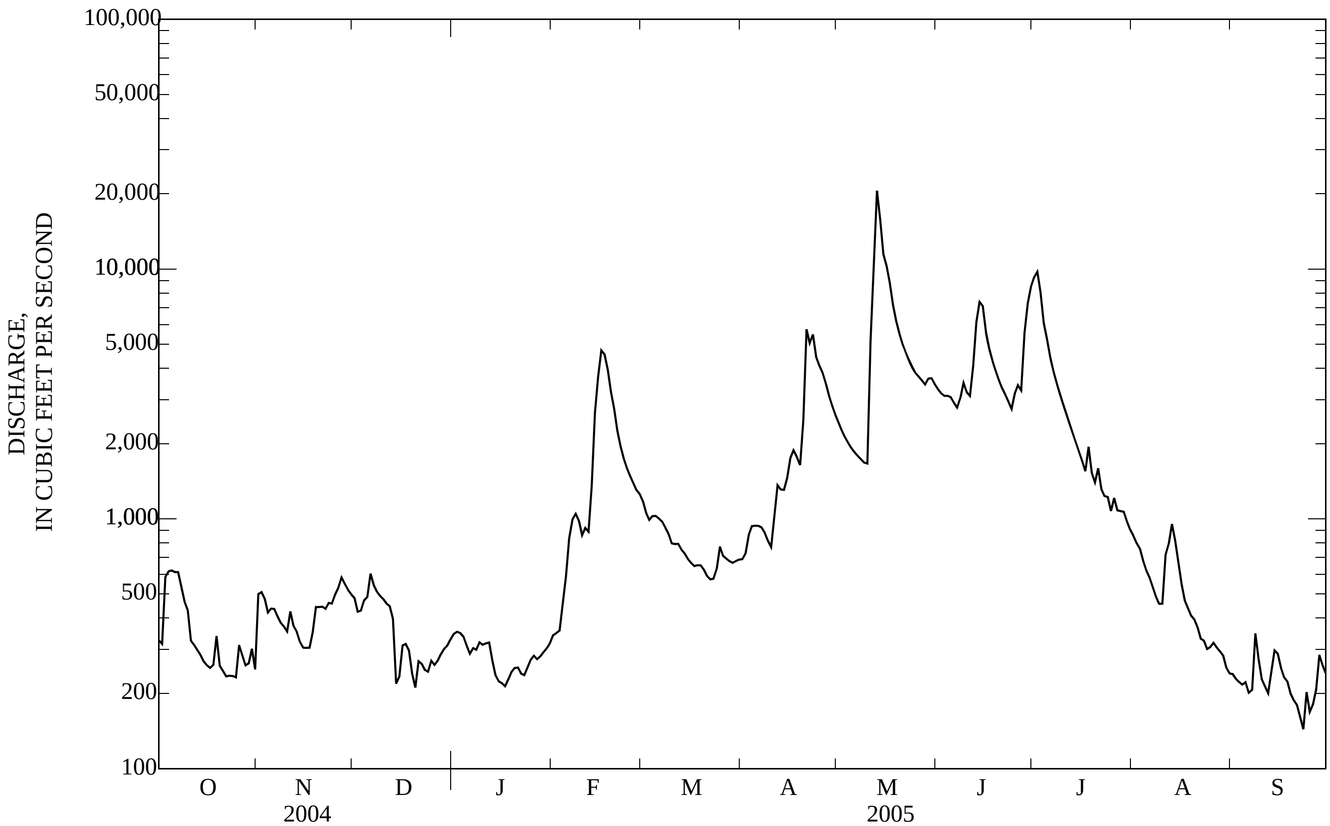
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	508	696	531	389	1,105	2,124	3,440	5,202	5,013	3,080	1,039	370
MAX	1,156	2,527	1,873	1,235	3,280	4,877	9,905	7,915	12,570	7,266	2,252	664
(WY)	(2003)	(1997)	(1997)	(1997)	(1997)	(2001)	(1999)	(1999)	(1998)	(1998)	(1998)	(1998)
MIN	120	265	177	169	180	349	277	370	671	670	334	124
(WY)	(2001)	(2000)	(2001)	(2000)	(2003)	(2000)	(2000)	(2000)	(2000)	(2002)	(2000)	(2000)

05484900 RACCOON RIVER AT FLEUR DRIVE, DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	799,984		580,148			
ANNUAL MEAN	2,186		1,589		1,960	
HIGHEST ANNUAL MEAN					3,350	1998
LOWEST ANNUAL MEAN					381	2000
HIGHEST DAILY MEAN	30,400	May 24	20,600	May 13	40,100	Jun 16, 1998
LOWEST DAILY MEAN	83	Jan 5	144	Sep 23	43	Feb 25, 2003
ANNUAL SEVEN-DAY MINIMUM	144	Jan 27	175	Sep 20	85	Sep 28, 2000
MAXIMUM PEAK FLOW			23,100	May 13	45,000	Jun 16, 1998
MAXIMUM PEAK STAGE			15.03	May 13	26.80	Jul 11, 1993
ANNUAL RUNOFF (AC-FT)	1,587,000		1,151,000		1,420,000	
ANNUAL RUNOFF (CFSM)	0.603		0.438		0.541	
ANNUAL RUNOFF (INCHES)	8.21		5.95		7.35	
10 PERCENT EXCEEDS	4,960		4,060		5,100	
50 PERCENT EXCEEDS	607		622		668	
90 PERCENT EXCEEDS	222		240		209	

e Estimated



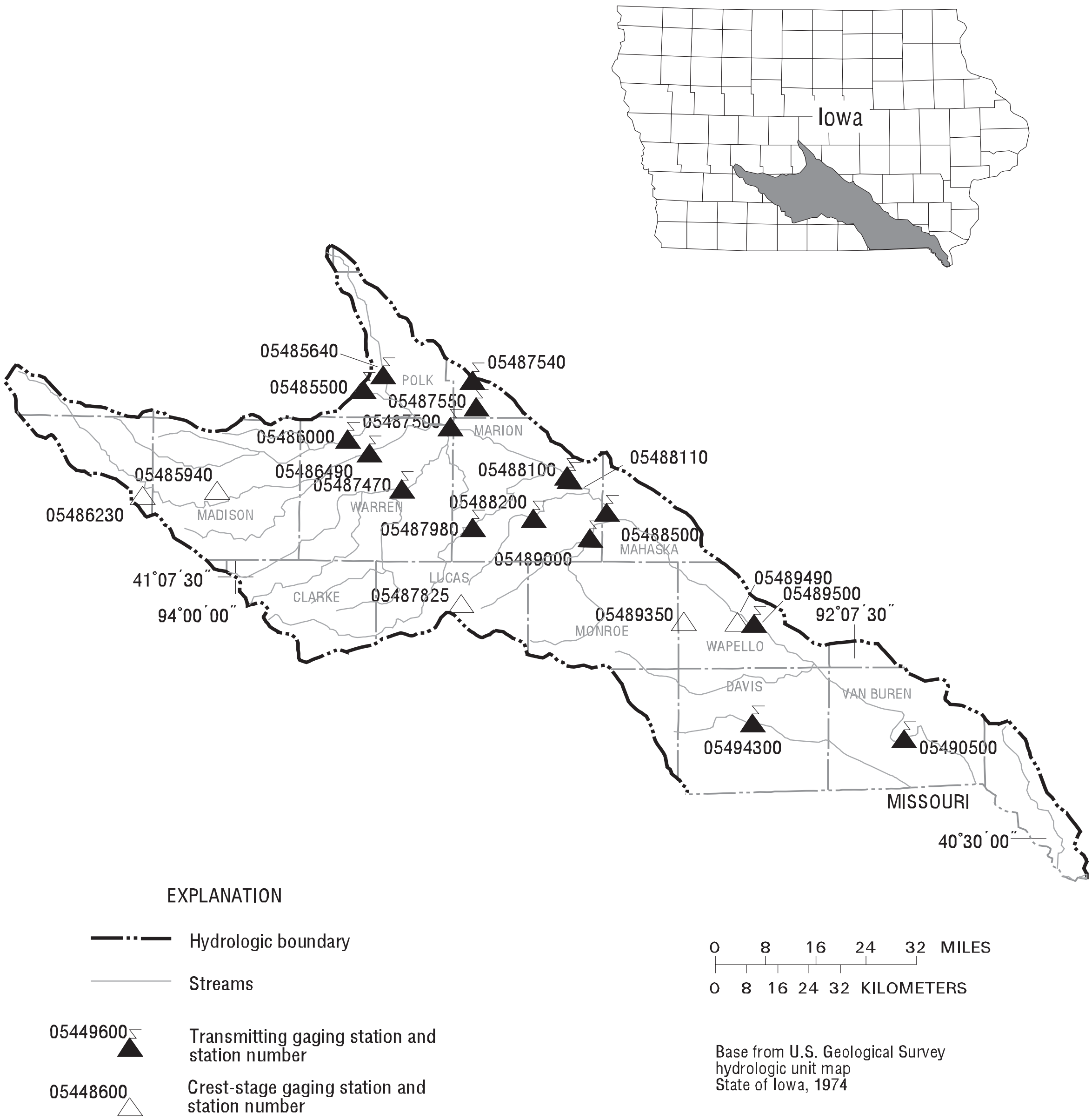


Figure 16. Locations of active continous-record and crest-stage gaging stations in the Lower Des Moines River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

05485500 DES MOINES RIVER BELOW RACCOON RIVER AT DES MOINES, IA

LOCATION.--Lat 41°34'40", long 93°36'19", in SW 1/4 NE 1/4 sec.10, T.78 N., R.24 W., Polk County, Hydrologic Unit 07100008, on left bank 40 ft downstream from bridge on Southeast 6th Street at Des Moines, 0.4 mi (revised) downstream from Raccoon River and Scott Street Dam, and 192.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--9,879 mi^2.

PERIOD OF RECORD.--April 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1943 (P).

GAGE.--Water-stage recorder. Datum of gage is 762.52 ft above NGVD of 1929. Prior to Oct. 1, 1951, and Oct. 1, 1953 to Sept. 30, 1959, water-stage recorder upstream of Scott Street Dam, 0.8 mi upstream at datum 11.16 ft higher. Oct. 1, 1951 to Sept. 30, 1953, Oct. 1, 1959 to April 24, 1997 water-stage recorder .3 mi downstream at current datum, and Oct. 1, 1959 to Sept. 30, 1961, nonrecording gage at present site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Des Moines municipal water supply is taken from infiltration galleries on Raccoon River, 3.5 mi upstream from station. At times, water is pumped from Raccoon River into recharge basins or into Waterworks Reservoir, capacity 4,800 acre-ft. Effluent from sewage treatment plant enters the river 2.3 mi downstream from station. Net effect of diversions not known. Flow regulated by Saylorville Lake (station 05481630) 12.7 mi upstream, since Apr. 12, 1977. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station., U.S. National Weather Service Limited Automatic Remote Collector (LARC), and U.S. Geological Survey data logger at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

COOPERATION.--Average monthly pumpage from galleries provided by Des Moines Water Works.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 116,000 ft^3/s July 11,1993, gage height, 34.29; minimum daily discharge, 26 ft^3/s Jan. 16-29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1893, that of June 26, 1947, site and datum then in use. Flood of May 31, 1903, reached a stage of 20.9 ft, from flood profile, at Scott Street site and datum, by office of Des Moines City Engineer.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,280	2,240	2,300	e1,580	859	3,040	3,480	8,430	13,000	23,400	2,750	799
2	3,910	2,290	2,260	e1,590	877	2,700	4,000	7,850	12,500	23,700	3,070	786
3	3,920	2,230	2,220	e1,560	894	2,650	4,400	7,390	12,400	20,800	3,180	751
4	3,800	2,300	2,170	e1,380	1,060	2,670	4,630	6,750	12,200	17,100	2,790	702
5	3,570	2,420	2,210	e1,190	1,330	2,660	4,680	6,310	11,300	15,000	2,190	662
6	3,310	2,210	2,390	e1,180	1,600	2,710	4,670	6,170	10,500	13,100	1,770	629
7	3,190	2,150	2,460	e1,160	1,980	2,820	4,540	6,100	10,100	11,100	1,690	623
8	3,150	2,130	2,500	e1,130	e1,890	2,750	4,130	6,060	10,300	9,340	1,730	868
9	3,460	2,040	2,790	e1,010	e1,810	2,510	3,590	6,350	10,600	8,000	1,650	791
10	3,270	1,910	3,210	907	e1,740	2,160	3,500	8,020	10,300	6,750	1,610	794
11	2,950	1,960	3,180	950	e1,760	2,280	4,400	15,400	10,600	5,780	2,000	813
12	2,930	1,900	2,700	1,020	e1,810	2,430	5,780	21,300	12,500	5,070	2,610	794
13	2,920	1,880	e1,690	e913	e2,420	2,240	5,860	28,500	16,100	4,620	2,690	872
14	2,850	1,850	e1,560	e824	4,270	2,200	6,600	24,700	18,300	4,060	2,240	1,040
15	2,710	1,820	e1,430	e679	7,400	2,170	8,020	23,500	17,700	4,210	1,960	1,180
16	2,490	1,750	e1,240	e717	9,640	2,110	8,970	23,900	15,200	3,770	1,650	1,120
17	2,490	1,650	e1,120	e689	10,400	2,010	8,980	23,100	12,800	3,230	1,620	1,020
18	2,520	1,780	e1,080	e717	9,970	1,920	8,710	22,100	11,200	3,870	1,690	894
19	2,820	2,050	e1,040	e732	7,870	1,940	8,210	21,300	9,830	3,320	1,580	881
20	1,690	2,150	e1,120	e700	6,530	2,010	9,110	20,400	e8,720	3,120	1,620	901
21	2,770	2,080	e1,130	e623	5,650	1,990	14,200	19,100	7,320	3,260	1,620	957
22	2,520	1,930	e1,140	e587	5,040	1,920	14,400	17,400	6,580	3,000	1,350	1,110
23	2,200	2,070	e1,190	e542	5,130	1,820	15,600	16,300	6,360	2,920	1,130	1,300
24	2,070	2,250	e1,030	e598	4,280	1,910	14,900	15,600	6,320	2,810	1,110	e1,500
25	1,960	2,280	e940	e632	3,930	2,130	14,700	14,700	8,510	2,580	1,200	e1,580
26	1,800	2,310	e953	e641	3,760	2,180	13,800	14,100	10,600	2,920	1,190	e1,870
27	1,820	2,370	e997	e663	3,680	2,240	12,500	13,900	13,400	2,170	1,040	e2,090
28	1,940	2,340	e1,240	725	3,500	2,250	11,000	13,700	18,300	3,370	968	e2,850
29	1,990	2,320	e1,390	727	---	2,270	9,970	13,800	20,900	3,440	848	e4,920
30	1,960	2,300	e1,530	729	---	2,470	9,200	13,800	22,400	2,800	835	5,570
31	1,920	---	e1,560	764	---	2,920	---	13,500	---	2,580	813	---
TOTAL	85,180	62,960	53,770	27,859	111,080	72,080	246,530	459,530	366,840	221,190	54,194	40,667
MEAN	2,748	2,099	1,735	899	3,967	2,325	8,218	14,820	12,230	7,135	1,748	1,356
MAX	4,280	2,420	3,210	1,590	10,400	3,040	15,600	28,500	22,400	23,700	3,180	5,570
MIN	1,690	1,650	940	542	859	1,820	3,480	6,060	6,320	2,170	813	623
AC-FT	169,000	124,900	106,700	55,260	220,300	143,000	489,000	911,500	727,600	438,700	107,500	80,660
CFSM	0.28	0.21	0.18	0.09	0.40	0.24	0.83	1.50	1.24	0.72	0.18	0.14
IN.	0.32	0.24	0.20	0.10	0.42	0.27	0.93	1.73	1.38	0.83	0.20	0.15

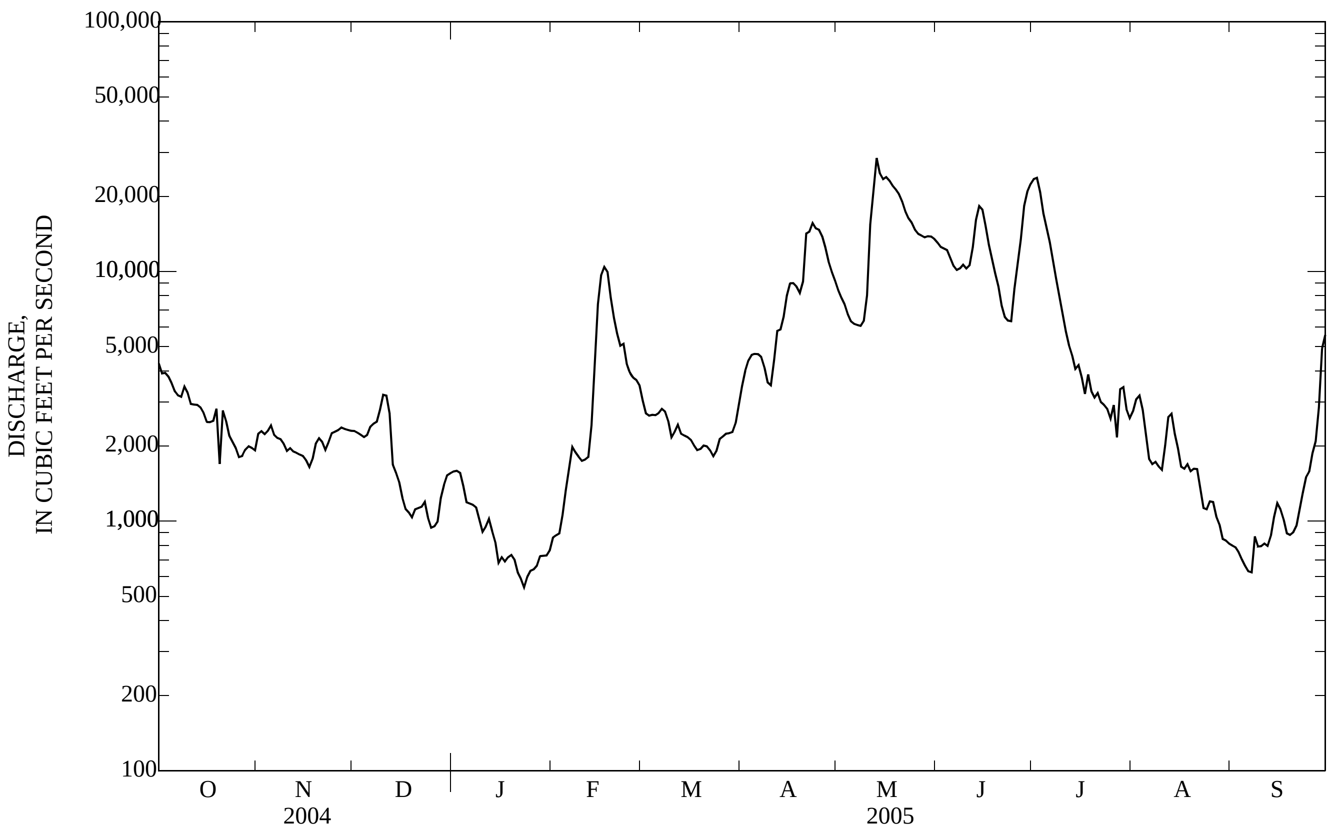
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2005, BY WATER YEAR (WY)

MEAN	2,862	3,141	2,702	1,639	2,957	7,537	11,100	12,080	12,920	10,700	4,782	3,169
MAX	15,060	10,610	9,045	6,439	12,400	23,530	27,620	28,190	35,250	55,960	26,050	21,430
(WY)	(1987)	(1993)	(1983)	(1983)	(1984)	(1983)	(1993)	(1993)	(1984)	(1993)	(1993)	(1993)
MIN	293	363	342	310	343	560	627	1,159	1,716	739	441	388
(WY)	(2001)	(1990)	(1990)	(1981)	(1978)	(1981)	(2000)	(2000)	(1988)	(1988)	(1988)	(2003)

05485500 DES MOINES RIVER BELOW RACCOON RIVER AT DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1978 - 2005 a	
ANNUAL TOTAL	2,009,715		1,801,880			
ANNUAL MEAN	5,491		4,937		6,311	
HIGHEST ANNUAL MEAN					19,180	1993
LOWEST ANNUAL MEAN					1,036	1989
HIGHEST DAILY MEAN	36,800	May 25	28,500	May 13	113,000	Jul 11, 1993
LOWEST DAILY MEAN	293	Jan 14	542	Jan 23 b	146	Oct 24, 2003
ANNUAL SEVEN-DAY MINIMUM	305	Feb 4	612	Jan 21	236	Mar 7, 1978
MAXIMUM PEAK FLOW			29,600	May 13	116,000	Jul 11, 1993
MAXIMUM PEAK STAGE			24.52	May 13	34.29	Jul 11, 1993
ANNUAL RUNOFF (AC-FT)	3,986,000		3,574,000		4,572,000	
ANNUAL RUNOFF (CFSM)	0.556		0.500		0.639	
ANNUAL RUNOFF (INCHES)	7.57		6.79		8.68	
10 PERCENT EXCEEDS	15,400		13,800		17,800	
50 PERCENT EXCEEDS	3,070		2,460		3,100	
90 PERCENT EXCEEDS	350		879		529	

a Post regulation.
b Ice effected.
e Estimated.



05485605 FOURMILE CREEK NEAR ANKENY, IA

LOCATION.--Lat 41°43'03", long 93°34'12", in NW1/4 NW1/4 NE1/4 sec.30, T.80 N., R.23 W., Polk County, Hydrologic Unit 07100008, on right bank at bridge on N.E. 86th Ave., 1.4 mi downstream from Deer Creek, 6.0 mi upstream from Muchikinock Creek, 1.0 mi SE of Ankeny, and 15.6 mi upstream from mouth.

DRAINAGE AREA.--62.0 mi^2.

PERIOD OF RECORD.--June 3, 2003 to current year.

GAGE.--Water-stage recorder. Datum of gage is 882.0 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

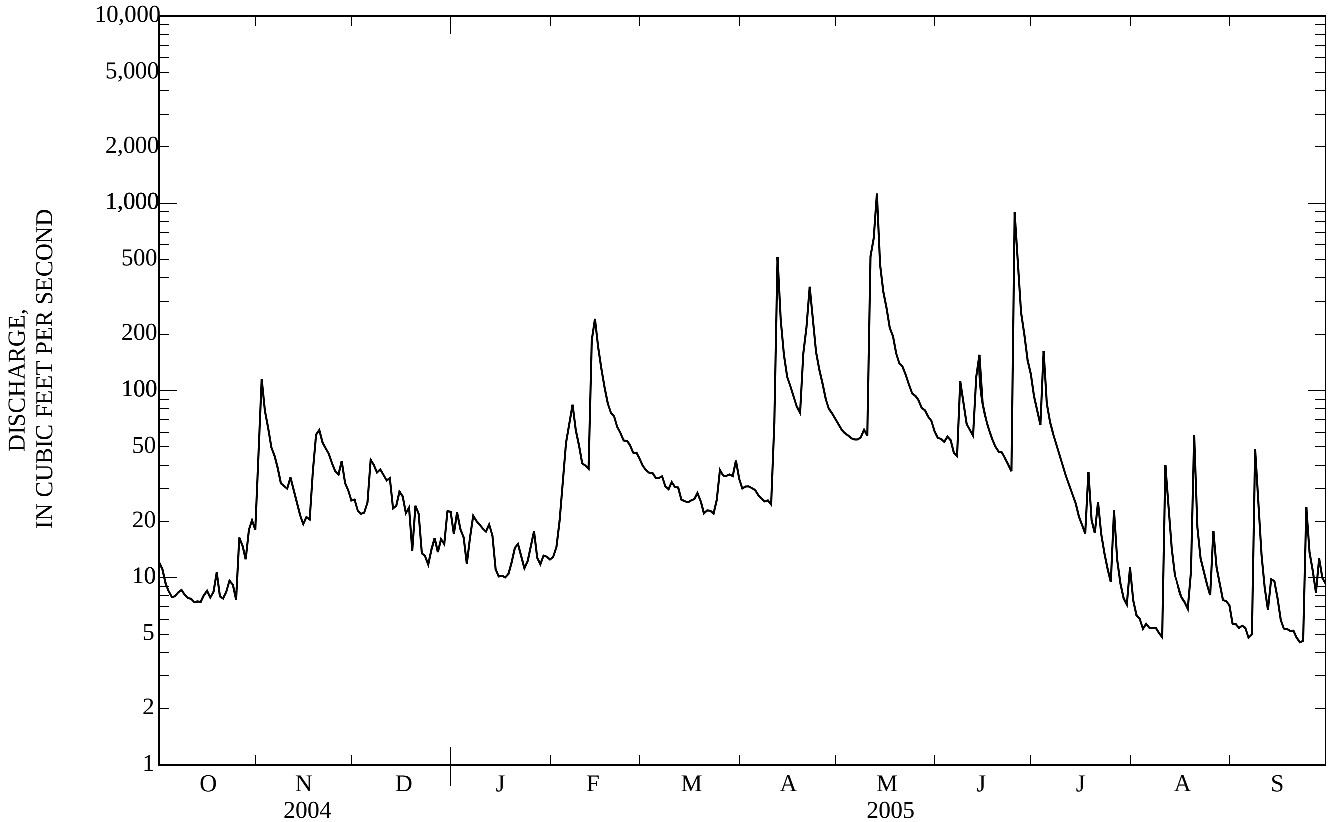
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	52	26	17	13	40	30	66	56	93	7.6	5.7
2	11	116	23	22	15	37	31	62	55	78	6.3	5.7
3	9.4	78	22	18	20	36	31	59	53	66	6.0	5.4
4	8.5	63	22	16	32	36	30	58	57	163	5.3	5.5
5	7.9	50	25	12	52	34	29	56	54	85	5.7	5.4
6	e8.0	45	43	16	65	34	28	55	46	68	5.4	4.8
7	e8.4	39	40	21	84	35	26	55	45	59	5.4	5.0
8	e8.6	32	37	20	61	31	26	56	112	51	5.4	49
9	e8.1	31	38	19	51	30	26	62	85	45	5.1	26
10	e7.8	30	35	18	41	32	25	57	66	40	4.8	13
11	e7.7	34	33	18	40	31	67	520	61	35	40	8.8
12	e7.4	29	34	19	38	30	e518	648	57	31	23	6.7
13	7.5	25	23	17	185	26	238	1,130	118	28	14	9.8
14	7.4	22	24	11	242	26	155	470	155	25	10	9.6
15	8.1	19	29	10	170	25	119	338	85	21	9.0	7.8
16	8.5	21	27	10	131	26	106	277	71	19	7.9	6.0
17	7.8	20	22	10	104	26	93	217	62	17	7.4	5.3
18	8.4	37	24	10	85	28	82	196	55	37	6.8	5.3
19	11	58	14	12	76	26	76	159	50	20	11	5.2
20	7.9	62	24	14	73	22	e157	140	47	17	58	5.2
21	7.7	53	22	15	64	23	e218	135	47	25	19	4.8
22	8.4	49	14	13	59	23	359	122	43	17	13	4.5
23	9.6	46	13	11	54	22	242	108	40	14	11	4.6
24	9.2	41	12	12	54	e26	160	96	37	11	9.2	24
25	7.6	37	14	15	51	38	129	94	894	9.5	8.1	14
26	16	36	16	18	46	35	109	89	465	23	18	11
27	15	42	14	13	47	35	90	81	261	12	11	8.3
28	13	32	16	12	43	36	80	78	198	9.3	9.2	13
29	18	29	15	13	---	35	75	72	145	7.8	7.6	10
30	20	26	23	13	---	42	71	69	123	7.2	7.5	9.3
31	18	---	23	12	---	34	---	60	---	11	7.1	---
TOTAL	313.9	1,254	747	457	1,996	960	3,426	5,685	3,643	1,144.8	364.8	298.7
MEAN	10.1	41.8	24.1	14.7	71.3	31.0	114	183	121	36.9	11.8	9.96
MAX	20	116	43	22	242	42	518	1,130	894	163	58	49
MIN	7.4	19	12	10	13	22	25	55	37	7.2	4.8	4.5
AC-FT	623	2,490	1,480	906	3,960	1,900	6,800	11,280	7,230	2,270	724	592
CFSM	0.16	0.67	0.39	0.24	1.15	0.50	1.84	2.96	1.96	0.60	0.19	0.16
IN.	0.19	0.75	0.45	0.27	1.20	0.58	2.06	3.41	2.19	0.69	0.22	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.65	32.5	17.0	11.6	52.9	56.3	88.6	199	109	63.7	17.8	12.8
MAX	10.1	41.8	24.1	14.7	71.3	81.7	114	214	121	113	36.6	23.7
(WY)	(2005)	(2005)	(2005)	(2005)	(2005)	(2004)	(2005)	(2004)	(2005)	(2004)	(2004)	(2004)
MIN	5.17	23.2	9.99	8.40	35.2	31.0	63.0	183	96.7	36.9	5.04	4.85
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2005)	(2004)	(2005)	(2004)	(2005)	(2003)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2003 - 2005	
ANNUAL TOTAL	22,893.6		20,290.2			
ANNUAL MEAN	62.6		55.6		57.5	
HIGHEST ANNUAL MEAN					59.4	2004
LOWEST ANNUAL MEAN					55.6	2005
HIGHEST DAILY MEAN	1,440	May 23	1,130	May 13	1,440	May 23, 2004
LOWEST DAILY MEAN	6.2	Feb 16	4.5	Sep 22	2.8	Aug 27, 2003
ANNUAL SEVEN-DAY MINIMUM	6.5	Feb 11	5.0	Sep 17	3.2	Aug 26, 2003
MAXIMUM PEAK FLOW			1,570	May 13 a	1,720	May 23, 2004
MAXIMUM PEAK STAGE			10.30	Jun 25	10.60	May 23, 2004
INSTANTANEOUS LOW FLOW			1.7	Sep 23	0.35	Aug 31, 2003 b
ANNUAL RUNOFF (AC-FT)	45,410		40,250		41,660	
ANNUAL RUNOFF (CFSM)	1.01		0.897		0.927	
ANNUAL RUNOFF (INCHES)	13.74		12.17		12.60	
10 PERCENT EXCEEDS	118		114		118	
50 PERCENT EXCEEDS	32		26		26	
90 PERCENT EXCEEDS	7.7		7.7		6.7	

a Also June 25.
b Also Sep. 8, 2003.
e Estimated.



05485640 FOURMILE CREEK AT DES MOINES, IA

LOCATION.--Lat 41°36'50", long 93°32'43", in NE¼ NE¼ sec.32, T.79 N., R.23 W., Polk County, Hydrologic Unit 07100008, on right bank 20 ft downstream from bridge on Easton Blvd., 4.4 mi downstream from Muchikinock Creek, and 5.2 mi (revised) upstream from mouth.

DRAINAGE AREA.--92.7 mi^2.

PERIOD OF RECORD.--October 1971 to current year.

REVISED RECORDS.--WDR IA-75-1: 1974 (P).

GAGE.--Water-stage recorder. Datum of gage is 795.87 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry and U.S. National Weather Service Limited Automatic Remote Collector (LARC) at the station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	56	e27	e19	e15	48	40	100	91	133	23	7.3
2	12	118	e24	e24	e17	45	40	91	89	108	19	6.1
3	11	82	e23	e19	e23	42	41	86	86	87	21	6.2
4	9.9	65	e23	e18	e36	41	42	83	103	326	21	6.0
5	9.3	49	e30	e13	54	39	42	81	102	140	17	5.9
6	9.4	43	e47	e17	71	38	41	79	86	91	e15	5.8
7	10	38	40	e23	102	41	43	78	88	73	e13	5.7
8	10	34	37	e22	e84	36	40	78	311	61	e11	45
9	10	32	37	e20	e62	34	42	78	246	52	e11	50
10	9.9	32	36	e19	e52	36	43	75	e152	44	10	17
11	10	e37	34	e19	e47	36	145	916	e122	39	57	12
12	9.7	e32	34	e21	e45	35	877	1,070	104	35	45	9.6
13	10	e30	e25	e18	e263	33	537	2,300	143	32	29	9.2
14	10	e26	e25	e13	399	31	334	794	312	30	23	12
15	10	e24	e31	e11	246	29	216	543	126	27	20	10
16	10	24	e29	e11	171	29	174	399	97	27	19	8.6
17	11	25	e24	e11	131	29	151	316	87	25	19	7.5
18	12	36	e25	e12	107	31	131	294	76	68	17	7.5
19	14	64	e21	e14	92	32	117	268	70	30	20	7.6
20	12	59	e38	e16	90	28	261	209	67	24	e94	7.3
21	11	49	e30	e18	78	27	348	198	69	46	e34	7.2
22	11	44	e18	e15	70	28	668	185	57	28	e19	6.6
23	12	42	e14	e13	63	28	427	174	49	23	e15	6.4
24	12	38	e13	e14	64	40	276	156	44	20	e12	27
25	12	36	e15	e16	61	76	217	134	844	20	e11	14
26	28	33	e18	e19	56	55	182	119	882	46	e17	13
27	19	42	e15	e15	54	48	152	107	388	29	e12	10
28	16	e33	e17	e14	51	46	130	102	308	23	e10	14
29	18	e31	e16	e15	---	46	119	98	216	19	e7.6	14
30	26	e27	e25	e14	---	55	115	93	178	18	e4.8	10
31	20	---	e24	e14	---	53	---	91	---	25	e5.2	---
TOTAL	398.2	1,281	815	507	2,604	1,215	5,991	9,395	5,593	1,749	651.6	368.5
MEAN	12.8	42.7	26.3	16.4	93.0	39.2	200	303	186	56.4	21.0	12.3
MAX	28	118	47	24	399	76	877	2,300	882	326	94	50
MIN	9.3	24	13	11	15	27	40	75	44	18	4.8	5.7
AC-FT	790	2,540	1,620	1,010	5,170	2,410	11,880	18,630	11,090	3,470	1,290	731
CFSM	0.14	0.46	0.28	0.18	1.00	0.42	2.15	3.27	2.01	0.61	0.23	0.13
IN.	0.16	0.51	0.33	0.20	1.04	0.49	2.40	3.77	2.24	0.70	0.26	0.15

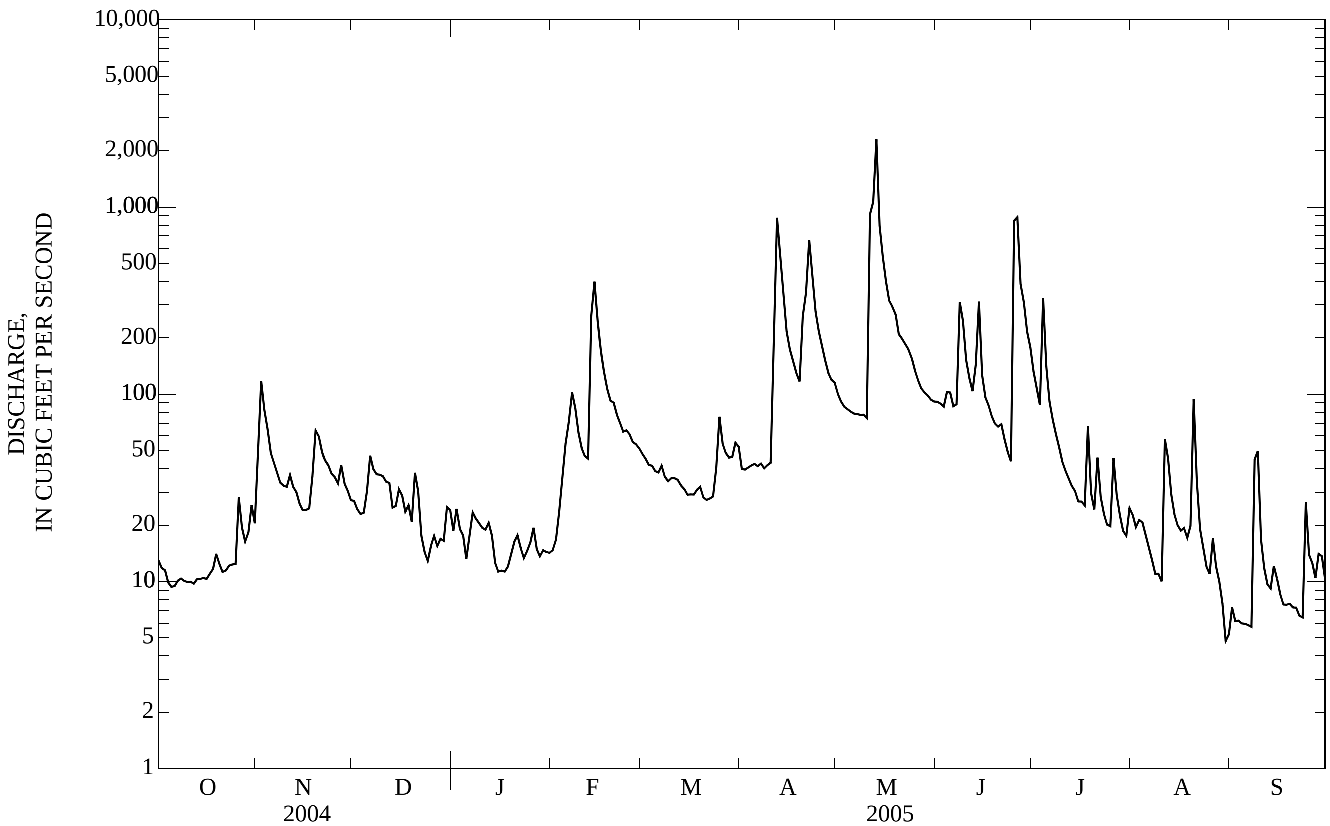
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	35.9	42.0	31.5	22.0	49.4	95.1	119	157	155	98.3	45.7	33.4
MAX	258	317	124	118	206	292	354	462	505	607	363	270
(WY)	(1987)	(1984)	(1983)	(1974)	(1973)	(1979)	(1973)	(1974)	(1998)	(1993)	(1993)	(1993)
MIN	1.36	1.57	0.25	0.00	0.55	4.04	3.67	6.67	0.73	0.07	1.66	1.37
(WY)	(1989)	(1977)	(1977)	(1977)	(1977)	(1981)	(1981)	(1977)	(1977)	(1977)	(1988)	(1988)

05485640 FOURMILE CREEK AT DES MOINES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1972 - 2005	
ANNUAL TOTAL	34,723.4		30,568.3			
ANNUAL MEAN	94.9		83.7		73.7	
HIGHEST ANNUAL MEAN					204	1993
LOWEST ANNUAL MEAN					7.97	1981
HIGHEST DAILY MEAN	3,100	May 23	2,300	May 13	3,570	Jun 9, 1974
LOWEST DAILY MEAN	5.1	Jan 4	4.8	Aug 30 e	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	6.7	Jan 1	5.9	Aug 30	0.00	Many days
MAXIMUM PEAK FLOW			3,230	May 13	5,600	Jun 18, 1998
MAXIMUM PEAK STAGE			13.19	May 13	15.00	Jun 18, 1998
INSTANTANEOUS LOW FLOW					0.00	Jan 2, 1977
ANNUAL RUNOFF (AC-FT)	68,870		60,630		53,360	
ANNUAL RUNOFF (CFSM)	1.02		0.903		0.795	
ANNUAL RUNOFF (INCHES)	13.93		12.27		10.80	
10 PERCENT EXCEEDS	184		176		172	
50 PERCENT EXCEEDS	37		34		25	
90 PERCENT EXCEEDS	9.9		10		3.3	

e Estimated.



05486000 NORTH RIVER NEAR NORWALK, IA

LOCATION.--Lat 41°27'29", long 93°39'17", in NW$\frac{1}{4}$ SW$\frac{1}{4}$ sec.20, T.77 N., R.24 W., Warren County, Hydrologic Unit 07100008, on left bank 10 ft downstream from bridge on County Highway R57, 1.7 mi southeast of Norwalk, 5.2 mi upstream from Middle Creek, 6.2 mi downstream from Badger Creek, and 22.8 mi upstream from mouth.

DRAINAGE AREA.--349 mi^2.

PERIOD OF RECORD.--February 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1946. WDR IA-76-1: 1975 (P).

GAGE.--Water-stage recorder. Datum of gage is 788.45 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to June 12, 1946, nonrecording gage at same site and datum. Jan. 7 to Oct. 11, 1960, nonrecording gage at site 2.1 mi upstream at different datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	27	e24	e11	e40	e62	68	149	187	71	9.3	1.9
2	9.3	35	e25	e14	e30	e67	e64	133	183	62	7.7	1.8
3	9.8	64	e23	e13	e38	e64	e59	123	176	54	7.4	1.7
4	6.9	116	e24	e11	e45	e76	e55	116	172	51	7.5	1.6
5	6.5	71	e24	e9.4	e65	e76	53	109	199	53	7.0	1.5
6	7.0	48	35	e5.8	e89	73	55	104	195	59	6.3	1.6
7	8.5	38	45	e16	e126	71	56	99	162	60	5.5	1.6
8	8.7	30	45	e12	e104	67	54	96	153	50	4.9	3.4
9	7.3	25	47	e14	e91	65	52	97	157	43	4.5	1.8
10	6.7	20	46	e12	e61	61	48	93	229	37	4.1	1.1
11	7.1	22	40	e16	e54	59	58	692	207	32	4.8	1.0
12	6.6	22	37	e21	e50	59	160	2,120	173	28	4.2	0.73
13	8.6	22	32	e12	e157	57	203	2,820	223	23	3.9	0.71
14	8.2	22	e14	e9.0	e368	53	178	6,450	212	20	4.1	0.84
15	7.6	23	e17	e6.2	e571	52	139	4,340	163	18	4.7	0.63
16	7.8	23	e19	e4.4	e432	50	117	2,370	145	16	9.5	0.57
17	8.0	22	e17	e6.8	e321	51	111	751	121	15	8.1	0.86
18	7.9	23	e15	e8.8	e241	51	114	552	110	31	6.3	1.2
19	10	25	e12	e11	e188	52	105	503	99	30	5.1	1.2
20	12	28	e18	e9.8	e174	52	247	442	89	38	4.6	1.2
21	11	37	e16	e11	164	51	463	386	82	33	3.7	1.2
22	13	50	e16	e11	149	47	590	358	76	23	3.2	1.4
23	31	46	e12	e14	131	45	454	328	74	15	2.9	1.2
24	19	38	e8.8	e15	119	50	377	293	69	12	2.8	1.1
25	15	33	e11	e9.7	110	74	314	271	100	12	2.8	1.1
26	13	30	e9.8	e17	105	106	273	262	83	17	2.9	1.2
27	11	30	e9.8	e12	100	105	244	257	79	14	2.8	1.2
28	15	29	e12	e13	96	92	210	233	77	15	2.5	2.0
29	25	e28	e11	e18	---	81	182	216	80	13	2.2	1.4
30	34	e27	e16	e24	---	77	164	207	78	11	2.2	1.2
31	22	---	e15	e25	---	72	---	200	---	12	2.1	---
TOTAL	371.4	1,054	696.4	392.9	4,219	2,018	5,267	25,170	4,153	968	149.6	39.94
MEAN	12.0	35.1	22.5	12.7	151	65.1	176	812	138	31.2	4.83	1.33
MAX	34	116	47	25	571	106	590	6,450	229	71	9.5	3.4
MIN	6.5	20	8.8	4.4	30	45	48	93	69	11	2.1	0.57
AC-FT	737	2,090	1,380	779	8,370	4,000	10,450	49,920	8,240	1,920	297	79
CFSM	0.03	0.10	0.06	0.04	0.43	0.19	0.50	2.33	0.40	0.09	0.01	0.00
IN.	0.04	0.11	0.07	0.04	0.45	0.22	0.56	2.68	0.44	0.10	0.02	0.00

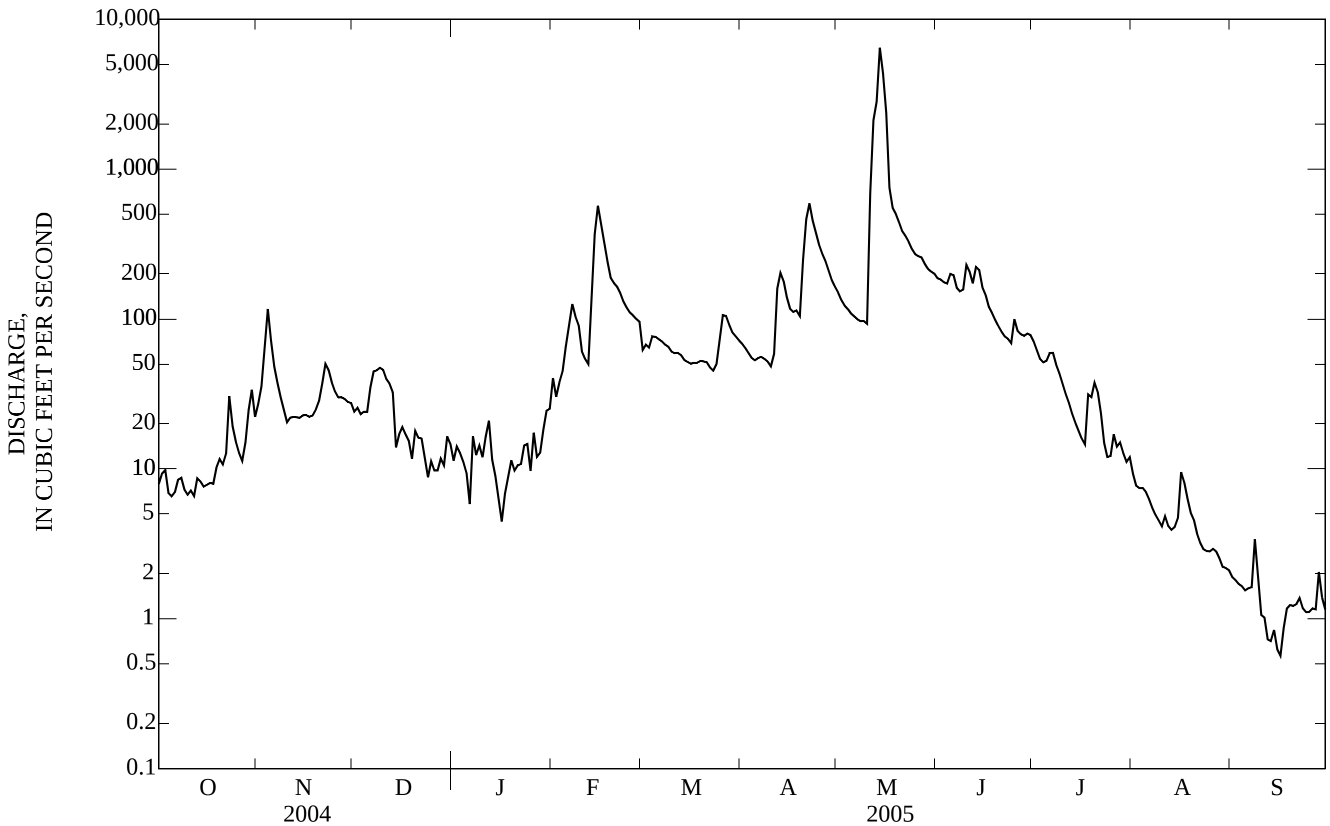
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	72.6	95.7	70.3	72.8	154	323	336	377	370	188	106	86.1
MAX	593	747	567	739	911	1,041	1,401	1,699	3,260	1,722	1,185	1,007
(WY)	(1987)	(1973)	(1993)	(1973)	(1973)	(1965)	(1973)	(1996)	(1947)	(1993)	(1993)	(1993)
MIN	0.20	0.37	0.36	0.38	3.21	3.90	1.22	3.71	1.58	1.10	0.21	0.26
(WY)	(1950)	(1956)	(1956)	(1954)	(1956)	(1954)	(1956)	(1967)	(1977)	(1977)	(1968)	(1957)

05486000 NORTH RIVER NEAR NORWALK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	82,754.7		44,499.24			
ANNUAL MEAN	226		122		188	
HIGHEST ANNUAL MEAN					709	1993
LOWEST ANNUAL MEAN					8.08	1968
HIGHEST DAILY MEAN	6,060	May 26	6,450	May 14	21,600	Jun 13, 1947
LOWEST DAILY MEAN	3.6	Jan 6	0.57	Sep 16	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	4.4	Jan 5	0.76	Sep 11	0.00	Many days
MAXIMUM PEAK FLOW			7,280	May 14	32,000	Jun 13, 1947 a
MAXIMUM PEAK STAGE			22.16	May 14	25.30	Jun 13, 1947 b
INSTANTANEOUS LOW FLOW			0.53	Sep 16	0.00	Jul 20, 1954
ANNUAL RUNOFF (AC-FT)	164,100		88,260		135,900	
ANNUAL RUNOFF (CFSM)	0.648		0.349		0.537	
ANNUAL RUNOFF (INCHES)	8.82		4.74		7.30	
10 PERCENT EXCEEDS	553		208		428	
50 PERCENT EXCEEDS	74		31		42	
90 PERCENT EXCEEDS	8.8		2.9		2.5	

a From rating curve extended above 9,000 ft^3/s on basis of velocity-area studies.
b From floodmark.
e Estimated.



05486490 MIDDLE RIVER NEAR INDIANOLA, IA

LOCATION.--Lat 41°25'27", long 93°35'14", in SW¼ SE¼ sec.35, T.77 N., R.24 W., Warren County, Hydrologic Unit 07100008, on right bank 10 ft downstream from bridge on county highway, 0.4 mi upstream from Cavitt Creek, 1.5 mi upstream from bridge on U.S. Highway 69, 4.6 mi northwest of Indianola, and 14.8 mi upstream from mouth.

DRAINAGE AREA.--503 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1940 (M), 1941, 1944, 1946, 1949 (M).

GAGE.--Water-stage recorder. Datum of gage is 776.15 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to June 11, 1946, June 9, 1947 to Nov. 23, 1948, and Sept. 8, 1951 to Oct. 30, 1952, nonrecording gage; and June 11, 1946 to June 8, 1947 (destroyed by flood), Nov. 24, 1948 to Sept. 7, 1951, Oct. 31, 1952 to Sept. 30, 1962, water-stage recorder at site 1.6 mi downstream at datum 2.81 ft lower.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	34	e33	e23	e71	e79	65	193	181	78	36	13
2	30	38	e36	e27	e60	e86	65	179	171	115	34	13
3	28	39	e32	e25	e69	e81	62	165	166	96	32	12
4	27	73	e33	e23	e77	e95	59	154	171	78	31	12
5	26	63	e34	e22	e97	96	58	144	256	67	28	11
6	27	51	43	e17	e123	88	64	137	256	434	27	11
7	26	42	45	e30	e152	e84	461	131	175	211	26	11
8	26	38	43	e25	e117	79	250	124	171	132	24	12
9	25	35	47	e28	e105	78	153	118	283	105	23	10
10	25	35	46	e24	e85	75	122	112	294	90	23	10
11	25	36	42	e30	e77	72	150	788	264	81	24	9.4
12	24	33	40	e36	e73	71	831	3,080	202	73	24	9.1
13	25	33	e33	e31	e220	69	524	9,860	898	67	25	9.0
14	24	33	e23	e29	e472	68	314	6,120	528	63	42	9.0
15	24	36	e28	e28	e728	65	222	1,930	303	60	47	9.2
16	23	35	e31	e27	e484	63	184	1,160	215	57	33	9.2
17	23	34	e30	e29	e322	62	165	884	165	55	28	9.3
18	24	34	e27	e32	e250	62	156	756	140	66	25	9.1
19	26	36	e22	e33	e205	63	147	701	123	66	22	9.7
20	24	36	e25	e31	e193	62	360	590	111	61	21	9.7
21	24	35	e22	e32	187	60	258	514	101	69	20	8.8
22	28	41	e22	e32	171	58	595	465	93	59	19	8.0
23	30	44	e20	e37	152	58	631	411	88	52	18	7.7
24	26	41	e16	e37	137	61	522	346	82	62	17	7.8
25	23	38	e20	e30	129	79	418	306	89	52	17	7.8
26	25	37	e18	e40	121	91	446	286	78	49	17	7.5
27	25	38	e18	e33	117	92	375	264	69	49	17	7.6
28	25	36	e21	e36	112	84	285	241	102	46	15	8.4
29	25	37	e20	e42	---	75	238	218	94	48	15	8.2
30	24	38	e29	e52	---	72	211	203	86	46	14	7.7
31	26	---	e27	e53	---	70	---	191	---	40	13	---
TOTAL	792	1,179	926	974	5,106	2,298	8,391	30,771	5,955	2,627	757	287.2
MEAN	25.5	39.3	29.9	31.4	182	74.1	280	993	198	84.7	24.4	9.57
MAX	30	73	47	53	728	96	831	9,860	898	434	47	13
MIN	23	33	16	17	60	58	58	112	69	40	13	7.5
AC-FT	1,570	2,340	1,840	1,930	10,130	4,560	16,640	61,030	11,810	5,210	1,500	570
CFSM	0.05	0.08	0.06	0.06	0.36	0.15	0.56	1.97	0.39	0.17	0.05	0.02
IN.	0.06	0.09	0.07	0.07	0.38	0.17	0.62	2.28	0.44	0.19	0.06	0.02

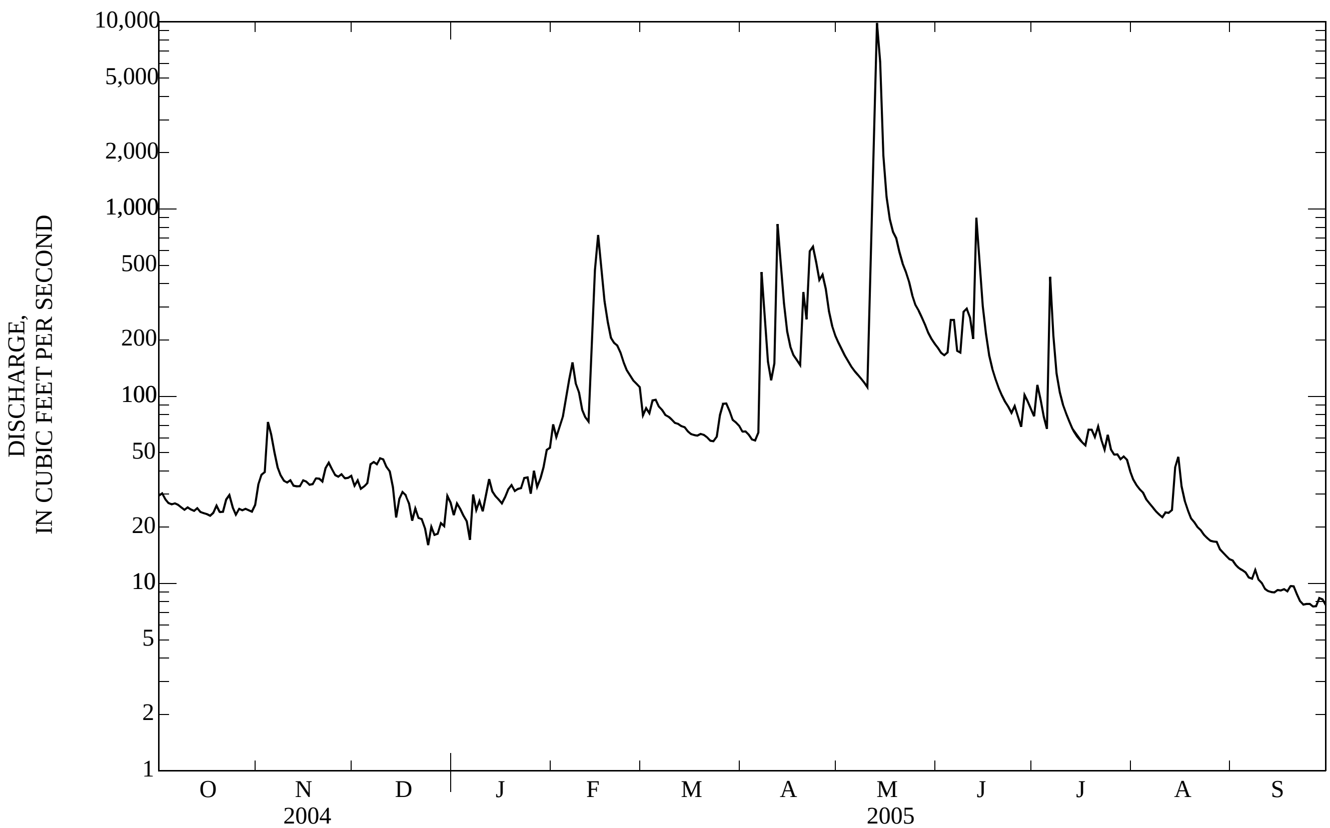
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	106	127	109	99.0	221	453	473	531	496	265	162	163
MAX	928	961	1,070	646	1,415	1,417	1,983	2,053	4,094	3,121	1,419	1,460
(WY)	(1974)	(1973)	(1983)	(1973)	(1973)	(1962)	(1973)	(1996)	(1947)	(1993)	(1993)	(1992)
MIN	4.28	2.80	1.62	1.02	4.68	7.35	4.81	10.1	3.81	5.20	4.47	3.92
(WY)	(1969)	(1956)	(1956)	(1977)	(1977)	(1954)	(1956)	(1956)	(1977)	(1977)	(1968)	(1968)

05486490 MIDDLE RIVER NEAR INDIANOLA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	107,287		60,063.2			
ANNUAL MEAN	293		165		267	
HIGHEST ANNUAL MEAN					1,006	1993
LOWEST ANNUAL MEAN					17.8	1968
HIGHEST DAILY MEAN	8,040	May 25	9,860	May 13	21,400	Jun 13, 1947
LOWEST DAILY MEAN	14	Jan 5	7.5	Sep 26	0.11	Jul 2, 1977
ANNUAL SEVEN-DAY MINIMUM	19	Dec 23	7.8	Sep 22	0.51	Jun 29, 1977
MAXIMUM PEAK FLOW			10,800	May 13	34,000	Jun 13, 1947
MAXIMUM PEAK STAGE			21.66	May 13	28.27	Jun 13, 1947 a
INSTANTANEOUS LOW FLOW			7.2	Sep 25	0.11	Jul 2, 1977
ANNUAL RUNOFF (AC-FT)	212,800		119,100		193,400	
ANNUAL RUNOFF (CFSM)	0.583		0.327		0.531	
ANNUAL RUNOFF (INCHES)	7.93		4.44		7.21	
10 PERCENT EXCEEDS	725		285		594	
50 PERCENT EXCEEDS	98		48		67	
90 PERCENT EXCEEDS	25		17		9.0	

a From floodmark.
e Estimated.



05487470 SOUTH RIVER NEAR ACKWORTH, IA

LOCATION.--Lat 41°20'14", long 93°29'10", in SE1/4 SE1/4 sec.34, T.76 N., R.23 W., Warren County, Hydrologic Unit 07100008, on right bank 15 ft downstream from bridge on county highway, 0.5 mi downstream from Otter Creek, 2.2 mi southwest of Ackworth, and 13.7 mi upstream from mouth.

DRAINAGE AREA.--460 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1941, 1945 (M), 1946.

GAGE.--Water-stage recorder. Datum of gage is 769.97 ft above NGVD of 1929. Prior to June 12, 1946, nonrecording gage, June 13, 1946 to Apr. 13, 1960, water-stage recorder, and Apr. 14, 1960 to Sept. 30, 1961, nonrecording gage, all at site 4.0 mi downstream at datum 8.06 ft lower.

REMARKS.--Records are considered good, except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1930 reached a stage of 24.5 ft, from information by local residents, discharge, about 30,000 ft^3/s, at site 4.0 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	30	e16	e17	e79	e52	45	146	91	147	12	4.4
2	15	47	e18	e21	e68	e61	38	133	84	70	11	4.3
3	13	40	e16	e20	e77	e57	35	123	78	49	10	4.2
4	14	51	e18	e14	e84	e65	34	114	100	50	9.6	4.1
5	10	57	22	e22	e103	66	33	106	548	42	9.7	4.1
6	11	52	51	e15	e127	62	909	101	288	35	8.7	4.0
7	12	37	82	e24	e158	60	3,640	98	152	31	8.2	4.3
8	13	24	59	e20	e114	60	791	92	149	29	8.1	4.7
9	12	21	45	e24	e103	53	397	90	334	27	7.6	4.5
10	11	19	34	e19	e83	50	290	83	197	24	7.6	4.1
11	11	24	34	e23	e74	51	660	330	302	22	15	4.0
12	10	20	30	e28	e71	50	4,550	894	210	21	9.5	4.1
13	10	19	e21	e23	e1,000	45	1,110	5,490	313	18	9.8	3.9
14	11	19	e13	e20	e699	43	440	1,310	498	17	10	3.9
15	11	18	e22	e19	e451	39	315	463	270	15	9.7	3.9
16	11	18	e27	e19	e236	41	e263	306	159	14	8.6	4.0
17	10	19	e27	e13	e179	42	e237	245	122	13	7.8	4.0
18	13	22	e23	e17	e149	42	e223	565	102	25	7.3	4.0
19	18	32	e18	e20	e139	41	e218	660	89	20	6.9	4.2
20	13	32	e20	e22	e130	39	e231	275	80	17	7.1	3.9
21	12	28	e16	e24	e120	36	213	216	72	37	6.4	3.7
22	13	25	e16	e18	e109	35	1,060	188	67	21	e5.6	3.7
23	12	23	e12	e15	103	36	533	155	62	14	5.8	3.6
24	13	21	e8.7	e17	99	41	276	132	57	11	6.4	3.9
25	11	19	e12	e24	94	72	238	119	59	9.2	7.5	4.0
26	17	20	e11	e27	89	75	403	119	55	28	8.0	4.8
27	24	23	e11	e24	87	63	284	111	51	35	7.7	4.5
28	22	22	e15	e31	84	54	228	100	58	29	6.1	4.8
29	25	22	e14	e37	---	49	191	96	61	19	e5.7	4.6
30	22	21	e23	e48	---	48	163	107	59	14	e5.4	4.4
31	15	---	e21	e51	---	63	---	100	---	13	e4.4	---
TOTAL	428	825	755.7	716	4,909	1,591	18,048	13,067	4,767	916.2	253.2	124.6
MEAN	13.8	27.5	24.4	23.1	175	51.3	602	422	159	29.6	8.17	4.15
MAX	25	57	82	51	1,000	75	4,550	5,490	548	147	15	4.8
MIN	10	18	8.7	13	68	35	33	83	51	9.2	4.4	3.6
AC-FT	849	1,640	1,500	1,420	9,740	3,160	35,800	25,920	9,460	1,820	502	247
CFSM	0.03	0.06	0.05	0.05	0.38	0.11	1.31	0.92	0.35	0.06	0.02	0.01
IN.	0.03	0.07	0.06	0.06	0.40	0.13	1.46	1.06	0.39	0.07	0.02	0.01

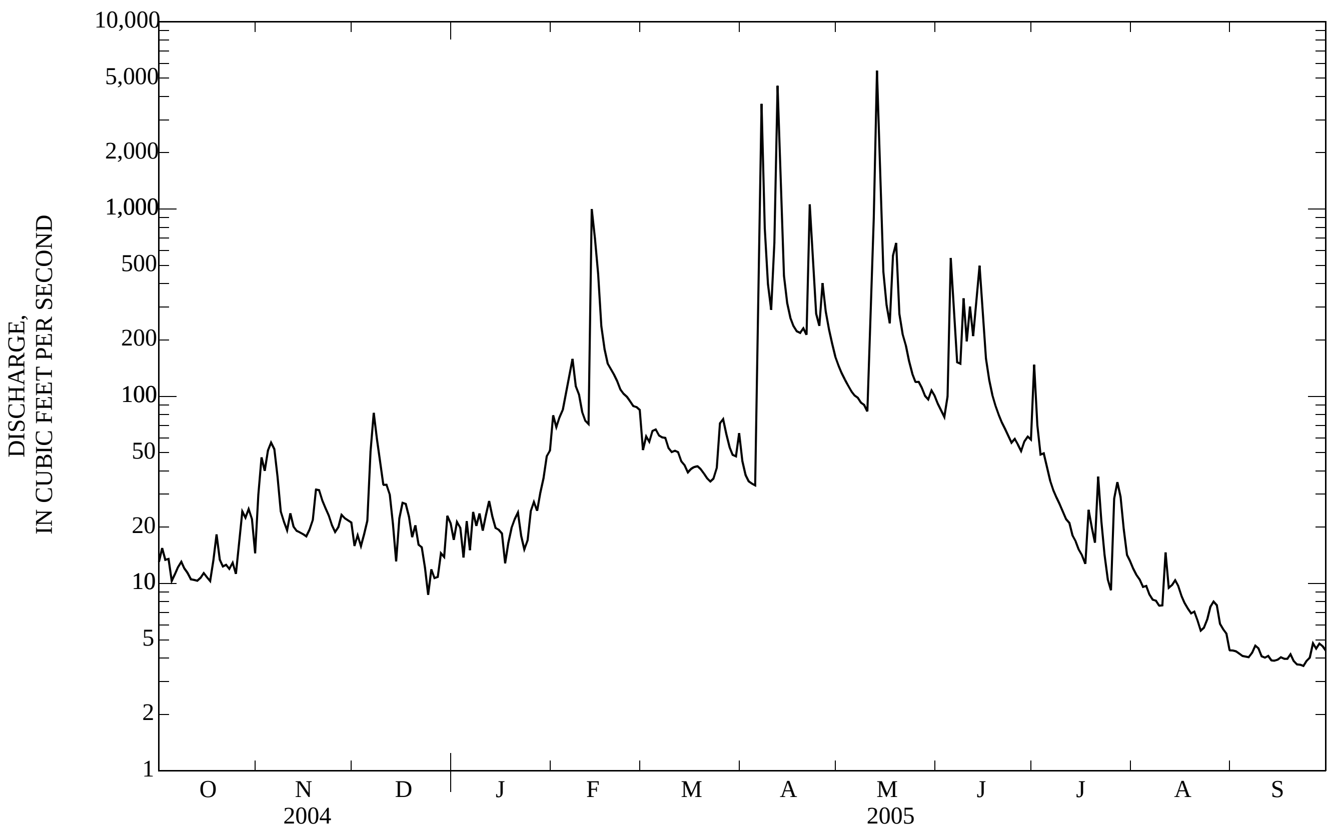
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	103	119	103	96.2	207	430	447	469	460	249	127	144
MAX	1,283	906	1,022	901	1,209	1,568	1,937	1,962	4,305	3,870	1,546	1,332
(WY)	(1974)	(1962)	(1983)	(1974)	(1973)	(1960)	(1973)	(1959)	(1947)	(1993)	(1993)	(1993)
MIN	0.35	1.05	0.88	1.05	3.70	3.61	1.70	6.88	1.79	1.48	2.02	1.05
(WY)	(1957)	(1957)	(1956)	(1956)	(1989)	(1957)	(1956)	(2000)	(1977)	(1977)	(1957)	(1957)

05487470 SOUTH RIVER NEAR ACKWORTH, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	67,081.7		46,400.7			
ANNUAL MEAN	183		127		246	
HIGHEST ANNUAL MEAN					966	1993
LOWEST ANNUAL MEAN					16.1	1989
HIGHEST DAILY MEAN	6,300	Aug 4	5,490	May 13	31,400	Jun 17, 1990
LOWEST DAILY MEAN	2.5	Jan 5	3.6	Sep 23	0.00	Sep 19, 1956 a
ANNUAL SEVEN-DAY MINIMUM	5.3	Jan 3	3.9	Sep 18	0.00	Sep 19, 1956 a
MAXIMUM PEAK FLOW			7,130	May 13	38,100	Jun 17, 1990
MAXIMUM PEAK STAGE			17.10	May 13	32.85	Jul 5, 1981
INSTANTANEOUS LOW FLOW					0.00	Sep 19, 1956 a
ANNUAL RUNOFF (AC-FT)	133,100		92,040		178,200	
ANNUAL RUNOFF (CFSM)	0.398		0.276		0.535	
ANNUAL RUNOFF (INCHES)	5.42		3.75		7.27	
10 PERCENT EXCEEDS	302		241		465	
50 PERCENT EXCEEDS	46		28		39	
90 PERCENT EXCEEDS	12		6.3		3.4	

a Also Sept. 30 to Oct. 13, 1956.
e Estimated.



05487500 DES MOINES RIVER NEAR RUNNELLS, IA

LOCATION.--Lat 41°29'19", long 93°20'17", in SE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.12, T.77 N., R.22 W., Polk County, Hydrologic Unit 07100008, on left bank 10 ft downstream from bridge on State Highway 316, 0.2 mi downstream from South River, 0.5 mi upstream from Camp Creek, 2.2 mi southeast of Runnells, 28.2 mi (revised) upstream from Red Rock Dam, and 167.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--11,655 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. Flow regulated by Saylorville Lake (station 05481630) 34.2 mi upstream. Stage-discharge relation is affected at times by backwater from Lake Red Rock (05488100). U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods occurred on May 31, 1903; June 14, 1947; June 26, 1947; and June 24, 1954. No gage height or discharge was determined. Gage height and discharge information is available for these floods at other sites on the Des Moines River.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,480	e2,480	e2,580	e1,800	977	3,920	3,350	10,000	e14,400	24,400	3,170	1,090
2	3,860	e2,540	e2,570	1,790	1,040	3,380	3,970	9,070	e13,900	25,300	3,550	1,070
3	3,860	e2,450	e2,530	1,760	1,070	3,140	4,450	8,580	e13,600	25,100	3,830	1,060
4	e3,820	e2,540	e2,510	1,690	1,250	3,070	4,820	7,850	e13,400	21,300	3,770	1,040
5	e3,840	2,660	e2,600	e1,450	1,670	3,070	4,880	7,120	e12,500	18,600	2,860	909
6	e3,530	2,460	e2,870	e1,400	1,990	3,010	5,150	6,790	e11,700	15,800	2,220	805
7	e3,400	2,260	3,010	e1,350	2,330	3,080	10,900	6,640	e11,200	13,900	1,940	748
8	e3,340	2,220	3,100	e1,330	2,870	3,060	6,730	6,480	e11,400	12,400	1,900	869
9	e3,680	2,200	3,000	e1,220	2,650	2,960	5,060	6,340	e11,700	11,200	1,850	1,420
10	e3,470	2,040	3,120	e1,100	2,590	2,400	4,160	7,360	e11,100	9,430	1,820	1,070
11	e3,190	2,150	3,360	e1,140	2,400	2,210	4,420	13,900	11,100	8,270	2,000	1,040
12	e3,170	e2,040	3,030	e1,200	2,350	2,620	15,000	25,700	11,400	7,170	2,940	977
13	e3,140	e2,010	2,250	e1,110	e3,900	2,430	11,100	48,400	15,400	6,480	3,370	866
14	e3,060	e1,980	e1,800	e996	e6,750	2,300	8,900	e40,400	19,900	5,830	2,930	1,030
15	e2,940	e1,950	e1,660	e863	e9,610	2,260	9,710	e33,700	20,000	5,300	2,620	e1,310
16	e2,780	e1,900	e1,470	e921	11,000	2,220	10,600	e29,600	18,000	5,330	e2,180	e1,340
17	e2,780	e1,820	e1,300	e876	11,800	2,130	10,800	e26,700	14,700	4,360	1,920	e1,260
18	e2,830	e2,010	e1,260	e905	11,700	2,010	10,600	e24,600	12,200	4,890	1,920	e1,130
19	e3,050	e2,240	e1,200	e931	10,400	1,900	10,100	e23,300	10,300	4,600	1,900	e956
20	e2,310	e2,330	e1,280	e873	8,070	2,030	10,200	e21,900	9,000	4,140	1,770	e938
21	e3,000	e2,260	e1,310	e834	7,740	2,110	15,200	e20,600	7,820	4,060	1,940	978
22	e2,770	e2,160	e1,330	e795	5,840	2,050	18,700	e19,100	6,660	4,070	1,780	e1,200
23	e2,490	e2,360	e1,380	e727	6,460	1,810	19,500	e17,900	5,920	3,610	1,540	e1,360
24	e2,320	e2,530	e1,250	e772	5,500	1,800	18,800	e17,200	5,550	3,460	1,440	e1,570
25	e2,190	e2,570	e1,130	e805	4,950	2,440	18,000	e16,500	6,420	3,210	1,440	e1,620
26	e2,030	e2,600	e1,140	e814	4,640	2,530	17,300	e15,800	10,000	3,270	1,520	e1,950
27	e2,080	2,660	e1,220	e834	4,490	2,590	16,000	e15,500	12,100	3,500	1,430	e2,170
28	e2,180	e2,660	e1,430	e882	4,380	2,560	13,600	e15,300	16,800	3,130	1,350	e2,910
29	e2,280	e2,620	e1,590	e886	---	2,550	12,100	e15,400	21,200	4,420	1,210	e4,940
30	e2,260	e2,580	e1,690	e895	---	2,470	11,000	e15,300	23,000	3,800	1,140	e5,630
31	e2,200	---	e1,760	944	---	2,930	---	e14,900	---	3,240	1,120	---
TOTAL	92,330	69,280	61,730	33,893	140,417	79,040	315,100	547,930	382,370	273,570	66,370	45,256
MEAN	2,978	2,309	1,991	1,093	5,015	2,550	10,500	17,680	12,750	8,825	2,141	1,509
MAX	4,480	2,660	3,360	1,800	11,800	3,920	19,500	48,400	23,000	25,300	3,830	5,630
MIN	2,030	1,820	1,130	727	977	1,800	3,350	6,340	5,550	3,130	1,120	748
AC-FT	183,100	137,400	122,400	67,230	278,500	156,800	625,000	1,087,000	758,400	542,600	131,600	89,770
CFSM	0.26	0.20	0.17	0.09	0.43	0.22	0.90	1.52	1.09	0.76	0.18	0.13
IN.	0.29	0.22	0.20	0.11	0.45	0.25	1.01	1.75	1.22	0.87	0.21	0.14

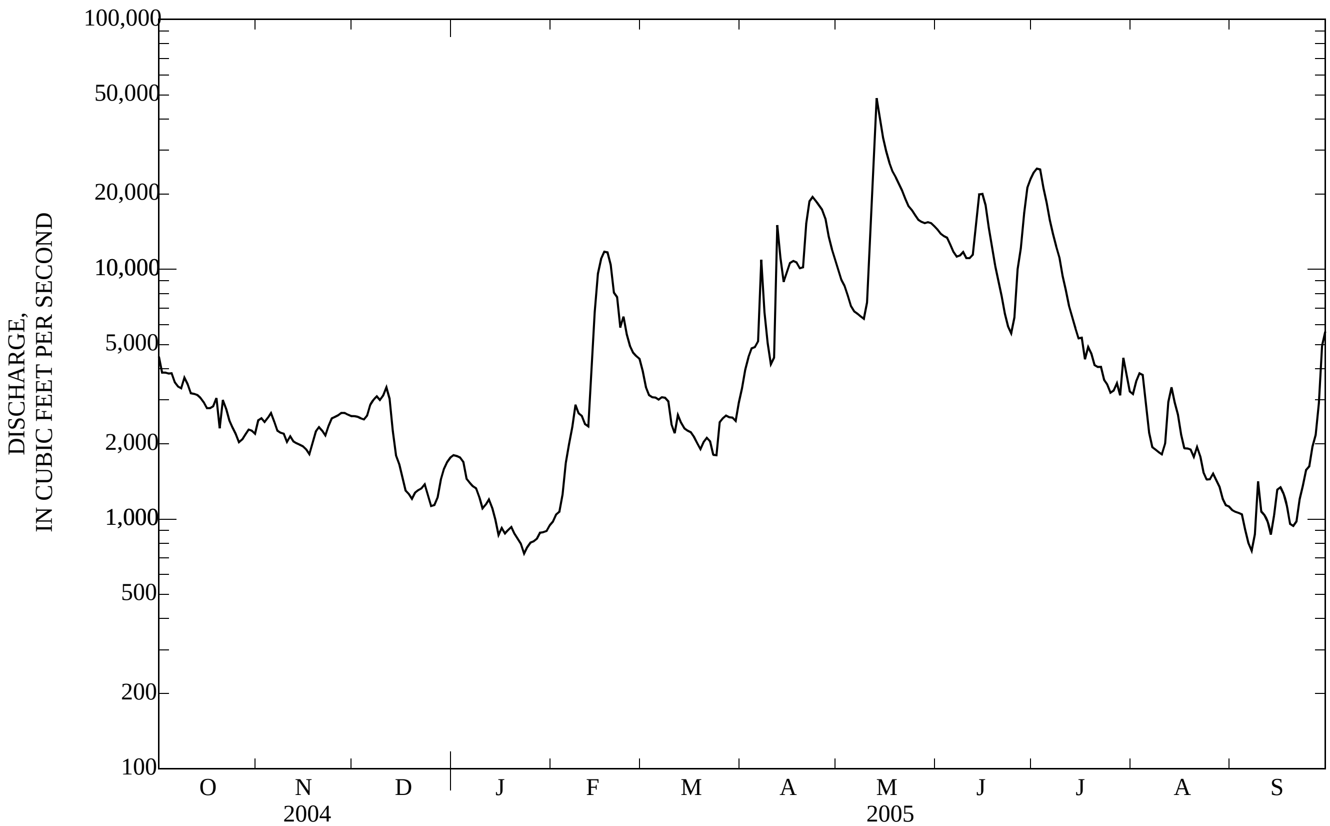
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,289	3,430	3,100	1,760	3,162	8,350	12,390	15,080	15,670	13,370	6,033	3,525
MAX	18,040	12,660	10,000	6,237	8,557	18,390	30,380	32,740	40,530	68,140	32,990	26,320
(WY)	(1987)	(1993)	(1992)	(1992)	(1997)	(1993)	(1993)	(1993)	(1991)	(1993)	(1993)	(1993)
MIN	352	524	473	450	500	1,136	773	1,272	1,777	840	534	503
(WY)	(2001)	(1990)	(1990)	(1990)	(1990)	(2000)	(2000)	(2000)	(1988)	(1988)	(1988)	(2000)

05487500 DES MOINES RIVER NEAR RUNNELLS, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1986 - 2005	
ANNUAL TOTAL	2,293,768		2,107,286			
ANNUAL MEAN	6,267		5,773		7,448	
HIGHEST ANNUAL MEAN					22,980	1993
LOWEST ANNUAL MEAN					1,200	1989
HIGHEST DAILY MEAN	40,900	May 25	48,400	May 13	133,000	Jul 11, 1993
LOWEST DAILY MEAN	403	Jan 14	727	Jan 23 a	297	Sep 17, 2000
ANNUAL SEVEN-DAY MINIMUM	436	Jan 9	797	Jan 21	319	Oct 16, 2000
MAXIMUM PEAK FLOW			55,100	May 13	134,000	Jul 11, 1993
MAXIMUM PEAK STAGE			58.45	May 13	82.88	Jul 11, 1993
ANNUAL RUNOFF (AC-FT)	4,550,000		4,180,000		5,396,000	
ANNUAL RUNOFF (CFSM)	0.538		0.495		0.639	
ANNUAL RUNOFF (INCHES)	7.32		6.73		8.68	
10 PERCENT EXCEEDS	16,500		15,300		20,000	
50 PERCENT EXCEEDS	3,400		2,870		3,570	
90 PERCENT EXCEEDS	540		1,080		620	

a Ice affected.
e Estimated.



05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA

LOCATION.--Lat 41°36'03", long 93°16'26", in NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.5, T.78 N., R.21 W., Jasper County, Hydrologic Unit 07100008, on left bank downstream side of bridge on Highway 163.

DRAINAGE AREA.--6.78 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--May 1995 to September 30, 2005 (discontinued).

GAGE.--Water-stage recorder. Concrete control. Datum of gage is 826.33 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.95	5.7	2.9	2.3	2.0	e4.9	3.2	5.6	6.9	4.9	1.7	0.07
2	0.86	7.7	2.9	2.3	e2.5	4.2	3.2	5.5	6.5	4.8	1.5	0.06
3	0.77	4.3	2.8	2.2	e4.7	4.1	3.1	5.4	6.3	4.7	1.4	0.05
4	0.72	4.2	2.8	e2.0	e5.3	4.1	3.0	5.3	7.0	5.9	1.1	0.04
5	0.72	3.7	3.1	e1.8	e4.6	3.8	3.0	5.2	11	5.1	1.1	0.03
6	0.72	3.4	4.4	e1.6	e4.6	3.8	3.1	5.2	7.9	4.6	0.98	0.02
7	0.76	3.1	3.8	e1.5	5.7	3.8	3.1	5.2	7.3	4.4	0.88	0.01
8	0.81	2.9	3.5	e1.9	4.8	e3.6	2.9	4.2	41	4.3	0.78	0.14
9	0.68	2.9	3.6	2.0	3.8	3.5	2.9	3.7	17	4.0	0.67	0.13
10	0.66	2.9	3.4	2.0	3.9	3.6	2.8	3.5	13	3.6	0.60	0.06
11	0.66	2.9	3.3	2.0	3.5	3.4	9.7	32	12	3.6	1.3	0.06
12	0.70	2.7	3.2	2.0	3.5	3.3	49	82	11	3.5	1.1	0.03
13	0.56	2.7	e3.2	e1.9	36	e3.3	19	112	18	3.3	1.0	0.03
14	0.63	2.7	e3.0	e1.8	19	e2.8	14	39	21	3.0	0.90	0.03
15	0.64	2.7	3.0	e1.3	13	e2.7	12	26	13	2.9	0.68	0.02
16	0.58	2.7	2.9	e1.4	11	3.0	10	21	11	2.7	0.60	0.01
17	0.55	2.6	2.8	e1.4	9.4	3.0	9.0	18	9.7	2.5	e0.52	0.00
18	0.71	3.1	e2.8	e1.5	8.1	3.0	7.7	16	8.7	3.3	e0.49	0.00
19	1.7	4.9	e2.8	e1.6	7.5	2.9	6.9	15	8.0	e2.8	0.39	0.00
20	0.96	4.6	2.8	e1.7	7.3	2.8	7.0	13	7.5	e2.6	0.33	0.00
21	0.87	4.1	2.7	e1.6	6.5	2.8	6.9	13	7.0	2.5	0.27	0.00
22	0.90	4.0	e2.5	e1.6	6.1	2.8	13	12	6.6	2.3	0.22	0.00
23	0.88	3.8	e2.4	e1.5	5.8	2.7	9.5	11	6.3	2.1	0.18	0.00
24	0.82	3.5	e2.3	e1.5	5.7	3.2	8.5	11	5.9	1.9	0.19	0.00
25	0.76	3.3	e2.4	e1.8	5.4	4.7	7.8	10	6.2	1.8	0.21	0.00
26	1.6	3.3	2.4	2.2	5.1	4.1	7.1	9.9	5.7	2.5	0.27	0.00
27	1.5	3.3	2.3	1.8	5.1	3.7	6.3	9.2	5.5	2.1	0.23	0.00
28	1.4	3.0	2.4	1.7	4.9	3.6	5.9	8.5	5.8	1.9	0.15	0.00
29	1.6	3.0	2.3	1.7	---	3.4	5.9	8.2	5.5	1.8	0.13	0.00
30	2.4	3.0	2.8	1.7	---	3.5	5.7	7.6	5.3	1.7	0.12	0.00
31	1.7	---	2.4	1.8	---	3.3	---	7.3	---	1.8	0.09	---
TOTAL	29.77	106.7	89.9	55.1	204.8	107.4	251.2	530.5	303.6	98.9	20.08	0.79
MEAN	0.96	3.56	2.90	1.78	7.31	3.46	8.37	17.1	10.1	3.19	0.65	0.03
MAX	2.4	7.7	4.4	2.3	36	4.9	49	112	41	5.9	1.7	0.14
MIN	0.55	2.6	2.3	1.3	2.0	2.7	2.8	3.5	5.3	1.7	0.09	0.00
AC-FT	59	212	178	109	406	213	498	1,050	602	196	40	1.6
CFSM	0.14	0.52	0.43	0.26	1.08	0.51	1.24	2.52	1.49	0.47	0.10	0.00
IN.	0.16	0.59	0.49	0.30	1.12	0.59	1.38	2.91	1.67	0.54	0.11	0.00

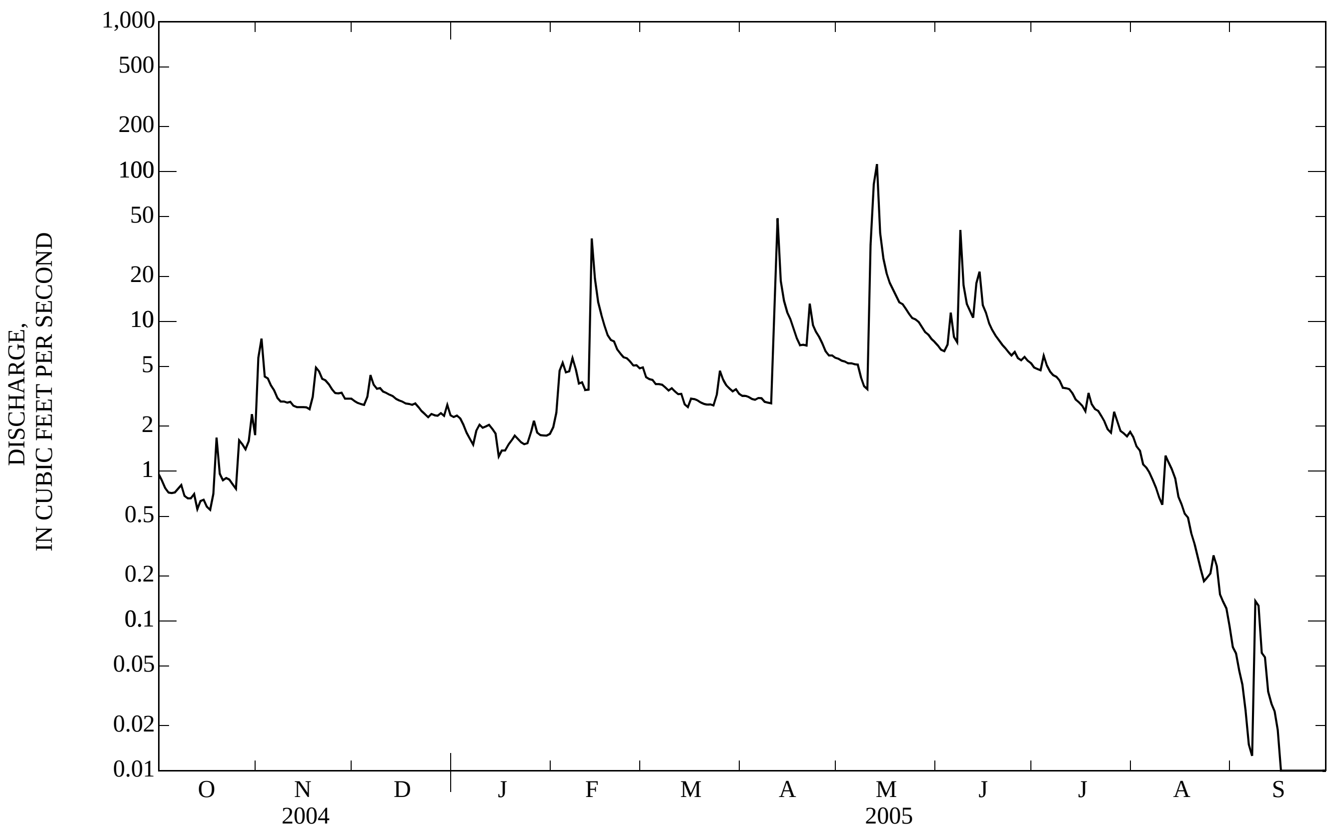
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.13	2.11	1.41	1.28	5.71	5.70	5.27	12.9	12.6	6.25	3.03	0.81
MAX	3.48	5.69	3.22	3.73	19.8	19.4	13.1	25.0	31.8	13.8	10.5	1.97
(WY)	(1999)	(1999)	(1998)	(1998)	(1996)	(2001)	(1998)	(1996)	(1998)	(1998)	(1999)	(1999)
MIN	0.17	0.36	0.12	0.28	0.87	1.29	1.41	3.95	6.61	2.67	0.65	0.03
(WY)	(2004)	(2001)	(2001)	(2002)	(2002)	(2000)	(1996)	(2001)	(1997)	(2001)	(2005)	(2005)

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	1,881.61		1,798.74			
ANNUAL MEAN	5.14		4.93		4.84	
HIGHEST ANNUAL MEAN					9.24	1998
LOWEST ANNUAL MEAN					2.68	2002
HIGHEST DAILY MEAN	55	May 25	112	May 13	210	May 24, 1996
LOWEST DAILY MEAN	0.55	Oct 17	0.00	Sep 17 a	0.00	Sep 17, 2005 a
ANNUAL SEVEN-DAY MINIMUM	0.62	Oct 11	0.00	Sep 17	0.00	Sep 17, 2005
MAXIMUM PEAK FLOW			675	May 12	1,350	Jun 18, 1998
MAXIMUM PEAK STAGE			8.29	May 12	9.66	Jun 18, 1998
INSTANTANEOUS LOW FLOW					0.00	Nov 10, 1995
ANNUAL RUNOFF (AC-FT)	3,730		3,570		3,510	
ANNUAL RUNOFF (CFSM)	0.758		0.727		0.714	
ANNUAL RUNOFF (INCHES)	10.32		9.87		9.70	
10 PERCENT EXCEEDS	9.9		9.8		11	
50 PERCENT EXCEEDS	3.5		3.0		2.1	
90 PERCENT EXCEEDS	0.96		0.20		0.30	

a Also Sept. 18-30, 2005.
e Estimated.



05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1995 to September 30, 2005 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1995 to September 30, 2005 (discontinued).
WATER TEMPERATURES: April 1995 to September 30, 2005 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: May 1995 to September 30, 2005 (discontinued).

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 891 microsiemens Sept. 25, 2005; minimum daily, 159 microsiemens May 24, 1996.
WATER TEMPERATURES: Maximum daily, 31.5°C July 31, 2001; minimum daily, 0.0°C many days during winter.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,130 mg/L July 22, 1998; minimum daily mean, 1 mg/L Feb. 9, 2003.
SEDIMENT LOADS: Maximum daily, 1,080 tons May 24, 1996; minimum daily, 0.00 tons Feb. 1-3, 9, 10, 14-19, Feb. 28 to Mar. 2, Mar. 10, Sept. 6-10, 24, Sept. 29, 30, 2003, Oct. 1, 7-9, 2003, Sept. 1-7 and 10-30, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 891 microsiemens Sept. 25; minimum daily, 382 microsiemens Feb. 13.
WATER TEMPERATURES: Maximum daily, 28.7°C July 23; minimum daily, 0.0°C Jan. 11 and 26.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 699 mg/L Feb. 13; minimum daily mean, 8 mg/L Apr. 3.
SEDIMENT LOADS: Maximum daily, 229 tons May 12; minimum daily, 0.00 tons Sept. 1-7 and 10-30.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	545	---	---	476	539	---	580	---
2	---	---	489	---	552	---	---	---	478	---	---	---
3	---	555	---	434	---	---	528	---	437	---	581	---
4	---	---	---	---	496	527	500	---	447	---	578	---
5	---	---	---	---	496	---	484	---	---	---	594	---
6	---	---	---	---	---	509	453	537	---	---	576	658
7	---	---	---	---	---	---	527	494	492	---	---	---
8	570	458	---	---	543	---	524	---	481	---	---	599
9	582	446	459	---	---	541	---	---	534	---	---	---
10	561	452	---	505	527	---	---	542	531	---	552	---
11	---	---	437	479	---	---	---	---	---	514	---	---
12	---	---	---	---	---	---	---	446	542	561	631	647
13	---	---	---	---	382	---	532	---	526	549	---	648
14	---	---	528	---	---	---	---	---	537	525	---	---
15	583	---	470	---	---	---	---	---	---	569	593	---
16	---	---	---	---	---	---	---	536	---	---	---	---
17	---	---	---	---	---	---	---	537	538	---	510	---
18	---	---	---	500	---	---	---	---	---	634	494	---
19	---	544	---	515	---	---	---	---	492	520	---	---
20	583	532	---	---	---	485	---	542	---	---	519	---
21	---	---	451	---	---	---	---	538	---	---	---	---
22	---	513	---	---	---	---	538	---	552	569	588	---
23	---	497	479	---	---	---	---	542	---	571	---	---
24	570	---	---	---	522	---	---	---	551	---	---	664
25	---	---	---	501	---	---	---	536	---	---	580	891
26	673	481	506	549	---	519	---	542	---	553	461	---
27	581	---	---	---	532	500	529	544	---	604	492	---
28	---	429	---	499	505	513	---	---	---	547	512	772
29	583	---	488	471	---	474	492	---	512	575	---	---
30	---	---	495	489	---	526	---	---	547	---	---	---
31	581	---	507	---	---	---	---	554	---	---	---	---

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	3.3	---	---	7.8	17.2	---	26.4	---
2	---	---	7.1	---	3.3	---	---	---	18.7	---	---	---
3	---	10.8	---	1.4	---	---	13.8	---	14.3	---	27.0	---
4	---	---	---	---	8.2	9.0	19.3	---	21.0	---	23.0	---
5	---	---	---	---	7.4	---	18.9	---	---	---	22.9	---
6	---	---	---	---	---	11.6	9.0	16.8	---	---	18.5	23.9
7	---	---	---	---	---	---	16.4	19.8	21.5	---	---	---
8	---	11.0	---	---	2.8	---	18.0	---	16.9	---	---	26.1
9	---	7.5	8.5	---	---	0.0	---	---	19.3	---	---	---
10	---	11.0	---	1.4	1.2	---	---	20.1	16.6	---	25.6	---
11	---	---	6.1	0.0	---	---	---	---	---	24.8	---	---
12	---	---	---	---	---	---	---	9.9	16.8	24.6	21.7	26.1
13	---	---	---	---	3.2	---	9.9	---	17.7	21.1	---	---
14	---	---	1.1	---	---	---	---	---	16.7	18.2	---	---
15	---	---	4.7	---	---	---	---	---	---	24.4	21.7	---
16	---	---	---	---	---	---	---	13.1	---	---	---	---
17	---	---	---	---	---	---	---	16.8	21.0	---	24.0	---
18	---	---	---	0.3	---	---	---	---	---	25.9	25.6	---
19	---	12.5	---	0.3	---	---	---	---	17.4	23.4	---	---
20	---	10.5	---	---	---	8.6	---	14.4	---	---	27.0	---
21	---	---	0.1	---	---	---	---	15.1	---	---	---	---
22	---	9.9	---	---	---	---	12.2	---	23.1	27.1	26.7	---
23	---	8.4	0.1	---	---	---	---	17.9	---	28.7	---	---
24	---	---	---	---	4.8	---	---	---	22.8	---	---	21.8
25	---	---	---	2.6	---	---	---	16.1	---	---	24.3	21.7
26	---	9.7	1.0	0.0	---	5.9	---	18.9	---	19.7	22.5	---
27	---	---	---	---	6.9	9.7	---	16.9	---	17.1	21.8	---
28	---	6.1	---	0.5	1.7	11.7	---	---	---	21.0	23.1	14.1
29	---	---	0.0	3.6	---	---	9.7	---	21.9	19.8	---	---
30	---	---	6.8	3.6	---	11.5	---	---	24.1	---	---	---
31	---	---	2.5	---	---	---	---	16.3	---	---	---	---

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

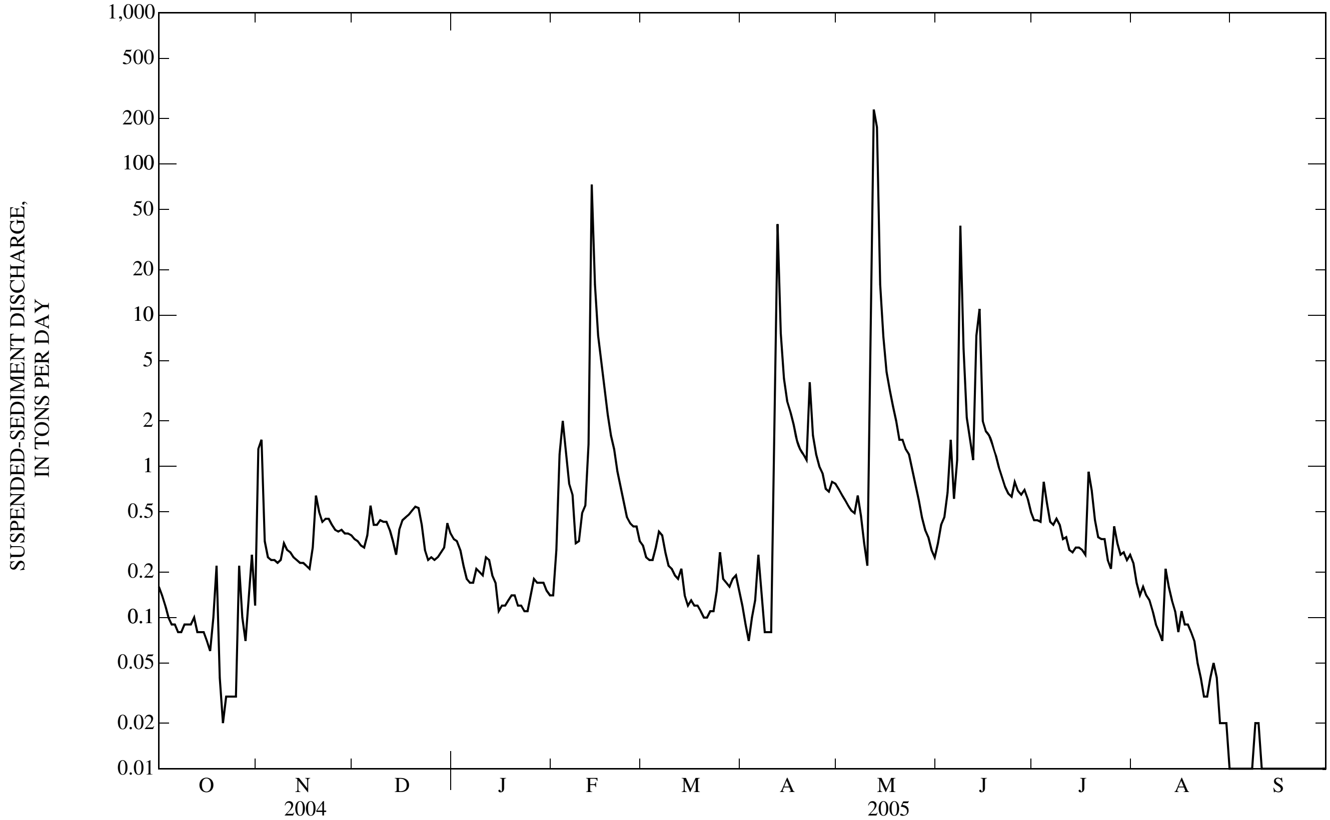
Day	Mean concen- tration (mg/l)	Load (tons/ day)	Mean concen- tration (mg/l)	Load (tons/ day)	Mean concen- tration (mg/l)	Load (tons/ day)	Mean concen- tration (mg/l)	Load (tons/ day)	Mean concen- tration (mg/l)	Load (tons/ day)	Mean concen- tration (mg/l)	Load (tons/ day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	62	0.16	72	1.3	42	0.33	53	0.33	27	0.14	23	0.30
2	62	0.14	67	1.5	41	0.32	50	0.32	42	0.28	22	0.25
3	58	0.12	27	0.32	40	0.30	46	0.28	92	1.2	22	0.24
4	53	0.10	22	0.25	39	0.29	41	0.22	137	2.0	21	0.24
5	49	0.09	24	0.24	41	0.35	38	0.18	94	1.2	28	0.29
6	44	0.09	26	0.24	46	0.55	40	0.17	62	0.77	36	0.37
7	39	0.08	27	0.23	40	0.41	41	0.17	42	0.65	34	0.35
8	36	0.08	30	0.24	43	0.41	40	0.21	23	0.31	28	0.27
9	46	0.09	39	0.31	45	0.44	37	0.20	31	0.32	23	0.22
10	52	0.09	36	0.28	47	0.43	36	0.19	46	0.49	22	0.21
11	52	0.09	34	0.27	48	0.43	47	0.25	58	0.55	21	0.19
12	51	0.10	33	0.25	44	0.38	44	0.24	142	1.4	20	0.18
13	50	0.08	33	0.24	37	0.32	38	0.19	699	73	24	0.21
14	49	0.08	32	0.23	32	0.26	35	0.17	307	16	18	0.14
15	47	0.08	31	0.23	47	0.38	32	0.11	200	7.3	17	0.12
16	42	0.07	30	0.22	56	0.44	31	0.12	159	4.8	16	0.13
17	37	0.06	30	0.21	60	0.46	32	0.12	129	3.3	15	0.12
18	48	0.10	33	0.29	63	0.48	33	0.13	100	2.2	15	0.12
19	45	0.22	48	0.64	67	0.51	32	0.14	81	1.6	14	0.11
20	16	0.04	40	0.50	71	0.54	31	0.14	67	1.3	13	0.10
21	10	0.02	39	0.43	73	0.53	28	0.12	53	0.93	13	0.10
22	12	0.03	41	0.45	60	0.41	28	0.12	45	0.74	14	0.11
23	13	0.03	44	0.45	43	0.28	28	0.11	37	0.58	14	0.11
24	15	0.03	43	0.41	38	0.24	27	0.11	30	0.46	17	0.15
25	16	0.03	42	0.38	38	0.25	29	0.14	29	0.42	21	0.27
26	46	0.22	41	0.37	37	0.24	31	0.18	29	0.40	17	0.18
27	23	0.10	42	0.38	39	0.25	35	0.17	29	0.40	17	0.17
28	19	0.07	44	0.36	41	0.27	35	0.17	24	0.32	16	0.16
29	32	0.14	43	0.36	45	0.29	37	0.17	---	---	20	0.18
30	39	0.26	43	0.35	56	0.42	33	0.15	---	---	20	0.19
31	26	0.12	---	---	56	0.36	30	0.14	---	---	17	0.15
TOTAL	---	3.01	---	11.93	---	11.57	---	5.46	---	123.06	---	5.93

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14	0.12	47	0.71	17	0.31	33	0.44	50	0.23	50	0.00
2	11	0.09	44	0.65	24	0.41	34	0.44	42	0.17	49	0.00
3	8	0.07	41	0.60	27	0.46	34	0.43	38	0.14	47	0.00
4	12	0.10	39	0.55	34	0.67	48	0.79	53	0.16	46	0.00
5	17	0.13	36	0.51	46	1.5	41	0.57	48	0.14	46	0.00
6	31	0.26	35	0.49	29	0.61	34	0.43	50	0.13	45	0.00
7	18	0.15	46	0.64	58	1.1	35	0.41	46	0.11	46	0.00
8	11	0.08	41	0.47	301	39	39	0.45	45	0.09	49	0.02
9	10	0.08	31	0.31	120	6.0	38	0.41	44	0.08	52	0.02
10	10	0.08	23	0.22	59	2.1	34	0.33	42	0.07	54	0.00
11	70	4.7	100	11	48	1.5	35	0.34	59	0.21	61	0.00
12	264	40	506	229	40	1.1	29	0.28	51	0.16	71	0.00
13	149	7.6	418	175	72	7.3	30	0.27	46	0.13	96	0.00
14	101	3.8	147	16	155	11	35	0.29	44	0.11	106	0.00
15	86	2.7	100	7.2	57	2.0	37	0.29	45	0.08	111	0.00
16	82	2.3	74	4.2	55	1.7	38	0.28	69	0.11	116	0.00
17	77	1.9	65	3.2	62	1.6	38	0.26	67	0.09	121	0.00
18	72	1.5	57	2.5	59	1.4	99	0.92	69	0.09	126	0.00
19	67	1.3	50	2.0	53	1.2	91	0.69	72	0.08	131	0.00
20	63	1.2	42	1.5	49	0.99	63	0.44	73	0.07	137	0.00
21	59	1.1	42	1.5	45	0.85	50	0.34	68	0.05	142	0.00
22	100	3.6	41	1.3	41	0.73	53	0.33	60	0.04	147	0.00
23	64	1.6	39	1.2	39	0.66	57	0.33	60	0.03	152	0.00
24	51	1.2	33	0.95	39	0.63	46	0.24	63	0.03	155	0.00
25	49	1.0	27	0.75	47	0.79	43	0.21	65	0.04	126	0.00
26	47	0.90	23	0.60	45	0.69	58	0.40	64	0.05	110	0.00
27	42	0.71	19	0.46	44	0.65	53	0.31	63	0.04	104	0.00
28	43	0.68	17	0.38	45	0.70	52	0.26	58	0.02	98	0.00
29	50	0.79	15	0.34	41	0.61	56	0.27	55	0.02	95	0.00
30	50	0.77	14	0.28	35	0.50	51	0.24	53	0.02	89	0.00
31	---	---	13	0.25	---	---	52	0.26	52	0.01	---	---
TOTAL	---	80.51	---	464.76	---	88.76	---	11.95	---	2.80	---	0.04
YEAR	809.78											

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued



05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--July 1995 to September 30, 2005 (discontinued).

INSTRUMENTATION.--Tipping bucket rain gage.

REMARKS.--Records good except for winter period, which is poor due to intermittent snow accumulation and subsequent melting.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily accumulation, 2.62 in., November 3, 2003.

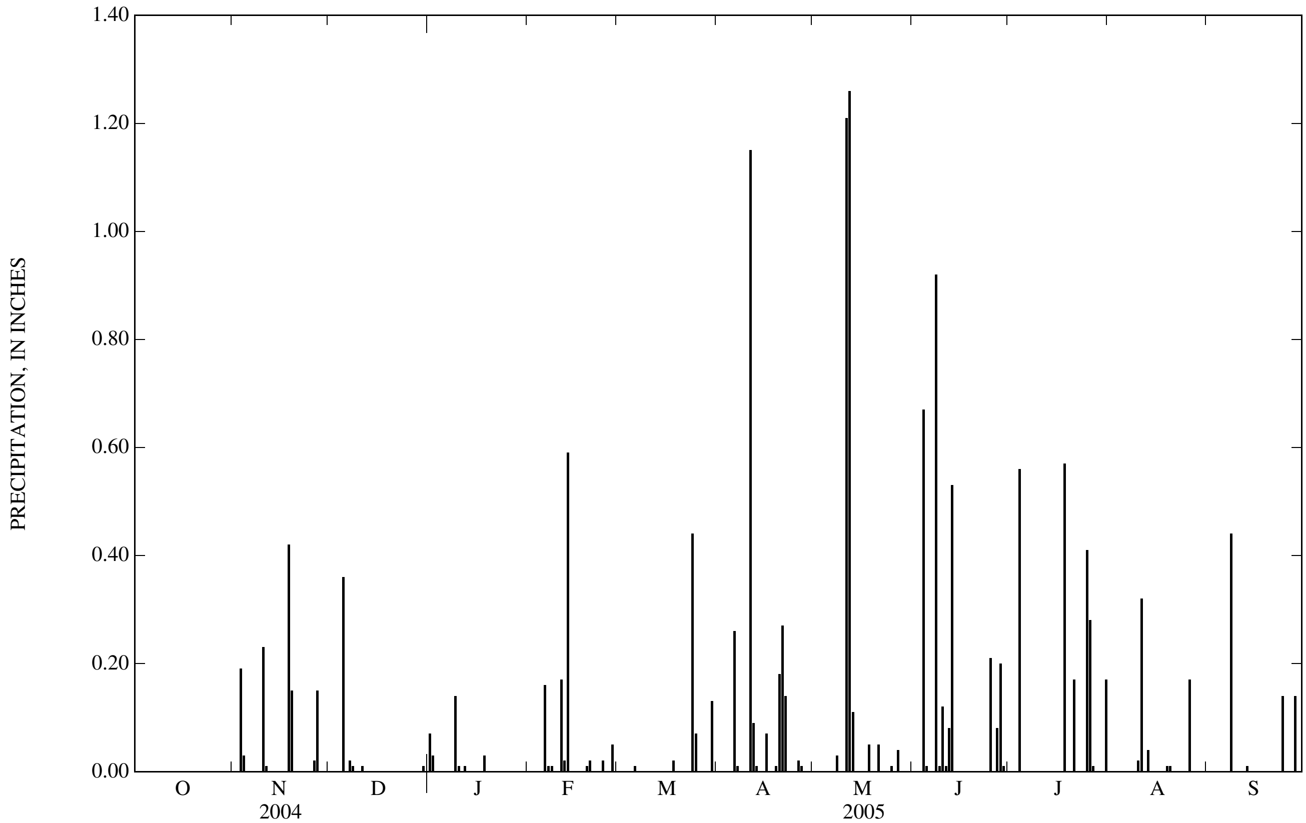
EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 1.26 in., April 12, 2005.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	---	---	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	---	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	---	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.56	0.00	0.00
5	---	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
6	---	0.00	0.00	0.00	0.16	0.01	0.26	0.00	0.00	0.00	0.00	0.00
7	---	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
8	---	0.00	0.01	0.00	0.01	0.00	0.00	0.03	0.92	0.00	0.00	0.44
9	---	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
10	---	0.23	0.00	0.01	0.00	0.00	0.00	0.00	0.12	0.00	0.02	0.00
11	---	0.01	0.01	0.00	0.17	0.00	1.15	1.21	0.01	0.00	0.32	0.00
12	---	0.00	0.00	0.01	0.02	0.00	0.09	1.26	0.08	0.00	0.00	0.00
13	---	0.00	0.00	0.00	0.59	0.00	0.01	0.11	0.53	0.00	0.04	0.01
14	---	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
16	---	0.00	0.00	0.00	0.00	0.00	0.07	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	e0.00	0.00
18	---	0.42	0.00	0.03	0.00	0.02	0.00	0.05	0.00	0.57	e0.00	0.00
19	---	0.15	0.00	0.00	0.01	0.00	0.01	0.00	0.00	e0.00	0.01	0.00
20	---	0.00	0.00	0.00	0.02	0.00	0.18	0.00	0.00	e0.00	0.01	0.00
21	---	0.00	0.00	0.00	0.00	0.00	0.27	0.05	0.00	0.17	0.00	0.00
22	---	0.00	0.00	0.00	0.00	0.00	0.14	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
24	---	0.00	0.00	0.00	0.02	0.44	0.00	0.00	0.00	0.00	0.00	0.14
25	---	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.21	0.41	0.00	0.00
26	---	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.28	0.17	0.00
27	---	0.15	0.00	0.00	0.05	0.00	0.01	0.04	0.08	0.01	0.00	0.00
28	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.14
29	---	0.00	0.00	0.00	---	0.00	0.00	0.00	0.01	0.00	0.00	0.00
30	---	0.00	0.01	0.00	---	0.13	0.00	0.00	0.00	0.00	0.00	0.00
31	---	---	0.00	0.00	---	0.00	---	0.00	---	0.17	0.00	---
TOTAL	---	---	0.41	0.29	1.06	0.67	2.22	2.76	2.85	2.17	0.57	0.73
MEAN	---	---	0.01	0.01	0.04	0.02	0.07	0.09	0.10	0.07	0.02	0.02
MAX	---	---	0.36	0.14	0.59	0.44	1.15	1.26	0.92	0.57	0.32	0.44
MIN	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

e Estimated

05487540 WALNUT CREEK NEAR PRAIRIE CITY, IA—Continued



05487550 WALNUT CREEK NEAR VANDALIA, IA

LOCATION.--Lat 41°32'13", long 93°15'32", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.27, T.78 N., R.21 W., Jasper County, Hydrologic Unit 07100008, on right bank downstream side of bridge.

DRAINAGE AREA.--20.3 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1994 to September 30, 2005 (discontinued).

GAGE.--Water-stage recorder. Concrete control. Datum of gage is 785.15 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	6.5	5.3	4.6	e3.5	14	11	19	16	10	4.3	0.19
2	3.0	12	5.2	e4.5	e4.7	e12	10	19	15	10	3.8	0.15
3	2.7	7.4	5.2	e4.0	e8.0	13	10	18	14	9.5	3.5	0.15
4	2.4	7.0	5.2	e3.7	e9.0	13	10	17	17	12	3.3	0.13
5	2.3	6.2	5.2	e2.8	e7.5	12	10	17	45	10	3.1	0.13
6	2.3	6.0	8.9	e2.9	e8.2	12	12	16	18	9.2	2.7	0.10
7	2.2	5.4	7.6	e3.2	e8.5	12	18	16	16	8.6	2.6	0.10
8	3.5	4.9	6.8	e3.2	e7.3	12	13	16	93	8.0	2.3	0.50
9	1.9	4.9	6.7	e3.1	e6.1	11	13	15	53	7.3	1.7	0.66
10	2.0	4.9	6.7	e3.6	5.9	11	12	15	29	6.9	1.3	0.31
11	1.8	5.3	6.2	e3.8	6.2	11	42	101	26	6.7	2.6	0.19
12	1.9	4.8	e5.5	e3.8	6.6	11	181	177	22	6.2	2.9	0.14
13	1.7	4.7	e4.5	e3.6	114	e8.3	82	552	21	5.8	2.2	0.14
14	1.7	4.6	e4.5	e2.9	76	e9.5	62	118	61	5.6	2.3	0.22
15	1.9	4.5	5.6	e3.2	44	e10	49	82	24	5.3	1.6	0.19
16	1.9	4.5	5.8	e2.9	30	11	38	67	21	5.0	1.3	0.14
17	1.4	4.6	5.4	e2.9	24	11	34	53	18	4.7	1.1	0.10
18	1.6	4.9	e4.4	e2.9	21	11	30	48	17	8.0	0.58	0.07
19	4.1	8.1	e3.4	e3.3	20	11	28	44	16	5.0	0.54	0.14
20	2.8	8.0	e5.0	e3.0	21	10	38	33	15	4.6	0.42	0.01
21	2.1	7.0	e4.6	e3.1	19	10	32	31	14	6.4	0.38	0.01
22	2.3	6.6	e4.0	e2.9	17	10	112	28	14	4.9	0.26	0.01
23	2.3	6.5	e3.5	e3.3	16	10	58	24	14	4.4	0.31	0.01
24	1.8	6.2	e3.3	e4.2	16	11	43	22	13	3.9	0.37	0.01
25	1.7	5.8	e3.4	e3.4	16	19	35	21	14	3.7	0.65	0.01
26	2.9	5.9	4.8	e5.1	15	15	30	21	13	7.0	0.54	0.02
27	4.4	6.2	4.6	e4.2	15	13	25	18	12	5.0	0.76	0.02
28	3.2	5.5	4.8	e3.6	14	13	22	17	12	4.1	0.38	0.03
29	2.8	5.5	4.8	e3.5	---	12	22	17	12	3.9	0.34	0.03
30	4.6	5.4	5.9	e3.4	---	12	20	16	11	3.7	0.24	0.04
31	3.5	---	5.4	e3.3	---	12	---	16	---	4.6	0.21	---
TOTAL	77.5	179.8	162.2	107.9	559.5	362.8	1,102	1,674	686	200.0	48.58	3.95
MEAN	2.50	5.99	5.23	3.48	20.0	11.7	36.7	54.0	22.9	6.45	1.57	0.13
MAX	4.6	12	8.9	5.1	114	19	181	552	93	12	4.3	0.66
MIN	1.4	4.5	3.3	2.8	3.5	8.3	10	15	11	3.7	0.21	0.01
AC-FT	154	357	322	214	1,110	720	2,190	3,320	1,360	397	96	7.8
CFSM	0.12	0.30	0.26	0.17	0.98	0.58	1.81	2.66	1.13	0.32	0.08	0.01
IN.	0.14	0.33	0.30	0.20	1.03	0.66	2.02	3.07	1.26	0.37	0.09	0.01

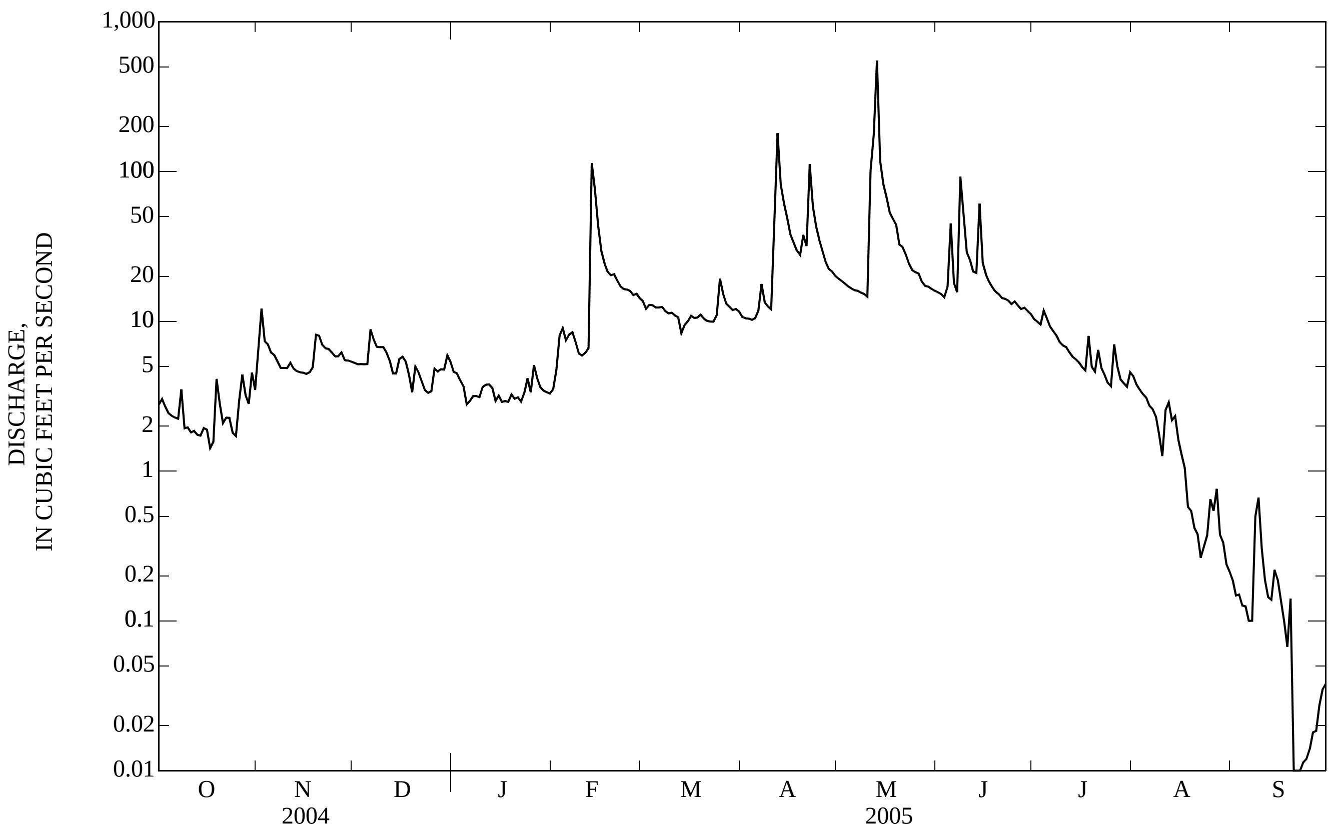
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.34	5.66	3.69	3.41	17.4	17.6	20.6	44.9	30.8	18.0	7.84	2.24
MAX	8.36	19.1	8.64	10.3	58.8	66.3	47.4	86.1	97.8	42.4	31.2	7.02
(WY)	(2003)	(2004)	(2004)	(1998)	(1996)	(2001)	(1995)	(1996)	(1998)	(1998)	(1999)	(1999)
MIN	0.21	0.49	0.27	0.79	1.32	3.82	5.62	14.3	15.2	6.40	1.57	0.13
(WY)	(1995)	(1995)	(2001)	(2003)	(2003)	(2000)	(1996)	(2002)	(1995)	(2001)	(2005)	(2005)

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	5,466.2		5,164.23			
ANNUAL MEAN	14.9		14.1		14.6	
HIGHEST ANNUAL MEAN					27.5	1998
LOWEST ANNUAL MEAN					7.13	2002
HIGHEST DAILY MEAN	225	May 25	552	May 13	573	May 24, 1996
LOWEST DAILY MEAN	1.4	Oct 17	0.01	Sep 20 a	0.01	Sep 20, 2005 a
ANNUAL SEVEN-DAY MINIMUM	1.7	Oct 12	0.01	Sep 20	0.01	Sep 20, 2005
MAXIMUM PEAK FLOW			1,240	May 13	1,380	Jun 14, 1998
MAXIMUM PEAK STAGE			10.39	May 13	10.85	Jun 14, 1998
INSTANTANEOUS LOW FLOW					0.01	Jan 8, 1996
ANNUAL RUNOFF (AC-FT)	10,840		10,240		10,580	
ANNUAL RUNOFF (CFSM)	0.736		0.697		0.719	
ANNUAL RUNOFF (INCHES)	10.02		9.46		9.77	
10 PERCENT EXCEEDS	27		28		31	
50 PERCENT EXCEEDS	8.2		5.9		5.9	
90 PERCENT EXCEEDS	3.0		0.40		0.68	

a Also Sept. 21-25.
e Estimated.



05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1995 to September 30, 2005 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1995 to September 30, 2005 (discontinued).
WATER TEMPERATURES: March 1995 to September 30, 2005 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: March 1995 to September 30, 2005 (discontinued).

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 771 microsiemens Oct. 10, 1995; minimum daily, 137 microsiemens Feb. 18, 1997.
WATER TEMPERATURES: Maximum daily, 33.5°C Aug. 1, 2001; minimum daily, 0.0°C many days in winter.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,120 mg/L Mar. 30, 1998; minimum daily mean, 4.0 mg/L Feb. 15, 17, 19, 21, 2001.
SEDIMENT LOADS: Maximum daily, 4,600 tons Mar. 30, 1998; minimum daily, 0.00 tons Sept. 4-10, 2003, Oct. 9, 2003, and Sept. 20-30, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 573 microsiemens Aug. 14; minimum daily, 268 microsiemens Feb. 13.
WATER TEMPERATURES: Maximum daily, 32.0°C July 23; minimum daily, 0.0°C Dec. 14, 21, 26, Jan. 15, and Jan. 26.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,620 mg/L Feb. 12; minimum daily mean, 13 mg/L Feb. 1.
SEDIMENT LOADS: Maximum daily, 2,740 tons May 13; minimum daily, 0.00 tons Sept. 20-30.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	469	---	---	461	477	---	---	---
2	---	---	440	---	456	---	---	---	511	---	---	522
3	---	---	---	418	---	---	433	---	487	---	555	---
4	---	515	---	---	401	482	471	483	499	498	553	---
5	525	---	---	---	428	---	465	496	---	---	506	---
6	---	---	424	---	---	487	478	490	---	---	527	516
7	---	491	---	---	---	---	460	492	514	539	---	---
8	---	491	---	---	514	---	461	---	319	---	---	431
9	460	475	423	---	---	483	---	---	492	---	---	---
10	541	420	---	417	479	---	---	490	509	---	527	448
11	543	---	452	---	475	---	---	---	---	534	---	---
12	---	456	---	---	---	---	---	430	512	541	495	486
13	---	---	---	---	268	---	462	373	511	538	---	489
14	---	---	407	---	---	---	472	464	494	545	573	---
15	511	---	454	463	---	---	---	---	512	549	552	---
16	---	---	---	---	---	---	---	488	515	---	541	---
17	---	---	---	---	---	---	---	494	519	---	528	---
18	---	---	---	482	---	---	---	---	---	461	---	---
19	---	480	---	402	---	---	---	495	521	560	547	---
20	504	493	---	---	482	446	---	499	---	---	523	---
21	---	---	392	---	---	---	470	493	---	---	---	---
22	560	518	---	---	---	---	444	---	525	537	514	---
23	555	464	419	---	---	---	---	504	527	544	---	---
24	542	483	---	---	483	---	---	---	528	---	---	557
25	---	---	---	440	481	---	---	505	---	---	479	551
26	524	429	441	418	---	483	---	501	---	---	514	---
27	543	---	449	---	457	471	484	505	---	548	494	---
28	559	451	---	447	488	475	471	---	---	560	466	557
29	---	---	438	437	---	460	---	---	532	---	---	---
30	---	453	372	431	---	458	---	---	540	---	---	---
31	507	---	447	---	---	---	---	510	---	---	---	---

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	0.5	---	---	8.1	20.1	---	---	---
2	---	---	3.9	---	0.7	---	---	---	21.4	---	---	18.9
3	---	---	---	0.4	---	---	13.5	---	17.7	---	24.8	---
4	---	7.0	---	---	3.5	7.6	18.6	16.0	22.7	21.6	26.3	---
5	---	---	---	---	1.1	---	19.5	16.7	---	---	25.6	---
6	---	---	3.9	---	---	11.0	13.2	17.4	---	---	22.0	22.9
7	---	10.3	---	---	---	---	15.3	20.9	23.6	23.9	---	---
8	---	8.7	---	---	0.2	---	15.8	---	17.6	---	---	19.4
9	---	6.9	6.8	---	---	0.2	---	---	19.1	---	---	---
10	---	11.6	---	0.1	1.1	---	---	21.5	18.6	---	28.1	23.0
11	---	---	4.6	---	1.4	---	---	---	---	27.3	---	---
12	---	5.1	---	---	---	---	---	10.1	17.6	27.5	23.1	24.7
13	---	---	---	---	1.8	---	10.2	13.3	19.8	26.2	---	---
14	---	---	0.0	---	---	---	11.3	12.9	17.7	23.4	19.2	---
15	---	---	1.8	0.0	---	---	---	---	18.2	25.6	20.3	---
16	---	---	---	---	---	---	---	14.5	18.6	---	22.7	---
17	---	---	---	---	---	---	---	16.3	21.8	---	25.6	---
18	---	---	---	0.3	---	---	---	---	---	27.2	---	---
19	---	12.8	---	0.3	---	---	---	20.7	18.3	27.8	25.4	---
20	---	9.9	---	---	---	7.4	---	14.9	---	---	28.3	---
21	---	---	0.0	---	---	---	12.0	16.2	---	---	---	---
22	---	8.9	---	---	---	---	12.8	---	25.8	29.7	26.4	---
23	---	6.8	1.0	---	---	---	---	20.3	25.0	32.0	---	---
24	---	4.5	---	---	4.1	---	---	---	26.3	---	---	20.9
25	---	---	---	0.3	1.3	---	---	16.5	---	---	22.7	20.9
26	---	6.2	0.0	0.0	---	6.0	---	15.7	---	---	25.4	---
27	---	---	0.6	---	5.5	7.8	---	14.9	---	22.9	26.2	---
28	---	4.1	---	0.2	1.4	12.1	10.4	---	---	25.1	22.1	16.3
29	---	---	1.4	1.3	---	---	---	---	24.5	---	---	---
30	---	3.7	2.8	0.5	---	12.9	---	---	24.8	---	---	---
31	---	---	0.6	---	---	---	---	16.7	---	---	---	---

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

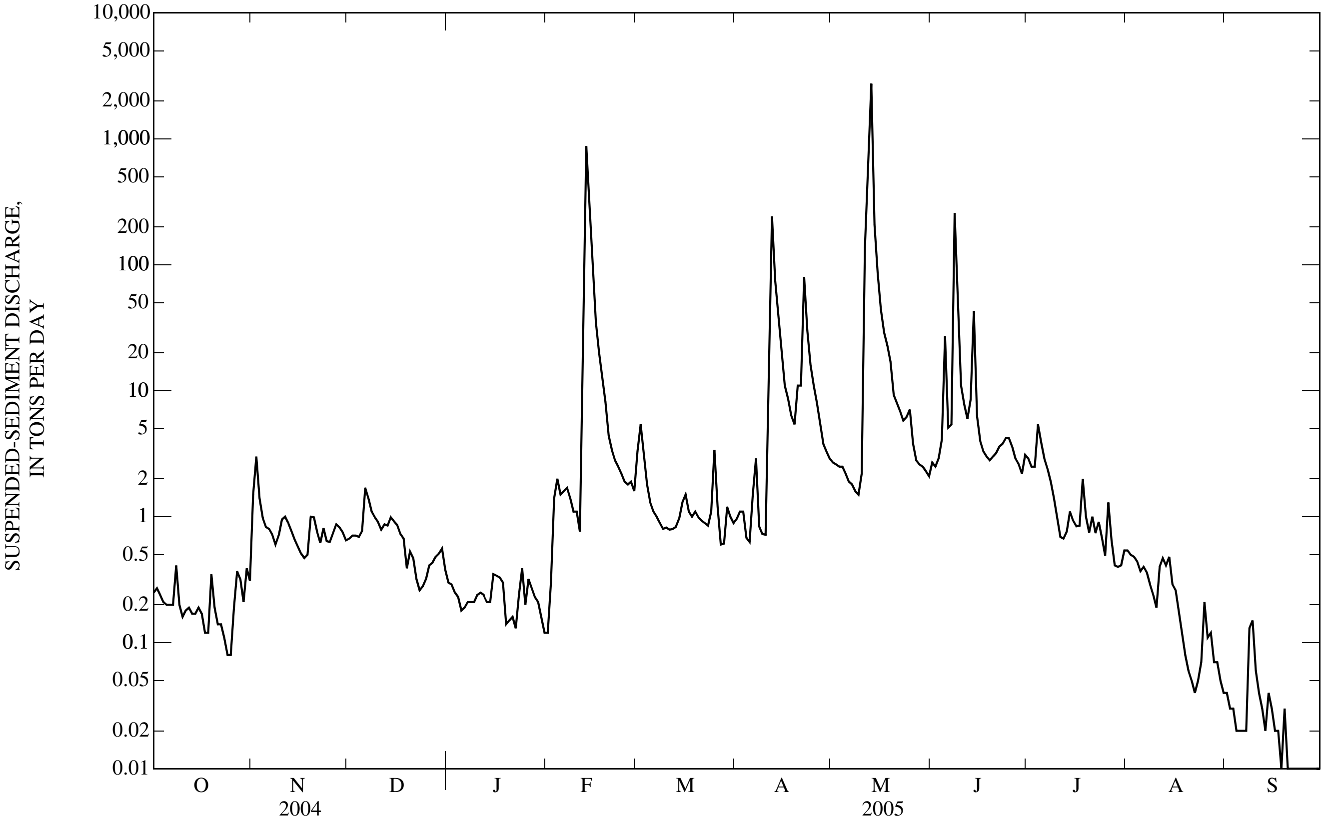
Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	33	0.25	75	1.5	47	0.67	24	0.30	13	0.12	86	3.3
2	33	0.27	91	3.0	51	0.71	24	0.29	24	0.30	166	5.4
3	33	0.24	70	1.4	51	0.71	23	0.25	67	1.4	92	3.2
4	32	0.21	51	0.98	49	0.69	23	0.23	84	2.0	52	1.8
5	31	0.20	49	0.83	55	0.77	24	0.18	72	1.5	38	1.3
6	32	0.20	50	0.80	70	1.7	24	0.19	71	1.6	34	1.1
7	32	0.20	50	0.72	68	1.4	24	0.21	73	1.7	31	1.0
8	42	0.41	45	0.60	61	1.1	24	0.21	73	1.4	28	0.89
9	38	0.20	54	0.71	55	0.99	25	0.21	69	1.1	26	0.80
10	31	0.16	72	0.95	50	0.91	25	0.24	69	1.1	26	0.82
11	37	0.18	73	1.0	47	0.79	24	0.25	45	0.76	27	0.79
12	37	0.19	69	0.89	53	0.87	23	0.24	342	6.4	28	0.80
13	37	0.17	61	0.77	61	0.85	22	0.21	2,620	874	37	0.83
14	36	0.17	53	0.66	68	0.99	27	0.21	1,620	345	38	0.97
15	35	0.19	47	0.58	61	0.92	41	0.35	918	110	49	1.3
16	33	0.17	43	0.51	55	0.86	43	0.34	428	35	51	1.5
17	30	0.12	38	0.47	50	0.73	42	0.33	303	20	38	1.1
18	27	0.12	38	0.50	46	0.67	38	0.30	225	13	36	1.0
19	31	0.35	46	1.0	42	0.39	16	0.14	148	8.1	36	1.1
20	25	0.19	46	0.99	37	0.53	19	0.15	80	4.4	35	0.99
21	24	0.14	40	0.76	33	0.47	19	0.16	66	3.4	34	0.93
22	23	0.14	35	0.62	27	0.32	17	0.13	61	2.8	33	0.89
23	18	0.11	46	0.81	25	0.26	27	0.24	56	2.5	32	0.85
24	15	0.08	38	0.64	27	0.28	34	0.39	50	2.2	36	1.1
25	16	0.08	40	0.63	29	0.32	22	0.20	45	1.9	65	3.4
26	23	0.19	47	0.74	31	0.41	23	0.32	45	1.8	27	1.2
27	29	0.37	52	0.87	35	0.43	24	0.27	46	1.9	17	0.60
28	35	0.32	56	0.82	37	0.48	24	0.23	41	1.6	18	0.61
29	27	0.21	51	0.75	39	0.51	22	0.21	---	---	36	1.2
30	32	0.39	45	0.65	35	0.56	17	0.16	---	---	31	1.0
31	34	0.31	---	---	26	0.38	14	0.12	---	---	28	0.89
TOTAL	---	6.53	---	26.15	---	21.67	---	7.26	---	1,446.98	---	42.66

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	33	0.96	51	2.7	64	2.7	103	2.9	47	0.54	74	0.04
2	38	1.1	51	2.6	61	2.5	92	2.5	49	0.50	74	0.03
3	40	1.1	52	2.5	74	2.9	97	2.5	52	0.48	73	0.03
4	25	0.68	53	2.5	83	4.1	167	5.4	50	0.44	73	0.02
5	22	0.63	48	2.2	206	27	137	3.9	44	0.37	72	0.02
6	44	1.5	44	1.9	104	5.1	115	2.9	55	0.40	74	0.02
7	57	2.9	41	1.8	129	5.4	103	2.4	51	0.36	87	0.02
8	23	0.84	38	1.6	857	257	87	1.9	46	0.29	96	0.13
9	22	0.73	36	1.5	390	63	70	1.4	51	0.24	85	0.15
10	22	0.72	57	2.2	134	11	53	1.0	57	0.19	74	0.06
11	125	32	447	137	112	7.8	38	0.69	58	0.40	76	0.04
12	482	242	1,020	703	103	6.0	40	0.67	61	0.47	79	0.03
13	336	75	1,510	2,740	152	8.5	49	0.76	70	0.41	66	0.02
14	219	37	639	208	228	43	72	1.1	77	0.48	62	0.04
15	147	20	378	85	94	6.3	65	0.93	66	0.29	60	0.03
16	111	11	238	44	71	4.0	63	0.84	74	0.26	59	0.02
17	95	8.7	203	29	67	3.3	67	0.85	70	0.18	57	0.02
18	79	6.4	174	23	65	3.0	93	2.0	79	0.12	59	0.01
19	72	5.4	140	17	65	2.8	74	1.0	54	0.08	66	0.03
20	100	11	105	9.3	74	3.0	60	0.75	50	0.06	61	0.00
21	132	11	94	8.0	84	3.2	57	1.0	50	0.05	54	0.00
22	259	80	90	6.9	94	3.6	56	0.74	51	0.04	52	0.00
23	188	30	88	5.8	102	3.8	76	0.91	60	0.05	55	0.00
24	135	16	105	6.2	120	4.2	65	0.68	72	0.07	79	0.00
25	113	11	123	7.1	116	4.2	49	0.49	117	0.21	57	0.00
26	100	8.0	67	3.8	103	3.6	67	1.3	81	0.11	51	0.00
27	80	5.4	57	2.8	90	2.9	48	0.65	58	0.12	63	0.00
28	63	3.8	56	2.6	77	2.6	37	0.41	72	0.07	74	0.00
29	57	3.3	53	2.5	69	2.2	38	0.40	75	0.07	70	0.00
30	54	2.9	51	2.3	103	3.1	41	0.41	75	0.05	48	0.00
31	---	---	49	2.1	---	---	44	0.54	74	0.04	---	---
TOTAL	---	631.06	---	4,066.9	---	501.8	---	43.92	---	7.44	---	0.76
YEAR	6,803.13											

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued



05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--April 1995 to September 30, 2005 (discontinued).

INSTRUMENTATION.--Tipping bucket rain gage.

REMARKS.--Records good except for the winter period, which is poor due to intermittent snow accumulation and subsequent melting.

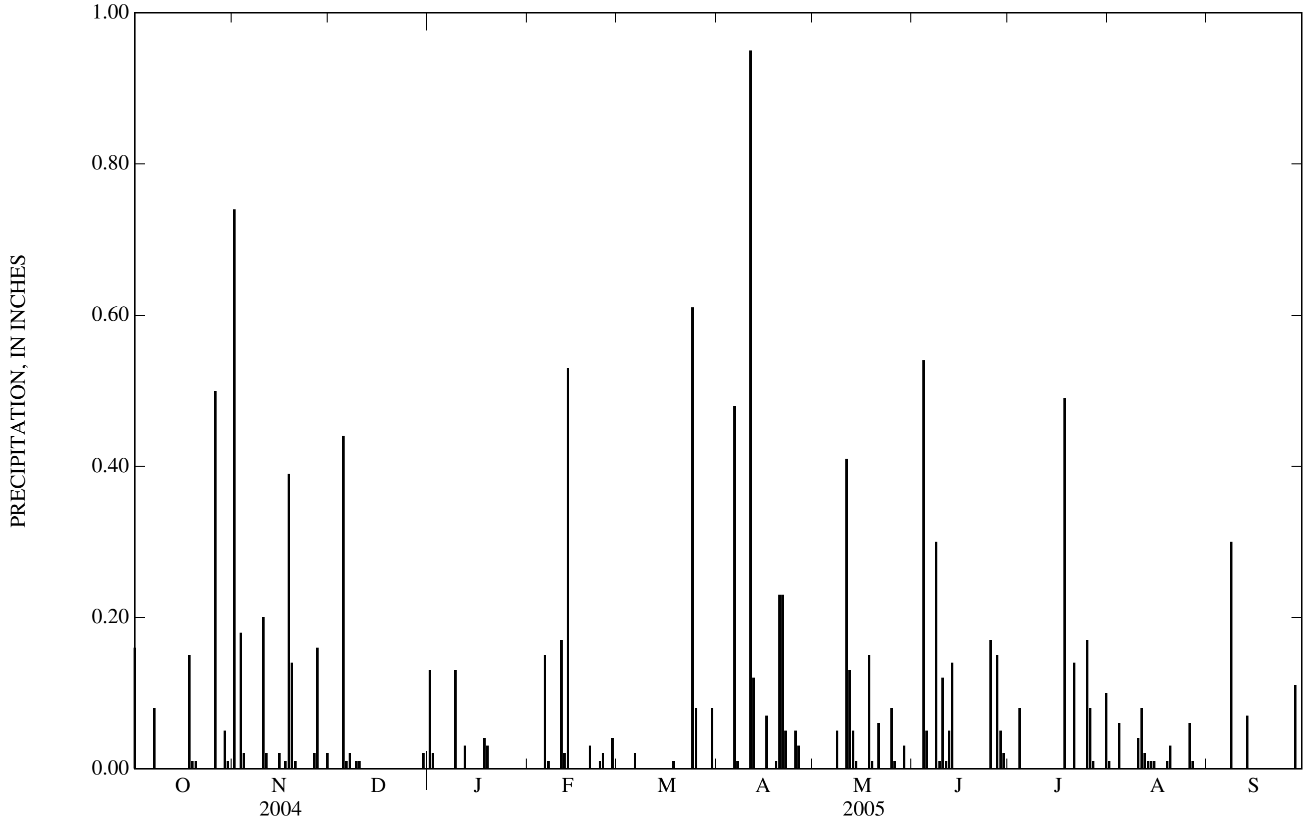
EXTREMES FOR PERIOD OF RECORD.--Maximum daily accumulation, 4.72 in., May 9, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum daily accumulation, 0.95 in., April 11.

PRECIPITATION, TOTAL, INCHES
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.16	0.74	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
2	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.08	0.06	0.00
5	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
6	0.00	0.00	0.01	0.00	0.15	0.02	0.48	0.00	0.00	0.00	0.00	0.00
7	0.08	0.00	0.02	0.00	0.01	0.00	0.01	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	0.05	0.30	0.00	0.00	0.30
9	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
10	0.00	0.20	0.01	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.04	0.00
11	0.00	0.02	0.00	0.00	0.17	0.00	0.95	0.41	0.01	0.00	0.08	0.00
12	0.00	0.00	0.00	0.03	0.02	0.00	0.12	0.13	0.05	0.00	0.02	0.00
13	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.05	0.14	0.00	0.01	0.07
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
15	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
17	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.15	0.39	0.00	0.04	0.00	0.01	0.00	0.15	0.00	0.49	0.00	0.00
19	0.01	0.14	0.00	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00
20	0.01	0.01	0.00	0.00	0.03	0.00	0.23	0.00	0.00	0.00	0.03	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.06	0.00	0.14	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.02	0.61	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.08	0.17	0.17	0.00	0.00
26	0.50	0.02	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.08	0.06	0.00
27	0.00	0.16	0.00	0.00	0.04	0.00	0.00	0.00	0.15	0.01	0.01	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.11
29	0.05	0.00	0.00	0.00	---	0.00	0.00	0.03	0.02	0.00	0.00	0.00
30	0.01	0.02	0.02	0.00	---	0.08	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.10	0.00	---
TOTAL	0.97	1.93	0.51	0.38	0.98	0.80	2.23	0.99	1.61	1.07	0.35	0.48
MEAN	0.03	0.06	0.02	0.01	0.04	0.03	0.07	0.03	0.05	0.03	0.01	0.02
MAX	0.50	0.74	0.44	0.13	0.53	0.61	0.95	0.41	0.54	0.49	0.08	0.30
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

05487550 WALNUT CREEK NEAR VANDALIA, IA—Continued



05487980 WHITE BREAST CREEK NEAR DALLAS, IA

LOCATION.--Lat 41°14'49", long 93°15'57", in NW$\frac{1}{4}$ NW$\frac{1}{4}$ sec.3, T.74 N., R.21 W., Marion County, Hydrologic Unit 07100008, on left bank 15 ft downstream from bridge on county highway, 0.5 mi downstream from Kirk Branch, 1.7 mi northwest of Dallas, and 20.7 mi upstream from mouth.

DRAINAGE AREA.--342 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 759.21 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 11, 1962 reached a stage of 28.87 ft, from floodmark, discharge, about 12,000 ft^3/s. Flood of June 6, 1947 may have been slightly higher.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	19	14	e34	e36	64	43	111	44	130	7.6	2.4
2	12	42	14	e26	e63	61	39	99	36	64	6.9	2.2
3	16	34	14	e24	e112	65	37	89	30	32	7.0	2.1
4	14	35	14	e21	e157	64	36	84	48	29	6.8	1.9
5	11	36	15	e19	e178	62	35	77	773	21	6.0	1.8
6	8.2	36	37	e14	e226	55	591	73	649	17	5.7	1.9
7	7.3	29	50	e14	e253	60	3,550	70	164	14	5.9	1.9
8	8.3	22	57	e13	e210	54	1,200	65	105	11	5.8	3.2
9	8.3	19	38	e15	e214	50	397	59	97	10	5.7	2.7
10	8.1	16	29	e15	222	49	255	64	537	9.6	5.8	2.0
11	7.8	19	24	e19	221	47	599	93	660	9.2	8.6	2.0
12	7.5	18	21	e23	197	45	5,620	204	311	8.3	11	2.1
13	7.4	14	e13	e21	1,710	39	1,530	1,390	741	7.8	27	1.9
14	7.7	14	e12	e19	1,660	39	557	917	752	7.5	37	1.8
15	8.2	14	e14	e16	585	36	323	298	271	7.4	29	1.7
16	7.5	14	e15	e14	306	38	219	178	147	7.6	19	1.7
17	7.2	14	e14	e12	199	37	178	134	102	7.4	9.9	1.8
18	7.3	16	e17	e13	161	37	152	175	74	13	6.6	1.7
19	9.6	22	e14	e15	142	36	163	196	58	14	5.0	1.8
20	12	26	e17	e16	146	34	166	132	47	15	5.1	1.8
21	9.8	21	e17	e18	145	33	209	91	40	14	4.3	1.7
22	9.1	19	e14	e17	129	32	577	74	35	10	3.8	1.7
23	9.6	20	e12	e17	111	32	747	62	30	7.3	3.5	2.0
24	9.0	19	e11	e19	105	36	306	52	27	6.4	3.3	2.5
25	8.9	16	e12	e22	98	69	259	44	23	5.9	3.5	2.0
26	9.1	17	e13	e23	91	66	298	48	23	19	3.7	1.6
27	23	18	e14	e22	86	59	205	42	19	32	3.7	e1.5
28	17	17	e19	e24	94	54	168	38	47	20	3.6	e2.5
29	28	15	e18	e26	---	48	150	38	65	17	3.6	e2.3
30	26	14	e26	e27	---	47	131	55	82	11	3.3	e2.1
31	16	---	e31	e29	---	53	---	47	---	8.8	2.8	---
TOTAL	352.9	635	630	607	7,857	1,501	18,740	5,099	6,037	586.2	260.5	60.3
MEAN	11.4	21.2	20.3	19.6	281	48.4	625	164	201	18.9	8.40	2.01
MAX	28	42	57	34	1,710	69	5,620	1,390	773	130	37	3.2
MIN	7.2	14	11	12	36	32	35	38	19	5.9	2.8	1.5
AC-FT	700	1,260	1,250	1,200	15,580	2,980	37,170	10,110	11,970	1,160	517	120
CFSM	0.03	0.06	0.06	0.06	0.82	0.14	1.83	0.48	0.59	0.06	0.02	0.01
IN.	0.04	0.07	0.07	0.07	0.85	0.16	2.04	0.55	0.66	0.06	0.03	0.01

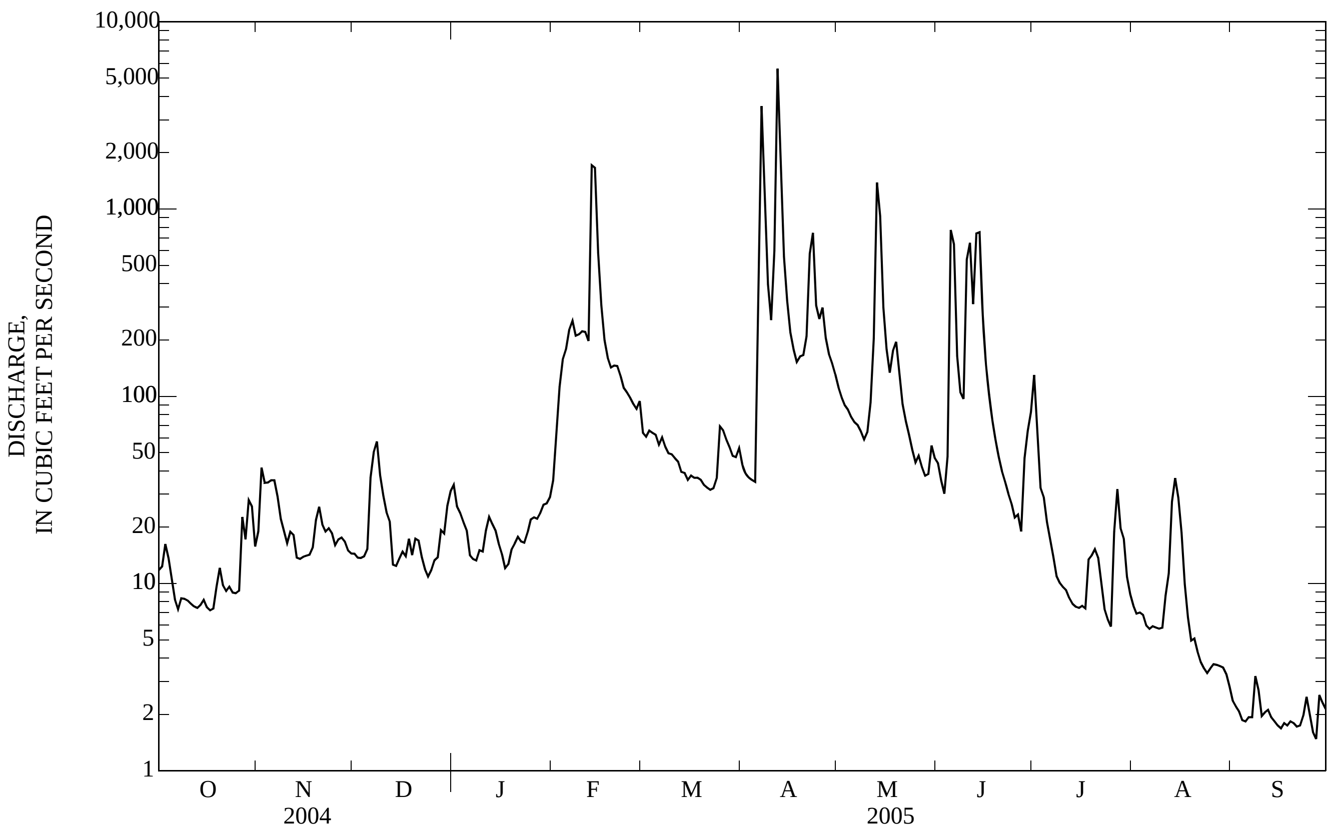
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	109	104	98.6	59.2	164	335	433	397	287	262	120	168
MAX	1,153	756	718	601	718	1,056	1,592	1,823	1,146	3,641	1,202	1,902
(WY)	(1974)	(1984)	(1983)	(1974)	(1973)	(1998)	(1991)	(1996)	(1967)	(1993)	(1993)	(1992)
MIN	1.16	1.35	0.80	0.49	1.82	4.05	3.85	6.44	5.13	1.47	2.09	1.11
(WY)	(1990)	(1977)	(1964)	(1977)	(1964)	(1964)	(1989)	(1980)	(1977)	(1988)	(1971)	(1968)

05487980 WHITE BREAST CREEK NEAR DALLAS, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	66,766.5		42,365.9			
ANNUAL MEAN	182		116		211	
HIGHEST ANNUAL MEAN					816	1993
LOWEST ANNUAL MEAN					17.1	1989
HIGHEST DAILY MEAN	4,440	Aug 28	5,620	Apr 12	24,700	Sep 16, 1992
LOWEST DAILY MEAN	5.9	Jan 31	1.5	Sep 27	0.02	Oct 14, 1989
ANNUAL SEVEN-DAY MINIMUM	7.5	Jan 7	1.7	Sep 15	0.05	Aug 9, 1989
MAXIMUM PEAK FLOW			8,480	Apr 12	37,300	Jul 16, 1982
MAXIMUM PEAK STAGE			21.27	Apr 12	33.45	Jul 16, 1982
INSTANTANEOUS LOW FLOW			1.4	Sep 16 a		
ANNUAL RUNOFF (AC-FT)	132,400		84,030		153,100	
ANNUAL RUNOFF (CFSM)	0.533		0.339		0.618	
ANNUAL RUNOFF (INCHES)	7.26		4.61		8.40	
10 PERCENT EXCEEDS	334		212		414	
50 PERCENT EXCEEDS	35		23		33	
90 PERCENT EXCEEDS	9.1		3.6		2.8	

a Also Sep. 18.
e Estimated.



05488100 LAKE RED ROCK NEAR PELLA, IA

LOCATION.--Lat 41°22'11", long 92°58'48", in NE1/4 NW1/4 sec.19, T.76 N., R.18 W., Marion County, Hydrologic Unit O7100008, at outlet works near right end of Red Rock Dam on Des Moines River, 3.0 mi upstream from Lake Creek, 4.5 mi southwest of Pella, and 139.2 mi (revised) upstream from mouth.

DRAINAGE AREA.--12,323 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is at NGVD 0f 1929 level (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in 1969. Storage began in March 1969. Releases controlled through 14 concrete conduits extending through the concrete ogee spillway section into the stilling basin. Inlet invert elevation at 690 ft above sea level. Maximum design discharge through the conduits is 37,500 ft^3/s but normal flood control operation limits maximum outflow to 30,000 ft^3/s. Spillway section consists of 5 tainter gates, 41 ft wide and 45 ft high, on concrete ogee crest at elevation 736 ft. The storage capacity of the reservoir at full flood-control pool level, 780 ft, is 1,489,900 acre-ft, surface area, 65,440 acres. Conservation pool level, 742 feet, is 265,500 acre-feet, surface area, 19,100 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Normal operation will maintain an elevation of 742 ft with minimum release of 300 ft^3/s and maximum release of 30,000 ft^3/s during the non-growing season, providing discharges at Ottumwa and Keosauqua do not exceed 30,000 ft^3/s and 35,000 ft^3/s respectively. Storage tables for water years 1985-1986 published as day second-feet instead of acre-feet storage. Prior to October 1, 2000 published as contents in acre feet, and as elevation in feet NGVD thereafter.

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

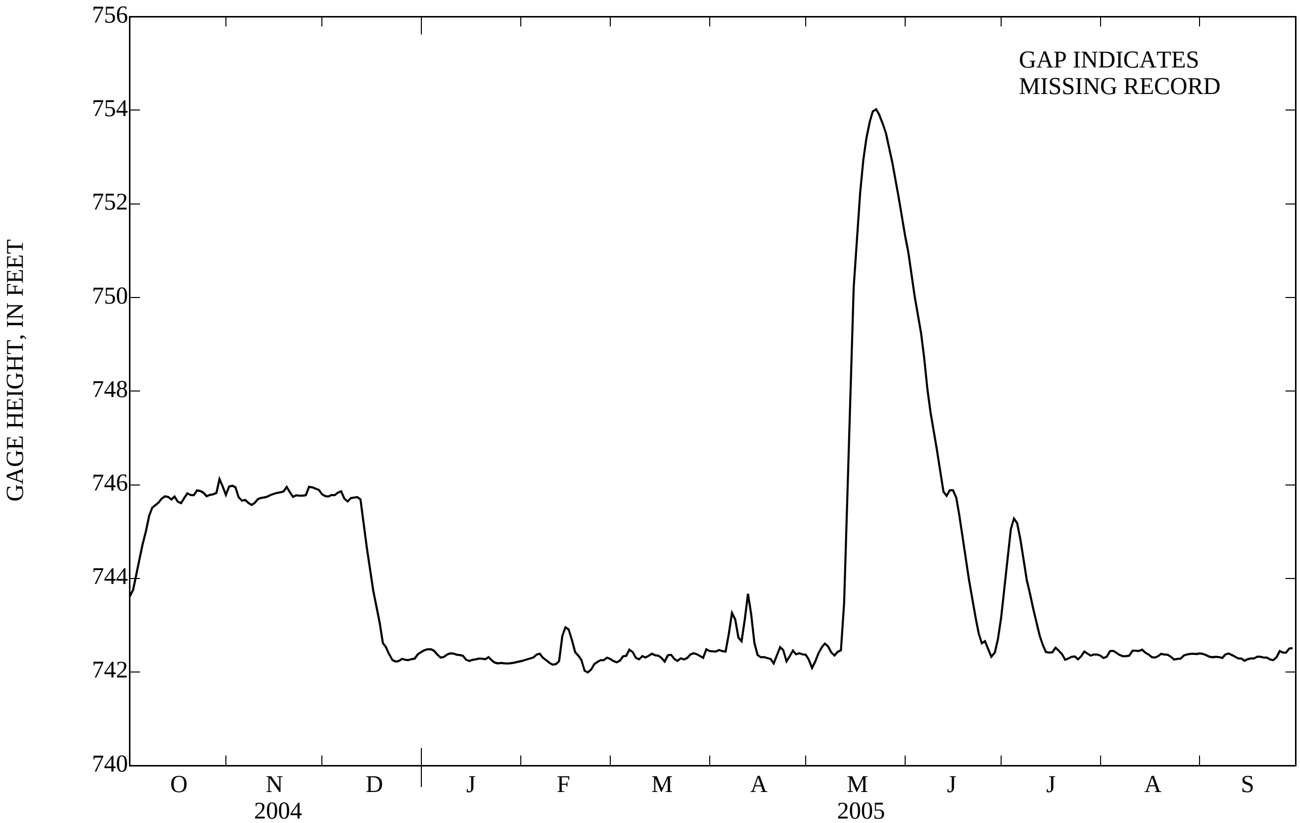
EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 782.67 ft July 13, 1993; minimum elevation, 719.68 ft Feb. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 756.28 ft May 18; minimum elevation, 742.04 ft July 30.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	743.53	745.75	745.77	742.43	742.23	742.26	742.41	742.37	751.23	743.29	742.34	742.40
2	743.64	746.03	745.75	742.47	742.25	742.22	742.45	742.22	750.89	743.85	742.28	742.38
3	743.78	745.96	745.75	742.49	742.27	742.20	742.43	742.04	750.37	744.49	742.34	742.35
4	744.17	745.94	745.79	742.48	742.29	742.25	742.48	742.28	749.91	745.22	742.48	742.32
5	744.49	745.66	745.77	742.44	742.31	742.36	742.43	742.44	749.54	745.29	742.44	742.31
6	744.81	745.66	745.85	742.35	742.39	742.34	742.44	742.55	749.14	745.14	742.40	742.33
7	745.06	745.68	745.86	742.29	742.39	742.52	742.93	742.62	748.55	744.73	742.35	742.31
8	745.41	745.59	745.65	742.33	742.27	742.39	743.37	742.52	747.86	744.28	742.33	742.29
9	745.54	745.56	745.64	742.38	742.24	742.27	743.04	742.38	747.42	743.86	742.34	742.40
10	745.57	745.63	745.74	742.40	742.18	742.27	742.63	742.34	747.01	743.61	742.35	742.39
11	745.63	745.71	745.72	742.39	742.15	742.36	742.67	742.46	746.63	743.27	742.49	742.35
12	745.73	745.72	745.74	742.36	742.17	742.29	743.27	742.46	746.18	743.01	742.44	742.32
13	745.76	745.73	745.67	742.36	742.25	742.36	743.80	743.81	745.74	742.71	742.45	742.28
14	745.73	745.75	745.03	742.34	742.93	742.40	743.04	746.70	745.77	742.54	742.48	742.29
15	745.67	745.79	744.52	742.23	742.96	742.34	742.48	749.27	745.92	742.39	742.39	742.22
16	745.77	745.81	744.11	742.23	742.89	742.35	742.32	750.54	745.87	742.42	742.37	742.29
17	745.59	745.83	743.61	742.27	742.62	742.28	742.31	751.62	745.68	742.42	742.30	742.29
18	745.61	745.84	743.31	742.27	742.36	742.20	742.32	752.43	745.21	742.55	742.31	742.29
19	745.75	745.86	742.97	742.29	742.35	742.41	742.29	753.11	744.74	742.42	742.34	742.34
20	745.84	745.98	742.50	742.28	742.22	742.35	742.27	753.52	744.30	742.37	742.40	742.32
21	745.76	745.79	742.54	742.27	741.96	742.25	742.15	753.82	743.85	742.22	742.36	742.30
22	745.78	745.72	742.32	742.33	742.00	742.23	742.42	754.03	743.48	742.31	742.37	742.31
23	745.91	745.79	742.23	742.22	742.06	742.31	742.56	754.02	743.08	742.33	742.31	742.25
24	745.85	745.76	742.22	742.19	742.20	742.25	742.43	753.87	742.75	742.33	742.25	742.25
25	745.82	745.77	742.24	742.18	742.22	742.31	742.16	753.67	742.57	742.25	742.29	742.33
26	745.73	745.78	742.29	742.20	742.26	742.39	742.39	753.47	742.69	742.36	742.28	742.48
27	745.80	746.01	742.25	742.18	742.25	742.40	742.48	753.13	742.43	742.46	742.37	742.39
28	745.79	745.92	742.25	742.18	742.32	742.37	742.34	752.81	742.29	742.37	742.37	742.42
29	745.83	745.91	742.28	742.19	---	742.33	742.42	752.40	742.45	742.34	742.39	742.53
30	746.22	745.88	742.29	742.20	---	742.29	742.36	752.05	742.79	742.38	742.39	742.50
31	745.88	---	742.41	742.22	---	742.55	---	751.61	---	742.37	742.38	---
MEAN	745.40	745.79	744.07	742.30	742.32	742.33	742.57	748.21	745.88	743.08	742.37	742.34
MAX	746.22	746.03	745.86	742.49	742.96	742.55	743.80	754.03	751.23	745.29	742.49	742.53
MIN	743.53	745.56	742.22	742.18	741.96	742.20	742.15	742.04	742.29	742.22	742.25	742.22

05488100 LAKE RED ROCK NEAR PELLA, IA—Continued



05488110 DES MOINES RIVER NEAR PELLA, IA

LOCATION.--Lat 41°21'38", long 92°58'23", in SW$\frac{1}{4}$ SW$\frac{1}{4}$ SE$\frac{1}{4}$ sec.19, T.76 N., R.18 W., Marion County, Hydrologic Unit 07100009, on right bank, 0.4 mi downstream of outlet of Red Rock Reservoir, 2.6 mi upstream of Lake Creek, and 138.7 mi upstream from mouth.

DRAINAGE AREA.--12,330 mi^2.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are fair. Flow regulated by Lake Red Rock (station 05488100) 0.4 mi upstream. U.S. Army Corps of Engineers data collection platform with satellite telemetry at the station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,350	2,030	3,030	1,900	1,220	4,110	3,240	10,000	17,700	18,000	3,480	1,020
2	2,880	2,730	2,610	1,870	1,290	3,610	3,760	9,570	18,400	18,200	3,170	1,020
3	936	3,750	2,490	2,130	1,520	3,360	4,270	7,270	18,400	18,400	3,000	1,030
4	345	4,510	2,420	2,370	1,860	3,140	4,850	6,040	18,300	18,600	2,990	1,040
5	347	3,730	2,450	2,370	2,050	3,140	5,100	6,050	18,200	18,400	2,860	871
6	335	2,880	3,350	1,680	2,900	3,160	5,210	6,050	17,900	17,900	2,500	761
7	334	2,860	3,970	1,150	e3,530	3,480	7,690	6,600	17,600	17,000	2,060	748
8	1,120	2,430	3,630	1,140	3,630	3,780	9,170	7,360	17,100	15,000	1,900	761
9	2,490	2,010	3,360	1,440	3,610	3,400	8,680	7,240	16,500	12,300	1,900	1,050
10	2,800	1,920	3,320	1,630	3,370	2,850	5,820	7,040	16,500	10,500	1,910	1,250
11	2,280	1,910	3,360	1,650	2,940	2,710	5,630	10,400	16,500	9,280	1,910	1,250
12	2,740	1,920	5,140	1,630	2,770	2,590	12,000	15,500	16,400	8,310	2,290	1,260
13	3,260	1,930	6,170	1,590	3,320	2,520	17,000	16,200	16,800	7,100	2,850	1,120
14	3,270	1,930	6,270	e1,630	7,010	2,640	14,300	17,400	17,700	6,170	3,160	1,010
15	3,040	1,930	6,250	1,230	10,500	2,750	11,200	18,500	18,200	4,940	2,820	1,010
16	2,850	1,940	6,190	917	12,000	2,750	9,910	18,600	18,300	4,280	2,420	998
17	2,310	2,070	5,120	1,090	12,900	2,760	9,650	18,500	18,300	4,260	1,910	999
18	1,920	2,150	4,300	1,180	11,700	2,310	9,690	18,400	17,300	4,230	1,620	997
19	2,040	2,480	4,370	1,130	10,800	2,150	9,680	18,400	15,800	4,230	1,610	992
20	2,270	3,280	3,060	1,160	10,200	2,420	9,650	18,400	14,400	3,990	1,610	997
21	2,400	3,290	2,200	1,160	8,160	2,540	11,500	18,600	13,200	3,750	1,610	1,010
22	2,410	2,500	2,310	1,070	6,110	2,520	15,400	18,400	12,100	3,600	1,620	1,000
23	2,690	2,180	1,730	1,150	5,470	2,510	17,400	18,300	11,000	3,530	1,490	1,020
24	2,870	2,340	1,280	1,150	5,530	2,370	17,900	18,300	9,590	3,510	1,270	846
25	2,580	2,360	1,050	1,130	5,110	2,540	15,600	18,400	9,020	3,080	1,230	718
26	2,120	2,360	1,290	1,110	4,840	2,880	14,200	18,300	11,900	2,800	1,270	1,010
27	1,900	2,320	1,500	1,140	4,820	3,070	14,200	18,200	14,100	3,230	1,270	1,240
28	1,920	2,350	1,440	1,150	4,770	3,150	12,500	18,400	15,100	3,470	1,130	1,330
29	2,050	3,020	1,430	1,130	---	3,160	11,300	18,400	16,900	3,470	1,030	2,820
30	2,120	3,700	1,440	1,130	---	3,150	10,400	18,400	17,800	3,480	1,020	4,530
31	2,150	---	1,700	1,130	---	3,100	---	18,500	---	3,480	1,020	---
TOTAL	67,127	76,810	98,230	43,337	153,930	90,620	306,900	445,720	477,010	258,490	61,930	35,708
MEAN	2,165	2,560	3,169	1,398	5,498	2,923	10,230	14,380	15,900	8,338	1,998	1,190
MAX	4,350	4,510	6,270	2,370	12,900	4,110	17,900	18,600	18,400	18,600	3,480	4,530
MIN	334	1,910	1,050	917	1,220	2,150	3,240	6,040	9,020	2,800	1,020	718
AC-FT	133,100	152,400	194,800	85,960	305,300	179,700	608,700	884,100	946,100	512,700	122,800	70,830
CFSM	0.18	0.21	0.26	0.11	0.45	0.24	0.83	1.17	1.29	0.68	0.16	0.10
IN.	0.20	0.23	0.30	0.13	0.46	0.27	0.93	1.34	1.44	0.78	0.19	0.11

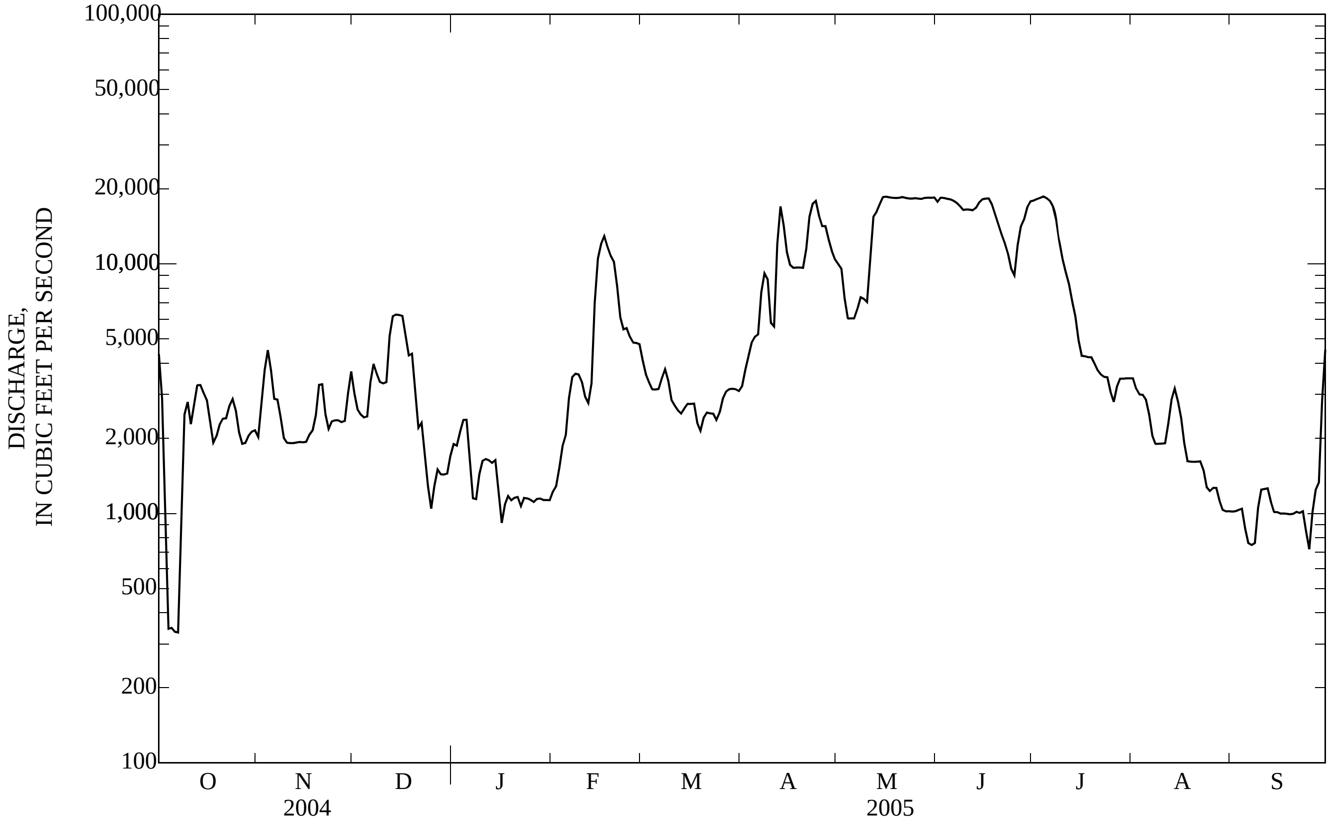
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2,728	3,107	3,494	1,680	3,639	7,939	11,340	13,950	15,940	18,700	7,815	3,821
MAX	11,150	11,990	12,380	3,997	8,246	17,480	22,040	28,520	27,950	79,340	44,600	33,490
(WY)	(1994)	(1993)	(1993)	(1993)	(1997)	(1993)	(1998)	(1993)	(1993)	(1993)	(1993)	(1993)
MIN	285	327	654	642	824	930	916	1,105	5,516	2,323	1,498	351
(WY)	(2001)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2002)	(2000)	(2003)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1993 - 2005	
ANNUAL TOTAL	2,530,838		2,115,812			
ANNUAL MEAN	6,915		5,797		7,871	
HIGHEST ANNUAL MEAN					24,360	1993
LOWEST ANNUAL MEAN					1,731	2000
HIGHEST DAILY MEAN	21,900	Jun 23	18,600	May 16 a	104,000	Jul 12, 1993
LOWEST DAILY MEAN	334	Oct 7	334	Oct 7	248	Oct 15, 2000
ANNUAL SEVEN-DAY MINIMUM	586	Jan 31	844	Oct 3	254	Oct 9, 2000
MAXIMUM PEAK FLOW			19,000	May 16	105,000	Jul 12, 1993
MAXIMUM PEAK STAGE			93.44	May 16	109.71	Jul 12, 1993
ANNUAL RUNOFF (AC-FT)	5,020,000		4,197,000		5,702,000	
ANNUAL RUNOFF (CFSM)	0.561		0.470		0.638	
ANNUAL RUNOFF (INCHES)	7.64		6.38		8.67	
10 PERCENT EXCEEDS	18,000		17,500		20,200	
50 PERCENT EXCEEDS	4,310		3,060		3,640	
90 PERCENT EXCEEDS	664		1,120		629	

05488110 DES MOINES RIVER NEAR PELLA, IA—Continued

a Also May 21 and July 4.
e Estimated



05488200 ENGLISH CREEK NEAR KNOXVILLE, IA

LOCATION.--Lat 41°18'02", long 93°02'43", in NE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.16, T.75 N., R.19 W., Marion County, Hydrologic Unit 07100009, on left bank 30 ft from left upstream abutment of bridge on State Highway 92, 3 mi east of Knoxville, and 12.7 mi (revised) upstream from mouth.

DRAINAGE AREA.--90.1 mi^2.

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

REVISED RECORDS.--WDR IA-97:(M)

GAGE.--Water-stage recorder. Datum of gage is 721.79 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 16, 1982 reached a stage of 30.28 ft, gage datum, discharge 28,000 ft^3/s, from contracted-opening indirect computations.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.90	4.2	4.5	e5.4	e7.3	20	20	31	15	6.4	2.2	0.58
2	0.97	6.9	4.3	e5.2	e17	19	16	29	14	4.2	1.6	0.40
3	0.99	8.1	4.1	e4.8	e31	19	15	27	13	2.6	1.5	0.29
4	0.88	7.1	4.2	e4.4	e84	19	14	26	18	20	1.3	0.30
5	0.82	5.9	4.5	e4.3	e76	18	14	25	52	9.3	1.2	0.58
6	0.74	5.3	8.9	e3.9	e56	17	153	24	47	4.6	1.0	0.52
7	0.85	4.6	12	e4.1	e44	18	1,290	23	23	3.3	0.97	0.48
8	1.1	4.0	8.9	e4.2	e33	18	273	23	22	2.4	0.94	1.0
9	1.0	3.6	7.2	e4.7	e28	15	99	24	32	2.1	0.80	2.3
10	1.1	3.3	6.3	e4.8	e21	15	67	26	26	1.7	0.82	0.74
11	1.2	3.6	5.8	e6.0	e19	16	204	52	99	1.4	2.1	0.61
12	1.4	3.6	5.1	e7.8	e18	15	1,750	129	36	1.3	0.65	0.49
13	1.1	3.7	4.5	e7.9	641	14	726	647	20	1.3	1.0	0.42
14	1.1	3.7	e4.0	e7.6	570	13	154	194	23	1.1	1.1	0.33
15	1.2	3.7	3.6	e6.0	127	12	97	72	12	1.0	1.1	0.32
16	1.2	3.8	3.3	e5.4	66	12	74	47	8.7	1.1	0.94	0.42
17	1.00	4.0	3.1	e5.1	45	13	63	36	7.5	1.2	0.89	0.33
18	1.1	5.2	3.2	e6.6	38	13	53	30	6.5	1.9	0.61	0.29
19	1.6	4.9	e2.8	e6.2	34	13	47	30	5.7	1.9	0.62	0.22
20	2.0	5.6	e3.0	e5.4	35	12	45	25	4.6	1.5	0.63	0.40
21	2.1	5.5	e2.8	e5.5	35	12	38	21	3.8	1.3	0.52	0.44
22	2.1	5.0	e2.7	e5.2	30	12	66	20	3.3	1.5	0.41	0.19
23	2.3	4.7	e2.4	e3.7	27	12	67	17	3.3	1.3	0.38	0.14
24	2.4	4.5	e2.2	e4.6	26	13	42	15	3.1	1.3	0.43	0.12
25	2.5	4.2	e2.9	e5.1	25	20	48	14	3.4	1.6	0.47	0.14
26	2.8	4.3	e3.1	e5.5	24	22	91	14	4.4	6.3	0.55	0.31
27	3.4	4.5	e2.9	e5.3	23	18	57	13	3.7	7.7	0.54	0.10
28	3.3	4.5	e3.0	e4.3	24	16	42	12	3.6	5.4	0.44	0.10
29	3.8	4.5	e2.9	e4.2	---	15	37	12	3.4	3.4	0.38	0.15
30	4.2	4.8	e4.3	e3.9	---	16	34	12	5.3	2.4	0.30	0.12
31	3.5	---	e5.0	e4.0	---	26	---	13	---	2.3	0.50	---
TOTAL	54.65	141.3	137.5	161.1	2,204.3	493	5,696	1,683	522.3	104.8	26.89	12.83
MEAN	1.76	4.71	4.44	5.20	78.7	15.9	190	54.3	17.4	3.38	0.87	0.43
MAX	4.2	8.1	12	7.9	641	26	1,750	647	99	20	2.2	2.3
MIN	0.74	3.3	2.2	3.7	7.3	12	14	12	3.1	1.0	0.30	0.10
AC-FT	108	280	273	320	4,370	978	11,300	3,340	1,040	208	53	25
CFSM	0.02	0.05	0.05	0.06	0.87	0.18	2.11	0.60	0.19	0.04	0.01	0.00
IN.	0.02	0.06	0.06	0.07	0.91	0.20	2.35	0.69	0.22	0.04	0.01	0.01

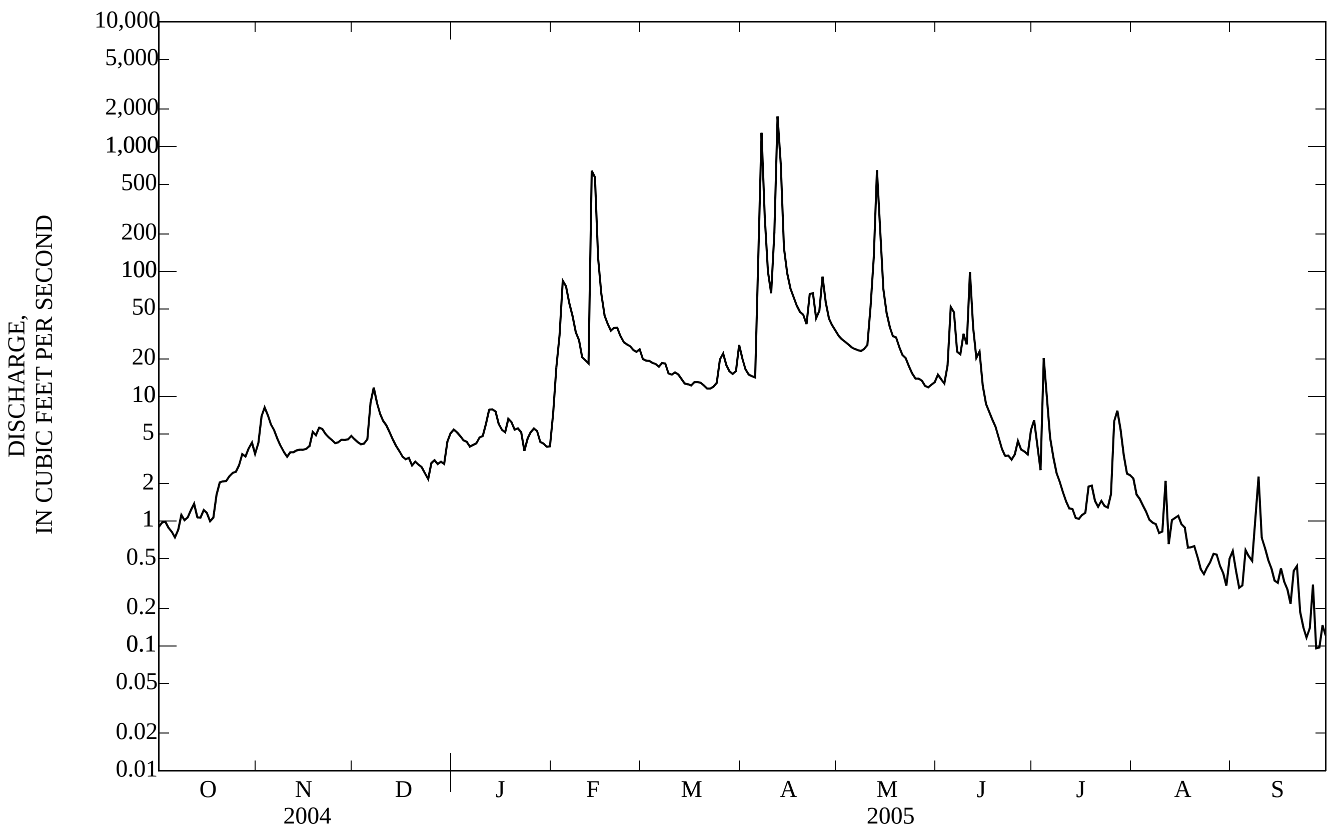
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	21.3	20.0	20.0	12.5	49.2	95.9	111	136	93.7	78.7	31.6	28.5
MAX	161	100	112	51.8	183	335	476	514	260	1,039	285	159
(WY)	(1987)	(1993)	(1993)	(1998)	(2001)	(1993)	(1991)	(1996)	(2000)	(1993)	(1993)	(1992)
MIN	0.48	0.76	0.31	0.66	0.50	2.05	1.03	1.99	2.27	0.18	0.17	0.03
(WY)	(1995)	(1989)	(1989)	(1989)	(1989)	(1989)	(1989)	(2000)	(1992)	(1988)	(1988)	(1991)

05488200 ENGLISH CREEK NEAR KNOXVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1985 - 2005	
ANNUAL TOTAL	19,038.77		11,237.67			
ANNUAL MEAN	52.0		30.8		58.7	
HIGHEST ANNUAL MEAN					214	1993
LOWEST ANNUAL MEAN					6.71	1989
HIGHEST DAILY MEAN	1,730	Aug 4	1,750	Apr 12	8,610	Jul 5, 1993
LOWEST DAILY MEAN	0.74	Oct 6	0.10	Sep 27 a	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	0.87	Sep 30	0.15	Sep 24	0.00	Sep 25, 1991
MAXIMUM PEAK FLOW			1,890	Apr 13	18,900	Jul 5, 1993
MAXIMUM PEAK STAGE			19.93	Apr 13	27.88	Jul 5, 1993
INSTANTANEOUS LOW FLOW			0.05	Sep 28		
ANNUAL RUNOFF (AC-FT)	37,760		22,290		42,510	
ANNUAL RUNOFF (CFSM)	0.577		0.342		0.651	
ANNUAL RUNOFF (INCHES)	7.86		4.64		8.85	
10 PERCENT EXCEEDS	97		45		96	
50 PERCENT EXCEEDS	7.5		4.8		8.3	
90 PERCENT EXCEEDS	2.1		0.58		0.46	

a Also Sep. 28.
e Estimated.



05488500 DES MOINES RIVER NEAR TRACY, IA

LOCATION.--Lat 41°16'53", long 92°51'41", in NW$\frac{1}{4}$ SE$\frac{1}{4}$ sec.19, T.75 N., R.17 W., Mahaska County, Hydrologic Unit 07100009, on right bank 250 ft upstream from abandoned Bellefountaine Bridge, 0.8 mi east of Tracy, 3.1 mi upstream from Cedar Creek, 3.8 mi downstream from bridge on newly located State Highway 92, 6.4 mi downstream from English Creek, and 127.5 mi (revised) upstream from mouth.

DRAINAGE AREA.--12,479 mi^2.

PERIOD OF RECORD.--March 1920 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1920 (M), 1922 (M), 1933.

GAGE.--Water-stage recorder. Datum of gage is 670.91 ft above NGVD of 1929. Prior to June 26, l940 and June 30, 1952 to Nov. 4, 1960 nonrecording gage, and June 27, 1940 to June 29, 1952 water-stage recorder, at site 250 ft downstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are fair. Flow regulated by Lake Red Rock (station 05488100) 11.9 mi upstream, since March 12, 1969. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 155,000 ft^3/s, June 14, 1947, gage height, 26.5 ft; minimum daily discharge, 40 ft^3/s Jan. 29 to Feb. 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1851, that of June 14, 1947. Flood of May 31, 1903, reached a stage of about 25 ft, discharge, about 130,000 ft^3/s. Minimum daily discharge since at least 1910, that of Jan. 29 to Feb. 1, 1940.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,180	2,070	3,290	1,770	1,210	4,280	3,260	10,200	18,200	18,300	3,440	952
2	3,030	2,350	2,730	1,770	1,220	3,600	3,620	9,850	19,000	18,400	3,250	947
3	1,230	3,610	2,640	1,920	1,440	3,450	4,100	7,850	19,000	18,600	3,000	946
4	401	4,160	2,540	2,220	1,710	3,210	4,540	5,890	18,900	18,800	3,000	947
5	357	3,980	2,550	2,250	2,000	3,200	4,870	5,890	18,900	18,400	2,920	878
6	345	2,880	3,120	1,860	2,570	3,200	4,990	5,880	18,900	17,900	2,640	729
7	347	2,870	3,970	1,170	3,510	3,430	7,900	6,280	18,700	17,300	2,210	729
8	770	2,600	3,740	1,160	3,590	3,780	9,630	7,080	18,200	15,500	1,970	757
9	2,150	2,100	3,430	1,320	3,380	3,540	8,640	7,060	17,600	12,900	1,970	856
10	2,840	1,970	3,430	1,560	3,220	3,060	6,390	6,700	17,300	11,000	1,960	1,100
11	2,380	1,970	3,420	1,580	2,850	2,810	5,090	9,280	17,300	9,750	2,030	1,100
12	2,450	1,970	4,610	1,590	2,600	2,740	14,000	15,800	17,200	8,590	2,200	1,100
13	3,220	1,970	6,060	1,580	3,160	2,620	20,100	17,500	17,400	7,350	2,760	1,040
14	3,220	1,970	6,090	e1,730	6,200	2,690	16,200	18,200	18,400	6,170	3,060	917
15	3,100	1,980	6,080	e1,360	10,300	2,820	12,200	19,400	19,100	5,090	2,770	915
16	2,840	1,980	6,020	e952	11,700	2,810	10,500	19,500	19,100	4,200	2,170	919
17	2,500	2,080	5,310	e1,060	13,200	2,810	10,000	19,300	19,100	4,180	1,780	916
18	1,930	2,220	4,300	e1,140	12,300	2,540	9,990	19,300	18,500	4,200	1,450	915
19	2,020	2,440	4,280	1,130	10,800	2,210	9,960	19,300	e16,600	4,170	1,450	918
20	2,220	3,100	e3,230	1,130	10,300	2,440	9,970	19,400	e15,000	4,020	1,460	907
21	2,380	3,410	2,320	1,130	8,510	2,580	11,100	19,400	e13,700	3,740	1,450	908
22	2,390	2,750	2,440	e1,060	6,140	2,580	15,900	19,300	e12,600	3,550	1,450	915
23	2,590	2,240	1,830	e1,150	5,200	2,580	18,200	19,200	e11,300	3,430	1,380	908
24	2,840	2,430	e1,390	e1,130	5,270	2,510	18,900	19,200	9,800	3,430	1,200	844
25	2,680	2,440	e1,130	1,120	5,020	2,530	17,000	19,200	8,930	3,180	1,100	679
26	2,250	2,450	1,200	1,110	4,670	2,910	15,000	19,100	11,200	2,910	1,150	810
27	1,930	2,450	e1,650	1,110	4,670	3,090	15,000	19,100	14,400	3,100	1,140	1,090
28	1,930	2,450	1,470	1,120	4,660	3,180	13,600	19,100	15,100	3,440	1,070	1,160
29	2,000	2,850	1,450	1,120	---	3,180	11,700	19,200	16,900	3,440	959	1,960
30	2,140	3,710	1,440	1,120	---	3,200	11,000	19,200	18,200	3,440	958	4,000
31	2,140	---	1,540	1,130	---	3,180	---	19,100	---	3,460	958	---
TOTAL	66,800	77,450	98,700	42,552	151,400	92,760	323,350	460,760	494,530	261,940	60,305	31,762
MEAN	2,155	2,582	3,184	1,373	5,407	2,992	10,780	14,860	16,480	8,450	1,945	1,059
MAX	4,180	4,160	6,090	2,250	13,200	4,280	20,100	19,500	19,100	18,800	3,440	4,000
MIN	345	1,970	1,130	952	1,210	2,210	3,260	5,880	8,930	2,910	958	679
AC-FT	132,500	153,600	195,800	84,400	300,300	184,000	641,400	913,900	980,900	519,600	119,600	63,000
CFSM	0.17	0.21	0.26	0.11	0.43	0.24	0.86	1.19	1.32	0.68	0.16	0.08
IN.	0.20	0.23	0.29	0.13	0.45	0.28	0.96	1.37	1.47	0.78	0.18	0.09

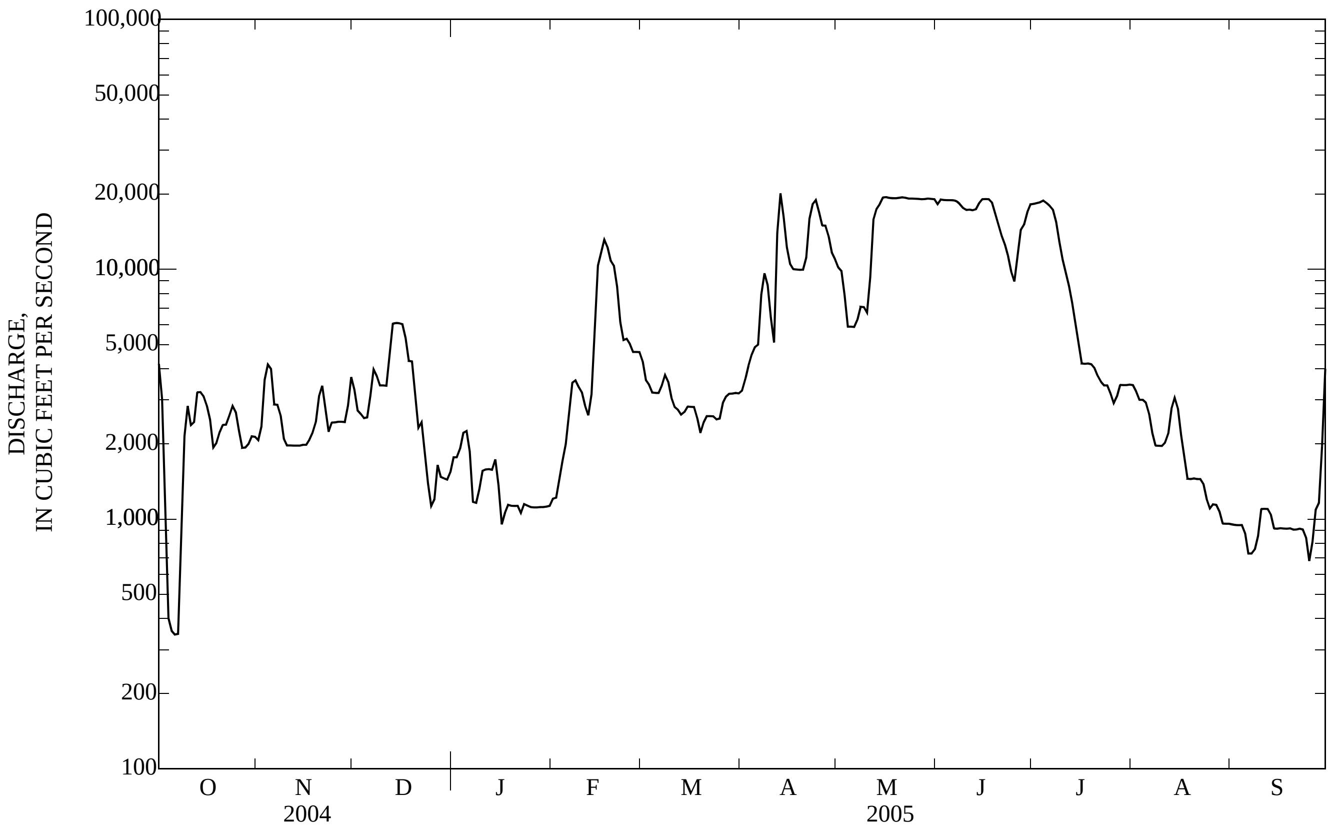
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,332	4,215	3,669	2,373	4,188	8,826	11,440	12,220	13,600	13,760	7,421	3,890
MAX	17,190	19,160	12,540	11,510	15,560	21,520	24,370	28,280	30,260	80,800	45,240	33,670
(WY)	(1974)	(1987)	(1983)	(1973)	(1973)	(1983)	(1998)	(1993)	(1984)	(1993)	(1993)	(1993)
MIN	318	340	344	305	276	746	866	425	277	220	591	342
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1989)	(1976)

05488500 DES MOINES RIVER NEAR TRACY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005 a	
ANNUAL TOTAL	2,655,605		2,162,309			
ANNUAL MEAN	7,256		5,924		7,427	
HIGHEST ANNUAL MEAN					24,450	1993
LOWEST ANNUAL MEAN					898	1977
HIGHEST DAILY MEAN	23,800	Jun 24	20,100	Apr 13	107,000	Jul 12, 1993
LOWEST DAILY MEAN	345	Oct 6	345	Oct 6	165	Feb 20, 1977
ANNUAL SEVEN-DAY MINIMUM	624	Jan 10	800	Oct 3	210	Oct 9, 1980
MAXIMUM PEAK FLOW			21,700	Apr 13	109,000	Jul 12, 1993
MAXIMUM PEAK STAGE			10.21	Apr 13	24.16	Jul 12, 1993
ANNUAL RUNOFF (AC-FT)	5,267,000		4,289,000		5,380,000	
ANNUAL RUNOFF (CFSM)	0.581		0.475		0.595	
ANNUAL RUNOFF (INCHES)	7.92		6.45		8.09	
10 PERCENT EXCEEDS	19,100		18,200		19,100	
50 PERCENT EXCEEDS	4,300		3,100		3,720	
90 PERCENT EXCEEDS	758		1,100		560	

a Post regulation.
e Estimated.



05489000 CEDAR CREEK NEAR BUSSEY, IA

LOCATION.--Lat 41°13'08", long 92°54'30", at SW corner sec.11, T.74 N., R.18 W., Marion County, Hydrologic Unit 07100009, on left bank 10 ft downstream from bridge on State Highway 156, 0.8 mi downstream from North Cedar Creek, 1.6 mi northwest of Bussey, 3.0 mi upstream from Honey Creek, and 8.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--374 mi^2.

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1438: Drainage area.

GAGE.--Water stage recorder. Datum of gage is 682.15 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Feb. 21, 1949, nonrecording gage at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1946 reached a stage of 28.45 ft on upstream side and 28.05 ft on downstream side of bridge, levels to floodmarks by U.S. Army Corps of Engineers, discharge, 31,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	29	16	e39	e44	77	65	99	42	49	16	5.8
2	30	38	16	e35	e62	69	48	89	34	32	15	3.9
3	32	58	15	e30	e114	73	43	84	27	20	13	3.6
4	20	50	14	e29	e193	71	42	77	47	26	11	4.9
5	14	43	16	e24	e255	71	41	72	339	24	10	3.9
6	14	38	76	e20	e357	65	81	69	266	17	9.8	4.3
7	11	31	157	e20	e384	70	1,910	67	95	14	8.8	3.5
8	14	20	90	e20	e313	66	494	63	63	12	8.7	6.9
9	16	15	63	e21	e236	54	248	59	83	11	9.7	18
10	14	14	52	e21	e212	51	175	57	82	9.6	9.3	12
11	12	16	45	e25	194	54	352	72	407	8.5	9.2	7.4
12	11	14	40	e34	174	52	8,420	152	223	7.8	31	4.1
13	11	12	34	e35	2,400	46	3,550	678	165	7.9	42	2.9
14	11	11	26	e28	2,070	42	741	402	158	7.2	46	1.6
15	11	12	20	e24	674	41	438	190	86	6.9	35	0.44
16	10	13	20	e22	372	39	328	121	56	7.2	23	0.04
17	11	14	17	e20	239	42	267	96	45	6.9	17	0.05
18	11	17	22	e21	189	43	225	82	39	12	12	0.12
19	15	22	e17	e22	162	41	196	80	31	13	9.0	0.65
20	15	30	e23	e23	173	38	177	71	28	11	8.1	0.79
21	17	26	e19	e24	177	36	168	60	26	10	6.4	0.58
22	15	19	e17	e22	149	35	211	58	25	9.4	4.8	2.4
23	15	16	e14	e22	122	37	508	52	24	9.6	4.2	1.6
24	16	23	e12	e23	116	43	323	46	21	10	3.4	0.66
25	15	14	e11	e25	109	73	207	42	19	9.7	2.4	0.76
26	26	13	e13	e27	99	99	229	41	17	22	3.4	4.0
27	32	15	e12	e27	95	74	188	41	16	40	4.6	2.8
28	34	16	e13	e31	104	61	150	39	20	41	5.3	4.0
29	39	16	e15	e34	---	55	126	39	38	25	3.9	4.6
30	35	16	e20	e37	---	53	113	63	44	18	3.3	1.9
31	61	---	e29	e41	---	72	---	56	---	17	2.2	---
TOTAL	602	671	954	826	9,788	1,743	20,064	3,217	2,566	514.7	387.5	108.19
MEAN	19.4	22.4	30.8	26.6	350	56.2	669	104	85.5	16.6	12.5	3.61
MAX	61	58	157	41	2,400	99	8,420	678	407	49	46	18
MIN	10	11	11	20	44	35	41	39	16	6.9	2.2	0.04
AC-FT	1,190	1,330	1,890	1,640	19,410	3,460	39,800	6,380	5,090	1,020	769	215
CFSM	0.05	0.06	0.08	0.07	0.93	0.15	1.79	0.28	0.23	0.04	0.03	0.01
IN.	0.06	0.07	0.09	0.08	0.97	0.17	2.00	0.32	0.26	0.05	0.04	0.01

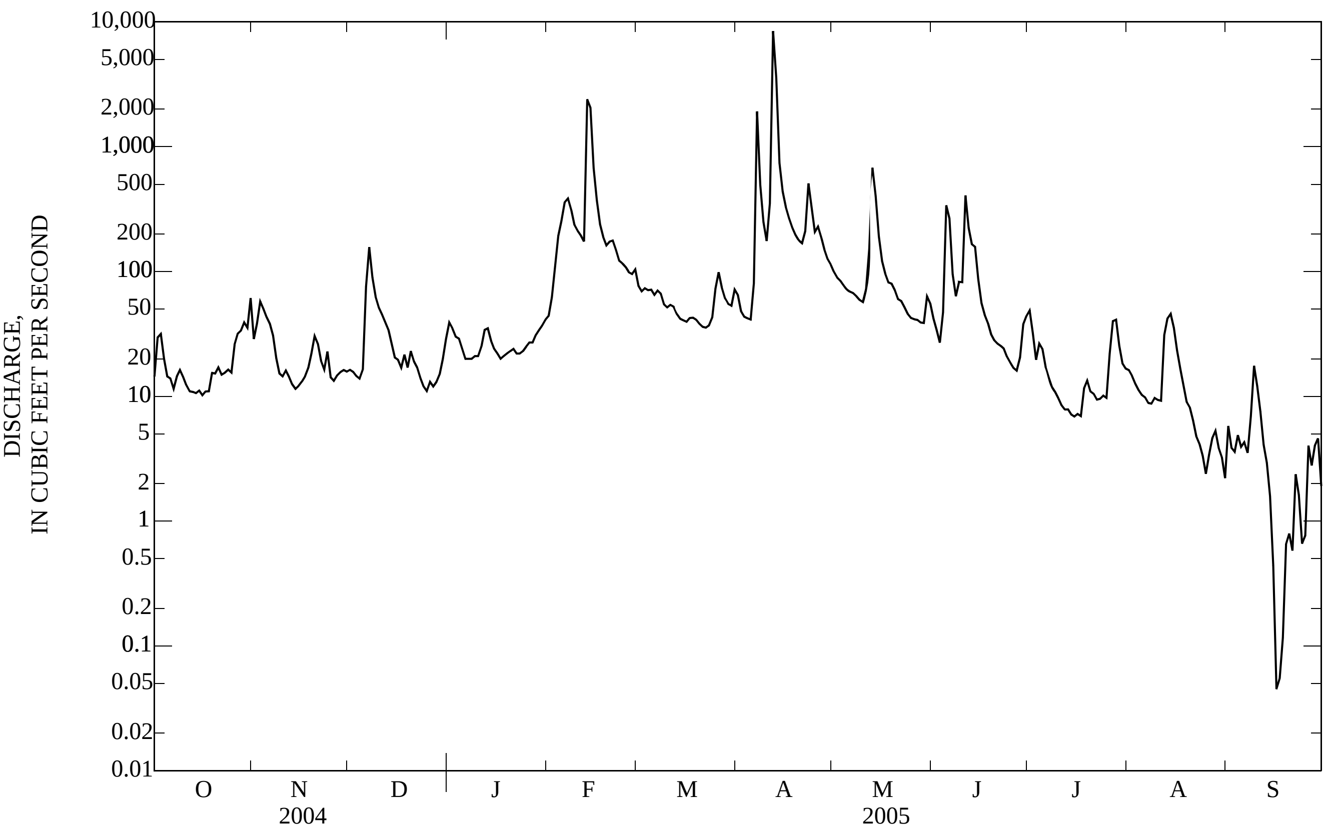
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	106	122	85.5	81.1	227	402	409	416	311	266	111	143
MAX	950	1,331	844	894	952	1,371	1,552	1,797	1,258	3,846	1,070	1,384
(WY)	(1974)	(1962)	(1983)	(1974)	(1949)	(1960)	(1973)	(1996)	(1967)	(1982)	(1993)	(1992)
MIN	0.18	0.33	0.39	0.20	2.29	3.78	0.79	7.19	2.74	2.26	2.51	0.60
(WY)	(1957)	(1956)	(1956)	(1956)	(1954)	(1954)	(1956)	(1956)	(1977)	(1988)	(1953)	(1953)

05489000 CEDAR CREEK NEAR BUSSEY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	66,655.4		41,441.39			
ANNUAL MEAN	182		114		223	
HIGHEST ANNUAL MEAN					768	1993
LOWEST ANNUAL MEAN					29.4	1989
HIGHEST DAILY MEAN	5,330	Mar 5	8,420	Apr 12	42,000	Jul 3, 1982
LOWEST DAILY MEAN	6.5	Jan 8	0.04	Sep 16	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	8.6	Jan 5	0.38	Sep 15	0.00	Sep 6, 1955
MAXIMUM PEAK FLOW			9,790	Apr 12	96,000	Jul 3, 1982
MAXIMUM PEAK STAGE			20.15	Apr 12	34.61	Jul 3, 1982
INSTANTANEOUS LOW FLOW			0.03	Sep 16 a	0.03	Sep 16, 2005
ANNUAL RUNOFF (AC-FT)	132,200		82,200		161,600	
ANNUAL RUNOFF (CFSM)	0.487		0.304		0.596	
ANNUAL RUNOFF (INCHES)	6.63		4.12		8.10	
10 PERCENT EXCEEDS	335		191		400	
50 PERCENT EXCEEDS	36		28		36	
90 PERCENT EXCEEDS	12		6.2		2.7	

a Also Sept. 17.
e Estimated.



05489500 DES MOINES RIVER AT OTTUMWA, IA

LOCATION.--Lat 41°00'39", long 92°24'40", in SE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.25, T.72 N., R.14 W., Wapello County, Hydrologic Unit 07100009, on right bank 15 ft downstream from Colorado and Eastern Railroad Bridge at Ottumwa, 0.4 mi downstream from Ottumwa powerplant, 6.5 mi upstream from Village Creek, 9.5 mi downstream from South Avery Creek, and 91.9 mi (revised) upstream from mouth.

DRAINAGE AREA.--13,374 mi^2.

PERIOD OF RECORD.--March 1917 to current year (published as "at Eldon" October 1930 to March 1935). Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 525: 1917-20. WSP 1308: 1917-23 (M), 1925-27 (M), 1931. WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft above NGVD of 1929. Prior to Sept. 30, 1930, nonrecording gage at Market Street Bridge 1,700 ft upstream at datum 0.83 ft higher. Oct. 1, 1930 to Mar. 31, 1935, nonrecording gage at Eldon 15 mi downstream at different datum. Apr. 1, 1935 to Oct. 25, 1963, water-stage recorder at site 1,100 ft downstream at Vine Street Bridge at datum 0.77 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Prior to Dec. 12, 1958 and since Nov. 30, 1960, diurnal fluctuation at low and medium stages are caused by powerplant upstream of station about $\frac{1}{2}$ mile. Flow regulated by Lake Red Rock (station 05488100) 48.2 mi upstream since March 12, 1969. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 135,000 ft^3/s June 7, 1947, gage height, 20.2 ft, site and datum then in use; minimum daily discharge, 26 ft^3/s Oct. 25, 1990, when gates at dam in Ottumwa were closed.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1850, that of June 7, 1947. Flood of May 31, 1903, reached a stage of 19.4 ft, former site and datum at Vine Street Bridge or about 22 ft at Market Street Bridge, from information by U.S. Army Corps of Engineers and U.S. National Weather Service, discharge, about 140,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,470	2,050	3,220	1,780	1,210	4,360	3,010	10,700	18,600	18,100	3,760	1,050
2	3,720	1,850	2,660	1,890	1,410	3,600	3,110	10,500	18,300	18,300	3,710	1,040
3	3,330	2,620	2,350	1,870	1,650	3,320	3,590	9,690	18,800	18,400	3,370	1,040
4	1,590	3,440	2,240	1,990	2,040	3,020	3,980	6,840	18,900	18,500	3,150	1,030
5	625	4,150	2,200	1,940	2,370	3,030	4,640	6,480	19,000	18,600	3,240	1,020
6	547	2,880	2,420	1,810	2,680	3,110	4,730	6,460	19,000	18,000	3,060	818
7	523	2,670	3,460	1,970	3,780	3,040	7,320	6,490	18,700	17,800	2,740	800
8	530	2,610	3,690	1,230	4,000	3,390	10,800	7,240	19,300	16,500	2,280	816
9	427	2,310	3,180	1,360	3,630	3,410	9,490	7,840	19,400	14,300	2,170	815
10	1,250	1,890	3,070	1,580	3,340	3,060	8,310	7,230	16,900	11,600	2,130	1,040
11	2,440	1,710	3,020	1,630	3,120	2,690	4,840	7,460	16,600	10,600	2,370	1,180
12	2,030	1,750	3,060	1,690	2,740	2,590	15,700	13,500	15,600	9,230	2,310	1,180
13	2,440	1,810	5,030	1,920	4,810	2,480	23,800	18,000	15,000	8,240	2,630	1,170
14	2,810	1,720	5,410	1,410	8,120	2,410	19,400	18,600	16,200	6,900	2,960	1,070
15	2,820	1,770	5,500	1,370	e10,100	2,500	14,500	19,200	17,900	6,110	3,350	1,030
16	2,670	1,800	5,470	1,580	11,100	2,580	11,800	19,600	18,900	4,760	2,750	885
17	2,530	1,710	5,440	1,170	12,900	2,510	10,700	19,400	19,000	4,660	2,590	1,040
18	2,030	1,950	4,010	1,320	12,800	2,520	10,600	19,300	18,800	4,500	2,000	874
19	1,830	2,000	3,640	1,280	10,900	2,290	10,500	19,200	17,400	4,530	1,820	1,010
20	1,750	2,210	4,350	1,230	10,700	2,140	10,400	19,200	15,800	4,510	1,810	895
21	2,000	3,130	2,890	1,180	9,630	2,260	10,400	19,300	14,700	4,290	1,900	1,060
22	2,100	2,560	2,520	1,300	6,900	2,360	14,800	19,200	13,400	4,080	1,720	825
23	2,200	2,300	2,770	1,210	5,360	2,370	18,700	19,100	12,100	3,820	1,740	945
24	2,320	1,900	1,690	1,140	5,120	2,400	19,500	19,000	10,700	3,820	1,640	1,010
25	2,510	2,200	1,040	1,280	5,140	2,390	18,800	19,000	9,220	3,800	1,270	771
26	2,380	2,130	1,210	1,620	4,530	2,560	15,900	18,900	9,280	3,480	1,300	833
27	1,940	2,150	1,120	1,360	4,550	2,940	15,500	18,800	13,800	3,400	1,340	855
28	1,750	2,110	1,590	1,240	4,480	3,130	15,300	18,800	14,600	3,650	1,320	1,250
29	1,870	2,130	1,410	1,180	---	3,030	12,500	19,000	16,100	3,750	1,210	1,440
30	1,940	2,730	1,560	1,260	---	3,070	12,000	18,900	18,000	3,760	1,090	3,240
31	1,950	---	1,580	1,230	---	3,030	---	18,900	---	3,700	1,070	---
TOTAL	63,322	68,240	92,800	46,020	159,110	87,590	344,620	461,830	490,000	275,690	69,800	32,032
MEAN	2,043	2,275	2,994	1,485	5,682	2,825	11,490	14,900	16,330	8,893	2,252	1,068
MAX	4,470	4,150	5,500	1,990	12,900	4,360	23,800	19,600	19,400	18,600	3,760	3,240
MIN	427	1,710	1,040	1,140	1,210	2,140	3,010	6,460	9,220	3,400	1,070	771
AC-FT	125,600	135,400	184,100	91,280	315,600	173,700	683,600	916,000	971,900	546,800	138,400	63,540
CFSM	0.15	0.17	0.22	0.11	0.42	0.21	0.86	1.11	1.22	0.66	0.17	0.08
IN.	0.18	0.19	0.26	0.13	0.44	0.24	0.96	1.28	1.36	0.77	0.19	0.09

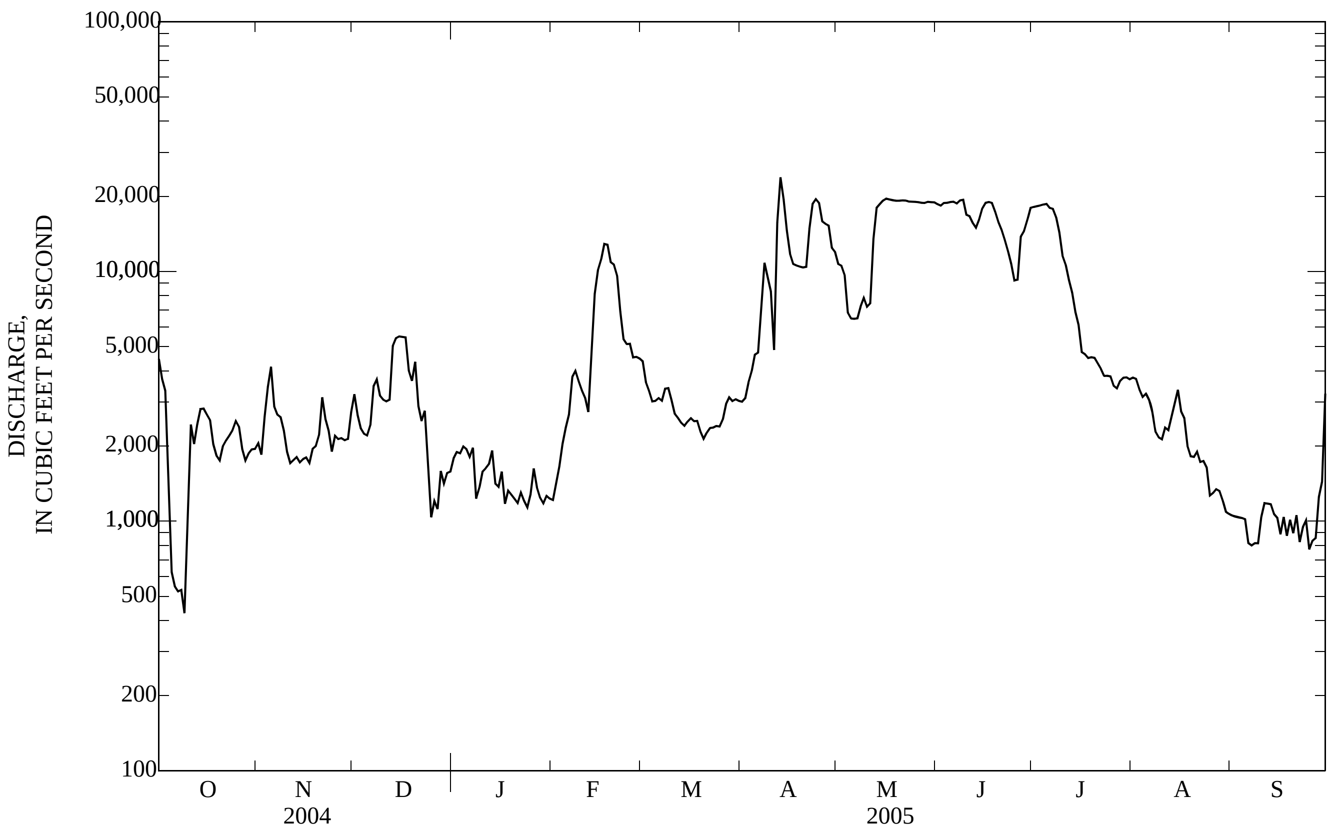
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,672	4,552	4,043	2,682	4,595	9,579	12,220	13,180	14,280	14,460	7,839	4,248
MAX	18,390	19,250	13,980	12,380	16,470	21,750	25,330	29,770	31,980	85,570	47,380	34,790
(WY)	(1974)	(1987)	(1993)	(1973)	(1973)	(1983)	(1983)	(1993)	(1984)	(1993)	(1993)	(1993)
MIN	307	327	381	290	328	891	962	519	282	238	610	366
(WY)	(2001)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1988)	(1976)

05489500 DES MOINES RIVER AT OTTUMWA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005 a	
ANNUAL TOTAL	2,706,241		2,191,054			
ANNUAL MEAN	7,394		6,003		7,961	
HIGHEST ANNUAL MEAN					26,350	1993
LOWEST ANNUAL MEAN					1,120	1977
HIGHEST DAILY MEAN	23,000	Jun 22	23,800	Apr 13	110,000	Jul 12, 1993
LOWEST DAILY MEAN	385	Jan 13	427	Oct 9	26	Oct 25, 1990 b
ANNUAL SEVEN-DAY MINIMUM	595	Jan 10	785	Oct 4	182	Jul 7, 1977
MAXIMUM PEAK FLOW			25,700	Apr 13	112,000	Jul 12, 1993
MAXIMUM PEAK STAGE			8.98	Apr 13	22.15	Jul 12, 1993
ANNUAL RUNOFF (AC-FT)	5,368,000		4,346,000		5,768,000	
ANNUAL RUNOFF (CFSM)	0.553		0.449		0.595	
ANNUAL RUNOFF (INCHES)	7.53		6.09		8.09	
10 PERCENT EXCEEDS	19,500		18,400		19,900	
50 PERCENT EXCEEDS	4,200		3,030		4,150	
90 PERCENT EXCEEDS	757		1,180		640	

a Post regulation.
b Gates at dam in Ottumwa closed.
e Estimated.



05490500 DES MOINES RIVER AT KEOSAUQUA, IA

LOCATION.--Lat 40°43'40", long 91°57'34", in SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.36, T.69 N., R.10 W., Van Buren County, Hydrologic Unit 07100009, on right bank 10 ft upstream from bridge on State Highway 1 at Keosauqua, 4.0 mi downstream from Chequest Creek, and 49.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--14,038 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1903 to July 1906, April to December 1910, August 1911 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 525: 1913-20. WSP 1438: Drainage area. WSP 1508: 1903, 1905-6, 1915- 18 (M), 1922 (M), 1924-26 (M), 1932-34 (M), 1937, 1942 (M).

GAGE.--Water-stage recorder. Datum of gage is 547.36 ft above NGVD of 1929. Prior to Dec. 24, 1933, nonrecording gage, and Dec. 25, 1933, to Sept. 30, 1972, water-stage recorder, at same site at datum 10.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Prior to Dec. 21, 1958, and since Nov. 30, 1960, some diurnal fluctuation at medium and low stages caused by power plant at Ottumwa. Flow regulated by Lake Red Rock (station 05488100) 91.0 mi upstream, since March 12, 1969. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 146,000 ft^3/s June 1, 1903, gage height, 27.85 ft, from floodmark, datum then in use; minimum daily discharge, 40 ft^3/s Jan. 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1851, reached a stage of 24 ft, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,140	2,750	3,320	e1,910	1,570	5,110	3,420	12,300	19,100	18,400	3,500	1,090
2	5,030	3,450	3,550	e2,010	1,650	4,840	3,380	11,600	18,300	18,400	3,480	1,100
3	3,960	2,570	2,770	e2,110	2,110	3,950	3,600	11,300	19,000	18,500	3,370	1,100
4	3,690	3,840	2,550	e2,350	2,640	3,780	4,150	9,750	19,200	18,700	3,010	1,100
5	1,620	4,610	2,470	e2,130	2,950	3,480	4,640	7,840	19,600	19,000	2,930	1,100
6	788	4,810	3,480	e2,020	3,070	3,460	5,170	7,760	19,400	18,400	2,890	1,100
7	651	3,330	4,090	1,980	3,980	3,510	5,610	7,740	19,200	17,900	2,750	1,000
8	677	3,060	4,750	e1,820	5,040	3,530	10,300	8,030	19,100	17,100	2,420	899
9	649	2,990	4,340	e1,580	4,650	3,940	10,900	8,770	21,600	15,300	1,970	1,010
10	579	2,550	3,690	e1,740	4,120	3,870	10,100	8,830	19,000	13,100	1,910	930
11	1,390	2,100	3,550	e1,650	3,740	3,380	8,580	8,480	18,700	11,400	1,970	1,140
12	2,780	1,970	3,470	e2,010	3,560	3,020	13,100	10,800	18,800	10,300	2,260	1,270
13	2,320	1,910	4,090	e2,310	6,870	2,960	26,200	16,700	18,900	9,150	2,340	1,280
14	2,950	1,930	5,830	e1,660	11,300	2,750	22,800	18,900	18,500	8,080	2,640	1,310
15	3,210	1,920	5,970	e1,620	10,400	2,700	17,500	19,000	19,100	6,920	2,970	1,220
16	3,210	1,880	5,960	e1,820	11,700	2,830	14,000	19,600	19,400	6,090	3,330	1,160
17	2,960	1,970	5,890	e1,520	12,200	2,930	12,500	19,600	19,300	4,860	2,630	972
18	2,980	1,900	5,510	e1,540	12,900	2,920	11,900	19,400	19,300	4,800	2,410	1,130
19	2,230	2,180	4,290	e1,380	11,900	2,860	11,800	19,400	18,300	4,630	1,920	1,090
20	2,090	2,210	e3,800	e1,480	10,900	2,520	11,700	19,300	16,800	4,540	1,850	1,090
21	2,190	2,530	e3,650	e1,350	10,500	2,360	11,700	19,400	15,600	4,430	1,720	1,060
22	2,420	3,630	e2,350	e1,370	8,960	2,600	13,200	19,400	14,600	4,060	1,820	1,110
23	2,600	2,730	e1,570	e1,440	6,830	2,680	18,700	19,300	13,400	3,780	1,630	1,030
24	2,550	2,490	e1,590	e1,370	5,770	2,700	20,100	19,200	12,300	3,480	1,670	967
25	2,720	2,140	e1,720	e1,350	5,780	2,860	19,700	19,200	11,000	3,390	1,620	1,150
26	3,190	2,380	e1,970	e1,930	5,580	2,820	17,600	19,200	10,200	3,470	1,290	1,110
27	3,250	2,380	e2,150	2,570	5,140	3,140	16,100	19,100	12,200	3,210	1,260	911
28	2,380	2,390	e1,870	2,320	5,150	3,300	15,900	19,000	14,900	2,940	1,340	871
29	2,170	2,360	e2,170	1,640	---	3,380	14,500	19,200	15,700	3,510	1,320	1,400
30	2,480	2,400	e2,060	1,500	---	3,380	13,000	19,200	17,500	3,450	1,240	1,450
31	2,560	---	e1,940	1,530	---	3,500	---	19,200	---	3,410	1,110	---
TOTAL	77,414	79,360	106,410	55,010	180,960	101,060	371,850	476,500	518,000	284,700	68,570	33,150
MEAN	2,497	2,645	3,433	1,775	6,463	3,260	12,400	15,370	17,270	9,184	2,212	1,105
MAX	5,140	4,810	5,970	2,570	12,900	5,110	26,200	19,600	21,600	19,000	3,500	1,450
MIN	579	1,880	1,570	1,350	1,570	2,360	3,380	7,740	10,200	2,940	1,110	871
AC-FT	153,600	157,400	211,100	109,100	358,900	200,500	737,600	945,100	1,027,000	564,700	136,000	65,750
CFSM	0.18	0.19	0.24	0.13	0.46	0.23	0.88	1.09	1.23	0.65	0.16	0.08
IN.	0.21	0.21	0.28	0.15	0.48	0.27	0.99	1.26	1.37	0.75	0.18	0.09

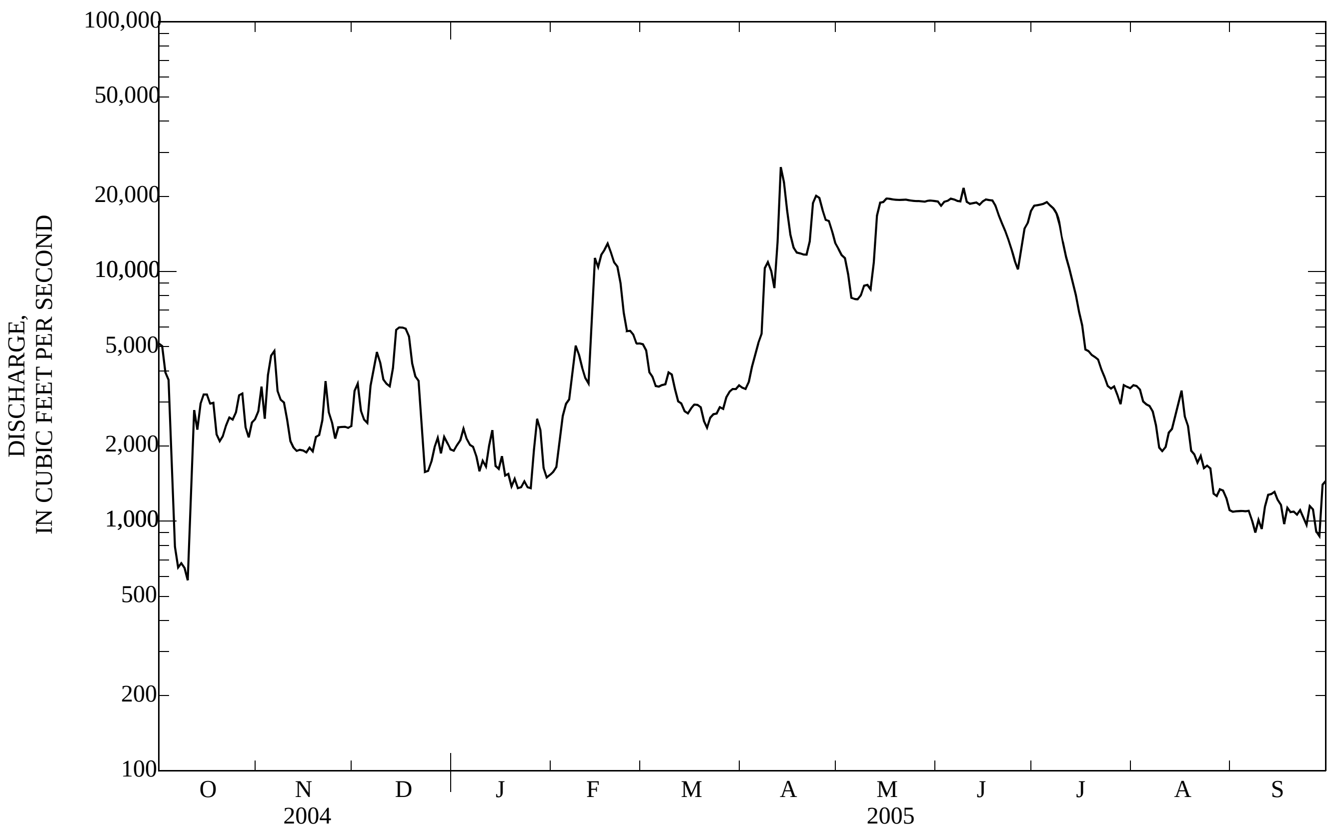
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3,892	4,708	4,267	2,857	4,921	10,080	12,850	13,930	14,690	14,940	8,097	4,613
MAX	19,850	19,320	14,510	13,120	17,370	22,200	30,030	31,260	30,900	86,150	47,320	35,210
(WY)	(1974)	(1987)	(1983)	(1973)	(1973)	(1983)	(1973)	(1993)	(1984)	(1993)	(1993)	(1993)
MIN	383	332	385	291	331	1,170	1,224	696	300	258	528	362
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1981)	(1977)	(1977)	(1977)	(1977)	(1989)	(1976)

05490500 DES MOINES RIVER AT KEOSAUQUA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005 a	
ANNUAL TOTAL	2,905,113		2,352,984			
ANNUAL MEAN	7,937		6,447		8,337	
HIGHEST ANNUAL MEAN					26,920	1993
LOWEST ANNUAL MEAN					1,303	1977
HIGHEST DAILY MEAN	27,600	Mar 5	26,200	Apr 13	108,000	Jul 13, 1993
LOWEST DAILY MEAN	579	Oct 10	579	Oct 10	115	Oct 27, 1990 b
ANNUAL SEVEN-DAY MINIMUM	758	Jan 26	908	Oct 5	204	Jul 3, 1977
MAXIMUM PEAK FLOW			27,600	Apr 13	111,000	Jul 12, 1993
MAXIMUM PEAK STAGE			17.86	Apr 13	32.66	Jul 13, 1993
ANNUAL RUNOFF (AC-FT)	5,762,000		4,667,000		6,040,000	
ANNUAL RUNOFF (CFSM)	0.565		0.459		0.594	
ANNUAL RUNOFF (INCHES)	7.70		6.24		8.07	
10 PERCENT EXCEEDS	19,500		18,900		20,800	
50 PERCENT EXCEEDS	4,840		3,380		4,500	
90 PERCENT EXCEEDS	1,120		1,300		701	

a Post regulation.
b Gates at dam in Ottumwa closed.
e Estimated.



05490500 DES MOINES RIVER AT KEOSAUQUA, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
19...	1100	3,420	440	741	10.6	98	8.4	545	10.3	168	205	--	30.4
NOV													
17...	1400	1,840	610	747	14.8	149	8.8	613	14.6	182	222	--	30.4
DEC													
08...	0900	4,780	584	750	14.0	110	8.1	580	4.5	168	205	--	27.8
JAN													
12...	1045	1,950	--	733	17.0	122	8.6	781	.3	228	276	--	47.4
FEB													
07...	0940	3,680	520	744	13.0	101	8.3	712	3.8	171	207	--	34.6
MAR													
15...	0948	2,690	570	751	13.3	101	8.0	672	3.3	193	233	--	37.3
APR													
13...	1020	28,600	590	746	8.7	84	7.5	422	13.1	102	124	--	18.5
MAY													
10...	1410	8,730	584	750	12.3	133	8.4	658	18.3	212	250	--	29.8
JUN													
08...	1015	18,900	--	740	8.8	104	8.3	633	22.2	207	221	16	25.1
JUL													
14...	1320	8,190	590	750	7.0	92	8.4	572	28.4	186	219	--	21.8
AUG													
09...	1310	2,240	563	750	15.6	209	8.8	535	29.7	149	13	13	30.0
SEP													
07...	1430	1,030	550	750	13.0	169	9.1	522	27.9	115	122	9	42.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
19...	13.3	64.0	<.04	3.28	E.005	.17	.176	.188	.23	3.64	3.70	1.3	<.1
NOV													
17...	10.7	89.3	<.04	2.63	.013	.17	.129	.142	.194	3.11	3.04	1.5	<.1
DEC													
08...	12.0	73.4	<.04	3.26	.014	.36	.167	.190	.29	3.58	4.15	2.7	<.1
JAN													
12...	10.4	95.8	<.04	4.96	.015	.31	.222	.23	.30	5.28	5.90	1.8	<.1
FEB													
07...	9.0	84.7	.10	3.99	.020	.31	.151	.168	.37	4.63	5.03	2.1	<.1
MAR													
15...	12.4	64.1	E.02	6.94	.021	.28	.187	.21	.26	7.23	7.51	1.5	<.1
APR													
13...	9.9	51.8	.17	4.69	.055	5.06	.038	E.070	.71	5.80	8.09	52.8	1.4
MAY													
10...	13.7	52.4	<.04	10.1	.012	.48	E.027	.138	.21	10.7	11.2	3.3	<.1
JUN													
08...	13.8	43.6	<.04	11.0	.030	.27	.083	.102	.19	11.3	12.3	2.3	<.1
JUL													
14...	19.9	37.9	<.04	9.24	.010	.43	.169	.21	.29	9.53	9.72	2.8	<.1
AUG													
09...	15.4	53.0	<.04	4.72	.024	.95	E.009	.026	.179	5.66	5.99	6.2	<.1
SEP													
07...	10.9	72.4	<.04	1.02	.023	1.01	<.030	.020	.130	2.10	2.40	7.0	<.1

05490500 DES MOINES RIVER AT KEOSAUQUA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
19...	1.3	4.1	3.2	9.4	<.006	E.052	.013	<.005	<.005	.240	<.050	<.010	<.004
NOV													
17...	1.4	4.4	5.7	5.0	<.006	E.040	<.006	<.005	<.005	.162	<.050	<.010	<.004
DEC													
08...	2.7	4.7	13.1	27.1	<.006	E.024	.015	<.005	<.005	.104	<.050	<.010	<.004
JAN													
12...	1.8	4.1	1.5	1.3	<.006	E.023	<.006	<.005	<.005	.088	<.050	<.010	<.004
FEB													
07...	2.1	5.1	19.8	27.6	<.006	E.020	.019	<.005	<.005	.075	<.050	<.010	<.004
MAR													
15...	1.5	4.5	4.6	7.0	<.006	E.021	.040	<.005	<.005	.076	<.050	<.010	<.004
APR													
13...	51.4	7.3	44.2	54.4	<.006	E.039	.066	.005	<.005	.237	<.050	<.010	<.004
MAY													
10...	3.3	4.0	12.2	36.4	<.006	E.038	.264	E.003	<.005	.431	<.050	<.010	<.004
JUN													
08...	2.3	4.1	17.6	34.6	<.006	E.106	.849	<.005	<.005	1.37	<.050	<.010	<.004
JUL													
14...	2.8	3.8	--	--	<.006	E.146	.120	<.005	<.005	1.20	<.050	<.010	<.004
AUG													
09...	6.1	9.0	--	--	<.006	E.098	.024	<.005	<.005	.849	<.050	<.010	<.004
SEP													
07...	6.9	4.5	31.8	88.8	<.006	E.028	<.007	<.005	<.005	.471	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
19...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
13...	<.041	<.020	<.005	<.006	<.030	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN													
08...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

05490500 DES MOINES RIVER AT KEOSAUQUA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
19...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.053	<.006	<.003	<.007
NOV													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.036	<.006	<.003	<.007
DEC													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.034	<.006	<.003	<.007
JAN													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.038	<.006	<.003	<.007
FEB													
07...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.061	<.006	<.003	<.007
MAR													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.594	<.006	<.003	<.007
APR													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.163	<.006	<.003	<.007
MAY													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.163	<.006	<.003	<.007
JUN													
08...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.342	<.006	<.003	<.007
JUL													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.181	<.006	<.003	<.007
AUG													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.076	<.006	<.003	<.007
SEP													
07...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.037	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
19...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
08...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
12...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
07...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.009	<.02	<.034
MAR													
15...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
13...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	.063	<.02	<.034
MAY													
10...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	.009	<.02	<.034
JUN													
08...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	.011	<.02	<.034
JUL													
14...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.020	<.02	<.034
AUG													
09...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.011	<.02	<.034
SEP													
07...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.007	<.02	<.034

05490500 DES MOINES RIVER AT KEOSAUQUA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Sus- pended sedi- ment concen- tration mg/L (80154)	Number of sam- pling points, count (00063)
OCT						
19...	<.02	<.010	<.006	<.009	15	11
NOV						
17...	<.02	<.010	<.006	<.009	36	10
DEC						
08...	<.02	<.010	<.006	<.009	74	10
JAN						
12...	<.02	<.010	<.006	<.009	9	4
FEB						
07...	<.02	<.010	<.006	<.009	105	11
MAR						
15...	<.02	<.010	<.006	<.009	13	10
APR						
13...	<.02	<.010	<.006	<.009	3,520	10
MAY						
10...	<.02	<.010	<.006	<.009	83	12
JUN						
08...	<.02	<.010	<.006	<.009	79	12
JUL						
14...	<.02	<.010	<.006	<.009	57	11
AUG						
09...	<.02	<.010	<.006	<.009	42	11
SEP						
07...	<.02	<.010	<.006	<.009	18	11

05494300 FOX RIVER AT BLOOMFIELD, IA

LOCATION.--Lat 40°46'10", long 92°25'07", in SW¼ SE¼ sec.13, T.69 N., R.14 W., Davis County, Hydrologic Unit 07110001, on left bank 15 ft downstream from bridge on County Highway V20, 1.3 mi north of county courthouse at Bloomfield, and 8.6 mi downstream from North Fox Creek.

DRAINAGE AREA.-- 87.7 mi^2

PERIOD OF RECORD.--October 1957 to September 1973; May 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 755.57 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1905 and June 18, 1946, exceeded all other known floods at this location, stage and discharge unknown. Also flood of May 6, 1960 reached a stage of 24.02 ft., gage datum; discharge 8,600 cfs (Slope-Area Measurement).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	109	13	e18	e14	e27	7.5	16	2.9	2.1	0.91	1.0
2	4.1	148	12	e16	e18	e23	7.0	13	2.7	1.9	0.84	0.91
3	2.9	45	11	e14	e17	21	6.6	12	2.6	1.8	0.80	e0.69
4	2.6	66	11	e13	e28	17	6.6	11	19	1.9	0.75	e0.51
5	2.8	50	24	e14	e29	15	6.1	11	84	1.8	0.77	e0.35
6	3.1	27	355	e8.6	e42	15	7.8	10	37	1.7	0.72	e0.17
7	2.6	20	118	e8.9	175	17	31	9.8	13	1.6	0.70	e0.23
8	2.7	15	67	e11	63	16	20	9.1	502	1.5	0.69	e0.29
9	3.2	13	38	e16	53	13	13	9.7	191	1.4	0.68	e0.29
10	3.0	13	29	e13	42	12	9.7	7.8	75	1.4	0.69	e0.25
11	3.4	12	22	e15	63	12	162	8.9	360	1.3	1.1	e0.25
12	6.1	10	19	e43	50	12	2,710	17	286	1.3	1.3	e0.20
13	9.1	9.5	17	e75	e1,210	11	509	76	146	1.3	2.1	e0.34
14	5.6	9.2	e8.9	e35	437	9.5	134	65	61	1.2	1.6	e0.50
15	3.4	9.6	e13	e21	153	8.6	73	32	38	1.1	1.2	e0.42
16	2.5	e11	e14	e19	83	8.8	49	19	22	1.1	0.94	e0.37
17	2.6	e11	e11	e16	54	8.8	36	14	15	1.0	0.86	e0.35
18	4.2	e9.9	e13	e16	45	8.4	26	12	9.9	1.0	0.85	e0.43
19	5.3	e12	e11	e16	37	8.6	19	11	7.4	0.98	0.83	e0.59
20	5.1	e12	e11	e19	41	7.7	14	9.1	5.5	0.94	1.1	e0.42
21	5.4	e11	e13	e23	46	7.3	23	7.9	4.0	0.91	1.0	e0.48
22	10	e13	e9.3	e23	39	7.4	206	7.0	3.2	0.88	1.1	e0.56
23	6.7	11	e8.2	e14	34	9.5	471	5.4	2.7	0.92	0.96	e0.50
24	3.5	10	e7.8	e21	29	12	100	4.9	2.3	0.77	0.96	e0.58
25	5.4	9.5	e10	e87	28	23	59	4.5	2.1	e0.84	1.0	0.71
26	45	9.2	e12	e452	26	21	47	4.4	2.1	e2.0	1.2	2.2
27	36	10	e13	e114	24	15	37	3.8	2.1	1.7	1.1	e0.19
28	13	11	e16	e65	34	13	26	3.1	2.0	1.2	1.2	e0.32
29	12	10	e15	e46	---	11	23	4.6	2.0	1.0	1.1	e0.22
30	108	11	e20	e18	---	10	19	5.0	3.0	0.92	1.1	e0.42
31	27	---	e25	e13	---	9.8	---	3.6	---	0.89	1.1	---
TOTAL	350.7	717.9	967.2	1,283.5	2,914	410.4	4,858.3	427.6	1,905.5	40.35	31.25	14.74
MEAN	11.3	23.9	31.2	41.4	104	13.2	162	13.8	63.5	1.30	1.01	0.49
MAX	108	148	355	452	1,210	27	2,710	76	502	2.1	2.1	2.2
MIN	2.5	9.2	7.8	8.6	14	7.3	6.1	3.1	2.0	0.77	0.68	0.17
AC-FT	696	1,420	1,920	2,550	5,780	814	9,640	848	3,780	80	62	29
CFSM	0.13	0.27	0.36	0.47	1.19	0.15	1.85	0.16	0.72	0.01	0.01	0.01
IN.	0.15	0.30	0.41	0.54	1.24	0.17	2.06	0.18	0.81	0.02	0.01	0.01

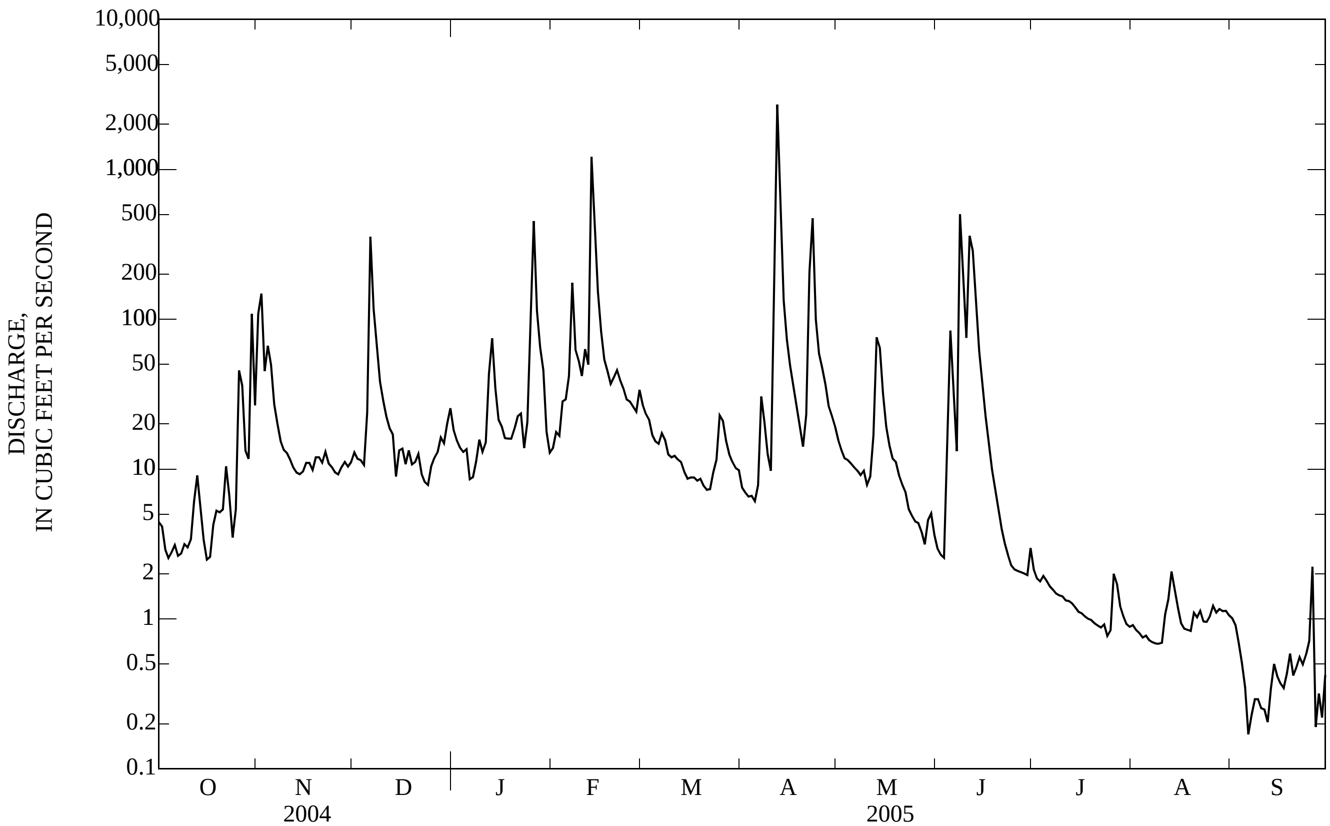
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.3	22.7	20.2	28.2	58.4	98.9	97.2	84.3	44.0	25.4	34.9	35.5
MAX	178	222	115	127	158	291	370	325	257	163	254	377
(WY)	(1960)	(1962)	(1971)	(1973)	(1959)	(1960)	(1973)	(1973)	(2001)	(1969)	(1970)	(1970)
MIN	0.21	0.53	0.32	0.59	0.67	1.07	1.17	0.69	0.73	1.09	0.20	0.27
(WY)	(1964)	(1965)	(1964)	(1964)	(1964)	(1964)	(2000)	(2000)	(1963)	(1972)	(1961)	(1999)

05494300 FOX RIVER AT BLOOMFIELD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	20,544.1		13,921.44			
ANNUAL MEAN	56.1		38.1		48.7	
HIGHEST ANNUAL MEAN					117	1973
LOWEST ANNUAL MEAN					8.40	1964
HIGHEST DAILY MEAN	3,440	Aug 27	2,710	Apr 12	4,370	May 6, 1960
LOWEST DAILY MEAN	1.1	Aug 15	0.17	Sep 6 e	0.00	Oct 1, 1957
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug 12	0.24	Sep 6	0.00	Oct 1, 1957
MAXIMUM PEAK FLOW			5,140	Apr 12	8,600	May 6, 1960
MAXIMUM PEAK STAGE			14.93	Apr 12	24.02	May 6, 1960
INSTANTANEOUS LOW FLOW					0.00	Oct 1, 1957
ANNUAL RUNOFF (AC-FT)	40,750		27,610		35,280	
ANNUAL RUNOFF (CFSM)	0.640		0.435		0.555	
ANNUAL RUNOFF (INCHES)	8.71		5.91		7.54	
10 PERCENT EXCEEDS	84		62		73	
50 PERCENT EXCEEDS	10		10		5.4	
90 PERCENT EXCEEDS	2.5		0.82		0.50	

e Estimated



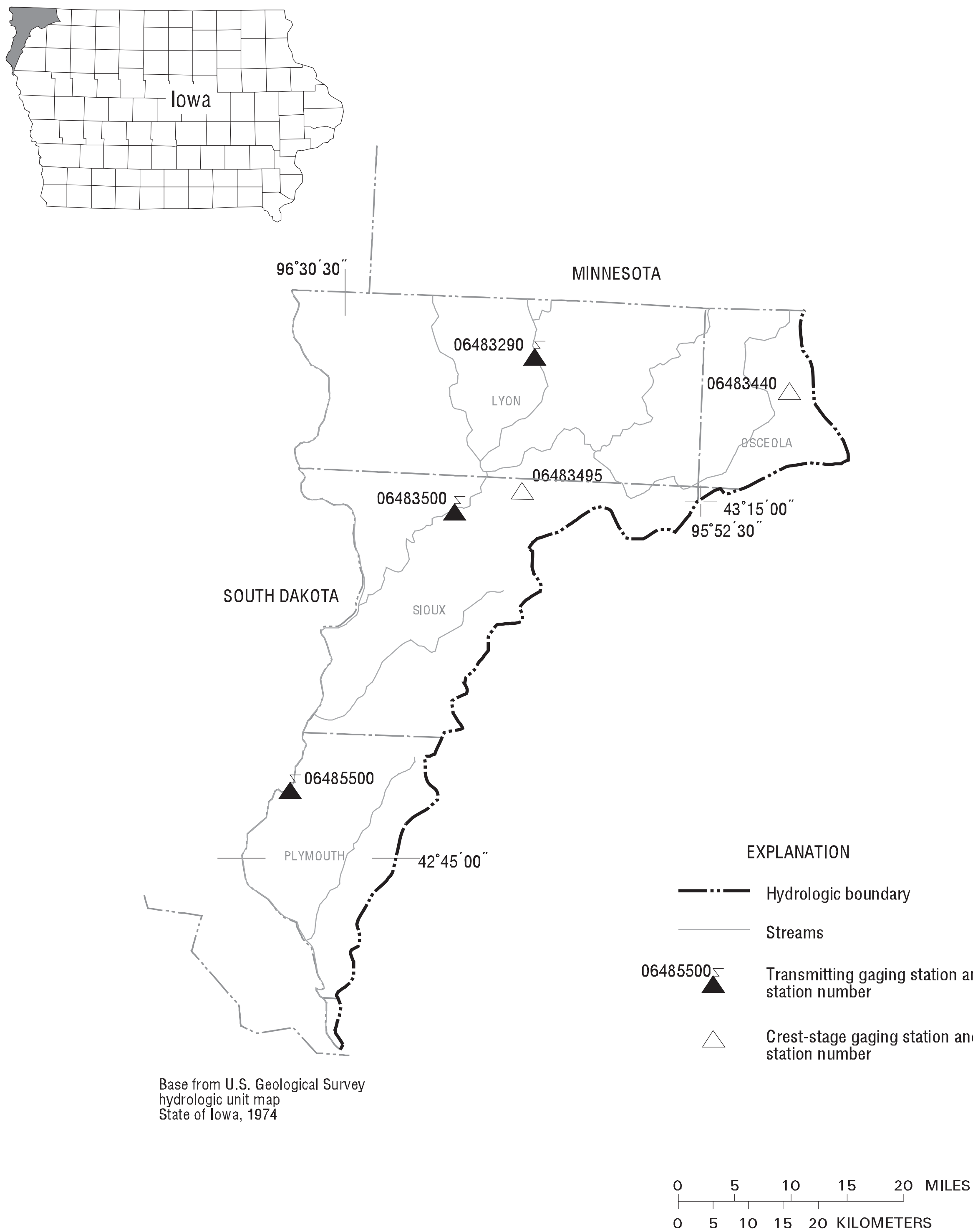


Figure 17. Locations of active continous-record and crest-stage gaging stations in the Big Sioux River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

06483290 ROCK RIVER BELOW TOM CREEK AT ROCK RAPIDS, IA

LOCATION.--Lat 43°25'23", long 96°09'52", in SW$\frac{1}{4}$ NW$\frac{1}{4}$ SE$\frac{1}{4}$ sec. 4, T.99 N., R.45 W., Lyon County, Hydrologic Unit 10170204, on right bank 5 ft downstream from bridge on gravel road in Campbell Park, near waterworks lift station, 200 ft east of Tama St and 8th Ave, 1.1 mi downstream from mouth of Tom Creek, and 44.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--853 mi^2.

PERIOD OF RECORD.--May 1, 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,308.57 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite and telephone modem telemetry at station. Precipitation records are not published, but are available.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 8, 1969 reached a stage of 10.23 ft, discharge 29,000 ft^3/s, at discontinued gaging station 1.4 mile upstream and above Tom Creek.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	220	117	98	e64	e51	e54	321	279	332	496	239	75
2	212	113	116	e53	e69	e96	268	268	341	439	213	71
3	204	111	112	e53	e79	e110	231	256	365	395	191	69
4	195	107	117	e45	e72	136	211	245	466	349	176	66
5	188	106	102	e41	e64	104	199	237	1,020	307	196	63
6	185	105	105	e31	e80	101	202	233	1,380	282	225	71
7	185	100	110	e40	e58	106	203	256	1,160	315	185	76
8	180	98	112	e39	e53	104	202	269	1,020	414	155	205
9	171	98	105	e54	e48	92	199	356	965	580	139	465
10	163	97	100	e49	e40	100	213	367	947	611	127	607
11	159	94	99	e52	e49	93	412	386	999	479	141	394
12	158	92	94	e51	e58	81	831	523	963	384	143	256
13	156	91	58	e40	e161	66	1,100	749	980	341	134	239
14	149	92	e52	e30	326	75	993	823	1,690	306	127	508
15	143	94	e70	e27	e303	118	835	777	1,740	264	116	737
16	140	97	e77	e28	231	103	809	702	1,380	232	109	492
17	138	99	e74	e31	e158	87	893	627	1,110	206	110	357
18	134	101	e68	e34	e136	45	890	580	936	185	192	301
19	130	114	e49	e43	e139	60	844	537	817	167	277	262
20	127	130	e58	e45	e142	70	743	497	731	173	223	235
21	127	133	e53	e42	e116	76	644	484	1,290	247	177	232
22	132	135	e46	e31	e122	77	629	506	1,550	230	145	222
23	134	128	e38	e32	e108	88	577	502	1,690	230	127	206
24	138	122	e39	e35	e113	103	508	457	1,230	189	115	213
25	132	112	e53	e52	e95	131	454	435	991	1,530	109	1,080
26	125	118	e51	e46	e105	174	415	475	882	753	113	2,000
27	121	124	e55	e45	e115	273	378	466	792	464	108	2,420
28	123	116	e58	e49	e66	478	345	430	696	487	103	1,770
29	127	111	e57	e47	---	588	318	384	606	410	96	1,320
30	125	87	e76	e51	---	482	297	351	544	334	88	1,100
31	124	---	e66	e58	---	382	---	327	---	279	81	---
TOTAL	4,745	3,242	2,368	1,338	3,157	4,653	15,164	13,784	29,613	12,078	4,680	16,112
MEAN	153	108	76.4	43.2	113	150	505	445	987	390	151	537
MAX	220	135	117	64	326	588	1,100	823	1,740	1,530	277	2,420
MIN	121	87	38	27	40	45	199	233	332	167	81	63
AC-FT	9,410	6,430	4,700	2,650	6,260	9,230	30,080	27,340	58,740	23,960	9,280	31,960
CFSM	0.18	0.13	0.09	0.05	0.13	0.18	0.59	0.52	1.16	0.46	0.18	0.63
IN.	0.21	0.14	0.10	0.06	0.14	0.20	0.66	0.60	1.29	0.53	0.20	0.70

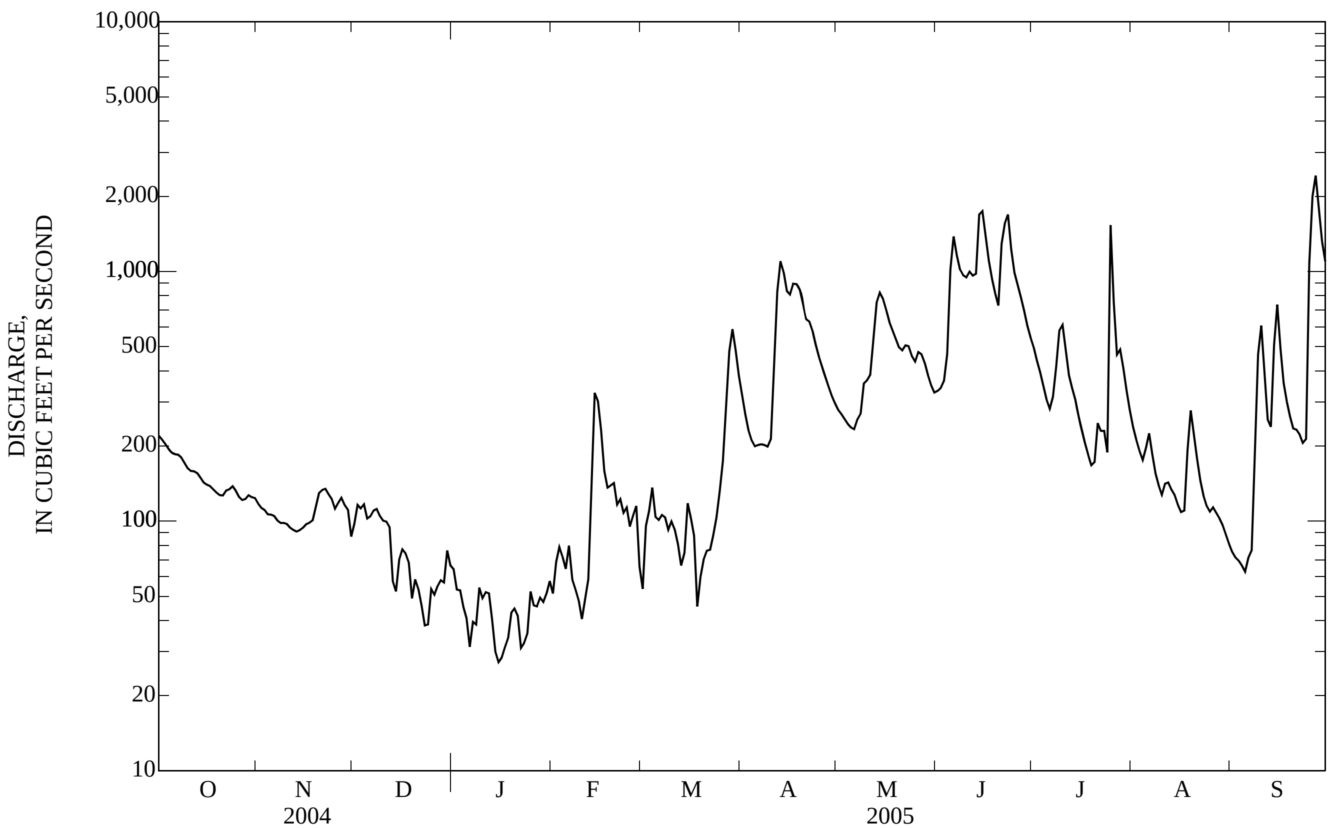
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	96.2	91.3	107	53.9	74.0	294	334	548	706	321	150	211
MAX	153	108	237	89.9	115	694	505	1,216	1,295	561	235	537
(WY)	(2005)	(2005)	(2002)	(2002)	(2002)	(2004)	(2005)	(2001)	(2001)	(2001)	(2004)	(2005)
MIN	50.6	47.3	43.1	39.4	31.4	138	254	310	174	48.2	31.7	46.3
(WY)	(2004)	(2004)	(2004)	(2004)	(2003)	(2003)	(2004)	(2002)	(2002)	(2002)	(2003)	(2002)

06483290 ROCK RIVER BELOW TOM CREEK AT ROCK RAPIDS, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2001 - 2005	
ANNUAL TOTAL	108,547		110,934			
ANNUAL MEAN	297		304		221	
HIGHEST ANNUAL MEAN					304	2005
LOWEST ANNUAL MEAN					146	2003
HIGHEST DAILY MEAN	2,580	Jun 18	2,420	Sep 27	8,870	Jun 13, 2001
LOWEST DAILY MEAN	14	Feb 26	27	Jan 15	12	Jan 26, 2003
ANNUAL SEVEN-DAY MINIMUM	26	Feb 14	33	Jan 13	18	Jan 22, 2003
MAXIMUM PEAK FLOW			2,880	Jul 25	12,000	Jun 13, 2001
MAXIMUM PEAK STAGE			12.57	Jul 25	19.30	Jun 13, 2001
INSTANTANEOUS LOW FLOW			19	Dec 13 a		
ANNUAL RUNOFF (AC-FT)	215,300		220,000		160,000	
ANNUAL RUNOFF (CFSM)	0.348		0.356		0.259	
ANNUAL RUNOFF (INCHES)	4.73		4.84		3.52	
10 PERCENT EXCEEDS	744		812		513	
50 PERCENT EXCEEDS	156		145		113	
90 PERCENT EXCEEDS	38		52		36	

a Result of Freeze-up.
e Estimated.



06483500 ROCK RIVER NEAR ROCK VALLEY, IA

LOCATION.--Lat 43°12'52", long 96°17'39", in SW¼ SW¼ sec.16, T.97 N., R.46 W., Sioux County, Hydrologic Unit 10170204, on left bank 15 ft upstream from bridge on County Highway K30, 0.3 mi north of Rock Valley, and 19.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,592 mi^2.

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

REVISED RECORDS.--WSP 1439: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,222.54 ft above NGVD of 1929. Prior to Aug. 13, 1952, nonrecording gage with supplementary water-stage recorder operating above 6.2 ft gage height. June 4, 1949 to Aug. 12, 1952 and Aug. 13, 1952 to May 4, 1976, water-stage recorder, at site 3.2 mi downstream at datum 10.73 ft lower.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1897 reached a stage of 17.0 ft, former site and datum, discharge not determined, from information by State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	630	346	322	e152	e136	e181	610	698	789	938	480	149
2	596	338	344	e143	e166	e221	544	660	771	867	425	138
3	565	328	346	e141	e180	229	495	627	832	814	386	131
4	534	325	350	e134	e180	234	465	603	946	739	357	122
5	506	317	336	e129	e174	226	443	580	3,110	668	337	114
6	483	316	324	e124	e194	213	451	575	2,820	618	363	121
7	475	312	332	e129	e180	206	499	575	2,630	591	354	128
8	468	302	325	e126	e166	207	505	605	2,410	688	313	226
9	449	296	324	e141	e155	188	487	646	2,200	847	285	588
10	433	299	318	e138	e149	181	482	755	2,090	918	264	769
11	419	288	311	e141	e170	189	633	851	2,010	855	264	703
12	405	282	306	e140	e260	175	1,140	1,160	1,930	716	276	519
13	398	277	e161	e129	e403	138	1,790	1,620	1,790	636	259	462
14	388	275	e145	e119	e700	133	1,920	1,900	2,360	586	246	466
15	379	279	e207	e113	e542	161	1,630	1,820	3,030	529	231	752
16	370	281	e224	e117	e401	221	1,470	1,610	2,500	478	216	724
17	358	287	e215	e118	e315	201	1,500	1,470	2,040	438	223	583
18	349	294	e196	e124	e290	182	1,560	1,390	1,690	401	274	547
19	343	317	e141	e132	e348	99	1,490	1,340	1,440	372	386	503
20	337	352	e162	e135	e278	125	1,380	1,210	1,270	356	423	454
21	334	378	e142	e133	e244	138	1,270	1,090	1,800	371	366	425
22	341	391	e134	e121	e248	146	1,310	1,080	2,590	430	309	403
23	354	391	e124	e122	e220	163	1,330	1,060	3,220	414	271	373
24	357	380	e127	e125	e250	202	1,230	1,010	2,660	384	244	407
25	354	362	e142	e141	e211	249	1,120	958	2,020	1,680	227	911
26	341	365	e139	e136	e222	297	1,030	983	1,740	1,590	226	2,620
27	336	380	e142	e135	e228	385	934	1,030	1,530	947	211	4,240
28	336	370	e144	e139	e196	542	854	982	1,380	786	199	3,720
29	350	363	e145	e136	---	760	790	914	1,200	731	189	2,610
30	360	338	e166	e140	---	776	741	851	1,020	635	176	2,000
31	352	---	e157	e143	---	701	---	804	---	548	164	---
TOTAL	12,700	9,829	6,951	4,096	7,206	8,069	30,103	31,457	57,818	21,571	8,944	25,908
MEAN	410	328	224	132	257	260	1,003	1,015	1,927	696	289	864
MAX	630	391	350	152	700	776	1,920	1,900	3,220	1,680	480	4,240
MIN	334	275	124	113	136	99	443	575	771	356	164	114
AC-FT	25,190	19,500	13,790	8,120	14,290	16,000	59,710	62,390	114,700	42,790	17,740	51,390
CFSM	0.26	0.21	0.14	0.08	0.16	0.16	0.63	0.64	1.21	0.44	0.18	0.54
IN.	0.30	0.23	0.16	0.10	0.17	0.19	0.70	0.74	1.35	0.50	0.21	0.61

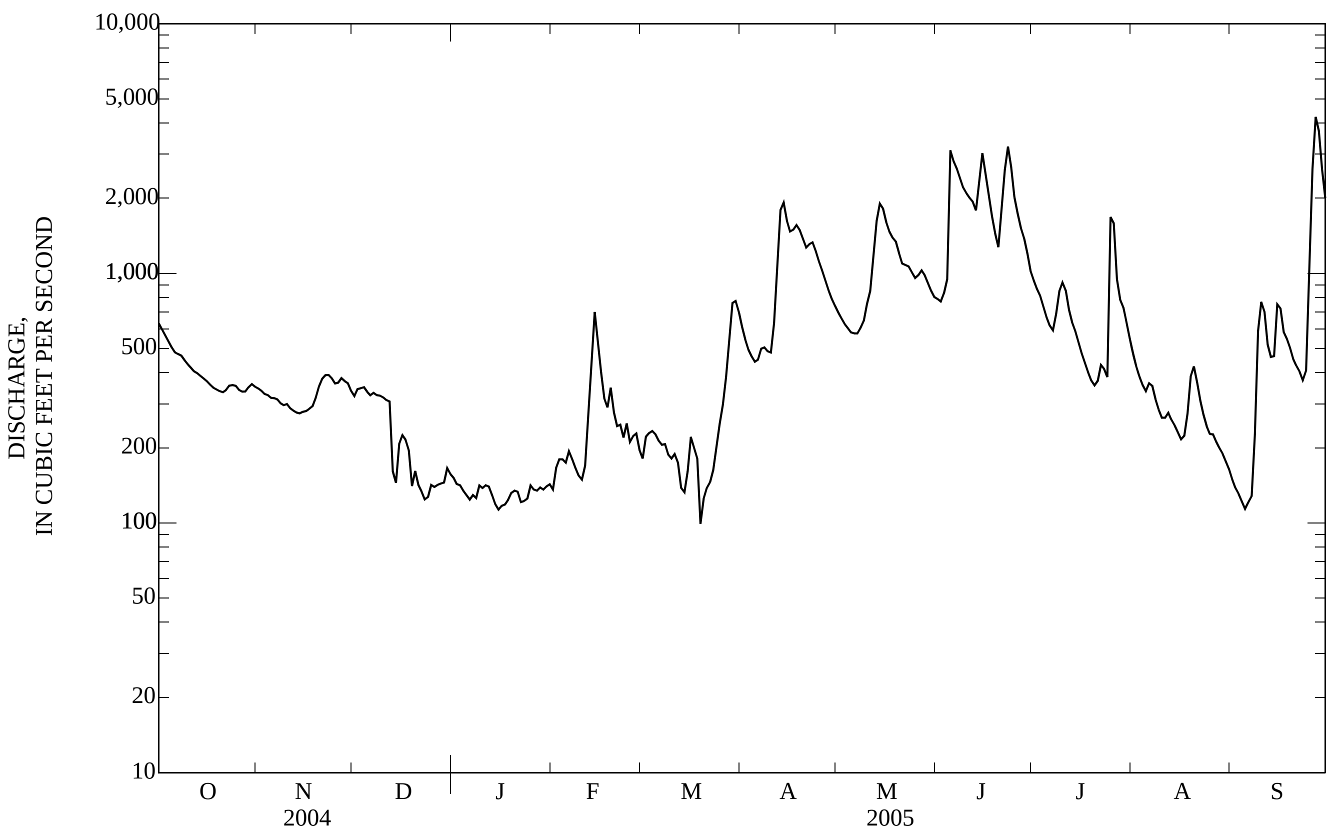
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	231	256	148	82.2	216	987	1,299	720	982	609	269	249
MAX	1,232	2,039	676	434	1,059	4,646	6,507	3,728	6,495	9,088	2,251	2,135
(WY)	(1993)	(1980)	(1983)	(1996)	(1966)	(1997)	(1969)	(1993)	(1993)	(1993)	(1993)	(1986)
MIN	2.39	9.70	3.22	0.04	0.30	35.1	35.9	44.4	46.3	21.9	6.79	3.26
(WY)	(1959)	(1959)	(1959)	(1977)	(1959)	(1959)	(1959)	(1968)	(1964)	(1976)	(1976)	(1955)

06483500 ROCK RIVER NEAR ROCK VALLEY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1949 - 2005	
ANNUAL TOTAL	210,314		224,652			
ANNUAL MEAN	575		615		504	
HIGHEST ANNUAL MEAN					2,656	1993
LOWEST ANNUAL MEAN					31.0	1968
HIGHEST DAILY MEAN	6,820	Mar 2	4,240	Sep 27	35,400	Apr 7, 1969
LOWEST DAILY MEAN	28	Feb 15	99	Mar 19	0.00	Feb 20, 1959 a
ANNUAL SEVEN-DAY MINIMUM	38	Feb 14	122	Jan 13	0.00	Feb 27, 1959
MAXIMUM PEAK FLOW			4,460	Sep 27	40,400	Apr 7, 1969
MAXIMUM PEAK STAGE			9.68	Sep 27	17.32	Apr 7, 1969 b
INSTANTANEOUS LOW FLOW			72	Mar 19		
ANNUAL RUNOFF (AC-FT)	417,200		445,600		365,100	
ANNUAL RUNOFF (CFSM)	0.361		0.387		0.317	
ANNUAL RUNOFF (INCHES)	4.91		5.25		4.30	
10 PERCENT EXCEEDS	1,400		1,510		1,140	
50 PERCENT EXCEEDS	356		363		140	
90 PERCENT EXCEEDS	53		139		17	

a Many days during winter periods in 1959 and 1977.
b At location and datum then in use.
e Estimated.



06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°50'14", long 96°33'41", in SW$\frac{1}{4}$ SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.30, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank 15 ft downstream from Iowa Highway 403 bridge, 0.5 mi northwest of Akron, and 2.9 mi upstream from Union Creek.

DRAINAGE AREA.--8,424 mi^2, of which 1,487 mi^2 usually is noncontributing (documented runoff occurred during 1994-2002 water years for 213 mi^2 of the usually noncontributing area).

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area. WDR SD-84-1: Drainage area. WDR SD-94-1 only: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,118.90 ft above NGVD of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 0.5 mi downstream at same datum. From Dec. 3, 1934, to Oct. 31, 1985, water-stage recorder at site 0.6 mi downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,590	788	843	e440	e330	688	1,570	1,650	1,830	2,700	1,650	465
2	1,560	809	814	e425	e340	617	1,470	1,590	1,920	2,500	1,450	442
3	1,500	788	807	e410	e345	642	1,350	1,520	2,100	2,310	1,260	426
4	1,430	822	765	e395	e350	724	1,230	1,460	2,140	2,150	1,120	407
5	1,330	943	756	e385	e355	684	1,140	1,410	4,670	2,000	1,010	394
6	1,250	1,030	754	e380	e350	665	1,090	1,370	7,410	1,830	963	395
7	1,200	1,000	755	e375	e335	658	1,050	1,350	6,990	1,750	952	395
8	1,160	929	763	e370	e325	653	1,060	1,350	6,510	1,710	978	402
9	1,110	919	770	e370	e320	657	1,050	1,370	6,010	2,000	894	463
10	1,090	904	770	e365	e315	661	1,060	1,420	5,250	2,090	828	1,250
11	1,060	884	768	e360	e326	641	1,160	1,540	4,740	2,020	789	1,930
12	1,020	846	783	e360	e382	641	1,440	1,900	4,430	1,910	763	1,840
13	986	821	715	e355	e493	635	2,360	2,660	4,270	1,740	784	1,630
14	959	813	e650	e350	e1,080	602	3,070	3,250	4,580	2,060	804	1,430
15	939	802	e600	e345	e2,000	575	3,210	3,310	4,950	2,050	722	1,280
16	912	798	e600	e340	e2,000	593	2,990	3,200	4,940	1,780	672	1,530
17	897	790	e650	e335	e1,950	652	2,920	3,040	4,630	1,590	638	1,640
18	872	790	e690	e330	e1,900	685	3,120	2,960	4,300	1,420	647	1,540
19	857	841	e690	e325	e1,800	670	3,230	2,900	3,980	1,260	670	1,530
20	865	841	e670	e325	e1,800	615	3,070	3,020	3,730	1,170	781	1,380
21	835	876	e670	e320	e2,000	550	2,870	2,710	3,610	1,120	863	1,260
22	830	950	e640	e320	e1,900	588	2,730	2,470	3,820	1,100	761	1,130
23	833	945	e620	e315	e1,800	624	2,730	2,330	4,480	1,120	678	1,060
24	833	903	e600	e315	944	655	2,800	2,210	5,400	1,040	639	1,070
25	829	900	e580	e310	758	691	2,550	2,110	5,250	1,060	614	1,150
26	822	898	e560	e310	730	727	2,340	2,030	4,210	2,280	611	1,690
27	805	887	e540	e310	742	782	2,150	2,060	3,740	2,840	583	3,220
28	783	890	e520	e310	708	881	2,010	2,040	3,550	1,860	567	5,070
29	781	878	e500	e315	---	1,070	1,870	2,000	3,250	1,990	555	5,090
30	791	835	e475	e320	---	1,440	1,740	1,920	2,950	2,070	525	4,240
31	783	---	e460	e325	---	1,600	---	1,820	---	1,910	497	---
TOTAL	31,512	26,120	20,778	10,810	26,678	22,566	62,430	65,970	129,640	56,430	25,268	45,749
MEAN	1,017	871	670	349	953	728	2,081	2,128	4,321	1,820	815	1,525
MAX	1,590	1,030	843	440	2,000	1,600	3,230	3,310	7,410	2,840	1,650	5,090
MIN	781	788	460	310	315	550	1,050	1,350	1,830	1,040	497	394
AC-FT	62,500	51,810	41,210	21,440	52,920	44,760	123,800	130,900	257,100	111,900	50,120	90,740

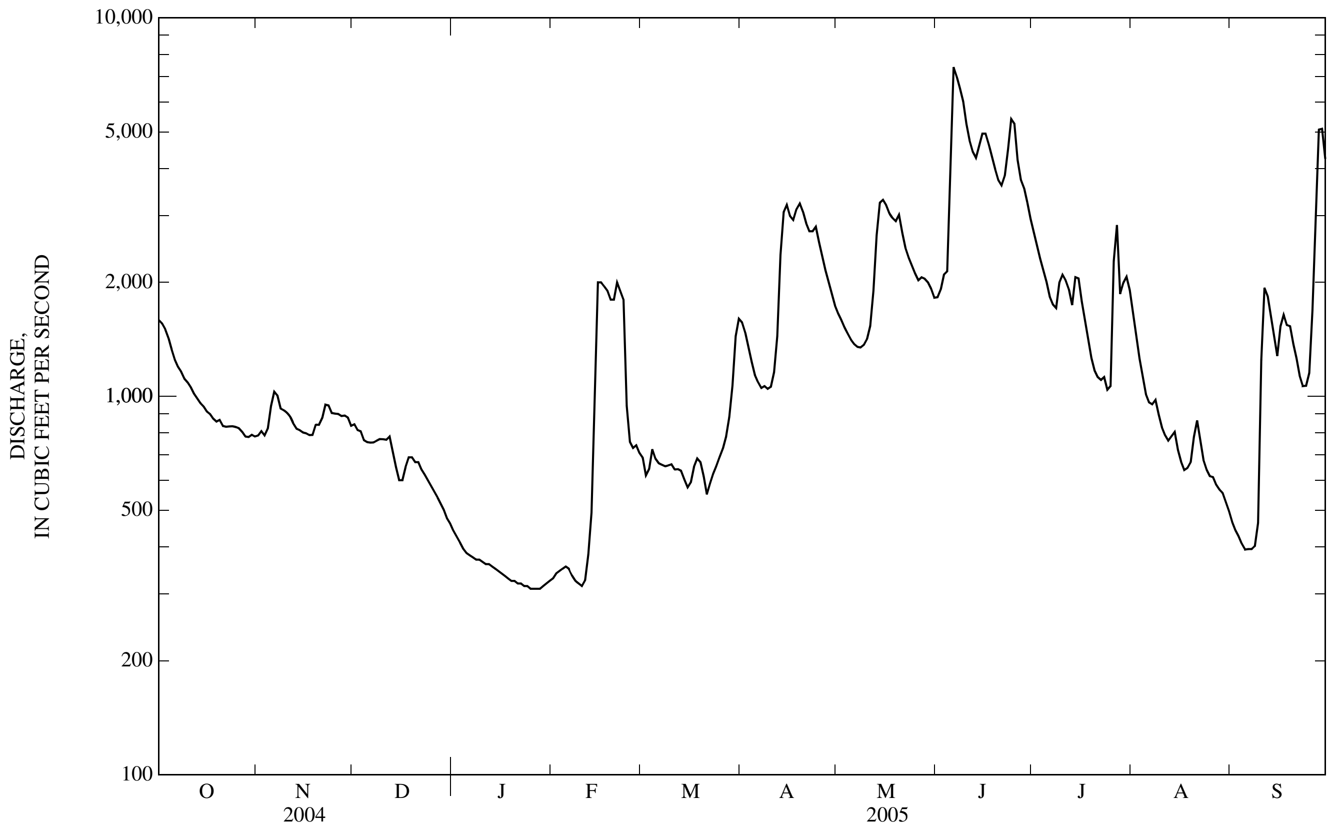
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	536	531	368	220	512	2,328	3,329	1,878	2,234	1,502	767	684
MAX	4,039	3,022	1,987	920	2,399	8,866	20,690	9,499	15,820	21,740	6,200	7,313
(WY)	(1987)	(1980)	(1999)	(1996)	(1966)	(1983)	(1969)	(1993)	(1984)	(1993)	(1993)	(1986)
MIN	32.9	47.9	32.1	6.68	12.1	124	139	73.3	100	50.7	45.2	36.4
(WY)	(1959)	(1959)	(1977)	(1977)	(1936)	(1931)	(1931)	(1934)	(1933)	(1931)	(1976)	(1976)

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1929 - 2005	
ANNUAL TOTAL	496,822		523,951			
ANNUAL MEAN	1,357		1,435		1,241 a	
HIGHEST ANNUAL MEAN					6,271	1993
LOWEST ANNUAL MEAN					120	1931
HIGHEST DAILY MEAN	10,200	Jun 2	7,410	Jun 6	77,500	Apr 9, 1969
LOWEST DAILY MEAN	150	Feb 17	310	Jan 25	4.0	Jan 17, 1977
ANNUAL SEVEN-DAY MINIMUM	153	Feb 14	312	Jan 23	4.4	Jan 15, 1977
MAXIMUM PEAK FLOW			7,640	Jun 6	80,800	Apr 9, 1969 b
MAXIMUM PEAK STAGE			16.20	Jun 6	23.38	Apr 26, 2001 c
ANNUAL RUNOFF (AC-FT)	985,400		1,039,000		899,100	
10 PERCENT EXCEEDS	2,970		3,070		2,920	
50 PERCENT EXCEEDS	881		944		420	
90 PERCENT EXCEEDS	194		378		74	

a Median of annual mean discharges, 900 ft^3/s.
b Gage height, 22.99 ft.
c Discharge, 40,400 ft^3/s.
e Estimated.



06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
12...	1600	E930	200	732	15.1	150	8.6	878	13.2	233	260	12	38.9
NOV													
18...	1100	784	190	735	11.0	97	8.3	982	8.0	271	330	--	40.4
DEC													
13...	1200	871	190	765	14.0	96	7.9	1,000	.0	295	349	5	41.1
JAN													
10...	1300	361	190	727	10.6	76	7.4	1,190	.0	324	396	--	55.0
FEB													
16...	1245	2,030	240	732	12.2	88	7.3	711	.5	163	197	--	36.9
MAR													
14...	1100	593	180	731	17.0	123	8.0	1,000	.5	259	308	--	45.5
APR													
11...	1130	1,150	195	723	8.8	93	8.1	859	15.0	227	269	--	36.8
MAY													
10...	1100	1,340	210	728	9.3	100	8.3	917	16.5	238	280	5	36.5
JUN													
06...	1115	7,560	265	727	5.0	56	7.6	664	19.0	147	177	--	17.3
20...	1140	3,550	232	733	6.9	86	8.1	1,030	24.5	296	350	5	26.6
JUL													
12...	1200	1,970	220	735	8.9	116	7.9	860	27.1	230	270	5	27.8
AUG													
09...	1200	1,080	210	729	11.1	144	8.6	759	26.2	140	164	--	34.6
SEP													
12...	1200	E1,930	220	728	6.2	78	7.6	594	24.0	159	191	--	22.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
12...	13.1	186	<.04	5.73	.010	1.46	.036	.053	.31	5.92	7.07	10.7	.9
NOV													
18...	11.7	193	E.04	6.13	.011	.30	.218	.23	.33	6.59	6.42	2.2	<.1
DEC													
13...	11.1	198	<.04	7.17	.012	.12	.229	.26	.28	7.60	7.59	.9	<.1
JAN													
10...	16.1	241	.12	7.88	.016	.05	.312	.29	.31	8.61	8.82	.4	<.1
FEB													
16...	11.8	110	.88	7.95	.071	1.25	.587	.70	1.26	9.97	12.1	10.7	.2
MAR													
14...	11.6	188	E.03	6.07	.014	.23	.303	.33	.40	6.52	6.69	2.0	<.1
APR													
11...	5.5	160	.16	5.25	.078	1.92	.206	.24	.85	5.84	7.52	17.0	.9
MAY													
10...	4.2	183	<.04	5.74	.018	1.11	.031	.055	.34	6.35	7.44	8.9	1.1
JUN													
06...	11.1	150	.30	6.00	.117	3.28	.269	.32	1.33	7.00	10.7	35.1	2.9
20...	21.5	212	<.04	7.92	.018	1.10	.185	.20	.60	8.20	9.53	11.9	.4
JUL													
12...	13.7	160	<.04	6.37	.025	1.50	.119	.144	.48	6.49	8.03	12.8	.3
AUG													
09...	2.7	189	<.04	1.41	.025	1.86	E.004	.016	.159	2.07	4.02	13.8	.4
SEP													
12...	13.3	105	E.02	1.96	.019	1.96	.170	.20	.71	2.69	4.16	24.7	8.4

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
12...	9.8	4.1	43.2	167	<.006	E.018	<.006	<.005	<.005	.055	<.050	<.010	<.004
NOV													
18...	2.1	3.7	E3.0	E7.1	<.006	E.013	<.006	<.005	<.005	.044	<.050	<.010	<.004
DEC													
13...	.9	2.8	--	--	<.006	E.014	<.006	<.005	<.005	.034	<.050	<.010	<.004
JAN													
10...	.4	2.9	1.6	3.8	<.006	E.012	<.006	<.005	<.005	.034	<.050	<.010	<.004
FEB													
16...	10.5	17.4	112	164	<.006	E.021	.051	<.010	<.005	.072	<.050	<.010	<.004
MAR													
14...	2.0	3.2	E2.9	E6.0	<.006	E.014	<.010	<.005	<.005	.034	<.050	<.010	<.004
APR													
11...	16.1	6.2	15.1	62.1	<.006	E.023	.101	<.005	<.005	.069	<.050	<.010	<.004
MAY													
10...	7.8	4.3	55.3	105	<.006	E.038	.496	<.005	<.005	.402	<.050	<.010	<.004
JUN													
06...	32.2	7.7	22.6	20.8	<.006	E.083	.898	<.006	<.005	.859	<.050	<.010	<.004
20...	11.5	6.4	9.2	13.1	<.006	E.085	.055	<.005	<.005	.628	<.050	<.010	<.004
JUL													
12...	12.5	4.6	38.5	111	<.006	E.040	.012	<.005	<.005	.255	<.050	<.010	<.004
AUG													
09...	13.5	4.7	--	--	<.006	E.021	<.006	<.005	<.005	.095	<.050	<.010	<.004
SEP													
12...	16.3	6.5	58.2	85.2	<.006	E.022	.044	<.005	<.005	.070	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
18...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
16...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAR													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN													
06...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
20...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
09...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.035	<.006	<.003	<.007
NOV													
18...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007
DEC													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.018	<.006	<.003	<.007
JAN													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.015	<.006	<.003	<.007
FEB													
16...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.080	<.006	<.003	<.007
MAR													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.030	<.006	<.003	<.007
APR													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.124	<.006	<.003	<.007
MAY													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.115	<.006	<.003	<.007
JUN													
06...	<.029	<.013	<.024	E.018	<.003	<.004	<.035	<.027	<.015	.284	<.006	<.003	<.007
20...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.082	<.006	<.003	<.007
JUL													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.036	<.006	<.003	<.007
AUG													
09...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007
SEP													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.060	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
12...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
18...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
13...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
10...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
16...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAR													
14...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
10...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	E.005	<.02	<.034
JUN													
06...	<.003	<.010	<.004	<.022	<.011	.03	<.004	<.025	<.011	<.02	<.008	<.02	<.034
20...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JUL													
12...	<.003	<.010	<.004	<.022	<.011	.05	<.004	<.025	<.011	<.02	<.005	<.02	<.034
AUG													
09...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
12...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

06485500 BIG SIOUX RIVER AT AKRON, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)	Number of sampling points, count (00063)
OCT						
12...	<.02	<.010	<.006	<.009	109	10
NOV						
18...	<.02	<.010	<.006	<.009	123	12
DEC						
13...	<.02	<.010	<.006	<.009	176	10
JAN						
10...	<.02	<.010	<.006	<.009	116	6
FEB						
16...	<.02	<.010	<.006	<.009	347	8
MAR						
14...	<.02	<.010	<.006	<.009	48	9
APR						
11...	<.02	<.010	<.006	<.009	334	12
MAY						
10...	<.02	<.010	<.006	<.009	210	10
JUN						
06...	<.02	<.010	<.006	.012	1,180	10
20...	<.02	<.010	<.006	<.009	405	10
JUL						
12...	<.02	<.010	<.006	<.009	273	11
AUG						
09...	<.02	<.010	<.006	<.009	133	11
SEP						
12...	<.02	<.010	<.006	<.009	--	11

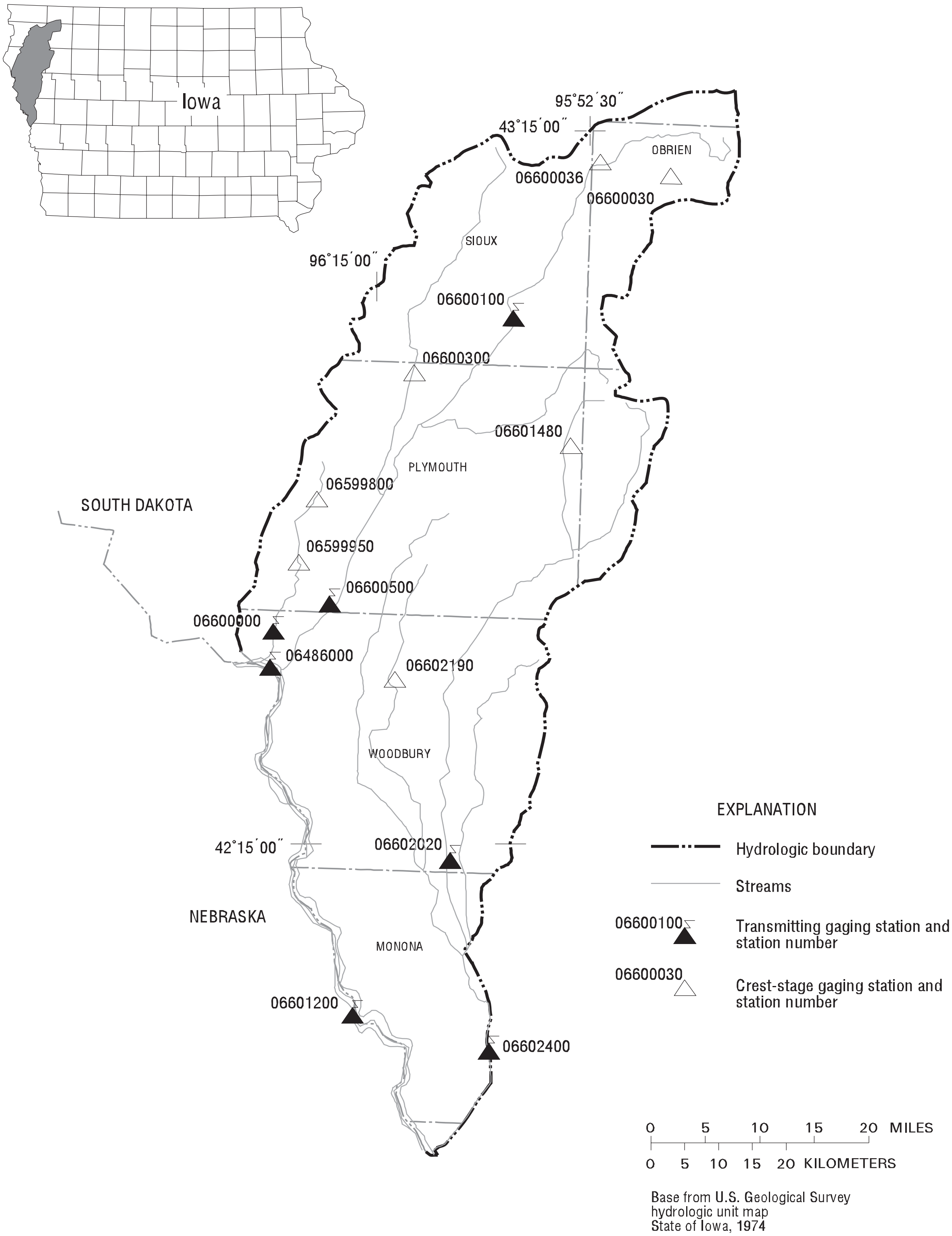


Figure 18. Locations of active continous-record and crest-stage gaging stations in the Missouri River, Floyd River, Perry Creek and Monona-Harrison Ditch drainage basins.

Gaging Stations

Crest Stage Gaging Stations

06486000 MISSOURI RIVER AT SIOUX CITY, IA

LOCATION.--Lat. 42°29'09", long 96°24'49", in NW$\frac{1}{4}$ SE$\frac{1}{4}$ sec.16, T.29 N., R.9 E., sixth prinicipal meridian, Dakota County, Nebraska, Hydrologic Unit 10230001, on right bank, upstream side of bridge on U.S. Highway 20 and 77, at South Sioux City, Nebraska, 1.9 mi downstream from Big Sioux River, and 732.2 mi upstream from mouth.

DRAINAGE.--314,600 mi^2, approximately. The 3,959 mi^2 in Great Divide basin are not included.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1897 to current year in reports of the U.S. Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only, published in WSP 1310. January 1879 to December 1890, monthly discharges only, in House Document 238, 73rd Congress, 2d session, Missouri River. Gage height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft above NGVD of 1929. Sept. 2, 1878 to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi of present site and at various datums. Jan. 1, 1906 to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935 to Sept. 30, 1969, water-stage recorder at site 227 ft downstream at datum 19.98 ft higher, and Oct. 1, 1969 to Sept. 30, 1970 at datum 20.00 ft higher. Oct. 1, 1970 to Jan. 30, 1981, water-stage recorder at site 227 ft downstream at present datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft^3/s Apr. 14, 1952, gage height, 24.28 ft, datum then in use; minimum, 2,500 ft^3/s Dec. 29, 1941; minimum gage height, 7.02 ft Jan. 19, 1996.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24,500	12,100	10,800	12,600	13,300	10,900	24,300	24,400	28,600	27,300	26,400	26,700
2	26,000	12,100	11,400	12,000	12,900	11,100	23,400	23,900	28,000	26,500	26,000	26,700
3	25,900	11,500	12,100	12,700	12,700	10,400	23,600	25,300	27,600	26,000	26,000	26,700
4	25,800	11,500	12,100	13,100	12,200	10,300	23,600	25,000	28,100	25,700	27,100	26,800
5	25,700	11,500	12,000	14,100	11,800	10,300	23,500	23,800	31,800	25,100	26,200	27,000
6	25,500	11,700	11,900	13,900	11,500	10,200	23,600	25,000	38,900	24,700	25,700	27,300
7	25,300	11,800	12,000	14,900	10,300	10,200	24,500	24,800	38,800	24,600	26,000	27,200
8	22,800	11,800	12,500	14,800	9,630	9,980	24,100	24,300	39,700	24,500	26,000	27,200
9	19,900	11,500	13,300	14,900	9,780	9,990	24,000	25,300	40,000	24,500	26,100	27,700
10	17,300	11,300	13,400	15,400	10,400	10,300	24,500	24,400	37,600	24,700	26,400	27,500
11	15,400	11,200	13,300	15,900	10,600	10,300	25,400	23,200	35,100	24,800	26,800	28,100
12	14,800	11,300	13,400	15,800	10,400	10,100	24,800	26,700	32,200	24,900	26,600	29,000
13	14,700	11,200	13,400	15,900	11,300	10,100	23,000	25,800	31,600	24,600	26,200	29,300
14	14,400	11,200	12,700	15,100	12,200	10,100	23,600	22,700	31,900	24,500	26,300	28,800
15	14,400	11,200	13,100	15,300	12,000	10,100	22,900	26,600	32,400	25,300	26,200	28,700
16	13,900	11,100	13,100	16,100	11,700	10,100	22,300	25,100	32,900	25,600	26,100	28,600
17	13,600	11,000	13,000	15,900	11,400	10,100	22,200	21,700	33,000	25,600	26,200	28,800
18	13,600	11,100	14,200	15,300	11,000	10,300	22,400	25,500	32,600	25,600	26,600	29,400
19	13,600	11,400	14,500	16,200	10,900	12,600	24,300	24,700	32,000	25,200	26,400	29,500
20	13,600	11,400	13,500	17,000	11,600	16,400	25,300	22,100	31,300	25,800	26,400	29,200
21	13,300	11,100	e15,400	15,200	11,600	19,400	23,400	26,000	32,000	25,800	26,500	28,500
22	13,200	11,200	e14,500	13,200	11,000	22,500	22,300	25,900	32,400	25,400	26,500	28,300
23	13,200	11,200	14,200	7,850	10,500	24,700	21,300	23,600	30,800	25,300	26,200	28,000
24	13,100	11,100	14,400	12,000	10,500	24,800	21,200	25,700	30,800	25,600	26,100	28,100
25	13,000	11,000	15,400	15,700	10,400	25,200	21,400	27,900	33,200	26,000	26,200	30,700
26	12,900	11,100	17,200	15,800	10,400	24,900	21,500	27,900	32,900	26,100	26,700	30,400
27	12,600	11,400	15,100	14,600	10,400	24,600	21,500	27,300	29,800	27,000	26,700	29,600
28	12,300	11,100	14,700	13,300	10,600	23,800	22,100	27,500	29,600	26,600	26,700	29,700
29	12,400	11,100	14,400	13,700	---	24,200	22,700	27,700	30,300	25,200	26,800	28,900
30	12,400	11,000	13,900	13,200	---	25,100	23,500	27,600	28,700	25,800	26,700	27,900
31	12,200	---	13,700	13,000	---	25,300	---	27,500	---	27,100	26,700	---
TOTAL	521,300	340,200	418,600	444,450	313,010	478,370	696,200	784,900	974,600	791,400	817,500	850,300
MEAN	16,820	11,340	13,500	14,340	11,180	15,430	23,210	25,320	32,490	25,530	26,370	28,340
MAX	26,000	12,100	17,200	17,000	13,300	25,300	25,400	27,900	40,000	27,300	27,100	30,700
MIN	12,200	11,000	10,800	7,850	9,630	9,980	21,200	21,700	27,600	24,500	25,700	26,700
AC-FT	1,034,000	674,800	830,300	881,600	620,900	948,800	1,381,000	1,557,000	1,933,000	1,570,000	1,622,000	1,687,000
CFSM	0.05	0.04	0.04	0.05	0.04	0.05	0.07	0.08	0.10	0.08	0.08	0.09
IN.	0.06	0.04	0.05	0.05	0.04	0.06	0.08	0.09	0.12	0.09	0.10	0.10

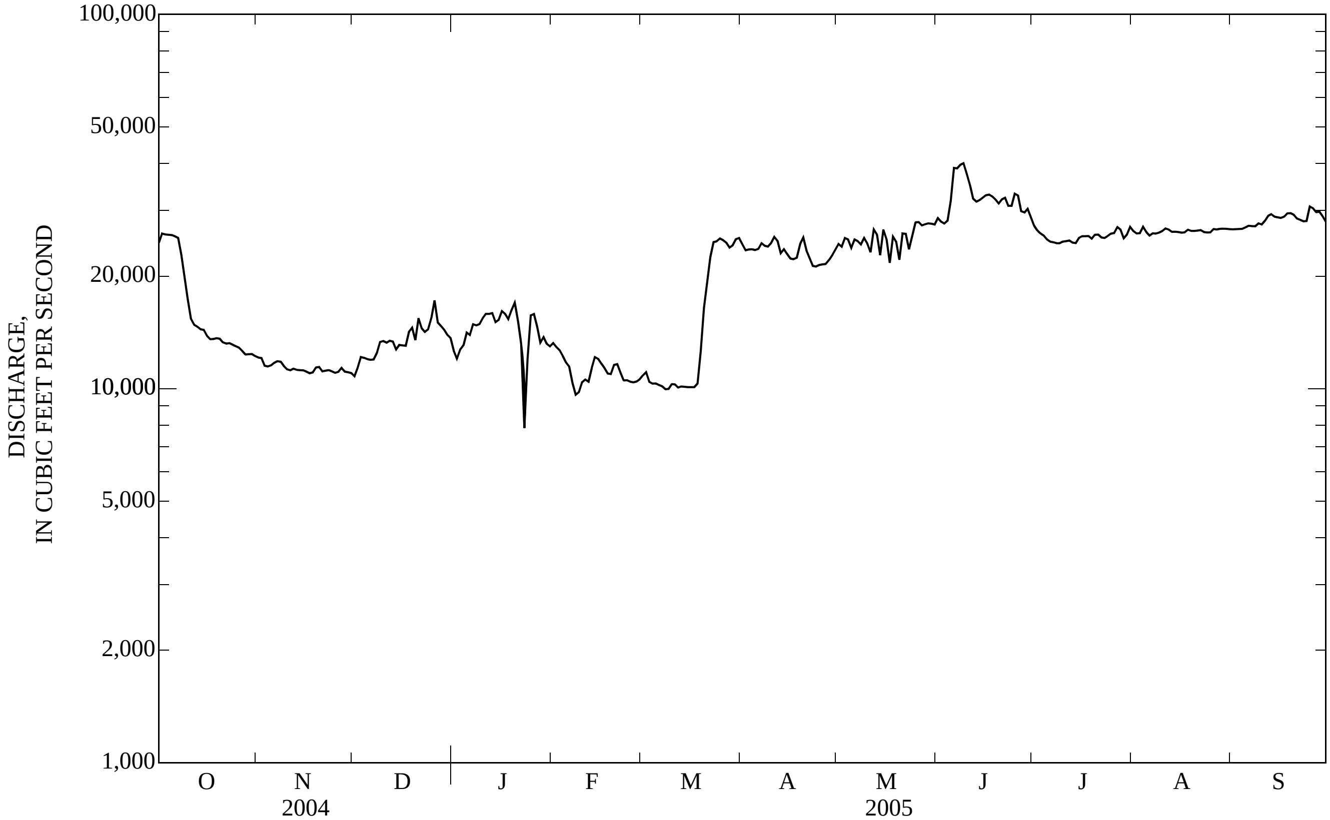
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	35,560	30,740	18,640	16,060	17,050	22,950	32,870	33,570	35,330	35,620	35,890	36,230
MAX	69,300	71,600	39,880	27,720	31,120	47,020	88,040	78,720	66,400	65,550	65,360	66,400
(WY)	(1998)	(1998)	(1998)	(1987)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)
MIN	14,350	6,951	8,271	7,316	6,293	9,135	17,450	23,820	23,270	25,530	24,270	25,790
(WY)	(1962)	(1962)	(1962)	(1964)	(1963)	(1957)	(1957)	(1962)	(1960)	(2005)	(1993)	(1962)

06486000 MISSOURI RIVER AT SIOUX CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005 a	
ANNUAL TOTAL	7,933,000		7,430,830			
ANNUAL MEAN	21,670		20,360		29,250	
HIGHEST ANNUAL MEAN					55,890	1997
LOWEST ANNUAL MEAN					19,770	1957
HIGHEST DAILY MEAN	37,900	Jun 6	40,000	Jun 9	105,000	Jun 25, 1953
LOWEST DAILY MEAN	10,800	Dec 1	7,850	Jan 23	3,000	Dec 11, 1961
ANNUAL SEVEN-DAY MINIMUM	11,100	Nov 25	10,100	Mar 8	5,430	Feb 22, 1963
MAXIMUM PEAK FLOW			40,900	Jun 9	101,000	Apr 3, 1960
MAXIMUM PEAK STAGE			17.91	Jun 9	30.65	Feb 19, 1971
ANNUAL RUNOFF (AC-FT)	15,740,000		14,740,000		21,190,000	
ANNUAL RUNOFF (CFSM)	0.069		0.065		0.093	
ANNUAL RUNOFF (INCHES)	0.94		0.88		1.26	
10 PERCENT EXCEEDS	32,000		28,800		45,900	
50 PERCENT EXCEEDS	22,900		23,200		29,500	
90 PERCENT EXCEEDS	12,000		11,000		12,000	

a Post regulation.
e Estimated.



06486000 MISSOURI RIVER AT SIOUX CITY, IA—Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected from U.S. Highway 20 and 77 bridge in South Sioux City.

PERIOD OF RECORD.--October 1971 to September 30, 2000; October 1, 2003 to current year. Daily sediment loads for October 1954 to September 1971 are in reports of U.S. Army Corps of Engineers.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1972 to September 1976, November 1977 to September 1981, October 1991 to September 30, 2000, October 1, 2003 to current year.
WATER TEMPERATURES: October 1971 to September 1976, November 1977 to September 1981, October 1991 to September 30, 2000, October 1, 2003 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1976, October 1991 to September 30, 2000, October 1, 2003 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 985 microsiemens Apr. 19, 1999; minimum daily, 410 microsiemens Mar. 22, 1978.
WATER TEMPERATURES: Maximum daily, 29.0°C July 25, 2005; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,420 mg/L May 18, 2000; minimum daily mean, 39 mg/L July 14, 2005.
SEDIMENT LOADS: Maximum daily, 370,000 tons July 17, 1996; minimum daily, 1,440 tons Dec. 7, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 807 microsiemens May 17; minimum daily, 633 microsiemens Mar. 23.
WATER TEMPERATURES: Maximum daily, 29.0°C July 25; minimum daily, 0.5°C Jan. 21, 27.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 840 mg/L June 9; minimum daily mean, 39 mg/L July 14.
SEDIMENT LOADS: Maximum daily,90,900 tons June 9; minimum daily, 2,070 tons Nov. 17.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Bed sedi- ment, dry svd sve dia percent <.063mm (80164)	Bed sedi- ment, dry svd sve dia percent <.125mm (80165)	Bed sedi- ment, dry svd sve dia percent <.25mm (80166)	Bed sedi- ment, dry svd sve dia percent <.5 mm (80167)	Bed sedi- ment, dry svd sve dia percent <1 mm (80168)	Bed sedi- ment, dry svd sve dia percent <2 mm (80169)	Bed sedi- ment, dry svd sve dia percent <4 mm (80170)	Bed sedi- ment, dry svd sve dia percent <8 mm (80171)	Bed sedi- ment, dry svd sve dia percent <16 mm (80172)	Bed sedi- ment, dry svd sve dia percent <128 mm (80175)
NOV											
03...	1130	.0	.0	30	83	97	99	100	100	100	100
DEC											
03...	1140	.0	.0	6	72	94	98	100	100	100	100
JAN											
21...	1255	.0	.0	4	49	88	97	99	100	100	100
FEB											
11...	1122	.0	.0	7	79	97	98	99	100	100	100
MAR											
03...	1045	.0	2	17	54	87	95	98	99	100	100
APR											
04...	1215	.0	1	12	77	95	98	99	100	100	100
MAY											
02...	1055	.0	.0	10	69	89	98	100	100	100	100
02...	1100	.0	.0	15	82	98	100	100	100	100	100
JUN											
13...	1120	.0	.0	13	77	94	96	97	98	100	100
JUL											
05...	1205	.0	.0	11	69	92	98	99	100	100	100
AUG											
08...	1140	.0	.0	28	85	97	98	98	100	100	100
SEP											
13...	1110	.0	.0	14	67	91	97	99	100	100	100

06486000 MISSOURI RIVER AT SIOUX CITY, IA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	739	---	---	---	---	---	---	---	---	---	760	---
2	---	---	---	---	---	---	---	675	---	---	---	---
3	---	724	712	---	---	662	---	---	---	---	---	---
4	---	---	---	---	---	---	689	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	734	---	---
6	---	---	---	---	---	---	---	---	721	---	---	---
7	---	---	699	---	---	---	---	---	---	---	---	768
8	691	748	---	---	---	645	---	---	---	---	769	---
9	---	---	---	---	---	---	---	668	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	693	---	671	---	---	732	---	---
12	772	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	800	---	---	755
14	---	---	---	---	---	652	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	759	---
16	---	739	---	---	---	---	---	---	---	---	---	---
17	---	---	701	---	714	---	---	807	---	---	---	---
18	736	---	---	---	---	---	715	---	---	753	---	---
19	---	---	---	---	---	---	---	---	---	---	---	767
20	---	---	---	---	---	---	---	---	773	---	---	---
21	---	---	---	704	---	---	---	---	---	---	---	---
22	---	729	---	---	---	---	---	---	743	---	756	---
23	---	---	---	---	---	633	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	736	---	---	---	---	---	---	---	---	765	---	---
26	---	---	---	---	---	---	754	---	---	---	---	735
27	---	---	---	713	---	---	---	---	---	---	---	---
28	---	---	---	---	---	652	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	763	---
30	---	---	700	---	---	---	---	685	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	---	---	---	---	---	---	---	---	---	27.5	---
2	---	---	---	---	---	---	---	11.0	---	---	---	---
3	---	9.5	3.0	---	---	3.0	---	---	---	---	---	---
4	---	---	---	---	---	---	11.0	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	28.0	---	---
6	---	---	---	---	---	---	---	---	21.5	---	---	---
7	---	---	4.0	---	---	---	---	---	---	---	---	23.5
8	18.5	9.5	---	---	---	5.5	---	---	---	---	27.5	---
9	---	---	---	---	---	---	---	16.5	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	4.0	---	13.0	---	---	26.5	---	---
12	16.0	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	22.5	---	---	24.0
14	---	---	---	---	---	2.0	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	25.0	---
16	---	8.5	---	---	---	---	---	---	---	---	---	---
17	---	---	2.5	---	2.0	---	---	16.0	---	---	---	---
18	12.0	---	---	---	---	---	15.5	---	---	27.0	---	---
19	---	---	---	---	---	---	---	---	---	---	---	21.5
20	---	---	---	---	---	---	---	---	25.0	---	---	---
21	---	---	---	0.5	---	---	---	---	---	---	---	---
22	---	7.0	---	---	---	---	---	---	27.0	---	26.0	---
23	---	---	---	---	---	4.5	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	12.0	---	---	---	---	---	---	---	---	29.0	---	---
26	---	---	---	---	---	---	12.0	---	---	---	---	20.0
27	---	---	---	0.5	---	---	---	---	---	---	---	---
28	---	---	---	---	---	7.0	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	24.5	---
30	---	---	1.5	---	---	---	---	19.5	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

06486000 MISSOURI RIVER AT SIOUX CITY, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

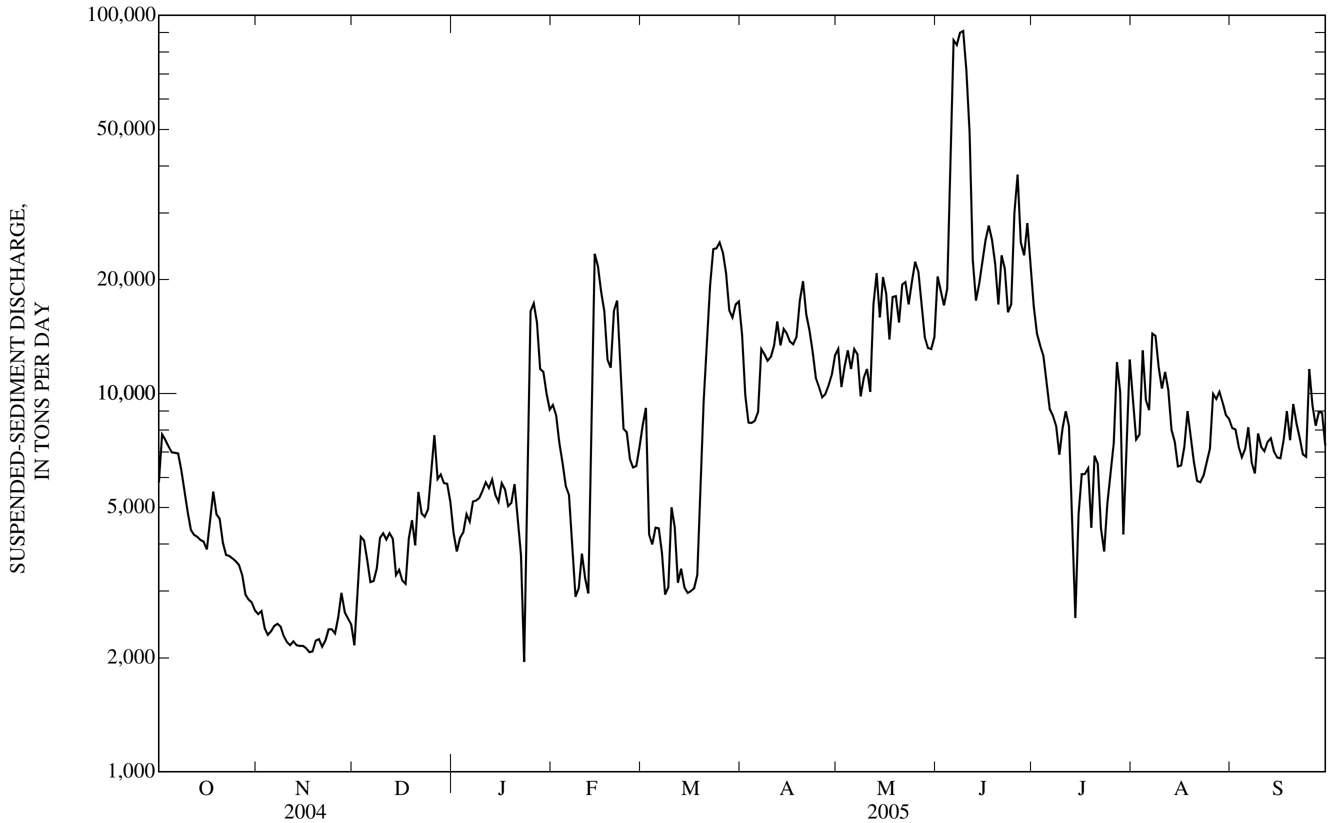
Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	88	5,820	80	2,610	74	2,160	125	4,270	260	9,330	281	8,240
2	111	7,800	82	2,660	98	3,030	118	3,820	250	8,760	305	9,160
3	108	7,550	77	2,400	128	4,180	121	4,160	216	7,400	150	4,240
4	104	7,250	74	2,300	125	4,090	122	4,300	198	6,550	143	3,990
5	101	6,990	75	2,350	112	3,630	126	4,800	179	5,700	159	4,420
6	101	6,970	77	2,430	98	3,170	122	4,590	174	5,400	159	4,400
7	102	6,940	77	2,460	99	3,190	129	5,180	135	3,770	139	3,800
8	102	6,280	76	2,420	103	3,450	131	5,210	112	2,900	109	2,940
9	103	5,540	74	2,280	115	4,150	132	5,290	115	3,050	114	3,070
10	104	4,860	72	2,200	118	4,270	133	5,530	134	3,770	179	5,000
11	105	4,360	71	2,160	115	4,110	136	5,820	114	3,250	159	4,430
12	106	4,230	72	2,210	118	4,270	131	5,620	105	2,960	116	3,160
13	106	4,180	71	2,160	114	4,130	138	5,920	324	10,200	126	3,440
14	105	4,100	71	2,150	96	3,310	133	5,400	711	23,400	112	3,070
15	105	4,060	71	2,150	97	3,420	125	5,180	669	21,700	109	2,970
16	104	3,870	71	2,120	91	3,200	133	5,790	590	18,600	110	3,000
17	126	4,630	70	2,070	89	3,140	130	5,580	538	16,500	112	3,050
18	150	5,500	70	2,080	108	4,130	122	5,040	416	12,300	119	3,310
19	130	4,790	72	2,220	118	4,620	117	5,140	397	11,700	150	5,130
20	127	4,660	73	2,240	109	3,970	126	5,760	529	16,500	214	9,560
21	112	4,030	71	2,140	132	5,490	114	4,670	559	17,600	268	14,000
22	105	3,740	73	2,220	123	4,820	105	3,750	386	11,600	317	19,300
23	104	3,720	79	2,380	123	4,720	91	1,950	284	8,070	362	24,100
24	104	3,660	79	2,380	127	4,930	229	7,680	278	7,900	362	24,200
25	103	3,600	78	2,320	148	6,180	389	16,500	238	6,720	369	25,100
26	101	3,520	86	2,560	167	7,760	404	17,300	227	6,370	350	23,600
27	97	3,310	97	2,970	146	5,940	389	15,400	228	6,430	313	20,800
28	88	2,940	88	2,640	153	6,110	323	11,600	252	7,220	258	16,600
29	86	2,850	85	2,540	149	5,800	307	11,400	---	---	244	15,900
30	84	2,800	82	2,450	153	5,770	281	10,000	---	---	254	17,200
31	81	2,670	---	---	140	5,160	259	9,070	---	---	256	17,500
TOTAL	---	147,220	---	70,270	---	136,300	---	211,720	---	265,650	---	308,680

06486000 MISSOURI RIVER AT SIOUX CITY, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	April Mean concentration (mg/l)	April Load (tons/day)	May Mean concentration (mg/l)	May Load (tons/day)	June Mean concentration (mg/l)	June Load (tons/day)	July Mean concentration (mg/l)	July Load (tons/day)	August Mean concentration (mg/l)	August Load (tons/day)	September Mean concentration (mg/l)	September Load (tons/day)
1	217	14,300	200	13,100	264	20,400	231	17,000	135	9,650	113	8,100
2	157	9,910	161	10,400	248	18,700	201	14,400	108	7,560	111	8,030
3	131	8,370	172	11,800	229	17,100	190	13,400	111	7,800	100	7,230
4	131	8,360	192	13,000	250	18,900	181	12,600	177	13,000	94	6,780
5	134	8,470	180	11,600	475	42,000	160	10,800	136	9,620	98	7,130
6	140	8,930	193	13,100	817	85,900	136	9,090	130	9,040	111	8,140
7	198	13,100	189	12,700	797	83,500	131	8,740	205	14,400	89	6,580
8	195	12,700	150	9,830	839	89,900	124	8,210	203	14,200	84	6,150
9	189	12,200	161	11,000	840	90,900	104	6,890	166	11,700	105	7,840
10	188	12,500	176	11,600	703	71,400	121	8,090	144	10,300	97	7,220
11	196	13,400	161	10,100	514	48,900	134	8,970	157	11,400	93	7,030
12	232	15,500	236	17,200	258	22,500	122	8,200	142	10,200	95	7,450
13	215	13,400	296	20,800	206	17,600	74	4,910	113	8,010	96	7,610
14	233	14,800	259	15,900	227	19,500	39	2,550	105	7,460	90	7,010
15	234	14,400	282	20,300	255	22,300	70	4,790	91	6,410	87	6,770
16	227	13,700	270	18,300	287	25,500	89	6,120	91	6,450	87	6,740
17	226	13,500	236	13,900	312	27,800	89	6,130	102	7,220	97	7,540
18	233	14,100	259	18,000	290	25,500	92	6,340	125	8,980	113	8,980
19	268	17,600	271	18,100	254	22,000	65	4,420	108	7,680	95	7,530
20	289	19,800	258	15,400	204	17,200	98	6,850	92	6,580	119	9,370
21	255	16,200	276	19,400	266	23,200	94	6,530	82	5,870	108	8,340
22	243	14,700	282	19,700	244	21,400	64	4,400	81	5,820	100	7,630
23	223	12,900	270	17,200	198	16,400	56	3,820	86	6,060	91	6,900
24	192	11,000	285	19,800	207	17,200	74	5,120	93	6,570	90	6,800
25	180	10,400	297	22,300	330	30,000	89	6,210	101	7,150	139	11,600
26	168	9,770	279	21,000	424	37,900	105	7,400	138	9,980	113	9,300
27	172	9,980	230	17,000	311	25,100	165	12,100	134	9,670	103	8,220
28	177	10,500	190	14,100	291	23,200	139	10,100	140	10,100	111	8,940
29	183	11,200	176	13,200	345	28,200	62	4,240	131	9,460	114	8,880
30	199	12,600	176	13,100	276	21,500	98	6,890	121	8,770	97	7,290
31	---	---	190	14,100	---	---	168	12,300	119	8,560	---	---
TOTAL	---	378,290	---	477,030	---	1,031,600	---	247,610	---	275,670	---	233,130

YEAR 3,783,170


SUSPENDED-SEDIMENT DISCHARGE, IN TONS PER DAY
100,000
50,000
20,000
10,000
5,000
2,000
1,000
O
N
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2004
2005

06600000 PERRY CREEK AT 38th STREET, SIOUX CITY, IA

LOCATION.--Lat 42°32'06", long 96°24'38", in SE¼ SE¼ sec.8, T.89 N., R.47 W., Woodbury County, Hydrologic Unit 10230001, on left bank at downstream side of bridge on 38th Street in Sioux City, 1.9 mi downstream from West Branch, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--65.1 mi^2.

PERIOD OF RECORD.--October 1945 to September 1969, June 1981 to September 30, 2004. Stage-only record October 1, 2004 to current.

REVISED RECORDS.--WSP 1440: Drainage area. WDR IA-95-1: River mile.

GAGE.--Water-stage recorder. Datum of gage is 1,112.04 ft above NGVD of 1929 (City of Sioux City benchmark). Prior to May 20, 1954, nonrecording gage with supplementary water-stage recorder in operation above 5.0 ft gage height and May 20, 1954 to Sept. 30, 1969, water-stage recorder at present site at datum 5.0 ft higher.

REMARKS.-- A reliable record of stage was obtained for the year. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

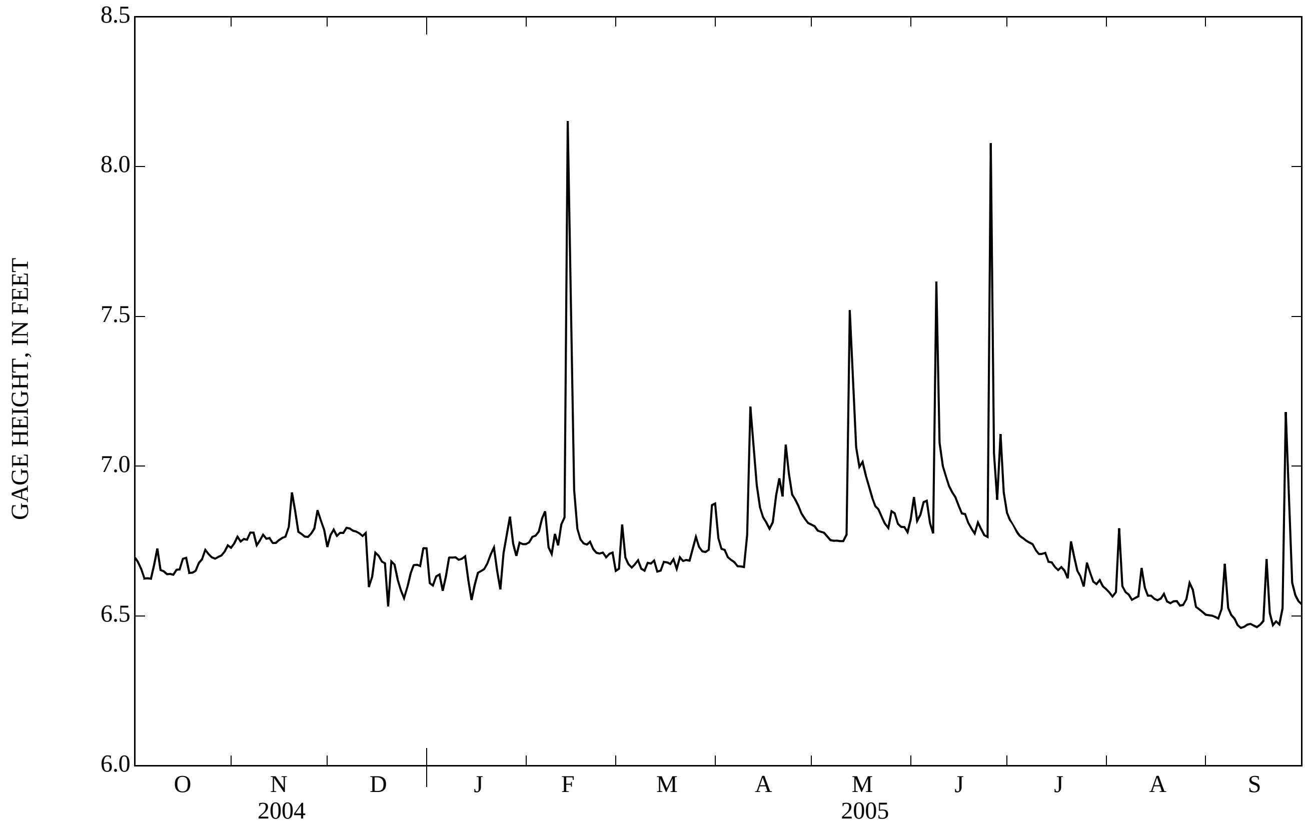
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 7, 1944 reached a stage of about 30.5 ft from floodmarks, present datum, discharge, 9,600 ft^3/s, on basis of contracted-opening measurement of peak flow by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height of 10.47 ft on June 25. Minimum gage height of 6.37 ft on Dec. 18.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.69	6.74	6.77	6.61	6.75	6.66	6.76	6.80	6.90	6.82	6.58	6.50
2	6.68	6.76	6.79	6.60	6.76	6.80	6.72	6.78	6.82	6.80	6.56	6.50
3	6.66	6.75	6.77	6.63	6.77	6.70	6.72	6.78	6.84	6.78	6.58	6.50
4	6.62	6.76	6.78	6.64	6.78	6.67	6.70	6.78	6.88	6.77	6.79	6.49
5	6.63	6.75	6.78	6.58	6.82	6.66	6.69	6.76	6.88	6.76	6.60	6.52
6	6.62	6.78	6.79	6.63	6.85	6.67	6.68	6.75	6.81	6.75	6.58	6.67
7	6.67	6.78	6.79	6.70	6.73	6.68	6.67	6.75	6.78	6.74	6.57	6.53
8	6.72	6.74	6.78	6.69	6.71	6.66	6.66	6.75	7.61	6.74	6.55	6.50
9	6.65	6.75	6.78	6.70	6.77	6.65	6.66	6.75	7.08	6.72	6.56	6.49
10	6.65	6.77	6.78	6.69	6.74	6.68	6.77	6.75	7.00	6.71	6.56	6.47
11	6.64	6.76	6.77	6.69	6.80	6.67	7.20	6.77	6.97	6.71	6.66	6.46
12	6.64	6.76	6.78	6.70	6.83	6.68	7.06	7.52	6.93	6.71	6.60	6.46
13	6.64	6.74	6.60	6.62	8.15	6.65	6.94	7.26	6.91	6.68	6.57	6.47
14	6.65	6.74	6.63	6.55	7.43	6.65	6.86	7.06	6.90	6.68	6.57	6.47
15	6.65	6.75	6.71	6.60	6.92	6.68	6.83	7.00	6.87	6.66	6.56	6.47
16	6.69	6.76	6.70	6.64	6.79	6.68	6.81	7.01	6.84	6.65	6.55	6.46
17	6.69	6.76	6.68	6.65	6.75	6.67	6.79	6.97	6.84	6.66	6.56	6.47
18	6.64	6.80	6.68	6.66	6.74	6.69	6.81	6.93	6.81	6.65	6.57	6.48
19	6.64	6.91	6.53	6.68	6.74	6.66	6.90	6.89	6.79	6.63	6.55	6.69
20	6.65	6.85	6.68	6.70	6.75	6.70	6.96	6.87	6.77	6.75	6.54	6.51
21	6.68	6.78	6.67	6.73	6.72	6.68	6.90	6.85	6.81	6.70	6.55	6.47
22	6.69	6.77	6.62	6.65	6.71	6.69	7.07	6.83	6.79	6.65	6.55	6.48
23	6.72	6.76	6.59	6.59	6.71	6.68	6.97	6.81	6.77	6.63	6.53	6.47
24	6.71	6.76	6.56	6.71	6.71	6.72	6.90	6.79	6.76	6.60	6.54	6.53
25	6.69	6.77	6.59	6.77	6.70	6.76	6.89	6.85	8.08	6.68	6.55	7.18
26	6.69	6.79	6.64	6.83	6.71	6.73	6.87	6.84	7.04	6.64	6.61	6.86
27	6.70	6.85	6.67	6.74	6.71	6.71	6.84	6.81	6.89	6.61	6.59	6.61
28	6.70	6.82	6.67	6.70	6.65	6.71	6.82	6.80	7.11	6.61	6.53	6.57
29	6.71	6.79	6.67	6.74	---	6.72	6.81	6.80	6.91	6.62	6.52	6.55
30	6.73	6.73	6.73	6.74	---	6.87	6.80	6.78	6.84	6.60	6.51	6.54
31	6.73	---	6.73	6.74	---	6.87	---	6.82	---	6.59	6.50	---
MEAN	6.67	6.77	6.70	6.67	6.83	6.70	6.84	6.87	6.94	6.69	6.57	6.55
MAX	6.73	6.91	6.79	6.83	8.15	6.87	7.20	7.52	8.08	6.82	6.79	7.18
MIN	6.62	6.73	6.53	6.55	6.65	6.65	6.66	6.75	6.76	6.59	6.50	6.46

06600000 PERRY CREEK AT 38th STREET, SIOUX CITY, IA—Continued



06600100 FLOYD RIVER AT ALTON, IA

LOCATION.--Lat 42°58'55", long 96°00'03", in NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.11, T.94 N., R.44 W., Sioux County, Hydrologic Unit 10230002, on right bank, 15 ft downstream from road on South County Road at east edge of Alton, 34.3 mi upstream from West Branch Floyd River, and 55.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--268 mi^2.

PERIOD OF RECORD.--October 1955 to current year. Prior to December 1955, monthly discharge only, published in WSP 1730.

REVISED RECORDS.--WDR IA-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,269.55 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a discharge of about 45,500 ft^3/s, from information by U. S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	96	108	e62	e44	52	83	122	200	185	46	8.4
2	201	99	104	e51	e69	e60	84	119	229	169	42	7.9
3	188	96	102	e50	92	e57	86	114	247	157	39	7.8
4	176	96	101	e42	88	55	86	112	261	146	38	7.9
5	166	94	97	e38	86	49	87	110	381	135	31	8.5
6	161	95	96	e30	85	47	86	110	456	135	26	24
7	158	92	95	e37	e60	49	94	109	407	129	24	29
8	156	86	91	e35	e53	46	88	118	405	127	22	31
9	155	85	89	e50	e50	43	86	189	459	125	21	135
10	149	88	87	e45	e44	45	88	214	410	120	25	69
11	143	83	83	e47	53	46	128	204	357	110	26	36
12	139	80	84	e47	55	46	214	335	318	102	31	21
13	137	80	65	e36	110	37	256	638	292	94	24	19
14	131	79	e55	e27	204	64	252	861	277	89	20	18
15	130	79	e68	e25	166	75	225	570	279	85	18	14
16	126	80	e77	e23	107	56	202	440	256	80	17	11
17	121	80	e75	e24	84	49	185	385	238	e75	17	10
18	117	80	e72	e27	e83	49	173	338	222	e70	18	14
19	115	94	e52	e36	e76	39	167	303	208	65	17	15
20	111	112	e66	e38	e71	44	162	277	199	64	16	20
21	111	120	e62	e34	72	45	156	259	278	63	14	15
22	113	121	e54	e25	64	48	175	246	382	58	13	13
23	116	120	e44	e28	64	53	186	230	322	54	12	11
24	111	114	e44	e33	62	61	179	218	271	50	12	17
25	103	111	e55	e50	60	67	172	219	251	65	13	70
26	100	110	e51	e46	60	69	163	233	242	86	13	140
27	100	113	e54	e46	58	74	152	228	226	76	13	147
28	102	111	e58	e48	41	80	140	219	215	63	11	117
29	105	109	e57	e46	---	84	132	205	205	58	9.8	93
30	106	108	e87	e46	---	89	126	193	198	53	9.6	80
31	100	---	e65	e54	---	88	---	188	---	50	8.9	---
TOTAL	4,161	2,911	2,298	1,226	2,161	1,766	4,413	8,106	8,691	2,938	647.3	1,209.5
MEAN	134	97.0	74.1	39.5	77.2	57.0	147	261	290	94.8	20.9	40.3
MAX	214	121	108	62	204	89	256	861	459	185	46	147
MIN	100	79	44	23	41	37	83	109	198	50	8.9	7.8
AC-FT	8,250	5,770	4,560	2,430	4,290	3,500	8,750	16,080	17,240	5,830	1,280	2,400
CFSM	0.50	0.36	0.28	0.15	0.29	0.21	0.55	0.98	1.08	0.35	0.08	0.15
IN.	0.58	0.40	0.32	0.17	0.30	0.25	0.61	1.13	1.21	0.41	0.09	0.17

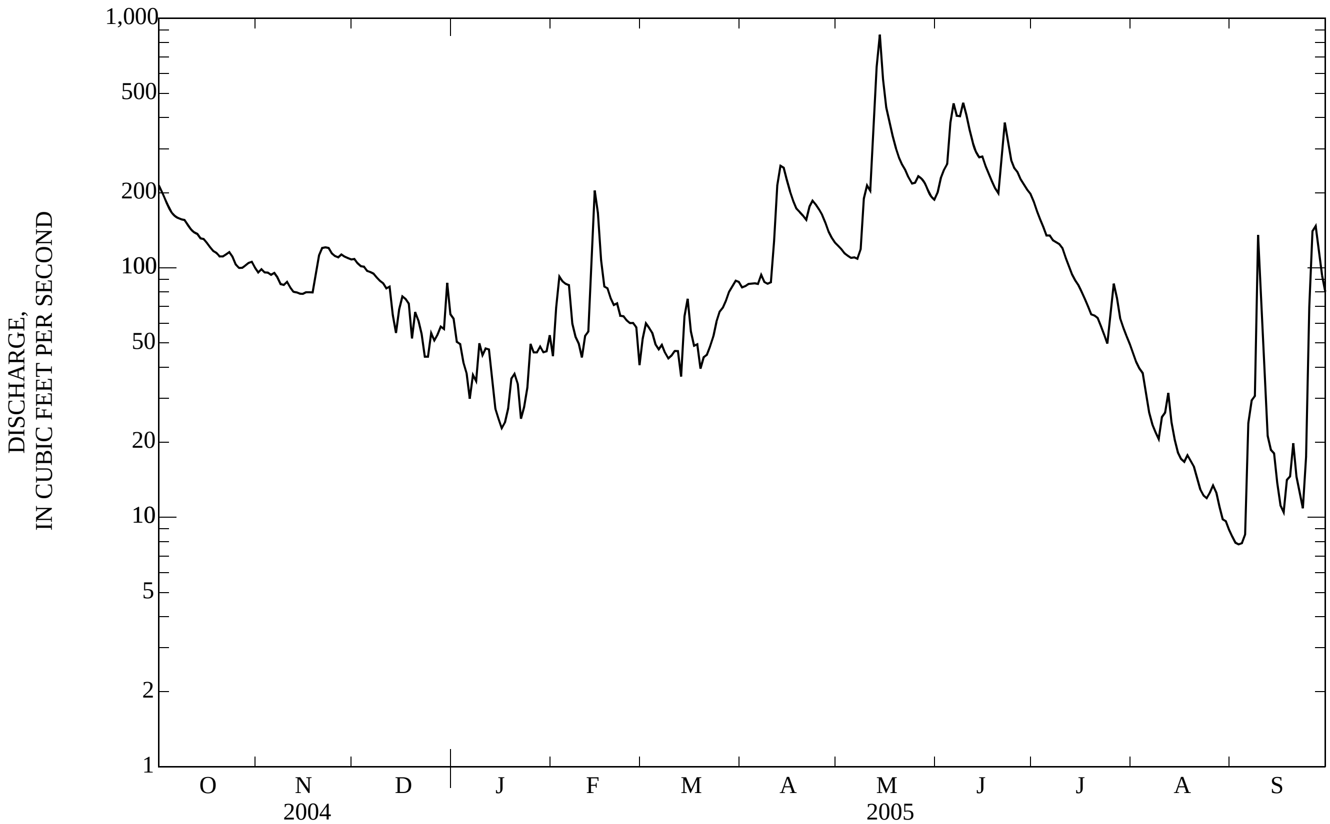
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	42.0	41.1	27.4	18.3	43.7	164	177	125	180	93.7	42.7	35.0
MAX	234	287	128	109	252	605	906	454	973	878	369	308
(WY)	(1993)	(1980)	(1983)	(1973)	(1971)	(1979)	(1969)	(1995)	(1984)	(1993)	(1995)	(2004)
MIN	0.06	0.30	0.07	0.05	0.15	1.77	3.67	2.92	2.36	3.29	0.37	0.08
(WY)	(1957)	(1959)	(1959)	(1959)	(1977)	(1959)	(1959)	(1968)	(1968)	(1958)	(1968)	(1958)

06600100 FLOYD RIVER AT ALTON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1956 - 2005	
ANNUAL TOTAL	40,772.6		40,527.8			
ANNUAL MEAN	111		111		82.5	
HIGHEST ANNUAL MEAN					323	1993
LOWEST ANNUAL MEAN					2.66	1968
HIGHEST DAILY MEAN	935	Sep 18	861	May 14	7,160	Apr 4, 1969
LOWEST DAILY MEAN	2.0	Jan 19	7.8	Sep 3	0.00	Oct 14, 1956 a
ANNUAL SEVEN-DAY MINIMUM	3.3	Jan 13	8.4	Aug 30	0.00	Oct 27, 1956
MAXIMUM PEAK FLOW			915	May 14	16,300	Jun 20, 1983 b
MAXIMUM PEAK STAGE			9.98	May 14	18.54	Jun 20, 1983 c
INSTANTANEOUS LOW FLOW			5.9	Dec 13 d		
ANNUAL RUNOFF (AC-FT)	80,870		80,390		59,770	
ANNUAL RUNOFF (CFSM)	0.416		0.414		0.308	
ANNUAL RUNOFF (INCHES)	5.66		5.63		4.18	
10 PERCENT EXCEEDS	258		229		191	
50 PERCENT EXCEEDS	70		85		22	
90 PERCENT EXCEEDS	6.7		21		1.6	

a No flow at times in 1956, 1958-59, 1965, 1968, 1977.
b From rating curve extended above 8,500 ft^3/s.
c From floodmark.
d Result of Freeze-up.
e Estimated.



06600500 FLOYD RIVER AT JAMES, IA

LOCATION.--Lat 42°34'36", long 96°18'40", in SE1/4 SE1/4 sec.30, T.90 N., R.46 W., Plymouth County, Hydrologic Unit 10230002, on left bank at upstream side of bridge on County Highway C70, 0.2 mi east of James, 14.3 mi downstream from West Branch Floyd River, and 8.9 mi (revised) upstream from mouth.

DRAINAGE AREA.--886 mi^2.

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

REVISED RECORDS.--WSP 1240: 1935 (M), 1936, 1937-38 (M), 1942, 1945. WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,092.59 ft above NGVD of 1929. Prior to Sept. 11, 1938, June 9 to Nov. 5, 1953, and Oct. 1, 1955, to May 22, 1957, nonrecording gage and May 23, 1957, to Sept. 30, 1970, water-stage recorder at same site at datum 10.0 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage and discharge since 1892, that of June 8, 1953, from information by U. S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	660	322	e320	e305	e211	e211	269	438	586	594	173	91
2	625	322	e331	e282	e243	228	e264	423	559	563	165	90
3	590	319	e322	e275	e298	249	e269	414	572	533	159	88
4	562	315	e323	e253	e271	242	e273	405	603	501	175	87
5	537	313	321	e246	e259	238	279	399	702	470	160	86
6	517	312	321	e223	e282	229	280	394	889	445	149	105
7	510	308	e311	e235	e229	225	271	393	887	449	141	102
8	539	301	306	e228	e216	218	275	399	1,080	422	134	98
9	519	296	300	e241	e208	214	272	644	1,110	409	130	94
10	504	300	294	e222	e200	217	277	554	1,030	397	129	118
11	487	294	287	e221	e233	214	325	660	960	374	135	135
12	473	287	287	e224	e400	214	426	1,170	879	352	138	114
13	461	283	276	e224	e594	206	588	1,470	827	331	129	104
14	449	281	241	e213	697	199	613	1,420	795	315	125	101
15	438	279	e237	e201	573	203	599	1,470	736	300	120	102
16	426	279	e286	e197	465	211	571	1,220	715	287	118	99
17	415	279	e292	e198	371	219	546	1,080	675	271	114	97
18	404	281	e274	e199	326	216	527	985	642	261	113	94
19	392	304	e235	e210	316	206	522	897	614	244	113	121
20	383	333	e269	e213	316	202	519	822	587	240	114	105
21	379	341	e251	e210	300	207	500	773	583	236	111	98
22	380	349	e242	e195	283	206	506	731	638	225	109	97
23	381	351	e235	e198	276	208	540	692	708	216	105	90
24	374	346	e237	e204	274	215	563	660	657	204	106	96
25	359	338	e283	e227	262	227	558	651	1,740	203	105	169
26	345	337	e270	e211	257	229	545	646	1,090	208	108	202
27	338	353	e291	e205	257	231	519	637	818	220	110	201
28	333	345	e301	e215	248	235	491	622	749	206	103	221
29	343	338	e299	e207	---	242	470	603	686	197	100	204
30	344	e332	e328	e211	---	270	455	581	635	187	98	183
31	331	---	e312	e227	---	282	---	570	---	180	95	---
TOTAL	13,798	9,438	8,882	6,920	8,865	6,913	13,112	22,823	23,752	10,040	3,884	3,592
MEAN	445	315	287	223	317	223	437	736	792	324	125	120
MAX	660	353	331	305	697	282	613	1,470	1,740	594	175	221
MIN	331	279	235	195	200	199	264	393	559	180	95	86
MED	426	314	291	215	275	217	496	646	711	287	118	101
AC-FT	27,370	18,720	17,620	13,730	17,580	13,710	26,010	45,270	47,110	19,910	7,700	7,120
CFSM	0.50	0.36	0.32	0.25	0.36	0.25	0.49	0.83	0.89	0.37	0.14	0.14
IN.	0.58	0.40	0.37	0.29	0.37	0.29	0.55	0.96	1.00	0.42	0.16	0.15

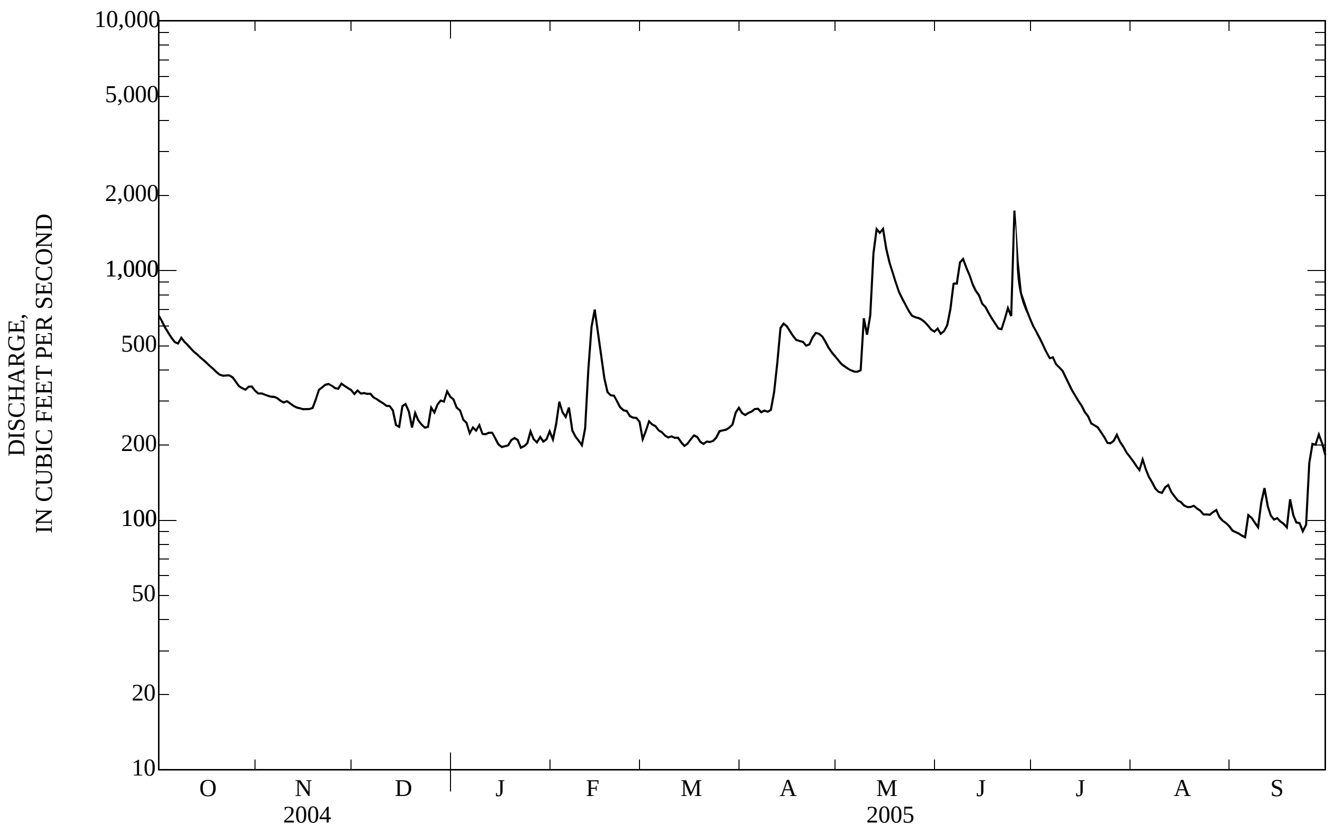
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	115	112	85.5	62.2	168	524	442	351	530	314	164	144
MAX	617	804	366	359	970	2,080	2,715	1,393	2,897	2,196	1,151	1,353
(WY)	(1993)	(1980)	(1980)	(1973)	(1952)	(1979)	(1969)	(1984)	(1984)	(1993)	(1951)	(1951)
MIN	4.55	4.54	3.05	1.13	1.62	21.5	18.7	15.1	14.4	7.32	6.12	3.40
(WY)	(1959)	(1959)	(1959)	(1977)	(1959)	(1964)	(1959)	(1968)	(1968)	(1936)	(1958)	(1958)

06600500 FLOYD RIVER AT JAMES, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1936 - 2005	
ANNUAL TOTAL	157,610		132,019			
ANNUAL MEAN	431		362		251	
HIGHEST ANNUAL MEAN					958	1983
LOWEST ANNUAL MEAN					19.9	1956
HIGHEST DAILY MEAN	3,870	May 23	1,740	Jun 25	32,400	Jun 8, 1953
LOWEST DAILY MEAN	35	Feb 8	86	Sep 5	0.90	Jan 10, 1977 a
ANNUAL SEVEN-DAY MINIMUM	40	Feb 3	91	Aug 30	0.90	Jan 10, 1977
MAXIMUM PEAK FLOW			2,640	Jun 25	71,500	Jun 8, 1953 b
MAXIMUM PEAK STAGE			15.16	Jun 25	35.30	Jun 8, 1953 c
INSTANTANEOUS LOW FLOW			83	Sep 5		
ANNUAL RUNOFF (AC-FT)	312,600		261,900		181,900	
ANNUAL RUNOFF (CFSM)	0.486		0.408		0.283	
ANNUAL RUNOFF (INCHES)	6.62		5.54		3.85	
10 PERCENT EXCEEDS	954		653		555	
50 PERCENT EXCEEDS	296		286		88	
90 PERCENT EXCEEDS	55		116		13	

a Also Jan. 11-22, 1977.
b From rating curve extended above 16,000 ft^3/s on basis of contracted opening and flow-over-embankment measurement of peak flow.
c From floodmarks, current datum.
e Estimated.



06601200 MISSOURI RIVER AT DECATUR, NE

LOCATION.--Lat 42°00'26", long 96°14'29", in NE1/4 SW1/4 sec.36, T.24 N., R.10 E., Burt County, Hydrologic Unit 10230001, on right bank 0.1 mi upstream from Iowa Highway 175 bridge at Decatur, and 691.0 mi upstream from mouth.

DRAINAGE AREA.--316,200 mi^2, approximately. The 3,959 mi^2 in Great Divide basin are not included.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,010.00 ft above NGVD of 1929, supplementary adjustment of 1954.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25,100	13,000	12,000	14,400	14,100	11,100	25,700	24,200	28,800	29,400	27,400	27,400
2	26,700	13,000	11,900	13,300	14,300	11,300	24,700	24,400	29,300	28,300	26,700	27,400
3	27,000	12,700	12,800	13,200	13,900	11,200	24,300	24,400	28,700	27,600	26,800	27,500
4	26,900	12,300	13,100	13,700	13,900	10,800	24,400	25,900	29,000	27,200	27,200	27,500
5	26,600	12,200	12,900	e14,800	13,500	10,800	24,300	24,800	30,000	26,700	27,700	27,600
6	26,500	12,300	12,800	14,400	13,200	10,800	24,300	24,800	37,700	26,300	27,000	28,000
7	26,300	12,300	12,700	e15,300	12,800	10,800	24,900	26,100	41,300	26,100	27,100	28,100
8	25,200	12,300	12,800	15,100	11,600	10,700	25,200	25,300	41,900	26,000	27,300	28,000
9	22,700	12,300	13,600	e15,300	11,100	10,600	24,900	25,700	42,900	25,900	27,300	28,200
10	20,000	12,000	14,100	e15,900	11,500	10,700	25,200	26,400	41,300	26,000	27,500	28,200
11	17,700	11,900	14,100	16,100	12,100	11,000	26,000	25,100	38,600	26,100	28,000	28,200
12	16,100	12,000	14,100	16,400	12,200	10,600	26,400	26,200	35,400	26,200	27,800	29,100
13	15,700	12,100	14,300	16,600	12,600	10,500	25,000	28,800	33,700	26,000	27,400	29,500
14	15,400	12,100	14,000	16,200	14,200	10,600	24,500	25,200	33,400	25,700	27,100	29,400
15	15,300	12,200	13,600	15,700	13,600	10,500	24,400	25,100	33,600	25,900	27,100	29,200
16	15,100	12,300	14,000	16,300	13,200	10,600	23,800	27,900	34,100	26,200	26,900	29,000
17	14,700	12,000	14,100	16,300	12,500	10,600	23,300	24,100	34,200	26,400	26,800	29,000
18	14,500	12,000	14,200	16,000	12,000	10,700	23,200	23,900	33,800	26,300	26,900	29,500
19	14,600	12,200	15,400	15,800	11,700	11,500	23,800	27,200	33,100	26,100	27,100	29,600
20	14,600	12,300	14,700	17,500	11,900	14,300	25,900	24,000	32,300	26,300	26,800	29,800
21	14,500	12,200	14,600	17,100	12,300	17,700	25,300	24,200	32,000	26,600	26,700	29,300
22	14,200	11,900	16,000	15,500	12,100	20,600	23,300	27,400	33,700	26,400	26,800	28,900
23	14,200	12,000	14,500	12,500	11,400	23,300	23,000	25,200	32,500	26,200	26,700	28,700
24	14,200	12,000	14,600	10,500	11,100	24,600	22,000	24,800	31,900	26,300	26,600	28,700
25	14,000	12,000	14,900	14,700	11,200	25,100	22,200	27,300	33,300	26,600	26,700	30,100
26	13,900	11,900	16,200	16,400	11,000	25,500	22,200	28,100	36,600	26,900	26,900	31,600
27	13,700	12,100	16,400	15,800	10,900	25,600	22,200	27,900	32,700	27,000	27,400	30,500
28	13,400	12,300	14,800	14,500	11,000	25,300	22,400	27,800	31,400	27,900	27,200	30,400
29	13,200	12,100	15,300	14,400	---	25,100	22,900	28,100	31,900	26,700	27,400	30,300
30	13,100	12,100	14,700	14,400	---	25,600	23,300	28,200	30,900	26,200	27,400	29,300
31	13,200	---	14,800	14,100	---	26,100	---	28,300	---	27,200	27,400	---
TOTAL	558,300	366,100	438,000	468,200	346,900	484,200	723,000	806,800	1,020,000	824,700	841,100	868,000
MEAN	18,010	12,200	14,130	15,100	12,390	15,620	24,100	26,030	34,000	26,600	27,130	28,930
MAX	27,000	13,000	16,400	17,500	14,300	26,100	26,400	28,800	42,900	29,400	28,000	31,600
MIN	13,100	11,900	11,900	10,500	10,900	10,500	22,000	23,900	28,700	25,700	26,600	27,400
AC-FT	1,107,000	726,200	868,800	928,700	688,100	960,400	1,434,000	1,600,000	2,023,000	1,636,000	1,668,000	1,722,000
CFSM	0.06	0.04	0.04	0.05	0.04	0.05	0.08	0.08	0.11	0.08	0.09	0.09
IN.	0.07	0.04	0.05	0.06	0.04	0.06	0.09	0.09	0.12	0.10	0.10	0.10

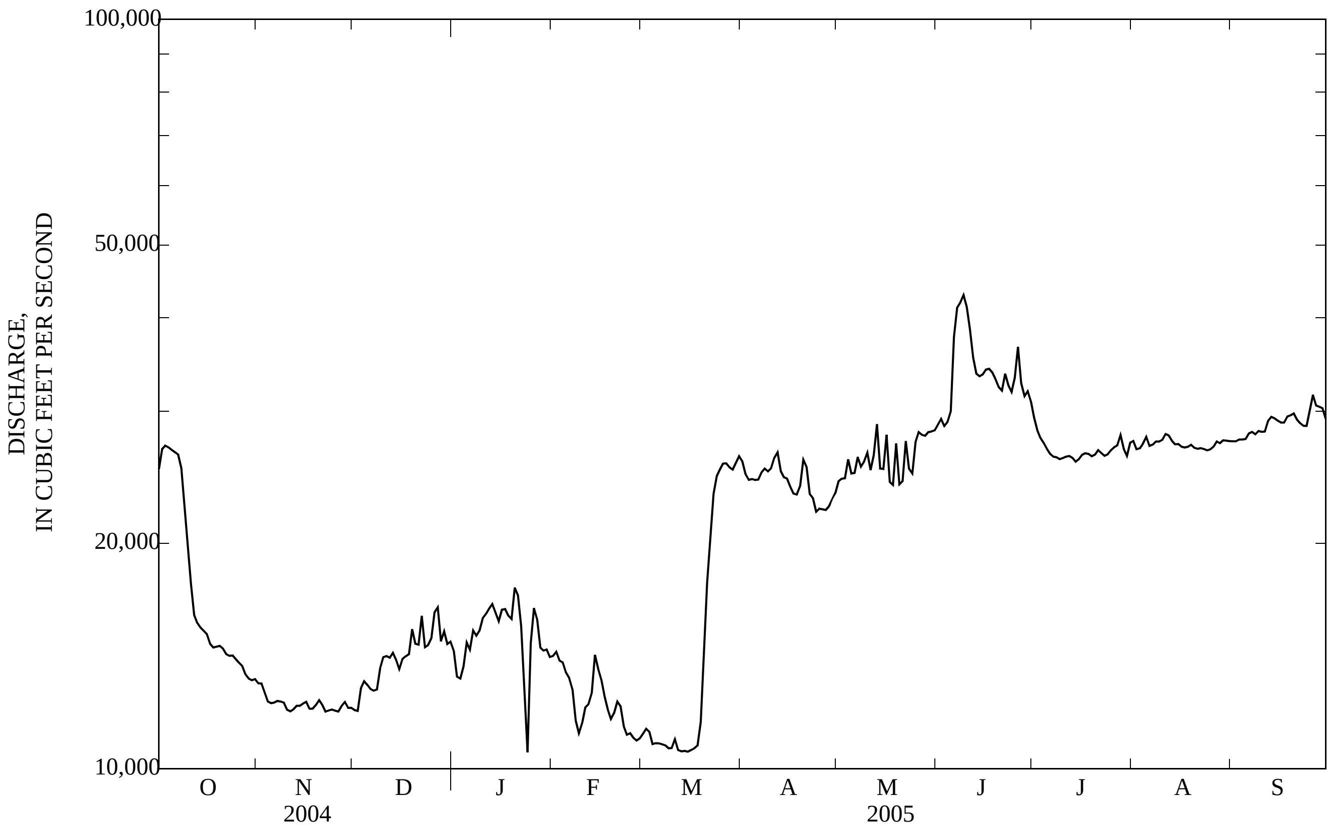
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36,000	31,250	20,780	18,450	19,290	24,120	34,650	36,250	37,490	36,910	35,060	36,700
MAX	70,150	72,350	41,350	26,850	32,380	49,450	90,050	80,690	67,970	66,520	66,170	67,290
(WY)	(1998)	(1998)	(1998)	(1998)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)	(1997)
MIN	18,010	10,470	12,070	12,360	12,210	11,580	24,100	26,030	27,010	26,600	25,680	26,750
(WY)	(2005)	(1991)	(1991)	(1990)	(1991)	(1991)	(2005)	(2005)	(2002)	(2005)	(2003)	(1993)

06601200 MISSOURI RIVER AT DECATUR, NE—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1988 - 2005	
ANNUAL TOTAL	8,282,500		7,745,300			
ANNUAL MEAN	22,630		21,220		30,620	
HIGHEST ANNUAL MEAN					57,440	1997
LOWEST ANNUAL MEAN					21,220	2005
HIGHEST DAILY MEAN	39,800	Jun 6	42,900	Jun 9	99,900	Apr 15, 1997
LOWEST DAILY MEAN	11,900	Nov 11	10,500	Jan 24 a	7,130	Dec 22, 1990
ANNUAL SEVEN-DAY MINIMUM	12,000	Nov 21	10,600	Mar 12	9,660	Dec 12, 1990
MAXIMUM PEAK FLOW			43,300	Jun 9	100,000	Apr 15, 1997
MAXIMUM PEAK STAGE			24.70	Jun 9	32.31	Jul 18, 1996
ANNUAL RUNOFF (AC-FT)	16,430,000		15,360,000		22,180,000	
ANNUAL RUNOFF (CFSM)	0.072		0.067		0.097	
ANNUAL RUNOFF (INCHES)	0.97		0.91		1.32	
10 PERCENT EXCEEDS	33,500		29,400		49,000	
50 PERCENT EXCEEDS	24,200		24,200		29,100	
90 PERCENT EXCEEDS	13,000		12,000		14,400	

a Also March 13 and 15.
e Estimated.



06602020 WEST FORK DITCH AT HORNICK, IA

LOCATION.--Lat 42°13'37", long 96°04'40", in SW¼ SW¼ sec.27, T.86 N., R.45 W., Woodbury County, Hydrologic Unit 10230004, on left bank at upstream side of State Highway 141 bridge, 1.0 mi east of Hornick, 9.2 mi upstream from Wolf Creek, and 13.5 mi north of Onawa.

DRAINAGE AREA.--403 mi^2.

PERIOD OF RECORD.-- April 1939 to September 1969 (published as "Holly Springs"), July 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,045.82 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. West Fork ditch is a dredged channel which diverts flow of West Fork Little Sioux River at Hornick 5.5 mi south, then southeast 6.5 mi to a point 1.2 mi west of Kennebec, where Wolf Creek enters from left. From this point, ditch roughly parallels the Little Sioux River and is known as Monona-Harrison ditch. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/ datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	121	e120	e85	e97	e106	109	159	200	270	85	49
2	187	123	e127	e72	e117	e122	106	155	213	249	82	48
3	177	123	128	e72	e159	128	103	152	208	234	80	47
4	174	120	127	e65	e140	119	104	150	208	223	84	47
5	166	119	e122	e60	e125	116	102	148	215	208	82	47
6	160	117	127	e50	129	115	103	146	220	198	77	50
7	161	116	127	e60	e102	111	104	146	205	191	74	51
8	162	114	124	e60	e95	113	100	147	240	184	71	50
9	164	115	122	e68	e91	109	101	146	453	184	69	49
10	158	114	122	e61	e82	107	98	153	388	173	71	47
11	154	117	122	e63	e98	111	118	153	325	163	76	45
12	151	114	119	e65	e123	109	187	406	293	156	75	45
13	149	113	e72	e58	e223	105	246	569	273	149	70	44
14	148	112	e50	e53	890	104	237	511	257	144	66	45
15	144	112	e68	e50	399	108	221	395	240	139	62	45
16	144	112	e74	e52	227	109	211	350	227	134	62	44
17	138	111	e76	e52	176	107	201	327	218	129	62	44
18	136	114	e71	e54	162	108	197	299	209	137	61	44
19	135	122	e53	e65	153	108	198	277	199	127	60	45
20	132	132	e67	e66	149	104	363	257	190	129	58	59
21	131	135	e63	e62	146	109	228	242	185	126	57	48
22	135	131	e57	e57	138	107	212	231	184	115	57	45
23	134	131	e47	e60	134	105	207	218	180	111	55	46
24	132	130	e47	e68	132	106	202	211	168	105	54	47
25	125	128	e61	e88	129	112	200	211	236	105	54	67
26	122	128	e58	e85	129	110	197	222	845	103	54	96
27	122	135	e63	e85	127	107	188	204	529	99	54	82
28	123	135	e66	e90	125	107	176	194	405	94	53	62
29	125	132	e62	e90	---	107	170	188	352	94	52	57
30	127	e119	e108	e95	---	108	164	183	302	91	51	54
31	124	---	e87	e101	---	112	---	179	---	87	49	---
TOTAL	4,535	3,645	2,737	2,112	4,797	3,409	5,153	7,329	8,367	4,651	2,017	1,549
MEAN	146	122	88.3	68.1	171	110	172	236	279	150	65.1	51.6
MAX	195	135	128	101	890	128	363	569	845	270	85	96
MIN	122	111	47	50	82	104	98	146	168	87	49	44
AC-FT	9,000	7,230	5,430	4,190	9,510	6,760	10,220	14,540	16,600	9,230	4,000	3,070
CFSM	0.36	0.30	0.22	0.17	0.43	0.27	0.43	0.59	0.69	0.37	0.16	0.13
IN.	0.42	0.34	0.25	0.19	0.44	0.31	0.48	0.68	0.77	0.43	0.19	0.14

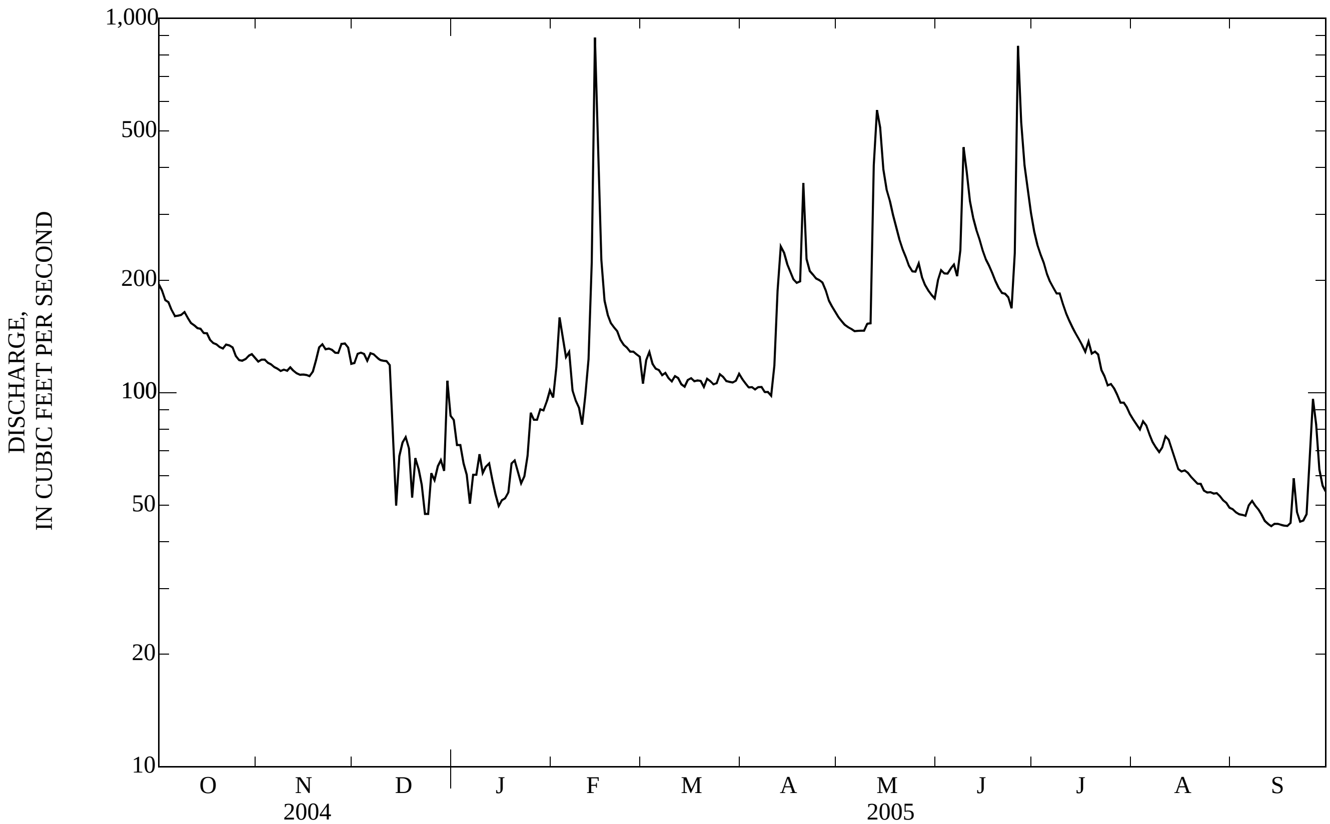
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.1	57.1	46.9	37.9	107	221	176	164	283	154	103	72.3
MAX	369	281	199	127	522	813	837	585	2,131	561	605	422
(WY)	(1993)	(1980)	(1985)	(1952)	(1994)	(1962)	(1969)	(1983)	(1984)	(1993)	(1951)	(1951)
MIN	2.08	4.06	2.60	2.26	2.41	8.41	9.80	11.5	7.71	11.5	2.92	2.23
(WY)	(1957)	(1959)	(1959)	(1959)	(1940)	(1957)	(1957)	(1943)	(1956)	(1956)	(1956)	(1956)

06602020 WEST FORK DITCH AT HORNICK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	73,179		50,301			
ANNUAL MEAN	200		138		124	
HIGHEST ANNUAL MEAN					367	1984
LOWEST ANNUAL MEAN					9.28	1956
HIGHEST DAILY MEAN	2,340	May 23	890	Feb 14	9,000	Mar 28, 1962
LOWEST DAILY MEAN	25	Jan 5	44	Sep 13 a	0.20	Jul 30, 1956 b
ANNUAL SEVEN-DAY MINIMUM	32	Jan 4	44	Sep 12	0.53	Aug 23, 1956
MAXIMUM PEAK FLOW			1,080	Feb 14	12,400	Mar 28, 1962
MAXIMUM PEAK STAGE			11.77	Feb 14	25.87	Jun 22, 1996
INSTANTANEOUS LOW FLOW			43	Sep 13 c		
ANNUAL RUNOFF (AC-FT)	145,200		99,770		89,740	
ANNUAL RUNOFF (CFSM)	0.496		0.342		0.307	
ANNUAL RUNOFF (INCHES)	6.75		4.64		4.18	
10 PERCENT EXCEEDS	404		225		249	
50 PERCENT EXCEEDS	124		119		52	
90 PERCENT EXCEEDS	46		54		11	

a Also Sep. 16-18.
b Also Aug. 17, 1956.
c Also Sep. 15-19.
e Estimated.



06602400 MONONA-HARRISON DITCH NEAR TURIN, IA

LOCATION.--Lat 41°57'52", long 95°59'30", in NW$^1/_4$ NE$^1/_4$ sec.32, T.83 N., R.44 W., Monona County, Hydrologic Unit 10230004, on left bank at upstream side of bridge on County Highway E54, 1.0 mi west of gaging station on Little Sioux River near Turin, 4 mi southwest of Turin, 5.2 mi northeast of Blencoe, and 12.5 mi upstream from mouth.

DRAINAGE AREA.--900 mi^2.

PERIOD OF RECORD.--May 1942 to current year. Records for May 1942 to January 1958 not equivalent owing to diversion from Little Sioux River through equalizer ditch 1.5 mi upstream. Records prior to 1950 not equivalent owing to diversion to Little Sioux River through diversion ditch 10.2 mi upstream. REVISED RECORDS: WSP 1440: Drainage area. WSP 1560: Drainage area. WDR IA-95-1: Period of record.

GAGE.--Water-stage recorder. Datum of gage is 1,015.00 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). May 7, 1942 to Oct. 13, 1953, nonrecording gage and Oct. 14, 1953 to Sept. 30, 1975, recording gage at same site at datum 5.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Monona-Harrison ditch is a dug channel and is a continuation of West Fork ditch, paralleling the Little Sioux River, and discharging into the Missouri River 1.5 mi upstream from the mouth of the Little Sioux River .U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	174	165	e135	144	165	185	333	342	395	e165	92
2	250	172	183	e128	149	190	180	328	375	372	e154	91
3	234	174	175	e127	152	209	179	325	355	354	151	92
4	221	168	172	e122	158	195	181	323	356	340	146	91
5	214	169	169	e121	171	190	181	322	368	325	152	90
6	209	169	170	e112	173	191	176	318	353	313	145	92
7	209	166	170	e122	140	184	183	321	326	304	138	95
8	215	163	169	e122	e136	187	178	319	522	297	134	95
9	217	162	166	e147	130	183	180	337	609	293	129	91
10	211	162	161	e140	e120	176	179	370	627	282	125	90
11	205	158	164	e147	145	180	209	348	519	265	154	87
12	202	154	158	151	160	182	385	2,210	429	254	156	86
13	197	153	e129	148	222	177	437	2,260	396	245	144	84
14	197	155	e114	138	1,150	170	390	854	372	238	132	84
15	194	157	128	128	739	179	363	541	349	232	125	86
16	194	161	169	129	351	186	351	471	334	227	118	86
17	192	158	168	132	273	184	338	448	324	222	114	87
18	189	162	158	134	249	181	335	417	314	219	e112	88
19	188	173	e61	138	240	181	342	388	303	224	e114	88
20	187	188	e81	142	234	179	1,030	363	293	215	e113	96
21	186	185	e123	143	229	187	1,240	349	287	232	e112	101
22	190	178	e118	e137	221	183	581	338	288	218	e107	94
23	188	173	e109	e130	214	182	474	327	281	199	104	94
24	185	172	e106	133	210	183	410	318	270	190	102	99
25	178	169	e125	132	203	186	395	322	316	188	101	112
26	175	169	e123	149	202	189	384	355	826	189	102	213
27	173	171	e128	e146	203	182	374	335	691	182	102	215
28	177	178	e128	e145	193	180	358	318	515	175	101	160
29	179	172	e124	147	---	183	348	307	583	170	99	144
30	175	165	e147	144	---	179	340	299	453	172	97	141
31	174	---	e136	143	---	193	---	295	---	e170	95	---
TOTAL	6,163	5,030	4,397	4,212	6,911	5,696	10,886	15,159	12,376	7,701	3,843	3,164
MEAN	199	168	142	136	247	184	363	489	413	248	124	105
MAX	258	188	183	151	1,150	209	1,240	2,260	826	395	165	215
MIN	173	153	61	112	120	165	176	295	270	170	95	84
AC-FT	12,220	9,980	8,720	8,350	13,710	11,300	21,590	30,070	24,550	15,270	7,620	6,280
CFSM	0.22	0.19	0.16	0.15	0.27	0.20	0.40	0.54	0.46	0.28	0.14	0.12
IN.	0.25	0.21	0.18	0.17	0.29	0.24	0.45	0.63	0.51	0.32	0.16	0.13

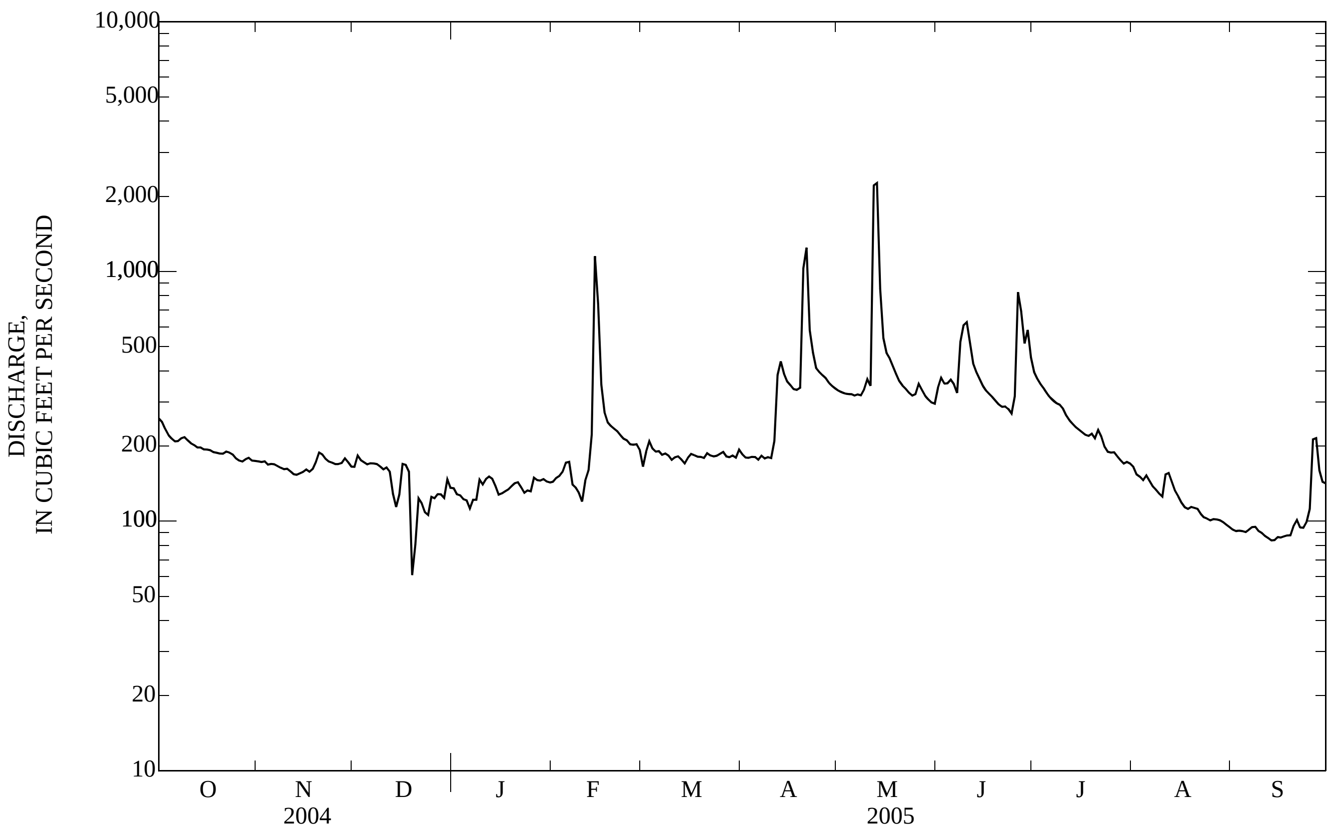
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	151	137	115	95.8	220	467	430	405	593	360	191	145
MAX	831	415	421	398	1,963	1,707	1,588	1,157	3,833	2,107	883	576
(WY)	(1993)	(1980)	(1985)	(1973)	(1971)	(1962)	(1965)	(1995)	(1984)	(1993)	(1996)	(1993)
MIN	16.0	18.0	11.4	10.5	13.9	46.9	41.1	43.7	71.8	46.1	30.6	30.8
(WY)	(1959)	(1959)	(1959)	(1959)	(1959)	(1968)	(1968)	(1968)	(1989)	(1976)	(1976)	(1981)

06602400 MONONA-HARRISON DITCH NEAR TURIN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005 a	
ANNUAL TOTAL	132,951		85,538			
ANNUAL MEAN	363		234		276	
HIGHEST ANNUAL MEAN					798	1993
LOWEST ANNUAL MEAN					55.5	1968
HIGHEST DAILY MEAN	4,270	May 24	2,260	May 13	18,000	Feb 19, 1971
LOWEST DAILY MEAN	61	Dec 19	61	Dec 19	8.5	Jan 3, 1959 b
ANNUAL SEVEN-DAY MINIMUM	69	Jan 24	86	Sep 11	8.5	Jan 3, 1959
MAXIMUM PEAK FLOW			3,790	May 12	19,900	Feb 19, 1971
MAXIMUM PEAK STAGE			14.61	May 12	28.03	Feb 19, 1971
ANNUAL RUNOFF (AC-FT)	263,700		169,700		199,800	
ANNUAL RUNOFF (CFSM)	0.404		0.260		0.306	
ANNUAL RUNOFF (INCHES)	5.50		3.54		4.16	
10 PERCENT EXCEEDS	722		371		506	
50 PERCENT EXCEEDS	203		180		135	
90 PERCENT EXCEEDS	86		107		40	

a Post closure of diversion from Little Sioux River.
b Also Jan. 4-11, 1959.
e Estimated.



06602400 MONONA-HARRISON DITCH NEAR TURIN, IA—Continued

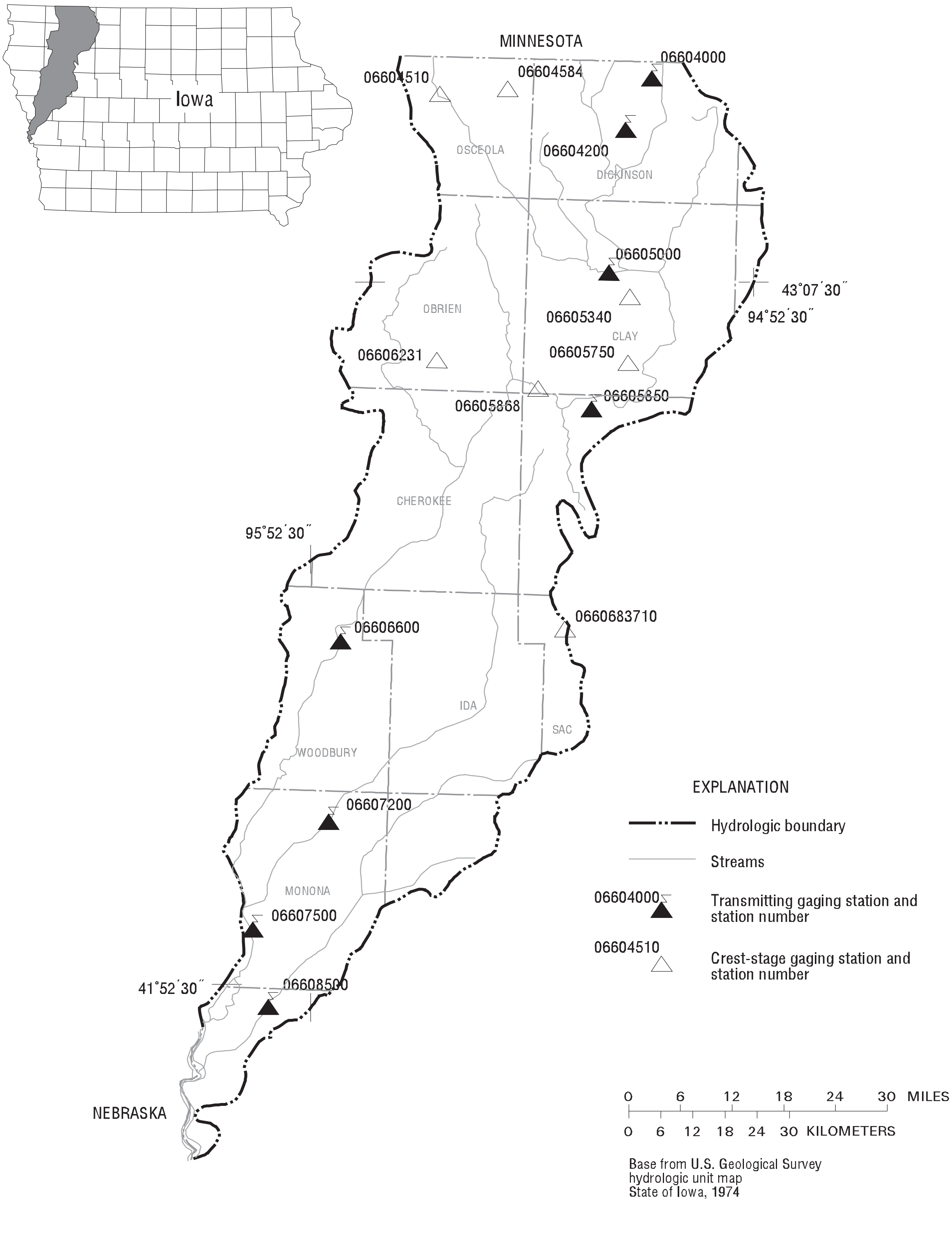


Figure 19. Locations of active continous-record and crest-stage gaging stations in the Little Sioux and Soldier River drainage basins.

Gaging Stations

Crest Stage Gaging Stations

06604000 SPIRIT LAKE NEAR ORLEANS, IA

LOCATION.--Lat 43°28'11", long 95°07'25", in NE$^1/_4$ NW$^1/_4$ sec.20, T.100N., R.36W., Dickinson County, Hydrologic Unit 10230003, 2.3 mi upstream from lake outlet, and 2.3 mi northwest of Orleans.

DRAINAGE AREA.--75.6 mi^2.

PERIOD OF RECORD.--May 1933 to September 1975 (fragmentary prior to 1951), April 1990 to current year. Prior to October 1949, published as "at Orleans".

GAGE.--Water-stage recorder. Datum of gage is 1,387.25 ft above NGVD of 1929, 90.0 ft above Iowa Lake Survey datum, and 14.2 ft below crest of spillway. Prior to July 6, 1950, non-recording gage or water-stage recorder at various sites near outlet, all at present datum.

REMARKS.--A reliable record of stage was obtained for the year. Lake formed by concrete dam with ungated spillway at elevation 1,401.4 ft. above sea level. Dam constructed in 1969. A previous outlet works had been constructed in 1944. Lake is used for conservation and recreation. U.S. Geological Survey data collection platform with satellite telemetry at the station.

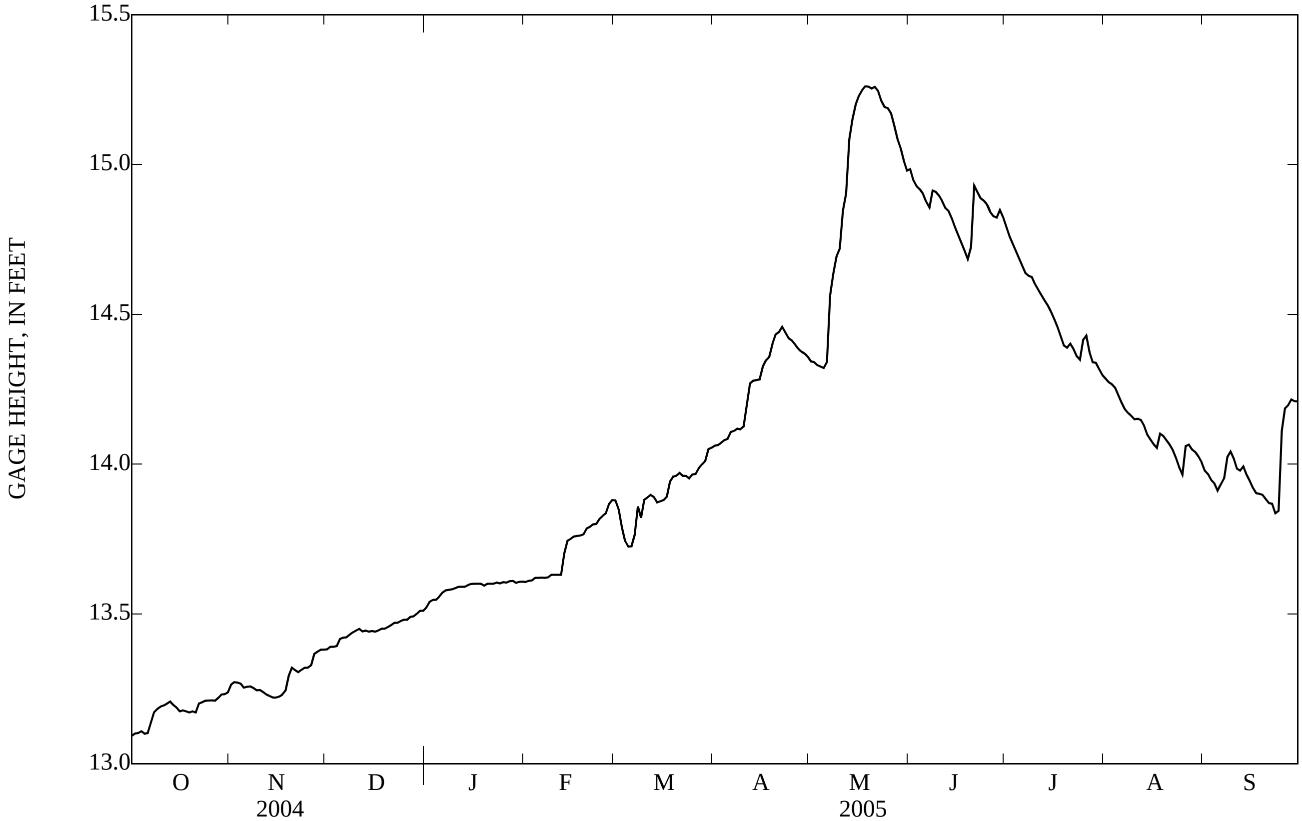
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 18.79 ft. July 17-20, 1993; minimum observed, 6.75 ft. Oct. 20, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 15.28 ft. May 21; minimum, 13.07 ft. Oct. 1.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.09	13.26	13.38	13.52	13.61	13.88	14.06	14.34	14.98	14.79	14.29	13.98
2	13.10	13.27	13.39	13.54	13.61	13.85	14.06	14.34	14.95	14.76	14.27	13.97
3	13.10	13.27	13.39	13.55	13.61	13.79	14.07	14.33	14.93	14.74	14.27	13.95
4	13.11	13.27	13.39	13.55	13.62	13.74	14.08	14.33	14.92	14.71	14.25	13.94
5	13.10	13.25	13.42	13.56	13.62	13.72	14.08	14.32	14.90	14.69	14.23	13.91
6	13.10	13.26	13.42	13.57	13.62	13.73	14.11	14.34	14.88	14.66	14.20	13.93
7	13.14	13.26	13.42	13.58	13.62	13.76	14.11	14.56	14.86	14.64	14.18	13.95
8	13.17	13.25	13.43	13.58	13.62	13.86	14.12	14.64	14.91	14.63	14.17	14.02
9	13.18	13.24	13.44	13.58	13.63	13.82	14.12	14.69	14.91	14.62	14.16	14.04
10	13.19	13.25	13.44	13.59	13.63	13.88	14.12	14.72	14.90	14.60	14.15	14.02
11	13.19	13.24	13.45	13.59	13.63	13.89	14.20	14.85	14.88	14.58	14.15	13.98
12	13.20	13.23	13.44	13.59	13.63	13.90	14.27	14.90	14.85	14.56	14.15	13.98
13	13.21	13.23	13.44	13.59	13.70	13.89	14.28	15.08	14.84	14.55	14.13	13.99
14	13.20	13.22	13.44	13.60	13.74	13.87	14.28	15.15	14.82	14.53	14.10	13.96
15	13.19	13.22	13.44	13.60	13.75	13.88	14.28	15.20	14.79	14.51	14.08	13.94
16	13.17	13.22	13.44	13.60	13.76	13.88	14.32	15.23	14.76	14.48	14.07	13.92
17	13.18	13.23	13.44	13.60	13.76	13.89	14.35	15.25	14.74	14.46	14.05	13.90
18	13.17	13.24	13.45	13.60	13.76	13.94	14.36	15.26	14.71	14.43	14.10	13.90
19	13.17	13.29	13.45	13.59	13.76	13.96	14.40	15.26	14.68	14.40	14.09	13.90
20	13.17	13.32	13.46	13.60	13.78	13.96	14.43	15.25	14.72	14.39	14.08	13.88
21	13.17	13.31	13.46	13.60	13.79	13.97	14.44	15.26	14.93	14.40	14.06	13.87
22	13.20	13.30	13.47	13.60	13.80	13.96	14.46	15.25	14.91	14.38	14.05	13.87
23	13.20	13.31	13.47	13.60	13.80	13.96	14.44	15.21	14.89	14.36	14.02	13.84
24	13.21	13.32	13.48	13.60	13.82	13.95	14.42	15.19	14.88	14.35	13.99	13.84
25	13.21	13.32	13.48	13.61	13.83	13.97	14.41	15.19	14.87	14.41	13.97	14.11
26	13.21	13.33	13.48	13.60	13.84	13.97	14.40	15.17	14.84	14.43	14.06	14.19
27	13.21	13.37	13.49	13.61	13.87	13.99	14.39	15.13	14.83	14.37	14.06	14.20
28	13.22	13.37	13.49	13.61	13.88	14.00	14.38	15.09	14.82	14.34	14.05	14.22
29	13.23	13.38	13.50	13.60	---	14.01	14.37	15.05	14.85	14.34	14.04	14.21
30	13.23	13.38	13.51	13.61	---	14.05	14.36	15.01	14.82	14.32	14.03	14.21
31	13.24	---	13.51	13.61	---	14.05	---	14.98	---	14.30	14.01	---
MEAN	13.18	13.28	13.45	13.59	13.72	13.90	14.27	14.92	14.85	14.51	14.11	13.99
MAX	13.24	13.38	13.51	13.61	13.88	14.05	14.46	15.26	14.98	14.79	14.29	14.22
MIN	13.09	13.22	13.38	13.52	13.61	13.72	14.06	14.32	14.68	14.30	13.97	13.84

06604000 SPIRIT LAKE NEAR ORLEANS, IA—Continued



06604200 WEST OKOBOJI LAKE AT LAKESIDE LABORATORY NEAR MILFORD, IA

LOCATION.--Lat 43°22'43", long 95°10'52", in NE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.23, T.99 N., R.37 W., Dickinson County, Hydrologic Unit 10230003, at pumping station of Lakeside Laboratory on west shore, 2.3 mi upstream from lake outlet, and 3.8 mi northwest of Milford.

DRAINAGE AREA.--125 mi^2.

PERIOD OF RECORD.--May 1933 to current year. Published as "Okoboji Lake at Arnold's Park" 1933-37 and as "Okoboji Lake at Lakeside Laboratory near Milford" 1937-66.

GAGE.--Water-stage recorder. Datum of gage is 1,391.76 ft above NGVD of 1929, 94.51 ft above Iowa Lake Survey datum. Prior to June 17, 1938, nonrecording gage at State Pier at Arnolds Park at same datum.

REMARKS.--A reliable record of stage was obtained for the year. Lake formed by concrete dam with ungated spillway at elevation 1,395.8 ft above sea level. Lake is used for conservation and recreation. Area of lake is approximately 3,900 acres. U.S. Geological Survey data collection platform with satellite telemetry at station.

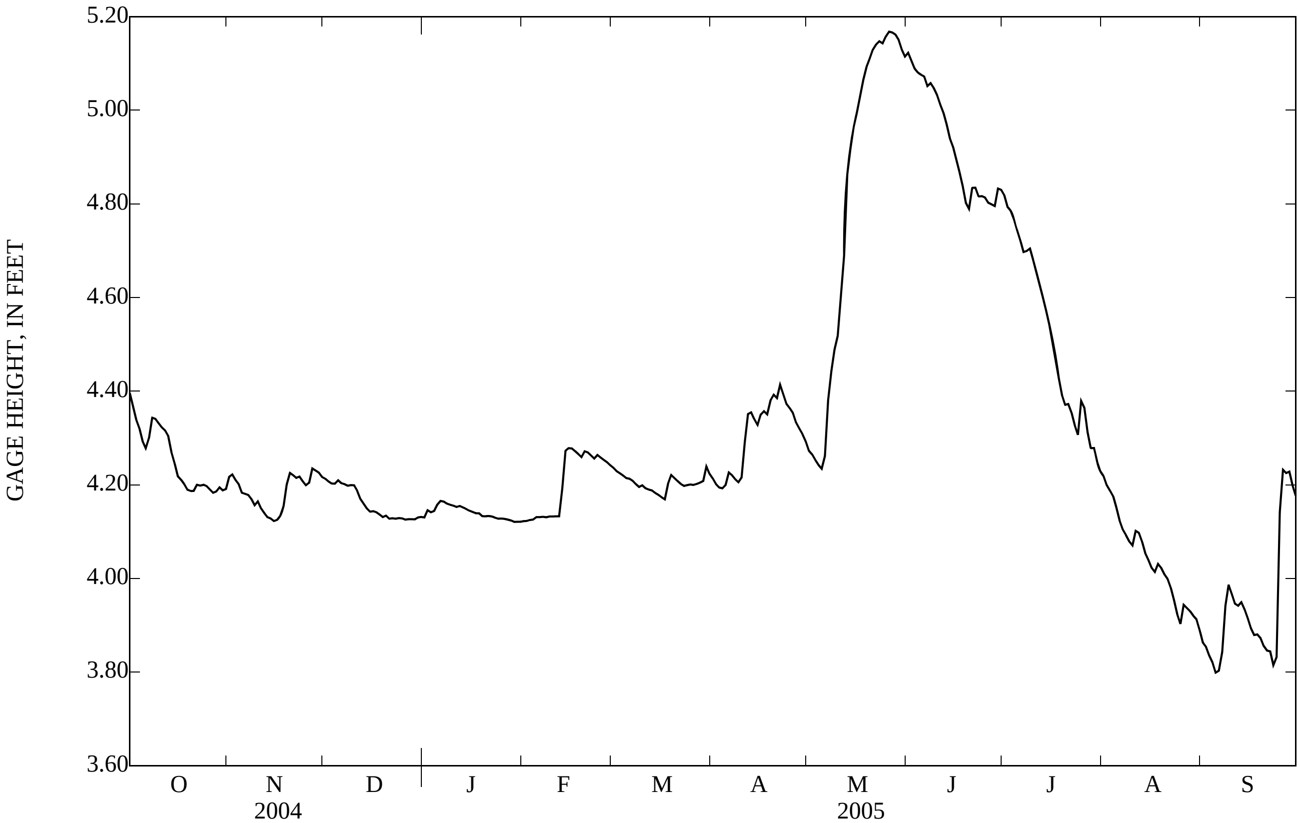
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.70 ft July 17, 1993; minimum observed, 0.20 ft Sept. 20, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.19 ft on May 25; minimum, 3.77 ft on Sept. 6.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.40	4.22	4.21	4.13	4.12	4.24	4.21	4.27	5.12	4.82	4.22	3.86
2	4.37	4.22	4.21	4.15	4.12	4.23	4.20	4.26	5.11	4.79	4.20	3.85
3	4.34	4.21	4.20	4.14	4.12	4.22	4.19	4.25	5.09	4.79	4.19	3.84
4	4.32	4.20	4.20	4.14	4.13	4.22	4.19	4.24	5.08	4.77	4.17	3.82
5	4.29	4.18	4.21	4.16	4.13	4.21	4.20	4.23	5.08	4.74	4.15	3.80
6	4.28	4.18	4.20	4.17	4.13	4.21	4.23	4.26	5.07	4.72	4.12	3.80
7	4.30	4.18	4.20	4.16	4.13	4.21	4.22	4.38	5.05	4.70	4.10	3.84
8	4.34	4.17	4.20	4.16	4.13	4.20	4.21	4.44	5.06	4.70	4.09	3.94
9	4.34	4.16	4.20	4.16	4.13	4.20	4.21	4.49	5.05	4.70	4.08	3.99
10	4.33	4.16	4.20	4.16	4.13	4.20	4.22	4.52	5.03	4.68	4.07	3.97
11	4.32	4.15	4.19	4.15	4.13	4.19	4.29	4.60	5.01	4.65	4.10	3.95
12	4.32	4.14	4.17	4.15	4.13	4.19	4.35	4.69	5.00	4.63	4.10	3.94
13	4.30	4.13	4.16	4.15	4.19	4.19	4.35	4.86	4.97	4.60	4.08	3.95
14	4.27	4.13	4.15	4.15	4.27	4.18	4.34	4.92	4.94	4.57	4.05	3.93
15	4.25	4.12	4.14	4.14	4.28	4.18	4.33	4.97	4.92	4.54	4.04	3.91
16	4.22	4.12	4.14	4.14	4.28	4.17	4.35	5.00	4.90	4.51	4.02	3.89
17	4.21	4.13	4.14	4.14	4.27	4.17	4.36	5.03	4.87	4.47	4.01	3.88
18	4.20	4.15	4.14	4.14	4.27	4.20	4.35	5.07	4.84	4.43	4.03	3.88
19	4.19	4.20	4.13	4.13	4.26	4.22	4.38	5.09	4.80	4.39	4.02	3.87
20	4.19	4.23	4.13	4.13	4.27	4.21	4.39	5.11	4.79	4.37	4.01	3.86
21	4.19	4.22	4.13	4.13	4.27	4.21	4.39	5.13	4.83	4.37	4.00	3.85
22	4.20	4.21	4.13	4.13	4.26	4.20	4.41	5.14	4.83	4.35	3.98	3.84
23	4.20	4.22	4.13	4.13	4.26	4.20	4.39	5.15	4.82	4.33	3.95	3.81
24	4.20	4.21	4.13	4.13	4.26	4.20	4.37	5.14	4.82	4.31	3.92	3.83
25	4.20	4.20	4.13	4.13	4.26	4.20	4.36	5.16	4.81	4.38	3.90	4.14
26	4.19	4.20	4.13	4.13	4.25	4.20	4.35	5.17	4.80	4.36	3.94	4.23
27	4.18	4.23	4.13	4.13	4.25	4.20	4.33	5.17	4.80	4.31	3.94	4.22
28	4.19	4.23	4.13	4.12	4.24	4.20	4.32	5.16	4.80	4.28	3.93	4.23
29	4.19	4.23	4.13	4.12	---	4.21	4.31	5.15	4.83	4.28	3.92	4.20
30	4.19	4.22	4.13	4.12	---	4.24	4.29	5.13	4.83	4.25	3.91	4.18
31	4.19	---	4.13	4.12	---	4.22	---	5.11	---	4.23	3.89	---
MEAN	4.25	4.18	4.16	4.14	4.20	4.20	4.30	4.82	4.93	4.52	4.04	3.94
MAX	4.40	4.23	4.21	4.17	4.28	4.24	4.41	5.17	5.12	4.82	4.22	4.23
MIN	4.18	4.12	4.13	4.12	4.12	4.17	4.19	4.23	4.79	4.23	3.89	3.80

06604200 WEST OKOBOJI LAKE AT LAKESIDE LABORATORY NEAR MILFORD, IA—Continued



06605000 OCHEYEDAN RIVER NEAR SPENCER, IA

LOCATION.--Lat 43°07'41", long 95°12'38", in SW¼ SW¼ sec.15, T.96N., R.37W., Clay County, Hydrologic Unit 10230003, on right bank 5 ft downstream from bridge on County Highway M38, 3.4 mi west by southwest of Spencer, and 4.9 mi (revised) upstream from mouth.

DRAINAGE AREA.--426 mi^2.

PERIOD OF RECORD.--October 1977 to current year. Occasional low-flow measurements, water years 1957-61, 1964, 1966-68, 1970, 1971, 1974-77.

GAGE.--Water-stage recorder. Datum of gage is 1,311.66 ft above NGVD of 1929.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1953 reached a stage of 12.89 ft, discharge, 26,000 ft^3/s on basis of contracted-opening measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	507	219	234	e110	e61	e91	202	280	431	314	56	22
2	466	249	219	e108	e68	e87	190	265	472	286	53	22
3	440	255	212	e107	e80	e107	178	253	473	271	52	21
4	408	251	210	e103	e97	e100	168	243	458	256	53	20
5	384	232	198	e95	e110	95	163	237	497	231	50	19
6	365	225	197	e75	e113	95	262	244	575	211	48	20
7	370	208	194	e82	e99	102	321	256	533	190	47	21
8	612	190	185	e95	e96	92	290	296	518	192	46	51
9	585	190	187	e92	e89	89	262	495	539	216	44	91
10	481	195	182	e85	e96	94	234	783	529	197	38	58
11	424	179	170	e83	e96	87	292	693	494	171	41	40
12	391	173	e172	e83	e93	85	717	e900	463	152	41	33
13	373	168	e141	e75	e201	90	1,030	e1,220	429	138	37	30
14	347	164	e114	e62	595	91	901	e1,570	413	127	35	28
15	339	163	e123	e59	302	88	713	e1,930	399	117	33	25
16	316	167	e134	e60	209	83	605	e2,300	375	107	32	24
17	301	166	e132	e62	170	81	564	e1,770	356	98	32	22
18	293	165	e121	e75	153	86	519	e1,210	338	91	33	23
19	282	192	e96	e73	141	78	494	e802	319	81	33	23
20	273	289	e110	e66	e138	85	491	691	301	77	33	21
21	267	299	e117	e65	e135	84	470	644	417	73	31	20
22	275	289	e104	e71	e122	89	483	624	637	70	29	20
23	280	275	e89	e68	e113	94	509	571	605	66	29	19
24	263	253	e85	e59	e110	113	461	525	495	61	29	24
25	248	240	e91	e58	e108	127	432	514	474	85	30	158
26	240	232	e87	e67	e107	156	396	550	448	94	30	453
27	238	251	e96	e72	e105	203	358	547	393	76	29	403
28	242	257	e100	e75	e104	257	331	509	367	68	27	331
29	253	249	e98	e69	---	253	310	467	349	65	26	305
30	247	242	e121	e64	---	237	295	435	347	62	24	287
31	219	---	e119	e59	---	214	---	417	---	59	24	---
TOTAL	10,729	6,627	4,438	2,377	3,911	3,633	12,641	22,241	13,444	4,302	1,145	2,634
MEAN	346	221	143	76.7	140	117	421	717	448	139	36.9	87.8
MAX	612	299	234	110	595	257	1,030	2,300	637	314	56	453
MIN	219	163	85	58	61	78	163	237	301	59	24	19
AC-FT	21,280	13,140	8,800	4,710	7,760	7,210	25,070	44,120	26,670	8,530	2,270	5,220
CFSM	0.81	0.52	0.34	0.18	0.33	0.28	0.99	1.68	1.05	0.33	0.09	0.21
IN.	0.94	0.58	0.39	0.21	0.34	0.32	1.10	1.94	1.17	0.38	0.10	0.23

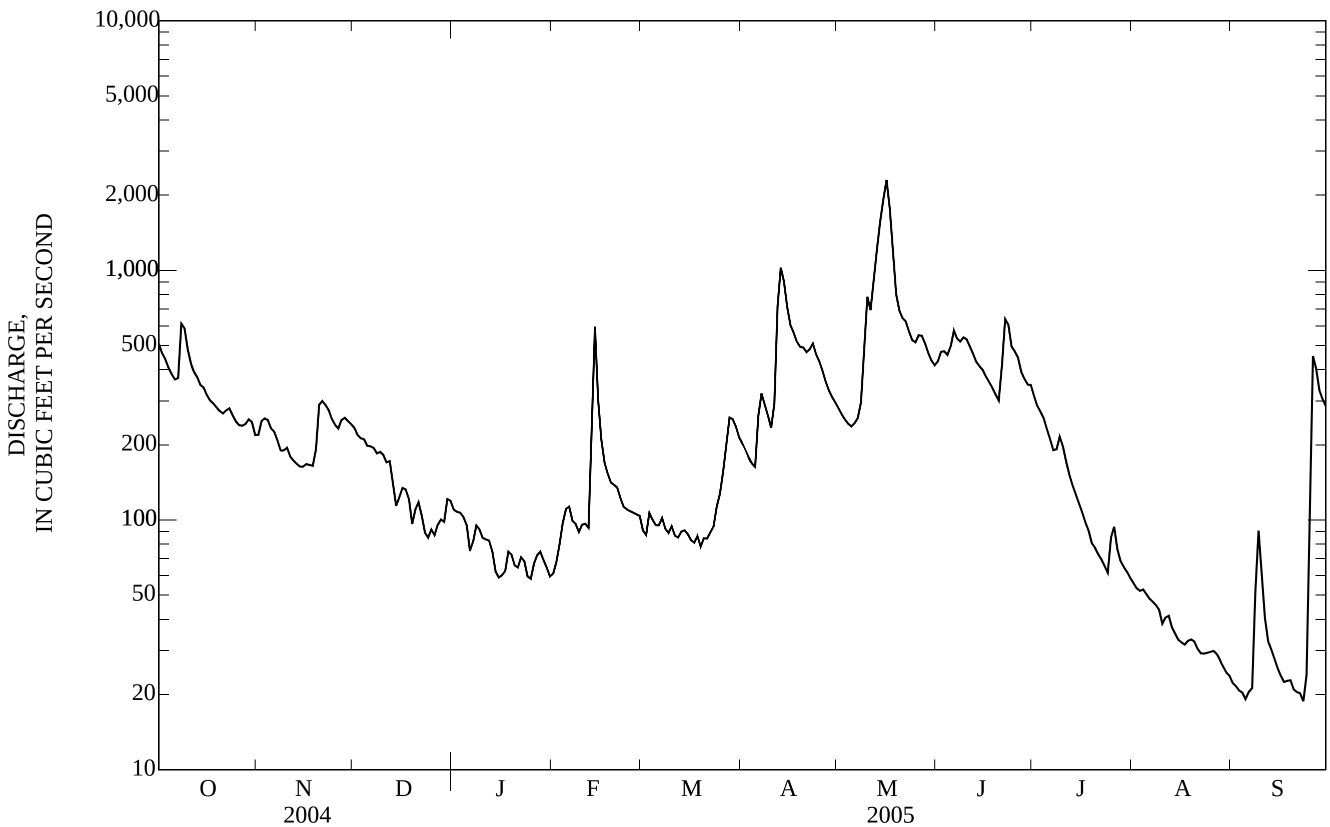
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	118	128	72.8	41.2	76.3	302	454	379	463	293	125	140
MAX	492	796	305	180	402	1,019	1,462	912	1,973	2,243	706	755
(WY)	(1983)	(1980)	(1983)	(1983)	(1983)	(1983)	(1983)	(1993)	(1993)	(1993)	(1993)	(2004)
MIN	8.12	8.11	1.91	0.51	0.00	14.0	19.7	54.9	33.8	33.4	15.3	9.85
(WY)	(2001)	(1990)	(1990)	(1979)	(1979)	(1990)	(2000)	(1981)	(1989)	(1989)	(1989)	(2000)

06605000 OCHEYEDAN RIVER NEAR SPENCER, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1978 - 2005	
ANNUAL TOTAL	72,893.5		88,122			
ANNUAL MEAN	199		241		216	
HIGHEST ANNUAL MEAN					763	1993
LOWEST ANNUAL MEAN					33.4	1989
HIGHEST DAILY MEAN	2,430	Sep 23	2,300	May 16 e	5,620	Jul 1, 1993
LOWEST DAILY MEAN	2.4	Jan 28	19	Sep 5 a	0.00	Jan 24, 1979 b
ANNUAL SEVEN-DAY MINIMUM	4.4	Jan 24	21	Sep 1	0.00	Jan 24, 1979
MAXIMUM PEAK FLOW			2,570	May 16 c	6,450	Jun 21, 1983
MAXIMUM PEAK STAGE			9.47	May 16 d	11.28	Jul 1, 1993
INSTANTANEOUS LOW FLOW			18	Sep 5 f		
ANNUAL RUNOFF (AC-FT)	144,600		174,800		156,500	
ANNUAL RUNOFF (CFSM)	0.468		0.567		0.507	
ANNUAL RUNOFF (INCHES)	6.37		7.70		6.89	
10 PERCENT EXCEEDS	393		509		527	
50 PERCENT EXCEEDS	109		168		83	
90 PERCENT EXCEEDS	6.5		33		11	

a Also Sep. 23.
b Also Jan. 25 to Mar. 9, 1979, Dec. 22, 1989 to Jan. 5, 1990.
c Highwater mark from Rating.
d From Highwater mark.
e Estimated.
f Also Sep. 6, 23, & 24.



06605850 LITTLE SIOUX RIVER AT LINN GROVE, IA

LOCATION.--Lat 42°53'45", long 95°14'35", in SW$\frac{1}{4}$ SE$\frac{1}{4}$ SW$\frac{1}{4}$ sec.5, T.93 N., R.37 W., Buena Vista County, Hydrologic Unit 10230003, on right bank 500 ft upstream of concrete dam, 1300 ft upstream of bridge on County Highway M36 in Linn Grove, and 139.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--1,548 mi^2.

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

REVISED RECORDS.--WDR IA-80-1: 1978-79.

GAGE.--Water-stage recorder. Datum of gage is 1,223.60 ft above NGVD of 1929. Oct. 1, 1972 to Nov. 17, 1999, water-stage recorder, 0.25 mi downstream, below concrete dam, at current datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1953, gage height 20.96 ft; discharge, 22,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,950	781	897	378	227	403	946	1,180	1,650	1,010	217	78
2	2,580	846	846	345	232	384	945	1,090	1,610	913	198	72
3	2,220	969	840	327	244	491	907	1,020	1,590	834	182	69
4	1,910	1,020	821	317	266	480	853	948	1,580	771	191	67
5	1,640	968	780	296	301	424	814	888	1,540	708	176	64
6	1,460	920	747	257	342	404	806	848	1,520	664	160	68
7	1,340	875	737	266	342	417	1,060	850	1,550	626	150	76
8	1,300	814	718	299	286	406	1,380	969	1,580	593	139	103
9	1,570	773	697	296	267	386	1,290	1,530	1,630	602	134	180
10	1,930	753	685	292	298	375	1,140	1,760	1,700	596	175	203
11	2,010	725	656	284	304	380	1,080	1,900	1,780	569	200	185
12	1,800	687	649	278	296	378	1,370	2,180	1,750	525	206	159
13	1,610	666	597	e267	534	335	1,880	2,540	1,660	490	216	147
14	1,490	639	312	e248	1,220	291	2,210	2,970	1,570	455	170	138
15	1,410	622	307	e237	1,550	329	2,420	3,410	1,490	423	147	130
16	1,310	619	e406	e231	1,660	389	2,480	4,200	1,410	396	135	118
17	1,200	618	e427	e237	1,410	368	2,330	5,080	1,340	371	129	108
18	1,120	627	e410	e245	938	346	2,110	4,900	1,240	360	122	99
19	1,060	664	e268	e234	891	331	2,030	4,360	1,140	327	116	113
20	1,000	876	e180	216	843	296	2,060	3,910	1,060	318	112	132
21	949	1,110	e239	217	814	360	2,080	3,520	1,060	318	106	112
22	927	1,180	e310	227	719	364	2,060	3,180	1,170	279	108	103
23	927	1,130	e305	223	645	367	2,110	2,860	1,400	263	114	95
24	912	1,060	e298	206	599	386	2,100	2,580	1,430	243	104	93
25	867	988	e340	203	573	414	1,980	2,330	1,370	243	99	153
26	827	927	e332	222	541	449	1,820	2,140	1,350	284	127	671
27	806	923	e361	231	526	500	1,670	2,050	1,310	319	119	1,190
28	792	957	368	240	520	570	1,520	2,020	1,260	302	102	1,280
29	800	984	361	232	---	679	1,400	1,940	1,160	282	92	1,160
30	815	938	376	224	---	788	1,290	1,830	1,080	256	88	1,180
31	791	---	394	226	---	877	---	1,730	---	239	85	---
TOTAL	42,323	25,659	15,664	8,001	17,388	13,367	48,141	72,713	42,980	14,579	4,419	8,346
MEAN	1,365	855	505	258	621	431	1,605	2,346	1,433	470	143	278
MAX	2,950	1,180	897	378	1,660	877	2,480	5,080	1,780	1,010	217	1,280
MIN	791	618	180	203	227	291	806	848	1,060	239	85	64
AC-FT	83,950	50,890	31,070	15,870	34,490	26,510	95,490	144,200	85,250	28,920	8,770	16,550
CFSM	0.88	0.55	0.33	0.17	0.40	0.28	1.04	1.52	0.93	0.30	0.09	0.18
IN.	1.02	0.62	0.38	0.19	0.42	0.32	1.16	1.75	1.03	0.35	0.11	0.20

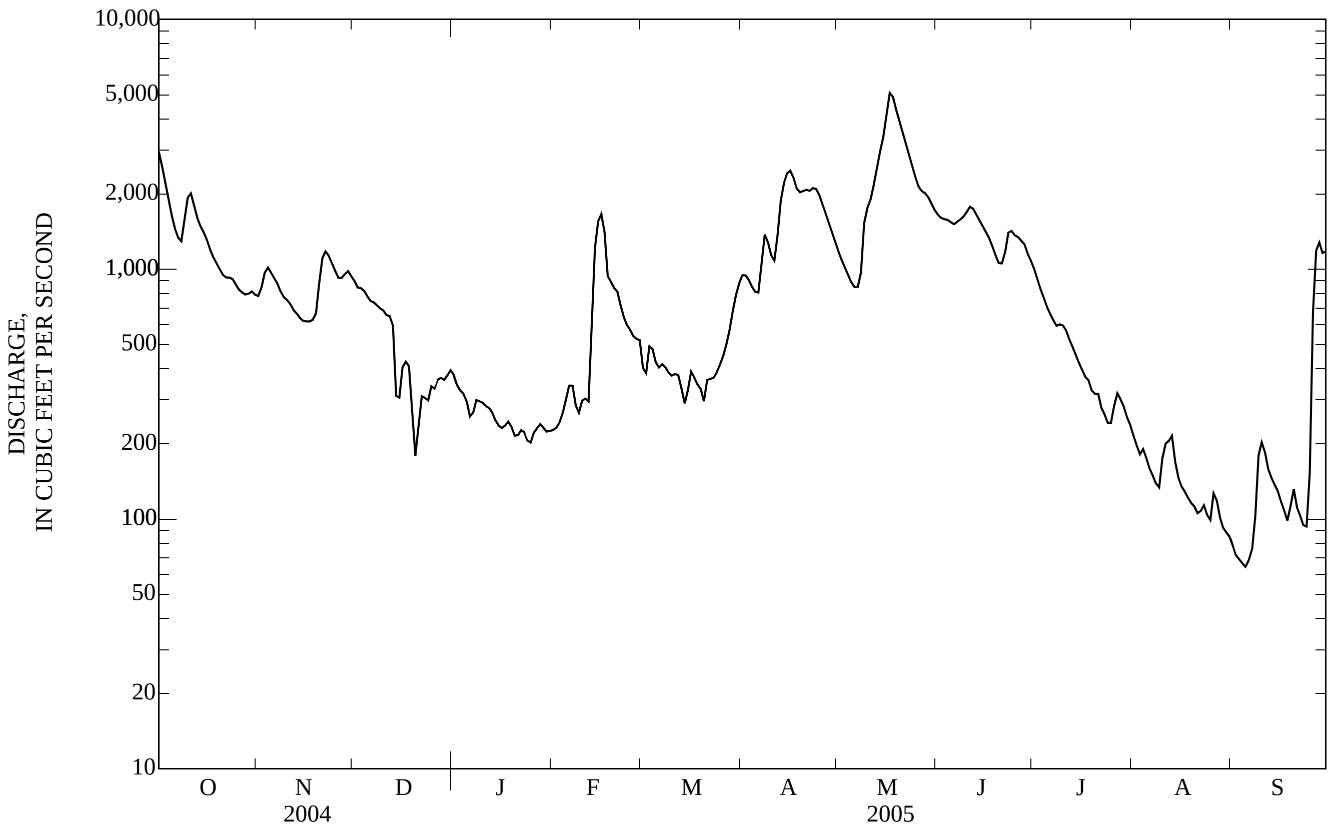
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	403	420	261	168	276	997	1,562	1,311	1,479	999	436	446
MAX	2,070	2,050	1,122	859	1,161	3,894	4,952	3,233	6,898	7,905	2,906	2,900
(WY)	(1983)	(1980)	(1983)	(1983)	(1983)	(1983)	(1983)	(1993)	(1993)	(1993)	(1993)	(2004)
MIN	21.3	22.0	6.08	3.12	5.92	75.9	74.9	69.4	60.3	36.3	26.4	22.7
(WY)	(1977)	(1977)	(1990)	(1977)	(1977)	(1990)	(2000)	(1977)	(1977)	(1977)	(1976)	(1976)

06605850 LITTLE SIOUX RIVER AT LINN GROVE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1973 - 2005	
ANNUAL TOTAL	267,166.2		313,580			
ANNUAL MEAN	730		859		731	
HIGHEST ANNUAL MEAN					2,763	1993
LOWEST ANNUAL MEAN					56.3	1977
HIGHEST DAILY MEAN	8,820	Sep 19	5,080	May 17	15,000	Jul 2, 1993
LOWEST DAILY MEAN	8.2	Feb 15	64	Sep 5	0.70	Feb 4, 1977
ANNUAL SEVEN-DAY MINIMUM	13	Feb 11	71	Sep 1	1.1	Jan 31, 1977
MAXIMUM PEAK FLOW			5,220	May 17	16,100	Jul 2, 1993
MAXIMUM PEAK STAGE			19.27	May 17	20.63	Jul 2, 1993
INSTANTANEOUS LOW FLOW			60	Sep 5		
ANNUAL RUNOFF (AC-FT)	529,900		622,000		529,300	
ANNUAL RUNOFF (CFSM)	0.472		0.555		0.472	
ANNUAL RUNOFF (INCHES)	6.42		7.54		6.41	
10 PERCENT EXCEEDS	1,440		1,900		1,930	
50 PERCENT EXCEEDS	338		645		297	
90 PERCENT EXCEEDS	26		139		41	

e Estimated



06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IA

LOCATION.--Lat 42°28'14", long 95°47'50", in NE$\frac{1}{4}$ NW$\frac{1}{4}$ sec.1, T.88 N., R.43 W., Woodbury County, Hydrologic Unit 10230003 on right bank 50 ft upstream from bridge on State Highway 31, 0.3 mi upstream from Bacon Creek, 0.5 mi west of Correctionville, 0.8 mi downstream from Pierson Creek, and 58.8 mi (revised) upstream from mouth.

DRAINAGE AREA.--2,500 mi^2.

PERIOD OF RECORD.--May 1918 to July 1925, October 1928 to July 1932, June 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 856: 1919. WSP 1240: 1924-25, 1931, 1932 (M), 1937, 1945 (M), 1947 (M), 1949 (M). WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,096.49 ft above NGVD of 1929. May 28, 1918, to July 1, 1925 and Oct. 29, 1928 to July 15, 1929, nonrecording gage 0.2 mi downstream at datum 1.25 ft lower. July 16, 1929, to July 2, 1932, and June 15, 1936, to Nov. 7, 1938, nonrecording gage at present site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23 or 24, 1891, reached a stage of 29.34 ft, present datum, from levels to floodmark by U.S. Soil Conservation Service (discharge not determined).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,930	1,290	1,330	e658	533	907	1,140	1,870	2,520	1,780	521	199
2	5,090	1,300	1,300	e650	540	e802	1,200	1,760	2,420	1,640	495	190
3	4,400	1,300	1,260	e618	564	873	1,240	1,670	2,360	1,530	472	186
4	3,890	1,360	1,220	e611	597	876	1,240	1,600	2,340	1,420	466	180
5	3,460	1,410	1,210	e604	644	907	1,230	1,530	2,290	1,310	483	175
6	3,100	1,400	1,190	e595	671	879	1,200	1,470	2,290	1,220	457	198
7	2,860	1,350	1,160	e565	656	848	1,270	1,430	2,330	1,170	423	230
8	2,740	1,290	1,130	e575	632	823	1,240	1,410	2,360	1,110	406	216
9	2,710	1,240	1,100	e615	603	806	1,490	1,420	2,570	1,060	392	204
10	2,700	1,200	1,080	e612	604	795	1,570	1,690	2,540	1,020	418	245
11	2,840	1,170	1,050	e607	566	786	1,600	2,220	2,500	989	491	287
12	2,920	1,130	1,020	e604	574	780	1,670	2,710	2,470	955	483	305
13	2,740	1,090	e804	e579	e1,010	761	1,960	3,550	2,420	910	515	299
14	2,460	1,070	e464	e535	e2,310	731	2,430	4,270	2,290	865	465	276
15	2,270	1,050	e445	e514	2,200	714	2,750	4,480	2,150	822	442	258
16	2,140	1,030	e673	e501	2,080	707	2,920	4,600	2,030	781	393	245
17	2,020	1,030	e692	e494	1,970	742	3,060	4,920	1,910	738	365	230
18	1,900	1,050	e683	e507	1,970	763	2,980	5,480	1,810	711	364	221
19	1,810	1,090	e513	508	1,700	742	2,800	5,970	1,700	670	338	228
20	1,720	1,170	e377	510	1,500	714	2,740	6,020	1,600	643	301	225
21	1,660	1,270	e430	522	1,440	704	2,660	5,580	1,480	635	278	224
22	1,600	1,460	e573	520	1,310	699	2,730	4,960	1,450	634	259	235
23	1,570	1,580	e645	519	1,300	733	2,760	4,420	1,480	607	245	230
24	1,530	1,580	e635	510	1,260	740	2,810	3,980	1,580	556	233	229
25	1,490	1,510	e641	511	1,140	765	2,830	3,700	2,860	554	236	264
26	1,430	1,450	e618	537	1,060	780	2,740	3,460	3,450	557	236	348
27	1,380	1,420	e626	559	1,030	802	2,540	3,190	2,650	583	234	413
28	1,350	1,370	e615	573	981	839	2,340	3,000	2,380	570	246	796
29	1,340	1,340	e592	555	---	889	2,170	2,860	2,140	559	239	1,140
30	1,320	1,350	e607	550	---	979	2,010	2,730	1,950	560	223	1,170
31	1,310	---	e637	542	---	1,080	---	2,580	---	544	210	---
TOTAL	75,680	38,350	25,320	17,360	31,445	24,966	63,320	100,530	66,320	27,703	11,329	9,646
MEAN	2,441	1,278	817	560	1,123	805	2,111	3,243	2,211	894	365	322
MAX	5,930	1,580	1,330	658	2,310	1,080	3,060	6,020	3,450	1,780	521	1,170
MIN	1,310	1,030	377	494	533	699	1,140	1,410	1,450	544	210	175
AC-FT	150,100	76,070	50,220	34,430	62,370	49,520	125,600	199,400	131,500	54,950	22,470	19,130
CFSM	0.98	0.51	0.33	0.22	0.45	0.32	0.84	1.30	0.88	0.36	0.15	0.13
IN.	1.13	0.57	0.38	0.26	0.47	0.37	0.94	1.50	0.99	0.41	0.17	0.14

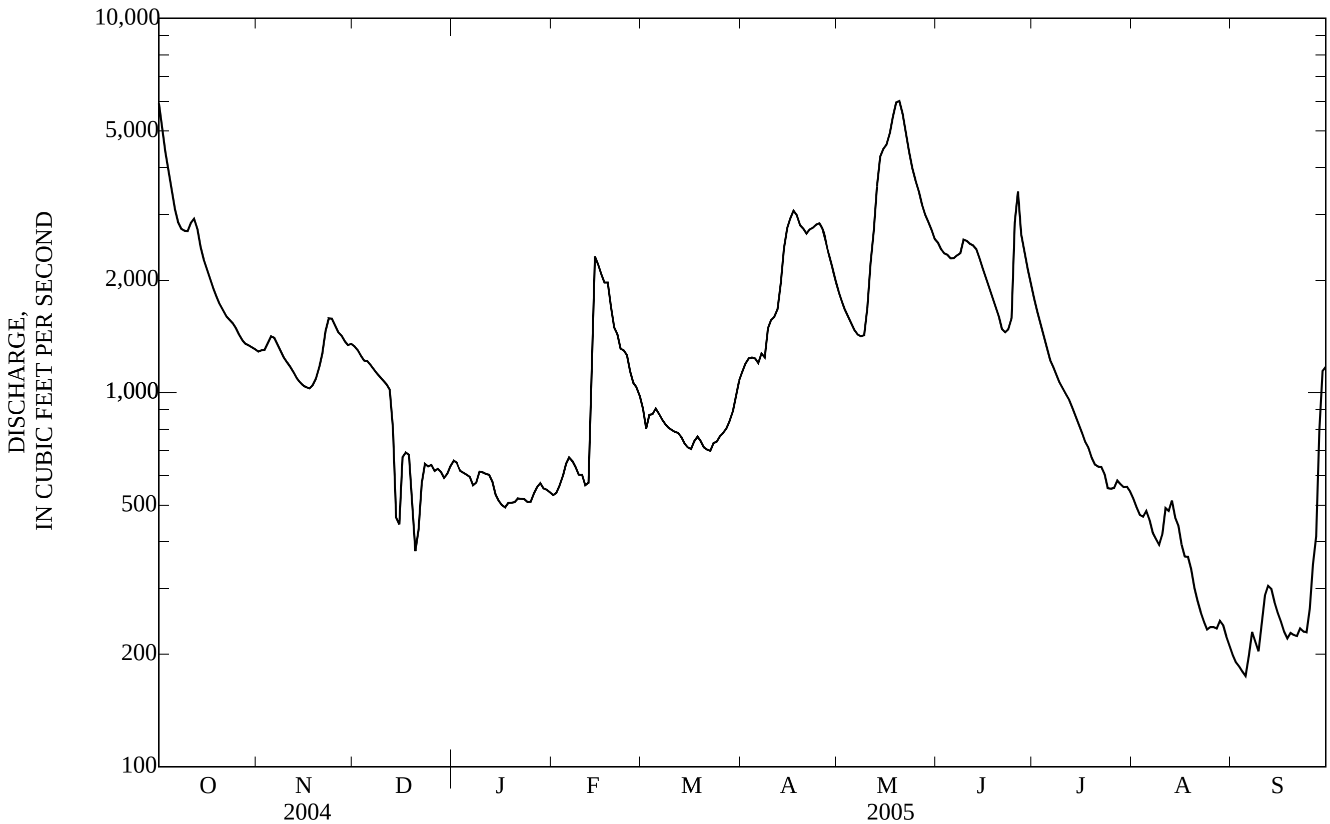
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	448	433	300	216	459	1,422	1,885	1,455	1,810	1,236	594	539
MAX	2,994	3,079	1,698	1,323	2,708	7,328	8,677	5,002	10,110	11,600	4,469	4,203
(WY)	(1983)	(1980)	(1983)	(1983)	(1971)	(1983)	(1983)	(1993)	(1993)	(1993)	(1993)	(2004)
MIN	8.33	25.3	15.1	8.31	7.08	53.5	61.9	57.3	58.1	43.4	15.0	14.4
(WY)	(1957)	(1959)	(1959)	(1959)	(1959)	(1931)	(1931)	(1931)	(1956)	(1956)	(1931)	(1958)

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1919 - 2005	
ANNUAL TOTAL	469,250		491,969			
ANNUAL MEAN	1,282		1,348		911	
HIGHEST ANNUAL MEAN					4,304	1993
LOWEST ANNUAL MEAN					53.7	1931
HIGHEST DAILY MEAN	10,900	Sep 24	6,020	May 20	27,900	Apr 7, 1965
LOWEST DAILY MEAN	67	Jan 29	175	Sep 5	2.6	Jul 17, 1936 a
ANNUAL SEVEN-DAY MINIMUM	69	Feb 3	191	Aug 31	4.6	Oct 4, 1956
MAXIMUM PEAK FLOW			6,100	May 20 b	29,800	Apr 7, 1965
MAXIMUM PEAK STAGE			12.61	May 20 c	25.86	Apr 7, 1965
INSTANTANEOUS LOW FLOW			169	Sep 5		
ANNUAL RUNOFF (AC-FT)	930,800		975,800		660,300	
ANNUAL RUNOFF (CFSM)	0.513		0.539		0.365	
ANNUAL RUNOFF (INCHES)	6.98		7.32		4.95	
10 PERCENT EXCEEDS	2,740		2,740		2,260	
50 PERCENT EXCEEDS	766		1,060		385	
90 PERCENT EXCEEDS	92		303		57	

a Also July 25, 1956, caused by construction of dam upstream.
b Maximum discharge of 6330 cfs. on Oct. 01, from rise the previous water year.
c Maximum gage height of 12.92 ft. on Oct. 01, from rise the previous water year.
e Estimated.



06607200 MAPLE RIVER AT MAPLETON, IA

LOCATION.--Lat 42°09'25", long 95°48'35", in SE¼ SE¼ sec.23, T.85 N., R.43 W., Monona County, Hydrologic Unit 10230005, on right bank at downstream side of bridge on State Highway 175, 1.0 mi downstream from Simmons Creek, 1.1 mi southwest of intersection of State Highways 175 and 141 in Mapleton, 2.1 mi upstream from McCleery Creek, and 16.0 mi upstream from mouth.

DRAINAGE AREA.--669 mi^2.

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WSP 1310: 1942 (M), 1946 (M), 1948 (M). WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,080.86 ft above NGVD of 1929. See WSP 1730 for history of changes prior to Sept. 20, 1956; Prior to Apr. 27, 2000, at datum 5.0 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	210	174	e132	e68	e67	e183	170	265	407	900	186	88
2	203	211	e144	e60	e89	192	171	260	409	787	180	86
3	196	179	e147	e59	e119	212	176	254	419	711	170	85
4	186	171	154	e56	e114	200	183	246	427	657	169	83
5	181	161	150	e53	129	189	195	245	456	596	164	82
6	174	157	153	e48	140	183	205	241	437	555	156	88
7	179	149	148	e52	118	179	210	244	407	528	150	90
8	187	142	144	e50	101	175	205	243	434	496	142	93
9	181	142	141	e60	92	169	203	248	457	472	137	87
10	178	148	138	e55	e79	164	208	238	478	443	131	80
11	175	143	133	e58	e98	164	e233	245	496	417	183	78
12	171	134	131	e57	110	163	e248	423	468	391	193	79
13	170	132	e71	e49	752	157	e276	626	448	368	169	77
14	164	133	e58	e43	1,500	158	e339	738	435	349	164	73
15	160	133	e87	e40	819	156	335	678	412	332	148	71
16	157	134	e94	e40	560	155	317	603	391	317	136	69
17	156	135	e90	e43	432	157	308	556	374	298	128	68
18	154	140	e84	e45	375	155	312	513	365	302	124	69
19	150	167	e48	e52	342	154	347	480	349	286	120	68
20	149	180	e58	e54	321	151	367	444	337	292	117	68
21	148	185	e55	e52	302	154	360	419	330	293	115	71
22	152	198	e48	e46	279	155	381	399	322	268	115	70
23	149	189	e44	e47	261	154	393	377	314	250	113	67
24	143	178	e45	e52	249	158	397	360	303	235	110	69
25	140	168	e54	e67	238	169	383	354	359	243	111	88
26	139	168	e53	e63	231	167	364	408	1,770	239	110	133
27	149	176	e55	e62	221	163	330	438	1,890	239	110	115
28	158	170	e56	e64	209	164	301	403	2,010	221	103	106
29	162	e160	e54	e61	---	167	277	392	1,250	210	100	95
30	157	e128	e106	e65	---	174	263	376	1,050	203	96	87
31	151	---	e70	e71	---	174	---	375	---	193	92	---
TOTAL	5,129	4,785	2,945	1,692	8,347	5,215	8,457	12,091	18,004	12,091	4,242	2,483
MEAN	165	160	95.0	54.6	298	168	282	390	600	390	137	82.8
MAX	210	211	154	71	1,500	212	397	738	2,010	900	193	133
MIN	139	128	44	40	67	151	170	238	303	193	92	67
AC-FT	10,170	9,490	5,840	3,360	16,560	10,340	16,770	23,980	35,710	23,980	8,410	4,930
CFSM	0.25	0.24	0.14	0.08	0.45	0.25	0.42	0.58	0.90	0.58	0.20	0.12
IN.	0.29	0.27	0.16	0.09	0.46	0.29	0.47	0.67	1.00	0.67	0.24	0.14

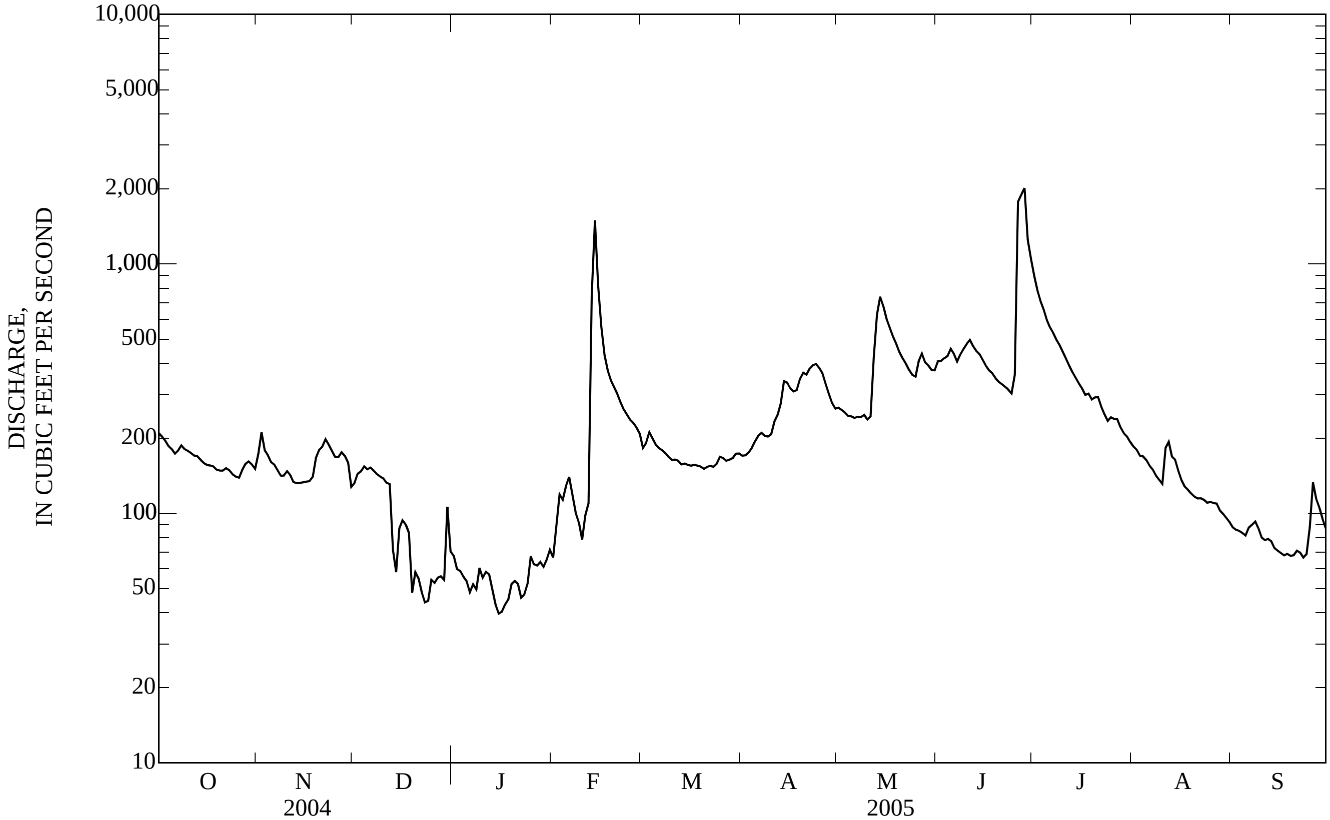
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	156	144	115	94.8	224	472	402	405	640	380	251	176
MAX	634	506	548	330	1,016	1,588	1,889	1,345	2,856	1,588	1,230	1,034
(WY)	(1983)	(1993)	(1985)	(1983)	(1971)	(1983)	(1983)	(1984)	(1984)	(1993)	(1951)	(1951)
MIN	9.36	14.6	5.74	3.25	3.64	25.6	19.9	35.9	48.5	33.3	12.6	5.48
(WY)	(1957)	(1959)	(1959)	(1959)	(1959)	(1957)	(1957)	(1968)	(1955)	(1956)	(1956)	(1956)

06607200 MAPLE RIVER AT MAPLETON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	119,636		85,481			
ANNUAL MEAN	327		234		288	
HIGHEST ANNUAL MEAN					983	1983
LOWEST ANNUAL MEAN					24.5	1956
HIGHEST DAILY MEAN	8,370	Jun 17	2,010	Jun 28	14,400	Jun 21, 1983
LOWEST DAILY MEAN	38	Jan 5	40	Jan 15 a	0.00	Sep 21, 1945
ANNUAL SEVEN-DAY MINIMUM	45	Jan 4	45	Jan 13	2.6	Feb 14, 1959
MAXIMUM PEAK FLOW			2,540	Jun 28	20,800	Sep 12, 1978
MAXIMUM PEAK STAGE			10.16	Jun 28	22.10	Jun 12, 1950
ANNUAL RUNOFF (AC-FT)	237,300		169,600		208,800	
ANNUAL RUNOFF (CFSM)	0.489		0.350		0.431	
ANNUAL RUNOFF (INCHES)	6.65		4.75		5.85	
10 PERCENT EXCEEDS	711		434		608	
50 PERCENT EXCEEDS	194		168		140	
90 PERCENT EXCEEDS	55		62		31	

a Also Jan. 16.
e Estimated.



06607500 LITTLE SIOUX RIVER NEAR TURIN, IA

LOCATION.--Lat 41°57'52", long 95°58'21", in NW1/4 NE1/4 sec.33, T.83 N., R.44 W., Monona County, Hydrologic Unit 10230003, on left bank on downstream side of bridge on County Highway E54, 1.0 mi east of gaging station on Monona-Harrison Ditch near Turin, 2.5 mi downstream from Maple River, 3.8 mi south of Turin, 6.2 mi northeast of Blencoe, and 13.4 mi (revised) upstream from mouth.

DRAINAGE AREA.--3,526 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1942 to September 1957, January 1958 to current year. June 1942 to January 1958 at site 1,200 ft east on old river channel; records not equivalent owing to diversion into Monona-Harrison Ditch through equalizer ditch 1.5 mi upstream 1923 to 1958, and diversion with Monona-Harrison Ditch through diversion ditch 8.3 miles upstream since 1958.

REVISED RECORDS.--WSP 1440: Drainage area. WSP 1560: Drainage area. WDR IA-95-1: Period of record.

GAGE.--Water-stage recorder. Datum of gage is 1,019.85 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to July 15, 1958, nonrecording gages near present site at different datums. July 15 to Sept. 3, 1958, nonrecording gage at present site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,360	1,440	1,600	e875	e662	e1,170	1,230	2,440	3,190	3,140	684	339
2	5,310	1,470	1,590	e857	e667	1,080	1,310	2,310	3,170	2,870	663	327
3	4,600	1,490	1,550	e805	e721	1,120	1,380	2,210	3,080	2,660	638	311
4	4,030	1,490	1,490	e767	e723	1,070	1,440	2,110	3,060	2,490	601	307
5	3,610	1,590	1,420	e754	e812	1,090	1,450	2,030	3,090	2,340	592	296
6	3,290	1,680	1,420	e741	e886	e1,130	1,410	1,970	3,060	2,170	591	301
7	3,030	1,630	1,350	e715	e896	e1,030	1,380	1,920	3,090	1,980	570	300
8	2,920	1,540	1,320	e710	e858	e994	1,490	1,890	3,180	1,880	522	324
9	2,840	1,510	1,270	e741	e846	946	1,480	1,880	3,330	1,730	487	322
10	2,880	1,420	1,200	e745	e833	921	1,820	1,890	3,430	1,600	459	313
11	2,930	1,350	1,190	e728	e840	915	1,980	2,330	3,420	1,510	591	335
12	3,100	1,310	1,140	e728	e865	911	2,090	3,250	3,330	1,420	695	372
13	3,150	1,270	e1,040	e719	e1,520	903	2,170	3,860	3,270	1,350	619	384
14	2,900	1,220	e776	e683	e3,920	880	2,550	4,650	3,160	1,270	642	378
15	2,650	1,210	e636	e647	3,520	855	3,050	5,070	3,000	1,190	601	357
16	2,480	1,190	e723	e627	2,870	838	3,270	5,100	2,850	1,120	576	348
17	2,370	1,160	754	e612	2,510	825	3,410	5,200	2,720	1,050	538	341
18	2,270	1,170	e828	e624	2,360	854	3,480	5,490	2,580	1,030	512	333
19	2,150	1,240	e806	e652	2,290	864	3,460	5,920	2,460	986	503	316
20	2,020	1,280	e689	e647	2,000	850	3,520	6,200	2,350	940	482	312
21	1,930	1,350	e606	e652	1,840	826	3,480	6,020	2,250	960	448	325
22	1,900	1,540	e745	e662	1,730	808	3,360	5,550	2,160	896	425	308
23	1,790	1,790	e815	e652	1,600	799	3,390	5,070	2,110	874	411	313
24	1,720	1,900	e815	e644	1,570	836	3,430	4,630	2,150	806	400	323
25	1,660	1,860	e793	e628	1,480	866	3,420	4,290	2,370	761	390	344
26	1,590	1,780	e771	e647	1,390	884	3,370	4,130	4,830	756	391	471
27	1,520	1,660	e789	e662	1,290	895	3,210	3,900	4,980	730	382	528
28	1,520	1,640	e776	e688	1,220	925	2,990	3,590	4,920	773	375	574
29	1,510	1,610	e771	e698	---	973	2,780	3,430	3,980	752	382	1,020
30	1,430	1,580	e785	e678	---	1,020	2,600	3,310	3,460	745	375	1,440
31	1,420	---	e884	e673	---	1,120	---	3,200	---	716	354	---
TOTAL	82,880	44,370	31,342	21,661	42,719	29,198	75,400	114,840	94,030	43,495	15,899	12,262
MEAN	2,674	1,479	1,011	699	1,526	942	2,513	3,705	3,134	1,403	513	409
MAX	6,360	1,900	1,600	875	3,920	1,170	3,520	6,200	4,980	3,140	695	1,440
MIN	1,420	1,160	606	612	662	799	1,230	1,880	2,110	716	354	296
AC-FT	164,400	88,010	62,170	42,960	84,730	57,910	149,600	227,800	186,500	86,270	31,540	24,320
CFSM	0.76	0.42	0.29	0.20	0.43	0.27	0.71	1.05	0.89	0.40	0.15	0.12
IN.	0.87	0.47	0.33	0.23	0.45	0.31	0.80	1.21	0.99	0.46	0.17	0.13

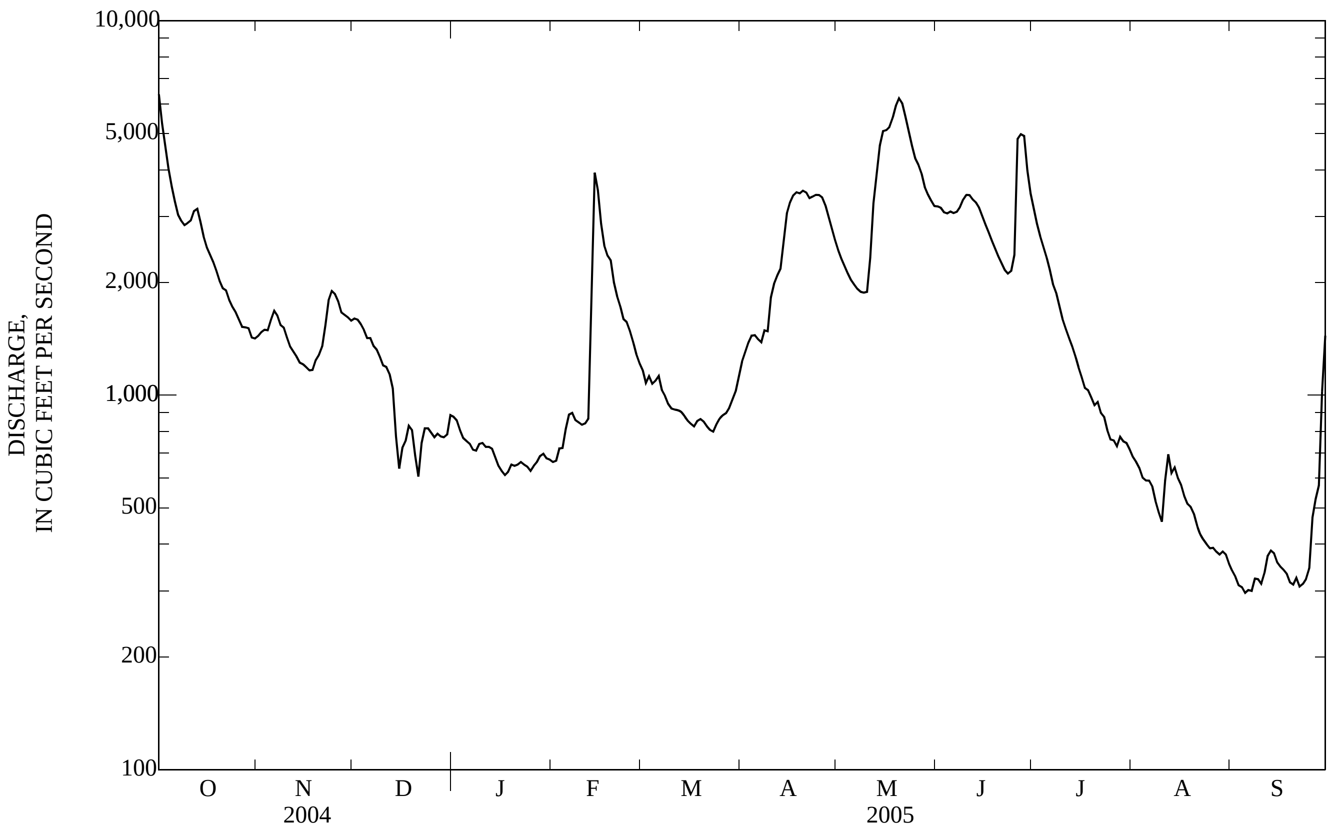
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	819	803	640	469	823	2,236	3,045	2,443	2,962	2,057	1,024	886
MAX	3,625	3,612	2,424	2,250	3,353	9,054	10,790	7,938	15,080	13,110	5,181	4,118
(WY)	(1983)	(1980)	(1983)	(1992)	(1971)	(1983)	(1965)	(1986)	(1984)	(1993)	(1993)	(2004)
MIN	37.5	48.0	31.2	18.5	25.1	171	157	118	315	181	140	90.2
(WY)	(1959)	(1959)	(1959)	(1977)	(1959)	(1964)	(1968)	(1968)	(1968)	(1968)	(1976)	(1976)

06607500 LITTLE SIOUX RIVER NEAR TURIN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005 a	
ANNUAL TOTAL	625,020		608,096			
ANNUAL MEAN	1,708		1,666		1,518	
HIGHEST ANNUAL MEAN					5,261	1993
LOWEST ANNUAL MEAN					167	1968
HIGHEST DAILY MEAN	11,400	Jun 17	6,360	Oct 1	28,700	Jun 22, 1996
LOWEST DAILY MEAN	159	Jan 29	296	Sep 5	17	Jan 18, 1977 b
ANNUAL SEVEN-DAY MINIMUM	169	Jan 27	309	Sep 3	17	Jan 27, 1977
MAXIMUM PEAK FLOW			6,270	May 20 c	32,000	Jun 22, 1996
MAXIMUM PEAK STAGE			14.40	May 20 d	27.44	Feb 19, 1971 f
INSTANTANEOUS LOW FLOW			289	Sep 5		
ANNUAL RUNOFF (AC-FT)	1,240,000		1,206,000		1,100,000	
ANNUAL RUNOFF (CFSM)	0.484		0.472		0.431	
ANNUAL RUNOFF (INCHES)	6.59		6.42		5.85	
10 PERCENT EXCEEDS	3,260		3,420		3,630	
50 PERCENT EXCEEDS	1,190		1,270		765	
90 PERCENT EXCEEDS	202		455		160	

a Post closure of diversion to Monona-Harrison Ditch.
b Also Jan. 19, 20, Jan. 28 to Feb. 1, 1977.
c Maximum discharge of 6970 cfs. on Oct. 01, from rise the previous water year.
d Maximum gage height of 14.95 ft. on Oct. 01, from rise the previous water year.
e Estimated.
f Ice affected.



06607500 LITTLE SIOUX RIVER NEAR TURIN, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
OCT													
12...	1300	3,130	165	732	10.0	101	8.3	698	13.9	253	309	--	24.4
NOV													
17...	0945	1,170	147	735	11.1	99	8.3	757	8.5	277	338	--	24.4
DEC													
15...	1030	912	135	750	15.1	104	8.1	806	.0	301	360	--	25.9
JAN													
11...	1100	727	206	726	12.6	91	7.8	832	.0	306	373	--	27.0
FEB													
14...	1100	4,510	168	724	12.2	89	6.9	455	.5	138	167	--	17.6
MAR													
15...	1300	853	150	734	15.6	121	8.0	798	3.0	280	333	--	30.0
APR													
14...	1130	2,480	148	739	8.7	86	8.0	717	13.5	245	291	--	25.3
MAY													
11...	1100	2,280	165	733	8.2	90	8.2	701	18.0	240	286	--	24.9
JUN													
15...	1030	3,020	172	735	9.7	112	8.2	714	20.5	254	302	--	24.4
27...	1100	4,800	180	730	6.8	83	7.6	513	23.0	160	192	--	14.7
JUL													
14...	1100	1,270	162	734	8.3	109	7.9	714	27.5	245	290	--	22.8
AUG													
10...	1030	458	148	734	9.0	111	8.7	532	23.7	147	171	--	22.6
SEP													
14...	1100	380	148	--	--	--	8.5	592	18.5	187	221	--	25.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, wat unf by analysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
12...	19.6	64.9	<.04	8.89	.009	.40	.115	.133	.35	8.82	9.33	3.9	.1
NOV													
17...	16.4	72.6	<.04	8.92	E.006	.24	.056	.067	.184	8.93	9.26	1.9	<.1
DEC													
15...	17.9	76.5	E.04	9.63	E.006	.12	.058	.058	.117	10.2	9.79	1.1	<.1
JAN													
11...	18.9	83.7	.07	8.99	.012	.05	.066	.075	.097	9.94	9.88	.4	<.1
FEB													
14...	11.0	34.4	1.04	5.50	.060	6.74	.373	.50	3.48	8.16	13.6	69.5	4.6
MAR													
15...	15.8	80.5	E.03	7.32	.010	.26	.223	.22	.31	8.28	7.84	2.1	<.1
APR													
14...	12.5	70.7	E.02	8.37	.020	1.30	.094	.114	.62	8.77	10.2	14.2	.9
MAY													
11...	9.7	70.6	<.04	7.77	.014	.87	.050	.071	.37	8.34	9.46	8.5	.4
JUN													
15...	16.8	63.6	<.04	10.7	.009	.80	.101	.116	.42	11.0	11.5	8.3	.2
27...	15.3	38.4	E.04	8.69	.079	3.33	.142	.181	.71	8.97	11.9	35.7	.5
JUL													
14...	17.3	70.7	<.04	7.68	.016	.92	.069	.086	.36	7.42	9.31	9.1	.2
AUG													
10...	4.8	83.1	<.04	1.50	.009	1.19	<.006	.010	.101	2.10	3.32	8.9	<.1
SEP													
14...	11.4	85.4	<.04	.30	.011	1.35	<.006	.015	.22	.71	1.80	9.9	1.0

06607500 LITTLE SIOUX RIVER NEAR TURIN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
12...	3.7	3.4	7.3	20.0	<.006	E.027	<.006	<.005	<.005	.067	<.050	<.010	<.004
NOV													
17...	1.9	2.5	E4.0	E9.9	<.006	E.025	<.006	<.005	<.005	.047	<.050	<.010	<.004
DEC													
15...	1.0	2.5	1.2	3.3	<.006	E.024	<.006	<.005	<.005	.035	<.050	<.010	<.004
JAN													
11...	.4	2.3	.8	2.8	<.006	E.019	<.006	<.005	<.005	.033	<.050	<.010	<.004
FEB													
14...	64.9	15.8	43.2	38.9	<.006	E.030	.025	<.005	<.005	.132	<.050	<.010	<.004
MAR													
15...	2.1	2.6	E1.6	E6.1	<.006	E.018	<.006	<.005	<.005	.031	<.050	<.010	<.004
APR													
14...	13.3	4.1	5.7	19.2	<.006	E.030	.063	<.005	<.005	.107	<.050	<.010	<.004
MAY													
11...	8.0	3.2	15.5	43.7	<.006	E.043	.103	.008	<.005	.184	<.050	<.010	<.004
JUN													
15...	8.1	3.3	7.5	11.9	<.006	E.053	.103	<.005	<.005	.310	<.050	<.010	<.004
27...	35.2	4.9	13.6	7.7	<.006	E.162	.135	<.005	<.005	2.94	<.050	<.010	<.004
JUL													
14...	8.9	3.1	17.8	52.5	<.006	E.012	.009	<.005	<.005	.136	<.050	<.010	<.004
AUG													
10...	8.8	3.6	--	--	<.006	E.018	<.006	<.005	<.005	.069	<.050	<.010	<.004
SEP													
14...	8.9	7.7	41.0	85.1	<.006	E.012	<.006	<.005	<.005	.041	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.005	<.009	<.005
MAR													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUN													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
27...	<.041	E.027	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
10...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

06607500 LITTLE SIOUX RIVER NEAR TURIN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.022	<.006	<.003	<.007
NOV													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.015	<.006	<.003	<.007
DEC													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.017	<.006	<.003	<.007
JAN													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.012	<.006	<.003	<.007
FEB													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.260	<.006	<.003	<.007
MAR													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.022	<.006	<.003	<.007
APR													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.072	<.006	<.003	<.007
MAY													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.078	<.006	<.003	<.007
JUN													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.057	<.006	<.003	<.007
27...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.274	.007	<.003	<.007
JUL													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.025	<.006	<.003	<.007
AUG													
10...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.017	<.006	<.003	<.007
SEP													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.013	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
12...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAR													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
11...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JUN													
15...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034
27...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	.015	<.02	<.034
JUL													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	E.057
AUG													
10...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

06607500 LITTLE SIOUX RIVER NEAR TURIN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)	Number of sam-pling points, count (00063)
OCT						
12...	<.02	<.010	<.006	<.009	376	11
NOV						
17...	<.02	<.010	<.006	<.009	220	10
DEC						
15...	<.02	<.010	<.006	<.009	223	8
JAN						
11...	<.02	<.010	<.006	<.009	123	5
FEB						
14...	<.02	<.010	<.006	<.009	3,780	8
MAR						
15...	<.02	<.010	<.006	<.009	127	10
APR						
14...	<.02	<.010	<.006	<.009	1,430	9
MAY						
11...	<.02	<.010	<.006	<.009	372	10
JUN						
15...	<.02	<.010	<.006	<.009	484	11
27...	<.02	<.010	<.006	E.003	1,650	9
JUL						
14...	<.02	<.010	<.006	<.009	591	10
AUG						
10...	<.02	<.010	<.006	<.009	90	10
SEP						
14...	<.02	<.010	<.006	<.009	--	14

06608500 SOLDIER RIVER AT PISGAH, IA

LOCATION.--Lat 41°49'50", long 95°55'52", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.14, T.81 N., R.44 W., Harrison County, Hydrologic Unit 10230001, on right bank 75 ft., upstream of bridge on County Highway F20, at west edge of Pisgah, 0.4 mi downstream from Cobb Creek, 0.5 mi upstream from Mogger Ditch, and 12.3 mi (revised) upstream from mouth.

DRAINAGE AREA.--407 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 956: 1940 (M). WSP 1240: 1940, 1941 (M), 1947. WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,036.53 ft above NGVD of 1929. Prior to Oct. 11, 1954, nonrecording gage at same site and datum with supplementary water-stage recorder operating above 8.2 ft gage height Mar. 2, 1946 to Sept. 24, 1953. Prior to Feb. 1954, on left bank at downstream side of bridge. Prior to June 21, 1989, at site 100 ft downstream at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	62	e44	e64	e55	e80	60	88	202	118	e60	39
2	40	95	e52	e51	e79	87	54	87	160	105	e57	38
3	41	71	e54	e51	120	87	54	87	146	100	e50	37
4	38	57	63	e41	106	80	53	86	144	94	e38	37
5	37	51	61	e37	98	78	51	87	154	88	e31	38
6	36	48	e69	e27	112	77	50	87	157	85	e26	41
7	39	42	e66	e35	e66	79	48	90	123	81	e23	42
8	45	39	60	e34	e61	72	46	93	343	78	e22	42
9	42	40	57	e49	e57	66	44	113	258	79	e21	40
10	39	42	54	e44	e50	66	49	98	230	72	e21	36
11	37	48	51	e47	e68	65	109	237	243	66	203	33
12	37	46	49	e47	e79	66	161	686	185	62	188	34
13	37	44	e35	e35	e534	59	129	500	164	57	96	33
14	36	45	e30	e26	e1,410	59	99	267	151	57	e79	33
15	36	45	e50	e24	369	63	84	219	139	56	e63	34
16	38	44	e55	e25	216	66	80	198	130	55	e59	33
17	37	43	e52	e26	172	64	75	186	125	54	e56	34
18	36	50	e49	e29	150	64	73	224	119	66	e56	35
19	36	85	e28	e39	136	60	111	177	113	67	e54	36
20	36	90	e49	e41	130	58	168	147	109	64	e51	34
21	38	67	e42	e38	125	57	210	135	111	86	e49	35
22	40	60	e33	e27	115	57	211	123	110	89	e49	34
23	43	57	e25	e29	116	58	174	111	105	82	e49	35
24	42	56	e26	e33	115	61	137	105	96	83	e47	38
25	40	56	e45	e52	106	74	129	117	92	89	47	43
26	39	58	e43	e48	111	71	124	140	146	134	48	57
27	40	67	e49	e48	109	65	117	122	120	e115	44	60
28	47	e65	e51	e52	102	63	108	112	305	e78	40	50
29	49	e56	e50	e49	---	62	101	108	356	e65	43	e41
30	48	e43	e87	e53	---	67	93	104	186	e60	42	38
31	45	---	e66	e59	---	69	---	108	---	e57	43	---
TOTAL	1,231	1,672	1,545	1,260	4,967	2,100	3,002	5,042	5,022	2,442	1,755	1,160
MEAN	39.7	55.7	49.8	40.6	177	67.7	100	163	167	78.8	56.6	38.7
MAX	49	95	87	64	1,410	87	211	686	356	134	203	60
MIN	36	39	25	24	50	57	44	86	92	54	21	33
AC-FT	2,440	3,320	3,060	2,500	9,850	4,170	5,950	10,000	9,960	4,840	3,480	2,300
CFSM	0.10	0.14	0.12	0.10	0.44	0.17	0.25	0.40	0.41	0.19	0.14	0.10
IN.	0.11	0.15	0.14	0.12	0.45	0.19	0.27	0.46	0.46	0.22	0.16	0.11

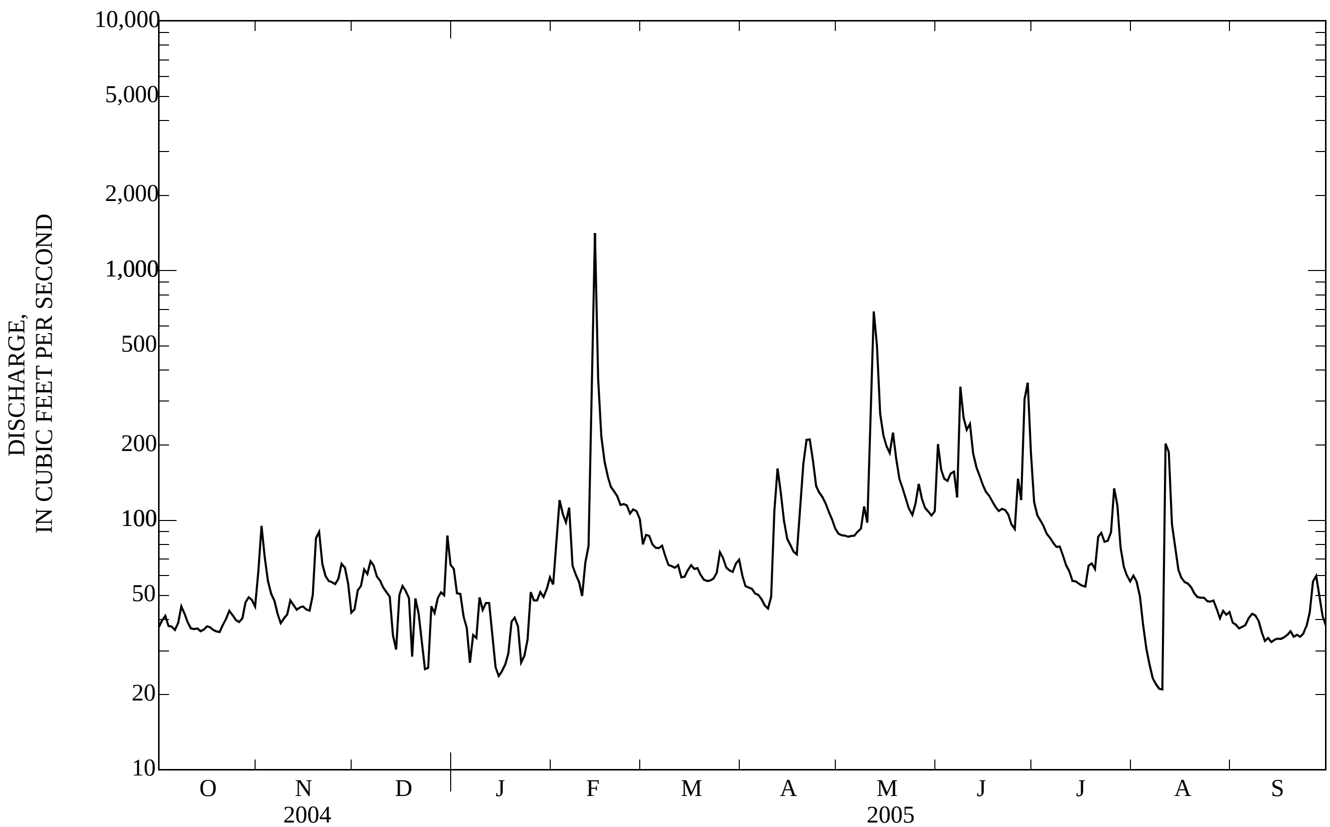
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	80.1	74.8	66.7	65.5	154	259	164	198	304	198	140	108
MAX	330	274	281	431	653	897	623	555	1,233	1,607	632	482
(WY)	(1994)	(1994)	(1985)	(1952)	(1971)	(1993)	(1983)	(1984)	(1991)	(1993)	(1993)	(1978)
MIN	9.61	12.8	6.05	3.29	9.43	27.8	12.5	13.6	22.1	22.8	14.4	6.70
(WY)	(1957)	(1959)	(1959)	(1959)	(1956)	(1957)	(1957)	(1957)	(1956)	(1970)	(1971)	(1956)

06608500 SOLDIER RIVER AT PISGAH, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1941 - 2005	
ANNUAL TOTAL	38,656		31,198			
ANNUAL MEAN	106		85.5		151	
HIGHEST ANNUAL MEAN					487	1993
LOWEST ANNUAL MEAN					27.3	1956
HIGHEST DAILY MEAN	1,500	Feb 29	1,410	Feb 14 a	20,700	Jul 17, 1996
LOWEST DAILY MEAN	25	Dec 23	21	Aug 9 b	2.0	Jan 2, 1945 c
ANNUAL SEVEN-DAY MINIMUM	33	Jan 4	26	Aug 4	2.0	Jan 2, 1945
MAXIMUM PEAK FLOW			2,900	Feb 14	34,700	Jul 17, 1996
MAXIMUM PEAK STAGE			10.68	Feb 13 a	28.87	Jul 17, 1996
INSTANTANEOUS LOW FLOW			18	Aug 10		
ANNUAL RUNOFF (AC-FT)	76,670		61,880		109,300	
ANNUAL RUNOFF (CFSM)	0.260		0.210		0.371	
ANNUAL RUNOFF (INCHES)	3.53		2.85		5.04	
10 PERCENT EXCEEDS	182		148		278	
50 PERCENT EXCEEDS	70		59		72	
90 PERCENT EXCEEDS	37		36		17	

a Ice affected.
b Also Aug. 10.
c Also Jan. 3-10, 1945.
e Estimated.



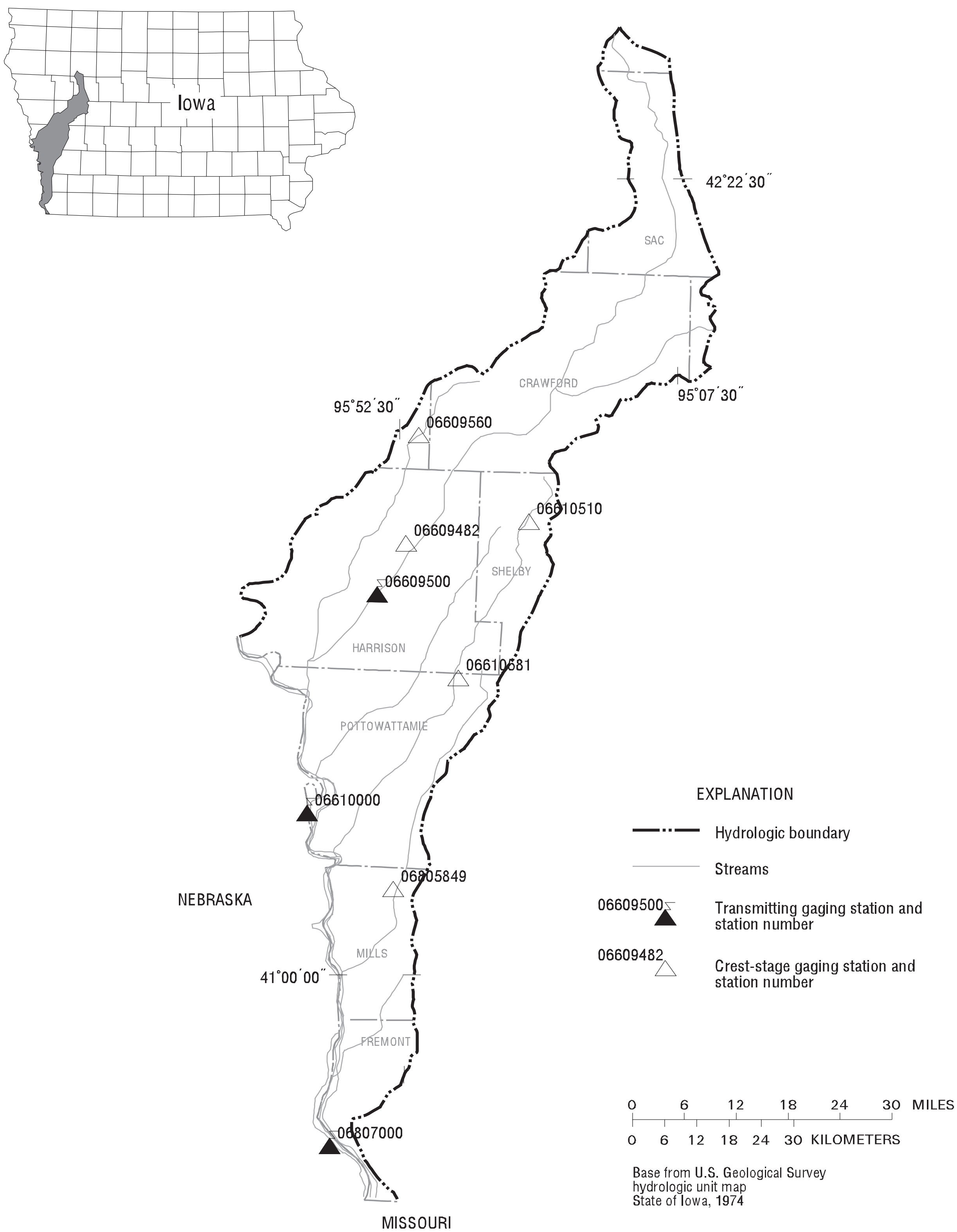


Figure 20. Locations of active continous-record and crest-stage gaging stations in the Boyer River and Missouri River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

06609500 BOYER RIVER AT LOGAN, IA

LOCATION.--Lat 41°38'30", long 95°46'57", in SE1/4 NW1/4 sec.19, T.79 N., R.42 W., Harrison County, Hydrologic Unit 10230007, on left bank downstream side of county bridge on Eight Street in Logan, 0.5 mi downstream from Elk Grove Creek, 10.4 mi upstream from Willow Creek, and 15.7 mi upstream from mouth.

DRAINAGE AREA.--871 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1918 to November 1924, February 1925 to July 1925, November 1937 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 956: 1938-39. WSP 1240: 1918-19, 1920 (M), 1921, 1922 (M), 1924-25, 1938 (M), 1945. WSP 1440: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,009.38 ft above NGVD of 1929 (Chicago and Northwestern Railway Company bench mark). See WSP 1918 for history of changes prior to Oct. 18, 1960.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	115	e113	e106	e73	e173	193	309	518	679	236	98
2	79	183	e118	e93	e98	179	152	298	495	610	227	94
3	84	179	e132	e93	e138	205	138	288	500	561	215	91
4	87	144	145	e83	e122	196	130	276	491	527	206	85
5	82	129	150	e80	e116	180	125	267	487	497	194	86
6	82	141	153	e72	e131	169	124	264	495	475	188	87
7	88	118	146	e81	e82	167	121	258	438	455	179	84
8	88	109	138	e74	e76	165	114	263	503	442	172	86
9	89	109	133	e88	e75	150	106	1,940	680	424	165	81
10	87	134	130	e71	e66	146	109	755	649	410	161	69
11	86	132	125	e72	e82	146	159	1,050	1,130	392	289	65
12	84	116	123	e70	e93	145	233	1,640	1,070	371	481	60
13	86	109	e89	e53	e1,600	136	345	2,190	776	365	272	60
14	83	107	e81	e44	2,550	124	324	1,350	714	354	215	58
15	83	108	e92	e41	1,280	130	288	1,090	667	341	185	58
16	81	112	e97	e42	666	139	258	924	607	327	170	57
17	80	123	e95	e45	425	138	244	833	574	314	158	56
18	81	123	e91	e49	358	133	236	752	546	309	153	56
19	84	155	e71	e59	320	130	528	690	521	301	145	55
20	85	181	e91	e60	302	129	519	631	499	286	137	52
21	85	170	e85	e56	285	124	642	576	486	314	132	50
22	85	158	e75	e44	264	123	639	560	476	332	131	49
23	87	149	e68	e46	248	121	581	524	461	288	123	50
24	85	142	e68	e51	240	124	513	496	446	269	118	53
25	85	135	e87	e70	226	154	471	496	444	270	115	57
26	82	139	e85	e66	224	153	438	527	795	478	118	69
27	85	146	e91	e66	221	138	401	524	1,140	403	120	85
28	105	149	e94	e70	208	129	364	557	1,040	283	119	83
29	121	148	e93	e68	---	126	339	515	891	256	112	74
30	107	140	e129	e71	---	138	322	482	813	241	108	70
31	97	---	e109	e76	---	185	---	463	---	235	105	---
TOTAL	2,707	4,103	3,297	2,060	10,569	4,595	9,156	21,788	19,352	11,809	5,449	2,078
MEAN	87.3	137	106	66.5	377	148	305	703	645	381	176	69.3
MAX	121	183	153	106	2,550	205	642	2,190	1,140	679	481	98
MIN	79	107	68	41	66	121	106	258	438	235	105	49
AC-FT	5,370	8,140	6,540	4,090	20,960	9,110	18,160	43,220	38,380	23,420	10,810	4,120
CFSM	0.10	0.16	0.12	0.08	0.43	0.17	0.35	0.81	0.74	0.44	0.20	0.08
IN.	0.12	0.18	0.14	0.09	0.45	0.20	0.39	0.93	0.83	0.50	0.23	0.09

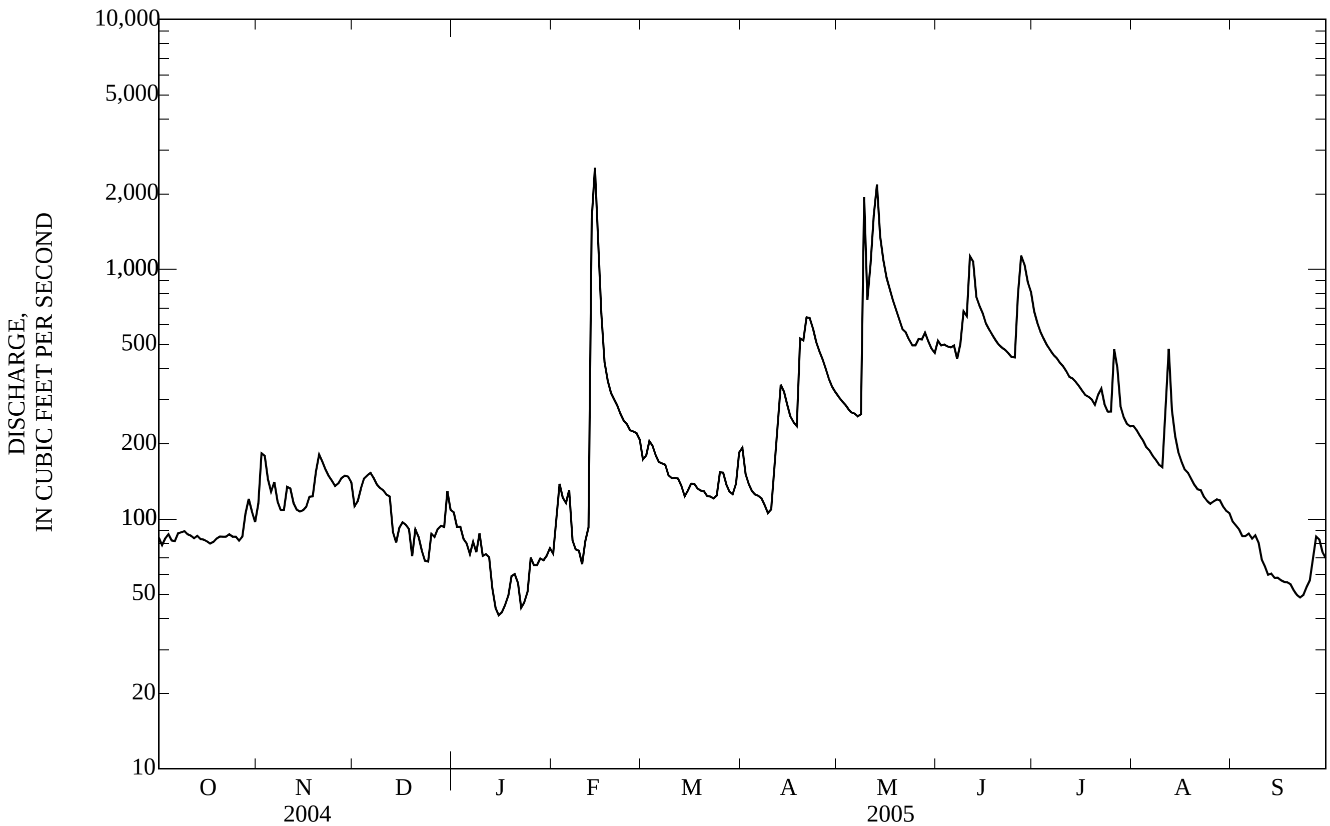
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	182	167	137	126	312	586	439	522	754	467	302	247
MAX	796	558	565	692	1,209	2,619	1,988	1,698	2,541	3,022	1,636	1,288
(WY)	(1974)	(1974)	(1973)	(1973)	(1971)	(1979)	(1983)	(1984)	(1990)	(1993)	(1951)	(1978)
MIN	11.1	8.33	6.68	3.06	3.55	40.4	23.3	39.9	33.3	51.0	34.5	11.6
(WY)	(1957)	(1940)	(1938)	(1940)	(1940)	(1981)	(1957)	(1968)	(1956)	(1977)	(1976)	(1939)

06609500 BOYER RIVER AT LOGAN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1919 - 2005	
ANNUAL TOTAL	118,655		96,963			
ANNUAL MEAN	324		266		357	
HIGHEST ANNUAL MEAN					1,018	1993
LOWEST ANNUAL MEAN					58.7	1956
HIGHEST DAILY MEAN	3,780	Jun 17	2,550	Feb 14	24,600	Jul 9, 1993
LOWEST DAILY MEAN	43	Jan 28	41	Jan 15 a	1.5	Jul 16, 1938
ANNUAL SEVEN-DAY MINIMUM	49	Jan 26	48	Jan 13	2.0	Jan 13, 1940
MAXIMUM PEAK FLOW			4,520	Feb 13	30,800	Jun 17, 1990
MAXIMUM PEAK STAGE			10.23	Feb 13	25.22	Mar 1, 1965 a
ANNUAL RUNOFF (AC-FT)	235,400		192,300		258,300	
ANNUAL RUNOFF (CFSM)	0.372		0.305		0.409	
ANNUAL RUNOFF (INCHES)	5.07		4.14		5.56	
10 PERCENT EXCEEDS	688		566		750	
50 PERCENT EXCEEDS	168		139		165	
90 PERCENT EXCEEDS	68		70		35	

a Ice affected.
e Estimated.



06609500 BOYER RIVER AT LOGAN, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.--October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan- taneous dis- charge, cfs (00061)	Stream width, feet (00004)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon- ate, wat flt incrm. titr., field, mg/L (00452)	Chlor- ide, water, fltrd, mg/L (00940)
OCT													
12...	1000	59	80.0	732	12.0	114	8.5	696	11.2	254	290	10	32.0
NOV													
17...	1230	142	84.0	735	10.6	105	8.3	696	13.0	269	328	--	27.5
DEC													
15...	1300	89	67.0	750	14.4	100	8.0	865	.0	340	415	--	29.9
JAN													
11...	1430	71	84.0	726	10.7	77	7.8	829	.0	309	377	--	33.6
FEB													
14...	1430	2,020	103	728	12.2	91	7.9	284	1.5	83	101	--	10.1
MAR													
17...	0930	138	120	727	12.7	100	7.8	743	3.5	274	326	--	28.1
APR													
12...	1100	218	90.0	725	9.6	94	7.9	602	12.0	217	259	--	25.3
MAY													
09...	0900	3,220	100	726	4.0	40	7.1	284	13.5	97	118	--	5.32
JUN													
16...	0930	613	93.0	734	7.7	90	8.1	654	21.0	247	292	--	18.9
JUL													
13...	1045	364	124	737	10.9	142	8.0	700	27.0	257	302	5	23.1
AUG													
12...	0930	504	92.0	734	6.4	73	8.2	393	19.8	136	164	--	14.1
SEP													
15...	0930	59	100	736	9.6	102	8.4	728	16.5	286	332	8	34.6

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
12...	8.3	61.4	<.04	5.75	.044	.18	.756	.81	.82	5.96	5.82	1.1	<.1
NOV													
17...	14.0	51.6	.04	5.05	.013	.18	.450	.47	.53	5.37	5.15	1.2	<.1
DEC													
15...	16.8	71.6	.06	7.48	.013	.05	.415	.44	.47	8.01	7.90	.5	<.1
JAN													
11...	16.6	55.6	.07	8.56	.011	.04	.657	.66	.65	9.30	9.23	.3	<.1
FEB													
14...	8.8	13.8	.82	4.32	.086	5.37	.347	.48	3.31	7.18	11.7	56.5	1.0
MAR													
17...	14.5	52.9	<.04	8.39	E.004	.19	.470	.49	.57	9.55	9.06	1.5	<.1
APR													
12...	7.2	39.1	<.04	5.28	.017	.94	.382	.42	.81	5.73	6.24	7.7	.2
MAY													
09...	5.7	14.4	.69	2.91	.065	E32.8	.084	.136	6.24	4.98	21.4	E293	E7.5
JUN													
16...	17.3	40.1	<.04	11.7	.011	.78	.284	.29	.67	12.1	12.6	7.2	<.1
JUL													
13...	16.9	42.7	<.04	11.6	.010	.37	.360	.39	.58	11.4	12.8	3.6	<.1
AUG													
12...	10.8	25.2	.06	3.19	.067	4.54	.402	.42	1.83	4.53	7.22	43.1	1.0
SEP													
15...	13.3	60.9	<.04	4.32	.053	.13	.860	.93	.99	4.80	5.40	.8	<.1

06609500 BOYER RIVER AT LOGAN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
12...	1.1	2.3	6.9	14.9	<.006	E.012	E.005	<.005	<.005	.061	<.050	<.010	<.004
NOV													
17...	1.2	2.6	E6.0	E9.6	<.006	E.021	.013	<.005	<.005	.111	<.050	<.010	<.004
DEC													
15...	.5	2.3	1.6	2.4	<.006	E.018	<.006	<.005	<.005	.065	<.050	<.010	<.004
JAN													
11...	.3	2.2	1.2	2.8	<.006	E.015	<.006	<.005	<.005	.052	<.050	<.010	<.004
FEB													
14...	55.5	15.1	32.7	29.8	<.006	E.037	.048	<.005	<.005	.144	<.050	<.010	<.004
MAR													
17...	1.5	2.3	E1.4	E4.1	<.006	E.016	E.005	<.005	<.005	.036	<.050	<.010	<.004
APR													
12...	7.6	4.3	8.9	43.0	<.006	E.040	.298	<.010	<.005	.699	<.050	<.010	<.004
MAY													
09...	E285	6.9	96.4	55.1	<.006	E.500	6.23	.017	<.005	E27.5	<.050	<.010	<.004
JUN													
16...	7.1	3.4	3.9	4.2	<.006	E.077	.046	<.005	<.005	1.48	<.050	<.010	<.004
JUL													
13...	3.6	3.9	2.9	12.5	<.006	E.012	.009	<.005	<.005	.238	<.050	<.010	<.004
AUG													
12...	42.1	5.9	--	--	<.006	E.052	.794	<.005	<.005	1.82	<.050	<.010	<.004
SEP													
15...	.7	6.2	12.1	39.4	<.006	E.015	.012	<.005	<.005	.083	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.007	<.009	<.005
MAR													
17...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
12...	<.041	<.020	<.005	<.006	<.060	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
09...	<.041	<.020	.032	<.006	.055	<.003	<.012	<.005	<.009	<.02	<.020	<.009	<.005
JUN													
16...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
12...	<.041	<.020	<.005	<.006	.057	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

06609500 BOYER RIVER AT LOGAN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.024	<.006	<.003	<.007
NOV													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.022	<.006	<.003	<.007
DEC													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.030	<.006	<.003	<.007
JAN													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.018	<.006	<.003	<.007
FEB													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.174	<.006	<.003	<.007
MAR													
17...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.028	<.006	<.003	<.007
APR													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.523	<.006	<.003	<.007
MAY													
09...	<.029	<.013	E.005	<.016	<.003	<.004	<.035	<.027	<.015	6.92	.014	<.003	<.007
JUN													
16...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.143	<.006	<.003	<.007
JUL													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.038	<.006	<.003	<.007
AUG													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	1.62	<.006	<.003	<.007
SEP													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.029	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
12...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
17...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
11...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.037
MAR													
17...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
APR													
12...	<.003	<.010	<.004	<.022	<.011	.02	<.004	<.025	<.011	<.02	.008	<.02	<.034
MAY													
09...	<.003	<.010	<.004	.026	<.011	<.01	<.004	.032	<.011	<.02	.114	<.02	<.034
JUN													
16...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.113	<.02	<.034
JUL													
13...	<.003	<.010	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	E.047
AUG													
12...	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.013	<.02	.116	<.02	<.034
SEP													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

06609500 BOYER RIVER AT LOGAN, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)	Number of sam-pling points, count (00063)
OCT						
12...	<.02	<.010	<.006	<.009	9	7
NOV						
17...	<.02	<.010	<.006	<.009	29	13
DEC						
15...	<.02	<.010	<.006	<.009	160	10
JAN						
11...	<.02	<.010	<.006	<.009	5	7
FEB						
14...	<.02	<.010	<.006	<.009	4,080	10
MAR						
17...	<.02	<.010	<.006	<.009	52	10
APR						
12...	<.02	<.010	<.006	<.009	317	12
MAY						
09...	<.02	<.010	<.006	.077	22,600	10
JUN						
16...	<.02	<.010	<.006	<.009	464	11
JUL						
13...	<.02	<.010	<.006	<.009	206	10
AUG						
12...	<.02	<.010	<.006	<.009	2,370	10
SEP						
15...	<.02	<.010	<.006	<.009	--	10

06610000 MISSOURI RIVER AT OMAHA, NE
(National stream-quality accounting network station)

LOCATION.--Lat 41°15'32", long 95°55'20", in SE1/4 NW1/4 sec.23, T.15 N., R.13 E., Douglas County, Hydrologic Unit 10230006, on right bank on left side of concrete floodwall, at foot of Douglas Street, 275 ft downstream from Interstate 480 Highway bridge in Omaha, and 615.9 mi upstream from mouth.

DRAINAGE AREA.--322,800 mi^2, approximately. The 3,959 mi^2 in Great Divide basin are not included.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year. April 1872 to December 1899 (gage heights only) in reports of the Missouri River Commission and since January 1875, (gage heights only) in reports of the U.S. Weather Bureau.

REVISED RECORDS.--WSP 761: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 948.24 ft above NGVD of 1929. See WSP 1730 for history of changes prior to Sept. 30, 1936. Oct. 1, 1936 to Sept. 30, 1982 at datum 10.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 396,000 ft^3/s Apr. 18, 1952, gage height, 40.20 ft, present datum; minimum, about 2,200 ft^3/s Jan. 6, 1937; minimum gage height, 6.85 ft, present datum, Feb. 5, 1989, result of freeze-up.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31,200	16,000	14,200	16,600	15,400	13,000	27,100	25,600	33,100	33,800	e27,900	27,800
2	30,400	16,100	14,100	16,200	15,400	13,000	26,900	26,300	33,400	32,200	e28,600	27,700
3	31,000	15,900	14,100	15,200	15,600	13,300	25,900	26,500	33,600	31,300	e27,700	27,700
4	30,800	15,600	14,600	14,800	15,300	13,200	25,600	26,400	32,900	30,800	27,600	27,800
5	30,200	15,000	15,200	15,100	15,200	12,800	25,600	27,700	33,100	30,500	27,800	27,800
6	29,700	14,800	15,200	15,400	15,200	12,700	25,500	26,800	34,300	30,000	28,100	27,900
7	29,600	14,800	15,100	15,800	14,900	12,800	25,500	26,800	41,300	29,400	27,300	28,400
8	29,400	14,700	15,000	15,800	14,100	12,800	26,000	28,000	45,200	29,000	27,100	28,500
9	28,300	14,500	14,900	16,300	13,000	12,700	26,300	28,500	47,000	28,900	27,300	28,500
10	26,000	14,500	15,500	16,400	12,500	12,600	26,100	29,100	47,500	28,700	27,500	28,700
11	23,600	14,400	16,000	16,600	12,600	12,500	26,300	32,200	45,900	28,700	28,000	28,700
12	21,300	14,100	16,100	17,000	13,300	12,600	27,700	34,000	43,000	28,700	28,600	28,900
13	19,900	14,100	16,000	17,200	14,400	12,300	28,200	41,700	38,800	28,800	28,500	29,800
14	19,400	14,200	15,800	17,300	21,100	12,000	26,700	41,300	36,900	28,600	27,700	30,300
15	18,800	14,200	15,300	16,900	23,100	11,900	26,100	34,600	36,400	28,400	27,300	30,100
16	18,200	14,200	14,900	16,500	20,300	11,800	26,500	33,300	36,200	28,500	27,300	30,000
17	17,800	14,200	15,300	16,700	17,900	11,900	26,100	36,100	36,600	28,900	27,100	29,800
18	17,100	14,200	15,400	17,000	16,700	11,800	25,700	32,200	36,500	29,400	26,900	29,800
19	16,700	14,300	15,400	16,800	15,900	11,900	27,400	31,600	36,200	29,000	27,000	30,200
20	16,500	14,500	15,700	16,600	15,300	12,400	27,900	35,000	35,500	28,500	27,200	29,700
21	16,500	14,700	15,600	18,000	15,000	14,700	31,500	31,900	34,600	28,400	26,900	29,600
22	16,400	14,600	15,400	18,200	15,200	17,800	31,200	31,100	33,800	28,700	26,700	29,200
23	16,100	14,400	16,600	16,700	14,900	20,900	28,100	33,400	34,300	28,200	26,800	28,900
24	15,900	14,500	15,600	14,100	14,200	23,900	26,800	30,900	33,000	27,600	26,700	28,700
25	15,800	14,600	15,800	11,900	13,700	25,600	25,700	29,900	32,000	27,800	26,700	28,800
26	15,600	14,600	16,200	15,100	13,600	26,000	25,600	32,400	33,500	28,700	27,200	30,100
27	15,600	14,500	17,300	17,400	13,400	26,400	25,300	32,900	39,900	28,300	27,100	32,100
28	15,700	14,600	18,100	17,200	13,100	26,200	25,100	32,400	37,100	28,400	27,700	31,300
29	15,600	14,700	16,800	16,000	---	25,800	25,100	31,900	35,600	29,100	27,500	31,200
30	15,500	14,400	16,900	15,600	---	25,900	25,200	32,000	35,500	28,100	27,800	31,600
31	15,700	---	16,700	15,700	---	26,400	---	32,100	---	27,400	27,800	---
TOTAL	660,300	439,900	484,800	502,100	430,300	509,600	798,700	974,600	1,112,700	902,800	851,400	879,600
MEAN	21,300	14,660	15,640	16,200	15,370	16,440	26,620	31,440	37,090	29,120	27,460	29,320
MAX	31,200	16,100	18,100	18,200	23,100	26,400	31,500	41,700	47,500	33,800	28,600	32,100
MIN	15,500	14,100	14,100	11,900	12,500	11,800	25,100	25,600	32,000	27,400	26,700	27,700
AC-FT	1,310,000	872,500	961,600	995,900	853,500	1,011,000	1,584,000	1,933,000	2,207,000	1,791,000	1,689,000	1,745,000
CFSM	0.07	0.05	0.05	0.05	0.05	0.05	0.08	0.10	0.11	0.09	0.09	0.09
IN.	0.08	0.05	0.06	0.06	0.05	0.06	0.09	0.11	0.13	0.10	0.10	0.10

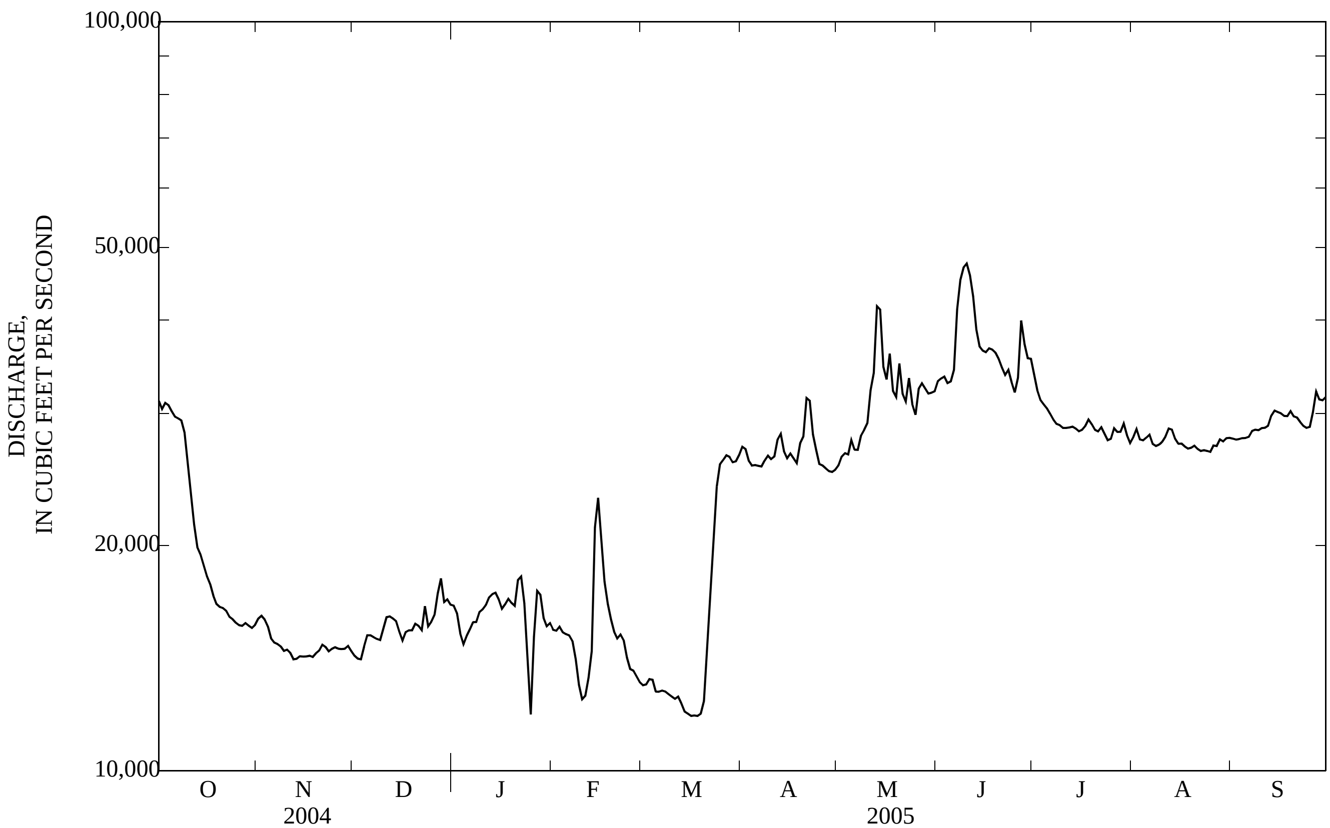
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37,920	33,600	20,800	17,690	19,630	27,520	38,180	38,330	41,580	40,000	38,370	38,490
MAX	74,070	75,040	44,260	33,250	40,410	54,660	93,840	87,620	76,120	78,560	68,890	69,770
(WY)	(1998)	(1998)	(1998)	(1987)	(1997)	(1997)	(1997)	(1997)	(1997)	(1993)	(1997)	(1997)
MIN	16,920	8,324	8,296	8,425	8,162	10,170	16,480	26,450	26,890	27,150	26,780	28,290
(WY)	(1962)	(1962)	(1962)	(1964)	(1963)	(1957)	(1957)	(1961)	(1961)	(1958)	(2003)	(1958)

06610000 MISSOURI RIVER AT OMAHA, NE—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005 a	
ANNUAL TOTAL	9,237,200		8,546,800			
ANNUAL MEAN	25,240		23,420		32,720	
HIGHEST ANNUAL MEAN					62,150	1997
LOWEST ANNUAL MEAN					20,490	1957
HIGHEST DAILY MEAN	51,600	May 24	47,500	Jun 10	116,000	Apr 4, 1960
LOWEST DAILY MEAN	14,100	Nov 12	11,800	Mar 16 b	2,440	Dec 14, 1961
ANNUAL SEVEN-DAY MINIMUM	14,200	Nov 12	11,900	Mar 13	4,300	Nov 28, 1955
MAXIMUM PEAK FLOW			47,800	Jun 10	120,000	Apr 1, 1960
MAXIMUM PEAK STAGE			19.96	Jun 10	30.26	Jul 10, 1993
ANNUAL RUNOFF (AC-FT)	18,320,000		16,950,000		23,700,000	
ANNUAL RUNOFF (CFSM)	0.078		0.073		0.101	
ANNUAL RUNOFF (INCHES)	1.06		0.98		1.38	
10 PERCENT EXCEEDS	38,300		33,000		51,900	
50 PERCENT EXCEEDS	25,800		26,000		32,100	
90 PERCENT EXCEEDS	15,100		14,200		14,200	

a Post regulation.
b Also March 18.
e Estimated.



06610000 MISSOURI RIVER AT OMAHA, NE—Continued

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Water quality samples were collected from Interstate 80 highway bridge 2.0 mi downstream from gaging station.

PERIOD OF RECORD.--July 1969 to 1976, 1978 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unf lab, uS/cm 25 degC (90095)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
OCT													
14...	1200	19,500	732	9.5	97	7.8	8.2	723	779	11.0	14.5	300	73.8
DEC													
02...	1130	14,100	739	13.0	100	8.0	8.1	757	793	6.0	3.0	320	78.8
JAN													
27...	1100	17,400	745	13.6	101	8.3	8.1	762	798	1.0	2.0	280	70.8
FEB													
11...	1100	12,500	740	14.0	102	8.2	7.8	764	798	2.0	1.0	300	75.7
15...	1530	23,800	734	12.0	93	8.1	7.5	598	635	5.5	3.0	230	58.8
MAR													
11...	1030	12,500	730	12.0	102	8.4	7.9	717	756	6.5	6.5	300	77.9
29...	1000	24,800	720	12.6	116	8.5	8.3	627	693	17.0	9.0	250	63.1
APR													
19...	1030	27,300	732	6.8	73	8.4	8.2	701	766	25.0	17.0	300	75.7
MAY													
03...	1100	26,500	742	10.1	94	8.5	8.3	721	750	15.5	11.0	300	75.1
14...	0830	42,600	735	7.6	77	8.2	7.9	518	609	15.5	14.5	220	52.8
31...	1000	31,600	735	8.2	92	8.4	8.3	726	763	20.0	19.0	300	71.1
JUN													
28...	1000	36,800	735	4.9	62	8.2	8.0	613	672	31.0	25.0	270	65.5
AUG													
05...	1000	28,200	749	6.4	82	8.5	8.6	736	759	28.5	27.0	250	60.0
SEP													
07...	1100	28,500	742	7.5	93	8.4	--	--	764	24.5	24.5	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, tons/ acre-ft (70303)
OCT													
14...	28.6	5.31	1	51.5	214	201	246	--	18.4	.6	11.8	160	.68
DEC													
02...	28.9	5.33	1	52.5	219	212	258	--	20.7	.6	13.5	162	.69
JAN													
27...	26.0	5.84	2	63.8	198	190	229	--	17.7	.6	10.2	184	.68
FEB													
11...	26.2	5.40	1	56.9	213	208	252	--	21.0	.6	12.4	155	.70
15...	20.2	7.34	1	35.1	169	168	--	--	18.4	.5	11.3	101	.55
MAR													
11...	26.2	5.42	1	49.0	210	208	249	--	18.7	.5	15.5	151	.66
29...	22.4	5.21	2	55.1	171	165	198	--	14.1	.6	10.4	156	.60
APR													
19...	27.9	5.45	1	49.1	189	192	230	--	17.8	.6	9.40	164	.68
MAY													
03...	28.1	5.15	1	50.3	187	193	228	4	16.2	.6	9.84	168	.67
14...	20.5	5.18	1	38.8	148	148	178	--	13.2	.5	8.16	123	.53
31...	29.3	5.45	1	52.7	193	190	226	--	14.9	.6	9.04	173	.68
JUN													
28...	25.6	6.75	1	37.6	170	163	195	--	13.6	.5	13.8	144	.59
AUG													
05...	24.1	6.34	2	63.8	177	175	206	4	16.1	.6	9.12	187	.67
SEP													
07...	--	--	--	--	--	166	198	--	--	--	--	--	--

06610000 MISSOURI RIVER AT OMAHA, NE—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)
OCT													
14...	501	.28	.85	E.02	2.34	E.006	.043	.051	.200	4.4	3.0	2.7	105
DEC													
02...	506	.31	.53	.05	2.46	E.005	.033	.048	.131	2.1	2.8	2.0	200
JAN													
27...	502	.38	.44	.13	1.04	.011	.036	.042	.121	1.5	3.2	1.9	132
FEB													
11...	513	.48	.52	.16	1.33	.011	.035	.046	.109	1.1	3.0	1.8	125
15...	407	1.2	4.1	.40	2.89	.035	.119	.144	1.31	27.9	7.4	2.6	89
MAR													
11...	484	.39	.53	<.04	1.98	.049	.035	.044	.190	3.6	3.6	2.3	137
29...	438	.29	.59	<.04	.91	<.008	E.003	.022	.160	2.3	2.8	6.2	22
APR													
19...	497	.36	1.1	<.04	3.02	E.007	.043	.055	.31	6.0	3.4	.2	110
MAY													
03...	491	.38	.72	<.04	2.00	E.005	.009	.030	.189	3.4	4.1	2.3	116
14...	388	.86	3.1	.16	2.44	.045	.065	.093	.62	20.6	5.3	2.3	80
31...	497	.34	.75	<.04	2.19	.011	.023	.036	.22	4.8	3.6	2.3	109
JUN													
28...	436	.76	2.2	E.03	2.94	.045	.085	.127	.68	13.6	4.5	3.3	115
AUG													
05...	492	--	--	--	--	--	--	--	--	3.6	4.0	3.7	143
SEP													
07...	--	.32	.58	<.04	.11	<.008	.015	.024	.136	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Iron, water, fltrd, ug/L (01046)	Lithium water, fltrd, ug/L (01130)	Selen-ium, water, fltrd, ug/L (01145)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)
OCT													
14...	<6	41.9	2.4	555	4.1	<.006	E.013	E.004	E.004	<.005	96.8	.041	<.050
DEC													
02...	E4	42.8	2.6	457	6.0	<.006	E.009	<.006	<.005	<.005	86.2	.021	<.050
JAN													
27...	<6	50.0	2.4	554	1.7	<.006	E.005	<.006	<.005	<.005	105	.016	<.050
FEB													
11...	E6	45.9	2.3	574	1.7	<.006	E.005	<.006	<.005	<.005	95.3	.344	<.050
15...	14	31.5	2.8	390	2.7	<.006	E.016	.018	<.005	<.005	94.9	.062	<.050
MAR													
11...	<6	53.1	3.0	526	2.7	<.006	E.007	<.006	<.005	<.005	95.6	.016	<.050
29...	<6	7.3	1.2	89.4	3.2	<.006	E.004	<.006	<.005	<.005	99.0	.017	<.050
APR													
19...	E4	3.1	2.4	104	.5	<.006	E.011	.018	<.005	<.005	93.5	.085	<.050
MAY													
03...	<6	38.4	2.8	554	2.4	<.006	E.011	.027	<.005	<.005	93.6	.045	<.050
14...	<6	30.1	2.3	373	2.5	<.006	E.097	3.82	<.010	<.005	97.9	7.53	<.050
31...	<6	41.2	2.6	518	2.7	<.006	E.027	.080	<.005	<.005	111	.162	<.050
JUN													
28...	E4	37.2	2.6	404	4.3	<.006	E.104	.069	<.005	<.005	104	1.72	<.050
AUG													
05...	<6	55.2	2.5	521	4.4	<.006	E.023	<.006	<.005	<.005	88.8	.144	<.050
SEP													
07...	--	--	--	--	--	<.006	E.014	<.006	<.005	<.005	87.4	.087	<.050

06610000 MISSOURI RIVER AT OMAHA, NE—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diazi-non-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)
OCT													
14...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	106	<.009	<.02	E.003
DEC													
02...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	90.8	<.009	<.02	<.004
JAN													
27...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	112	<.009	<.02	<.004
FEB													
11...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	113	<.009	<.02	.004
15...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	122	<.009	<.02	<.004
MAR													
11...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	88.0	<.009	<.02	.004
29...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	97.5	<.009	<.02	<.004
APR													
19...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	101	<.009	<.02	<.004
MAY													
03...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	98.5	<.009	<.02	<.004
14...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	93.3	<.009	<.02	<.004
31...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	121	<.009	<.02	<.004
JUN													
28...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	117	<.009	<.02	<.004
AUG													
05...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	98.8	<.009	<.02	<.004
SEP													
07...	<.010	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.005	96.7	<.009	<.02	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)
OCT													
14...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.012	<.006	<.003	<.007	<.003	<.010
DEC													
02...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.008	<.006	<.003	<.007	<.003	<.010
JAN													
27...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	<.006	<.006	<.003	<.007	<.003	<.010
FEB													
11...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.007	<.006	<.003	<.007	<.003	<.010
15...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.112	<.006	<.003	<.007	<.003	<.010
MAR													
11...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.013	<.006	<.003	<.007	<.003	<.010
29...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	E.005	<.006	<.003	<.007	<.003	<.010
APR													
19...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.057	<.006	<.003	<.007	<.003	<.010
MAY													
03...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.029	<.006	<.003	<.007	<.003	<.010
14...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.823	.094	<.003	<.007	<.003	<.010
31...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.056	<.006	<.003	<.007	<.003	<.010
JUN													
28...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.223	E.005	<.003	<.007	<.003	<.010
AUG													
05...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007	<.003	<.010
SEP													
07...	<.009	<.005	<.003	<.004	<.035	<.027	<.015	.017	<.006	<.003	<.007	<.003	<.010

06610000 MISSOURI RIVER AT OMAHA, NE—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)
OCT													
14...	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
DEC													
02...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
JAN													
27...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
FEB													
11...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
15...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
MAR													
11...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
29...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
APR													
19...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
MAY													
03...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
14...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.018	<.02	<.034	<.02	<.010
31...	<.004	<.022	<.011	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
JUN													
28...	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	.011	<.02	<.034	<.02	<.010
AUG													
05...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010
SEP													
07...	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
OCT		
14...	<.006	<.009
DEC		
02...	<.006	<.009
JAN		
27...	<.006	<.009
FEB		
11...	<.006	<.009
15...	<.006	<.009
MAR		
11...	<.006	<.009
29...	<.006	<.009
APR		
19...	<.006	<.009
MAY		
03...	<.006	<.009
14...	<.006	E.007
31...	<.006	<.009
JUN		
28...	<.006	<.009
AUG		
05...	<.006	<.009
SEP		
07...	<.006	<.009

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE

LOCATION.--Lat 40°40'55", long 95°50'48", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.9, T.8 N., R.14 E., Otoe County, Hydrologic Unit 10240001, on right bank 1.0 mi upstream from Highway 2 Bridge at Nebraska City, and 562.6 mi upstream from mouth.

DRAINAGE AREA.--410,000 mi^2, approximately. The 3,959 mi^2 in Great Divide basin are not included.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1929 to current year. Gage-height records collected in this vicinity from August 1878 to December 1899 are contained in reports of Missouri River Commission.

REVISED RECORDS.--WSP 761: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 905.36 ft above NGVD of 1929, supplementary adjustment of 1954. See WSP 1918 or 1919 for history of changes prior to Apr. 1, 1963.

REMARKS.--Records are considered good. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 414,000 ft^3/s Apr. 19, 1952; maximum gage height, 27.66 ft Apr. 18, 1952; minimum discharge, 1,600 ft^3/s Dec. 31, 1946 (discharge measurement); minimum gage height observed, -0.28 ft Dec. 24, 1960, result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35,300	18,300	19,100	21,800	22,000	18,800	31,800	32,700	45,300	43,200	30,000	30,100
2	34,300	19,600	19,000	22,100	22,400	18,600	32,400	32,800	40,500	40,700	30,500	29,900
3	34,000	19,600	18,200	21,200	22,700	18,400	32,600	32,800	41,900	38,600	30,200	29,400
4	33,900	19,700	17,900	18,900	23,100	18,600	30,500	32,200	41,900	37,800	29,500	29,400
5	33,100	19,000	19,000	17,400	23,400	18,100	30,600	32,100	42,800	36,300	29,300	29,000
6	32,500	18,500	20,200	16,500	24,800	17,300	30,400	32,600	49,600	35,400	29,900	29,000
7	31,800	18,700	20,700	16,400	30,000	17,100	30,200	31,400	53,200	34,800	29,200	29,300
8	31,700	18,600	20,600	16,400	25,700	17,000	29,800	31,900	53,900	33,600	28,300	29,900
9	31,400	18,700	20,100	16,600	21,500	17,000	30,200	32,400	54,500	33,100	28,100	30,200
10	29,500	18,900	20,200	17,400	19,000	17,100	30,400	33,100	56,700	32,900	28,000	29,800
11	27,500	19,800	21,100	17,800	17,500	17,400	31,200	34,700	57,300	32,400	30,900	30,000
12	25,400	19,100	21,500	18,300	17,600	17,400	33,800	43,900	54,500	32,000	29,200	29,900
13	22,700	18,500	21,700	19,100	23,700	17,300	34,600	52,000	51,500	32,000	30,200	30,400
14	21,600	18,100	21,500	19,300	36,500	17,000	34,700	59,500	50,700	31,600	29,500	31,300
15	21,500	18,400	21,200	19,200	37,300	17,000	32,600	54,700	48,100	30,700	29,100	31,200
16	21,200	18,100	19,300	18,600	33,500	16,700	32,400	49,600	46,800	30,400	29,500	31,100
17	21,000	17,900	19,200	18,800	28,200	17,100	32,400	49,200	46,700	30,600	30,000	30,800
18	20,700	17,300	20,400	19,500	25,800	16,300	31,400	47,100	46,200	31,500	29,900	30,600
19	20,300	17,900	20,400	20,500	24,900	16,200	32,300	43,600	45,600	31,400	29,200	31,600
20	19,900	19,400	20,400	21,000	23,300	16,200	37,400	43,700	44,500	30,800	29,000	31,900
21	19,700	19,100	18,700	21,300	22,300	17,400	38,400	42,600	43,400	30,600	29,500	31,800
22	19,600	20,000	18,600	23,000	22,200	20,900	42,400	39,100	42,900	31,200	28,900	31,500
23	19,200	20,000	17,400	22,700	22,000	25,600	40,400	39,400	45,800	31,000	29,000	31,100
24	19,100	19,300	17,700	21,000	21,300	29,300	37,900	39,600	51,600	29,900	29,200	30,900
25	19,200	18,900	16,400	17,400	20,400	32,400	36,300	36,600	46,300	29,300	28,600	30,800
26	19,100	19,000	17,000	16,700	19,600	33,700	36,300	37,100	46,000	33,900	29,500	30,900
27	18,700	19,000	17,800	21,900	19,200	31,900	35,300	38,100	48,000	35,600	30,100	33,400
28	19,100	19,300	19,600	24,400	19,300	32,200	34,300	38,200	49,500	32,000	30,200	33,900
29	18,800	19,400	20,000	23,600	---	31,600	33,500	38,700	45,700	31,400	30,700	33,400
30	18,500	19,400	18,700	21,700	---	31,200	33,000	37,100	45,100	31,100	30,900	33,600
31	18,500	---	21,100	21,600	---	31,700	---	36,800	---	29,900	30,800	---
TOTAL	758,800	567,500	604,700	612,100	669,200	664,500	1,009,500	1,225,300	1,436,500	1,025,700	916,900	926,100
MEAN	24,480	18,920	19,510	19,750	23,900	21,440	33,650	39,530	47,880	33,090	29,580	30,870
MAX	35,300	20,000	21,700	24,400	37,300	33,700	42,400	59,500	57,300	43,200	30,900	33,900
MIN	18,500	17,300	16,400	16,400	17,500	16,200	29,800	31,400	40,500	29,300	28,000	29,000
AC-FT	1,505,000	1,126,000	1,199,000	1,214,000	1,327,000	1,318,000	2,002,000	2,430,000	2,849,000	2,034,000	1,819,000	1,837,000
CFSM	0.06	0.05	0.05	0.05	0.06	0.05	0.08	0.10	0.12	0.08	0.07	0.08
IN.	0.07	0.05	0.05	0.06	0.06	0.06	0.09	0.11	0.13	0.09	0.08	0.08

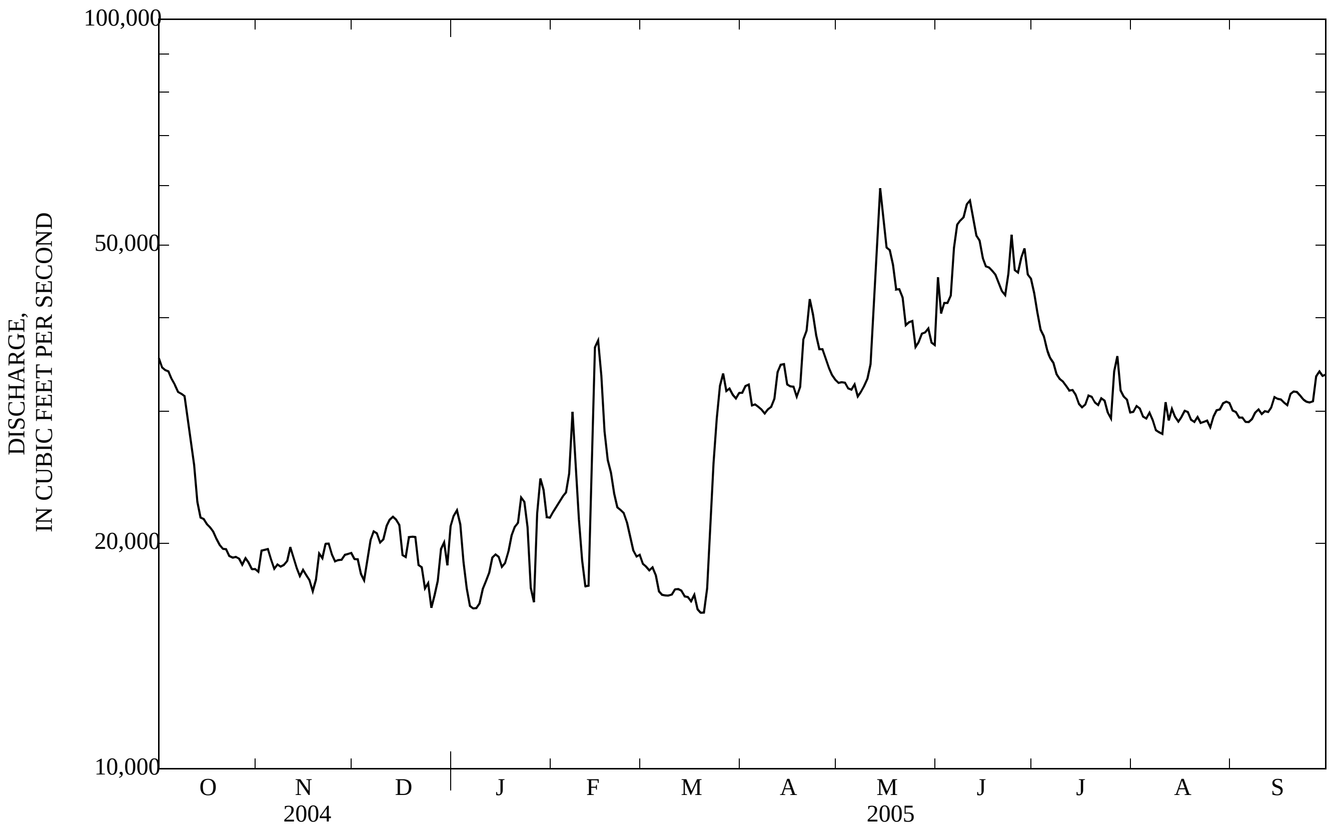
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	42,140	38,350	25,270	21,410	26,320	37,200	46,950	47,340	51,740	45,760	41,920	41,950
MAX	76,760	79,410	52,410	39,970	48,630	66,730	98,960	90,280	117,500	116,700	71,540	73,410
(WY)	(1998)	(1998)	(1987)	(1987)	(1983)	(1983)	(1997)	(1997)	(1984)	(1993)	(1996)	(1997)
MIN	22,420	14,380	10,510	10,160	12,780	15,310	21,850	32,470	33,530	28,830	28,040	30,870
(WY)	(1962)	(1962)	(1956)	(1957)	(1957)	(1957)	(1957)	(1955)	(1958)	(2002)	(2003)	(2005)

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005 a	
ANNUAL TOTAL	10,963,000		10,416,800			
ANNUAL MEAN	29,950		28,540		38,890	
HIGHEST ANNUAL MEAN					66,450	1997
LOWEST ANNUAL MEAN					25,370	1957
HIGHEST DAILY MEAN	80,000	May 25	59,500	May 14	188,000	Jul 25, 1993
LOWEST DAILY MEAN	15,000	Jan 8	16,200	Mar 19 b	4,320	Jan 11, 1957
ANNUAL SEVEN-DAY MINIMUM	16,600	Jan 5	16,600	Mar 14	5,590	Nov 29, 1955
MAXIMUM PEAK FLOW			61,100	May 14	196,000	Jul 23, 1993
MAXIMUM PEAK STAGE			14.27	May 14	27.19	Jul 23, 1993
ANNUAL RUNOFF (AC-FT)	21,750,000		20,660,000		28,180,000	
ANNUAL RUNOFF (CFSM)	0.073		0.070		0.095	
ANNUAL RUNOFF (INCHES)	0.99		0.95		1.29	
10 PERCENT EXCEEDS	45,600		42,800		61,000	
50 PERCENT EXCEEDS	29,600		29,500		36,600	
90 PERCENT EXCEEDS	18,700		18,000		18,000	

a Post regulation.
b Also Mar. 20.



06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

WATER-QUALITY RECORDS

LOCATION.--Water quality samples were collected by boat, 0.5 miles upstream of gage.

PERIOD OF RECORD.--May 1951 to current year. Daily sediment loads August 1957 to September 1971 in reports of U.S. Army Corps of Engineers.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1951 to December 1977, October 1991 to current year.
WATER TEMPERATURES: May 1951 to December 1977, October 1991 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976, October 1991 to current year.

REMARKS.--Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 994 microsiemens Dec. 17, 1962; minimum daily, 273 microsiemens June 17, 1964.
WATER TEMPERATURES: Maximum daily, 31.0°C July 26, 1977, July 25, 1997, and July 14, 2005; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,420 mg/L Aug. 7, 1996; minimum daily mean, 80 mg/L Aug. 3, 2002.
SEDIMENT LOADS: Maximum daily, 3,120,000 tons June 24, 1996; minimum daily, 3,920 tons Dec. 13, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 792 microsiemens Jan. 26; minimum daily, 578 microsiemens June 1.
WATER TEMPERATURES: Maximum daily, 31.0°C July 14; minimum daily, 0.5°C Feb. 10.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,840 mg/L Feb. 15; minimum daily, 129 mg/L Nov. 18.
SEDIMENT LOADS: Maximum daily, 295,000 tons May 14; minimum daily, 6,030 tons Nov. 18.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)	Bed sedi-ment, dry svd sve dia percent <.125mm (80165)	Bed sedi-ment, dry svd sve dia percent <.25mm (80166)	Bed sedi-ment, dry svd sve dia percent <.5 mm (80167)	Bed sedi-ment, dry svd sve dia percent <1 mm (80168)	Bed sedi-ment, dry svd sve dia percent <2 mm (80169)	Bed sedi-ment, dry svd sve dia percent <4 mm (80170)	Bed sedi-ment, dry svd sve dia percent <8 mm (80171)	Bed sedi-ment, dry svd sve dia percent <16 mm (80172)	Bed sedi-ment, dry svd sve dia percent <128 mm (80175)
OCT											
04...	1350	.0	.0	15	46	64	80	95	100	100	100
NOV											
02...	1130	.0	.0	22	63	74	83	92	100	100	100
DEC											
16...	1440	.0	.0	18	54	71	84	95	100	100	100
JAN											
21...	1130	.0	.0	13	62	87	95	99	100	100	100
FEB											
10...	1440	.0	.0	14	67	91	98	99	100	100	100
MAR											
02...	1330	.0	.0	8	41	76	90	97	99	100	100
APR											
11...	1100	.0	.0	6	42	82	96	99	100	100	100
MAY											
06...	1000	.0	.0	12	58	82	94	99	100	100	100
JUN											
03...	1330	.0	.0	8	44	73	92	97	100	100	100
JUL											
19...	1400	.0	.0	13	56	73	88	97	100	100	100
AUG											
08...	1330	.0	.0	12	52	74	89	96	98	100	100
SEP											
06...	1100	.0	.0	16	60	82	93	97	98	100	100

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	702	---	732	---	---	---	684	---	578	---	---	---
2	---	749	---	---	---	716	---	739	---	---	777	757
3	---	---	---	---	---	---	---	---	702	---	---	---
4	724	---	---	---	---	---	694	---	---	---	782	---
5	---	737	---	---	---	---	---	---	---	768	---	---
6	---	---	---	---	---	---	722	712	694	---	---	743
7	---	---	---	---	---	711	---	---	---	---	---	---
8	732	---	---	---	---	---	---	---	---	775	773	762
9	---	770	724	---	---	---	---	727	679	---	---	---
10	---	---	---	---	702	---	---	---	---	---	---	---
11	---	---	---	---	---	---	703	---	---	766	752	---
12	739	760	---	---	---	---	---	---	---	---	---	751
13	---	---	---	---	---	---	---	615	715	---	---	---
14	---	---	---	---	---	---	688	---	---	779	---	---
15	764	749	---	---	---	705	---	---	---	---	754	---
16	---	---	730	---	---	---	---	602	754	---	---	750
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	638	---	749	---	---	---	---	---
19	774	757	---	---	---	---	---	712	---	764	758	771
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	776	---	713	690	---	765	758	---	---
22	761	710	---	---	---	---	---	---	---	---	736	772
23	---	705	---	---	---	---	---	773	---	---	---	---
24	---	---	---	---	---	---	---	---	665	---	---	---
25	---	---	---	---	---	651	721	---	---	---	---	---
26	764	---	---	792	---	---	---	751	---	---	---	773
27	---	---	---	---	---	---	---	---	750	---	---	---
28	---	---	---	---	---	656	---	---	---	689	---	---
29	772	---	764	---	---	---	748	---	---	750	723	749
30	---	---	---	---	---	---	---	---	707	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.5	---	4.0	---	---	---	11.0	---	20.5	---	---	---
2	---	14.0	---	---	---	4.5	---	13.0	---	---	28.0	25.5
3	---	---	---	---	---	---	---	---	21.5	---	---	---
4	18.0	---	---	---	---	---	12.5	---	---	---	28.5	---
5	---	11.5	---	---	---	---	---	---	---	27.0	---	---
6	---	---	---	---	---	---	15.0	15.0	23.5	---	---	27.0
7	---	---	---	---	---	9.5	---	---	---	---	---	---
8	17.5	---	---	---	---	---	---	---	---	28.5	27.5	26.0
9	---	11.5	5.5	---	---	---	---	19.5	24.5	---	---	---
10	---	---	---	---	0.5	---	---	---	---	---	---	---
11	---	---	---	---	---	---	17.0	---	---	29.0	29.0	---
12	17.5	10.0	---	---	---	---	---	---	---	---	---	26.0
13	---	---	---	---	---	---	---	18.0	23.0	---	---	---
14	---	---	---	---	---	---	16.0	---	---	31.0	---	---
15	15.5	8.5	---	---	---	6.5	---	---	---	---	27.0	---
16	---	---	3.0	---	---	---	---	16.5	23.5	---	---	24.0
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	5.0	---	18.5	---	---	---	---	---
19	14.0	12.0	---	---	---	---	---	19.0	---	30.0	27.5	24.0
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	1.5	---	8.5	20.0	---	27.0	29.5	---	---
22	15.5	10.5	---	---	---	---	---	---	---	---	27.5	24.5
23	---	9.0	---	---	---	---	---	23.0	---	---	---	---
24	---	---	---	---	---	---	---	---	27.5	---	---	---
25	---	---	---	---	---	6.5	15.5	---	---	---	27.0	---
26	16.0	---	---	2.5	---	---	---	22.0	---	---	---	23.0
27	---	---	---	---	---	---	---	---	28.0	---	---	---
28	---	---	---	---	---	8.5	---	---	---	29.5	---	---
29	18.0	---	2.5	---	---	---	13.0	---	---	27.0	26.5	20.0
30	---	---	---	---	---	---	---	---	27.5	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	OCTOBER Mean concentration (mg/l)	OCTOBER Load (tons/day)	NOVEMBER Mean concentration (mg/l)	NOVEMBER Load (tons/day)	DECEMBER Mean concentration (mg/l)	DECEMBER Load (tons/day)	JANUARY Mean concentration (mg/l)	JANUARY Load (tons/day)	FEBRUARY Mean concentration (mg/l)	FEBRUARY Load (tons/day)	MARCH Mean concentration (mg/l)	MARCH Load (tons/day)
1	382	36,400	197	9,750	197	10,100	206	12,100	815	48,400	260	13,200
2	354	32,800	232	12,300	183	9,390	210	12,500	867	52,300	215	10,800
3	321	29,500	241	12,800	174	8,550	206	11,800	893	54,800	238	11,800
4	290	26,500	249	13,200	193	9,320	185	9,440	919	57,300	274	13,800
5	276	24,700	242	12,400	238	12,200	178	8,370	934	59,000	291	14,300
6	266	23,400	267	13,300	272	14,800	173	7,710	993	66,700	249	11,600
7	256	22,100	331	16,800	251	14,100	173	7,640	1,230	99,600	218	10,100
8	248	21,200	319	16,000	284	15,900	173	7,650	952	66,600	217	9,990
9	244	20,700	322	16,300	249	13,500	174	7,810	582	34,100	213	9,800
10	241	19,200	344	17,600	248	13,600	181	8,510	237	12,300	209	9,640
11	238	17,700	340	18,100	247	14,100	189	9,060	134	6,340	236	11,100
12	238	16,300	208	10,800	263	15,300	195	9,620	151	7,210	255	12,000
13	259	15,900	177	8,880	254	14,900	201	10,400	687	46,600	230	10,700
14	287	16,700	174	8,490	226	13,100	203	10,600	1,550	157,000	205	9,400
15	305	17,700	169	8,400	242	13,800	201	10,400	1,840	185,000	180	8,220
16	277	15,800	154	7,550	207	10,800	183	9,220	1,510	137,000	174	7,880
17	241	13,700	142	6,840	210	10,900	183	9,270	1,130	86,300	222	10,300
18	206	11,500	129	6,030	238	13,100	185	9,730	877	61,200	171	7,580
19	173	9,460	159	7,730	246	13,500	192	10,600	795	53,400	155	6,780
20	165	8,850	249	13,100	233	12,800	198	11,200	742	46,700	162	7,110
21	162	8,620	259	13,300	198	10,000	253	14,600	688	41,500	188	8,860
22	161	8,520	244	13,100	198	9,930	633	39,500	635	38,000	236	13,400
23	162	8,430	240	12,900	183	8,620	602	37,000	581	34,500	291	20,100
24	165	8,520	244	12,700	189	9,020	386	22,000	528	30,400	346	27,400
25	167	8,670	237	12,100	164	7,290	223	10,600	474	26,100	422	37,100
26	168	8,680	252	12,900	167	7,670	784	36,000	421	22,200	493	44,900
27	267	13,500	238	12,200	180	8,660	1,070	63,200	367	19,000	364	31,400
28	518	26,800	242	12,600	199	10,600	1,100	72,600	314	16,400	369	32,100
29	496	25,200	225	11,800	187	10,100	1,010	64,400	---	---	357	30,400
30	346	17,300	204	10,700	176	8,870	777	45,500	---	---	341	28,700
31	328	16,400	---	---	194	11,000	754	44,100	---	---	325	27,800
TOTAL	---	550,750	---	360,670	---	355,520	---	643,130	---	1,565,950	---	508,260

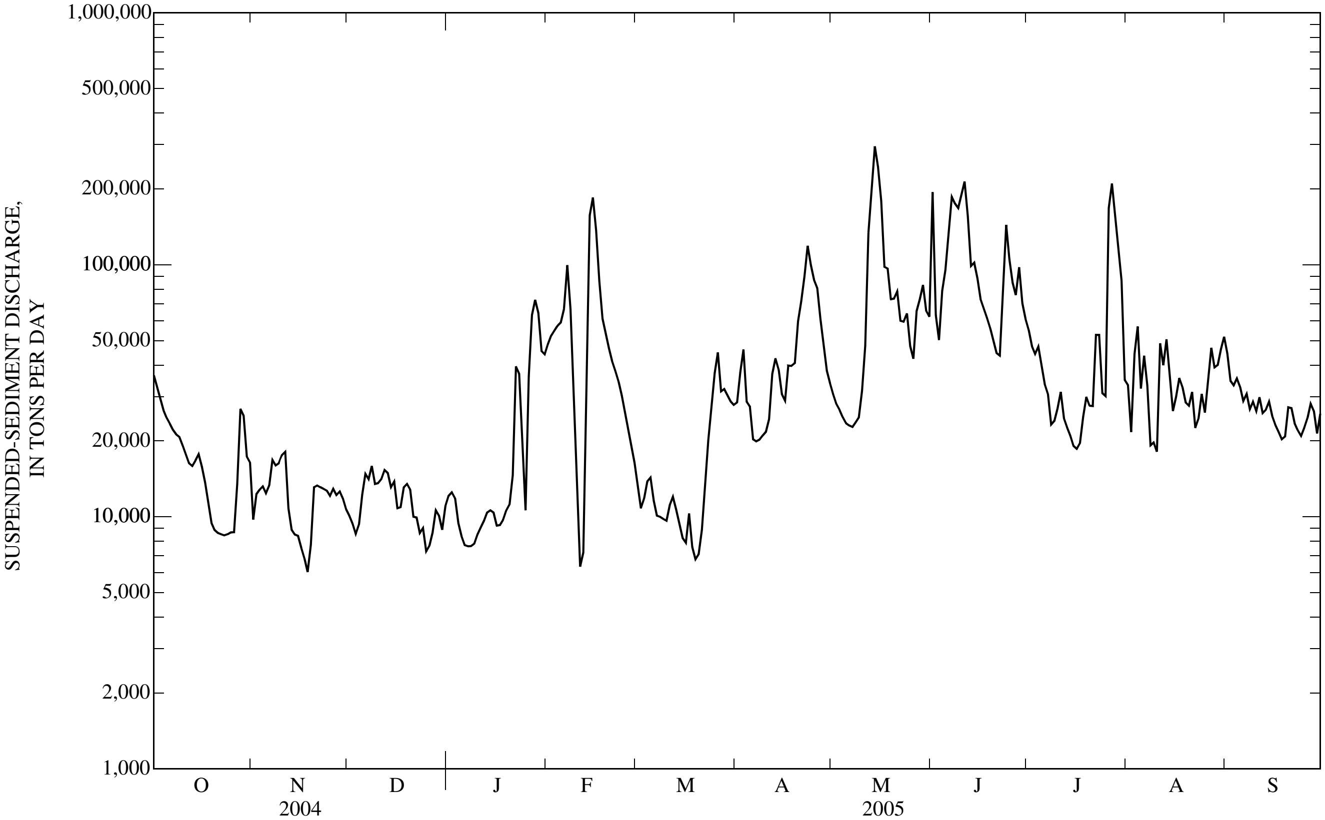
06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Day	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)	Mean concen-tration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	331	28,400	347	30,600	1,560	194,000	473	55,100	412	33,300	548	44,500
2	427	37,400	316	28,000	577	63,200	433	47,600	264	21,700	428	34,600
3	523	46,100	300	26,500	445	50,300	426	44,300	542	44,200	417	33,200
4	346	28,600	286	24,800	697	78,800	463	47,300	714	56,900	445	35,400
5	331	27,400	272	23,500	824	95,300	406	39,800	408	32,300	418	32,800
6	247	20,300	262	23,000	973	132,000	352	33,600	540	43,600	367	28,800
7	244	19,900	268	22,700	1,290	186,000	326	30,700	420	33,200	389	30,700
8	251	20,200	276	23,700	1,200	175,000	255	23,200	252	19,200	330	26,700
9	258	21,000	284	24,800	1,150	168,000	268	24,000	260	19,700	351	28,600
10	265	21,700	353	31,600	1,240	190,000	303	26,900	240	18,100	328	26,300
11	290	24,400	501	47,700	1,380	214,000	357	31,300	579	48,800	368	29,800
12	403	36,900	1,120	134,000	1,060	156,000	285	24,600	506	39,900	319	25,800
13	455	42,500	1,450	204,000	710	98,900	261	22,600	620	50,600	324	26,600
14	410	38,400	1,830	295,000	749	102,000	246	21,000	459	36,600	338	28,600
15	349	30,700	1,640	244,000	682	88,600	230	19,100	335	26,300	299	25,100
16	331	28,900	1,340	179,000	577	73,000	227	18,600	377	30,000	275	23,100
17	456	39,800	740	98,200	532	67,100	237	19,600	437	35,500	261	21,700
18	468	39,700	759	96,600	494	61,600	293	24,900	405	32,700	246	20,300
19	466	40,700	619	73,000	455	56,100	353	29,900	360	28,400	243	20,800
20	588	59,600	622	73,400	416	50,000	331	27,600	352	27,600	316	27,200
21	691	71,600	680	78,300	381	44,600	333	27,500	392	31,300	314	27,000
22	784	89,700	567	59,900	377	43,600	624	52,700	288	22,500	276	23,500
23	1,090	119,000	557	59,400	665	83,400	628	52,700	313	24,500	261	22,000
24	980	100,000	600	64,100	1,030	144,000	382	30,900	390	30,700	251	20,900
25	890	87,200	482	47,600	838	105,000	379	30,100	335	25,900	271	22,500
26	826	81,000	422	42,400	685	85,000	1,810	168,000	434	34,900	295	24,600
27	639	60,900	637	65,500	583	75,800	2,190	210,000	575	46,800	311	28,100
28	520	48,200	707	73,000	732	97,800	1,770	154,000	480	39,100	288	26,300
29	419	38,000	794	83,100	570	70,400	1,390	118,000	482	40,000	237	21,400
30	380	33,900	656	65,600	501	61,000	1,030	86,500	553	46,200	282	25,600
31	---	---	626	62,200	---	---	431	34,900	623	51,800	---	---
TOTAL	---	1,382,100	---	2,405,200	---	3,110,500	---	1,577,000	---	1,072,300	---	812,500

YEAR 14,343,880

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued



06807000 MISSOURI RIVER AT NEBRASKA CITY, NE—Continued

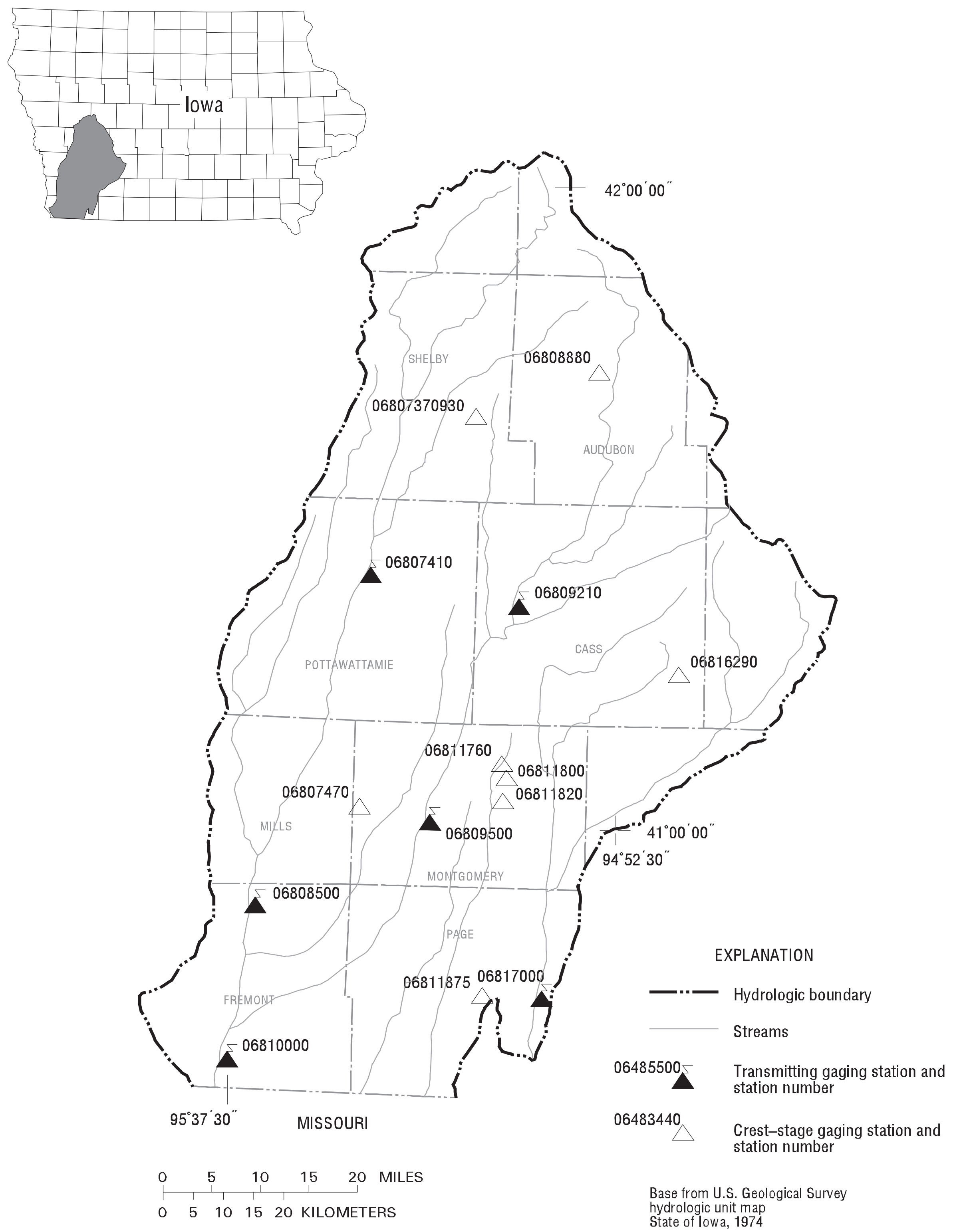


Figure 21. Locations of active continous-record and crest-stage gaging stations in the Nishnabotna River, Nodaway River, and Missouri River drainage basin.

Gaging Stations

Crest Stage Gaging Stations

06807410 WEST NISHNABOTNA RIVER AT HANCOCK, IA

LOCATION.--Lat 41°23'24", long 95°22'17", in NW1/4 NE1/4 sec.18, T.76 N., R.39 W., Pottawattamie County, Hydrologic Unit 10240002, on right bank at upstream side of bridge on County Highway G30, 0.6 mi west of Hancock school, 3.0 mi downstream from Jim Creek, 60.1 mi (revised) upstream from confluence with East Nishnabotna River, and 75.7 mi upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--609 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,085.83 ft above NGVD of 1929. Prior to Sept. 15, 1980, on downstream end of right pier at same datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	104	e75	e85	e77	e128	191	289	428	444	275	133
2	90	127	88	e73	e100	e157	160	280	414	400	263	130
3	90	120	102	e72	e141	163	148	271	402	385	254	129
4	90	103	99	e63	e127	150	141	265	415	529	242	128
5	87	95	98	e59	e120	147	135	259	410	537	232	125
6	88	94	104	e48	e134	143	130	256	378	406	221	124
7	89	91	101	e56	e88	141	124	254	358	381	215	127
8	91	86	94	e55	e83	136	119	256	412	365	210	126
9	89	86	92	e70	e79	132	117	567	717	352	204	123
10	87	89	90	e65	e71	130	116	355	528	338	199	119
11	87	105	88	e68	e89	130	144	1,100	3,380	328	223	114
12	87	102	88	e68	e101	130	195	1,770	e1,290	318	344	111
13	89	92	e59	e57	e460	123	329	1,830	e1,020	316	248	111
14	87	91	e55	e47	1,660	121	249	1,180	891	302	219	107
15	88	92	e71	e45	447	123	210	978	773	293	205	108
16	88	92	e76	e47	e281	126	189	864	694	284	197	105
17	89	92	e74	e48	e266	124	171	790	655	278	189	105
18	90	96	e70	e51	265	122	185	736	613	314	188	106
19	89	113	e50	e61	241	118	177	687	575	292	183	125
20	91	121	e70	e62	229	116	397	625	545	266	177	113
21	92	107	e64	e59	217	116	805	587	519	273	176	101
22	96	100	e55	e48	201	115	608	559	502	323	172	97
23	96	96	e47	e50	190	114	507	523	483	271	164	91
24	91	93	e47	e55	183	115	439	500	462	255	159	94
25	90	90	e67	e73	173	132	404	485	451	247	158	97
26	89	93	e64	e69	172	141	378	519	514	756	165	101
27	91	102	e70	e69	167	130	350	468	464	552	160	100
28	96	99	e73	e73	159	124	319	448	455	342	153	92
29	97	e91	e71	e71	---	121	317	437	439	307	147	85
30	97	e74	e108	e75	---	127	305	425	617	291	143	84
31	92	---	e88	e80	---	180	---	411	---	278	140	---
TOTAL	2,803	2,936	2,398	1,922	6,521	4,075	8,059	18,974	19,804	11,023	6,225	3,311
MEAN	90.4	97.9	77.4	62.0	233	131	269	612	660	356	201	110
MAX	97	127	108	85	1,660	180	805	1,830	3,380	756	344	133
MIN	87	74	47	45	71	114	116	254	358	247	140	84
AC-FT	5,560	5,820	4,760	3,810	12,930	8,080	15,990	37,630	39,280	21,860	12,350	6,570
CFSM	0.15	0.16	0.13	0.10	0.38	0.22	0.44	1.01	1.08	0.58	0.33	0.18
IN.	0.17	0.18	0.15	0.12	0.40	0.25	0.49	1.16	1.21	0.67	0.38	0.20

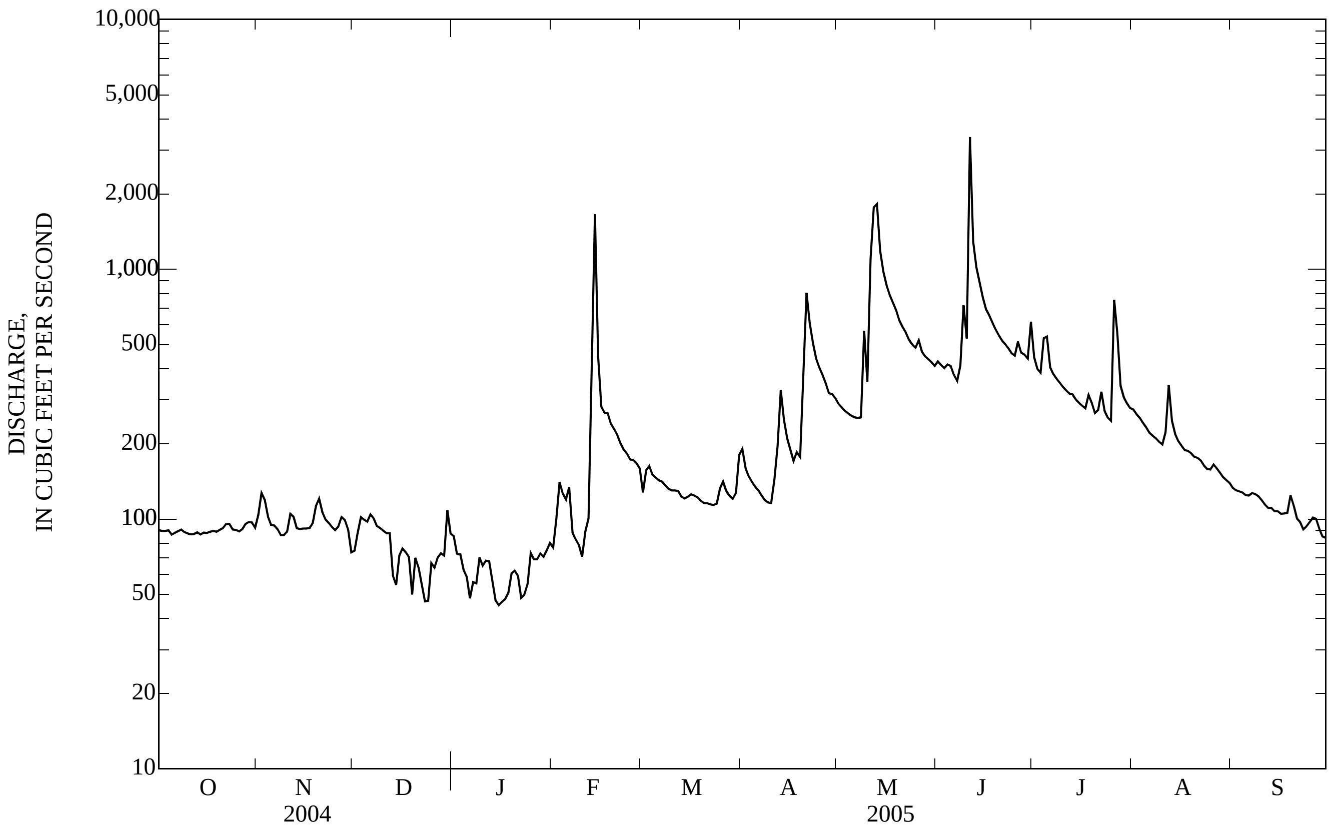
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	183	173	149	118	264	498	414	525	598	415	239	275
MAX	998	910	628	625	993	1,946	1,295	1,586	2,228	2,925	1,073	2,412
(WY)	(1987)	(1973)	(1973)	(1973)	(1983)	(1979)	(1983)	(1973)	(1998)	(1993)	(1996)	(1972)
MIN	30.2	32.1	17.9	4.58	27.2	40.3	45.6	30.1	26.7	38.4	26.4	14.7
(WY)	(2001)	(1971)	(1971)	(1971)	(1967)	(1968)	(1968)	(1967)	(1977)	(1970)	(1968)	(1971)

06807410 WEST NISHNABOTNA RIVER AT HANCOCK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1960 - 2005	
ANNUAL TOTAL	119,768		88,051			
ANNUAL MEAN	327		241		321	
HIGHEST ANNUAL MEAN					966	1993
LOWEST ANNUAL MEAN					42.4	1968
HIGHEST DAILY MEAN	7,650	May 25	3,380	Jun 11	23,300	Sep 12, 1972
LOWEST DAILY MEAN	24	Jan 5	45	Jan 15	2.2	Feb 8, 1971 a
ANNUAL SEVEN-DAY MINIMUM	31	Jan 4	51	Jan 13	2.5	Feb 4, 1971
MAXIMUM PEAK FLOW			5,350	Jun 11	30,100	Jul 10, 1993
MAXIMUM PEAK STAGE			10.45	Jun 11	23.52	Jul 10, 1993
ANNUAL RUNOFF (AC-FT)	237,600		174,600		232,400	
ANNUAL RUNOFF (CFSM)	0.537		0.396		0.527	
ANNUAL RUNOFF (INCHES)	7.32		5.38		7.16	
10 PERCENT EXCEEDS	684		516		709	
50 PERCENT EXCEEDS	160		130		157	
90 PERCENT EXCEEDS	47		71		37	

a Also Feb. 9, 1971.
e Estimated.



06808500 WEST NISHNABOTNA RIVER AT RANDOLPH, IA

LOCATION.--Lat 40°52'23", long 95°34'48", in NE$\frac{1}{4}$ NE$\frac{1}{4}$ sec.17, T.70 N., R.41 W., Fremont County, Hydrologic Unit 10240002, on right bank at upstream side of bridge on State Highway 184, 0.3 mi downstream from Deer Creek, 0.5 mi west of Randolph, 16.0 mi upstream from confluence with East Nishnabotna River, and 30.6 mi (revised) upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--1,326 mi^2.

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

REVISED RECORDS.--WSP 1440: Drainage area. WDR IA-74-1: 1973 (M). WDR IA-76-1: 1975 (P).

GAGE.--Water-stage recorder. Datum of gage is 932.99 ft above NGVD of 1929, unadjusted. Prior to Aug. 26, 1955, nonrecording gage with supplementary water-stage recorder operating above 8.4 ft. June 30, 1949 to Aug. 25, 1955 at same site and datum.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey rain gage and data collection platform with satellite telemetry at the station. Precipitation records are not published, but are available.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of about 24 ft, discharge not determined, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	252	e219	e189	e176	359	404	614	957	1,100	503	262
2	256	262	e228	e170	e208	350	414	591	925	898	496	255
3	254	272	230	e167	e268	361	384	581	931	833	480	252
4	255	279	244	e157	e252	372	368	572	927	837	454	248
5	252	256	249	e154	e252	362	359	564	929	1,100	431	241
6	249	248	273	e143	e297	354	351	559	893	950	418	237
7	250	245	267	e152	e264	344	338	554	839	811	404	237
8	251	252	257	e149	e249	336	327	543	821	767	395	240
9	251	e259	248	e165	e245	327	322	535	1,020	738	383	237
10	247	274	242	e159	e235	325	319	767	1,340	712	369	228
11	246	294	238	e162	e257	319	353	1,120	2,430	687	420	218
12	246	295	235	e161	e300	321	443	3,170	3,350	669	508	210
13	244	284	e195	e151	682	317	476	5,420	1,890	651	543	211
14	242	263	e178	e143	2,180	311	588	2,850	1,600	645	467	228
15	245	250	e197	e138	1,750	304	535	2,300	1,420	611	408	205
16	244	244	e202	e140	827	311	495	2,040	1,280	589	378	199
17	244	242	e197	e143	626	318	473	1,820	1,190	571	360	195
18	244	238	e197	e147	548	315	445	1,670	1,120	635	348	194
19	245	259	e176	e154	506	308	460	1,540	1,060	632	340	197
20	246	267	e196	e157	481	306	514	1,400	1,010	593	333	200
21	248	264	e190	e153	459	303	766	1,270	964	562	324	218
22	253	256	e179	e143	437	306	1,180	1,210	937	554	337	194
23	256	247	e172	e145	415	311	1,030	1,130	916	593	309	186
24	248	240	e172	e152	405	309	875	1,080	887	540	300	187
25	240	239	e193	e166	397	319	795	1,030	875	509	293	192
26	245	238	e190	e166	388	329	748	989	899	1,060	302	196
27	246	244	e197	e165	388	339	706	1,000	908	1,120	353	199
28	254	e241	e200	e167	382	330	668	939	1,130	811	311	204
29	267	e232	e197	e167	---	321	636	922	967	609	300	201
30	254	e219	e234	e170	---	333	617	911	961	555	289	192
31	245	---	e202	e175	---	382	---	890	---	525	277	---
TOTAL	7,723	7,655	6,594	4,870	13,874	10,202	16,389	40,581	35,376	22,467	11,833	6,463
MEAN	249	255	213	157	496	329	546	1,309	1,179	725	382	215
MAX	267	295	273	189	2,180	382	1,180	5,420	3,350	1,120	543	262
MIN	240	219	172	138	176	303	319	535	821	509	277	186
AC-FT	15,320	15,180	13,080	9,660	27,520	20,240	32,510	80,490	70,170	44,560	23,470	12,820
CFSM	0.19	0.19	0.16	0.12	0.37	0.25	0.41	0.99	0.89	0.55	0.29	0.16
IN.	0.22	0.21	0.18	0.14	0.39	0.29	0.46	1.14	0.99	0.63	0.33	0.18

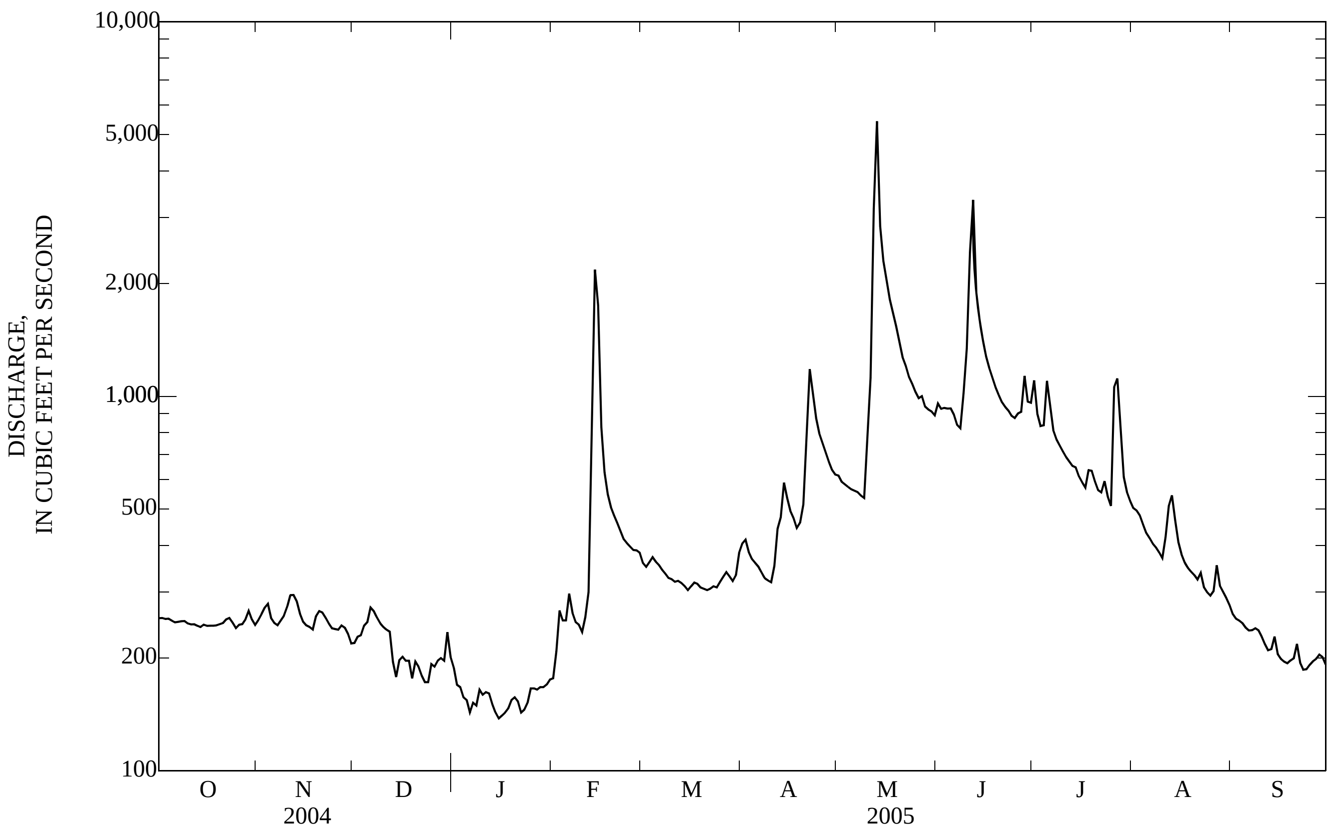
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	369	343	295	260	526	924	788	1,073	1,248	877	583	506
MAX	2,002	1,277	1,140	1,201	1,777	3,877	2,867	3,227	5,031	6,357	2,610	2,531
(WY)	(1987)	(1973)	(1973)	(1973)	(1973)	(1979)	(1973)	(1973)	(1998)	(1993)	(1993)	(1972)
MIN	27.1	33.6	20.6	17.4	19.4	67.8	42.7	97.3	65.6	71.2	30.1	41.0
(WY)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1956)	(1967)	(1956)	(1954)	(1955)	(1955)

06808500 WEST NISHNABOTNA RIVER AT RANDOLPH, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1949 - 2005	
ANNUAL TOTAL	257,705		184,027			
ANNUAL MEAN	704		504		649	
HIGHEST ANNUAL MEAN					1,985	1993
LOWEST ANNUAL MEAN					111	1968
HIGHEST DAILY MEAN	10,500	May 25	5,420	May 13	25,800	Jun 15, 1998
LOWEST DAILY MEAN	77	Jan 5	138	Jan 15	10	Dec 17, 1955 a
ANNUAL SEVEN-DAY MINIMUM	82	Jan 4	145	Jan 13	11	Dec 16, 1955
MAXIMUM PEAK FLOW			6,670	May 13	40,800	May 26, 1987
MAXIMUM PEAK STAGE			16.12	May 13	24.80	Mar 5, 1949 b
ANNUAL RUNOFF (AC-FT)	511,200		365,000		470,500	
ANNUAL RUNOFF (CFSM)	0.531		0.380		0.490	
ANNUAL RUNOFF (INCHES)	7.23		5.16		6.66	
10 PERCENT EXCEEDS	1,480		1,000		1,400	
50 PERCENT EXCEEDS	461		315		339	
90 PERCENT EXCEEDS	95		183		93	

a Also Dec. 18-21, 1955.
b From graph based on gage readings, backwater from ice.
e Estimated.



06809210 EAST NISHNABOTNA RIVER NEAR ATLANTIC, IA

LOCATION.--Lat 41°20'46", long 95°04'36", in NW$\frac{1}{4}$ NW$\frac{1}{4}$ sec.35, T.76 N., R.37 W., Cass County, Hydrologic Unit 10240003, on left bank at downstream side of bridge on county highway, 1.6 mi upstream from Turkey Creek, 5.2 mi southwest of junction of U.S. Highway 6 and State Highway 83 in Atlantic, 74.3 mi (revised) upstream from confluence with West Nishnabotna River, and 89.9 mi upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--436 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,105.83 ft above NGVD of 1929. Prior to Oct. 1, 1970, at site 2.2 mi upstream at datum 5.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 2, 1958 reached a stage of 22.49 ft, from floodmark, discharge, 34,200 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e52	61	45	e63	e55	e81	100	262	340	409	131	60
2	e52	79	51	e51	e80	e103	93	251	313	314	127	59
3	e50	71	52	e51	e118	116	88	242	311	281	119	58
4	e50	59	50	e41	e107	105	86	233	308	725	114	56
5	e47	52	50	e37	e98	100	83	223	284	548	106	55
6	e47	49	55	e27	e113	97	80	216	259	353	104	56
7	48	47	53	e35	e65	95	77	210	248	298	103	57
8	48	47	49	e34	e63	93	76	199	294	270	100	57
9	47	49	47	e50	e56	89	75	194	462	249	97	56
10	46	51	46	e44	e50	88	74	182	341	234	96	54
11	46	59	45	e47	e67	90	100	2,800	2,850	222	156	51
12	47	60	44	e47	e80	89	128	4,640	996	211	279	50
13	46	54	37	e36	e352	83	118	5,200	754	198	170	54
14	45	51	34	e26	990	83	104	1,870	704	186	129	56
15	46	51	49	e25	412	83	96	1,230	585	175	113	51
16	46	51	e54	e25	261	85	97	994	531	163	104	50
17	46	51	e52	e27	199	84	100	878	501	150	100	48
18	46	52	e49	e30	187	84	93	807	466	257	97	47
19	47	70	e29	e40	166	81	92	725	435	209	93	47
20	47	82	e49	e42	159	79	768	639	413	160	87	50
21	48	70	e43	e38	151	79	930	596	396	185	83	47
22	50	63	e33	e25	138	78	889	556	381	235	80	42
23	49	60	e25	e27	130	78	804	518	357	222	77	41
24	47	58	e26	e30	127	80	546	491	330	196	76	45
25	45	56	e45	e51	119	89	495	468	331	154	74	47
26	46	57	e43	e48	121	95	429	456	380	210	77	50
27	47	58	e48	e48	115	89	358	411	327	199	76	48
28	51	58	e52	e52	110	88	324	e391	421	142	70	50
29	53	57	e50	e50	---	85	300	e364	350	133	66	47
30	49	52	e87	e53	---	89	280	e342	617	128	64	45
31	48	---	e66	e59	---	101	---	e327	---	130	62	---
TOTAL	1,482	1,735	1,458	1,259	4,689	2,759	7,883	26,915	15,285	7,546	3,230	1,534
MEAN	47.8	57.8	47.0	40.6	167	89.0	263	868	510	243	104	51.1
MAX	53	82	87	63	990	116	930	5,200	2,850	725	279	60
MIN	45	47	25	25	50	78	74	182	248	128	62	41
AC-FT	2,940	3,440	2,890	2,500	9,300	5,470	15,640	53,390	30,320	14,970	6,410	3,040
CFSM	0.11	0.13	0.11	0.09	0.38	0.20	0.60	1.99	1.17	0.56	0.24	0.12
IN.	0.13	0.15	0.12	0.11	0.40	0.24	0.67	2.30	1.30	0.64	0.28	0.13

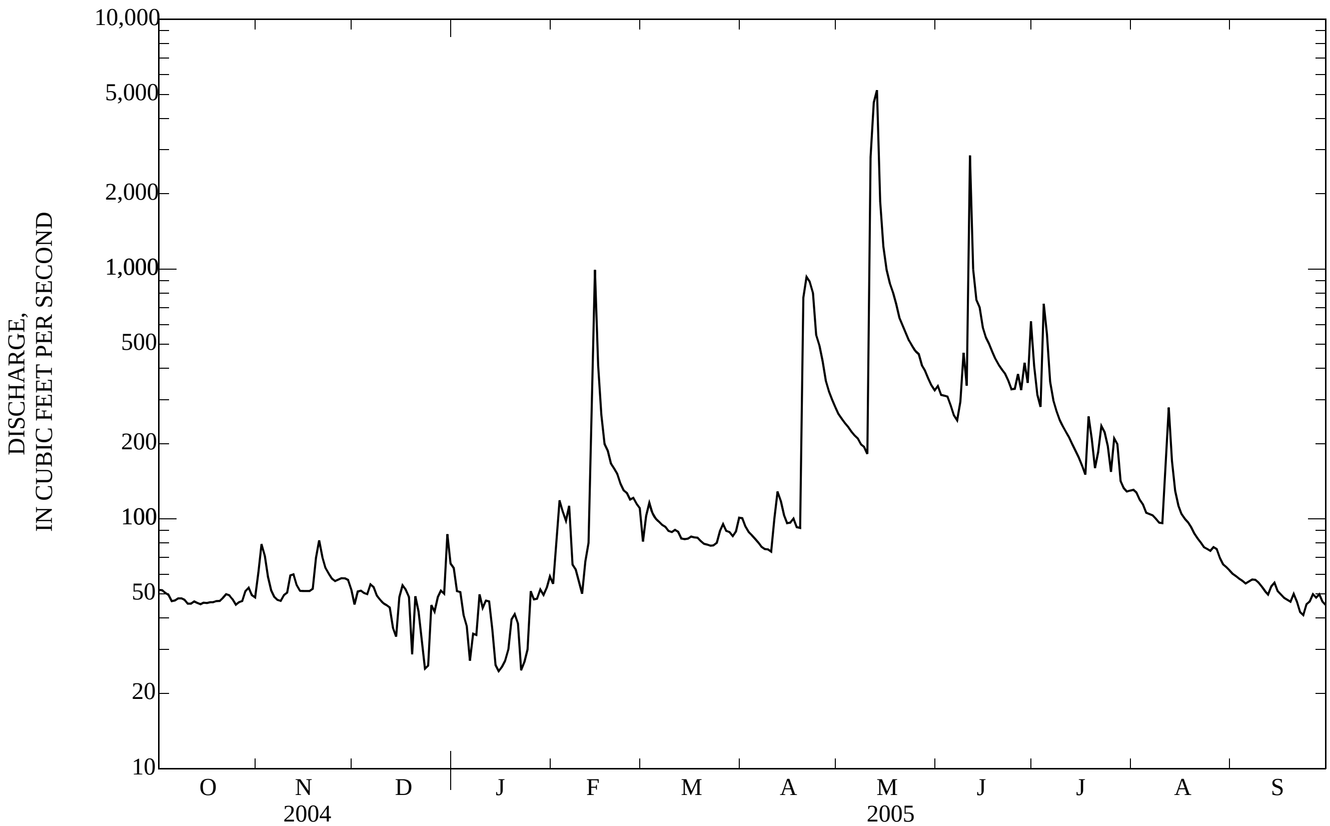
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	132	127	104	86.3	193	386	355	451	504	338	173	195
MAX	1,069	757	529	529	812	1,378	1,138	1,366	3,125	2,747	1,394	1,855
(WY)	(1987)	(1973)	(1993)	(1973)	(1971)	(1965)	(1973)	(2004)	(1998)	(1993)	(1993)	(1972)
MIN	21.0	20.3	10.6	7.68	18.7	28.4	27.9	15.0	23.4	15.6	13.4	14.8
(WY)	(1967)	(1969)	(1964)	(1971)	(1968)	(1968)	(1981)	(1967)	(1977)	(1968)	(1968)	(1971)

06809210 EAST NISHNABOTNA RIVER NEAR ATLANTIC, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	106,014		75,775			
ANNUAL MEAN	290		208		254	
HIGHEST ANNUAL MEAN					842	1993
LOWEST ANNUAL MEAN					23.7	1968
HIGHEST DAILY MEAN	12,600	May 23	5,200	May 13	32,300	Jun 15, 1998
LOWEST DAILY MEAN	21	Feb 15	25	Dec 23 a	2.5	Jul 10, 1977
ANNUAL SEVEN-DAY MINIMUM	26	Feb 9	30	Jan 13	7.0	Dec 17, 1963
MAXIMUM PEAK FLOW			11,000	May 13	41,400	Jun 15, 1998
MAXIMUM PEAK STAGE			14.01	May 13	22.81	Sep 12, 1972
INSTANTANEOUS LOW FLOW			6.8	Dec 14 b		
ANNUAL RUNOFF (AC-FT)	210,300		150,300		183,900	
ANNUAL RUNOFF (CFSM)	0.664		0.476		0.582	
ANNUAL RUNOFF (INCHES)	9.05		6.47		7.91	
10 PERCENT EXCEEDS	597		431		562	
50 PERCENT EXCEEDS	114		83		100	
90 PERCENT EXCEEDS	37		46		24	

a Also Jan. 15, 16 & 22.
b Result of freeze-up.
e Estimated.



06809500 EAST NISHNABOTNA RIVER AT RED OAK, IA

LOCATION.--Lat 41°00'31", long 95°14'29", in NW¼ SE¼ sec.29, T.72 N., R.38 W., Montgomery County, Hydrologic Unit 10240003, on downstream side of Coolbaugh Street bridge in Red Oak, 0.2 mi upstream from Red Oak Creek, 38.1 mi (revised) upstream from confluence with West Nishnabotna River, and 53.7 mi upstream from mouth of Nishnabotna River.

DRAINAGE AREA.--894 mi^2.

PERIOD OF RECORD.--May 1918 to November 1924, February 1925 to July 1925, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1240: 1921, 1922-23 (M), 1924, 1942 (M), 1944 (M), 1946. WSP 1440: Drainage area. WSP 1710: 1957.

GAGE.--Water-stage recorder. Datum of gage is 1,005.45 ft above NGVD of 1929. Prior to July 5, 1925, nonrecording gage at present site at datum 4.60 ft higher. May 29, 1936 to Nov. 13, 1952, nonrecording gage with supplementary water-stage recorder in operation above 3.2 ft gage height. July 30, 1939 to Nov. 13, 1952, and Nov. 14, 1952 to June 13, 1966, water-stage recorder, all at site 0.5 mi upstream at datum 5.00 ft higher. June 14, 1966 to Sept. 30, 1969, at present site at datum 5.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	118	e82	e85	e79	205	153	417	646	774	234	115
2	119	125	e93	e71	e101	161	144	401	636	509	225	112
3	118	138	100	e71	e138	185	134	387	618	457	208	110
4	117	130	103	e62	e127	186	129	376	619	444	191	107
5	114	114	106	e58	e119	171	128	368	591	1,030	184	104
6	115	109	111	e48	e133	167	126	362	561	568	173	101
7	117	105	113	e55	e87	159	120	354	529	480	168	102
8	118	100	110	e55	e83	156	113	347	530	446	163	105
9	116	99	106	e70	e76	149	110	343	e600	421	158	100
10	115	100	102	e64	e74	143	110	335	731	399	152	97
11	112	107	99	e67	e100	144	142	1,860	4,090	383	160	93
12	112	113	98	e67	e107	143	202	5,040	2,290	367	250	90
13	112	111	90	e56	e370	141	270	9,830	1,440	357	329	93
14	112	104	e85	e47	e1,310	133	242	4,090	1,200	345	234	96
15	110	103	e98	e44	848	131	209	2,640	1,080	337	200	96
16	111	104	e100	e46	480	132	203	2,030	908	325	186	91
17	111	104	e93	e47	382	132	201	1,730	820	312	178	87
18	112	104	e81	e50	334	131	198	1,550	755	358	171	87
19	113	110	e57	e60	302	130	196	1,390	695	430	164	85
20	115	121	e76	e61	284	126	203	1,210	652	356	159	84
21	116	129	e66	e58	271	123	1,190	1,060	613	334	154	87
22	118	117	e56	e48	250	126	984	1,010	581	395	152	85
23	119	e111	e49	e49	231	123	1,250	909	557	368	145	82
24	115	104	e50	e54	221	125	835	855	529	322	143	80
25	113	102	e69	e72	212	133	672	796	504	296	141	83
26	123	101	e66	e68	200	143	595	786	527	344	158	84
27	116	104	e73	e68	202	147	537	752	522	378	149	83
28	117	102	e75	e72	209	134	488	704	518	340	140	89
29	119	e94	e74	e70	---	130	457	679	574	292	131	86
30	115	e80	e107	e74	---	139	437	662	562	263	125	81
31	112	---	e87	e79	---	143	---	634	---	243	121	---
TOTAL	3,571	3,263	2,675	1,896	7,330	4,491	10,778	43,907	25,478	12,673	5,446	2,795
MEAN	115	109	86.3	61.2	262	145	359	1,416	849	409	176	93.2
MAX	123	138	113	85	1,310	205	1,250	9,830	4,090	1,030	329	115
MIN	110	80	49	44	74	123	110	335	504	243	121	80
AC-FT	7,080	6,470	5,310	3,760	14,540	8,910	21,380	87,090	50,540	25,140	10,800	5,540
CFSM	0.13	0.12	0.10	0.07	0.29	0.16	0.40	1.58	0.95	0.46	0.20	0.10
IN.	0.15	0.14	0.11	0.08	0.31	0.19	0.45	1.83	1.06	0.53	0.23	0.12

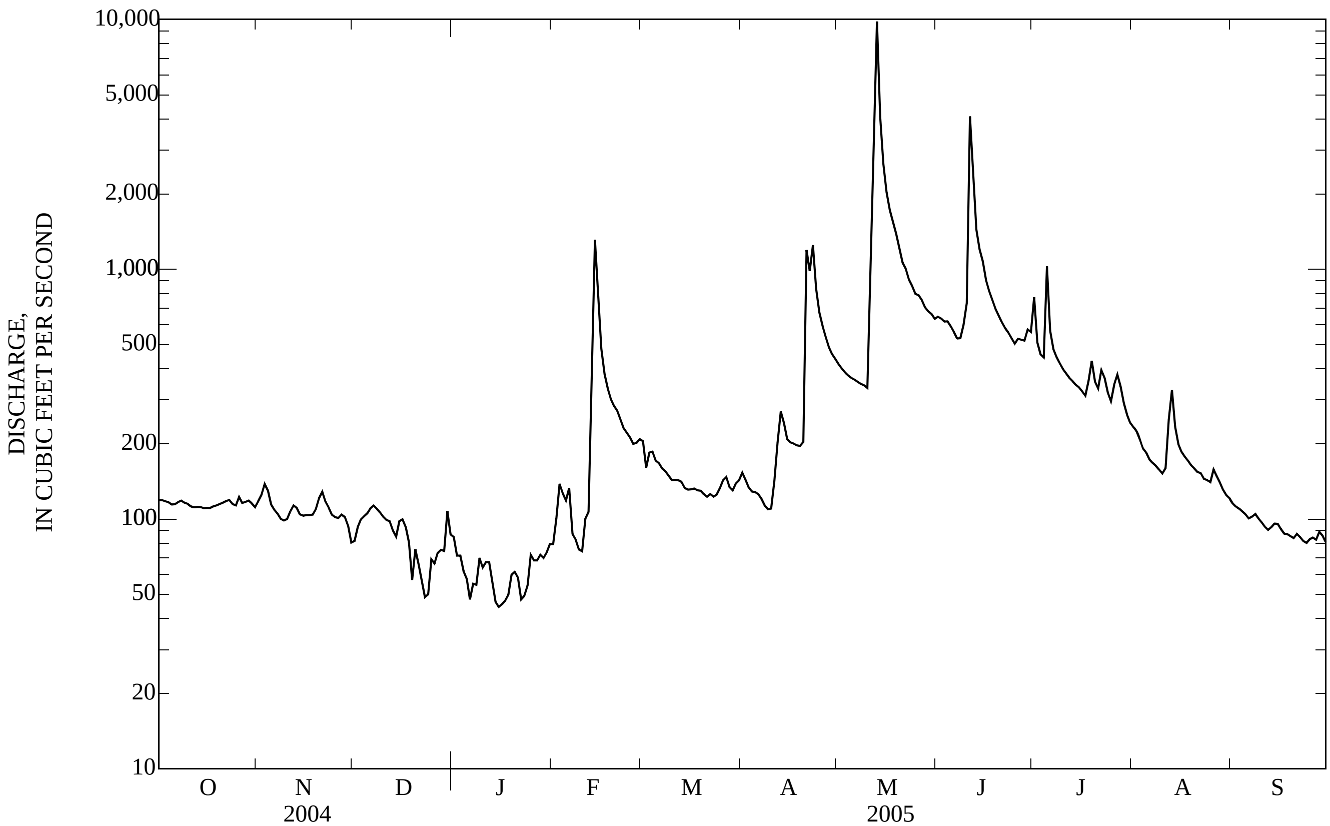
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	219	209	165	153	354	662	570	752	904	560	351	344
MAX	1,816	1,335	1,038	1,078	1,438	2,596	2,194	2,538	5,330	6,971	2,821	3,074
(WY)	(1987)	(1973)	(1993)	(1973)	(1973)	(1965)	(1973)	(1999)	(1998)	(1993)	(1993)	(1972)
MIN	16.5	19.9	14.6	12.3	17.2	32.3	30.4	35.2	40.5	24.5	17.0	14.9
(WY)	(1938)	(1940)	(1938)	(1940)	(1940)	(1938)	(1956)	(1939)	(1968)	(1936)	(1936)	(1937)

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1919 - 2005	
ANNUAL TOTAL	170,380		124,303			
ANNUAL MEAN	466		341		441	
HIGHEST ANNUAL MEAN					1,842	1993
LOWEST ANNUAL MEAN					54.9	1968
HIGHEST DAILY MEAN	10,200	May 23	9,830	May 13	45,100	Jun 15, 1998
LOWEST DAILY MEAN	40	Jan 6	44	Jan 15 a	6.0	Aug 18, 1936
ANNUAL SEVEN-DAY MINIMUM	47	Jan 4	50	Jan 13	8.1	Dec 15, 1937
MAXIMUM PEAK FLOW			12,900	May 13	60,500	Jun 15, 1998
MAXIMUM PEAK STAGE			18.18	May 13	29.39	Jun 15, 1998
ANNUAL RUNOFF (AC-FT)	337,900		246,600		319,200	
ANNUAL RUNOFF (CFSM)	0.521		0.381		0.493	
ANNUAL RUNOFF (INCHES)	7.09		5.17		6.70	
10 PERCENT EXCEEDS	978		685		961	
50 PERCENT EXCEEDS	214		132		180	
90 PERCENT EXCEEDS	60		74		45	

a Ice affected.
e Estimated.



06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA

LOCATION.--Lat 40°37'57", long 95°37'32", in SW1/4 SE1/4 sec.11, T.67 N., R.42 W., Fremont County, Hydrologic Unit 10240004, on left bank 1.7 mi downstream from confluence of East Nishnabotna and West Nishnabotna Rivers, 2 mi northeast of Hamburg, and 14.0 mi (revised) upstream from mouth.

DRAINAGE AREA.--2,806 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1922 to September 1923, October 1928 to current year. Monthly discharge only for some periods published in WSP 1310.

REVISED RECORDS.--WSP 1240: 1923, 1929-37, 1938-40 (M), 1943 (M). WSP 1440: Drainage area. WDR IA-74-1: 1973.

GAGE.--Water-stage recorder. Datum of gage is 894.17 ft above NGVD of 1929. See WSP 1730 for history of changes prior to Nov. 16, 1950.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	383	355	412	e289	e427	733	652	1,220	2,280	2,220	993	389
2	384	371	401	e260	e542	722	678	1,150	2,120	2,240	966	368
3	388	384	399	e255	e629	694	659	1,120	2,120	1,860	948	351
4	385	472	431	e237	e588	754	607	1,090	2,180	1,730	905	342
5	383	482	450	e227	e570	726	576	1,060	2,090	1,970	861	329
6	384	431	507	e254	e655	692	582	1,050	2,020	2,460	834	324
7	378	408	510	e349	e578	666	629	1,030	1,870	1,850	807	317
8	379	386	484	e337	e542	652	546	1,010	1,760	1,650	773	319
9	379	373	469	e403	e546	632	519	995	1,990	1,540	744	321
10	382	389	443	e370	e511	606	499	1,060	2,690	1,450	711	307
11	374	421	431	e374	e567	585	556	1,400	4,180	1,370	720	295
12	375	452	431	e377	e648	583	803	5,700	9,130	1,330	891	286
13	368	458	e394	e361	e1,610	576	866	15,400	4,650	1,300	1,000	280
14	379	454	e316	e355	2,530	561	935	12,200	3,770	1,260	1,070	292
15	398	435	e275	e349	3,990	540	933	6,920	3,410	1,200	852	269
16	377	436	e334	e358	2,210	545	855	5,370	3,080	1,160	716	269
17	391	440	e332	e355	1,490	548	817	4,490	2,810	1,110	647	277
18	378	436	e314	e355	1,240	556	763	3,950	2,620	1,310	611	259
19	354	483	e254	e370	1,130	550	787	3,610	2,450	1,270	585	254
20	341	485	e288	e368	1,090	539	910	3,280	2,320	1,240	571	249
21	342	482	e273	e365	1,040	524	1,130	2,990	2,210	1,130	553	255
22	359	498	e259	e353	989	513	3,080	2,770	2,130	1,060	546	261
23	359	470	e250	e356	936	571	2,550	2,610	2,060	1,120	534	265
24	347	448	e246	e363	897	604	2,510	2,460	1,980	1,090	493	268
25	334	435	e283	e380	873	604	2,030	2,330	1,910	976	486	269
26	336	438	e273	e377	850	586	1,810	2,230	1,910	1,490	486	269
27	354	439	e286	e375	828	583	1,590	2,220	1,890	1,800	543	276
28	351	444	e287	e375	814	587	1,460	2,120	2,310	1,710	528	282
29	367	e428	e284	e375	---	555	1,340	2,050	2,200	1,240	473	292
30	353	e417	e360	e385	---	556	1,260	2,010	2,130	1,100	446	290
31	345	---	e297	e403	---	649	---	1,960	---	1,040	416	---
TOTAL	11,407	13,050	10,973	10,710	29,320	18,792	32,932	98,855	80,270	45,276	21,709	8,824
MEAN	368	435	354	345	1,047	606	1,098	3,189	2,676	1,461	700	294
MAX	398	498	510	403	3,990	754	3,080	15,400	9,130	2,460	1,070	389
MIN	334	355	246	227	427	513	499	995	1,760	976	416	249
AC-FT	22,630	25,880	21,760	21,240	58,160	37,270	65,320	196,100	159,200	89,800	43,060	17,500
CFSM	0.13	0.16	0.13	0.12	0.37	0.22	0.39	1.14	0.95	0.52	0.25	0.10
IN.	0.15	0.17	0.15	0.14	0.39	0.25	0.44	1.31	1.06	0.60	0.29	0.12

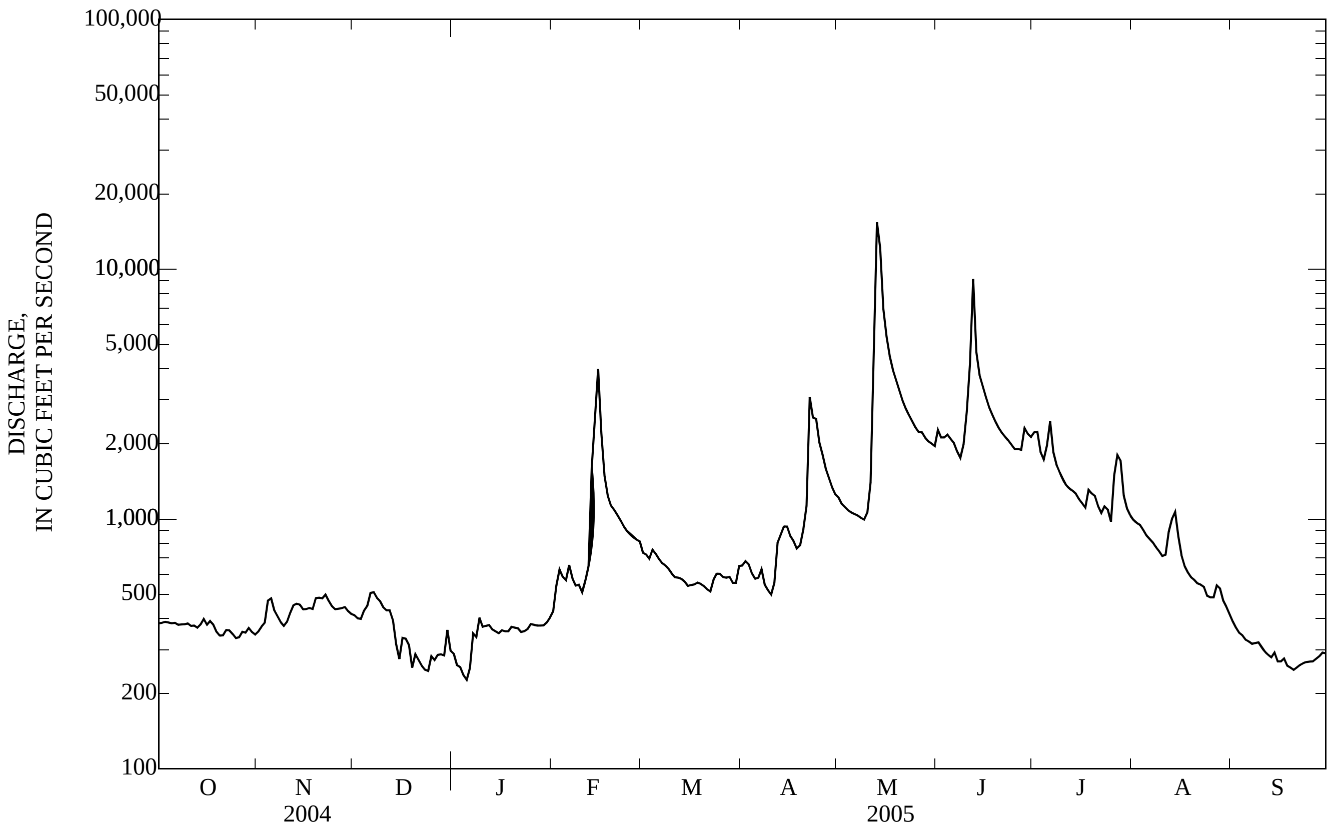
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	655	656	548	547	1,016	1,787	1,492	1,964	2,570	1,676	1,086	966
MAX	5,004	3,083	2,557	3,585	4,720	7,229	5,866	6,621	16,430	17,780	6,266	7,385
(WY)	(1987)	(1973)	(1973)	(1973)	(1973)	(1979)	(1973)	(1995)	(1947)	(1993)	(1993)	(1993)
MIN	39.5	42.9	27.1	21.3	30.3	115	89.7	68.2	151	52.8	16.8	44.1
(WY)	(1938)	(1938)	(1938)	(1940)	(1940)	(1931)	(1956)	(1934)	(1956)	(1936)	(1934)	(1937)

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1922 - 2005	
ANNUAL TOTAL	510,625		382,118			
ANNUAL MEAN	1,395		1,047		1,250	
HIGHEST ANNUAL MEAN					5,062	1993
LOWEST ANNUAL MEAN					170	1934
HIGHEST DAILY MEAN	19,700	May 25	15,400	May 13	53,700	Jun 17, 1998
LOWEST DAILY MEAN	162	Jan 6	227	Jan 5 a	4.5	Aug 30, 1934
ANNUAL SEVEN-DAY MINIMUM	175	Jan 4	259	Sep 18	9.9	Aug 24, 1934
MAXIMUM PEAK FLOW			18,000	May 13	65,100	Jun 17, 1998
MAXIMUM PEAK STAGE			25.16	May 13	33.18	Jun 17, 1998
ANNUAL RUNOFF (AC-FT)	1,013,000		757,900		905,400	
ANNUAL RUNOFF (CFSM)	0.497		0.373		0.445	
ANNUAL RUNOFF (INCHES)	6.77		5.07		6.05	
10 PERCENT EXCEEDS	3,050		2,220		2,870	
50 PERCENT EXCEEDS	878		556		588	
90 PERCENT EXCEEDS	198		292		126	

a Ice affected.
e Estimated.



06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA—Continued

(Large River Mass Contaminents Station)

WATER QUALITY RECORDS

PERIOD OF RECORD.-- 1979-1993, 1979-1981 (chem only), October 2003 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan- taneous dis- charge, cfs (00061)	Stream width, feet (00004)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon- ate, wat flt incrm. titr., field, mg/L (00452)	Chlor- ide, water, fltrd, mg/L (00940)
OCT													
13...	0800	376	110	731	9.7	96	8.4	544	12.9	224	273	--	17.2
NOV													
16...	1300	430	168	741	12.3	110	8.0	561	9.0	235	286	--	17.1
DEC													
14...	1045	396	176	750	14.2	99	7.3	625	.0	267	324	--	19.2
JAN													
12...	1200	367	167	721	10.6	76	7.5	622	.0	251	306	--	19.5
FEB													
15...	1100	4,060	250	732	10.8	81	6.9	319	2.0	103	125	--	14.1
MAR													
16...	1045	535	200	738	12.1	98	8.2	575	5.0	227	271	--	16.6
APR													
13...	1030	866	230	738	10.3	101	7.8	521	12.8	205	244	--	17.1
MAY													
12...	1000	5,100	260	734	5.6	62	7.5	399	18.5	139	168	--	11.2
JUN													
14...	1030	3,790	260	733	7.5	87	7.6	435	20.0	149	179	--	11.7
JUL													
11...	1200	1,360	250	733	7.9	103	7.9	552	27.0	205	242	--	13.9
AUG													
11...	1245	713	255	735	10.1	128	8.8	539	25.5	212	246	6	13.8
SEP													
13...	1030	282	160	732	9.0	111	8.0	548	23.5	225	265	5	19.7

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)
OCT													
13...	11.3	37.9	<.04	3.15	.009	.24	.098	.113	.164	3.44	3.38	1.5	<.1
NOV													
16...	11.6	37.0	<.04	3.26	.009	.16	.078	.094	.158	3.60	3.53	1.0	<.1
DEC													
14...	12.9	34.0	.04	3.00	.008	.13	.152	.173	.23	3.49	3.51	.9	<.1
JAN													
12...	15.7	37.8	.09	4.38	.012	.06	.077	.085	.118	4.65	4.75	.4	<.1
FEB													
15...	9.6	17.1	.57	3.28	.045	7.63	.064	.137	3.82	5.24	11.3	75.2	1.1
MAR													
16...	14.1	35.1	E.02	5.16	.011	.23	.130	.152	.22	5.49	5.92	1.6	<.1
APR													
13...	9.8	29.2	<.04	3.63	.013	1.06	.118	.137	.48	3.87	3.75	7.6	.1
MAY													
12...	11.7	22.2	.20	5.42	.075	5.86	.117	.146	1.95	6.61	11.9	58.2	1.2
JUN													
14...	15.5	22.1	<.04	10.5	.028	2.08	.136	.163	1.12	10.3	13.1	20.4	.5
JUL													
11...	17.7	28.4	<.04	8.96	.011	1.44	.198	.21	.96	8.90	10.5	14.7	.4
AUG													
11...	14.9	34.3	<.04	4.29	.030	.76	.146	.170	.36	4.96	5.14	5.1	<.1
SEP													
13...	12.1	41.3	<.04	1.66	.017	.61	.080	.113	.24	2.03	2.52	3.3	<.1

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
OCT													
13...	1.5	1.9	8.4	20.7	<.006	E.017	<.006	<.005	<.005	.065	<.050	<.010	<.004
NOV													
16...	1.0	2.2	E7.2	E12.7	<.006	E.014	E.004	<.005	<.005	.041	<.050	<.010	<.004
DEC													
14...	.9	3.9	6.7	5.5	<.006	E.017	<.006	<.005	<.005	.053	<.050	<.010	<.004
JAN													
12...	.4	1.8	1.0	3.2	<.006	E.015	<.007	<.005	<.005	.040	<.050	<.010	<.004
FEB													
15...	74.1	12.3	59.7	87.0	<.006	E.023	.049	<.005	<.005	.122	<.050	<.010	<.004
MAR													
16...	1.6	1.9	E2.4	E7.1	<.006	E.014	<.006	<.005	<.005	.030	<.050	<.010	<.004
APR													
13...	7.4	3.1	12.4	45.0	<.006	E.029	.077	<.010	<.005	.242	<.050	<.010	<.004
MAY													
12...	57.0	4.4	21.9	16.7	<.006	E.226	2.55	.070	<.005	14.2	<.050	<.010	<.004
JUN													
14...	20.0	3.1	5.9	2.8	<.006	E.164	.103	<.005	<.005	1.73	<.050	<.010	<.004
JUL													
11...	14.3	2.1	6.5	9.6	<.006	E.042	.008	<.005	<.005	.247	<.050	<.010	<.004
AUG													
11...	5.0	2.3	--	--	<.006	E.021	<.006	<.005	<.005	.116	<.050	<.010	<.004
SEP													
13...	3.1	5.4	14.2	91.5	<.006	E.017	<.006	<.005	<.005	.083	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)
OCT													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
NOV													
16...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
DEC													
14...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JAN													
12...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
FEB													
15...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.007	<.009	<.005
MAR													
16...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
APR													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
MAY													
12...	<.041	<.020	.019	<.006	.057	<.003	<.012	E.003	<.009	<.02	<.004	<.009	<.005
JUN													
14...	<.041	E.031	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
JUL													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
AUG													
11...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005
SEP													
13...	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009	<.005

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
OCT													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.012	<.006	<.003	<.007
NOV													
16...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007
DEC													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.016	<.006	<.003	<.007
JAN													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.012	<.006	<.003	<.007
FEB													
15...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.096	<.006	<.003	<.007
MAR													
16...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.011	<.006	<.003	<.007
APR													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.128	<.006	<.003	<.007
MAY													
12...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	6.29	.064	<.003	<.007
JUN													
14...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.207	.013	<.003	<.007
JUL													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.030	<.006	<.003	<.007
AUG													
11...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.015	<.006	<.003	<.007
SEP													
13...	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.015	<.006	<.003	<.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)
OCT													
13...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
NOV													
16...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
DEC													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
JAN													
12...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
FEB													
15...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAR													
16...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.065	<.02	<.034
APR													
13...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
MAY													
12...	<.003	<.010	<.004	E.016	<.011	.01	<.004	<.025	<.011	<.02	.188	<.02	<.034
JUN													
14...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	.011	<.02	<.034
JUL													
11...	<.003	<.010	<.004	<.022	<.011	E.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
AUG													
11...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034
SEP													
13...	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Sus- pended sedi- ment concen- tration mg/L (80154)	Number of sam- pling points, count (00063)
OCT						
13...	<.02	<.010	<.006	<.009	126	10
NOV						
16...	<.02	<.010	<.006	<.009	106	11
DEC						
14...	<.02	<.010	<.006	<.009	100	12
JAN						
12...	<.02	<.010	<.006	<.009	86	11
FEB						
15...	<.02	<.010	<.006	<.009	6,070	10
MAR						
16...	<.02	<.010	<.006	<.009	69	10
APR						
13...	<.02	<.010	<.006	<.009	321	11
MAY						
12...	<.02	<.010	<.006	E.003	5,380	10
JUN						
14...	<.02	<.010	<.006	E.002	1,750	10
JUL						
11...	<.02	<.010	<.006	<.009	1,400	10
AUG						
11...	<.02	<.010	<.006	<.009	152	10
SEP						
13...	<.02	<.010	<.006	<.009	--	11

06813500 MISSOURI RIVER AT RULO, NE

LOCATION.--Lat 40°03'13", long 95°25'19", in NW$\frac{1}{4}$ NW$\frac{1}{4}$ sec.17, T.1 N., R.18 E., Richardson County, Hydrologic Unit 10240005, on right bank at downstream side of bridge on U.S. Highway 159 at Rulo, 3.2 mi upstream from Big Nemaha River, and 498.0 mi upstream from mouth.

DRAINAGE AREA.--414,900 mi^2, approximately. The 3,959 mi^2 in Great Divide basin are not included.

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

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above NGVD of 1929. Oct. 1949 to Sept. 12, 1950, nonrecording gage at site 80 ft upstream and Sept. 13, 1950 to Apr. 19, 1983, recording gage on downstream end of middle pier, all at same datum.

REMARKS.--Records are considered good. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Army Corps of Engineers data collection platform with satellite telemetry at the station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 358,000 ft^3/s Apr. 22, 1952, gage height, 25.60 ft; minimum daily discharge, 4,420 ft^3/s Jan. 13, 1957; minimum gage height, -0.19 ft Dec. 25, 1990, result of freezeup.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36,000	19,700	20,200	22,100	22,900	20,600	32,800	35,300	44,100	45,700	31,000	31,400
2	35,300	19,700	19,900	22,700	23,200	20,200	33,100	35,200	46,600	44,000	31,100	30,800
3	34,600	20,500	19,800	23,100	23,400	20,000	34,000	35,100	43,500	41,900	31,500	30,800
4	34,600	20,400	19,200	21,900	23,800	20,000	33,200	34,900	45,300	40,400	31,100	30,400
5	34,100	20,400	19,000	19,600	24,200	20,200	32,000	34,000	46,500	39,500	30,800	30,500
6	33,500	19,800	20,100	18,400	24,600	19,900	32,300	34,300	45,800	38,600	30,800	30,000
7	32,900	19,200	21,000	17,700	27,100	19,200	33,800	33,800	54,100	37,800	31,300	30,100
8	32,200	19,200	21,500	17,800	29,600	19,100	32,700	32,900	54,000	36,700	30,900	30,300
9	32,100	18,900	21,200	17,800	25,300	18,900	32,100	33,400	55,500	35,500	30,400	30,700
10	31,400	19,000	20,900	18,100	21,700	18,800	32,300	34,100	59,500	35,000	30,300	30,700
11	29,400	19,200	21,000	18,500	19,900	18,700	32,800	35,200	66,900	34,500	30,500	30,300
12	27,600	19,900	21,600	18,800	19,100	18,900	35,100	41,400	68,300	33,900	32,800	30,500
13	25,800	19,600	21,900	19,100	20,800	18,800	37,500	77,000	60,800	33,700	34,100	30,400
14	23,600	19,200	21,800	19,800	30,200	18,400	37,600	78,600	54,800	33,600	36,300	31,100
15	22,800	19,000	21,600	20,100	42,800	18,100	36,900	71,400	52,300	33,000	31,200	32,100
16	22,500	19,200	21,100	19,800	39,900	17,900	34,900	58,600	49,800	32,300	30,000	32,000
17	22,100	19,000	19,800	19,400	33,800	17,700	34,700	54,200	49,000	32,100	30,400	32,000
18	21,800	18,800	19,800	19,700	28,800	17,800	34,100	53,900	48,700	33,300	30,700	31,900
19	21,400	18,400	20,600	20,000	26,900	17,200	33,500	49,700	48,000	33,900	30,600	31,900
20	20,800	18,900	20,600	20,800	25,700	16,900	35,600	46,600	47,700	33,000	30,300	32,900
21	20,500	20,000	20,300	21,400	24,300	16,900	41,400	46,700	46,600	32,400	30,100	32,900
22	20,400	19,900	19,400	21,800	23,600	17,900	43,900	44,300	45,700	32,200	30,400	32,500
23	20,400	20,600	19,200	23,200	23,300	21,000	45,900	42,300	45,200	32,600	29,900	31,900
24	20,100	20,700	18,500	22,800	23,000	25,200	42,400	43,400	51,900	32,000	30,000	31,700
25	20,000	20,100	18,400	21,100	22,400	28,900	39,900	42,100	51,300	31,200	30,100	31,300
26	20,200	19,900	17,600	18,300	21,700	32,800	38,700	40,200	47,700	34,100	29,700	31,100
27	20,100	20,000	18,000	17,900	21,000	33,700	38,400	41,200	47,600	40,000	31,000	31,700
28	19,900	19,900	18,900	22,300	20,700	33,000	37,500	41,700	51,200	36,900	31,100	34,000
29	20,200	20,100	20,500	24,900	---	33,100	36,500	42,100	49,600	33,500	31,300	33,900
30	19,900	20,300	20,800	24,400	---	32,500	35,800	41,600	46,600	32,900	31,600	33,500
31	19,600	---	20,300	22,900	---	32,500	---	40,600	---	32,000	31,700	---
TOTAL	795,800	589,500	624,500	636,200	713,700	684,800	1,081,400	1,375,800	1,524,600	1,098,200	963,000	945,300
MEAN	25,670	19,650	20,150	20,520	25,490	22,090	36,050	44,380	50,820	35,430	31,060	31,510
MAX	36,000	20,700	21,900	24,900	42,800	33,700	45,900	78,600	68,300	45,700	36,300	34,000
MIN	19,600	18,400	17,600	17,700	19,100	16,900	32,000	32,900	43,500	31,200	29,700	30,000
AC-FT	1,578,000	1,169,000	1,239,000	1,262,000	1,416,000	1,358,000	2,145,000	2,729,000	3,024,000	2,178,000	1,910,000	1,875,000
CFSM	0.06	0.05	0.05	0.05	0.06	0.05	0.09	0.11	0.12	0.09	0.07	0.08
IN.	0.07	0.05	0.06	0.06	0.06	0.06	0.10	0.12	0.14	0.10	0.09	0.08

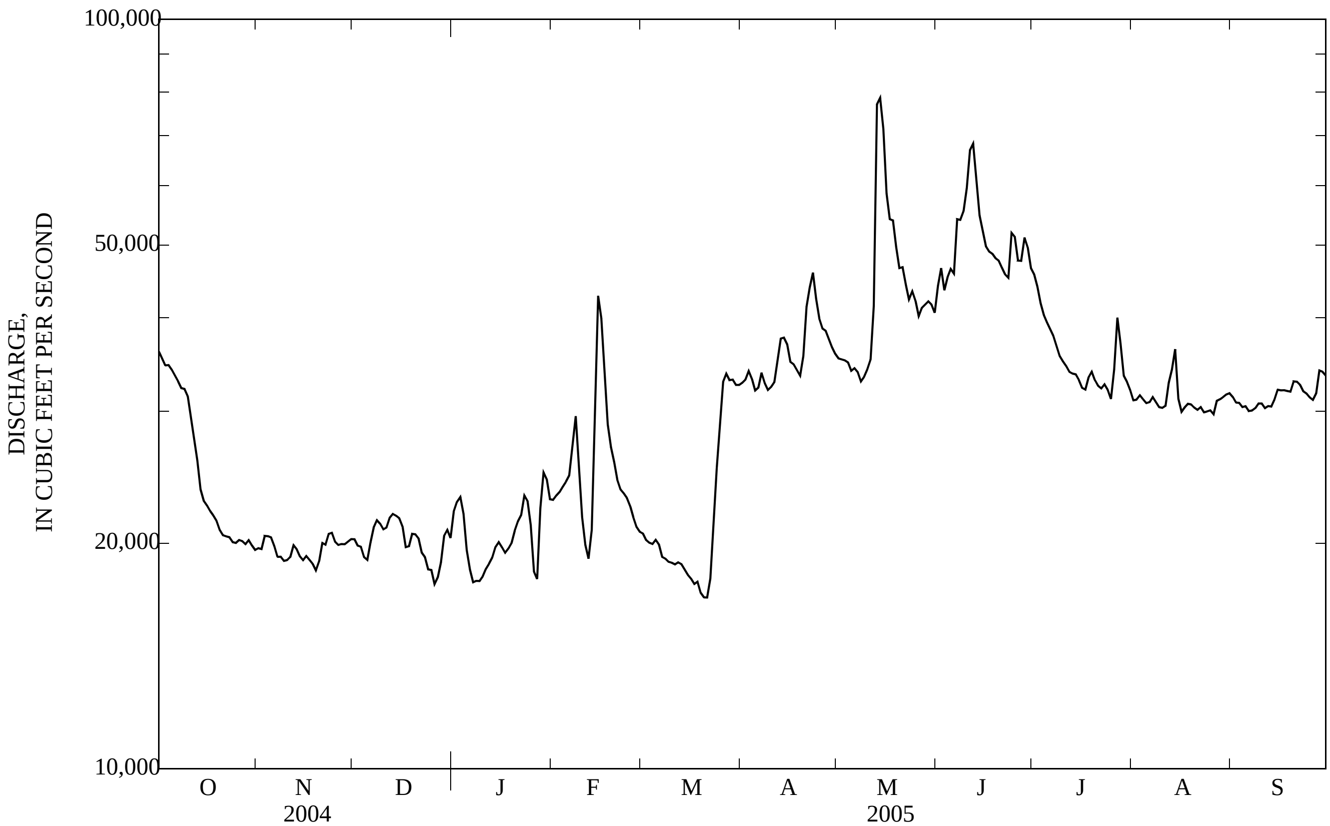
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	44,040	40,370	26,950	22,710	28,290	40,370	50,410	51,600	56,230	50,120	44,140	44,360
MAX	80,050	83,880	57,380	42,280	53,140	79,590	106,100	97,280	130,600	164,800	78,730	76,410
(WY)	(1998)	(1998)	(1998)	(1973)	(1997)	(1979)	(1997)	(1997)	(1984)	(1993)	(1996)	(1997)
MIN	25,580	17,000	9,953	10,800	13,220	15,380	21,820	33,790	33,710	29,650	29,320	31,510
(WY)	(1962)	(1962)	(1956)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(2002)	(2003)	(2005)

06813500 MISSOURI RIVER AT RULO, NE—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005 a	
ANNUAL TOTAL	11,800,500		11,032,800			
ANNUAL MEAN	32,240		30,230		41,670	
HIGHEST ANNUAL MEAN					71,880	1997
LOWEST ANNUAL MEAN					26,340	1957
HIGHEST DAILY MEAN	98,000	May 25	78,600	May 14	289,000	Jul 24, 1993
LOWEST DAILY MEAN	16,100	Jan 9	16,900	Mar 20 b	4,420	Jan 13, 1957
ANNUAL SEVEN-DAY MINIMUM	17,400	Jan 6	17,500	Mar 16	5,560	Nov 30, 1955
MAXIMUM PEAK FLOW			85,900	May 13	307,000	Jul 24, 1993
MAXIMUM PEAK STAGE			17.19	May 13	25.37	Jul 24, 1993
ANNUAL RUNOFF (AC-FT)	23,410,000		21,880,000		30,180,000	
ANNUAL RUNOFF (CFSM)	0.078		0.073		0.100	
ANNUAL RUNOFF (INCHES)	1.06		0.99		1.36	
10 PERCENT EXCEEDS	47,800		45,700		66,000	
50 PERCENT EXCEEDS	31,500		30,500		38,300	
90 PERCENT EXCEEDS	19,500		19,100		19,100	

a Post regulation.
b Also Mar. 21.



06817000 NODAWAY RIVER AT CLARINDA, IA

LOCATION.--Lat 40°44'22", long 95°00'47", in SW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.32, T.69 N., R.36 W., Page County, Hydrologic Unit 10240009, near left abutment on downstream side of bridge on State Highway 2 (city route), 0.5 mi downstream from North Branch, 1.2 mi east of city square of Clarinda, 7.5 mi upstream from East Nodaway River, and 12.0 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--762 mi^2.

PERIOD OF RECORD.--May 1918 to July 1925, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310. No winter records 1918-1925.

REVISED RECORDS.--WSP 1240: 1918-20 (M), 1921, 1922-25 (M), 1936-38, 1942, 1943-45 (M), 1948. WSP 1440: Drainage area. WSP 1710: 1958, 1959 (P).

GAGE.--Water-stage recorder. Datum of gage is 955.36 ft above NGVD of 1929. Prior to July 5, 1925, and May 28, 1936 to Mar. 26, 1957, nonrecording gage at same site, and prior to Oct. 1, 1987, at datum 5.00 ft. higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Clarinda municipal water supply is taken from Nodaway River, 500 ft upstream from station. Average daily pumpage was 1.44 ft^3/s. U.S. Geological Survey data collection platform with satellite telemetry at the station.

COOPERATION.--Average pumpage provided by City of Clarinda water works.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1903 reached a stage of 25.4 ft, from floodmarks, discharge not determined.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	50	e44	70	e78	e148	115	275	477	150	64	33
2	48	51	e48	e56	e82	179	104	250	404	141	60	33
3	51	68	48	e54	e97	181	106	230	427	133	57	33
4	49	70	54	e41	e101	183	105	209	422	131	55	32
5	45	60	54	e39	e92	169	102	198	372	125	54	30
6	47	63	64	e32	e108	165	139	194	326	123	50	29
7	48	61	63	e41	e81	146	148	189	285	114	48	29
8	53	56	66	e42	e75	140	112	184	268	109	45	31
9	50	55	62	e62	e74	133	110	172	442	109	43	32
10	49	53	58	e55	e71	129	106	162	662	103	43	31
11	45	55	57	e59	e97	126	343	677	794	98	50	29
12	43	53	56	e59	e102	124	520	4,620	712	92	59	29
13	44	54	41	e52	e958	122	421	10,400	641	88	79	27
14	44	53	36	e44	1,840	109	298	3,510	522	82	77	28
15	44	52	61	e39	932	108	241	2,010	451	77	55	32
16	44	54	53	e40	601	114	225	1,460	381	73	50	33
17	46	57	e52	e45	476	122	242	1,210	344	71	47	31
18	44	59	e49	e56	391	117	222	1,030	315	225	45	30
19	44	64	e31	e69	338	109	201	927	290	141	43	29
20	46	61	e45	e75	326	109	209	812	265	118	43	27
21	52	63	e44	e75	313	105	291	727	249	94	41	26
22	57	59	e34	e57	286	102	543	684	237	99	40	26
23	53	54	e27	e58	247	114	580	629	223	105	36	28
24	51	51	e27	e66	224	113	522	571	208	83	37	29
25	48	51	e42	e84	226	132	435	534	198	71	39	29
26	50	54	e44	e88	214	145	434	514	189	147	40	29
27	55	54	53	e82	206	136	363	501	181	142	55	27
28	62	51	49	e90	176	123	339	464	209	141	46	30
29	63	e49	56	e82	---	120	324	459	191	93	38	31
30	50	e43	75	e87	---	116	285	470	189	78	34	31
31	49	---	77	e89	---	114	---	444	---	72	34	---
TOTAL	1,526	1,678	1,570	1,888	8,812	4,053	8,185	34,716	10,874	3,428	1,507	894
MEAN	49.2	55.9	50.6	60.9	315	131	273	1,120	362	111	48.6	29.8
MAX	63	70	77	90	1,840	183	580	10,400	794	225	79	33
MIN	43	43	27	32	71	102	102	162	181	71	34	26
AC-FT	3,030	3,330	3,110	3,740	17,480	8,040	16,230	68,860	21,570	6,800	2,990	1,770
CFSM	0.06	0.07	0.07	0.08	0.41	0.17	0.36	1.47	0.48	0.15	0.06	0.04
IN.	0.07	0.08	0.08	0.09	0.43	0.20	0.40	1.69	0.53	0.17	0.07	0.04

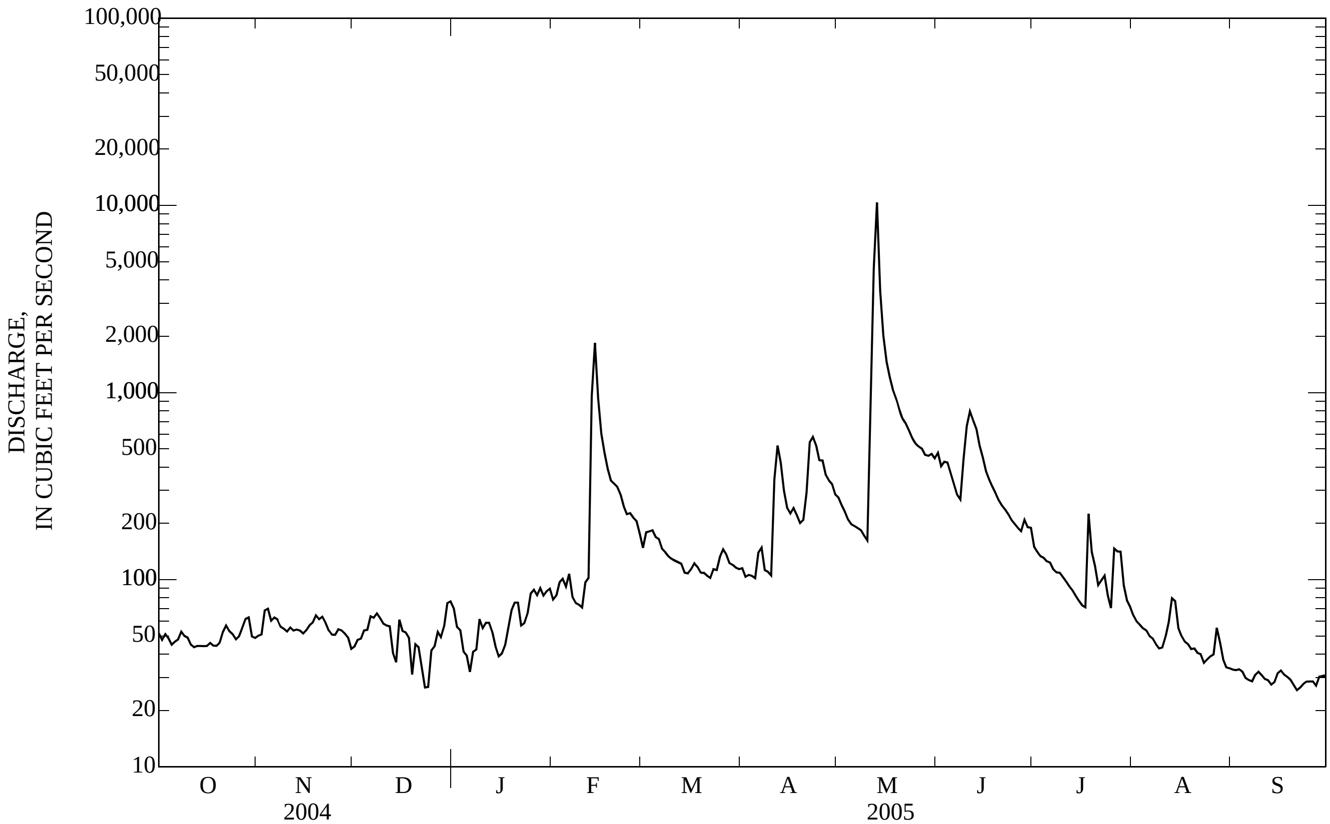
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	167	167	132	125	307	560	551	717	752	424	226	301
MAX	1,658	1,602	1,090	853	1,857	2,456	2,450	2,489	4,779	6,778	1,953	3,019
(WY)	(1974)	(1973)	(1993)	(1974)	(1973)	(1979)	(1973)	(1996)	(1947)	(1993)	(1987)	(1972)
MIN	7.52	8.27	2.10	6.00	11.3	14.0	14.4	10.3	20.0	17.3	9.81	6.83
(WY)	(1938)	(1938)	(1924)	(1924)	(1940)	(1938)	(1956)	(1939)	(1968)	(1954)	(1936)	(1937)

06817000 NODAWAY RIVER AT CLARINDA, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1919 - 2005	
ANNUAL TOTAL	114,234		79,131			
ANNUAL MEAN	312		217		374	
HIGHEST ANNUAL MEAN					1,577	1993
LOWEST ANNUAL MEAN					36.8	1968
HIGHEST DAILY MEAN	5,450	May 30	10,400	May 13	25,500	Sep 13, 1972
LOWEST DAILY MEAN	14	Jan 6	26	Sep 21 a	1.0	Dec 9, 1923 b
ANNUAL SEVEN-DAY MINIMUM	22	Jan 4	28	Sep 19	1.3	Dec 25, 1923
MAXIMUM PEAK FLOW			15,900	May 13	31,100	Jun 13, 1947 c
MAXIMUM PEAK STAGE			16.84	May 13	25.30	Jun 13, 1947 d
INSTANTANEOUS LOW FLOW			13	Dec 13		
ANNUAL RUNOFF (AC-FT)	226,600		157,000		271,000	
ANNUAL RUNOFF (CFSM)	0.410		0.285		0.491	
ANNUAL RUNOFF (INCHES)	5.58		3.86		6.67	
10 PERCENT EXCEEDS	639		447		819	
50 PERCENT EXCEEDS	116		77		100	
90 PERCENT EXCEEDS	34		34		20	

a Also Sep. 22.
b Also Dec. 27-31, 1923.
c From rating curve extended above 15,000 ft^3/s on basis of an overflow profile and extended channel rating.
d From floodmark.
e Estimated.



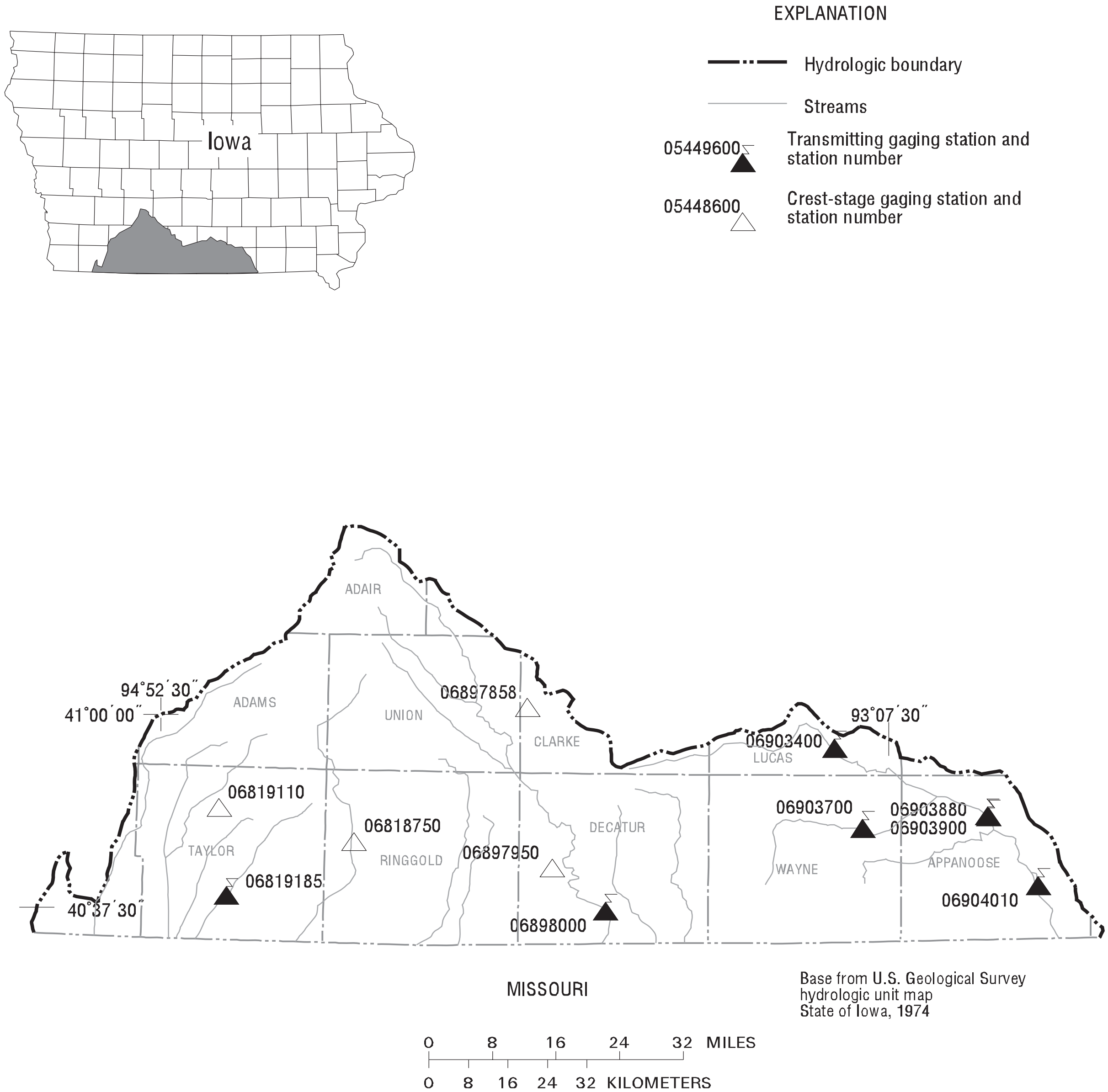


Figure 22. Locations of active continous-record and crest-stage gaging stations in the Platte River, Grand River and Chariton River drainage basins.

Gaging Stations

Crest Stage Gaging Stations

06819185 EAST FORK ONE HUNDRED AND TWO RIVER AT BEDFORD, IA

LOCATION.--Lat 40°39'38", long 94°42'59", in NE¼ sec.35, T.68 N., R.34 W., Taylor County, Hydrologic Unit 10240013, on left bank at downstream side of bridge of County Highway N44, 0.1 mi south of Bedford, 0.4 mi upstream from concrete stablization dam, 3.0 mi upstream from Daugherty Creek, and 9.1 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--85.4 mi^2.

PERIOD OF RECORD.--October 1983 to current year. September 1959 to September 1983, at site 2 mi downstream published as "near Bedford" (station 06819190) not equivalent because of difference in drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,069.16 ft above NGVD of 1929.

REMARKS.--Records are considered fair, except for those estimated daily discharges, which are poor. Slight regulation at low flow by low dam used for water supply in Bedford. U.S. Geolocial Survey data collection platform with satellite telemetry and a U.S. National Weather Service Limited Automatic Remote Collector (LARC) at the station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	21	7.3	4.8	15	18	9.9	9.4	6.8	4.3	1.8	0.57
2	3.6	35	7.3	4.8	13	20	8.0	8.2	4.5	1.9	1.3	0.55
3	2.5	12	7.1	5.6	36	19	9.0	7.1	8.7	1.3	1.2	0.53
4	2.5	49	7.5	3.6	55	18	10	6.2	28	1.4	1.2	0.53
5	2.0	20	8.5	3.3	48	15	10	6.0	30	1.2	1.1	0.51
6	2.0	14	29	e1.6	113	17	44	5.7	11	1.1	0.97	0.50
7	1.9	9.0	23	e3.1	134	37	255	5.4	5.8	1.0	0.79	0.49
8	1.5	6.0	14	e1.7	47	22	90	5.0	10	0.96	0.67	0.47
9	2.3	5.6	14	3.7	35	19	64	4.6	112	0.92	0.62	0.48
10	1.8	6.0	13	4.1	26	19	50	4.3	43	0.90	0.59	0.48
11	e1.3	6.8	9.9	3.7	29	18	842	154	36	0.89	0.57	0.48
12	e1.4	6.6	9.9	4.3	93	18	236	784	512	0.86	1.1	0.47
13	1.4	5.3	7.2	e3.5	e1,590	14	108	1,380	815	0.85	50	0.51
14	1.2	5.2	5.9	e1.6	398	12	69	197	109	0.84	19	0.48
15	1.2	6.0	5.6	e1.2	152	11	53	101	62	0.82	3.2	0.46
16	1.5	6.7	7.8	e1.2	100	13	45	72	42	0.82	1.8	0.45
17	2.7	7.6	7.5	e1.4	81	13	38	54	30	0.83	1.4	0.46
18	3.9	8.1	7.7	2.0	68	13	36	41	15	20	1.3	0.47
19	3.2	45	e3.3	2.5	62	12	36	34	9.0	10	1.2	0.47
20	5.0	32	4.9	3.9	74	9.2	28	20	5.6	2.1	1.3	0.46
21	6.2	16	6.6	6.4	66	9.6	33	15	3.8	77	1.2	0.44
22	8.5	12	4.6	e2.9	55	13	175	34	4.6	7.5	1.1	0.46
23	8.2	12	e1.8	3.5	49	15	63	13	4.1	1.5	0.92	0.45
24	9.7	9.4	e1.5	3.1	46	14	41	7.9	2.9	1.1	0.73	0.45
25	11	8.2	2.3	e12	38	25	41	6.1	3.0	0.93	0.56	0.47
26	10	8.5	3.0	e129	30	19	35	6.1	3.7	541	214	0.47
27	14	11	4.0	e50	30	15	22	4.8	2.3	100	28	0.46
28	21	9.3	4.7	15	24	15	18	4.1	8.2	11	1.6	0.45
29	17	7.8	5.2	13	---	14	15	6.0	3.2	3.8	7.1	0.44
30	19	7.6	7.8	32	---	15	12	7.1	6.9	2.6	1.6	0.47
31	12	---	10	26	---	14	---	3.9	---	2.1	0.81	---
TOTAL	184.3	408.7	251.9	354.5	3,507	505.8	2,495.9	3,006.9	1,938.1	801.52	348.73	14.38
MEAN	5.95	13.6	8.13	11.4	125	16.3	83.2	97.0	64.6	25.9	11.2	0.48
MAX	21	49	29	129	1,590	37	842	1,380	815	541	214	0.57
MIN	1.2	5.2	1.5	1.2	13	9.2	8.0	3.9	2.3	0.82	0.56	0.44
AC-FT	366	811	500	703	6,960	1,000	4,950	5,960	3,840	1,590	692	29
CFSM	0.07	0.16	0.10	0.13	1.47	0.19	0.97	1.14	0.76	0.30	0.13	0.01
IN.	0.08	0.18	0.11	0.15	1.53	0.22	1.09	1.31	0.84	0.35	0.15	0.01

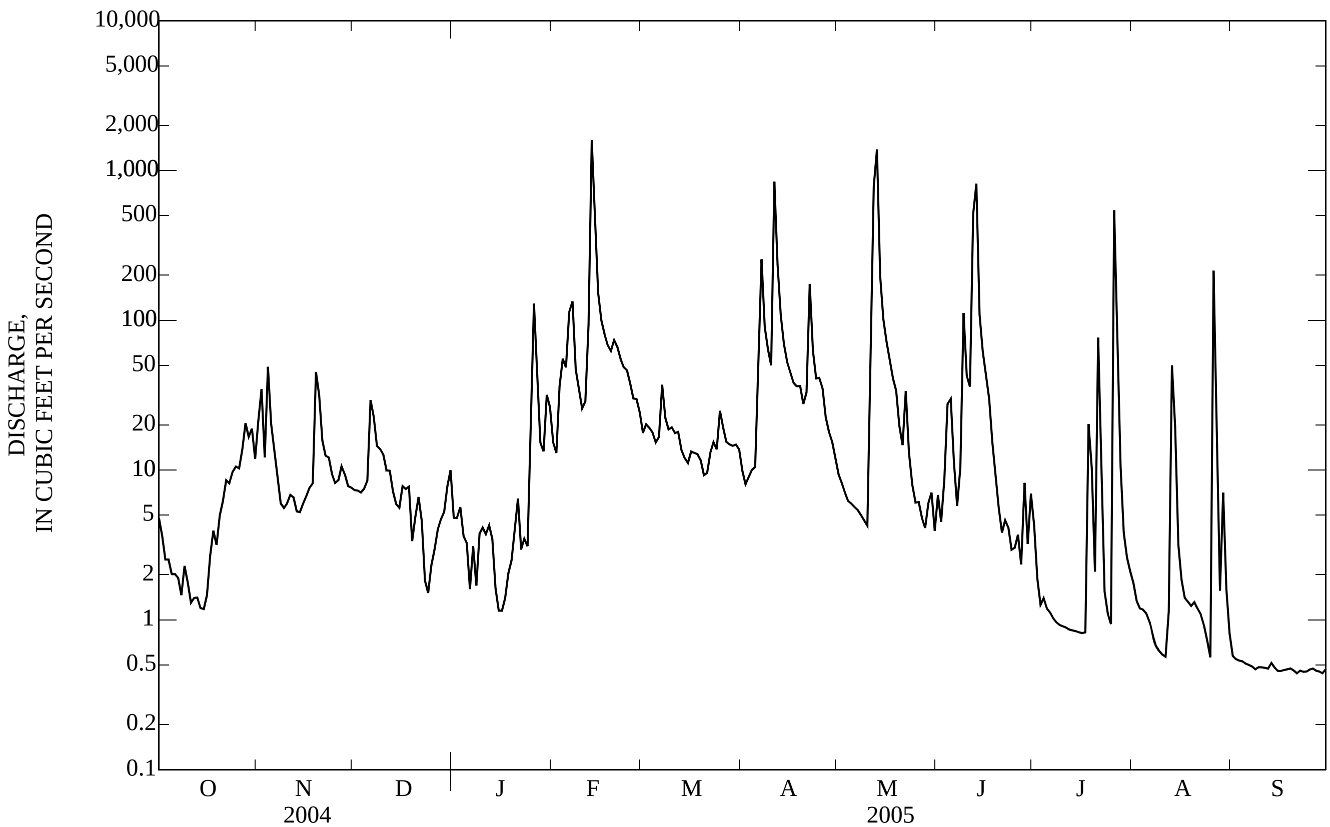
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	19.6	25.0	22.8	9.74	43.4	74.5	89.4	137	96.7	99.1	23.0	41.9
MAX	159	202	181	50.2	149	276	289	488	255	889	173	260
(WY)	(1987)	(1993)	(1993)	(1998)	(1997)	(1998)	(1984)	(1995)	(1995)	(1993)	(1987)	(1993)
MIN	0.18	0.28	0.31	0.22	0.17	2.13	0.82	0.67	1.90	0.39	0.41	0.19
(WY)	(2004)	(2003)	(2003)	(2003)	(1989)	(1989)	(1989)	(1989)	(1988)	(2003)	(2003)	(2003)

06819185 EAST FORK ONE HUNDRED AND TWO RIVER AT BEDFORD, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1984 - 2005	
ANNUAL TOTAL	18,964.60		13,817.73			
ANNUAL MEAN	51.8		37.9		56.9	
HIGHEST ANNUAL MEAN					200	1993
LOWEST ANNUAL MEAN					6.30	2003
HIGHEST DAILY MEAN	1,520	Aug 4	1,590	Feb 13	7,600	Jul 5, 1993
LOWEST DAILY MEAN	0.53	Feb 3	0.44	Sep 21 a	0.00	Jul 6, 1989 b
ANNUAL SEVEN-DAY MINIMUM	1.4	Oct 10	0.46	Sep 23	0.00	Aug 3, 1989 c
MAXIMUM PEAK FLOW			3,650	Jun 12	9,570	Jul 14, 1986
MAXIMUM PEAK STAGE			18.72	May 13 d	23.85	Jul 5, 1993
INSTANTANEOUS LOW FLOW			0.43	Sep 21 f		
ANNUAL RUNOFF (AC-FT)	37,620		27,410		41,210	
ANNUAL RUNOFF (CFSM)	0.607		0.443		0.666	
ANNUAL RUNOFF (INCHES)	8.26		6.02		9.05	
10 PERCENT EXCEEDS	75		62		90	
50 PERCENT EXCEEDS	9.5		7.5		6.7	
90 PERCENT EXCEEDS	1.6		0.77		0.54	

a Also Sep. 29.
b Many days between July 6 to Dec. 24, 1989.
c Also Sept. 20, 2002.
d From backwater.
e Estimated.
f Also Sep. 27-29.



06898000 THOMPSON RIVER AT DAVIS CITY, IA

LOCATION.--Lat 40°38'25", long 93°48'29", in SE$\frac{1}{4}$ SE$\frac{1}{4}$ sec.35, T.68 N., R.26 W., Decatur County, Hydrologic Unit 10280102, on left bank 15 ft downstream from bridge on U.S. Highway 69 at Davis City, 3.1 mi upstream from Dickersons Branch, and 5.8 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--701 mi^2.

PERIOD OF RECORD.--May 1918 to July 1925, July 1941 to current year. Monthly discharge only for some periods, published in WSP 1310. No winter records 1921-25. Prior to October 1918, published as "Grand River".

REVISED RECORDS.--WSP 1240: 1918, 1920-21 (M), 1922-24, 1925 (M), 1946-47 (M). WSP 1440: Drainage area. WSP 1710: 1957.

GAGE.--Water-stage recorder. Datum of gage is 874.04 ft above NGVD of 1929. May 14, 1918 to July 2, 1925, July 14, 1941 to Feb. 24, 1942, nonrecording gage, and Feb. 25, 1942 to Feb. 8, 1967, water-stage recorder at same site at datum 2.00 ft higher.

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 8, 1885, reached a stage of 22.8 ft, datum in use prior to Feb. 9, 1967, from floodmark, discharge, 30,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	25	e26	23	170	e111	94	242	220	359	34	14
2	33	24	e29	e20	136	122	91	210	349	267	31	13
3	32	25	30	e18	118	116	89	198	361	151	30	13
4	28	40	29	e13	176	128	91	195	395	95	28	12
5	25	83	29	e12	257	132	84	185	2,930	78	26	11
6	25	77	34	e7.2	299	124	93	174	980	71	25	11
7	26	58	48	e10	e367	122	1,810	163	556	66	23	11
8	25	45	55	e10	e203	114	1,050	156	765	62	23	10
9	24	37	48	e21	e188	105	494	148	3,320	59	22	10
10	23	32	46	e16	e170	101	338	144	1,600	53	21	10
11	22	30	41	21	222	93	449	149	1,130	49	21	9.2
12	22	28	37	22	205	92	1,960	179	689	46	22	8.4
13	22	28	e24	e20	1,180	92	1,340	2,090	1,000	43	52	9.3
14	20	28	e19	e14	1,860	88	659	4,390	2,340	42	77	9.9
15	19	29	21	e11	1,460	83	452	3,310	938	40	63	8.6
16	17	31	21	e12	731	83	358	1,230	606	39	37	8.6
17	17	32	21	e12	435	85	310	840	490	37	28	7.7
18	18	32	e17	14	319	83	279	693	423	45	25	7.5
19	17	36	e12	14	260	80	253	858	380	52	23	8.1
20	17	38	e16	15	245	82	235	631	350	59	23	7.9
21	18	39	e16	15	244	80	316	475	325	59	21	7.0
22	19	38	e13	e11	235	77	2,340	445	308	55	25	8.0
23	20	34	e9.0	e12	209	79	1,540	406	289	47	23	7.6
24	18	33	e8.6	13	188	77	738	338	275	59	18	7.9
25	21	31	11	e25	180	80	483	288	258	62	17	7.6
26	20	31	12	e327	172	91	391	263	241	71	20	6.9
27	20	32	12	e194	164	103	449	235	224	108	18	6.0
28	25	30	13	144	153	116	384	220	212	73	18	11
29	26	29	14	115	---	114	323	215	211	65	34	8.5
30	21	e25	18	112	---	104	278	232	226	50	26	6.3
31	20	---	21	210	---	98	---	213	---	41	20	---
TOTAL	698	1,080	750.6	1,483.2	10,546	3,055	17,771	19,515	22,391	2,403	874	277.0
MEAN	22.5	36.0	24.2	47.8	377	98.5	592	630	746	77.5	28.2	9.23
MAX	38	83	55	327	1,860	132	2,340	4,390	3,320	359	77	14
MIN	17	24	8.6	7.2	118	77	84	144	211	37	17	6.0
AC-FT	1,380	2,140	1,490	2,940	20,920	6,060	35,250	38,710	44,410	4,770	1,730	549
CFSM	0.03	0.05	0.03	0.07	0.54	0.14	0.85	0.90	1.06	0.11	0.04	0.01
IN.	0.04	0.06	0.04	0.08	0.56	0.16	0.94	1.04	1.19	0.13	0.05	0.01

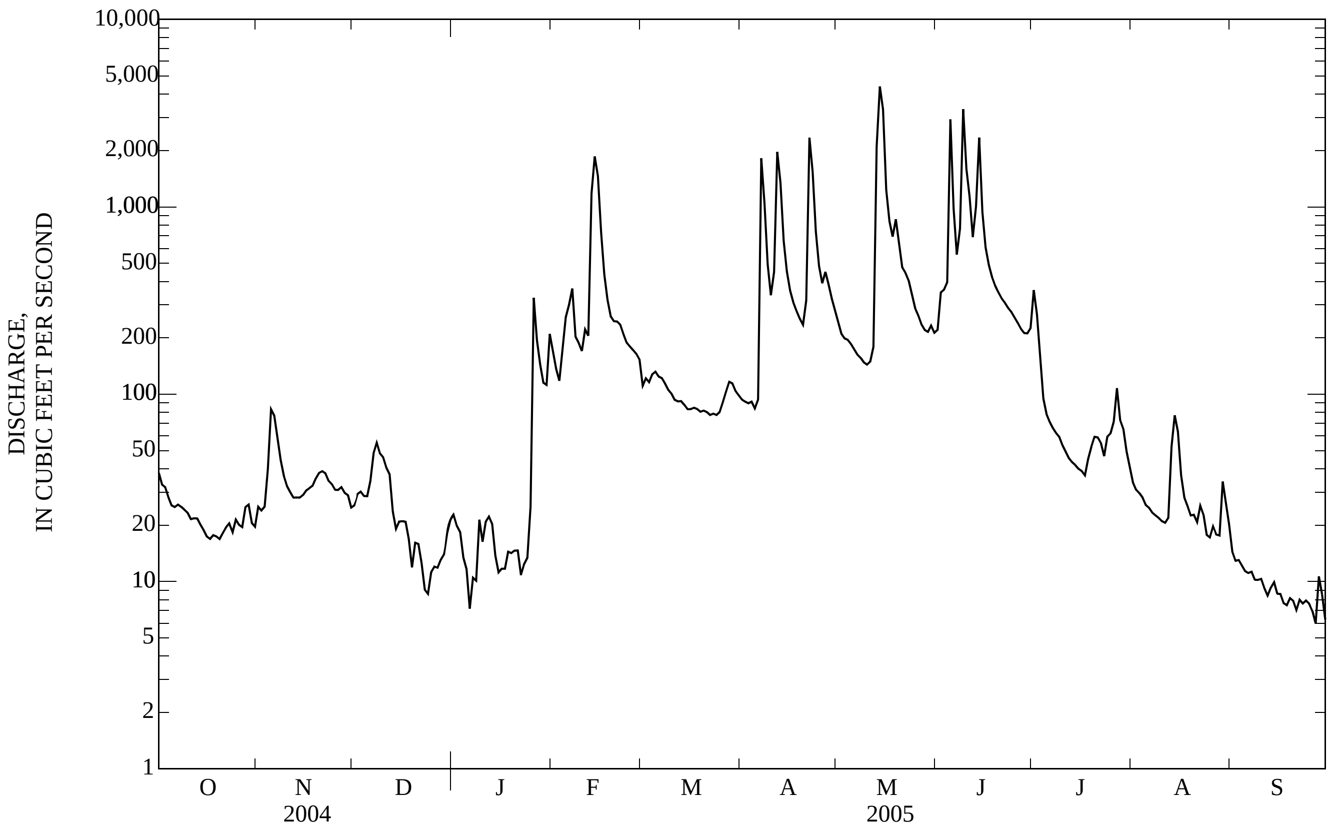
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	177	204	141	146	327	631	677	697	644	406	193	317
MAX	2,138	1,462	1,299	1,292	1,849	2,375	2,586	3,364	4,750	7,239	2,255	5,178
(WY)	(1974)	(1962)	(1983)	(1960)	(1973)	(1979)	(1973)	(1996)	(1947)	(1993)	(1987)	(1992)
MIN	1.41	2.07	0.94	0.62	1.14	10.7	2.55	1.19	3.08	1.98	6.16	3.87
(WY)	(1957)	(1956)	(1956)	(1956)	(1956)	(1954)	(1956)	(1956)	(1956)	(1977)	(2003)	(2003)

06898000 THOMPSON RIVER AT DAVIS CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1919 - 2005	
ANNUAL TOTAL	115,564.8		80,843.8			
ANNUAL MEAN	316		221		382	
HIGHEST ANNUAL MEAN					1,469	1993
LOWEST ANNUAL MEAN					28.6	2000
HIGHEST DAILY MEAN	9,340	Aug 28	4,390	May 14	52,900	Sep 16, 1992
LOWEST DAILY MEAN	2.1	Jan 27	6.0	Sep 27	0.10	Jun 25, 1956
ANNUAL SEVEN-DAY MINIMUM	8.5	Feb 9	7.3	Sep 21	0.36	Jun 19, 1956
MAXIMUM PEAK FLOW			4,490	May 14	57,000	Sep 16, 1992
MAXIMUM PEAK STAGE			6.04	May 14	24.29	Sep 16, 1992
INSTANTANEOUS LOW FLOW			5.4	Sep 27		
ANNUAL RUNOFF (AC-FT)	229,200		160,400		277,100	
ANNUAL RUNOFF (CFSM)	0.450		0.316		0.546	
ANNUAL RUNOFF (INCHES)	6.13		4.29		7.41	
10 PERCENT EXCEEDS	694		461		823	
50 PERCENT EXCEEDS	89		52		79	
90 PERCENT EXCEEDS	13		12		9.0	

e Estimated



06903400 CHARITON RIVER NEAR CHARITON, IA

LOCATION.--Lat 40°57'07", long 93°15'35", in SW¼ NE¼ sec.15, T.71 N., R.21 W., Lucas County, Hydrologic Unit 10280201, on right bank 15 ft downstream from bridge on County Highway S43, 0.1 mi downstream from Wolf Creek, 5.0 mi southeast of Chariton, and 63.2 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--182 mi^2.

PERIOD OF RECORD.--October 1965 to current year. Occasional low-flow measurements, water years 1958-60, 1962, 1964.

GAGE.--Water stage recorder. Datum of gage is 917.90 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Beaver activity in September. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at the station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1960 reached a stage of about 23 ft, discharge, about 15,000 ft^3/s and flood of June 5, 1947 reached a stage of 21.65 ft, from floodmark, discharge, 11,000 ft^3/s. A discharge of 0.08 ft^3/s was measured on Oct. 30, 1963.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	e10	5.4	e4.0	e39	e38	17	20	5.1	20	0.95	0.54
2	2.6	e22	7.9	e2.9	e29	e33	15	18	4.5	14	0.86	0.40
3	2.8	e17	7.6	e1.9	e32	30	15	17	4.0	8.5	0.79	0.30
4	3.0	14	7.5	e1.8	e39	29	13	15	5.7	4.9	0.69	0.21
5	3.1	11	8.1	e2.8	e33	27	12	14	324	3.2	0.58	0.12
6	3.3	11	28	e1.6	e27	26	20	13	544	2.5	0.51	0.09
7	3.7	8.3	37	e2.5	e29	26	898	12	173	2.1	0.40	0.11
8	3.8	5.9	22	e3.2	e28	25	776	11	43	1.8	0.32	0.13
9	3.6	5.2	21	e5.1	e26	22	303	11	24	1.5	0.27	0.13
10	3.7	4.7	18	e3.3	e27	21	110	12	20	1.4	0.22	0.09
11	3.7	4.8	14	e4.1	e25	20	155	11	40	1.2	0.17	0.06
12	3.9	4.1	11	e7.1	e30	19	2,560	16	137	1.0	1.8	0.04
13	3.8	3.7	8.3	e7.5	e332	17	1,630	111	173	0.91	4.8	0.06
14	4.5	3.2	e1.3	e3.7	e727	16	734	149	113	0.89	11	0.08
15	4.6	3.0	e3.1	e2.5	e539	14	155	103	59	e0.75	6.3	0.07
16	4.9	3.2	e3.3	e1.8	e212	14	92	41	22	e0.72	3.6	0.07
17	5.2	3.1	e2.0	e1.6	122	14	65	25	13	e0.74	2.3	0.04
18	5.1	3.3	e3.8	e1.2	87	14	50	19	8.6	1.1	3.2	0.03
19	5.5	4.7	e1.7	e1.9	69	13	40	21	6.3	0.92	2.2	0.04
20	5.9	5.4	e2.1	e2.9	65	12	37	18	4.8	e0.74	1.7	0.03
21	6.6	5.3	e2.5	e3.7	71	11	38	17	3.6	e0.69	1.3	0.02
22	7.3	4.6	e1.4	e4.2	65	11	303	15	2.9	e0.66	1.2	0.02
23	7.6	4.1	e0.93	e3.5	58	12	232	12	2.6	e0.62	1.1	0.02
24	7.6	3.9	e0.50	e2.7	50	13	129	9.3	2.4	e0.58	0.89	0.02
25	7.6	4.4	e0.93	e4.3	46	18	62	7.5	2.0	0.54	0.65	0.02
26	7.8	3.2	e1.4	e25	42	21	47	6.6	2.3	1.4	0.70	0.13
27	8.3	3.8	e1.7	e22	40	19	39	5.9	2.9	2.7	0.89	0.06
28	e8.5	3.6	e2.1	e17	41	18	32	5.1	262	2.5	0.65	0.17
29	e6.8	3.6	e1.3	e27	---	17	28	5.6	55	1.7	0.58	0.12
30	e7.2	4.1	e2.8	e34	---	16	24	6.4	21	1.2	0.57	0.08
31	e7.7	---	e5.1	e37	---	18	---	5.8	---	1.1	0.51	---
TOTAL	161.4	188.2	233.76	243.8	2,930	604	8,631	753.2	2,080.7	82.56	51.70	3.30
MEAN	5.21	6.27	7.54	7.86	105	19.5	288	24.3	69.4	2.66	1.67	0.11
MAX	8.5	22	37	37	727	38	2,560	149	544	20	11	0.54
MIN	1.7	3.0	0.50	1.2	25	11	12	5.1	2.0	0.54	0.17	0.02
CFSM	0.03	0.03	0.04	0.04	0.57	0.11	1.58	0.13	0.38	0.01	0.01	0.00
IN.	0.03	0.04	0.05	0.05	0.60	0.12	1.76	0.15	0.43	0.02	0.01	0.00

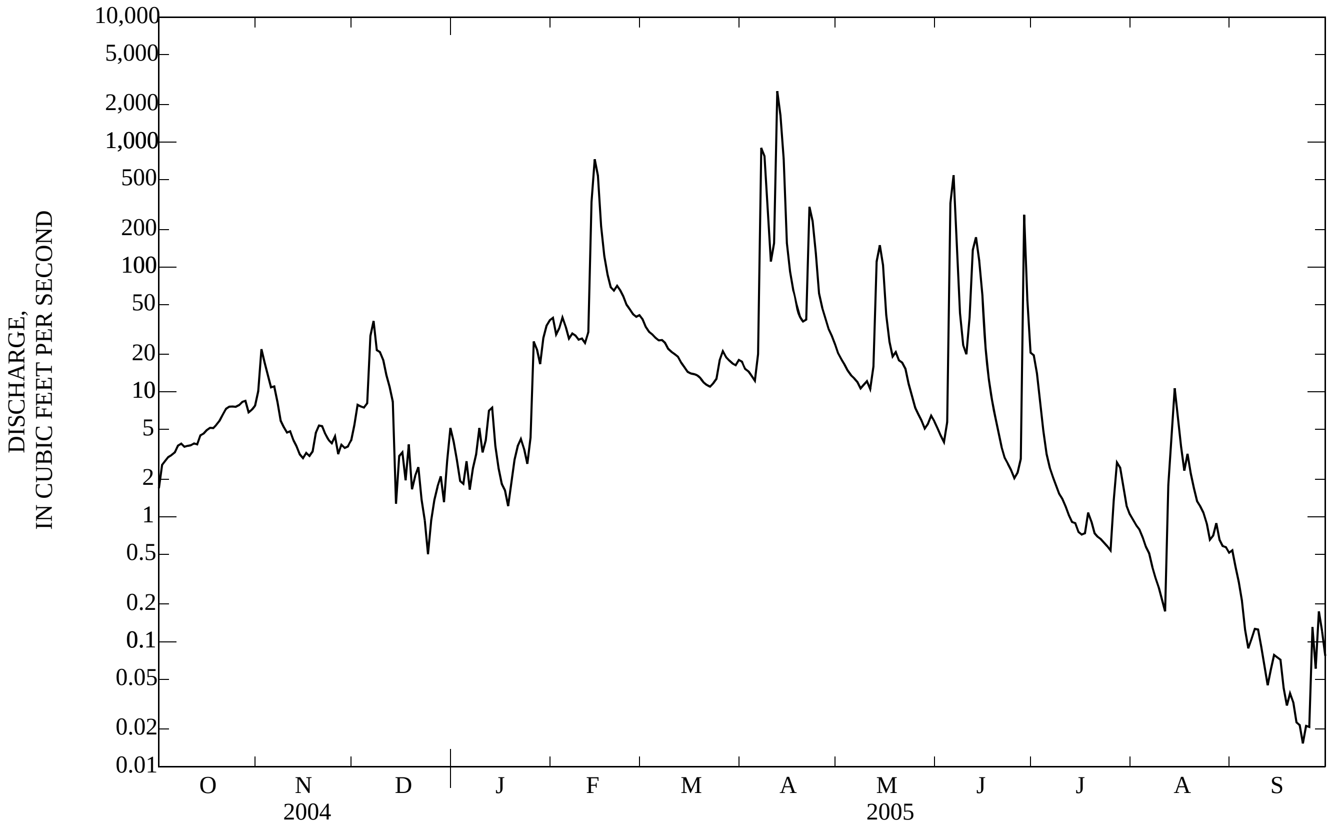
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	72.5	54.8	54.7	32.5	83.5	176	231	226	162	145	74.6	112
MAX	568	294	408	340	403	761	1,093	1,097	856	1,711	618	1,704
(WY)	(1974)	(1993)	(1983)	(1974)	(1997)	(1979)	(1991)	(1995)	(1967)	(1993)	(1987)	(1992)
MIN	0.01	0.00	0.00	0.01	0.22	1.22	0.07	2.12	0.38	0.00	0.04	0.09
(WY)	(1990)	(1990)	(1990)	(2003)	(1989)	(2000)	(1989)	(2000)	(1988)	(1988)	(2003)	(1991)

06903400 CHARITON RIVER NEAR CHARITON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	43,377.46		15,963.62			
ANNUAL MEAN	119		43.7		119	
HIGHEST ANNUAL MEAN					345	1993
LOWEST ANNUAL MEAN					9.71	1989
HIGHEST DAILY MEAN	2,970	Aug 28	2,560	Apr 12	24,600	Sep 15, 1992
LOWEST DAILY MEAN	0.50	Dec 24	0.02	Sep 21 a	0.00	Aug 1, 1977
ANNUAL SEVEN-DAY MINIMUM	1.3	Dec 23	0.02	Sep 19	0.00	Jun 21, 1988
MAXIMUM PEAK FLOW			2,950	Apr 12	37,700	Sep 15, 1992
MAXIMUM PEAK STAGE			17.31	Apr 12	29.32	Sep 15, 1992
ANNUAL RUNOFF (CFSM)	0.651		0.240		0.653	
ANNUAL RUNOFF (INCHES)	8.87		3.26		8.87	
10 PERCENT EXCEEDS	243		58		250	
50 PERCENT EXCEEDS	9.0		5.6		11	
90 PERCENT EXCEEDS	3.1		0.51		0.50	

a Also Sep. 22-25.
e Estimated.



06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IA

LOCATION.--Lat 40°48'02", long 93°11'32", in SW¼ SW¼ sec.5, T.69 N., R.20 W., Wayne County, Hydrologic Unit 10280201, on right bank 20 ft downstream from bridge on County Highway S50, 1.3 mi downstream from Jordan Creek, 4.3 mi northwest of Promise City, 16.0 mi upstream from confluence with Chariton River, and 54.0 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--168 mi^2.

PERIOD OF RECORD.--October 1967 to current year. Occasional low-flow measurements, water years 1958-66, published as "near Bethlehem". Monthly discharge measurements for March 1965 to September 1967 available in files of Iowa City District Office.

GAGE.--Water-stage recorder. Datum of gage is 913.70 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. U.S. Army Corps of Engineers data collection platform with satellite telemetry at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 21, 1965, reached a stage of 25.5 ft, from floodmarks, discharge, about 18,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	11	8.5	e7.8	e126	e39	29	22	5.9	100	1.9	1.5
2	5.4	43	8.8	e5.2	e158	e35	21	20	5.2	42	1.8	1.2
3	4.9	31	8.5	e5.4	e260	29	19	18	5.4	25	1.8	0.86
4	3.8	22	8.3	e4.9	e312	29	18	17	17	19	1.6	0.77
5	3.4	21	10	e4.4	e216	28	17	17	608	16	1.4	0.71
6	3.0	17	77	e2.3	176	26	21	16	104	13	1.3	0.62
7	3.2	12	56	e4.4	439	29	169	15	32	10	1.2	0.67
8	3.5	9.4	31	e7.2	182	29	87	14	17	8.2	1.2	0.73
9	3.1	7.7	22	e9.1	166	23	51	14	14	6.8	1.2	0.62
10	2.9	7.0	18	e9.3	99	22	38	13	12	5.7	1.1	0.53
11	3.0	6.8	16	e10	61	22	185	13	25	4.8	1.3	0.49
12	3.2	6.5	14	e13	75	22	2,040	23	27	4.0	1.7	0.42
13	3.4	5.7	12	e19	1,510	19	361	153	116	3.5	3.4	0.50
14	3.2	5.6	e2.8	e25	706	17	129	93	43	3.3	6.3	0.61
15	3.4	5.8	e4.6	e11	220	16	79	38	17	3.1	3.9	0.49
16	3.4	6.1	e5.8	e8.0	124	17	57	24	9.6	2.9	2.5	0.45
17	3.2	6.1	e3.8	e6.3	81	17	46	18	6.0	2.7	1.9	0.44
18	3.3	7.0	e5.9	e5.4	61	17	38	17	4.6	4.0	1.6	0.49
19	3.4	8.6	e2.9	e5.0	52	16	33	41	4.0	4.0	1.3	0.75
20	3.4	8.8	e4.6	e6.4	57	15	30	22	3.2	3.2	1.3	0.70
21	3.5	8.1	e4.8	e10	70	15	32	15	2.7	2.5	1.2	0.57
22	4.1	7.7	e3.4	e13	56	14	187	12	2.1	2.6	1.1	0.73
23	4.0	7.6	e2.4	e16	46	18	172	10	1.9	2.6	1.0	0.63
24	4.2	7.2	e2.4	e9.1	42	20	63	8.4	1.7	2.3	1.2	0.54
25	4.1	6.8	e2.2	e59	41	30	46	7.1	1.5	2.1	1.4	0.59
26	4.7	7.1	e2.6	e364	38	31	43	6.6	1.3	8.6	1.7	0.84
27	12	7.8	e2.6	e194	37	25	41	6.4	4.1	22	1.8	0.76
28	14	7.7	e4.0	e78	44	22	35	6.2	1,480	8.6	1.7	1.1
29	7.9	8.6	e3.8	e76	---	20	30	6.1	146	3.4	4.7	1.0
30	18	8.9	e5.8	e93	---	23	26	7.1	248	2.4	3.8	1.0
31	16	---	e11	e108	---	41	---	7.1	---	2.1	2.2	---
TOTAL	162.4	325.6	365.5	1,189.2	5,455	726	4,143	700.0	2,965.2	340.4	61.5	21.31
MEAN	5.24	10.9	11.8	38.4	195	23.4	138	22.6	98.8	11.0	1.98	0.71
MAX	18	43	77	364	1,510	41	2,040	153	1,480	100	6.3	1.5
MIN	2.9	5.6	2.2	2.3	37	14	17	6.1	1.3	2.1	1.0	0.42
AC-FT	322	646	725	2,360	10,820	1,440	8,220	1,390	5,880	675	122	42
CFSM	0.03	0.06	0.07	0.23	1.16	0.14	0.82	0.13	0.59	0.07	0.01	0.00
IN.	0.04	0.07	0.08	0.26	1.21	0.16	0.92	0.15	0.66	0.08	0.01	0.00

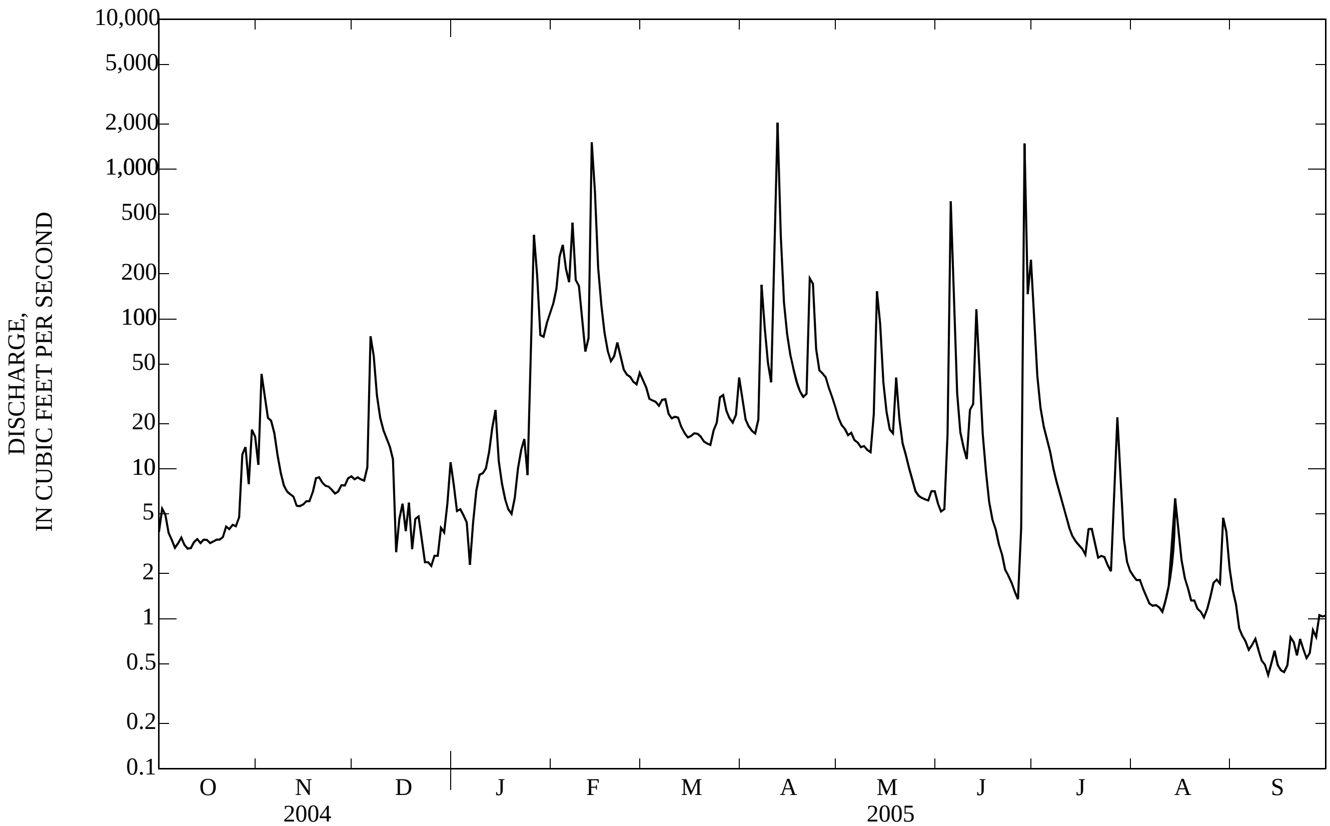
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	88.0	53.9	56.5	34.1	101	178	222	226	159	165	59.1	124
MAX	498	357	440	335	534	853	730	1,043	625	2,351	644	2,227
(WY)	(1978)	(1993)	(1983)	(1974)	(2001)	(1979)	(1991)	(1995)	(2001)	(1993)	(2004)	(1992)
MIN	0.15	0.39	0.40	0.19	0.88	2.74	1.21	1.89	1.18	0.24	0.52	0.45
(WY)	(1989)	(1990)	(1977)	(1977)	(1989)	(2000)	(1989)	(2000)	(1988)	(1977)	(2003)	(2000)

06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1968 - 2005	
ANNUAL TOTAL	44,538.6		16,455.11			
ANNUAL MEAN	122		45.1		122	
HIGHEST ANNUAL MEAN					446	1993
LOWEST ANNUAL MEAN					10.1	2003
HIGHEST DAILY MEAN	6,360	Aug 27	2,040	Apr 12	34,700	Sep 15, 1992
LOWEST DAILY MEAN	2.2	Dec 25	0.42	Sep 12	0.00	Jul 6, 1977 a
ANNUAL SEVEN-DAY MINIMUM	2.8	Dec 22	0.49	Sep 11	0.00	Aug 16, 1989
MAXIMUM PEAK FLOW			3,200	Apr 12	70,600	Sep 15, 1992
MAXIMUM PEAK STAGE			15.79	Apr 12	34.84	Sep 15, 1992
INSTANTANEOUS LOW FLOW			0.38	Sep 11 b		
ANNUAL RUNOFF (AC-FT)	88,340		32,640		88,520	
ANNUAL RUNOFF (CFSM)	0.724		0.268		0.727	
ANNUAL RUNOFF (INCHES)	9.86		3.64		9.88	
10 PERCENT EXCEEDS	131		80		192	
50 PERCENT EXCEEDS	11		8.6		12	
90 PERCENT EXCEEDS	3.6		1.2		0.89	

a Also July 7, 21-24, 28 to Aug. 1, 1977, July 9, 10, and Aug. 14, 18-22, 1989.
b Also Sep. 11-13, 16, 17.
e Estimated.



06903880 RATHBUN LAKE NEAR RATHBUN, IA

LOCATION.--Lat 40°49'30", long 92°53'33", in NW$\frac{1}{4}$ NE$\frac{1}{4}$ sec.35, T.70 N., R.18 W., Appanoose County, Hydrologic Unit 10280201, at control tower of Rathbun Dam, 1.8 mi north of Rathbun, 3.9 mi upstream from Walnut Creek, and 30.1 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--549 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929.

REMARKS.--Reservoir is formed by earthfill dam completed in 1969. Storage began in November 1969. Release is controlled by two hydraulically controlled slide gages, 6 ft wide and 12 ft high, into forechamber of an 11-ft diameter horseshoe conduit through the dam. No dead storage. Maximum design discharge through gates is 5,000 ft^3/s. Uncontrolled notch spillway is concrete overflow section 500 ft in length, located about 3,000 ft west of the right abutment of the dam and provides emergency discharge into the adjacent drainage area of Little Walnut Creek. Uncontrolled notch spillway is at elevation 926 ft, contents 545,621 acre-ft, surface area, 20,974 acres. Conservation pool level is at elevation 904.0 ft, contents 199,830 acre-ft, surface area, 10,989 acres. Reservoir is used for flood control, low-flow augumentation, conservation and recreation. Prior to October 1, 2000 published as mean daily contents in acre feet, and as mean daily elevation in feet NGVD thereafter. U.S. Geological Survey data collection platform with satellite telemetry at station.

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

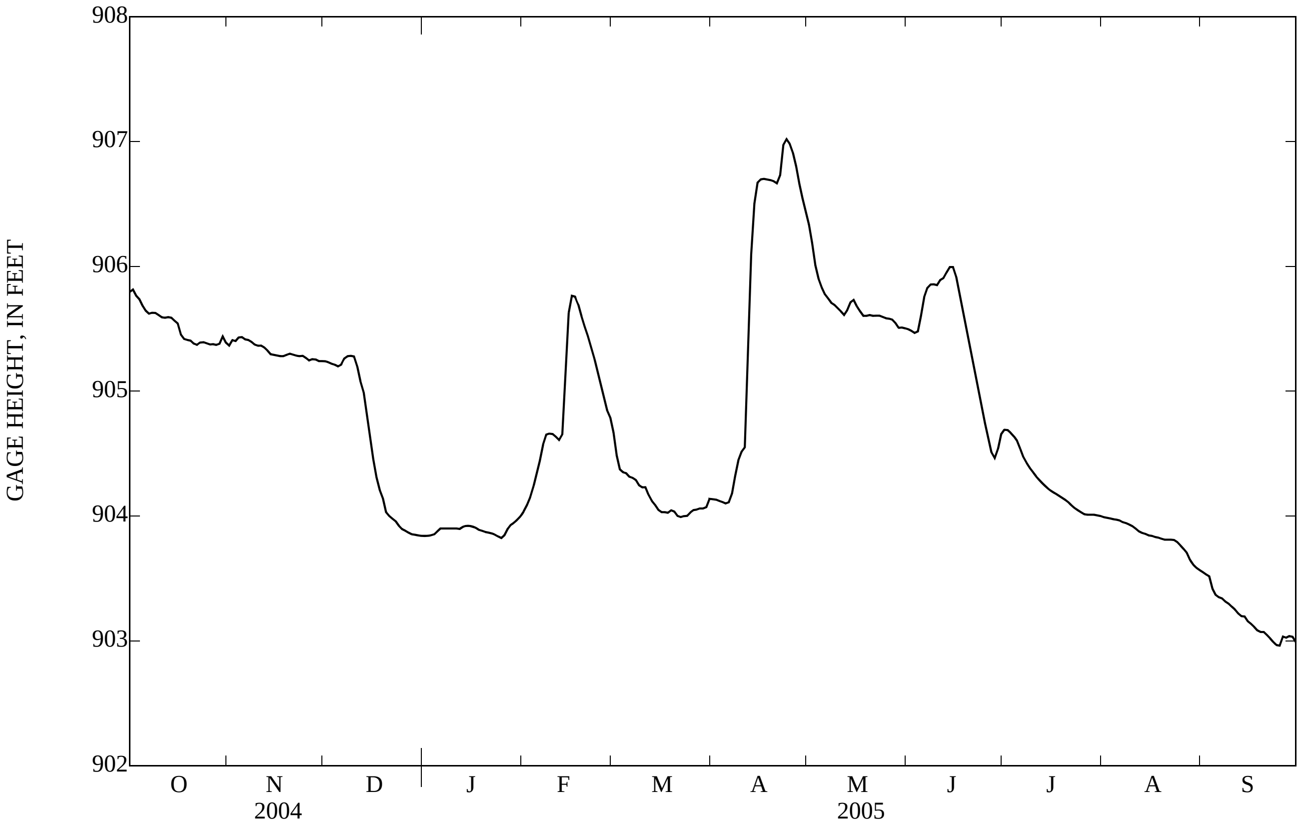
EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 927.16 ft July 28, 1993; minimum elevation, 855.40 ft Oct. 6-10, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 907.02 ft on Apr. 23, 24; minimum elevation, 902.96 ft on Sep. 24, 25.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	905.79	905.36	905.24	903.84	904.04	904.67	904.13	906.34	905.50	904.69	903.99	903.55
2	905.81	905.41	905.23	903.84	904.09	904.49	904.13	906.19	905.48	904.69	903.98	903.53
3	905.76	905.40	905.22	903.84	904.15	904.37	904.12	906.01	905.47	904.66	903.98	903.52
4	905.74	905.43	905.21	903.85	904.23	904.35	904.11	905.90	905.48	904.64	903.97	903.42
5	905.68	905.43	905.20	903.88	904.34	904.34	904.10	905.83	905.61	904.60	903.97	903.37
6	905.64	905.41	905.21	903.90	904.44	904.31	904.11	905.78	905.75	904.54	903.96	903.35
7	905.62	905.41	905.26	903.90	904.57	904.31	904.18	905.74	905.83	904.47	903.95	903.34
8	905.63	905.39	905.28	903.90	904.65	904.29	904.32	905.71	905.85	904.42	903.94	903.31
9	905.63	905.37	905.28	903.90	904.66	904.25	904.45	905.69	905.86	904.38	903.93	903.30
10	905.61	905.36	905.28	903.90	904.66	904.23	904.51	905.66	905.85	904.35	903.92	903.27
11	905.59	905.37	905.20	903.90	904.63	904.23	904.55	905.64	905.89	904.31	903.90	903.25
12	905.59	905.35	905.08	903.90	904.61	904.17	905.26	905.61	905.91	904.29	903.88	903.22
13	905.59	905.33	904.99	903.91	904.65	904.12	906.10	905.65	905.95	904.26	903.86	903.20
14	905.59	905.30	904.81	903.92	905.18	904.09	906.50	905.71	905.99	904.24	903.86	903.19
15	905.56	905.29	904.62	903.92	905.63	904.05	906.67	905.73	905.99	904.21	903.84	903.16
16	905.54	905.28	904.45	903.91	905.76	904.03	906.70	905.68	905.92	904.19	903.84	903.13
17	905.45	905.28	904.31	903.90	905.76	904.03	906.70	905.64	905.79	904.18	903.83	903.11
18	905.42	905.28	904.21	903.89	905.69	904.02	906.70	905.60	905.66	904.16	903.83	903.08
19	905.41	905.29	904.14	903.88	905.60	904.04	906.69	905.60	905.53	904.15	903.82	903.07
20	905.40	905.30	904.03	903.87	905.52	904.03	906.68	905.61	905.40	904.13	903.81	903.07
21	905.38	905.29	904.00	903.87	905.44	904.00	906.66	905.60	905.27	904.11	903.81	903.05
22	905.37	905.28	903.98	903.86	905.35	903.99	906.73	905.60	905.13	904.08	903.81	903.02
23	905.39	905.28	903.96	903.85	905.26	904.00	906.97	905.60	905.01	904.06	903.81	902.99
24	905.39	905.28	903.92	903.84	905.16	904.00	907.02	905.59	904.87	904.05	903.79	902.97
25	905.38	905.27	903.89	903.82	905.06	904.03	906.98	905.58	904.74	904.03	903.76	902.96
26	905.37	905.25	903.88	903.85	904.95	904.05	906.91	905.58	904.63	904.01	903.74	903.03
27	905.38	905.26	903.87	903.89	904.85	904.05	906.80	905.57	904.51	904.01	903.70	903.02
28	905.37	905.25	903.85	903.93	904.79	904.06	906.66	905.55	904.46	904.01	903.65	903.04
29	905.38	905.24	903.85	903.95	---	904.06	906.54	905.51	904.54	904.01	903.61	903.03
30	905.44	905.24	903.84	903.97	---	904.07	906.44	905.51	904.65	904.00	903.58	902.99
31	905.39	---	903.84	904.00	---	904.14	---	905.50	---	904.00	903.57	---
MEAN	905.53	905.32	904.55	903.89	904.92	904.16	905.75	905.69	905.42	904.26	903.84	903.18
MAX	905.81	905.43	905.28	904.00	905.76	904.67	907.02	906.34	905.99	904.69	903.99	903.55
MIN	905.37	905.24	903.84	903.82	904.04	903.99	904.10	905.50	904.46	904.00	903.57	902.96

06903880 RATHBUN LAKE NEAR RATHBUN, IA—Continued



06903900 CHARITON RIVER NEAR RATHBUN, IA

LOCATION.--Lat 40°49'19", long 92°53'28", in SE¼ NE¼ sec.35, T.70 N., R.18 W., Appanoose County, Hydrologic Unit 10280201, on left bank 600 ft downstream from outlet of Rathbun Dam, 1.7 mi north of Rathbun, 3.8 mi upstream from Walnut Creek, and 30.0 mi upstream from Iowa-Missouri State line.

DRAINAGE AREA.--549 mi^2.

PERIOD OF RECORD.--October 1956 to current year. Monthly discharge only for some periods, published in WSP 1730.

REVISED RECORDS.--WSP 1560: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 847.92 ft above NGVD of 1929. Prior to Nov. 16, 1960, nonrecording gage and Nov. 17, 1960 to Sept. 30, 1969, recording gage, at site 3.1 mi downstream at datum 4.65 ft lower.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,800 ft^3/s Mar. 31, 1960, gage height, 25.3 ft from floodmark, site and datum then in use.

REMARKS.--Records are considered good, except for those estimated daily discharge, which are poor. U.S. Geological Survey data collection platform with satellite and telephone modem telemetry at the station. Flow regulated by Rathbun Lake (station 06903880) since Nov. 21, 1969. Records of discharge include diversions of: Oct. 1-17, 11 ft^3/s; Oct. 18 to Oct. 31, 5.0 ft^3/s; Nov. 1 to Dec 1, 2.0 ft^3/s; Dec 2 to Apr. 22, 4.0 ft^3/s; Apr. 23 to Apr. 27, 10 ft^3/s; Apr. 28 to Jun 4, 4.0 ft^3/s; Jun 5 to Jun 17, 6.0 ft^3/s; Jun 18 to to Jun 30, 5.0 ft^3/s; July 1 to July 6, 7.0 ft^3/s; July 7 to Aug. 23, 8.0 ft^3/s; Aug 24, to Sept. 30, 10 ft^3/s. The flow is diverted from the reservoir for fish ponds downstream from dam. Diverted flow returns to stream 0.1 mi downstream from gage. Rathbun Regional Water Association permit No. 0400900 allows withdrawal from Rathbun Dam discharge immediately downstream from gage for maximum rate of 4,200 gpm (9.36 ft^3/s).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	21	19	61	19	716	26	733	16	408	30	25
2	80	20	18	61	20	585	26	729	16	407	30	26
3	79	19	19	62	20	299	26	571	16	408	30	25
4	79	19	19	57	20	209	26	403	17	408	30	26
5	81	e18	19	59	20	210	26	402	17	410	30	27
6	48	e17	19	59	19	209	26	307	90	254	29	28
7	28	e17	19	60	204	213	26	222	207	102	29	27
8	28	17	20	59	474	215	146	222	214	104	30	28
9	28	17	346	59	471	216	228	224	220	93	30	28
10	29	17	766	59	470	215	229	222	222	89	31	29
11	29	17	763	59	470	216	240	223	225	61	31	29
12	29	17	760	59	470	218	e237	226	226	35	31	28
13	29	18	761	60	536	219	38	224	237	36	31	e29
14	28	21	758	61	262	223	91	220	286	36	28	e28
15	102	18	756	58	328	116	219	209	510	37	29	e28
16	99	18	754	58	691	27	223	209	746	36	29	e26
17	28	18	630	59	674	27	225	208	731	36	30	e24
18	28	18	407	60	675	27	224	118	729	36	31	e25
19	24	18	405	62	670	27	220	19	726	35	30	e25
20	24	18	194	62	672	28	221	19	725	35	29	e25
21	24	18	60	62	674	27	147	19	723	33	30	e25
22	24	18	57	62	584	25	224	19	720	33	25	e25
23	24	19	e62	63	714	25	424	20	717	33	24	e24
24	25	19	e62	63	714	25	405	20	616	33	24	e23
25	25	19	62	62	712	25	572	20	378	31	22	e23
26	25	19	60	37	711	25	740	20	378	30	25	e23
27	22	19	59	19	712	26	741	61	240	29	23	e23
28	17	19	58	19	715	28	740	93	86	30	23	23
29	17	19	60	19	---	30	739	17	88	30	24	23
30	18	19	60	19	---	29	736	16	230	30	24	23
31	19	---	61	19	---	26	---	16	---	30	24	---
TOTAL	1,219	551	8,113	1,638	12,721	4,506	8,191	6,031	10,352	3,408	866	771
MEAN	39.3	18.4	262	52.8	454	145	273	195	345	110	27.9	25.7
MAX	102	21	766	63	715	716	741	733	746	410	31	29
MIN	17	17	18	19	19	25	26	16	16	29	22	23
AC-FT	2,420	1,090	16,090	3,250	25,230	8,940	16,250	11,960	20,530	6,760	1,720	1,530

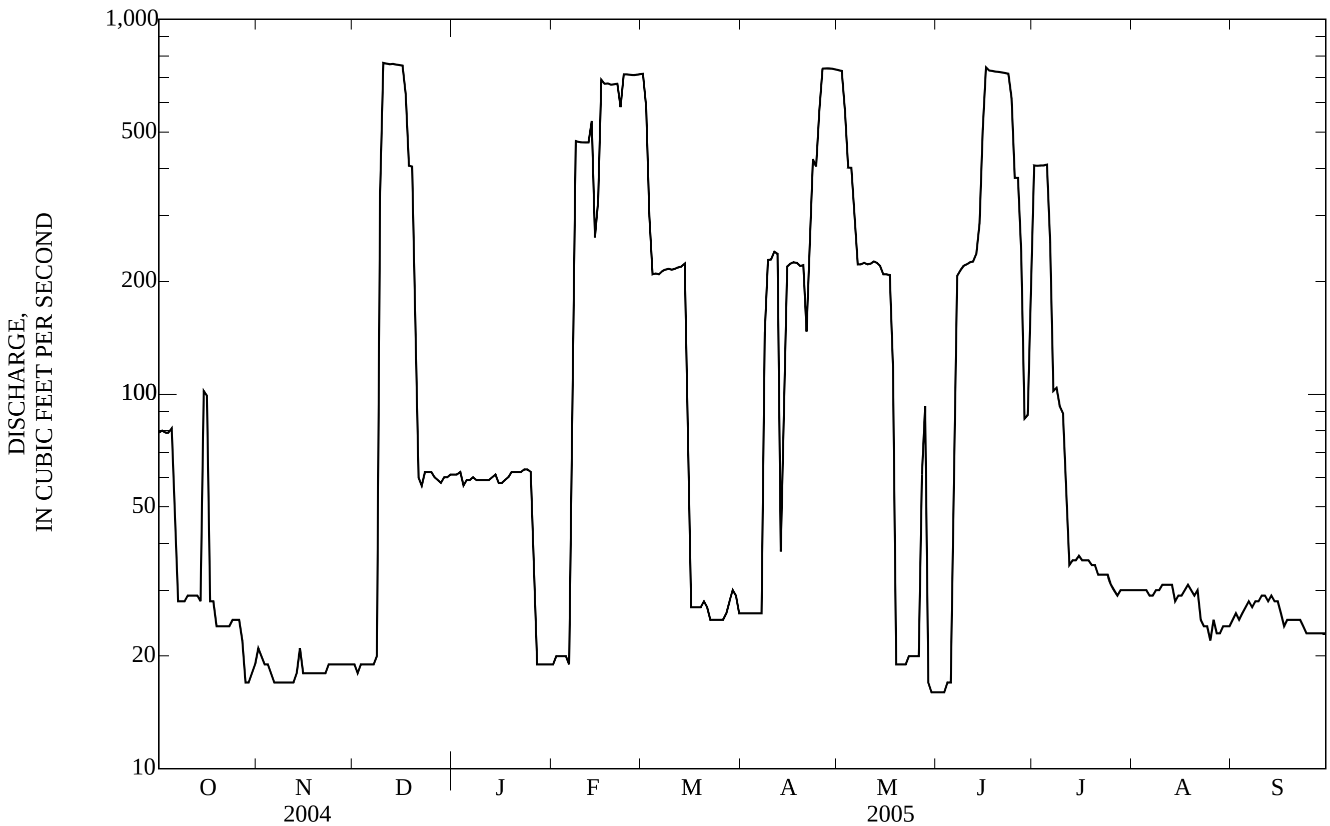
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	246	254	383	219	299	434	346	418	478	543	444	294
MAX	1,790	1,828	1,364	1,546	1,550	1,271	1,480	1,281	1,573	1,377	1,826	1,707
(WY)	(1994)	(1994)	(1993)	(1993)	(1993)	(1993)	(2001)	(1973)	(1973)	(2001)	(1993)	(1993)
MIN	11.5	9.97	5.54	8.98	5.60	9.40	6.74	19.3	16.6	6.53	9.10	11.0
(WY)	(1975)	(1975)	(1970)	(1970)	(1970)	(1970)	(1970)	(1977)	(1988)	(1970)	(1970)	(1974)

06903900 CHARITON RIVER NEAR RATHBUN, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005 a	
ANNUAL TOTAL	95,740		58,367			
ANNUAL MEAN	262		160		364	
HIGHEST ANNUAL MEAN					1,164	1993
LOWEST ANNUAL MEAN					20.4	1989
HIGHEST DAILY MEAN	1,110	Mar 9	766	Dec 10	1,950	Oct 17, 1993
LOWEST DAILY MEAN	16	May 16	16	May 30 b	0.00	Oct 26, 1977
ANNUAL SEVEN-DAY MINIMUM	16	May 15	16	May 29	1.0	Apr 1, 1970
MAXIMUM PEAK FLOW			782	Dec 10	2,780	Dec 14, 1993
MAXIMUM PEAK STAGE			7.67	Dec 10	14.94	Dec 14, 1993
INSTANTANEOUS LOW FLOW					0.00	Oct 26, 1977
ANNUAL RUNOFF (AC-FT)	189,900		115,800		263,800	
10 PERCENT EXCEEDS	780		622		1,180	
50 PERCENT EXCEEDS	29		33		39	
90 PERCENT EXCEEDS	19		19		16	

a Post regulation.
b Also May 31 to Jun. 3.
e Estimated.



06904010 CHARITON RIVER NEAR MOULTON, IA

LOCATION.--Lat 40°41'33", long 92°46'20", in SE¼ NE¼ sec.14, T.68 N., R.17 W., Appanoose County, Hydrologic Unit 10280201, on right bank 6 ft downstream from bridge on County Highway J45 (543rd St.), 0.7 mi downstream from Hickory Creek, 5.0 mi west of Moulton, 21.7 mi (revised) downstream from Rathbun Dam, and 8.4 mi (revised) upstream from Iowa-Missouri State line.

DRAINAGE AREA.--740 mi^2.

PERIOD OF RECORD--August 1979 to current year.

GAGE--Water stage recorder. Datum of gage is 800.00 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records are considered good, except for those estimated daily discharges, which are poor. Flow regulated by Rathbun Reservoir (station 06903880) 20.8 mi upstream. U.S. Geological data collection platform with satellite and telephone modem telemetry and U.S. Army Corps of Engineers rain gage at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1947 reached a stage of about 45 ft, discharge unknown, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	108	53	e83	e66	e750	64	938	78	417	36	34
2	136	189	53	e82	e72	e736	56	930	75	451	36	34
3	128	123	54	e79	e73	e454	54	899	76	437	36	34
4	126	122	51	e75	e73	e274	53	576	111	431	35	33
5	124	108	59	e73	e80	e253	51	543	296	429	33	33
6	124	87	486	e72	e101	e251	53	530	418	416	33	34
7	70	72	345	e72	e232	e255	72	368	337	161	31	34
8	66	59	195	e72	e478	e259	80	348	345	113	32	35
9	63	55	134	e74	e496	e255	246	349	347	110	32	36
10	55	54	726	e74	e520	e251	262	347	469	106	32	34
11	53	50	799	e88	e527	e248	483	346	914	105	34	34
12	56	48	791	e104	e539	e246	3,970	363	633	68	40	35
13	67	47	784	e140	e1,750	e242	2,490	418	1,200	45	52	39
14	59	46	775	e99	e1,890	e242	791	399	579	46	55	44
15	57	45	775	e87	e613	e241	513	364	482	44	40	40
16	204	45	773	e79	e858	e100	483	345	794	43	36	40
17	95	46	763	e81	e799	e62	451	337	845	40	36	e34
18	51	49	485	e86	e758	e59	430	333	834	40	36	e30
19	50	55	e412	e74	e740	e57	413	174	828	43	35	34
20	47	51	e250	e72	e740	e56	403	105	820	43	36	37
21	47	47	e86	e67	e748	53	427	98	819	40	36	38
22	49	46	e85	e75	e680	52	761	96	817	39	35	35
23	57	45	e101	e75	e734	56	1,980	91	814	38	35	34
24	51	45	e91	e82	e765	57	937	87	811	37	36	33
25	50	45	e84	e105	e762	68	731	84	505	38	36	33
26	55	43	e81	e355	e756	66	1,000	83	425	48	32	41
27	62	47	e80	e167	e754	62	996	84	414	62	35	39
28	52	49	e84	e67	e758	59	975	189	167	42	35	38
29	54	46	e80	e55	---	59	961	122	488	42	34	42
30	292	52	e78	e58	---	64	950	88	261	39	35	38
31	89	---	e80	e55	---	64	---	81	---	36	34	---
TOTAL	2,609	1,924	9,693	2,827	17,362	5,951	21,136	10,115	16,002	4,049	1,119	1,079
MEAN	84.2	64.1	313	91.2	620	192	705	326	533	131	36.1	36.0
MAX	292	189	799	355	1,890	750	3,970	938	1,200	451	55	44
MIN	47	43	51	55	66	52	51	81	75	36	31	30
AC-FT	5,170	3,820	19,230	5,610	34,440	11,800	41,920	20,060	31,740	8,030	2,220	2,140
CFSM	0.11	0.09	0.42	0.12	0.84	0.26	0.95	0.44	0.72	0.18	0.05	0.05
IN.	0.13	0.10	0.49	0.14	0.87	0.30	1.06	0.51	0.80	0.20	0.06	0.05

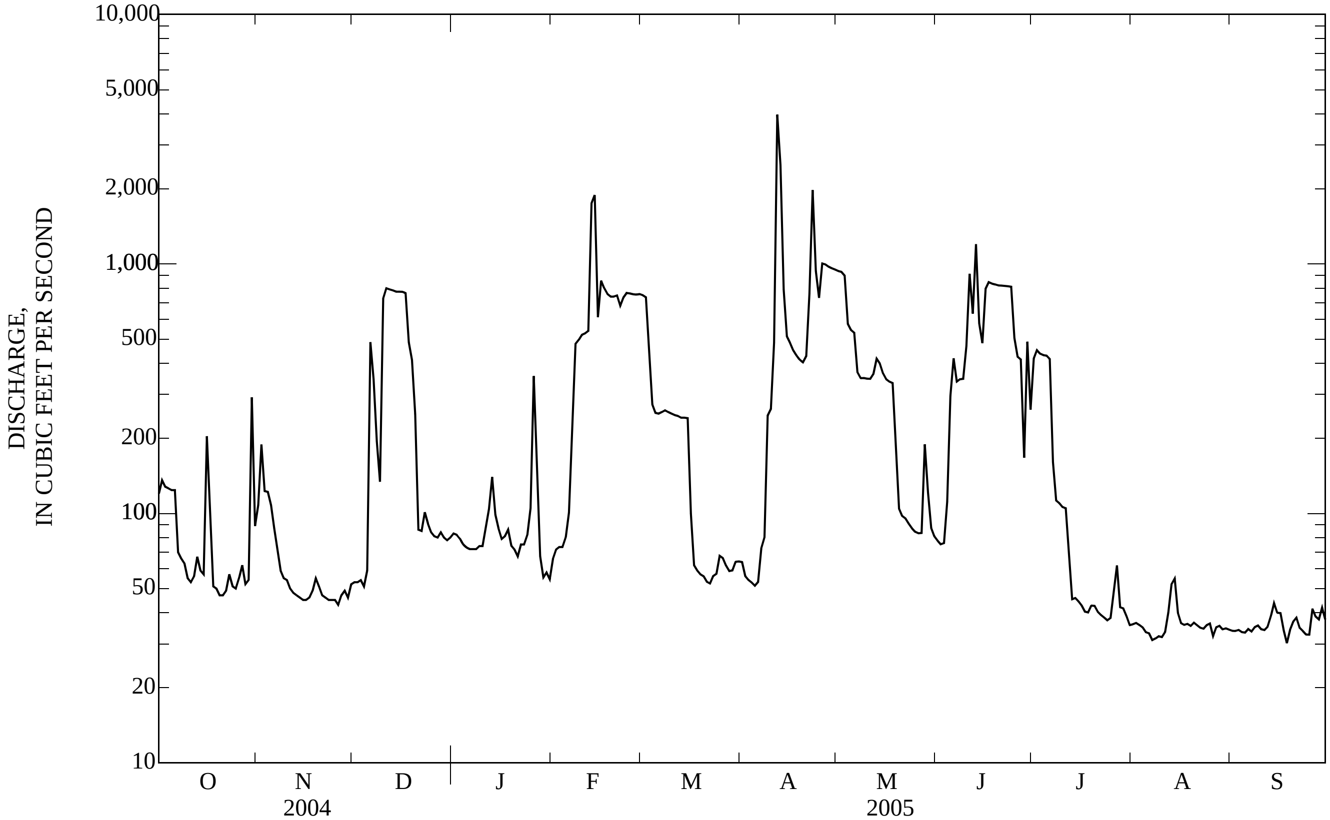
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2005, BY WATER YEAR (WY)

MEAN	355	346	467	277	418	666	612	685	685	830	586	422
MAX	1,874	1,931	1,557	1,696	1,772	1,831	1,731	1,421	1,593	2,849	2,004	1,976
(WY)	(1994)	(1994)	(1983)	(1993)	(1983)	(1993)	(2001)	(1995)	(2001)	(1982)	(1993)	(1993)
MIN	24.2	23.0	20.1	22.2	20.6	24.3	22.7	32.2	20.3	17.9	21.0	26.6
(WY)	(1989)	(1989)	(1990)	(1989)	(1989)	(1989)	(1989)	(2000)	(1988)	(1988)	(1988)	(1988)

06904010 CHARITON RIVER NEAR MOULTON, IA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1980 - 2005	
ANNUAL TOTAL	148,150		93,866			
ANNUAL MEAN	405		257		530	
HIGHEST ANNUAL MEAN					1,555	1993
LOWEST ANNUAL MEAN					43.6	1989
HIGHEST DAILY MEAN	4,230	May 30	3,970	Apr 12	8,720	Jul 17, 1982
LOWEST DAILY MEAN	20	May 17	30	Sep 18 e	14	Jun 22, 1988 a
ANNUAL SEVEN-DAY MINIMUM	32	May 11	32	Aug 5	15	Jun 22, 1988
MAXIMUM PEAK FLOW			4,540	Apr 12	11,200	Jul 16, 1982
MAXIMUM PEAK STAGE			32.24	Apr 12	36.83	Jul 16, 1982
ANNUAL RUNOFF (AC-FT)	293,900		186,200		384,000	
ANNUAL RUNOFF (CFSM)	0.547		0.348		0.716	
ANNUAL RUNOFF (INCHES)	7.45		4.72		9.73	
10 PERCENT EXCEEDS	986		762		1,330	
50 PERCENT EXCEEDS	124		80		170	
90 PERCENT EXCEEDS	42		36		27	

a Also June 23, 27, and July 9, 1988.
e Estimated.



Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years up to the current year for which the annual maximum has been determined.

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

[+--not determined, a--peak stage did not reach bottom of gage, b--ice affected, c--old gage datum, d--estimate, e--peak affected by backwater]

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum: Date	Gage height (ft)	Discharge (ft^3/s)	Period of record maximum: Date	Gage height (ft)	Discharge (ft^3/s)
UPPER IOWA RIVER BASIN								
Dry Run Creek near Decorah, IA (05387490)	Lat 43°17'29",long 91°48'33"in SE1/4, sec.20, T.98 N., R.8 W., Winneshiek County, Hydrologic Unit 07060002, on State Highway 9, 0.5 mi west of Decorah. Drainage area 21.0 mi^2.	1978-	2005	(a)	<923	08-16-93	20.80	4,620
Waterloo Creek near Dorchester, IA (05388310)	Lat 43°27'04", long 91°30'18", in NW1/4, sec.25, T.100 N., R.6 W., Allamakee County, Hydrologic Unit 07060002, on State Highway 76, 1.4 mi south of Dorchester. Drainage area 43.6 mi^2.	1966-	07-26-05	11.41	3,050	07-01-78	14.80	9,380
MISSISSIPPI RIVER BASIN								
Mississippi River tributary at McGregor, IA (05389501)	Lat 43°01'12", long 91°11'25", in N1/4, sec.27, T.95 N., R.3 W., Clayton County, Hydrologic Unit 07060001,at culvert on County Road X50, at intersection with U.S. Highway 18 (Business Route), in McGregor. Drainage area 0.72 mi^2.	1991-	08-18-05	11.32	82	03-31-93	13.13	[d]250
TURKEY RIVER BASIN								
French Hollow Creek near Elkader, IA (05412030)	Lat 42°50'19", long 91°24'25", in SW1/4, sec.26, T.93 N.,R.5 W., Clayton County, Hydrologic Unit 07060004, at culvert on State Highway 13, 1.1 mi south of Elkader. Drainage area 3.56 mi^2.	1991-	08-19-05	9.31	131	05-23-04	20.23	3,300
LITTLE MAQUOKETA RIVER BASIN								
Little Maquoketa River at Graf, IA (05414350)	Lat 42°30'09", long 90°51'50", in SE1/4 NW1/4, sec.20, T.89 N., R.1 E., Dubuque County, Hydrologic Unit 07060003, at bridge on county highway, 300 ft downstream from Illinois Central railroad bridge, 0.5 mi northeast of Graf. Drainage area 39.6 mi^2.	1951-	2005	(a)	<1,010	6-4-02	15.93	7,700
Middle Fork Little Maquoketa River near Rickardsville, IA (05414400)	Lat 42°33'38", long 90°51'35", in SE1/4, sec.32, T.90 N., R.1 E., Dubuque County, Hydrologic Unit 07060003, at bridge on county highway, 2 mi southeast of Rickardsville. Drainage area 30.2 mi^2.	1951-	2005	(a)	<1,060	08-02-72	27.70	23,000
North Fork Little Maquoketa River near Rickardsville, IA (05414450)	Lat 42°35'09", long 90°51'20", near NW corner, sec.28, T.90 N., R.1 E., Dubuque County, Hydrologic Unit 07060003, at bridge on county highway, 1 mi northeast of Rickardsville. Drainage area 21.6 mi^2.	1951-	2005	(a)	<380	08-02-72	14.02	7,180

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

[+--not determined, a--peak stage did not reach bottom of gage, b--ice affected, c--old gage datum, d--estimate, e--peak affected by backwater]

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum: Date	Gage height (ft)	Discharge (ft^3/s)	Period of record maximum: Date	Gage height (ft)	Discharge (ft^3/s)
LITTLE MAQUOKETA RIVER BASIN -- continued								
Bloody Run tributary near Sherrill, IA (05414605)	Lat 42°37’13”, long 90°45’44”, in SE1/4, sec.7, T.90 N., R.2 E., Dubuque County, Hydrologic Unit 07060003, at culvert on county road 1.6 mi northeast of Sherrill. Drainage area 0.59 mi^2	1991-	02-14-05	12.05	84	06-15-91	19.27	[d]692
MAQUOKETA RIVER BASIN								
Lamont Creek tributary at Lamont, IA (05416200)	Lat 42°35’22”, long 91°38’52”, in SE1/4, sec.22, T.90 N., R.7 W., Buchanan County, Hydrologic Unit 07060006, at culvert on State Highway 187, 0.8 mi southwest of Lamont. Drainage area 1.78 mi^2.	1991-	02-13-05	15.35	107	06-01-00	20.13	[d]635
Sand Creek near Manchester, IA (05416972)	Lat 42°26’57”, long 91°28’50”, in SE1/4, sec.12, T.88 N., R.6 W., Delaware County, Hydrologic Unit 07060006, at culvert on State Highway 13, 2.7 mi southwest of Manchester. Drainage area 11.0 mi^2.	1991-	2005	(a)	<446	06-04-02	19.31	[d]4,290
Williams Creek near Charlotte, IA (05418645)	Lat 41°55’55”, long 90°31’44”, in SE1/4, sec.6, T.82 N., R.4 E., Clinton County, Hydrologic Unit 07060006, at culvert on County Road Y7, 2.1 mi north of County Highway E63, 5 mi southwest of Charlotte. Drainage area 1.77 mi^2.	1990-	02-13-05	7.18	(+)	05-29-96	13.02	[d]990
WAPSIPINICON RIVER BASIN								
Little Wapsipinicon River tributary near Riceville, IA (05420600)	Lat 43°21’31”, long 92°29’08”, near SW1/4 corner, sec. 27, T.99 N., R.14 W., Howard County, Hydrologic Unit 07080102, at culvert on county highway, 3.5 mi east of Riceville. Drainage area 1.10 mi^2.	1953-	07-27-05	4.59	380	07-06-04	6.52	[d]7,500
Little Wapsipinicon River near Oran, IA (05420850)	Lat 42°42’53”, long 92°02’29”, near NW corner, sec.9, T.91 N., R.10 W., Fayette County, Hydrologic Unit 07080102, at bridge on State Highway 3, 2 mi northeast of Oran. Drainage area 94.1 mi^2.	1966-	02-14-05	86.14	941	05-17-99	94.15	12,800
Buck Creek near Oran, IA (05420875)	Lat 42°42’53”, long 92°07’33”, in NE1/4, sec.10, T.91 N., R.11 W., Bremer County, Hydrologic Unit 07080102, at bridge on State Highway 3, 2.5 mi northwest of Oran. Drainage area 37.9 mi^2.	1966-	06-27-05	87.52	406	05-17-99	91.02	[d]5,600
Pine Creek tributary near Winthrop, IA (05421100)	Lat 42°29’17”, long 91°47’10”, in SW1/4, sec.27, T.89 N., R.8 W., Buchanan County, Hydrologic Unit 07080102, at culvert on county road, 2.5 mi northwest of Winthrop. Drainage area 0.33 mi^2.	1953-	2005	(a)	<9.8	07-17-68	8.97	[d]334
Wapsipinicon River tributary at Winthrop, IA (05421300) (formerly published as: “Pine Creek trib. no. 2 at Winthrop”)	Lat 42°28’06”, long 91°44’33”, at N1/4 corner sec.2, T.88 N., R.8 W., Buchanan County, Hydrologic Unit 07080102, at culvert on State Highway 939, near west city limits of Winthrop. Drainage area 0.70 mi^2.	1953-	06-05-05	4.87	7.6	07-17-68	7.26	570

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

[+--not determined, a--peak stage did not reach bottom of gage, b--ice affected, c--old gage datum, d--estimate, e--peak affected by backwater]

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum Date	Gage height (ft)	Dis-charge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Dis-charge (ft^3/s)
IOWA RIVER BASIN								
Silver Creek at Welton, IA (05421890)	Lat 41°54'54", long 90°36'00", in NW1/4, sec.15, T.82 N., R.3 E., Clinton County, Hydrologic Unit 07080103, at bridge on U.S. Highway 61, at north edge of Welton. Drainage area 9.03 mi^2.	1966-	2005	(a)	<244	05-17-74	89.77	[d]4,820
Westmain Drainage Ditch 1 & 2 at Britt, IA (05448400) Low-flow site April 1958 to Sept. 1976	Lat 43°06'09", long 93°47'04", in SW1/4, sec.27, T.96 N., R.25 W., Hancock County, Hydrologic Unit 07080207, at bridge on U.S. Highway 18, near east city limits of Britt. Drainage area 21.2 mi^2.	1966-	05-12-05	80.19	70	04-28-75	83.59	372
East Branch Iowa River above Hayfield, IA (05448600)	Lat 43°09'21", long 93°41'21", at S1/4 corner sec.4, T.96 N., R.24 W., Hancock County, Hydrologic Unit 07080207, at bridge on county highway, 1.5 mi southeast of Hayfield. Drainage area 2.23 mi^2.	1953-	05-12-05	3.73	33	04-11-01	8.12	(+)
Honey Creek tributary near Radcliffe, IA (0545129280)	Lat 42°19'44", long 93°25'28", in SW1/4, sec.21, T.87 N., R.22 W., Hardin County, Hydrologic Unit 07080207, at culvert on county road highway S27, 1.1 mi northeast of Radcliffe. Drainage area 3.29 mi^2.	1991-	05-12-05	95.27	43	05-10-95	100.14	[d]510
Stein Creek near Clutier, IA (05451955)	Lat 42°04'46", long 92°18'00", in NE1/4, sec.24, T.84 N., R.13 W., Tama County, Hydrologic Unit 07080208, at bridge on county highway E36, 5 mi east of Clutier. Drainage area 23.4 mi^2.	1971-	02-14-05	71.69	415	06-15-82	77.92	11,400
Price Creek at Amana, IA (05453200)	Lat 41°48'18", long 91°52'23", in SE1/4, sec.22, T.81 N., R.9 W., Iowa County, Hydrologic Unit 07080208, at bridge on State Highway 151, near north edge of Amana. Drainage area 29.1 mi^2.	1966-	04-12-05	83.36	988	06-17-90	88.80	5,080
North Fork tributary to Mill Creek near Solon, IA (05453430)	Lat 41°50'24", long 91°30'04" in NW1/4, sec.12, T.81 N., R.6 W., Johnson County, Hydrologic Unit 07080208, at culvert on State Highway 1, 2 mi north of Solon. Drainage area 0.78 mi^2.	1990-	2005	(a)	<35	07-16-92	(+)	(+)
Clear Creek tributary near Williamsburg, IA (05454180)	Lat 41°41'16", long 91°57'02", in SE1/4, sec.36, T.80 N., R.10 W., Iowa County, Hydrologic Unit 07080209, at culvert on county road, 4 mi northeast of Williamsburg, 1 mi south of county highway F35. Drainage area 0.37 mi^2.	1990-	04-12-05	45.17	13	06-17-90	48.76	[d]291
North English River near Montezuma, IA (05455140)	Lat 41°38'51", long 92°34'16", in SW1/4, sec.14, T.79 N., R.15 W., Poweshiek County, Hydrologic Unit 07080209, at bridge on county highway, 5.0 mi northwest of Montezuma. Drainage area 31.0 mi^2.	1972-	2005	(a)	<1,020	07-20-78	28.18	4,640
North English River at Guernsey, IA (05455210)	Lat 41°38'42", long 92°21'28", at NW corner sec.22, T.79 N., R.13 W., Poweshiek County, Hydrologic Unit 07080209, at bridge on State Highway 21, 1 mi southwest of Guernsey. Drainage area 81.5 mi^2.	1960, 1966-	2005	(a)	<2,440	06-15-82	87.43	7,460

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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Station name and number	Location and drainage area	Period of record	Water year 2005 maximum Date	Gage height (ft)	Dis-charge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Dis-charge (ft^3/s)
IOWA RIVER BASIN -- continued								
Deep River at Deep River, IA (05455230)	Lat 41°35'29", long 92°21'18", in SW1/4, sec.3, T.78 N., R.13 W., Poweshiek County, Hydrologic Unit 07080209, at bridge on State Highway 21, 1 mi northeast of Deep River. Drainage area is 30.5 mi^2.	1960, 1966-	2005	(a)	<856	05-14-70	[c]83.85	6,200
Bulgers Run near Riverside, IA (05455550)	Lat 41°29'02", long 91°37'36", in SE1/4, sec.11, T.77 N., R.7 W., Washington County, Hydrologic Unit 07080209, at bridge on State Highway 22, 2.5 mi west of Riverside. Drainage area 6.31 mi^2.	1965-	2005	(a)	<435	09-21-65	89.04	3,080
Deer Creek near Carpenter, IA (05457440)	Lat 43°24'54", long 92°59'05", in NW1/4 sec.9, T.99 N., R.18 W., Mitchell County, Hydrologic Unit 07080201, at bridge on State Highway 105, 1.5 mi east of Carpenter. Drainage area 91.6 mi^2.	1966-	2005	(a)	1,260	07-06-04	85.75	4,150
Gizzard Creek tributary near Bassett, IA (0545776680)	Lat 43°04'01",long 92°34'31", in SE1/4, sec.2, T.95 N., R.15 W., Floyd County, Hydrologic Unit 07080201, at culvert on U.S. Highway 18, 3.3 mi west of Bassett. Drainage area 3.42 mi^2.	1990-	06-26-05	99.57	358	07-21-99	103.00	(+)
Spring Creek near Mason City, IA (05459490)	Lat 43°12'48", long 93°12'38", in SE1/4, sec.16, T.97 N., R.20 W., Cerro Gordo County, Hydrologic Unit 07080203, at bridge on U.S. Highway 65, 4 mi north of Mason City. Drainage area 29.3 mi^2.	1966-	04-19-05	90.14	3,160	05-22-04	91.15	5,340
Willow Creek near Mason City, IA (05460100)	Lat 43°08'55", long 93°16'07", near center sec.12, T.96 N., R.21 W., Cerro Gordo County, Hydrologic Unit 07080203, at bridge on U.S. Highway 18, 3.5 mi west of Mason City. Drainage area 78.6 mi^2.	1966-	04-19-05	89.65	555	05-22-04	92.21	1,270
Miller Creek near Eagle Center, IA (05464025)	Lat 42°19'22", long 92°20'50", in NW1/4, sec.27, T.87 N., R.13 W., Black Hawk County, Hydrologic Unit 07080205, at culvert on State Highway 21, 1.3 mi southeast of Eagle Center. Drainage area is 9.14 mi^2.	1991-	06-28-05	41.36	824	05-22-04	(+)	(+)
Prairie Creek tributary near Van Horne, IA (05464535)	Lat 41°59'33", long 92°05'06", in NW1/4, sec.24, T.83 N., R.11 W., Benton County, Hydrologic Unit 07080205, at culvert on County Highway V66, 1.1 mi south of Van Horne. Drainage area is 0.94 mi^2.	1991-	05-13-05	(a)	<170	05-26-97	18.14	[d]571
Thunder Creek at Blairstown, IA (05464562)	Lat 41°54'12", long 92°05'03", in NE1/4, sec.23, T.82 N., R.11 W., Benton County, Hydrologic unit 07080205, at culvert on county highway V66, near city limits of Blairstown. Drainage area 0.96 mi^2.	1991-	05-13-05	12.72	91	08-16-93	16.12	[d]540
North Fork Long Creek at Ainsworth, IA (05465150)	Lat 41°16'51", long 91°32'16", Long Creek at in SW1/4, sec.22, T.75 N., R.6 W., Washington County, Hydrologic Unit 07080209, at bridge on U.S. Highway 218, 1 mi southeast of Ainsworth. Drainage area 30.2 mi^2.	1951, 1965-	02-14-05	85.71	182	05-10-96	93.40	(+)

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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Station name and number	Location and drainage area	Period of record	Water year 2005 maximum Date	Gage height (ft)	Dis-charge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Dis-charge (ft^3/s)
YELLOW SPRING CREEK BASIN								
Haight Creek at Kingston, IA (05469350)	Lat 40°58'14", long 91°02'30", in NW1/4, sec.12, T.71 N., R.2 W., Des Moines County, Hydrologic Unit 07080104, at culvert on State Highway 99, 0.5 mi south of Kingston. Drainage area 2.67 mi^2.	1990-	02-14-05	10.67	276	06-16-90	15.18	[d]1,460
SKUNK RIVER BASIN								
Mud Lake drainage ditch 71, at Jewell, IA (05469860)	Lat 42°18'52", long 93°38'23", in SW1/4, sec.27, T.87 N., R.24 W., Hamilton County, Hydrologic Unit 07080105, at bridge on U.S. Highway 69, in Jewell. Drainage area 65.4 mi^2.	1966-	05-12-05	85.82	829	07-09-93	91.32	3,700
Long Dick Creek near Ellsworth, IA (05469970)	Lat 42°18'37", long 93°32'06", in NW1/4, sec.33, T.87 N., R.23 W., Hamilton County, Hydrologic Unit 07080105, at culvert on State Highway 175, 2.2 mi east of Ellsworth. Drainage area 6.08 mi^2.	1991-	05-12-05	92.76	(+)	08-17-93	94.73	(+)
Keigley Branch near Story City, IA (05469990)	Lat 42°09'01", long 93°37'13", in NW1/4, sec.26, T.85 N., R.24 W., Story County, Hydrologic Unit 07080105, at bridge on U.S. Highway 69, 3 mi south of Story City. Drainage area 31.0 mi^2.	1966-	2005	(a)	<228	06-17-96	92.26	[d]3,440
Snipe Creek tributary at Melbourne, IA (0547209280)	Lat 41°56'08", long 93°05'08", in SE1/4, sec.5, T.82 N., R.19 W., Marshall County, Hydrologic Unit 07080106, at culvert on county highway E63, 0.5 mi east of Melbourne. Drainage area 1.61 mi^2.	1990-	06-15-05	14.07	36	06-17-90	17.39	[d]360
Middle Creek near Lacey, IA (05472390)	Lat 41°25'17", long 92°39'04" (revised), at N1/4 corner sec.1, T.76 N., R.16 W., Mahaska County, Hydrologic Unit 07080106, at bridge on U.S. Highway 63, 1.5 mi northwest of Lacey. Drainage area 23.0 mi^2.	1966-	2005	(a)	<172	04-24-76	90.06	9,650
Skunk River tributary near Richland, IA (05472555)	Lat 41°15'50", long 91°57'52", in NE1/4, sec.35, T.75 N., R.10 W., Keokuk County, Hydrologic Unit 07080107, at culvert on county highway W15, 4.9 mi north of Richland, 5.1 mi south of State Highway 92. Drainage area 0.18 mi^2.	1990-	2005	(a)	<2.5	03-16-01	17.08	[d]120
DES MOINES RIVER BASIN								
Drainage Ditch 97 tributary near Britt, IA (0548065350)	Lat 43°06'42", long 93°54'22", in SW1/4, sec.22, T.96 N., R.26 W., Hancock County, Hydrologic Unit 07100005, at culvert on county road, 5.4 mi northwest of Britt. Drainage area 0.94 mi^2. (Revised)	1991-	05-12-05	93.07	52	05-22-04	99.24	(+)
White Fox Creek at Clarion, IA (05480930)	Lat 42°43'55", long 93°42'26", in NW1/4, sec.5, T.91 N., R.24 W., Wright County, Hydrologic Unit 07100005, at bridge on State Highway 3, 1.5 mi east of Clarion. Drainage area 13.3 mi^2.	1966-	06-26-05	91.08	428	07-09-93 07-09-03	93.59 93.77	1,400 1,120
Brewers Creek tributary near Webster City, IA (05480993)	Lat 42°26'57", long 93°51'59", in NW1/4, sec.10, T.88 N., R.26, W., Hamilton County, Hydrologic Unit 07100005, at culvert on U.S. Highway 20, 2.5 mi southwest of Webster City. Drainage area 1.58 mi^2.	1990-	07-25-05	96.40	67	06-04-91	99.25	[d]544

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
DES MOINES RIVER BASIN -- continued								
Bluff Creek at Pilot Mound, IA (05481510)	Lat 42°09'59", long 94°01'11", in NW1/4, sec.20 T.85 N., R.27 W., Boone County, Hydrologic Unit 07100004, at bridge on county road E18 at northwest edge of Pilot Mound. Drainage area 23.5 mi^2. (Revised)	1966-	2005	(a)	<199	07-09-93	89.25	1,120
Peas Creek at Boone, IA (05481530)	Lat 42°02'04", long 93°51'25", in SE1/4, sec.34, T.84 N., R.26 W., Boone County, Hydrologic Unit 07100004, at culvert on U.S. Highway 30, at the southeast side of Boone city limits. Drainage area 1.69 mi^2.	1990-	09-25-05	(a)	<72	06-15-98	103.05	[d]410
Hardin Creek near Farlin, IA (05482900)	Lat 42°05'34, long 94°25'39", in NE1/4 NW1/4 NW1/4, sec. 14, T.84 N., R.31 W., Greene County, Hydrologic Unit 07100006, at bridge on county highway, 1.5 mi northeast of Farlin. Drainage area 101 mi^2.	1951-	02-13-05	9.60[b]	774	07-09-93	13.97	3,010
Brushy Creek near Templeton, IA (05483318)	Lat 41°56'45", long 94°52'45", in SW1/4 NW 1/4 NW 1/4, sec.1, T.82 N., R.35 W., Carroll County, Hydrologic Unit 07100007, at bridge on U.S. Highway 71, 4 mi northeast of Templeton. Drainage area 45.0 mi^2.	1966-	2005	(a)	<1,770	07-09-93	93.48	19,000
Middle Raccoon River tributary at Carroll, IA (05483349)	Lat 42°02'30", long 94°52'43", in NW1/4 NW1/4 SW1/4, sec. 36, T. 84 N,.R.35 W., Carroll County Hydrologic Unit 07100007, at bridge on U.S. Highway 71, 1.1 mi south of Carroll. Drainage area 6.58 mi^2.	1966-	02-13-05	18.84	98	06-17-96	25.88	4,600
Cedar Creek tributary No. 2 near Winterset, IA (05485940)	Lat 41°19'49", long 94°03'05", in SW1/4, sec.35, T.76 N., R.28 W., Madison County, Hydrologic Unit 07100008, at culvert on State Highway 92, 0.5 mi west of U.S. Highway 169, 1 mi west of Winterset. Drainage area 1.02 mi^2.	1990-	05-13-05	95.33	146	05-24-96	98.58	[d]447
Brush Branch Creek near Stanzel, IA (05486230)	Lat 41°18'57", long 94°16'42", in SW1/4, sec.2, T.75 N., R.30 W., Adair County, Hydrologic Unit 07100008, at culvert on State Highway 92, 1 mi west of Stanzel. Drainage area is 3.02 mi^2.	1990-	05-12-05	90.08	(+)	09-15-92	97.06	(+)
Little White Breast Creek tributary near Chariton, IA (05487825)	Lat 41°03'36", long 93°18'12", in SW1/4, sec. 5, T.72 N., R.21 W., Lucas County, Hydrologic Unit 07100008, at culvert on State Highway 14, 2.0 mi north of Chariton. Drainage area 0.05 mi^2.	1990-	06-05-05	16.81	9.5	08-19-93	18.93	[d]56.2
South Avery Creek near Blakesburg, IA (05489350)	Lat 41°00'59", long 92°37'32", in SE1/4, sec.19, T.72 N., R.15 W., Wapello County, Hydrologic Unit 07100009, at bridge on U.S. Highway 34, 3.5 mi north of Blakesburg. Drainage area 33.1 mi^2.	1965-	06-05-05	81.19	2,460	07-03-82	90.20	(+)
Bear Creek at Ottumwa, IA (05489490)	Lat 41°00'52", long 92°27'44", in NW1/4, sec.27, T.72 N., R.14 W., Wapello County, Hydrologic Unit 07100009, at bridge on U.S. Highway 34, near west edge of Ottumwa. Drainage area 22.9 mi^2.	1965-	04-12-05	84.34	859	09-21-65	92.80	4,000

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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BIG SIOUX RIVER BASIN								
Dawson Creek near Sibley, IA (06483440)	Lat 43°23’23”, long 95°42’53”, near NW corner sec.20, T.99 N., R.41 W., Osceola County, Hydrologic Unit 10170204, at culvert on County Highway A30, 2 mi southeast of Sibley. Drainage area 4.35 mi^2.	1952-	06-20-05	5.61	(+)	06-13-01	9.78	(+)
Burr Oak Creek near Perkins, IA (06483495)	Lat 43°14’43”, long 96°10’38”, in SE1/4, sec.5, T.97 N., R.45 W., Sioux County, Hydrologic Unit 10170204, at bridge on U.S. Highway 75, 4 mi north of Perkins. Drainage area 30.9 mi^2.	1966-	06-05-05	86.17	968	06-20-83	88.37	[d]6,400
PERRY CREEK BASIN								
Perry Creek near Merrill, IA (06599800)	Lat 42°43’15”, long 96°20’33”, in NW1/4, sec.12, T.91, N., R.47 W., Plymouth County, Hydrologic Unit 10230001, at bridge on County Highway C44, 5 mi west of Merrill. Drainage area 8.17 mi^2.	1953-	05-12-05 02-13-05	5.27 5.33	62 [b](+)	03-27-62	12.22	(+)
Perry Creek near Hinton, IA (06599950)	Lat 42°37’11”, long 96°22’20”, in NE1/4, sec.15, T.90 N., R.47 W., Plymouth County, Hydrologic Unit 10230001, at bridge on county highway, 4 mi west of Hinton. Drainage area 33.1 mi^2.	1953-	06-25-05	23.17	25	06-14-81	38.68	[d]5,500
FLOYD RIVER BASIN								
Little Floyd River near Sanborn, IA (06600030)	Lat 43°11’10”, long 95°43’30”, in NE1/4, sec.31, T.97 N., R.41 W., O’Brien County, Hydrologic Unit 10230002, at bridge on U.S. Highway 18, 3.5 mi west of Sanborn. Drainage area 8.44 mi^2.	1966-	2005	(a)	<104	03-02-70	89.04	(+)
Sweeney Creek tributary near Sheldon, IA (06600036)	Lat 43°11’10”, long 95°44’38”, in SW1/4, sec.25, T.97 N., R.42 W., O’Brien County, Hydrologic Unit 10230002, at culvert on U.S. Highway 18, 4.8 mi east of Sheldon. Drainage area 0.62 mi^2.	1991-	02-14-05	(a)	<104	07-14-93	99.27	[d]270
West Branch Floyd River near Struble, IA (06600300)	Lat 42°55’26”, long 96°10’36”, in SE1/4, sec.29, T.94 N., R.45 W., Sioux County, Hydrologic Unit 10230002, at bridge on county highway B62, 0.1 mi west of U.S. Highway 75, 2.2 mi northeast of Struble. Drainage area 180 mi^2	1996-	2005	(a)	<345	03-04-94	15.86	8,920
MONONA-HARRISON DITCH BASIN								
Big Whiskey Slough near Remsen, IA (06601480)	Lat 42°48’28”, long 95°53’21”, in NW1/4, sec.11, T.92 N., R.43 W., Plymouth County, Hydrologic Unit 10230004, at bridge on State Highway 3, 4.2 mi east of Remsen. Drainage area 12.9 mi^2.	1966-	06-25-05	90.59	(+)	03-22-79	94.87	(+)
Elliott Creek at Lawton, IA (06602190)	Lat 42°28’30”, long 96°11’22”, in NW1/4, sec.3, T.88 N., R.46 W. Woodbury County, Hydrologic Unit 10230004, at bridge on U.S. Highway 20, at west edge of Lawton. Drainage area 34.8 mi^2.	1966-	2005	(a)	<1,230	06-12-84	86.14	3,150

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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LITTLE SIOUX RIVER BASIN								
Ocheyedan River near Ocheyedan, IA (06604510)	Lat 43°25’58”, long 95°36’41”, in NE1/4, sec.6, T.99 N., R.40 W., Osceola County, Hydrologic Unit 10230003, at bridge on State Highway 9, 4 mi northwest of Ocheyedan. Drainage area 73.5 mi^2.	1966-	2005	(a)	<114	06-29-93	86.79	2,200
Dry Run Creek near Harris, IA (06604584)	Lat 43°26’42”, long 95°27’21”, in NE1/4, sec.33, T.100 N., R.39 W., Osceola County, Hydrologic Unit 10230003, at culvert on county highway M12, 1 mi west of Harris. Drainage area 4.30 mi^2.	1990-	2005	(a)	<305	06-29-93 03-13-95	16.58 13.04	390 565
Prairie Creek near Spencer, IA (06605340)	Lat 43°05’16”, long 95°09’40”, in SE1/4, sec.36, T.96 N., R.37 W., Clay County, Hydrologic Unit 10230003, at bridge on U.S. Highway 71, 4 mi south of Spencer. Drainage area 22.3 mi^2.	1966-	04-12-05	87.07	79	07-04-71 06-13-94	90.77 91.05	2,200 1,640
Willow Creek near Cornell, IA (06605750)	Lat 42°58’21”, long 95°09’40”, in SE1/4, sec.12, T.94 N., R.37 W., Clay County, Hydrologic Unit 10230003, at bridge on U.S. Highway 71, 2 mi northwest of Cornell. Drainage area 78.6 mi^2.	1966-	05-13-05	85.51	469	03-22-79	91.49	4,200
Little Sioux River tributary near Peterson, IA (06605868)	Lat 42°55’25”, long 95°21’55”, in NW1/4, sec.32, T.94 N., R.38 W., Clay County, Hydrologic Unit, 10230003, at culvert on State Highway 10, 1.2 mi northwest of Peterson. Drainage area 0.29 mi^2.	1991-	04-14-05	85.27	(+)	05-31-93	91.81	(+)
Willow Creek near Calumet, IA (06606231)	Lat 42°58’05”, long 95°32’56” in NE1/4, sec. 15, T.94 N., R.40 W., O’Brian County, Hydrologic Unit 10230003, at culvert on State Highway 10, 1.2 mi north of Calumet. Drainage area 4.13 mi^2.	1991-	02-14-05	95.75	(+)	07-14-93	100.92	[d]1,180
Halfway Creek at Schaller, IA (0660683710)	Lat 42°30’18”, long 95°17’19”, in SW1/4, sec.24, T.89 N., R.38 W., Sac County, Hydrologic Unit 10230005, at culvert on State Highway 110, 0.1 mi north of Schaller. Drainage area 1.74 mi^2.	1990-	2005	(a)	<20	07-14-92	94.11	(+)
BOYER RIVER BASIN								
Willow Creek near Soldier, IA (06609560)	Lat 41°55’17”, long 95°42’05”, near S1/4 corner sec.11, T.82 N., R.42 W., Monona County, Hydrologic Unit 10230001, at bridge on State Highway 37, 6 mi southeast of Soldier. Drainage area 29.1 mi^2.	1966-	02-13-05	72.12	823	07-09-93	84.66	6,840
MOSQUITO CREEK BASIN								
Moser Creek near Earling, IA (06610510)	Lat 41°46’35”, long 95°26’55”, in NE1/4, sec.1, T.80 N., R.40 W., Shelby County, Hydrologic Unit 10230006, at bridge on State Highway 37, 1.5 mi west of Earling. Drainage area 21.6 mi^2.	1966-	05-12-05	74.81	1,340	06-15-84	87.89	(+)
Mosquito Creek tributary near Neola, IA (06610581)	Lat 41°30’06”, long 95°35’44”, in NE1/4, sec.6, T.77 N., R.41 W., Pottawattamie County, Hydrologic Unit 10230006, at culvert on State Highway 191, 3.8 mi north of Neola. Drainage area 3.22 mi^2.	1991-	2005	(a)	<46	05-22-04	87.50	1,960

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

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MOSQUITO CREEK BASIN -- continued								
Keg Creek tributary near Mineola, IA (06805849)	Lat 41°07'53", long 95°43'31", in SW1/4, sec.7, T.73 N., R.42 W., Mills County, Hydrologic Unit 10240001, at culvert on county highway H12, 2.4 mi southwest of Mineola. Drainage area 2.01 mi^2.	1991-	05-12-05	77.01	57	07-10-99	82.97	[d]600
NISHNABOTNA RIVER BASIN								
Elm Creek near Jacksonville, IA (0680737930)	Lat 41°38'44", long 95°12'18", in SW1/4, sec.18, T.79 N., R.37 W., Shelby County, Hydrologic Unit 10240002, at culvert on State Highway 44, 2.8 mi west of Jacksonville. Drainage area 9.43 mi^2.	1990-	2005	(a)	<128	05-23-04	98.47	3,140
Indian Creek near Emerson, IA (06807470)	Lat 41°01'50", long 95°22'51", in NW1/4, sec.19, T.72 N., R.39 W., Montgomery County, Hydrologic Unit 10240002, at bridge on U.S. State Highway 34, 1 mi east of Emerson. Drainage area 37.3 mi^2.	1966-	2005	(a)	<766	06-15-82 08-07-99	92.63 94.32	15,800 (+)
Bluegrass Creek at Audubon, IA (06808880)	Lat 41°42'46", long 94°44'46", in NW1/4, sec.28, T.80 N., R.35 W., Audubon County, Hydrologic Unit 10240003, at bridge on U.S. Highway 71, near south edge of Audubon. Drainage area 15.4 mi^2.	1966-	05-13-05	75.54	322	07-09-93	88.55	(+)
TARKIO RIVER BASIN								
Tarkio River near Elliott, IA (06811760)	Lat 41°06'06", long, 95°06'09", near NE corner sec.28, T.73 N., R.37 W., Montgomery County, Hydrologic Unit 10240005, at bridge on county highway, 4.5 mi southeast of Elliott. Drainage area 10.7 mi^2.	1952-	05-12-05	5.84	431	08-29-93	12.98	4,640
East Tarkio Creek near Stanton, IA (06811800)	Lat 41°04'48", long 95°05'34", in W1/2 sec.34, T.73 N., R.37 W., Montgomery County, Hydrologic Unit 10240005, at bridge on county highway H24, 7 mi north of Stanton. Drainage area 4.66 mi^2.	1952-	2005	(a)	<471	06-09-67	13.74	4,790
Tarkio River tributary near Stanton, IA (06811820)	Lat 41°02'38", long 95°05'55", in NE1/4 sec.16, T.72 N., R.37 W., Montgomery County, Hydrologic Unit 10240005, at box culvert on county highway H63, 4 mi north of Stanton. Drainage area 0.67 mi^2.	1952-	05-12-05	92.78	(+)	06-23-99	5.56	1,070
Snake Creek near Yorktown, IA (06811875)	Lat 40°44'33", long 95°07'46", in NW1/4, sec.32, T.69 N., R.37 W., Page County, Hydrologic Unit 10240005, at bridge on State Highway 2, 1.5 mi northeast of Yorktown. Drainage area 9.10 mi^2.	1966- 1991 1997-	05-12-05	85.46	(+)	07-09-87	95.24	3,080
NODAWAY RIVER BASIN								
West Nodaway River at Massena, IA (06816290)	Lat 41°14'44", long 94°45'27", in SE1/4, sec.33, T.75 N., R.34 W., Cass County, Hydrologic Unit 10240009, at bridge on State Highway 148, at southeast corner of Massena. Drainage area 23.4 mi^2.	1966-	05-12-05	74.33	712	02-01-73	82.39	[d]4,700

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS—Continued

[+--not determined, a--peak stage did not reach bottom of gage, b--ice affected, c--old gage datum, d--estimate, e--peak affected by backwater]

			Water year 2005 maximum			Period of record maximum		
Station name and number	Location and drainage area	Period of record	Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
PLATTE RIVER BASIN								
Platte River near Diagonal, IA (06818750)	Lat 40°46'02", long 94°24'46", in NW1/4, sec. 22, T.69 N., R.31 W., Ringgold County, Hydrologic Unit 10240012, at bridge on county highway, 2.2 mi upstream from Turkey Creek, 4.6 mi. southwest of Diagonal, and 4.9 mi downstream from Gard Creek. Drainage area 217 mi^2.	1968-1991 1997-	05-13-05	19.47	4,580	09-09-89	23.60	8,630
Middle Branch 102 River near Gravity, IA (06819110)	Lat 40°49'40", long 94°44'18", in SE1/4, sec.27, T.70 N., R.34 W., Taylor County, Hydrologic Unit 10240013, at bridge on State Highway 148, 4.8 mi north of Gravity. Drainage area 34.5 mi^2.	1966-	05-13-05	63.30	798	02-01-73 07-05-93	c83.65 82.30	(+) 6,250
GRAND RIVER BASIN								
Sevenmile Creek, near Thayer, IA (06897858)	Lat 41°01'37", long 94°00'03", in SE1/4, sec.18, T.72 N., R.27 W., Clarke County, Hydrologic Unit 10280102, at culvert on U.S. Highway 34, 2.6 mi east of Thayer. Drainage area 6.61 mi^2.	1991-	05-13-05	(a)	<192	09-15-92	24.92	[d]1,330
Elk Creek near Decatur City, IA (06897950)	Lat 40°43'18", long 93°56'12", in SE1/4, sec. 34, T.69 N., R.27 W., Decatur County, Hydrologic Unit 10280102, at bridge on county Highway, 1,000 ft. downstream from West Elk Creek, 5.8 mi. upstream from mouth, and 5.5 mi. (Revised) west of Decatur City. Drainage area 52.5 mi^2.	1968-	05-13-05	16.99	2,460	07-05-93	29.93	32,800

APPANOOSE COUNTY

404103092404001. Local number, 68-16-15 DDAD.
LOCATION.--Lat 40°41'03", long 92°40'29", Hydrologic Unit 10280201, located approximately 4 mi south of State Highway 2 on State Highway 202 beneath water tower in the Town of Moulton. Owner: Town of Moulton.
AQUIFER.--Cambrian/Ordovician.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 and 12.75 in., depth 2377 ft, screened 1713-1736 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 992.00 ft above sea level, by unknown method. Measuring point: Top of well cover, 1.07 ft above land-surface datum.
REMARKS.-- Moulton Town Well.
PERIOD OF RECORD.--October 1961 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 355.00 feet below land surface datum, March 10, 1961; lowest measured, 395.09 feet below land-surface datum August 15, 2005.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	395.09

CLINTON COUNTY

414806090212301. Local number, 81-05E-22 DDD.
LOCATION.--Lat 41°48'03", long 90°21'26", Hydrologic Unit 07080101, approximately 1 mile south of the intersection of U.S. Interstate 30 and county road 36, on the northwest corner of intersection. Owner: Town of Low Moor.
AQUIFER.--Silurian, Alexanderian Series.
WELL CHARACTERISTICS.--Drilled public-use well, diameter 12 in. to 62 ft, 8 in. to 62 ft, depth 322 ft, open hole from 85- 322 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 651 feet above sea level, by topographic map. Measuring point: Base of vent pipe, 1.12 above land surface datum.
PERIOD OF RECORD.--August 1997 to September 30, 2004 (discontinued).
REMARKS.-- Low Moor No.2.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.92 feet below land-surface datum, May 7, 1998; lowest measured, 30.50 ft below land-surface datum, May 03, 1999.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 25	23.20

414921090450401. Local number, 81-02E-17 ACA.
LOCATION.--Lat 41°49'32", long 90°45'08", Hydrologic Unit 07080103, located below water tower near sub-station in the Town of Claims. Owner: Town of Calamus.
AQUIFER.--Silurian.
WELL CHARACTERISTICS.--Drilled pumping well, diameter 12 in. to 90 ft, 10 in. to 190 ft, depth 278 ft.
INSTRUMENTATION.--Quarterly measurements with airline by USGS personnel.
DATUM.--Elevation of land-surface datum is 712 feet above sea level, by topographic map.
PERIOD OF RECORD.--August 1997 to September 30, 2004 (discontinued).
REMARKS.-- Calamus No.1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42 feet below land-surface datum, November 14, 2002; lowest measured, 125 ft below land-surface datum, August 13, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL
JUN 22	43	AUG 17	102

WATER YEAR 2005 HIGHEST 43 JUN 22, 2005 LOWEST 102 AUG 17, 2005

HENRY COUNTY

405010091424901. Local number, 70-07-30 BCDD.
LOCATION.--Lat 40°50'10", long 91°42'49", Hydrologic Unit 07080107, in the Hillsboro City Park adjacent to water tower. Owner: City of Hillsboro.
AQUIFER.--Mississippian: limestone of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused test hole, diameter 6 in., depth 365 ft, cased to 74.8 ft, open hole 74.8-365 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 733 ft above sea level, from topographic map. Measuring point: Hole in top of casing, 1.15 ft above land-surface datum.
REMARKS.-- Hillsboro Test 1.
PERIOD OF RECORD.--August 1989 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 70.12 ft below land-surface datum, February 23, 1996, May 6, 1994; lowest measured, 78.03 ft below land-surface datum, February 22, 2000.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	72.52

HENRY COUNTY—Continued

410852091394301. Local number, 73-07-09 AABD.
LOCATION.--Lat 41°08'51", long 91°39'43", Hydrologic Unit 07080107, north of Main Street near the water tower, Wayland. Owner: Town of Wayland.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 4 ft, depth 52 ft. Casing information not available.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 735 ft above sea level, from topographic map. Measuring point: Hole in top of casing, 0.21 ft above land-surface datum.
REMARKS.-- Wayland Town Well.
PERIOD OF RECORD.--August 1960 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.30 ft below land-surface datum, September 1, 1965; lowest measured, 14.69 ft below land-surface datum, February 15, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	9.79

JASPER COUNTY

414210092592001. Local number, 80-18-31 ABBB.
LOCATION.--Lat 41°42'10", long 92°59'20", Hydrologic Unit 07080105, approximately 3 mi east of the City of Newton just south of U.S. Highway 6. Owner: P.W. Beukema.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Dug stock water-table well, diameter 36 in., depth 37 ft, cribbed with brick.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 940 ft above sea level, from topographic map. Measuring point: Top of cement platform, 0.70 ft above land-surface datum.
REMARKS.-- Beukema well.
PERIOD OF RECORD.--February 1940 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.67 ft below land-surface datum, June 10, 1947; lowest measured, 27.15 ft below land-surface datum, December 18, 1948.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	5.34

JOHNSON COUNTY

414315091252001. Local number, 80-05-22 CBCB1.
LOCATION.--Lat 41°43'15", long 91°25'18", Hydrologic Unit 07080209, along the Chicago, Rock Island and Pacific Railroad track, southeast of the overpass on Rapid Creek Road over the track, approximately 5.5 mi northeast of the junction of Interstate 80 and Iowa Highway 1. Owner: Chicago, Rock Island and Pacific Railroad Co.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2.25 in., depth 18.43 ft, screened 16.43-18.43 ft. Depth originally 20 ft, depth of 18.43 ft measured June 23, 1989.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel. Graphic water-level recorder February 1942 to October 1965, measured twice per month March 1995 to October 1995.
DATUM.--Elevation of land-surface datum is 753 ft above sea level, from topographic map. Measuring point: Top of casing, 2.87 ft above land-surface datum.
REMARKS.-- At the site of the former Elmira depot.
PERIOD OF RECORD.--May 1941 to September 1956, January 1958 to September 30, 2004 (discontinued).
REVISED RECORDS.--WDR IA-88-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.84 ft below land-surface datum, April 29, 1947 (revised); lowest measured, dry, November 10, 15, 20, 25, and 30, 1964, December 5, 10, 15, 20, 25 and 31, 1964, December 1 and 10, 1975, October 21, November 23, and December 17, 1976, and January 20 and February 18, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 16	12.45	JUN 22	12.05	JUL 20	12.41	AUG 17	12.99	SEP 30	14.05

WATER YEAR 2005 HIGHEST 12.05 JUN 22, 2005 LOWEST 14.05 SEP 30, 2005

414315091252002. Local number, 80-05-22 CBCB2.
LOCATION.--Lat 41°43'15", long 91°25'18", Hydrologic Unit 07080209, along the Chicago, Rock Island and Pacific Railroad track, southeast of the overpass on Rapid Creek Road over the track, approximately 5.5 mi northeast of the junction of Interstate 80 and Iowa Highway 1. Owner: Chicago, Rock Island and Pacific Railroad Co.
AQUIFER.--Devonian: Cedar Valley limestone of Middle Devonian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 5 in., depth 82.5 ft. Casing information not available.
INSTRUMENTATION.--Intermittant measurement with chalked tape by USGS personnel. US Geological Survey data collection platform with satellite telemetry with H-310 pressure transducer.
DATUM.--Elevation of land-surface datum is 753 ft above sea level, from topographic map. Measuring point: top of casing, 3.63 ft above land- surface datum.
REMARKS.-- At the site of the former Elmira depot.
PERIOD OF RECORD.--December 1941 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.58 ft below land-surface datum, November 27, 1992; lowest measured, 21.65 ft below land-surface datum, August 21, 1989.

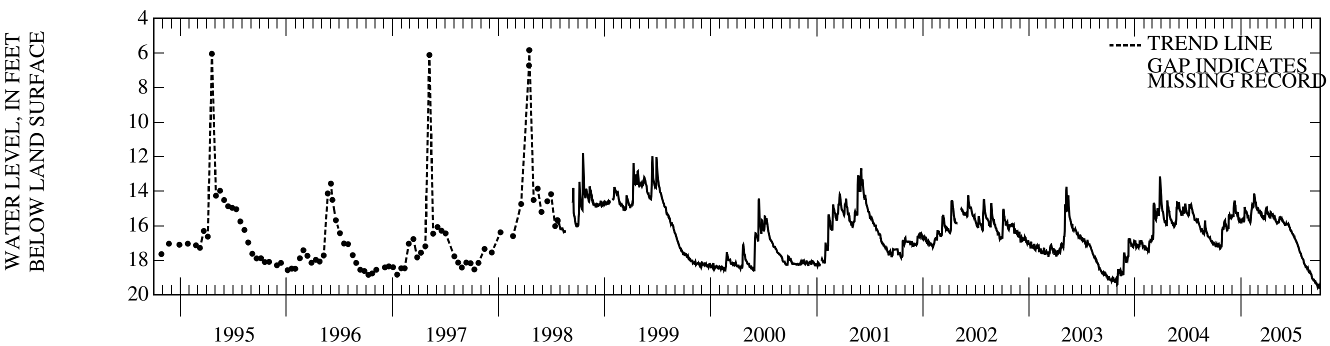
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 16	14.32	JUN 07	15.94	JUL 20	17.43	SEP 30	19.55				
MAR 31	15.29	22	16.31	AUG 17	18.47						

WATER YEAR 2005 HIGHEST 14.32 FEB 16, 2005 LOWEST 19.55 SEP 30, 2005

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.03	16.18	15.40	15.86	15.81	15.15	15.31	15.75	15.93	16.61	17.91	18.98
2	17.13	15.93	15.40	15.67	15.74	15.22	15.32	15.79	15.93	16.66	17.95	19.04
3	17.04	15.84	15.41	15.65	15.57	15.21	15.30	15.82	15.95	16.65	17.98	19.07
4	17.18	15.76	15.42	15.65	15.32	15.14	15.27	15.87	15.92	16.70	18.10	19.09
5	17.18	15.71	15.50	15.60	15.13	15.29	15.31	15.85	15.86	16.75	18.19	19.10
6	17.17	15.68	14.98	15.58	15.03	15.13	15.40	15.80	15.93	16.78	18.20	19.14
7	17.13	15.93	14.72	15.68	14.79	15.13	15.48	15.79	15.93	16.81	18.22	19.16
8	17.09	16.07	14.64	15.78	14.75	15.31	15.50	15.80	15.92	16.85	18.27	19.15
9	17.18	16.00	14.54	15.71	14.79	15.34	15.47	15.77	15.88	16.89	18.30	19.14
10	17.19	15.98	14.70	15.79	14.94	15.18	15.50	15.85	15.89	16.94	18.36	19.19
11	17.18	16.14	14.85	15.69	14.93	15.22	15.52	15.73	15.90	16.96	18.35	19.23
12	17.09	16.20	14.85	15.45	14.90	15.30	15.20	15.67	15.93	17.00	18.34	19.22
13	17.06	16.27	15.19	14.92	14.57	15.44	15.22	15.51	15.91	17.04	18.36	19.21
14	17.05	16.26	15.32	15.06	14.14	15.50	15.31	15.51	15.94	17.09	18.41	19.31
15	17.05	16.19	15.19	15.14	14.18	15.52	15.36	15.58	16.04	17.16	18.46	19.35
16	17.17	16.11	15.26	15.20	14.31	15.46	15.37	15.58	16.09	17.20	18.48	19.36
17	17.25	16.13	15.31	15.30	14.45	15.42	15.35	15.56	16.11	17.23	18.47	19.35
18	17.19	16.13	15.26	15.17	14.62	15.39	15.34	15.55	16.17	17.30	18.43	19.37
19	17.27	15.45	15.50	15.18	14.67	15.51	15.34	15.53	16.24	17.39	18.54	19.40
20	17.33	15.34	15.21	15.24	14.61	15.61	15.42	15.67	16.27	17.42	18.59	19.48
21	17.31	15.44	15.43	15.32	14.81	15.60	15.48	15.66	16.27	17.47	18.64	19.44
22	17.22	15.36	15.62	15.46	14.96	15.57	15.41	15.61	16.31	17.55	18.66	19.46
23	17.08	15.42	15.67	15.57	14.99	15.54	15.54	15.66	16.31	17.56	18.70	19.57
24	17.19	15.47	15.59	15.42	14.99	15.57	15.47	15.76	16.35	17.58	18.73	19.53
25	17.24	15.55	15.53	15.38	15.03	15.27	15.38	15.78	16.42	17.61	18.73	19.50
26	16.89	15.55	15.79	15.57	15.14	15.11	15.43	15.80	16.46	17.68	18.67	19.58
27	16.25	15.49	15.79	15.73	15.03	15.02	15.60	15.79	16.49	17.75	18.69	19.58
28	16.22	15.56	15.64	15.65	15.02	14.97	15.67	15.81	16.51	17.78	18.77	19.56
29	16.13	15.52	15.74	15.62	---	14.98	15.66	15.85	16.51	17.84	18.80	19.63
30	16.07	15.36	15.60	15.70	---	14.96	15.71	15.90	16.53	17.88	18.81	19.57
31	16.23	---	15.79	15.77	---	15.24	---	15.94	---	17.90	18.90	---
MEAN	16.99	15.80	15.32	15.50	14.90	15.30	15.42	15.73	16.13	17.23	18.45	19.33
MAX	17.33	16.27	15.79	15.86	15.81	15.61	15.71	15.94	16.53	17.90	18.90	19.63
MIN	16.07	15.34	14.54	14.92	14.14	14.96	15.20	15.51	15.86	16.61	17.91	18.98



KEOKUK COUNTY

412030092121601. Local number, 76-12-35 DBDC.
LOCATION.--Lat 41°20'27", long 92°12'22", Hydrologic Unit 07080106, approximately 0.25 mi north of the town of Sigourney, 0.25 mi north of Highway 92. Owner: City of Sigourney.
AQUIFER.--Mississippian: limestone and dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused public-supply artesian well, diameter 14 in., depth 300 ft, cased to 128 ft, open hole 128-300 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel. Analog digital water-level recorder January 1989 to September 1992.
DATUM.--Elevation of land-surface datum is 769 ft above sea level, from topographic map. Measuring point: Top of casing, .87 ft above land-surface datum.
REMARKS.-- Sigourney South Rock Island No. 1 well. Water levels affected by nearby pumping.
PERIOD OF RECORD.--July 1988 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 80.99 ft below land-surface datum, May 17, 1995; lowest measured, 118.29 ft below land-surface datum, August 31, 1991.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	86.75

LINN COUNTY

415343091360101. Local number, 82-07-25 AAAB.
LOCATION.--Lat 41°53'43", long 91°36'01", Hydrologic Unit 07080208, 0.5 mi northwest of the Town of Ely at the southwest corner of the junction of County Roads E-70 and W-6E. Owner: Iowa Department of Natural Resources--Geological Survey and U.S. Geological Survey.
AQUIFER.--Silurian: limestone and dolomite of Silurian age.
WELL CHARACTERISTICS.--Drilled observation artesian water well, diameter 6 in., depth 401 ft, cased to 121.5 ft, open hole 121.5-401 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel. Graphic water-level recorder April 1978 to October 1979. Intermittent measurement with chalked tape by USGS personnel May 1976 to April 1978.
DATUM.--Elevation of land-surface datum is 772 ft above sea level, from topographic map. Measuring point: Top of casing, 1.76 ft above land-surface datum.
REMARKS.-- Ely (Northwest) Railroad well. Records for May 1976 to September 1988 are unpublished and available in the files of the Iowa District Office.
PERIOD OF RECORD.--May 1976 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.03 ft below land-surface datum, August 26, 1993; lowest measured, 19.96 ft below land-surface datum, June 14, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 17	13.61

415422091422601. Local number, 82-07-18 CDCD.
LOCATION.--Lat 41°54'22", long 91°42'29", Hydrologic Unit 07080205, on 76th Avenue SW, approximately 1.5 mi west of U.S. Highway 218, Cedar Rapids. Owner: Edwin J. Hynek.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water-table well, diameter 4 ft, depth 13.5 ft, cribbed with brick.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel. Graphic water-level recorder July 1959 to September 1987.
DATUM.--Elevation of land-surface datum is 835 ft above sea level, from topographic map. Measuring point: Base of recorder shelter, 0.37 ft above land-surface datum.
REMARKS.-- Well previously owned by Lester Petrak.
PERIOD OF RECORD.--July 1959 to September 30, 2004 (discontinued).
REVISED RECORDS.--WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.09 ft below land-surface datum, August 4, 1968; lowest recorded, 11.75 ft below land-surface datum, February 8, 1977.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 17	9.78

MAHASKA COUNTY

411912092273601. Local number, 75-14-10 BAAC.
LOCATION.--Lat 41°19'13", long 92°27'36", Hydrologic Unit 07080106, approximately 0.5 mi south of Iowa Highway 92 in the town of Rose Hill. Owner: City of Rose Hill.
AQUIFER.--Mississippian: limestone and dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused public-supply artesian well, diameter 6 in., depth 370 ft, casing information not available.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel. Analog digital water-level recorder July 1990 to October 1992. Intermittent measurement with chalked tape by USGS personnel May 1989 to June 1989.
DATUM.--Elevation of land-surface datum is 815 ft above sea level, from topographic map. Measuring point: Top of recorder platform, 1.63 ft above land-surface datum.
REMARKS.-- Rose Hill No. 2 well.
PERIOD OF RECORD.--May 1989 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 100.03 ft below land-surface datum, May 05, 1999; lowest measured, 107.51 ft below land-surface datum, February 08, 1999.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	101.35

412020092471002. Local number, 76-17-35 CADB.
LOCATION.--Lat 41°20'26", long 92°47'09", Hydrologic Unit 07100009, 150 ft east of the old treatment plant near a retirement village on the north end of the Town of Leighton. Owner: Town of Leighton.
AQUIFER.--Cambrian-Ordovician: sandstone of Late Cambrian and sandstone and sandy dolomite of Early Ordovician age.
WELL CHARACTERISTICS.--Drilled unused public-supply artesian well, diameter 8 in. to 383 ft, 5 in. 383-1778 ft, depth 2200 ft, open 1778-2200 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 820 ft above sea level, from topographic map. Measuring point: Top of casing, 5.43 ft above land-surface datum.
REMARKS.-- Leighton No. 4 well.
PERIOD OF RECORD.--May 1989 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 99.67 ft below land-surface datum, May 16, 2000; lowest measured, 282.96 ft below land-surface datum, August 20, 1996.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	149.47

411914092274701. Local number, 75-14-10 BABC.
LOCATION.--Lat 41°19'14", long 92°27'47", Hydrologic Unit 07080106, approximately 0.45 mi south of Iowa Highway 92, behind City Hall in the Town of Rose Hill. Owner: City of Rose Hill.
AQUIFER.--Mississippian: limestone and dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused public-supply artesian well, diameter 5 in., depth 273 ft, cased to 106 ft, open hole 106-273 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 817 ft above sea level, from topographic map. Measuring point: Top of casing, 1.56 ft above land-surface datum.
REMARKS.-- Rose Hill No. 4 well.
PERIOD OF RECORD.--September 1988 to September 30, 2004 (discontinued).
REVISION.--Site identification number. Previously published as 411914092273001.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 99.56 ft below land-surface datum, May 17, 1995; lowest measured, 106.03 ft below land-surface datum, May 05, 1999.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	101.01

MARION COUNTY

411323093142601. Local number, 74-21-11 DBCB1.
LOCATION.--Lat 41°13'25", long 93°14'27", Hydrologic Unit 07100008, north of the water tower in the town square. Owner: Town of Melcher.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in., depth 9.7 ft, lined with tile. Depth originally 25 ft, depth measured in 1981 and 1991 at 12.2 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 948 ft above sea level, from topographic map. Measuring point: Top of casing, 2.02 ft above land-surface datum.
REMARKS.-- Town well No. 2.
PERIOD OF RECORD.--March 1950 to September 30, 2004 (discontinued).
REVISION.--Highest water level measured, 0.20 ft below land-surface datum, October 10, 1973; lowest measured, 15.27 ft below land-surface datum, October 22, 1953.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft below land-surface datum, October 10, 1973; lowest measured, 15.27 ft below land-surface datum, October 22, 1953.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	6.02	JUL 11	7.05	AUG 16	5.77

WATER YEAR 2005 HIGHEST 5.77 AUG 16, 2005 LOWEST 7.05 JUL 11, 2005

411329093142902. Local number, 74-21-11 DBBB2.
LOCATION.--Lat 41°13'33", long 93°14'29", Hydrologic Unit 07100008, southeast corner of the T junction of North B Street and Main Street, Melcher. Owner: Town of Melcher.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 6 in., depth 119 ft, cased to 76 ft, open hole 76-119 ft.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 943 ft above sea level, from topographic map. Measuring point: Nipple welded to plate on top of casing, 1.82 ft above land- surface datum.
REMARKS.-- Town well No. 3, well 11K1.
PERIOD OF RECORD.--July 1945 to December 1955, October 1976 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.16 ft below land-surface datum, May 07, 1996; lowest measured (nearby well pumping), 108.85 ft below land-surface datum, December 4, 6-7, 1949.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	21.44

MONTGOMERY COUNTY

410057095075101. Local number, 72-37-29 BABA.
LOCATION.--Lat 41°00'57", long 95°07'50", Hydrologic Unit 10240005, approximately 4.35 mi east of the City of Red Oak, just south of County Road H-34. Owner: John Ogden.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Bored observation water-table well, diameter 3 in., depth 40 ft, screened interval unavailable.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel. US Geological Survey data collection platform with satellite telemetry with submersible pressure transducer.
DATUM.--Elevation of land-surface datum is 1,275 ft above sea level, from topographic map. Measuring point: Top of casing, 2.47 ft above land-surface datum.
PERIOD OF RECORD.--June 1937 to current year.
REVISION.--Measuring point revised May 10, 1990 to September 10, 1992.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.14 ft below land-surface datum, July 22, 1993; lowest measured, dry, July 8, 1963 and February 3, 1964.

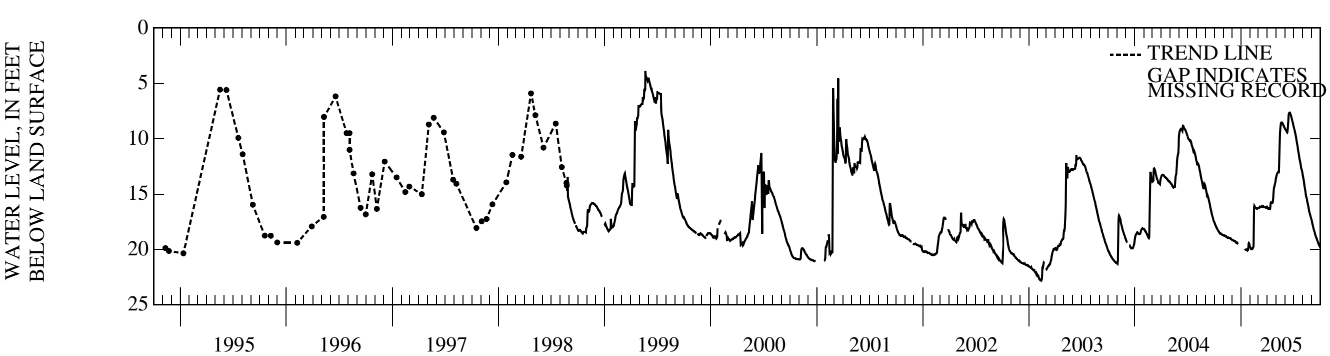
WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 04	18.83	JAN 27	19.43	APR 20	15.61	JUL 14	10.74				
DEC 13	19.34	MAR 02	16.24	JUN 06	9.31	AUG 16	15.65				

WATER YEAR 2005 HIGHEST 9.31 JUN 06, 2005 LOWEST 19.43 JAN 27, 2005

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.60	18.71	19.15	---	19.80	16.25	16.27	13.50	9.11	8.95	13.32	17.46
2	17.68	18.74	19.17	---	19.87	16.24	16.30	13.39	9.15	9.06	13.47	17.58
3	17.74	18.76	19.18	---	19.92	16.23	16.29	13.29	9.19	9.16	13.62	17.70
4	17.80	18.77	19.18	---	19.96	16.20	16.27	13.21	9.19	9.27	13.80	17.80
5	17.87	18.78	19.20	---	19.98	16.21	16.26	13.14	9.23	9.39	13.98	17.91
6	17.93	18.76	19.20	---	19.99	16.19	16.29	13.08	9.31	9.53	14.15	18.01
7	17.98	18.78	19.21	---	19.98	16.15	16.34	13.02	9.41	9.67	14.32	18.12
8	18.03	18.83	19.23	---	19.96	16.16	16.36	12.99	9.44	9.81	14.50	18.21
9	18.08	18.83	19.22	---	19.93	16.17	16.36	12.98	9.30	9.96	14.67	18.30
10	18.14	18.83	19.24	---	19.88	16.14	16.36	13.00	9.04	10.12	14.84	18.39
11	18.20	18.86	19.27	---	19.81	16.12	16.13	12.72	8.62	10.28	15.00	18.49
12	18.24	18.89	19.28	---	19.69	16.09	15.80	11.77	8.21	10.44	15.14	18.58
13	18.29	18.92	19.33	---	17.54	16.12	15.75	10.46	7.91	10.59	15.25	18.67
14	18.33	18.94	19.38	19.95	16.24	16.15	15.78	9.57	7.73	10.75	15.35	18.76
15	18.36	18.95	19.38	20.00	16.07	16.17	15.81	9.12	7.66	10.91	15.48	18.84
16	18.41	18.94	19.39	20.04	16.13	16.16	15.82	8.86	7.63	11.08	15.62	18.92
17	18.45	18.94	19.41	20.06	16.18	16.13	15.82	8.68	7.62	11.25	15.76	18.98
18	18.48	18.95	19.41	20.04	16.23	16.10	15.79	8.58	7.65	11.42	15.88	19.04
19	18.53	18.94	19.44	20.01	16.26	16.12	15.74	8.53	7.72	11.58	16.02	19.11
20	18.57	18.95	19.41	19.99	16.25	16.16	15.64	8.53	7.80	11.72	16.16	19.20
21	18.59	18.99	19.42	19.99	16.27	16.17	15.35	8.54	7.88	11.86	16.30	19.27
22	18.57	19.00	---	20.03	16.30	16.17	14.82	8.55	7.98	12.00	16.44	19.34
23	18.56	18.99	---	20.07	16.32	16.18	14.53	8.59	8.07	12.14	16.56	19.42
24	18.59	19.01	---	20.05	16.31	16.19	14.42	8.65	8.18	12.30	16.68	19.48
25	18.63	19.02	---	19.93	16.30	16.20	14.31	8.71	8.29	12.47	16.78	19.53
26	18.67	19.01	---	19.50	16.30	16.23	14.20	8.77	8.39	12.62	16.87	19.60
27	18.70	19.03	---	19.42	16.27	16.23	14.10	8.83	8.52	12.69	16.94	19.66
28	18.70	19.08	---	19.47	16.25	16.20	13.96	8.88	8.63	12.78	17.03	19.71
29	18.68	19.12	---	19.58	---	16.16	13.79	8.94	8.74	12.90	17.13	19.78
30	18.67	19.14	---	19.66	---	16.14	13.62	9.00	8.84	13.03	17.23	19.81
31	18.70	---	---	19.73	---	16.20	---	9.07	---	13.17	17.34	---
MEAN	18.32	18.92	---	---	17.86	16.17	15.48	10.48	8.48	11.06	15.54	18.79
MAX	18.70	19.14	---	---	19.99	16.25	16.36	13.50	9.44	13.17	17.34	19.81
MIN	17.60	18.71	---	---	16.07	16.09	13.62	8.53	7.62	8.95	13.32	17.46



MUSCATINE COUNTY

412120091080401. Local number, 76-02-30 CBAA1.
LOCATION.--Lat 41°21'20", long 91°08'01", Hydrologic Unit 07080101, west of the Town of Fruitland on an Iowa State University Agricultural Experiment Farm. Owner: U.S. Geological Survey.
AQUIFER.--Alluvial: Mississippi River sand and gravel of Holocene age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in., depth 27 ft, screened 24-27 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel. Graphic water-level recorder May 1966 to October 1987.
DATUM.--Elevation of land-surface datum is 546 ft above sea level, from topographic map. Measuring point: Top of casing, 3.40 ft above land-surface datum.
REMARKS.--Fruitland/30M4 well.
PERIOD OF RECORD.--May 1966 to September 30, 2004 (discontinued).
REVISED RECORDS.-- WDR IA-84-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.15 ft below land-surface datum, September 7, 1993; lowest measured, 19.46 ft below land-surface datum, August 17, 2005.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 17	19.46

412120091080402. Local number, 76-02-30 CBAA.
LOCATION.--Lat 41°21'20", long 91°08'04", Hydrologic Unit 07080101, west of the Town of Fruitland on an Iowa State University Agricultural Experiment Farm. Owner: U.S. Geological Survey.
AQUIFER.--Silurian-Devonian: limestone of Silurian and Devonian age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 189 ft, screened 169-189 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 546 ft above sea level, from topographic map. Measuring point: Top of casing, 3.01 ft above land-surface datum.
REMARKS.-- Fruitland 13B well.
PERIOD OF RECORD.--October 1992 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.12 ft below land-surface datum, August 24, 1993; lowest measured, 19.44 ft below land-surface datum, August 17, 2005.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 17	19.44

412120091080403. Local number, 76-02-30 CBAA.
LOCATION.--Lat 41°21'20", long 91°08'04", Hydrologic Unit 07080101, west of the Town of Fruitland on an Iowa State University Agricultural Experiment Farm. Owner: U.S. Geological Survey.
AQUIFER.--Alluvial: Mississippi River sand and gravel of Quarternary age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 100 ft, screened 90-100 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 546 ft above sea level, from topographic map. Measuring point: Top of casing, 3.13 ft above land-surface datum.
REMARKS.-- Fruitland 13C well.
PERIOD OF RECORD.--October 1992 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.20 ft below land-surface datum, September 10, 1993; lowest measured, 19.70 ft below land-surface datum, May 06, 1997 .

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

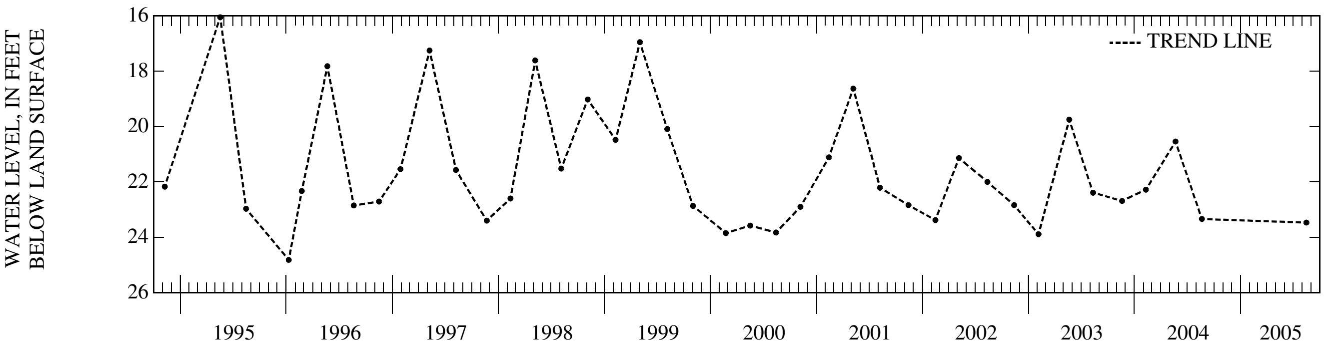
DATE	WATER LEVEL
AUG 17	19.46

VAN BUREN COUNTY

404150091483001. Local number, 68-08-08 CDD.
LOCATION.--Lat 40°41'53", long 91°48'20", Hydrologic Unit 07100009, located at the west end of the park in the City of Bonaparte, south of County Road J-40. Owner: City of Bonaparte.
AQUIFER.--Mississippian: limestone and dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused semi-confined public-supply well, diameter 6 in., depth 205 ft, cased to 18 ft, open hole 18-205 ft.
INSTRUMENTATION.--Intermittent measurement with chalked tape by USGS personnel. Graphic water-level recorder December 1988 to July 1990. Intermittent measurement with chalked tape by USGS personnel August 1988 to December 1988.
DATUM.--Elevation of land-surface datum is 552 ft above sea level, from topographic map. Measuring point: Top of recorder platform, 0.65 ft above land-surface datum.
REMARKS.-- Bonaparte No. 1 well. Recorder removed July 17, 1990.
PERIOD OF RECORD.--August 1988 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.08 ft below land-surface datum, August 10, 1993; lowest measured, 32.13 ft below land-surface datum, August 16, 1989.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	23.47



WASHINGTON COUNTY

411300091320701. Local number, 74-06-15 BDAC.
LOCATION.--Lat 41°12'59", long 91°32'07", Hydrologic Unit 07080107, in the water treatment plant, beneath the water tower in Crawfordsville. Owner: Town of Crawfordsville.
AQUIFER.--Mississippian: dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused municipal artesian water well, diameter 6.5 in., depth 215 ft, cased to 132 ft, open hole 132-215 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 725 ft above sea level, from topographic map. Measuring point: Nipple on plate welded to casing, 1.10 ft above land-surface datum.
REMARKS: Crawfordsville North.
PERIOD OF RECORD.--September 1983, March 1987 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 69.23 ft below land-surface datum, March 25, 1987; lowest measured, 78.09 ft below land-surface datum, August 05, 1999.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	74.25

412750091495201. Local number, 77-09-24 AADA.
LOCATION.--Lat 41°27'53", long 91°49'47", Hydrologic Unit 07080209, north of the city sewage treatment plant and west of First Avenue SE, Wellman. Owner: City of Wellman.
AQUIFER.--Mississippian: dolomite of Mississippian age.
WELL CHARACTERISTICS.--Drilled unused artesian water well, diameter 10 in. to 27 ft, 8 in. to 47 ft, depth 110 ft, cased to 47 ft, open hole 47 to 110 ft.
INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 695 ft above sea level, from topographic map. Measuring point: Nipple on plate welded to casing, 1.87 ft above land-surface datum.
REMARKS.-- City test well No. 1.
PERIOD OF RECORD.--May 1963 to October 1971, May 1973 to September 30, 2004 (discontinued).
REVISED RECORDS.--WDR IA-84-1, WDR IA-88-1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.38 ft above land-surface datum, May 03, 1993; lowest measured, 6.80 ft below land-surface datum, October 20, 1964.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 16	4.16

WASHINGTON COUNTY—Continued

411828091304701(revised). Local number, 75-06-14 ABBB.
LOCATION.--Lat 41°18'28", long 91°30'47", Hydrologic Unit 07080209, 1 mi north and 1.5 mi east of the junction of U.S. Highway 218 and Iowa Highway 92. Owner: Mrs. David Armstrong.
AQUIFER.--Glacial drift of Pleistocene age.
WELL CHARACTERISTICS.--Bored unused water-table well, diameter 12 in., depth 45 ft, lined with tile.
INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.
DATUM.--Elevation of land-surface datum is 745 ft above sea level, from topographic map. Measuring point: Nipple welded to barrel, 4.08 ft above land-surface datum.
PERIOD OF RECORD.--November 1983 to September 30, 2004 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.29 ft below land-surface datum, April 16, 1999; lowest measured, 13.64 ft below land-surface datum, August 22, 1996.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
AUG 15	7.97

GROUND WATER QUALITY MONITORING PROGRAM

[Geologic unit abbreviations used in this table: 110QRCU, Quarternary-Cretaceous Undifferentiated; 110QRNR, Quarternary System; 111ALVM, Holocene Alluvium; 111ENRV, East Nishnabotna River Allvuial; 111SDRV, Soldier River Alluvial; 112AFNN, Aftonian Interglacial Deposits; 112PLSC, Pleistocene Series; GWM, Ground Water Monitoring Program; NAWQA, National Water Quality Assessment Program]

MULTIPLE STATION ANALYSES

Station number	Station name	County	Date	Time	Project	Geologic unit	Depth of well, feet below LSD (72008)	Flow rate of well, gal/min (00058)
411727094374001	075N33W15DDBB 1976Fontanelle 5	Adair	07-08-05	1100	GWM	111ALVM	39	--
405632094534401	071N35W20AACB 1990Nodaway 4	Adams	07-13-05	1225	GWM	111ALVM	35	--
431638091282902	098N05W30ACDC 1899Waukon 2	Allamakee	08-02-05	1205	GWM	371JRDN	577	300
432202091133001	099N03W29BACD 24826 1977LANSING 2	Allamakee	08-11-05	0915	GWM	371MSMN	805	280
413234094552401	078N35W19BCDB 1976Brayton 1	Audubon	06-29-05	1400	GWM	111ENRV	41	--
415955092120701	083N12W13CBBB 1921Keystone 1	Benton	06-16-05	1230	NAWQA	364STPR	1,300	--
420535091524002	084N09W15ACC 1932Shellsburg 2	Benton	08-05-05	1110	GWM	340DVSL	335	100
421011092012101	085N10W16CDBB 00025 1932Vinton 2	Benton	08-24-05	0930	GWM	371JRDN	1,505	--
421130092274501	Traer No. 4	Black Hawk	06-23-05	1600	NAWQA	371JRDN	1340	--
421903092112601	087N12W25DBBC 23018 1972La Porte City 4	Black Hawk	06-24-05	1000	NAWQA	360OVCB	1,400	--
422819092212701	089N13W34DDAA 12031 1960Waterloo 17	Black Hawk	08-03-05	0840	GWM	344DVNNM	215	--
420451093561301	084N27W13DCAA 1940Boone 20	Boone	07-07-05	0845	GWM	111ALVM	64	180
420959094001901	085N27W16CCDC 1967Pilot Mound 3	Boone	07-06-05	1740	GWM	112PLSC	30	32
424621092234501	Bremer	Bremer	07-07-05	1000	NAWQA	364STPR	815	--
422852092040101	089N10W31AAB 09382 1957Jesup 2	Buchanan	08-05-05	1330	GWM	358KNKK	380	275
423557091382801	Lamont 2	Buchanan	08-29-05	1145	GWM	371JRDN	1,195	--
423840095135001	090N37W05AAD 10125 1959Storm Lake 4	Buena Vista	07-12-05	0930	NAWQA	371JRDN	1,690	--
423840095135001	090N37W05AAD 10125 1959Storm Lake 4	Buena Vista	07-14-05	0930	NAWQA	371JRDN	1,690	--
424708094570901	092N35W14BCCC 2002 ALBERT CITY 3	Buena Vista	07-12-05	1100	GWM	112PLSC	183	--
425344095090401	093N37W01DDDD 1977Sioux Rapids 2	Buena Vista	07-12-05	1215	GWM	111ALVM	50	--
425330092483701	093N17W01DDDA 11918 1960Greene 2	Butler	07-14-05	1235	GWM	344CDVL	215	235
422339094375102	Rockwell City Well 6	Calhoun	07-12-05	1330	NAWQA	371JRDN	1,970	--
422339094375102	Rockwell City Well 6	Calhoun	07-14-05	1330	NAWQA	371JRDN	1,970	--
422527094511901	088N34W19BDAA 02018 1945Lytton 2	Calhoun	07-13-05	1600	NAWQA	360OVCB	1,854	--
415233094403201	082N33W34ABBD 1938Coon Rapids 1, North	Carroll	07-11-05	1325	GWM	217DKOT	191	100
411622094520901	075N35W27BBAB 1921Cumberland 1	Cass	07-13-05	0950	GWM	112PLSC	155	--
411639094521101	075N35W22CBDC 1978Cumberland (5) 4	Cass	07-13-05	1040	GWM	217DKOT	213	--
414032091210001	079N04W06DACD 1979West Branch 4	Cedar	08-31-05	0825	GWM	358ALXD	450	--
423744095383301	090N41W11ADAD 1967Quimby 1	Cherokee	07-06-05	1355	GWM	217DKOT	225	--
424340095331301	091N40W03ACCC 1996Cherokee 10	Cherokee	07-06-05	1530	GWM	217DKOT	251	--
424934095474701	093N42W34CCBB 03152 1948Marcus 2	Cherokee	07-13-05	1200	NAWQA	364PRSR	880	--
425753092115501	094N12W13AAAA 1956Fredericksburg 2	Chickasaw	08-22-05	1430	GWM	364STPR	792	250
423845091240701	091N05W35CDC 00161 1935 Edgewood City 1 W	Clayton	08-29-05	1400	GWM	371CMBR	1,150	--
424706091061101	092N02W17ACC 1937Guttenberg 1	Clayton	08-16-05	1045	GWM	371JRDN	450	290
430130091103001	095N03W22DD 05311 1952McGregor 6	Clayton	08-10-05	0945	GWM	371SLRC	116	290
430213091105901	095N03W 1988Marquette 2	Clayton	08-10-05	1315	GWM	370CMBR	515	230
414652090153201	081N06E33ADA 1956Camanche 2	Clinton	08-31-05	1330	GWM	111ALVM	61	200
414903090323401	081N04E18CDCA 03376 1948De Witt 5	Clinton	08-25-05	1150	GWM	371JRDN	1,421	--
415025090110611	081N07E07ACA 00344 1936Clinton 7	Clinton	08-15-05	1030	NAWQA	371GLVL	2,242	--
420336095115601	084N37W30BDAD 1936Vail (1),2	Crawford	07-05-05	1330	GWM	111ALVM	32	--
413749093592601	079N27W21CDDA 1977Adel 3	Crawford	07-06-05	1145	GWM	111ALVM	54	370
415057094065301	081N28W09ABBB 28614 1987Perry 9R	Crawford	07-06-05	1400	GWM	111ALVM	45	335
422039091144501	Hopkinton 4	Delaware	09-12-05	1030	GWM	371JRDN	1,250	--
423020091273701	089N05W20DBBB 1981Manchester 7	Delaware	08-01-05	1240	GWM	350SLRN	270	--
404933091105701	070N03W34AABA 24618 1978West Burlington 5	Des Moines	09-09-05	1100	GWM	371JRDN	1,811	--
423135090383201	089N03E18AADD 1969Dubuque 9	Dubuque	08-11-05	1130	GWM	111ALVM	125	--
423602090595201	090N01W19AA 1987Holy Cross 1	Dubuque	08-02-05	0845	GWM	364GLEN	665	--
432339094500101	099N34W14BCAC 1972Estherville #10	Emmet	07-12-05	1630	NAWQA	360OVCB	750	--
432339094500101	099N34W14BCAC 1972Estherville #10	Emmet	07-12-05	1640	NAWQA	360OVCB	750	--
432349094285201	099N31W14BBCD 1995Armstrong 7	Emmet	07-13-05	1330	GWM	112PLSC	136	300
424054091543301	091N09W21ACA 01511 1942Oelwein 42	Fayette	08-29-05	0900	GWM	371JRDN	1,328	688
425717091382601	094N07W14CBAD 1948Elgin 1	Fayette	08-16-05	1430	GWM	364GLEN	208	--
425717091382602	094N07W14CBAD 1954Elgin 2	Fayette	08-02-05	1405	GWM	364GLEN	220	--
430800092540301	096N17W18CDBA 09845 1958Rudd 2	Floyd	07-11-05	1300	NAWQA	371JRDN	1,288	--
424421093114801	092N20W34BDCC 05443 1952Hampton 3	Franklin	06-22-05	1630	NAWQA	360OVCB	1,763	--
425341093132501	093N20W05DDAB 1956Sheffield 2	Franklin	07-14-05	1500	GWM	110QRNR	27	110
404327095284801	068N40W07BCAA 1980Farragut 79-2 (North)	Fremont	07-13-05	1440	GWM	111ALVM	65	--
421322092522001	086N17W31ABDA 13238 1962Conrad 3	Grundy	08-03-05	1150	GWM	339HMPN	120	150
421856092355101	087N15W28DBDD 1978Reinbeck 3	Grundy	08-03-05	1020	GWM	344CDVL	394	330
422611092552501	088N18W14BCCB 10984 1960Wellsburg 1	Grundy	06-23-05	1130	NAWQA	371JRDN	2,050	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Pump or flow period prior to sampling, minutes (72004)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)
07-08-05	30	.1	6.6	430	13.0	200	--	--	2.20	15.0	180	14.0	--
07-13-05	30	.4	6.7	480	12.5	240	--	--	1.10	12.0	140	4.4	--
08-02-05	30	--	7.2	710	10.7	370	--	--	1.00	11.0	270	38.0	--
08-11-05	--	.3	7.3	640	12.2	160	35.0	20.0	4.10	91.0	220	43.0	.25
06-29-05	--	.2	6.5	810	12.5	430	--	--	1.20	27.0	310	62.0	--
06-16-05	--	.3	6.9	1,740	11.2	710	152	80.2	10.3	136	--	4.97	1.7
08-05-05	100	12.5	6.9	640	11.0	350	--	--	2.90	12.0	250	20.0	--
08-24-05	--	1.1	7.0	880	12.4	340	75.0	39.0	14.0	76.0	300	5.8	1.20
06-23-05	--	.3	7.1	1,040	13.0	460	101	48.9	15.8	67.2	--	6.32	1.2
06-24-05	--	.5	7.1	864	12.5	370	78.9	40.4	12.6	58.5	--	5.37	1.3
08-03-05	--	.2	7.1	650	11.6	340	--	--	1.70	12.0	220	26.0	--
07-07-05	30	.8	7.5	700	12.0	370	--	--	3.00	13.0	250	26.0	--
07-06-05	30	.6	7.3	720	11.7	400	--	--	2.80	7.90	300	11.0	--
07-07-05	--	.5	7.2	614	10.8	280	56.5	32.3	7.63	33.9	--	1.62	2.0
08-05-05	30	1.6	7.2	520	10.8	300	--	--	1.70	5.40	240	5.5	--
08-29-05	--	.3	7.3	520	10.7	250	53.0	26.0	9.30	23.0	240	3.0	1.11
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	.6	6.8	2,300	17.3	990	280	68.2	42.9	151	--	27.7	1.7
07-12-05	30	M	7.4	1,400	10.5	710	--	--	8.00	70.0	400	<1.0	--
07-12-05	50	4.0	7.1	1,200	11.5	530	--	--	3.60	34.0	240	210	--
07-14-05	35	.5	7.6	460	10.3	260	--	--	1.30	2.80	210	5.0	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	.7	6.7	1,520	17.3	680	164	64.9	23.1	97.4	--	10.3	1.4
07-13-05	--	1.0	6.9	1,990	15.5	820	188	83.9	26.1	172	--	17.5	1.3
07-11-05	30	.9	7.0	410	13.1	220	--	--	<1.00	6.50	150	4.6	--
07-13-05	30	1.6	6.7	410	13.5	210	--	--	1.60	11.0	180	<1.0	--
07-13-05	30	.2	6.8	380	12.5	200	--	--	1.50	10.0	190	<1.0	--
08-31-05	--	7.9	6.7	860	12.3	440	--	--	1.80	23.0	380	39.0	--
07-06-05	30	.1	7.5	580	12.0	310	--	--	3.80	14.0	250	<1.0	--
07-06-05	60	M	7.2	1,100	11.5	630	--	--	5.30	52.0	280	2.0	--
07-13-05	--	.8	6.8	1,880	14.5	970	258	78.5	12.4	99.3	--	6.97	1.3
08-22-05	--	.2	7.3	450	10.5	230	54.0	25.0	5.40	11.0	220	<1.0	.64
08-29-05	--	.3	7.2	510	12.9	230	52.0	26.0	8.90	20.0	240	1.3	.83
08-16-05	--	.8	6.9	710	14.1	330	79.0	36.0	2.60	39.0	310	31.0	.24
08-10-05	--	7.6	6.9	700	10.5	360	85.0	36.0	2.10	21.0	280	33.0	.16
08-10-05	--	.3	7.3	640	13.0	230	55.0	23.0	4.20	55.0	250	39.0	.40
08-31-05	30	6.9	7.4	360	13.2	160	--	--	1.40	9.10	95	15.0	--
08-25-05	90	.1	7.3	870	17.2	220	48.0	25.0	13.0	110	260	84.0	1.04
08-15-05	--	.2	7.1	713	17.9	280	66.2	26.5	9.82	51.1	--	38.9	.6
07-05-05	30	1.1	6.8	850	18.0	400	--	--	1.20	27.0	280	49.0	--
07-06-05	35	.7	7.3	740	10.7	400	--	--	2.20	14.0	290	26.0	--
07-06-05	30	.4	7.3	680	11.1	400	--	--	1.80	5.90	280	10.0	--
09-12-05	--	--	7.2	610	15.1	210	46.0	25.0	11.0	47.0	250	5.9	1.35
08-01-05	30	4.6	7.4	520	10.4	260	--	--	1.80	4.70	180	9.4	--
09-09-05	--	.7	7.3	1,700	21.9	350	78.0	36.0	18.0	240	240	110	1.99
08-11-05	--	.1	7.5	380	13.8	190	--	--	2.70	10.0	160	15.0	--
08-02-05	60	.9	7.0	610	14.3	360	--	--	1.80	2.20	300	<1.0	--
07-12-05	--	1.1	6.8	1,570	9.8	870	228	71.7	5.52	58.4	--	2.23	.4
07-12-05	--	--	--	1,500	--	890	230	75.0	5.50	57.0	400	1.9	.38
07-13-05	35	.4	7.3	1,100	10.8	560	--	--	4.10	55.0	430	<1.0	--
08-29-05	--	.5	7.0	520	10.4	250	54.0	27.0	8.70	20.0	240	1.9	.96
08-16-05	--	1.7	6.8	640	10.3	360	100	28.0	2.10	5.60	260	17.0	.25
08-02-05	30	.9	7.1	670	10.3	370	--	--	2.40	5.40	240	16.0	--
07-11-05	--	8.4	7.3	579	12.7	290	69.8	27.6	7.26	15.4	--	1.46	.8
06-22-05	--	.3	6.8	961	12.9	370	88.9	34.5	20.0	65.8	--	9.16	1.2
07-14-05	30	.5	7.5	560	13.0	310	--	--	1.20	4.10	210	8.3	--
07-13-05	30	.7	6.9	600	14.0	300	--	--	2.80	18.0	240	14.0	--
08-03-05	30	1.4	7.1	730	11.4	390	--	--	2.60	12.0	280	22.0	--
08-03-05	30	.2	7.1	1,000	10.9	620	--	--	3.50	12.0	210	<1.0	--
06-23-05	--	.3	7.1	934	13.0	350	81.4	34.8	20.2	71.8	--	9.37	1.2

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Organic nitro-gen, water, fltrd, mg/L (00607)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phate, water, unfltrd mg/L (00650)	Organic carbon, water, unfltrd mg/L (00680)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)
07-08-05	--	19.0	240	.30	.300	<.050	<.10	<.020	.590	2.1	--	--	--
07-13-05	--	98.0	330	.13	<.050	2.60	<.10	<.020	.070	1.0	--	--	--
08-02-05	--	24.0	400	<.10	<.050	3.00	<.10	.020	.040	<.5	--	--	--
08-11-05	8.70	48.0	330	<.10	.100	<.050	<.10	<.020	.030	<.5	<.10	<.01	<.0
06-29-05	--	40.0	510	.12	.080	<.050	<.10	<.020	.220	1.3	--	--	--
06-16-05	8.56	684	1,330	--	4.27	<.06	--	<.006	--	--	<2	<.20	E.2
08-05-05	--	38.0	410	.16	<.050	5.70	.16	.030	.040	.8	--	--	--
08-24-05	7.70	170	560	.88	.770	<.050	.11	<.020	.030	.8	<.10	<.01	<.0
06-23-05	8.37	255	703	--	1.08	<.06	--	<.006	--	--	<2	<.20	<.2
06-24-05	8.07	162	545	--	.77	<.06	--	<.006	--	--	<2	<.20	<.2
08-03-05	--	68.0	400	.14	.120	1.40	<.10	<.020	.020	.7	--	--	--
07-07-05	--	62.0	480	.96	<.050	9.10	.96	.090	.110	2.5	--	--	--
07-06-05	--	77.0	480	.27	.200	<.050	<.10	<.020	.100	1.1	--	--	--
07-07-05	7.23	43.9	332	--	1.58	<.06	--	<.006	--	--	<2	<.20	<.2
08-05-05	--	21.0	320	.11	<.050	3.30	.11	<.020	.040	.6	--	--	--
08-29-05	7.20	45.0	300	.58	.550	<.050	<.10	<.020	.030	.5	<.10	<.01	<.0
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	8.43	1,070	1,920	--	2.44	<.06	--	<.006	--	--	<2	<.20	E.2
07-12-05	--	420	1,090	1.8	1.60	<.050	.25	<.020	.070	2.8	--	--	--
07-12-05	--	36.0	780	.18	<.050	6.50	.17	.020	.030	.7	--	--	--
07-14-05	--	39.0	270	<.10	<.050	<.050	<.10	.040	.040	.6	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	9.95	543	1,160	--	.97	<.06	--	<.006	--	--	<2	<.20	E.1
07-13-05	9.14	847	1,600	--	.97	<.06	--	<.006	--	--	M	<.20	<.2
07-11-05	--	36.0	260	<.10	<.050	1.70	<.10	<.020	8.90	<.5	--	--	--
07-13-05	--	35.0	250	<.10	<.050	.050	<.10	<.020	.040	<.5	--	--	--
07-13-05	--	15.0	190	<.10	.050	<.050	<.10	<.020	.050	<.5	--	--	--
08-31-05	--	46.0	530	1.1	.790	<.050	.60	<.020	.110	1.5	--	--	--
07-06-05	--	55.0	360	.55	.450	<.050	.10	.020	.050	.6	--	--	--
07-06-05	--	400	960	.51	.420	<.050	<.10	<.020	.040	.8	--	--	--
07-13-05	12.8	810	1,570	--	1.43	<.06	--	<.006	--	--	<2	<.20	1.3
08-22-05	7.40	29.0	260	.53	.410	<.050	.10	<.020	.030	.5	<.10	<.01	<.0
08-29-05	7.40	46.0	300	.45	.400	<.050	<.10	<.020	.040	2.2	<.10	<.01	<.0
08-16-05	10.0	41.0	420	<.10	<.050	.130	<.10	<.020	.030	<.5	<.10	<.01	M
08-10-05	13.0	29.0	400	.16	<.050	2.80	<.10	<.020	.040	.6	<.10	<.01	<.0
08-10-05	8.90	31.0	330	<.10	<.050	<.050	<.10	<.020	<.020	.6	<.10	<.01	<.0
08-31-05	--	27.0	190	<.10	<.050	6.10	<.10	.050	.060	.6	--	--	--
08-25-05	9.20	82.0	510	1.3	1.00	<.050	.30	<.020	.020	<.5	<.10	<.01	<.0
08-15-05	8.81	50.8	411	--	.46	<.06	--	.130	--	--	<2	<.20	<.2
07-05-05	--	76.0	520	<.10	<.050	5.40	<.10	.110	.120	.7	--	--	--
07-06-05	--	58.0	450	.16	.100	1.60	<.10	<.020	.080	1.8	--	--	--
07-06-05	--	89.0	490	.13	.060	<.050	<.10	<.020	.040	1.6	--	--	--
09-12-05	8.70	63.0	350	.80	.700	<.050	.10	<.020	.020	<.5	<.10	<.01	<.0
08-01-05	--	24.0	300	<.10	<.050	11.0	<.10	<.020	.040	<.5	--	--	--
09-09-05	12.0	480	1,120	1.4	1.10	<.050	.30	<.020	.030	<.5	<.10	<.01	<.0
08-11-05	--	15.0	220	1.0	.740	<.050	.27	.070	.480	4.5	--	--	--
08-02-05	--	22.0	330	<.10	<.050	<.050	<.10	<.020	<.020	1.1	--	--	--
07-12-05	24.2	549	1,260	--	1.65	<.06	--	.044	--	--	<2	<.20	.4
07-12-05	24.0	520	1,300	1.3	.980	<.050	.32	<.020	.100	2.1	<.10	<.01	<.0
07-13-05	--	210	780	.96	.710	<.050	.25	<.020	.070	2.4	--	--	--
08-29-05	6.90	44.0	290	.53	.420	<.050	.11	<.020	.030	<.5	<.10	<.01	<.0
08-16-05	12.0	46.0	290	<.10	<.050	6.40	<.10	<.020	.020	.7	<.10	<.01	<.0
08-02-05	--	48.0	380	<.10	<.050	6.20	<.10	<.020	.030	.6	--	--	--
07-11-05	7.90	56.3	346	--	<.04	.35	--	<.006	--	--	<2	<.20	<.2
06-22-05	8.58	183	598	--	1.46	<.06	--	<.006	--	--	<2	<.20	E.1
07-14-05	--	18.0	330	<.10	<.050	15.0	<.10	.040	.100	1.4	--	--	--
07-13-05	--	59.0	380	.16	.090	1.50	<.10	.070	.190	.6	--	--	--
08-03-05	--	43.0	420	.46	.390	4.70	<.10	<.020	.020	.5	--	--	--
08-03-05	--	350	760	.86	.810	<.050	<.10	<.020	.030	<.5	--	--	--
06-23-05	8.57	180	597	--	1.53	<.06	--	<.006	--	--	<2	<.20	<.2

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Cyanide water unfltrd mg/L (00720)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)
07-08-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-11-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	M	<.00	<.05	<.01
06-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	7	<.06	906	<.04	<.8	2.7	--	654	E.06	9.8	--	6.46	.5
08-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-24-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
06-23-05	12	<.06	816	<.04	<.8	.9	--	2,160	<.08	21.2	--	4.68	E.3
06-24-05	16	<.06	677	<.04	<.8	<2.8	--	166	<.08	3.4	--	4.06	<.4
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-07-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-07-05	45	<.06	621	<.04	<.8	<2.0	--	465	<.40	6.3	--	1.60	<.4
08-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	<.1	<.0	M	<.0	<.02	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
07-12-05	--	--	--	--	--	--	<.01	--	--	--	--	--	--
07-14-05	8	<.06	1,610	<.04	<.8	3.6	--	870	<.08	40.3	--	8.27	.7
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	<.01	--	--	--	--	--	--
07-14-05	12	<.06	680	<.04	<.8	2.1	--	958	<.08	16.4	--	4.87	E.3
07-13-05	8	<.06	587	<.04	<.8	2.8	<.01	643	<.08	9.0	--	5.45	.4
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	8	.06	361	<.04	<.8	2.9	<.01	972	<.08	58.8	--	7.18	E.3
08-22-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-29-05	<.1	<.0	M	<.0	<.02	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-16-05	.1	<.0	M	<.0	<.01	M	<.01	<.02	.0	M	<.00	<.05	<.01
08-10-05	.1	<.0	M	<.0	<.01	<.01	<.01	<.02	<.0	<.02	<.00	<.05	<.01
08-10-05	.1	<.0	M	<.0	<.01	M	<.01	<.02	<.0	<.02	<.00	<.05	<.01
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-25-05	<.1	<.0	M	<.0	<.02	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-15-05	55	<.06	280	<.04	<.8	1.7	<.01	85	.12	2.1	--	6.97	<.4
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-12-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-09-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	13	E.03	243	<.04	.9	1.8	--	1,780	<.08	238	--	8.37	E.4
07-12-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	M	<.00	<.05	<.01
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	<.1	<.0	M	<.0	<.02	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-16-05	.1	<.0	<.05	<.0	<.01	<.01	<.01	<.02	<.0	<.02	<.00	<.05	<.01
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	32	<.06	231	<.04	<.8	1.1	<.01	E5	E.06	<.2	--	2.52	<.4
06-22-05	17	<.06	1,280	<.04	<.8	<4.8	--	286	<.08	11.5	--	4.03	E.2
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	16	<.06	1,430	<.04	<.8	<5.2	--	1,060	<.08	10.7	--	3.52	<.4

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Thallium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	2,4,5-T water unfltrd ug/L (39740)	2,4-D water unfltrd ug/L (39730)	2,4-DB water unfltrd ug/L (30219)	CIAT, water, unfltrd ug/L (75981)	CEAT, water, unfltrd ug/L (75980)	Acetochlor, water, unfltrd ug/L (49259)	Acifluorfen, water unfltrd ug/L (79193)	Alachlor, water, unfltrd ug/L (77825)	Ametryn water unfltrd ug/L (82184)
07-08-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-13-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-02-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-11-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
06-29-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-16-05	<.2	3,570	<.04	27.6	--	--	--	--	--	--	--	--	--
08-05-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
08-24-05	<.01	M	<.0	--	--	--	--	--	--	--	--	--	--
06-23-05	<.2	2,360	<.04	10.1	--	--	--	--	--	--	--	--	--
06-24-05	<.2	1,800	<.04	5.3	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-07-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-07-05	<.2	1,620	<.20	2.3	--	--	--	--	--	--	--	--	--
08-05-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-29-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.2	7,440	<.04	4.3	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-12-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-14-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.2	3,190	<.04	4.5	--	--	--	--	--	--	--	--	--
07-13-05	<.2	6,300	<.04	6.6	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-31-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.2	2,810	<.04	4.1	--	--	--	--	--	--	--	--	--
08-22-05	<.01	M	<.0	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-29-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-16-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-10-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-10-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-31-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-25-05	<.01	M	<.0	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-15-05	<.2	2,030	<.04	110	--	--	--	--	--	--	--	--	--
07-05-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
09-12-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-01-05	--	--	--	--	<.20	<1.00	<1.0	.2	<.1	<.050	<.20	<.1	<.1
09-09-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-11-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.2	1,070	<.04	1.4	--	--	--	--	--	--	--	--	--
07-12-05	<.01	M	<.0	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-16-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-02-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-11-05	<.2	567	E.02	E.3	--	--	--	--	--	--	--	--	--
06-22-05	<.2	2,130	<.04	1.9	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
07-13-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-03-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	.1	<.1
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	<.2	2,040	<.04	1.5	--	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Atrazine, water, unfltrd ug/L (39630)	Bentazon, water, unfltrd ug/L (38710)	Bromacil, water, unfltrd ug/L (30234)	Bromomethane water unfltrd ug/L (30202)	Butachlor, water, unfltrd ug/L (30235)	Butylate, water, unfltrd ug/L (30236)	Carbaryl, water, unfltrd ug/L (39750)	Carbofuran, water, unfltrd ug/L (82615)	Chloramben, water, unfltrd ug/L (82051)	Chloromethane water unfltrd ug/L (30201)	Clomazone, water, fltrd, ug/L (50344)	Cyanazine, water, unfltrd ug/L (81757)	Dicamba water unfltrd ug/L (82052)
07-08-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-13-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-02-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-11-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
06-29-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-05-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-07-05	.2	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-07-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-05-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-29-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-12-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-14-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-31-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-22-05	<.1	<1.0	<.1	--	<.1	<.1	<.05	<.05	<.50	--	<.050	<.1	<.50
08-29-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-16-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-10-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-10-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-31-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-25-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
09-12-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-01-05	.2	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
09-09-05	<.1	--	<.1	--	<.1	<.1	<.05	--	--	--	<.050	<.1	--
08-11-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-16-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-02-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-13-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-03-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	--	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Di-chlor-prop, water, unfltrd ug/L (30190)	Dimeth-enamid water, fltrd, ug/L (61588)	Dinoseb water unfltrd ug/L (30191)	EPTC, water, unfltrd ug/L (81894)	Fonofos water, fltrd, ug/L (04095)	Metola-chlor, water, unfltrd ug/L (39356)	Metri-buzin, water unfltrd ug/L (81408)	Pendi-meth-alin, water unfltrd ug/L (79190)	Penta-chloro-phenol, water, unfltrd ug/L (39032)	Pic-loram water unfltrd ug/L (39720)	Prome-ton, water, unfltrd ug/L (39056)	Propa-chlor, water, unfltrd ug/L (77729)	Propa-zine, water, unfltrd ug/L (39024)
07-08-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-13-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-02-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-11-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
06-29-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-16-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-05-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
06-24-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-03-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-07-05	<1.0	<.05	<.50	<.05	--	.08	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-07-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-05-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-29-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-12-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-12-05	<1.0	<.05	<.50	<.05	--	1.90	<.05	<.05	<.50	<.50	.7	<.05	<.1
07-14-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-31-05	<1.0	<.05	<.50	<.05	--	2.20	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-22-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-29-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-16-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-10-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-10-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-31-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-25-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-15-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-05-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
09-12-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-01-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
09-09-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-16-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-02-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-11-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
06-22-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-14-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-13-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-03-05	<1.0	<.05	<.50	<.05	--	.10	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silvex, water, unfltrd ug/L (39760)	Sima-zine, water, unfltrd ug/L (39055)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-clopyr, water, unfltrd ug/L (04092)	Tri-flur-alin, water, unfltrd ug/L (39030)	Xylene, water, unfltrd ug/L (81551)	1,1,1,2 -Tetra-chloro-ethane, water, unfltrd ug/L (77562)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	1,1,2,2 -Tetra-chloro-ethane, water, unfltrd ug/L (34516)	1,1,2-Tri-chloro-ethane, water, unfltrd ug/L (34511)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,1-Di-chloro-propene water unfltrd ug/L (77168)
07-08-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-13-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-02-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-11-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
06-29-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-16-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-05-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
06-24-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-03-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-07-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-07-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-05-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-29-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-12-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-12-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-14-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-13-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-31-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-22-05	<.20	<.1	<.050	<.20	<.1	--	--	--	--	--	--	--	--
08-29-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-31-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-25-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-15-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-05-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
09-12-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-01-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
09-09-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-02-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-11-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
06-22-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-14-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-13-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-03-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	1,2,3-Tri-chloro-propane water unfltrd ug/L (77443)	1,2,4-Tri-chloro-benzene water unfltrd ug/L (34551)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)	4-Chloro-toluene water unfltrd ug/L (77277)	Benzene water unfltrd ug/L (34030)	Bromo-benzene water unfltrd ug/L (81555)
07-08-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-02-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-16-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.01	<.03
06-24-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-03-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-07-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-07-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-13-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-31-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-31-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-15-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
09-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-01-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
09-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-02-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-11-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
06-22-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-03-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)	Di-chloro-methane water unfltrd ug/L (34423)	Ethyl-benzene water unfltrd ug/L (34371)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
07-08-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-13-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-02-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-16-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-05-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-24-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
06-24-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-03-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-07-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-07-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-05-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-12-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-12-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	1.1
07-14-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	.2	<.03	<.06	<.04	<.04	<.1
07-13-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-31-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-31-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-25-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-15-05	<.03	<.03	<.1	E.07	<.05	<.1	<.05	<.1	E.01	E.03	<.04	<.04	<.1
07-05-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
09-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-01-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
09-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-02-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-02-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-11-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
06-22-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-14-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-13-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-03-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tetra- chloro- methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans- 1,2-Di- chloro- ethene, water, unfltrd ug/L (34546)	trans- 1,3-Di- chloro- propene water unfltrd ug/L (34699)	Tri- bromo- methane water unfltrd ug/L (32104)	Tri- chloro- ethene, water, unfltrd ug/L (39180)	Tri- chloro- methane water unfltrd ug/L (32106)	Vinyl chlor- ide, water, unfltrd ug/L (39175)	Gross alpha radioac water, fltrd, U-nat, pCi/L (01515)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Ra-226, water, fltrd, pCi/L (09503)	Tritium water unfltrd pCi/L (07000)
07-08-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-02-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-11-05	--	--	--	--	--	--	--	--	--	2.7	10.6	2	.0
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-16-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.3
08-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-24-05	--	--	--	--	--	--	--	--	--	15	26.1	4	.1
06-23-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.1
06-24-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.3
08-03-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-07-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-07-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.1
08-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	3.8	11.0	3	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.3
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.03	<.06	.26	<.03	<.09	<.10	<.04	1.94	<.1	--	--	--	.4
07-13-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.3
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	1.5	4.6	<.90	--
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-31-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	<1.4	5.5	<.60	--
07-06-05	--	--	--	--	--	--	--	--	--	5.8	9.3	3	--
07-13-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.3
08-22-05	--	--	--	--	--	--	--	--	--	5.0	9.6	2	--
08-29-05	--	--	--	--	--	--	--	--	--	6.6	13.7	3	-.1
08-16-05	--	--	--	--	--	--	--	--	--	2.8	18.2	1	2.3
08-10-05	--	--	--	--	--	--	--	--	--	<1.8	5.1	<.60	25.4
08-10-05	--	--	--	--	--	--	--	--	--	4.4	8.6	2	.3
08-31-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	6.1	14.6	3	--
08-15-05	E.07	<.06	E.01	<.03	<.09	<.10	E.08	<.02	<.1	--	--	--	.8
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
09-12-05	--	--	--	--	--	--	--	--	--	3.3	12.4	2	--
08-01-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
09-09-05	--	--	--	--	--	--	--	--	--	8.7	20.4	5	--
08-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-02-05	--	--	--	--	--	--	--	--	--	4.3	3.4	2	--
07-12-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	M
07-12-05	--	--	--	--	--	--	--	--	--	13	13.5	7	--
07-13-05	--	--	--	--	--	--	--	--	--	1.3	6.0	<.90	--
08-29-05	--	--	--	--	--	--	--	--	--	4.5	12.4	2	-.1
08-16-05	--	--	--	--	--	--	--	--	--	<1.6	5.3	<.90	22.0
08-02-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-11-05	<.03	<.06	E.01	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.2
06-22-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.6
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-13-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-03-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	<2.8	<2.9	M	--
06-23-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.2

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Station number	Station name	County	Date	Time	Project	Geologic unit	Depth of well, feet below LSD (72008)	Flow rate of well, gal/min (00058)
422855093481501	089N25W33BDAA 25409 1979Webster City 6	Hamilton	06-22-05	1030	NAWQA	360OVCB	2,000	--
425533093364001	094N23W30CCD 1941 No.2	Hancock	07-12-05	1615	GWM	330MSSP	175	110
430015093360501	095N23W31ACA 11168 1959Klemme 2	Hancock	07-05-05	1245	GWM	341LMCK	185	--
430015093360502	095N23W31ABDD 00265 1934Klemme 1	Hancock	07-05-05	1430	NAWQA	371JRDN	1,512	--
423310093032801	089N19W02BAAD 08169 1957Ackley 2	Hardin	06-23-05	0915	GWM	360OVCB	1,919	--
423310093032801	089N19W02BAAD 08169 1957Ackley 2	Hardin	09-13-05	1200	GWM	360OVCB	1,919	--
414236096012501	080N45W25DABD 1951Mondamin 2, South	Harrison	06-29-05	0830	GWM	111ALVM	90	--
405529091233301	New London Well No. 1	Henry	08-04-05	1045	GWM	370CMBR	1,375	--
410851091394401	073N07W09AABD 25274 1978Wayland 2	Henry	07-26-05	1000	GWM	360ODVC	1,900	--
432144092332501	099N14W30CACA 17554 1964Riceville 2	Howard	07-06-05	1545	NAWQA	364GLEN	468	--
432650092170401	100N12W29DBD 1968Lime Springs 2	Howard	08-23-05	1615	GWM	364GLEN	380	--
424317094120501	091N28W06CACD 03222 1948Dakota City 2	Humboldt	06-21-05	1530	NAWQA	364GLEN	1,025	--
422138095274401	Ida Grove 7	Ida	07-06-05	0815	GWM	112PLSC	66	--
422915095323504	089N39W33CDDD 1985Holstein 3	Ida	07-06-05	0955	GWM	111ALVM	54	--
414520092112001	080N12W12ADDC 05509 1952Ladora 1	Iowa	06-28-05	1435	GWM	112PLSC	72	--
414825091511201	081N09W23DADA 21060 1968East Amana 2	Iowa	06-28-05	1215	GWM	340DVSL	550	--
420247090234201	084N05E32AAAD 17615 1965Preston 2	Jackson	09-12-05	1400	GWM	364STPR	697	240
420310090190301	084N06E30BBD 1982Miles 2	Jackson	08-03-05	1300	GWM	364GLEN	605	--
420343090395001	Maquoketa Well No. 6	Jackson	08-03-05	1030	GWM	371CMBR	2,340	--
420414090113201	084N07E20BCDD 1895Sabula 1	Jackson	08-10-05	1340	GWM	360OVCB	973	--
413048093062101	078N20W36DBDA 1981Monroe 7	Jasper	08-04-05	1425	NAWQA	325DSMS	300	--
413913093070001	079N20W13ADDA 07999 1955Newton 13	Jasper	08-04-05	1305	GWM	111ALVM	45	--
410046091555701	Fairfield Municipal Well nr Walton Lake	Jefferson	08-30-05	1425	GWM	371JRDN	2,200	1,150
420650091163601	Anamosa Well No. 5	Jones	07-29-05	1000	GWM	371TMPL	1,475	--
421442091120001	086N03W21CAAA 1977Monticello 4	Jones	08-01-05	1520	GWM	350SLRN	320	400
411108091594001	074N10W27BDDA 05358 1952Richland 1	Keokuk	07-28-05	1430	GWM	371JRDN	1,870	125
412138091571501	076N10W25ACCA 01794 1943Keota 2	Keokuk	07-25-05	1335	GWM	339WSVL	153	120
432515094093501	099N28W04ACCC 01582 1942LEDYARD 1	Kossuth	07-13-05	1545	GWM	111ALVM	198	80
403745091174701	067N04W02CBBC 1991Fort Madison 4	Lee	09-16-05	1100	GWM	111ALVM	147	--
420005091431201	083N08W13ACDB 1970Cedar Rapids S6	Linn	08-09-05	1440	GWM	111ALVM	65	--
420200091363001	083N07W01BADD 17979 1966 Marion No.4	Linn	08-26-05	1230	GWM	371JRDN	1,566	--
421723091465002	086N08W04DCDB 17349 1965Walker 2	Linn	07-07-05	1330	NAWQA	371JRDN	1,525	--
411644091110702	075N03W22DCBD 18800 1976Grandview 2	Louisa	09-01-05	1420	GWM	112AFNN	174	40
405858093175701	071N20W06ABDA 07948 1956Russell 1	Lucas	08-16-05	1015	GWM	360OVCB	2,520	--
432608096201503	100N47W36DCBD 1988Lester (4) 2	Lyon	07-11-05	1730	GWM	111ALVM	32	--
411940093060101	075N20W01DAAA 19961 1967Knoxville 1	Marion	06-13-05	1500	NAWQA	360ODVC	2,290	--
412310093160601	076N21W15BCDC 19067 1967Pleasantville 1	Marion	07-28-05	0930	GWM	360OVCB	2,405	--
420105093095101	083N20W10ACBB 08171 1957State Center 5	Marshall	06-15-05	1400	NAWQA	371JRDN	2,568	--
420352092552401	084N18W22DDDD 1981Marshalltown 14	Marshall	07-21-05	1340	GWM	330MSSP	160	450
420405092545601	084N18W23CACA 1977Marshalltown 8	Marshall	07-21-05	1420	GWM	112PLSC	223	800
410656095380201	073N42W23AAAC 1978Silver City 3	Mills	06-30-05	0820	GWM	111ALVM	60	--
431654092484501	098N17W26ADBC 16641 1964Osage 5	Mitchell	07-14-05	0800	GWM	364GLEN	650	600
432150092332401	099N15W25DABA 1917Riceville 1	Mitchell	07-06-05	1730	GWM	344CDVL	515	--
432241092550802	099N18W24CABA 1960Saint Ansgar 2	Mitchell	07-14-05	1045	GWM	344CDVL	240	--
420955095475601	085N43W24BDBA 1973Mapleton 5	Monona	07-07-05	0900	GWM	111ALVM	63	--
405850095061701	071N37W04ACD 06207 1953Stanton 1	Montgomery	07-08-05	1340	GWM	217DKOT	158	--
413521090511001	078N01E04CAA 03238 1948Stockton 1	Muscatine	08-31-05	0955	GWM	355HPKN	247	--
431157095502901	097N42W29BBBC 1949Sheldon 5	O'Brien	07-12-05	0800	GWM	111ALVM	24	--
403906095015001	067N37W01AAAA 1985Shambaugh 3	Page	07-15-05	1300	GWM	111ALVM	30	--
425731094270801	094N31W13ACCC 1949West Bend 2	Palo Alto	07-12-05	1045	GWM	217DKOT	115	--
425735094270201	094N31W13AC 10712 1959West Bend 4	Palo Alto	07-12-05	0930	NAWQA	371JRDN	1,360	--
423537095583901	090N43W19CCBB 1956Kingsley 1	Plymouth	07-11-05	1215	GWM	110QRNR	37	--
413416093432501	078N25W10CDDC 19416 1967West Des Moines 1	Polk	06-14-05	1000	NAWQA	360OVCB	2,460	--
413931093292001	079N23W11DCDD 23701 1976Altoona 3	Polk	06-14-05	1400	NAWQA	360OVCB	2,530	--
411501095251301	075N40W35CBCA 1975Carson (5) 3	Pottawattamie	06-30-05	1010	GWM	111ALVM	25	--
412832095132701	077N38W16BAAB 22927 1971WALNUT 2	Pottawattamie	07-27-05	1200	NAWQA	360ODVC	2,635	--
414430092433001	080N16W16BCCB 06931 1955Grinnell 7	Poweshiek	08-04-05	1200	GWM	371JRDN	2,550	950
414432092433203	080N16W16BCBD 00151 1926Grinnell 6	Poweshiek	06-16-05	0915	NAWQA	371JRDN	2,500	--
421617095051001	086N36W07CDBB 1971Wall Lake (3),2	Sac	07-05-05	1510	GWM	112PLSC	43	--
413040090455001	078N02E32CC 22757 1971Blue Grass (2),1	Scott	08-25-05	1430	GWM	364PLVL	640	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Pump or flow period prior to sampling, minutes (72004)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)
06-22-05	--	.3	6.9	1,430	15.0	480	117	43.8	18.7	133	--	71.5	1.4
07-12-05	30	.4	7.6	650	11.5	350	--	--	1.60	12.0	350	<1.0	--
07-05-05	--	--	--	830	--	460	--	--	5.00	16.0	340	33.0	--
07-05-05	--	.2	7.0	950	12.1	450	116	43.4	17.0	49.0	320	6.8	.9
06-23-05	--	.4	7.0	950	13.6	360	84.0	35.1	21.0	71.3	--	10.1	1.2
09-13-05	--	.4	7.1	946	13.6	--	--	--	--	--	--	--	--
06-29-05	30	.1	6.9	1,100	13.0	590	--	--	6.80	49.0	540	18.0	--
08-04-05	--	.2	7.0	1,700	22.0	360	81.0	35.0	18.0	240	220	100	1.79
07-26-05	--	.3	7.1	1,600	24.1	470	110	48.0	20.0	200	240	66.0	1.35
07-06-05	--	.6	7.2	631	10.0	300	73.3	28.8	3.59	19.3	--	.67	.7
08-23-05	--	.1	7.1	440	8.8	240	--	--	1.30	4.00	220	2.6	--
06-21-05	--	.4	6.8	771	11.3	430	105	39.8	4.32	8.62	--	14.4	.5
07-06-05	30	.1	7.0	690	11.5	390	--	--	1.80	9.80	310	12.0	--
07-06-05	30	5.3	7.4	820	12.0	430	--	--	1.30	13.0	260	31.0	--
06-28-05	30	.1	7.7	1,000	12.0	340	--	--	2.90	110	380	4.3	--
06-28-05	30	.1	7.2	770	14.6	340	--	--	6.60	47.0	290	1.3	--
09-12-05	--	.3	7.2	700	16.2	330	68.0	32.0	9.30	29.0	270	30.0	.44
08-03-05	--	.4	7.0	720	14.4	320	70.0	32.0	9.60	33.0	250	34.0	.47
08-03-05	--	.3	7.0	610	20.3	290	69.0	27.0	9.00	18.0	250	14.0	.49
08-10-05	30	.2	7.3	480	16.9	270	--	--	4.00	1.90	240	1.7	--
08-04-05	30	.1	7.1	860	13.0	430	--	--	3.10	35.0	350	<1.0	--
08-04-05	--	7.1	7.0	680	10.7	370	--	--	<1.00	7.80	260	17.0	--
08-30-05	280	.9	7.4	1,800	23.3	310	--	--	18.0	280	250	150	--
07-29-05	--	.3	7.1	940	17.1	330	73.0	36.0	14.0	85.0	270	16.0	1.20
08-01-05	30	3.0	7.1	590	16.8	330	--	--	<1.00	4.70	250	8.2	--
07-28-05	--	.2	7.2	1,600	22.8	510	110	49.0	19.0	190	240	64.0	1.38
07-25-05	30	.2	6.8	880	14.9	460	--	--	2.80	34.0	430	17.0	--
07-13-05	35	.3	7.2	1,100	11.0	560	140	50.0	4.10	62.0	330	1.3	.39
09-16-05	--	2.6	7.0	480	15.0	220	--	--	3.00	11.0	210	16.0	--
08-09-05	--	.8	7.4	540	11.6	280	--	--	2.20	12.0	190	24.0	--
08-26-05	--	1.4	7.0	860	17.5	300	64.0	35.0	13.0	81.0	280	9.9	1.37
07-07-05	--	.4	7.0	442	11.2	230	54.4	23.8	1.95	9.01	--	<.20	.4
09-01-05	30	.5	7.0	440	12.6	240	66.0	19.0	1.40	8.30	250	<1.0	.25
08-16-05	60	5.6	7.5	1,300	22.2	250	--	--	16.0	200	260	86.0	--
07-11-05	30	.4	7.3	1,100	10.0	640	--	--	2.80	23.0	310	31.0	--
06-13-05	--	.2	7.2	1,080	23.1	290	66.0	29.2	18.3	122	--	49.8	1.6
07-28-05	--	--	--	950	--	280	65.0	27.0	17.0	99.0	260	23.0	1.65
06-15-05	--	.1	7.2	1,110	22.1	360	78.8	38.0	17.4	99.1	--	18.0	1.3
07-21-05	30	3.3	7.1	690	12.2	390	--	--	2.30	11.0	300	24.0	--
07-21-05	60	.1	7.3	690	11.3	350	--	--	2.70	17.0	290	19.0	--
06-30-05	20	.1	7.1	960	12.0	520	--	--	2.60	26.0	340	78.0	--
07-14-05	30	.5	7.5	520	10.3	280	--	--	1.60	7.80	240	9.3	--
07-06-05	--	--	--	570	--	290	--	--	3.20	20.0	300	<1.0	--
07-14-05	35	.4	7.4	690	10.4	370	--	--	1.40	11.0	250	28.0	--
07-07-05	350	3.2	6.8	800	23.5	420	--	--	3.80	22.0	310	25.0	--
07-08-05	30	.1	7.2	510	13.5	250	--	--	1.50	11.0	220	17.0	--
08-31-05	--	3.4	7.4	640	14.0	330	--	--	1.00	8.90	320	9.6	--
07-12-05	60	2.2	7.0	830	9.5	450	--	--	1.60	15.0	310	25.0	--
07-15-05	90	.1	6.6	480	12.0	220	--	--	1.20	23.0	140	33.0	--
07-12-05	--	--	--	730	--	400	110	34.0	4.50	16.0	380	2.5	.40
07-12-05	--	.6	6.7	1,880	12.9	910	250	69.0	22.5	112	--	19.9	1.2
07-11-05	30	3.7	7.5	840	14.0	450	--	--	2.60	17.0	320	25.0	--
06-14-05	--	.6	7.3	1,730	25.5	380	85.0	39.4	19.1	227	--	59.1	2.7
06-14-05	--	.1	7.3	715	25.7	250	55.7	27.4	12.2	51.9	--	11.1	1.7
06-30-05	30	.2	7.3	650	11.5	380	--	--	1.20	10.0	280	15.0	--
07-27-05	--	.3	7.2	2,340	24.1	740	190	62.8	35.3	224	--	231	3.0
08-04-05	180	.1	7.1	1,200	24.4	390	--	--	18.0	110	280	17.0	--
06-16-05	--	.2	7.2	2,310	22.3	630	168	50.3	19.0	288	--	55.2	1.4
07-05-05	30	.4	7.1	790	11.5	420	--	--	5.10	9.70	230	20.0	--
08-25-05	30	.6	7.0	610	13.0	350	--	--	1.70	12.0	360	<1.0	.29

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Organic nitro-gen, water, fltrd, mg/L (00607)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phate, water, unfltrd mg/L (00650)	Organic carbon, water, unfltrd mg/L (00680)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)
06-22-05	8.33	361	961	--	1.01	<.06	--	<.006	--	--	<2	<.20	.2
07-12-05	--	12.0	360	1.4	1.30	.050	<.10	<.020	.100	1.5	--	--	--
07-05-05	--	79.0	530	.41	.340	<.050	<.10	<.020	.050	1.3	--	--	--
07-05-05	7.49	210	650	1.1	.870	<.050	.22	<.020	<.020	.5	<2	<.20	<.2
06-23-05	8.64	190	613	--	1.56	<.06	--	E.004	--	--	<2	<.20	E.1
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	--	84.0	710	1.5	1.00	<.050	.44	<.020	.420	2.9	--	--	--
08-04-05	11.0	470	1,110	1.4	1.00	<.050	.38	<.020	.020	<.5	<.10	<.01	<.0
07-26-05	11.0	530	1,140	1.4	1.20	<.050	.18	<.020	.020	<.5	<.10	<.01	<.0
07-06-05	11.5	47.7	349	--	3.15	<.06	--	.012	--	--	<2	<.20	<.2
08-23-05	--	23.0	250	.44	.320	<.050	.10	<.020	.060	.7	--	--	--
06-21-05	19.2	96.2	462	--	.06	3.13	--	.021	--	--	<2	E.10	1.2
07-06-05	--	43.0	470	<.10	<.050	4.70	<.10	.140	.170	.7	--	--	--
07-06-05	--	61.0	540	<.10	<.050	21.0	<.10	.030	.060	.7	--	--	--
06-28-05	--	170	630	5.1	5.20	<.050	<.10	.070	.350	3.9	--	--	--
06-28-05	--	130	460	1.6	1.60	<.050	<.10	<.020	.020	.7	--	--	--
09-12-05	8.90	57.0	380	.50	.330	<.050	.10	.020	.020	.8	<.10	<.01	<.0
08-03-05	8.50	62.0	410	.52	.380	<.050	.14	<.020	.410	<.5	<.10	<.01	<.0
08-03-05	9.40	37.0	350	.29	.220	.070	<.10	<.020	1.20	<.5	<.10	<.01	<.0
08-10-05	--	16.0	240	<.10	<.050	<.050	<.10	<.020	.040	<.5	--	--	--
08-04-05	--	110	540	1.7	1.60	<.050	.13	<.020	.040	1.4	--	--	--
08-04-05	--	37.0	390	.11	<.050	9.10	.11	.100	.110	1.0	--	--	--
08-30-05	--	450	1,170	1.3	1.30	<.050	<.10	<.020	.090	<.5	--	--	--
07-29-05	8.50	210	600	1.1	1.00	<.050	<.10	<.020	.490	<.5	<.10	<.01	<.0
08-01-05	--	26.0	330	<.10	<.050	4.10	<.10	<.020	.020	<.5	--	--	--
07-28-05	10.0	540	1,170	1.4	1.20	<.050	.16	<.020	.020	<.5	<.10	<.01	<.0
07-25-05	--	61.0	530	.55	.380	<.050	.17	<.020	.040	.7	--	--	--
07-13-05	16.0	330	880	.99	1.00	<.050	<.10	<.020	.060	2.1	<.10	<.01	.0
09-16-05	--	7.8	260	3.3	3.60	<.050	<.10	<.020	.680	4.2	--	--	--
08-09-05	--	31.0	320	.27	<.050	6.60	.27	.030	.040	1.9	--	--	--
08-26-05	8.50	180	540	.96	.770	<.050	.19	<.020	<.020	.7	<.10	<.01	<.0
07-07-05	8.59	13.9	226	--	.42	<.06	--	<.006	--	--	<2	<.20	<.2
09-01-05	23.0	<1.0	250	.80	.750	<.050	<.10	.050	.280	1.3	<.10	<.01	<.0
08-16-05	--	260	810	.96	.890	<.050	<.10	<.020	.020	.7	--	--	--
07-11-05	--	300	890	<.10	<.050	.060	<.10	<.020	.100	2.2	--	--	--
06-13-05	10.8	223	690	--	1.44	<.06	--	<.006	--	--	M	<2.00	<.2
07-28-05	12.0	190	590	1.1	1.10	<.050	<.10	<.020	.020	<.5	<.10	<.01	<.0
06-15-05	10.5	258	714	--	1.37	<.06	--	<.006	--	--	<2	<.20	<.2
07-21-05	--	49.0	460	.29	<.050	1.90	.29	.040	.060	1.8	--	--	--
07-21-05	--	64.0	450	1.3	1.00	<.050	.23	<.020	.070	1.6	--	--	--
06-30-05	--	75.0	630	.38	.200	<.050	.18	<.020	.240	1.4	--	--	--
07-14-05	--	38.0	300	.21	.230	<.050	<.10	<.020	.040	.7	--	--	--
07-06-05	--	22.0	340	2.9	2.80	<.050	.53	.030	.060	1.6	--	--	--
07-14-05	--	52.0	440	<.10	<.050	8.00	<.10	<.020	.030	.6	--	--	--
07-07-05	--	64.0	540	.10	<.050	8.80	<.10	.070	.090	.5	--	--	--
07-08-05	--	22.0	290	.57	.500	<.050	<.10	<.020	.060	.5	--	--	--
08-31-05	--	24.0	370	.19	.110	<.050	<.10	<.020	.050	.8	--	--	--
07-12-05	--	100	510	.32	.190	<.050	.13	.020	.130	1.9	--	--	--
07-15-05	--	58.0	310	.13	.050	<.050	<.10	<.020	.430	1.6	--	--	--
07-12-05	24.0	37.0	450	.68	.670	<.050	.32	.080	.320	1.2	<.10	<.01	M
07-12-05	8.10	755	1,560	--	1.33	<.06	--	<.006	--	--	<2	<.20	.4
07-11-05	--	66.0	550	<.10	<.050	9.60	<.10	.090	.140	.8	--	--	--
06-14-05	12.5	533	1,180	--	1.31	<.06	--	<.006	--	--	M	<.20	<.2
06-14-05	12.2	102	427	--	.68	<.06	--	<.006	--	--	<2	<.20	<.2
06-30-05	--	64.0	430	<.10	<.050	1.10	<.10	<.020	.060	.7	--	--	--
07-27-05	11.1	720	1,640	--	1.31	<.06	--	<.006	--	--	M	<.20	.6
08-04-05	--	300	760	1.3	1.20	<.050	<.10	<.020	.020	<.5	--	--	--
06-16-05	10.0	849	1,680	--	1.68	<.06	--	<.006	--	--	<2	<.20	E.2
07-05-05	--	150	570	.19	.100	<.050	<.10	<.020	.090	1.6	--	--	--
08-25-05	--	12.0	350	<.10	.070	<.050	<.10	<.020	<.020	.6	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Cyanide water unfltrd mg/L (00720)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)
06-22-05	12	<.06	982	<.04	<.8	<4.0	--	310	<.08	8.5	--	15.8	.9
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	27	<.06	844	<.04	<.8	E2.5	--	521	<.56	14.3	--	3.62	E.3
06-23-05	16	<.06	1,450	<.04	<.8	<5.2	--	327	<.08	6.4	--	7.97	E.2
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
07-26-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
07-06-05	120	<.06	207	<.04	<.8	.5	--	631	<.08	9.5	--	1.96	<.4
08-23-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	149	<.06	148	E.03	<.8	1.4	--	25	.40	13.3	--	5.75	16.3
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-12-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-03-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-03-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-10-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-28-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	.0	M	<.00	<.05	<.01
09-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-26-05	<.1	<.0	M	<.0	<.02	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
07-07-05	131	<.06	90	<.04	<.8	E.3	--	22	.78	2.0	--	1.41	<.4
09-01-05	.1	<.0	<.05	<.0	<.01	<.01	<.01	M	<.0	M	<.00	<.05	<.01
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-13-05	22	<.60	1,230	<.04	<.8	.6	--	86	<.80	1.4	--	5.53	.4
07-28-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
06-15-05	18	<.06	1,370	<.04	<.8	.9	--	636	<.08	6.4	--	4.63	E.3
07-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-07-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-08-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.01	M	<.00	<.05	<.01
07-12-05	16	E.04	613	<.04	1.1	2.3	<.01	3,940	<.08	104	--	9.67	1.1
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-14-05	14	<.06	1,550	<.04	<.8	2.4	--	186	E.04	2.0	--	2.79	<.4
06-14-05	39	<.06	569	<.04	<.8	1.3	--	44	.18	.7	--	1.70	<.4
06-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-27-05	12	<.06	734	<.04	<.8	2.9	--	883	<.08	13.4	--	9.63	E.3
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	15	<.06	1,560	<.04	<.8	2.5	--	1,080	<.08	10.6	--	6.17	.7
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Thall-ium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	2,4,5-T water unfltrd ug/L (39740)	2,4-D water unfltrd ug/L (39730)	2,4-DB water unfltrd ug/L (30219)	CIAT, water, unfltrd ug/L (75981)	CEAT, water, unfltrd ug/L (75980)	Aceto-chlor, water, unfltrd ug/L (49259)	Aci-fluor-fen, water unfltrd ug/L (79193)	Ala-chlor, water, unfltrd ug/L (77825)	Ametryn water unfltrd ug/L (82184)
06-22-05	<.2	3,310	<.04	25.3	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-05-05	<.2	1,940	<.28	2.0	--	--	--	--	--	--	--	--	--
06-23-05	<.2	2,070	<.04	20.4	--	--	--	--	--	--	--	--	--
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-04-05	<.01	M	<.0	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-26-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
07-06-05	<.2	454	<.04	4.4	--	--	--	--	--	--	--	--	--
08-23-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-21-05	<.2	645	.23	7.6	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	2.0	<.20	<.1	<.1
06-28-05	--	--	--	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
06-28-05	--	--	--	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
09-12-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-03-05	<.01	M	<.0	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-03-05	<.01	M	<.0	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-10-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-01-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-28-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
07-25-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-13-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
09-16-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-09-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
08-26-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
07-07-05	<.2	405	<.04	.8	--	--	--	--	--	--	--	--	--
09-01-05	<.01	M	<.0	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-13-05	<.2	2,080	<.40	2.4	--	--	--	--	--	--	--	--	--
07-28-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
06-15-05	<.2	2,750	<.04	13.1	--	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-21-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-30-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-14-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
07-07-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-08-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
07-15-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-12-05	<.01	M	<.0	--	--	--	--	--	--	--	--	--	--
07-12-05	<.2	3,330	<.04	6.6	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-14-05	<.2	3,400	<.04	15.6	--	--	--	--	--	--	--	--	--
06-14-05	<.2	1,300	<.04	3.9	--	--	--	--	--	--	--	--	--
06-30-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-27-05	<.2	6,050	<.04	9.4	--	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	<.2	3,480	<.04	7.2	--	--	--	--	--	--	--	--	--
07-05-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
08-25-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Atrazine, water, unfltrd ug/L (39630)	Bentazon, water, unfltrd ug/L (38710)	Bromacil, water, unfltrd ug/L (30234)	Bromomethane water unfltrd ug/L (30202)	Butachlor, water, unfltrd ug/L (30235)	Butylate, water, unfltrd ug/L (30236)	Carbaryl, water, unfltrd ug/L (39750)	Carbofuran, water, unfltrd ug/L (82615)	Chloramben, water, unfltrd ug/L (82051)	Chloromethane water unfltrd ug/L (30201)	Clomazone, water, fltrd, ug/L (50344)	Cyanazine, water, unfltrd ug/L (81757)	Dicamba water unfltrd ug/L (82052)
06-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-04-05	<.1	<1.0	<.1	--	<.1	<.1	<.05	<.05	<.50	--	<.050	<.1	<.50
07-26-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-23-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-28-05	<.1	--	<.1	<.50	<.1	<.1	<.05	<.05	--	<.50	<.050	<.1	--
06-28-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
09-12-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-03-05	<.1	<1.0	<.1	--	<.1	<.1	<.05	<.05	<.50	--	<.050	<.1	<.50
08-03-05	<.1	<1.0	<.1	--	<.1	<.1	<.05	<.05	<.50	--	<.050	<.1	<.50
08-10-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-01-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-28-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
07-25-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-13-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
09-16-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-09-05	.3	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-26-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
07-07-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-28-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
06-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-21-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-21-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-30-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-14-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-07-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-08-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.1	--	<.1	<.50	<.1	<.1	<.05	<.05	--	<.50	<.050	<.1	--
07-15-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.1	<1.0	.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-14-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-30-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-27-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
08-25-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Di-chlor-prop, water, unfltrd ug/L (30190)	Dimeth-enamid water, fltrd, ug/L (61588)	Dinoseb water unfltrd ug/L (30191)	EPTC, water, unfltrd ug/L (81894)	Fonofos water, fltrd, ug/L (04095)	Metola-chlor, water, unfltrd ug/L (39356)	Metri-buzin, water unfltrd ug/L (81408)	Pendi-meth-alin, water unfltrd ug/L (79190)	Penta-chloro-phenol, water, unfltrd ug/L (39032)	Pic-loram water unfltrd ug/L (39720)	Prome-ton, water, unfltrd ug/L (39056)	Propa-chlor, water, unfltrd ug/L (77729)	Propa-zine, water, unfltrd ug/L (39024)
06-22-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-05-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
06-23-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-04-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-26-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
07-06-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-23-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-21-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	2.00	<.50	<.05	--	3.80	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-28-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
06-28-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
09-12-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-03-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-03-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-10-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-01-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-28-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
07-25-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-13-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
09-16-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-09-05	<1.0	<.05	<.50	<.05	--	.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-26-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
07-07-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
09-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-13-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-28-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
06-15-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-21-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-21-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-30-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-14-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-07-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-08-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
07-15-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-14-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
06-14-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
06-30-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-27-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-05-05	<1.0	<.05	<.50	<.05	--	.07	<.05	<.05	<.50	<.50	<.1	<.05	<.1
08-25-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silvex, water, unfltrd ug/L (39760)	Sima- zine, water, unfltrd ug/L (39055)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- clopyr, water, unfltrd ug/L (04092)	Tri- flur- alin, water, unfltrd ug/L (39030)	Xylene, water, unfltrd ug/L (81551)	1,1,1,2 -Tetra- chloro- ethane, water, unfltrd ug/L (77562)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	1,1,2,2 -Tetra- chloro- ethane, water, unfltrd ug/L (34516)	1,1,2- Tri- chloro- ethane, water, unfltrd ug/L (34511)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,1-Di- chloro- propene water unfltrd ug/L (77168)
06-22-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-05-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
06-23-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-04-05	<.20	<.1	<.050	<.20	<.1	--	--	--	--	--	--	--	--
07-26-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-23-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-21-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-28-05	--	<.1	<.050	--	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-28-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
09-12-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-03-05	<.20	<.1	<.050	<.20	<.1	--	--	--	--	--	--	--	--
08-03-05	<.20	<.1	<.050	<.20	<.1	--	--	--	--	--	--	--	--
08-10-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-01-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-28-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
07-25-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-13-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
09-16-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-09-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-26-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
07-07-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
09-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-13-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-28-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
06-15-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-21-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-21-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-30-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	M	<.50	<.50
07-14-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-07-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-08-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	<.1	<.050	--	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-15-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-14-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
06-14-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
06-30-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-27-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-05-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
08-25-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	1,2,3-Tri-chloro-propane water unfltrd ug/L (77443)	1,2,4-Tri-chloro-benzene water unfltrd ug/L (34551)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)	4-Chloro-toluene water unfltrd ug/L (77277)	Benzene water unfltrd ug/L (34030)	Bromo-benzene water unfltrd ug/L (81555)
06-22-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-05-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
06-23-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-23-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-21-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-28-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-01-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-16-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-09-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-07-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
09-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-13-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-30-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-07-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-08-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-15-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-14-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
06-14-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
06-30-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-27-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
08-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)	Di-chloro-methane water unfltrd ug/L (34423)	Ethyl-benzene water unfltrd ug/L (34371)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
06-22-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-05-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
06-23-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-23-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-21-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-28-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-10-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-01-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
09-16-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-09-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-07-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
09-01-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-13-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-28-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-21-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-21-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-30-05	<.50	<.50	<.50	.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-14-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-14-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-07-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-08-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-15-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-14-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
06-14-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
06-30-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-27-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-16-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-05-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
08-25-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	trans-1,3-Di-chloro-propene water unfltrd ug/L (34699)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Gross alpha radioac water, fltrd, U-nat, pCi/L (01515)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Ra-226, water, fltrd, pCi/L (09503)	Tritium water unfltrd pCi/L (07000)
06-22-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.2
07-12-05	--	--	--	--	--	--	--	--	--	<2.2	3.0	<.60	--
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-05-05	<.03	<.06	E.02	<.03	<.09	<.10	<.04	<.02	<.1	6.5	25.8	4	-.3
06-23-05	<.03	<.06	E.01	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	M
09-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	32	24.9	10	.1
07-26-05	--	--	--	--	--	--	--	--	--	17	26.7	8	--
07-06-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.1
08-23-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-21-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	17.9
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-28-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-28-05	--	--	--	--	--	--	--	--	--	4.3	6.7	2	--
09-12-05	--	--	--	--	--	--	--	--	--	3.4	12.3	3	.3
08-03-05	--	--	--	--	--	--	--	--	--	2.5	10.7	3	-.3
08-03-05	--	--	--	--	--	--	--	--	--	13	16.6	5	-.1
08-10-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-04-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-04-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-30-05	--	--	--	--	--	--	--	--	--	37	30.4	16	--
07-29-05	--	--	--	--	--	--	--	--	--	9.6	22.3	4	--
08-01-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-28-05	--	--	--	--	--	--	--	--	--	24	24.2	8	--
07-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	<2.8	4.9	2	-.3
09-16-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-09-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-26-05	--	--	--	--	--	--	--	--	--	5.5	15.2	3	.2
07-07-05	<.03	<.06	E.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
09-01-05	--	--	--	--	--	--	--	--	--	.8	32.1	<.60	--
08-16-05	--	--	--	--	--	--	--	--	--	4.9	17.5	5	--
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-13-05	<.03	<.06	E.09	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.3
07-28-05	--	--	--	--	--	--	--	--	--	17	20.3	8	--
06-15-05	<.03	<.06	E.01	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.1
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-30-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	<1.2	7.1	1	--
07-14-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-07-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	3	<.50	--	--	--	--
07-08-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-31-05	--	--	--	--	--	--	--	--	--	2.2	11.3	<1	--
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-15-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	16	13.5	13	--
07-12-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.4
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-14-05	<.03	<.06	E.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
06-14-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.3
06-30-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-27-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.0
08-04-05	--	--	--	--	--	--	--	--	--	8.5	22.0	4	--
06-16-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	.2
07-05-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
08-25-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Station number	Station name	County	Date	Time	Project	Geologic unit	Depth of well, feet below LSD (72008)	Flow rate of well, gal/min (00058)
413923090350901	079N03E11CCBD 1929Eldridge 2	Scott	08-31-05	1145	GWM	350SLRN	515	--
413049095254501	078N39W34ACCD 1968Shelby 5	Shelby	06-29-05	1200	GWM	111ALVM	48	--
430017096285301	095N48W35BDDC 1931Hawarden 2	Sioux	07-11-05	1500	GWM	110QRCU	36	--
415252093411401	082N24W30DCBB 1945Slater 1	Story	07-05-05	1245	GWM	112PLSC	180	85
415329093361002	082N24W26AABA 24912 1978Huxley 4	Story	06-15-05	1030	NAWQA	371JRDN	2,600	--
415417092180101	082N13W24AAAD 12850 1961Belle Plaine 4	Tama	07-21-05	1020	GWM	111ALVM	42	230
415753092350201	083N15W27CDD 18841 1966Tama 5	Tama	07-21-05	1150	GWM	111ALVM	43	425
415938092350001	083N15W15CDDD 12687 1961Toledo Jordan 1	Tama	06-20-05	1200	NAWQA	371JRDN	2,016	--
421135092275002	085N14W10ABCD 1894Traer 2	Tama	08-03-05	1310	GWM	344CDVL	350	--
403659094285301	067N32W12CAAD 1960Blockton 1	Taylor	07-15-05	1100	GWM	112PLSC	271	--
410907092375301	073N15W06CADA 1995Eddyville 3	Wapello	08-16-05	1155	GWM	111ALVM	35	--
413040093290501	078N23W34DDBD 1979Carlisle 5	Warren	07-06-05	0820	GWM	111ALVM	45	400
411309091322801	074N06W15BCAC 07308 1956Crawfordsville (1)3	Washington	07-26-05	1230	GWM	367PRDC	1,718	40
412013091485701	076N08W31DDCC 08701 1957West Chester 1	Washington	08-30-05	1245	GWM	339WSVL	243	100
412850091342901	077N06W17BBA 14835 1961Riverside 5	Washington	07-25-05	0940	GWM	112PLSC	250	--
422135094173911	087N30W12BCD 00918 1938CALLENDER 1	Webster	07-11-05	1020	GWM	111ALVM	1,785	58
423028094115101	089N28W19CAA 1931Fort Dodge 12	Webster	07-12-05	0900	GWM	339KDRK	541	800
423043094120401	089N28W19BDBB 13068 1962Fort Dodge 16	Webster	06-21-05	1100	NAWQA	360OVCB	1,830	--
431556093375401	098N24W26DDCC 00304 1934Forest City 2	Winnebago	07-13-05	0845	GWM	344CDVL	142	1,000
432323093571601	099N26W18DACD 16406 1964Buffalo Center 2	Winnebago	07-13-05	1125	GWM	111ALVM	472	350
432501093320001	099N23W02CCDA 1978Lake Mills 3	Winnebago	07-06-05	1015	NAWQA	360ODVC	460	--
430641091403401	096N07W21CDDC 20274 1968CASTALIA 2	Winneshiek	08-09-05	1145	GWM	371JRDN	938	53
430842091460302	096N08W10ADDC 13842 1962OSSIAN 2	Winneshiek	08-09-05	0930	GWM	371JRDN	1,020	150
430843091555601	096N09W09DBCC 12681 1961Fort Atkinson 2	Winneshiek	08-29-05	1145	GWM	364STPR	480	136
431226091570801	Spillville 1	Winneshiek	08-08-05	1600	GWM	367PRDC	545	126
431828091473201	098N08W16ACBC 1972Decorah 6	Winneshiek	08-22-05	1650	GWM	111ALVM	82	--
422831095465102	089N42W34DDDD 1927Correctionville 1 W	Woodbury	07-06-05	1215	GWM	111ALVM	26	--
422927096252201	089N47W29CDCD 1971SIOUX CITY RIVER 2	Woodbury	07-11-05	1020	GWM	217DKOT	310	--
423954093535801	091N26W27CAAD 1952Eagle Grove 3	Wright	07-12-05	1345	GWM	112PLSC	70	285
	NAWQA TREND WELLS							
412755091114101	077N03W16DDC 1997NAWQA obs/James King	Muscatine	07-18-05	1300	NAWQA	111ALVM	18	--
413438091341201	078n06w08acc	Johnson	07-19-05	1000	NAWQA	111ALVM	80	--
414818092055403	081N11W14CCA 1985USGS Obs Well IRA 26C	Iowa	07-19-05	1300	NAWQA	111ALVM	11	--
415147092115301	082n12w36ccc	Benton	07-20-05	0930	NAWQA	111ALVM	28	--
414208092312601	080N14W31BAA 1997NAWQA obs	Poweshiek	07-20-05	1230	NAWQA	111ALVM	18	--
414430093220001	080n22w13bcb	Polk	07-20-05	1600	NAWQA	111ALVM	20	--
421115091250501	085N05W10BDC 1997Nawqa obs/Ron McGovern	Linn	07-22-05	1100	NAWQA	111ALVM	23	--
431339093155901	097N21W13ABA 1997NAWQA obs	Cerro Gordo	07-21-05	1230	NAWQA	111ALVM	12	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Pump or flow period prior to sampling, minutes (72004)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)
08-31-05	--	.1	7.5	420	14.6	200	--	--	1.00	12.0	230	<1.0	--
06-29-05	15	6.6	6.9	460	12.0	230	--	--	<1.00	8.00	130	18.0	--
07-11-05	30	6.4	7.5	900	11.5	480	--	--	4.40	17.0	310	24.0	--
07-05-05	30	.2	7.8	730	14.1	310	--	--	7.10	63.0	420	<1.0	--
06-15-05	--	.3	7.3	1,540	22.0	390	87.0	40.6	20.7	184	--	44.7	2.2
07-21-05	30	1.1	7.0	710	14.9	390	--	--	1.50	11.0	250	17.0	--
07-21-05	30	2.0	7.2	650	11.2	340	--	--	1.30	14.0	240	26.0	--
06-20-05	--	.3	7.0	1,040	17.0	440	96.1	49.1	16.8	73.4	--	7.67	1.2
08-03-05	30	.3	7.3	1,600	11.5	800	--	--	4.30	81.0	200	2.5	--
07-15-05	30	.1	8.2	1,600	14.5	150	--	--	2.40	360	420	98.0	--
08-16-05	--	1.5	6.9	780	12.4	420	--	--	1.30	14.0	270	22.0	--
07-06-05	30	.7	7.5	580	12.1	300	--	--	1.70	12.0	220	27.0	--
07-26-05	--	.2	7.3	1,600	23.5	440	95.0	41.0	19.0	200	230	68.0	1.27
08-30-05	30	.7	7.1	820	12.4	360	--	--	2.80	56.0	400	2.0	--
07-25-05	30	.2	7.7	640	16.3	260	--	--	2.70	62.0	350	1.8	--
07-11-05	30	4.6	7.3	930	16.9	440	85.0	49.0	14.0	47.0	330	7.6	1.61
07-12-05	30	.5	7.1	890	12.4	470	--	--	5.20	29.0	370	<1.0	--
06-21-05	--	.3	7.0	1,330	16.2	430	101	42.9	11.4	135	--	122	1.1
07-13-05	30	.4	7.3	730	9.7	390	--	--	2.70	18.0	370	<1.0	--
07-13-05	30	.4	7.3	800	9.3	360	85.0	30.0	3.20	68.0	410	<1.0	.34
07-06-05	--	.6	6.8	710	9.1	390	100	36.5	2.50	21.0	370	<1.0	.4
08-09-05	--	.3	7.2	430	11.1	250	61.0	25.0	2.40	3.20	200	1.5	.42
08-09-05	--	.5	7.0	440	9.9	250	62.0	25.0	2.10	3.00	210	1.5	.29
08-29-05	45	6.1	7.2	680	12.3	400	88.0	40.0	9.20	20.0	230	6.3	1.79
08-08-05	--	.4	6.8	570	9.9	320	78.0	34.0	1.70	6.50	240	7.3	.66
08-22-05	--	.6	7.0	710	11.4	380	--	--	2.80	14.0	310	30.0	--
07-06-05	30	6.6	7.5	730	13.0	390	--	--	2.60	12.0	270	13.0	--
07-11-05	1,440	.1	7.2	1,100	13.5	500	--	--	8.60	80.0	290	26.0	--
07-12-05	30	.5	7.3	740	12.3	400	--	--	3.10	15.0	380	3.8	--
07-18-05	25	.7	6.3	403	11.1	190	55.3	12.7	.72	8.50	--	19.3	.1
07-19-05	35	.5	6.9	558	11.9	300	77.4	25.3	.75	9.49	--	3.96	.3
07-19-05	21	.8	6.4	432	12.8	230	59.6	19.6	.88	6.10	--	13.8	.2
07-20-05	64	2.9	6.5	562	11.9	240	70.6	15.9	1.05	18.5	--	35.7	.1
07-20-05	30	11.9	7.3	558	12.0	260	69.7	21.2	.22	5.60	--	12.2	.2
07-20-05	72	.3	6.9	701	11.9	380	101	31.0	.97	4.70	--	10.9	.2
07-22-05	29	11.1	7.6	363	12.3	170	58.0	7.14	.61	2.31	--	10.6	E.1
07-21-05	18	8.5	7.3	617	14.4	320	81.1	27.8	.64	2.77	--	21.5	.2

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Organic nitro-gen, water, fltrd, mg/L (00607)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phate, water, unfltrd mg/L (00650)	Organic carbon, water, unfltrd mg/L (00680)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)
08-31-05	--	<1.0	160	1.7	1.60	<.050	<.10	.020	.250	2.9	--	--	--
06-29-05	--	19.0	310	<.10	<.050	14.0	<.10	.090	.130	.6	--	--	--
07-11-05	--	110	620	<.10	<.050	12.0	<.10	.030	.070	.7	--	--	--
07-05-05	--	<1.0	460	9.6	7.20	<.050	2.4	<.020	.080	19.0	--	--	--
06-15-05	10.9	467	998	--	1.36	<.06	--	<.006	--	--	<2	<.20	E.1
07-21-05	--	100	490	<.10	<.050	2.00	<.10	.050	.070	1.7	--	--	--
07-21-05	--	57.0	430	.10	<.050	4.60	<.10	.090	.100	.6	--	--	--
06-20-05	9.08	257	701	--	1.14	<.06	--	<.006	--	--	<2	<.20	<.2
08-03-05	--	710	1,270	5.2	5.10	<.050	<.10	<.020	.110	2.6	--	--	--
07-15-05	--	320	1,090	3.3	2.00	<.050	1.3	.220	.410	14.0	--	--	--
08-16-05	--	120	510	<.10	<.050	1.70	<.10	.060	.090	.7	--	--	--
07-06-05	--	44.0	360	<.10	<.050	1.10	<.10	<.020	.060	.7	--	--	--
07-26-05	11.0	490	1,100	1.3	1.20	<.050	.15	<.020	.020	<.5	<.10	<.01	<.0
08-30-05	--	69.0	480	1.7	1.70	<.050	<.10	<.020	.080	1.5	--	--	--
07-25-05	--	13.0	360	3.5	3.20	<.050	.30	.170	.260	1.9	--	--	--
07-11-05	8.40	180	610	.63	.540	<.050	<.10	<.020	.040	.9	<.10	<.01	<.0
07-12-05	--	120	540	.57	.620	<.050	<.10	<.020	.070	1.4	--	--	--
06-21-05	9.92	206	825	--	.49	<.06	--	<.006	--	--	<2	<.20	.2
07-13-05	--	39.0	440	.66	.510	<.050	.66	<.020	.110	2.0	--	--	--
07-13-05	15.0	52.0	490	1.2	.790	<.050	.40	<.020	.100	2.5	<.10	<.01	<.0
07-06-05	19.5	37.0	420	.88	.460	<.050	.42	.030	.060	1.6	<2	<.20	.4
08-09-05	7.80	28.0	230	<.10	.080	<.050	<.10	<.020	.030	<.5	<.10	<.01	<.0
08-09-05	8.50	30.0	260	<.10	.060	<.050	<.10	<.020	.020	.5	<.10	<.01	<.0
08-29-05	7.40	120	470	1.7	1.60	<.050	.12	<.020	.030	1.2	<.10	<.01	<.0
08-08-05	11.0	57.0	360	<.10	.090	.710	<.10	<.020	.030	.7	<.10	<.01	<.0
08-22-05	--	41.0	450	<.10	<.050	2.00	<.10	.020	.050	1.0	--	--	--
07-06-05	--	38.0	450	<.10	<.050	16.0	<.10	<.020	.030	.9	--	--	--
07-11-05	--	290	810	.38	.280	<.050	.10	<.020	.070	1.5	--	--	--
07-12-05	--	25.0	410	.75	.600	<.050	.15	<.020	.100	1.6	--	--	--
07-18-05	8.88	65.9	232	--	.04	<.06	--	.009	--	--	<2	.50	5.6
07-19-05	22.4	29.4	341	--	.32	<.06	--	.013	--	--	<2	<.20	1.3
07-19-05	16.1	21.9	266	--	<.04	<.06	--	.011	--	--	<2	<.20	E.1
07-20-05	17.0	64.4	411	--	<.04	18.1	--	.034	--	--	<2	<.20	.2
07-20-05	13.7	22.7	408	--	<.04	27.9	--	.024	--	--	<2	<.20	.2
07-20-05	28.2	134	535	--	.18	E.05	--	.010	--	--	<2	<.20	3.4
07-22-05	17.1	8.0	268	--	<.04	13.2	--	.097	--	--	<2	<.20	.4
07-21-05	24.5	26.2	376	--	<.04	17.3	--	.022	--	--	<2	<.20	.5

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Cyanide water unfltrd mg/L (00720)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	14	<.06	1,700	<.04	<.8	1.4	--	1,500	<.08	31.5	--	3.11	.5
07-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-20-05	56	<.06	1,900	<.04	<.8	14.1	--	330	<.08	3.3	--	4.78	E.3
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-26-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	M	<.00	<.05	<.01
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	11	<.06	689	<.04	<.8	<2.8	--	276	E.07	5.7	--	5.46	.9
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	M	<.00	<.05	<.01
07-06-05	121	<.06	81	<.04	<.8	E.3	--	801	.17	49.6	--	2.71	E.2
08-09-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-09-05	.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-29-05	<.1	<.0	M	<.0	<.01	<.01	<.01	M	<.0	<.02	<.00	<.05	<.01
08-08-05	.2	<.0	M	<.0	<.01	<.01	<.01	<.02	<.0	<.02	<.00	<.05	<.01
08-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-18-05	75	<.06	8	<.04	<.8	.4	--	601	<.08	181	--	5.69	E.3
07-19-05	249	<.06	20	<.04	<.8	.4	--	3,000	E.07	195	--	2.77	<.4
07-19-05	121	<.06	11	<.04	<.8	.5	--	932	<.08	411	--	3.50	<.4
07-20-05	71	<.06	29	<.04	<.8	1.3	--	7	<.08	4.1	--	6.20	2.1
07-20-05	160	<.06	8	<.04	<.8	.7	--	E4	<.08	.4	--	3.93	1.9
07-20-05	401	<.06	23	E.03	<.8	4.2	--	994	<.08	639	--	4.27	E.2
07-22-05	24	<.06	E7	<.04	E.6	E.3	--	<6	<.08	E.1	--	2.52	.5
07-21-05	55	<.06	16	<.04	1.0	.7	--	8	<.08	.4	--	4.83	1.4

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Thall-ium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	2,4,5-T water unfltrd ug/L (39740)	2,4-D water unfltrd ug/L (39730)	2,4-DB water unfltrd ug/L (30219)	CIAT, water, unfltrd ug/L (75981)	CEAT, water, unfltrd ug/L (75980)	Aceto-chlor, water, unfltrd ug/L (49259)	Aci-fluor-fen, water unfltrd ug/L (79193)	Ala-chlor, water, unfltrd ug/L (77825)	Ametryn water unfltrd ug/L (82184)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-11-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	<.2	3,460	<.04	2.6	--	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	<.20	<1.00	<1.0	.1	<.1	<.050	<.20	<.1	<.1
07-21-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
06-20-05	<.2	1,230	<.04	6.3	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-26-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.01	M	<.0	--	--	--	--	<.1	<.1	.060	--	<.1	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	<.2	1,800	<.04	21.1	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
07-06-05	<.2	268	.07	1.9	--	--	--	--	--	--	--	--	--
08-09-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-09-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-29-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	<.1
08-08-05	<.01	M	<.0	--	--	--	--	<.1	<.1	<.050	--	<.1	--
08-22-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-06-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-11-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-12-05	--	--	--	--	<.20	<1.00	<1.0	<.1	<.1	<.050	<.20	<.1	<.1
07-18-05	<.2	98.3	.07	1.5	--	--	--	--	--	--	--	--	--
07-19-05	<.2	194	<.04	31.2	--	--	--	--	--	--	--	--	--
07-19-05	<.2	143	<.04	1.1	--	--	--	--	--	--	--	--	--
07-20-05	<.2	273	<.04	5.4	--	--	--	--	--	--	--	--	--
07-20-05	<.2	193	<.04	.8	--	--	--	--	--	--	--	--	--
07-20-05	<.2	192	<.04	12.7	--	--	--	--	--	--	--	--	--
07-22-05	<.2	113	<.04	E.3	--	--	--	--	--	--	--	--	--
07-21-05	<.2	93.5	<.04	E.5	--	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Atra-zine, water, unfltrd ug/L (39630)	Ben-tazon, water, unfltrd ug/L (38710)	Broma-cil, water, unfltrd ug/L (30234)	Bromo-methane water unfltrd ug/L (30202)	Buta-chlor, water, unfltrd ug/L (30235)	Butyl-ate, water, unfltrd ug/L (30236)	Car-baryl, water, unfltrd ug/L (39750)	Carbo-furan, water, unfltrd ug/L (82615)	Chlor-amben, water, unfltrd ug/L (82051)	Chloro-methane water unfltrd ug/L (30201)	Cloma-zone, water, fltrd, ug/L (50344)	Cyana-zine, water, unfltrd ug/L (81757)	Dicamba water unfltrd ug/L (82052)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-11-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-21-05	.2	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-21-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
06-20-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-26-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
07-06-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-09-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-09-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-29-05	<.1	--	<.1	--	<.1	<.1	<.05	<.05	--	--	<.050	<.1	--
08-08-05	<.1	--	--	--	--	<.1	--	--	--	--	--	<.1	--
08-22-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-06-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-11-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-12-05	<.1	<1.0	<.1	<.50	<.1	<.1	<.05	<.05	<.50	<.50	<.050	<.1	<.50
07-18-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-19-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-19-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-22-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	--	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Di-chlor-prop, water, unfltrd ug/L (30190)	Dimeth-enamid water, fltrd, ug/L (61588)	Dinoseb water unfltrd ug/L (30191)	EPTC, water, unfltrd ug/L (81894)	Fonofos water, fltrd, ug/L (04095)	Metola-chlor, water, unfltrd ug/L (39356)	Metri-buzin, water unfltrd ug/L (81408)	Pendi-meth-alin, water unfltrd ug/L (79190)	Penta-chloro-phenol, water, unfltrd ug/L (39032)	Pic-loram water unfltrd ug/L (39720)	Prome-ton, water, unfltrd ug/L (39056)	Propa-chlor, water, unfltrd ug/L (77729)	Propa-zine, water, unfltrd ug/L (39024)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-21-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-21-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
06-20-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-26-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
07-06-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
08-09-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-09-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-29-05	--	<.05	--	<.05	--	<.05	<.05	<.05	--	--	<.1	<.05	<.1
08-08-05	--	--	--	--	--	<.05	<.05	--	--	--	--	--	--
08-22-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-06-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-11-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-12-05	<1.0	<.05	<.50	<.05	--	<.05	<.05	<.05	<.50	<.50	<.1	<.05	<.1
07-18-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-19-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-19-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-20-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-22-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--
07-21-05	--	--	--	--	<.003	--	--	--	--	--	--	--	--

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Silvex, water, unfltrd ug/L (39760)	Sima- zine, water, unfltrd ug/L (39055)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- clopyr, water, unfltrd ug/L (04092)	Tri- flur- alin, water, unfltrd ug/L (39030)	Xylene, water, unfltrd ug/L (81551)	1,1,1,2 -Tetra- chloro- ethane, water, unfltrd ug/L (77562)	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	1,1,2,2 -Tetra- chloro- ethane, water, unfltrd ug/L (34516)	1,1,2- Tri- chloro- ethane, water, unfltrd ug/L (34511)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,1-Di- chloro- propene water unfltrd ug/L (77168)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-21-05	<.50	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-21-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
06-20-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-26-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
07-06-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
08-09-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-09-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-29-05	--	<.1	<.050	--	<.1	--	--	--	--	--	--	--	--
08-08-05	--	--	--	--	<.1	--	--	--	--	--	--	--	--
08-22-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-06-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-11-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	M	<.50	<.50
07-12-05	<.20	<.1	<.050	<.20	<.1	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50
07-18-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-19-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-19-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-20-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-20-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-20-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-22-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03
07-21-05	--	--	--	--	--	--	<.03	<.03	<.08	<.04	<.04	<.02	<.03

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	1,2,3-Tri-chloro-propane water unfltrd ug/L (77443)	1,2,4-Tri-chloro-benzene water unfltrd ug/L (34551)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,3-Di-chloro-propane water unfltrd ug/L (77173)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	2,2-Di-chloro-propane water unfltrd ug/L (77170)	2-Chloro-toluene water unfltrd ug/L (77275)	4-Chloro-toluene water unfltrd ug/L (77277)	Benzene water unfltrd ug/L (34030)	Bromo-benzene water unfltrd ug/L (81555)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
06-20-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
08-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-08-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-22-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.5
07-18-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-19-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-19-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	<.02	<.03
07-20-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.01	<.03
07-20-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.02	<.03
07-20-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.02	<.03
07-22-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.02	<.03
07-21-05	<.18	<.1	<.05	<.1	<.03	<.03	<.1	<.03	<.05	<.04	<.05	E.03	<.03

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	Chloro-ethane, water, unfltrd ug/L (34311)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	cis-1,3-Di-chloro-propene water unfltrd ug/L (34704)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-bromo-methane water unfltrd ug/L (30217)	Di-chloro-methane water unfltrd ug/L (34423)	Ethyl-benzene water unfltrd ug/L (34371)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
08-31-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-29-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-15-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-21-05	2	<.50	<.50	<.5	<.50	M	<.50	<1	<.50	--	--	<.50	<.5
07-21-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
06-20-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-03-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-15-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-16-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-26-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-30-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-25-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-11-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-12-05	--	--	--	--	--	--	--	--	--	--	--	--	--
06-21-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-13-05	--	--	--	--	--	--	--	--	--	--	--	--	--
07-06-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
08-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-09-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-29-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-08-05	--	--	--	--	--	--	--	--	--	--	--	--	--
08-22-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-06-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-11-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-12-05	<.50	<.50	<.50	<.5	<.50	<.50	<.50	<1	<.50	--	--	<.50	<.5
07-18-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-19-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-19-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-20-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	M	<.03	<.06	<.04	<.04	<.1
07-20-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-20-05	.64	<.03	<.1	<.02	<.05	.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-22-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1
07-21-05	<.03	<.03	<.1	<.02	<.05	<.1	<.05	<.1	<.03	<.06	<.04	<.04	<.1

GROUND WATER QUALITY MONITORING PROGRAM—Continued

MULTIPLE STATION ANALYSES—CONTINUED

Date	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tetra- chloro- methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans- 1,2-Di- chloro- ethene, water, unfltrd ug/L (34546)	trans- 1,3-Di- chloro- propene water unfltrd ug/L (34699)	Tri- bromo- methane water unfltrd ug/L (32104)	Tri- chloro- ethene, water, unfltrd ug/L (39180)	Tri- chloro- methane water unfltrd ug/L (32106)	Vinyl chlor- ide, water, unfltrd ug/L (39175)	Gross alpha radioac water, fltrd, U-nat, pCi/L (01515)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Ra-226, water, fltrd, pCi/L (09503)	Tritium water unfltrd pCi/L (07000)
08-31-05	--	--	--	--	--	--	--	--	--	<1.7	4.2	<.70	--
06-29-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-05-05	--	--	--	--	--	--	--	--	--	3.7	18.0	2	--
06-15-05	<.03	<.06	E.03	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	2	<.50	--	--	--	--
07-21-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
06-20-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.2
08-03-05	--	--	--	--	--	--	--	--	--	1.5	7.4	<1	--
07-15-05	--	--	--	--	--	--	--	--	--	<.8	<3.8	<.70	--
08-16-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	2	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-26-05	--	--	--	--	--	--	--	--	--	13	22.7	5	--
08-30-05	--	--	--	--	--	--	--	--	--	<2.8	5.2	1	--
07-25-05	--	--	--	--	--	--	--	--	--	2.4	4.6	1	--
07-11-05	--	--	--	--	--	--	--	--	--	4.6	17.5	3	-.1
07-12-05	--	--	--	--	--	--	--	--	--	5.5	7.7	4	--
06-21-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	-.2
07-13-05	--	--	--	--	--	--	--	--	--	6.5	8.4	5	--
07-13-05	--	--	--	--	--	--	--	--	--	2.4	14.1	3	-.1
07-06-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	2.4	5.1	3	.2
08-09-05	--	--	--	--	--	--	--	--	--	3.8	6.4	1	.3
08-09-05	--	--	--	--	--	--	--	--	--	1.8	5.4	1	.3
08-29-05	--	--	--	--	--	--	--	--	--	3.2	9.7	1	--
08-08-05	--	--	--	--	--	--	--	--	--	<1.6	4.4	M	--
08-22-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-06-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-11-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-12-05	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	<.50	--	--	--	--
07-18-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-19-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-19-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-20-05	<.03	<.06	E.01	<.03	<.09	<.10	<.04	E.01	<.1	--	--	--	--
07-20-05	<.03	<.06	E.01	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-20-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	3.04	<.1	--	--	--	--
07-22-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--
07-21-05	<.03	<.06	<.02	<.03	<.09	<.10	<.04	<.02	<.1	--	--	--	--

Remark codes used in this table:
< -- Less than.
E -- Estimated.
M -- Presence verified but not quantified.

405747093233201 MCNAY RESEARCH STATION NEAR CHARITON, IOWA

LOCATION.--Lat 40°57'47", long 93°23'34", in SW1/4 NE1/4 sec. 9, T.71 N., R.23 W., Lucas County, Hydrologic Unit 10280201, 3.1 mi east and 2.0 mi north of Derby, Iowa, 3.4 mi west and 2.8 mi south of Chariton, Iowa.

OWNER.--U.S. Geological Survey.

PERIOD OF RECORD.--September 1984 to current year.

INSTRUMENTATION.--Wet/dry precipitation collector, weighing-bucket type recording rain gage with alter wind shield and event recorder. National Weather Service standard 8-inch rain and snow gage (back-up only).

REMARKS.--Samples collected by Jim Secor. Footnote: "M" indicates that presence is verified, but not quantified. Collection of field pH and field specific conductance were discontinued December 7, 2004.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as N (83044)	Nitrate wet atm dep fltrd, mg/L as N (83068)	Ortho-phos-phate, wet dep fltrd, mg/L as P (83108)
OCT 05-12	5.8	5.2	.15	.01	.01	.01	.05	.59	.25	.16	<.003
OCT 12-19	7.0	24.2	1.55	.14	.07	.05	.12	3.67	1.12	.81	<.003
OCT 19-26	5.6	9.4	.21	.02	.10	.02	.07	1.24	.50	.27	.045
OCT 26-NOV 02	4.7	10.5	.06	.01	.01	.01	.02	1.05	.18	.16	<.003
NOV 02-10	4.8	10.0	.10	.01	M	.01	.02	.84	.10	.17	<.003
NOV 10-16	5.2	24.9	.87	.08	.05	.05	.13	3.90	1.17	.85	<.003
NOV 16-23	5.2	11.6	.11	.02	.02	.10	.16	.97	.47	.34	<.003
NOV 23-30	4.4	26.4	.25	.02	.01	.04	.15	1.76	.59	.87	<.003
NOV 30-DEC 07	4.9	7.5	.05	.01	.01	M	.01	.56	.11	.14	<.003
DEC 07-14	--	--	--	--	--	--	--	--	--	--	--
DEC 14-21	--	--	--	--	--	--	--	--	--	--	--
DEC 21-28	--	--	--	--	--	--	--	--	--	--	--
DEC 28 - JAN 4	5.4	9.2	.18	.02	.02	.09	.13	1.34	.45	.24	<.003
JAN 04-11	--	--	--	--	--	--	--	--	--	--	--
JAN 11-18	4.7	16.6	.26	.02	.03	.24	.10	2.36	.29	.23	<.003
JAN 18-25	--	--	--	--	--	--	--	--	--	--	--
JAN 25-FEB 02	--	--	--	--	--	--	--	--	--	--	--
FEB 02-08	5.0	10.0	.10	.02	.01	.03	.07	1.07	.36	.26	<.003
FEB 08-15	5.4	3.1	.02	<.003	.01	.01	.02	.12	.07	.08	<.003
FEB 15-22	5.9	21.9	.41	.04	.06	.05	.14	2.94	1.45	.82	<.003
FEB 22-MAR 02	6.5	19.5	.30	.02	.03	.04	.07	1.88	1.58	.85	<.003
MAR 02-08	7.1	23.9	1.58	.07	.14	.12	.18	1.79	1.36	.49	<.003
MAR 08-15	--	--	--	--	--	--	--	--	--	--	--
MAR 15-22	--	--	--	--	--	--	--	--	--	--	--
MAR 22-29	6.9	27.1	2.42	.26	.06	.36	.29	3.96	.68	.71	<.003
MAR 29-APR 05	6.7	16.2	1.01	.06	.03	.08	.09	1.55	.99	.33	<.003
APR 05-12	5.8	6.0	.17	.02	.03	.08	.13	.78	.31	.13	.035
APR 12-19	--	--	--	--	--	--	--	--	--	--	--

405747093233201 MCNAY RESEARCH STATION NEAR CHARITON, IOWA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as N (83044)	Nitrate wet atm dep fltrd, mg/L as N (83068)	Ortho-phos-phate, wet dep fltrd, mg/L as P (83108)
APR 19-26	5.8	15.5	.69	.11	.21	.13	.20	1.91	.77	.48	.084
APR 26-MAY 03	6.9	9.2	.61	.06	.04	.01	.02	.32	.52	.13	<.003
MAY 03-10	6.5	14.9	.86	.08	.08	.17	.30	1.93	.73	.38	<.003
MAY 10-17	5.6	9.6	.29	.03	.05	.08	.11	1.35	.47	.28	<.003
MAY 17-24	6.3	15.8	.81	.07	.11	.12	.20	2.13	.52	.50	.003
MAY 24-31	6.5	9.9	.31	.02	.02	.01	.03	1.22	.72	.30	<.003
MAY 31-JUN 07	5.3	7.9	.14	.02	.03	.06	.08	1.02	.33	.18	<.003
JUN 07-14	5.9	8.7	.39	.05	.04	.10	.12	1.32	.37	.24	<.003
JUN 14-21	--	--	--	--	--	--	--	--	--	--	--
JUN 21-28	5.6	14.3	.89	.04	.02	.05	.10	2.44	.55	.37	<.003
JUN 28-JUL 05	6.3	18.8	1.33	.07	.08	.07	.17	3.24	.76	.52	<.003
JUL 05-12	--	--	--	--	--	--	--	--	--	--	--
JUL 12-19	5.6	5.4	.22	.01	.01	.01	.03	.53	.19	.16	<.003
JUL 19-26	6.1	4.6	.33	.02	.02	.03	.04	.31	.15	.14	<.003
JUL 26-AUG 02	5.4	2.6	.02	M	M	M	.01	.16	.04	.04	<.003
AUG 02-09	5.1	30.1	--	--	--	--	--	--	--	--	--
AUG 09-16	5.6	5.8	.29	.02	.01	.02	.04	.66	.20	.19	<.003
AUG 16-23	6.0	5.9	.34	.02	.01	.01	.03	.36	.25	.30	<.003
AUG 23-30	4.4	24.3	.31	.03	.01	.01	.08	2.67	.33	.32	<.003
AUG 30-SEP 06	--	--	--	--	--	--	--	--	--	--	--
SEP 06-13	6.0	24.0	2.37	.17	.10	.04	.24	3.91	.47	.73	<.003
SEP 13-20	6.8	11.6	.68	.05	.03	.06	.08	1.24	.62	.32	<.003
SEP 20-27	6.4	10.0	.62	.06	.03	.06	.09	1.39	.47	.87	<.003

425435091281101 BIG SPRING FISH HATCHERY NEAR ELKADER, IOWA

LOCATION.--Lat 42°54'35", long 91°28'11", in SE1/4 NE 1/4 SE1/4 sec. 31, T.94 N., R.5 W., Clayton County, Hydrologic Unit 07060004, 3.0 mi north and 2.8 mi west of Elkader, Iowa.

OWNER.--U.S. Geological Survey.

PERIOD OF RECORD.--August 1984 to current year.

INSTRUMENTATION.--Wet/dry precipitation collector and weighing-bucket type recording rain gage with alter wind shield and event recorder.

REMARKS.--Samples Collected by Robert Zach. Footnote: "M" indicates presence is verified, but not quantified. Collection of field pH and field specific conductnace were discontinued November 2, 2004.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	pH wet atm dep unfltrd lab, std units (83107)	Specif. conductance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnesium, wet atm dep fltrd, mg/L (83002)	Potassium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chloride, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as N (83044)	Nitrate wet atm dep fltrd, mg/L as N (83068)	Orthophosphate, wet dep fltrd, mg/L as P (83108)
OCT 05-12	6.5	13.0	.59	.11	.03	.02	.06	1.48	.75	.53	<.003
OCT 12-19	6.7	16.5	.73	.09	.06	.02	.07	1.79	1.00	.60	<.003
OCT 19-26	5.5	17.6	.55	.09	.05	.04	.11	3.18	.89	.47	<.003
OCT 26-NOV 02	6.2	7.1	.49	.05	.10	.02	.07	1.03	.23	.17	<.003
NOV 02-09	--	--	--	--	--	--	--	--	--	--	--
NOV 09-16	7.4	46.3	2.38	.22	.09	.05	.16	3.29	2.16	.83	<.003
NOV 16-23	6.0	9.7	.08	.01	.01	.01	.03	1.34	.82	.34	<.003
NOV 23-30	5.7	7.6	.13	.02	.02	.01	.02	.88	.43	.21	<.003
NOV 30-DEC 07	5.1	9.1	.06	.01	.01	.01	.03	.79	.39	.32	<.003
DEC 07-14	4.8	33.9	.64	.09	.04	.02	.16	3.47	1.73	1.58	<.003
DEC 14-21	7.2	17.8	2.51	.24	.03	.03	.06	.28	.23	.19	<.003
DEC 21-28	--	--	--	--	--	--	--	--	--	--	--
DEC 28 - JAN 04	4.9	14.7	.23	.04	.03	.14	.20	2.14	.60	.29	<.003
JAN 04-11	5.3	6.2	.13	.03	.01	.04	.06	.48	.20	.23	<.003
JAN 11-18	--	--	--	--	--	--	--	--	--	--	--
JAN 18-25	4.9	9.9	.16	.04	.01	.03	.08	.24	.18	.41	<.003
JAN 25-FEB 01	4.3	35.5	.30	.07	.03	.18	.27	3.35	.91	.95	<.003
FEB 01-08	5.1	8.5	.05	.01	.01	.01	.03	.82	.32	.22	<.003
FEB 08-15	4.6	14.7	.04	.01	.01	.01	.04	.94	.27	.35	<.003
FEB 15-22	5.6	10.1	.39	.07	.01	.02	.05	1.18	.49	.45	<.003
FEB 22-MAR 01	6.1	20.8	.39	.04	.06	.09	.17	2.58	1.57	.87	<.003
MAR 01-08	6.8	17.1	1.08	.09	.12	.04	.06	1.10	1.00	.32	<.003
MAR 08-15	6.6	9.4	.69	.09	.01	.03	.05	.66	.44	.19	<.003
MAR 15-22	7.0	25.0	2.72	.12	.09	.10	.19	1.71	.86	.66	<.003
MAR 22-29	--	--	--	--	--	--	--	--	--	--	--
MAR 29-APR 05	6.8	19.3	1.04	.15	.15	.09	.11	1.26	1.07	.37	<.003
APR 05-12	6.4	24.9	1.03	.16	.11	.11	.17	4.63	1.51	.69	<.003
APR 12-19	6.7	30.8	1.77	.25	.53	.07	.13	3.97	1.69	.87	.030

425435091281101 BIG SPRING FISH HATCHERY NEAR ELKADER, IOWA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc- tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes- ium, wet atm dep fltrd, mg/L (83002)	Potas- sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor- ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as N (83044)	Nitrate wet atm dep fltrd, mg/L as N (83068)	Ortho- phos- phate, wet dep fltrd, mg/L as P (83108)
APR 19-26	6.4	16.0	.78	.17	.05	.04	.07	1.59	.89	.52	<.003
APR 26- MAY 03	6.9	25.0	1.40	.19	.24	.03	.07	1.28	1.71	.53	<.003
MAY 03-10	6.7	15.8	1.11	.12	.04	.01	.04	1.10	.73	.29	<.003
MAY 10-17	6.1	13.5	.49	.08	.06	.09	.15	1.84	.79	.46	<.003
MAY 17-24	6.2	20.4	1.11	.19	.06	.08	.15	3.07	.98	.70	<.003
MAY 24-31	6.8	18.1	1.21	.23	.36	.02	.04	.95	.88	.36	<.003
MAY 31- JUN 07	5.7	8.0	.26	.05	.09	.05	.08	1.14	.36	.21	<.003
JUN 07-14	6.5	11.1	.73	.16	.22	.05	.10	1.07	.43	.25	<.003
JUN 14-21	--	--	--	--	--	--	--	--	--	--	--
JUN 21-28	6.3	16.4	1.23	.12	.04	.04	.09	2.52	.64	.51	<.003
JUN 28- JUL 05	6.4	18.7	1.19	.21	.26	.04	.09	2.91	.78	.38	.033
JUL 05-12	--	--	--	--	--	--	--	--	--	--	--
JUL 12-19	6.1	7.4	.33	.07	.04	.01	.04	.90	.42	.21	<.003
JUL 19-26	6.5	6.4	.31	.08	.15	.04	.06	.54	.23	.16	<.003
JUL 26- AUG 02	--	--	--	--	--	--	--	--	--	--	--
AUG 02-09	6.8	19.0	1.30	.47	.90	.01	.05	1.51	.47	.25	<.003
AUG 09-16	6.4	9.0	.56	.06	.05	.01	.04	1.09	.46	.27	<.003
AUG 16-23	4.5	21.5	.14	.02	.02	M	.04	2.32	.30	.27	<.003
AUG 23-30	6.1	14.7	.93	.19	.04	.04	.13	1.95	.41	.55	<.003
AUG 30- SEP 06	6.9	25.2	2.15	.35	.07	.02	.09	2.28	.93	.63	<.003
SEP 06-13	5.9	12.6	.65	.06	.05	.02	.05	1.97	.57	.31	<.003
SEP 13-20	5.5	7.6	.22	.05	.12	.03	.04	1.05	.21	.14	<.003
SEP 20-27	5.2	8.8	.18	.03	.03	.03	.06	1.04	.31	.22	<.003

Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter (m)
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic foot per second per day [(ft^3/s)/d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.233×10^{3}	cubic meter (m^3)
	1.233×10^{-3}	cubic hectometer (hm^3)
	1.233×10^{-6}	cubic kilometer (km^3)
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second (m^3/s)
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton (short)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (˚F) as follows:

$$˚F = (1.8 \times ˚C) + 32$$

USGS

Nalley and others—**Water Resources Data, Iowa, Water Year 2005**—IA-05

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